



**Tuesday, May 2, 2023
5:00 PM**

**City Council
Tuesday Meeting Agenda**

**Council Chambers
200 Forrest Street**

Call to Order

Call to Prayer and Pledge of Allegiance

Presentation Agenda

POLICY AGENDA

1. **2023-307** Approve the minutes for the April 17, 18 & 24, 2023 meetings of the City Council.
2. **2023-243** Take from the table an Appeal of the Planning Commission's recommendation to deny a change in zoning classification for property located at 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4) - tabled at the April 18, 2023 meeting.
3. **2023-290** Adopt a Resolution setting Public Hearing on Monday, June 5th, 2023 at 4:00 p.m. in the City Council Chambers located at City Hall to determine if certain properties are in such a state of uncleanness so as to be a menace to the health and safety of the community, according to the provision of MS Code 1972, Section 21-19-11.
4. **2023-299** Approve Letter Agreement with Neel-Schaffer, Inc. for professional engineering services related to the Gordon's Creek Pathway Along VFW Project and authorize the Mayor to execute in duplicate.
5. **2023-306** Approve Memorandum of Agreement with the Mississippi Department of Transportation (MDOT) to provide funding for the Gordon's Creek VFW Pathway Project (Federal Aid Project No. STP-0210-00(042)LPA/109399-701000) and authorize the Mayor to execute in duplicate.
6. **2023-293** Approve Lighting Agreement with Mississippi Power Company for additional lighting for a monthly increase in pricing for the following locations per attached documents; and authorize the Mayor to execute the same.
7. **2023-267** Approve Contractor and Owner Agreements for the Emergency Roof Repair

Initiative for an amount not to exceed \$15,000 per project according to the Emergency Roof Repair Initiative Program Manual and authorize the Mayor to execute in triplicate.

8. **2023-300** Approve an agreement between the Mississippi State Fire Academy (MSFA) and The Hattiesburg Fire Department to administer the NFPA 1001 Field program, for an amount not to exceed \$5,000.00 and authorize the Mayor to execute the same.
9. **2023-309** Approve a Sponsorship Agreement between the City of Hattiesburg and JTR Productions, INC for advertisement sponsorship, in accordance with Mississippi 17-3-1, for an amount not to exceed \$7,500.00 and authorize manual check for the same.
10. **2023-268** Approve and authorize issuance of a manual check for CDBG/HOME Program Claims per attached Memorandum (CDBG Entitlement)
11. **2023-302** Adopt a Resolution appointing Andrew Arman Miri as Municipal Public Defender Pro Tem, for the City of Hattiesburg.

ROUTINE AGENDA

1. **2023-287** Acknowledge receipt of the two-quote docket.
2. **2023-305** Acknowledge receipt of FY22 audit from Hattiesburg Public School District.
3. **2023-303** Acknowledge receipt of FY 2021 audit from the Hattiesburg Tourism Commission.
4. **2023-304** Acknowledge receipt of the FY 2022 audit from the Hattiesburg Tourism Commission.
5. **2023-301** Acknowledge bids received on April 6, 2023 for one or more small tandem dump trucks and accept the bid of Burroughs Companies as the best and lowest bid.
6. **2023-308** Acknowledge bids received on April 14, 2023 for one or more police pursuit package vehicles and accept the bid of Cannon Motors as the best and lowest bid.
7. **2023-298** Approve Plans and Specifications for the COMSWIP Sewer Improvements Phase IX - East 2nd Street Area project and authorize advertisement for bids for same.
8. **2023-296** Approve Plans and Specifications for the MLK Avenue Area Infrastructure Improvements Project and authorize advertisement for bids for same.

9. 2023-295 Approve Plans and Specifications for the Edwards Street Infrastructure Improvements Project and authorize advertisement for bids for same.
10. 2023-294 Approve Plans and Specifications for the Bobby L. Chain Runway Taxiway A Realignment and Improvements Project (AIP Project No. 3-28-0031-0030-2023) and authorize advertisement for bids for same.
11. 2023-266 Approve the sale of grave spaces, per attached Memo's, Receipts, and Deeds.
12. 2023-297 Approve claims docket for the period ending April 28, 2023.

In Memoriam:

- Ms. Betty McSwain
- Mrs. Martha Jo Hayes
- Mr. Ronnie Price
- Minister Marie LaNay Hibbler
- Ms. Ella Mae Booker Kling
- Ms. Joyce “Boochie” Carroll

Meeting Adjourn



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Lisa Luu
cc: Ronda Kennedy, Clerk of Council
Date: Tuesday, May 2, 2023
Re: Approve the minutes for the April 17, 18 & 24, 2023 meetings of the City Council.
File Number: 2023-307
Minute Book #

Summary

According to Miss. Code Ann. § 21-15-33, "the minutes of every municipality must be adopted and approved by a majority of all the members of the governing body of the municipality at the next regular meeting or within thirty (30) days of the meeting thereof, whichever occurs first....."

Recommendation Statement

I recommend approval of the minutes.

Please place this on the May 2, 2023 City Council meeting for consideration.

Published Agenda



Monday, April 17, 2023 4:00 PM	City Council Monday Meeting Agenda	Council Chambers 200 Forrest Street
---	---	--

Call to Order

Public Hearing

- | | | |
|-----------|-----------------|--|
| 1. | 2023-247 | Hold a public hearing for the appeal filed against the Hattiesburg Planning Commission's recommendation to deny a change to the zoning classification for certain properties located at 350 S 11 th Ave and 709 Mamie Street from zoning classification of 350 S 11 th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4). |
|-----------|-----------------|--|

Agenda Adjustments:

- **Add Policy Items #17, #18 and #19**

- | | | |
|------------|-----------------|---|
| 17. | 2023-262 | Acknowledge bids received April 13, 2023 for the Tatum Park-Fields 16, 18, & Common Area Project and accept the bid from Sports Contractors Unlimited, LLC in the amount of \$2,701,207.85; Authorize the Mayor to execute contracts when prepared. |
| 18. | 2023-263 | Acknowledge bids received April 13, 2023 for the Kamper Park Tennis Court Overlay project and accept the bid from Australian Courtworks, Inc. in the amount of \$453,700.00; Authorize the Mayor to execute contracts when prepared. |
| 19. | 2023-264 | Approve Change Order No. 1 with Phoenix Construction for the Jaycee Park Improvements project, increasing the contract amount \$5,704.00, and authorize the mayor to execute same. |

- **And, Add Routine Item #8 at the request of the Administration as follows:**

- | | | |
|-----------|-----------------|--|
| 8. | 2023-265 | Acknowledge the bids received on April 6, 2023, for one (1) new or used bucket truck for the Parks and Recreation Department and accept the bid from Altec Nueco as the best bid received; as the lowest bid submitted by Schmidy's Machinery did not meet the specifications. |
|-----------|-----------------|--|

Agenda Review

Citizens' Forum

Meeting Recess

Call to Order

BE IT REMEMBERED that the Hattiesburg City Council held a **public hearing at 4:00 p.m. Monday, April 17, 2023**, in Council Chambers at City Hall, for the appeal filed against the Hattiesburg Planning Commission's recommendation to deny a change to the zoning classification for certain properties located at 350 S 11th Ave and 709 Mamie Street from zoning classification of 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4).

Those present included Mayor Toby Barker and members of the City Council Jeffrey George, Ward 1; Deborah Delgado, Ward 2 (via teleconference); Carter Carroll, Ward 3; Dave Ware, Ward 4 (via teleconference); and Nicholas Brown, Ward 5. Others in attendance included Director of Administration/City Clerk, Kermas Eaton; City Attorney, Randy Pope; Deputy Clerk of Council, Lisa Luu Jolly; City staff members; media; and the public.

Council President George called the meeting to order and explained the procedures.

Public Hearing

1.

2023-247

Hold a public hearing for the appeal filed against the Hattiesburg Planning Commission's recommendation to deny a change to the zoning classification for certain properties located at 350 S 11th Ave and 709 Mamie Street from zoning classification of 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4).
- Attachments:

[Appeal of Rezoning - Roberts S 11th and Mamie](#)

[Item A Staff Summary](#)

[Item A image sheet](#)

[Item A Applicant Summary](#)

[Ordinance - Robin Roberts Rezone](#)

Nathan Satcher, City Planner, provided a presentation overview of the appeal filed against the Planning Commission's recommendation to deny zoning classification for properties 350 S. 11th Avenue and 709 Mamie Street.

Attachment: [CC April 17 2023 PP](#)

Robin Roberts and Michael Anderson, the appellants, both spoke against the Planning Commission's recommendation.

Council President George called upon the appellants for rebuttal.

There were no other citizens who wished to speak for or against the petition.

By unanimous consent, Council President George **closed the public hearing at 4:40 p.m. and proceeded with the Agenda Review.**

Agenda Adjustments

The Deputy Clerk of Council read aloud adjustments to the Agenda.

Add Policy Items #17, #18 and #19:

17.

2023-262

Acknowledge bids received April 13, 2023 for the Tatum Park-Fields 16, 18, & Common Area Project and accept the bid from Sports Contractors Unlimited, LLC in the amount of \$2,701,207.85; Authorize the Mayor to execute contracts when prepared.
- Attachments:

[Tatum Park-Fields 16, 18, & Common Area-Cert Bid Tab](#)

[Tatum Parks-Fields 16, 18, & Common Area-Bid Tab Ltr](#)
18.

2023-263

Acknowledge bids received April 13, 2023 for the Kamper Park Tennis Court Overlay project and accept the bid from Australian Courtworks, Inc. in the amount of \$453,700.00; Authorize the Mayor to execute contracts when prepared.
- Attachments:

[Kamper Park Tennis Court Overlay-Bid Tab Ltr](#)

[Kamper Park Tennis Court Overlay-Cert Bid Tab](#)
19.

2023-264

Approve Change Order No. 1 with Phoenix Construction for the Jaycee Park Improvements project, increasing the contract amount \$5,704.00, and authorize the mayor to execute same.
- Attachments:

[3922 - Jaycee Park Improvements CO 01 - Review Letter](#)

[3922 - Jaycee Park Improvements CD - CO No1](#)

And, Add Routine Item #8 and the Addendum to the Claims Docket (Routine Item # 7) at the request of the Administration as follows:

8.

2023-265

Acknowledge the bids received on April 6, 2023, for one (1) new or used bucket truck for the Parks and Recreation Department and accept the bid from Altec Nueco as the best bid received; as the lowest bid submitted by Schmidy's Machinery did not meet the specifications.
- Attachments:

[Bid Tab- Hattiesburg Bucket Truck 4-6-23](#)

7. **2023-239** Approve claims docket for the period ending April 14,2023.

Attachments: DOCKET 22.04.14
DT 23.04.14
Addendum to the Docket, 04-18-2023

Agenda Review

Council President George proceeded with the Agenda Review.

Following discussion of agenda items, Council President George closed the Agenda Review.

Citizens' Forum

Council Vice President Ware proceeded with the Citizens' Forum.

He stated the procedures and invited members of the public to speak.

There were no citizens present who wished to address the Council.

Council Vice President Ware closed the Citizen Forum.

Meeting Recess

Council President George declared the **meeting recessed at 4:40 p.m., this 17th day of April, 2023**, by unanimous consent, until the 18th day of April, 2023.

ATTEST:

APPROVE:

Clerk of Council

Council President

ATTEST AND CERTIFY:

APPROVE:

City Clerk

Mayor

Published Agenda



Tuesday, April 18, 2023 5:00 PM	City Council Tuesday Meeting Agenda	Council Chambers 200 Forrest Street
--	--	--

Call to Order
Call to Prayer and Pledge of Allegiance
Presentation Agenda

POLICY AGENDA

1.	2023-253	Approve the minutes for the April 3 & 4, 2023 meetings of the City Council.
2.	2023-243	Appeal of the Planning Commission's recommendation to deny a change in zoning classification for property located at 350 S 11 th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4).
3.	2023-121	Take from the table an Ordinance for the petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, establishing the zoning classification for a portion of an unimproved property located at the intersection of Jackson Road and the Longleaf Trace to B-2 Neighborhood Business District. (PPIN 33787, Lamar County, Ward 1) - tabled at the April 4, 2023 City Council meeting.
4.	2023-122	Take from the table a petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, requesting a conditional use for “restaurant, without drive-through” in a B-2 Zone (Neighborhood Business District) contingent upon approval of the request to establish the zoning. (PPIN 33787, Lamar County, Ward 1) - tabled at the April 4, 2023 City Council meeting.
5.	2023-246	Adopt an Ordinance for the petition filed by Trace 4 th Street, LLC. owner, to request a variance from section 10.6 Signs – for a minimum of “79 feet” of frontage where 150 feet is required for a proposed on-premise monument sign for property located at 1015 Main St (Forrest County, Ward 2). The Board of Adjustment Recommended to Approve on April 5, 2023.
6.	2023-252	Adopt a Resolution supporting the Hattiesburg Housing Authority for the redevelopment of Briarfield Homes.
7.	2023-258	Adopt a Resolution declaring certain vehicles as surplus (per attached list) and authorize disposal or sale of said vehicles ; authorize removal of vehicles from the inventory of the Hattiesburg Fire Department .
8.	2023-257	Approve Request for designation of Recognized Historic Landmark Status for the property located in the public right-of-way at Hardy St. and S. 22 nd Ave., commonly known as the Parkhaven Arch.
9.	2023-251	Approve Professional Services Agreement with Landry Lewis Germany Architects, PA, to provide architectural services related to the replacement of Fire Station #7 Roof and authorize the Mayor to execute the same.
10.	2023-240	Approve Lighting Agreements with Mississippi Power Company for additional lighting on Florida Ave, and other locations as described in the attached forms, and authorize the Mayor to execute the same.
11.	2023-242	Approve Supplemental Agreement No. 2 with Walters Construction Company, Inc. for the Highway 49, Camp Street, Adeline Street & Mamie Street State Aid Project (No. DECD-0018(35)BO Forrest County) to add a line item and increase the number of days in the contract, and authorize the Mayor to execute in triplicate.
12.	2023-261	Approve and acknowledge receipt of Memorandum of Agreement between the City of Hattiesburg and Mississippi Department of Transportation (MDOT) to construct improvements along Highway 11 and Interstate Highway 59 Interchange for an appropriation in the amount of \$500,000.00 and authorize Mayor to execute said agreement in duplicate.
13.	2023-238	Ratification of Sponsorship Agreement between the City of Hattiesburg and the Hattiesburg Athletic Booster Club for advertising sponsorship as outlined in the agreement, in accordance with MS Code 17-3-1, for an amount not to exceed 25,000.00, and authorize the Mayor to execute the same.
14.	2023-249	Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the Hattiesburg Youth Soccer Association, in the amount of \$20,000.00, to develop and promote soccer programs for Hattiesburg residents for the term of October 1, 2022 through September 30, 2023; authorize the Mayor to execute the same and issuance of manual check.
15.	2023-248	Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the American Diabetes Association for summer day camp program promoting the prevention and cure of diabetes and improving the lives of all people affected by diabetes and authorize the Mayor to execute the same.

16.

2023-241

Adopt an order to approve the sale of a personal service weapon , Glock 17, 9 mm caliber asset ID# (New) Serial Number BSHT901 to retired police Officer Harris Tapp pursuant to Mississippi Code Annotated 45-9-131.

17.

2023-262

Acknowledge bids received April 13, 2023 for the Tatum Park-Fields 16, 18, & Common Area Project and accept the bid from Sports Contractors Unlimited, LLC in the amount of \$2,701,207.85; Authorize the Mayor to execute contracts when prepared.

18.

2023-263

Acknowledge bids received April 13, 2023 for the Kamper Park Tennis Court Overlay project and accept the bid from Australian Courtworks, Inc. in the amount of \$453,700.00; Authorize the Mayor to execute contracts when prepared.

19.

2023-264

Approve Change Order No. 1 with Phoenix Construction for the Jaycee Park Improvements project, increasing the contract amount \$5,704.00, and authorize the mayor to execute same.

ROUTINE AGENDA

1.

2023-245

Ratification of agreement between the City of Hattiesburg and the Mississippi State Fire Academy to administer the NFPA 1072 F training course for Hattiesburg Firefighters.

2.

2023-260

Acknowledge receipt of proof of publications for the month of February and March 2023.

3.

2023-259

Acknowledge privilege tax license report for the month of March 2023.

4.

2023-244

Approve Plans and Specifications for the 16th Avenue and Concart Street Improvements project and Authorize advertisement for bids.

5.

2023-237

Approve the City's purchase of (3) three grave spaces, located in the Southeast Quarter (SE 1/4), Lot 11, Section 30,and South Half (S 1/2) of the Northeast Quarter (NE 1/4), Lot 11, Section 30, at Highland Cemetery, Minute Book# 2008-4, Page 565, in the amount of \$ 525.00, from George or Katherine McCardle, Authorize manual check for the same.

6.

2023-236

Approve the sale of grave spaces per attached Memo's, Receipts, and Deeds.

7.

2023-239

Approve claims docket for the period ending April 14,2023.

8.

2023-265

Acknowledge the bids received on April 6, 2023, for one (1) new or used bucket truck for the Parks and Recreation Department and accept the bid from Altec Nueco as the best bid received; as the lowest bid submitted by Schmidy's Machinery did not meet the specifications.

In Memoriam:

- **Ms. Aslee Patterson**
- **Mr. Jerry Langford**
- **Dr. Ben Carmichael**
- **Ms. Marie L. Hibbler**
- **Mr. Paul Dickson**
- **Mrs. Shirley Lawrence**

Meeting Adjourn

Call to Order

BE IT REMEMBERED that the **regular meeting of the Hattiesburg City Council was held at 5:00 p.m. Tuesday, April 18, 2023**, in Council Chambers at City Hall; same being from a recessed meeting held on April 17, 2023.

Those present included Mayor Toby Barker and members of the City Council Jeffrey George, Ward 1; Deborah Delgado, Ward 2 (via teleconference); Carter Carroll, Ward 3 (via teleconference); Dave Ware, Ward 4; and Nicholas Brown, Ward 5. Others in attendance included Director of Administration/City Clerk, Kermas Eaton; City Attorney, Randy Pope; Deputy Clerk of Council, Lisa Luu Jolly; City staff members; media; and the public.

Council President George Called the meeting to order.

Call to Prayer and Pledge of Allegiance

The prayer was given by Malcolm Berch.

The Pledge of Allegiance was led by Kermas Eaton.

Presentation Agenda

The PRESENTATION AGENDA came before the Council.

There were no presentations at this time.

THE MATTER OF THE AGENDA ORDER came before the Council.

POLICY AGENDA

The POLICY AGENDA came before the Council.

1. **2023-253** Approve the minutes for the April 3 & 4, 2023 meetings of the City Council.

Attachments: 4-3-2023 APH, AR, WS, XS Mins.
 4-2023 Mins.

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to
Approve the minutes for the April 17, 18 & 24, 2023 meetings of the City Council.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

2. **2023-243** Appeal of the Planning Commission's recommendation to deny a change in zoning classification for property located at 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4).

Attachments: Item A Staff Summary
 Item A image sheet
 Item A Applicant Summary
 Ordinance - Robin Roberts Rezone
 MINUTES HPC March 2023

A MOTION was made by Council Vice President Ware and seconded by Council Member Nicholas Brown to TABLE the Appeal of the Planning Commission's recommendation to deny a change in zoning classification for property located at 350 S 11th Ave from R-1B to R-3, and to change 709 Mamie Street from R-1A to R-2 until next City Council meeting (May 2, 2023).

Council Vice President Ware stated that he has heard concerns from the neighborhood and requested that the Council postpone considering the petition until he can address those concerns with both sides.

Following discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

3. **2023-121** Take from the table an Ordinance for the petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, establishing the zoning classification for a portion of an unimproved property located at the intersection of Jackson Road and the Longleaf Trace to B-2 Neighborhood Business District. (PPIN 33787, Lamar County, Ward 1) - tabled at the April 4, 2023 City Council meeting.

Attachments: Rezone and CU on Jackson Road - Image Sheet-combined
 Ordinance - Jackson Road ZONING established
 MINUTES HPC February 2023
 MINUTES HPC Special Called Meeting - February 15 2023

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Take from the table an Ordinance for the petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, establishing the zoning classification for a portion of an unimproved property located at the intersection of Jackson Road and the Longleaf Trace to B-2.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Adopt the Ordinance (#3327) with the following conditions:

1. That the subject property is not currently zoned and should be.
2. While the Council finds that there has been a change in the neighborhood and that there is a public need for rezoning if the property was currently zoned, since the subject property is not currently zoned, any zoning will be “Ab Initio” zoning, and given that, the question of a change in character of the neighborhood and public need is less relevant to the Council’s decision than it would be if a rezoning was being sought.
3. The City’s Comprehensive Plan is just that—a Plan— which is subject to amendment and flexibility, and the current Comprehensive Plan of the City was adopted in 2008, some fifteen years ago. Granting the requested zoning establishment would be consistent with Goal 24 of the current Comprehensive Plan which is to “plan appropriately for the orderly arrangement of land uses to create a city with safe, convenient, attractive, sustainable, healthy, neighborhoods and districts,” and also with Goal 29 of the Comprehensive Plan which is “to provide a range of retail and service businesses that are accessible and convenient to all areas of Hattiesburg.”
4. Granting the requested zoning would have a minimal impact on the surrounding landowners.

It is, therefore, ORDERED that the request of Safari Timberlands, LLC, for a zoning classification of a B-2 zone for a property located at PPIN 33787 Jackson Road, City of Hattiesburg, Lamar County, Mississippi, be granted, and the following Ordinance (#3327) be and the same is hereby adopted by the City Council of Hattiesburg.

Council member Delgado stated that she could not vote in favor of this Ordinance for the following same concerns stated on the April 3, 2023 City Council meeting:

“I am concerned that Mr. Scanlon, who is the City's attorney in our ongoing annexation lawsuit, is representing the applicant in a matter on appeal to the Council today. In order to represent the applicant, Mr. Scanlon is required to have a waiver granted by the Council. The Mayor gave him a waiver four (4) months ago, which I believe is invalid, and informed the Council President who did not inform me as a Council member. The waiver has not been voted on by the Council. Even if it was voted on, the optics are not good. Here we have a Citizen coming before us expecting fairness and equity, but I doubt that we are able to meet his expectation because of our relationship with council for the applicant.”

Following discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 4 - George, Carroll (via teleconference), Ware and Brown

Nays: 0

Abstain: 1 - Delgado (via teleconference)

4. **2023-122** Take from the table a petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, requesting a conditional use for “restaurant, without drive-through” in a B-2 Zone (Neighborhood Business District) contingent upon approval of the request to establish the zoning. (PPIN 33787, Lamar County, Ward 1) - tabled at the April 4, 2023 City Council meeting.

Attachments: Rezone and CU on Jackson Road - Image Sheet-combined

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Take from the table a petition filed by John P. Scanlon, representative, and Safari Timberlands, LLC, owner, requesting a conditional use for “restaurant, without drive-through” in a B-2 Zone.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve the conditional use with the following conditions:

1. The restaurant portion of the facility shall not exceed 1,000 square feet.
2. Signage shall be indirectly illuminated and must meet all other applicable sign regulations as set forth by the City of Hattiesburg’s Land Development Code.
3. If any of the above conditions are not met during the operation of the restaurant, the conditional use as a restaurant without a drive-through in a B-2 zone shall terminate, and the business shall cease to operate immediately.

It is, therefore, ORDERED that the request of Safari Timberlands, LLC, for a conditional use of “restaurant, without drive-through” in a B-2 zone for a property located at PPIN 33787 Jackson Road, City of Hattiesburg, Lamar County, Mississippi, be granted subject to the following conditions:

Council member Delgado stated that she could not also vote in favor of this petition for the following same concerns stated previously on Policy Agenda Item #3:

“I am concerned that Mr. Scanlon, who is the City's attorney in our ongoing annexation lawsuit, is representing the applicant in a matter on appeal to the Council today. In order to represent the applicant, Mr. Scanlon is required to have a waiver granted by the Council. The Mayor gave him a waiver four (4) months ago, which I believe is invalid, and informed the Council President who did not inform me as a Council member. The waiver has not been voted on by the Council. Even if it was voted on, the optics are not good. Here we have a Citizen coming before us expecting fairness and equity, but I doubt that we are able to meet his expectation because of our relationship with council for the applicant.”

Following discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 4 - George, Carroll (via teleconference), Ware and Brown

Nays: 0

Abstain: 1 - Delgado (via teleconference)

5. **2023-246** Adopt an Ordinance for the petition filed by Trace 4th Street, LLC.owner, to request a variance from section 10.6 Signs – for a minimum of “79 feet” of frontage where 150 feet is required for a proposed on-premise monument sign for property located at 1015 Main St (Forrest County, Ward 2). The Board of Adjustment Recommended to Approve on April 5, 2023.

Attachments: 1015 N Main St - Staff Summary (Sign variance)
 1015 N Main St - Image Sheet
 MINUTES BOA April 2023

**Note: This item was worded as an Ordinance in error.*

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve the petition filed by Trace 4th Street, LLC, owner, to request a variance from section 10.6 Signs – for a minimum of “79 feet” of frontage where 150 feet is required for a proposed on-premise monument sign for property located at 1015 Main St.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

6. **2023-252** Adopt a Resolution supporting the Hattiesburg Housing Authority for the redevelopment of Briarfield Homes.

Attachments: Resolution Briarfield HOME Funds HHA 4.4.23

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Adopt a Resolution (#2023-56) supporting the Hattiesburg Housing Authority for the redevelopment of Briarfield Homes.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

7. **2023-258** Adopt a Resolution declaring certain vehicles as surplus (per attached list) and authorize disposal or sale of said vehicles; authorize removal of vehicles from the inventory of the Hattiesburg Fire Department.

Attachments: Resolution-surplus 2023-4
 HFD vehicles for disposal

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Adopt a Resolution (#2023-57) declaring certain vehicles as surplus (per attached list) and authorize disposal or sale of said vehicles; authorize removal of vehicles from the inventory of the Hattiesburg Fire Department.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

8. **2023-257** Approve Request for designation of Recognized Historic Landmark Status for the property located in the public right-of-way at Hardy St. and S. 22nd Ave., commonly known as the Parkhaven Arch.

Attachments: landmark_application
 HHCC minutes Mar 8 2023
 History of Park Haven

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Request for designation of Recognized Historic Landmark Status for the property located in the public right-of-way at Hardy St. and S. 22nd Ave., commonly known as the Parkhaven Arch.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

9. **2023-251** Approve Professional Services Agreement with Landry Lewis Germany Architects, PA, to provide architectural services related to the replacement of Fire Station #7 Roof and authorize the Mayor the execute the same.

Attachments: Fire Station 7 Roof Replacement-LLG Architects Agreement

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Professional Services Agreement with Landry Lewis Germany Architects, PA, to provide architectural services related to the replacement of Fire Station #7 Roof and authorize the Mayor the execute the same.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

10. **2023-240** Approve Lighting Agreements with Mississippi Power Company for additional lighting on Florida Ave., and other locations as described in the attached forms, and authorize the Mayor to execute the same.

Attachments: MS Power - Florida Ave
 MS Power - Alley Behind 705 Mamie St
 MS Power - 914 Beverly Hills Dr

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Lighting Agreements with Mississippi Power Company for additional lighting on Florida Ave, and other locations as described in the attached forms, and authorize the Mayor to execute the same.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

11. **2023-242** Approve Supplemental Agreement No. 2 with Walters Construction Company, Inc. for the Highway 49, Camp Street, Adeline Street & Mamie Street State Aid Project (No. DECD-0018(35)BO Forrest County) to add a line item and increase the number of days in the contract, and authorize the Mayor to execute in triplicate.

Attachments: Supplemental Agreement No. 2 - Walters Cons.

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Supplemental Agreement No. 2 with Walters Construction Company, Inc. for the Highway 49, Camp

Street, Adeline Street & Mamie Street State Aid Project (No. DECD-0018(35)BO Forrest County) to add a line item and increase the number of days in the contract, and authorize the Mayor to execute in triplicate.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

12. **2023-261** Approve and acknowledge receipt of Memorandum of Agreement between the City of Hattiesburg and Mississippi Department of Transportation (MDOT) to construct improvements along Highway 11 and Interstate Highway 59 Interchange for an appropriation in the amount of \$500,000.00 and authorize Mayor to execute said agreement in duplicate.

Attachments: MDOT-I 59 US 11 Lighting MOA 4.18.23

A MOTION was made by Council Member Brown and seconded by Council Vice President Ware to Approve and acknowledge receipt of Memorandum of Agreement between the City of Hattiesburg and Mississippi Department of Transportation (MDOT) to construct improvements along Highway 11 and Interstate Highway 59 Interchange for an appropriation in the amount of \$500,000.00 and authorize Mayor to execute said agreement in duplicate.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

13. **2023-238** Ratification of Sponsorship Agreement between the City of Hattiesburg and the Hattiesburg Athletic Booster Club for advertising sponsorship as outlined in the agreement, in accordance with MS Code 17-3-1, for an amount not to exceed 25,000.00, and authorize the Mayor to execute the same.

Attachments: AD CONTRACT AGREEMENT BETWEEN HBURG HIGH BOOSTER CLUB

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Ratification of Sponsorship Agreement between the City of Hattiesburg and the Hattiesburg Athletic Booster Club for advertising sponsorship as outlined in the agreement, in accordance with MS Code 17-3-1, for an amount not to exceed 25,000.00, and authorize the Mayor to execute the same.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

14. **2023-249** Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the Hattiesburg Youth Soccer Association, in the amount of \$20,000.00, to develop and promote soccer programs for Hattiesburg residents for the term of October 1, 2022 through September 30, 2023; authorize the Mayor to execute the same and issuance of manual check.

Attachments: Soccer 2022-2023 contract

A MOTION was made by Council Member Brown and seconded by Council Vice President Ware to Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the Hattiesburg Youth Soccer Association, in the amount of \$20,000.00, to develop and promote soccer programs for Hattiesburg residents for the term of October 1, 2022 through September 30, 2023; authorize the Mayor to execute the same and issuance of manual check.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

- 15. 2023-248** Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the American Diabetes Association for summer day camp program promoting the prevention and cure of diabetes and improving the lives of all people affected by diabetes and authorize the Mayor to execute the same.

Attachments: Diabetes Association COH_ADA Project Power (Youth)_Vendor Agreement 2023_Onsite62

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Agreement between the City of Hattiesburg Parks and Recreation Department and the American Diabetes Association for summer day camp program promoting the prevention and cure of diabetes and improving the lives of all people affected by diabetes and authorize the Mayor to execute the same.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

- 16. 2023-241** Adopt an order to approve the sale of a personal service weapon , Glock 17, 9 mm caliber asset ID# (New) Serial Number BSHT901 to retired police Officer Harris Tapp pursuant to Mississippi Code Annotated 45-9-131.

Attachments: Letter from Benefit Fund -Lt. Tapp
Memo To Council - Tapp Service Weapon

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Adopt an order to approve the sale of a personal service weapon , Glock 17, 9 mm caliber asset ID# (New) Serial Number BSHT901 to retired police Officer Harris Tapp pursuant to Mississippi Code Annotated 45-9-131.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

- 17. 2023-262** Acknowledge bids received April 13, 2023 for the Tatum Park-Fields 16, 18, & Common Area Project and accept the bid from Sports Contractors Unlimited, LLC in the amount of \$2,701,207.85; Authorize the Mayor to execute contracts when prepared.

Attachments: Tatum Park-Fields 16, 18, & Common Area-Cert Bid Tab
Tatum Parks-Fields 16, 18, & Common Area-Bid Tab Ltr

A MOTION was made by Council Member Brown and seconded by Council Vice President Ware to Acknowledge bids received April 13, 2023 for the Tatum Park-Fields 16, 18, & Common Area Project and accept the bid from Sports Contractors Unlimited, LLC in the amount of \$2,701,207.85; Authorize the Mayor to execute contracts when prepared.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

18. **2023-263** Acknowledge bids received April 13, 2023 for the Kamper Park Tennis Court Overlay project and accept the bid from Australian Courtworks, Inc. in the amount of \$453,700.00; Authorize the Mayor to execute contracts when prepared.

Attachments: Kamper Park Tennis Court Overlay-Bid Tab Ltr
 Kamper Park Tennis Court Overlay-Cert Bid Tab

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Acknowledge bids received April 13, 2023 for the Kamper Park Tennis Court Overlay project and accept the bid from Australian Courtworks, Inc. in the amount of \$453,700.00; Authorize the Mayor to execute contracts when prepared.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

19. **2023-264** Approve Change Order No. 1 with Phoenix Construction for the Jaycee Park Improvements project, increasing the contract amount \$5,704.00, and authorize the mayor to execute same.

Attachments: 3922 - Jaycee Park Improvements CO 01 - Review Letter
 3922 - Jaycee Park Improvements CD - CO No1

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to Approve Change Order No. 1 with Phoenix Construction for the Jaycee Park Improvements project, increasing the contract amount \$5,704.00, and authorize the mayor to execute same.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

ROUTINE AGENDA

THE ROUTINE AGENDA came before the Council.

A MOTION was made by Council Vice President Ware and seconded by Council Member Brown to approve the Routine Agenda.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado (via teleconference), Carroll (via teleconference), Ware and Brown

Nays: 0

1. **2023-245** Ratification of agreement between the City of Hattiesburg and the Mississippi State Fire Academy to administer the NFPA 1072 F training course for Hattiesburg Firefighters.

Attachments: Hattiesburg 1072 Field Del April 2023

2. **2023-260** Acknowledge receipt of proof of publications for the month of February and March 2023.

Attachments: 32023 proofs
 22023 proofs

3. **2023-259** Acknowledge privilege tax license report for the month of March 2023.

Attachments: PTL March monthly report

4.

2023-244

Approve Plans and Specifications for the 16th Avenue and Concart Street Improvements project and Authorize advertisement for bids.

Attachments: Advertisement
16th Ave & Concart St Improvements-Final Plans
16th Ave & Concart St Improvements-Final Specs
5.

2023-237

Approve the City's purchase of (3) three grave spaces, located in the Southeast Quarter (SE 1/4), Lot 11, Section 30, and South Half (S 1/2) of the Northeast Quarter (NE 1/4), Lot 11, Section 30, at Highland Cemetery, Minute Book# 2008-4, Page 565, in the amount of \$ 525.00, from George or Katherine McCardle, Authorize manual check for the same.

Attachments: Buy Back (George or Katherine McCardle)04-18-2023
6.

2023-236

Approve the sale of grave spaces per attached Memo's, Receipts, and Deeds.

Attachments: Memo's (04-18-2023)
Receipts (04-18-2023)
Deeds (04-18-2023)
7.

2023-239

Approve claims docket for the period ending April 14,2023.

Attachments: DOCKET 22.04.14
DT 23.04.14
Addendum to the Docket, 04-18-2023
8.

2023-265

Acknowledge the bids received on April 6, 2023, for one (1) new or used bucket truck for the Parks and Recreation Department and accept the bid from Altec Nueco as the best bid received; as the lowest bid submitted by Schmidy's Machinery did not meet the specifications.

Attachments: Bid Tab- Hattiesburg Bucket Truck 4-6-23

In Memoriam:

A MOTION was made by Council President George to Adjourn the meeting in memory of:

- Ms. Aslee Patterson
- Mr. Jerry Langford
- Dr. Ben Carmichael
- Ms. Marie L. Hibbler
- Mr. Paul Dickson
- Mrs. Shirley Lawrence

Meeting Adjourn

Council President George declared the **meeting adjourned at 5:18 p.m., this 18th day of April, 2023**, by unanimous consent, until the 24th day of April, 2023.

ATTEST:

APPROVE:

Clerk of Council

Council President

ATTEST AND CERTIFY:

APPROVE:

City Clerk

Mayor

Published Agenda



Monday, April 24, 2023 10:00 AM	City Council Special Called Meeting Agenda	Council Chambers 200 Forrest Street
--	---	--

- Call to Order**
- Declaration of Special Called Meeting**
- Agenda Items**
- | | | |
|-----------|-----------------|---|
| 1. | 2023-288 | Approve Right-of-Way Agreement between City of Hattiesburg, Norfolk Southern Railroad and Illinois Central Railroad Company related to the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program and authorize the Mayor to execute in triplicate. |
| 2. | 2023-289 | Approve Agreement between City of Hattiesburg, Norfolk Southern Railroad Company and Illinois Central Railroad Company related to the construction of a connection track as part of the 2019 Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program and authorize the Mayor to execute in triplicate. |
| 3. | 2023-291 | Adopt a Resolution approving the 2023-2027 Consolidated Plan and 2023 Annual Action Plan for the City of Hattiesburg and authorize submission to the US Department of Housing and Urban Development for Community Development Block Grant and HOME Investment Partnerships Entitlement Programs. |

Meeting Recess

Call to Order

BE IT REMEMBERED that the **Special Called meeting of the Hattiesburg City Council was held at 10:00 a.m. Monday, April 24, 2023**, in Council Chambers at City Hall; same being from an adjourned meeting held on April 18, 2023.

Those present included Mayor Toby Barker and members of the City Council Jeffrey George, Ward 1; Deborah Delgado, Ward 2; Carter Carroll, Ward 3; Dave Ware, Ward 4 (via teleconference); and Nicholas Brown, Ward 5. Others in attendance included Director of Administration/City Clerk, Kermas Eaton; City Attorney, Randy Pope; Clerk of Council, Ronda S. Kennedy; Deputy Clerk of Council, Lisa Luu Jolly; City staff members; media; and the public.

Council President George Called the meeting to order.

Declaration of Special Called Meeting

Council President George declared the Special Called Meeting.

- Agenda Items**
- The Agenda Items came before the Council.
- | | | |
|-----------|-----------------|---|
| 1. | 2023-288 | Approve Right-of-Way Agreement between City of Hattiesburg, Norfolk Southern Railroad and Illinois Central Railroad Company related to the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program and authorize the Mayor to execute in triplicate. |
|-----------|-----------------|---|

Attachments: ROW Agrmnt Hattiesburg MS FY19 CRISI (1) LR5 16 22 (2) final 6-14-22

A MOTION was made by Council Member Carroll and seconded by Council Member Brown to Approve Right-of-Way Agreement between City of Hattiesburg, Norfolk Southern Railroad and Illinois Central Railroad Company related to the Consolidated Rail Infrastructure and Safety Improvements (CRISI) program and authorize the Mayor to execute in triplicate.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado, Carroll, Ware (via teleconference) and Brown

Nays: 0

2. **2023-289** Approve Agreement between City of Hattiesburg, Norfolk Southern Railroad Company and Illinois Central Railroad Company related to the construction of a connection track as part of the 2019 Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program and authorize the Mayor to execute in triplicate.

Attachments: Hattiesburg Agreement for execution_IC signed_04 19 23

A MOTION was made by Council Member Carroll and seconded by Council Member Delgado to Approve Agreement between City of Hattiesburg, Norfolk Southern Railroad Company and Illinois Central Railroad Company related to the construction of a connection track as part of the 2019 Consolidated Rail Infrastructure and Safety Improvements (CRISI) Program and authorize the Mayor to execute in triplicate.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado, Carroll, Ware (via teleconference) and Brown

Nays: 0

3. **2023-291** Adopt a Resolution approving the 2023-2027 Consolidated Plan and 2023 Annual Action Plan for the City of Hattiesburg and authorize submission to the US Department of Housing and Urban Development for Community Development Block Grant and HOME Investment Partnerships Entitlement Programs.

Attachments: Revised CoH ConPlan Resolution 041523

Memorandum - Resolution & 2023-2027 ConPlan PY23 AAP

Rev CoH In Progress 042423 ConPlan 2023AAP

A MOTION was made by Council Member Carroll and seconded by Council Member Delgado to Adopt a Resolution (#2023-58) approving the 2023-2027 Consolidated Plan and 2023 Annual Action Plan for the City of Hattiesburg and authorize submission to the US Department of Housing and Urban Development for Community Development Block Grant and HOME Investment Partnerships Entitlement Programs.

There being no discussion, the Motion received the affirmative vote of the Council as follows:

Yeas: 5 - George, Delgado, Carroll, Ware (via teleconference) and Brown

Nays: 0

Meeting Recess

Council President George declared the **meeting adjourned at 10:02 a.m., this 24th day of April, 2023**, by unanimous consent, until the 1st day of May, 2023.

ATTEST:

APPROVE:

Clerk of Council

Council President

ATTEST AND CERTIFY:

APPROVE:

City Clerk

Mayor



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Take from the table an Appeal of the Planning Commission's recommendation to deny a change in zoning classification for property located at 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4) - tabled at the April 18, 2023 meeting.
File Number: 2023-243
Minute Book #

Summary

A petition has been filed by Robin Roberts, applicant, and Michael Albanese of Burnice Whittier Smith Corp., owner, as required in the Land Development Code, Ord. No. 3209, to change the zoning classification for certain properties located at 350 S 11th Ave and 709 Mamie Street. The applicant requests to change the zoning classification of 350 S 11th Ave from R-1B (Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1A to R-2 (two-family residential) (Forrest County, Ward 4). Planning Commission voted to deny on March 1, 2023

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

HPC March 2023: Item A

Robin Roberts, Applicant, and Michael Albanese of Burnice Whittier Smith Corp., Owner

Request for: **Zoning Change From R-1B to R2 and R-3**



URBAN DEVELOPMENT PLANNING DIVISION

Planning Commission Case Fact Sheet

Name of Petitioners: Robin Roberts, Applicant, and Michael Albanese of Burnice Whittier Smith Corp., Owner

Address of Property:

Parcels are adjacent to each other at the Corner of S 11th Ave and Mamie Street

R-1B to R-2 Request: 709 Mamie Street

R-1B to R-3 Request: 350 S 11th Ave

	Tax Parcel	PPIN:	Ward:
709 Mamie Street	2-029M-09-054.00	16933	4
350 S 11 th Ave	2-029M-09-053.00	16934	4

Request: **Zoning Change of two R-1A Parcels
One parcel to R-2 and one to R-3**

Applicant Summary: See Attached

Applicable Regulations:

SECTION 2

APPLICABILITY AND CONFORMITY

2.4 Nonconformities

2.4.4 Nonconforming Uses. A legal nonconforming use is a use existing legally at the time of the passage of this Code, or the time of annexation into the City's jurisdiction, which does not by reason of use conform to the regulations of the district in which it is located. A use established after the passage of this Code which does not conform to regulations of the district in which it is located shall be considered an illegal nonconforming use and is a violation of this Code. Legal nonconforming uses of land or structures may continue only in accordance with all of the following provisions.

2.4.4.4 Reestablishment Restricted. A legal nonconforming use, when discontinued or abandoned, shall not be resumed.

Discontinuance or abandonment shall be defined as:

i. When land used for a legal nonconforming use ceases to be

used in a bona fide manner or a period of six consecutive calendar months.

ii. When a building designed or arranged for a nonconforming use ceases to be used in a bona fide manner as a legal nonconforming use for a continuous period of six consecutive calendar months.

iii. When a building designed or arranged for a conforming use shall cease to be used in a bona fide manner as a legal nonconforming use for a period of six consecutive calendar months.

SECTION 4

Zoning Districts Established

4.5.4 R-1B Residential District: The purpose of the R-1A District is to permit single-family residential uses with related recreational, religious and educational facilities. This district is consistent with the Neighborhood Conservation 1 and 2 districts in the Comprehensive Plan. This zoning district encourages protected lower-density residential neighborhoods with only compatible supporting institutional uses and open space.

4.5.6 R-2 Two-Family Residential District: The purpose of the R-2 District is to permit medium density residential uses including two-family, or duplex structures, with related recreational, religious and educational facilities. This district is consistent with the Neighborhood Conservation 1 and 2 districts in the Comprehensive Plan. This zoning district encourages protected residential neighborhoods with only compatible supporting institutional uses and open space.

4.5.7 R-3 Multi-Family Residential District. The purpose of the R-3 District is to permit medium and high density residential uses including multi-family, two-family, and single-family structures with related recreational, religious and educational facilities. This district is consistent with the Neighborhood Conservation 1 and 2 districts in the Comprehensive Plan. This zoning district encourages protected residential neighborhoods with only compatible supporting institutional uses and open space.

5.4.18 Dwelling, Two Family and Multi-Family.

5.4.18.1 On infill development sites in residential districts, multi-family buildings shall be designed to blend in with surrounding single-family residential buildings to the maximum extent practicable with regards to building design, setbacks, driveway and garage design and location, porches, and sidewalks.

5.4.18.2 Site designs shall create a sense of “neighborhood” and shall meet the following requirements:

- i. Buildings shall be sited with front entrances and porches

oriented toward streets, drives, and plazas, rather than clustered around parking lots.

ii. An internal vehicular circulation system for private streets, when included, shall be reflective of a single-family residential street system.

iii. Parking lots shall be located behind buildings, except where it is deemed appropriate to use a parking lot as a buffer from an arterial street, or where such parking area will directly abut a property line exterior to the development site when located in or adjacent to a residential district.

iv. Walkways shall connect all buildings with parking areas, play areas, clubhouses, and existing public sidewalks adjacent to the development site.

v. Plazas, clubhouses, pools, and recreational facilities shall be centrally located, when provided.

5.4.18.3 Building designs that create variety and do not look monotonous if replicated throughout the development shall be required. Such designs shall include the following:

i. Side and rear building elevations, garages, carports, and all accessory structures shall have the same level of design, aesthetic quality, and architectural detailing.

ii. Porches, varied rooflines, and varied façade depths shall be provided to create variety and individuality of each building.

iii. Windows and projecting wall surfaces shall be used to break up larger wall surfaces, establish visual interest and provide visibility of the street and other public spaces encouraging social interaction.

iv. Protective entry courts, common vestibules, covered breeze ways, or enclosed stair halls shall be used to reduce the number of visible doors, unless designed in a row house or townhouse manner oriented toward the street.

v. Garages shall be designed to be integrated with the building design or sited so as to avoid long monotonous rows of garage doors and building walls. Garages shall be oriented so that they do not visually dominate the building façade or the streetscape.

Present Zoning: The parcels are currently zoned R-1B

Present Use: Unoccupied Residential Structures

Future Land Use: Neighborhood Conservation District 1

Surrounding Zoning and Land Use:
North: R-1B Single Family Residential
South: R-1B Single Family Residential
East: R-1B Single Family Residential
West: R-1C Single-Family Residential

HPC March 2023: Item A

Robin Roberts, Applicant, and Michael Albanese of Burnice Whittier Smith Corp., Owner

Request for: **Zoning Change From R-1B to R2 and R-3**

Letters or

Concerns stated:

The Planning Division Office has not received any letters or other written communications relative to this case as of February 22, 2023

History / Background:

The applicant met with Planning Staff to discuss the rezoning of two parcels at the intersection of S 11th Ave and Mamie Street. The property located at 350 S 11th Avenue was constructed and used as a 4-plex previously but has been vacant for more than 6 months. The property at 709 Mamie Street had been converted into a duplex, but a recent fire destroyed the building and it has been vacant for more than 6 months. Both properties, while constructed as Multi-Family and Two-Family residential structures, were considered legal nonconforming when the current Land Development Code was adopted. The abandonment of the non-conforming uses requires the properties to meet the current standards of the zoning district, and therefore cannot be used for multi-family, two-family structures as currently zoned.

The rezone request of the property at 350 S 11th Avenue to an R-3 zoned parcel would allow the property to be used legally as a 4-plex structure. The applicant discussed with staff the intent to demolish the burned structure at 709 Mamie St and reestablish a duplex at the site, if the R-2 Zoning is approved.

Option:

Basis for approval (Zoning Change):

- I. There was a mistake in the original zoning
- II. The character of the neighborhood has changed substantially so that rezoning is clearly justified **and** there is a public need for the rezoning
- III. Annexation

SUBJECT PARCEL:

350 S 11th Ave and 709 Mamie St

Robin L. Roberts (representative) and Michael Albanese of Burnice Whittier Smith Corp (owner/applicant).

The applicant requests to change zoning classification of 350 S 11th Ave from R-1B(Single-Family Residential) to R-3 (Multi-family residential), and to change 709 Mamie Street from R-1B to R-2 (two family residential) (Forrest County, Ward 4).

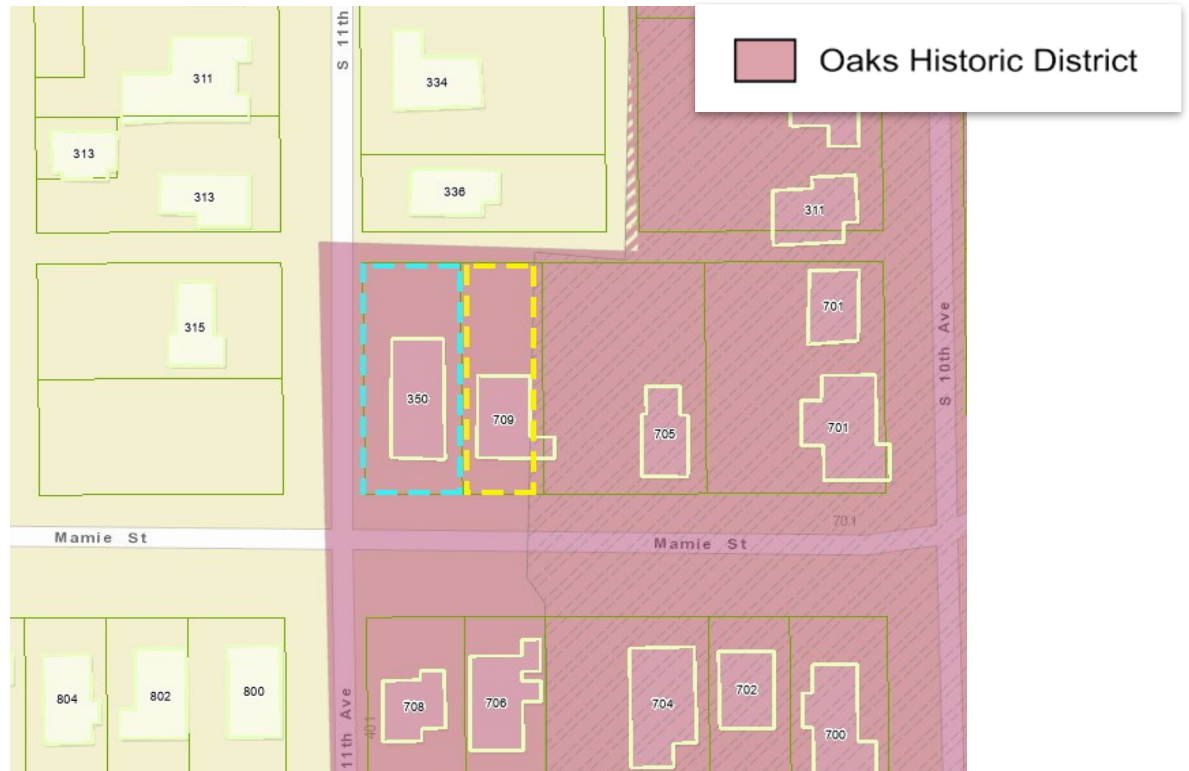


350 S 11th Ave

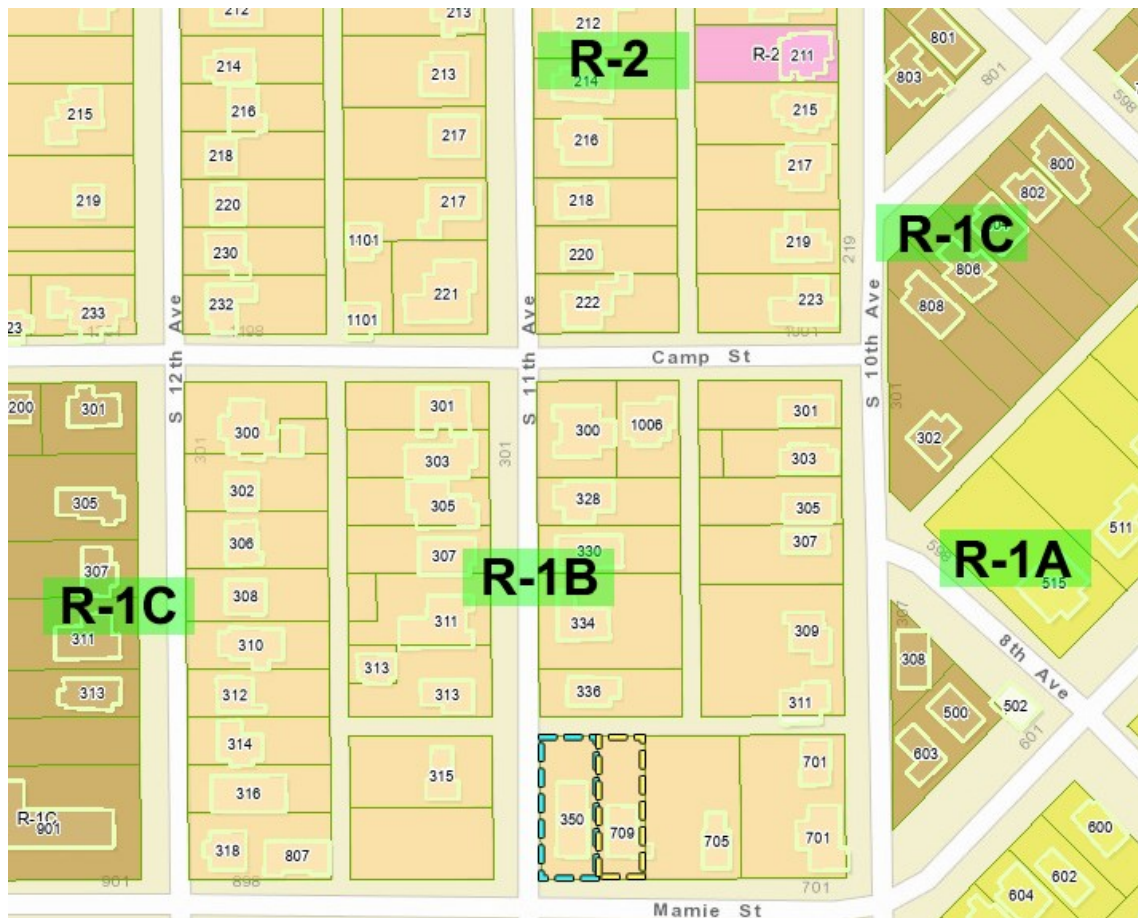
709 Mamie St



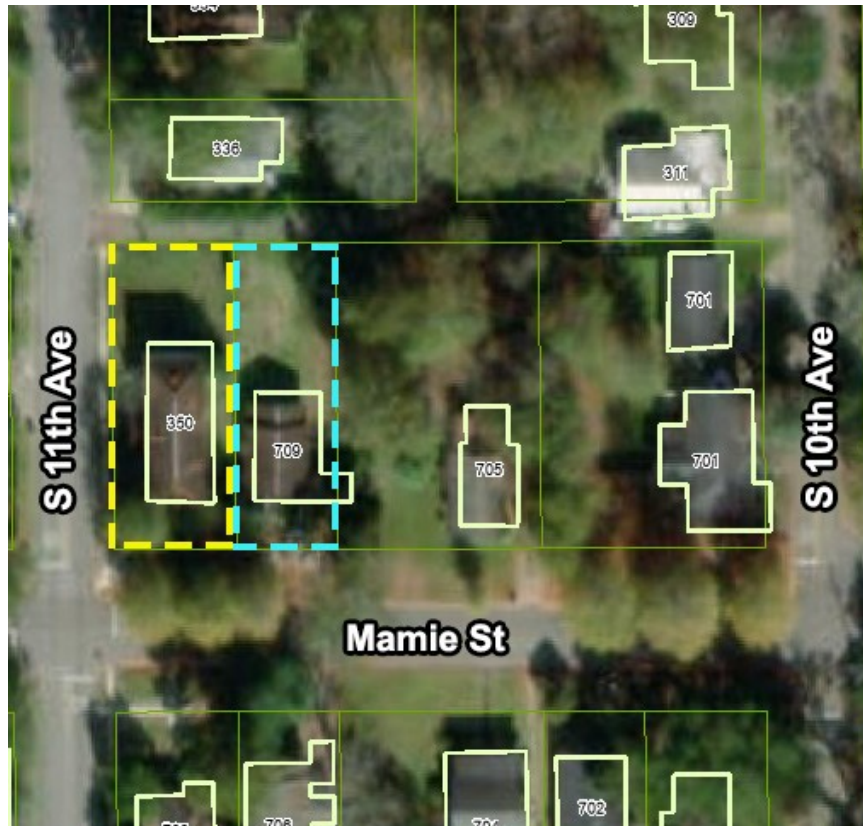
Vicinity Map—Ward 4



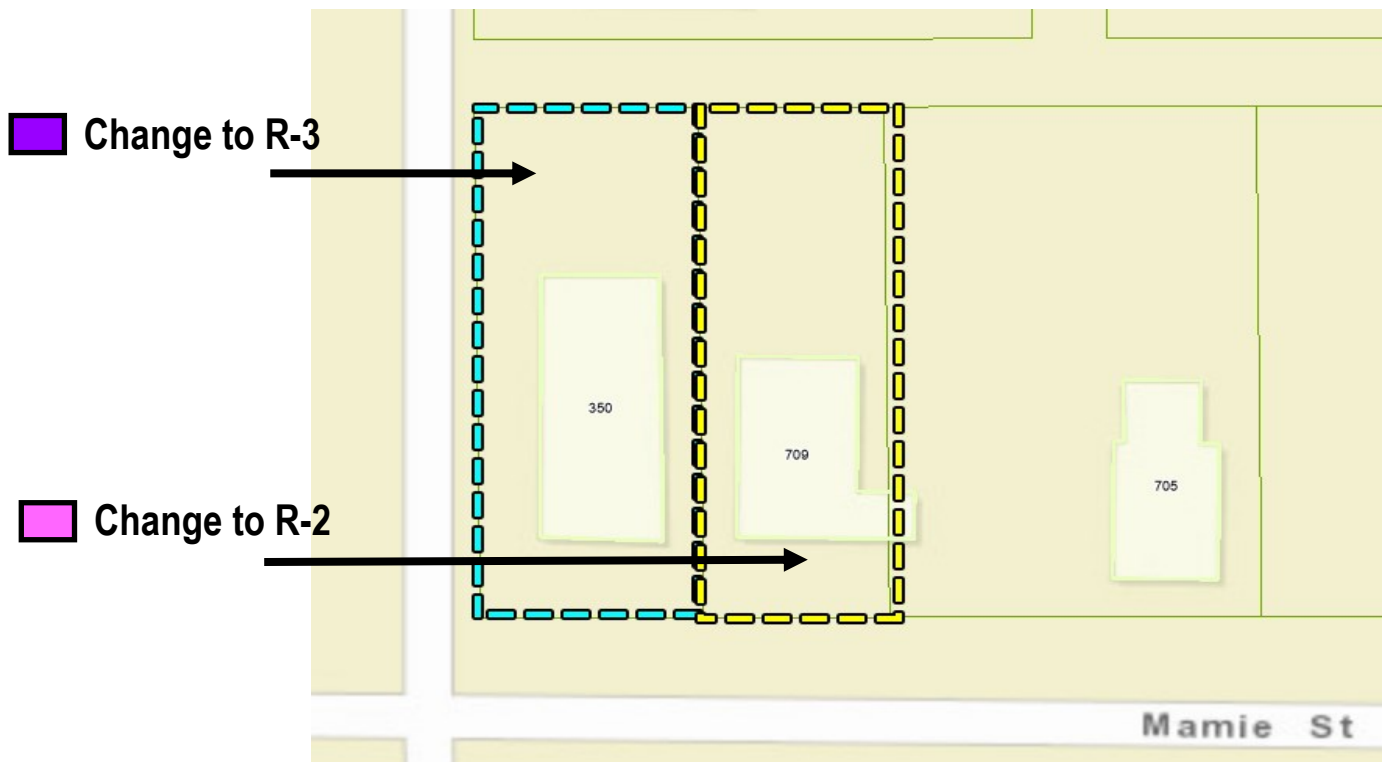
Surrounding Zoning



Site Aerial



Area Requested for Rezone



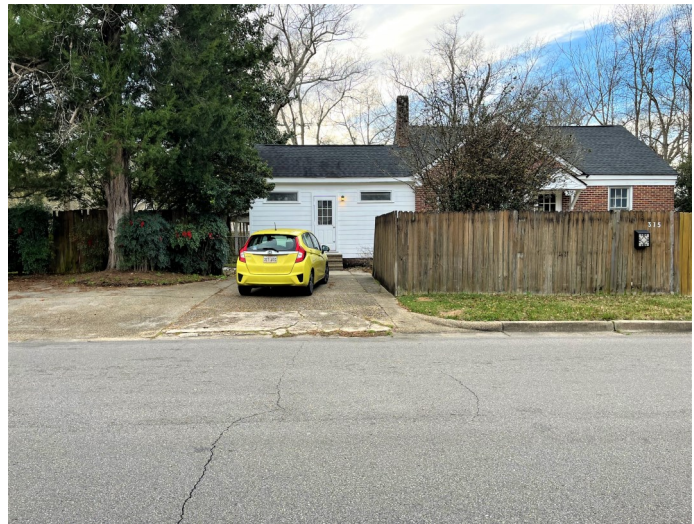
SURROUNDING AREA

Northern and Southern Directions: R-1B

Single-family Residential



Western Direction: R-1B, Single-family Residential



S11th Ave and Mamie St Intersection

SURROUNDING AREA

Eastern Direction: R-1B

Single-family Residential



Rezoning Information (1 page)

One of the following conditions must be met before a rezoning can be recommended.
Check the condition(s) most applicable to your request and explain in writing.

- A. There is a material change in the circumstances and conditions of the neighborhood and area surrounding the petitioned property and there is a public need for the change in question, based on the Comprehensive Plan.
- B. There is a mistake in the original zoning.
- C. Annexation

Detailed explanation of condition(s) most applicable to your request: (Please print or type.)

There is a clear public need for the zoning to be changed back as per the provisions of the comprehensive plan. The two properties sought to be re-zoned have been used for higher density residential use for many years. The structure at 350 S. 11th Avenue is a 4-plex, while the adjacent 709 Mamie Street is a duplex. Both properties lost their "grandfather" status due to vacancy. Allowing the property to return to a 4-plex and duplex (R-3 & R-2, respectively) meets criteria in the comprehensive plan in the following ways: it will promote economic development by making a substantial investment in property that may otherwise be unused or an eyesore. It is within a historic district so the certificate process will insure it preserves the historic character. The re-zoning will cause no incompatible use, as the proposed use is as it has always been. The property values will be enhanced by the investment for the benefit of the entire neighborhood. It will also improve the stock of moderate income housing. Nothing about the project will cause disorderly development, and the use will allow orderly growth & development without changing the character of the neighborhood.

Prepared by: City of Hattiesburg
City Clerk's Office
P.O. Box 1898
Hattiesburg, MS 39403-1898
(601)545-4550

Return to: City of Hattiesburg
City Clerk's Office
P.O. Box 1898
Hattiesburg, MS 39403
(601)545-4550

INDEXING INSTRUCTIONS:

ORDINANCE NUMBER _____

OF THE CITY OF HATTIESBURG, MISSISSIPPI

ADOPT AN ORDINANCE FOR THE PETITION FILED BY ROBIN ROBERTS, APPLICANT, AND MICHAEL ALBANESE OF BURNICE WHITTIER SMITH CORP., TO CHANGE THE ZONING CLASSIFICATION FOR CERTAIN PROPERTIES LOCATED AT 350 S 11TH AVE AND 709 MAMIE STREET (PARCEL NO. 2-029M-09-053.00, AND 2-029M-09-054.00; PPIN 16934, AND 16933) TO CHANGE THE ZONING CLASSIFICATION OF 350 S 11TH AVE FROM R-1B (SINGLE-FAMILY RESIDENTIAL) TO R-3 (MULTI-FAMILY RESIDENTIAL), AND TO CHANGE 709 MAMIE STREET FROM R-1B TO R-2 (TWO-FAMILY RESIDENTIAL). THE PLANNING COMMISSION RECOMMENDED TO DENY ON MARCH 1, 2023.

BE IT ORDAINED BY THE MAYOR AND COUNCIL OF THE CITY OF HATTIESBURG, MISSISSIPPI:

SECTION 1. That the Comprehensive Zoning District Map, adopted as part of the Comprehensive Zoning Ordinance No. 3209, as amended, of the City of Hattiesburg, Mississippi, be and the same is hereby changed and amended. The Hattiesburg Planning Commission recommended to Approve said change in zoning for the following reasons:

The character of the neighborhood has changed substantially so that rezoning is clearly justified, and there is a public need for the rezoning.

Said property being more particularly described as follows, to-wit:

Parcel No. 2-029M-09-053.00, PPIN 16934:

Lot 13, in Block 13 of the Hattiesburg Heights Property Survey to the City of

Hattiesburg, Forrest County, Mississippi; and

Parcel No. 2-029M-09-054.00, PPIN 16933:

Lot 12, in Block 13 of the Hattiesburg Heights Property Survey to the City of
Hattiesburg, Forrest County, Mississippi

SECTION 2. Except as hereby expressly changed and amended, the aforesaid
Comprehensive Zoning District Map and the Land Development Code Ordinance No. 3209, as
amended, of said City of Hattiesburg, Mississippi, shall be and remain in full force and form as
adopted.

SECTION 3. That this Ordinance take effect and be in force thirty (30) days from and
after passage as provided by law.

The foregoing Ordinance having been reduced to writing, the same was introduced by
Council member _____ seconded by Council member _____
and was adopted by the following vote to-wit:

YEAS:

NAYS:

THE President thereby declared the motion carried and the foregoing Ordinance adopted
and approved, this the _____ day of _____ A.D., 2023

(S E A L)

ATTEST:

ADOPTED:

CLERK OF COUNCIL

PRESIDENT

THE above and foregoing Ordinance having been submitted to and approved by the Mayor,
this the _____ day of _____ A.D., 2023

ATTEST:

APPROVED:

CITY CLERK

MAYOR

**MINUTES OF THE
REGULAR MEETING OF THE
HATTIESBURG PLANNING COMMISSION**

March 1st, 2023

The Hattiesburg Planning Commission did meet in a regular session on March 1st, 2023, at 1:00 p.m. at the Jackie Dole Community Center, 220 West Front Street, Hattiesburg, Mississippi. Mark Miller, Chair, presided over the meeting. Staff utilized GoToMeeting, an online meeting, desktop sharing, and telephone/video conferencing platform to give Commissioners, petitioners, and the public the option to participate remotely. A quorum was indicated and the attendance was as follows:

Commissioners Present: Charles Dawe (via GoToMeeting)
Amy Hinton, Vice-Chair
Dick Conville
Jeff Keyseear (via GoToMeeting)
Elayne Lockett
Luke McNair (via GoToMeeting)
Mark Miller - Chair
Rhoda A. Pickett
Rebekah Ray
Michael Dickerson (via GoToMeeting)

Commissioners Absent: Carlos Wilson

Also Present: Nathan Satcher, Planner II
Wiley Quinn, Director of Urban Development
Jim Gladden, Esq.
Kevin Bates, Building Official
Cory Long, AICP, Planning Manager
Andrea Garcia, Planner I

AGENDA REVIEW

There came the matter of the February 2023 Agenda. Commissioner Ray made a motion to accept the agenda, seconded by Commissioner Hinton. All members present were in favor.

MINUTES REVIEW

REPORTS

BUILDING REPORT

Kevin Bates, Building Official, provided the Building Permit Report for February 2022. He shared that there was an increase in permits valuation due apartment complexes, which was mostly due to the new Ivy Row developments located on Hwy 49. Also, there was a slight increase in commercial, single-family residential buildings, and roofing permits.

PLANNING REPORT

There came the matter of the Planning Report by Nathan Satcher, Planner. He shared that the Jackson Rd case was appealed and will be brought to City Council for an additional public hearing on April 3rd. The conditional use request for 1601 Hardy St has also been appealed and will go to City Council for a public hearing on March 13. Cory Long, planning manger, noted that the staff is still exploring a court reporter to document and provide the meeting minutes.

CHAIR'S REPORT

There came the matter of the Chair's Report. Chair Miller noted that last year an ADU subcommittee was formed to explore ways to create a legal path for Accessory Dwelling Units and that Planning Commission needs to revisit the committee.

INTRODUCTIONS

The Commissioners introduced themselves.

PUBLIC HEARING – PLANNING COMMISSION

There came the matter of Items A-1 & A-2 (Change Zoning for 709 Mamie Street and 350 S 11th Ave) presented by Robin L. Roberts. Nathan Satcher first presented that the applicant requested a change of zoning classification for 350 S 11th Ave, from R-1B (Single-Family Residential) to R-3 (Multi-family Residential). The same was requested for the property located at 709 Mamie Street, changing from R-1B to R-2 zone (Two-Family Residential). Both properties are located within the Oaks Historic District.

The property at 350 S 11th Ave was built and used as a 4-plex, and the one at 709 Mamie St had been converted to a duplex in the past but both have been vacant for more than 6 months.

When the current Land Development Code was adopted, both properties were considered legally non-conforming. According to the code, if the use of the properties is discontinued for more than 6 months, these are required to meet the current standards of the zoning district, and therefore cannot be used for multi-family, two-family structures as currently zoned.

Then Satcher presented the Future Land Use map from The Comprehensive Plan, which identifies this area as a Neighborhood Conservation District 1. There are also a few two-family and multi-family residences constructed in this area that adhere to the character of the surrounding neighborhood. Both properties are also located near the corridor districts Hardy St Neighborhood Business, as well as West Pine Regional and Broadway Drive Community Businesses. Additionally, both properties are located near the Hardy Street Neighborhood Business District, as well as West Pine Regional and Broadway Dr. Business District.

The representative Robin L. Roberts appeared on behalf of the property owner Michael Albanese and initiated the public meeting by explaining a brief history of the property. He stated that the 709 Mamie St property would be rebuilt as a duplex if the R-2 zoning is approved, while the property at 350 S 11th Ave would be used legally as a 4-plex structure if rezoned to R-3.

In addition, he confirmed that both properties had lost their non-confirming use status, and he is seeking to get back to their original zoning. Either the properties should be remodeled and fixed up to liveable conditions, or they should be torn down. He also mentioned that there are other multi-family residential structures in the area.

In her comments, Commissioner Hinton said the 350 S 11th Ave property has been vacant for more than 20 years, and asked why the applicant is not considering building a single-family home instead of keeping it as a rental property. Mr. Roberts replied that from an investor standpoint, such a decision would mean financial loss. Chair Miller then declared the public hearing portion of the meeting closed at 1:44 PM.

After that, Commissioner Hinton suggested using both structures as single-family homes instead of rental properties, stating that multi-family rental properties were not compatible with the neighborhood's current character. Commissioner Dowe expressed his concerns to the Commissioners about the 4-plex at 350 S 11th Ave, stating that investors would not be interested in this property if a rezoning is not possible and this would lead to decay.

Commissioner Hinton made the motion to deny the zoning change petition for 709 Mamie St (item A-1), on the basis that there is no public need for that type of housing in the

neighborhood. Commissioner Lockett seconded the motion. A roll call vote was then conducted. The motion failed to be approved and the change of zoning was denied by a vote of 7 to 2.

Commissioners Voting Aye:

Amy Hinton, Vice-Chair
Rebekah Ray
Mark Miller – Chair
Elayne Lockett
Michael Dickerson
Charles Dawe
Jeff Keyseear

Commissioners Voting Nay:

Dick Conville
Luke McNair

Another motion was made by Commissioner Hinton to deny the zoning change for 350 S 11th Ave (item A-2), seconded by Commissioner Lockett. The motion failed to be approved and the change of zoning was denied by a vote of 7 to 2.

Commissioners Voting Aye:

Amy Hinton, Vice-Chair
Rebekah Ray
Mark Miller
Elayne Lockett
Michael Dickerson
Charles Dawe
Jeff Keyseear

Commissioners Voting Nay:

Dick Conville
Luke McNair

There came the matter of Item B (Rezone Request and Preliminary Platt Approval for J ED Turner Road/Classic Drive intersection) presented by Jonathan Krebs. Nathan Satcher stated that the case was a combination request for rezoning one R-1B parcel and a portion of another parcel zoned R-1A. Both parcels would be rezoned to A-2 and be part of a

request to approve a Preliminary Plat for a Major Subdivision.

The Comprehensive Plan identifies this area as a Neighborhood Conservation District 2, which is characterized as “low-density or moderate-density single-family residences; building lots with front and side yards, with standard depths and an overall lower density of development than downtowns or historic neighborhoods”. The A-2 Zoning of the property, is more in line with the Rural Residential/Agricultural District of the Comprehensive Plan, which is characterized as “sparsely developed residential lands or undeveloped lands. Properties in this district are expected to transition from undeveloped or very low-density residential lands to large estate residences or suburban neighborhood residential developments”.

Then the conditional issues were discussed. Satcher mentioned that the maximum length of a minor street would be more than 400 ft in this subdivision, due to the topographical conditions and property access limitations. Additional expansions for the property were not presented. Planning Div. Manager, Cory Long stated that the right-of-way proposed exceeds the requirements; the width of the right-of-way needs to be taken into consideration in the future.

Jonathan Krebs, the owner of the property discussed, initiated the public meeting expressing his interest in creating the subdivision on unimproved parcels and establishing his home in the area. The proposed subdivision will be $\pm$ 46.49 acres with 16 lots ranging in size from 1 to 3.8 acres; this will include a green space with a lake and a pathway that connects to the Longleaf Trace.

Commissioner Hinton asked if Pipeline Rd would be paved and Mr. Krebs stated that paving the road was part of a request made by the Planning Division, and that he is currently looking into paving the exit of the neighborhood. Since sanitation trucks and school buses are expected to use this road, Krebs will explore options for resolving the issue.

Erick Weill, a resident of J ED Turner Rd, spoke in favor of the proposal. In support of the proposal, he emphasized that the buffer zone between the subdivision and Longleaf Trace was a good idea. Chair Miller then closed the public hearing portion of the meeting.

Commissioner Pickett questioned the staff about the need for sidewalks in this area that connect to the Longleaf Trace. Satcher stated these are not required on an A-2 zone, however, a common pathway that connects the development to the Longleaf Trace has already been constructed. A question was raised by Commissioner Conville regarding the existing car path. Mr. Krebs mentioned that the primary car path is intended to extend across the front of all the

properties, which corresponds to the old railroad that ran through the city.

Commissioner Pickett then asked about the square footage of the houses; Satcher answered that it was up to the subdivision to determine what the minimum size requirement for homes should be. A motion was made by Commissioner Hinton to approve the zone change for both parcels to A-2, stating that the growth of Longleaf Trace has changed the character of the area. The same motion was made for the third item and the Preliminary Platt for the subdivision was approved.

Commissioners Voting Aye:

Charles Dawe (via GoToMeeting)
Amy Hinton, Vice-Chair
Dick Conville
Jeff Keysear (via GoToMeeting)
Elayne Lockett
Luke McNair (via GoToMeeting)
Mark Miller - Chair
Rhoda A. Pickett
Rebekah Ray

Commissioners Voting Nay: None

Commissioners Absent: Michael Dickerson (via GoToMeeting)

BUSINESS MEETING

Having no further business, Chair Miller made a motion to adjourn, and the public meeting was adjourned at 2:46 PM.

Mark M. Miller, Chair

Cory Long, AICP, Planning Division Manager



Memorandum

To: Mayor Toby Barker and Members of City Council

From: Ann Jones

cc: Wiley Quinn, Urban Development Director

Date: Tuesday, May 2, 2023

Re: Adopt a Resolution setting Public Hearing on Monday, June 5th, 2023 at 4:00 p.m. in the City Council Chambers located at City Hall to determine if certain properties are in such a state of uncleanness so as to be a menace to the health and safety of the community, according to the provision of MS Code 1972, Section 21-19-11.
File Number: 2023-290
Minute Book #

Summary

Set Public Hearing 06 05 2023, Unsafe Properties

Recommendation Statement

I recommend the setting of a Public Hearing to consider the state of the listed attached properties to determine if these properties are in such a state of uncleanness so as to be a menace to the health and safety of the community, according to the provision of MS Code 1972, Section 21-19-11.

Please place this on the May 2, 2023 City Council meeting for consideration.



MAYOR
Toby Barker

COUNCIL - WARD ONE
Jeffrey George

COUNCIL - WARD TWO
Deborah Denard Delgado

COUNCIL - WARD THREE
Carter Carroll

COUNCIL - WARD FOUR
Dave Ware

COUNCIL - WARD FIVE
Nicholas Brown

MEMORANDUM

TO: Mayor and City Council

FROM: Wiley Quinn, Director of Urban Development

DATE: May 2nd, 2023

RE: Set Public Hearing

The Code Enforcement Division requests that the City Council hold a Public Hearing on Monday, June 5, 2023 to determine if the following properties are in such a state of uncleanness so as to be a menace to the health and safety of the community, according to the provisions of MS Code 1972, Section 21-19-11.

	Address	PPIN	Ward	Violations	Proposed Actions	Estimated Cost	Estimated Penalty
1	102 West 7th Street	14507	2	DS, VS, AG&R, OGL	Demo	\$7,000	\$3,500
2	106 Donald Street	20984	5	AB, DB, OGL	Demo	\$5,250	\$1,500
3	108 Donald Street	20983	5	OGL, AS, AG&R	Demo Accessory Structure, Clean	\$2,000	\$1,500
4	110 Donald Street	20982	5	AB, DB, OGL	Demo	\$5,250	\$1,500
5	135 East 7th Street	19004	2	DS, VS, AG&R, OGL	Demo	\$5,000	\$2,500

6	212 Willis Avenue	13834	5	DS	Demo	\$5,250	\$1,500
7	314 Bay Street	18609	4	DS, VS, AG&R	Demo	\$15,000	\$7,500
8	402 J.M. Tatum Industrial Parkway	3368	5	AB, DB, OGL	Clean, Close, Secure	\$4,000	\$1,500
9	416 Miller Street	19593	2	DS, VS, OGL, AG&R	Clean, Close, Secure	\$3,000	\$1,500
10	509 Elizabeth Avenue	19790	4	DS	Demo	\$5,000	\$2,500
11	610 Breland Street	21699	5	AB, DB, OGL	Demo	\$5,250	\$1,500
12	704 Ellis Avenue	13068	5	DS	Demo	\$5,250	\$1,500
13	1300 North Main Street	14508	2	DS, VS, AG&R	Demo	\$10,000	\$5,000
14	1504 Main Street	22176	2	DS	Demo	\$5,000	\$2,500

Garbage & Rubbish=GAR/RUB

Accumulation of Garbage and Rubbish = AG&R

Dilapidated Building=DB

Dangerous Structure=DS

Imminent Danger=ID

Overgrown Lot=OGL

Open Storage=OS

Unsafe Structure=US

Abandoned Vehicle=AV

Abandoned Structure=AS

Vacant Structure=VS

Owner Responsibility=OR

Hazardous Tree = HT

Exterior Structure = ES

Clean Pool = POOL

Trash & Litter = T&L

Prepared by:
City of Hattiesburg
Code Enforcement
P.O. Box 1898
Hattiesburg, Mississippi 39403-1898

Return to:
City of Hattiesburg
City Clerk's Office
P.O. Box 1898
Hattiesburg, Mississippi 39403-1898

RESOLUTION

WHEREAS, complaint has been made to the City of Hattiesburg, Mississippi, that the following properties to wit:

	Address	PPIN	Ward	Violations
1.	102 West 7th Street	14507	2	DS, VS, AG&R, OGL
2.	106 Donald Street	20984	5	AB, DB, OGL
3.	108 Donald Street	20983	5	OGL, AS, AG&R
4.	110 Donald Street	20982	5	AB, DB, OGL
5.	135 East 7th Street	19004	2	DS, VS, AG&R, OGL
6.	212 Willis Avenue	13834	5	DS
7.	314 Bay Street	18609	4	DS, VS, AG&R
8.	402 J.M. Tatum Industrial Parkway	3368	5	AB, DB, OGL
9.	416 Miller Street	19593	2	DS, VS, OGL, AG&R
10.	509 Elizabeth Avenue	19790	4	DS
11.	610 Breland Street	21699	5	AB, DB, OGL
12.	704 Ellis Avenue	13068	5	DS
13.	1300 North Main Street	14508	2	DS, VS, AG&R
14.	1504 Main Street	22176	2	DS

are in such a state of uncleanness so as to be a menace to the health and safety of the community;
and

WHEREAS, it is in the public interest that the City Council, on its own motion, hold hearings as provided by Section 21-19-11 of the Mississippi Code of 1972, as annotated and amended, to determine whether or not the above properties are in such a state of uncleanness so as to be a menace to the health and safety of the community.

The above and foregoing Resolution, having been first reduced to writing, was introduced by Council member _____, seconded by Council member _____, and was adopted by the following vote, to-wit:

ABSENT:

(SEAL)

ADOPTED:

PRESIDENT

APPROVED:

MAYOR



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Letter Agreement with Neel-Schaffer, Inc. for professional engineering services related to the Gordon's Creek Pathway Along VFW Project and authorize the Mayor to execute in duplicate.
File Number: 2023-299
Minute Book #

Summary

Approve Letter Agreement with Neel-Schaffer, Inc. for professional engineering services related to the Gordon's Creek Pathway Along VFW Project and authorize the Mayor to execute in duplicate.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.

April 21, 2023

Honorable Toby Barker
Mayor
City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403-1898

RE: GORDON'S CREEK PATHWAY ALONG VFW
LETTER AGREEMENT FOR PROFESSIONAL SERVICES

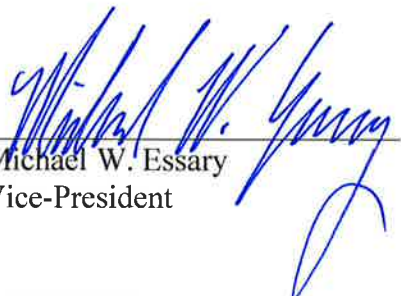
Dear Mayor Barker:

Neel-Schaffer is pleased to offer our professional engineering services to the City of Hattiesburg in reference to the Gordon's Creek Pathway Project. Our services will be provided for a fixed fee of \$85,200.00 and will be in accordance with Exhibit A – Scope of Work, Exhibit B – Project Map and Exhibit C – General Terms and Conditions, which are attached hereto and made part of this Letter Agreement.

Please indicate your acceptance of this Agreement by executing all three (3) original documents and returning one to our office. Thank you for the opportunity to be of continued service to the City of Hattiesburg.

Sincerely,

Neel-Schaffer, Inc.


Michael W. Essary
Vice-President

ACCEPTED:

BY: _____
Toby Barker, Mayor

DATE: _____

CC: Ann Jones, Chief Administrative Officer

Attachments

EXHIBIT A

Scope of Work

This PROJECT includes sidewalk and pathway lighting along Gordon's Creek as shown in Exhibit B – Project Map.

The CONSULTANT shall prepare all plans, specifications, and provide an Opinion of Probable Cost (PS&E Assembly) as indicated in the LPA Project Development Manual.

The following engineering services shall be performed by the CONSULTANT on behalf of the Local Public Agency (LPA) in accordance with this CONTRACT at the direction of the LPA, unless otherwise modified by the Mississippi Department of Transportation (MDOT).

A monthly status report along with an updated project schedule is required. This report is to be submitted by the 7th of each month to the LPA for their signature and then submitted to the District LPA Coordinator. This monthly report is to be submitted by the CONSULTANT and will update the LPA on the status of the project. Recent milestones in plan development, such as the submittal of plans for review, shall be documented. Also, the target dates for the future milestones should be included.

TYPICAL ITEMS/MATERIALS PROVIDED BY THE LPA:

Based upon availability, the LPA will provide within normal resources of the LPA, the following:

1. Maps, aerial photographs, and other cartographic items as may be available;
2. Available old construction plans, drawings, and maps pertinent to the project;
3. Names, addresses, and telephone numbers of points of contact which may prove useful to the CONSULTANT in conducting this analysis;
4. A single point of contact within the LPA for day-to-day coordination of each CONTRACT;

GENERAL REQUIREMENTS:

As directed, the CONSULTANT shall provide engineering/technical assistance to perform specific assignments requiring needed expertise or staff resources unavailable to the LPA.

Manuals, guides, and specifications applicable to this CONTRACT shall be those approved and adopted by the MDOT and in effect on the effective date this CONTRACT unless otherwise specified in the CONTRACT or subsequently directed by the MDOT during the course of this CONTRACT.

The design of the project shall be in compliance with the MDOT Roadway Design Manual, and supplemented with updated design policies as described in design memos, American Association of State Highway and Transportation Officials (AASHTO)'s Policy on Geometric Design Of Highways and Streets; MDOT Standard Drawings (roadway and bridge), MDOT Roadway CADD Manual; MDOT Standard Specifications for Road and Bridge Construction; and the Manual on Uniform Traffic Control Devices (MUTCD)l. The latest edition of the aforementioned documents shall be used.

This project shall be performed using English units.

It is the responsibility of the CONSULTANT to request and receive approval from the LPA's Project Manager prior to making any changes to plans developed under this contract. This requirement includes plans developed by any subconsultants. As a minimum, the Scope of Work shall be divided into the following phases:

FIELD REVIEW PLANS

Part 1 -- Pre-Design Conference

Part 2 -- Conceptual Plans

Part 3 -- Field Inspection Plans

Part 4 -- Office Review Plans

Part 5 -- Final Contract Plans

FIELD SURVEY:

The CONSULTANT shall survey the project utilizing standard surveying practices as required to prepare preliminary and final contract plans.

FIELD REVIEW PLANS:

Unless stated otherwise in the CONTRACT, the following specific requirements are typical for this phase:

Part 1 - PRE-DESIGN CONFERENCE

The purpose of the conference is to discuss LPA procedures, contract administration, data required by this CONTRACT, the design criteria, and other matters as the parties deem necessary. After the Pre-Design Conference, the Project Director shall authorize the CONSULTANT to proceed with the preparation of the conceptual design plans.

Part 2 - CONCEPTUAL PLANS

The CONSULTANT shall prepare and submit conceptual plans for the project to include, where applicable:

- A. **CONCEPTUAL PLANS:** Title Sheet(s), typical sections, plan-profile sheets, traffic control sheets, conceptual permanent directional signing layout sheets, special design sheets where needed, phase construction sheets as required (plan & elevation).

Part 3 - FIELD INSPECTION PLANS

The CONSULTANT shall prepare and submit field inspection plans in accordance with the LPA'S format based on the approved conceptual plan. The field inspection plans shall contain, as a minimum:

- A. **FIELD INSPECTION PLANS:** Title sheet, typical sections, preliminary listing of pay items, plan and profile sheets showing all geometrics, profile grades, construction limits, cross-sections, preliminary earthwork quantities, preliminary pavement marking sheets, size and location of all drainage structures, as well as any traffic control that will be required during construction. Cross drain structures shall be plotted on the cross sections.

After the field review is conducted, the CONSULTANT shall provide the LPA with written updated construction opinion of probable cost. This OPC shall be based on historical cost data from similar MDOT projects.

Part 4 - OFFICE REVIEW PLANS

After the Office Review plans (100% plan development, pending final review) are complete, the CONSULTANT shall submit one (1) set of reproducible plans for review by the LPA. A final Office Review will be required and the CONSULTANT shall be required to attend. Allow approximately three (3) weeks from the submittal date of the reproducibles for scheduling and completing the Office Review. In the office review, the LPA shall review and mark the plans with all required revisions.

After the Office Review is conducted, the CONSULTANT shall provide the LPA with a written updated construction opinion of probable cost. This OPC shall be based on the plan quantities and historical cost data for the pay items.

Part 5 - FINAL CONTRACT PLANS

The final contract plans shall include all items required in the final right-of-way plans and all other information such as, but not limited to:

- A. **FINAL CONTRACT PLANS:** Title sheet; detailed index; general notes; typical sections; summary of quantities; estimated quantities; plan-profile sheets; special design sheets; and all notes and data used to develop the plans.

ADVERTISEMENT:

The Consultant shall prepare legal advertisement for the referenced project and shall ensure the project follows the LPA Project Development Manual and is properly advertised per Mississippi State bidding laws and regulations. These services include the following:

- Preparing the advertisement
- Bidder Coordination
- Receive and evaluate bids
- Assemble Bids and Submit

Additional Items included in the scope of work:

1. Completion of forms LPA-100, LPA-700, and Env-160
2. Completion of Sampling and Testing Proposal
3. Assist in the bid opening and prepare items for concurrence to award the project
4. Topographic Survey of the Project Limits
5. Cultural Resource Survey
6. Threatened and Endangered Species
7. No Rise Evaluation
8. Wetland delineation

Items Not included in the scope of work:

1. Right-of-way Acquisition Services (Boundary Surveys, ROW Plats, etc.)
2. Environmental Assessment / Environmental Impact Statement
3. Re-bidding the Project
4. Traffic Study
5. LOMR/CLOMR



NOTICE TO DRAWING HOLDER NEEL-SCHAFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTATION BY THE ENGINEER, SHALL BE AT THE REUSER'S SOLE RISK AND THE REUSER SHALL INDEMNIFY AND HOLD HARMLESS THE ENGINEER FROM ALL CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR RESULTING THEREFROM.	REVISIONS		DRAWING INFORMATION		GORDON'S CREEK - VFW TO OLD BAKERY			EXHIBIT B PROJECT MAP	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: PROPOSAL FILENAME: conceptual.dwg SCALE: SURVEYED BY: DSGN: --- DATE: 10/2021 DRWN: GPC DATE: 10/2021 CHKD: DATE: QA/QC: DATE:			WORKING NUMBER:	DRAWING NUMBER:

10/29/2021 3:17 PM c:\p000\hattiesburg\10566_tg1108_gordon's - vfw to bakery\design\plans\conceptual.dwg

EXHIBIT C

GENERAL TERMS AND CONDITIONS

1. **Relationship between Engineer and Client.** Engineer shall serve as Client's professional engineering consultant in those phases of the Project to which this Agreement applies. The relationship is that of a buyer and seller of professional services and it is understood that the parties have not entered into any joint venture or partnership with the other, nor is the relationship a fiduciary relationship between Engineer and Client. The Engineer shall not be considered to be the agent of the Client. To the extent that Client is a public entity or a person or entity obligated to repay some or all of an amount borrowed in a municipal securities offering, it is expressly understood and agreed that the Engineer is not acting as a municipal advisor to the Client, as that term applies to the Dodd-Frank Wall Street Reform and Consumer Protection Act and its supporting regulations, that Engineer's services will not include the provision of advice or recommendations regarding municipal financial products or the issuance of municipal securities, and that the Client is responsible for retaining an independent registered municipal advisor for such advice or recommendation.
2. **Responsibility of the Engineer.** Engineer will perform services under this Agreement in a manner consistent with that standard of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this Agreement or in any report, opinion, document, or otherwise.

Notwithstanding anything to the contrary which may be contained in this Agreement or any other material incorporated herein by reference, or in any agreement between the Client and any other party concerning the Project, the Engineer shall not have control of and shall not be responsible for the means, methods, techniques, sequences or procedures of construction; or the safety, safety precautions or programs of the Client, the construction contractor, other contractors or subcontractors performing any of the work or providing any of the services on the Project. Nor shall the Engineer be responsible for the acts or omissions of the Client, or for the failure of the Client, any contractor or subcontractor, or any other engineer, architect or consultant not under contract to the Engineer to carry out their respective responsibilities in accordance with the Project documents, this Agreement or any other agreement concerning the Project.

Engineer shall determine the amounts owing to the construction contractor and recommend in writing payments to the contractor in such amounts. By recommending any payment, the Engineer will not thereby be deemed to have represented that exhaustive, continuous or detailed review or examinations have been made to check the quality or quantity of the contractor's work.

3. **Responsibility of the Client.** Client shall provide all criteria and full information as to his requirements for the Project, including budgetary limitations. Client shall arrange for Engineer to enter upon public and private property and obtain all necessary approvals and permits required from all governmental authorities having jurisdiction over the Project.

Client shall give prompt written notice to the Engineer whenever Client observes or otherwise becomes aware of any development that affects the scope or timing of Engineer's

services, or any defect or nonconformance in the work of any construction contractor.

The Client shall promptly report to the Engineer any defects or suspected defects in the Engineer's services of which the Client becomes aware, so that the Engineer may take measures to minimize the consequences of such a defect. The Client further agrees to impose a similar notification requirement on all contractors in its Client/Contractor contract and shall require all subcontracts at any level to contain a like requirement. Should legal liability for the defects exist, failure by the Client and the Client's contractors or subcontractors to notify the Engineer shall relieve the Engineer of any liability for costs of remedying the defects about the sum such remedy would have cost had prompt notification been given when such defects were first discovered.

Client shall examine all documents presented by Engineer, obtain advice of an attorney or other consultant as Client deems appropriate for such examinations and provide decisions pertaining thereto within a reasonable time so as not to delay the services of the Engineer.

4. **Designation of Authorized Representatives.** Each party shall designate one or more persons to act with authority in its behalf with respect to appropriate aspects of the Project. The persons designated shall review and respond promptly to all communications received from the party.
5. **Ownership of Documents.** Drawings, specifications, reports and any other documents prepared by Engineer in connection with any or all of the services furnished hereunder shall be the property of Engineer. Engineer shall have the right to retain copies of all documents and drawings for its files.
6. **Reuse of Documents.** All documents, including drawings and specifications furnished by Engineer pursuant to this Agreement, are intended for use on the Project only. Client agrees they should not be used by Client or others on extensions of the Project or on any other project. Any reuse, without written verification or adaption by Engineer, shall be at Client's sole risk, and Client shall indemnify and hold harmless Engineer from all claims, damages, losses and expenses, including attorney's fees arising out of or resulting therefrom. Owner further acknowledges that any reports or studies prepared by Engineer are intended solely for the Owner's use and information, and the Owner shall defend and indemnify Engineer from any liabilities arising out of other entities' reliance on such reports or studies.
7. **Opinions of Cost.** Since the Engineer has no control over the cost of labor, materials, equipment or services furnished by the contractor, or over the contractor's methods of determining prices, or over competitive bidding or market conditions, the Engineer cannot and does not guarantee that proposals, bids or actual construction costs will not vary from his opinions or estimates of construction costs.
8. **Changes.** Client reserves the right by written change order or amendment to make changes in requirements, amount of work, or engineering time schedule adjustments; and Engineer and Client shall negotiate appropriate adjustments in fee and/or schedule acceptable to both parties to accommodate any changes or Additional Services.
9. **Delays.** If the Engineer's services are delayed by the Client, or for other reasons beyond the Engineer's control, for more than one year, the fee provided for in this Agreement shall be adjusted equitably.

EXHIBIT C

GENERAL TERMS AND CONDITIONS

10. **Subcontracts.** Engineer may subcontract portions of the services, but each subcontractor must be approved by Client in writing.
11. **Suspension of Services.** Client may, at any time, by written order to Engineer, require Engineer to stop all, or any part, of the services required by this Agreement. Upon receipt of such an order, Engineer shall immediately comply with its terms and take all reasonable steps to minimize the occurrence of costs allocable to the services covered by the order. Client, however, shall pay all costs associated with suspension including all costs necessary to maintain continuity and the staff required to resume the services upon expiration of the suspension of work order. Engineer will not be obligated to provide the same personnel employed prior to suspension when the services are resumed in the event the period of any suspension exceeds 30 days. Client will reimburse Engineer for the costs of such suspension and remobilization.
12. **Termination.** This Agreement may be terminated by either party upon 30 days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party. This Agreement may be terminated by Client, under the same terms, whenever Client shall determine that termination is in its best interests. Cost of termination, including salaries, overhead and fee, incurred by Engineer either before or after the termination date shall be reimbursed by Client.
13. **Notices.** Any notice or designation required to be given by either party hereto shall be in writing and, unless receipt of such notice is expressly required by the terms hereof, it shall be deemed to be effectively served when deposited in the mail with sufficient first class postage affixed and addressed to the party to whom such notice is directed at such party's place of business or such other address as either party shall hereinafter furnish to the other party by written notice as herein provided.
14. **Indemnification.** Engineer shall indemnify and hold harmless Client from Client's loss or expense, including reasonable attorney's fees for claims for personal injury (including death) or property damage to the extent caused by the negligent act, error or omission of Engineer.

Client shall indemnify and hold harmless Engineer from Engineer's loss or expense, including reasonable attorney's fees, for claims for personal injuries (including death) or property damage to the extent caused by the negligent act, error or omission of Client.

In the event of joint or concurrent negligence of Engineer and Client, each shall bear that portion of the loss or expense that its share of the joint or concurrent negligence bears to the total negligence (including that of third parties) which caused the personal injury or property damage.

Client shall not be liable to the Engineer, and the Engineer shall not be liable to the Client, for any special, incidental or consequential damages, including, but not limited to, loss of use and loss of profit, incurred by either party due to the fault of the other, regardless of the nature of this fault, or whether it was committed by the Client or the Engineer or their employees, agents or subcontractors, by reason of services rendered under this Agreement.

Engineer's indemnification obligation as set forth herein is expressly subject to and limited by the limitation of liability provision agreed upon by the Client and Engineer as set forth in Section 21, "Risk Allocation" of this Agreement.

Client waives any rights or claims for damage to persons or property that it or any of its successors in interest or insurers may have against Engineer for any claim or action arising out of Engineer's scope of services related to the Project or this Agreement, but only to the extent that such rights or claims for damages are covered by a policy of liability, casualty, property or other insurance, regardless of who procures such insurance.

15. **Legal Proceedings.** In the event Engineer's employees are at any time required by Client to provide testimony, answer interrogatories or otherwise provide information ("testimony") in preparation for or at a trial, hearing, proceeding on inquiry ("proceeding") arising out of the services that are the subject of this Agreement, where Engineer is not a party to such proceeding, Client will compensate Engineer for its services and reimburse Engineer for all related direct costs incurred in connection with providing such testimony. This provision shall be of no effect if the parties have agreed in a separate agreement or an amendment to this Agreement to terms which specifically supersede this provision, nor shall this provision apply in the event Client engages Engineer to provide expert testimony or litigation support, which services shall be the subject of a separate agreement or an amendment to this Agreement.
16. **Successors and Assigns.** The terms of this Agreement shall be binding upon and inure to the benefit of the parties and their respective successors and assigns; provided however, that neither party shall assign this Agreement in whole or in part without the prior written approval of the other.
17. **Insurance.** Within the context of prudent business practices, Engineer shall endeavor to maintain workmen's compensation and unemployment compensation of a form and in an amount as required by state law; comprehensive general liability with limits of at least \$500,000/ \$1,000,000; automotive liability with limits of at least \$500,000/ \$500,000; and professional liability insurance with an annual limit of at least \$500,000. Client recognizes that insurance market is erratic and Engineer cannot guarantee to maintain the coverages identified above.
18. **Information Provided by the Client.** The Engineer shall indicate to the Client the information needed for rendering of services hereunder. The Client may elect to provide this information (including services by others) to the Engineer. In this case, the Client recognizes that the Engineer cannot assure the sufficiency of such information. Accordingly, the Engineer shall not be liable for any claims for injury or loss arising from errors, omissions or inaccuracies in documents or other information provided by the Client. In addition, the Client agrees to compensate the Engineer for any time spent or expenses incurred in defending such claim or in making revisions to his work as a direct or indirect result of information provided by the Client which is insufficient.
19. **Subsurface Conditions and Utilities.** Client recognizes that a comprehensive sampling and testing program implemented by trained and experienced personnel of Engineer or Engineer's subconsultants with appropriate equipment may fail to detect certain hidden conditions. Client also recognizes that actual environmental, geological and geotechnical conditions that Engineer properly inferred to exist between sampling points may differ significantly from those that actually exist.

Engineer will locate utilities which will affect the project from information provided by the Client and utility companies and

EXHIBIT C

GENERAL TERMS AND CONDITIONS

from Engineer's surveys. In that these utility locations are based, at least in part, on information from others, Engineer cannot and does not warrant their completeness and accuracy.

20. **Hazardous Materials.** When hazardous materials are known, assumed or suspected to exist at a project site, Engineer is required to take appropriate precautions to protect the health and safety of his personnel, to comply with the applicable laws and regulations and to follow procedures deemed prudent to minimize physical risks to employees and the public. Client hereby warrants that, if he knows or has any reason to assume or suspect that hazardous materials may exist at the project site, he will inform Engineer in writing prior to initiation of services under this Agreement.

Hazardous materials may exist at a site where there is no reason to believe they could or should be present. Client agrees that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. Engineer agrees to notify Client as soon as practically possible should unanticipated hazardous materials or suspected hazardous materials be encountered. Client waives any claim against Engineer and agrees to indemnify, defend and hold Engineer harmless from any claim or liability for injury or loss arising from Engineer's encountering unanticipated hazardous materials or suspected hazardous materials. Client also agrees to compensate Engineer for any time spent and expenses incurred by Engineer in defense of any such claim.

21. **Risk Allocation.** The Client recognizes that Engineer's fee includes an allowance for funding a variety of risks which affect the Engineer by virtue of his agreeing to perform services on the Client's behalf. One of these risks stems from the Engineer's potential for human error. In order for the Client to obtain the benefits of a fee which includes a lesser allowance for risk funding, the Client agrees to limit the Engineer's liability to the Client and all construction contractors arising from the Engineer's professional acts, errors or omissions, such that the total aggregate liability of the Engineer to all those named shall not exceed \$50,000 or the Engineer's total fee for the services rendered on this project, whichever is greater.
22. **Anticipated Change Orders.** Client recognizes and expects that a certain amount of imprecision and incompleteness is to be expected in construction contract documents; that contractors are expected to furnish and perform work, materials and equipment that may reasonably be inferred from the contract documents or from the prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for; and that a certain amount of change orders are to be expected. As long as Engineer provides services in a manner consistent with that standard of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions, client agrees not to make any claim against Engineer for cost of these change orders unless these costs become a significant part of the construction contract amount. In no case will Client make claim against Engineer for costs incurred if the change order work is a necessary part of the Project for which Client would have incurred cost if work had been included originally in the contract documents unless Client can demonstrate that such costs were higher through issuance of the change order than they would have been if originally included in the contract documents in which case any claim of Client against Engineer will be limited to the cost increase and not the entire cost of the change order.

23. **Payment.** Engineer shall submit monthly invoices, or invoice submittal will be as noted in the agreement, to the Client. Payment in full shall be due upon receipt of the invoice. Payment of any invoices by the Client shall be taken to mean that the Client is satisfied with the Engineer's services to the date of the payment and is not aware of any deficiencies in those services. If payments are delinquent after 30 days from invoice date, the Client agrees to pay interest on the unpaid balance at the rate of one percent (1%) per month. Payment will be credited first to any interest owed then to principal. If the Client fails to make payments, the Engineer, after giving seven (7) days written notice to the Client, may suspend services until the Client has paid in full all amounts due for services, expenses, and other related charges, without recourse to the Client for loss or damage caused by such suspension. The Client further waives any and all claims against the Engineer for any such suspension. Payment for Engineer's services is not contingent on any factor, except the Engineer's ability to provide services in a manner consistent with that standard of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. Payment of invoices shall not be subject to any discounts, set-offs or back-charges unless agreed to in writing by both parties. If the Client contests an invoice, the Client may withhold only that portion so contested and pay the undisputed portion, after the Client has notified the Engineer in writing within 30 days of receiving the invoice and shall identify the specific cause of the disagreement and the amount in dispute.

If Engineer brings any action at law or in equity to enforce or interpret the terms of this Agreement, or if Engineer must either prosecute or defend any action related to the subject matter of the Agreement, and prevails in such action, then Engineer shall be entitled to reasonable attorney's fees, expenses and costs, including expert witness fees, if applicable.

24. **Force Majeure.** Neither Client nor Engineer shall be liable for any fault or delay caused by any contingency beyond their control, including, but not limited to, acts of God, wars, strikes, walkouts, fires, natural calamities, or demands or requirements of governmental agencies.
25. **Compliance with Laws.** To the extent they apply to its employees or its services, the Engineer shall comply with all applicable United States, state, territorial and commonwealth laws, including ordinances of any political subdivisions or agencies of the United States, any state, territory or commonwealth thereof.
26. **Separate Provisions.** If any provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions shall be valid and binding.
27. **Governing Law.** This Agreement shall be governed by and construed in accordance with the laws of the principal place of business of the Engineer.
28. **Dispute Resolution.** All disputes, controversies or claims, of whatever kind or character, between the Parties, their agents and/or principals, arising out of or in connection with the subject matter of this Agreement shall be litigated in no other venue other than the Circuit Court of Madison County, Mississippi, or the United States District Court which includes within its geographical Division, Madison County, Mississippi; and shall be litigated only before a judge hearing the matter alone, as both finder of fact and law, without a jury.

EXHIBIT C

GENERAL TERMS AND CONDITIONS

By entering into this agreement, the parties knowingly, purposefully and intelligently agree to waive their individual rights to have any dispute, controversy or claim amongst and between them, to include the Contractor's individual Shareholders, Directors and Officers, decided, heard or adjudged by a trial by jury.

Client or Engineer gives the other written notice of objection to any term or condition before commencement of performance in connection with any other provision of services or projects involving the two of them.

29. **Additional Services.** Services resulting from significant changes in the general scope, extent or character of the Project designed or specified by Engineer or its design including, but not limited to, changes in size, complexity, Client's schedule, construction schedule, character of construction or method of financing; and revising previously accepted studies, reports, design documents or Contract Documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes or orders enacted subsequent to the preparation of such studies, reports or documents, or are due to any other causes beyond Engineer's control.
30. **Amendment.** This Agreement shall not be subject to amendment unless another instrument is executed by duly authorized representatives of each of the parties.
31. **Entire Understanding of Agreement.** This Agreement represents and incorporates the entire understanding of the parties hereto, and each party acknowledges that there are no warranties, representations, covenants or understandings of any kind, matter or description whatsoever, made by either party to the other except as expressly set forth herein. Client and Engineer hereby agree that any purchase orders, invoices, confirmations, acknowledgments or other similar documents executed or delivered with respect to the subject matter hereof that conflict with the terms of this Agreement shall be null, void and without effect to the extent they conflict with the terms of this Agreement.
32. **Survival of Provisions.** The provisions of this Agreement shall continue to be binding upon the parties hereto notwithstanding termination of this Agreement for any reason.
33. **Nonwaiver.** No waiver by a party of any provision of this Agreement shall be deemed to have been made unless in writing and signed by such party.
34. **Identity of Project Owner.** Within ten (10) days of the entry of this Agreement, Client, if Client is not the Project Owner, shall provide to Engineer the following information relative to the Project Owner: Project Owner's full legal name; Project Owner's physical address; Project Owner's mailing address; and the name, physical address and mailing address of the Client's point of contact with the Owner for the Project.
35. **Conflicting Terms.** In the event that there are multiple agreements with varying or conflicting terms and conditions between Client and Engineer, the Terms and Conditions contained in this Agreement shall supersede and have precedence over any other terms and conditions contained in any other written or oral agreement entered into between Client and Engineer that either actually do or appear to conflict with the Terms and Conditions contained in this Agreement, regardless of when, in relationship to these Terms and Conditions contained in this Agreement, such other written or oral agreement was actually entered into between Client and Engineer.
36. **Course of Dealing.** Client and Engineer agree that these General Terms and Conditions establish a course of dealing between them and shall apply to this and all other services, projects, agreements or dealings between the them, unless



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Memorandum of Agreement with the Mississippi Department of Transportation (MDOT) to provide funding for the Gordon's Creek VFW Pathway Project (Federal Aid Project No. STP-0210-00(042)LPA/109399-701000) and authorize the Mayor to execute in duplicate.
File Number: 2023-306
Minute Book #

Summary

Approve Memorandum of Agreement with the Mississippi Department of Transportation (MDOT) to provide funding for the Gordon's Creek VFW Pathway Project (Federal Aid Project No. STP-0210-00(042)LPA/109399-701000) and authorize the Mayor to execute in duplicate.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.

Brad White
Executive Director

P. O. Box 1850
Jackson, MS 39215-1850
Telephone (601) 359-7249
FAX (601) 359-7050
GoMDOT.com



Brian D. Ratliff
Deputy Executive Director/Chief Engineer
Lisa M. Hancock
Deputy Executive Director/Administration
Charles R. Carr
Director, Office of Intermodal Planning

16499-B Highway 49, Saucier, Mississippi 39574-9740
April 17, 2023

Mr. Toby Barker,
Mayor, City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403-1898

RE: Memorandum of Agreement, MOA
Gordon's Creek VFW Pathway – STP-0210-00(042)LPA / 109399-701000

Dear Mr. Barker,

The above referenced federal aid project has been assigned a project number:
STP-0210-00(042)LPA / 109399-701000. This number should be used in its entirety on all
correspondence for this project.

Attached are the duplicate copies of the Memorandum of Agreement, MOA, for the above
referenced project for your review and processing. The MOA outlines responsibilities and funding
as required by the MDOT project development manual, PDM, for federal funding. Please execute
the MOA in duplicate and return with governing council or board minutes signifying approval.
Please mail to:

Mississippi Department of Transportation
Attn: David Seyfarth
16499-B Highway 49
Saucier, MS 39574-9740

In accordance with the MOA, please remember to include the MDOT in any public relations
activities or press release for this project. The MDOT public relations liaison for District VI is
Michael Flood, telephone number 601-359-7020. Should you need additional information, contact
my office at 228-832-0682.

Sincerely,

Chuck Starita, PE
Asst. District 6 LPA Engineer

cc: Project File 16-10 w/ attachments

STP-0210-00(042)LPA / 109399-701000
Gordon's Creek VFW Pathway
Hattiesburg, MS

This Agreement is made between the Mississippi Transportation Commission, a body Corporate of the State of Mississippi (hereinafter referred to as the "Commission"), acting by and through the duly authorized Executive Director of the Mississippi Department of Transportation ("MDOT") and City of Hattiesburg (hereinafter referred to as the "LPA"), for the purpose of establishing the terms under which the LPA may utilize federal funds to complete the proposed project as described below, effective as of the date of the last execution by the Commission.

WHEREAS, the Commission has oversight responsibility and authority over federal funds that are available for local public agency projects; and

WHEREAS, the LPA intends to develop and construct Gordon's Creek VFW Pathway; (hereinafter referred to as the "Project"), and the Commission intends to allow the LPA access to available federal funds and manage the Project under the terms and provisions of this Memorandum of Agreement; and

WHEREAS, it is anticipated that approximately \$1,064,925.00 in federal funds (80% grant match and 20% local match) are available for the construction of the Project, and that the above mentioned federal funds may be rescinded if they are not obligated on or before December 31, 2024, and that the above funds are subject to normal rescissions and obligational limitations; and

WHEREAS, the LPA will be responsible for all Project costs over and above the maximum amount of federal funds allocated to the Project by the Commission;

WHEREAS, the Commission and the LPA desire to set forth, by this Agreement, more fully, the agreements of the parties by which the Project will be developed and completed; and

NOW, THEREFORE, for and in consideration of the premises and agreements of the parties as hereinafter contained, the LPA and the Commission enter into this Memorandum of Agreement for the use of the currently available federal funds and any future federal funds that may be allocated to this Project, agree and covenant as follows:

ARTICLE I. DUTIES AND RESPONSIBILITIES

A. The LPA, which is hereby designated as the Local Sponsor for the purposes herein, hereby contracts, covenants and binds itself to the following responsibilities, duties, terms and conditions:

1. The LPA shall immediately designate a full time employee of the LPA as the Project Director, who will serve as the person responsible for completion of all phases of the Project and will coordinate all Project activities with the MDOT District LPA Engineer.

2. The LPA shall promptly follow the procedures set out in the latest online version of the

Project Development Manual (PDM) for Local Public Agencies that are necessary for the Project including, but not limited to, project activation, reporting requirements for federal awards (including the single audit), consultant selection, necessary permits, environmental process, preliminary design, right-of-way acquisition, advertisement for and selection of a contractor, construction oversight, and project close out activities.

3. The LPA shall submit to MDOT four (4) complete sets of as-built plans in printed form and the original electronic files in a format that is compatible with Microstation prior to MDOT acceptance. Upon request, MDOT may waive this requirement for selected projects.

4. The LPA shall be responsible for all maintenance and operation of the Project during and after completion so that the federal investment in the Project is preserved. If maintenance is not performed, as appropriate, future federal funds may be withheld for any projects in the jurisdiction of the local agency, or the Commission may seek recovery of federal funds through all available legal actions.

5. The LPA shall follow and abide by any and all federal requirements, specifically, but not limited to, the provisions that no retainage shall be withheld from installment payments to the construction contractor.

6. The LPA agrees that if any act or omission on the part of the LPA causes loss of Federal funding from FHWA or any other source, or any penalty being imposed by the United States of America under the Clean Water Act, 33 U.S.C. § 1251, et seq. or any other provision of law, the LPA will be solely responsible for all additional costs.

7. In compliance with State Law, the LPA shall pay all payments owed to Contractors and Consultants according to the terms of the contract, and in all instances payments shall be made within forty-five (45) days from the day they were due and payable. MDOT reserves the right to withhold reimbursement until adequate proof of payment has been produced by the LPA.

Excepted from this requirement are payments to railroads for any work included in the Project. Payments to railroads, their consultants or contractors, for work included in the Project, may be made by MDOT, at its sole discretion. Payments made by MDOT to railroads, their consultants or contractors shall come from the funds obligated for the Project.

8. The LPA shall be solely responsible for payment of any and all funds required to complete the Project, over and above the available federal funds for the Project.

9. All contracts and subcontracts shall include a provision for compliance with Senate Bill 2988 from the 2008 Session of the Mississippi Legislature entitled "The Mississippi Employment Protection Act," as published in the General Laws of 2008 and codified in the Mississippi Code of 1972, as amended (Sections 71-11-1 and 71-11-3), and any rules or regulations promulgated by the Commission, the Department of Employment Security, the Department of Revenue, the Secretary of State, or the Department of Human Services in accordance with the Mississippi Administrative Procedures Law (Section 25-43-1, et seq., Mississippi Code of 1972, as amended) regarding compliance with the Act. Under this Act, the LPA and every sub-recipient or subcontractor shall register with and participate in a federal work authorization program operated by the United States Department of Homeland Security to electronically verify information of newly hired employees pursuant to the Illegal Immigration Reform and Immigration Responsibility Act of 1996, Public Law 104-208., Division C, Section 403(a); 8 USC, Section 1324a.

10. The LPA will be required to acknowledge MDOT and FHWA in all public relations efforts for the Project including press releases, materials for groundbreakings, ribbon cuttings or other public events and any other public information or media resources by notifying the MDOT Public Affairs Division, via telephone at 601-359-7074 or by electronic mail at comments@mdot.ms.gov. At a minimum, the following example sentence should be included:

"This project was funded (partially) by the Mississippi Department of Transportation and the Federal Highway Administration."

When appropriate, an invitation should be extended to MDOT Public Affairs for the Transportation Commissioner, MDOT Executive Director or other designee to speak at any official public ceremony for this Project.

11. The LPA agrees that if the Project is not kept upon a schedule that meets MDOT guidelines, then the funds allocated to the Project may be rescinded. If the Project funds are rescinded, then the LPA may be required to refund any amounts paid unto the LPA by MDOT. The MDOT guidelines are derived from Title 23, United States Code, Section 102(b) and Title 23, Code of Federal Regulations, Part 630.112(c)(2).

12. The LPA will be required to submit to the District LPA Engineer monthly progress reports through the Notice to Proceed for construction, which shall include, but not be limited to, the work that has been completed that month and the planned work for the upcoming month. The LPA will also provide a project progress schedule that will report project milestones and the target date for the LPA's request for Ad Authority. These project milestones are to be updated once any milestones are missed.

13. The LPA agrees to maintain, and make available to Commission, a sufficient accounting system with proper internal controls and safeguards to prevent fraud and overpayments. The accounting system and its controls should at all times maintain adequate recording and reporting of federal funds received by the LPA. If sufficient internal controls over the LPA's federal funding are not maintained, federal funds may be withheld and future transportation projects will not be considered.

14. The LPA agrees that any planning studies prepared or produced, as part of, or in conjunction with, this Project, shall in no way obligate the Commission to any other terms or conditions other than those stated herein.

15. The LPA, being classified as a lower tier participant in federal funding, certifies, by execution of this agreement, that neither it nor those individuals or entities with which it contracts are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

16. The LPA agrees that it will require that engineering plans prepared for the construction of the Project be signed and sealed by the professional engineer responsible for preparation of the plans. This requirement applies to the engineer assigned to the Project by a consulting engineering firm under contract to the LPA, or to an engineer that is a full-time, or part-time employee of the LPA. Further, the LPA agrees that it is solely responsible for errors and omissions that occur during Project development or during construction, regardless of any review or oversight activity on the part of MTC/MDOT.

17. The LPA agrees that once construction of the Project has commenced, the LPA is responsible for the Project being completed according to the plans and specifications, addenda or supplemental agreement as amended. The LPA acknowledges and agrees that this responsibility continues after the federal funds provided through MDOT are exhausted.

18. The LPA process is a reimbursement process, and as such if an LPA is found to have requested reimbursement prior to payment made the LPA will be held in violation of the intent of this MOA. If an LPA is found to be in violation then the LPA will be subjected to a higher level of scrutiny in review of their financial documents, and may be required to submit additional documentation. The LPA may be subjected to loss of federal funds if found in violation of the LPA reimbursement process.

B. THE COMMISSION WILL:

1. Allow the LPA to design and construct the proposed transportation improvements provided that the design meets with MTC/MDOT and FHWA approval.

2. Approve permit applications that meet with MDOT standards that are necessary to allow the LPA access to the property of the Commission for the purposes of constructing the proposed transportation improvements. The Commission may enter into an appropriate agreement in its discretion.

3. Work with the LPA, through the District LPA Engineer, during the various phases of the work with the goal of producing a project that will be acceptable to the Commission upon completion.

4. Review all submittals in a timely manner, in accordance with the PDM, to allow the Project to progress in an orderly fashion. The review and oversight conducted by MTC does not relieve the LPA from its full responsibility for the proper design and construction of the Project.

5. During the progress of the Project, assist the LPA in obtaining reimbursements of federal funding for any project cost that is eligible for reimbursement.

6. Submit all documents to the Federal Highway Administration (FHWA) when required or requested by the FHWA.

7. At its discretion, make payments directly to railroad companies, their consultants or contractors for work on railroads included in the Project. The payments made shall come from Project funds obligated for the Project.

ARTICLE II. GENERAL PROVISIONS

A. The Commission shall have the right to audit all accounts associated with the Project, and should there be any overpayment by the Commission to the LPA, the LPA agrees to refund any such overpayment within thirty (30) days of written notification. Should the LPA fail to reimburse the Commission, the Commission shall have the right to offset the amount due from any other funds in its possession that are due the LPA on this or any other project, current or future.

B. This Memorandum of Agreement shall be subject to termination at any time upon thirty (30) days written notice by either party. Such notice given by the LPA, shall not, however, cancel any contract made by the LPA that is to further the purpose of this agreement and that is underway at the time of termination. Any construction contract underway shall be allowed to conclude under its own terms. The LPA agrees to bear complete and total, legal and financial responsibility for any such contract. Additionally, funds may be suspended or terminated under the provisions of Section F of this Article.

C. It is understood that this is a Memorandum of Agreement and that more specific requirements for the development and construction of the transportation improvement Project are contained in the Federal Statutes, the Code of Federal Regulations, the Mississippi Code, and the Standard Operating Procedures for MDOT, and other related regulatory authorities. The LPA agrees that it will abide by all such applicable authority.

D. Should the LPA miss the obligation deadline set in this MOU, the Commission reserves the right to refuse to obligate funds for the Project.

E. The Executive Director of MDOT is authorized to withhold federal funds for the Project for failure of the LPA, its consultants, or its contractor to follow the requirements of the Standard Specifications for Road and Bridge Construction, latest edition, or the latest online LPA Project Development Manual.

F. Before federal funds are terminated, the LPA will be notified in writing by the Executive Director of the conditions that make termination of funds imminent. If no effective effort has been made by the LPA, its agents, employees, contractors or subcontractors, to correct the conditions set forth in the Director's notice, within fifteen (15) calendar days after notice is given, the Executive Director may declare the federal funds suspended for the Project and notify the LPA accordingly. The LPA will then have forty- five (45) days in which to correct all conditions of which complaint is made. If all conditions are not corrected within forty-five (45) days, the Executive Director may declare the federal funds for the Project terminated and notify the LPA accordingly. If all conditions are corrected, within the forty-five (45) day period, the LPA will be reimbursed under the terms of this agreement, for all work satisfactorily completed during the forty-five day period.

G. In the event that circumstances call for MDOT to expend staff time and other resources to address issues on the Project, then MDOT time may be charged to the Project. Assessing charges to a project is within the sole discretion of MDOT. Any charges made will impact the amount of funds available to reimburse the LPA, and therefore the LPA's contribution to the Project may increase.

ARTICLE III. NOTICE & DESIGNATED AGENTS

A. For purposes of implementing this section and all other sections of this Agreement with regard to notice, the following individuals are herewith designated as agents for the respective parties unless otherwise indentured in the addenda hereto:

For Contractual Administrative Matters:

COMMISSION:
Executive Director
MDOT
P.O. Box 1850
Jackson, MS 39215-1850
Phone: (601) 359-7002
Fax: (601) 359-7110

LPA:
Toby Barker, Mayor
City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403-1898
Phone: 601-545-4501

For Technical Matters:

COMMISSION:
District LPA Engineer – District Six
MDOT
16499-B Highway 49
Saucier, MS 39574-9740
Phone: 228-832-0682

LPA:
Hunter White, Int. Engineering Director
City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403-1898
Phone: 601-545-4540

B. All notices given hereunder shall be by U.S. Certified Mail, return receipt requested, or by facsimile and shall be effective only upon receipt by the addressee at the above addresses or telephone numbers.

ARTICLE IV. RELATIONSHIP OF THE PARTIES

A. The relationship of the LPA to the Commission is that of an independent contractor, and said LPA, in accordance with its status as an independent contractor, covenants and agrees that it will conduct itself consistent with such status, that it will neither hold itself out as, nor claim to be, an officer or employee of the Commission by reason hereof. The LPA will not by reason hereof, make any claim, demand or application or for any right or privilege applicable to an officer or employee of the Commission, including, but not limited to, workers' compensation coverage, unemployment insurance benefits, social security coverage, retirement membership or credit, or any form of tax withholding whatsoever.

B. The Commission executes all directives and orders through the MDOT. The LPA executes all directives and orders pursuant to applicable law, policies, procedures and regulations. All notices, communications, and correspondence between the Commission and the LPA shall be directed to the designated agent shown above in Article III.

ARTICLE V. RESPONSIBILITIES FOR CLAIMS AND LIABILITY

To the extent permitted by law, the Commission and the LPA agree that neither party nor their agents, employees, contractors or subcontractors, will be held liable for any claim, loss, damage, cost, charge or expenditure arising out of any negligent act, actions, neglect or omission caused solely by the other party, its agents, employees, contractors or subcontractors.

ARTICLE VI. MISCELLANEOUS

No modification of this Memorandum of Agreement shall be binding unless such modification shall be in writing and signed by all parties. If any provision of this Memorandum of Agreement shall be held to be invalid or unenforceable for any reason, the remaining provisions shall continue to be valid and enforceable. If a court finds that any provision of this Memorandum of Agreement is invalid or unenforceable, but that by limiting such provision it would become valid and enforceable, then such provision shall be deemed to be written, construed, and enforced as so limited.

THE REST OF THIS PAGE LEFT INTENTIONALLY BLANK

ARTICLE VII. AUTHORITY TO CONTRACT

Both parties hereto represent that they have authority to enter into this Memorandum of Agreement.

This Agreement may be executed in one or more counterparts (facsimile transmission, email or otherwise), each of which shall be an original Agreement, and all of which shall together constitute but one Agreement.

So agreed this the _____ day of _____, 20__.

City of Hattiesburg

Toby Barker, Mayor

Attested:

(Appropriate clerk etc.)

So agreed this the _____ day of _____, 20__.

MISSISSIPPI TRANSPORTATION COMMISSION
By and through the duly authorized
Executive Director

Bradley R. White
Executive Director
Mississippi Department of Transportation

Book _____, Page _____,



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Lighting Agreement with Mississippi Power Company for additional lighting for a monthly increase in pricing for the following locations per attached documents; and authorize the Mayor to execute the same.
File Number: 2023-293
Minute Book #

Summary

Approve Lighting Agreement with Mississippi Power Company for additional lighting for a monthly increase in pricing for the following locations per attached documents; and authorize the Mayor to execute the same.

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

DATE: 4/19/23

RE: STREET LIGHT REQUEST AND AUTHORIZATION LETTER

FROM: CITY/TOWN OF Hattiesburg PHONE:
AUTHORIZED SIGNATURE DATE:
DEVELOPER NAME ACCOUNT # 598418200
DEVELOPER SIGNATURE DATE:
DATE GOVERNMENTAL AUTHORITY TO TAKE OWNERSHIP OF PAYMENT:
Attach a plat for development.

**TO: MISSISSIPPI POWER COMPANY, ATTN. : (MPC LIGHTING SERVICES) P.O. Box 4079,
Gulfport, MS 39502, FAX # 228-865-5843 or Email: (G2MPCLSVC@southernco.com)**

DATE MAIL/FAX/ EMAIL RECEIVED

INSTRUCTIONS: INSTALL STREET LIGHTS AS NOTED IN THE SCHEDULE BELOW. CONSIDER THIS YOUR AUTHORIZATION TO BILL THE NEW LIGHTS UNDER THE TERMS OF THE CURRENTLY APPLICABLE STREET LIGHT RATE (SL-27) AS APPROVED BY THE MISSISSIPPI PUBLIC SERVICE COMMISSION.

PLEASE TAKE NOTICE: By and through Developer's request and execution hereof, Developer acknowledges and agrees that any electric lighting service for outdoor lighting is subject to MPC's Rules Governing Electric Service and MPC's Outdoor Lighting Electric Rate Schedule (OL-22. Developer understands and agrees that OL-22 provides for a three (3) year minimum term for lighting (other than special lighting) and Developer shall be liable to MPC for all service under the rate schedule until termination, provided however that Developer shall, in no event, be excused from liability for service during the applicable minimum term. MPC shall be entitled to pursue any and all available legal remedies in the event Developer, or Developer's successors or assigns, fails to make any and all payments as and when due during the term of service.

TYPE LIGHT	NUMBER TO INSTALL (I) NUMBER TO REMOVE (R)	LOCATION AND COMMENTS												
LED FIXTURES														
50 WATT LED	<table><tr><td>1</td><td>2</td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	1	2							<table><tr><td>500 MLK and 300 Scooba Monthly increase \$8.66 each = \$17.32</td></tr><tr><td></td></tr><tr><td></td></tr><tr><td></td></tr></table>	500 MLK and 300 Scooba Monthly increase \$8.66 each = \$17.32			
1	2													
500 MLK and 300 Scooba Monthly increase \$8.66 each = \$17.32														
90 WATT LED														
110 WATT LED														
190 WATT LED														
OTHER FIXTURES														

NOTE: FOR NON-ROUTINE INSTALLATIONS REQUIRING POLES, UNDERGROUND WIRING OR OTHER SPECIAL CONDITIONS PLEASE CONTACT YOUR MARKET SPECIALIST AND SPECIFIC CONTRACTS WILL BE PREPARED.

PLEASE FAX OR EMAIL THIS FULLY COMPLETED FORM TO MPC'S LIGHTING SERVICES DEPT. AND WE WILL INSTALL THE LIGHTING INSTALLATIONS THAT YOU REQUEST. YOU MAY ALSO USE THIS FORM TO REPORT LIGHTS NOT BURNING BY LISTING THE ESTIMATED SIZE AND LOCATION ON THE FORM AND FAXING TO US.



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Dequandra Johnson
cc: Kermas Eaton, City Clerk, Wiley Quinn, Urban Development Director
Date: Tuesday, May 2, 2023
Re: Approve Contractor and Owner Agreements for the Emergency Roof Repair Initiative for an amount not to exceed \$15,000 per project according to the Emergency Roof Repair Initiative Program Manual and authorize the Mayor to execute in triplicate.
File Number: 2023-267
Minute Book #

Summary

Approve and authorize the Mayor to execute, in triplicate, Contractor and Owner Agreement(s) and Emergency Roof Repair Initiative Grant Award(s) for an amount not to exceed \$15,000 per project according to the Emergency Roof Repair Initiative Program Manual.

- Bobbie Jean Bullock | 709 Woodland Court
- Tony May | 115 Independence Avenue
- Janice & Ronels Fortenberry | 106 Eastside Avenue
- Lena Bland - Hoard | 814 1/2 Arnold Street
- Robert Smith | 1000 North 34th Avenue

Recommendation Statement

I recommend approval of this item. Please place this on the May 2, 2023 City Council meeting for consideration.

Please place this on the May 2, 2023 City Council meeting for consideration.



URBAN DEVELOPMENT COMMUNITY DEVELOPMENT DIVISION

MEMORANDUM

TO: Mayor Barker and Members of City Council

FROM: Wiley Quinn, Director of Department of Urban Development

cc: Kermas Eaton, City Clerk

Re: Approve and authorize the Mayor to execute, in triplicate, Contractor and Owner Agreement(s) and Emergency Roof Repair Initiative Grant Award(s) for an amount not to exceed \$15,000 per project according to the Emergency Roof Repair Initiative Program Manual.

DATE: April 20, 2023

The following request to authorize and approve, in triplicate, Contractor and Owner Agreement(s) and Emergency Roof Repair Agreement(s) for the following:

- Bobbie Jean Bullock, 709 Woodland Court
- Tony May, 115 Independence Avenue
- Janice & Ronels Fortenberry, 106 Eastside Avenue
- Lena Bland-Hoard, 814 ½ Arnold Street
- Robert Smith, 1000 North 34th Avenue

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.



CITY OF HATTIESBURG COMMUNITY DEVELOPMENT
Emergency Repair Roof Initiative Program

Contractor & Owner Agreement

THIS AGREEMENT, made the 2nd day of May, 2023 and between the City of Hattiesburg Community Development Division (COHCDD) Emergency Repair Roof Initiative Program (ERRIP) and Bobbi Jean Bullock of 709 Woodland Court, hereinafter called Owner, and Starter Homes of Mississippi, with its principal place of business located at 57 Carter Drive, Seminary, Mississippi 39479, hereinafter called the Contractor.

WITNESSETH

1. SCOPE OF WORK

The Contractor shall furnish all labor, materials, tools, supplies, supervision and other services and shall perform all operations necessary and required to satisfactorily complete the work shown on the Work Write-Up and described in the specifications and other Contract Documents prepared for the **709 Woodland Court** Project by the Housing Programs Inspector, said work to be performed on the structure(s)/property located at **709 Woodland Court**, Hattiesburg, Mississippi, all in accordance with terms of the Contract Documents.

2. TIME OF COMPLETION

The Owner/COHCDD shall issue a written Notice to Proceed within 5 days from the date of the Owner/COHCDD signing of this Agreement, accepting the Contractor's bid and proposal, providing the Contractor has obtained the necessary permits and related documents (if needed) and has presented them to the Owner/COHCDD. If the Notice to Proceed is not received by the Contractor within this 5-day period, the Contractor may at his option terminate his obligation under this Agreement, provided he has obtained the necessary permits and related documentation within (15) days from the date of the Owner's/COHCDD's signing of this Agreement, the Owner/COHCDD has the option of terminating the Contract for cause.

The Contractor shall commence working within ten (10) calendar days, as time is of the essence in the completion of this contract, after issuance of the Notice to Proceed, and it is to be completed within **thirty (30) days** after issuance of the Notice to Proceed. **One hundred dollars (\$100.00) per day, as liquidated damages, will be deducted from the final payment for every day project repair completion exceeds sixty (30) days.** The Owner/COHCDD has the option of terminating the Contract for failure to commence work within the time allowed by the Contract Agreement.

3. COMPENSATION

As full consideration for the satisfactory performance by Contractor of this Contract, the Owner/COHCDD shall pay to the Contractor the sum of fourteen thousand nine hundred ninety-five dollars (\$14,995.00) subject to any written additions or deductions provided and incorporated herein, in accordance with the payment provisions of this Contract.

4. CHANGES IN THE WORK

The Owner/COHCDD without invalidating the Contract may order Changes in Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order signed by the Owner and COHCDD or their duly authorized agent. The Contract Sum and the Contract Time may be changed by a Change Order. The



cost or credit to the Owner/COHCDD from a Change in the Work shall be determined by mutual agreement before executing the Work involved.

5. CORRECTION OF WORK

The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within a period of one year from the Date of substantial Completion of the Contract or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The provisions of this statement apply to Work done by Subcontractors as well as to Work done by direct employees of the Contractor.

6. TERMINATION BY THE OWNER

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provisions of the Contract, the Owner/COHCDD may, after seven days written notice to the Contractor and without prejudice to any other remedy they may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If the Contractor's workmanship is deficient and he fails to remedy such work within a specified time period, the Owner/COHCDD, at their option, may terminate the Contract and take possession of the site and all materials, supplies and equipment incorporated in the work thereon. The Owner/COHCDD may finish the Work by whatever method they may deem expedient. If the unpaid balance of the Contract Sum exceeds the expenses of finishing the Work, such excess shall be paid to the Contractor for approved work completed, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner/COHCDD.

7. PAYMENTS/DRAWS

Payments may be withheld on account of (1) defective Work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment, (4) damage to another contractor or (5) unsatisfactory prosecution of the Work of the Contractor.

Final payment shall not be due until the Contractor has delivered to the Owner/CHOCDD filed lien waivers/releases, indemnifying them against any lien.

The making of final payment shall constitute a waiver of all claims by the Owner/COHCDD except those arising from (1) unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of Work to comply with the Requirements of the Contract Documents or (4) terms of any special guarantees required by the Contract Documents. The acceptance of the final payment shall constitute a waiver of all claims by the Contractor except those preciously made in writing and still unsettled.

1. _____
2. _____
3. _____
4. _____
5. _____



Final payment shall be due thirty (30) days after completion and acceptance of the work, provided the Contract has been satisfactorily performed, subject to the provision of the General Conditions of the Contract.

There will be deed restriction attached to **709 Woodland Court** for three (3) years. Homeowner agrees to occupy the rehabilitated home for three (3) years after rehabilitation activities are completed. The homeowner agrees to pay the prorated grant amount and legal fees associated with securing repayment to the City of Hattiesburg in the event the property is sold, transferred or disposed of prior to the expiration of the three (3) year affordability period. **Homeowner acknowledges and agrees that this contract shall be binding on his/hers/their heirs, executors and assigns.**

This agreement may not be assigned to any Contractor or Agent of Contractor. IN WITNESS WHEREOF, the parties hereto executed this Agreement the ____ day of ____, 2023.

Homeowner	Date
-----------	------

Contractor

By: _____

Date: _____

Attest: _____

CITY OF HATTIESBURG EMERGENCY REPAIR PROGRAM (10K+)
Emergency Repair Roof Initiative
GRANT AWARD AGREEMENT

General Terms and Conditions

1. ____ I certify that I currently live in and own the home for which I am accepting repair assistance.
2. ____ I agree to remain in Hattiesburg during the course of the repairs being performed and to make my home accessible between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, unless otherwise arranged.
3. ____ I understand that I am responsible for packing and storage of jewelry, family heirlooms, food, cleaning and other chemicals, lawn equipment, and toiletries for the duration of the repair work as necessary.
4. ____ I understand that the discovery of illegal activities or the use of verbal or physical threats of harm towards City employees, the contractor or his workers will result in an immediate termination of all repair activities.
5. ____ I agree that the City has irrevocable rights and permission to use my name and to use, reproduce, exhibit, copyright and publish photographic images and/or videotaped images of me and/or my home for advertising, trade and/or any other lawful purpose.
6. ____ I certify that I am not an employee of the City of Hattiesburg, nor do I have an immediate family member who is an elected official of the City of Hattiesburg nor an employee who is responsible for the administration, management and oversight of the program (Community Development Division Staff).
7. ____ I hereby agree to occupy the home to be rehabilitated for a period of not less than **three (3)** years after completion of the repairs funded under in the Emergency Roof Repair Initiative Program. **(Homeowner acknowledges and agrees that this agreement shall be binding on his/hers/their heirs, executors and assigns.)**
8. ____ I agree to repay the prorated grant amount and legal fees associated with securing repayment to the City should I sale, transfer or dispose of the property prior to the expiration of the **three (3)** year affordability period.
9. ____ I understand that I cannot apply for another Housing Rehabilitation or Housing Repair Grant within the **three (3)** year affordability period.
10. ____ I hereby agree to maintain flood insurance, when applicable.
11. ____ I hereby agree to maintain all county and city property taxes as they come due during the affordability period.
12. ____ I hereby agree that the completion of the repairs for which these grant funds are awarded shall constitute a complete work agreement and I will sign all the necessary paperwork to allow for payment to the contractor.
13. ____ I authorize the city to proceed with preliminary testing, requests for bids, and other required steps necessary in order to proceed with a project, and further understand that costs related to the same shall be added to the total cost of the project under this grant award.

By my signature below I, **Bobbi Jean Bullock of 709 Woodland Court**, agree to all the terms of this grant and understand that failure to abide by any of the terms will result in forfeiture of my grant and/or repayment of expended grant funds this the ____ day of _____, 2023.

Homeowner's Signature

Spouse's Signature

GRANT AWARD

The Homeowner(s), , **Bobbi Jean Bullock of 709 Woodland Court** is hereby awarded a Housing Rehabilitation Award for costs associated with the repair or rehabilitation of **709 Woodland Court**. The amount of the award shall be the actual cumulative cost of all related preparation and work, including but not limited to: preliminary environmental testing, required abatement work, construction costs, any required legal filing fees, any change orders/discovery repairs and any approved voluntary temporary relocation assistance. General construction/rehabilitation/repair costs are not to exceed \$15,000, excluding change orders/discovery repairs necessary to meet building codes and program standards according to the Emergency Repair Roof Initiative Program.

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kermas Eaton, City Clerk

GENERAL CONTRACTOR EMERGENC REPAIR ROOF PROGRAM
WORK AGREEMENT

For Roof Repair Work At: 709 Woodland Court – Bobbie Jean Bullock

1. _____ I propose to furnish all materials and perform all labor necessary to complete the work described in the attached Work Write-Up/Bid Solicitation.
2. _____ I agree that all work will be completed with quality workmanship and materials and I certify that no lead-based paint will be used on this job.
3. _____ I will begin work within ten (10) working days after receiving the **Notice to Proceed**, and I will complete the job within sixty (30) days of the start date.
4. _____ I will purchase, maintain and furnish evidence of Comprehensive Business Liability Insurance coverage during the life of the contract, in an amount not less than \$50,000 in the event of bodily injury including death and \$2,000.00 in the event of property damage arising out of work performed by me.
5. _____ I will obtain all permits and licenses necessary for the completion and execution of the work and labor to be performed.
6. _____ I will perform all work in conformance with the terms shown in Article 8 of the General Conditions, Exhibit J.
7. _____ I certify that I will perform all work in conformance with local codes and in conformance with the City of Hattiesburg’s CDBG/HOME Contractors Performance Standards, Exhibit K.
8. _____ I agree that I will not discriminate against any persons employed by my company or any applicant for employment with my company because of age, race, color, religion, sex, handicap, familial status, national origin or because of any political or union affiliation. In accordance with 24 CFR Part 8 as required by Section 504 Regulations, there shall be no discrimination on the basis of handicap in admission, access to, treatment or employment in federally assisted programs and activities. The City of Hattiesburg Department of Urban Development shall coordinate compliance of this part and is hereby the designee to handle any grievances concerning violation of these regulations.
9. _____ I will clean construction debris from the dwelling and the site to a dumpster or a code legal dump at least daily, and I will leave the property in a broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, I will vacuum all occupied spaces at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. I will acquire approval from Community Development prior to prohibiting access to any work site, and I will notify the owner.
10. _____ I will furnish the original of all manufacturers' and suppliers' written guarantees and warranties covering materials and equipment to the City of Hattiesburg for forwarding to the Homeowner.
11. _____ I understand that a *Request for Payment with Invoice*, and when applicable the *Lien Waiver and Release of Lien* *Waivers* must be completed and submitted according to the Request for Payment Processing Schedule.
12. _____ I understand that payment may be made by percentage of completion, not to exceed 70% until completion of the work, provided this Agreement be then fully executed, subject to the provisions of Article 8 of the General Conditions, Exhibit J.
13. _____ I understand that the homeowner can not authorize any other contractor/individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs Program to make repairs to the premise during the duration of this Grant Agreement.
14. _____ I understand that if any contractor/ individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs program performs any repairs to the premises; it is my responsibility to report it immediately to the Housing Program Inspector or the Housing Coordinator immediately, all the terms of the Grant Agreement may be voided and the grant award to the homeowner forfeited.

This work will be completed for the sum of **\$14,995.00**. ***ALL WORKMANSHIP IS SUBJECT TO A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR.**

CONTRACT ACCEPTANCE

You are hereby authorized to furnish all materials and labor required to complete the work mentioned in the above proposal, for which I agree to approve the payment in the amount specified in said proposal, and according to the terms thereof, on this the 2nd day of May, 2023.

Starter Homes of Mississippi		Date
Bobbi Jean Bullock, Signature	Date	Other Homeowner, Signature
City of Hattiesburg – Witness		Date



Department of Urban Development Community Development Division

Homeowner: Bobbie Jean Bullock

Phone:

WORK WRITE-UP

Address: 709 Woodland Court

Completed and Approved By:

Project Type: ☐ Rehab ☐ Repair ☐ Special Project ☐ Adopt a Home ☐ World Changers HP Inspector: _____ Date: _____
Special Classifications: ☐ N/A ☐ Historic District ☐ 50 Years + ☐ Flood Zone ☐ Lead ☐ Asbestos

Reviewed and Approved By:

Contract Date:

Housing Coordinator: _____ Date: _____

Contractor:

Housing Manager: _____ Date: _____

General Requirements: All repairs are to be performed in accordance with the guidelines and material specifications listed in the City of Hattiesburg's Housing Rehabilitation and Housing Repair Grants Program Manual for CDBG/HOME, Contractor's Performance Standards Rehabilitation and the 2018 International Residential Code.

ITEM NO.	WORK DESCRIPTION	ESTIMATED COST
<u>ROOF</u>		
1.	Remove metal roof & lathing	3000
2.	Replace all deteriorated decking and framing	2300
3.	Install nail over ridge vent	760
4.	Install new synthetic felt	600
5.	Install new vent pipe boots	200
6.	Replace deteriorated fascia and soffit; caulk and paint to match	600
7.	Install new drip edge	600
8.	Install 25-year mid-grade architectural shingles	6995
TOTAL:		14995

****Notes****

Front access only. Has metal roof & ¾" damaged decking. Large roof.

*** Contractor is responsible for walking the roof to identify soft spots and deteriorated decking and/or checking the interior of the structure for leaks and water damage associated with roof deterioration. Call for inspection when shingles and decking is removed.





CITY OF HATTIESBURG COMMUNITY DEVELOPMENT
Emergency Repair Roof Initiative Program

Contractor & Owner Agreement

THIS AGREEMENT, made the 2nd day of May, 2023 and between the City of Hattiesburg Community Development Division (COHCDD) Emergency Repair Roof Initiative Program (ERRIP) and Tony May of 115 Independence Avenue, hereinafter called Owner, and Starter Homes of Mississippi, with its principal place of business located at 57 Carter Drive, Seminary, Mississippi 39479, hereinafter called the Contractor.

WITNESSETH

1. SCOPE OF WORK

The Contractor shall furnish all labor, materials, tools, supplies, supervision and other services and shall perform all operations necessary and required to satisfactorily complete the work shown on the Work Write-Up and described in the specifications and other Contract Documents prepared for the **115 Independence Avenue** Project by the Housing Programs Inspector, said work to be preformed on the structure(s)/property located at **115 Independence Avenue**, Hattiesburg, Mississippi, all in accordance with terms of the Contract Documents.

2. TIME OF COMPLETION

The Owner/COHCDD shall issue a written Notice to Proceed within 5 days from the date of the Owner/COHCDD signing of this Agreement, accepting the Contractor's bid and proposal, providing the Contractor has obtained the necessary permits and related documents (if needed) and has presented them to the Owner/COHCDD. If the Notice to Proceed is not received by the Contractor within this 5-day period, the Contractor may at his option terminate his obligation under this Agreement, provided he has obtained the necessary permits and related documentation within (15) days from the date of the Owner's/COHCDD's signing of this Agreement, the Owner/COHCDD has the option of terminating the Contract for cause. The Contractor shall commence working within ten (10) calendar days, as time is of the essence in the completion of this contract, after issuance of the Notice to Proceed, and it is to be completed within **thirty (30) days** after issuance of the Notice to Proceed. **One hundred dollars (\$100.00) per day, as liquidated damages, will be deducted from the final payment for every day project repair completion exceeds sixty (30) days.** The Owner/COHCDD has the option of terminating the Contract for failure to commence work within the time allowed by the Contract Agreement.

3. COMPENSATION

As full consideration for the satisfactory performance by Contractor of this Contract, the Owner/COHCDD shall pay to the Contractor the sum of thirteen thousand one hundred fifty dollars (\$13,150.00) subject to any written additions or deductions provided and incorporated herein, in accordance with the payment provisions of this Contract.

4. CHANGES IN THE WORK

The Owner/COHCDD without invalidating the Contract may order Changes in Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order signed by the Owner and COHCDD or their duly authorized agent. The Contract Sum and the Contract Time may be changed by a Change Order. The



cost or credit to the Owner/COHCDD from a Change in the Work shall be determined by mutual agreement before executing the Work involved.

5. CORRECTION OF WORK

The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within a period of one year from the Date of substantial Completion of the Contract or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The provisions of this statement apply to Work done by Subcontractors as well as to Work done by direct employees of the Contractor.

6. TERMINATION BY THE OWNER

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provisions of the Contract, the Owner/COHCDD may, after seven days written notice to the Contractor and without prejudice to any other remedy they may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If the Contractor's workmanship is deficient and he fails to remedy such work within a specified time period, the Owner/COHCDD, at their option, may terminate the Contract and take possession of the site and all materials, supplies and equipment incorporated in the work thereon. The Owner/COHCDD may finish the Work by whatever method they may deem expedient. If the unpaid balance of the Contract Sum exceeds the expenses of finishing the Work, such excess shall be paid to the Contractor for approved work completed, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner/COHCDD.

7. PAYMENTS/DRAWS

Payments may be withheld on account of (1) defective Work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment, (4) damage to another contractor or (5) unsatisfactory prosecution of the Work of the Contractor.

Final payment shall not be due until the Contractor has delivered to the Owner/CHOCDD filed lien waivers/releases, indemnifying them against any lien.

The making of final payment shall constitute a waiver of all claims by the Owner/COHCDD except those arising from (1) unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of Work to comply with the Requirements of the Contract Documents or (4) terms of any special guarantees required by the Contract Documents. The acceptance of the final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and still unsettled.

1. _____
2. _____
3. _____
4. _____
5. _____



8. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due thirty (30) days after completion and acceptance of the work, provided the Contract has been satisfactorily performed, subject to the provision of the General Conditions of the Contract.

9. DEED RESTRICTION

There will be deed restriction attached to **115 Independence Avenue** for three (3) years. Homeowner agrees to occupy the rehabilitated home for three (3) years after rehabilitation activities are completed. The homeowner agrees to pay the prorated grant amount and legal fees associated with securing repayment to the City of Hattiesburg in the event the property is sold, transferred or disposed of prior to the expiration of the three (3) year affordability period. **Homeowner acknowledges and agrees that this contract shall be binding on his/hers/their heirs, executors and assigns.**

10. ASSIGNMENT OF CONTRACT

This agreement may not be assigned to any Contractor or Agent of Contractor. IN WITNESS WHEREOF, the parties hereto executed this Agreement the _____ day of _____, 2023.

Tony May	Date	Homeowner	Date

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kermas Eaton, City Clerk

Homeowner	Date
-----------	------

Contractor

By: _____

Date: _____

Attest: _____

CITY OF HATTIESBURG EMERGENCY REPAIR PROGRAM (10K+)
Emergency Repair Roof Initiative
GRANT AWARD AGREEMENT

General Terms and Conditions

1. ____ I certify that I currently live in and own the home for which I am accepting repair assistance.
2. ____ I agree to remain in Hattiesburg during the course of the repairs being performed and to make my home accessible between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, unless otherwise arranged.
3. ____ I understand that I am responsible for packing and storage of jewelry, family heirlooms, food, cleaning and other chemicals, lawn equipment, and toiletries for the duration of the repair work as necessary.
4. ____ I understand that the discovery of illegal activities or the use of verbal or physical threats of harm towards City employees, the contractor or his workers will result in an immediate termination of all repair activities.
5. ____ I agree that the City has irrevocable rights and permission to use my name and to use, reproduce, exhibit, copyright and publish photographic images and/or videotaped images of me and/or my home for advertising, trade and/or any other lawful purpose.
6. ____ I certify that I am not an employee of the City of Hattiesburg, nor do I have an immediate family member who is an elected official of the City of Hattiesburg nor an employee who is responsible for the administration, management and oversight of the program (Community Development Division Staff).
7. ____ I hereby agree to occupy the home to be rehabilitated for a period of not less than **three (3)** years after completion of the repairs funded under in the Emergency Roof Repair Initiative Program. **(Homeowner acknowledges and agrees that this agreement shall be binding on his/hers/their heirs, executors and assigns.)**
8. ____ I agree to repay the prorated grant amount and legal fees associated with securing repayment to the City should I sale, transfer or dispose of the property prior to the expiration of the **three (3)** year affordability period.
9. ____ I understand that I cannot apply for another Housing Rehabilitation or Housing Repair Grant within the **three (3)** year affordability period.
10. ____ I hereby agree to maintain flood insurance, when applicable.
11. ____ I hereby agree to maintain all county and city property taxes as they come due during the affordability period.
12. ____ I hereby agree that the completion of the repairs for which these grant funds are awarded shall constitute a complete work agreement and I will sign all the necessary paperwork to allow for payment to the contractor.
13. ____ I authorize the city to proceed with preliminary testing, requests for bids, and other required steps necessary in order to proceed with a project, and further understand that costs related to the same shall be added to the total cost of the project under this grant award.

By my signature below I, **Tony May of 115 Independence Avenue**, agree to all the terms of this grant and understand that failure to abide by any of the terms will result in forfeiture of my grant and/or repayment of expended grant funds this the ____ day of _____, 2023.

Homeowner's Signature

Spouse's Signature

GRANT AWARD

The Homeowner(s), , **Tony May of 115 Independence Avenue** is hereby awarded a Housing Rehabilitation Award for costs associated with the repair or rehabilitation of **115 Independence Avenue**. The amount of the award shall be the actual cumulative cost of all related preparation and work, including but not limited to: preliminary environmental testing, required abatement work, construction costs, any required legal filing fees, any change orders/discovery repairs and any approved voluntary temporary relocation assistance. General construction/rehabilitation/repair costs are not to exceed \$15,000, excluding change orders/discovery repairs necessary to meet building codes and program standards according to the Emergency Repair Roof Initiative Program.

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kermas Eaton, City Clerk

GENERAL CONTRACTOR EMERGENC REPAIR ROOF PROGRAM
WORK AGREEMENT

For Roof Repair Work At: 115 Independence Avenue – Tony May

1. _____ I propose to furnish all materials and perform all labor necessary to complete the work described in the attached Work Write-Up/Bid Solicitation.
2. _____ I agree that all work will be completed with quality workmanship and materials and I certify that no lead-based paint will be used on this job.
3. _____ I will begin work within ten (10) working days after receiving the **Notice to Proceed**, and I will complete the job within sixty (30) days of the start date.
4. _____ I will purchase, maintain and furnish evidence of Comprehensive Business Liability Insurance coverage during the life of the contract, in an amount not less than \$50,000 in the event of bodily injury including death and \$2,000.00 in the event of property damage arising out of work performed by me.
5. _____ I will obtain all permits and licenses necessary for the completion and execution of the work and labor to be performed.
6. _____ I will perform all work in conformance with the terms shown in Article 8 of the General Conditions, Exhibit J.
7. _____ I certify that I will perform all work in conformance with local codes and in conformance with the City of Hattiesburg's CDBG/HOME Contractors Performance Standards, Exhibit K.
8. _____ I agree that I will not discriminate against any persons employed by my company or any applicant for employment with my company because of age, race, color, religion, sex, handicap, familial status, national origin or because of any political or union affiliation. In accordance with 24 CFR Part 8 as required by Section 504 Regulations, there shall be no discrimination on the basis of handicap in admission, access to, treatment or employment in federally assisted programs and activities. The City of Hattiesburg Department of Urban Development shall coordinate compliance of this part and is hereby the designee to handle any grievances concerning violation of these regulations.
9. _____ I will clean construction debris from the dwelling and the site to a dumpster or a code legal dump at least daily, and I will leave the property in a broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, I will vacuum all occupied spaces at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. I will acquire approval from Community Development prior to prohibiting access to any work site, and I will notify the owner.
10. _____ I will furnish the original of all manufacturers' and suppliers' written guarantees and warranties covering materials and equipment to the City of Hattiesburg for forwarding to the Homeowner.
11. _____ I understand that a *Request for Payment* with *Invoice*, and when applicable the *Lien Waiver* and *Release of Lien Waivers* must be completed and submitted according to the Request for Payment Processing Schedule.
12. _____ I understand that payment may be made by percentage of completion, not to exceed 70% until completion of the work, provided this Agreement be then fully executed, subject to the provisions of Article 8 of the General Conditions, Exhibit J.
13. _____ I understand that the homeowner can not authorize any other contractor/individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs Program to make repairs to the premise during the duration of this Grant Agreement.
14. _____ I understand that if any contractor/ individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs program performs any repairs to the premises; it is my responsibility to report it immediately to the Housing Program Inspector or the Housing Coordinator immediately, all the terms of the Grant Agreement may be voided and the grant award to the homeowner forfeited.

This work will be completed for the sum of **\$13,150.00**. ****ALL WORKMANSHIP IS SUBJECT TO A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR.***

CONTRACT ACCEPTANCE

You are hereby authorized to furnish all materials and labor required to complete the work mentioned in the above proposal, for which I agree to approve the payment in the amount specified in said proposal, and according to the terms thereof, on this the 2nd day of May, 2023.

Tony May, Signature _____ Date _____

City of Hattiesburg – Witness _____ Date _____

Starter Homes of Mississippi _____ Date _____

Other Homeowner, Signature _____ Date _____



Department of Urban Development Community Development Division

Owner: May

ress: 115 Independence Drive

ect Type: ☐ Rehab ☒ Repair ☐ Special Project

ial Classifications: ☐ N/A ☐ Historic District ☐ 50 Years + ☐ Flood Zone

tract Date:

tractor:

Phone:

WORK WRITE-UP

Completed and Approved By: HP Inspector: SJP

Reviewed and Approved By: Housing Coordinator: Date: 3/2/2023

Housing Manager: Date:

General Requirements: All repairs are to be performed in accordance with the guidelines and material specifications listed in the City of Hattiesburg's Housing Rehabilitation and Housing Repair Grants Program Manual for CDBG/HOME, Contractor's Performance Standards Rehabilitation and the 2018 International Residential Code.

ITEM

10. WORK DESCRIPTION

ROOF

- 1. Remove shingles and felt down to the decking
- 2. Replace all deteriorated decking and framing
- 3. Replace all deteriorated soffit and fascia
- 4. Cut out slot for ridge vent
- 5. Install roof edge
- 6. Install new synthetic felt
- 7. Install new pipe boots
- 8. Install 25-year mid-grade architectural shingles
- 9. Install ridge vent and cap

ESTIMATED COST

1700
1800
1800
200
600
105
300
6050
300

Total Cost: 13,150

<<Notes>>

Holes in roof. New molding. Extend rear stoop past water cooler. Drip edge. Replace all deteriorated wood.

*Contractor is responsible for walking the roof to identify soft spots and deteriorated decking and/or checking the interior of structure for leaks and water damage associated with roof deterioration. Call for inspection when shingles and decking is moved.





CITY OF HATTIESBURG COMMUNITY DEVELOPMENT
Emergency Repair Roof Initiative Program

Contractor & Owner Agreement

THIS AGREEMENT, made the 2nd day of May, 2023 and between the City of Hattiesburg Community Development Division (COHCDD) Emergency Repair Roof Initiative Program (ERRIP) and Janice and Ronels Fortenberry of 106 Eastside Avenue, hereinafter called Owner, and Starter Homes of Mississippi, with its principal place of business located at 57 Carter Drive, Seminary, Mississippi 39479, hereinafter called the Contractor.

WITNESSETH

1. SCOPE OF WORK

The Contractor shall furnish all labor, materials, tools, supplies, supervision and other services and shall perform all operations necessary and required to satisfactorily complete the work shown on the Work Write-Up and described in the specifications and other Contract Documents prepared for the **106 Eastside Avenue** Project by the Housing Programs Inspector, said work to be performed on the structure(s)/property located at **106 Eastside Avenue, Hattiesburg, Mississippi**, all in accordance with terms of the Contract Documents.

2. TIME OF COMPLETION

The Owner/COHCDD shall issue a written Notice to Proceed within 5 days from the date of the Owner/COHCDD signing of this Agreement, accepting the Contractor's bid and proposal, providing the Contractor has obtained the necessary permits and related documents (if needed) and has presented them to the Owner/COHCDD. If the Notice to Proceed is not received by the Contractor within this 5-day period, the Contractor may at his option terminate his obligation under this Agreement, provided he has obtained the necessary permits and related documentation within (15) days from the date of the Owner's/COHCDD's signing of this Agreement, the Owner/COHCDD has the option of terminating the Contract for cause.

The Contractor shall commence working within ten (10) calendar days, as time is of the essence in the completion of this contract, after issuance of the Notice to Proceed, and it is to be completed within **thirty (30) days** after issuance of the Notice to Proceed. **One hundred dollars (\$100.00) per day, as liquidated damages, will be deducted from the final payment for every day project repair completion exceeds sixty (30) days.** The Owner/COHCDD has the option of terminating the Contract for failure to commence work within the time allowed by the Contract Agreement.

3. COMPENSATION

As full consideration for the satisfactory performance by Contractor of this Contract, the Owner/COHCDD shall pay to the Contractor the sum of fourteen thousand six hundred dollars (\$14,600.00) subject to any written additions or deductions provided and incorporated herein, in accordance with the payment provisions of this Contract.

4. CHANGES IN THE WORK

The Owner/COHCDD without invalidating the Contract may order Changes in Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order signed by the Owner and COHCDD or their duly authorized agent. The Contract Sum and the Contract Time may be changed by a Change Order. The



cost or credit to the Owner/COHCDD from a Change in the Work shall be determined by mutual agreement before executing the Work involved.

5. CORRECTION OF WORK

The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within a period of one year from the Date of substantial Completion of the Contract or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The provisions of this statement apply to Work done by Subcontractors as well as to Work done by direct employees of the Contractor.

6. TERMINATION BY THE OWNER

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provisions of the Contract, the Owner/COHCDD may, after seven days written notice to the Contractor and without prejudice to any other remedy they may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If the Contractor's workmanship is deficient and he fails to remedy such work within a specified time period, the Owner/COHCDD, at their option, may terminate the Contract and take possession of the site and all materials, supplies and equipment incorporated in the work thereon. The Owner/COHCDD may finish the Work by whatever method they may deem expedient. If the unpaid balance of the Contract Sum exceeds the expenses of finishing the Work, such excess shall be paid to the Contractor for approved work completed, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner/COHCDD.

7. PAYMENTS/DRAWS

Payments may be withheld on account of (1) defective Work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment, (4) damage to another contractor or (5) unsatisfactory prosecution of the Work of the Contractor.

Final payment shall not be due until the Contractor has delivered to the Owner/CHOCDD filed lien waivers/releases, indemnifying them against any lien.

The making of final payment shall constitute a waiver of all claims by the Owner/COHCDD except those arising from (1) unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of Work to comply with the Requirements of the Contract Documents or (4) terms of any special guarantees required by the Contract Documents. The acceptance of the final payment shall constitute a wavier of all claims by the Contractor except those preciously made in writing and still unsettled.

1. _____
2. _____
3. _____
4. _____
5. _____



8. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due thirty (30) days after completion and acceptance of the work, provided the Contract has been satisfactorily performed, subject to the provision of the General Conditions of the Contract.

9. DEED RESTRICTION

There will be deed restriction attached to **106 Eastside Avenue** for three (3) years. Homeowner agrees to occupy the rehabilitated home for three (3) years after rehabilitation activities are completed. The homeowner agrees to pay the prorated grant amount and legal fees associated with securing repayment to the City of Hattiesburg in the event the property is sold, transferred or disposed of prior to the expiration of the three (3) year affordability period. **Homeowner acknowledges and agrees that this contract shall be binding on his/hers/their heirs, executors and assigns.**

10. ASSIGNMENT OF CONTRACT

This agreement may not be assigned to any Contractor or Agent of Contractor. IN WITNESS WHEREOF, the parties hereto executed this Agreement the ____ day of _____, 2023.

Janice Fortenberry

Date

Ronels Fortenberry

Date

City of Hattiesburg, Mississippi

Contractor

By: _____

Toby Barker, Mayor

By: _____

Date: May 2, 2023

Date: _____

Attest: _____

Kermas Eaton, City Clerk

Attest: _____

CITY OF HATTIESBURG EMERGENCY REPAIR PROGRAM (10K+)
Emergency Repair Roof Initiative
GRANT AWARD AGREEMENT

General Terms and Conditions

1. _____ I certify that I currently live in and own the home for which I am accepting repair assistance.
2. _____ I agree to remain in Hattiesburg during the course of the repairs being performed and to make my home accessible between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, unless otherwise arranged.
3. _____ I understand that I am responsible for packing and storage of jewelry, family heirlooms, food, cleaning and other chemicals, lawn equipment, and toiletries for the duration of the repair work as necessary.
4. _____ I understand that the discovery of illegal activities or the use of verbal or physical threats of harm towards City employees, the contractor or his workers will result in an immediate termination of all repair activities.
5. _____ I agree that the City has irrevocable rights and permission to use my name and to use, reproduce, exhibit, copyright and publish photographic images and/or videotaped images of me and/or my home for advertising, trade and/or any other lawful purpose.
6. _____ I certify that I am not an employee of the City of Hattiesburg, nor do I have an immediate family member who is an elected official of the City of Hattiesburg nor an employee who is responsible for the administration, management and oversight of the program (Community Development Division Staff).
7. _____ I hereby agree to occupy the home to be rehabilitated for a period of not less than **three (3)** years after completion of the repairs funded under in the Emergency Roof Repair Initiative Program. **(Homeowner acknowledges and agrees that this agreement shall be binding on his/hers/their heirs, executors and assigns.)**
8. _____ I agree to repay the prorated grant amount and legal fees associated with securing repayment to the City should I sale, transfer or dispose of the property prior to the expiration of the **three (3)** year affordability period.
9. _____ I understand that I cannot apply for another Housing Rehabilitation or Housing Repair Grant within the **three (3)** year affordability period.
10. _____ I hereby agree to maintain flood insurance, when applicable.
11. _____ I hereby agree to maintain all county and city property taxes as they come due during the affordability period.
12. _____ I hereby agree that the completion of the repairs for which these grant funds are awarded shall constitute a complete work agreement and I will sign all the necessary paperwork to allow for payment to the contractor.
13. _____ I authorize the city to proceed with preliminary testing, requests for bids, and other required steps necessary in order to proceed with a project, and further understand that costs related to the same shall be added to the total cost of the project under this grant award.

By my signature below I, **Janice & Ronels Fortenberry of 106 Eastside Avenue**, agree to all the terms of this grant and understand that failure to abide by any of the terms will result in forfeiture of my grant and/or repayment of expended grant funds this the ____ day of _____, 2023.

Homeowner's Signature

Spouse's Signature

GRANT AWARD

The Homeowner(s), , **Janice & Ronels Fortenberry of 106 Eastside Avenue** is hereby awarded a Housing Rehabilitation Award for costs associated with the repair or rehabilitation of **106 Eastside Avenue**. The amount of the award shall be the actual cumulative cost of all related preparation and work, including but not limited to: preliminary environmental testing, required abatement work, construction costs, any required legal filing fees, any change orders/discovery repairs and any approved voluntary temporary relocation assistance. General construction/rehabilitation/repair costs are not to exceed \$15,000, excluding change orders/discovery repairs necessary to meet building codes and program standards according to the Emergency Repair Roof Initiative Program.

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kermas Eaton, City Clerk

GENERAL CONTRACTOR EMERGENC REPAIR ROOF PROGRAM
WORK AGREEMENT

For Roof Repair Work At: 106 Eastside Avenue – Janice & Ronels Fortenberry

1. _____ I propose to furnish all materials and perform all labor necessary to complete the work described in the attached Work Write-Up/Bid Solicitation.
2. _____ I agree that all work will be completed with quality workmanship and materials and I certify that no lead-based paint will be used on this job.
3. _____ I will begin work within ten (10) working days after receiving the **Notice to Proceed**, and I will complete the job within sixty (30) days of the start date.
4. _____ I will purchase, maintain and furnish evidence of Comprehensive Business Liability Insurance coverage during the life of the contract, in an amount not less than \$50,000 in the event of bodily injury including death and \$2,000.00 in the event of property damage arising out of work performed by me.
5. _____ I will obtain all permits and licenses necessary for the completion and execution of the work and labor to be performed.
6. _____ I will perform all work in conformance with the terms shown in Article 8 of the General Conditions, Exhibit J.
7. _____ I certify that I will perform all work in conformance with local codes and in conformance with the City of Hattiesburg’s CDBG/HOME Contractors Performance Standards, Exhibit K.
8. _____ I agree that I will not discriminate against any persons employed by my company or any applicant for employment with my company because of age, race, color, religion, sex, handicap, familial status, national origin or because of any political or union affiliation. In accordance with 24 CFR Part 8 as required by Section 504 Regulations, there shall be no discrimination on the basis of handicap in admission, access to, treatment or employment in federally assisted programs and activities. The City of Hattiesburg Department of Urban Development shall coordinate compliance of this part and is hereby the designee to handle any grievances concerning violation of these regulations.
9. _____ I will clean construction debris from the dwelling and the site to a dumpster or a code legal dump at least daily, and I will leave the property in a broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, I will vacuum all occupied spaces at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. I will acquire approval from Community Development prior to prohibiting access to any work site, and I will notify the owner.
10. _____ I will furnish the original of all manufacturers' and suppliers' written guarantees and warranties covering materials and equipment to the City of Hattiesburg for forwarding to the Homeowner.
11. _____ I understand that a *Request for Payment* with *Invoice*, and when applicable the *Lien Waiver* and *Release of Lien* *Waivers* must be completed and submitted according to the Request for Payment Processing Schedule.
12. _____ I understand that payment may be made by percentage of completion, not to exceed 70% until completion of the work, provided this Agreement be then fully executed, subject to the provisions of Article 8 of the General Conditions, Exhibit J.
13. _____ I understand that the homeowner can not authorize any other contractor/individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs Program to make repairs to the premise during the duration of this Grant Agreement.
14. _____ I understand that if any contractor/ individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs program performs any repairs to the premises; it is my responsibility to report it immediately to the Housing Program Inspector or the Housing Coordinator immediately, all the terms of the Grant Agreement may be voided and the grant award to the homeowner forfeited.

This work will be completed for the sum of **\$14,600.00.** ***ALL WORKMANSHIP IS SUBJECT TO A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR.**

CONTRACT ACCEPTANCE

You are hereby authorized to furnish all materials and labor required to complete the work mentioned in the above proposal, for which I agree to approve the payment in the amount specified in said proposal, and according to the terms thereof, on this the 2nd day of May, 2023.

_____	_____	_____	_____
Janice Fortenberry, Signature	Date	Starter Homes of Mississippi	Date
_____	_____	Ronels Fortenberry, Signature	Date

City of Hattiesburg – Witness

Date



Department of Urban Development Community Development Division

Homeowner:

Phone:

WORK WRITE-UP

Address: 106 Eastside Avenue

Completed and Approved By:

Project Type: ☐ Rehab ☐ Repair ☐ Special Project ☐ Adopt a Home ☐ World Changers

HP Inspector:

Date:

Special Classifications: ☐ N/A ☐ Historic District ☐ 50 Years + ☐ Flood Zone ☐ Lead ☐ Asbestos

Reviewed and Approved By:

Contract Date:

Housing Coordinator:

Date:

Contractor:

Housing Manager:

Date:

General Requirements: All repairs are to be performed in accordance with the guidelines and material specifications listed in the City of Hattiesburg's Housing Rehabilitation and Housing Repair Grants Program Manual for CDBG/HOME, Contractor's Performance Standards Rehabilitation and the 2018 International Residential Code.

ITEM

NO.

WORK DESCRIPTION

ROOF

ESTIMATED COST

1. Remove shingles and felt down to the decking
2. Replace all deteriorated decking and framing
3. Install nail-over ridge vent
4. Install new synthetic felt
5. Install new vent pipe boots
6. Replace any deteriorated fascia and soffit; caulk and paint to match
7. Install new drip edge
8. Install 25-year mid-grade architectural shingles

2400
1500
700
600
300
1200
600
7300

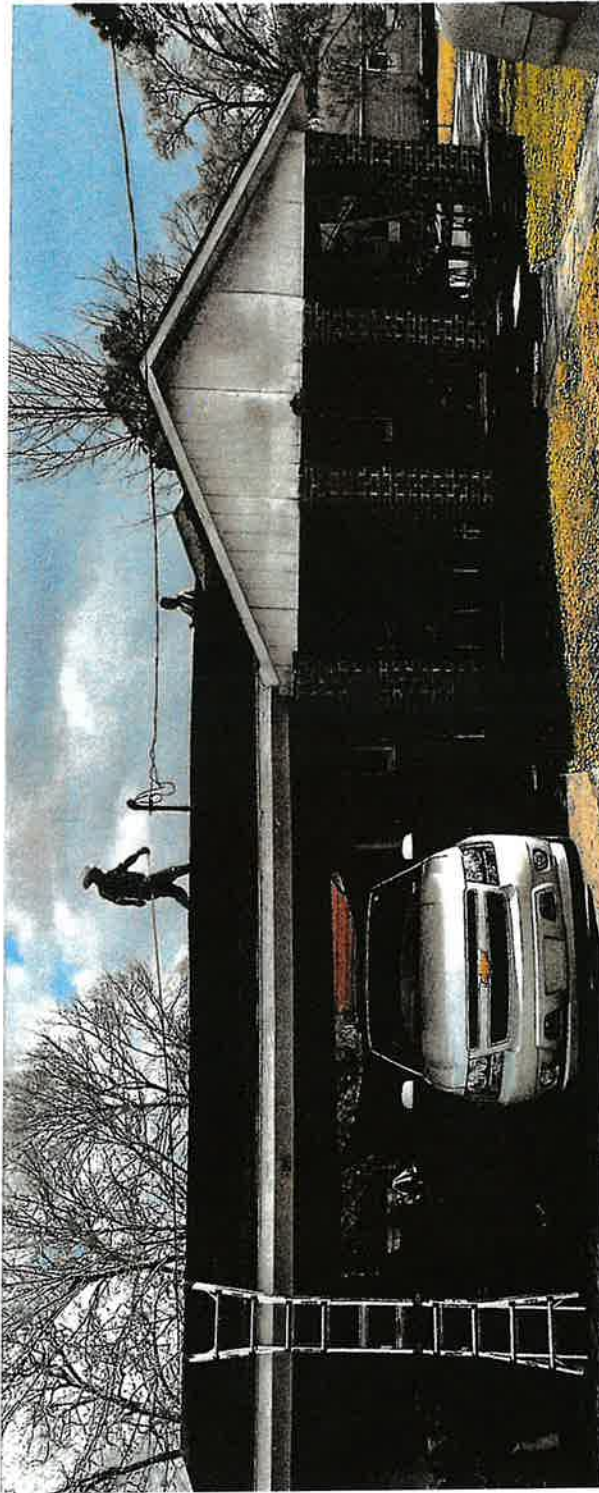
TOTAL:

14,600

Notes

No back access. Sits within feet of a busy intersection. Remove tree limbs from tree that is located on Katie Avenue side of home.

*** Contractor is responsible for walking the roof to identify soft spots and deteriorated decking and/or checking the interior of the structure for leaks and water damage associated with roof deterioration. Call for inspection when shingles and decking is removed.





CITY OF HATTIESBURG COMMUNITY DEVELOPMENT
Emergency Repair Roof Initiative Program

Contractor & Owner Agreement

THIS AGREEMENT, made the 2nd day of May, 2023 and between the City of Hattiesburg Community Development Division (COHCDD) Emergency Repair Roof Initiative Program (ERRIP) and Lena Bland-Hoard of 814 ½ Arnold Street, hereinafter called Owner, and Starter Homes of Mississippi, with its principal place of business located at 57 Carter Drive, Seminary, Mississippi 39479, hereinafter called the Contractor.

WITNESSETH

1. SCOPE OF WORK

The Contractor shall furnish all labor, materials, tools, supplies, supervision and other services and shall perform all operations necessary and required to satisfactorily complete the work shown on the Work Write-Up and described in the specifications and other Contract Documents prepared for the **814 ½ Arnold Street** Project by the Housing Programs Inspector, said work to be performed on the structure(s)/property located at **814 ½ Arnold Street**, Hattiesburg, Mississippi, all in accordance with terms of the Contract Documents.

2. TIME OF COMPLETION

The Owner/COHCDD shall issue a written Notice to Proceed within 5 days from the date of the Owner/COHCDD signing of this Agreement, accepting the Contractor's bid and proposal, providing the Contractor has obtained the necessary permits and related documents (if needed) and has presented them to the Owner/COHCDD. If the Notice to Proceed is not received by the Contractor within this 5-day period, the Contractor may at his option terminate his obligation under this Agreement, provided he has obtained the necessary permits and related documentation within (15) days from the date of the Owner's/COHCDD's signing of this Agreement, the Owner/COHCDD has the option of terminating the Contract for cause.

The Contractor shall commence working within ten (10) calendar days, as time is of the essence in the completion of this contract, after issuance of the Notice to Proceed, and it is to be completed within **thirty (30) days** after issuance of the Notice to Proceed. **One hundred dollars (\$100.00) per day, as liquidated damages, will be deducted from the final payment for every day project repair completion exceeds sixty (30) days.** The Owner/COHCDD has the option of terminating the Contract for failure to commence work within the time allowed by the Contract Agreement.

3. COMPENSATION

As full consideration for the satisfactory performance by Contractor of this Contract, the Owner/COHCDD shall pay to the Contractor the sum of fourteen thousand one hundred seventy-five dollars (\$14,175.00) subject to any written additions or deductions provided and incorporated herein, in accordance with the payment provisions of this Contract.

4. CHANGES IN THE WORK

The Owner/COHCDD without invalidating the Contract may order Changes in Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order signed by the Owner and COHCDD or their duly authorized agent. The Contract Sum and the Contract Time may be changed by a Change Order. The



cost or credit to the Owner/COHCDD from a Change in the Work shall be determined by mutual agreement before executing the Work involved.

5. CORRECTION OF WORK

The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within a period of one year from the Date of substantial Completion of the Contract or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The provisions of this statement apply to Work done by Subcontractors as well as to Work done by direct employees of the Contractor.

6. TERMINATION BY THE OWNER

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provisions of the Contract, the Owner/COHCDD may, after seven days written notice to the Contractor and without prejudice to any other remedy they may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If the Contractor's workmanship is deficient and he fails to remedy such work within a specified time period, the Owner/COHCDD, at their option, may terminate the Contract and take possession of the site and all materials, supplies and equipment incorporated in the work thereon. The Owner/COHCDD may finish the Work by whatever method they may deem expedient. If the unpaid balance of the Contract Sum exceeds the expenses of finishing the Work, such excess shall be paid to the Contractor for approved work completed, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner/COHCDD.

7. PAYMENTS/DRAWS

Payments may be withheld on account of (1) defective Work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment, (4) damage to another contractor or (5) unsatisfactory prosecution of the Work of the Contractor.

Final payment shall not be due until the Contractor has delivered to the Owner/CHOCDD filed lien waivers/releases, indemnifying them against any lien.

The making of final payment shall constitute a waiver of all claims by the Owner/COHCDD except those arising from (1) unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of Work to comply with the Requirements of the Contract Documents or (4) terms of any special guarantees required by the Contract Documents. The acceptance of the final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and still unsettled.

1. _____
2. _____
3. _____
4. _____
5. _____



8. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due thirty (30) days after completion and acceptance of the work, provided the Contract has been satisfactorily performed, subject to the provision of the General Conditions of the Contract.

9. DEED RESTRICTION

There will be deed restriction attached to **814 ½ Arnold Street** for three (3) years. Homeowner agrees to occupy the rehabilitated home for three (3) years after rehabilitation activities are completed. The homeowner agrees to pay the prorated grant amount and legal fees associated with securing repayment to the City of Hattiesburg in the event the property is sold, transferred or disposed of prior to the expiration of the three (3) year affordability period. **Homeowner acknowledges and agrees that this contract shall be binding on his/hers/their heirs, executors and assigns.**

10. ASSIGNMENT OF CONTRACT

This agreement may not be assigned to any Contractor or Agent of Contractor. IN WITNESS WHEREOF, the parties hereto executed this Agreement the ____ day of _____, 2023.

_____ Lena Bland-Hoard	_____ Date	_____ Homeowner	_____ Date
---------------------------	---------------	--------------------	---------------

City of Hattiesburg, Mississippi

Contractor

By: _____
Toby Barker, Mayor

By: _____

Date: May 2, 2023

Date: _____

Attest: _____
Kernas Eaton, City Clerk

Attest: _____

CITY OF HATTIESBURG EMERGENCY REPAIR PROGRAM (10K+)
Emergency Repair Roof Initiative
GRANT AWARD AGREEMENT

General Terms and Conditions

1. ____ I certify that I currently live in and own the home for which I am accepting repair assistance.
2. ____ I agree to remain in Hattiesburg during the course of the repairs being performed and to make my home accessible between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, unless otherwise arranged.
3. ____ I understand that I am responsible for packing and storage of jewelry, family heirlooms, food, cleaning and other chemicals, lawn equipment, and toiletries for the duration of the repair work as necessary.
4. ____ I understand that the discovery of illegal activities or the use of verbal or physical threats of harm towards City employees, the contractor or his workers will result in an immediate termination of all repair activities.
5. ____ I agree that the City has irrevocable rights and permission to use my name and to use, reproduce, exhibit, copyright and publish photographic images and/or videotaped images of me and/or my home for advertising, trade and/or any other lawful purpose.
6. ____ I certify that I am not an employee of the City of Hattiesburg, nor do I have an immediate family member who is an elected official of the City of Hattiesburg nor an employee who is responsible for the administration, management and oversight of the program (Community Development Division Staff).
7. ____ I hereby agree to occupy the home to be rehabilitated for a period of not less than **three (3)** years after completion of the repairs funded under in the Emergency Roof Repair Initiative Program. **(Homeowner acknowledges and agrees that this agreement shall be binding on his/hers/their heirs, executors and assigns.)**
8. ____ I agree to repay the prorated grant amount and legal fees associated with securing repayment to the City should I sale, transfer or dispose of the property prior to the expiration of the **three (3)** year affordability period.
9. ____ I understand that I cannot apply for another Housing Rehabilitation or Housing Repair Grant within the **three (3)** year affordability period.
10. ____ I hereby agree to maintain flood insurance, when applicable.
11. ____ I hereby agree to maintain all county and city property taxes as they come due during the affordability period.
12. ____ I hereby agree that the completion of the repairs for which these grant funds are awarded shall constitute a complete work agreement and I will sign all the necessary paperwork to allow for payment to the contractor.
13. ____ I authorize the city to proceed with preliminary testing, requests for bids, and other required steps necessary in order to proceed with a project, and further understand that costs related to the same shall be added to the total cost of the project under this grant award.

By my signature below I, Lena Bland-Hoard of 814 ½ Arnold Street, agree to all the terms of this grant and understand that failure to abide by any of the terms will result in forfeiture of my grant and/or repayment of expended grant funds this the ____ day of _____, 2023.

Homeowner's Signature

Spouse's Signature

GRANT AWARD

The Homeowner(s), , Lena Bland-Hoard of 814 ½ Arnold Street is hereby awarded a Housing Rehabilitation Award for costs associated with the repair or rehabilitation of **814 ½ Arnold Street**. The amount of the award shall be the actual cumulative cost of all related preparation and work, including but not limited to: preliminary environmental testing, required abatement work, construction costs, any required legal filing fees, any change orders/discovery repairs and any approved voluntary temporary relocation assistance. General construction/rehabilitation/repair costs are not to exceed \$15,000, excluding change orders/discovery repairs necessary to meet building codes and program standards according to the Emergency Repair Roof Initiative Program.

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kernas Eaton, City Clerk

GENERAL CONTRACTOR EMERGENC REPAIR ROOF PROGRAM
WORK AGREEMENT

For Roof Repair Work At: 814 1/2 Arnold Street – Lena Bland-Hoard

1. _____ I propose to furnish all materials and perform all labor necessary to complete the work described in the attached Work Write-Up/Bid Solicitation.
2. _____ I agree that all work will be completed with quality workmanship and materials and I certify that no lead-based paint will be used on this job.
3. _____ I will begin work within ten (10) working days after receiving the **Notice to Proceed**, and I will complete the job within sixty (30) days of the start date.
4. _____ I will purchase, maintain and furnish evidence of Comprehensive Business Liability Insurance coverage during the life of the contract, in an amount not less than \$50,000 in the event of bodily injury including death and \$2,000.00 in the event of property damage arising out of work performed by me.
5. _____ I will obtain all permits and licenses necessary for the completion and execution of the work and labor to be performed.
6. _____ I will perform all work in conformance with the terms shown in Article 8 of the General Conditions, Exhibit J.
7. _____ I certify that I will perform all work in conformance with local codes and in conformance with the City of Hattiesburg’s CDBG/HOME Contractors Performance Standards, Exhibit K.
8. _____ I agree that I will not discriminate against any persons employed by my company or any applicant for employment with my company because of age, race, color, religion, sex, handicap, familial status, national origin or because of any political or union affiliation. In accordance with 24 CFR Part 8 as required by Section 504 Regulations, there shall be no discrimination on the basis of handicap in admission, access to, treatment or employment in federally assisted programs and activities. The City of Hattiesburg Department of Urban Development shall coordinate compliance of this part and is hereby the designee to handle any grievances concerning violation of these regulations.
9. _____ I will clean construction debris from the dwelling and the site to a dumpster or a code legal dump at least daily, and I will leave the property in a broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, I will vacuum all occupied spaces at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. I will acquire approval from Community Development prior to prohibiting access to any work site, and I will notify the owner.
10. _____ I will furnish the original of all manufacturers' and suppliers' written guarantees and warranties covering materials and equipment to the City of Hattiesburg for forwarding to the Homeowner.
11. _____ I understand that a *Request for Payment with Invoice*, and when applicable the *Lien Waiver and Release of Lien Waivers* must be completed and submitted according to the Request for Payment Processing Schedule.
12. _____ I understand that payment may be made by percentage of completion, not to exceed 70% until completion of the work, provided this Agreement be then fully executed, subject to the provisions of Article 8 of the General Conditions, Exhibit J.
13. _____ I understand that the homeowner can not authorize any other contractor/individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs Program to make repairs to the premise during the duration of this Grant Agreement.
14. _____ I understand that if any contractor/ individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs program performs any repairs to the premises; it is my responsibility to report it immediately to the Housing Program Inspector or the Housing Coordinator immediately, all the terms of the Grant Agreement may be voided and the grant award to the homeowner forfeited.

This work will be completed for the sum of **\$14,175.00**. ***ALL WORKMANSHIP IS SUBJECT TO A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR.**

CONTRACT ACCEPTANCE

You are hereby authorized to furnish all materials and labor required to complete the work mentioned in the above proposal, for which I agree to approve the payment in the amount specified in said proposal, and according to the terms thereof, on this the 2nd day of May, 2023.

Lena Bland-Hoard, Signature

City of Hattiesburg – Witness

Other Homeowner, Signature

Starter Homes of Mississippi

Date

Date

Date



Department of Urban Development Community Development Division

Homeowner

Address: 814 1/2 Arnold Street

Phone:

WORK WRITE-UP

Completed and Approved By:

Project Type: ☐ Rehab ☐ Repair ☒ Special Project ☐ Adopt a Home ☐ World Changers

HP Inspector:

Date:

Special Classifications: ☐ N/A ☐ Historic District ☐ 50 Years + ☐ Flood Zone ☐ Lead ☐ Asbestos

Reviewed and Approved By:

Contract Date:

Housing Coordinator:

Date:

Contractor:

Housing Manager:

Date:

General Requirements: All repairs are to be performed in accordance with the guidelines and material specifications listed in the City of Hattiesburg's Housing Rehabilitation and Housing Repair Grants Program Manual for CDBG/HOME, Contractor's Performance Standards Rehabilitation and the 2018 International Residential Code.

ITEM

NO.

WORK DESCRIPTION

ESTIMATED COST

ROOF

1. Remove shingles and felt down to the decking
2. Replace all deteriorated decking and framing
3. Install nail over ridge vent
4. Install new synthetic felt
5. Install new vent pipe boots
6. Replace deteriorated fascia and soffit; caulk and paint to match
7. Install new drip edge
8. Install 25-year mid-grade architectural shingles

3450
900
600
600
150
400
600
7625

TOTAL:

14,175

*** Contractor is responsible for walking the roof to identify soft spots and deteriorated decking and/or checking the interior of the structure for leaks and water damage associated with roof deterioration. Call for inspection when shingles and decking is removed.





CITY OF HATTIESBURG COMMUNITY DEVELOPMENT
Emergency Repair Roof Initiative Program

Contractor & Owner Agreement

THIS AGREEMENT, made the 2nd day of May, 2023 and between the City of Hattiesburg Community Development Division (COHCDD) Emergency Repair Roof Initiative Program (ERRIP) and Robert Smith of 1000 North 34th Avenue, hereinafter called Owner, and Starter Homes of Mississippi, with its principal place of business located at 57 Carter Drive, Seminary, Mississippi 39479, hereinafter called the Contractor.

WITNESSETH

1. SCOPE OF WORK

The Contractor shall furnish all labor, materials, tools, supplies, supervision and other services and shall perform all operations necessary and required to satisfactorily complete the work shown on the Work Write-Up and described in the specifications and other Contract Documents prepared for the **1000 North 34th Avenue** Project by the Housing Programs Inspector, said work to be performed on the structure(s)/property located at **1000 North 34th Avenue**, Hattiesburg, Mississippi, all in accordance with terms of the Contract Documents.

2. TIME OF COMPLETION

The Owner/COHCDD shall issue a written Notice to Proceed within 5 days from the date of the Owner/COHCDD signing of this Agreement, accepting the Contractor's bid and proposal, providing the Contractor has obtained the necessary permits and related documents (if needed) and has presented them to the Owner/COHCDD. If the Notice to Proceed is not received by the Contractor within this 5-day period, the Contractor may at his option terminate his obligation under this Agreement, provided he has obtained the necessary permits and related documentation within (15) days from the date of the Owner's/COHCDD's signing of this Agreement, the Owner/COHCDD has the option of terminating the Contract for cause.

The Contractor shall commence working within ten (10) calendar days, as time is of the essence in the completion of this contract, after issuance of the Notice to Proceed, and it is to be completed within **thirty (30) days** after issuance of the Notice to Proceed. **One hundred dollars (\$100.00) per day, as liquidated damages, will be deducted from the final payment for every day project repair completion exceeds sixty (30) days.** The Owner/COHCDD has the option of terminating the Contract for failure to commence work within the time allowed by the Contract Agreement.

3. COMPENSATION

As full consideration for the satisfactory performance by Contractor of this Contract, the Owner/COHCDD shall pay to the Contractor the sum of fourteen thousand eight hundred seventy-five dollars (\$14,875.00) subject to any written additions or deductions provided and incorporated herein, in accordance with the payment provisions of this Contract.

4. CHANGES IN THE WORK

The Owner/COHCDD without invalidating the Contract may order Changes in Work consisting of additions, deletions, or modifications, the Contract Sum and the Contract Time being adjusted accordingly. All such Changes in the Work shall be authorized by written Change Order signed by the Owner and COHCDD or their duly authorized agent. The Contract Sum and the Contract Time may be changed by a Change Order. The



cost or credit to the Owner/COHCDD from a Change in the Work shall be determined by mutual agreement before executing the Work involved.

5. CORRECTION OF WORK

The Contractor shall correct any work that fails to conform to the requirements of the Contract Documents where such failure to conform appears during the progress of the Work, and shall remedy any defects due to faulty materials, equipment or workmanship which appears within a period of one year from the Date of substantial Completion of the Contract or within such longer period of time as may be prescribed by law or by the terms of any applicable special guarantee required by the Contract Documents. The provisions of this statement apply to Work done by Subcontractors as well as to Work done by direct employees of the Contractor.

6. TERMINATION BY THE OWNER

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents or fails to perform any provisions of the Contract, the Owner/COHCDD may, after seven days written notice to the Contractor and without prejudice to any other remedy they may have, make good such deficiencies and may deduct the cost thereof from the payment then or thereafter due the Contractor. If the Contractor's workmanship is deficient and he fails to remedy such work within a specified time period, the Owner/COHCDD, at their option, may terminate the Contract and take possession of the site and all materials, supplies and equipment incorporated in the work thereon. The Owner/COHCDD may finish the Work by whatever method they may deem expedient. If the unpaid balance of the Contract Sum exceeds the expenses of finishing the Work, such excess shall be paid to the Contractor for approved work completed, but if such expense exceeds such unpaid balance, the Contractor shall pay the difference to the Owner/COHCDD.

7. PAYMENTS/DRAWS

Payments may be withheld on account of (1) defective Work not remedied, (2) claims filed, (3) failure of the Contractor to make payments properly to Subcontractors or for labor, materials or equipment, (4) damage to another contractor or (5) unsatisfactory prosecution of the Work of the Contractor.

Final payment shall not be due until the Contractor has delivered to the Owner/CHOCDD filed lien waivers/releases, indemnifying them against any lien.

The making of final payment shall constitute a waiver of all claims by the Owner/COHCDD except those arising from (1) unsettled liens, (2) faulty or defective Work appearing after Substantial Completion, (3) failure of Work to comply with the Requirements of the Contract Documents or (4) terms of any special guarantees required by the Contract Documents. The acceptance of the final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and still unsettled.

1. _____
2. _____
3. _____
4. _____
5. _____



8. ACCEPTANCE AND FINAL PAYMENT

Final payment shall be due thirty (30) days after completion and acceptance of the work, provided the Contract has been satisfactorily performed, subject to the provision of the General Conditions of the Contract.

9. DEED RESTRICTION

There will be deed restriction attached to **1000 North 34th Avenue** for three (3) years. Homeowner agrees to occupy the rehabilitated home for three (3) years after rehabilitation activities are completed. The homeowner agrees to pay the prorated grant amount and legal fees associated with securing repayment to the City of Hattiesburg in the event the property is sold, transferred or disposed of prior to the expiration of the three (3) year affordability period. **Homeowner acknowledges and agrees that this contract shall be binding on his/hers/their heirs, executors and assigns.**

10. ASSIGNMENT OF CONTRACT

This agreement may not be assigned to any Contractor or Agent of Contractor. IN WITNESS WHEREOF, the parties hereto executed this Agreement the ____ day of _____, 2023.

Robert Smith _____ Date _____

Homeowner _____ Date _____

City of Hattiesburg, Mississippi

Contractor

By: _____
Toby Barker, Mayor

By: _____

Date: May 2, 2023

Date: _____

Attest: _____
Kermas Eaton, City Clerk

Attest: _____

CITY OF HATTIESBURG EMERGENCY REPAIR PROGRAM (10K+)
Emergency Repair Roof Initiative
GRANT AWARD AGREEMENT

General Terms and Conditions

1. ____ I certify that I currently live in and own the home for which I am accepting repair assistance.
2. ____ I agree to remain in Hattiesburg during the course of the repairs being performed and to make my home accessible between the hours of 7:00 a.m. and 5:00 p.m., Monday through Friday, unless otherwise arranged.
3. ____ I understand that I am responsible for packing and storage of jewelry, family heirlooms, food, cleaning and other chemicals, lawn equipment, and toiletries for the duration of the repair work as necessary.
4. ____ I understand that the discovery of illegal activities or the use of verbal or physical threats of harm towards City employees, the contractor or his workers will result in an immediate termination of all repair activities.
5. ____ I agree that the City has irrevocable rights and permission to use my name and to use, reproduce, exhibit, copyright and publish photographic images and/or videotaped images of me and/or my home for advertising, trade and/or any other lawful purpose.
6. ____ I certify that I am not an employee of the City of Hattiesburg, nor do I have an immediate family member who is an elected official of the City of Hattiesburg nor an employee who is responsible for the administration, management and oversight of the program (Community Development Division Staff).
7. ____ I hereby agree to occupy the home to be rehabilitated for a period of not less than **three (3)** years after completion of the repairs funded under in the Emergency Roof Repair Initiative Program. **(Homeowner acknowledges and agrees that this agreement shall be binding on his/hers/their heirs, executors and assigns.)**
8. ____ I agree to repay the prorated grant amount and legal fees associated with securing repayment to the City should I sale, transfer or dispose of the property prior to the expiration of the **three (3)** year affordability period.
9. ____ I understand that I cannot apply for another Housing Rehabilitation or Housing Repair Grant within the **three (3)** year affordability period.
10. ____ I hereby agree to maintain flood insurance, when applicable.
11. ____ I hereby agree to maintain all county and city property taxes as they come due during the affordability period.
12. ____ I hereby agree that the completion of the repairs for which these grant funds are awarded shall constitute a complete work agreement and I will sign all the necessary paperwork to allow for payment to the contractor.
13. ____ I authorize the city to proceed with preliminary testing, requests for bids, and other required steps necessary in order to proceed with a project, and further understand that costs related to the same shall be added to the total cost of the project under this grant award.

By my signature below I, Robert Smith of 1000 North 34th Avenue, agree to all the terms of this grant and understand that failure to abide by any of the terms will result in forfeiture of my grant and/or repayment of expended grant funds this the ____ day of _____, 2023.

Homeowner's Signature

Spouse's Signature

GRANT AWARD

The Homeowner(s), , Robert Smith of 1000 North 34th Avenue is hereby awarded a Housing Rehabilitation Award for costs associated with the repair or rehabilitation of **1000 North 34th Avenue**. The amount of the award shall be the actual cumulative cost of all related preparation and work, including but not limited to: preliminary environmental testing, required abatement work, construction costs, any required legal filing fees, any change orders/discovery repairs and any approved voluntary temporary relocation assistance. General construction/rehabilitation/repair costs are not to exceed \$15,000, excluding change orders/discovery repairs necessary to meet building codes and program standards according to the Emergency Repair Roof Initiative Program.

City of Hattiesburg, Mississippi

By: _____
Toby Barker, Mayor

Date: May 2, 2023

Attest: _____
Kermas Eaton, City Clerk

GENERAL CONTRACTOR EMERGENC REPAIR ROOF PROGRAM
WORK AGREEMENT

For Roof Repair Work At: 1000 North 34th Avenue – Robert Smith

1. _____ I propose to furnish all materials and perform all labor necessary to complete the work described in the attached Work Write-Up/Bid Solicitation.
2. _____ I agree that all work will be completed with quality workmanship and materials and I certify that no lead-based paint will be used on this job.
3. _____ I will begin work within ten (10) working days after receiving the **Notice to Proceed**, and I will complete the job within sixty (30) days of the start date.
4. _____ I will purchase, maintain and furnish evidence of Comprehensive Business Liability Insurance coverage during the life of the contract, in an amount not less than \$50,000 in the event of bodily injury including death and \$2,000.00 in the event of property damage arising out of work performed by me.
5. _____ I will obtain all permits and licenses necessary for the completion and execution of the work and labor to be performed.
6. _____ I will perform all work in conformance with the terms shown in Article 8 of the General Conditions, Exhibit J.
7. _____ I certify that I will perform all work in conformance with local codes and in conformance with the City of Hattiesburg’s CDBG/HOME Contractors Performance Standards, Exhibit K.
8. _____ I agree that I will not discriminate against any persons employed by my company or any applicant for employment with my company because of age, race, color, religion, sex, handicap, familial status, national origin or because of any political or union affiliation. In accordance with 24 CFR Part 8 as required by Section 504 Regulations, there shall be no discrimination on the basis of handicap in admission, access to, treatment or employment in federally assisted programs and activities. The City of Hattiesburg Department of Urban Development shall coordinate compliance of this part and is hereby the designee to handle any grievances concerning violation of these regulations.
9. _____ I will clean construction debris from the dwelling and the site to a dumpster or a code legal dump at least daily, and I will leave the property in a broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, I will vacuum all occupied spaces at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. I will acquire approval from Community Development prior to prohibiting access to any work site, and I will notify the owner.
10. _____ I will furnish the original of all manufacturers’ and suppliers’ written guarantees and warranties covering materials and equipment to the City of Hattiesburg for forwarding to the Homeowner.
11. _____ I understand that a *Request for Payment* with *Invoice*, and when applicable the *Lien Waiver* and *Release of Lien Waivers* must be completed and submitted according to the Request for Payment Processing Schedule.
12. _____ I understand that payment may be made by percentage of completion, not to exceed 70% until completion of the work, provided this Agreement be then fully executed, subject to the provisions of Article 8 of the General Conditions, Exhibit J.
13. _____ I understand that the homeowner can not authorize any other contractor/individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs Program to make repairs to the premise during the duration of this Grant Agreement.
14. _____ I understand that if any contractor/ individual not associated with the City of Hattiesburg CDBG/HOME Rehabilitation or Repairs program performs any repairs to the premises; it is my responsibility to report it immediately to the Housing Program Inspector or the Housing Coordinator immediately, all the terms of the Grant Agreement may be voided and the grant award to the homeowner forfeited.

This work will be completed for the sum of **\$14,875.00**. ***ALL WORKMANSHIP IS SUBJECT TO A LIMITED WARRANTY FOR A PERIOD OF ONE (1) YEAR.**

CONTRACT ACCEPTANCE

You are hereby authorized to furnish all materials and labor required to complete the work mentioned in the above proposal, for which I agree to approve the payment in the amount specified in said proposal, and according to the terms thereof, on this the 2nd day of May, 2023.

Robert Smith, SignatureDate

City of Hattiesburg – WitnessDate

Starter Homes of MississippiDate

Other Homeowner, SignatureDate



Department of Urban Development Community Development Division

Owner: 1000 N 34th Ave
Address: 1000 N 34th Ave
Project Type: ☐ Rehab ☒ Repair ☐ Special Project ☐ Adopt A Home ☐ World Changers
Special Classifications: ☐ N/A ☐ Historic District ☐ 50 Years + ☐ Flood Zone
☐ Lead ☐ Asbestos

Phone:

WORK WRITE-UP
Completed and Approved By: HP Inspector: SJP Date: 4/5/2023
Reviewed and Approved By: Housing Coordinator: Date:
Housing Manager: Date:

Contract Date:
Contractor:

General Requirements: All repairs are to be performed in accordance with the guidelines and material specifications listed in the City of Natchezburg's Housing Rehabilitation and Housing Repair Grants Program Manual for CDBG/HOME, Contractor's Performance Standards Rehabilitation and the 2018 International Residential Code.

ITEM

C. WORK DESCRIPTION

ESTIMATED COST

ROOF

- 1. Remove shingles and felt down to the decking
- 2. Replace all deteriorated decking and framing
- 3. Replace all deteriorated soffit and fascia
- 4. Cut out slot for ridge vent
- 5. Install roof edge
- 6. Install new synthetic felt
- 7. Install new pipe boots
- 8. Install 25-year mid-grade architectural shingles
- 9. Install ridge vent and cap

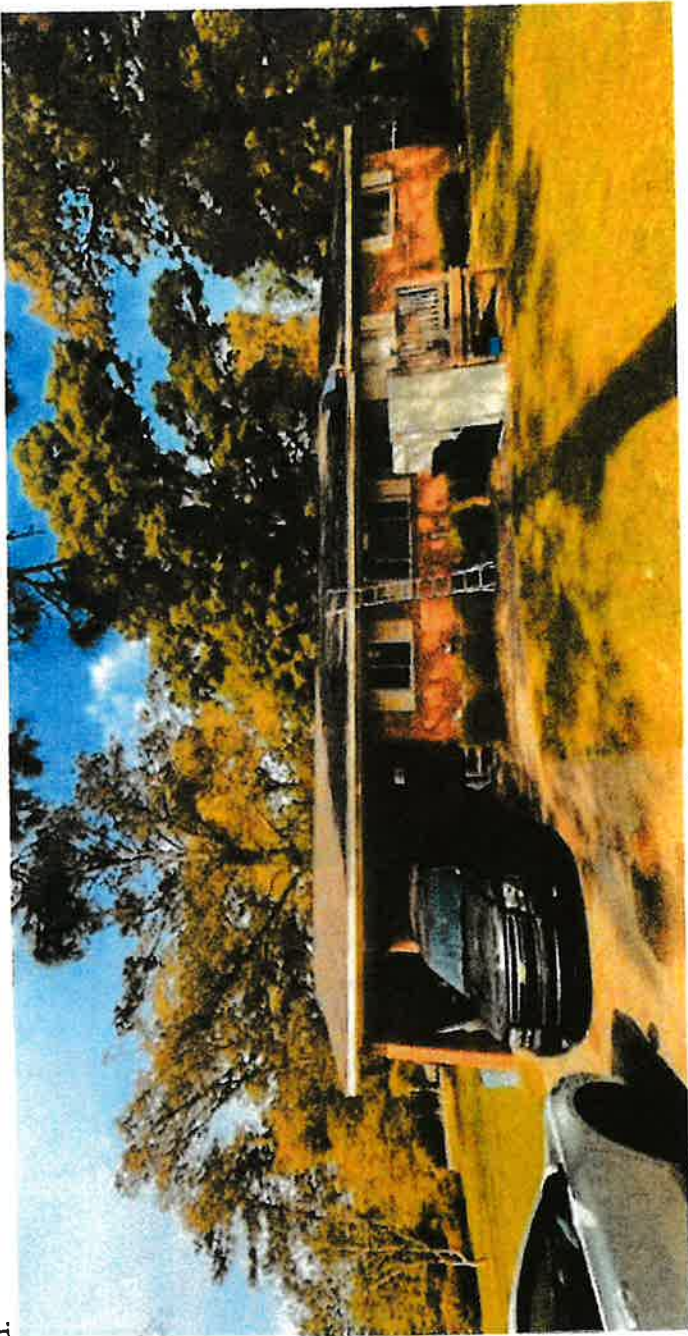
3200
1800
650
200
800
800
150
6725
600

Total Cost: 14,875

<<NOTES>>

Soft spots. Metal roof on back porch leaks

Contractor is responsible for walking the roof to identify soft spots and deteriorated decking and/or checking the interior of structure for leaks and water damage associated with roof deterioration. Call for inspection when shingles and decking is moved.





Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Approve an agreement between the Mississippi State Fire Academy (MSFA) and The Hattiesburg Fire Department to administer the NFPA 1001 Field program, for an amount not to exceed \$5,000.00 and authorize the Mayor to execute the same.
File Number: 2023-300
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.



STATE FIRE ACADEMY



Terry Wages
Executive Director

Division of Mississippi Department of Insurance
1 Fire Academy U.S.A.
Jackson, Mississippi 39208-9600
Phone: (601) 932-2444

Mike Chaney
Insurance Commissioner

Memorandum of Understanding (Rev. 1/2022)

This Memorandum of Understanding is entered into between the Mississippi State Fire Academy (MSFA), #1 Fire Academy USA, Jackson, MS 39208 (Rankin County Mississippi) and the following Customer:

Customer Name: Hattiesburg Fire Department

Address: 810 Main St.

City, State Zip: Hattiesburg, Ms. 39401

Phone: 601-545-4691

Fax:

Federal ID Number: _____

Contact Person/Title: Cody Keys/ Training Chief

Email Address: ckeys@hattiesburgms.com

1. DATE(S) OF SERVICE: April 17th, 2023

2. LOCATION FOR SERVICE TO BE PERFORMED: Hattiesburg Fire Department Training Facility

3. DESCRIPTION OF SERVICE TO BE PROVIDED TO CUSTOMER Mississippi State Fire Academy (MSFA) shall provide the course **NFPA 1001- I-II F**. Academy Staff will provide the local course coordinator a complete package to manage the delivery of the course. **No books are included.** MSFA will administer all written and skill examinations.

Examination dates must be approved by MSFA personnel. All communications concerning test scores, student activities, etc. shall be between the MSFA coordinator and the local course manager. Certificate will be issued upon successful completion of course.

All documents and curriculum provided to you from the MSFA is the property of MSFA and cannot be duplicated for use outside of this delivery. **No books are included, and customer is wholly responsible for purchasing any required books through the textbook publisher.**

4: NUMBER OF STUDENTS THIS MEMORANDUM OF UNDERSTANDING APPLIES TO:

Minimum Number: 10

Maximum Number: 15

5. SERVICE FEE: Total Cost: **\$5000.00**

And/or Cost Per Student: **\$500.00**

Hattiesburg FD- 10 Students

Customer agrees to pay the service fee for the minimum number of seats being reserved herein, regardless of whether the minimum number of students actually attends the training.

If a Purchase Order is required for this service, indicate so and provide a purchase order number and/or copy of the purchase order: _____

Please note : If there is more than one department/organization entering this agreement for this course and the fee is split between the departments/organizations, the cost per student is based on the provided number of students. If the number of students from participating departments/organizations changes, the cost per student will change. However, the total of the fees will equal the total cost above and will be split between the participating departments/organizations.

If on Academy campus Monday through Thursday, are meals to be provided: ☐ Yes ☒ No If Yes, indicate which meals are provided: _____ Breakfast served 6:30 a.m. to 7:15 a.m. _____ Lunch served 11:30 a.m. to 12:45 p.m.

If on Academy campus Monday through Thursday, are dorm beds requested: ☐ Yes _____ # of Beds ☒ No

Note: An invoice will be submitted to the customer upon completion of the service. If a purchase order number is required from your company, please fill in the appropriate blocks on this form. Payment for services is due within thirty (30) days of completion of services and receipt of invoice.

6. MODIFICATION, AMENDMENT, OR TERMINATION OF AGREEMENT:

Modifications, amendments, or termination of the Memorandum of Understanding may be made upon mutual agreement of both parties but must be in writing and signed by both parties. This Agreement may be terminated by the Academy upon written notice to the Customer should the Academy be subject to governmental budgetary cuts or if personnel cuts limit the amount of available manpower necessary to execute the professional service.

7. INSURANCE:

Customer represents that it will maintain workers' compensation insurance as prescribed by law that will insure to the benefit of the customer's personnel, as well as comprehensive general liability insurance. The Academy represents that it maintains workers compensation insurance for Academy personnel during the course of their official duties. Further, the Academy represents that as a state agency, the Mississippi Tort Claims Board views the organization as a sub-agency of the Mississippi Insurance Department. The Mississippi Insurance Department is certified by the Mississippi Tort Claims Board by participating in the Mississippi Tort Claims Fund as set forth in Chapter 46, Title 11, Mississippi Code 1972, as amended. This fund provides protection for tort claims against state employees and agencies subject to terms and limitations established by law while in the scope of their duties.

8. GOVERNING LAW:

This Agreement will be construed and governed in accordance with the laws of the State of Mississippi excluding its conflicts of laws provisions, and any litigation with respect thereto shall be brought in the courts of the State.

9. ACADEMY COURSE MATERIAL IS PROTECTED PROPERTY:

Academy course instructional material (lesson plans, power point presentations, handouts, skills check offs, etc.) shall be considered Protected Property belonging to the Academy. If part of this agreement is to provide the Customer this information for performance of this agreement, the Customer shall not copy, duplicate, transcribe, or any other form of duplication, in whole or in part, any course material submitted to them for use in fulfilling this Memorandum of Understanding, either directly or indirectly, for personal benefit, the benefit of another, or for future use. This statement of policy shall continue to be in effect whether or not the Agreement is terminated or has expired. Additionally, if any state property is utilized as part of this agreement, the Customer assures proper custody and care of the property (withstanding normal use and wear and tear).

10. ACKNOWLEDGEMENT OF MEMORANDUM OF UNDERSTANDING:

This constitutes the entire agreement of both parties with respect to the subject matter contained herein and supersedes and replaces any and all prior negotiations, understandings and agreements, written or oral, between the parties relating thereto. For the faithful performance of the terms of this agreement, the parties hereto have caused this Agreement to be executed by their undersigned authorized representatives.

PARTIES IN AGREEMENT:

Mississippi State Fire Academy
Authorized Personnel: Terry Wages, Executive Director
Authorized Personnel: Paul Ammerman, Admin. Svcs.
Daniel Cross, Instructional Svcs.

Signature/Date

Signature/Date

Academy Contact Regarding this Agreement:

Telephone:

Email:

Customer: Hattiesburg Fire Department
Authorized Personnel: Sherrocko Stewart
Title: Fire Chief
Authorized Personnel:

Signature/Date

Optional Signature/Date:

If a Purchase Order is required for this service, indicate so and provide a purchase order number and/or copy of the purchase order:

Customer Invoicing/Billing Address:

Contact Name:

Contact Phone Number:



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Approve a Sponsorship Agreement between the City of Hattiesburg and JTR Productions, INC for advertisement sponsorship, in accordance with Mississippi 17-3-1, for an amount not to exceed \$7,500.00 and authorize manual check for the same.
File Number: 2023-309
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

001095-6155

JTR PRODUCTIONS, INC.

Concerts / Special Events / Sports Marketing

John T. Reid

President / CEO

TO: Ann Jones
Chief Administrative Officer
City Of Hattiesburg
200 Forrest St.
Hattiesburg, MS. 39401

Advertisement Sponsorship for the "36th Annual Mothers' Day Blues Festival" Sunday May 14, 2023, at the Forrest County Multi-Purpose Center Fairground. This Letter is serving as the invoice request for seventy-five hundred (\$7,500.00) dollars.

Thank you.

John Reid

734-994-0138

734-358-5973 (cell)

P.O. Box 3056 / Ann Arbor, MI 48106-3056

www.jtrproductions.com

JTRProductions@sbcglobal.net



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Dequandra Johnson
cc: Kermas Eaton, City Clerk, Wiley Quinn, Urban Development Director
Date: Tuesday, May 2, 2023
Re: Approve and authorize issuance of a manual check for CDBG/HOME Program Claims per attached Memorandum (CDBG Entitlement)
File Number: 2023-268
Minute Book #

Summary

Please authorize and approve issuance of manual checks for CDBG/HOME Program Claims per attached Memorandum. {CDBG Entitlement}

Recommendation Statement

I recommend approval of this item. Please place this on the May 2, 2023 City Council meeting for consideration.

Please place this on the May 2, 2023 City Council meeting for consideration.



URBAN DEVELOPMENT COMMUNITY DEVELOPMENT DIVISION

MEMORANDUM

TO: City of Hattiesburg Council Members

FROM: Wiley Quinn
Department of Urban Development

SUBJECT: Authorize issuance of manual check for CDBG/HOME Program claims

DATE: April 24, 2023

The following request for payment is being submitted for approval during the City Council's May 2, 2023 meeting. Please authorize and approve issuance of a manual check for the claims listed below:

Recipient: Starter Homes of Mississippi
Activity: Emergency Roof Repair
Program: CDBG
Project Site: 421 North 19th Avenue
Amount Requested: **\$14,995.00**
Purpose of Request: Reimbursement

Recipient: Starter Homes of Mississippi
Activity: Emergency Roof Repair
Program: CDBG
Project Site: 115 Townsend Street
Amount Requested: **\$14,950.00**
Purpose of Request: Reimbursement

STARTER HOMES OF MISSISSIPPI

57 CARTER DRIVE

SEMINARY, MS. 39479

PHONE: (601) 408-7120

Date: April 5, 2023**BILL TO:**

PETRA WINGO

COMMUNITY DEVELOPMENT

P.O. BOX 1898

HATTIESBURG, MS. 39401

Re: Roof Replacement Reimbursement

Labor & materials to complete repair

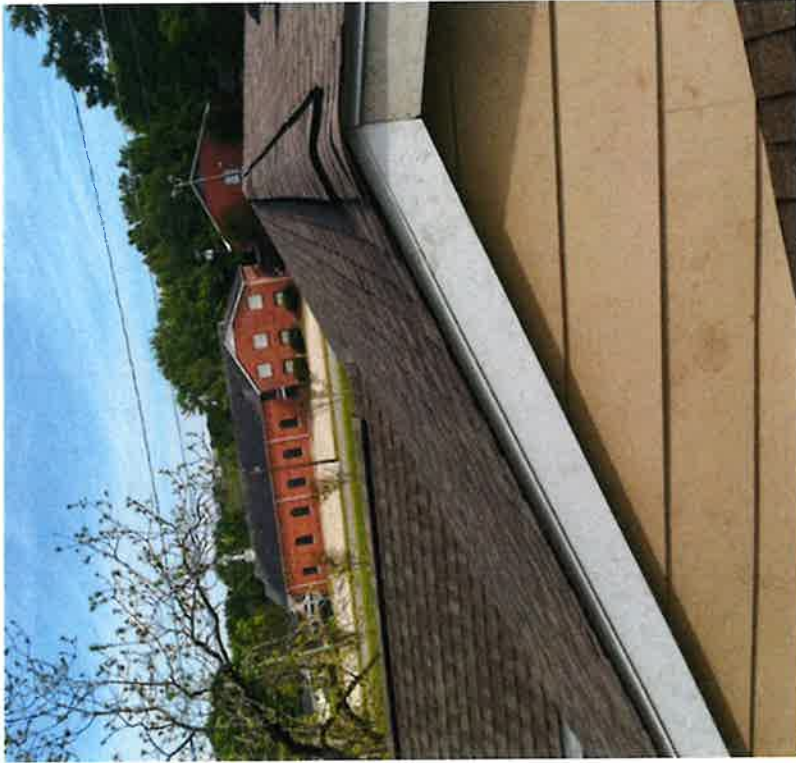
Project site: 421 N 19th Avenue

<i>Description</i>	<i>QUANTITY</i>	<i>Price</i>	<i>Total</i>
Bundles of shingles	98	4000	4000.00
Boxes of nail-over ridge	2	250	250.00
Boxes of drip edge	2	250	250.00
Synthetic Felt	4	300	300.00
Sheets of ½ plywood, nails, & plyclips	18	600	600.00
1x 2x16' siding & nails (to nail on)	4 pieces	125	125.00
Nails for shingles & felt		250	250.00
Boots		50	50.00
Power ventilation		385	385.00
1x8 fascia & 1/8' cornice & nails		350	350.00
2x6x12 rafter material	8	100	100.00
Insurance		250	250.00
Labor		5,500	5,500.00
Contractor fee		2,585	2,585.00

TOTAL: 14,995.00 **14,995.00****THANK YOU FOR YOUR BUSINESS!****TOTAL DUE:****\$14,995.00**



421 N 19th Avenue



STARTER HOMES OF MISSISSIPPI

57 CARTER DRIVE

SEMINARY, MS. 39479

PHONE: (601) 408-7120

Date: April 5, 2023**BILL TO:**

PETRA WINGO

COMMUNITY DEVELOPMENT

P.O. BOX 1898

HATTIESBURG, MS. 39401

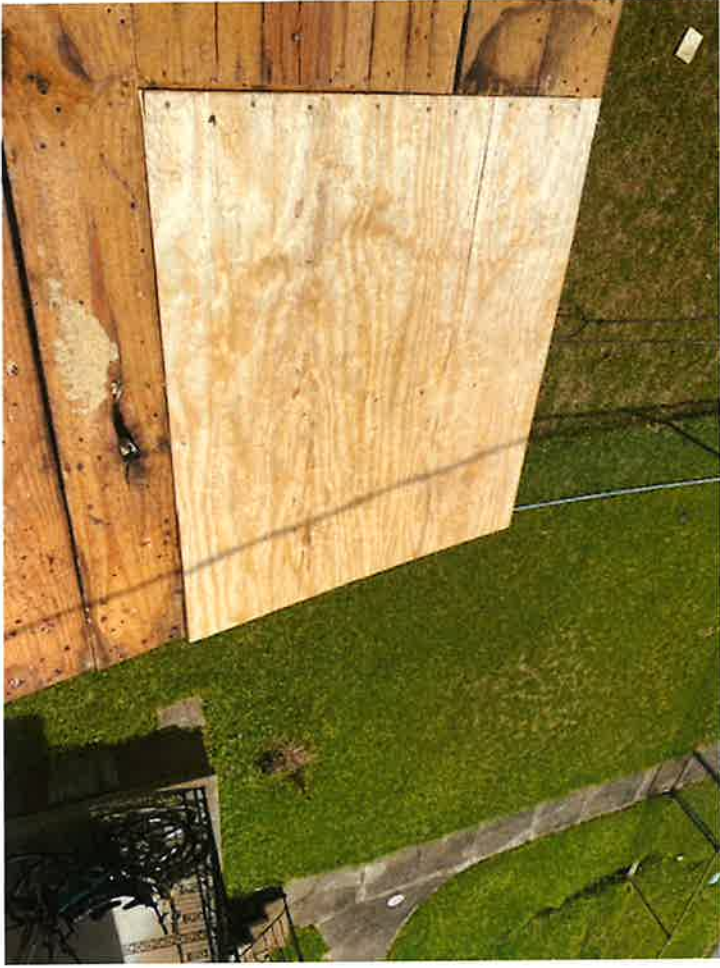
Re: Roof Replacement Reimbursement

Labor & materials to complete repair

Project site: 115 Townsend

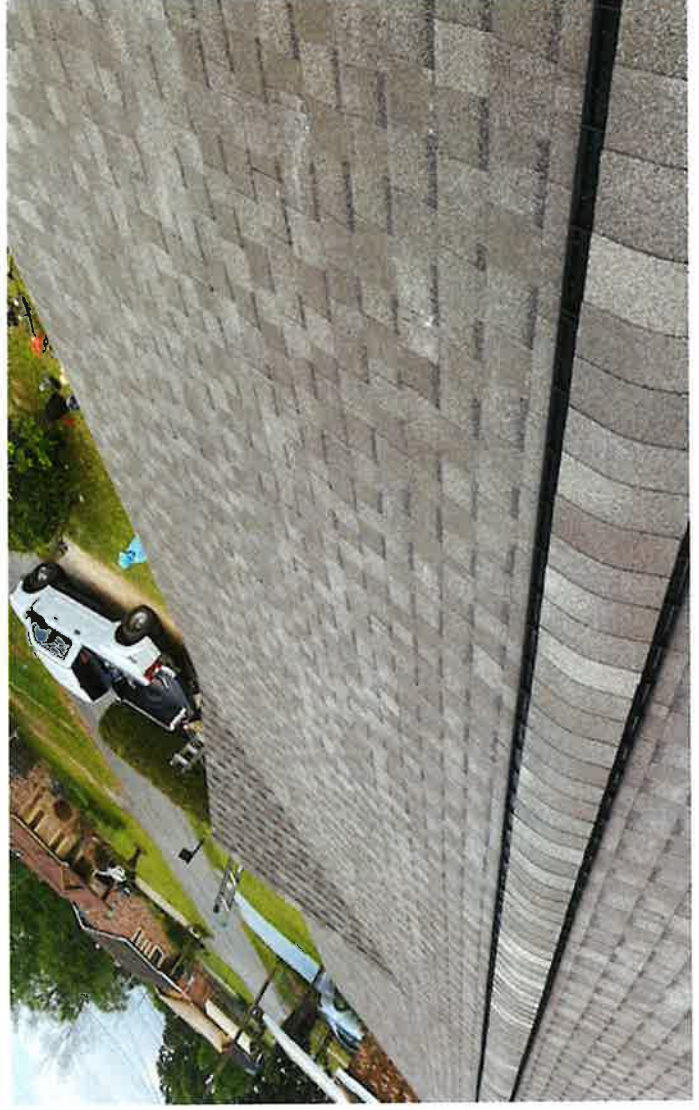
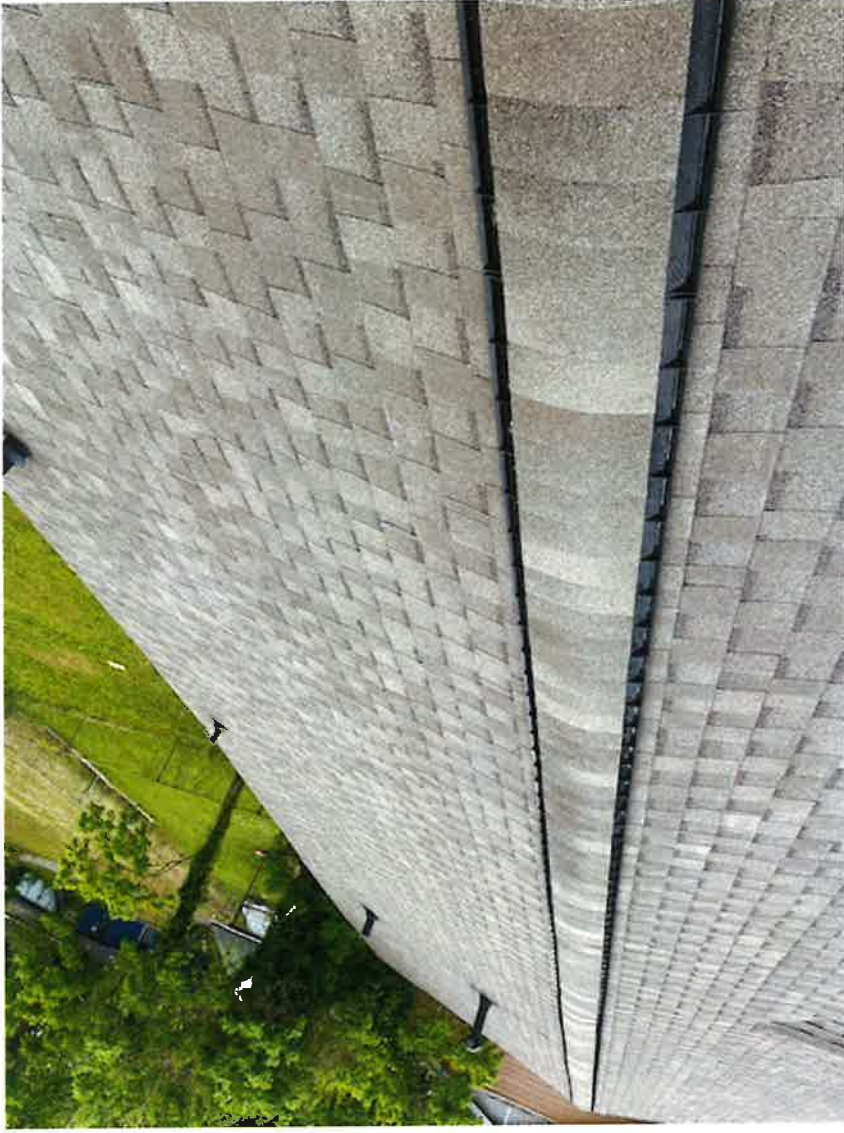
<i>Description</i>	<i>QUANTITY</i>	<i>Price</i>	<i>Total</i>
Bundles of shingles	87	3500	3,500.00
Boxes of nail-over ridge	2	250	250.00
Boxes of drip edge	1	200	200.00
Synthetic Felt	3	225	225.00
1x10x12' decking	18	300	300.00
¾" CDX for overhangs	10	400	400.00
Nails for felt & shingles	1	250.00	250.00
Boots	1	50	50.00
2x6 barge rafters	1	50	50.00
Insurance		250	250.00
Paint		75	75.00
Labor		4850	4,850.00
Contractor fee		3820	3,820.00

TOTAL: 14,220 **14,220.00****THANK YOU FOR YOUR BUSINESS!****TOTAL DUE:****\$14,220.00**



115 Townsend Street
*Progress Pictures





115 Townsend Street
*After Pictures



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Adopt a Resolution appointing Andrew Arman Miri as Municipal Public Defender Pro Tem, for the City of Hattiesburg.
File Number: 2023-302
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

Andrew Arman Miri

217 South 21st Street
Hattiesburg, MS 39401
Cell: (601) 473-9123
aamiri9123@gmail.com

Experience

Attorney December 2022 to Current

Lowrey & Fortner PA- Hattiesburg, MS

My practice focuses on felony level criminal cases and civil litigation from around the state of Mississippi with an emphasis on practicing in the Hattiesburg and surrounding areas. I have the opportunity to work with an incredible group of people with the goal of creating favorable outcomes for our clients. I regularly advise clients on their options and prepare them for resolution of their matters.

Attorney December 2021 to October 2022

Pearl River Public Defenders Office- Poplarville, MS

I handled a large docket of felony cases for the 15th district which range from simple possession to capital murder. I often manage cases from preliminary hearings all the way through plea or trial. My day to day consists of meeting with clients in person or in the jail, answering jail mail, and returning phone calls from clients. In addition, I work towards resolution of felony level files with the District Attorney's office. In the event resolution cannot be reached, I advise clients on their rights and prepare them for trial.

Attorney February 2021 to December 2021

Walters, Baldio & Craine- Austin, TX

I handled complex civil litigation cases with a focus on high-risk insurance coverage disputes. I regularly met with clients, conducted investigations, and coordinated strategies for trial. In addition to managing my own docket, I advised and trained junior associates on their case strategies.

Attorney October 2019 to February 2021

Schwartz & Associates- Hattiesburg, Mississippi

I managed the Hattiesburg branch of the largest personal injury firm in Mississippi. I directed multiple staff members on the way to achieving favorable outcomes for clients in personal injury litigation. In addition to running the office, I handled a large case load (200+) of files from inception to finality.

Attorney October 2018 to October 2019

Forrest County Youth Court – Hattiesburg, Mississippi

I acted as court appointed counsel for parents going through youth court termination proceedings in Forrest County. In addition, I helped advise juveniles in enforcement actions brought against them by the State. I regularly conducted trials on matters before the court.

Attorney December 2017 to February 2019

Bryan Nelson PA – Hattiesburg, Mississippi

My practice focused on insurance defense and corporate litigation. I handled hundreds of legal matters that included corporate defense, bad faith actions, and coverage disputes. I regularly provided coverage opinions to our clients on various topics and in addition would initiate litigation that paralleled the advice given.

Attorney October 2015 to December 2017

Herskovits PLLC – New York, New York; Hattiesburg, Mississippi

Securities and corporate litigation, arbitration, and regulatory defense. I regularly defended clients against FINRA, SEC, and other state regulatory bodies in compliance matters. My usual clients include large broker dealers, individual brokers, analysts, and corporations.

Attorney August 2013 to October 2015

Lockley, Slawson, & Mallion – Hattiesburg, Mississippi

My personal practice focused on small business matters including litigation and criminal defense. I would regularly meet with clients and help them with problems until finality.

Education

Juris Doctor, August 2010 to May 2013

The University of Mississippi - Oxford, Mississippi

Member of Mississippi Defense Lawyers Association

Dean's Leadership Council

Ole Miss Negotiation Team

VITA Tax Clinic Founder (Tax Practicum Clinic)

Transactional Law Clinic

BBA : Finance, May 2010

The University of Mississippi -Oxford, Mississippi

Member of Column's Society

Member of Finance Club

Coursework in Marketing, Public Relations and Promotions Management

Dean's List

Academic Excellence Scholarship

Who's Who Finalist

Boy's and Girls Club mentor

Publication and Accomplishments

Andrew Miri, Comment, Applying Grokster to Streaming Peer-to-Peer Broadcasters and Live Sporting Events, 2 MISS. SPORTS L. REV. 195.

Abercrombie v. Abercrombie, 2017-CA-01158-COA

Associate Professor at William Carey University, Hattiesburg, MS; Healthcare Law

Southern Regional Public Safety Institute (SRPSI) Instructor; Constitutional and Criminal Law

Mediator for Mississippi Department of Education, Special Education

Past President of the Hattiesburg Area Young Lawyers Association

Licensed in Mississippi and Texas

**RESOLUTION FOR APPOINTING MUNICIPAL PUBLIC DEFENDER PRO TEM
FOR THE CITY OF HATTIESBURG**

WHEREAS, the Council recognizes the need to appoint a Municipal Public Defender Pro Tem; and

WHEREAS, the Council desires the administration of the City to continue to operate its routine functions.

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF HATTIESBURG:

Section 1. That Andrew Arman Miri be and is hereby appointed as Municipal Public Defender Pro Tem, effective May 2, 2023 until further ordered.

Section 2. That public interest and necessity requiring same, this Resolution shall become effective immediately from and after passage.

The above and foregoing Resolution, after having been first reduced to writing, was introduced by Council member _____, seconded by Council member _____, and was adopted by the following vote, to-wit:

YEAS:

NAYS:

The President thereby declared the motion carried and the Resolution adopted, this the 2nd day of May, 2023.

(S E A L)

ATTEST:

ADOPTED:

CLERK OF COUNCIL

PRESIDENT

The above and foregoing Resolution having been submitted to and approved by the Mayor, this the 2nd Day of May, 2023.

ATTEST:

APPROVED:

CITY CLERK

MAYOR



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Sylvester London, Division Manager
cc:
Date: Tuesday, May 2, 2023
Re: Acknowledge receipt of the two-quote docket.
File Number: 2023-287
Minute Book #

Summary

Acknowledge receipt of the unadvertised bid docket for the period of March 27, 2023 through April 21, 2023, covering purchases requiring the obtaining of a minimum of two (2) bids as defined in Section 31-7-13 (B) of the Mississippi Code.

Recommendation Statement

Attached is the unadvertised bid docket for the period of March 27, 2023 through April 21, 2023, covering purchases requiring the obtaining of a minimum of two (2) bids as defined in Section 31-7-13 (B) of the Mississippi Code.

This report is submitted for your review, approval, and acknowledgement on the minutes of the City Council. Should there be any questions, please feel free to contact my office.

Please place this on the May 2, 2023 City Council meeting for consideration.

SUCCESSFUL BID/ OTHER BID	PURCHASE ORDER	BID AMOUNT	ITEM DESCRIPTION
BULLOCK HARDWOOD FLOORING D&S CLEANING SERVICES	2302768	\$ 6,500.00 \$ 10,960.00	HARDWOOD FLOORS
B W SULLIVAN BUILDING CONTRACTOR INC GB COATINGS LLC MSP ENTERPRISES LLC MITCHCO CONSTRUCTION INC	2302781	\$ 19,900.00 \$ 27,450.00 \$ 28,115.00 \$ 29,300.00	CAC BLACK BOX THEATRE
OFFICE PRODUCTS PLUS STANDARD OFFICE	2302870	\$ 11,997.00 \$ 12,000.00	STACKABLE CHAIRS AT TRAUM DEPT
PARKER'S LANDSCAPE SERV INC FOUR SEASONS LAWN AND LANDSCAPE LLC KLEAN KUT LANDSCAPE & CONSTRUCTION LLC	2302941	\$ 8,780.00 \$ 12,540.50 \$ 37,722.00	HARDY ST ROUNDABOUT PLANTING

CITY OF HATTIESBURG
UNADVERTISED BID RESULTS

OO# 2302768

ITEM: HARDWOOD FLOORS

BID #1

WINNING BID

COMPANY BULLOCK HARDWOOD FLOORING

BID

AMOUNT \$6,500.00

BID #2

COMPANY D&S CLEANING SERVICES

BID

AMOUNT \$10,960.00

BID #3

COMPANY _____

BID

AMOUNT _____

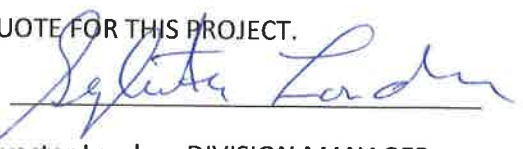
BID #4

COMPANY _____

BID

AMOUNT _____

THANK YOU FOR SENDING A QUOTE FOR THIS PROJECT.


Sylvester London, DIVISION MANAGER



City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

Bill To 1001
City of Hattiesburg
P.O. BOX 1898
Hattiesburg, MS 39401

Ship To 1004
220 West Front St
2nd Floor Jackie Dole Building
Hattiesburg, MS 39401

Purchase Order
Fiscal Year 2023 Page 1 of 1

Purchase Order Number **02302768**
Purchase Order Date **04/11/2023**
Department **COMMUNITY CENTERS**

FID 64-6000432

Vendor 49823
BULLOCK HARDWOOD FLOORING
95 SHINE BULLOCK ROAD
LAUREL, MS 39443

VENDOR PHONE NUMBER	VENDOR EMAIL	VENDOR NUMBER	REQUISITION NUMBER	BUYER NAME	DELIVERY REFERENCE
		49823	2302643	Rebecca Acker	

NOTES

TWO QUOTE FOR HARDWOOD FLOORS

ITEM #	DESCRIPTION	QUANTITY	UOM	UNIT PRICE	EXTENDED PRICE
1	FURNISH MATERIAL, LABOR, AND EQUIPMENT TO CLEAN SCREEN AND APPLY ONE COAT OF OIL BASE WOOD FINISH TO THE 2ND AND 3RD FLOORS AND STAIRS TO THE CULTURAL CENTER. GL #: 077650 - 715014	1.0000	EACH	\$6,500.0000	\$6,500.00

SUBMIT SEPARATE INVOICES FOR EACH ORDER. PREPAY SHIPPING CHARGES IF ANY AND ADD TO INVOICE. THE PO NUMBER MUST APPEAR ON ALL PACKAGES & INVOICES.

City Clerk

Total Ext. Price \$6,500.00
Purchase Order Total \$8,500.00

Bullock Hardwood Floors

95 Shine Bullock Rd.
Laurel, MS 39443

601-

Invoice

04/04/2023

Invoice for

Attn: Rebecca Acker
City of Hattiesburg Purchasing Dept.
Division Manager

Payable to

Bullock Hardwood Floors
95 Shine Bullock Rd.
Laurel, MS 39443

Project

Culture Center

Invoice

23-0404.01

Due date: 04/11/2023

Description

Furnish material, labor and equipment to clean, screen, and apply one coat of oil base wood finish to the 2nd and 3rd floors and stairs to the Cultural Center.

Total price

estimated size 5,500 sq ft.

Total:

6,500.00

payment due upon receipt

Subtotal

6,500.00





D&S Cleaning Services

723 Main Street
Hattiesburg, MS 39401

(601) 545-4944
comcntr@hattiesburgms.com

ESTIMATE	#21
TOTAL	\$10,960.00

CONTACT US

P.O. BOX 1751
Picayune, MS 39466

(601) 914-2918
admin@dsleanservices.com

ESTIMATE

Services	qty	unit price	amount
----------	-----	------------	--------

Wood Floor Screening and Re-Coating	1.0	\$9,460.00	\$9,460.00
-------------------------------------	-----	------------	------------

Cultural Center of Hattiesburg (5,500 sq/ft)

Delivery Date- Completed on or before April 30th, 2023 or as agreed upon between service provider and customer.

Price Expiration- July 31st, 2023. Our commercial refinishing supplies are special ordered and will take approximately (1) week to arrive for job. If you intend on utilizing our services please let us know as soon as possible.

Services subtotal: \$9,460.00

Materials	qty	unit price	amount
-----------	-----	------------	--------

Screen Material	1.0	\$500.00	\$500.00
-----------------	-----	----------	----------

10 boxes of (10) sanding screens

Basic Coating Commercial Finish	1.0	\$1,000.00	\$1,000.00
---------------------------------	-----	------------	------------

10 gallons of commercial finish

Materials subtotal: \$1,500.00

Subtotal	\$10,960.00
----------	-------------

Total	\$10,960.00
--------------	--------------------

CITY OF HATTIESBURG
UNADVERTISED BID RESULTS

OQ# 2302781

ITEM: CAC BLACK BOX THEATRE - ENG

BID #1

WINNING BID

COMPANY B W SULLIVAN BUILDING CONTRACTOR INC

BID

AMOUNT \$19,900.00

BID #2

COMPANY GCB COATINGS LLC

BID

AMOUNT \$27,450.00

BID #3

COMPANY MSP ENTERPRISES LLC

BID

AMOUNT \$28,115.00

BID #4

COMPANY MITCHCO CONSTRUCTION INC

BID

AMOUNT \$29,300.00

THANK YOU FOR SENDING A QUOTE FOR THIS PROJECT.



Sylvester London, DIVISION MANAGER



City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

Purchase Order

Fiscal Year 2023

Page 1 of 1

Bill To 1001
City of Hattiesburg
P.O. BOX 1898
Hattiesburg, MS 39401

Ship To 1014
212 West Front St
Centennial Building
Hattiesburg, MS 39401

Purchase Order Number **02302781**
Purchase Order Date **04/11/2023**
Department **ENGINEERING**

FID 64-6000432

Vendor 47013
B W SULLIVAN BUILDING CONTRACTOR INC
4451 HWY 49
HATTIESBURG, MS 39401

VENDOR PHONE NUMBER	VENDOR EMAIL	VENDOR NUMBER	REQUISITION NUMBER	BUYER NAME	DELIVERY REFERENCE
	SCOTT@BWSULLIVAN.COM	47013	2302686	Lakecia Buckhalter	

NOTES

TWO-QUOTE CAC BLACK BOX THEATRE
PLEASE EMAIL THE INVOICE TO shensarling@hattiesburgms.com...THANKS.

ITEM #	DESCRIPTION	QUANTITY	UOM	UNIT PRICE	EXTENDED PRICE
1	CONSTRUCTION FOR THE BLACK BOX THEATRE - (BW SULLIVAN BUILDING CONTRACTOR, INC) GL #: 086300 - 7295PR	1.0000	EACH	\$19,900.0000	\$19,900.00

SUBMIT SEPARATE INVOICES FOR EACH ORDER. PREPAY SHIPPING CHARGES IF ANY AND ADD TO INVOICE. THE PO NUMBER MUST APPEAR ON ALL PACKAGES & INVOICES.

City Clerk

Total Ext. Price \$19,900.00
Purchase Order Total **\$19,900.00**

B.W. SULLIVAN BUILDING CONTRACTOR, INC.

4451 US Highway 49
Hattiesburg, MS 39401-9305
Office 601-582-2933 Fax 601-582-2049

March 20, 2023

City of Hattiesburg
Attn: Sid Gonsoulin
200 Forrest Street
Hattiesburg, Mississippi 39401

**RE: Bid For Phase 1 ONLY
CAC Black Box Theatre
City of Hattiesburg**

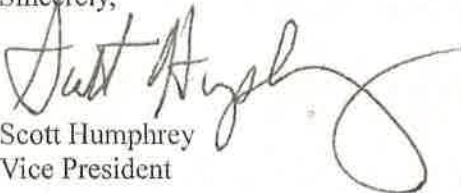
Sid,

We propose to furnish all necessary materials, labor, equipment, supervision and permits as required per the Scope of Work as per drawings prepared by Landry Lewis Germany Architects, P.A. Dated March 6, 2023 for the sum of:

Nineteen Thousand Nine Hundred Dollars and No Cents - \$19,900.00

Should you have any questions concerning this bid proposal please feel free to contact me.

Sincerely,


Scott Humphrey
Vice President

Confirmed with the Contractor that the permit noted above assumes a zero cost permit issued by / to City of Hattiesburg.
~SG



PHASE TWO ONLY



Coatings, LLC

40 Deep South Lane, Purvis, MS 39475

03/21/2023

Estimate

To: Hattiesburg CAC Black Box

Estimate to paint black box and reception per plans

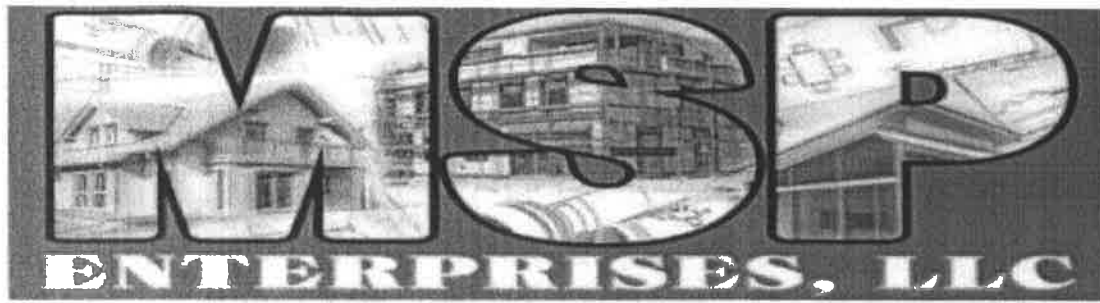
Total - \$27,450.00

Thank you for the opportunity to quote this project and feel free to call should you have any questions or concerns.

Respectfully,

A handwritten signature in black ink, appearing to read "Michael Deans", with a long horizontal flourish extending to the right.

Michael Deans



Commercial and Residential Building and Remodeling

683 R.V. Lindley Road Moselle, MS 39459 COR #23400-MC CELL 601-270-3702
Facebook: MSP Enterprises, LLC Website: MSPEnterprises.biz
Email: msp.ent@aol.com

City of Hattiesburg
Attn: Sid Gonsoulin
200 Forrest St.
Hattiesburg MS 39401

March 20, 2023

RE: CAC Black Box Theatre CN#22-3936 Phase I and Phase II

WORK PROPOSAL

**** DENOTES DISCLAIMERS**

DESCRIPTION OF WORK	PRICE
PHASE I: General Construction to include demo/installation of CMU block walls and hollow metal doors & frames, as well as minor electrical reconfiguration and demo, paint, and general labor. <i>** price includes all bonding, and MPC</i> <i>**prices does not include permitting or related costs</i>	\$28,115
PHASE II: Prep, prime, and paint only, as described in the last sheet <i>** price includes all bonding, and MPC</i> <i>**prices does not include permitting or related costs</i>	\$38,085

Respectfully Submitted,

Michael Patterson
MSP Enterprises



March 16, 2023

Landry Lewis Germany Architects, P.A.
Shane Germany
Hattiesburg, MS

Re: CAC Black Box Theatre City of Hattiesburg

Mr. Germany:

Per your request and on-site visit, we are providing the following proposal for the renovation for black box theatre, City of Hattiesburg, CN#22-3936 Phase 1.

Proposal includes all labor, material, equipment, taxes and insurance for Phase 1 only.

TOTAL	\$ 29,300.00
-------	---------------------

Scope Excludes: City Permits, roofing, design fees, mechanical, flooring, audio/visual, structural or civil design/layout, any unknown damaged lumber or structural damage. Lead time on door is 6-8 weeks from approval.

If this work is desired, please issue the appropriate documents as soon as possible so that the work can be incorporated into our schedule without delay or additional cost.

Quotation is subject to review in fifteen days.

Sincerely,

MITCHCO CONSTRUCTION, INC.

Chad Mitchell

CITY OF HATTIESBURG
UNADVERTISED BID RESULTS

OQ# 2302870

ITEM: STACKABLE CHAIRS AT TRAIN DEPOT

BID #1

WINNING BID

COMPANY OFFICE PRODUCTS PLUS

BID

AMOUNT \$11,997.50

BID #2

COMPANY STANDARD OFFICE

BID

AMOUNT \$12,000.00 (WITHOUT FREIGHT)

BID #3

COMPANY _____

BID

AMOUNT _____

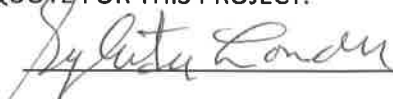
BID #4

COMPANY _____

BID

AMOUNT _____

THANK YOU FOR SENDING A QUOTE FOR THIS PROJECT.


Sylvester London, DIVISION MANAGER



City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

Bill To 1001
City of Hattiesburg
P.O. BOX 1898
Hattiesburg, MS 39401

Ship To 1004
220 West Front St
2nd Floor Jackie Dole Building
Hattiesburg, MS 39401

Purchase Order

Fiscal Year 2023

Page 1 of 1

Purchase Order Number **02302870**
Purchase Order Date **04/17/2023**
Department **COMMUNITY CENTERS**

FID 64-6000432

Vendor 3810
OFFICE PRODUCTS PLUS
PO BOX 256
RIDGELAND, MS 39158

VENDOR PHONE NUMBER	VENDOR EMAIL	VENDOR NUMBER	REQUISITION NUMBER	BUYER NAME	DELIVERY REFERENCE
	DJONES@OPPLUS.COM	3810	2302774	Rebecca Acker	

NOTES

TWO QUOTE FOR STACKABLE CHAIRS AT TRAIN DEPOT

ITEM #	DESCRIPTION	QUANTITY	UOM	UNIT PRICE	EXTENDED PRICE
1	HERCULES CROWN BACK STACKING BANQUET CHAIRS VINYL COPPER VEIN FRAME GL #: 001093 - 739900	1.0000	EACH	\$11,997.5000	\$11,997.50

SUBMIT SEPARATE INVOICES FOR EACH ORDER. PREPAY SHIPPING CHARGES IF ANY AND ADD TO INVOICE. THE PO NUMBER MUST APPEAR ON ALL PACKAGES & INVOICES.

Total Ext. Price \$11,997.50

Purchase Order Total \$11,997.50


City Clerk

opPLUS

208 Park Court
Ridgeland, MS 39157
Tel 601 898-2600 Fax 601 853-0627
djones@opplus.com
601.941.3900

Model #	Description	Qty	List *Price	*Quote	Ext Quote
Stack Chairs					
FD-CO1-COPPER-TN-VY-GG	Hercules Crown Back Stacking Banquet chair Tan Vinyl- Copper Vein Frame	250	\$ -	\$ 47.99	\$ 11,997.50

FREIGHT	\$	
Total	\$	11,997.50

**Payment Terms:**

Full balance due within 30 days of receipt of product.

Delivery/Installation Terms:

Proposal does not include assembly, installation, and cardboard removal.
arrives by LTL Common Carrier / Dock Delivery / Lift-Gate included

SPECIAL ORDER AND CUSTOM MERCHANDISE CANNOT BE RETURNED
PRICES SUBJECT TO CHANGE AFTER 30 DAYS (5.05.2023)

All material is guaranteed to be as specified. All work to be completed in a workman-like manner according to standard practices. Any alteration or deviation from above specifications involving extra costs will be executed only upon written orders, and will become an extra charge over and above the proposal. All agreements contingent upon strikes, accidents or delays beyond our control. All workers are fully covered by Workmen's Compensation Insurance.

Authorized Signature:

Doug Jones

Date: 04.05.2023

Acceptance of Proposal -The above prices, specifications, quantities, finishes, fabric, colors, and conditions are satisfactory and are hereby accepted. You are authorized to do the work as specified. Payment will be made as outlined above. Acceptance of this proposal authorizes OPP to order above merchandise.

PO#: ____ N/A ____ Date/Acceptance: _____ Signature: _____ Title: _____

QUOTE/BID

NAME: City of Hattiesburg

ADDRESS: Purchasing Division

ADDRESS: P.O. Box 1898

ADDRESS: Hattiesburg, MS 39405

PHONE #: 601-545-4944

FAX #:

ATTENTION: Rebecca Acker



5317 Old Hwy 11, Suite 15
Hattiesburg, MS 39402
www.sos-oec.com 601-544-5361

INQUIRY #: 1

DATE: 4-17-23

TERMS:

PRICES QUOTED ARE:

F.O.B.

DEL

COMMENTS: For Train Depot

We are pleased to quote you as follows Your inquiry

MFG	STOCK #	DESCRIPTION (Fabric#, Finish#, Etc.)	UN	QTY	UN \$	EXT. \$
		FD-COZ-COPPER-BRN-VY-GB Hercules				
		Stacking Banquet Chair				
		in Brown Vinyl-Copper				
		Vein Frame - See	ea	250	48.00	\$12,000.00
		Attached photos & info				
		Delivery Date: Approximately				
		3 weeks from the date				
		of order.				
		Quote valid until May 1, 2023.				
OEC	ASSEMBLY					0
OEC	DELIVERY					0
OEC	FREIGHT					782.87
OEC	INSTALLATION					0

This is a special order - Therefore no cancellations or returns allowed.

Subtotal this page	\$12,782.87
Tax Percentage	0
Tax	\$ 0
Total Price	\$12,782.87

Accepted by

Date

Charlene Lewis

4-17-23

OEC Representative

Date

CITY OF HATTIESBURG
UNADVERTISED BID RESULTS

OQ# 2302941

ITEM: HARDY ST ROUNDABOUT PLANTING

BID #1

WINNING BID

COMPANY PARKER'S LANDSCAPE SERV INC

BID

AMOUNT \$8,780.00

BID #2

COMPANY FOUR SEASONS LAWN AND LANDSCAPE LLC

BID

AMOUNT \$12,540.50

BID #3

COMPANY KLEAN KUT LANDSCAPE & CONSTRUCTION LLC

BID

AMOUNT \$37,722.00

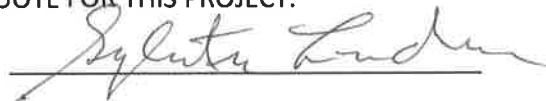
BID #4

COMPANY _____

BID

AMOUNT _____

THANK YOU FOR SENDING A QUOTE FOR THIS PROJECT.



Sylvester London, DIVISION MANAGER



City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

Bill To 1001
City of Hattiesburg
P.O. BOX 1898
Hattiesburg, MS 39401

Ship To 9998
NON APPLICABLE

Purchase Order

Fiscal Year 2023

Page 1 of 1

Purchase Order Number **02302941**
Purchase Order Date **04/21/2023**
Department **PARKS & REC MAINT DIV**

FID 64-6000432

Vendor 3853
PARKER'S LANDSCAPE SERV INC
PO BOX 17361
HATTIESBURG, MS 39404-7361

VENDOR PHONE NUMBER	VENDOR EMAIL	VENDOR NUMBER	REQUISITION NUMBER	BUYER NAME	DELIVERY REFERENCE
	MIKE@PARKERSLANDSCAPESERVICE.COM	3853	2302853	Akira Lewis	

NOTES

P&R TWO QUOTE-HARDY ST ROUNDABOUT:PLANTING
PLEASE SEND INVOICE TO ALEWIS@HATTIESBURGMS.COM

ITEM #	DESCRIPTION	QUANTITY	UOM	UNIT PRICE	EXTENDED PRICE
1	HARDY STREET ROUNDABOUT PLANTING PLAN TO INCLUDE LABOR AND MATERIAL PER THE MATERIAL AND PLANTING SPECIFICATIONS ATTACHED. THE CITY OF HATTIESBURG WILL PROVIDE DESIGN PLANS TO VENDOR. GL #: 002300 - 699900	1.0000	EACH	\$8,780.0000	\$8,780.00

SUBMIT SEPARATE INVOICES FOR EACH ORDER. PREPAY SHIPPING CHARGES IF ANY AND ADD TO INVOICE. THE PO NUMBER MUST APPEAR ON ALL PACKAGES & INVOICES.

City Clerk

Total Ext. Price \$8,780.00
Purchase Order Total \$8,780.00



MAYOR
Toby Barker

COUNCIL - WARD ONE
Jeffrey George

COUNCIL - WARD TWO
Deborah Denard Delgado

COUNCIL - WARD THREE
Carter Carroll

COUNCIL - WARD FOUR
Dave Ware

COUNCIL - WARD FIVE
Nicholas Brown

TO: PARKER'S LANDSCAPE

FROM: CITY OF HATTIESBURG

RE: BID REQUEST FOR HARDY STREET ROUNDABOUT PLANTING PLAN

DATE: 4/4/2023

This is a request to bid on the Hardy Street Roundabout planting project to include labor and material with the following material and planting specifications:

1. <u>TOPSOIL FOR PLANT HOLES, CONTRACTOR FURNISHED CU. YD. 18</u>	\$ 540
2. <u>SOLID SOD (PATCHING DISTURBED AREAS) SQ. YD. 150</u>	\$ 500
3. <u>WATERING AND PLANT EST. LUMP SUM 1</u>	\$ 500
4. <u>BED PREPARATION SQ. FT. 1800</u>	\$ 250
5. <u>FERTILIZER FOR WOODY PLANT MATERIAL, TABLET 21 GRAM QTY OF 130</u>	\$ 100
6. <u>TREE BARK MULCH, TYPE III (2" DEPTH IN BED AREAS) CU. YD. 12</u>	\$ 360
7. <u>TREE BARK MULCH, TYPE V (3" DEPTH IN BED AREAS) CU. YD. 18</u>	\$ 540
8. <u>TREE PLANTING, CAROLINA MIDNIGHT LOROPETALUM (15 GAL) QTY OF 1</u>	\$ 75
9. <u>TREE PLANTING, NELLIE R. STEVENS HOLLY (45 GAL) QTY OF 4</u>	\$ 800
10. <u>TREE PLANTING, LITTLE GEM MAGNOLIA (15 GAL) QTY OF 5</u>	\$ 375

11. SHRUB PLANTING, DWARF YAUPON HOLLY (3 GAL) QTY OF 21	\$	210
12. SHRUB PLANTING, MUHLY GRASS (3 GAL) QTY OF 23	\$	230
13. SHRUB PLANTING, PARSONS JUNIPER (1 GAL) QTY OF 44	\$	220
14. ALL LABOR FOR GROUNDWORK, SITE PREP AND INSTALLATION	\$	4300

TOTAL BID PRICE: \$ 8,780

The City of Hattiesburg will provide design plans to awarded bid.

Please sign and submit this bid request with your quote to slondon@hattiesburgms.com by 4/6/23 before 5:00pm.

THIS PRICE DOES NOT INCLUDE SALES TAX. 7% WOULD BE ADDED IF APPLICABLE

Vendor Signature:

Carl Van



FOUR SEASONS Lawn and Landscape, LLC

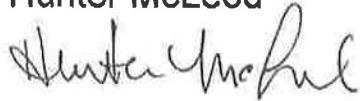
1620 Bush Diary Road
Laurel, Mississippi 39440

Office: 601-425-5956
Email: hmcleod4seasons@yahoo.com

March 12, 2023

Four Seasons Lawn and Landscape, LLC's bid for the *Hardy Street Roundabout Planting Plan* is \$12,540.50 per the materials and planting specifications provided by the City of Hattiesburg.

Hunter McLeod

A handwritten signature in black ink, appearing to read "Hunter McLeod", written over the printed name.

Owner



MAYOR
Toby Barker

COUNCIL - WARD ONE
Jeffrey George

COUNCIL - WARD TWO
Deborah Denard Delgado

COUNCIL - WARD THREE
Carter Carroll

COUNCIL - WARD FOUR
Dave Ware

COUNCIL - WARD FIVE
Nicholas Brown

TO: FOUR SEASONS LAWN AND GARDEN (hmcleod4seasons@yahoo.com)

FROM: CITY OF HATTIESBURG

RE: BID REQUEST FOR HARDY STREET ROUNDABOUT PLANTING PLAN

DATE: 3/17/2023

This is a request to bid on the Hardy Street Roundabout planting project to include labor and material with the following material and planting specifications:

1. <u>TOPSOIL FOR PLANT HOLES, CONTRACTOR FURNISHED CU. YD. 18</u>	<u>\$ 990.00</u>
2. <u>SOLID SOD (PATCHING DISTURBED AREAS) SQ. YD. 150</u>	<u>\$ 1,050.00</u>
3. <u>WATERING AND PLANT EST. LUMP SUM 1</u>	<u>\$ 2,150.00</u>
4. <u>BED PREPARATION SQ. FT. 1800</u>	<u>\$ 1,890.00</u>
5. <u>FERTILIZER FOR WOODY PLANT MATERIAL, TABLET 21 GRAM QTY OF 130</u>	<u>\$ 325.00</u>
6. <u>TREE BARK MULCH, TYPE III (2" DEPTH IN BED AREAS) CU. YD. 12</u>	<u>\$ 660.00</u>
7. <u>TREE BARK MULCH, TYPE V (3" DEPTH IN BED AREAS) CU. YD. 18</u>	<u>\$ 1,440.00</u>
8. <u>TREE PLANTING, CAROLINA MIDNIGHT LOROPETALUM (15 GAL) QTY OF 1</u>	<u>\$ 165.00</u>
9. <u>TREE PLANTING, NELLIE R. STEVENS HOLLY (45 GAL) QTY OF 4</u>	<u>\$ 1,650.00</u>
10. <u>TREE PLANTING, LITTLE GEM MAGNOLIA (15 GAL) QTY OF 5</u>	<u>\$ 812.50</u>

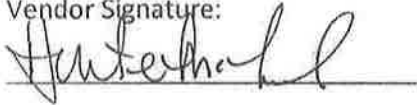
- | | |
|---|-----------------------------|
| 11. <u>SHRUB PLANTING, DWARF YAUPON HOLLY (3 GAL) QTY OF 21</u> | <u>\$ 504.00</u> |
| 12. <u>SHRUB PLANTING, MUHLY GRASS (3 GAL) QTY OF 23</u> | <u>\$ 552.00</u> |
| 13. <u>SHRUB PLANTING, PARSONS JUNIPER (1 GAL) QTY OF 44</u> | <u>\$ 352.00</u> |
| 14. <u>ALL LABOR FOR GROUNDWORK, SITE PREP AND INSTALLATION</u> | <u>\$ included in price</u> |
| 15. | |

TOTAL BID PRICE: \$ 12,540.50

The City of Hattiesburg will provide design plans to awarded bid.

Please sign and submit this bid request with your quote to slondon@hattiesburgms.com by 3/24/23 before 5:00pm.

Vendor Signature:





MAYOR
Toby Barker

COUNCIL - WARD ONE
Jeffrey George

COUNCIL - WARD TWO
Deborah Denard Delgado

COUNCIL - WARD THREE
Carter Carroll

COUNCIL - WARD FOUR
Dave Ware

COUNCIL - WARD FIVE
Nicholas Brown

TO: KLEAN KUT LANDSCAPE & CONSTRUCTION, LLC

FROM: CITY OF HATTIESBURG

RE: BID REQUEST FOR HARDY STREET ROUNDABOUT PLANTING PLAN

DATE: 4/19/2023

This is a request to bid on the Hardy Street Roundabout planting project to include labor and material with the following material and planting specifications:

1. TOPSOIL FOR PLANT HOLES, CONTRACTOR FURNISHED CU. YD. 18	\$990.00
2. SOLID SOD (PATCHING DISTURBED AREAS) SQ. YD. 150	\$844.00
3. WATERING AND PLANT EST. LUMP SUM 1 – WATER TRUCK, NO IRRIGATION	\$2500.00
4. BED PREPARATION SQ. FT. 1800	\$800.00
5. FERTILIZER FOR WOODY PLANT MATERIAL, TABLET 21 GRAM QTY OF 130	\$268.00
6. TREE BARK MULCH, TYPE III (2" DEPTH IN BED AREAS) CU. YD. 12	\$680.00
7. TREE BARK MULCH, TYPE V (3" DEPTH IN BED AREAS) CU. YD. 18	\$990.00
8. TREE PLANTING, CAROLINA MIDNIGHT LOROPETALUM (15 GAL) QTY OF 1	\$185.00
9. TREE PLANTING, NELLIE R. STEVENS HOLLY (45 GAL) QTY OF 4	\$1500.00
10. TREE PLANTING, LITTLE GEM MAGNOLIA (15 GAL) QTY OF 5	\$1900.00

11. SHRUB PLANTING, DWARF YAUPON HOLLY (3 GAL) QTY OF 21	\$820.00
12. SHRUB PLANTING, MUHLY GRASS (3 GAL) QTY OF 23	\$667.00
13. SHRUB PLANTING, PARSONS JUNIPER (1 GAL) QTY OF 44	\$1278.00
14. ALL LABOR FOR GROUNDWORK, SITE PREP AND INSTALLATION	\$24,300.00

TOTAL BID PRICE:
\$37,722.00

The City of Hattiesburg will provide design plans to the awarded bid.

Please sign and submit this bid request with your quote to slondon@hattiesburgms.com by 4/26/23 before 5:00pm.

Vendor Signature:

_____ GARY DEMENT _____



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Ann Jones
cc:
Date: Tuesday, May 2, 2023
Re: Acknowledge receipt of FY22 audit from Hattiesburg Public School District.
File Number: 2023-305
Minute Book #

Summary

Acknowledge receipt of FY22 audit from Hattiesburg Public School District.

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

SUZANNE E. SMITH, CPA, PLLC

AUDITING AND ACCOUNTING SERVICES

sesmithcpa@msn.com

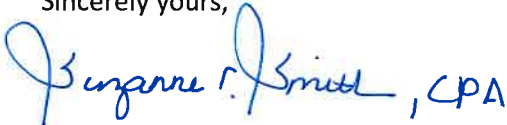
March 2, 2023

City Council Members
City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403

Council Members:

Enclosed is a copy of the report for the Single Audit of Hattiesburg Public School District for the year ended June 30, 2022. My contract with the district requires that you receive a copy of this report. This report has been reviewed by the Office of the State Auditor. If you need anything else from me, please let me know.

Sincerely yours,

A handwritten signature in blue ink that reads "Suzanne E. Smith, CPA". The signature is fluid and cursive, with the initials "S.E.S." being prominent.

Suzanne E. Smith, CPA
Suzanne E. Smith, CPA, PLLC

HATTIESBURG PUBLIC SCHOOL DISTRICT

Audited Financial Statements
For the Year Ended June 30, 2022

HATTIESBURG PUBLIC SCHOOL DISTRICT TABLE OF CONTENTS

INDEPENDENT AUDITOR'S REPORT	7
MANAGEMENT'S DISCUSSION AND ANALYSIS	13
BASIC FINANCIAL STATEMENTS	
Government-wide Financial Statements	
Exhibit A – Statement of Net Position	23
Exhibit B – Statement of Activities	25
Governmental Funds Financial Statements	
Exhibit C – Balance Sheet	27
Exhibit C-1 - Reconciliation of the Governmental Funds Balance Sheet to the Statement of Net Position	29
Exhibit D – Statement of Revenues, Expenditures and Changes in Fund Balances	31
Exhibit D-1 - Reconciliation of the Governmental Funds Statement of Revenues, Expenditures and Changes in Fund Balances to the Statement of Activities	33
Notes to the Financial Statements	35
REQUIRED SUPPLEMENTARY INFORMATION	
Budgetary Comparison Schedule – General Fund	67
Budgetary Comparison Schedule – ESSER II Fund	69
Budgetary Comparison Schedule – ESSER III ARP Fund	71
Schedule of the District's Proportionate Share of the Net Pension Liability	73
Schedule of District Contributions (PERS)	75
Schedule of the District's Proportionate Share of the Net OPEB Liability	77
Schedule of District Contributions (OPEB)	79
Notes to the Required Supplementary Information	81
SUPPLEMENTARY INFORMATION	
Schedule of Expenditures of Federal Awards	87
Notes to the Schedule of Expenditures of Federal Awards	89
Schedule of Instructional, Administrative and Other Expenditures – Governmental Funds	91
OTHER INFORMATION	
Statement of Revenues, Expenditures and Changes in Fund Balances - General Fund, Last Four Years	95
Statement of Revenues, Expenditures and Changes in Fund Balances - All Governmental Funds, Last Four Years	97
REPORTS ON INTERNAL CONTROL AND COMPLIANCE	
Independent Auditor's Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance with <i>Government Auditing Standards</i>	101
Independent Auditor's Report on Compliance for Each Major Federal Program and Report on Internal Control Over Compliance Required by the Uniform Guidance	103
INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE WITH STATE LAWS AND REGULATIONS	109
SCHEDULE OF FINDINGS AND QUESTIONED COSTS	113
AUDITEE'S CORRECTIVE ACTION PLAN	117

(This page left blank intentionally)

INDEPENDENT AUDITOR'S REPORT

(This page left blank intentionally)

SUZANNE E. SMITH, CPA, PLLC

AUDITING AND ACCOUNTING SERVICES

sesmithcpa@msn.com

INDEPENDENT AUDITOR'S REPORT

Superintendent and School Board
Hattiesburg Public School District

Report on the Audit of the Financial Statements

Opinions

We have audited the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the Hattiesburg Public School District as of and for the year ended June 30, 2022, and the related notes to the financial statements, which collectively comprise the Hattiesburg Public School District's basic financial statements as listed in the table of contents.

In our opinion, the accompanying financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, each major fund, and the aggregate remaining fund information of the Hattiesburg Public School District, as of June 30, 2022, and the respective changes in financial position thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America (GAAS) and the standards applicable to financial audits contained in *Government Auditing Standards (Government Auditing Standards)*, issued by the Comptroller General of the United States. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of the Hattiesburg Public School District and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Hattiesburg Public School District's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

POST OFFICE BOX 1563
STARKVILLE, MS 39750
PHONE: 601-938-5717

Auditor's Responsibility for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with GAAS and *Government Auditing Standards* will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with GAAS and *Government Auditing Standards*, we

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Hattiesburg Public School District's internal control. Accordingly, no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Hattiesburg Public School District's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis, budgetary comparison information, the Schedule of the District's Proportionate Share of the Net Pension Liability, the Schedule of District Contributions (PERS), the Schedule of the District's Proportionate Share of the Net OPEB Liability, and the Schedule of District Contributions (OPEB), be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Hattiesburg Public School District's basic financial statements. The accompanying Schedule of Expenditures of Federal Awards, as required by *Title 2 U.S. Code of Federal Regulations Part 200*, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards and the Schedule of Instructional, Administrative and Other Expenditures for Governmental Funds are presented for purposes of additional analysis and are not a required part of the basic financial statements. Such information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the accompanying Schedule of Expenditures of Federal Awards and the Schedule of Instructional, Administrative and Other Expenditures for Governmental Funds are fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Other Information

Management is responsible for the other information included in the annual report. The other information comprises the Statement of Revenues, Expenditures and Changes in Fund Balances—General Fund, Last Four Years and the Statement of Revenues, Expenditures and Changes in Fund Balances—All Governmental Funds, Last Four Years but does not include the basic financial statements and our auditor's report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon.

In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated January 27, 2023, on our consideration of the Hattiesburg Public School District's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the Hattiesburg Public School District's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Hattiesburg Public School District's internal control over financial reporting and compliance.



Suzanne E. Smith, CPA, PLLC
Starkville, Mississippi

January 27, 2023

(This page left blank intentionally)

MANAGEMENT'S DISCUSSION AND ANALYSIS

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

The following discussion and analysis of Hattiesburg Public School District's financial performance provides an overview of the School District's financial activities for the year ended June 30, 2022. The intent of this discussion and analysis is to look at the School District's performance as a whole. Readers are encouraged to review the financial statements and the notes to the financial statements to enhance their understanding of the School District's financial performance.

FINANCIAL HIGHLIGHTS

- Total net position for 2022 increased \$14,605,902, including a prior period adjustment of (\$47,905), which represents a 209% increase from fiscal year 2021. Total net position for 2021 increased \$6,528,975, including a prior period adjustment of (\$272,527), which represents a 48% increase from fiscal year 2020.
- General revenues amounted to \$41,744,886 and \$41,971,304, or 66% and 74% of all revenues for fiscal years 2022 and 2021, respectively. Program specific revenues in the form of charges for services and grants and contributions accounted for \$21,728,359, or 34% of total revenues for 2022, and \$14,817,594, or 26% of total revenues for 2021.
- The District had \$48,819,438 and \$49,987,396 in expenses for fiscal years 2022 and 2021; only \$21,728,359 for 2022 and \$14,817,594 for 2021 of these expenses was offset by program specific charges for services, grants and contributions. General revenues of \$41,744,886 for 2022 and \$41,971,304 for 2021 were adequate to provide for these programs.
- Among major funds, the General Fund had \$39,630,318 in revenues and \$35,496,252 in expenditures for 2022, and \$39,063,465 in revenues and \$32,890,089 in expenditures in 2021. The General Fund's fund balance increased by \$2,105,877, including a prior period adjustment of (\$13,874), from 2021 to 2022, and decreased by \$121,133, including a prior period adjustment of \$27,786, from 2020 to 2021.
- Capital assets, net of accumulated depreciation, increased by \$5,767,475, including a prior period adjustment of \$38,369, for 2022 and increased by \$12,321,214, including a prior period adjustment of (\$304,065), for 2021. The increase for 2022 was due to the addition of construction in progress and furniture and equipment coupled with the increase in accumulated depreciation.
- Long-term debt, including the liability for compensated absences, decreased by \$985,331 for 2022 and decreased by \$988,710 for 2021. This decrease for 2022 was due primarily to the principal payments on outstanding long-term debt. The liability for compensated absences decreased by \$7,776 for 2022 and decreased by \$28,710 for 2021.

OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis serves as an introduction to the District's basic financial statements, which include government-wide financial statements, fund financial statements, and notes to the financial statements. This report also contains required supplementary information, supplementary information, and other information.

Government-wide Financial Statements

The government-wide financial statements are designed to provide the reader with a broad overview of the District's finances. These statements consist of the Statement of Net Position and the Statement of Activities, which are prepared using the flow of economic resources measurement focus and the accrual basis of accounting. The current year's revenues and expenses are taken into account regardless of when cash is received or paid.

The Statement of Net Position presents information on all the District's nonfiduciary assets, deferred outflows, liabilities, and deferred inflows, with the differences between them reported as "net position." Over

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

time, increases or decreases in the District's net position may serve as a useful indicator of whether its financial position is improving or deteriorating.

The Statement of Activities presents information showing how the District's net position changed during the most recent fiscal year. All changes in net position are reported as soon as the underlying event giving rise to the change occurs, regardless of the timing of related cash flows. Thus, revenues and expenses are reported in this statement for some items that will only result in cash flows in future fiscal periods.

The government-wide financial statements outline functions of the District that are principally supported by property taxes and intergovernmental revenues (governmental activities). The governmental activities of the District include instruction, support services, non-instructional, sixteenth section, pension expense, OPEB expense, and interest on long-term liabilities.

Fund Financial Statements

A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The District uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements. All of the funds of the District are included in one category: governmental funds.

Governmental funds – All of the District's general activities are reported in its governmental funds. Governmental funds are used to account for essentially the same functions reported as governmental activities in the government-wide financial statements. However, governmental funds are accounted for using the modified accrual basis of accounting and the flow of current financial resources measurement focus. The approach focuses on near-term inflows and outflows of spendable resources, as well as balances of spendable resources available at year end. The governmental fund statements provide a detailed view of the District's near-term financing requirements.

Because the focus of governmental funds is narrower than that of the government-wide financial statements, it is useful to compare the information presented for governmental funds with similar information presented for governmental activities in the government-wide financial statements. By doing so, the reader may gain a better understanding of the long-term impact of the District's near-term financing decisions. The governmental funds Balance Sheet is reconciled to the Statement of Net Position, and the governmental funds Statement of Revenues, Expenditures, and Changes in Fund Balances is reconciled to the Statement of Activities to facilitate this comparison between governmental funds and governmental activities.

The District maintains individual governmental funds in accordance with the *Financial Accounting Manual for Mississippi Public School Districts*. Information is presented separately in the governmental funds Balance Sheet and in the governmental funds Statement of Revenues, Expenditures, and Changes in Fund Balances for all major funds. All non-major funds are combined and presented in these reports as other governmental funds.

Reconciliation of Government-wide and Fund Financial Statements

The financial statements include two schedules that reconcile the amounts reported on the governmental funds financial statements (modified accrual basis of accounting) with government-wide financial statements (accrual basis of accounting). The following summarizes the major differences between the two statements:

Capital assets used in governmental activities are not reported on governmental funds financial statements.

Capital outlay spending results in capital assets on government-wide financial statements, but is reported as expenditures on the governmental funds financial statements.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

Bond and note proceeds result in liabilities on government-wide financial statements, but are recorded as other financing sources on the governmental funds financial statements.

A net pension liability and net OPEB liability result in liabilities on the government-wide financial statements but are not reported on governmental funds financial statements.

Certain other outflows represent either increases or decreases in liabilities on the government-wide financial statements but are reported as expenditures on the governmental funds financial statements.

Notes to the financial statements

The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements. The notes to the financial statements can be found immediately following the basic financial statements.

Required Supplementary Information

In addition to the basic financial statements and accompanying notes, this report also presents budgetary comparison schedules, Schedule of the District's Proportionate Share of the Net Pension Liability, Schedule of District Contributions (PERS), Schedule of the District's Proportionate Share of the Net OPEB Liability, and Schedule of District Contributions (OPEB) as required supplementary information. The District adopts an annual operating budget for all governmental funds. A budgetary comparison schedule has been provided for the General Fund and each additional major special revenue fund as required by the Governmental Accounting Standards Board.

Supplementary Information

Additionally, a Schedule of Expenditures of Federal Awards as required by Title 2 U.S. Code of Federal Regulations Part 200, Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards and a Schedule of Instructional, Administrative and Other Expenditures for governmental funds can be found in this report.

Other Information

Although not a required part of the basic financial statements, the Statement of Revenues, Expenditures and Changes in Fund Balances—General Fund, Last Four Years and the Statement of Revenues, Expenditures and Changes in Fund Balances—All Governmental Funds, Last Four Years, is presented for purposes of additional analysis as required by the Mississippi Department of Education.

GOVERNMENT-WIDE FINANCIAL ANALYSIS

Net position

Net position may serve over time as a useful indicator of the District's financial position. Assets and deferred outflows of resources exceeded Liabilities and deferred inflows of resources by \$7,621,963 as of June 30, 2022.

The District's financial position is a product of several financial transactions including the net result of activities, the acquisition and payment of debt, the acquisition and disposal of capital assets and the depreciation of capital assets.

Table 1 presents a summary of the District's net position at June 30, 2022 and June 30, 2021.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

Table 1
Condensed Statement of Net Position

	June 30, 2022	June 30, 2021	Percentage Change
Current assets	\$ 36,217,888	\$ 30,579,926	18.44%
Restricted assets	6,954,298	9,402,448	-26%
Capital assets, net	60,182,147	54,414,672	10.60%
Total assets	103,354,333	94,397,046	9.49%
 Deferred outflows of resources	 10,351,947	 9,118,162	 13.53%
 Current liabilities	 3,535,764	 5,771,299	 -38.74%
Long-term debt outstanding	27,982,430	28,967,761	-3.40%
Net pension liability	54,187,003	70,317,494	-22.94%
Net OPEB liability	3,096,687	3,759,563	-17.63%
Total liabilities	88,801,884	108,816,117	-18.39%
 Deferred inflows of resources	 17,282,433	 1,683,030	 926.86%
 Net position:			
Net investment in capital assets	35,636,647	31,827,527	11.97%
Restricted	13,667,451	11,529,745	18.54%
Unrestricted	(41,682,135)	(50,341,211)	17.20%
Total net position	\$ 7,621,963	\$ (6,983,939)	209.14%

Additional information on unrestricted net position:

In connection with the application of standards on accounting and financial reporting for pensions and OPEB, management presents the following additional information:

Total unrestricted net position (deficit)	(\$41,682,135)
Less unrestricted deficit in net position resulting from recognition of the net pension liability and net OPEB liability including the related deferred outflows and deferred inflows	62,825,940
Unrestricted net position, exclusive of the net pension liability and net OPEB liability effect	<u>\$ 21,143,805</u>

The following are significant current year transactions that have had an impact on the Statement of Net Position.

- Increase in current assets in the amount of \$5,637,962.
- Decrease in restricted assets of \$2,448,150.
- Increase in capital assets of \$5,767,475.
- Increase in deferred outflows of resources in the amount of \$1,233,785.
- Decrease in current liabilities in the amount of \$2,235,535.
- Decrease in the net pension liability in the amount of \$16,130,491.
- Decrease in the net OPEB liability in the amount of \$662,876.
- Increase in the deferred inflows of resources in the amount of \$15,599,403.
- The principal retirement of \$1,015,924 of long-term debt.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

Changes in net position

The District's total revenues for the fiscal years ended June 30, 2022 and June 30, 2021 were \$63,473,245 and \$56,788,898, respectively. The total cost of all programs and services was \$48,819,438 for 2022 and \$49,987,396 for 2021.

Table 2 presents a summary of the changes in net position for the fiscal years ended June 30, 2022 and June 30, 2021.

Table 2
Changes in Net Position

	<u>Year Ended</u> <u>June 30, 2022</u>	<u>Year Ended</u> <u>June 30, 2021</u>	<u>Percentage</u> <u>Change</u>
Revenues:			
Program revenues:			
Charges for services	\$ 3,227,124	\$ 471,680	584.18%
Operating grants and contributions	18,459,538	14,345,914	28.67%
Capital Grants and Contributions	41,697	-	N/A %
General revenues:			
Property taxes	22,066,732	21,992,050	0.34%
Grants and contributions not restricted	18,549,715	18,555,518	-0.03%
Investment earnings	388,459	496,341	-21.74%
Sixteenth section sources	80,920	151,429	-46.56%
Other	659,060	775,966	-15.07%
Total revenues	<u>63,473,245</u>	<u>56,788,898</u>	11.77%
Expenses:			
Instruction	25,218,942	24,913,201	1.23%
Support services	18,837,426	16,415,219	14.76%
Non-instructional	2,867,076	2,359,467	21.51%
Sixteenth section	39,651	47,531	-16.58%
Pension expense	1,103,590	5,209,306	-78.82%
OPEB expense	(253,290)	3,197	-8022.74%
Interest on long-term liabilities	1,006,043	1,039,475	-3.22%
Total expenses	<u>48,819,438</u>	<u>49,987,396</u>	-2.34%
Increase (Decrease) in net position	<u>14,653,807</u>	<u>6,801,502</u>	115.45%
Net Position, July 1, as previously reported	<u>(6,983,939)</u>	<u>(13,512,914)</u>	48.32%
Prior Period Adjustment	<u>(47,905)</u>	<u>(272,527)</u>	82.42%
Net Position, July 1, as restated	<u>(7,031,844)</u>	<u>(13,785,441)</u>	48.99%
Net Position, June 30	<u>\$ 7,621,963</u>	<u>\$ (6,983,939)</u>	209.14%

Governmental activities

The following table presents the cost of seven major District functional activities: instruction, support services, non-instructional, sixteenth section, pension expense, OPEB expense and interest on long-term liabilities. The table also shows each functional activity's net cost (total cost less charges for services generated by the activities and intergovernmental aid provided for specific programs). The net cost presents the financial burden that was placed on the State and District's taxpayers by each of these functions.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

Net cost of governmental activities [(\$27,091,079) for 2022 and (\$35,169,802) for 2021] was financed by general revenue, which is primarily made up of property taxes (\$22,066,732 for 2022 and \$21,992,050 for 2021) and state and federal revenues (\$18,549,715 for 2022 and \$18,555,518 for 2021). In addition, there was \$80,920 and \$151,429 in Sixteenth Section sources for 2022 and 2021, respectively.

Investment earnings amounted to \$659,060 for 2022 and \$775,966 for 2021.

Table 3
Net Cost of Governmental Activities

	Total Expenses		Percentage Change
	2022	2021	
Instruction	\$ 25,218,942	\$ 24,913,201	1.23%
Support services	18,837,426	16,415,219	14.76%
Non-instructional	2,867,076	2,359,467	21.51%
Sixteenth section	39,651	47,531	-16.58%
Pension Expense	1,103,590	5,209,306	-78.82%
OPEB Expense	(253,290)	3,197	-8022.74%
Interest on long-term liabilities	1,006,043	1,039,475	-3.22%
Total expenses	\$ 48,819,438	\$ 49,987,396	-2.34%

	Net (Expense) Revenue		Percentage Change
	2022	2021	
Instruction	\$ (15,348,465)	\$ (16,644,039)	7.78%
Support services	(10,900,750)	(12,319,866)	11.52%
Non-instructional	924,010	93,612	887.06%
Sixteenth section	(39,651)	(47,531)	16.58%
Pension Expense	(1,103,590)	(5,209,306)	78.82%
OPEB Expense	253,290	(3,197)	8022.74%
Interest on long-term liabilities	(875,923)	(1,039,475)	15.73%
Total net (expense) revenue	\$ (27,091,079)	\$ (35,169,802)	22.97%

FINANCIAL ANALYSIS OF THE DISTRICT'S FUNDS

As noted earlier, the District uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Governmental funds. The focus of the District's governmental funds is to provide information on current inflows, outflows and balances of spendable resources. Such information is useful in assessing the District's financing requirements. In particular, unassigned fund balance may serve as a useful measure of the District's net resources available for spending at the end of the fiscal year.

The financial performance of the District as a whole is reflected in its governmental funds. As the District completed the year, its governmental funds reported a combined fund balance of \$38,564,732, an increase of \$4,028,351, which includes a prior period adjustment of (\$47,870) and a decrease in inventory of \$16,207. \$8,743,050 or 23% of the fund balance is unassigned, which represents the residual classification for the General Fund's fund balance that has not been assigned to other funds and that has not been restricted, committed, or assigned to specific purposes within the general fund. The remaining fund balance

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

of \$29,821,682 or 77% is either nonspendable, restricted, committed or assigned to indicate that it is not available for spending except only for the purposes to which it is restricted, committed or assigned.

The General Fund is the principal operating fund of the District. The increase in fund balance in the General Fund for the fiscal year was \$2,105,877, including a prior period adjustment of (\$13,874). The fund balance of Other Governmental Funds showed an increase in the amount of \$1,922,474, which includes a prior period adjustment of (\$33,996) and a decrease in reserve for inventory of \$16,207, due primarily to an increase in the fund balance of the Child Nutrition Fund. The increase (decrease) in the fund balances for the other major funds were as follows:

<u>Major Fund</u>	<u>Increase(Decrease)</u>
ESSER II Fund	No change
ESSER III ARP Fund	No change

BUDGETARY HIGHLIGHTS

During the year, the District revised the annual operating budget. Budget revisions were made to address and correct the original budgets to reflect more accurately the sources and uses of funding for the School District.

A schedule showing the original and final budget amounts compared to the District's actual financial activity for the General Fund and each major special revenue fund is provided in this report as required supplementary information.

CAPITAL ASSETS AND DEBT ADMINISTRATION

Capital Assets. As of June 30, 2022, the District's total capital assets were \$87,017,420, including land, school buildings, building improvements, improvements other than buildings, buses, other school vehicles, furniture and equipment, and any intangible assets. This amount represents an increase of \$6,709,478, including a prior period adjustment of \$38,369, from 2021. Total accumulated depreciation as of June 30, 2022, was \$26,835,273, and total depreciation expense for the year was \$1,673,259, resulting in total net capital assets of \$60,182,147.

Table 4
Capital Assets, Net of Accumulated Depreciation

	<u>June 30, 2022</u>	<u>June 30, 2021</u>	<u>Percentage Change</u>
Land	\$ 704,392	\$ 704,392	0.00%
Construction in Progress	16,929,189	21,016,048	-19.45%
Buildings	25,912,779	20,540,606	26.15%
Building Improvements	10,123,593	6,266,345	61.55%
Improvements other than buildings	4,424,281	4,186,645	5.68%
Mobile equipment	1,804,060	1,471,015	22.64%
Furniture and equipment	256,680	229,621	11.78%
Intangible assets	27,173	-	N/A%
Total	\$ 60,182,147	\$ 54,414,672	10.60%

Additional information on the District's capital assets can be found in Note 5 included in this report.

Debt Administration. At June 30, 2022, the District had \$27,982,430 in outstanding long-term debt, of which \$1,096,178 is due within one year. The liability for compensated absences decreased \$7,776 from the prior year.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Management's Discussion and Analysis
For the Year Ended June 30, 2022

Table 5
Outstanding Long-Term Debt

	June 30, 2022	June 30, 2021	Percentage Change
General obligation bonds payable	\$ 20,350,000	\$ 21,025,000	-3.21%
Three mill notes payable	1,220,000	1,550,000	-21.29%
Qualified school construction bonds payable	6,000,000	6,000,000	0.00%
Obligations under leases	27,445	-	N/A %
Compensated absences payable	384,985	392,761	-1.98%
Total	\$ 27,982,430	\$ 28,967,761	-3.40%

Additional information on the District's long-term debt can be found in Note 7 included in this report.

CURRENT ISSUES

The Hattiesburg Public School District is financially stable. The District is proud of its community support of the public schools. The District has committed itself to financial excellence for many years. The District plans to continue its sound financial management to meet the challenges of the future. The District has eight (8) schools:

Rowan Elementary School
Burney 6th Grade STEAM Academy
Hawkins Elementary School
Grace Christian Elementary School
Thames Elementary School
Woodley Elementary School
N. R. Burger Middle School
Hattiesburg High School

CONTACTING THE DISTRICT'S FINANCIAL MANAGEMENT

If you have any questions about this report or need additional financial information, contact the Superintendent's Office of the Hattiesburg Public School District, 301 Mamie Street, Hattiesburg, Mississippi 39043.

FINANCIAL STATEMENTS

(This page is left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

**Statement of Net Position
June 30, 2022**

Exhibit A

	Governmental Activities
Assets	
Cash and cash equivalents	\$ 31,130,813
Due from other governments	3,645,200
Lease receivable	1,353,606
Inventories	88,269
Restricted assets	6,954,298
Capital assets, net of accumulated depreciation	60,182,147
Total Assets	<u>103,354,333</u>
Deferred Outflows of Resources	
Deferred outflows - pensions	9,738,445
Deferred outflows - OPEB	613,502
Total deferred outflows of resources	<u>10,351,947</u>
Liabilities	
Accounts payable and accrued liabilities	3,219,218
Interest payable on long-term liabilities	316,546
Long-term liabilities, due within one year:	
Leases payable	11,178
Capital related liabilities	902,500
Non-capital related liabilities	182,500
Net OPEB liability	100,319
Long-term liabilities, due beyond one year:	
Leases payable	16,267
Capital related liabilities	23,643,000
Non-capital related liabilities	3,226,985
Net pension liability	54,187,003
Net OPEB liability	2,996,368
Total Liabilities	<u>88,801,884</u>
Deferred Inflows of Resources	
Deferred inflows - pensions	14,659,122
Deferred inflows - OPEB	1,235,075
Deferred inflows - leases	1,388,236
Total deferred inflows of resources	<u>17,282,433</u>
Net Position	
Net investment in capital assets	35,636,647
Restricted for:	
Expendable:	
School-based activities	3,809,228
Debt service	6,741,494
Unemployment benefits	92,160
Non-expendable:	
Sixteenth section	3,024,569
Unrestricted	(41,682,135)
Total Net Position	<u>\$ 7,621,963</u>

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Statement of Activities

For the Year Ended June 30, 2022

Exhibit B

Functions/Programs	Expenses	Program Revenues			Net (Expense) Revenue and Changes in Net Position
		Charges for Services	Operating Grants and Contributions	Capital Grants and Contributions	
Governmental Activities:					Governmental Activities
Instruction	\$ 25,218,942	397,150	9,451,143	22,184	(15,348,465)
Support services	18,837,426	2,792,547	5,124,616	19,513	(10,900,750)
Non-instructional	2,867,076	37,427	3,753,659		924,010
Sixteenth section	39,651				(39,651)
Pension expense	1,103,590				(1,103,590)
OPEB expense	(253,290)				253,290
Interest on long-term liabilities	1,006,043		130,120		(875,923)
Total Governmental Activities	\$ 48,819,438	3,227,124	18,459,538	41,697	(27,091,079)
General Revenues:					
Taxes:					
		General purpose levies			19,445,707
		Debt purpose levies			2,621,025
Unrestricted grants and contributions:					
		State			18,470,875
		Federal			78,840
		Unrestricted investment earnings			388,459
		Sixteenth section sources			80,920
		Other			659,060
		Total General Revenues			41,744,886
		Change in Net Position			14,653,807
		Net Position - Beginning, as previously reported			(6,983,939)
		Prior Period Adjustments			(47,905)
		Net Position - Beginning, as restated			(7,031,844)
		Net Position - Ending			\$ 7,621,963

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Governmental Funds

Balance Sheet
June 30, 2022

Exhibit C

	Major Funds			Other	Total
	General	ESSER II	ESSER III	Governmental	Governmental
	Fund	Fund	ARP Fund	Funds	Funds
Assets					
Cash and cash equivalents	\$ 22,124,532			9,415,865	31,540,397
Cash with fiscal agents				2,580,977	2,580,977
Investments				3,953,141	3,953,141
Due from other governments	522,256	891,443	1,080,134	1,151,367	3,645,200
Accrued interest receivable				10,596	10,596
Lease receivable	1,353,606				1,353,606
Due from other funds	2,707,674			1,327	2,709,001
Advance to other funds				698,006	698,006
Inventories				88,269	88,269
Total assets	26,708,068	891,443	1,080,134	17,899,548	46,579,193
Liabilities, deferred inflows of resources, and fund balances					
Liabilities:					
Accounts payable and accrued liabilities	2,773,972	69,530		278,031	3,121,533
Due to other funds	1,327	821,913	1,080,134	805,627	2,709,001
Advances from other funds	698,006				698,006
Unearned revenue				13,500	13,500
Other payables	84,185				84,185
Total Liabilities	3,557,490	891,443	1,080,134	1,097,158	6,626,225
Deferred Inflows of Resources:					
Leases	1,388,236				1,388,236
Total deferred inflows of resources	1,388,236	0	0	0	1,388,236
Fund Balances:					
Nonspendable					
Inventory				88,269	88,269
Permanent fund principal				2,326,563	2,326,563
Advances				698,006	698,006
Restricted					
Debt service				7,058,040	7,058,040
Grant activities				2,645,568	2,645,568
Unemployment benefits				92,160	92,160
Early childhood learning				1,075,391	1,075,391
Assigned					
Capital improvements	12,403,036			2,787,331	15,190,367
Technology	240,920				240,920
Vocational				2,431	2,431
Student activities	375,336				375,336
Unemployment benefits				28,631	28,631
Unassigned	8,743,050				8,743,050
Total Fund Balances	21,762,342	0	0	16,802,390	38,564,732
Total liabilities, deferred inflows of resources and fund balances	\$ 26,708,068	891,443	1,080,134	17,899,548	46,579,193

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Governmental Funds

Reconciliation of the Governmental Funds Balance Sheet to the Statement of Net Position

Exhibit C-1

June 30, 2022

Total fund balances for governmental funds \$ 38,564,732

Amounts reported for governmental activities in the statement of Net Position are different because:

1. Capital assets used in governmental activities are not financial resources and therefore are not reported in the funds:

Land	\$ 704,392	
Construction in progress	16,929,189	
Buildings	44,292,806	
Building improvements	11,243,731	
Improvements other than buildings	7,309,341	
Mobile equipment	4,076,552	
Furniture and equipment	2,423,040	
Intangible right to use equipment assets	38,369	
Accumulated depreciation	<u>(26,835,273)</u>	60,182,147

2. Some liabilities, including net position obligations, are not due and payable in the current period and, therefore, are not reported in the funds:

Net pension liability	(54,187,003)	
Deferred outflows and inflows of resources related to pensions are applicable to future periods and, therefore, are not reported in the funds:		
Deferred outflows of resources related to pensions	9,738,445	
Deferred inflows of resources related to pensions	<u>(14,659,122)</u>	(59,107,680)

3. Some liabilities, including net OPEB obligations, are not due and payable in the current period and, therefore, are not reported in the funds:

Net OPEB liability	(3,096,687)	
Deferred outflows and inflows of resources related to OPEB are applicable to future periods and, therefore, are not reported in the funds:		
Deferred outflows of resources related to OPEB	613,502	
Deferred inflows of resources related to OPEB	<u>(1,235,075)</u>	(3,718,260)

4. Long-term liabilities and related accrued interest are not due and payable in the current period and therefore are not reported in the funds:

General obligation bonds	(20,350,000)	
Three mill limited tax notes payable	(1,220,000)	
Qualified school construction bonds payable	(6,000,000)	
Lease obligations	(27,445)	
Compensated absences payable	(384,985)	
Accrued interest payable	<u>(316,546)</u>	(28,298,976)

Net Position of governmental activities \$ 7,621,963

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Governmental Funds

Statement of Revenues, Expenditures and Changes in Fund Balances
For the Year Ended June 30, 2022

Exhibit D

	Major Funds			Other	Total
	General	ESSER II	ESSER III	Governmental	Governmental
	Fund	Fund	ARP Fund	Funds	Funds
Revenues:					
Local sources	\$ 20,247,934			3,393,531	23,641,465
State sources	19,146,815			1,495,403	20,642,218
Federal sources	146,625	3,273,545	2,123,289	10,865,274	16,408,733
Sixteenth section sources	88,944			(61,734)	27,210
Total Revenues	39,630,318	3,273,545	2,123,289	15,692,474	60,719,626
Expenditures:					
Instruction	18,599,405	1,517,257	1,209,696	6,559,538	27,885,896
Support services	14,428,781	1,113,733	297,415	3,508,790	19,348,719
Noninstructional services	6,561			2,960,921	2,967,482
Sixteenth section	39,651				39,651
Facilities acquisition and construction	2,381,823	8,504		4,720,460	7,110,787
Debt service:					
Principal	6,809			1,009,115	1,015,924
Interest	33,222			981,581	1,014,803
Other				5,500	5,500
Total Expenditures	35,496,252	2,639,494	1,507,111	19,745,905	59,388,762
Excess (Deficiency) of Revenues over (under) Expenditures	4,134,066	634,051	616,178	(4,053,431)	1,330,864
Other Financing Sources (Uses):					
Insurance recovery				2,753,619	2,753,619
Transfer in to Escrow Agent				509,162	509,162
Sale of other property	6,795			1,150	7,945
Operating transfers in	1,478,826			3,499,936	4,978,762
Payment to QSCB escrow agent				(509,162)	(509,162)
Operating transfers out	(3,499,936)	(634,051)	(616,178)	(228,597)	(4,978,762)
Total Other Financing Sources (Uses)	(2,014,315)	(634,051)	(616,178)	6,026,108	2,761,564
Net Change in Fund Balances	2,119,751	0	0	1,972,677	4,092,428
Fund Balances:					
July 1, 2021, as previously reported	19,656,465	0	0	14,879,916	34,536,381
Prior period adjustments	(13,874)			(33,996)	(47,870)
July 1, 2021, as restated	19,642,591	0	0	14,845,920	34,488,511
Decrease in reserve for inventory				(16,207)	(16,207)
June 30, 2022	\$ 21,762,342	0	0	16,802,390	38,564,732

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Governmental Funds

**Reconciliation of the Governmental Funds Statement of Revenues,
Expenditures and Changes in Fund Balances to the Statement of Activities
For the Year Ended June 30, 2022**

Exhibit D- 1

Net change in fund balances - total governmental funds \$ 4,092,428

Amounts reported for governmental activities in the statement of activities are different because:

1. Governmental funds report capital outlay as expenditures. However, in the statement of activities, the cost of capital assets is allocated over their estimated useful lives as depreciation expense. In the current period, these amounts are:		
Capital outlay	\$ 7,774,368	
Depreciation expense	<u>(1,673,259)</u>	6,101,109
2. In the statement of activities, only the gain/loss on the sale of assets is reported, while in the governmental funds, the proceeds from the sale increases financial resources. Thus, the change in Net Position differs from the change in fund balance by the cost of the assets sold.		
		(372,003)
3. The issuance of long-term debt provides current financial resources to governmental funds, while the repayment of the principal of long-term debt consumes the current financial resources of governmental funds. Neither transaction, however, has any effect on net position. Also, governmental funds report the effect of premiums, discounts and the difference between the carrying value of refunded debt and the acquisition cost of refunded debt when debt is first issued. These amounts are deferred and amortized in the statement of activities:		
Payments of debt principal	1,015,924	
Accrued interest payable	<u>8,760</u>	1,024,684
4. Some items relating to pensions and reported in the statement of activities do not provide or require the use of current financial resources and therefore are not reported as revenues/expenditures in the governmental funds. The activities include:		
Pension expense	(1,103,590)	
Contributions subsequent to the measurement date	<u>4,566,002</u>	3,462,412
5. Some items relating to OPEB and reported in the statement of activities do not provide or require the use of current financial resources and therefore are not reported as revenues/expenditures in the governmental funds. The activities include:		
OPEB expense	253,290	
Contributions subsequent to the measurement date	<u>100,319</u>	353,609
6. Some items reported in the statement of activities do not provide or require the use of current financial resources and therefore are not reported as revenues/expenditures in governmental funds. These activities include:		
Change in compensated absences	7,776	
Change in inventory reserve	<u>(16,207)</u>	(8,431)
7. Rounding differences		(1)
Change in Net Position of governmental activities		<u><u>\$ 14,653,807</u></u>

The notes to the financial statements are an integral part of this statement.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Note 1 – Summary of Significant Accounting Policies

The accompanying financial statements of the school district have been prepared in conformity with generally accepted accounting principles (GAAP) as prescribed by the Governmental Accounting Standards Board (GASB). GASB is the accepted standard-setting body for governmental accounting and financial reporting principles. The most significant of the school district's accounting policies are described below.

A. Financial Reporting Entity

As defined by accounting principles generally accepted in the United States of America, the school district is considered an "other stand-alone government." The school district is a related organization of, but not a component unit of, the City of Hattiesburg, Mississippi, since the governing authority of the city selects a majority of the school district's board but does not have financial accountability for the school district.

For financial reporting purposes, Hattiesburg Public School District has included all funds and organizations. The District has also considered all potential component units for which it is financially accountable and other organizations for which the nature and significance of their relationship with the District are such that exclusion would cause the District's financial statements to be misleading or incomplete. The Governmental Accounting Standards Board has set forth criteria to be considered in determining financial accountability. These criteria include appointing a voting majority of an organization's governing body and (1) the ability of the District to impose its will on that organization or (2) the potential for the organization to provide specific benefits to or impose specific financial burdens on the District.

B. Government-wide and Fund Financial Statements

Government-wide Financial Statements – The Statement of Net Position and the Statement of Activities report information on all of the non-fiduciary activities of the District. For the most part, the effect of inter-fund activity has been removed from these statements. Governmental activities, which normally are supported by tax and intergovernmental revenues, are reported separately from business type activities, which rely to a significant extent on fees and charges for support.

The Statement of Net Position presents the District's non-fiduciary assets, deferred outflows, liabilities, and deferred inflows with the difference reported as net position. Net position is reported in three categories:

1. Net investment in capital assets consists of capital assets, net of accumulated depreciation, and reduced by outstanding balances of bonds, notes and other debt attributable to the acquisition, construction or improvement of those assets.
2. Restricted net position results when constraints placed on net position use are either externally imposed or imposed by law through constitutional provisions or enabling legislation.
3. Unrestricted net position consists of net position not meeting the definition of the two preceding categories. Unrestricted net position often has constraints on resources imposed by management which can be removed or modified.

The Statement of Activities demonstrates the degree to which the direct expenses of a given function, or segment, are offset by program revenues. Direct expenses are those clearly identifiable with a specific function. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

given function and 2) grants, contributions and interest restricted to meeting the operational or capital requirements of a particular function. Property taxes and other items not included among program revenues are reported instead as general revenues.

Fund Financial Statements - Separate financial statements are provided for governmental funds. Major individual governmental funds are reported in separate columns in the fund financial statements. All remaining governmental funds are aggregated and reported as other governmental funds.

The school district reports the following major governmental funds:

General Fund - This is the school district's primary operating fund. The general fund is used to account for and report all financial resources not accounted for and reported in another fund.

ESSER II Fund - This is a special revenue fund used to account for the Federal Elementary and Secondary School Emergency Relief (ESSER) Fund grant, administered by the United States Department of Education in continued response to the COVID-19 pandemic. ESSER II funds are part of the Coronavirus Response and Relief Supplemental Appropriations Act (CRRSA), which was signed into law on December 27, 2020.

ESSER III ARP Fund - This is a special revenue fund used to account for the Federal Elementary and Secondary School Emergency Relief (ESSER) Fund grant, administered by the United States Department of Education. ESSER III was established in March, 2021, when the American Rescue Plan (ARP) Act was signed into law.

All other governmental funds not meeting the criteria established for major funds are presented in the other governmental column of the fund financial statements.

Additionally, the school district reports the following fund types:

GOVERNMENTAL FUNDS

Special Revenue Funds - Special Revenue Funds are used to account for and report the proceeds of specific revenue sources that are restricted or committed to expenditure for specified purposes other than debt service or capital projects.

Capital Projects Funds - Capital Projects Funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditure for capital outlays, including the acquisition or construction of capital facilities and other capital assets.

Debt Service Funds - Debt Service Funds are used to account for and report financial resources that are restricted, committed, or assigned to expenditure for principal and interest.

Permanent Funds - Permanent Funds are used to account for and report resources that are restricted to the extent that only earnings, and not the principal, may be used for purposes that support the district's programs.

C. Measurement Focus, Basis of Accounting, and Financial Statement Presentation

In the government-wide Statement of Net Position and Statement of Activities, governmental activities are presented using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned, and expenses are recorded when a liability is incurred or economic asset used, regardless of the timing of the related cash flows. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Governmental fund financial statements are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Revenues are recognized as soon as they are both measurable and available. Measurable means knowing or being able to reasonably estimate the amount. Revenues are considered to be available when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days after year end. Expenditures (including capital outlay) are recorded when the related fund liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and judgments, are recorded only when payment is due.

Federal grants and assistance awards made on the basis of entitlement periods are recorded as receivables and revenues when entitlement occurs. Federal reimbursement type grants are recorded as revenues when the related expenditures are recognized. Use of grant resources is conditioned upon compliance with terms of the grant agreements and applicable federal regulations, which include subjecting grants to financial and compliance audits.

Property taxes, intergovernmental revenues (shared revenues, grants and reimbursements from other governments) and interest associated with the current fiscal period are all considered to be susceptible to accrual.

Ad valorem property taxes are levied by the governing authority of the city on behalf of the school district based upon an order adopted by the school board of the school district requesting an ad valorem tax effort in dollars. Since the taxes are not levied and collected by the school district, the revenues to be generated by the annual levies are not recognized until the taxes are actually collected by the tax levying authority.

Capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of general long-term debt and acquisitions under leases are reported as other financing sources.

Under the terms of grant agreements, the District funds certain programs by a combination of specific cost-reimbursement grants and general revenues. Thus, when program expenses are incurred, there is both restricted and unrestricted net position available to finance the program. It is the District's policy to first apply cost-reimbursement grant resources to such programs and then general revenues.

The effect of inter-fund activity has been eliminated from the government-wide statements.

Revenues from the Mississippi Adequate Education Program are appropriated on a fiscal year basis and are recorded at the time the revenues are received from the State of Mississippi.

The account classifications used in the financial statements conform to the broad classifications recommended in *Governmental Accounting, Auditing, and Financial Reporting*, issued in 2012 by the Government Finance Officers Association and are consistent with the broad classifications recommended in *Financial Accounting for Local and State School Systems, 2014*, issued by the U.S. Department of Education.

D. Encumbrances

An encumbrance system is maintained to account for commitments or assignments resulting from approved purchase orders, work orders and contracts. However, the school district attempts to liquidate all encumbrances at year-end. Encumbrances outstanding at year-end are not reported within committed or assigned fund balances.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

E. Assets, liabilities, deferred outflows/inflows, and net position/fund balances

1. Cash, Cash equivalents and Investments

Cash and cash equivalents

The district's cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with original maturities of three months or less from the date of acquisition. The school district deposits excess funds in the financial institutions selected by the school board. State statutes specify how these depositories are to be selected.

Investments

The school district can invest its excess funds, as permitted by Section 29-3-113, Miss. Code Ann. (1972), in interest-bearing deposits or other obligations of the types described in Section 27-105-33, Miss. Code Ann. (1972), or in any other type investment in which any other agency, instrumentality or subdivision of the State of Mississippi may invest, except that 100% of said funds are authorized to be so invested.

For accounting purposes, certificates of deposit are classified as investments if they have an original maturity greater than three months when acquired. Investments for the district are reported at fair market value.

2. Receivables and payables

Activities between funds that are representative of lending/borrowing arrangements outstanding at the end of the fiscal year are referred to as either "due to/from other funds" (i.e., the current portion of inter-fund loans) or "advances to/from other funds" (i.e. the non-current portion of inter-fund loans). All other outstanding balances between funds are reported as "due to/from other funds."

Advances between funds, as reported in the fund financial statements, are offset by a fund balance reserve account in applicable governmental funds to indicate that they are not available for appropriation and are not expendable available financial resources.

3. Due from Other Governments

Due from other governments represents amounts due from the State of Mississippi and various grants and reimbursements from other governments.

4. Inventories and Prepaid Items

Donated commodities are received from the USDA and are valued at USDA cost. Other inventories are valued at cost (calculated on the first-in, first-out basis). The costs of governmental fund type inventories are reported as expenditures when purchased.

Prepaid items, such as prepaid insurance, are not reported for governmental fund types since the costs of such items are accounted for as expenditures in the period of acquisition.

5. Restricted Assets

Certain resources set aside for repayment of debt are classified as restricted assets on the Statement of Net Position because their use is limited by applicable debt statutes, e.g.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Qualified School Construction Bond sinking funds. Also, the nonexpendable portion of the Permanent Fund, if applicable, is classified as restricted assets because the 16th Section Principal fund is not available for use by the district except as provided for under state statute for loans from this fund.

6. Capital Assets

Capital assets include land, improvements to land, easements, water rights, timber rights, buildings, building improvements, vehicles, machinery, equipment, works of art and historical treasures, infrastructure, and all other tangible or intangible assets that are used in operations and that have initial useful lives extending beyond a single reporting period. Capital assets are reported in the applicable governmental or business type activities columns in the government-wide Statement of Net Position. Capital assets are recorded at historical cost or estimated historical cost based on appraisals or deflated current replacement cost. Donated capital assets are recorded at estimated fair market value at the date of donation. The costs of normal maintenance and repair that do not add to the value of the asset or materially extend asset lives are not capitalized. Capital assets are defined by the District as assets with an initial, individual cost in excess of the thresholds in the table below.

Capital acquisition and construction are reflected as expenditures in the Governmental Fund statements and the related assets are reported as capital assets in the governmental activities column in the government-wide financial statements.

Depreciation is calculated on the straight-line basis for all assets, except land.

The following schedule details the capitalization thresholds:

	Capitalization Policy	Estimated Useful Life
Land	\$ 0	0
Buildings	50,000	40 years
Building improvements	25,000	20 years
Improvements other than buildings	25,000	20 years
Mobile equipment	5,000	5-10 years
Furniture and equipment	5,000	3-7 years
Intangible assets	**	**

(**) The estimated useful life for each right to use asset (intangible asset) is the number of years of the lease which is represented by each right to use asset.

The term 'depreciation' includes the amortization of intangible assets.

7. Deferred outflows/inflows of resources

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflows of resources, represents a consumption of net position that applies to a future period(s) and so will not be recognized as an outflow of resources (expense/expenditure) until then. The district has incurred deferred outflows which are presented as deferred outflows related to OPEB and pensions.

In addition to liabilities, the statement of financial position will sometimes report a separate

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

section for deferred inflows of resources. This separate financial statement element, deferred inflows of resources, represents an acquisition of net position that applies to a future period(s) and so will not be recognized as an inflow of resources (revenue) until that time. The district has incurred deferred inflows related to OPEB, pensions, and leases.

See Notes 6, 9, 10, and 17 for further details.

8. Compensated Absences

Employees of the school district accumulate sick leave at a minimum amount as required by state law. A greater amount may be provided by school district policy provided that it does not exceed the provisions for leave as provided in Sections 25-3-93 and 25-3-95. Some employees are allowed personal leave and/or vacation leave in accordance with school district policy. The district pays for unused leave for employees as required by Section 37-7-307(5), Miss. Code Ann. (1972).

The liability for these compensated absences is recorded as a long-term liability in the government-wide statements. The current portion of this liability is estimated based on historical trends. In the fund financial statements, governmental funds report the liability for compensated absences from expendable available financial resources only if the payable has matured, for example, an employee retires.

9. Leases

The Governmental Accounting Standards Board (GASB) issued Statement No. 87, *Leases* (GASB 87) to establish a single leasing model for accounting and reporting purposes. This guidance is intended to enhance the accountability, consistency and comparability of lease activities reported by governments. GASB 87 was implemented during fiscal year 2022.

When acting as lessor for the leasing of sixteenth section trust lands, the school district uses the minimum of 4% interest required by Mississippi statute for sixteenth section loans to calculate the net present value of future sixteenth section lease payments. When acting as lessee, the school district uses the federal prime lending rate to calculate the present value of lease payments if the rate implicit in the lease is not known. See Note 6 and Note 7 for details.

10. Long-term Liabilities and Bond Discounts/Premiums

In the government-wide financial statements, outstanding debt is reported as liabilities. Bond discounts or premiums and the difference between reacquisition price and the net carrying value of refunded debt are capitalized and amortized over the terms of the respective bonds using a method that approximates the effective interest method.

The governmental fund financial statements recognize the proceeds of debt and premiums as other financing sources of the current period. Issuance costs are reported as expenditures. See Note 7 for details.

11. Pensions

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Public Employees' Retirement System (PERS) and additions to/deductions from PERS' fiduciary net position have been determined on the same basis as they are reported by PERS. For this purpose, the benefit payments (including refunds of

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value. See Note 9 for details.

12. Postemployment Benefits Other than Pensions (OPEB)

For purposes of measuring the net OPEB liability, deferred outflows of resources and deferred inflows of resources related to OPEB, and OPEB expense, information about the fiduciary net position of the State and School Employees' Life and Health Plan (OPEB Plan) and additions to/deductions from the OPEB Plan's fiduciary net position have been determined on the same basis as they are reported by the OPEB Plan. For this purpose, benefit payments are recorded when the OPEB benefits come due. Investments are reported at fair value as determined by the state. See Note 10 for details.

13. Fund Balances

Fund balance for governmental funds is reported in classifications that comprise a hierarchy based primarily on the extent to which the government is bound to honor constraints on the specific purposes for which amounts in those funds can be spent.

Governmental fund balance is classified as nonspendable, restricted, committed, assigned or unassigned. Following are descriptions of fund classifications used by the district:

Nonspendable fund balance includes items that cannot be spent. This includes activity that is not in a spendable form (inventories, prepaid amounts, long-term portion of loans/notes receivable, or property held for resale unless the proceeds are restricted, committed, or assigned) and activity that is legally or contractually required to remain intact, such as a principal balance in a permanent fund.

Restricted fund balance includes amounts that have constraints placed upon the use of the resources either by an external party or imposed by law through a constitutional provision or enabling legislation.

Committed fund balance includes amounts that can be used only for the specific purposes pursuant to constraints imposed by a formal action of the School Board, the District's highest level of decision-making authority. This formal action is official action taken by the school board documented in its official minutes. The action for fund balance commitment must occur on or prior to balance sheet date. There are currently no committed fund balances in the district.

Assigned fund balance includes amounts that are constrained by the District's intent to be used for a specific purpose, but are neither restricted nor committed. For governmental funds, other than the general fund, this is the residual amount within the fund that is not restricted or committed. Assignments of fund balance are created by the District Finance Director pursuant to authorization established by school board policy.

Unassigned fund balance is the residual classification for the general fund. This classification represents fund balance that has not been assigned to other funds and that has not been restricted, committed, or assigned to specific purposes within the general fund. The general fund should be the only fund that reports a positive unassigned fund balance amount. In other governmental funds, it may be necessary to report a negative unassigned fund balance.

When an expenditure/expense is incurred for purposes for which both restricted and unrestricted (committed, assigned, or unassigned) resources are available, it is the District's general policy to use restricted resources first. When expenditures/expenses are incurred for purposes for which unrestricted (committed, assigned, and unassigned) resources are

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

available, and amounts in any of these unrestricted classifications could be used, it is the District's general policy to spend committed resources first, followed by assigned amounts, and then unassigned amounts.

It is the goal of the District to achieve and maintain an unassigned fund balance in the general fund at fiscal year end of not less than twelve (12) percent of general fund revenues for the year. If the unassigned fund balance at fiscal year end falls below the goal, the District must develop a restoration plan to achieve and maintain the minimum fund balance.

14. Accounting Standards Update

GASB 87, Leases, was implemented during fiscal year 2022. The objective of this statement is to better meet the information needs of financial statement users by improving accounting and financial reporting for leases by governments. It establishes a single model for lease accounting based on the foundational principle that leases are financings of the right to use an underlying asset. This guidance is intended to enhance the accountability, consistency and comparability of lease activities reported by governments.

Note 2 – Cash and Cash Equivalents, Cash with Fiscal Agents, and Investments

The district follows the practice of aggregating the cash assets of various funds to maximize cash management efficiency and returns. Restrictions on deposits and investments are imposed by statutes as follows:

Deposits. The school board must advertise and accept bids for depositories no less than once every three years as required by Section 37-7-333, Miss. Code Ann. (1972). The collateral pledged for the school district's deposits in financial institutions is held in the name of the State Treasurer under a program established by the Mississippi State Legislature and is governed by Section 27-105-5, Miss. Code Ann. (1972). Under this program, the entity's funds are protected through a collateral pool administered by the State Treasurer. Financial institutions holding deposits of public funds must pledge securities as collateral against those deposits. In the event of failure of a financial institution, securities pledged by that institution would be liquidated by the State Treasurer to replace the public deposits not covered by the Federal Deposit Insurance Corporation.

Investments. Section 29-3-113 and 37-59-43, Miss. Code Ann. (1972), authorizes the school board to invest excess funds in the types of investments authorized by Section 27-105-33(d) and (e), Miss. Code Ann. (1972). This section permits the following types of investments: (a) certificates of deposit or interest bearing accounts with qualified state depositories; (b) direct United States Treasury obligations; (c) United States Government agency, United States Government instrumentality or United States Government sponsored enterprise obligations, not to exceed fifty percent of all monies invested with maturities of thirty days or longer; (d) direct security repurchase agreements and reverse direct security repurchase agreements of any federal book entry of only those securities enumerated in (b) and (c) above; (e) direct obligations issued by the United States of America that are deemed to include securities of, or other interests in, any open-end or closed-end management type investment company or investment trust approved by the State Treasurer and the Executive Director of the Department of Finance and Administration, not to exceed twenty percent of invested excess funds. Investment income on bond funds (Capital Projects), bond sinking funds (Debt Service Funds) and sixteenth section principal funds (Permanent Funds) must be credited to those funds. Investment income of \$100 or more of any fund must be credited to that fund. Investment income of less than \$100 can be credited to the General Fund.

Cash and Cash Equivalents

The carrying amount of the school district's deposits with financial institutions reported in the governmental funds was \$31,540,397.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Custodial Credit Risk - Deposits. Custodial credit risk is defined as the risk that, in the event of the failure of a financial institution, the district will not be able to recover deposits or collateral securities that are in the possession of an outside party. The district does not have a deposit policy for custodial credit risk. In the event of failure of a financial institution, securities pledged by that institution would be liquidated by the State Treasurer to replace the public deposits not covered by the Federal Deposit Insurance Corporation. Deposits above FDIC coverage are collateralized by the pledging financial institution's trust department or agent in the name of the Mississippi State Treasurer on behalf of the district.

Cash with Fiscal Agents

The carrying amount of school district's cash with fiscal agents held by financial institutions was \$2,580,977.

Investments

As of June 30, 2022, the district had the following investments.

Investment Type	Rating	Maturities (in years)	Fair Value
U. S. Treasury Bonds and Notes	AA+	Less than 5 years	\$ 2,140,900
U. S. Treasury/Agency Securities	AA+	Less than 5 years	44,321
	AA+	5 – less than 10 years	75,687
	AA+	10 – less than 15 years	377,767
Asset Backed Securities	AA+	Less than 5 years	293,101
	AA+	5 – less than 10 years	454,415
	AA+	10 – less than 15 years	85,738
Municipal Bonds	AA/AA-	Less than 5 years	346,233
	AA	5 – less than 10 years	134,979
		Total	\$ <u>3,953,141</u>

The district categorizes its fair value measurements within the fair value hierarchy established by generally accepted accounting principles. The hierarchy is based on the valuation inputs used to measure the fair value of the asset. Level 1 inputs are quoted prices in active markets for identical assets; Level 2 inputs are significant other observable inputs; Level 3 inputs are significant unobservable inputs.

All investments are valued using quoted market prices (Level 1 inputs).

Interest Rate Risk. The district does not have a formal investment policy that limits investment maturities as a means of managing its exposure to fair value losses arising from increasing interest rates.

Credit Risk. State law limits investments to those prescribed in Sections 27-105-33(d) and 27-105-33(e), Miss. Code Ann. (1972). The district does not have a formal investment policy that would further limit its investment choices or one that addresses credit risk.

Custodial Credit Risk - Investments. Custodial credit risk is defined as the risk that, in the event of the failure of the counterparty, the district will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. The district does not have a formal investment

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

policy that addresses custodial credit risk. As of June 30, 2022, the district did not have any investments to which this would apply.

Concentration of Credit Risk. Disclosure of investments by amount and issuer for any issuer that represents five percent or more of total investments is required. This requirement does not apply to investments issued or explicitly guaranteed by the U.S. government, investments in mutual funds and external investment pools, and other pooled investments.

Note 3 – Inter-fund Receivables, Payables and Transfers

The following is a summary of inter-fund transactions and balances:

A. Due From/To Other Funds

Receivable Fund	Payable Fund	Amount
General Fund	ESSER II Fund	\$ 821,913
	ESSER III ARP Fund	1,080,134
	Other governmental funds	805,627
Other governmental funds	General Fund	1,327
Total		<u>\$ 2,709,001</u>

Inter-fund balances represent loans created by the existence of negative fund cash balances in a pooled bank account. Negative fund cash balances in governmental funds (special revenue funds) are the result of the timing of cash flows inherent in reimbursable grant funds due from the State and Federal governments. Interfund balances also represent interfund payables resulting from inter-fund transfers at or near year end.

B. Advances To/From Other Funds

Receivable Fund	Payable Fund	Amount
Other governmental funds	General Fund	\$ 698,006
Total		<u>\$ 698,006</u>

The interfund advances represent sixteenth section principal loans due from the General Fund to the 16th Section Principal Fund.

Sixteenth section principal loans payable

Note: The sixteenth section principal loans payable are not reflected on the Statement of Net Position because these funds were borrowed by the General Fund from the Sixteenth Section Trust Fund (Permanent Trust Fund) in accordance with Section 29-3-113, Miss. Code Ann. (1972). The revenue and expenditures associated with these transactions are reflected on the Statement of Revenues, Expenditures and Changes in Fund Balances. The interest rate on the sixteenth section principal loans as of June 30, 2022, is four (4) percent.

The following is a schedule by years of the total payments due on this debt:

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Year Ending June 30	Principal	Interest	Total
2023	\$ 59,981	31,226	91,207
2024	61,399	29,807	91,206
2025	38,376	23,065	61,441
2026	39,911	21,530	61,441
2027	41,507	19,934	61,441
2028-2032	233,809	73,395	307,204
2033-2037	223,023	22,739	245,762
Total	\$ 698,006	221,696	919,702

C. Inter-fund Transfers

Transfers Out	Transfers In	Amount
General Fund	Other governmental funds	\$ 3,499,936
ESSER II Fund	General Fund	634,051
ESSER III ARP Fund	General Fund	616,178
Other governmental funds	General Fund	228,597
Total		<u>\$ 4,978,762</u>

Inter-fund transfers represent operating transfers from the General Fund to other governmental funds. Also included are transfers of indirect costs from special revenues to the General Fund.

Note 4 – Restricted Assets

The restricted assets represent the cash balance (\$409,584), cash with fiscal agents balance (\$98,950), investment balance (\$1,812,241), and accrued interest balance (\$5,789) of the Sixteenth Section Principal Fund (Permanent Fund) which is legally restricted and may not be used for purposes that support the district's programs. Restricted assets also include cash with fiscal agents balance (\$2,482,027), investment balance (\$2,140,900), and accrued interest balance (\$4,807) of the QSCB Debt Retirement Funds that are legally restricted for qualified school construction bond debt service. Total restricted assets on the Statement of Net Position are \$6,954,298.

Note 5 – Capital Assets

The following is a summary of changes in capital assets for governmental activities.

The term depreciation includes amortization of intangible assets.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

	Balance 7/1/2021	Increases	Decreases	Completed Construction	Adjustments	Balance 6/30/2022
Governmental Activities:						
<u>Non-depreciable capital assets:</u>						
Land	\$ 704,392					704,392
Construction-in-progress	21,016,048	7,110,787		(11,197,646)		16,929,189
Total non-depreciable capital assets	21,720,440	7,110,787	-	(11,197,646)	-	17,633,581
<u>Depreciable capital assets:</u>						
Buildings	38,191,127			6,101,679		44,292,806
Building improvements	7,311,232		720,287	4,652,786		11,243,731
Improvements other than buildings	6,866,160			443,181		7,309,341
Mobile equipment	3,620,219	558,051	101,718			4,076,552
Furniture and equipment	2,598,764	105,530	281,254			2,423,040
Intangible right to use equipment	-	-	-	-	38,369	38,369
Total depreciable capital assets	58,587,502	663,581	1,103,259	11,197,646	38,369	69,383,839
<u>Less accumulated depreciation for:</u>						
Buildings	17,650,521	729,506				18,380,027
Building improvements	1,044,887	449,749	374,498			1,120,138
Improvements other than buildings	2,679,515	205,545				2,885,060
Mobile equipment	2,149,204	201,604	78,316			2,272,492
Furniture and equipment	2,369,143	75,659	278,442			2,166,360
Intangible right to use equipment	-	11,196	-	-	-	11,196
Total accumulated depreciation	25,893,270	1,673,259	731,256	-	-	26,835,273
Total depreciable capital assets, net	32,694,232	(1,009,678)	372,003	11,197,646	38,369	42,548,566
Governmental activities capital assets, net	\$ 54,414,672	6,101,109	372,003	-	38,369	60,182,147
Total capital assets, net excluding intangible right to use assets						
						60,154,974
Intangible right to use assets, net						27,173
Total capital assets, net as reported in the statement of net position						60,182,147

Depreciation expense was charged to the following governmental functions:

	Amount
Governmental activities:	
Instruction	\$ 452,682
Support services	1,157,681
Non-instructional	62,896
Total depreciation expense - Governmental activities	\$ 1,673,259

Adjustments were necessary to recognize intangible right to use equipment assets at July 1, 2021.

The details of construction-in-progress are as follows:

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

	Spent to June 30, 2022	Remaining Commitment
Governmental Activities:		
Hattiesburg High School Renovations Phase \$	16,899,263	\$ 832,708
Roof Top Units Replacement	8,504	191,815
Emergency Power Upgrades/Generators	14,900	336,950
Hattiesburg High School Solar Project	6,522	129,546
Total governmental activities	<u>\$ 16,929,189</u>	<u>\$ 1,491,019</u>

Construction projects included in governmental activities are funded with local funds committed for capital improvements and Federal ESSER funds.

Note 6 – Leases

As Lessee:

The school district is a lessee for various non-cancellable leases of equipment. For leases that have a maximum possible term of 12 months or less at commencement, the school district recognizes expense based on the provisions of the lease contract. For all other leases, other than short term, the school district recognized a lease and an intangible right-to-use lease asset.

At lease commencement, the school district initially measures the lease liability at the present value of payments expected to be made during the lease term. Subsequently, the lease liability is reduced by the principal portion of lease payments made. The lease asset is initially measured as the initial amount of the lease liability, less lease payments made at or before the lease commencement date, plus any initial direct costs ancillary to placing the underlying asset into service, less any lease incentives received at or before the lease commencement date. Subsequently, the lease asset is amortized in depreciation expense on a straight-line basis over the shorter of the lease term or the useful life of the underlying asset.

The school district generally uses the Federal Prime Borrowing Rate at lease inception as the discount rate for leases unless the rate that the lessor charges is known.

The lease term includes the non-cancellable period of the lease plus any additional periods covered by either a school district or lessor option to extend for which it is reasonably certain to be exercised or terminate for which it is reasonably certain to not be exercised. Periods in which both the school district and the lessor have a unilateral option to terminate (or if both parties have agreed to extend) are excluded from the lease term.

The school district, acting as lessee, has entered into seven (7) leases for equipment. Details of the lease obligations can be found in Note 7.

As Lessor:

Sixteenth Section Lands

Sixteenth section school lands, or lands granted in lieu thereof, constitute property held in trust for the benefit of the public schools. The school board, under the general supervision of the Office of the Secretary of State, has control and jurisdiction of said school trust lands and of all funds arising from any disposition thereof. It is the duty of the school board to manage the school trust lands and all funds arising therefrom as trust property. Accordingly, the board shall assure that adequate compensation is received for all uses of the trust lands, except for uses by the public schools.

The school district uses the rate of 4% minimum interest required by Mississippi statute for sixteenth section loans to calculate the present value of sixteenth section lease rental payments since a rate implicit in the

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

sixteenth section leases is not a part of the lease contract. The school district's financial statements have not been restated nor has a cumulative effect been reflected for the restatement of the beginning net position of the school district.

The school district, acting as lessor, has entered into 107 leases involving the leasing of the right to use Sixteenth Section school lands. Such leases are let for a term that corresponds with state law in accordance with the type of lease executed. The district's financial statements have not been restated nor has a cumulative effect been reflected for the restatement of the beginning net position of the district as part of the implementation of GASB Statement No. 87. The school district has, however, included in its financial statements at year end the net present value of future lease payments of \$1,353,606 as a lease receivable and \$1,388,236 as deferred inflows of resources. The deferred inflows of resources for leases are being amortized using the straight-line method of amortization.

The total amount of inflows of resources recognized during the current fiscal year is \$57,206.

The following are the future Principal and Interest Payments to be received on the leases:

Year Ending June 30	Principal Payments	Interest Payments	Total
2023	\$ 37,692	54,145	91,837
2024	39,200	52,637	91,837
2025	39,244	51,069	90,313
2026	40,814	49,499	90,313
2027	42,447	47,866	90,313
2028-2032	224,166	213,437	437,603
2033-2037	253,542	166,148	419,690
2038-2042	259,546	114,767	374,313
2043-2047	144,144	69,619	213,763
2048-2052	101,475	46,762	148,237
2053-2057	120,077	24,877	144,954
Thereafter	51,259	3,552	54,811
Total	\$ 1,353,606	894,378	2,247,984

Note 7 – Long-term Liabilities

The following is a summary of changes in long-term liabilities and other obligations for governmental activities:

	Balance 7/1/2021	Additions	Reductions	Adjustments	Balance 6/30/2022	Amounts due within one year
A. General obligation bonds payable	\$ 21,025,000		675,000		20,350,000	715,000
B. Three mill notes payable	1,550,000		330,000		1,220,000	345,000
C. Qualified school construction bonds	6,000,000				6,000,000	
D. Lease obligations			10,924	38,369	27,445	11,178
E. Compensated absences payable	392,761		7,776		384,985	25,000
Subtotals	\$ 28,967,761	-	1,023,700	38,369	27,982,430	1,096,178

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

A. General obligation bonds payable

General obligation bonds are direct obligations and pledge the full faith and credit of the school district. General obligation bonds currently outstanding are as follows:

Description	Interest Rate	Issue Date	Maturity Date	Amount Issued	Amount Outstanding
General Obligation Series, 2019	0.30%	1-Apr-19	1-Apr-39	\$ 22,500,000	\$ 20,350,000
Total				<u>\$ 22,500,000</u>	<u>\$ 20,350,000</u>

The following is a schedule by years of the total payments due on this debt:

Year Ending June 30	Principal	Interest	Total
2023	\$ 715,000	717,975	1,432,975
2024	750,000	689,375	1,439,375
2025	890,000	659,375	1,549,375
2026	975,000	623,775	1,598,775
2027	1,025,000	584,775	1,609,775
2028-2032	5,825,000	2,339,425	8,164,425
2033-2037	7,085,000	1,277,788	8,362,788
2038-2039	3,085,000	158,856	3,243,856
Total	<u>\$ 20,350,000</u>	<u>7,051,344</u>	<u>27,401,344</u>

This debt will be retired from the Bond Retirement Fund (debt service fund). The amount of bonded indebtedness that can be incurred by the school district is limited by Sections 37-59-5 and 37-59-7, Miss. Code Ann. (1972). Total outstanding bonded indebtedness during a year can be no greater than 15% of the assessed value of the taxable property within such district, according to the then last completed assessment for taxation, unless certain conditions, as set forth in Section 37-59-7, Miss. Code Ann. (1972) have been met. As of June 30, 2022, the amount of outstanding bonded indebtedness was equal to 6.0% of property assessments as of October 1, 2021.

B. Three mill limited tax promissory notes payable

The limited tax notes payable were issued to finance capital improvements in the district and are secured by future ad valorem tax revenues levied specifically for the purpose of retiring the notes payable.

Debt currently outstanding is as follows:

Description	Interest Rate	Issue Date	Maturity Date	Amount Issued	Amount Outstanding
Limited Tax note, Series 2012	2.42%	15-Jun-12	15-Jun-25	\$ 2,700,000	\$ 635,000
Limited Tax note, Series 2019	2.59%	25-Jul-19	25-Jul-25	800,000	585,000
Total				<u>\$ 3,500,000</u>	<u>\$ 1,220,000</u>

The following is a schedule by years of the total payments due on this debt:

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

1. Limited obligation bond issue of June 15, 2012

Year Ending June 30		Principal	Interest	Total
2023	\$	225,000	19,281	244,281
2024		205,000	12,813	217,813
2025		205,000	6,663	211,663
Total	\$	635,000	38,757	673,757

This debt will be retired from the Three Mill Note Debt Service Fund.

2. Limited obligation bond issue of July 25, 2019.

Year Ending June 30		Principal	Interest	Total
2023	\$	120,000	15,152	135,152
2024		130,000	12,043	142,043
2025		165,000	8,676	173,676
2026		170,000	4,403	174,403
Total	\$	585,000	40,274	625,274

This debt will be retired from the Three Mill Note Debt Service Fund.

Total limited obligation bond payments for all issues:

Year Ending June 30		Principal	Interest	Total
2023	\$	345,000	34,433	379,433
2024		335,000	24,856	359,856
2025		370,000	15,339	385,339
2026		170,000	4,403	174,403
Total	\$	1,220,000	79,031	1,299,031

The school district has pledged a portion of the future state revenues the district receives from the State of Mississippi pursuant to the Mississippi Accountability and Adequate Education Program Act, Sections 37-151-1 through 37-151-7, Miss. Code Ann. (1972), to repay \$800,000 in three mill limited tax notes issued on July 25, 2019. The state aid capital improvement bonds are not included in the computation of the debt limit percentage. Proceeds from the notes were used to finance capital improvements made to the district's buildings. The notes are payable through July 25, 2025. This pledge is secondary to the prior pledge of Education Enhancement Fund revenue to the District's Series 2009 Qualified School Construction Bonds as referenced in Note 7(C) below. Annual principal and interest payments on the notes are expected to require all of such pledged revenues with the remaining amounts to be paid through the avails of a local debt service tax levy. Principal and interest payments remaining to be paid on the three mill limited tax note are \$585,000

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

and \$40,274, respectively. State Education Enhancement Fund revenue for the year ended June 30, 2022, was \$173,863. Principal and interest payments for this debt for the year ended June 30, 2022, were \$110,000 and \$18,001, respectively.

C. Qualified school construction bonds payable

As more fully explained in Note 15, debt has been issued by the school district that qualifies as Qualified school construction bonds. Debt currently outstanding is as follows:

Description	Interest Rate	Issue Date	Maturity Date	Amount Issued	Amount Outstanding
QSCB, Series 2009	0.94%	15-Sep-09	14-Sep-24	\$ 3,000,000	\$ 3,000,000
QSCB, Series 2010	1.25%	1-Dec-10	1-Dec-25	3,000,000	3,000,000
Total				<u>\$ 6,000,000</u>	<u>\$ 6,000,000</u>

The following are schedules by year of the total payments on this debt:

1. Qualified school construction bonds payable of September 15, 2009.

Year Ending June 30	Principal	Interest	Total
2023	\$ -	28,200	28,200
2024	-	28,200	28,200
2025	3,000,000	28,200	3,028,200
Total	<u>\$ 3,000,000</u>	<u>84,600</u>	<u>3,084,600</u>

2. Qualified school construction bonds payable of December 1, 2010.

Year Ending June 30	Principal	Interest	Total
2023	\$ -	165,000	165,000
2024	-	165,000	165,000
2025	-	165,000	165,000
2026	3,000,000	165,000	3,165,000
Total	<u>\$ 3,000,000</u>	<u>660,000</u>	<u>3,660,000</u>

Total qualified school construction bonds payable – all issues.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Year Ending June 30	Principal	Interest	Total
2023	\$ -	193,200	193,200
2024	-	193,200	193,200
2025	3,000,000	193,200	3,193,200
2026	3,000,000	165,000	3,165,000
Total	\$ 6,000,000	744,600	6,744,600

The school district has pledged a portion of future state revenues the district receives from the State of Mississippi pursuant to the Mississippi Accountability and Adequate Education Program Act, Sections 37-151-1 through 37-151-7, Miss. Code Ann. (1972), to repay the \$3,000,000 in Qualified school construction bonds issued on September 15, 2009. Proceeds from the bonds were issued to finance capital improvements made to the district's buildings. The bonds are payable from the future revenues of the State Education Enhancement revenues and other district tax funds and are payable through September 15, 2024. Annual principal and interest payments on the bonds are expected to require all of such state pledged revenues, with the remaining amounts to be paid through the avails of a local debt service tax levy. As further explained in Note 15, minimum total sinking fund payments remaining to be paid on the Series 2009 bonds is \$600,000. Sinking fund payments for the current year and total Education Enhancement Funds pledged revenues were \$200,000 and \$173,863, respectively.

D. Obligations under leases

The school district has entered into seven (7) equipment leases as lessee.

Description	Interest Rate	Issue Date	Maturity Date	Amount Issued	Amount Outstanding
1. Copier - HHS Special Education	3.25%	1-Jul-21	31-Jul-24	\$ 4,583	\$ 3,138
2. Copier - CO - Exceptional Children	3.25%	1-Jul-21	31-Oct-24	5,125	3,636
3. Copier - CO - Child Nutrition	3.25%	1-Jul-21	31-Oct-24	4,062	2,882
4. Copier - Rowan	3.25%	1-Jul-21	31-Oct-24	5,125	3,635
5. Copier - Mary Bethune	3.25%	1-Jul-21	30-Nov-24	5,246	3,760
6. Copier - Parent Ed Center	3.25%	1-Jul-21	15-Feb-25	4,350	3,178
7. Copier - STEAM Academy	3.25%	1-Jul-21	15-Feb-25	9,878	7,216
Total				<u>\$ 38,369</u>	<u>\$ 27,445</u>

Note: Issue date reflects GASB No. 87 implementation date.

The following is a schedule by years of the total payments due on this debt:

1. Copier at Hattiesburg High School Special Education Department with an implementation date of July 1, 2021.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,480	80	1,560
2024	1,529	31	1,560
2025	129	1	130
Total	<u>\$ 3,138</u>	<u>112</u>	<u>3,250</u>

2. Copier at Central Office – Exceptional Children Services with an implementation date of July 1, 2021.

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,525	95	1,620
2024	1,575	45	1,620
2025	536	1	537
Total	<u>\$ 3,636</u>	<u>141</u>	<u>3,777</u>

3. Copier at Central Office – Child Nutrition with an implementation date of July 1, 2021.

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,209	75	1,284
2024	1,248	36	1,284
2025	425	1	426
Total	<u>\$ 2,882</u>	<u>112</u>	<u>2,994</u>

4. Copier at Rowan Elementary with an implementation date of July 1, 2021.

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,524	96	1,620
2024	1,575	45	1,620
2025	536	4	540
Total	<u>\$ 3,635</u>	<u>145</u>	<u>3,780</u>

5. Copier at Mary Bethune Elementary with an implementation date of July 1, 2021.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,520	100	1,620
2024	1,570	50	1,620
2025	670	5	675
Total	\$ 3,760	155	3,915

6. Copier at Parent Education Center with an implementation date of July 1, 2021.

Year Ending June 30	Principal	Interest	Total
2023	\$ 1,199	85	1,284
2024	1,238	46	1,284
2025	741	8	749
Total	\$ 3,178	139	3,317

7. Copier at STEAM Academy with an implementation date of July 1, 2021.

Year Ending June 30	Principal	Interest	Total
2023	\$ 2,721	194	2,915
2024	2,812	105	2,917
2025	1,683	18	1,701
Total	\$ 7,216	317	7,533

Total obligations under leases – all issues.

Year Ending June 30	Principal	Interest	Total
2023	\$ 11,178	725	11,903
2024	11,547	358	11,905
2025	4,720	38	4,758
Total	\$ 27,445	1,121	28,566

E. Compensated absences payable

As more fully explained in Note 1(E)(8), compensated absences payable is adjusted on an annual basis as required by Section 37-7-307(5), Miss. Code Ann. (1972). Compensated absences will be paid from the fund from which the employees' salaries were paid.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Note 8 – Other Commitments

Commitments under renovation contracts, described in Note 5, amount to \$1,491,019.

Note 9 – Defined Benefit Pension Plan

General Information about the Pension Plan

Plan Description. The school district contributes to the Public Employees' Retirement System of Mississippi (PERS), a cost-sharing multiple-employer defined benefit pension plan. PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Miss. Code Ann. Section 25-11-1 et seq., (1972, as amended) and may be amended only by the Mississippi

Legislature. PERS issues a publicly available financial report that includes financial statements and required supplementary information. That report is available at www.pers.ms.gov.

Benefits provided. Membership in PERS is a condition of employment granted upon hiring for qualifying employees and officials of the State of Mississippi, state universities, community and junior colleges, and teachers and employees of the public school districts. For those persons employed by political subdivisions and instrumentalities of the State of Mississippi, membership is contingent upon approval of the entity's participation in PERS by the PERS' Board of Trustees. If approved, membership for the entity's employees is a condition of employment and eligibility is granted to those who qualify upon hiring. Participating members who are vested and retire at or after age 60 or those who retire regardless of age with at least 30 years of creditable service (25 years of creditable service for employees who became members of PERS before July 1, 2011) are entitled, upon application, to an annual retirement allowance payable monthly for life in an amount equal to 2.0 percent of their average compensation for each year of creditable service up to and including 30 years (25 years for those who became members of PERS before July 1, 2011), plus 2.5 percent for each additional year of creditable service with an actuarial reduction in the benefit for each year of creditable service below 30 years or the number of years in age that the member is below 65, whichever is less. Average compensation is the average of the employee's earnings during the four highest compensated years of creditable service. Benefits vest upon completion of eight years of membership service (four years of membership service for those who became members of PERS before July 1, 2007). PERS also provides certain death and disability benefits. A Cost-of-Living Adjustment (COLA) payment is made to eligible retirees and beneficiaries. The COLA is equal to 3.0 percent of the annual retirement allowance for each full fiscal year of retirement up to the year in which the retired member reaches age 60 (55 for those who became members of PERS before July 1, 2011), with 3.0 percent compounded for each fiscal year thereafter.

Contributions. PERS members are required to contribute 9.00% of their annual covered salary, and the school district is required to contribute at an actuarially determined rate. The employer's rate as of June 30, 2022 was 17.40% of annual covered payroll. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Section 25-11-1 of the Mississippi Code of 1972, as amended, and may be amended only by the Mississippi Legislature. The school district's contributions to PERS for the fiscal years ending June 30, 2022, 2021 and 2020 were \$4,566,002, \$4,241,428, and \$4,208,493, respectively, which equaled the required contributions for each year.

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At June 30, 2022, the school district reported a liability of \$54,187,003 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2021, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The District's proportion of the net pension liability was based on a projection of the school district's long-term share of contribution to the pension plan relative to projected contributions of all participating entities,

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

actuarially determined. The school district's proportionate share used to calculate the June 30, 2022 net pension liability was 0.366613 percent, which was based on a measurement date of June 30, 2021. This was an increase of 0.003381 percent from its proportionate share used to calculate the June 30, 2021 net pension liability, which was based on a measurement date of June 30, 2020.

For the year ended June 30, 2022, the District recognized pension expense of \$1,103,590. At June 30, 2022, the District reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 369,729	\$
Net difference between projected and actual earnings on pension plan investments		14,429,478
Changes of assumptions	57,614	
Changes in proportion and differences between District contributions and proportionate share of contributions	4,745,100	229,644
District contributions subsequent to the measurement date	4,566,002	
Total	\$ <u>9,738,445</u>	\$ <u>14,659,122</u>

\$4,566,002 reported as deferred outflows of resources related to pensions resulting from school district contributions subsequent to the measurement date will be recognized as a reduction to the net pension liability in the year ended June 30, 2023. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ending June 30:	
2023	\$ (3,346,402)
2024	(3,066,599)
2025	(3,073,678)

Actuarial assumptions. The total pension liability as of June 30, 2021 was determined by actuarial valuation prepared as of June 30, 2020, by the new actuarial assumptions adopted by the Board subsequent to the June 30, 2020 valuation based on the experience investigation for the four-year period ending June 30, 2020, and by the investment experience for the fiscal year ending June 30, 2021. The following actuarial assumptions are applied to all periods included in the measurement:

Inflation	2.40 percent
Salary increases	2.65-17.90 percent, including inflation
Investment rate of return	7.55 percent, net of pension plan investment expense, including inflation

Mortality rates for service retirees were based on the PubS.H-2010(B) Retiree Table with the following adjustments: For males, 95% of male rates up to age 60, 110% for ages 61 to 75 and 101% for ages above 77. For females, 84% of female rates up to age 72 and 100% for ages above 76. Mortality rates for disability retirees were based on the PubG.H-2010 Disabled Table adjusted 134% for males and 121% for females. Mortality rates for Contingent Annuitants were based on the PubS.H-2010(B) Contingent Annuitant Table, adjusted 97% for males and 110% for females. Mortality rates will be projected generationally using the MP-2020 projection scale to account for future improvements in life expectancy.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

The actuarial assumptions used for the purposes of determining the total pension liability were based on the results of an actuarial experience study for the period July 1, 2016 to June 30, 2020. The experience report is dated April 20, 2021.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected nominal returns, net of pension plan investment expense and the assumed rate of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The most recent target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>		<u>Long-Term Expected Real Rate of Return</u>	
Domestic Equity	27.00	%	4.60	%
International Equity	22.00		4.50	
Global Equity	12.00		4.80	
Fixed Income	20.00		(0.25)	
Real Estate	10.00		3.75	
Private Equity	8.00		6.00	
Cash Equivalents	1.00		(1.00)	
Total	100	%		

Discount rate. The discount rate used to measure the total pension liability was 7.55 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate (9.00%) and that employer contributions will be made at the current contribution rate (17.40%). Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

Sensitivity of the District's proportionate share of the net pension liability to changes in the discount rate. The following table presents the District's proportionate share of the net pension liability calculated using the discount rate of 7.55%, as well as what the District's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.55%) or 1-percentage-point higher (8.55%) than the current rate:

	<u>1% Decrease (6.55%)</u>	<u>Current Discount Rate (7.55%)</u>	<u>1% Increase (8.55%)</u>
District's proportionate share of the net pension liability	\$ 76,741,501	\$ 54,187,003	\$ 35,600,304

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued PERS financial report.

Note 10 – Other Postemployment Benefits (OPEB)

General Information about the OPEB Plan.

Plan description. State law mandates that all state, public education, library, junior and community college and retiring employees be offered health and life benefit coverage through the State and School Employees' Life and Health Insurance Plan (the Plan). The Plan was established by Section 25-15-3 et seq., Mississippi Code Ann. (1972), which may be amended only by the State Legislature. The State and School Employees'

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Health Insurance Management Board (the Board) administers the Plan. The Board has the sole legal authority to promulgate rules and regulations governing the operations of the Plan within the confines of the law governing the Plan. The Plan is self-insured and is financed through premiums collected from employers, employees, retirees and COBRA participants. The Plan provides for Other Postemployment Benefits (OPEB) as a multiple-employer defined benefit OPEB plan. The plan issues a publicly available financial report that can be obtained at <http://knowyourbenefits.dfa.ms.gov/>.

Benefits provided.

The Plan was formed by the State Legislature to provide group health and life benefits to full-time active and retired employees of the State, agencies, universities, community/junior colleges, public school districts and public libraries. In addition, the spouse and/or children of covered employees and retirees, as well as surviving spouses and COBRA participants, may be eligible for health insurance coverage under the Plan. Benefits of the OPEB Plan consist of an implicit rate subsidy, which is essentially the difference between the average cost of providing health care benefits to retirees under age 65 and the average cost of providing health care benefits to all participants when premiums paid by retirees are not age adjusted. Employees' premiums are funded primarily by their employers. Retirees must pay their own premiums, as do active employees for spouse and dependent medical coverage. The Board has the sole authority for setting life and health insurance premiums for the Plan. Per Section 12-15-15 (10) Mississippi Code Ann. (1972), a retired employee electing to purchase retiree life and health insurance must pay the full cost of such insurance premium. If the Board determined actuarially that the premium paid by the participating retirees adversely affects the overall cost of the Plan to the State, then the Board may impose a premium surcharge, not to exceed 15%, upon such participating retired employees who are under the age for Medicare eligibility and who are initially employed before January 1, 2006. For participating retired employees who are under the age for Medicare eligibility and who are initially employed on or after January 1, 2006, the Board may impose a premium surcharge in an amount the Board determined actuarially to cover the full cost of insurance. The Plan offers a Base option and a Select option for health benefits for non-Medicare participants. The Plan includes a separate coverage level for Medicare eligible retirees, Medicare Eligible surviving spouses, and Medicare eligible dependents of retirees and surviving spouses.

Contributions.

The Board has the sole authority for setting life and health insurance premiums for the Plan. The required premiums vary based on the plan selected and the type of participant. Employers pay no premiums for retirees while employees' premiums are funded primarily by their employer. Contributions to the OPEB plan from the District were \$100,319 for the year ended June 30, 2022.

OPEB Liabilities, OPEB Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources related to OPEB

At June 30, 2022, the District reported a liability of \$3,096,687 for its proportionate share of the net OPEB liability. The net OPEB liability was measured as of June 30, 2021, and the total OPEB liability used to calculate the net OPEB liability was determined by an actuarial valuation as of that date. The basis for the District's proportion is determined by comparing the employer's average monthly employees participating in the Plan with the total average employees participating in the Plan in the fiscal year of all employers. The allocation was utilized because the level of premiums contributed by each employer is the same for any employee regardless of plan participation elections made by the employee. At the measurement date of June 30, 2021, the District's proportion was 0.48108960 percent. This was a decrease of 0.00201560 percent from the proportionate share as of the measurement date of June 30, 2020.

For the year ended June 30, 2022, the District recognized OPEB expense of (\$253,290). At June 30, 2022, the District reported deferred outflows of resources and deferred inflows of resources related to OPEB from the following sources:

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 3,368	\$ 968,294
Changes of assumptions	501,531	104,733
Net difference between projected and actual earnings on OPEB plan investments	144	
Changes in proportion and differences between District contributions and proportionate share of contributions	8,140	162,048
District contributions subsequent to the measurement date	100,319	
Total	\$ <u>613,502</u>	\$ <u>1,235,075</u>

\$100,319 as deferred outflows of resources related to OPEB resulting from school district contributions subsequent to the measurement date will be recognized as a reduction to the net OPEB liability in the year ended June 30, 2023. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to OPEB will be recognized in OPEB expense as follows:

Year Ending June 30:

2023	\$ (218,209)
2024	(188,672)
2025	(110,790)
2026	(127,279)
2027	(76,942)

Actuarial assumptions. The total OPEB liability was determined by an actuarial valuation as of June 30, 2021, using the following key actuarial assumptions and other inputs:

Inflation	2.40 percent
Salary increases	2.65-17.90 percent, including wage inflation
Municipal Bond Index Rate	
Measurement Date	2.13%
Prior Measurement Date	2.19%
Year FNP is projected to be depleted	
Measurement Date	2021
Prior Measurement Date	2020
Single Equivalent Interest Rate, net of OPEB plan investment expense, including inflation	
Measurement Date	2.13%
Prior Measurement Date	2.19%

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Health Care Cost Trends

Medicare Supplement Claims
Pre-Medicare

6.50% for 2022 decreasing to an ultimate
rate of 4.50% by 2030

Mortality rates for service retirees were based on the PubS.H-2010(B) Retiree Table with the following adjustments: For males, 95% of male rates up to age 60, 110% for ages 61 to 75 and 101% for ages above 77. For females, 84% of female rates up to age 72 and 100% for ages above 76. Mortality rates for disability retirees were based on the PubG.H-2010 Disabled Table adjusted 134% for males and 121% for females. Mortality rates for Contingent Annuitants were based on the PubS.H-2010(B) Contingent Annuitant Table, adjusted 97% for males and 110% for females. Mortality rates will be projected generationally using the MP-2020 projection scale to account for future improvements in life expectancy.

The demographic actuarial assumptions used in the June 30, 2021 valuation were based on the results of the last actuarial experience study, dated April 20, 2021.

The remaining actuarial assumptions (e.g., initial per capita costs, health care cost trends, rate of plan participation, rates of plan election, etc.) used in the June 30, 2021 valuation were based on a review of recent plan experience done concurrently with the June 30, 2021 valuation.

The long-term expected rate of return on OPEB plan investments is 4.50%.

Discount rate. The discount rate used to measure the total OPEB liability at June 30, 2021 was 2.13 percent. Since the Prior Measurement Date, the Discount Rate has changed from 2.19% to 2.13%.

The trust was established on June 28, 2018 with an initial contribution of \$1,000,000. As of June 30, 2021, the trust has \$1,044,424. The fiduciary net position is projected to be depleted immediately, therefore, the Municipal Bond Index Rate is used in the determination of the discount rate for both the June 30, 2020 and the June 30, 2021 total OPEB liability. The discount rate used to measure the total OPEB liability at June 30, 2021 was based on a monthly average of the Bond Buyers General Obligation 20-year Municipal Bond Index Rate.

Sensitivity of the District's proportionate share of the net OPEB liability to changes in the discount rate. The following presents the District's proportionate share of the net OPEB liability, as well as what the District's proportionate share of the net OPEB liability would be if it were calculated using a discount rate that is 1-percentage-point lower (1.13 percent) or 1-percentage-point higher (3.13 percent) than the current discount rate:

	1% Decrease (1.13%)	Current Discount Rate (2.13%)	1% Increase (3.13%)
Net OPEB liability	\$ 3,427,590	\$ 3,096,687	\$ 2,814,543

Sensitivity of the District's proportionate share of the net OPEB liability to changes in the healthcare cost trend rates. The following presents the District's proportionate share of the net OPEB liability, as well as what the District's proportionate share of the net OPEB liability would be if it were calculated using healthcare cost trend rates that are 1-percentage-point lower or 1-percentage-point higher than the current healthcare cost trend rates:

	1% Decrease	Healthcare Cost Trend Rates Current	1% Increase
Net OPEB liability	\$ 2,868,333	\$ 3,096,687	\$ 3,355,109

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

OPEB plan fiduciary net position. Detailed information about the OPEB plan's fiduciary net position is available in a separately issued report that can be found at <http://knowyourbenefits.dfa.ms.gov/>.

Note 11 – Alternative School Consortium

The school district entered into an Alternative School Agreement dated May 11, 2021, creating the Hattiesburg Public School District and Forrest County Agricultural School District Alternative School. This consortium was created pursuant to the provisions of Section 37-13-92 (6), Miss. Code Ann. (1972), and approved by the Mississippi Department of Education and includes the Hattiesburg Public School District and the Forrest County Agricultural School District

Section 37-13-92 (6), Miss. Code Ann. (1972), allows two or more adjacent school districts to enter into a contract to operate an alternative school program. The school board of the school district designated by the agreement as the lead district will serve as the governing board of the alternative school program. Transportation for students attending the alternative school program will be the responsibility of the individual school district sending the students.

The Hattiesburg Public School District has been designated as the lead school district for the consortium, and the operations of the consortium are included in its financial statements.

The following Statement of Revenues, Expenditures and Changes in Fund Balances is presented to detail the financial activity of the Hattiesburg Public School District and Forrest County Agricultural School District Alternative School.

**Hattiesburg Public School District and Forrest County Agricultural School District Alternative School
Statement of Revenues, Expenditures and Changes in Fund Balance
For the Year Ended June 30, 2022**

Revenues	
Local sources:	
Tuition from other LEA's within the state:	
Forrest County Agricultural School District	\$ 41,000
Total tuition from other LEA's within the state	41,000
Interest	330
Total local sources	41,330
Total Revenues	41,330
Expenditures	
Salaries	578,810
Employee benefits	198,502
Purchased property services	1,687
Supplies	1,915
Property	6,920
Total Expenditures	787,834
Excess (Deficiency) of Revenues Over (Under) Expenditures	(746,504)
Other Financing Sources/Uses:	
Operating transfers in	746,504
Total Other Financing Sources/Uses	746,504
Net Change in Fund Balance	0
Fund Balance:	
July 1, 2021	0
June 30, 2022	\$ 0

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

Note 12 – Prior Period Adjustments

A summary of significant Net Position/Fund Balance adjustments is as follows:

Exhibit B - Statement of Activities

Explanation	Amount
1. Correction of a prior period error in recording an asset or liability	\$ (47,870)
2. Restatement of prior period amounts of net OPEB liability	(35)
Total	<u>\$ (47,905)</u>

Exhibit D - Statement of Revenues, Expenditures and Changes in Fund Balances

Fund	Explanation	Amount
General Fund	Error correction of a prior period recording of an asset or liability	\$ (13,874)
Other governmental funds	Error correction of a prior period recording of an asset or liability	(33,996)
Total		<u>\$ (47,870)</u>

Note 13 – Contingencies

Federal Grants – The school district has received federal grants for specific purposes that are subject to audit by the grantor agencies. Entitlements to these resources are generally conditional upon compliance with the terms and conditions of the grant agreements and applicable federal regulations, including the expenditure of resources for allowable purposes. Any disallowances resulting from the grantor audit may become a liability of the school district.

Litigation – The school district is party to legal proceedings, many of which occur in the normal course of governmental operations. It is not possible at the present time to estimate the outcome or liability, if any, of the school district with respect to the various proceedings. However, the school district's legal counsel believes that ultimate liability resulting from these lawsuits will not have a material adverse effect on the financial condition of the school district.

Note 14 – Risk Management

The school district is exposed to various risks of loss related to torts; theft of, damage to and destruction of assets; errors and omissions; injuries to employees; and natural disasters. The district carries commercial insurance for these risks. Settled claims resulting from these insured risks have not exceeded commercial insurance coverage in any of the past three fiscal years.

Note 15 – Qualified School Construction Bonds

Section 1521 of the American Recovery and Reinvestment Act (ARRA) of 2009 provides for a source of capital at no or at nominal interest rates for costs incurred by certain public schools in connection with the construction, rehabilitation or repair of a public school facility or for the acquisition of land where a school will be built. Investors receive Federal income tax credits at prescribed tax credit rates in lieu of interest, which essentially allows state and local governments to borrow without incurring interest costs. While Qualified School Construction Bonds (QSCBs) are intended to be interest free to a borrower, the ARRA legislation allows a lender to charge supplemental interest, and such supplemental interest is the responsibility of the school district.

When the stated interest rate on the QSCB results in interest payments that exceed the supplemental interest payments discussed in the preceding paragraph, the school district may apply for a direct cash

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

subsidy payment from the U.S. Treasury which is intended to reduce the stated interest rate to a nominal percentage. These subsidy payments do not include the amount of any supplemental interest paid on a QSCB. The bonds issued by the school district are interest-bearing, but the interest charged does not exceed the supplemental interest discussed in the preceding paragraph. Therefore, the district did not receive nor apply for a direct cash subsidy payment from the U. S. Treasury.

The school district makes equal annual payments into a sinking fund which is used to pay off the bonds at termination. The current maturity limit of tax credit bonds is 17 years, per the U. S. Treasury Department. Under this program, ten percent of the proceeds must be subject to a binding commitment to be spent within six months of issuance, and 100% must be spent within three years. Up to two percent of bond proceeds can be used to pay costs of issuance. The amount on deposit at June 30, 2022, was \$2,401,499 for the Series 2009 issue, which included cash with fiscal agents. The amount on deposit at June 30, 2022, was \$2,226,235 for the Series 2010 issue, which included cash with fiscal agents of \$80,528, investments of \$1,214,900, and accrued interest of \$4,807. The amount accumulated in the sinking funds at the end of the seventeen-year period is expected to be sufficient to retire the debt. The following schedule reports the annual deposits to be made to the sinking funds by the school district.

Year Ending June 30		2009 Series	2010 Series	Total
2023	\$	200,000	200,000	400,000
2024		200,000	200,000	400,000
2025		200,000	200,000	400,000
2026		-	200,000	200,000
Total	\$	600,000	800,000	1,400,000

Note 16 – Insurance Loss Recoveries

The Hattiesburg Public School District received \$2,753,619 in insurance loss recoveries related to fire damage to buildings. In the government-wide Statement of Activities, the insurance loss recoveries were reported as charges for services and allocated among the expense functions based on the following percentages.

Insurance Loss Recoveries	Percentage	Expense Function
\$ 2,753,619	100%	Support services
\$ 2,753,619	100%	

Note 17 – Effect of Deferred Amounts on Net Position

The unrestricted net position amount of (\$41,682,135) includes the effect of deferring the recognition of expenses resulting from a deferred outflow from pensions. A portion of the deferred outflow of resources related to pension in the amount of \$4,566,002 resulting from the school district contribution subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended June 30, 2023. The \$5,172,443 balance of deferred outflow of resources related to pensions, at June 30, 2022 will be recognized as an expense and will decrease the unrestricted net position over the next 3 years.

The unrestricted net position amount of (\$41,682,135) includes the effect of deferring the recognition of

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Financial Statements
For Year Ended June 30, 2022

revenue resulting from a deferred inflow from pensions. The \$14,659,122 balance of deferred inflow of resources related to pensions, at June 30, 2022 will be recognized as revenue and will increase the unrestricted net position over the next 3 years.

The unrestricted net position amount of (\$41,682,135) includes the effect of deferring the recognition of expenses resulting from a deferred outflow from OPEB. A portion of the deferred outflow of resources related to OPEB in the amount of \$100,319 resulting from the school district contribution subsequent to the measurement date will be recognized as a reduction of the net OPEB liability in the year ended June 30, 2023. The \$513,183 balance of deferred outflow of resources related to OPEB, at June 30, 2022 will be recognized as an expense and will decrease the unrestricted net position over the next 5 years.

The unrestricted net position amount of (\$41,682,135) includes the effect of deferring the recognition of revenue resulting from a deferred inflow from OPEB. The \$1,235,075 balance of deferred inflow of resources related to OPEB, at June 30, 2022 will be recognized as revenue and will increase the unrestricted net position over the next 5 years.

The unrestricted net position amount of (\$41,682,135) includes the effect of deferring recognition of revenue resulting from a deferred inflow from leases. The \$1,388,236 balance of deferred inflow of resources related to leases at June 30, 2022, will be recognized as revenue and will increase the unrestricted net position over the next 40 years.

Note 18 - Subsequent Events

Events that occur after the Statement of Net Position date but before the financial statements are available to be issued must be evaluated for recognition or disclosure. The effects of subsequent events that provide evidence about conditions that existed at the Statement of Net Position date are recognized in the accompanying financial statements. Subsequent events which provide evidence about conditions that existed after the Statement of Net Position date require disclosure in the accompanying notes. Management of the Hattiesburg Public School District evaluated the activity of the district through January 27, 2023, and determined that no events have occurred requiring disclosure in the notes to the financial statement

REQUIRED SUPPLEMENTARY INFORMATION

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT
Required Supplementary Information

Budgetary Comparison Schedule
General Fund
For the Year Ended June 30, 2022

	Budgeted Amounts		Actual (GAAP Basis)	Variances	
				Positive (Negative)	
	Original	Final		Original to Final	Final to Actual
Revenues:					
Local sources	\$ 20,727,210	20,247,934	20,247,934	(479,276)	0
State sources	19,126,496	19,146,815	19,146,815	20,319	0
Federal sources	142,800	146,625	146,625	3,825	0
Sixteenth section sources	145,000	123,574	88,944	(21,426)	(34,630)
Total Revenues	40,141,506	39,664,948	39,630,318	(476,558)	(34,630)
Expenditures:					
Instruction	21,351,530	18,605,561	18,599,405	2,745,969	6,156
Support services	17,569,608	14,428,781	14,428,781	3,140,827	0
Noninstructional services	7,100	7,844	6,561	(744)	1,283
Sixteenth section	50,200	39,651	39,651	10,549	0
Facilities acquisition and construction	7,352,628	2,381,823	2,381,823	4,970,805	0
Debt service:					
Principal	56,042		6,809	56,042	(6,809)
Interest	35,165	32,591	33,222	2,574	(631)
Total Expenditures	46,422,273	35,496,251	35,496,252	10,926,022	(1)
Excess (Deficiency) of Revenues					
over (under) Expenditures	(6,280,767)	4,168,697	4,134,066	10,449,464	(34,631)
Other Financing Sources (Uses):					
Sale of transportation equipment	5,000	0	0	(5,000)	0
Sale of other property	10,000	6,795	6,795	(3,205)	0
Operating transfers in	8,160,068	12,555,404	1,478,826	4,395,336	(11,076,578)
Operating transfers out	(10,076,087)	(14,576,514)	(3,499,936)	(4,500,427)	11,076,578
Total Other Financing Sources (Uses)	(1,901,019)	(2,014,315)	(2,014,315)	(113,296)	0
Net Change in Fund Balances	(8,181,786)	2,154,382	2,119,751	10,336,168	(34,631)
Fund Balances:					
July 1, 2021, as previously reported	19,875,265	19,656,465	19,656,465	(218,800)	0
Prior period adjustments	10,000	(13,874)	(13,874)	(23,874)	0
July 1, 2021, as restated	19,885,265	19,642,591	19,642,591	(242,674)	0
June 30, 2022	\$ 11,703,479	21,796,973	21,762,342	10,093,494	(34,631)

The notes to the required supplementary information are an integral part of this schedule.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Required Supplementary Information

Budgetary Comparison Schedule

ESSER II Fund

For the Year Ended June 30, 2022

	Budgeted Amounts		Actual (GAAP Basis)	Variances	
				Positive (Negative)	
	Original	Final		Original to Final	Final to Actual
Revenues:					
Federal sources	\$ 10,911,988	11,175,606	3,273,545	263,618	(7,902,061)
Total Revenues	10,911,988	11,175,606	3,273,545	263,618	(7,902,061)
Expenditures:					
Instruction	2,477,912	3,698,038	1,517,257	(1,220,126)	2,180,781
Support services	1,676,999	2,281,755	1,113,733	(604,756)	1,168,022
Facilities acquisition and construction	5,700,000	3,754,421	8,504	1,945,579	3,745,917
Total Expenditures	9,854,911	9,734,214	2,639,494	120,697	7,094,720
Excess (Deficiency) of Revenues over (under) Expenditures	1,057,077	1,441,392	634,051	384,315	(807,341)
Other Financing Sources (Uses):					
Operating transfers out	(1,057,077)	(1,441,392)	(634,051)	(384,315)	807,341
Total Other Financing Sources (Uses)	(1,057,077)	(1,441,392)	(634,051)	(384,315)	807,341
Net Change in Fund Balances	0	0	0	0	0
Fund Balances:					
July 1, 2021	0	0	0	0	0
June 30, 2022	\$ 0	0	0	0	0

The notes to the required supplementary information are an integral part of this schedule.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Required Supplementary Information

Budgetary Comparison Schedule

ESSER III ARP Fund

For the Year Ended June 30, 2022

	Budgeted Amounts		Actual (GAAP Basis)	Variances	
				Positive (Negative)	
	Original	Final		Original to Final	Final to Actual
Revenues:					
Federal sources	\$ 25,616,066	26,031,330	2,123,289	415,264	(23,908,041)
Total Revenues	25,616,066	26,031,330	2,123,289	415,264	(23,908,041)
Expenditures:					
Instruction	7,281,990	12,528,678	1,209,696	(5,246,688)	11,318,982
Support services	5,376,099	3,473,962	297,415	1,902,137	3,176,547
Facilities acquisition and construction	11,900,000	7,297,479		4,602,521	7,297,479
Total Expenditures	24,558,089	23,300,119	1,507,111	1,257,970	21,793,008
Excess (Deficiency) of Revenues over (under) Expenditures	1,057,977	2,731,211	616,178	1,673,234	(2,115,033)
Other Financing Sources (Uses):					
Operating transfers out	(1,057,977)	(2,731,211)	(616,178)	(1,673,234)	2,115,033
Total Other Financing Sources (Uses)	(1,057,977)	(2,731,211)	(616,178)	(1,673,234)	2,115,033
Net Change in Fund Balances	0	0	0	0	0
Fund Balances:					
July 1, 2021	0	0	0	0	0
June 30, 2022	\$ 0	0	0	0	0

The notes to the required supplementary information are an integral part of this schedule.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Schedule of the District's Proportionate Share of the Net Pension Liability

PERS

Last 10 Fiscal Years*

	2022	2021	2020	2019	2018	2017	2016	2015
District's proportion of the net pension liability	% 0.366613	0.363232	0.359253	0.369100	0.367900	0.428800	0.439400	0.415100
District's proportionate share of the net pension liability	\$ 54,187,003	70,317,494	63,199,691	61,392,296	61,157,467	76,594,387	67,922,575	51,058,006
District's covered payroll	\$ 24,376,023	24,186,741	23,397,029	23,573,041	23,598,470	27,431,486	27,452,508	25,364,660
District's proportionate share of the net pension liability as a percentage of its covered payroll	222.30%	290.73%	270.12%	260.43%	259.16%	279.22%	247.42%	201.30%
Plan fiduciary net position as a percentage of the total pension liability	70.44%	58.97%	61.59%	62.54%	61.49%	57.47%	61.70%	67.21%

The notes to the required supplementary information are an integral part of this schedule.

* The amounts presented for each fiscal year were determined as of the measurement date of 6/30 of the year prior to the fiscal year presented.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB 68 was implemented in FYE 6/30/15, and until a full 10-year trend is compiled, the District has only presented information for the years in which information is available.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Schedule of District Contributions

PERS

Last 10 Fiscal Years

	2022	2021	2020	2019	2018	2017	2016	2015
Contractually required contribution	\$ 4,566,002	4,241,428	4,208,493	3,685,032	3,712,754	3,716,759	4,320,459	4,323,770
Contributions in relation to the contractually required contribution	4,566,002	4,241,428	4,208,493	3,685,032	3,712,754	3,716,759	4,320,459	4,323,770
Contribution deficiency (excess)	\$ -	-	-	-	-	-	-	-
District's covered payroll	\$ 26,241,391	24,376,023	24,186,741	23,397,029	23,573,041	23,598,470	27,431,486	27,452,508
Contributions as a percentage of covered payroll	17.40%	17.40%	17.40%	15.75%	15.75%	15.75%	15.75%	15.75%

The notes to the required supplementary information are an integral part of this schedule.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB 68 was implemented in FYE 6/30/15, and until a full 10-year trend compiled, the District has only presented information for the years in which information is available.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Schedule of the District's Proportionate Share of the Net OPEB Liability

OPEB

Last 10 Fiscal Years*

	2022	2021	2020	2019	2018
District's proportion of the net OPEB liability	% 0.48108960	0.48310520	0.48500156	0.49130000	0.48860000
District's proportionate share of the net OPEB liability	\$ 3,096,687	3,759,563	4,115,437	3,800,249	3,833,927
District's covered - employee payroll	24,376,023	24,186,741	23,397,029	23,573,041	23,598,470
District's proportionate share of the net OPEB liability as a percentage of its covered - employee payroll	12.70%	15.54%	17.59%	16.12%	16.25%
Plan fiduciary net position as a percentage of the total OPEB liability	0.16%	0.13%	0.12%	0.13%	0.00%

The notes to the required supplementary information are an integral part of this schedule.

* The amounts presented for each fiscal year were determined as of the measurement date of 6/30 of the year prior to the fiscal year presented.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB 75 was implemented in FYE 6/30/18, and until a full 10-year trend is compiled, the District has only presented information for the years in which information is available.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Schedule of District Contributions

OPEB

Last 10 Fiscal Years

	2022	2021	2020	2019	2018
Actuarially determined contribution	\$ 100,319	124,467	149,931	164,959	163,446
Contributions in relation to the actuarially determined contribution	100,319	124,467	149,931	164,959	163,446
Contribution deficiency (excess)	\$ -	-	-	-	-
District's covered - employee payroll	26,241,391	24,376,023	24,186,741	23,397,101	23,573,041
Contributions as a percentage of covered - employee payroll	0.38%	0.51%	0.62%	0.71%	0.69%

The notes to the required supplementary information are an integral part of this schedule.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB 75 was implemented in FYE 6/30/18 and, until a full 10-year trend is compiled, the District has only presented information for the years in which information is available. Prior year information is based on historical amounts reported in prior year audit reports.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Required Supplementary Information
For the Year Ended June 30, 2022

Budgetary Comparison Schedule

(1) Basis of Presentation

The Budgetary Comparison Schedule presents the original legally adopted budget, the final legally adopted budget, the actual data on the GAAP basis, variances between the original budget and the final budget, and variances between the final budget and the actual data.

(2) Budget Amendments and Revisions

The budget is adopted by the school board and filed with the taxing authority. Amendments can be made on the approval of the school board. By statute, final budget revisions must be approved on or before October 15. A budgetary comparison is presented for the General Fund and each major Special Revenue Fund consistent with accounting principles generally accepted in the United States of America.

Pension Schedules

(1) *Changes of assumptions*

2015:

The expectation of retired life mortality was changed to the RP-2014 Healthy Annuitant Blue Collar Table projected to 2016 using Scale BB rather than the RP-2000 Mortality Table, which was used prior to 2015.

The expectation of disabled mortality was changed to the RP-2014 Disabled Retiree Table, rather than the RP-2000 Disabled Mortality Table, which was used prior to 2015.

Withdrawal rates, pre-retirement mortality rates, disability rates and service retirement rates were also adjusted to more closely reflect actual experience.

Assumed rates of salary increase were adjusted to more closely reflect actual and anticipated experience.

The price inflation and investment rate of return assumptions were changed from 3.50% to 3.00% and 8.00% to 7.75%, respectively.

2016:

The assumed rate of interest credited to employee contributions was changed from 3.50% to 2.00%.

2017:

The expectation of retired life mortality was changed to the RP-2014 Healthy Annuitant Blue Collar Mortality Table projected with Scale BB to 2022. Small adjustments were also made to the Mortality Table for disabled lives.

The wage inflation assumption was reduced from 3.75% to 3.25%.

Withdrawal rates, pre-retirement mortality rates, disability rates and service retirement rates were also adjusted to more closely reflect actual experience.

The percentage of active member disabilities assumed to be in the line of duty was increased from 6% to 7%.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Required Supplementary Information
For the Year Ended June 30, 2022

2019:

The expectation of retired life mortality was changed to the PubS.H-2010(B) Retiree Table with the following adjustments: for males, 112% of male rates from ages 18 to 75 scaled down to 105% for ages 80 to 119; for females, 85% of the female rates from ages 18 to 65 scaled up to 102% for ages 75 to 119; and projection scale MP-2018 will be used to project future improvements in life expectancy generationally.

The expectation of disabled mortality was changed to PubT.H-2010 Disabled Retiree Table for disabled retirees with the following adjustments: for males, 137% of male rates at all ages; for females, 115% of female rates at all ages; and projection scale MP-2018 will be used to project future improvements in life expectancy generationally.

The price inflation assumption was reduced from 3.00% to 2.75%.

The wage inflation assumption was reduced from 3.25% to 3.00%.

Withdrawal rates, pre-retirement mortality rates, and service retirement rates were also adjusted to more closely reflect actual experience.

The percentage of active member disabilities assumed to be in the line of duty was increased from 7% to 9%.

2021:

The expectation of retired life mortality was changed to the PubS.H-2010(B) Retiree Table with the following adjustments: for males, 95% of male rates up to age 60, 110% for ages 61 to 75, and 101% for ages above 77; for females, 84% of female rates up to age 72, 100% for ages above 76; and projection scale MP-2020 will be used to project future improvements in life expectancy generationally.

The expectation of disabled mortality was changed to PubG.H-2010 Disabled Table for disabled retirees with the following adjustments: for males, 134% of male rates at all ages; for females, 121% of female rates at all ages; and projection scale MP-2020 will be used to project future improvements in life expectancy generationally.

The expectation of contingent annuitant mortality was based on the PubS.H-2010(B) Contingent Annuitant Table with the following adjustments: for males, 97% of male rates at all ages; for females, 110% of female rates at all ages; and projection scale MP-2020 will be used to project future improvements in life expectancy generationally.

The price inflation assumption was reduced from 2.75% to 2.40%.

The wage inflation assumption was reduced from 3.00% to 2.65%.

The investment rate of return assumption was changed from 7.75% to 7.55%.

The assumed load for administrative expenses was increased from 0.25% to 0.28%.

Withdrawal rates, pre-retirement mortality rates, disability rates and service retirement rates were also adjusted to reflect actual experience more closely.

The percentage of active member disabilities assumed to be in the line of duty was increased from 9% to 12%.

The percentage of active member deaths assumed to be in the line of duty was decreased from 6% to 4%.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Required Supplementary Information
For the Year Ended June 30, 2022

(2) *Changes in benefit provisions*

2016:

Effective July 1, 2016, the interest rate on employee contributions shall be calculated based on the money market rate as published by the Wall Street Journal on December 31 of each preceding year with a minimum rate of one percent and a maximum rate of five percent.

(3) *Method and assumptions used in calculations of actuarially determined contributions.*

The actuarially determined contribution rates in the schedule of employer contributions are calculated as of June 30, two years prior to the end of the fiscal year in which contributions are reported (June 30, 2019 valuation for the June 30, 2021 fiscal year end). The following actuarial methods and assumptions were used to determine the most recent contribution rate reported in that schedule:

Actuarial cost method	Entry age
Amortization method	Level percentage of payroll, open
Remaining amortization period	28.8 years
Asset valuation method	5-year smoothed market
Price Inflation	2.75 percent
Salary increase	3.00 percent to 18.25 percent, including inflation
Investment rate of return	7.75 percent, net of pension plan investment expense, including inflation

OPEB Schedules

(1) *Changes of assumptions*

2017: The discount rate was changed from 3.01% for the prior Measurement Date to 3.56% for the current Measurement Date.

2018: The discount rate was changed from 3.56% for the prior Measurement Date to 3.89% for the current Measurement Date.

2019: The discount rate was changed from 3.89% for the prior Measurement Date to 3.50% for the current Measurement Date.

2020: The discount rate was changed from 3.50% for the prior Measurement Date to 2.19% for the current Measurement Date.

2021: The discount rate was changed from 2.19% for the prior Measurement Date to 2.13% for the current Measurement Date.

(2) *Changes in benefit provisions*

2017: None

2018: None

2019: None

2020: The schedule of monthly retiree contributions was increased as of January 1, 2021. In addition, the deductibles and coinsurance maximums were increased for the Select coverage and the coinsurance maximums were increased for the Base Coverage beginning January 1, 2021.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Required Supplementary Information
For the Year Ended June 30, 2022

2021: The schedule of monthly retiree contributions was increased as of January 1, 2022. In addition, the in-network medical deductible was increased for the Select coverage beginning January 1, 2022.

- (3) *Methods and assumptions used in calculations of Actuarially Determined Contributions.* The Actuarially Determined Contributions rates, as a percentage of payroll, used to determine the Actuarially Determined Contribution amounts in the Schedule of Employer Contributions are calculated as of the most recent Valuation Date. The following actuarial methods and assumptions (from the June 30, 2020 actuarial valuation) were used to determine contribution rates reported in that schedule for the year ending June 30, 2021:

Actuarial cost method	Entry age
Amortization method	Level dollar
Amortization period	30 years, open
Asset valuation method	Market Value of Assets
Price inflation	2.75%
Salary increases, including wage inflation	3.00% to 18.25%
Initial health care cost trend rates	
Medicare Supplement Claims	7.00%
Pre-Medicare	
Ultimate health care cost trend rates	
Medicare Supplement Claims	4.75%
Pre-Medicare	
Year of ultimate trend rates	
Medicare Supplement Claims	2028
Pre-Medicare	
Long-term investment rate of return, net of OPEB plan investment expense, including price inflation	2.19%

SUPPLEMENTARY INFORMATION

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Supplementary Information

Schedule of Expenditures of Federal Awards

For the Year Ended June 30, 2022

Federal Grantor/ Pass-through Grantor/ Program or Cluster Title	Federal Assistance Listing Number	Pass-through Entity Identifying Number	Federal Expenditures
U.S. Department of Agriculture			
Passed-through Mississippi Department of Education:			
Child nutrition cluster:			
School breakfast program	10.553	225MS326N1099	\$ 621,853
National school lunch program	10.555	225MS326N1099	1,865,927
National school lunch program - commodities	10.555	225MS326N1099	263,375
COVID-19 - Emergency operations cost	10.555	225MS326N1099	314,600
Summer food service program for children	10.559	225MS326N1099	133,629
Total child nutrition cluster			3,199,384
Administrative expense reimbursement	10.560	225MS907N2533	9,456
Total passed-through Mississippi Department of Education			3,208,840
Total U.S. Department of Agriculture			3,208,840
U.S. Department of Defense			
Direct Program:			
Reserve Officers' Training Corps	12.xxx	N/A	70,098
Total U.S. Department of Defense			70,098
U.S. Department of Education			
Passed-through Mississippi Department of Education:			
Title I grants to local educational agencies	84.010	S010A180024 S010A190024 S010A200024 S010A210024	3,878,137
Career and technical education - basic grants to states	84.048	V048A210024	80,783
English language acquisition grants	84.365	S365A190024 S365A200024 S365A210024	27,983
Supporting effective instruction state grants	84.367	S367A180023 S367A190023 S367A200023 S367A210023	342,511
School improvement grants	84.377	S377A210025	11,742
Student support and academic enrichment program grants	84.424	S424A180025 S424A190025 S424A200025 S424A210025	316,444
Subtotal			4,657,600
Special education cluster:			
Special education - grants to states	84.027	H027A190108 H027A200108 H027A210108	1,400,715
COVID-19 - Special education - grants to states	84.027X	H027X210108	71,933
Special education - preschool grants	84.173	H173A190113 H173A200113 H173A210113	45,631

Federal Grantor/ Pass-through Grantor/ Program or Cluster Title	Federal Assistance Listing Number	Pass-through Entity Identifying Number	Federal Expenditures
COVID-19 - Special education - preschool grants	84.173X	H173X210113	14,760
Total special education cluster			1,533,039
COVID-19 - Elementary & Secondary School Emergency Relief Fund I	84.425D	S425D200031	619,946
COVID-19 - Elementary & Secondary School Emergency Relief Fund II	84.425D	S425D210031	3,273,545
COVID-19 - Elementary & Secondary School Emergency Relief Fund Pre-K grant	84.425D	S425D200031	13,309
COVID-19 - Elementary & Secondary School Emergency Relief Fund ARP III	84.425U	S425U210031	2,123,289
Total COVID-19 - Education Stabilization Fund (ESSER)			6,030,089
Total passed-through Mississippi Department of Education			12,220,728
Passed-through Mississippi Department of Rehabilitation Services			
Rehabilitation services - vocational rehabilitation grants to states	84.126	3100021449	42,449
Total passed-through Mississippi Department of Rehabilitation Services			42,449
Total U.S. Department of Education			12,263,177
<u>U.S. Department of Health and Human Services</u>			
Passed-through the Mississippi Department of Education:			
Medicaid cluster:			
Medical assistance program	93.778	2205MS5ADM	24,132
Total Medicaid cluster			24,132
Total passed-through Mississippi Department of Education			24,132
Total U.S. Department of Health and Human Services			24,132
<u>Social Security Administration</u>			
Passed-through the Mississippi Department of Rehabilitation Services:			
Disability insurance/SSI cluster:			
Social security disability insurance	96.001	4-22-04MSD100	1,204
Total Social security disability insurance cluster			1,204
Total passed-through Mississippi Department of Rehabilitation Services:			1,204
Total Social Security Administration			1,204
Total for All Federal Awards			\$ 15,567,451

The accompanying notes to the supplementary information are an integral part of this schedule.

HATTIESBURG PUBLIC SCHOOL DISTRICT
Notes to the Schedule of Expenditures of Federal Awards
For the Year Ended June 30, 2022

Schedule of Expenditures of Federal Awards

(1) Basis of Presentation

The accompanying schedule of expenditures of federal awards (the "Schedule") includes the federal award activity of the Hattiesburg Public School District under programs of the federal government for the year ended June 30, 2022. The information in this Schedule is presented in accordance with the requirements of Title 2 U.S. *Code of Federal Regulations* Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance). Because the Schedule presents only a selected portion of the operations of the Hattiesburg Public School District, it is not intended to and does not present the financial position, changes in net position, or cash flows of the Hattiesburg Public School District.

(2) Summary of Significant Accounting Policies

Expenditures reported on the Schedule are reported on the modified accrual basis of accounting. Such expenditures are recognized following the cost principles contained in the Uniform Guidance, wherein certain types of expenditures are not allowable or are limited as to reimbursement. Negative amounts shown on the Schedule represent adjustments or credits made in the normal course of business to amounts reported as expenditures in prior years.

(3) Indirect Cost Rate

The Hattiesburg Public School District has not elected to use the 10-percent de minimis indirect cost rate allowed under the Uniform Guidance.

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Supplementary Information

Schedule of Instructional, Administrative and Other Expenditures - Governmental Funds For the Year Ended June 30, 2022

Expenditures	Total	Instruction and Other Student Instructional Expenditures	General Administration	School Administration	Other
Salaries and fringe benefits	\$ 35,650,834	28,519,238	1,423,768	2,458,115	3,249,713
Other	23,737,928	5,541,445	451,158	32,679	17,712,646
Total	\$ 59,388,762	34,060,683	1,874,926	2,490,794	20,962,359
Total number of students *	3,186				
Cost per student	\$ 18,641	10,691	588	782	6,580

For purposes of this schedule, the following columnar descriptions are applicable:

Instruction and Other Student Instructional Expenditures - includes the activities dealing directly with the interaction between teachers and students. Included here are the activities of teachers, teachers aides or classroom assistants of any type.

General Administration - includes expenditures for the following functions: Support Services - General Administration and Support Services - Business.

School Administration - includes expenditures for the following function: Support Services - School Administration.

Other - includes all expenditure functions not included in Instruction or Administration Categories.

* includes the number of students reported on the ADA report submission for month 9, which is the final submission for the fiscal year

(This page left blank intentionally)

OTHER INFORMATION

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Other Information

Statement of Revenues, Expenditures and Changes in Fund Balances

General Fund

Last Four Years

UNAUDITED

	2022	2021*	2020*	2019*
Revenues:				
Local sources	\$ 20,247,934	20,036,157	18,462,086	18,150,570
State sources	19,146,815	18,737,955	19,387,472	18,702,285
Federal sources	146,625	130,957	101,960	390,690
Sixteenth section sources	88,944	158,396	130,963	138,723
Total Revenues	39,630,318	39,063,465	38,082,481	37,382,268
Expenditures:				
Instruction	18,599,405	17,917,154	18,721,124	18,424,446
Support services	14,428,781	13,365,669	13,405,129	13,756,453
Noninstructional services	6,561	2,313	1,622	6,266
Sixteenth section	39,651	47,531	32,708	30,273
Facilities acquisition and construction	2,381,823	1,523,519	138,797	
Debt service:				
Principal	6,809			
Interest	33,222	33,903	35,165	36,378
Total Expenditures	35,496,252	32,890,089	32,334,545	32,253,816
Excess (Deficiency) of Revenues over (under) Expenditures	4,134,066	6,173,376	5,747,936	5,128,452
Other Financing Sources (Uses):				
Insurance recovery		2,249	18,420	12,254
Sale of transportation equipment			6,300	
Sale of other property	6,795	8,555	8,454	17,230
Operating transfers in	1,478,826	487,985	280,319	36,378
Operating transfers out	(3,499,936)	(6,821,084)	(1,366,671)	(742,750)
Total Other Financing Sources (Uses)	(2,014,315)	(6,322,295)	(1,053,178)	(676,888)
Net Change in Fund Balances	2,119,751	(148,919)	4,694,758	4,451,564
Fund Balances:				
Beginning of period, as previously reported	19,656,465	19,777,598	15,010,995	10,559,431
Prior period adjustments	(13,874)	27,786	45,588	
Fund reclassification			26,257	
Beginning of period, as restated	19,642,591	19,805,384	15,082,840	10,559,431
Increase (Decrease) in reserve for inventory				
End of Period	\$ 21,762,342	\$ 19,656,465	\$ 19,777,598	\$ 15,010,995

*SOURCE - PRIOR YEAR AUDIT REPORTS

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT

Other Information

Statement of Revenues, Expenditures and Changes in Fund Balances

All Governmental Funds

Last Four Years

UNAUDITED

	2022	2021*	2020*	2019*
Revenues:				
Local sources	\$ 23,641,465	23,513,359	21,420,559	21,218,818
State sources	20,642,218	20,526,649	21,127,690	20,321,573
Federal sources	16,408,733	12,374,243	8,837,001	9,104,519
Sixteenth section sources	27,210	222,398	227,815	264,109
Total Revenues	60,719,626	56,636,649	51,613,065	50,909,019
Expenditures:				
Instruction	27,885,896	26,886,849	23,912,155	23,223,875
Support services	19,348,719	17,194,404	16,894,111	17,245,508
Noninstructional services	2,967,482	2,458,955	2,733,131	2,839,780
Sixteenth section	39,651	47,531	32,708	30,273
Facilities acquisition and construction	7,110,787	14,192,521	12,684,953	1,040,922
Debt service:				
Principal	1,015,924	960,000	735,000	1,869,270
Interest	1,014,803	1,048,561	1,054,302	321,625
Other	5,500	6,000	4,500	5,480
Total Expenditures	59,388,762	62,794,821	58,050,860	46,576,733
Excess (Deficiency) of Revenues over (under) Expenditures	1,330,864	(6,158,172)	(6,437,795)	4,332,286
Other Financing Sources (Uses):				
Bonds and notes issued			800,000	22,500,000
Insurance recovery	2,753,619	152,249	18,420	24,053
Transfer in to escrow agent	509,162			
Sale of transportation equipment			6,300	
Sale of other property	7,945	8,555	8,454	17,255
Transfer in to escrow agent		529,224	521,930	546,128
Operating transfers in	4,978,762	7,309,069	1,646,990	865,128
Payment to QCSB escrow agent	(509,162)	(529,224)	(521,930)	(546,128)
Operating transfers out	(4,978,762)	(7,309,069)	(1,646,990)	(865,128)
Total Other Financing Sources (Uses)	2,761,564	160,804	833,174	22,541,308
Net Change in Fund Balances	4,092,428	(5,997,368)	(5,604,621)	26,873,594
Fund Balances:				
Beginning of period, as previously reported	34,536,381	40,479,809	45,996,697	19,156,592
Prior period adjustments	(47,870)	31,537	43,650	
Fund reclassification			26,257	
Beginning of period, as restated	34,488,511	40,511,346	46,066,604	19,156,592
Increase (Decrease) in reserve for inventory	(16,207)	22,403	17,826	(33,489)
End of Period	\$ 38,564,732	\$ 34,536,381	\$ 40,479,809	\$ 45,996,697

*SOURCE - PRIOR YEAR AUDIT REPORTS

(This page left blank intentionally)

REPORTS ON INTERNAL CONTROL AND COMPLIANCE

(This page left blank intentionally)

SUZANNE E. SMITH, CPA, PLLC

AUDITING AND ACCOUNTING SERVICES

sesmithcpa@msn.com

INDEPENDENT AUDITOR'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

Superintendent and School Board
Hattiesburg Public School District

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of Hattiesburg Public School District, as of and for the year ended June 30, 2022, and the related notes to the financial statements, which collectively comprise Hattiesburg Public School District's basic financial statements and have issued our report thereon dated January 27, 2023.

Report on Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered Hattiesburg Public School District's internal control over financial reporting (internal control) as a basis for designing audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Hattiesburg Public School District's internal control. Accordingly, we do not express an opinion on the effectiveness of Hattiesburg Public School District's internal control.

A deficiency in internal control exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct, misstatements, on a timely basis. *A material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency* is a deficiency, or combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses or significant deficiencies may exist that were not identified.

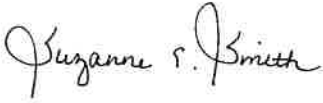
Report on Compliance and Other Matters

As part of obtaining reasonable assurance about whether Hattiesburg Public School District's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the financial statements. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

POST OFFICE BOX 1563
STARKVILLE, MS 39760
PHONE: 601-938-5717

Purpose of this Report

The purpose of this report is solely to described the scope of our testing of internal control and compliance and the results of that testing and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in cursive script that reads "Suzanne E. Smith".

Suzanne E. Smith, CPA, PLLC
Starkville, MS 39760

January 27, 2023

SUZANNE E. SMITH, CPA, PLLC

AUDITING AND ACCOUNTING SERVICES

sesmithcpa@msn.com

INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE FOR EACH MAJOR PROGRAM AND ON INTERNAL CONTROL OVER COMPLIANCE REQUIRED BY THE UNIFORM GUIDANCE

Superintendent and the School Board
Hattiesburg Public School District

Report on Compliance for Each Major Federal Program

Opinion on Each Major Federal Program

We have audited Hattiesburg Public School District's compliance with the type of compliance requirements identified as subject to audit in the OMB *Compliance Supplement* that could have a direct and material effect on each of Hattiesburg Public School District's major federal programs for the year ended June 30, 2022. Hattiesburg Public School District's major federal programs are identified in the summary of the auditor's results section of the accompanying schedule of findings and questioned costs.

In our opinion, Hattiesburg Public School District complied, in all material respects, with the types of compliance requirements referred to above that could have a direct and material effect on each of its major federal programs for the year ended June 30, 2022.

Basis for Opinion on Each Major Federal Program

We conducted our audit of compliance in accordance with auditing standards generally accepted in the United States of America; the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States; and the audit requirements of Title 2 U.S. Code of Federal Regulations Part 200, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements of Federal Awards* (Uniform Guidance). Our responsibilities under those standards and the Uniform Guidance are further described in the Auditor's Responsibilities for the Audit of Compliance section of our report.

We are required to be independent of Hattiesburg Public School District and to meet our other ethical responsibilities, in accordance with relevant ethical requirements related to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion on compliance for each major federal program. Our audit does not provide a legal determination of Hattiesburg Public School District's compliance with the compliance requirements referred to above.

Responsibilities of Management for Compliance

Management is responsible for compliance with the requirements referred to above and for the design, implementation, and maintenance of effective internal control over compliance with the requirements of laws, statutes, regulations, rules, and provisions of contracts or grant agreements applicable to Hattiesburg Public School District's federal programs.

POST OFFICE BOX 1563
STARKVILLE, MS 39760
PHONE: 601-938-5717

Auditor's Responsibilities for Audit of Compliance

Our objectives are to obtain reasonable assurance about whether material noncompliance with the compliance requirements referred to above occurred, whether due to fraud or error, and to express an opinion on Hattiesburg Public School District's compliance based on our audit. Reasonable assurance is a high level of assurance but is not absolute assurance and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards, *Government Auditing Standards*, and the Uniform Guidance will always detect material noncompliance when it exists. The risk of not detecting material noncompliance resulting from fraud is higher than for that resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Noncompliance with the compliance requirements referred to above is considered material if there is a substantial likelihood that, individually or in the aggregate, it would influence the judgment made by a reasonable user of the report on compliance about Hattiesburg Public School District's compliance with the requirements of each major federal program as a whole.

In performing an audit in accordance with generally accepted auditing standards, *Government Auditing Standards*, and the Uniform Guidance, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material noncompliance, whether due to fraud or error, and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding Hattiesburg Public School District's compliance with the compliance requirements referred to above and performing such other procedures as we considered necessary in the circumstances.
- Obtain an understanding of Hattiesburg Public School District's internal control over compliance relevant to the audit in order to design audit procedures that are appropriate in the circumstances and to test and report on internal control over compliance in accordance with the Uniform Guidance, but not for the purpose of expressing an opinion on the effectiveness of Hattiesburg Public School District's internal control over compliance. Accordingly, no such opinion is expressed.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and any significant deficiencies and material weaknesses in internal control over compliance that we identified during the audit.

Other Matters

The results of our auditing procedures disclosed an immaterial instance of noncompliance which is required to be reported in accordance with the Uniform Guidance and which is described in the accompanying schedule of findings and questioned costs as **Finding 2022-001**. Our opinion on each major federal award program is not modified with respect to this matter.

Government Auditing Standards requires the auditor to perform limited procedures on Hattiesburg Public School District's response to the noncompliance finding identified in our audit described in the accompanying schedule of findings and questioned costs. Hattiesburg Public School District's response was not subjected to the other auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.

Report on Internal Control over Compliance

Our consideration of internal control over compliance was for the limited purpose described in the Auditor's Responsibilities for the Audit of Compliance section above and was not designed to identify all deficiencies in internal control over compliance that might be material weaknesses or significant deficiencies in internal control over compliance and therefore, material weaknesses or significant deficiencies may exist that were not identified. We did not identify any deficiencies in internal control over compliance that we consider to

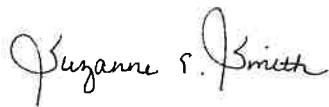
be material weaknesses. However, as discussed below, we did identify certain deficiencies in internal control over compliance that we consider to be significant deficiencies.

A deficiency in internal control over compliance exists when the design or operation of a control over compliance does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, noncompliance with a type of compliance requirement of a federal program on a timely basis. *A material weakness in internal control over compliance* is a deficiency or a combination of deficiencies, in internal control over compliance, such that there is a reasonable possibility that material noncompliance with a type of compliance requirement of a federal program will not be prevented, or detected and corrected, on a timely basis. *A significant deficiency in internal control over compliance* is a deficiency, or a combination of deficiencies, in internal control over compliance with a type of compliance requirement of a federal program that is less severe than a material weakness in internal control over compliance, yet important enough to merit attention by those charged with governance. We consider the deficiency in internal control over compliance described in the accompanying schedule of findings and questioned costs as **Finding 2022-001** to be a significant deficiency.

Our audit was not designed for the purpose of expressing an opinion on the effectiveness of internal control over compliance. Accordingly, no such opinion is expressed.

Government Auditing Standards requires the auditor to perform limited procedures on Hattiesburg Public School District's response to the internal control over compliance findings identified in our audit described in the accompanying schedule of findings and questioned costs. Hattiesburg Public School District's response was not subjected to the other auditing procedures applied in the audit of compliance and, accordingly, we express no opinion on the response.

The purpose of this report on internal control over compliance is solely to describe the scope of our testing of internal control over compliance and the results of that testing based on the requirements of the Uniform Guidance. Accordingly, this report is not suitable for any other purposes.



Suzanne E. Smith, CPA, PLLC
Starkville, MS 39760

January 27, 2023

(This page left blank intentionally)

INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE WITH STATE LAWS AND REGULATIONS

(This page left blank intentionally)

SUZANNE E. SMITH, CPA, PLLC

AUDITING AND ACCOUNTING SERVICES

sesmithcpa@msn.com

INDEPENDENT AUDITOR'S REPORT ON COMPLIANCE WITH STATE LAWS AND REGULATIONS

Superintendent and School Board
Hattiesburg Public School District

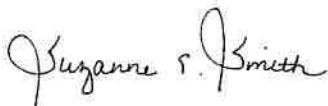
We have audited the financial statements of the governmental activities, each major fund, and the aggregate remaining fund information of the Hattiesburg Public School District as of and for the year ended June 30, 2022, which collectively comprise Hattiesburg Public School District's basic financial statements and have issued our report thereon dated January 27, 2023. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States.

Section 37-9-18(3)(a), Miss. Code Ann. (1972), states in part, "the auditor shall test to insure that the school district is complying with the requirements of Section 37-61-33(3)(a)(iii), Miss. Code Ann. (1972), relating to classroom supply funds." As required by the state legal compliance audit program prescribed by the Office of the State Auditor, we have also performed procedures to test compliance with certain other state laws and regulations. However, providing an opinion on compliance with all state laws and regulations was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our procedures performed to test compliance with the requirements of Section 37-61-33(3)(a)(iii), Miss. Code Ann. (1972), disclosed no instances of noncompliance.

Section 37-9-18(3)(b), Miss. Code Ann. (1972), states in part, "the auditor shall test to insure correct and appropriate coding at the function level. The audit must include a report showing the correct and appropriate functional level expenditure codes in expenditures by the school district." The results of our procedures performed to test compliance with the requirements of Section 37-9-18(3)(b), Miss. Code Ann. (1972), disclosed no instances of noncompliance related to incorrect or inappropriate functional level expenditure coding.

As required by the state legal compliance audit program prescribed by the Office of the State Auditor, we have also performed procedures to test compliance with certain other state laws and regulations. However, providing an opinion on compliance with all state laws and regulations was not an objective of our audit and, accordingly, we do not express such an opinion. The results of procedures performed to test compliance with certain other state laws and regulations and our audit of the financial statements did not disclose any instances of noncompliance with other state laws and regulations.

This report is intended solely for the information and use of the school board and management, entities with accreditation overview, and federal awarding agencies, the Office of the State Auditor and pass-through entities and is not intended to be and should not be used by anyone other than these specified parties. However, this report is a matter of public record and its distribution is not limited.



Suzanne E. Smith, CPA, PLLC
Starkville, Mississippi

January 27, 2023

(This page left blank intentionally)

SCHEDULE OF FINDINGS AND QUESTIONED COSTS

(This page left blank intentionally)

HATTIESBURG PUBLIC SCHOOL DISTRICT
Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2022

Section I: Summary of Auditor's Results

Financial Statements:

1. Type of auditor's report issued: Unmodified

2. Internal control over financial reporting:
 - a. Material weakness(es) identified? (Yes/No) No
 - b. Significant deficiency(ies) identified? (Yes/None reported) None reported

3. Noncompliance material to financial statements noted? (Yes/No) No

Federal Awards:

4. Internal control over major programs:
 - a. Material weakness(es) identified? (Yes/No) No
 - b. Significant deficiency(ies) identified? (Yes/None reported) Yes

5. Type of auditor's report issued on compliance for major programs: Unmodified

6. Any audit findings disclosed that are required to be reported in accordance with 2 CFR 200.516(a)? (Yes/No) Yes

7. Identification of major programs:

<u>Assistance Listing Numbers</u>	<u>Name of Federal Program or Cluster</u>
84.010	Title I grants to local educational agencies
84.027	Special Education Cluster:
84.027X	Special Education - Grants to States
84.173	COVID 19 – Special Education – Grants to States
	Special Education – Preschool Grants
84.425D	COVID 19 – Elementary & Secondary School Emergency Relief Fund I
84.425D	COVID 19 – Elementary & Secondary School Emergency Relief Fund II
84.425U	COVID 19 – Elementary & Secondary School Emergency Relief Fund ARP III
84.425D	COVID 19 - Pre-K ESSER Grant

8. Dollar threshold used to distinguish between type A and type B programs: \$750,000
9. Auditee qualified as low-risk auditee? (Yes/No) Yes

10. Prior fiscal year audit findings(s) and questioned costs which would require the auditee

HATTIESBURG PUBLIC SCHOOL DISTRICT
Schedule of Findings and Questioned Costs
For the Year Ended June 30, 2022

to prepare a summary schedule of prior audit findings in accordance with 2 CFR 200.15(b)? (Yes/No)

No

Section II: Financial Statement Findings

The results of our tests did not disclose any findings related to the financial statements that are required to be reported under *Government Auditing Standards*.

Section III: Federal Award Findings and Questioned Costs

Finding considered a Significant Deficiency in Internal Control over Compliance and Noncompliance that is not considered Material –

Finding 2022-001. 84.425D COVID-19 – Elementary & Secondary School Emergency Relief Fund ARP III; 84.027 Special Education – Grants to States and 84.173 Special Education – Preschool Grants; and 84.010 Title I Grants to Local Educational Agencies - Cost Principles (Contract Provisions for Non-Federal Entity Contracts Under Federal Awards).

Criteria: Appendix II to 2 CFR 200 – *Contract Provisions for Non-Federal Entity Contracts Under Federal Awards* requires that all contracts in excess of \$10,000 must address termination for cause and for convenience by the non-Federal entity, including the manner by which it will be affected and the basis for settlement.

Condition: Our testing of nonpayroll expenditures showed contractual service agreements for educational consulting services and special education therapy and consulting services that did not contain language that addresses termination for cause and for convenience by the school district, including the manner by which it will be affected and the basis for settlement.

Cause: The school district did not realize that the contract element was required.

Effect: The contracts did not comply with all contract provisions outlined in Appendix II to 2 CFR 200.

Questioned Costs: None

Perspective: We identified five (5) vendors providing services under Federal awards whose contracts did not contain the contract provisions regarding termination for cause and for convenience.

Recommendation: The district should familiarize itself with the requirements of *Appendix II to Part 200 – Contract Provisions for Non-Federal Entity Contracts Under Federal Awards* and provide a thorough review of each contract in excess of \$10,000 before approving the contract, checking for appropriate provision wording.

Views of Responsible Officials: The views of district administration are outlined in the Auditee's Correction Plan.

AUDITEE CORRECTIVE ACTION PLAN

(This page left blank intentionally)



Hattiesburg Public Schools

301 Mamie Street
Hattiesburg, MS 39401
Phone: 601-582-5078
Fax: 601-583-7339

Auditee's Corrective Action Plan For the Year Ended June 30, 2022

Finding 2022-001. 84.425D COVID-19 – Elementary & Secondary School Emergency Relief Fund ARP III; 84.027 Special Education – Grants to States and 84.173 Special Education – Preschool Grants; and 84.010 Title I Grants to Local Educational Agencies – Cost Principals (Contract Provisions for Non-Federal Entity Contracts Under Federal Awards).

District Response:

A. Corrective Action Plan:

The district will strengthen internal controls over contracts to ensure all contracts under federal awards contain the required contract provisions. A contract review checklist will be utilized during the contract review process.

B. Person Responsible:

Name: Dr. Robert Williams
Title: Superintendent
Contact: (601) 582-5078

C. Anticipated Completion Date:

February 1, 2023

(This page left blank intentionally)



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Ann Jones
cc:
Date: Tuesday, May 2, 2023
Re: Acknowledge receipt of FY 2021 audit from the Hattiesburg Tourism Commission.
File Number: 2023-303
Minute Book #

Summary

Acknowledge receipt of FY 2021 audit from the Hattiesburg Tourism Commission.

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

HATTIESBURG TOURISM COMMISSION
(VISIT HATTIESBURG)

FINANCIAL STATEMENTS

YEARS ENDED SEPTEMBER 30, 2021 and 2020

HATTIESBURG TOURISM COMMISSION
FINANCIAL STATEMENTS
YEARS ENDED SEPTEMBER 30, 2021 and 2020

TABLE OF CONTENTS

	<u>PAGE</u>
INDEPENDENT AUDITOR’S REPORT	3
FINANCIAL STATEMENTS	
Exhibit A – Statements of Net Position	6
Exhibit B – Statements of Activities	7
Exhibit C – Balance Sheets – Governmental Funds	8
Exhibit C1 – Reconciliation of the Balance Sheets - Governmental Funds to the Statements of Net Position	9
Exhibit D – Statements of Revenues, Expenditures, and Changes In the Fund Balances - Governmental Funds	10
Exhibit D1 – Reconciliation of the Statements of Revenues, Expenditures, and Changes in the Fund Balances to the Statements of Activities	11
NOTES TO FINANCIAL STATEMENTS	12
REQUIRED SUPPLEMENTARY INFORMATION	
Schedule 1A – Schedule of the Commission’s Proportionate Share of Net Pension Liability	24
Schedule 1B – Schedule of Commission’s Contributions (PERS)	25
SUPPLEMENTARY INFORMATION	
Schedule 2A – Budgetary Comparison	27
Schedule 2B – Budgetary Comparison	28
Schedule 3 – Schedule of Directors	29
OTHER AUDITOR’S REPORTS	
Report On Internal Control Over Financial Reporting And On Compliance And Other Matters Based On An Audit Of Financial Statements Performed In Accordance With <i>Government Auditing Standards</i>	30

American Institute of
Certified Public Accountants

King CPA, PLLC

206 East Central Ave P.O. Box 1182
Petal, MS 39465
Telephone 601-544-9795....Fax 601-544-9793

Mississippi Society of Certified
Public Accountants

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Hattiesburg Tourism Commission

Report on Financial Statements

We have audited the accompanying financial statements of the governmental activities and each major fund of the Hattiesburg Tourism Commission as of and for the years ended September 30, 2021 and 2020, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of the financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of the Hattiesburg Tourism Commission, as of September 30, 2021 and 2020, and the respective changes in financial position thereof for the years then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters

Required Supplementary Information

Accounting principles generally accepted in the United States of America require the Schedule of Commission's Proportionate Share of the Net Pension Liability, and the Schedule of the Commission's Contributions be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted Management's Discussion and Analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Our opinion on the basic financial statements is not affected by this missing information.

Other Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise the Commission's basic financial statements. The accompanying financial information listed as supplementary information in the table of contents is presented for purposes of additional analysis and is not a required part of the basic financial statements. Such information has not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on it.

Other Reporting Required by Government Auditing Standards

In accordance with *Government Auditing Standards*, we have also issued our report dated October 25, 2022, on our consideration of the Hattiesburg Tourism Commission's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements and other matters. The purpose of that report is to describe the scope of our testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Hattiesburg Tourism Commission's internal control over financial reporting and compliance.



KING CPA, PLLC
Petal, Mississippi
October 25, 2022

HATTIESBURG TOURISM COMMISSION

FINANCIAL STATEMENTS

EXHIBIT A**HATTIESBURG TOURISM COMMISSION**STATEMENTS OF NET POSITION
SEPTEMBER 30, 2021 AND 2020

	Governmental Activities	
	<u>2021</u>	<u>2020</u>
Assets		
Cash and cash equivalents	\$ 1,831,136	\$ 1,988,083
Due from other governments	192,225	135,095
Other receivables	21,579	36,637
Inventory	16,166	10,692
Fixed assets, net	3,407	5,168
TOTAL ASSETS	<u>2,064,513</u>	<u>2,175,675</u>
Deferred Outflow of Resources		
Deferred outflow related to pensions	<u>225,635</u>	<u>205,015</u>
Liabilities		
Accounts payable	29,201	55,925
Accrued payroll & related taxes	27,458	26,110
Accrued compensated absences	21,828	21,291
Deferred Revenue	-	413,362
Net pension liability	<u>739,022</u>	<u>967,942</u>
TOTAL LIABILITIES	<u>817,509</u>	<u>1,484,630</u>
Deferred Inflow of Resources		
Deferred inflow related to pensions	<u>273,979</u>	<u>28,551</u>
Net Position		
Net investment in capital assets	3,407	5,168
Restricted for:		
Hattiesburg Alliance for Public Art	54,950	32,815
Unrestricted	<u>1,140,303</u>	<u>829,526</u>
TOTAL NET POSITION	<u>\$ 1,198,660</u>	<u>\$ 867,509</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT B

HATTIESBURG TOURISM COMMISSION
STATEMENTS OF ACTIVITIES
FOR THE YEARS ENDED SEPTEMBER 30, 2021 AND 2020

FUNCTION/PROGRAM EXPENSES:	Governmental Activities	
	<u>2021</u>	<u>2020</u>
Tourism Promotion		
Payroll expense	\$ 411,341	\$ 437,374
Pension expense	42,658	128,995
Advertising and promotion	538,326	229,859
Operational costs	128,463	117,602
Grants and sponsorships	35,448	25,856
Purchases for resale	2,737	6,891
Depreciation and related asset charges	1,761	1,761
Events and Programs		
FAM tours	3,406	-
Art and sculpture projects	52,115	43,280
MS Miss Hospitality	83,805	61,739
Total Function/Program Expenses	<u>1,300,060</u>	<u>1,053,357</u>
PROGRAM REVENUES:		
Charges for Services		
Gift shop sales	114	5,322
MS Miss Hospitality	123,477	63,203
Support services	89,512	89,069
Other income	24,779	58,817
Operating Grants and Contributions		
Mississippi Development Authority	10,000	5,000
Hattiesburg Alliance for Public Art	34,450	29,575
Total Program Revenue	<u>282,332</u>	<u>250,986</u>
NET PROGRAM EXPENSE	<u>(1,017,728)</u>	<u>(802,371)</u>
GENERAL REVENUES (EXPENSES):		
Special sales tax	858,101	642,015
Paycheck Protection Program proceeds	76,000	76,000
Tourism Recovery Fund grant	413,362	86,494
EIDL grant	-	7,000
Interest income	1,416	9,845
Total General Revenues (Expenses)	<u>1,348,879</u>	<u>821,354</u>
CHANGE IN NET POSITION	<u>331,151</u>	<u>18,983</u>
NET POSITION - Beginning of Year	<u>867,509</u>	<u>848,526</u>
NET POSITION - End of Year	<u><u>\$ 1,198,660</u></u>	<u><u>\$ 867,509</u></u>

The accompanying notes are an integral part of the financial statements.

HATTIESBURG TOURISM COMMISSION

BALANCE SHEETS – GOVERNMENTAL FUNDS

SEPTEMBER 30, 2021 AND 2020

	Special Revenue Funds				
	General	MMH		Total	
	Fund	Pageant	HAPA	2021	2020
ASSETS:					
Cash and cash equivalents	\$ 1,644,252	\$ 131,934	\$ 54,950	\$ 1,831,136	\$ 1,988,083
Due from other governments	192,225	-	-	192,225	135,095
Other receivables	41,579	-	-	41,579	36,637
Inventory	16,166	-	-	16,166	10,692
Total Assets	<u>\$ 1,894,222</u>	<u>\$ 131,934</u>	<u>\$ 54,950</u>	<u>\$ 2,081,106</u>	<u>\$ 2,170,507</u>
LIABILITIES					
Current Liabilites					
Accounts payable	\$ 29,201	\$ 20,000	\$ -	\$ 49,201.00	\$ 55,925
Deferred revenue	101,379	-	-	101,379	484,874
Accrued payroll & related taxes	27,457	-	-	27,457	26,110
Total Liabilities	<u>158,037</u>	<u>20,000</u>	<u>-</u>	<u>178,037</u>	<u>566,909</u>
Fund Balances:					
Nonspendable					
Inventory	16,166	-	-	16,166	10,692
Restricted					
Hattiesburg Alliance for Public Art	-	-	54,950	54,950	32,815
Committed:					
Operational reserve	700,000	-	-	700,000	720,000
Assigned:					
Art partnership reserve	-	-	-	-	40,000
Lightpole banner project	5,786	-	-	5,786	10,000
Civic special attraction project	200,000	-	-	200,000	200,000
Strategic planning implementation	175,000	-	-	175,000	182,143
MS Miss Hospitality	-	111,934	-	111,934	85,957
Unassigned:					
General fund	639,233	-	-	639,233	321,991
Total Fund Balance	<u>1,736,185</u>	<u>111,934</u>	<u>54,950</u>	<u>1,903,069</u>	<u>1,603,598</u>
Total Liabilities and Fund Balance	<u>\$ 1,894,222</u>	<u>\$ 131,934</u>	<u>\$ 54,950</u>	<u>\$ 2,081,106</u>	<u>\$ 2,170,507</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT C1

HATTIESBURG TOURISM COMMISSION
RECONCILIATIONS OF THE BALANCE SHEETS - GOVERNMENTAL FUNDS
TO THE STATEMENTS OF NET POSITION
SEPTEMBER 30, 2021 AND 2020

	<u>2021</u>	<u>2020</u>
Total Fund Balance-Governmental Funds (Exhibit C)	\$ 1,903,069	\$ 1,603,598
Amounts reported for net position in the statement of net position are different because:		
Capital Assets used in governmental activities are not financial resources and are not reported as assets in governmental funds		
Capital assets	83,244	83,244
Less accumulated depreciation	(79,837)	(78,076)
Some liabilities, including net pension obligations, are not due and payable in the current period and, therefore, are not reported in the funds:		
Net pension liability	(739,022)	(967,942)
Deferred outflows and inflows of resources related to pensions are applicable to future periods and, therefore, are not reported in the funds		
Deferred outflows of resources related to pensions	225,635	233,124
Deferred inflows of resources related to pensions	(273,979)	(56,660)
A portion of the Commission's receivables are collected after year-end; but they are not collected soon enough to be available as financial resources for the current year. These revenues are deferred and not reported in the governmental funds.		
Special sales tax for September	101,378	71,512
Long term liabilities, including compensated absences payable are not due and payable in the current period and are not reported as liabilities in governmental funds		
Accrued compensated absences	<u>(21,828)</u>	<u>(21,291)</u>
Total Net Position-Governmental Activities (Exhibit A)	<u><u>\$ 1,198,660</u></u>	<u><u>\$ 867,509</u></u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT D

HATTIESBURG TOURISM COMMISSION
STATEMENTS OF REVENUES, EXPENDITURES, AND CHANGES
IN FUND BALANCES – GOVERNMENTAL FUNDS
FOR THE YEARS ENDED SEPTEMBER 30, 2021 AND 2020

	<u>Special Revenue Funds</u>				
	General Fund	MMH Pageant	HAPA	Total	
				2021	2020
REVENUES					
Special sales tax	\$ 828,233	\$ -	\$ -	\$ 828,233	\$ 748,234
Support Services	89,512	-	-	89,512	89,069
Gift shop sales	114	-	-	114	5,322
Event revenue	-	123,477	-	123,477	63,203
Donations and grants	-	10,000	34,450	44,450	29,575
Other income	24,779	-	-	24,779	63,817
Interest income	729	687	-	1,416	9,845
Total Revenues	<u>943,367</u>	<u>134,164</u>	<u>34,450</u>	<u>1,111,981</u>	<u>1,009,065</u>
EXPENDITURES					
Tourism Promotion					
Payroll expense	457,572	-	-	457,572	495,689
Advertising and promotion	538,162	164	-	538,326	229,859
Operational costs	124,045	4,218	200	128,463	117,602
Grants and sponsorships	35,448	-	-	35,448	25,856
Purchases for resale	2,737	-	-	2,737	6,891
Events and Programs					
FAM tours	3,406	-	-	3,406	-
Art and sculpture projects	-	-	52,115	52,115	43,280
MS Miss Hospitality pageant	-	83,805	-	83,805	61,739
Total Expenditures	<u>1,161,370</u>	<u>88,187</u>	<u>52,315</u>	<u>1,301,872</u>	<u>980,916</u>
OTHER FINANCING SOURCES					
Operating transfers in	20,000	-	40,000	60,000	50,000
Operating transfers out	(40,000)	(20,000)	-	(60,000)	(50,000)
Paycheck protection program proceeds	76,000	-	-	76,000	76,000
Tourism Recovery Fund grant	413,362	-	-	413,362	86,494
EIDL grant	-	-	-	-	7,000
Total Other Financing Sources	<u>469,362</u>	<u>(20,000)</u>	<u>40,000</u>	<u>489,362</u>	<u>169,494</u>
Net Change in Fund Balance	251,359	25,977	22,135	299,471	197,643
FUND BALANCE, Beginning	<u>1,484,826</u>	<u>85,957</u>	<u>32,815</u>	<u>1,603,598</u>	<u>1,405,956</u>
FUND BALANCE, Ending	<u>\$ 1,736,185</u>	<u>\$ 111,934</u>	<u>\$ 54,950</u>	<u>\$ 1,903,069</u>	<u>\$ 1,603,598</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT D1

HATTIESBURG TOURISM COMMISSION
RECONCILIATIONS OF THE STATEMENTS OF REVENUES, EXPENDITURES,
AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS
TO THE STATEMENTS OF ACTIVITIES
FOR THE YEARS ENDED SEPTEMBER 30, 2021 AND 2020

	<u>2021</u>	<u>2020</u>
Net Change in fund balances-governmental funds (Exhibit D)	\$ 299,471	\$ 197,642
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlay as expenditures. However, in the statement of activities, the cost of capital assets is allocated over their estimated useful lives as depreciation expense.		
Capital outlay	-	-
Depreciation expense	(1,761)	(1,761)
Some items reported in the statement of activities relating to the implementation of GASB 68 are not reported in the governmental funds.		
Net change in pension expense	4,112	(77,014)
Some items reported in the Statement of Activities do not provide or require the use of current financial resources and are not reported as revenue/expenditures in governmental funds.		
Changes in compensated absences	(538)	6,336
Changes in deferred revenue	<u>29,867</u>	<u>(106,220)</u>
Change in net position of governmental activities (Exhibit B)	<u>\$ 331,151</u>	<u>\$ 18,983</u>

The accompanying notes are an integral part of the financial statements.

HATTIESBURG TOURISM COMMISSION

NOTES TO FINANCIAL STATEMENTS

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. REPORTING ENTITY

The Hattiesburg Tourism Commission was established under the provision of House Bill 1717 adopted by the Mississippi Legislature in the 1990 regular session. House Bill 1717 authorizes the mayor and city council of Hattiesburg, Mississippi, to create and establish the Hattiesburg Tourism Commission. The City of Hattiesburg considers the Commission a related organization. The Commission began operations November 1, 1990. House Bill No. 1764 which amended Chapter 878, local and private laws of 1990 and subsequent amendments is currently in effect until July 1, 2022 at which time it is repealed.

The Hattiesburg Tourism Commission has been granted tax-exempt status under Internal Revenue Code Section 501 (c) (3). The Commission is currently operating as Visit Hattiesburg.

For financial reporting purposes, the reporting entity includes all funds that are covered by the oversight responsibility of the Commission's governing board. As defined by generally accepted accounting principles, the Commission is considered an "other standalone government." The Commission is a related organization of, but not a component unit of, the City of Hattiesburg since the governing authorities of the municipality select the Commission's board but do not have financial accountability for the Commission.

Under the provisions of House Bill No. 1764, the Hattiesburg Tourism Commission shall consist of seven members appointed by the mayor and ratified by the city council. A special 2% sales tax is authorized to be levied upon the gross proceeds from hotel and motel overnight room rental, exclusive of charges for food, telephone, laundry, beverages and similar changes; and provide that such tax be paid to the state tax commission.

B. GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

Government-wide Financial Statements - The Statement of Net Position and Statement of Activities report information on all of the non-fiduciary activities of the Commission.

The Statement of Net Position presents the Commission's non-fiduciary assets and liabilities, with the difference reported as net position. Net position is reported in three categories:

1. Net investment in capital assets, net of accumulated depreciation, and reduced by outstanding balances of bonds, notes and other debt attributable to the acquisition, construction or improvement of those assets.
2. Restricted net position results when constraints placed on net position use are either externally imposed or imposed by law through constitutional provisions or enabling legislation.
3. Unrestricted net position consists of net position not meeting the definition of the two preceding categories. Unrestricted net position often has constraints on resources imposed by management which can be removed or modified.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SINGIFICANT ACCOUNTING POLICIES (continued)

The Statement of Activities demonstrates the degree to which the direct expenses of a given function, or segment, are offset by program revenues. Direct expenses are those clearly identifiable with a specific function. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function and 2) grants, contributions and interest restricted to meeting the operational or capital requirements of a particular function. Special sales taxes and other items not included among program revenues are reported instead as general revenues.

Fund Financial Statements - Separate financial statements are provided for governmental funds. Major individual governmental funds are reported in separate columns in the fund financial statements. Any remaining governmental funds would be aggregated and reported as other governmental funds.

The Commission reports the following major governmental funds:

The General Fund is the primary operating fund of the Commission. It is used to account for all financial resources, except those accounted for in another fund.

The MMH Pageant, a special revenue fund, accounts for the operation and promotion of the annual Mississippi Miss Hospitality Pageant.

The HAPA, a special revenue fund, accounts for the activities of the Hattiesburg Alliance for Public Arts.

Fund balance for governmental funds is reported in classifications that comprise a hierarchy based primarily on the extent to which the government is bound to honor constraints on the specific purposes for which amounts in those funds can be spent.

Governmental fund balance is classified as nonspendable, restricted, committed, assigned or unassigned. Following are descriptions of fund classifications used by the commission:

Nonspendable fund balance includes items that cannot be spent. This includes activity that is not in a spendable form (a) inventories or prepaids; or (b) legally required to be maintained intact.

Restricted fund balance includes amounts that have constraints placed upon the use of the resources either by an external party or imposed by law through constitution provision or enabling legislation.

Committed fund balance includes amounts that can be used only for the specific purposes determined by a formal action of the government's highest level of decision-making authority.

Assigned fund balance includes amounts intended to be used by the Commission for specific purposes, subject to change, as established either directly by the Board of Directors or by management officials to whom assignment authority has been delegated by the Board of Directors.

Unassigned fund balance is the residual classification for the general fund. This classification represents fund balance that has not been assigned to other funds and that has not been restricted, committed, or assigned to specific purposes within the general fund.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SINGIFICANT ACCOUNTING POLICIES (continued)

C. MEASUREMENT FOCUS, BASIS OF ACCOUNTING

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place.

Governmental funds are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Under this method, revenues are recognized when measurable and available. The Commission considers all revenues reported in governmental funds to be available if the revenues are collected within thirty (30) days of the end of the fiscal period. Expenditures are recorded when the related fund liability is incurred, except for principal and interest on general long-term debt and claims and judgments which are recognized as expenditures when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of general long-term debt and acquisitions under capital leases are reported as other financing sources. The special sales tax associated with the current fiscal period is considered to be susceptible to accrual. The balance collected more than 30 days after the fiscal period is deferred in the fund statements since it is not considered available for current expenditures.

D. BUDGETS AND BUDGETARY ACCOUNTING

Hattiesburg Tourism Commission has no legal budget requirements. The Commission provides budgetary data for management and reporting purposes using the following procedures:

1. The executive director of Hattiesburg Tourism Commission submits a proposed budget to the Board of Directors.
2. The board reviews the proposed budget, makes changes and approves.
3. Budgets for the Governmental Funds are not adopted on a basis consistent with generally accepted accounting principles (GAAP). Budgeted amounts are as originally adopted, or as amended by the Board of Directors.
4. Budget amendments are approved by board before year end.
5. The budget appropriations lapse at the end of the fiscal year.

E. COMPENSATED ABSENCES

Commission employees are entitled to certain compensated absences based upon their length of employment. Vacation leave is accrued on a monthly basis. A waiting period of six months must be completed before vacation time can be used. After that, employees can request use of earned vacation time including that accrued during the waiting period. Unused vacation time can be accumulated and rolled over into the next year. Upon resignation or termination of employment, each employee shall be paid for unused vacation time that has been accrued through the last day of work up to six weeks. All unused vacation time remaining beyond six weeks will be certified to PERS. There is no limit to accumulation of sick leave days. However, unused sick leave days will not be paid to employees while they are employed or upon termination of employment. Unused sick time may be credited toward retirement service.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SINGIFICANT ACCOUNTING POLICIES (continued)

F. USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

G. PENSIONS

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Public Employee's Retirement System (PERS) and additions to/deductions from PERS' fiduciary net position have been determined on the same basis as they are reported by PERS. For this purpose, the benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

H. INVENTORIES

Inventory consists of logo-related items, snacks, and gifts held for resale. The costs of governmental fund type inventories are reported under the consumption method.

I. DEFERRED OUTFLOWS/INFLOWS OF RESOURCES

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflow of resources, represents a consumption of net position that applies to a future period and so will not be recognized as an outflow of resources (expenditure/expense) until that time.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred outflow of resources, represents an acquisition of net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 2 – DEPOSITS AND INVESTMENTS

The Commission deposits excess funds in financial institutions selected in accordance with state statutes.

Cash consists of amounts on deposit with financial institutions in non-interest-bearing accounts, interest-bearing demand accounts, savings accounts and certificates of deposit with an original maturity of 90-days or less. Cash is valued at cost. The carrying amount approximates fair value because of the short maturities of these instruments.

Investments consist of certificates of deposit with an original maturity date greater than 90 days. Investments are valued at cost.

As of September 30, 2021, the carrying amount of Hattiesburg Tourism Commission's deposits with financial institutions was \$1,829,935 and the bank balance was \$1,865,992. As of September 30, 2020, the carrying amount of Hattiesburg Tourism Commission's deposits with financial institutions was \$1,987,283 and the bank balance was \$2,051,095.

The collateral for public entities' deposits in financial institutions are held in the name of the State Treasurer under a program established by the Mississippi State Legislature and is governed by Section 27-105-5, Miss. Code Ann (1972). Under this program, the entity's funds are protected through a collateral pool administered by the State Treasurer. Financial institutions holding deposits of public funds must pledge securities as collateral against those deposits. In the event of failure of a financial institution, securities pledged by that institution would be liquidated by the State Treasurer to replace the public deposits not covered by the Federal Depository Insurance Corporation.

Custodial Credit Risk – Deposits. Custodial credit risk is defined as the risk that, in the event of the failure of a financial institution, the Commission will not be able to recover deposits or collateral securities that are in the possession of an outside party. The Commission does not have a deposit policy for custodial credit risk. However, the Mississippi State Treasurer manages that risk on behalf of the Commission. Deposits above the FDIC coverage are collateralized by the pledging financial institution trust department or agent in the name of the Mississippi State Treasurer on behalf of the Commission.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 3 – CAPITAL ASSETS

Capital acquisition and construction are reflected as expenditures in the Governmental Fund statements and the related assets are reported as capital assets in the governmental activities column in the government-wide financial statements.

Capital assets are reported at actual or estimated historical cost based on appraisals or deflated current replacement cost. Contributed assets are reported at estimated fair value at the time received.

Capitalized thresholds (dollar value above which asset acquisitions are added to the capital asset accounts) and estimated useful lives of capital assets are reported in the government-wide statements.

Depreciation is calculated on the straight-line basis for all assets, except land. The following schedule details those thresholds.

	<u>Capitalization Policy</u>	<u>Estimated Useful Life</u>
Land	\$ -	
Buildings	50,000	40 years
Building improvements	25,000	20 years
Improvements other than buildings	25,000	20 years
Mobile equipment	5,000	5-10 years
Furniture and equipment	5,000	3-7 years

Capital Assets consist of the following:

	<u>10/01/20</u>	<u>Additions</u>	<u>Disposals</u>	<u>09/30/21</u>
Equipment	\$ 11,595		\$ -	\$ 11,595
Furniture	<u>71,649</u>	-	-	<u>71,649</u>
	<u>83,244</u>	-	-	<u>83,244</u>
 Accumulated Depreciation	 <u>78,076</u>	 <u>1,761</u>	 <u>-</u>	 <u>79,837</u>
 Net Fixed Assets	 <u><u>\$ 5,168</u></u>			 <u><u>\$ 3,407</u></u>

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN

Plan Description

The Hattiesburg Tourism Commission Contributes to the Public Employees' Retirement System of Mississippi (PERS), a cost-sharing multiple-employer defined benefit pension plan. PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Miss. Code Ann. Section 25-11-1 et seq., (1972, as amended) and may be amended only by the Mississippi Legislature. PERS issues a publicly available financial report that includes financial statements and required supplementary information. That report is available at www.pers.ms.gov.

Benefits provided

Membership in PERS is a condition of employment granted upon hiring for qualifying employees and officials of the State of Mississippi, state universities, community and junior colleges, and teachers and employees of the Hattiesburg Tourism Commission. For those persons employed by political subdivisions and instrumentalities of the State of Mississippi, membership is contingent upon approval of the entity's participation in PERS by the PERS' Board of Trustees. If approved, membership for the entity's employees is a condition of employment and eligibility is granted to those who qualify upon hiring. Participating members who are vested and retire at or after age 60 or those who retire regardless of age with at least 30 years of creditable service (25 years of creditable service for employees who became members of PERS before July 1, 2011) are entitled, upon application, to an annual retirement allowance payable monthly for life in an amount equal to 2.0 percent of their average compensation for each year of creditable service up to and including 30 years (25 years for those who became members of PERS before July 1, 2011), plus 2.5 percent for each additional year of creditable service with an actuarial reduction in the benefit for each year of creditable service below 30 years or the number of years in age that the member is below 65, whichever is less. Average compensation is the average of the employee's earnings during the four highest compensated years of creditable service. Benefits vest upon completion of eight years of membership service (four years of membership service for those who became members of PERS before July 1, 2007). PERS also provides certain death and disability benefits. A Cost-of-Living Adjustment (COLA) payment is made to eligible retirees and beneficiaries. The COLA is equal to 3.0 percent of the annual retirement allowance for each full fiscal year of retirement up to the year in which the retired member reaches age 60 (55 for those who became members of PERS before July 1, 2011), with 3.0 percent compounded for each fiscal year thereafter.

Contributions

PERS members are required to contribute 9.00% of their annual covered salary, and the Commission is required to contribute at an actuarially determined rate. The employer's rate as of September 30, 2021 was 17.40% of annual covered payroll. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Section 25-11-1 of the Mississippi Code of 1972, as amended, and may be amended only by the Mississippi Legislature. The Commission's contributions to PERS for the fiscal years ending September 30, 2021, 2020, and 2019 were \$46,770, \$51,981, and \$46,682, respectively, which equaled the required contributions for each year.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At September 30, 2021 and 2020, the Commission reported a liability of \$739,022 and \$967,942 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2021, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Commission's proportion of the net pension liability was based on a projection of the Commission's long-term share of contribution to the pension plan relative to projected contributions of all participating entities, actuarially determined. The Commission's proportionate share used to calculate the September 30, 2021 net pension liability was 0.004102 percent, which was based on a measurement date of June 30, 2021. This was an increase of 0.00043 percent from its proportionate share used to calculate the September 30, 2020 net pension liability, which was based on a measurement date of June 30, 2020.

For the years ended September 30, 2021 and 2020, the Commission recognized pension expense of \$42,658 and \$128,995, respectively. At September 30, 2021 the Commission reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 11,816	\$ -
Net difference between projected and actual earnings on pension plan investments	38,436	(273,979)
Changes of assumptions	56,401	-
Change in proportionate share	80,234	-
Contributions subsequent to the measurement date	10,639	-
	<u>\$ 197,526</u>	<u>\$ (273,979)</u>

\$10,639 is reported as deferred outflows of resources related to pensions resulting from the entity's contributions subsequent to the measurement date will be recognized as a reduction to the net pension liability in the year ended September 30, 2021. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended September 30,	
2022	\$ 10,121
2023	(3,039)
2024	(27,852)
2025	(66,322)
2026	-
	<u>\$ (87,092)</u>

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Actuarial assumptions. The collective total pension liability in the June 30, 2021 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.75 percent
Salary increases	3.00-18.25 percent, including inflation
Investment rate of return	7.75 percent, net of pension plan investment expense, including inflation

Mortality rates were based on the PubS.H-2010(B) Retiree Table with the following adjustments. For males 112% of male rates from ages 18 to 75 scaled down to 105% for ages 80 to 119. For Females 85% of the female rates from ages 18 to 65 scaled up to 102% for ages 75 to 119. Mortality rates will be projected generationally using the MP-2018 projection scale to account for future improvements in life expectancy.

The actuarial assumptions are based on the experience investigation for the four-year period ending June 30, 2018.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected nominal returns, net of pension plan investment expense and the assumed rate of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

<u>Asset Class</u>	<u>Target Allocation</u>	<u>Long-Term Expected Real Rate of Return</u>
Domestic Equity	27.00%	4.90%
International Equity	22.00%	4.75%
Global	12.00%	5.00%
Debt Securities	20.00%	1.50%
Real Estate	10.00%	4.00%
Private Equity	8.00%	6.25%
Cash Equivalents	<u>1.00%</u>	0.25%
	<u>100.00%</u>	

Discount rate. The discount rate used to measure the total pension liability was 7.75 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that Employer contributions will be made at the current employer contribution rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Sensitivity of the Commission's proportionate share of the net pension liability to changes in the discount rate. The following presents the Commission's proportionate share of the net pension liability calculated using the discount rate of 7.75 percent, as well as what the Commission's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.75 percent) or 1-percentage-point higher (8.75 percent) than the current rate:

	1% Decrease (6.75%)	Current Discount Rate (7.75%)	1% Increase (8.75%)
Hattiesburg Tourism Commission	\$ 1,046,628	\$ 739,022	\$ 485,530

	1% Decrease (6.55%)	Current Discount Rate (7.55%)	1% Increase (8.55%)
System's Net Pension Liability	\$ 20,932,564,000	\$ 14,780,437,000	\$ 9,710,595,000

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued PERS financial report.

NOTE 5 –EFFECT OF DEFERRED AMOUNTS ON NET POSITION

The unrestricted net position amount of \$1,140,303 includes the effect of deferred inflows/outflows of resources related to pensions. A portion of the deferred outflow of resources related to pensions in the amount of \$10,639 resulting from the entity's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended September 30, 2021. The \$186,887 balance of the deferred outflow of resources related to pensions will be recognized in pension expense over the next 3 years and the \$273,979 balance of the deferred inflow of resources related to pensions will be recognized in pension expense over the next 4 years.

NOTE 6 –RELATED ENTITIES

In efforts to not duplicate services to the Hattiesburg area, the Commission has entered into an agreement with the Hattiesburg Downtown Association. In exchange for a fee, the Hattiesburg Tourism Commission will provide the HDA marketing and admin services. The Commission will also serve as a pass through entity to provide payroll for one employee of the Hattiesburg Downtown Association. The HDA will fully reimburse the Commission for all payroll, taxes, and insurance associated with individual's payroll.

NOTE 7 –SUBSEQUENT EVENTS

Events that occur after the Statement of Net Position date but before the financial statements are available to be issued must be evaluated for recognition or disclosure. The effects of subsequent events that provide evidence about conditions that existed at the Statement of Net Position date are recognized in the accompanying financial statements. Subsequent events which provide evidence about conditions that existed after the Statement of Position date require disclosure in the accompanying notes. Management of the Commission has evaluated the activity through October 25, 2022, and determined that no subsequent event has occurred requiring disclosure in the notes to the financial statements.

HATTIESBURG TOURISM COMMISSION

REQUIRED SUPPLEMENTARY INFORMATION

HATTIESBURG TOURISM COMMISSION

Required Supplementary Information

SCHEDULE OF THE COMMISSION'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY

Schedule 1A

PERS

Last 10 Fiscal Years*

	2021	2020	2019	2018	2017	2016	2015
Commission's proportion of the net pension liability	0.004102%	0.004532%	0.004354%	0.003027%	0.004342%	0.003722%	0.004317%
Commission's proportionate share of the net pension liability	\$ 739,022	\$ 967,942	\$ 703,679	\$ 503,480	\$ 721,787	\$ 714,500	\$ 618,321
Commission's covered payroll	\$ 268,792	\$ 298,739	\$ 289,258	\$ 216,254	\$ 270,095	\$ 225,111	\$ 258,375
Commission's proportionate share of the net pension liability as a percentage of its covered payroll	274.94%	324.01%	243.27%	232.82%	267.23%	317.40%	239.31%
Plan fiduciary net position as a percentage of the total pension liability	58.97%	58.97%	61.59%	61.49%	57.47%	61.70%	67.21%

The notes to the required supplementary information are an integral part of this schedule.

* The amounts presented for each fiscal year were determined as of the measurement date of 6/30 of the year prior to the fiscal year presented.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB Statement No. 68 was implemented in FYE 6/30/15, and, until a full 10-year trend is compiled, the Commission has only presented information for the years in which information is available.

HATTIESBURG TOURISM COMMISSION

Required Supplementary Information

SCHEDULE OF COMMISSIONS CONTRIBUTIONS

Schedule 1B

PERS

Last 10 Fiscal Years*

	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Contractually required contribution	\$ 46,770	\$ 51,981	\$ 46,682	\$ 34,060	\$ 42,540	\$ 35,455	\$ 40,694
Contributions in relation to the contractually required contribution	\$ 46,770	\$ 51,981	\$ 46,682	\$ 34,060	\$ 42,540	\$ 35,455	\$ 40,694
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Commission's covered payroll	\$ 268,792	\$ 298,739	\$ 289,258	\$ 216,254	\$ 270,095	\$ 225,111	\$ 258,375
Contributions as a percentage of covered payroll	17.40%	17.40%	16.14%	15.75%	15.75%	15.75%	15.75%

The notes to the required supplementary information are an integral part of this schedule.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB Statement No. 68 was implemented in FYE 6/30/2015, and, until a full 10-year trend is compiled, the Commission has only presented information for the years in which information is available.

HATTIESBURG TOURISM COMMISSION

SUPPLEMENTARY INFORMATION

SCHEDULE 2A

HATTIESBURG TOURISM COMMISSION
BUDGETARY COMPARISON
FOR THE YEAR ENDED SEPTEMBER 30, 2021

	Final Budget	Actual (non-GAAP Basis)	Variances Positive (Negative)
REVENUES			
2% Bed Tax	\$ 504,000	\$ 828,203	\$ 324,203
Logo Shop Sales	6,000	114	(5,886)
COVID-19 Tourism Recovery Fund	375,000	413,362	38,362
Interest	5,000	729	(4,271)
State Miss Hospitality	30,000	30,000	-
Downtown Support Services	85,749	89,512	3,763
Operational Reserves	70,000	-	(70,000)
Public Art Reserves	40,000	40,000	-
Strategic Planning Implementation Reserves	60,000	6,069	(53,931)
PPP Loan Forgiveness	-	76,000	76,000
TOTAL REVENUES	<u>\$ 1,175,749</u>	<u>\$ 1,483,989</u>	<u>\$ 308,240</u>
EXPENDITURES			
Marketing	\$ 105,000	\$ 159,124	\$ (54,124)
Gift Shop Purchases	4,000	2,737	1,263
Capital Expenditures	3,000	-	3,000
Office Operations	80,700	132,578	(51,878)
COVID-19 Tourism Recovery Fund	374,700	442,737	(68,037)
Destination Building	100,000	46,069	53,931
Compensation/Benefits	488,721	448,871	39,850
TOTAL EXPENDITURES	<u>1,156,121</u>	<u>1,232,116</u>	<u>(75,995)</u>
NET EXCESS (DEFICIT)	<u>\$ 19,628</u>	<u>\$ 251,874</u>	<u>\$ 232,245</u>

Basis of Presentation

The Budgetary Comparison Schedule above presents the final budget, the actual data on the non-GAAP basis, and the variances between the final budget and the actual data. The budget is adopted for management use only and is not legally required.

SCHEDULE 2B

HATTIESBURG TOURISM COMMISSION
BUDGETARY COMPARISON
FOR THE YEAR ENDED SEPTEMBER 30, 2020

	Final Budget	Actual (non-GAAP Basis)	Variances Positive (Negative)
REVENUES			
2% Bed Tax	\$ 720,000	\$ 748,264	\$ 28,264
Interest	12,375	8,659	(3,716)
Logo Shop Sales	6,000	5,322	(678)
Misc Income	85,749	89,069	3,320
State Miss Hospitality	30,000	20,000	(10,000)
TOTAL REVENUES	<u>\$ 854,124</u>	<u>\$ 871,314</u>	<u>\$ 17,190</u>
EXPENDITURES			
Marketing	\$ 276,900	\$ 171,311	\$ 105,589
Capital Expenditures	3,000	-	3,000
Office Operations	83,500	103,944	(20,444)
Sales, Marketing, & Ambassador Payroll	485,324	482,742	2,582
TOTAL EXPENDITURES	<u>848,724</u>	<u>757,997</u>	<u>90,727</u>
NET EXCESS (DEFICIT)	<u>\$ 5,400</u>	<u>\$ 113,317</u>	<u>\$ 107,917</u>

Basis of Presentation

The Budgetary Comparison Schedule above presents the final budget, the actual data on the non-GAAP basis, and the variances between the final budget and the actual data. The budget is adopted for management use only and is not legally required.

SCHEDULE 3**HATTIESBURG TOURISM COMMISSION**

SCHEDULE OF DIRECTORS
FOR THE YEAR ENDED SEPTEMBER 30, 2021

<u>Board Member</u>	<u>Representation Area</u>	<u>Bond Amount</u>	<u>Bond Expires</u>
Frank James	Hotel Industry (1)	\$ 50,000	10/26/2023
Melanie Archer	Hotel Industry (2)	50,000	10/11/2023
Anthony L. Harris	Economic Development	50,000	1/15/2023
Joe Paul	University of Southern Mississippi	50,000	5/27/2023
Bonnie Warren	At Large (1)	50,000	11/5/2022
Michael Marks	At Large (2)	50,000	8/17/2023
Shawn Lowrey	At Large (3)	50,000	8/19/2023

The enabling legislation requires a seven member board be appointed by the Mayor of the City of Hattiesburg and ratified by the City Council. The legislation also requires the members to represent specified areas of the community and to give bond in the amount of \$50,000.

American Institute of
Certified Public Accountants

King CPA, PLLC

206 East Central Ave P.O. Box 1182
Petal, MS 39465
Telephone 601-544-9795....Fax 601-544-9793

Mississippi Society of Certified
Public Accountants

REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Board of Directors
Hattiesburg Tourism Commission

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the governmental activities and each major fund of the Hattiesburg Tourism Commission, as of and for the years ended September 30, 2021 and 2020, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements and have issued our report thereon dated October 25, 2022.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Commission's internal control over financial reporting to determine our audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control. Accordingly, we do not express an opinion on the effectiveness of the Commission's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Hattiesburg Tourism Commission's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "King CPA, PLLC". The signature is written in a cursive, flowing style.

KING CPA, PLLC
Petal, Mississippi
October 25, 2022



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Ann Jones
cc:
Date: Tuesday, May 2, 2023
Re: Acknowledge receipt of the FY 2022 audit from the Hattiesburg Tourism Commission.
File Number: 2023-304
Minute Book #

Summary

Acknowledge receipt of the FY 2022 audit from the Hattiesburg Tourism Commission.

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

HATTIESBURG TOURISM COMMISSION
(VISIT HATTIESBURG)

FINANCIAL STATEMENTS

YEARS ENDED SEPTEMBER 30, 2022 and 2021

HATTIESBURG TOURISM COMMISSION
FINANCIAL STATEMENTS
YEARS ENDED SEPTEMBER 30, 2022 and 2021

TABLE OF CONTENTS

	<u>PAGE</u>
INDEPENDENT AUDITOR’S REPORT	3
FINANCIAL STATEMENTS	
Exhibit A – Statements of Net Position	6
Exhibit B – Statements of Activities	7
Exhibit C – Balance Sheets – Governmental Funds	8
Exhibit C1 – Reconciliation of the Balance Sheets - Governmental Funds to the Statements of Net Position	9
Exhibit D – Statements of Revenues, Expenditures, and Changes In the Fund Balances - Governmental Funds	10
Exhibit D1 – Reconciliation of the Statements of Revenues, Expenditures, and Changes in the Fund Balances to the Statements of Activities	11
NOTES TO FINANCIAL STATEMENTS	12
REQUIRED SUPPLEMENTARY INFORMATION	
Schedule 1A – Schedule of the Commission’s Proportionate Share of Net Pension Liability	24
Schedule 1B – Schedule of Commission’s Contributions (PERS)	25
OTHER INFORMATION	
Schedule 2A – Budgetary Comparison	27
Schedule 2B – Budgetary Comparison	28
Schedule 3 – Schedule of Directors	29
OTHER AUDITOR’S REPORTS	
Report On Internal Control Over Financial Reporting And On Compliance And Other Matters Based On An Audit Of Financial Statements Performed In Accordance With <i>Government Auditing Standards</i>	30

*American Institute of
Certified Public Accountants*

King CPA, PLLC

*206 East Central Ave P.O. Box 1182
Petal, MS 39465*

Telephone 601-544-9795....Fax 601-544-9793

*Mississippi Society of
Certified Public*

INDEPENDENT AUDITOR'S REPORT

To the Board of Directors
Hattiesburg Tourism Commission

Opinions

We have audited the accompanying financial statements of the governmental activities and each major fund of the Hattiesburg Tourism Commission as of and for the years ended September 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements as listed in the table of contents.

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities and each major fund of the Hattiesburg Tourism Commission, as of September 30, 2022 and 2021, and the respective changes in financial position thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Basis for Opinions

We conducted our audit in accordance with auditing standards generally accepted in the United States of America. Our responsibilities under those standards are further described in the Auditor's Responsibilities for the Audit of the Financial Statements section of our report. We are required to be independent of Hattiesburg Tourism Commission, and to meet our other ethical responsibilities, in accordance with the relevant ethical requirements relating to our audit. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Responsibilities of Management for the Financial Statements

Management is responsible for the preparation and fair presentation of the financial statements in accordance with accounting principles generally accepted in the United States of America, and for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, management is required to evaluate whether there are conditions or events, considered in the aggregate, that raise substantial doubt about the Commission's ability to continue as a going concern for twelve months beyond the financial statement date, including any currently known information that may raise substantial doubt shortly thereafter.

Auditor's Responsibilities for the Audit of the Financial Statements

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinions. Reasonable assurance is a high level of assurance but is not absolute and therefore is not a guarantee that an audit conducted in accordance with generally accepted auditing standards will always detect a material misstatement when it exists. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control. Misstatements are considered material if there is a substantial likelihood that, individually or in the aggregate, they would influence the judgment made by a reasonable user based on the financial statements.

In performing an audit in accordance with generally accepted auditing standards, we:

- Exercise professional judgment and maintain professional skepticism throughout the audit.
- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error and design and perform audit procedures responsive to those risks. Such procedures include examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control. Accordingly no such opinion is expressed.
- Evaluate the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluate the overall presentation of the financial statements.
- Conclude whether, in our judgment, there are conditions or events, considered in the aggregate, that raise substantial doubt about the Commission's ability to continue as a going concern for a reasonable period of time.

We are required to communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit, significant audit findings, and certain internal control-related matters that we identified during the audit.

Required Supplementary Information

Accounting principles generally accepted in the United States of America require the Schedule of Commission's Proportionate Share of the Net Pension Liability and the schedule of the Commission's Contributions be presented to supplement the basic financial statements. Such information is the responsibility of management and, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Management has omitted Management's Discussion and Analysis that accounting principles generally accepted in the United States of America require to be presented to supplement the basic financial statements. Such missing information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statement in an appropriate operational, economic, or historical context. Our opinions on the basic financial statements are not affected by this missing information.

Other Information

Management is responsible for the other information included in the report. The other information comprises the budgetary comparison schedule but does not include the basic financial statements and our auditor's report thereon. Our opinions on the basic financial statements do not cover the other information, and we do not express an opinion or any form of assurance thereon. In connection with our audit of the basic financial statements, our responsibility is to read the other information and consider whether a material inconsistency exists between the other information and the basic financial statements, or the other information otherwise appears to be materially misstated. If, based on the work performed, we conclude that an uncorrected material misstatement of the other information exists, we are required to describe it in our report.

King CPA, PLLC

KING CPA, PLLC
Petal, Mississippi
December 10, 2022

HATTIESBURG TOURISM COMMISSION

FINANCIAL STATEMENTS

EXHIBIT A**HATTIESBURG TOURISM COMMISSION**STATEMENTS OF NET POSITION
SEPTEMBER 30, 2022 AND 2021

	Governmental Activities	
	<u>2022</u>	<u>2021</u>
Assets		
Cash and cash equivalents	\$ 1,861,171	\$ 1,831,136
Due from other governments	155,335	192,225
Other receivables	10,980	21,579
Inventory	22,842	16,166
Prepaid expense	100,000	-
Fixed assets, net	1,646	3,407
TOTAL ASSETS	<u>2,151,974</u>	<u>2,064,513</u>
Deferred Outflow of Resources		
Deferred outflow related to pensions	<u>352,508</u>	<u>225,635</u>
Liabilities		
Accounts payable	-	29,201
Accrued payroll & related taxes	24,893	27,458
Accrued compensated absences	26,986	21,828
Net pension liability	<u>1,029,182</u>	<u>739,022</u>
TOTAL LIABILITIES	<u>1,081,061</u>	<u>817,509</u>
Deferred Inflow of Resources		
Deferred inflow related to pensions	<u>221,148</u>	<u>273,979</u>
Net Position		
Net investment in capital assets	1,646	3,407
Restricted for:		
Hattiesburg Alliance for Public Art	64,295	54,950
Unrestricted	<u>1,136,332</u>	<u>1,140,303</u>
TOTAL NET POSITION	<u>\$ 1,202,273</u>	<u>\$ 1,198,660</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT B

HATTIESBURG TOURISM COMMISSION
STATEMENTS OF ACTIVITIES
FOR THE YEARS ENDED SEPTEMBER 30, 2022 AND 2021

FUNCTION/PROGRAM EXPENSES:	Governmental Activities	
	<u>2022</u>	<u>2021</u>
Tourism Promotion		
Payroll expense	\$ 449,117	\$ 411,341
Pension expense	167,744	42,658
Advertising and tourism promotion	364,065	538,326
Operational costs	96,636	128,463
Grants and sponsorships	62,500	35,448
Purchases for resale	10,544	2,737
Depreciation and related asset charges	1,761	1,761
Events and Programs		
FAM tours	598	3,406
Art and sculpture projects	91,860	52,115
MS Miss Hospitality	112,698	83,805
Total Function/Program Expenses	<u>1,357,523</u>	<u>1,300,060</u>
PROGRAM REVENUES:		
Charges for Services		
Gift shop sales	728	114
MS Miss Hospitality	152,650	123,477
Support services	85,673	89,512
Other income	2,359	24,779
Operating Grants and Contributions		
Mississippi Development Authority	10,000	10,000
Hattiesburg Alliance for Public Art	101,205	34,450
Total Program Revenue	<u>352,615</u>	<u>282,332</u>
NET PROGRAM EXPENSE	<u>(1,004,908)</u>	<u>(1,017,728)</u>
GENERAL REVENUES (EXPENSES):		
Special sales tax	1,008,005	858,101
Paycheck Protection Program proceeds		76,000
Tourism Recovery Fund grant		413,362
Interest income	516	1,416
Total General Revenues (Expenses)	<u>1,008,521</u>	<u>1,348,879</u>
CHANGE IN NET POSITION	<u>3,613</u>	<u>331,151</u>
NET POSITION - Beginning of Year	<u>1,198,660</u>	<u>867,509</u>
NET POSITION - End of Year	<u><u>\$ 1,202,273</u></u>	<u><u>\$ 1,198,660</u></u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT C**HATTIESBURG TOURISM COMMISSION****BALANCE SHEETS – GOVERNMENTAL FUNDS****SEPTEMBER 30, 2022 AND 2021**

	Special Revenue Funds				
	General	MMH		Total	
	<u>Fund</u>	<u>Pageant</u>	<u>HAPA</u>	<u>2022</u>	<u>2021</u>
ASSETS:					
Cash and cash equivalents	\$ 1,650,116	\$ 146,760	\$ 64,295	\$ 1,861,171	\$ 1,831,136
Due from other governments	155,335	-	-	155,335	192,225
Other receivables	10,980	-	-	10,980	41,579
Inventory	22,842	-	-	22,842	16,166
Prepaid Expense	100,000	-	-	100,000	-
Total Assets	<u>\$ 1,939,273</u>	<u>\$ 146,760</u>	<u>\$ 64,295</u>	<u>\$ 2,150,328</u>	<u>\$ 2,081,106</u>
LIABILITIES					
Current Liabites					
Accounts payable	\$ -	\$ -	\$ -	\$ -	\$ 49,201
Deferred revenue	75,307	-	-	75,307	101,379
Accrued payroll & related taxes	24,893	-	-	24,893	27,457
Total Liabilities	<u>100,200</u>	<u>-</u>	<u>-</u>	<u>100,200</u>	<u>178,037</u>
Fund Balances:					
Nonspendable					
Inventory	22,842	-	-	22,842	16,166
Restricted					
Hattiesburg Alliance for Public Art	-	-	64,295	64,295	54,950
Committed:					
Operational reserve	860,000	-	-	860,000	700,000
Assigned:					
Art partnership reserve	100,000	-	-	100,000	-
Lightpole banner project	15,000	-	-	15,000	5,786
Civic special attraction project	300,000	-	-	300,000	200,000
Strategic planning implementation	100,000	-	-	100,000	175,000
MS Miss Hospitality	-	146,760	-	146,760	111,934
Unassigned:					
General fund	441,231	-	-	441,231	639,233
Total Fund Balance	<u>1,839,073</u>	<u>146,760</u>	<u>64,295</u>	<u>2,050,128</u>	<u>1,903,069</u>
Total Liabilities and Fund Balance	<u>\$ 1,939,273</u>	<u>\$ 146,760</u>	<u>\$ 64,295</u>	<u>\$ 2,150,328</u>	<u>\$ 2,081,106</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT C1

HATTIESBURG TOURISM COMMISSION
RECONCILIATIONS OF THE BALANCE SHEETS - GOVERNMENTAL FUNDS
TO THE STATEMENTS OF NET POSITION
SEPTEMBER 30, 2022 AND 2021

	<u>2022</u>	<u>2021</u>
Total Fund Balance-Governmental Funds (Exhibit C)	\$ 2,050,128	\$ 1,903,069
Amounts reported for net position in the statement of net position are different because:		
Capital Assets used in governmental activities are not financial resources and are not reported as assets in governmental funds		
Capital assets	83,244	83,244
Less accumulated depreciation	(81,598)	(79,837)
Some liabilities, including net pension obligations, are not due and payable in the current period and, therefore, are not reported in the funds:		
Net pension liability	(1,029,182)	(739,022)
Deferred outflows and inflows of resources related to pensions are applicable to future periods and, therefore, are not reported in the funds		
Deferred outflows of resources related to pensions	352,508	225,635
Deferred inflows of resources related to pensions	(221,148)	(273,979)
A portion of the Commission's receivables are collected after year-end; but they are not collected soon enough to be available as financial resources for the current year. These revenues are deferred and not reported in the governmental funds.		
Special sales tax for September	75,307	101,378
Long term liabilities, including compensated absences payable are not due and payable in the current period and are not reported as liabilities in governmental funds		
Accrued compensated absences	<u>(26,986)</u>	<u>(21,828)</u>
Total Net Position-Governmental Activities (Exhibit A)	<u>\$ 1,202,273</u>	<u>\$ 1,198,660</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT D

HATTIESBURG TOURISM COMMISSION
STATEMENTS OF REVENUES, EXPENDITURES, AND CHANGES
IN FUND BALANCES – GOVERNMENTAL FUNDS
FOR THE YEARS ENDED SEPTEMBER 30, 2022 AND 2021

	<u>Special Revenue Funds</u>				
	General <u>Fund</u>	MMH <u>Pageant</u>	<u>HAPA</u>	<u>Total</u>	
				<u>2022</u>	<u>2021</u>
REVENUES					
Special sales tax	\$ 1,034,076	\$ -	\$ -	\$ 1,034,076	\$ 828,233
Support Services	85,673	-	-	85,673	89,512
Gift shop sales	728	-	-	728	114
Event revenue	-	152,650	-	152,650	123,477
Donations and grants	-	10,000	101,205	111,205	44,450
Other income	2,359	-	-	2,359	24,779
Interest income	516	-	-	516	1,416
Total Revenues	<u>1,123,352</u>	<u>162,650</u>	<u>101,205</u>	<u>1,387,207</u>	<u>1,111,981</u>
EXPENDITURES					
Tourism Promotion					
Payroll expense	501,247	-	-	501,247	457,572
Advertising and tourism promotion	364,065	-	-	364,065	538,326
Operational costs	91,510	5,126	-	96,636	128,463
Grants and sponsorships	62,500	-	-	62,500	35,448
Purchases for resale	10,544	-	-	10,544	2,737
Events and Programs					
FAM tours	598	-	-	598	3,406
Art and sculpture projects	-	-	91,860	91,860	52,115
MS Miss Hospitality pageant	-	112,698	-	112,698	83,805
Total Expenditures	<u>1,030,464</u>	<u>117,824</u>	<u>91,860</u>	<u>1,240,148</u>	<u>1,301,872</u>
OTHER FINANCING SOURCES					
Operating transfers in	10,000	-	-	10,000	60,000
Operating transfers out	-	(10,000)	-	(10,000)	(60,000)
Paycheck protection program proceeds	-	-	-	-	76,000
Tourism Recovery Fund grant	-	-	-	-	413,362
EIDL grant	-	-	-	-	-
Total Other Financing Sources	<u>10,000</u>	<u>(10,000)</u>	<u>-</u>	<u>-</u>	<u>489,362</u>
Net Change in Fund Balance	102,888	34,826	9,345	147,059	299,471
FUND BALANCE, Beginning	<u>1,736,185</u>	<u>111,934</u>	<u>54,950</u>	<u>1,903,069</u>	<u>1,603,598</u>
FUND BALANCE, Ending	<u>\$ 1,839,073</u>	<u>\$ 146,760</u>	<u>\$ 64,295</u>	<u>\$ 2,050,128</u>	<u>\$ 1,903,069</u>

The accompanying notes are an integral part of the financial statements.

EXHIBIT D1

HATTIESBURG TOURISM COMMISSION
RECONCILIATIONS OF THE STATEMENTS OF REVENUES, EXPENDITURES,
AND CHANGES IN FUND BALANCES OF GOVERNMENTAL FUNDS
TO THE STATEMENTS OF ACTIVITIES
FOR THE YEARS ENDED SEPTEMBER 30, 2022 AND 2021

	<u>2022</u>	<u>2021</u>
Net Change in fund balances-governmental funds (Exhibit D)	\$ 147,059	\$ 299,471
Amounts reported for governmental activities in the statement of activities are different because:		
Governmental funds report capital outlay as expenditures. However, in the statement of activities, the cost of capital assets is allocated over their estimated useful lives as depreciation expense.		
Capital outlay	-	-
Depreciation expense	(1,761)	(1,761)
Some items reported in the statement of activities relating to the implementation of GASB 68 are not reported in the governmental funds.		
Net change in pension expense	(110,456)	4,112
Some items reported in the Statement of Activities do not provide or require the use of current financial resources and are not reported as revenue/expenditures in governmental funds.		
Changes in compensated absences	(5,158)	(538)
Changes in deferred revenue	<u>(26,071)</u>	<u>29,867</u>
Change in net position of governmental activities (Exhibit B)	<u>\$ 3,613</u>	<u>\$ 331,151</u>

The accompanying notes are an integral part of the financial statements.

HATTIESBURG TOURISM COMMISSION

NOTES TO FINANCIAL STATEMENTS

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

A. REPORTING ENTITY

The Hattiesburg Tourism Commission was established under the provision of House Bill 1717 adopted by the Mississippi Legislature in the 1990 regular session. House Bill 1717 authorizes the mayor and city council of Hattiesburg, Mississippi, to create and establish the Hattiesburg Tourism Commission. The City of Hattiesburg considers the Commission a related organization. The Commission began operations November 1, 1990. House Bill No. 1742 which amended Chapter 878, local and private laws of 1990 and subsequent amendments is currently in effect until July 1, 2027 at which time it is repealed.

The Hattiesburg Tourism Commission has been granted tax-exempt status under Internal Revenue Code Section 501 (c) (3). The Commission is currently operating as Visit Hattiesburg.

For financial reporting purposes, the reporting entity includes all funds that are covered by the oversight responsibility of the Commission's governing board. As defined by generally accepted accounting principles, the Commission is considered an "other standalone government." The Commission is a related organization of, but not a component unit of, the City of Hattiesburg since the governing authorities of the municipality select the Commission's board but do not have financial accountability for the Commission.

Under the provisions of House Bill No. 1742, the Hattiesburg Tourism Commission shall consist of seven members appointed by the mayor and ratified by the city council. A special 2% sales tax is authorized to be levied upon the gross proceeds from hotel and motel overnight room rental, exclusive of charges for food, telephone, laundry, beverages and similar changes; and provide that such tax be paid to the state tax commission.

B. GOVERNMENT-WIDE AND FUND FINANCIAL STATEMENTS

Government-wide Financial Statements - The Statement of Net Position and Statement of Activities report information on all of the non-fiduciary activities of the Commission.

The Statement of Net Position presents the Commission's non-fiduciary assets and liabilities, with the difference reported as net position. Net position is reported in three categories:

1. Net investment in capital assets, net of accumulated depreciation, and reduced by outstanding balances of bonds, notes and other debt attributable to the acquisition, construction or improvement of those assets.
2. Restricted net position results when constraints placed on net position use are either externally imposed or imposed by law through constitutional provisions or enabling legislation.
3. Unrestricted net position consists of net position not meeting the definition of the two preceding categories. Unrestricted net position often has constraints on resources imposed by management which can be removed or modified.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (continued)

The Statement of Activities demonstrates the degree to which the direct expenses of a given function, or segment, are offset by program revenues. Direct expenses are those clearly identifiable with a specific function. Program revenues include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function and 2) grants, contributions and interest restricted to meeting the operational or capital requirements of a particular function. Special sales taxes and other items not included among program revenues are reported instead as general revenues.

Fund Financial Statements - Separate financial statements are provided for governmental funds. Major individual governmental funds are reported in separate columns in the fund financial statements. Any remaining governmental funds would be aggregated and reported as other governmental funds.

The Commission reports the following major governmental funds:

The General Fund is the primary operating fund of the Commission. It is used to account for all financial resources, except those accounted for in another fund.

The MMH Pageant, a special revenue fund, accounts for the operation and promotion of the annual Mississippi Miss Hospitality Pageant.

The HAPA, a special revenue fund, accounts for the activities of the Hattiesburg Alliance for Public Arts.

Fund balance for governmental funds is reported in classifications that comprise a hierarchy based primarily on the extent to which the government is bound to honor constraints on the specific purposes for which amounts in those funds can be spent.

Governmental fund balance is classified as nonspendable, restricted, committed, assigned or unassigned. Following are descriptions of fund classifications used by the commission:

Nonspendable fund balance includes items that cannot be spent. This includes activity that is not in a spendable form (a) inventories or prepaids; or (b) legally required to be maintained intact.

Restricted fund balance includes amounts that have constraints placed upon the use of the resources either by an external party or imposed by law through constitution provision or enabling legislation.

Committed fund balance includes amounts that can be used only for the specific purposes determined by a formal action of the government's highest level of decision-making authority.

Assigned fund balance includes amounts intended to be used by the Commission for specific purposes, subject to change, as established either directly by the Board of Directors or by management officials to whom assignment authority has been delegated by the Board of Directors.

Unassigned fund balance is the residual classification for the general fund. This classification represents fund balance that has not been assigned to other funds and that has not been restricted, committed, or assigned to specific purposes within the general fund.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SINGIFICANT ACCOUNTING POLICIES (continued)

C. MEASUREMENT FOCUS, BASIS OF ACCOUNTING

The government-wide financial statements are reported using the economic resources measurement focus and the accrual basis of accounting. Revenues are recorded when earned and expenses are recorded at the time liabilities are incurred, regardless of when the related cash flows take place.

Governmental funds are reported using the current financial resources measurement focus and the modified accrual basis of accounting. Under this method, revenues are recognized when measurable and available. The Commission considers all revenues reported in governmental funds to be available if the revenues are collected within thirty (30) days of the end of the fiscal period. Expenditures are recorded when the related fund liability is incurred, except for principal and interest on general long-term debt and claims and judgments which are recognized as expenditures when payment is due. General capital asset acquisitions are reported as expenditures in governmental funds. Proceeds of general long-term debt and acquisitions under capital leases are reported as other financing sources. The special sales tax associated with the current fiscal period is considered to be susceptible to accrual. The balance collected more than 30 days after the fiscal period is deferred in the fund statements since it is not considered available for current expenditures.

D. BUDGETS AND BUDGETARY ACCOUNTING

Hattiesburg Tourism Commission has no legal budget requirements. The Commission provides budgetary data for management and reporting purposes using the following procedures:

1. The executive director of Hattiesburg Tourism Commission submits a proposed budget to the Board of Directors.
2. The board reviews the proposed budget, makes changes and approves.
3. Budgets for the Governmental Funds are not adopted on a basis consistent with generally accepted accounting principles (GAAP). Budgeted amounts are as originally adopted, or as amended by the Board of Directors.
4. Budget amendments are approved by board before year end.
5. The budget appropriations lapse at the end of the fiscal year.

E. COMPENSATED ABSENCES

Commission employees are entitled to certain compensated absences based upon their length of employment. Vacation leave is accrued on a monthly basis. A waiting period of six months must be completed before vacation time can be used. After that, employees can request use of earned vacation time including that accrued during the waiting period. Unused vacation time can be accumulated and rolled over into the next year. Upon resignation or termination of employment, each employee shall be paid for unused vacation time that has been accrued through the last day of work up to six weeks. All unused vacation time remaining beyond six weeks will be certified to PERS. There is no limit to accumulation of sick leave days. However, unused sick leave days will not be paid to employees while they are employed or upon termination of employment. Unused sick time may be credited toward retirement service.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 1- SUMMARY OF SINGIFICANT ACCOUNTING POLICIES (continued)

F. USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect certain reported amounts and disclosures. Accordingly, actual results could differ from those estimates.

G. PENSIONS

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Public Employee's Retirement System (PERS) and additions to/deductions from PERS' fiduciary net position have been determined on the same basis as they are reported by PERS. For this purpose, the benefit payments are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

H. INVENTORIES

Inventory consists of logo-related items, snacks, and gifts held for resale. The costs of governmental fund type inventories are reported under the consumption method.

I. DEFERRED OUTFLOWS/INFLOWS OF RESOURCES

In addition to assets, the statement of financial position will sometimes report a separate section for deferred outflows of resources. This separate financial statement element, deferred outflow of resources, represents a consumption of net position that applies to a future period and so will not be recognized as an outflow of resources (expenditure/expense) until that time.

In addition to liabilities, the statement of financial position will sometimes report a separate section for deferred inflows of resources. This separate financial statement element, deferred outflow of resources, represents an acquisition of net position that applies to a future period and so will not be recognized as an inflow of resources (revenue) until that time.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 2 – DEPOSITS AND INVESTMENTS

The Commission deposits excess funds in financial institutions selected in accordance with state statutes.

Cash consists of amounts on deposit with financial institutions in non-interest-bearing accounts, interest-bearing demand accounts, savings accounts and certificates of deposit with an original maturity of 90-days or less. Cash is valued at cost. The carrying amount approximates fair value because of the short maturities of these instruments.

Investments consist of certificates of deposit with an original maturity date greater than 90 days. Investments are valued at cost.

As of September 30, 2022, the carrying amount of Hattiesburg Tourism Commission's deposits with financial institutions was \$1,861,171 and the bank balance was \$2,044,502. As of September 30, 2021, the carrying amount of Hattiesburg Tourism Commission's deposits with financial institutions was \$1,831,136 and the bank balance was \$1,865,992.

The collateral for public entities' deposits in financial institutions are held in the name of the State Treasurer under a program established by the Mississippi State Legislature and is governed by Section 27-105-5, Miss. Code Ann (1972). Under this program, the entity's funds are protected through a collateral pool administered by the State Treasurer. Financial institutions holding deposits of public funds must pledge securities as collateral against those deposits. In the event of failure of a financial institution, securities pledged by that institution would be liquidated by the State Treasurer to replace the public deposits not covered by the Federal Depository Insurance Corporation.

Custodial Credit Risk – Deposits. Custodial credit risk is defined as the risk that, in the event of the failure of a financial institution, the Commission will not be able to recover deposits or collateral securities that are in the possession of an outside party. The Commission does not have a deposit policy for custodial credit risk. However, the Mississippi State Treasurer manages that risk on behalf of the Commission. Deposits above the FDIC coverage are collateralized by the pledging financial institution trust department or agent in the name of the Mississippi State Treasurer on behalf of the Commission.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 3 – CAPITAL ASSETS

Capital acquisition and construction are reflected as expenditures in the Governmental Fund statements and the related assets are reported as capital assets in the governmental activities column in the government-wide financial statements.

Capital assets are reported at actual or estimated historical cost based on appraisals or deflated current replacement cost. Contributed assets are reported at estimated fair value at the time received.

Capitalized thresholds (dollar value above which asset acquisitions are added to the capital asset accounts) and estimated useful lives of capital assets are reported in the government-wide statements.

Depreciation is calculated on the straight-line basis for all assets, except land. The following schedule details those thresholds.

	Capitalization Policy	Estimate Useful Life
Land	\$ -	
Buildings	50,000	40 years
Building improvements	25,000	20 years
Improvements other than buildings	25,000	20 years
Furniture and equipment	5,000	3-7
Mobile equipment	5,000	5-10

Capital Assets consist of the following:

	10/01/21	Additions	Disposals	09/30/22
Equipment	\$ 11,595		\$ -	\$ 11,595
Furniture	71,649	-	-	71,649
	<u>83,244</u>	<u>-</u>	<u>-</u>	<u>83,244</u>
Accumulated Depreciation	<u>79,837</u>	<u>1,761</u>	<u>-</u>	<u>81,598</u>
Net Fixed Assets	<u><u>\$ 3,407</u></u>			<u><u>\$ 1,646</u></u>

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN

Plan Description

The Hattiesburg Tourism Commission Contributes to the Public Employees' Retirement System of Mississippi (PERS), a cost-sharing multiple-employer defined benefit pension plan. PERS provides retirement and disability benefits, annual cost-of-living adjustments, and death benefits to plan members and beneficiaries. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Miss. Code Ann. Section 25-11-1 et seq., (1972, as amended) and may be amended only by the Mississippi Legislature. PERS issues a publicly available financial report that includes financial statements and required supplementary information. That report is available at www.pers.ms.gov.

Benefits provided

Membership in PERS is a condition of employment granted upon hiring for qualifying employees and officials of the State of Mississippi, state universities, community and junior colleges, and teachers and employees of the Hattiesburg Tourism Commission. For those persons employed by political subdivisions and instrumentalities of the State of Mississippi, membership is contingent upon approval of the entity's participation in PERS by the PERS' Board of Trustees. If approved, membership for the entity's employees is a condition of employment and eligibility is granted to those who qualify upon hiring. Participating members who are vested and retire at or after age 60 or those who retire regardless of age with at least 30 years of creditable service (25 years of creditable service for employees who became members of PERS before July 1, 2011) are entitled, upon application, to an annual retirement allowance payable monthly for life in an amount equal to 2.0 percent of their average compensation for each year of creditable service up to and including 30 years (25 years for those who became members of PERS before July 1, 2011), plus 2.5 percent for each additional year of creditable service with an actuarial reduction in the benefit for each year of creditable service below 30 years or the number of years in age that the member is below 65, whichever is less. Average compensation is the average of the employee's earnings during the four highest compensated years of creditable service. Benefits vest upon completion of eight years of membership service (four years of membership service for those who became members of PERS before July 1, 2007). PERS also provides certain death and disability benefits. A Cost-of-Living Adjustment (COLA) payment is made to eligible retirees and beneficiaries. The COLA is equal to 3.0 percent of the annual retirement allowance for each full fiscal year of retirement up to the year in which the retired member reaches age 60 (55 for those who became members of PERS before July 1, 2011), with 3.0 percent compounded for each fiscal year thereafter.

Contributions

PERS members are required to contribute 9.00% of their annual covered salary, and the Commission is required to contribute at an actuarially determined rate. The employer's rate as of September 30, 2022 was 17.40% of annual covered payroll. Plan provisions and the Board of Trustees' authority to determine contribution rates are established by Section 25-11-1 of the Mississippi Code of 1972, as amended, and may be amended only by the Mississippi Legislature. The Commission's contributions to PERS for the fiscal years ending September 30, 2022, 2021, and 2019 were \$46,770, \$46,770, and \$51,981, respectively, which equaled the required contributions for each year.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions

At September 30, 2022 and 2021, the Commission reported a liability of \$1,029,182 and \$739,022 for its proportionate share of the net pension liability. The net pension liability was measured as of June 30, 2022, and the total pension liability used to calculate the net pension liability was determined by an actuarial valuation as of that date. The Commission's proportion of the net pension liability was based on a projection of the Commission's long-term share of contribution to the pension plan relative to projected contributions of all participating entities, actuarially determined. The Commission's proportionate share used to calculate the September 30, 2022 net pension liability was 0.004337 percent, which was based on a measurement date of June 30, 2022. This was an increase of 0.000235 percent from its proportionate share used to calculate the September 30, 2021 net pension liability, which was based on a measurement date of June 30, 2021.

For the years ended September 30, 2022 and 2021, the Commission recognized pension expense of \$167,744 and \$42,658, respectively. At September 30, 2022 the Commission reported deferred outflows of resources and deferred inflows of resources related to pensions from the following sources:

	Deferred Outflows of Resources	Deferred Inflows of Resources
Differences between expected and actual experience	\$ 14,571	\$ -
Net difference between projected and actual earnings on pension plan investments	249,008	(202,180)
Changes of assumptions	35,596	-
Change in proportionate share	37,333	(18,968)
Contributions subsequent to the measurement date	16,000	-
	<u>\$ 352,508</u>	<u>\$ (221,148)</u>

\$10,639 is reported as deferred outflows of resources related to pensions resulting from the entity's contributions subsequent to the measurement date will be recognized as a reduction to the net pension liability in the year ended September 30, 2022. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pensions will be recognized in pension expense as follows:

Year Ended September 30,	
2023	\$ 60,831
2024	22,978
2025	(8,295)
2026	55,846
2027	-
	<u>\$ 131,360</u>

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Actuarial assumptions. The collective total pension liability in the June 30, 2022 actuarial valuation was determined using the following actuarial assumptions, applied to all periods included in the measurement:

Inflation	2.40 percent
Salary increases	2.65-17.90 percent, including inflation
Investment rate of return	7.55 percent, net of pension plan investment expense, including inflation

Mortality rates were based on the PubS.H-2010(B) Retiree Table with the following adjustments. For males, 95% of male rates up to age 60, 110% for ages 61 to 75 and 101% for ages above 77. For Females, 84% of female rates up to age 72 and 100% for ages above 76. Mortality rates will be projected generationally using the MP-2020 projection scale to account for future improvements in life expectancy.

The actuarial assumptions are based on the experience investigation for the four-year period ending June 30, 2020.

The long-term expected rate of return on pension plan investments was determined using a log-normal distribution analysis in which best-estimate ranges of expected future real rates of return (expected nominal returns, net of pension plan investment expense and the assumed rate of inflation) are developed for each major asset class. These ranges are combined to produce the long-term expected rate of return by weighting the expected future real rates of return by the target asset allocation percentage and by adding expected inflation. The target asset allocation and best estimates of arithmetic real rates of return for each major asset class are summarized in the following table:

Asset Class	Target Allocation	Long-term expected real Rate of Return
Domestic Equity	27%	4.60%
International Equity	22%	4.50%
Global	12%	4.80%
Debt Securities	20%	-0.25%
Real Estate	10%	3.75%
Private Equity	8%	6.00%
Cash Equivalents	1%	-1.00%
	<u>100%</u>	

Discount rate. The discount rate used to measure the total pension liability was 7.55 percent. The projection of cash flows used to determine the discount rate assumed that plan member contributions will be made at the current contribution rate and that Employer contributions will be made at the current employer contribution rate. Based on those assumptions, the pension plan's fiduciary net position was projected to be available to make all projected future benefit payments of current plan members. Therefore, the long-term expected rate of return on pension plan investments was applied to all periods of projected benefit payments to determine the total pension liability.

HATTIESBURG TOURISM COMMISSION
NOTES TO FINANCIAL STATEMENTS

NOTE 4 – DEFINED BENEFIT PENSION PLAN (continued)

Sensitivity of the Commission's proportionate share of the net pension liability to changes in the discount rate. The following presents the Commission's proportionate share of the net pension liability calculated using the discount rate of 7.55 percent, as well as what the Commission's proportionate share of the net pension liability would be if it were calculated using a discount rate that is 1-percentage-point lower (6.55 percent) or 1-percentage-point higher (8.55 percent) than the current rate:

SENSITIVITY ANALYSIS

	1% Decrease (6.55%)	Current Discount Rate (7.55%)	1% Increase (8.55%)
Hattiesburg Tourism Commission	\$ 1,343,188	\$ 1,029,182	\$ 770,300

	1% Decrease (6.55%)	Current Discount Rate (7.55%)	1% Increase (8.55%)
System's Net Pension Liability	\$ 26,863,751,000	\$ 20,583,639,000	\$ 15,406,006,000

Pension plan fiduciary net position. Detailed information about the pension plan's fiduciary net position is available in the separately issued PERS financial report.

NOTE 5 –EFFECT OF DEFERRED AMOUNTS ON NET POSITION

The unrestricted net position amount of \$1,246,788 includes the effect of deferred inflows/outflows of resources related to pensions. A portion of the deferred outflow of resources related to pensions in the amount of \$10,639 resulting from the entity's contributions subsequent to the measurement date will be recognized as a reduction of the net pension liability in the year ended September 30, 2022. The \$186,887 balance of the deferred outflow of resources related to pensions will be recognized in pension expense over the next 3 years and the \$273,979 balance of the deferred inflow of resources related to pensions will be recognized in pension expense over the next 4 years.

NOTE 6 –RELATED ENTITIES

In efforts to not duplicate services to the Hattiesburg area, the Commission has entered into an agreement with the Hattiesburg Downtown Association. In exchange for a fee, the Hattiesburg Tourism Commission will provide the HDA marketing and admin services. The Commission will also serve as a pass through entity to provide payroll for one employee of the Hattiesburg Downtown Association. The HDA will fully reimburse the Commission for all payroll, taxes, and insurance associated with individual's payroll.

NOTE 7 –SUBSEQUENT EVENTS

Events that occur after the Statement of Net Position date but before the financial statements are available to be issued must be evaluated for recognition or disclosure. The effects of subsequent events that provide evidence about conditions that existed at the Statement of Net Position date are recognized in the accompanying financial statements. Subsequent events which provide evidence about conditions that existed after the Statement of Position date require disclosure in the accompanying notes. Management of the Commission has evaluated the activity through December 10, 2022, and determined that no subsequent event has occurred requiring disclosure in the notes to the financial statements.

HATTIESBURG TOURISM COMMISSION

REQUIRED SUPPLEMENTARY INFORMATION

HATTIESBURG TOURISM COMMISSION

Required Supplementary Information

SCHEDULE OF THE COMMISSION'S PROPORTIONATE SHARE OF THE NET PENSION LIABILITY

Schedule 1A

PERS

Last 10 Fiscal Years*

	2022	2021	2020	2019	2018	2017	2016	2015
Commission's proportion of the net pension liability	0.004337%	0.004102%	0.004532%	0.004354%	0.003027%	0.004342%	0.003722%	0.004317%
Commission's proportionate share of the net pension liability	\$ 1,029,182	\$ 739,022	\$ 967,942	\$ 703,679	\$ 503,480	\$ 721,787	\$ 714,500	\$ 618,321
Commission's covered payroll	\$ 329,239	\$ 268,792	\$ 298,739	\$ 289,258	\$ 216,254	\$ 270,095	\$ 225,111	\$ 258,375
Commission's proportionate share of the net pension liability as a percentage of its covered payroll	312.59%	274.94%	324.01%	243.27%	232.82%	267.23%	317.40%	239.31%
Plan fiduciary net position as a percentage of the total pension liability	59.93%	70.44%	58.97%	61.59%	61.49%	57.47%	61.70%	67.21%

The notes to the required supplementary information are an integral part of this schedule.

* The amounts presented for each fiscal year were determined as of the measurement date of 6/30 of the year prior to the fiscal year presented.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB Statement No. 68 was implemented in FYE 6/30/15, and, until a full 10-year trend is compiled, the Commission has only presented information for the years in which information is available.

HATTIESBURG TOURISM COMMISSION

Required Supplementary Information

SCHEDULE OF COMMISSIONS CONTRIBUTIONS

Schedule 1B

PERS

Last 10 Fiscal Years*

	<u>2022</u>	<u>2021</u>	<u>2020</u>	<u>2019</u>	<u>2018</u>	<u>2017</u>	<u>2016</u>	<u>2015</u>
Contractually required contribution	\$ 57,288	\$ 46,770	\$ 51,981	\$ 46,682	\$ 34,060	\$ 42,540	\$ 35,455	\$ 40,694
Contributions in relation to the contractually required contribution	\$ 57,288	\$ 46,770	\$ 51,981	\$ 46,682	\$ 34,060	\$ 42,540	\$ 35,455	\$ 40,694
Contribution deficiency (excess)	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>	<u>\$ -</u>
Commission's covered payroll	\$ 329,239	\$ 268,792	\$ 298,739	\$ 289,258	\$ 216,254	\$ 270,095	\$ 225,111	\$ 258,375
Contributions as a percentage of covered payroll	17.40%	17.40%	17.40%	16.14%	15.75%	15.75%	15.75%	15.75%

The notes to the required supplementary information are an integral part of this schedule.

This schedule is presented to illustrate the requirement to show information for 10 years. However, GASB Statement No. 68 was implemented in FYE 6/30/2015, and, until a full 10-year trend is compiled, the Commission has only presented information for the years in which information is available.

HATTIESBURG TOURISM COMMISSION

OTHER INFORMATION

SCHEDULE 2A

HATTIESBURG TOURISM COMMISSION
BUDGETARY COMPARISON
FOR THE YEAR ENDED SEPTEMBER 30, 2022

	Final Budget	Actual (non-GAAP Basis)	Variances Positive (Negative)
REVENUES			
2% Bed Tax	\$ 654,000	\$ 1,034,076	\$ 380,076
Logo Shop Sales	2,500	728	(1,772)
Interest	2,500	516	(1,984)
State Miss Hospitality	30,000	30,000	-
Downtown Support Services	89,540	89,876	336
Event Production Reimbursements	-	17,356	17,356
Operational Reserves	70,000	-	(70,000)
Strategic Planning Implementation Reserves	50,000		(50,000)
PPP Loan Forgiveness	-	76,000	76,000
TOTAL REVENUES	<u>\$ 898,540</u>	<u>\$ 1,248,552</u>	<u>\$ 350,012</u>
EXPENDITURES			
Marketing	\$ 289,045	\$ 438,805	\$ (149,760)
Gift Shop Purchases	2,500	10,439	(7,939)
Office Operations	84,900	68,502	16,398
Destination Building	50,000	16,830	33,170
Compensation/Benefits	471,223	512,878	(41,655)
TOTAL EXPENDITURES	<u>897,668</u>	<u>1,047,454</u>	<u>(149,786)</u>
NET EXCESS (DEFICIT)	<u>\$ 872</u>	<u>\$ 201,099</u>	<u>\$ 200,226</u>

Basis of Presentation

The Budgetary Comparison Schedule above presents the final budget, the actual data on the non-GAAP basis, and the variances between the final budget and the actual data. The budget is adopted for management use only and is not legally required.

SCHEDULE 2B

HATTIESBURG TOURISM COMMISSION
BUDGETARY COMPARISON
FOR THE YEAR ENDED SEPTEMBER 30, 2021

	<u>Final Budget</u>	<u>Actual (non-GAAP Basis)</u>	<u>Variances Positive (Negative)</u>
REVENUES			
2% Bed Tax	\$ 504,000	\$ 828,203	\$ 324,203
Logo Shop Sales	6,000	114	(5,886)
COVID-19 Tourism Recovery Fund	375,000	413,362	38,362
Interest	5,000	729	(4,271)
State Miss Hospitality	30,000	30,000	-
Downtown Support Services	85,749	89,512	3,763
Operational Reserves	70,000	-	(70,000)
Public Art Reserves	40,000	40,000	-
Strategic Planning Implementation Reserves	60,000	6,069	(53,931)
PPP Loan Forgiveness	-	76,000	76,000
TOTAL REVENUES	<u>\$ 1,175,749</u>	<u>\$ 1,483,989</u>	<u>\$ 308,240</u>
EXPENDITURES			
Marketing	\$ 105,000	\$ 159,124	\$ (54,124)
Gift Shop Purchases	4,000	2,737	1,263
Capital Expenditures	3,000	-	3,000
Office Operations	80,700	132,578	(51,878)
COVID-19 Tourism Recovery Fund	374,700	442,737	(68,037)
Destination Building	100,000	46,069	53,931
Compensation/Benefits	488,721	448,871	39,850
TOTAL EXPENDITURES	<u>1,156,121</u>	<u>1,232,116</u>	<u>(75,995)</u>
NET EXCESS (DEFICIT)	<u>\$ 19,628</u>	<u>\$ 251,874</u>	<u>\$ 232,245</u>

Basis of Presentation

The Budgetary Comparison Schedule above presents the final budget, the actual data on the non-GAAP basis, and the variances between the final budget and the actual data. The budget is adopted for management use only and is not legally required.

SCHEDULE 3**HATTIESBURG TOURISM COMMISSION**

SCHEDULE OF DIRECTORS
FOR THE YEAR ENDED SEPTEMBER 30, 2022

<u>Board Member</u>	<u>Representation Area</u>	<u>Bond Amount</u>	<u>Bond Expires</u>
Frank James	Hotel Industry (1)	\$ 50,000	10/26/2023
Melanie Archer	Hotel Industry (2)	50,000	10/11/2023
Anthony L. Harris	Economic Development	50,000	1/15/2023
Joe Paul	University of Southern Mississippi	50,000	5/27/2023
Bonnie Warren	At Large (1)	50,000	11/5/2023
Michael Marks	At Large (2)	50,000	8/17/2023
Shawn Lowrey	At Large (3)	50,000	8/19/2023

The enabling legislation requires a seven member board be appointed by the Mayor of the City of Hattiesburg and ratified by the City Council. The legislation also requires the members to represent specified areas of the community and to give bond in the amount of \$50,000.

King CPA, PLLC

*American Institute of
Certified Public Accountants*

206 East Central Ave P.O. Box 1182
Petal, MS 39465
Telephone 601-544-9795....Fax 601-544-9793

*Mississippi Society of
Certified Public*

REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING AND ON COMPLIANCE AND OTHER MATTERS BASED ON AN AUDIT OF FINANCIAL STATEMENTS PERFORMED IN ACCORDANCE WITH GOVERNMENT AUDITING STANDARDS

To the Board of Directors
Hattiesburg Tourism Commission

We have audited, in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States, the financial statements of the governmental activities and each major fund of the Hattiesburg Tourism Commission, as of and for the years ended September 30, 2022 and 2021, and the related notes to the financial statements, which collectively comprise the Commission's basic financial statements and have issued our report thereon dated December 10, 2022.

Internal Control over Financial Reporting

In planning and performing our audit of the financial statements, we considered the Commission's internal control over financial reporting to determine our audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control. Accordingly, we do not express an opinion on the effectiveness of the Commission's internal control over financial reporting.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect and correct misstatements on a timely basis. A *material weakness* is a deficiency, or combination of deficiencies, in internal control such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control over financial reporting was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or, significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether the Hattiesburg Tourism Commission's financial statements are free of material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit and, accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

A handwritten signature in black ink that reads "King CPA, PLLC". The signature is written in a cursive, flowing style.

KING CPA, PLLC
Petal, Mississippi
December 10, 2022



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Acknowledge bids received on April 6, 2023 for one or more small tandem dump trucks and accept the bid of Burroughs Companies as the best and lowest bid.
File Number: 2023-301
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.



CITY OF HATTIESBURG
Dump Truck

Reverse Auction Start Date / Time	Apr 06, 2023 10:00 AM
Reverse Auction End Date / Time	Apr 06, 2023 10:30 AM

Western Star Chassis with Warren Body

Company	Bid Amount	Bidding Date / Time	Delivery Lead Time
Burroughs Companies	\$ 175,000.00	Apr 06, 2023 10:02:14 AM	250 days

Kenworth Chassis with Ox Body

Company	Bid Amount	Bidding Date / Time	Delivery Lead Time
Truckworx	\$ 182,892.40	Apr 06, 2023 10:02:21 AM	45 days



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, May 2, 2023

Re: Acknowledge bids received on April 14, 2023 for one or more police pursuit package vehicles and accept the bid of Cannon Motors as the best and lowest bid.
File Number: 2023-308
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.



CITY OF HATTIESBURG POLICE VEHICLES

Reverse Auction Specification
Reverse Auction Start Date / Time Apr 14, 2023 10:00 AM US/Central
Reverse Auction End Date / Time Apr 14, 2023 10:30 AM US/Central
Reverse Auction Duration 00:30 [hh:mm]

Police Pursuit Dodge Charger

Company	Bid Amount	Bidding Date / Time	Delivery Lead Time (# of days)
Champion Chrysler Dodge Jeep Ram	\$ 40,825.00	Apr 14, 2023 10:19:03 AM US/Central	60
Cannon Motors	\$ 36,860.00	Apr 14, 2023 10:13:06 AM US/Central	180
Champion Chrysler Dodge Jeep Ram	\$ 43,200.00	Apr 14, 2023 10:01:39 AM US/Central	60

Dodge Durango- Administrative Unit

Company	Bid Amount	Bidding Date / Time	Delivery Lead Time (# of days)
Champion Chrysler Dodge Jeep Ram	\$ 44,580.00	Apr 14, 2023 10:19:03 AM US/Central	5
Cannon Motors	\$ 41,645.00	Apr 14, 2023 10:13:07 AM US/Central	180
Champion Chrysler Dodge Jeep Ram	\$ 46,850.00	Apr 14, 2023 10:01:39 AM US/Central	15



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Plans and Specifications for the COMSWIP Sewer Improvements Phase IX - East 2nd Street Area project and authorize advertisement for bids for same.
File Number: 2023-298
Minute Book #

Summary

Approve Plans and Specifications for the COMSWIP Sewer Improvements Phase IX - East 2nd Street Area project and authorize advertisement for bids for same.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.

SPECIFICATIONS AND CONTRACT DOCUMENTS

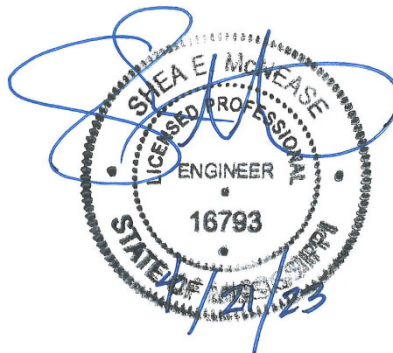
FOR

**COMSWIP SEWER IMPROVEMENTS – PHASE IX
EAST 2ND STREET AREA**

FOR THE

CITY OF HATTIESBURG

APRIL 2023



PREPARED BY:

**SHOWS, DEARMAN & WAITS, INC.
CONSULTING ENGINEERS**

Table of Contents

Advertisement For Bids.....	3
Information For Bidders.....	4
Proposal Form.....	7
Proposal.....	8
Bid Bond.....	12
Contract Agreement.....	14
Payment And Performance Bond.....	18
General Conditions.....	20
Definitions.....	20
Preliminary Matters.....	23
Correlation, Interpretation And Intent of Contract Documents.....	26
Availability Of Lands; Subsurface Conditions; Reference Points.....	27
Bonds And Insurance.....	29
Contractor's Responsibilities.....	30
Work By Others.....	40
Owner's Responsibilities.....	41
Engineer's Status During Construction.....	42
Changes In Work.....	45
Change Of Contract Price.....	46
Change Of Contract Time.....	51
Guaranty.....	51
Payments And Completion.....	52
Suspension Of Work And Termination.....	56
Dispute Settlement.....	58
Miscellaneous.....	58
Supplemental General Conditions.....	61
Article 1 - Special Conditions.....	61
Scope And Intent.....	61
Examination Of Premises.....	61
Permits, Taxes, And Ordinances.....	61
Insurances, Etc.....	61
Cleaning Up.....	64
Special Instructions.....	64
Limitations.....	64
Product/Materials Substitution.....	64
Inspection.....	64
Specifications And Drawings Are Reciprocal.....	64
As-Built Drawings.....	65
Guarantees, Warranties And Bonds.....	65
Close-Out Documents.....	66
Measurement And Payment.....	68
Technical Specifications.....	TS-1
Sanitary Sewer Systems.....	TS-1
Standard Specification for Lining Ductile Iron Pipe.....	TS-18
Manholes.....	TS-21
Restoration of Roads, Driveways, Fences, Lawns and other Grassed Areas.....	TS-27
Seeding and Sodding.....	TS-33
Concrete.....	TS-39
Ductile Iron Water Systems.....	TS-42
Fire Hydrant.....	TS-57
Sewer – Tracer Wire Specification.....	TS-60
Submersible Pump and Panel Specification.....	TS-63



ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the City of **Hattiesburg**, MISSISSIPPI, will receive sealed bids until **10:00AM** on **June 15, 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**COMSWIP SEWER IMPROVEMENTS - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
COMSWIP SEWER IMPROVEMENTS - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

INFORMATION FOR BIDDERS

BIDS will be received by City of Hattiesburg, MS herein called the "OWNER", at City Hall until 10:00 AM on June 15, 2023, and then at said office publicly opened and read aloud.

Each BID must be submitted in sealed envelope, addressed to the City Clerk of said City. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **ComSWIP Sewer Improvements - Phase IX East 2nd Street Area, Hattiesburg, Mississippi** and the envelope should bear on the outside the BIDDER'S name, address, and license number if applicable. If forwarded by mail, the sealed BID shall be included in a delivery package addressed to the Owner at 200 Forrest Street, Hattiesburg, MS 39401.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID BOND payable to the OWNER for five percent (5%) of the total amount of the BID. As soon as the BID prices have been compared, the

OWNER will return the BONDS of all except the three lowest responsive, responsible BIDDERS upon request of the BIDDER. When the Agreement is executed the BONDS of the two remaining unsuccessful BIDDERS will be returned upon request of the BIDDER. The BID BOND of the successful BIDDER will be retained until the PAYMENT BOND and PERFORMANCE BOND have been executed and approved, after which it will be returned upon request of the BIDDER. A certified check may be used in lieu of a BID BOND.

A PERFORMANCE BOND and a PAYMENT BOND, each in the amount of 100 percent (100%) of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dates copy of their Power of Attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the PERFORMANCE BOND and PAYMENT BOND within ten (10) calendar days from the date when NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within thirty (30) days of receipt of acceptable PERFORMANCE BOND, PAYMENT BOND and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within thirty (30) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period; the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the thirty (30) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

The contract time stipulated, will be strictly enforced, if the CONTRACTOR fails to

complete the work within the time stipulated, a deduction will be made of \$750 a day from the money due the CONTRACTOR not as a penalty but as liquidated damages. The CONTRACTOR and the CONTRACTOR'S sureties shall be liable for all liquidated damages in excess of money due the CONTRACTOR.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest and best responsive and responsible BIDDER.

All applicable Laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

FURTHER, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause.

The BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

The ENGINEER is SHOWS, DEARMAN & WAITS, INC. The address of the ENGINEER is 301 2nd Avenue, HATTIESBURG, MISSISSIPPI.

PROPOSAL FORM

I (we) agree to begin work within (10) calendar days after the issuance of Notice to Proceed, and to complete the work within 180 calendar days thereafter.

It is understood that the quantities of work listed for unit prices bid are approximate, and are intended to merely indicate the general scope of the various items entering into the complete work and for comparison of bids. It is further understood and agreed that the Owner may increase or decrease the quantities listed in the Proposal and that no change in the unit prices proposed shall be occasioned thereby.

The undersigned further agrees that the unit and lump sum prices quoted include all items of work required or necessary for the accomplishment of the projected work and that these items include all work indicated on the Plans and Specifications for which no specific pay items have been established.

The undersigned certifies that the bid prices contained herein have been carefully checked and are submitted as correct and final.

If within sixty (60) days the scheduled closing time for receipt of bids, this Proposal is accepted, the undersigned will execute a formal contract within ten (10) days after official notification thereof, will deliver a surety bond for the faithful performance of this contract, and will complete the work within the time specified from the date of execution of the contract.

Respectfully Submitted,

Authorized by:

ADDRESS

PROPOSAL

COMSWIP SEWER IMPROVEMENT - PHASE IX EAST 2ND STREET AREA

Item	Description	Unit	Quantity	Unit Price	Extension
	Sewer Pipe Items				
1	4" PVC Sewer Force Main (All Depths)	LF	445		
2	8" SDR 26 PVC Sewer Pipe (0'- 6')	LF	458		
3	8" SDR 26 PVC Sewer Pipe (6'- 8')	LF	97		
4	10" SDR 26 PVC Sewer Pipe (0'- 6')	LF	225		
5	10" SDR 26 PVC Sewer Pipe (6'- 8')	LF	88		
6	10" SDR 26 PVC Sewer Pipe (8'- 10')	LF	92		
7	10" SDR 26 PVC Sewer Pipe (10'- 12')	LF	90		
8	10" SDR 26 PVC Sewer Pipe (12'- 14')	LF	74		
9	12" SDR 26 PVC Sewer Pipe (0'- 6')	LF	562		
10	12" SDR 26 PVC Sewer Pipe (6'- 8')	LF	51		
11	12" SDR 26 PVC Sewer Pipe (8'- 10')	LF	34		
12	12" SDR 26 PVC Sewer Pipe (10'- 12')	LF	70		
13	12" SDR 26 PVC Sewer Pipe (12'- 14')	LF	164		
14	12" SDR 26 PVC Sewer Pipe (14'- 16')	LF	283		
15	12" SDR 26 PVC Sewer Pipe (16'- 18')	LF	135		
16	12" SDR 26 PVC Sewer Pipe (18'- 20')	LF	4		
17	15" SDR 26 PVC Sewer Pipe (0'- 6')	LF	720		
18	15" SDR 26 PVC Sewer Pipe (6'- 8')	LF	570		
19	15" SDR 26 PVC Sewer Pipe (8'- 10')	LF	22		
20	8" Ductile Iron Sewer Pipe (0'- 6')	LF	25		

21	24" Steel Casing, 0.25" WT (Bored) (All Depths)	LF	80		
22	Removal of Existing Sewer Line	LF	3,224		
23	Abandonment of Existing Sewer Line (All Sizes)	LF	940		
24	Tracer Wire System for Sewer	LS	1		
	Sewer Manhole Items				
25	48" Precast Concrete Sewer Manhole (0' - 6')	EA	9		
26	48" Precast Concrete Sewer Manhole (6' - 8')	EA	1		
27	48" Precast Concrete Sewer Manhole (8' - 10')	EA	2		
28	48" Precast Concrete Sewer Manhole (10' - 12')	EA	1		
29	48" Precast Concrete Sewer Manhole (16' - 18')	EA	1		
30	48" Precast Concrete Sewer Manhole (18' - 20')	EA	1		
31	60" Precast Concrete Sewer Manhole (6' - 8')	EA	2		
32	Demolition and Removal of Existing Manholes (All Types)	EA	16		
33	Abandonment of Existing Manhole	EA	1		
34	Drop Manhole Assembly (All Depths)	EA	3		
35	Duplex Pump Station (Incl, Pumps, Wetwell, Piping, Valves, Valve Pit, Controls, Elec. Service, Water Service, Etc)	EA	1		
	Sewer Service Items				
36	4" Sanitary Sewer Service Cleanout	EA	51		
37	4" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings)	LF	510		
38	6" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings)	LF	1,400		
39	8"x8"x6" PVC Service Tee	EA	8		
40	10"x10"x6" PVC Service Tee	EA	7		
41	12"x12"x6" PVC Service Tee	EA	11		

42	15"x15"x6" PVC Service Tee	EA	25		
	Miscellaneous Construction Items				
43	Crushed Aggregate (Size 610) for Trench Repair	Ton	1,935		
44	Crushed Aggregate (Size 610) for Pump Station Yard	Ton	43		
45	Select Fill Material (Class 9, Group C), LVM for Trench Repair	CY	4,400		
46	Concrete Driveway Pavement Repair (All Depths)	SY	51		
47	Concrete Roadway Pavement Repair (All Depths)	SY	2,975		
48	9.5mm Hot Mix Asphalt	Ton	316		
49	19mm Hot Mix Asphalt	Ton	90		
50	Concrete Sidewalk Repair (All Depths)	SY	102		
51	Remove & Replace Concrete Curb & Gutter (Match Existing Type)	LF	520		
52	Class "B" Concrete, Minor Structures	CY	7		
53	Reinforcing Steel	LBS	415		
54	Inlet Gratings	LBS	100		
55	Inlet Castings	LBS	550		
56	12" Corrugated HDPE Pipe (Dual Wall)	LF	10		
57	15" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	164		
58	22"x13" Reinforced Concrete Arch Pipe (Class III) (Plastic Gaskets)	LF	32		
59	Removal of Existing Pipe Cross Drains (All Sizes and Depths)	LF	225		
60	Remove, Salvage and Reset Existing Wood Fence	LF	30		
61	Remove, Salvage and Reset Existing Chain Link Fence	LF	60		
62	Class II Chain Link Fence, Vinyl Coated w/ Barbed Wire (Pump Station)	LF	90		

63	Class II Chain Link Fence Gate, Double Leaf, Vinyl Coated w/ Barbed Wire (Pump Station)	EA	1		
64	6" Yellow Thermoplastic Detail Traffic Stripe	LF	2,660		
65	6" White Thermoplastic Detail Traffic Stripe	LF	25		
66	Lengend White Thermoplastic Traffic Marking (6" Equivilent)	LF	1,020		
67	Lengend White Thermoplastic Traffic Marking	SF	155		
68	Solid Sod (Incl. Sod, Top Soil, Fertilizer, Watering, etc.)	SY	420		
69	Landscape Restoration (Inc. Top Soil, Plants, Mulch, Watering, etc.)	SF	700		
70	Clearing and Grubbing	Acre	1		
71	Temporary Erosion Control	LS	1		
72	Maintenance of Traffic	LS	1		
73	Mobilization	LS	1		
			BID TOTAL:		

Base Bid Respectfully Submitted, Name of Firm or Bidder: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that we, the under signed, _____ Principal, and _____ as Surety, are hereby held and firmly bound unto the City of Hattiesburg as Owner in the penal sum of 5% (Five Percent) for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20_____.

The Condition of the above obligation is such that whereas the Principal has submitted to a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the following project:

**COMSWIP SEWER IMPROVEMENT - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year set forth above.

PRINCIPAL

SURETY

BY: _____

IMPORTANT: Surety companies executing BONDS must appear on the Treasure Department's most current line (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this ____ day of _____, 20____ by and between _____ hereinafter called the CONTRACTOR, the City of Hattiesburg hereinafter called the OWNER, Witnesseth that the CONTRACTOR and the OWNER, for the consideration hereafter named and agrees as follows.

ARTICLE 1: SCOPE OF WORK

The CONTRACTOR agrees to furnish all tools, labor, equipment, materials, and supplies required to be furnished, and perform all work required under and in accordance with the plans entitled:

**COMSWIP SEWER IMPROVEMENT - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

which are on file at the office of the OWNER, and the Specifications, Proposals, General and Special Conditions, attached hereto and made a part hereof as fully as though copied herein, under the direct supervision and to the entire satisfaction of the OWNER and in accordance with the Laws of the State of Mississippi.

ARTICLE 2: THE CONTRACT SUM

It is further agreed and understood by and between the parties hereunto that the OWNER agrees to pay and the CONTRACTOR agrees to accept full and final compensation for all work done under this agreement, the lump sum amount adjusted for variation of quantities at the unit prices named in the Proposal, which is hereto attached, such payment to be made in lawful money of the United States, at the time and in the manner hereinafter set forth.

ARTICLE 3: TIME OF COMPLETION

The CONTRACTOR agrees, for the consideration above expressed, to begin and complete the work within the time specified in the Proposal. If the CONTRACTOR fails to complete the work in the time specified, he shall pay the OWNER as **liquidated damages**, ascertained and agreed, and not in the nature of a penalty, the sum of **\$ 750** for each day delayed, which shall be deducted from the final amount to be paid under the contract; provided that the extension of time with the waiver of liquidation damages may be granted as provided for in the Specifications.

ARTICLE 4: PROGRESS PAYMENTS

The OWNER agrees to make progress payments during the construction as provided herein as follows:

The CONTRACTOR will on or before the tenth (10th) day of each month make an estimate of the value of the work done, based on contract prices, and submit to the ENGINEER, along with an affidavit by the CONTRACTOR that progress payments theretofore received from OWNER have discharged in full all the CONTRACTOR's obligations stated in prior progress payments. ENGINEER will recommend partial payment to the OWNER within a reasonable time of receipt of CONTRACTOR's estimate based on the ENGINEER's estimated quantities.

The OWNER agrees to pay the CONTRACTOR one hundred percent (100%) of the value of the work done each month, less retainage in accordance with MS Code of 1972 Section 31-5-33 until final acceptance of the work has been made. If defective and/or materials are discovered or reasonable doubt arises to the integrity of any part of the work for which partial payment has been allowed, a deduction from subsequent estimates in the amount equal to the work in question will be made until the defects have been remedied or the cause for doubt removed.

ARTICLE 5: ACCEPTANCE AND FINAL PAYMENT

Upon receipt of written notice that the work is ready for final acceptance and inspection, the ENGINEER shall promptly make such inspection, and when he finds the work acceptable under the contract, and the contract fully performed, he shall promptly issue a final certificate, over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof. Then, the entire balance shall be due the CONTRACTOR within forty-five (45) days the date of said final acceptance and receipt of the closeout documents required per the Supplement to General Conditions and recommendation of the same to the OWNER.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the ENGINEER that all payrolls, materials, bills, and other indebtedness connected with the work have been paid.

The making and acceptance of the final payment shall constitute a waiver of all claims by the OWNER, other than those arising from unsettled liens, from faulty work or materials appearing within one (1) year after payment, or claims previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER, so certifies, the OWNER shall, upon certificate of the ENGINEER and without terminating the Contract,

make payment of the balance due for that portion of the work fully completed and accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

ARTICLE 6: THE PERFORMANCE BOND

The CONTRACTOR agrees to furnish a bond, with an approved surety thereon guaranteeing the performance of this contract, in no less than one hundred percent (100%) of the amount of the Contract. Said Bond shall be conditioned on full and complete performance of the Contract, and for the payment of all labor and materials for a period of one (1) year after completion. The Surety on said Bond shall be a surety company of financial resources satisfactory to the OWNER and authorized to do business in the State of Mississippi.

ARTICLE 7 INSURANCE

The CONTRACTOR agrees to also carry public liability insurance, property damage insurance, and workman's compensation insurance in amounts as required by the specifications.

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of the project specified herein.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR will commence the work required by the "Contract Documents" and complete the project on or before the completion date unless the period for completion is extended otherwise by the "Contract Documents."
4. The CONTRACTOR agrees to perform all of the work described in the "Contract Documents" and comply with the terms therein for the sum as shown in the bid schedule.
5. The term "Contract Documents" means and includes the following:

Advertisement for Bids
Instructions to Bidders
Bid
Bid Bond
Contract Agreement

Notice of Award
Notice to Proceed
Change Order
General Conditions
Supplemental General Conditions

Payment Bond
Performance Bond
Addenda

Technical Specifications
Drawings

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the "General Conditions" such amounts as required by the "Contract Documents."
7. This "Contract Agreement" shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

OWNERS:

SEAL

City of Hattiesburg

Authorized by:

ATTEST

(Printed Name & Title)

CONTRACTOR:

SEAL

ATTEST

IMPORTANT NOTE: Surety companies executing bonds must appear on the US Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the state where the project is located.

PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: THAT WE, the Undersigned _____ (hereinafter called the Principal), a corporation, partnership or individual duly unauthorized by law to do business as a construction contractor in the State of Mississippi, and _____ of _____ (herein called the Surety), a corporation duly authorized to do surety business under the laws of the State of Mississippi, are held and firmly bound unto the City of Hattiesburg, MS (hereinafter called the Obligee), a Municipality existing under the laws of the State of Mississippi, in the penal sum of _____ Dollars (_____) lawful money of the United States, for the payment of which well and truly to be made, the said Principal and the said Surety do hereby bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, by these presents, as follows:

The Condition of this obligation is such that; whereas Principal by an instrument in writing attached hereto and bearing date of _____ has agreed with said Obligee to do all work necessary and to furnish labor, materials, tools, supplies and services to construct **COMSWIP SEWER IMPROVEMENT - PHASE IX EAST 2ND STREET AREA, HATTIESBURG, MISSISSIPPI** as shown on Plans and specified thereby in the Specifications, Proposal and other Contract Documents hereto attached.

NOW THEREFORE, if said Principal shall well and truly in good, sufficient and workmanlike manner, and to the satisfaction of Obligee perform and complete the work required, and shall defend, indemnify and save harmless said Obligee against all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising out of injury or damage to persons or property by reason or arising from any act, omission or neglect of said Principal, his agent, servants or employees with relation to said work; and shall pay all cost, charges, rentals and expenses for labor, material, supplies and equipment and deliver the said improvement to Obligee completed and ready for occupancy or operation, and free from all liens, encumbrances or claims for labor, material or otherwise; and shall pay all other expenses lawfully chargeable to Obligee by reason of any default or neglect of the said Principal in the relation of said agreement and said work, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety for value received hereby stipulates and agrees that no charge, extension of time, alteration or addition to the terms of the Contract, or the work to be performed thereunder, or the Specifications accompanying the same, shall in any way affect its obligation on this bond and does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

PROVIDED FURTHER, that if Principal, or his, or its subcontractor or subcontractors fail to duly pay for any labor, materials, team hire, sustenance provisions or any other supplies or materials used or consumed by such Principal or his, their or its subcontractors in performance of the work contracted to be done, the Surety will pay the same in any amount not exceeding the sum specified in the bond, together with interest as provided by law.

IN WITNESS THEREOF: Said Principal and Surety have hereunto set their hands and seals at _____ this _____ day of _____, 20__.

(SEAL)

WITNESSES:

PRINCIPAL

ADDRESS

Name of person executing for Principal

TITLE

SURETY

ADDRESS

WITNESSES:

TITLE

Name of person executing for Surety

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meaning indicated which shall be applicable to both the singular and plural thereof.

ACCEPTANCE: By the OWNER of the Work as being fully complete in accordance with the Contract Documents.

AGREEMENT: The written agreement between the OWNER and the CONTRACTOR covering the Work to be performed: The Contract Documents are attached to and made a part of the Agreement. Also designated as the Contract.

ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by addition, deletions, clarifications or corrections.

APPLICATION FOR PAYMENT: The form furnished by the ENGINEER which is to be used by the CONTRACTOR in requesting progress payments and an affidavit of the CONTRACTOR that progress payments theretofore received from the OWNER on account of the WORK have been applied by the CONTRACTOR to discharge in full all of the CONTRACTOR'S obligations stated in prior Applications for Payment.

APPROVAL: Accept as satisfactory.

BID: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BIDDER: Any person, firm or corporation submitting a Bid for the Work.

BONDS: Bid, performance and payment bonds and other instruments of security furnished by the CONTRACTOR and his surety in accordance with the Contract Documents and in accordance with the law of the place of the project.

CHANGE ORDER: A written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

CONTRACT DOCUMENTS: The Agreement, Addenda, Instruction's to Bidders, CONTRACTOR'S BID, the Bonds, the Notice of Award, these General Conditions,

the Supplementary conditions, Special Conditions, Technical Conditions, the Specifications, Drawings and Modifications, and Notice to Proceed.

CONTRACT PRICE: The total moneys payable to the CONTRACTOR under the Contract Documents.

CONTRACT TIME: The number of calendar days stated in the Agreement for the completion of the Work.

CONTRACTING OFFICER: The OWNER (Grantee) - The individual who is authorized to sign the contract documents on behalf of the OWNER'S governing body.

CONTRACTOR: The person, firm or corporation with whom the OWNER has executed the Agreement.

DAY: A calendar day of twenty-four hours measured from midnight to the next midnight.

DRAWINGS: The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the ENGINEER and are referred to in the Contract Documents.

ENGINEER: The person, firm or corporation named as such in the Contract Documents.

FIELD ORDER: A written order issued by the ENGINEER which clarifies or interprets the Contract Documents in accordance with Paragraph 9.3 or orders minor changes in the Work in accordance with paragraph 10.2.

HE, HIS, AND HIM: These are several pronouns that shall represent both male and female genders.

MODIFICATION: (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order (c) a written clarification or interpretation issued by the ENGINEER in accordance with paragraph 9.3 or (d) a written order for a minor change or alteration in the Work issued by the ENGINEER pursuant to paragraph 10.2. A modification may only be issued after execution of the Agreement.

NOTICE OF AWARD: The written notice by OWNER to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, OWNER will execute and deliver the Agreement to him.

NOTICE TO PROCEED: A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligations under the Contract Documents.

OWNER: A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

PROJECT: The entire construction to be performed as provided in the Contract Documents.

CONSTRUCTION OBSERVER, RESIDENT INSPECTOR, CONSTRUCTION INSPECTOR, PROJECT REPRESENTATIVE: An authorized representative of the ENGINEER assigned to observe the Work performed and materials furnished by the CONTRACTOR or such other person as may be appointed by the OWNER as his representative. The CONTRACTOR shall be notified in writing of the identity of this representative.

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work and as required by the Contract Documents.

SAMPLES: Physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

SPECIFICATIONS: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work.

SUBCONTRACTOR: An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

SUBSTANTIAL COMPLETION: Substantial completion may be granted for all or portions of the work prior to final completion and stopping of contract time. Substantial completion is defined as the date when the construction is sufficiently completed in accordance with the contract documents so that the project or specified part of the project can be utilized for the purpose for which it was intended. The contract provides that the retainer may be reduced for that portion of the work which substantial completion is granted, but the granting of substantial completion will not stop contract time or liquidated damages.

SUPPLEMENTARY GENERAL CONDITIONS: Federal and State conditions in effect at time of submission of Bid in addition to those Supplementary General Conditions attached here to.

SUPPLIER: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

SPECIAL CONDITIONS: When included as a part of the Contract Documents, Special Conditions refer only to the Work under this Contract.

SURETY: The corporate body which is bound with the CONTRACTOR and which engages to be responsible for the CONTRACTOR and his acceptable performance of the Work.

WORK: Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by CONTRACTOR under the Contract Documents, including all labor, materials, equipment and other incidentals, and the furnishing thereof.

WRITTEN NOTICE: The term "Notice" as used herein shall mean and include all written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with Contract requirements. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or to an authorized representative of such individual, firm or corporation, or if delivered at or sent by registered mail to the last business address known to him who gives the notice. Unless otherwise stated in writing, any notice to or demand upon the OWNER under this Contract shall be delivered to the OWNER through the ENGINEER.

ARTICLE 2 - PRELIMINARY MATTERS:

AWARD:

2.2 The award of the Contract, if it is awarded, will be to the lowest and best responsible, responsive Bidder. No Notice of Award will be given until the OWNER has concluded such investigations as he deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the BID of any Bidder who does not pass such investigation to the OWNER'S satisfaction. In analyzing Bids, the OWNER may take into consideration alternates and unit prices, if requested by the Bid Form. If the Contract is

awarded, the OWNER will issue the NOTICE of AWARD and give the successful Bidder a contract for execution within sixty (60) days after the opening of Bids.

EXECUTION OF AGREEMENT:

2.3 At least three counterparts of the Agreement and such other Contract Documents will be executed and delivered by CONTRACTOR to the ENGINEER within 10 days of receipt from the OWNER.

FORFEITURE OF BID SECURITY:

2.4 Failure of the successful Bidder to execute and deliver the Agreement and deliver the required Bonds as stipulated in paragraph 2.3 shall be just cause for the OWNER to annul the Notice of Award and declare the Bid and any security therefore forfeited.

The quantities appearing in the bid schedule are approximate and have been prepared for comparison of bids. The OWNER does not guarantee or assume any responsibility that quantities shown on the plans will not vary during actual construction of the contract. The CONTRACTOR further acknowledges the possibility of variation of quantities, shall be precluded from claiming in the construction of the project, and the CONTRACTOR shall not claim deception or misunderstanding because of any variation in quantities, location, character of work, or any other condition. Payment will be made only for actual quantities of work performed and accepted.

The OWNER makes no guarantees regarding the character or extent of water levels, soil, rock, utilities, or any other subsurface condition the BIDDER may encounter during work. The OWNER requires BIDDERS to make their own evaluation of subsurface soil conditions and to determine how these conditions may affect methods of construction.

CONTRACTOR'S PRE-BID REPRESENTATIONS:

2.1 CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work, Locality, and local conditions and will obey all federal, state, and local laws, ordinances, rules and regulations that may in any manner affect performance of the Work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. CONTRACTOR also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the Work at the Contract Price in accordance

with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

COMMENCEMENT OF CONTRACT TIME:

2.5 The Contract Time will commence to run in accordance with the Notice to Proceed.

STARTING THE PROJECT:

2.6 CONTRACTOR shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No Work shall be done at the site prior to the date on which the Contract Time commences to run, except with the written consent of the OWNER.

BEFORE STARTING CONSTRUCTION:

2.7 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to ENGINEER any conflict, error or discrepancy which he may discover; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications. CONTRACTOR shall pot-hole existing utilities to ascertain exact location throughout the entire project. CONTRACTOR shall notify the ENGINEER any such locations of utilities which will prevent the work from being performed as designed, any work performed in which conflicts with an existing utility shall be remedied by the CONTRACTOR at his sole expense.

SCHEDULE OF COMPLETION:

2.8 Within ten (10) days after delivery of the Notice to Proceed by OWNER to CONTRACTOR, CONTRACTOR shall submit to ENGINEER an estimated progress schedule with earnings indicating the starting and completion dates of the various stages of the Work, and a preliminary schedule of Shop Drawing submissions. (See paragraphs 6.22 through 6.26.) The ENGINEER shall review and return this schedule or require revisions thereto within 14 days of its submittal. If there is more than one CONTRACTOR involved in a project, the responsibility for coordinating the Work of all CONTRACTORS shall be as provided in the Special Conditions.

2.9 At a time deemed appropriate by the OWNER to but before starting the Work

at the site, a preconstruction conference may be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the project. Present at the conference will be the OWNER or his representative, ENGINEER, Resident Project Representatives, CONTRACTOR and his Superintendent.

QUALIFICATION OF SUBCONTRACTORS MATERIALMEN AND SUPPLIERS:

2.10 Within ten (10) working days after bid opening, the CONTRACTOR will (if required) submit to the OWNER and the ENGINEER, for acceptance, a list of the names of Subcontractors and such other persons and organizations (including those who are to furnish principal items of material or equipment) proposed for those portions of the Work as to which the identity of the Subcontractors and other person and organizations must be submitted as specified in the Contract Documents. Within thirty (30) working days after receiving the list, the ENGINEER will notify the CONTRACTOR in writing if either the OWNER or the ENGINEER, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the OWNER or the ENGINEER to make objection to any Subcontractor, person or organization on the list within thirty days of receipt shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the OWNER or the ENGINEER to reject defective Work, material or equipment, or Work, material or equipment not in conformance with the requirements of the Contract Documents.

ARTICLE 3 - CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS:

3.1 It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR. They may be altered only by a Modification.

3.2 The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall call it to the ENGINEER'S attention in writing at once and before proceeding with the Work affected thereby; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Specifications or Drawings. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Agreement Modifications, Addenda, Special Conditions, and Instruction's to Bidders, General Conditions, Technical Specifications and

Drawings. If the requirements of one are more stringent than the other, the more stringent requirements shall apply.

3.3 The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service."

3.4 Miscellaneous items and accessories which are not specifically mentioned, but which are essential to produce a complete and properly operating installation, or usable structure or plant providing the indicated function, shall be furnished and installed without change in the Contract Price. Such miscellaneous items and accessories shall be of the same quality standards including material, style, finish, strength, class, weight and other applicable characteristics, as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the ENGINEER before installation. The above requirement is not intended to include major components not covered by or inferable from the Drawings and Specifications.

3.5 The Work of all trades under this Contract shall be coordinated by the CONTRACTOR in such a manner as to obtain the best workmanship possible for the entire Project, and all components of Work shall be installed or erected in accordance with the best practices of the particular trade.

3.6 Manufacturer's literature, when referenced, shall be dated and numbered and is intended to establish the minimum requirements acceptable. Whenever reference is given to codes or standard specifications or other data published by regulating agencies or accepted organizations, including but not limited to National Electrical Code, applicable State Building Code, Federal Specifications, ASTM Specifications, various institute specifications, and the like, it shall be understood that such reference is to the latest edition including addenda in effect on the date of Bid.

3.7 Brand names where used in the Technical Specifications, are intended to denote the standard of quality required for the particular material or product. The use of a brand name item is to set a standard of quality and is not intended to restrict the Contractor from offering an equal item from other source(s) of supply. The term "equal" or "equivalent" when used in connection with brand names, shall be interpreted to mean a material or product that is similar and equal in type, quality, size, capacity, composition, finish, color and other applicable characteristics to the material or product specified by trade name, and that is for the same use and capable of performing the same function, in the opinion of the ENGINEER, as the material or product so specified. Proposed equivalent items must be approved by ENGINEER before they are purchased or incorporated in the Work.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE CONDITIONS; REFERENCE POINTS:

Availability of Lands

4.1 The OWNER will furnish, as indicated in Contract Documents, the lands upon which the Work is to be done, rights-of-way for access thereto, and such other lands which are designated for use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise specified in the Contract Documents. Other access to such lands or rights-of-way for the CONTRACTOR'S convenience shall be the responsibility of the CONTRACTOR. The CONTRACTOR will provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 The OWNER will, upon request, furnish to the BIDDERS copies of all available boundary surveys.

Subsurface Conditions:

4.3 The CONTRACTOR acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the grounds, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The CONTRACTOR further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done on behalf of the OWNER on the site or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. Any additional information necessary to ascertain subsurface soil conditions, including test holes and soil borings, not provided by the OWNER shall be undertaken by the BIDDER prior to bidding at his cost. Such exploration shall be adequate to satisfy the BIDDER of the materials expected to be encountered on the project. The OWNER assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the OWNER.

Differing Site Conditions

4.4 (a) The CONTRACTOR shall promptly, and before such conditions are disturbed, notify the OWNER in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in this contract. The OWNER shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

(b) No claim of the CONTRACTOR under this clause shall be allowed unless the CONTRACTOR has given the notice required in (a) above.

(c) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

ARTICLE 5 - BONDS AND INSURANCE:

Performance and Payment Bonds:

5.1 The contractor's attention is directed to the Information for Bidders and Supplement to General Conditions.

Contractor's Liability Insurance:

5.2 The CONTRACTOR shall provide the OWNER with insurance certificates certifying that all required insurance is in force; and such insurance certificates shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

5.3 The CONTRACTOR agrees that if any part of the Work under the contract is sublet, he will require the Subcontractor(s) to carry insurance as required, and that he will require the Subcontractor(s) to furnish to him insurance certificates similar to those required by the OWNER in 5.1 and 5.2 above.

5.4 The CONTRACTOR agrees to add ENGINEER to insurance policy as additional insured.

Owner's Liability Insurance

5.4 The OWNER will be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain such insurance as will protect him against claims which may arise from operations under the Contract Documents.

Fire and Extended Coverage Insurance (Builders' Risk):

5.5 The CONTRACTOR shall maintain, as applicable, in an Insurance Company or Insurance Companies acceptable to the OWNER, Fire, Extended Coverage and Vandalism & Malicious Mischief Insurance on buildings and structures, while in the course of construction, including foundations, additions, attachments and all permanent fixtures belonging to and constituting a part of said buildings or structures. The policy or policies shall also cover machinery, if the cost of machinery is included in the Contract. The amount of insurance should at all times be at least equal to the actual cash value of the insured property. The policy shall be in the name of the OWNER and the CONTRACTOR, as their interests may appear, and shall also cover the interests of all Subcontractors performing work.

5.6 The CONTRACTOR shall provide the OWNER with satisfactory evidence certifying that the foregoing insurance is in force; and such evidence shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

Cancellation and Re-Insurance:

5.7 If any insurance should be canceled or changed by the insurance company or should any insurance expire during the period of this Contract, the CONTRACTOR shall be responsible for securing other acceptable insurance to provide the coverage specified in this section to maintain continuous coverage during the life of this Contract.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES:

Supervision and Superintendence:

6.1 The CONTRACTOR will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, safety, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the Work a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required

to perform adequate supervision and coordination of the Work. (Copies of written communications given to the Superintendent shall be mailed to the Contractor's home or office.)

Labor, Materials and Equipment:

6.2 The CONTRACTOR will provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order at the site.

6.3 The CONTRACTOR will furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, local telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work.

6.4 All materials and equipment will be new, except as otherwise provided in the Contract Documents. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or approved, such materials shall be delivered to the site in their original packages or container with seals unbroken and labels intact.

6.5 All materials and equipment shall be applied, handled, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors and industry standards, except as otherwise provided in the Contract Documents.

Materials, Equipment, Products and Substitutions:

6.6 Materials, equipment and products incorporated in the Work must be approved for use before being purchased by the CONTRACTOR. The CONTRACTOR shall submit to the ENGINEER a list of proposed materials, equipment or products, together with such samples as may be necessary for him to determine their acceptability and obtain his approval, within ninety (90) calendar days after award of Contract. No request for payment for "or equal" equipment will be approved until this list has been received and approved by the ENGINEER.

6.6.1 Whenever a material, article or piece of equipment is identified on the drawings or Specifications by reference to brand names or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand names or catalog number, and if, in the opinion of the

ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Incidental charges or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the Contract Price, or Contract Time.

6.6.2 No substitute shall be ordered or installed without the written approval of the ENGINEER who shall be the judge of equality.

6.6.3 Delay caused by obtaining approvals for substitute materials will not be considered justifiable grounds for an extension of construction time.

6.6.4 Should any work or materials, equipment or products not conform to requirements of the Drawings and Specifications or become damaged during the process of the Work, such Work or materials shall be removed and replaced, together with any work disarranged by such alterations, at any time before completion and acceptance of the Project. All such work shall be done at the expense of the CONTRACTOR. (See paragraph 7.10)

6.6.5 No materials or supplies for the Work shall be purchased by the CONTRACTOR or by any Subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the Seller. The CONTRACTOR warrants that he has good title to all materials and supplies used by him in the Work.

Concerning Subcontractors:

6.7 The CONTRACTOR will not employ any Subcontractor, other person or organization of the types referred to in paragraph 2.10 (whether initially or as a substitute) against whom the OWNER or the ENGINEER may have reasonable objection, nor will the CONTRACTOR be required to employ any Subcontractor against whom he has reasonable objection. The CONTRACTOR will not make any substitution for any Subcontractor who has been accepted by the OWNER and the ENGINEER, unless the ENGINEER determines that there is good cause for doing so.

6.8 The CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any Subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization,

except as may otherwise be required by law. OWNER or ENGINEER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done in accordance with the schedule of values.

6.9 The divisions and sections of the Specifications and the identifications of any drawings shall not control the CONTRACTOR in dividing the work among Subcontractors or delineating the Work to be performed by any specific trade.

6.10 The CONTRACTOR agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER.

6.11 All Work performed for the CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between the CONTRACTOR and the Subcontractor.

6.12 The CONTRACTOR shall be responsible for the coordination of the trades, Subcontractors and material men engaged upon his Work.

6.12.1 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the CONTRACTOR by the terms of these General Conditions and other Contract Documents insofar as applicable to the Work of Subcontractors, and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provisions of the Contract Documents.

6.12.2 The OWNER or ENGINEER will not undertake to settle any differences between the CONTRACTOR and his Subcontractors or between Subcontractors.

6.12.3 If in the opinion of the ENGINEER, any Subcontractor on the project proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

Patent Fees and Royalties:

6.13 The CONTRACTOR will pay all license fees and royalties and assume all costs incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others. He will indemnify and hold harmless the OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of such rights during or after completion of the Work, and shall defend all such claims in connection with any alleged infringement of such rights.

6.14 The CONTRACTOR shall be responsible for determining the application of patent rights and royalties on materials, appliances, articles or systems prior to bidding. However, he shall not be responsible for such determination on systems which do not involve purchase by him of materials, appliances, and articles.

Permits:

6.15 The CONTRACTOR will secure and pay for all construction permits and licenses and will pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of his Bid. When such charges are normally made by the OWNER, there will be no charges to the CONTRACTOR. The OWNER shall assist the CONTRACTOR, when necessary, in obtaining such permits and licenses. The CONTRACTOR will also pay all public utility charges.

Laws and Regulations:

6.16 The CONTRACTOR will give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, he will give the ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the ENGINEER, he will bear all costs arising wherefrom; however, it shall not be his primary responsibility to make certain that the Drawings and Specifications are in accordance with such laws, ordinances, rules and regulations.

Taxes:

6.17 Cost of all sales and other taxes for which the CONTRACTOR is liable under the Contract shall be included in the Contract Price stated by the CONTRACTOR.

Record Drawings:

6.18 The CONTRACTOR will keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the Engineer and shall be delivered to him for the OWNER upon completion of the Project. It shall be used for this purpose only.

Safety and Protection:

6.19 The CONTRACTOR will be responsible for initiating, maintaining and

supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to:

6.19.1 All employees on the work and other persons who may be affected thereby.

6.19.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

6.19.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

6.20 The CONTRACTOR will designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S superintendent unless otherwise designated in writing by the CONTRACTOR to the OWNER.

Emergencies:

6.21 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the ENGINEER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall be issued covering the changes and deviations involved. If the CONTRACTOR believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in Articles 11 & 12.

Shop Drawing and Samples:

6.22 After checking and verifying all field measurements, the CONTRACTOR will submit to the ENGINEER for review, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9) three (3) copies (or at the ENGINEER'S option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of the CONTRACTOR. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the ENGINEER to review the information as required.

6.23 The CONTRACTOR will also submit to the ENGINEER for review, with such

promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

6.24 At the time of each submission, the CONTRACTOR will in writing call the ENGINEER'S attention to any deviations that the Shop Drawings or sample may have from the requirements of the Contract Documents.

6.25 The ENGINEER will review with reasonable promptness Shop Drawings and samples, but his review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review of a separate item as such will not indicate review of the assembly in which the item functions. The CONTRACTOR will make any corrections required by the ENGINEER and will return the required number of corrected copies of Shop Drawings and resubmit new samples until the review is satisfactory to the ENGINEER. The CONTRACTOR shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the ENGINEER on previous submissions. The CONTRACTOR'S stamp of approval on any Shop Drawings or sample shall constitute a representative to the OWNER and the ENGINEER that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalogue numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawings or sample with the requirements of the Work and the Contract Documents.

6.26 No Work requiring a Shop Drawing or sample submission shall be commenced until the submission has been reviewed by the ENGINEER. A copy of each Shop Drawing and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6.27 The ENGINEER'S review of Shop Drawings or samples shall not relieve the CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing called the ENGINEER'S attention to such deviation at the time of submission and the ENGINEER has given written approval to the specific deviation, nor shall any review by the ENGINEER relieve the CONTRACTOR from responsibility for errors or omission in the Shop Drawings.

Cleaning Up:

6.28 The CONTRACTOR shall clean up behind the Work as much as is reasonably possible as the Work progresses. Upon completion of the Work, and before acceptance of and final payment for the Project by the OWNER, the CONTRACTOR

shall remove all his surplus and discarded materials excavated material and rubbish from the roadways, sidewalks, parking areas, lawns and all adjacent property; shall clean his portion of Work involved in any building under this Contract, so that no further cleaning by the OWNER is necessary prior to his occupancy; shall restore all property, both public and private, which has been disturbed or damaged during the prosecution of the Work; and shall leave the whole in a neat and presentable condition.

6.29 Clean-up operations shall consistently be carried on by the CONTRACTOR at all times to keep the premises free from accumulation of waste materials and rubbish. Upon completion of the Work he shall remove all rubbish, tools, scaffolding, surplus materials, etc., and shall leave his work "broom clean", or its equivalent, unless more exactly specified elsewhere in the Contract. The CONTRACTOR shall do the cleaning for all trades upon completion of the Work.

6.30 General. In case of dispute, the OWNER may remove the rubbish and charge the cost to the CONTRACTOR as the ENGINEER shall determine to be just.

Public Convenience and Safety:

6.31 The CONTRACTOR shall, at all times, conduct the Work in such a manner as to insure the least practicable obstruction to public travel. The convenience of the general public and of the residents along and adjacent to the area of the Work shall be provided for in a satisfactory manner, consistent with the operation and local conditions. "Street Closed" signs shall be placed immediately adjacent to the Work, in a conspicuous position at such locations as traffic demands in accordance with the MUTCD. At any time that streets are required to be closed, the CONTRACTOR shall notify law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. The CONTRACTOR shall keep the portion of the project being used by the public in satisfactory condition. It may become necessary for the CONTRACTOR to sweep the roadway surface to completely remove debris.

Sanitary Provisions:

6.32 The CONTRACTOR shall furnish necessary toilet conveniences, secluded from public observation, for use of all personnel on the Work, whether or not in his employ. They shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the Public Authorities having jurisdiction. He shall commit no public nuisance. Temporary sanitary facilities shall be removed upon completion of the Work and the premises shall be left clean.

Indemnification:

6.33 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than Work itself) including the loss of use resulting wherefrom and (b) is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

6.34 In any and all claims against the OWNER or the ENGINEER or any of their agents or employees, by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.33 shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.35 The obligations of the CONTRACTOR under paragraph 6.33 shall not extend to the liability of the Engineer's negligent acts, errors or omissions or those of his employees or agents.

Responsibility for Connecting to Existing Work:

6.36 It shall be the express responsibility of the CONTRACTOR to connect his Work to each part of the existing work or work previously installed as required by the Drawings and Specifications to provide a complete installation.

Work in Street, Highway and Other Rights-of-Way:

6.37 Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights-of-way of streets, highways, public carrier lines, utility lines (either aerial, surface or subsurface), etc., shall be done in accordance with requirements of the Contract Documents. The CONTRACTOR will be responsible for obtaining all permits necessary for the work. Upon completion of the Work, CONTRACTOR shall present to ENGINEER certificates, in triplicate, from the proper authorities stating that the Work has been done in accordance with their requirements.

6.37.1 The OWNER will cooperate with the CONTRACTOR in obtaining action from any utilities or public authorities involved in the above requirements.

6.37.2 The ENGINEER shall be responsible for obtaining elevations of curbs and gutters, pavement, storm drainage structures, and other such items which must be established by governmental departments as soon as grading operations are begun on the site and, in any case, sufficiently early in the construction period to prevent any adverse effect on the Project.

Cooperation with Governmental Departments, Public Utilities, Etc:

6.38 The OWNER shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, telephone, and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structure connected therewith, that are encountered in the work in order that such items may be properly shored, supported and protected, or the CONTRACTOR may relocate them if he so desires. The CONTRACTOR shall give all proper notices, shall comply with requirements of such parties in the performance of his Work, shall permit entrance of such parties on the Project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

6.38.1 The CONTRACTOR'S attention is called to the fact that there may be delays on the Project due to work to be done by governmental departments, public utilities, and others in repairing or moving poles, conduits, etc. The CONTRACTOR shall cooperate with the above parties, in every way possible, so that the construction can be completed in the least possible time.

6.38.2 The CONTRACTOR shall have made himself familiar with all codes, laws, ordinances and regulations which in any manner affect those engaged or employed in the Work, or materials and equipment used in or upon the Work, or in any way affect the conduct of the Work, and no plea of misunderstanding will be considered on account of his ignorance thereof.

Use of Premises:

6.39 CONTRACTOR shall confine his apparatus, storage of materials, and operations of his workmen to limits indicated by law, ordinances, permits, and directions of ENGINEER and OWNER, and shall not unnecessarily encumber any part of site.

6.39.1 CONTRACTOR shall not overload or permit any part of any structure to be loaded with such weight as will endanger its safety, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

6.39.2 CONTRACTOR shall enforce OWNER'S instructions in connection with signs, advertisements, fires and smoking.

6.39.3 CONTRACTOR shall arrange and cooperate with OWNER in routing and parking of automobiles of his employees, subcontractors and other personnel and in routing material delivery trucks and other vehicles to the Project Site.

Protection of Existing Property Improvements:

6.40 Any existing surface or subsurface improvements, such as pavements, curbs, sidewalks, pipes or utilities, footings or structures (including portions thereof), trees, and shrubbery not indicated on the Drawings or noted in the Specifications as being removed or altered shall be protected from damage during construction of the Project. Any such improvements damaged during construction of the Project shall be restored to a condition equal to that existing at time of award of Contract.

Temporary Heat:

6.41 The General CONTRACTOR shall provide heat, fuel and services as necessary to protect all work and materials, within all habitable areas of permanent building construction, for all contracts against injury from dampness and cold until final acceptance of all work and materials for the Project, unless building is fully occupied by the OWNER prior to such acceptance, in which case the OWNER shall assume all expenses of heating from date of full occupancy. In areas outside those covered above, each prime contractor shall be responsible for providing such temporary heat, fuel and services as required to protect his work or shall make all necessary arrangements with the General CONTRACTOR for providing such temporary heat, fuel and services. Unless otherwise specifically permitted by Special Conditions, the permanent heating system shall not be used to provide temporary heat. CONTRACTOR'S proposed methods of heating shall be submitted for approval.

ARTICLE 7 - WORK BY OTHERS:

7.1 The OWNER may perform additional work related to the Project by himself, or he may let other direct contracts therefore which shall contain General Conditions similar to these. The CONTRACTOR will afford the other contractors who are parties to such direct contracts (or the OWNER, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2 If any part of the CONTRACTOR'S work depends for proper execution or

results upon the work of any such other CONTRACTOR (or the OWNER), the CONTRACTOR will promptly report to the ENGINEER in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results.

7.3 The CONTRACTOR will do all cutting, fitting, and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The CONTRACTOR will not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and of the other contractors whose work will be affected.

7.4 If the performance of additional work by other contractors or the OWNER is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional work. If the CONTRACTOR believes that the performance of such additional work by the OWNER or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefore as provide in Articles 11 and 12.

7.5 Where practicable, the CONTRACTOR shall build around the work of other separate contractors or shall leave chases, slots and holes as required to receive and to conceal within the general construction work the work of such other separate contractors as directed by them. Where such chases, slots, etc., are impracticable, the work shall require specific approval of the ENGINEER.

7.6 Necessary chases, slots and holes not built or left by the CONTRACTOR shall be cut by the separate contractor requiring such alterations after approval of the CONTRACTOR. The CONTRACTOR shall do all patching and finishing of his Work where cut by other contractors at the expense of such other contractors.

7.7 Cooperation is required in the use of site facilities and in the detailed execution of the Work. Each contractor shall coordinate his operations with those of the other contractors for the best interest of the Work in order to prevent delay in the execution thereof.

7.8 Each contractor shall keep himself informed of the progress of the work of other contractors. Should lack of progress or defective workmanship on the part of other contractors interfere with his operations, the CONTRACTOR shall notify the ENGINEER immediately. Lack of such notice to the ENGINEER will be construed as acceptance by the CONTRACTOR of the status of the work of other contractors as being satisfactory for proper coordination of his own work.

7.9 Each contractor shall give notices of the progress of his work so as to allow

other contractors adequate opportunity to properly direct and coordinate their work. The CONTRACTOR shall give notices of the progress of his Work so that work of other contractors, when required to be concealed, may be placed before the general construction Work. All such notices shall be submitted to the ENGINEER with copies to other prime contractors on the Project sufficiently ahead of job progress to permit adequate time for the other prime contractors to coordinate their work.

7.10 The cost of extra work resulting from lack of notices, untimely notices, failure to respond to notices, defective work or lack of coordination shall be borne by the CONTRACTOR responsible for such lack of notices, etc.

ARTICLE 8 - OWNER'S RESPONSIBILITIES:

8.1 The OWNER will issue all communications to the CONTRACTOR through the ENGINEER.

8.2 In case of termination of the employment of the ENGINEER, the OWNER will appoint an engineer against whom the CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to arbitration, if mutually agreeable.

8.3 The OWNER will furnish the data required of him under the Contract Documents promptly and shall make payments to the CONTRACTOR promptly after they are due as provided in Article 14.

8.4 OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1, 4.4 and the Special Conditions. Paragraphs 4.2 and 4.3 refer to OWNER'S identifying and making available to CONTRACTOR copies of surveys and investigation reports of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.5 The OWNER'S responsibilities in respect of liability and property insurance are set forth in paragraph 5.4.

8.6 In addition to his rights to request changes in the Work in accordance with Article 10, the OWNER (especially in certain instances as provided in paragraph 10.4) will be obligated to execute Change Orders.

8.7 In connection with the OWNER'S right to stop Work or suspend Work; see paragraph 15.1. Paragraph 15.3 deals with the OWNER'S right to terminate services

of the CONTRACTOR under certain circumstances.

8.8 The OWNER shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or any portion thereof may not have expired; but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the Work, the CONTRACTOR shall be entitled to such extra compensation or extension of time or both, except by prior agreement, as the ENGINEER may determine. See paragraph 14.11.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION:

Owner's Representative:

9.1 The ENGINEER shall be the OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER'S representative during construction are set forth in Articles 1 through 17 of these General Conditions and shall not be extended without written consent of the OWNER and the ENGINEER.

9.1.1 The ENGINEER'S decision, in matters relating to aesthetics shall be final, if within the terms of the Contract Documents.

9.1.2 Except as may be otherwise provided in this contract all claims, counter-claims, disputes and other matters in question between the OWNER and the CONTRACTOR arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the State in which the OWNER is located.

Visits to Site:

9.2 The ENGINEER will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. He will not be required to make continuous on-site observations to check the quality or quantity of the Work. His efforts will be directed toward ascertaining on behalf of the OWNER that the completed Project will conform to the requirements of the Contract Documents. On the basis of his on-site observations as an experienced and qualified design professional, he will keep the OWNER informed of the progress of the Work and will endeavor to guard the OWNER against defects and deficiencies in the Work of contractors.

Clarifications and Interpretations:

9.3 The ENGINEER will issue with reasonable promptness such written clarification or interpretations of the Contract Documents (in the form of Drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

Measurement of Quantities:

9.4 All Work completed under the Contract will be measured by the CONTRACTOR according to the United States Standard Measures. All linear surface measurements will be made horizontally or vertically as required by the item measured.

Rejecting Defective Work:

9.5 The ENGINEER will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not meet the requirements of any inspection, test or approval or has been damaged prior to final acceptance). He will also have authority to require special inspection or testing of the Work whether or not the Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.6 In connection with the ENGINEER'S responsibility as to Shop Drawings and samples, see paragraphs 6.22 through 6.27, inclusive.

9.7 In connection with the ENGINEER'S responsibility for Change Orders; see Articles 10, 11, and 12.

9.8 In connection with the ENGINEER'S responsibilities in respect of Application for Payment, etc., see Article 14.

Resident Project Representative:

9.9 The OWNER or the ENGINEER will provide on-site representation sufficient to guarantee that construction is in general compliance with the construction drawings and the contract specifications.

Decisions on Disagreements:

9.10 The ENGINEER will be the initial interpreter of the terms and conditions of the Contract Documents and the judge of the performance hereunder. In his capacity as interpreter and judge, he will exercise his best efforts to insure faithful performance by both the OWNER and the CONTRACTOR. He will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the Work or the interpretation of or performance under the Contract Documents shall be referred initially to the ENGINEER for decision; which he shall render in writing within a reasonable time.

9.11 Either the OWNER or the CONTRACTOR, if the other agrees, may request legal action with respect to any such claim, dispute or other matter that has been referred to the ENGINEER, except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.11, such legal action to be in accordance with Article 16. However, no request for legal action of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which the ENGINEER has rendered his decision or (b) the tenth day after the parties have presented their evidence to the ENGINEER if he has not rendered his written decision before that date. No request for legal action shall be made later than thirty (30) days after the date on which the ENGINEER rendered his written decision in respect of the claim, dispute or other matter as to which legal action is sought; and the failure to request legal action within said thirty (30) days period shall result in the ENGINEER'S decision being final and binding upon the OWNER and the CONTRACTOR. If the ENGINEER renders a decision after legal proceedings have been initiated, such decision may be entered as evidence but shall not supersede the legal proceedings, except where the decision is acceptable to the parties concerned.

Limitations on Engineer's Responsibilities:

9.12 Neither the ENGINEER'S authority to act under this Article 9 nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any of their agents or employees or any other person performing any of the Work.

9.13 The ENGINEER will not be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions and programs incident thereto, and he will not be responsible for the CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.14 The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR, or any Subcontractors, or any of his or their agents or employees, or any other person performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK:

10.1 Without invalidating the Agreement, the OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, the CONTRACTOR will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12. A Change Order signed by the CONTRACTOR indicates his agreement therewith.

10.2 The ENGINEER may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the CONTRACTOR believes that any minor change or alteration authorized by the ENGINEER entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

10.3 Additional Work performed by the CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.21 and except as provided in paragraph 10.2.

10.4 The OWNER will execute appropriate Change Orders prepared by the ENGINEER covering changes in the Work to be performed as provided in paragraph 4.4, and Work performed in an emergency as provided in paragraph 6.21 and any other claim of the CONTRACTOR for a change in the Contract Time or the Contract Price which is approved by the ENGINEER.

10.5 It is the CONTRACTOR'S responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The CONTRACTOR will furnish proof of such adjustment to the OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE:

11.1 The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the CONTRACTOR shall be at his expense without changing the Contract Price.

11.2 (a) The OWNER may, at any time, without notice to the sureties, by written

order designated or indicated to be a change order, make any change in the Work within the general scope of the contract, including but not limited to changes:

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Owner-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the OWNER, which causes any such change, shall be treated as a change order under this clause, provided that the CONTRACTOR gives the OWNER written notice stating the date, circumstances, and source of the order and that the CONTRACTOR regards the order as a change order.

(c) Except as herein provided, no order, statement, or conduct of the OWNER shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

(d) If any change under this clause causes an increase or decrease in the CONTRACTOR'S cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly: PROVIDED, HOWEVER, that except for claims based on defective specifications, no claim for any change under (b) above shall be allowed for any costs incurred more than 20 days before the CONTRACTOR gives written notice as therein required. And provided further, that in the case of defective specifications for which the OWNER is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the CONTRACTOR in attempting to comply with such defective specifications.

(e) If the CONTRACTOR intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the OWNER a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the OWNER. The statement of claim hereunder may be included in the notice under (b) above.

(f) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents by application of unit prices to the quantities of the items involved.

11.3.2 By negotiated lump sum.

11.3.3 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work plus a fixed amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise maybe agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to salaries and wages plus the costs of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by OWNER.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturer's field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such Bids to OWNER who will then determine with the advice of ENGINEER, which Bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of Work plus a Fee, the cost of the Work shall be determined in accordance with paragraphs 11.4 and 11.5.

11.4.4 Costs of special consultants (including but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travelling and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or other in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the cost of transportation, loading, unloading, installation, dismantling and removal thereof--all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall end when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable imposed by any governmental authority.

11.4.5.5 Deposits lost for causes other than CONTRACTOR'S negligence, royalty payments and fees for permits and licenses. Costs for permits and licenses must be shown as a separate item.

11.4.5.6 Losses, damages and expenses, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the execution of, and to, the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of Work for the purpose of determining CONTRACTOR'S fee. If however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and Insurance required because of changes in the Work.

11.5 The term cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals, (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the schedule referred to in subparagraph 11.4.1 -- all of which are to be considered administrative costs covered by the CONTRACTOR'S Fee.

11.5.2 Expenses of CONTRACTOR'S principal and branch offices other than his office at the site.

11.5.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR'S for delinquent payments.

11.5.4 Cost of premiums for all bonds and for all insurance policies whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except as otherwise provide in subparagraph 11.4.5.9.)

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6 The CONTRACTOR'S Fee which shall be allowed to CONTRACTOR for his overhead and profit shall be determined as follows;

11.6.1 A mutually acceptable firm fixed price; or if none can be agreed upon,

11.6.2 A mutually acceptable fixed fee based on the estimate of the various portions of the Cost of the Work.

11.7 The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the net shall be computed to include overhead and profit, identified separately, for both additions and credits.

11.8 Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will submit in form prescribed by ENGINEER an itemized cost breakdown together with supporting data.

11.9 Allowances: It is understood that the CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such material men, suppliers, or Subcontractors and for such sums within the limit of the allowances as the ENGINEER may approve. Upon final payment, the Contract Price shall be adjusted as required and an appropriate Change Order issued. The CONTRACTOR agrees that the original Contract Price includes such sums as he deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be allowed.

11.9.1 These allowances shall cover the cost to the CONTRACTOR less any applicable trade discount, of the materials and equipment required by the allowance delivered at the site, and all applicable taxes.

11.9.2 The CONTRACTOR'S costs for unloading and handling on site, labor, installation costs, overhead, profit and other expenses contemplated for the original allowance shall be included in the Contract Price and not in the allowance.

11.9.3 Whenever the cost, as described in 11.9.1 above, is more than or less than the allowance, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses, except that whenever unit price allowances are stipulated for brick, the Change Order will not include any cost as described in 11.5 above.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME:

12.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to OWNER and ENGINEER within ten days of the occurrence of the event giving rise to

the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if he makes a claim therefore as provided in paragraph 12.1. Such delays shall include, but not be restricted to, acts or neglect by any separate contractor employed by OWNER, fires, floods, labor disputes, epidemics, or acts of God.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of the Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either parties.

12.4 No claim for delay shall be allowed because of failure to furnish Drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

12.5 This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

ARTICLE 13 - GUARANTY:

13.1 The CONTRACTOR shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs or adjustments, in the Work that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

ARTICLE 14 - PAYMENTS AND COMPLETION:

Payments to Contractors:

14.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or revise the partial payment estimate provides the same to the CONTRACTOR indicating in writing his reasons for refusing or revising payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within forty-five (45) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER may retain a portion of the amount otherwise due the CONTRACTOR. Except as State law otherwise provides, the amount the OWNER retains shall be limited to the following:

14.1.1 Withholding of not more than 5 percent of the payment claimed until work is 50 percent complete;

14.1.2 When Work is 50 percent complete, reduction of the withholding to 2.5 percent of the dollar value of all Work satisfactorily completed to date, provided that the CONTRACTOR is making satisfactory progress and there is no specific cause for greater withholding and the same is requested by the CONTRACTOR in writing;

14.1.3 When the Work is substantially complete (operational or beneficial occupancy), the withheld amount shall be further reduced below 5 percent to only that amount necessary to assure completion.

14.1.4 The OWNER may reinstate up to 5 percent withholding if the OWNER determines, at its discretion, that the CONTRACTOR is not making satisfactory progress or there is other specific cause for such withholding.

Contractor's Warranty of Title:

14.2 The CONTRACTOR warrants and guarantees that title to all work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the OWNER prior to the making of the Application for payment, free and clear of all liens, claims, security interests and

encumbrances (hereafter in these General Conditions referred to as "Liens") and that no work, materials or equipment covered by an Application for Payment will have been acquired by the CONTRACTOR or by any other person performing the Work at the Site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

Approval of Payments:

14.3 The ENGINEER'S approval of any payment requested in an Application for Payment shall constitute a representation by him to the OWNER, based on the ENGINEER'S on-site observations of the Work in progress as an experienced and qualified design professional and on his review of the Application of Payment and the supporting data, that the Work has progressed to the point indicated; That, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval), and that the CONTRACTOR is entitled to payment of the amount approved. However, by approving any such payment, the ENGINEER shall not thereby be deemed to have represented that he made exhaustive or continuous on-site observations to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the CONTRACTOR has used the moneys paid or to be paid to him on account of the Contract Price, or that title to any Work, materials, or equipment has passed to the OWNER free and clear of any Liens.

14.4 The CONTRACTOR shall make the following certification on each request for payment:

"I hereby certify that the labor and materials listed on this request for payment has been used in the construction of this work or that all materials included in this request for payment and not yet incorporated into the construction are now on the site or stored at an approved location; and payment received from the last request for payment has been used to make payments to all first tier subcontractors and suppliers except as listed below."

14.5 The ENGINEER'S approval of final payment shall constitute an additional representation by him to the OWNER that the conditions precedent to the CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.11 have been fulfilled.

14.6 The ENGINEER may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. He may

also refuse to approve any such payment, because of subsequently discovered evidence or the results of subsequent inspections or tests nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect the OWNER from loss because:

14.6.1 The Work is defective, reasonable doubt exists to the integrity, or completed Work has been damaged requiring correction or replacement,

14.6.2 The Work for which payment is request cannot be verified,

14.6.3 Claims or Liens have been filed or there is reasonable evidence indicating the probable filing thereof,

14.6.4 The Contract Price has been reduced because of Modifications,

14.6.5 The OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.1,

14.6.6. Of unsatisfactory prosecution of the Work, including failure to clean up as required by paragraphs 6.29 and 6.30,

14.6.7. Of persistent failure to cooperate with other contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents,

14.6.8. Of liquidated damages payable by the CONTRACTOR or,

14.6.9. Of any other violation of, or failure to comply with, the provisions of the Contract Documents.

14.7 Prior to Substantial Completion, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the Work. Such use shall not constitute and acceptance of such portions of the Work.

14.8 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the Work, or restoration of any damaged Work, except such as may be caused by agents or employees of the OWNER.

14.9 Upon completion and acceptance of the Work, the ENGINEER shall issue a certificate attached to the final payment request that the Work has been accepted by him under the conditions of the Contract Documents. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such

sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within forty-five (45) days of completion and acceptance of the Work.

14.10 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the Work. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the Contract Documents by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

Acceptance of Final Payment as Release:

14.11 When all items of work are completed to the satisfaction of the ENGINEER and the ENGINEER has been advised by the CONTRACTOR that a final inspection is desired, time will be suspended until final inspection is conducted and for an additional 14 calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 14-day suspension all necessary items of work have not been completed, time changes will resume. If the specified completion date had not been reached at the time the CONTRACTOR called for a final inspection, the calendar day difference between the specified completion date and the date the CONTRACTOR called for a final inspection will be added after the 14-day period before starting liquidated damages. If a project is on liquidated damages at the time a final inspection is scheduled, liquidated damages will be suspended until the final inspection is conducted and for seven (7) calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 7-day suspension all necessary items of work have not been completed, liquidated damages will resume. When final inspection has been made by the ENGINEER and all items of work have been completed, the daily time charge will cease.

14.12 The acceptance by the CONTRACTOR of final payment shall be and shall

operate as a release to the OWNER of all claims and liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this Work and for every act and neglect of the OWNER and others relating to or arising out of this Work. Any payment however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bonds.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION:

Owner May Suspend Work:

15.1 The OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to the CONTRACTOR and the ENGINEER which shall fix the date on which Work shall be resumed. The CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefore as provided in Articles 11 and 12.

Work During Inclement Weather:

15.2 No Work shall be done under these Specifications except by permission of the OWNER when the weather is unfit for good and careful work to be performed. Should the severity of the weather continue, the CONTRACTOR, upon the direction of the OWNER, shall suspend all work until instructed to resume operations by the OWNER and the Contract Time shall be extended to cover the duration of the order. Work damaged during periods of suspension due to inclement weather shall be repaired and/or replaced by the CONTRACTOR. Any compensation for repairs or replacements shall be subject to approval of the OWNER.

Owner May Terminate:

15.3 If the CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property; or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment or he disregards laws, ordinances, rules regulations or orders of any public body having jurisdiction, or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the Contract Documents, then the OWNER may without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety seven days written notice, terminate the services of the CONTRACTOR and take

possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the Work by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR or the Surety will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a Change Order.

15.4 Where the CONTRACTOR'S services have been so terminated by the OWNER, said terminations shall not affect any rights of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys by the OWNER due the CONTRACTOR will not release the CONTRACTOR from liability.

15.5 Upon seven days written notice to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, the CONTRACTOR shall be paid for all Work executed and any expense sustained plus a reasonable profit.

Removal of Equipment:

15.6 In the case of termination of this Contract before completion, for any cause whatever, the CONTRACTOR if notified to do so by the OWNER, shall promptly remove any part or all of his equipment and supplies from the property of the OWNER. Should the CONTRACTOR not remove such equipment and supplies, the OWNER shall have the right to remove them at the expense of the CONTRACTOR. Equipment and supplies shall not be construed to include such items for which the CONTRACTOR has been paid in whole or in part.

Contractor May Stop Work or Terminate:

15.7 If, through no act or fault of the CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or other public authority, or the ENGINEER fails to act on any Application for Payment within sixty (60) days after it is submitted, or the OWNER fails to pay the CONTRACTOR any sum approved by the ENGINEER or awarded by court ruling within forty-five (45) days of its approval and presentation, then the CONTRACTOR may, upon seven (7) days written notice to the OWNER and the ENGINEER, and if the OWNER or ENGINEER fails to reasonable respond in writing, terminate the Agreement and recover from the OWNER payment for all Work

executed and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if the ENGINEER has failed to act on an Application for Payment or the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon seven (7) days notice to the OWNER and the ENGINEER stop the Work until he has been paid all amounts then due.

Owner Furnished Equipment:

15.8 In case the OWNER furnishes equipment to the CONTRACTOR to install, but fails to deliver it to the CONTRACTOR as required and in case such failure causes the CONTRACTOR additional expense or need for extension of time, the CONTRACTOR may make such claims upon the OWNER and obtain adjustments as provided herein.

Liquidated Damages:

15.9 If the CONTRACTOR shall fail to complete the work within the contract time, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the Contract Documents for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract Documents.

ARTICLE 16 - DISPUTE SETTLEMENT:

16.1 All claims, disputes and other matters in question arising out of, or relating to, this Agreement or the breach thereof except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.11, shall be decided in a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS:

17.1 Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to him who gives the notice.

17.2 If the OWNER fails to make payment forty-five (45) days after payment is due, in addition to other remedies available to the CONTRACTOR, there shall be added to each such progress payment, interest at 1% per month commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

17.3 All Specifications, Drawings and copies thereof furnished by the ENGINEER

shall remain his property. They shall not be used on another Project, and, with the exception of those sets which have been signed in connection with the execution of the Agreement, shall be returned to him on request upon completion of the Project.

17.4 The duties and obligations imposed by these General Conditions, and the rights and remedies available hereunder, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.36 and 14.3 and the rights and remedies available to OWNER and ENGINEER there under, shall be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available by law, by special guarantee or by other provisions of the CONTRACT DOCUMENTS.

17.5 Should the OWNER or the CONTRACTOR suffer injury or damage to its person or property because of any error, omission or act of the other or of any of his employee or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.

17.6 The CONTRACT DOCUMENTS shall be governed by the law of the place of the Project.

Progress Charts and Requirements for Overtime Work

17.7 The CONTRACTOR shall within 5 days or within such time as determined by the OWNER after date of commencement of work prepare and submit to the OWNER for approval a practicable schedule, showing the order in which the CONTRACTOR proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plans and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The CONTRACTOR shall enter on the chart the actual progress at such intervals as directed by the OWNER and shall immediately deliver to the OWNER three (3) copies thereof. If the CONTRACTOR fails to submit a progress schedule within the time herein prescribed, the owner may withhold approval of progress payment estimates until such time as the CONTRACTOR submits the required progress schedule.

17.8 If, in the opinion of the OWNER, the CONTRACTOR falls behind the progress schedule, the CONTRACTOR shall take such steps as may be necessary to improve his progress and the OWNER may require him to increase the number of shifts, or overtime operations, days of work, or the amount of construction plant, or update the progress schedule to reflect increased production for meeting the completion date, or all of them, and to submit for approval such supplementary schedule or schedules in chart form as may be deemed necessary to demonstrate the manner in

which the agreed rate of progress will be regained, all without additional cost to the OWNER.

17.9 Failure of the CONTRACTOR to comply with the requirements of the OWNER under this provision shall be grounds for determination by the OWNER that the CONTRACTOR is not prosecuting the work with such diligence as will insure completion within the time specified. Upon such determination the OWNER may terminate the CONTRACTOR'S right to proceed with the work or any separable part thereof in accordance with the clause of the contract entitled, "Termination for Default-Damages for Delay - Time Extensions.

17.10 Should the Contractor fail to complete the work within the specified time, or within any extra time allowed under these specifications, a sum of money, determined by the following schedule, shall be deducted from any funds due the Contractor, the Owner shall have the right recover the said sum or sums from the Contractor or from the surety, or from both. The amounts of these deductions are to cover the liquidated damages to the Owner incurred by additional or other expenses due to the failure of the Contractor to complete the work or any part of the work within the time specified, and such deductions are not to be considered penalties.

17.11 The damages indicated above shall be considered as liquidated damages for the loss to the OWNER on account of the expense due to the employment of Engineers and their assistants and to any others expenses incurred after the expiration of the Contract time as determined by the ENGINEER in section 14.11

17.12 Work requiring the presence or services of the ENGINEER, based-solely on the opinion of the ENGINEER, will not be permitted on Sunday or holidays observed by the State unless the ENGINEER determines that an emergency or necessity exists. Work on these days solely to complete the project within the contract time will not be considered a necessity or emergency.

17.13 The ENGINEER will prepare and submit to the CONTRACTOR one (1) preliminary punch list of items that do not meet the contract requirements after the final inspection and one (1) final punch list immediately before final completion and final payment.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 1 - SPECIAL CONDITIONS

SCOPE AND INTENT

Special conditions shall prevail over General Conditions in case of conflict. The Contractor shall furnish all labor, materials, equipment (including fuel), tools, appliances, transportation and perform all operations in connection with the construction of, alterations to, or repair of, the building, including utilities, complete, in strict accordance with the specifications and the plans governing the construction of, alterations to, or repair of, the project.

EXAMINATION OF PREMISES

Before submitting a proposal for his work, each bidder shall be held responsible to have examined the site and satisfied himself as to the conditions under which work is to be performed.

PERMITS, TAXES, AND ORDINANCES

The Contractor shall pay for all required permits, give legal notices, and pay taxes and assessments levied in connection with this contract. Building regulations shall be strictly adhered to and the contractor shall be responsible for knowledge thereof.

INSURANCES, ETC.

In addition to the requirements of the General Conditions, insurance coverage specified herein constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of the **CONTRACTOR** under the terms of the Contract. The **CONTRACTOR** shall procure and maintain at his own expense any additional kinds and amounts of insurance that, in his own judgment, may be necessary for his proper protection in the prosecution of the Work.

The **CONTRACTOR** shall carry insurance as prescribed herein and all policies shall be with companies satisfactory to the **OWNER**.

If a part of this Contract is sublet, the **CONTRACTOR** shall require each Subcontractor to carry insurance of the same kinds and in like amounts as carried by the **CONTRACTOR**. Certificates of insurance shall state that 30 days written notice will be given to the **OWNER** before the policy is canceled or changed. No **CONTRACTOR** or Subcontractor will be allowed to start any construction work on this Contract until certificates of all insurance required herein are filed and approved by the **OWNER**. The certificates shall show the type, amount, class of operations covered, effective dates and the dates of expiration of policies.

The **CONTRACTOR** shall secure and maintain in effect for the period of the Contract and pay all premiums for the following kinds and amounts of insurance.

A. Workers' Compensation and Employer's Liability Insurance

This insurance shall protect the **CONTRACTOR** against all claims under applicable State Worker's Compensation Laws. The **CONTRACTOR** shall also be protected and shall cause each Subcontractor to be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Worker's Compensation Law. The liability limits shall not be less than the required statutory limits for Worker's Compensation and Employer's Liability or the amount of ONE HUNDRED THOUSAND DOLLARS (\$100,000.00) for each person whichever is more. This policy shall include an all states endorsement.

B. **CONTRACTOR'S** Comprehensive Public Liability and Property Damage Insurance, covering all operations in connection with the performance of this Contract in amounts not less than the following:

Bodily injury liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) for all damages arising out of the injury or destruction of property in any one accident and subject to that limit per accident a total for aggregate limit of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of injury to or destruction of property during the policy period.

The Comprehensive Public Liability and Property Damage policies carried by both the **CONTRACTOR** and the Subcontractors shall contain an endorsement to include the coverage of the following hazards:

- a. Explosion, collapse, and underground property damage to include any damage or destruction of property below the surface of the ground, such as wires, conduits, pipes, mains, sewers, etc., caused by the **CONTRACTOR'S** operations.
- b. The collapse of and structural injury to any building, structure or property on or adjacent to the **OWNER'S** premises or right-of-way caused by the **CONTRACTOR'S** operations in the removal of other buildings, structures, or supports, or by excavation below the surface of the ground.
- c. Contractual Liability Coverage for the Hold Harmless segments of the Contract Documents.

C. **CONTRACTOR'S** Contingent or Protective Liability and Property Damage:

In case part of this Contract is sublet, the **CONTRACTOR** shall secure contingent or protective liability and property damage insurance to protect him from any and all claims arising from the operation of his Subcontractors in the execution of Work included in the Contract. In no case shall the amount of such protection be less than the limits of \$500,000/\$1,000,000 for Public Liability Insurance and \$500,000/\$1,000,000 for Property Damage Insurance. The coverage in each case shall be acceptable to the **OWNER**.

D. Automotive Public Liability and Property Damage

The **CONTRACTOR** shall maintain automobile public liability insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for injury to one person and ONE MILLION DOLLARS (\$1,000,000) for one accident; and automobile property damage insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for one accident to protect him from any and all claims arising from the use of the following:

- a. **CONTRACTOR'S** own automobiles and trucks.
- b. Hired automobiles and trucks.
- c. Automobiles and trucks owned by Subcontractors.

The aforementioned is to cover use of automobiles and trucks on and off the site of the Project.

E. OWNER'S Protective Liability Policy

The **CONTRACTOR** shall maintain **OWNER'S** Protective Liability Insurance with the **OWNER** as the named insured, and the **ENGINEER**, and their servants, agents and employees as additional insureds in amounts not less than the following:

- a. Bodily Injury in the amount of ONE MILLION DOLLARS (\$1,000,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of an injury or destruction of property in any one accident and subject to that limit per accident a total (or aggregate) limit of ONE MILLION DOLLARS (\$1,000,000) for all damages arising out of injury to or destruction of property during the policy period.

CLEANING UP

The CONTRACTOR shall, at all times, keep the premises free from accumulations of waste materials and at the completion of the work, be shall remove all his rubbish, tools, temporary buildings, etc. from and about the site and shall leave his work “broom” clean unless more exactly specified elsewhere. All glass shall be washed and left free from stains of any nature.

SPECIAL INSTRUCTIONS

LIMITATIONS

During construction, care is to be taken to prevent damage to the work in place. As soon as work is completed, all work is to be thoroughly cleaned. Before completion, all damaged work is to be repaired and left in perfect condition. The CONTRACTOR will be responsible for all clean up of the premises. All trash, etc. will be hauled away from the site, and the site left in a clean and neat condition. Alcoholic beverages of any type will not be permitted on job site.

PRODUCT/MATERIALS SUBSTITUTION

CONTRACTOR will submit prior to starting work on project any changes to materials specified. CONTRACTOR will submit all specification data, company name, and supplier of material that he wishes to substitute. All material will be evaluated. CONTRACTOR will be given approval/disapproval by OWNER. No substitutes will be taken into consideration after work has begun, no substitutes will be allowed if CONTRACTOR does not submit specification data within time allowed.

INSPECTION

All work covered by these specifications shall be subject to inspection by OWNER or his authorized representative. CONTRACTOR will coordinate with OWNER for inspections as required during construction, and furnish to the OWNER in writing a project schedule prior to mobilization of work at the job site.

SPECIFICATIONS AND DRAWINGS ARE RECIPROCAL

The specifications and drawings are intended mutually to explain each other and anything which is referred to in the specifications and not shown on the drawings shall be considered as being shown and mentioned and referred to in both of these documents. Such work shall be done and performed accordingly. Any drawing attached to this specification form is an integral part thereof and where such drawings, if any, differ from these specifications, the specifications shall govern.

AS-BUILT DRAWINGS

Occasionally, during the course of construction, modifications and changes may occur due to site conditions, unforeseen circumstances and problems encountered. This may result in a modification of construction as originally depicted on drawings. Contractor will furnish the OWNER a marked-up set of prints in red line of all changes and/or modifications that pertain to this contract. Drawings will be labeled. "AS-BUILT DRAWINGS".

GUARANTEES, WARRANTIES AND BONDS

1. All work will be guaranteed by the CONTRACTOR for a period of one (1) year from the date of substantial completion.
2. Wording for the notarized guarantee shall be as follows:
"We hereby guarantee all work performed by us on the above captioned project to be free from defective materials and workmanship for a period of one (1) year, or such longer period of time as may be called for in the Contract Documents for such portions of the work."
3. Guarantee Compliance:
Except as otherwise specified, all work shall be guaranteed by the CONTRACTOR and through him each sub-contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the date of substantial completion of the Contract. In case of work performed by his sub-contractors, the CONTRACTOR shall secure warranties from said sub-contractors and deliver copies of the same to the OWNER upon completion of the work. If, within any guarantee period, repairs or changes are required in connection with guaranteed work which, in the OWNER'S opinion, are rendered necessary as the result of use of materials, equipment or workmanship which are inferior, defective or not in accordance with terms of the Contract: CONTRACTOR shall promptly upon receipt of OWNER'S written notice, and without expense of the OWNER;
 - a. Place in satisfactory condition in every particular all such guaranteed work, correct all defects therein.
 - b. Make good all damage to the building, site, equipment or building contents which in the OWNER'S opinion is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with terms of the Contract.
 - c. Make good any work or material or the equipment and contents of building or site disturbed in fulfilling such guarantee.

In any case where fulfilling the requirements of the Contract, or any guarantee embraced in or required thereby, the CONTRACTOR disturbs any work guaranteed under another's Contract, he shall restore such disturbed work to condition satisfactory to the OWNER and guarantee such restored work to the same extent as it was guaranteed under such other contract. If the CONTRACTOR, after notice, fails to proceed promptly to comply with terms of the guarantee, the OWNER may have the defects corrected and the CONTRACTOR

and his surety shall be liable for all expense incurred. All special guarantees applicable to definite parts of the work that may be stipulated in the specification or other Contract Documents shall be subject to the terms of this Specification Section during the first year of the life of such special guarantees. All guarantees and warranties shall be obtained in the OWNER'S name and evidence thereof shall be promptly delivered to the OWNER'S Representative for transfer to the OWNER.

CLOSE-OUT DOCUMENTS

In general documents for close out, to be submitted by the CONTRACTOR to the OWNER, prior to final payment, shall be; but not limited to the following:

1. APPLICATION FOR PAYMENT: AIA Document G-702
2. CERTIFICATE OF SUBSTANTIAL COMPLETION: AIA Document G-704
3. CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS:
AIA Documents G-706 and G-706A: The Contractor shall furnish these AIA Documents complete with attached notarized full release of liens, damages, and a guarantee that all materials and labor are paid in accordance with Contract Documents with the following wording:
"WE HEREBY CERTIFY THAT ALL BILLS FOR LABOR AND MATERIALS INCORPORATED INTO THE ABOVE CAPTIONED PROJECT UNDER OUR CONTRACT HAVE BEEN PAID AND THAT THE OWNER IS RELEASED FROM ANY AND ALL CLAIMS AND/OR DAMAGES UNDER THIS CONTRACT."
4. CONSENT OF SURETY COMPANY TO FINAL PAYMENT: AIA Document G-707
To be completed in full by the Bonding Company.
5. CONTRACTOR'S NOTARIZED STATEMENT:
Notarized statement that project has been constructed in accordance with Contract Documents.
6. CONTRACTOR'S NOTARIZED STATEMENT OF GUARANTEE/S:
All work will be guaranteed by the Contractor for a period of one (1) year from the date of substantial completion. Wording will be as follows:
"WE HEREBY GUARANTEE ALL WORK PERFORMED BY US ON ABOVE CAPTIONED PROJECT TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR, OR SUCH LONGER PERIOD OF TIME AS MAY BE CALLED FOR IN THE CONTRACT DOCUMENTS FOR SUCH PORTIONS OF THE WORK."
In the case of work performed by his sub-contractors, the Contractor shall secure warranties from said sub-contractors and deliver copies of same to the Owner upon completion of work.
7. OPERATING AND MAINTENANCE MANUALS:
All manufacturer's operating instructions and maintenance manuals will be compiled in a tabbed and labeled 3-ring binder. (Furnish Owner with two (2) sets).
8. FORM W-9, PAYER'S REQUEST FOR TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION (IRS):
Form W-9 is to be completed by non-corporation contractors. Non-applicable if Contractor's firm is Incorporated.
9. FINAL CLEANING:
At close out time clean and re-clean entire work to normal level for "FIRST CLASS" maintenance/cleaning

MEASUREMENT AND PAYMENT

Measurement and payment for the following bid items shall be as described and shall include all material equipment, labor and testing to install and make operational a complete sewer system as detailed on the contract drawings and in these specifications.

SEWER MAIN (SDR-26), HDPE, DUCTILE IRON, OR OTHER

Payment for all sewer mains will be per linear foot for various diameter pipe measured from centerline of manhole to centerline of manhole in relation to the diameter of the pipe and the depth of cut as shown in the individual bid items. The item shall be paid per linear foot.

REMOVAL OF EXISTING SEWER LINE

Payment for removal of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

ABANDONMENT OF EXISTING SEWER LINE

Payment for abandonment of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

TRACER WIRE SYSTEM FOR WATER/SEWER

Installation requirements for tracer wire shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to provide a complete tracer system for the sewer infrastructure with proper grounding and connection points as shown in the plans and specifications. Grounding and hook-up locations shall be absorbed in the price of the tracer wire. The item shall be paid per linear foot.

MANHOLES

Payment for manholes will be per each and depth of manhole in appropriate depth bracket measured from lid of manhole to downstream invert. Depth shall be based on individual bid items.

DEMOLITION AND REMOVAL OF EXISTING MANHOLE

Payment for demolition and removal of existing manhole shall be as indicated on the construction plans. The item shall include the removal of the manhole frame and lid assembly with storage and delivery to City of Hattiesburg, demolition of the remainder of the manhole as indicated on the construction plans removal of the manhole as indicated. The item shall include all labor, equipment and materials necessary to demolish and remove an existing manhole. Bypass pumping shall be an absorbed portion of this item should it be necessary for the removal. The item shall be paid per each.

ABANDONMENT OF EXISTING MANHOLE

Payment for abandonment of existing manhole shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the

item. The item shall be paid per each.

DROP MANHOLE ASSEMBLY

Payment for drop manhole assembly shall include furnishing and installing all hardware required to assemble a drop as detailed in the plans and specifications. Payment shall be per each.

SANITARY SEWER SERVICE CLEANOUT

Payment for sewer cleanout will be per each to include all labor, materials and equipment at the bid size. Price shall reflect each necessary cleanout as determined by the ENGINEER to provide sanitary sewer service to project area.

SANITARY SEWER SERVICE

Payment for sanitary sewer service will be per linear foot for various diameter pipe. Item shall include PVC pipe, fittings, and other items necessary for a functioning service. Item shall include all labor, equipment and materials necessary to install all equipment. The item shall be per linear foot.

SANITARY SEWER SERVICE TEE

Payment for sanitary sewer service tee will be per each at the bid size and type. Price shall include all labor, materials and equipment necessary to install sanitary sewer service tee based on plans and specifications.

DUCTILE IRON, PVC and HDPE WATER SYSTEMS

Payment for item shall include furnishing and installing all pipe, trenching, compaction of required bedding and backfill excavation, disposal of excess excavated material sheeting, shoring, bracing, dewatering, testing, fittings, reducers, flushing the system and related items not specifically covered under other pay items. The contract price shall be determined by the measured distance of pipe installed and accepted per linear foot.

CONNECTION ITEMS

Payment for connection items shall include installation of reducers, fittings, valve boxes, trenching, excavation, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

GATE VALVES

Payment for installation of gate valves shall include furnishing gate valves, valve boxes, trenching, excavating, compaction of backfill, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

FIRE HYDRANT WITH APPURTENANCES

Payment for installation of fire hydrant with appurtenance shall include furnishing fire hydrant, gate valve, valve box, piping, trenching, excavating, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items. Pay shall be determined per each to include fire hydrant, tees, gate valve, valve box, pipe and other miscellaneous items as required to provide an operational hydrant. Pay shall be determined per each.

REMOVAL OF EXISTING FIRE HYDRANT

Payment for removal of fire hydrant shall include capping/plugging existing service line and removal of the hydrant. Item shall be paid per each.

SERVICE TAP

Payment for service tap shall include all fittings, tubing, tapping saddle, corporation stop, materials, labor and equipment to provide a new water service. Item shall be paid per each.

SERVICE TUBING

Payment for installation of service tubing shall include furnishing and installing service tubing as directed by the ENGINEER. Item shall include all boring, trenching, excavating, compaction of backfill, disposal of excess excavated material etc. to install service tubing as directed. Payment shall be per linear foot measured from each connection point.

RESIDENTIAL METER

Payment for residential meter shall include all components, labor and equipment for a fully operational water meter. Meter shall meet the requirements of the plans and specifications and function fully within the existing system. Item shall include meter, box and any necessary fittings and shall be paid per each.

CRUSHED AGGREGATE

Payment for crushed aggregate shall include furnishing and installing material as specified in the plans and specifications. Crushed aggregate shall be installed as a base material for the pavement repairs. Crushed aggregate may be used for a temporary riding surface and will be the surface of Camp Street throughout the life of the project. Temporary riding surface will be removed prior to pavement repairs and moved to another location as directed by the engineer at no additional cost to the project. Payment shall be per ton from certified scales.

SELECT FILL MATERIAL

Payment for select fill material will be based on loose vehicular measurement. Haul vehicles shall be measured and volumes calculated. It shall be the discretion of ENGINEER as to the overall percentage full of haul material and that determination shall be final. Item shall include material, haul, placement and testing necessary to meet the plans and specifications.

CONCRETE PAVEMENT REPAIR

Payment for concrete pavement repair shall include furnishing and installing concrete pavement as specified in the plans and specifications. Item shall include forming, material, haul, placement, finishing and testing necessary to meet the plans and specifications. Payment shall be per square yard.

CONCRETE

Payment for concrete shall include furnishing and installing concrete with specified class as specified in the plans and specifications. Item shall include forming, material, haul, placement compaction and testing necessary to meet the plans and specifications. Item shall include reinforcing steel, grates, etc. as necessary and required. Payment shall be per cubic yard.

HOT MIX ASPHALT

Payment for hot mix asphalt shall include furnishing and installing asphalt pavement as specified in the plans and specifications. Item shall include material, haul, placement compaction and testing necessary to meet the plans and specifications. Payment shall be per ton.

CONCRETE SIDEWALK REPAIR

Payment for concrete sidewalk repair shall include furnishing and installing sidewalk to match removed concrete sidewalk. Item shall include saw cutting, forming, material, haul, placement, compaction and testing necessary to meet the plans and specifications. Item shall not be used for damage to sidewalk as a result of poor construction methods or neglect from the contractor. Payment shall be per square yard.

CONCRETE CURB AND GUTTER

Payment for concrete curb and gutter shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing curb and gutter. Item shall be paid per linear foot.

CONCRETE DITCH REPAIR

Payment for concrete ditch repair shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing paved ditch. Item shall be paid per square yard.

CLASS "B" CONCRETE, MINOR STRUCTURES

Payment for Class "B" Concrete, Minor Structures shall include grading, forming, materials, placement, compaction and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per cubic yard.

REINFORCING STEEL

Payment for reinforcing steel shall include grading, forming, materials, tying, spacing and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET GRATINGS

Payment for inlet gratings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET CASTINGS

Payment for inlet castings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

DRAINAGE PIPE

Payment for all drainage pipe will be per linear foot for various diameter pipe and material type measured from end of pipe to end of pipe installed in relation to the diameter of the pipe.

REMOVAL OF EXISTING PIPE CROSS DRAINS

Payment for removal of existing pipe cross drains shall include removal of all pipe materials from project site. Item shall be as authorized by the engineer. Item shall be paid per linear foot.

REMOVAL OF EXISTING CORRUGATED HDPE PIPE AND RESET

Payment for removal of existing corrugated HDPE pipe and reset shall include removal of all pipe materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

REMOVAL, SALVAGE, AND RESET EXISTING FENCE

Payment for removal, salvage, and reset of existing fence shall include removal of all fence materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

6" YELLOW THERMOPLASTIC DETAIL TRAFFIC STRIPE

Payment for 6" Yellow Thermoplastic Detail Stripe shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

LEGEND WHITE THERMOPLASTIC TRAFFIC MARKING

Payment for Legend White Thermoplastic Traffic Marking shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

SOLID SOD

Payment for solid sod shall include furnishing and installing sod, fertilizer, lime and other components required to establish permanent grassing matching existing conditions. Solid Sod shall include final grading prior to installation of sod materials. The unit measurement shall be per square yard.

LANDSCAPE RESTORATION

Payment for Landscape Restoration shall include furnishing and installing of top soil, mulch, plants, fertilizer, watering, final grading and other components required to re-establish landscaping to matching existing conditions. The unit measurement shall be per square foot.

CLEARING AND GRUBBING

Payment for clearing and grubbing shall include removal of all items within the required limits of construction necessary to complete the project based on the construction plans and specifications. Payment shall include off site removal of all items removed during clearing and grubbing. Item shall include all materials, labor and equipment necessary to meet the plans and specifications. Payment shall be per acre.

TEMPORARY EROSION CONTROL

Payment for Temporary Erosion Control shall include furnishing, installing and maintaining hay bales or silt fence as required by current Mississippi Department of Environmental Quality standards. Hay bales and silt fence shall be installed and maintained to prevent erosion under or excess siltation within 24 hours of a rain event. The unit measurement shall be lump sum and includes any required maintenance.

MAINTENANCE OF TRAFFIC

Payment for maintenance of traffic will be lump sum. Item shall include all materials, labor and equipment to maintain traffic based on the current MUTCD or as required by the ENGINEER.

MOBILIZATION

Payment for mobilization shall enable contractor to assemble materials, equipment, etc. on site, to prepare for construction. The unit measurement shall be lump sum. Mobilization shall be paid 50 percent at 5 percent of construction complete and 100 percent at 25 percent of construction complete.

SANITARY SEWERAGE SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of sewer pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139/139M Electric-Fusion (Arc) Welded Steel Pipe (HPS 4 inch and over).
- A 252 Welded and Seamless Steel Pipe Piles.
- C 31/C 31M Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Specifications for Concrete Aggregate
- C 39/C 39M Compressive Strength of Cylindrical Concrete Specimens.
- D 1248 Polyethylene Plastics Extrusion Materials for Wire and Cable
- D 1784 Rigid Poly(Vinyl Chloride)(PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds.
- D 2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel Plate Loading.
- D 2922 Density of Soil and Soil Aggregate in place by Nuclear Methods (Shallow Depths).
- D 3034 Specifications for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- D 3212 Joints for Drain and Sewer Plastic Pipes using Flexible Elastomeric Seals.
- F 477 Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

F 794 Poly (Vinyl Chloride)(PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

A21.10 Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.

A21.11 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

A21.50 Ductile Iron Pipe, Design Requirements

A21.51 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-lined Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

C 104 Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water and Other Liquids.

C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

C 151 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction Current Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer and bear on the submittal a certification from the Contractor the submittal is in conformance with the specifications.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

3.2 PVC Pipe: The Contractor shall submit manufacturer's certificate which certifies the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the Contractor shall submit the following:

A. PVC Piping: PVC Pipe shall be sampled, tested, and inspected in accordance with the provisions of ASTM D3034. Copies of test results shall be attached. Test results shall be similar material and not be more than one year old from the date of material delivery.

B. Joints: The following submittals shall be required for PVC joints.

1. Certificate with test results for joints for compliance to ASTM D 3212. Gaskets shall conform to ASTM F 477. Test results shall be for similar material and not be more than one year old.

4.0 MATERIALS

4.1 Gravity Sewer Pipe: Where the type of gravity sewer piping is not indicated on the plans, the Contractor shall furnish polyvinyl chloride (PVC) pipe.

The Contractor shall be restricted to furnishing the exact type of pipe material where indicated on the Contract Drawings.

The Contractor shall be limited to the use of only one type of pipe (so selected by the Contractor and indicated on the Proposal Form) and shall not change the type of gravity sewer pipe except as follows:

1. Where indicated on the plans, or
2. If permitted in writing by the Engineer.

A. **Ductile Iron Pipe:** Ductile iron shall be designed in accordance with the latest revision of ANSI/AWWA C150/A21.50 for a minimum 50psi.

Ductile Iron Pipe shall be manufactured in accordance with the latest revision of ANSI/AWWA C151/A21.51. Each pipe shall be subjected to a hydrostatic pressure test of at least 500 psi at the point of manufacture.

Pipe shall be standard asphaltic coating on the exterior. Pipe shall also have 40 mils of Protecto 401 Ceramic Epoxy on the interior per "Standard Specification for Lining Ductile Iron Pipe for Sewer Service".

The class or nominal thickness, net weight without lining, and casting period shall be clearly marked on each length of pipe. Additionally, the manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "Ductile" shall be cast or stamped on the pipe.

All pipe shall be furnished with Push-On Type Joints, such as Tyton or Fastite. Joints shall be in accordance with ANSI/AWWA C111/A21.11, of latest revision, and be furnished complete with all necessary accessories.

Fittings shall be ductile iron. Fittings shall conform to the latest revision of either ANSI/AWWA C600.

B. **PVC Pipe:** PVC gravity sewer pipe and fittings shall conform to the requirements of ASTM D 3034 with an SDR of 26 and a minimum stiffness of 46 lb./in. - in and 115 lb./in. - in, respectively. Joints for sewer pipe shall be either push-up or mechanical conforming to the requirements of ASTM 3212. Gaskets for sewer pipe shall conform to the requirements of ASTM F 477.

Approved adaptors shall be used for making connections between PVC pipe and

concrete manholes. Pipe connections to new manholes shall be made using a flexible synthetic rubber boot mechanically clamped to the manhole and to the pipe to provide a watertight seal.

C. Service Laterals: Service laterals for local services shall consist of fittings, pipe lengths, and connections of 6 inch or 4 inch pipe. The fittings, pipe lengths and plugs shall be of the same material as the run pipe unless otherwise indicated on the Contract Drawings. The modified sewer tees shall be an integral part of the run pipe. The remainder of the branch shall consist of standard fittings (elbows, reducers, and lengths of pipe) in accordance with the manufacturer's standard products and as specified. Pipe lengths and joint connections shall meet the specified requirements for the type materials used.

4.2 Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of sewer pipe or force main and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch. (Hwy) and 0.28 inch (RR). Contractor shall verify the I.D. of the casing pipe is adequate for the carrier pipe prior to installation.

4.3 Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table:)

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 - ½"	95 - 100
¾"	35 - 70
⅜"	10 - 30
No. 4	0 - 5

4.4 Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1 - ½" sieve.

4.5 Clay Gravel Material: Clay Gravel Material shall meet MDOT Specifications, Group

4.6 Concrete: Concrete shall be in accordance with the requirements of Technical Specifications - CONCRETE

4.7 Select Fill Material: General : The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in

character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material. Material shall meet the Standard Specifications for Road and Bridge Construction, Latest Edition for Class 9 Group C and modified to consist of a P.I of between 5 and 15.

4.8 Backfill: All other backfill shall consist of excavated material removed from the trench unless otherwise directed by the Engineer. CONTRACTOR shall separate poor and acceptable material during excavation. Failure to separate material shall require CONTRACTOR to furnish acceptable backfill at no additional cost to the project. Unacceptable material shall be disposed of off-site at the Contractor's expense.

5.0 CONSTRUCTION:

5.1 Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

Where possible, Contractor shall remove turf in sections, keep damp, and replace upon completion of backfilling.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor at his expense. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should

the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe. In the event trench width is wider than allowed on the plans, Contractor shall absorb the cost of additional wash gravel bedding based on neat line quantity calculations.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

If adequate area is not available on the construction site, the Contractor will be required to stockpile material off site. Owner shall not bear any additional expense.

Ledge Rock, boulders and large stones shall be removed to provide a minimum clearance of 4 inches (10 cm) below and on each side of all pipes.

It is the intention of these specification that there shall be a minimum interruption to traffic and all traffic control shall be in accordance with the MUTCD.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of sewer pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches and dikes and shall perform all pumping and other work necessary to divert or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade

made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the pipe laying operation.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with wash gravel bedding and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation, without direction of the Engineer, shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the subgrade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the subgrade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the subgrade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in

the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to a minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grade, and cross section with proper bell holes at each joint to ensure that pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

- a Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.
- b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.
- c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OR ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.

5.2 PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

5.3 PIPE LAYING: Pipe laying shall proceed upgrade with the spigot ends of the bell-and-spigot pipe and tongue ends of the tongue and groove pipe jointing in the direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the sewer shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water, earth, or other substance will enter the pipe or fittings.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

The Contractor shall utilize a commercial grade laser beam specifically manufactured to aid in maintaining grade and alignment of pipelines during installation. The primary unit shall be mounted on a heavy duty base and firmly anchored in the downstream manhole of the reach under construction. The maximum distance shall not exceed four hundred feet (400') per set-up without the approval of the Engineer.

Each joint of pipe shall be installed using an approved target to align the pipe with the projected laser beam. The methods and procedures shall be in strict accordance with the manufacturer's recommendations and instructions. Proper ventilation shall be maintained at all times. Care shall be exercised in order to prevent bumping or misalignment of the projected beam. Sewer lines shall be laid such that the installed variation of invert elevations when compared with the construction plans does not exceed 0.05 feet. Sewer lines in which said variation exceeds 0.05 feet may be rejected. Sewer pipe shall be visually inspected for alignment by lamping, televising or by other appropriate means to determine alignment.

Whenever a movable steel box is used in place of sheeting, the Contractor shall take care to prevent the pipe from moving when the steel box is moved.

5.4 PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

A. PVC Pipe Joint Construction: The bell and spigot ends of PVC sewer pipe shall be cleaned of all foreign material that could interfere with proper assembly of the joints. The spigot

ends shall be cleaned one inch (1") beyond the joint assembly reference mark.

The spigot end of the pipe shall be thoroughly lubricated in accordance with the manufacturer's recommendations. The coating should be the equivalent of a brush coat of enamel paint and may be applied by hand, cloth, pad sponge or glove.

The lubricated spigot end shall be inserted into the bell keeping the pipe length in proper alignment. The bell shall be braced while the spigot end is pushed in under the rubber ring, so that previously completed joints in the line will not be closed up. The spigot end shall be pushed into the bell until the reference mark is flush with the end of the bell. Pipe shall be pushed by use of a bar or other means approved by the Engineer. Hydraulic excavators, backhoes, or other machinery shall not be used to push slip-joint pipe together.

Generally, the installation and jointing of PVC Pipe shall conform to the requirement so the latest edition of ASTM D-2321, "Underground Installation of Flexible Thermoplastic Sewer Pipe".

Any pipe cuts shall be of neat line. Pipe shall have bevel edges according to the manufacturer's recommendations.

B. Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe and shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space.

When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first; then the top; next the bolts on either side; and last, the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

C. Jointing Dissimilar Pipes: Suitable adaptor couplings are required for connecting dissimilar pipes. The couplings shall be approved by the Engineer before installation.

5.5 STREAM CROSSING: Ductile iron pipe Class 50 shall be used as shown on the Drawings. Granular fill, concrete, and concrete collars shall be placed or constructed as shown on the contract drawings.

5.6 SERVICE LATERALS (LINES): Modified sewer tees shall be installed on the run pipe at the appropriate field locations. Service lines of the sizes specified shall be laid to a uniform grade so that the customer being served can be tied-in using good construction practices. All tamping and backfilling operations shall be performed the same as on main line pipe. Removable plugs shall be securely installed in pipe ends and a 2" x 2" treated post extending 12" above the ground line shall mark the pipe end location if the lateral is not connected to an existing sewer. For service laterals in which a connection to an existing service is required, the Contractor shall make the connection. Contractor shall verify the location of all service laterals within the project area prior to construction.

5.7 BORINGS: Borings shall be accomplished in accordance with Mississippi Standard Specifications for Road and Bridge Construction or Railway Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the crossing.

A. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be water tight.

B. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

C. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under surcharged sewage conditions.

D. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end with a quick setting grout.

5.8 RELATION TO WATER MAINS:

A. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

5.9 CONTINUATION OF SERVICE

The existing wastewater system shall remain in operation during the duration of the project until such time it is no longer needed. Should removal of facilities from operation become necessary, a plan which will avoid or minimize pollution effects on any receiving stream and provide alternate service for wastewater facilities shall be reviewed and approved in advance by the Mississippi Department of Environmental Quality and shall be adhered to during construction.

Where shown on the plans or directed by the Engineer, new sewers shall be connected to existing sewers either by constructing a manhole over an existing line (doghouse) or by coring through the wall of an existing manhole.

6.0 TESTING

6.1 Ductile Iron Pipe:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

6.2 PVC PIPING: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittal. No other material test shall be required.

6.3 STEEL CASING PIPE: Material test shall be included as part the submittal. No other material test shall be required.

6.4 BEDDING MATERIAL AND STABILIZATION MATERIAL: Test for gradation and test for material passing the No. 40 sieve shall be as follows:

Gradation	- AASHTO T 88
Liquid Limit	- AASHTO T 89
Plasticity Index	- AASHTO T 90

One set of each test listed above will be required for every 500 cubic yards or major fraction thereof.

6.5 COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a

change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99	
AASHTO T-191	or
ASTM D 2922	
Select Backfill Material OR	
Stabilization Material	1
One per 100 CY	
Bedding Material	2
One per 600 LF	
Tamped Backfill	2
One per 600 LF	

6.6 INFILTRATION/EXFILTRATION/LAMP TEST: The Contractor shall provide all plugs, water supply, measuring devices, and all other equipment, material, labor and supervision to measure the infiltration and exfiltration tests as specified below. The Contractor shall perform the test in the presence of the Engineer. All gravity sewer pipe shall be tested in accordance with the following applicable requirements.

A. Infiltration Test: The infiltration test shall be conducted between adjacent manholes. The outlet pipe on the downstream manhole shall be plugged and tested for water tightness to the satisfaction of the Engineer. The accumulated depth of water in the downstream manhole shall be read at 12 hour intervals for two (2) days and the infiltration rate calculated from the data obtained. Any section exceeding an infiltration rate of 200 gallons/day/inch diameter/mile shall be relayed at the Contractor's expense. This means that the Contractor shall locate and repair leaks as necessary to pass the infiltration test. Infiltration test shall be utilized only when ground water is above pipe.

B. Low Pressure Air Test: Air test shall be conducted in strict accordance with the manufacturer's instructions, including all recommended safety precautions. Equipment used for air testing shall be specifically designed for such and include a monitoring gauge with 0 to 5 psi with a minimum division of 0.1 psi and an accuracy of no less than 0.05 psi

1. Air testing shall be conducted for completed gravity sewer mains
2. After an internal pressure of 4.0 psi is obtained, allow at least 2 minutes for pressure to stabilize, adding only the amount of air necessary to maintain pressure. After stabilization period, adjust the pressure to 3.5 psi and valve off air supply.

3. Determine the minimum pressure holding time allowed for pressure to drop from 3.5 psi to 3.0 psi as shown on the table below.

Minimum Holding Time for Low Pressure Air Test

Nominal Pipe Size (inches)	Time per 100 ft.
6	42 sec.
8	1 min. - 12 sec.
10	1 min. - 30 sec.
12	1 min. - 48 sec.
15	2 min. - 6 sec.
18	2 min. - 24 sec.
21	3 min.
24	3 min. - 36 sec.
27	4 min. - 12 sec.
30	4 min. - 48 sec.
33	5 min. - 24 sec.
36	6 min.

C. Visual Test: Gravity sewer lines will be lapped and shall show a true line between manholes without defects in conditions, grade, or alignment. Any defective lines shall be subject to a closed-circuit television inspection performed at the Contractor's expense.

6.7 DEFLECTION TESTS: 100% of the PVC gravity sewer mains shall be tested 30 days after the final backfill has been in place by the following method:

Use a "Go-, no-go" mandrel which is sized to such dimensions that it will not "go" when encountering a deflection greater than 5%. The instructions for its use are as follows:

A. Completely flush the line making sure the pipe is clean of any mud or debris that would hinder the passage of the mandrel.

B. During the final flushing of the line, attach a floating block or ball to the end of the mandrel, pull rope and float the rope through the line. (A nylon ski rope is recommended)

C. After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.

D. Connect a retrieval rope to the back of the mandrel to pull it back if necessary.

E. By hand, remove all the slack in the pull rope and place a tape marker on the top at the end of the pipe where the mandrel will exit, determining the location of the mandrel in the line.

F. By hand, draw mandrel through the sewer lines. If any irregularities or obstructions are encountered in the line, they shall be corrected by the Contractor.

G. If a section with excessive deflection is found, locate it; dig down and uncover the pipe; if any damaged pipe is found, replace it; if pipe is not damaged, realign and thoroughly tamp haunching and initial backfill; replace remainder of backfill.

H. Re-test this section for deflection after 30 days from initial testing.

STANDARD SPECIFICATION
FOR LINING DUCTILE IRON PIPE
FOR SEWER SERVICE

1.0 Condition of Ductile Iron Prior to Surface Preparation

All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface. Because removal of old linings may not be possible, the intent of this specification is that the entire interior of the ductile iron pipe and fittings shall not have been lined with any substance prior to the application of the specified lining material and no coating shall have been applied to the first six inches of the exterior of the spigot ends.

2.0 Lining Material

The Standard of Quality is Protecto 401 Ceramic Epoxy. The material shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe and fittings for sewer service, a test report verifying the following properties, and a certification of the test results.

A permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.

The following test must be run on coupons from factory lined ductile iron pipe:

ASTM B-117 Salt Spray (scribed panel) - Results to equal 0.0 undercutting after two years.

ASTM G-95 Cathodic Disbondment 1.5 volts @ 77°F. Results to equal no more than 0.5mm undercutting after 30 days.

Immersion Testing rated using ASTM D-714-87.

20% Sulfuric Acid - No effect after two years.

140°F 25% Sodium Hydroxide - No effect after two years.

160°F Distilled Water - No effect after two years.

120°F Tap Water (scribed panel) - 0.0 undercutting after two years with no effect.

An abrasion resistance of no more than 3 mils (.075mm) loss after one million cycles using European Standard EN 598: 1994 Section 7.8 Abrasion Resistance.

3.0 Application

Applicator

The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.

Surface Preparation

Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any areas with oil, grease, or any substance which can be removed by solvent, shall be solvent cleaned to remove those substances. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be reblasted.

Lining

After the surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. No lining shall take place when the substrate or ambient temperature is below 40 degrees Fahrenheit. The surface also must be dry and dust free. If flange pipe or fittings are included in the project, the lining shall not be used on the face of the flange.

Coating of Bell Sockets and Spigot Ends

Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.

Number of Coats

The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. **To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.**

Touch-Up & Repair

Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

4.0 Inspection and certification

Inspection

All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PA-2 Film Thickness Rating.

The interior lining of all pipe barrels and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any pinholes found shall be repaired prior to shipment.

Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.

Certification

The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

5.0 Handling

Protecto 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying. The pipe shall not be dropped or unloaded by rolling. Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded. Ductile iron pipe should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.

MANHOLES

1.0 GENERAL:

This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals for the construction of standard manholes, in accordance with the Contract Drawings and Specifications. Included in the work are structural excavation, backfill, and disposal of excess material.

2.0 APPLICABLE DOCUMENTS:

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

American Society for Testing and Materials (ASTM)

A 48/A48M	Standard Specification for Gray Iron Casting
C 39/C39M	Standard Specification for Test for Compressive Strength of Cylindrical Concrete Specimens
C 443	Standard Specification for Joints for Circular Concrete Pipe and Manholes Using Rubber Gaskets
C 478	Standard Specification for Precast Reinforced Concrete Manhole Sections
C 497	Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile
C 2922	Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

American Association of State Highway and Transportation Officials (AASHTO):

M-198 Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

T-99 Standard Method of Test for the Moisture-Density Relations of Soils Using a (2.5kg) Rammer and (305 mm) Drop.

T-191 Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method.

3.0 SUBMITTALS

The following tests or data shall be submitted to the Engineer from the Contractor for approval prior to incorporation into the work:

3.1 Certificates: The Contractor shall furnish certificates from supplier certifying the products conform to the required specifications included herein for the following items:

- 3.1.1. Flexible Plastic Gaskets
- 3.1.2. Precast Manhole Bases
- 3.1.3. Precast Manhole Riser Sections
- 3.1.4. Manhole Steps
- 3.1.5. Manhole Frames and Covers (ASTM A 48)
- 3.1.6. Epoxy Grout

3.2 Catalogue Cuts or Brochures: The Contractor shall also submit catalogue cuts or product brochures providing descriptive data, recommended application and use, and installation procedure for the following items:

- 3.2.1. Manhole Frames and Covers
- 3.2.2. Epoxy Grouts
- 3.2.3. Manhole Steps

4.0 MATERIALS

4.1 Manhole Riser Sections: Manhole riser sections shall be precast reinforced sections conforming to ASTM C 478 and as shown on the Contract Drawings.

4.2 Joints: Joints for precast riser sections shall be concrete pipe type flexible plastic gaskets. Joint material shall be pre-formed conforming the requirements of AASHTO M-198. Installation shall be in accordance with manufacturer's recommendations.

4.3 Concrete Manhole Bases: Concrete manhole bases shall be precast or cast-in-place as follows:

4.3.1 Cast-In-Place Manhole Bases and Box Type Bases (if used): Concrete and reinforcing steel shall conform to the requirements of Technical Specifications - CONCRETE.

4.3.2 Precast Concrete Bases: Precast concrete bases shall conform to the requirements of ASTM 478 with reinforcing steel (size and spacing as indicated on the plans).

4.4 Manhole Steps: Manhole steps shall be plastic coated corrosion resistant with a minimum

design load of 300 pounds and shall be installed as shown on the Contract Drawings.

4.5 Cement Grout: Cement grout shall be high strength, non-metallic conforming to Corps of Engineers CRD-C-588. The grout shall be V-3 by W. R. Meadows, Inc., Masterflow 713 by Master Builders or equal.

4.6 Manhole Frame and Covers: Manhole frame and covers shall conform to ASTM A 48 as well as to the following requirements. All frame and covers shall be new when installed for the project and shall meet AASHTO H-20 loading condition.

4.6.1 Standard Manhole Cover and Frame - shall be as manufactured by Dews Foundry, Jackson Standard, Model DF-25 (7) or Vulcan Foundry, Model V-1115, 420 Pounds, marked "CITY OF HATTIESBURG SEWER", domestic origin, or equal.

4.6.2 Water Tight Manhole Cover and Frame - shall be as manufactured by Vulcan Foundry, Model V2357, or Dews Foundry, Model DF-25(7)W.T., 410 pounds with neoprene gasket, four 5/8 inch stainless steel bolts recessed into cover. Cover labeled "CITY OF HATTIESBURG SEWER", domestic origin, or approved equal.

4.7 Epoxy Grout: Epoxy Grout shall be high strength non-metallic, non-shrinking. The grout shall be as by EMBECO, Inc., SEAL-COAT or approved equal.

4.8 Drop Manholes: Concrete for drop manholes shall conform to the requirements of Technical Specifications - CONCRETE. Pipe and fittings shall be the same material and size as the incoming gravity sewer.

4.9 Flexible Connection: At all sewer connections to manholes, provide gasket flexible watertight connection that allows for differential settlement of the pipe and manhole wall. Bands, clamps and other metal accessories shall be of Series 304 stainless steel.

4.10 All manholes: All manholes shall be lined inside with a twenty (20) mil dry film thickness of an acceptable coal tar epoxy system.

5.0 CONSTRUCTION

5.1 Earthwork

5.1.1 General: Excavation shall be to the extent required to allow proper construction of the manhole. Shoring and sheeting shall be utilized where required by Federal, State and local codes and regulations for safe working conditions. In addition, shoring and sheeting shall be required to protect the integrity of adjacent structures or prevent adverse effects on surrounding areas. Dewatering shall be employed to the extent required to allow dry working conditions.

5.1.2 General Excavation: The Contractor shall "lay back" or employ shoring and sheeting as required to assure stability of the excavation. Material shall be stockpiled so as not to surcharge adjoining pipe trenches. Topsoil shall be separated so as to allow the maximum reuse in grassing operations.

5.1.3 Structural Excavation: The area immediately beneath the manhole bases shall be graded and compacted. Compaction shall be to 96% of maximum laboratory density as determined by AASHTO T 99. Should unsuitable material be encountered, the Engineer may direct that the area be over excavated and filled with stabilization material. Specification for stabilization material and payment for such shall be in accordance with Technical Specifications.

5.1.4 Backfilling: Backfill material shall consist of select backfill in accordance with Technical Specifications. Backfilling shall be uniformly placed around the structure in 10-inch layers and be compacted to 90% of maximum density to full depth in unimproved areas. Backfill in paved areas and within five feet to any edge of pavement shall be compacted to 95% of maximum laboratory density in 6-inch layers to the subgrade line. Refer to Technical Specifications.

5.1.5 Salvage: Manhole frames and covers removed during excavation shall remain the property of the Owner and shall be delivered to a location designated by the Owner. All other items removed shall be disposed of by the CONTRACTOR at his expense.

5.2 Riser Installation: Precast concrete riser sections shall be installed plumb and in accordance with the details shown on the Contract Drawings. Joints shall be installed in accordance with manufacturer's recommendations.

The manhole invert channels shall be formed in the bases, smooth and semi-circular in shape conforming to the inside of the adjacent sewer section. Changes in the direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be formed directly in the concrete of the manhole base. The joint between the base and riser section shall be sealed with epoxy grout. Clean pea gravel shall be used as the epoxy grout filler.

Standard manhole cut-outs and lifting holes shall be sealed with epoxy grout.

5.3 Cast-In-Place Concrete: Bases, flat tops, and drop manhole risers shall be constructed in accordance with Technical specifications - CONCRETE.

5.4 Manhole Steps: Manhole steps shall be installed during the manufacturing of the riser or cone sections. Risers and cones shall be joined so the steps are vertically aligned.

5.5 Manhole Frame and Covers: Manhole frame and covers shall be set and grouted in place

with cement grout. For manholes located in roads or streets, the manhole cover shall be flush with pavement or surface course.

6.0 TESTING

6.1 General: The Contractor shall conduct (and bear the cost of) all testing (Laboratory Approved by the Owner) as directed by the Engineer and furnish results of such tests prior to incorporating the material into the work. All testing is subsidiary to Manhole Payment Items.

6.1.1 Cast-In-Place Concrete Items: The concrete quality testing for manhole bases, drop manholes, and valve boxes shall be tested in accordance with Technical specifications - CONCRETE.

6.1.2 Manhole Risers and Precast Concrete Bases: Manhole risers and precast concrete bases shall be tested for concrete compressive strength. If the place of manufacture is local and reasonably available to the Engineer, Paragraph (a) shall be followed for testing requirements. Should the place of manufacture not be available, Paragraph (b) shall apply.

The contractor shall prepare (in the presence of the Engineer) standard rodded concrete cylinder or cylinders compacted and cured in a similar manner to the manhole sections. Concrete for such cylinders shall be typical fresh concrete mix drawn from the actual casting operation of a riser or base. Cylinders shall be tested in accordance with ASTM C 39. The average compressive strength shall be equal to or greater than the specified design strength (4000 psi). Not more than 10% of the cylinders shall fall below the design strength (4000 psi). In no case shall any cylinder tested fall below 3200 psi. Number of such cylinder tests shall be as follows:

6.1.2.1 One set of cylinders for each day's run castings or

6.1.2.2 One set of cylinders for each 200 linear feet of riser sections manufactured.

6.1.2.3 One set of cylinders per 20 bases or flat tops manufactured.

The Engineer may require additional tests should compressive test results fail.

6.1.3 Earthwork Test: Maximum laboratory density shall be measured in accordance with AASHTO T-99. Field densities shall be determined in accordance with AASHTO T-191 or ASTM D 2992. Standard proctors and field densities shall be performed in accordance with the following schedule.

Standard proctor tests shall be required for earthwork associated with manhole construction. At least two (2) field density tests shall be conducted for earth work associated with each manhole construction.

6.1.4 Inspection for Watertightness: All manholes shall be inspected for watertightness prior to placing into service.

RESTORATION OF ROADS, DRIVEWAYS, FENCES

LAWNS AND OTHER GRASSED AREAS

1.0 GENERAL

The work under this item of work shall consist of furnishing all necessary materials, labor, supervision, tools, equipment and incidentals for the restoration of roads, driveways, fences, lawns and other grassed areas so as to provide satisfactory repair to all damage caused by general construction work. It is the intent of this Specifications to restore all such features to the general conditions that existed prior to construction activity insofar as practical. It is not the intention of this Specification that trees, which must be cut and removed, be restored. The Contractor is expected to be familiar with the overall area and be satisfied as to the materials required and level of effort needed to accomplish such restoration in accordance with this Specification.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work:

American Association of State Highway and Transportation Officials (AASHTO).

- T 99 Standard Method of Test for the Moisture Density Relations of Soils Using a 5.5 lg. (2.5 kg) Rammer and a 12-inch (305 mm) Drop.
- T 167 Compressive Strength of Bituminous Mixture
- T 191 Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method
- T 230 Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

American Society for Testing and Materials (ASTM)

- D 2922 Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

Mississippi Department of Transportation (MDOT)

Standard Specifications for Road and Bridge Construction, Current Edition.

Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)

3.0 SUBMITTALS

3.1 Mix Designs: Design mix will be provided by Contractor and approved by Engineer prior to production of asphalt.

4.0 MATERIALS

4.1 Subbase and Base Courses: Subbase and base courses under paved areas shall be as specified in MDOT Specification Section 301.

4.2 Prime Coat: Prime coat shall consist of Grade MC-30 or Grade MS-70 in accordance with the applicable requirements of MDOT Specification Section 702.

4.3 Bituminous Pavement: Bituminous Pavement for roadway and parking areas, wearing and binder courses, shall consist of a mix in accordance with MDOT Specifications Section 403. Materials shall conform to the following subsection of MDOT Specifications Sections 702 and 703.

A. **Hot Mix Asphalt All Sizes:** Mississippi Standard Specifications for Road and Bridge Construction, Latest Edition

B. **Topsoil:** Topsoil shall be in accordance with Technical Specifications – SEEDING AND SODDING.

C. **Seeding and Sodding:** Seeding and sodding operations shall be in accordance with Technical Specifications - SEEDING AND SODDING.

5.0 CONSTRUCTION

5.1 Maintenance of Traffic: Prior to limiting or restricting traffic on any street or road, the Contractor shall obtain permission from the Engineer. Through or local traffic shall at all times be accommodated by the use of temporary approaches, crossings or detours (if allowed by the Engineer). Satisfactory (to the Property Owner) ingress and egress to any public or private property shall be properly maintained. Proper barricades, signs and detour signs shall be provided by the Contractor to adequately warn motorists of obstructions ahead. Lighted (flashing) barricades shall be used at night.

Flagmen shall be provided to direct traffic around equipment and for one way movement of

traffic around equipment and for one way movement of vehicles. The Contractor may have to stop construction and restore full traffic during certain rush hours.

The Contractor shall at all times (unless otherwise permitted in writing by the Engineer) maintain open one lane to traffic during construction operations and restore roadways to two-way traffic during non-construction hours. All traffic shall be maintained in accordance with the MUTCD, current Edition.

5.2 Repair of Asphalt/Concrete Streets/Driveways/Parking Lots:

A. Removal and Earthwork: The existing asphalt pavement shall be uniformly saw cut on straight lines and the material shall be removed. Other methods of cutting the existing asphalt surface which will result in a uniform straightedge similar to a sawed cut may be acceptable. Upon completion of the pipe laying, select backfill shall be placed in the excavation in maximum 8-inch lifts and compacted to at least 90% of maximum laboratory density to within one foot of the top subgrade and to 95% of maximum laboratory density in the upper one foot of the subgrade.

Maximum density of typical select backfill material shall be determined in accordance with AASHTO T 191 or ASTM D 2922. Portable mechanical tampers or vibratory compactors shall be used in the trenches. Rollers may be used at street level. Existing base and asphalt surfaces which become undermined during construction shall be removed until firm undisturbed subgrade is reached.

A. Select Fill: Class 9, Group "C" Modified for a PI of between 5 and 15 as per latest Edition of Mississippi standard specifications for Road and Bridge construction

B. Asphalt Repair: Temporary Asphalt repair shall be made using 3" thickness of 825 crushed stone.

C. Concrete Repair: Concrete repair shall be made using 3,000 psi concrete meeting Technical Specifications - CONCRETE

D. Prime Coat: Prime coat shall be applied to exposed existing base material prior to overlay with asphaltic base course in accordance with MDOT Specification Section 408.

F. Tack Coat: Tack coat shall be applied to existing or new asphaltic wearing course and asphaltic base, or concrete which is to require asphalt wearing course.

G. Asphalt Wearing Course: Placement and compaction of the bituminous pavement shall be in accordance with MDOT Specification Section 403.03.

E. Utilities: All utility covers excavated during removal of streets, driveways, parking lots shall be restored to finished grade.

5.3 Driveways and Sidewalks: Driveways and sidewalks shall be repaired in similar manner to the original construction. Asphalt drives shall be saw cut where required and repaired in accordance with Paragraph (b) of this Specification. Concrete drives shall be saw cut or removed to the next joint. The minimum thickness for concrete driveway repair is 7 inches and for sidewalks is 4 inches.

Concrete surfaces shall be properly tooled and receive a broom finish. Installation (if required) of new driveway drainage culvert shall be made only at the direction of the Engineer. The Contractor shall take all reasonable precautions to allow for reuse of existing drainage culverts.

5.4 Repair to Gravel Roads: Gravel roads shall be backfilled and compacted in accordance with Paragraph (B) of this Specification. The final surface shall consist of 12-inch in-place compacted clay gravel. Compaction shall be to 100% of maximum laboratory density in accordance with AASHTO T99.

5.5 Repair to Lawns:

A. General: The Contractor shall exercise extreme care to minimize damage to improved lawns. Trees and shrubs within the limits of work shall be removed only for essential construction requirements. Any shrubs, which are removed or damaged, shall be replaced by satisfactory (to the Property Owner) planting by the contractor. Any grass seed areas, roads, streets, driveways, culverts, fences, water lines, metal boxes or other items (excluding trees unavoidably cut) which are damaged by the Contractor, shall be satisfactorily restored by Contractor. Acceptance of improved lawn repairs shall be based on the firm establishment of live stand of grasses and live growth of any replanted and acceptable shrubs. The Contractor shall water and fertilize such areas until healthy growth of grass (and shrubs, if applicable) are attained.

B. Grading: The surface areas shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall strip topsoil and sod and stockpile for later use. Upon completion of trenching over the area. Additional topsoil shall be furnished if required (at no additional cost) to provide a uniform thickness of 3 inches. Lime at a rate of 1 - ½ tons per acre and fertilizer (13-13-13) at a rate of 800 pounds per acre shall be applied as needed to further establish grass growth.

D. Grassing: Grass seed, sprigs, or sod similar to the existing lawn grasses shall be planted in accordance with the supplier's recommendations. Winter cover grasses such as rye grass shall be applied (in addition to planting the permanent grasses) if seeding, sprigging, or sodding is done at a time of year when the permanent grasses will not actively grow. The type (s) of permanent grasses shall be the same as the grass (es) in the damaged lawns. If the lawn repairs are accomplished between September 1 and March 1, the Contractor shall continue the restoration

work during the next period of March 15 and April 5 and mow the grass and continue the restoration until satisfactory growth of the permanent grass (es) is obtained. Such additional restoration work shall include the 1 - ½ tons of lime per acre, application of 13-13-13 fertilizer at a rate of 800 pounds per acre and replanting and watering permanent grass as necessary to obtain satisfactory (to Engineer) growth. No time will be charged against the Contract Time for any such additional restoration work.

Sodding: Sodding shall be in accordance with Technical Specifications: - Seeding and Sodding

5.6 Erosion Control: During all phases of construction, the Contractor shall adequately protect all work from adverse erosion. Soil shall not be allowed to flow off the limits of work area. The Contractor shall employ the use of ditch checks, matting, temporary grass cover, blankets, or other measures to control erosion. The Contractor shall be responsible to correct damage caused by erosion. During the construction of this project, all work areas will be strictly monitored. All trench lines will be kept in excellent condition, all streets and drives will receive careful maintenance, keeping potholes and settled areas filled in. Dust control is essential and will also be strictly monitored.

5.7 General Grassing of Unimproved Areas

A. General: The Contractor shall seed and establish grass growth in all disturbed areas in unimproved areas (to include pastures and roadsides). Acceptance of the grass cover shall be based upon the firm establishment of a live stand of grass. The contractor shall water such grass if natural rainfall fails to adequately provide moisture. On slopes and other areas subject to erosion, grassing shall be accomplished as soon as practical (within 48 hours unless weather is prohibiting) after finish grading operations.

B. Grading: The surface area shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall remove existing topsoil and stockpile for later use. Upon completion of backfilling (to establish contours as before construction), the topsoil shall be uniformly spread back over the area. The Engineer may require additional topsoil be furnished by the Contractor at no expense to the project, if in the opinion of the Engineer, adequate provisions and efforts were not made by the Contractor to stockpile and re-use existing topsoil material.

D. Fertilizer and Agricultural Limestone: The Contractor shall uniformly apply 800 lbs. per acre of 13-13-13 fertilizer and also apply two (2) tons per acre of agricultural limestone to the area to be seeded. The fertilizer and limestone shall be tilled into the soil to a depth of four (4) inches.

E. Mulch Cover: Erosion prone areas such as steep slopes and highway shoulders shall receive a layer of loose straw mulch or equivalent at the rate of one and one-half (1-1/2) tons per acre. The mulch cover shall be established by the application of an emulsified asphalt or by "crimping" parts of the material into the soil.

5.8 Miscellaneous Items: Items such as fences, gates, paved ditches, and other items shall be replaced or repaired as required for restoration. Should additional fencing material be required, new post and new wire of similar size, type and gauge shall be provided and installed.

5.9 General Care: Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees, which do not have to be removed in the opinion of the Engineer, and which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

6.0 TESTING

6.1 General: All sampling and testing shall be accomplished by the testing laboratory approved by the Owner and employed by the Contractor to perform such services. Results shall be immediately forwarded to the Engineer by the Contractor.

6.2 Earthwork: Earthwork directly involved with road and street repair shall be tested as follows:

A. Moisture Density Relationship (Standard Proctors): Two tests of sampled native material shall be required. Tests shall be in accordance with AASHTO T 99.

B. Field Density: A minimum of two and a maximum of four field density tests shall be required. Density tests shall be in accordance with AASHTO T 191 or ASTM D 2922.

C. Topsoil: Two pH tests and two organic content tests (wet combustion method) will be required.

SEEDING AND SODDING

1.0 DESCRIPTION

This item consists of furnishing all labor, supervision, materials, tools, incidentals and equipment and performing all work for topsoiling, tilling, fertilizing, seeding, watering, and otherwise establishing, protecting and maintaining seeded and sodded areas as required by the Contract Drawings and these specifications, and including repair, refertilizing and reseeding as required until final inspection and acceptance of the project.

2.0 SUBMITTALS

Certificates for fertilizer, limestone, seed.

3.0 MATERIAL

3.1 Topsoil: Topsoil shall be the surface layer of soil that is stockpiled by the Contractor during stripping and/or excavation on the site. The topsoil shall be free of subsoil, clay, lumps, stones, brush or seed. Topsoil shall have a pH value of not less than 4.5 nor more than 8.0.

3.2 Lime: Lime shall be ground limestone containing not less than 80% of total carbonates and shall be ground to such fineness that 80% will pass through a No. 10 mesh sieve and 40% will pass through a No. 40 mesh sieve.

3.3 Fertilizer: Fertilizer shall be water soluble commercial carriers of available plant food elements or combinations thereof, as stated herein and shall conform to the applicable state fertilizer laws. They shall be uniform in composition, dry, and free flowing materials in condition for application by suitable equipment. The fertilizer shall be delivered in standard bags or other convenient standard containers, each fully labeled with manufacturer's guaranteed analysis. Any fertilizer shall contain not less than the percentages by weight of the ingredients set out as follows: (1) Nitrogen, 13% (2) Phosphorous P O, 13%, (3) Potash K C, 13%. Invoices for fertilizer will show the kind and have analysis furnished.

3.4 Seed: Seeds with a minimum pure live seed content of 90% shall be used. They shall be of the best grade and of known vitality, purity, and germination and shall be delivered in containers bearing seed tags as required by law showing percentages of germination content and purity of seed as well as percentages of weed seed content.

All seeds shall be free of wild onion, Canadian thistle, Johnson grass, crab grass or other seeds of noxious weeds. All seeds shall be furnished in standard containers, or as acceptable to the Engineer. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be acceptable.

Purity, Germination and Planting Schedule

Spring and Summer Seeding (March 1 to September 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Hulled Bermuda	95	90	20
Pensacola Bahia	95	90	30

TOTAL 50
Fall and Winter Seeding (September 1 to March 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Unhulled Bermuda	95	90	20
Pensacola Bahia	95	90	30
Rye	95	85	15
Crimson Clover	95	85	8

TOTAL 73

Seeding in Existing Lawns: Grass seeds for existing lawns shall be the same as the existing grass.

3.5 Leguminous Inoculants: Inoculation media containing live nitrogen-fixing bacteria shall be supplied with all legume seed. The inoculants shall be standard, pure culture of nitrogen-fixing bacteria. Each kind of legume will require a cultural bacteria that is adapted to that particular kind of seed. The bacteria shall be supplied in convenient containers of a proper size to treat the amount of seed to be planted. The legume seeds shall be treated according to the directions, and before the expiration date for use of the media shown on the container.

3.6 Soil for Repairs: For fills or areas to be repaired, soil shall be topsoil of a least equal quality to that which exists in areas adjacent to the area to be repaired.

3.7 Water: Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass, and shall be from a source accepted prior to use.

3.8 Solid Sod: Bermuda or Carpet Grass and shall be native to the locality of the work and shall, when placed be live, fresh, growing grass with at least two and one-half (2 ½) inches of soil adhering firmly to the roots. The sod shall be reasonably free from obnoxious weeds or other

grasses, and shall not contain any matter deleterious to its growth; or which might affect its subsistence or hardness when transplanted. The sod shall be in blocks at least 3" x 8", and free from ragged edges.

4.0 INSPECTION AND TESTS

4.1 Fertilizer and Limestones: Duplicate copies of material invoices shall be furnished to the Engineer. Invoices shall show quantities and grade of fertilizer, quantity of limestone, percentages of calcium carbonate and magnesium carbonate, as applicable, and the percentages of limestone that pass the No. 40 and the No. 10 mesh sieves. Samples of each lot of fertilizer and limestone shall be furnished for testing. Upon completion of project a final check of total quantities of fertilizer and limestone used will be made against total area treated, and if minimum rates of application have not been met, additional quantities of these materials to make up minimum application specified shall be distributed.

4.2 Seed: Contractor shall furnish to the Engineer duplicate signed copies of statement(s) from vendor(s), certifying that each container of seed delivered is labeled in accordance with Federal Seed Act and is at least equal to requirements specified therein. This certification shall be obtained from vendor and shall be furnished before application.

5.0. PREPARATION OF GROUND SURFACE

5.1 General: Equipment, in good operating condition, shall be used for the proper preparation of the ground and for handling and placing all materials. Equipment shall be acceptable before work is started.

5.2 Topsoiling: Topsoil shall be obtained from job site stockpiles formed during stripping and/or excavation operations and shall be free from subsoil, clay lumps, stones, brush, grasses or weeds, excess acids or alkali, or any other material to subsequent, smooth, grading, planting, and maintenance operations.

The topsoil shall be evenly spread on tilled areas to a uniform depth of at least 3 inches after compaction. Spreading shall be performed so that seeding can proceed with a minimum of soil preparation or tilling. After preplanting fertilization is completed, the topsoil shall be compacted by rolling with a cultipacker or by other approved means.

Rehabilitation of the stockpile areas shall include returning the area to near pre-construction conditions, including seeding of the area to re-establish the growth of grass.

5.3 Grading: Previously established grades shall be maintained on the areas to be treated in a true and even condition; necessary repairs shall be made to previously graded areas by means of graders or other approved equipment.

5.4 Tillage: After the areas required to be treated have been brought to the grades shown, the

soil shall be tilled to a depth of at least 4 inches by plowing, disking, harrowing, or other acceptable operations until the condition of the soil is acceptable. The work shall be performed only during period when beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. Undulations or irregularities in the surface shall be leveled before the next specified operation.

6.0 APPLICATION OF FERTILIZER AND LIMESTONE

6.1 Preplanting fertilization of areas to be seeded: Fertilizer shall be distributed uniformly at a rate of 800 pounds per acre over areas to be seeded and shall be mixed into the soil to a depth of at least 4 inches by disking, harrowing, or other acceptable methods. Application of fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.2 Liming: Immediately following or simultaneously with incorporation of fertilizer, limestone shall be distributed uniformly at a rate of 4000 pounds per acre, and shall be mixed into the soil to a depth of at least 4 inches by disking , harrowing, or other acceptable methods. Application of limestone along with fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.3 Leveling: Surface irregularities resulting from tillage, fertilizing, liming, or other operations shall be leveled before seeding.

6.4 Postplanting fertilization: From 40 to 60 days after seeding, ammonium nitrate or its nitrogen equivalent shall be applied uniformly at a rate of 225 pounds per acre over areas seeded. Fertilizer shall be applied when grass blades are dry to minimize burning. The planted area shall be watered to thoroughly moisten the upper 6 inches of the soil surface after the fertilizer is applied.

7.0 PLANTING SEED

7.1 General : A satisfactory method of sowing shall be employed, using approved mechanical power-drawn drills or seeders, or other approved methods. When drills are used, markers or other means shall be provided to insure that the successive seeded strips will overlap or be separated by a space no greater than 6 inches. When delays in operations extend the work beyond the most favorable planting season for species designated or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be halted as directed and resumed only when conditions are favorable or when approved alternate or corrective measure and procedures have been effected. If inspection during or after seeding operations indicates that strips wider than 6 inches have been left unplanted or other areas skipped, additional seed shall be sown.

7.2 Broadcast Seeding: Seeding shall be broadcast either by hand or with acceptable seeding equipment, in combination with fertilizer, or with other acceptable sowing equipment. Seed shall be distributed uniformly over designated areas. Half of the seed shall be sown with sower moving

at right angles to first sowing. Seed shall be covered to an average depth of 1/4 inches by brush harrow, spiketooth harrow, chain harrow, cultipacker, hand rake with wood tines, or other approved device. Seed shall not be broadcast during windy weather.

7.3 Drill Seeding: Drill seeding shall be accomplished with approved equipment with drills set not more than 6 inches apart. Seed shall be sown uniformly over designated areas to average depth of 1/4 inch.

7.4 Sodding: All solid sod shall be procured areas where the soil is fertile and contains a high percentage of loamy topsoil, and from areas that have been grazed or mowed sufficiently to form a dense turf.

Mechanical devices, such as sod cutter, may be used for cutting the sod into strips or blocks. Care shall be exercised at all times to retain the native soil on the roots of the sod during the process of excavating, hauling and planting.

The solid sod blocks shall be transplanted within 24 hours from the time of cutting, unless they are stacked, to their destination in a manner satisfactory to the Engineer. All solid sod in stacks shall be kept moist and protected from exposure to the air and sun, and from freezing. In no event shall more than two (2) days elapse between the cutting and planting of the solid sod.

Solid sod shall be planted during the period between March 1st and December 15th, unless written permission is given by the Engineer to extend the planting season. The solid sod shall be placed on the prepared surface with the edges in close contact. All cracks between blocks of solid sod shall be closed with small pieces of fresh sod, and all cracks too small for sod shall be filled by a light dressing of topsoil. The entire sodded area shall then be compacted and watered to the satisfaction of the Engineer. Rollers, hand tamps or other approved equipment may be used for compacting.

Surfaces of solid sodding which, in the opinion of the Engineer, may slide due to the height and slope of the surface or nature of the soil, shall, upon direction of the Engineer, be "pegged" with wooden pegs driven through the sod blocks into firm earth, sufficiently close to hold the sod in place.

8.0 MAINTENANCE

Seeded areas shall be maintained until all work or designated portions thereof have been completed and accepted. Tall grass and weeds that tend to impede the desired grass species shall be mowed, and any damage resulting from these operations shall be repaired at the Contractor's expense.

9.0 ESTABLISHMENT OF GROWTH

9.1 General : The Contractor shall be responsible for proper care of seeded areas while grass is becoming established for three (3) months after completion of treatment on the entire project, unless desired cover is established in a shorter period of time and the Owner shortens responsibility period. The Contractor shall be responsible for providing a satisfactory stand of grass. A satisfactory stand of grass is determined as a cover of living grass in which gaps larger than 12 inches square do not occur as determined by an acceptance inspection made at the end of the maintenance period. Maintenance work shall be performed at the Contractor's expense.

9.2 Mowing: Seeded and sodded areas shall be mowed with acceptable mowing equipment to a height of about 4 inches when average height of grass becomes about 8 inches. When amount of cut grass is heavy, grass shall be removed to prevent destruction of underlying turf. If weeds or other undesirable vegetation threatens to impede the growth of planted species, such vegetation shall be mowed, or in case of excessive growth, shall be uprooted, raked and removed from area.

9.3 Refertilizing: The Contractor will determine areas needing refertilization at least 15 days before application is required. Fertilization shall be distributed on designated area during periods when grass is dry. 13-13-13 grade fertilizer shall be applied uniformly at a rate of 800 pounds per acre. Fertilizer conforming to physical condition, packaging and marking as specified herein before shall be provided.

9.4 Reseeding: The Contractor will determine areas requiring reseeding at least 15 days before period specified for reseeding. Seed specified hereinbefore shall be drilled at rates hereinbefore specified, in a manner that will cause minimum disturbance to existing stand of grass, and at an angle of not less than 15 degrees from direction of previously seeded rows.

CONCRETE

1.0 GENERAL

- A. This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals and performing all forms of work; furnishing and placing reinforcement, inserts and anchors; mixing, placing, curbing, and furnishing of portland cement concrete.
- B. The work includes, but is not necessarily limited to manholes, pumping stations, lift stations, driveways, and minor concrete work.

2.0 APPLICABLE DOCUMENTS

The following publications form a part of this Specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publication referenced shall apply to the work.

A. American Society for Testing and Materials (ASTM):

- A 615 Billet Steel for Concrete Reinforcement
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field
- C 33 Concrete Aggregates
- C-39 Compressive Strength of Molded Concrete Cylinders
- C 143 Slump of Portland Cement Concrete
- C 150 Portland Cement

B. Mississippi Department of Transportation (MDOT):

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS:

The following data shall be submitted to the Engineer for review prior to incorporation into the work:

- A. Letter from the manufacturer certifying the concrete mix conforms to the requirements for Class B concrete as defined in Section 804 of the MDOT Standard Specifications for Road and Bridge Construction.

- B. Letter of certificate from the manufacturer certifying that the reinforcing steel conforms to the herein specified requirements.

4.0 MATERIALS:

- A. General: The concrete shall be ready-mix concrete manufactured by a plant for delivery to the site of the work in a plastic state. The Contractor may batch the concrete at the work site by use of portable mixers providing the following requirements are met:
 - 1. Facilities shall be provided to properly weight, proportion and control the components of the concrete mix.
 - 2. The mixer(s) shall be of such capacity so as to allow the complete placement of the plastic concrete mix prior to the initial set of any portion of the particular concrete pour.
- B. Concrete Mix: The concrete materials and mix design, shall conform to the requirements for Class B concrete Section 804, MDOT Standard Specifications for Road and Bridge Construction. The compressive strength of the concrete shall be a minimum of 3000 psi at 28 days, or earlier. Type I Portland Cement shall be used in the mix, except where otherwise specified or permitted. Prior to producing any concrete for cast-in-place construction on the project, the Contractor shall submit to the Engineer the proposed mix design and shall obtain Engineer's approval of the mix design.
- C. Reinforcing Steel - shall be new stock, deformed bars conforming to ASTM A 615, Grade 40 or Grade 60.
- D. Curing Material - shall consist of wetted burlap, wetted cotton mats, plastic sheeting, or an approved liquid membrane material which will satisfactorily keep the new concrete in a moist condition for at least seven (7) days.

5.0 CONSTRUCTION:

- A. Weather Limitations: Concrete shall be placed when the atmospheric temperature is a Minimum of thirty-five (35) degrees F. and rising. Newly placed concrete shall be protected from cold temperatures for at least four (4) days at a temperature of not less than forty (40) degrees F.
- B. Forms: Forms shall be securely anchored in place and properly aligned. Wood forms shall be oiled prior to placement of fresh concrete mix.
- C. Reinforcement: Reinforcing bars shall be securely mounted by the use of chairs or other approved methods so as to not become displaced during placement of concrete mix. The positioning of reinforcing by working the bars into the newly placed concrete mix shall not be allowed.

- D. Placement: The plastic concrete mix shall be worked (and vibrated if required) into the formwork. The mix shall be consolidated so as to remove all voids and finished to form a true and level surface.
- E. Curing: The hardened concrete shall be kept moist by the use of curing materials for a minimum of seven (7) days.
- F. Slump Requirements: The following slump requirement shall apply:
Class B Concrete 2-4 Inches
- G. Chamfered Corners: All exposed corners shall be chamfered one (1) inch or as indicated.
- H. Finish:
1. All surfaces shall be "floated" to provide a uniform and level surface. Defects (honeycombs, ties, etc.) shall be repaired. No rubbing shall be required.
 2. Sidewalks, driveways and other surfaces subject to pedestrian traffic shall be floated as noted in paragraph 1 above and shall receive a "broom" finish.

6.0 TESTING

The following test shall be required:

- A. Slump: The Contractor shall test the concrete mix for conformance to the slump requirements as required. Test shall be in accordance with ASTM C 143.
- B. Compressive Strength: The Contractor shall sample the concrete mix and prepare test cylinders for conformance to the compressive strength requirements. The Contractor shall transport the cylinders to the testing laboratory (employed by the Contractor) and have the cylinders tested in accordance with ASTM C 31 and C 39. The results of such test shall be forwarded to the Engineer. Test shall be performed at the following schedule.

One test per 15 cubic yards or major fraction thereof. A minimum of one test for each day of mixing shall be performed.

DUCTILE IRON WATER SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of water pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of these Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139 Electric-Fusion (Arc) welded steel pipe (sizes 4 inch and over).
- A 252 Welded and Seamless steel pipe piles.
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Concrete Aggregates
- C 39 Test for Compressive Strength of Cylindrical Concrete Specimens.
- D 2922 Density of Soil Aggregate in place by the clear Method (shallow depths).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- 21.10 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.
- 21.11 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.
- 21.50 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-line Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

- C 104 Cement-Mortar Lining for Cast Iron Pipe and Fittings for Water and Other Liquids.
- C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.

C 150 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as Specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

4.0 MATERIALS

WATER SYSTEM:

A. Ductile Iron Pipe: Ductile iron pipe shall be designed in accordance with the latest revision of ANSI/AWWA C 151/A21.51), rated working pressure of 350 psi plus a 100 psi surge allowance; a 2 to 1 safety factor on the sum of working pressure plus surge pressure in Type 3 Laying condition with a depth of cover as required per plans.

Pipe shall have standard asphaltic coating on the exterior. Pipe also shall have a cement mortar lining on the interior in accordance with the latest revision of ANSI/AWWA C104/A21.4. If corrosion protection is required, polyethylene encasement shall be installed prior to the pipes installation in accordance with ANSI/AWWA C105/A21.5-88.

All non-restrained pipe shall be furnished with push-on type joints such as "Fastite", or equal. Joints shall be in accordance with the latest revision of ANSI/AWWA C111/A21.11 and shall be furnished complete with all necessary accessories.

Where restrained joint pipe is required, "Fast Grip", "Flex-Ring", or "Field Flex-Ring" or approved equal shall be used. The length of restrained pipe shall be as tabulated or noted on the plans.

Ductile iron fittings shall conform to the latest revisions of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Fittings, linings, and coatings shall be as specified for the pipe above.

All pipe, fittings and accessories shall be installed and tested in accordance with the latest revision of AWWA C600. Newly installed ductile iron water mains shall be disinfected in accordance with the latest revision of AWWA C651 prior to placing in service.

B. Gate Valves: Where indicated on the Plans or directed by the ENGINEER, the CONTRACTOR shall furnish and install gate valves as hereinafter specified.

All gate valves shall be cast iron mechanical joint, M.J., Mueller A-2380-20, equivalent or better.

All gate valves shall be furnished with O-ring packing and 2" square operating nut, AWWA 200lb., for cast iron water main.

Valve boxes shall be cast iron top and bottom. Extension pieces shall be provided as required.

All valves will be set at a perfect 90 degree angle from level pipe, (perpendicular) so as to be easily accessible through properly set valve box as per specifications above.

The CONTRACTOR shall furnish and install either a two-piece or three-piece, slip type, cast iron valve box over each gate valve. Valve boxes will be set over valve operating nut, centered so as to be easily accessible with a valve operating wrench or key. They will be set to correspond with the finished grade of street, lot, or easement. No dirt will be left in box; box will not rest directly on valve body.

C. Fittings, Valves and Hydrants, Etc.: All fittings, valves and valve boxes, hydrants, and other appurtenances are to be set at the points indicated on the plans, or as directed by the ENGINEER, and omission to do so shall be corrected by the CONTRACTOR without extra cost to the OWNER.

All fittings shall either be Ductile Iron Compact (ANSI/AWWA C153/A21.53) or Cast Iron (ANSI/AWWA-C110/A21-10) and shall have mechanical joint ends and mechanical joint restraints (Series 1120) and shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices.

The mechanical joint restraint device shall have a working pressure of a least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron., MEGALUG or equal.

To improve the sealing capacity, the gaskets for all mechanical joints conforming to the requirements of ANSI/AWWA C110/A/21.10, C111/A21.11, or C153/A21.53 shall be of a design that causes the gasket to deflect approximately 30% during assembly of the mechanical joint. The gasket material shall conform to the requirements of ANSI/AWWA C111/A21.11, Section 1-6.4 of the latest revision. Mechanical joint gaskets shall be EBAA Iron's EBAA Seal- Improved Mechanical Joint Gasket or approved equal.

Fittings (bends, tees, plus, and caps) shall be securely braced by mechanical joint restraints, as indicated on the Plans, to prevent the possibility of blowing off under pressure. And a full length of pipe shall be installed on each end of the fitting. Then cut pieces can be installed beyond the full lengths of pipe.

D. Plugs and Caps: Where indicated on the Plans, or as directed by the ENGINEER, the CONTRACTOR shall install plugs for anticipated future extensions by placing a branch fitting (tee or cross) in the line and plugging the unused branch or branches. In general, such plugs will be located at street intersections where present plans provided lines running in only two or three directions from the intersections and where, in the opinion of the ENGINEER, a connection may be required for future extension. Where "dead end" lines are installed, the ends of such lines shall

be plugged or capped as required.

For the various hot taps required according to the plans, and up to 12 inches, the JCM 432, stainless Tapping Sleeve, or approved equal, shall be required. The CONTRACTOR shall furnish all materials for these various taps.

E. Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of water pipe and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch.

F. Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1" sieve.

G. Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table)

H. Meter: Water meter shall be Badger "Radio Read" and all fittings shall be Ford brand consistent with current City Standards.

I. Polyethylene Pipe: Shall be in accordance with AWWA C906, ASTM D3035, PE4710, C200 (DR11), with ductile iron outside diameter (DIOD)

J. Fittings for Polyethylene Pipe: Shall be in accordance with AWWA C906, AWWA D3035, molded and manufactured to comply with ASTM F714. AWWA C906, AWWA M55, ASTM D3261 for butt fusion fittings ANSI Class 150 or as necessary to provide minimum pressure rating.

K. Joints and Jointing Materials

a. Mechanical Joint: DIOD Mechanical joint adapter and gaskets for mechanical joints for joint connections between pipe and metal fittings, valves, and other accessories, AWWA C111/A21.11.

b. Butt Fusion: Jointing is to comply with ASTM D2657, Butt Fusion. No offset in alignment between adjacent pipe joints or fittings is permitted.

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 1/2"	95 - 100
3/4"	35 - 70
3/8"	10 - 30
No. 4	0 - 5

H. Select Backfill: General: The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material.

Gradation: Any coarse aggregate contained in the material shall pass the one and one-half (1-1/2), sieve and not more than thirty-five percent (35%) shall be retained in the Number 10 sieve. The plasticity index (P.I.) shall not exceed 12, nor shall the liquid limit exceed 30.

The composite selected sand-clay material passing the Number 10 sieve shall conform to the following minimum and maximum gradation limits:

<u>Sieve</u>	<u>Percent Passing by Weight</u>
Number 40	40 - 85
Number 60	30 - 70
Number 270	8 - 30
Silt (.05 to .005 mm)	3 - 15
Clay (Passing .005 mm)	3 - 15

I. Backfill: All other backfill shall consist of excavated material removed from the trench.

5.0 CONSTRUCTION:

Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas and Excavation, Trenching and Backfilling.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of water pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches and dikes and shall perform all pumping and other work necessary to divert

or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the bid price.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with select backfill and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation without direction of the Engineer shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the sub-grade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the sub-grade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the sub-grade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools

shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grad, and cross section with proper bell holes at each joint to insure the pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

a. Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS AND OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.

c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

F. PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

G. PIPE LAYING: Each pipe shall be laid true to line and grade and in such manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the water shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water earth, or other substance will enter the pipe or fittings. The minimum depth of water mains shall be 30 inches below finished grade to the top of the water main.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

H. PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space. When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first, then the top; next the bolts on either side; and last, the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

I. BORINGS: Borings shall be accomplished in accordance with Mississippi Department of Transportation Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the

crossing.

1. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be watertight.

2. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

3. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under all conditions.

4. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end by installing WMSON Type U end seals, as manufactured by T.D. Williamson, Inc. Tulsa, Oklahoma, or equal, in accordance with the instructions of the manufacturer of the seals.

J. Separation of Water and Sewer Mains:

1. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

K. INCIDENTAL CONCRETE:

1. GENERAL: The following specifications shall apply to any and all items of incidental work with Portland Cement with or without reinforcement, including such items as concrete piers to support cast iron pipe above ground, erosion control bulkheads or structures, cradles and encasement, blocking and the like.

All concrete used in the construction of this project shall comply with the requirements herein specified for its particular class and kind.

2. MATERIALS: All materials used in this work shall consist of (a) Portland Cement, (b) Sand, (c) Gravel, and (d) Clean Water.

(a) The cement used shall be domestic manufacture, either "Standard" or "high Early Strength" Portland Cement, which shall meet all the requirements of the current A.S.T.M. Specifications for the type used at the time it is incorporated in the work.

(b) The fine aggregate shall consist of clean, sharp sand, well graded from coarse to fine, consisting of hard, durable particles, free from coarse to fine, consisting of hard, durable particles, free from silt, salt or organic matter. It shall meet all the requirements of the ASTM Specifications C33, Paragraph 1, 2 and 3, and ASTM C-40.

(c) The coarse aggregate used shall consist of clean washed gravel, free from particles of wood or lumps of clay. Not more than 10% shall pass the No. 4 sieve, and it shall conform with the

requirements of ASTM Specifications C33, Paragraph 5 to 8 inclusive.

(d) The water used for mixing concrete shall be clear, free from oil, salt, strong acid, alkali organic matter, and shall be approved by the Engineer.

(e) Reinforcing steel shall conform to the requirements of the "Standard Specifications for Billet-Steel Concrete Reinforcing Bars" of intermediate grade (Serial Designation: A 15-39) or the Standard Specifications for Rail-Steel Concrete Reinforcement Bars (Serial Designation; A-16-35) of the American Society for Testing Materials.

3. CONSTRUCTION METHODS:

All concrete materials shall be as handled and stored that they will not become damaged after delivery at the site. The cement shall be thoroughly protected from the weather, and the sand and gravel, shall be so stored that they will not become intermixed, and so as to prevent the admixture with either of any foreign materials. Reinforcing steel shall be so stored that it will not come in contact with the ground, shall be protected from the weather, and shall be clean and free from rust when incorporated in the work.

Concrete materials shall be mixed in the proportions and in a manner that will produce concrete of the class and strength specified to its use.

Unless indicated otherwise, all concrete shall be Class A which shall have a crushing strength of not less than 3,000 pounds per square inch at 28 days, as determined by the Standard Methods for testing concrete materials.

Class B concrete, which shall have a crushing strength of not less than 2,500 pounds per square inch at 28 days, and shall be used for erosion control bulkheads and blocking pipelines at bends to prevent blowing off under pressure.

Class C concrete, which shall have a crushing strength of not less than 2,000 pounds per square inch at 28 days, shall be used for cradles and encasement and may be used for backfill below grade.

After concrete has been properly mixed, it shall be deposited in the forms in reasonably uniform layers and in such manner as to prevent segregation of the aggregates. It shall be thoroughly spaded or puddled while being placed to insure maximum density and prevent honey-combing.

No concrete shall be deposited when the air temperature is less than 40 degrees F. No material shall be deposited on a frozen sub-grade, nor shall any frozen moisture or material be incorporated into the mixture.

No concrete shall be placed in water, nor shall water be permitted to rise on it or to run over it within a period of 24 hours after it has been placed.

Unsatisfactory concrete, resulting from failure to observe the above requirements or otherwise,

shall be removed and replaced as directed by the Engineer.

4. COMPENSATION:

Payment for all concrete, except as may be elsewhere herein provided, shall be included in the prices bid for the construction units with which it is placed and no separate or extra compensation will be allowed directly therefore.

6.0 TESTING

DUCTILE IRON PIPE:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

STEEL CASING PIPE: Material test shall be included as part of the submittal. No other material test shall be required.

COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99 Select Backfill Material OR Stabilization Material	AASHTO T-191	or	ASTM D 2922
	1		One per 100 CY
Bedding Material	2		One per 600 LF
Tamped Backfill	2		One per 600 LF

HYDROSTATIC TESTING:

The completed system shall be tested as herein stated. The pipe shall be filled with water and all air exhausted. Each section shall be tested under a hydrostatic pressure of 150 pounds per square inch and shall not show leakage exceeding 10 gallons per inch of diameter per mile of pipe per 24 hours when so tested. Whatever shall be measured into a container and refilled to the pre-test level. The pressure shall be maintained for 4 hours by pumping as necessary, and if the pipe has been backfilled, a 24-hour test is required.

All visible leaks at exposed joints and all leaks evident on the surface where joints are covered shall be repaired, and leakage eliminated, regardless of total leakage shown by the tests. Lines which fail to meet tests shall be removed, if necessary, or repaired and retested until compliance with these test requirements is affected.

These tests are to be made at the Contractor's expense, and he is to provide all necessary fittings, equipment, appliances, and any other necessary items to conduct the tests in a manner satisfactory to the Engineer. All costs incidental to conducting these tests are to be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

CLEANING AND DISINFECTION:

Before each section of work is placed in service, it shall be thoroughly flushed to remove any dirt or other foreign material from inside the lines; and the inside of the lines shall be disinfected by pumping into and through them a solution of chlorine of 50mg/l for 24 hours in such manner as to meet the requirements of the State Board of Health.

At least two (2) samples of chlorine free water, taken from each section shall be submitted to the State Board of Health for examination to determine if the system is free from organisms of the Coli-Aerogenes group. If such samples are not negative from organisms of the Coli-Aerogenes group, the system shall be disinfected and re-disinfected in a manner meeting the requirements of the State Board of Health, until the system is freed of contamination.

All water mains will be flushed, chlorinated and re-chlorinated until two (2) consecutive negative water samples are obtained by the Local Health Department or a representative of the water systems certified as an operator by the Mississippi Department of Health.

The CONTRACTOR shall be responsible for the conduct of all of the above defined activities, and any and all costs incident thereto shall be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

EXISTING DRINKING WATER FACILITIES

The Contractor is required to keep existing drinking water facilities in operation during

construction. Should the Contractor require that existing facilities be taken out of operation, a plan to provide for alternative service shall be reviewed and approved in advance by the Health Department and shall be adhered to during construction.

FIRE HYDRANT

1.0 General

Fire hydrants shall comply in all respects with AWWA Standard C-502, latest revision, and shall be M & H or approved equal. Fire hydrants shall be of the compression type with the main valve opening against the pressure and closing with the pressure. The main valve opening shall be 4-1/2", 5-1/4", or 6-1/4" in diameter. Fire hydrant shall be of a dry barrel, dry top design. The main valve on the hydrant shall remain closed should the hydrant nozzle section be broken off by a traffic accident. The nozzle section shall consist of two (2) hose nozzles and one (1) pumper nozzle or other, as specified.

2.0 Rating

Fire hydrants shall be rated at 150 psi water working pressure, tested at 300 pounds hydrostatic for structural soundness in the following manner: 300 pounds hydrostatic test supplied from the inlet side, first with the main valve closed for the testing of the valve seat; second, with the main valve open for testing of the drain valves and the hydrant barrel. Testing is to be completed in accordance with AWWA C-502.

3.0 End Configurations

Hydrants shall be connected to the main by a 4", 6", or 8" mechanical joint, flange shoe, A.C., or hub shoe. Mechanical joint shoes, A.C., and hub shoes shall be fitted with strapping lugs.

4.0 Design

- 4.1 The main valve seat of the hydrant shall be made of rubber and be supported by a one-piece bronze top plate and drain valve mechanism and bottom plate. The bottom stem threads of the main valve rod shall be fitted with a cast iron cap nut (epoxy coated, optional) suitable for sealing the threads from the water. Drain valves shall be faced with rubber.
- 4.2 Changes in size or shape of the waterway shall be accomplished by means of easy curves. Exclusive of the main valve opening, the net area of the waterway of the barrel and the foot piece at the smallest part shall not be less than one hundred twenty percent (120%) of that of the net opening of the main valve.
- 4.3 Hose and steamer nozzles shall be threaded and screwed into the nozzle section and then pinned to prevent turning.
- 4.4 The hydrant shall be so designed that when it is in place, no excavation will be required to remove the main valve and moveable parts of the drain valve. Further, the hydrants shall be of the type that can be extended without excavating. Hydrants shall be so designed that, in the event of accident or breaking of the hydrant above or near grade level, the main valve will remain closed. The main

valve rod shall be made in two parts and fitted with breakable feature at the ground line flange.

- 4.5** The ground line connection between nozzle section and the barrel shall incorporate the use of eight (8) breakable bolts. This connection shall be so designed that the nozzle section can be rotated in increments of forty-five (45) degrees. The ground line connection between the barrel and nozzle section shall be gasketed to provide a seal.
- 4.6** The operating threads of the hydrant shall be so designed as to avoid the working of any iron or steel parts against either iron or steel. The operating stem and operating nut threads shall be square or acme type.
- 4.7** The operating thread shall be grease lubricated at the factory. Access shall be provided to field lubricate the operating mechanism.
- 4.8** The operating thread shall be sealed from water at all items when the valve is either in the opened or closed position. The operating rod shall be bronze sheathed where it passes through the double “O” ring seal plate.
- 4.9** The bonnet shall be weather proof.
- 4.10** The operating nut shall be of bronze and a self-lubricating, anti-friction thrust bearing shall be provided to reduce operating torque.
- 4.11** Hydrants shall be of the dry type and hydrant shoe shall have two positive acting non-corrodible drain valves that shall drain the hydrant completely by opening when the main valve is closed and close tightly in accordance with AWWA C-500 requirements when the valve is open. The main valve assembly shall be seated in the hydrant (with a bronze-to-bronze interface as an option) to facilitate removal of the main valve should maintenance be required. The nozzle section shall consist of two 2” hose nozzles to the specified thread designation (NST or other, as specified) and one pumper nozzle 4-1/2” in diameter to the specified thread designation (NST or other, as specified) or other combination of nozzle outlets including independent hose gate valves as specified.
- 4.12** Two “O” ring seals shall be utilized where the main hydrant rod passes through the seal plate.
- 4.13** Hydrant standpipe shall be ductile or cast iron and single piece for all bury depths.
- 4.14** All like parts of hydrants of the same size and model produced by the same manufacturer shall be interchangeable.
- 4.15** Hydrant shall open by turning to the left.

- 4.16** Threads or hose and streamer nozzles shall be national standard unless otherwise specified.
- 4.17** Auxiliary shut-off (isolation) gate valves, when required, shall be of the same manufacture as the hydrant.
- 4.18** The inside of all hydrants shall be coated in accordance with AWWA standards and federal specification TT-C-494A or equal except for bronze and machined surfaces. Exterior of hydrant shall be painted fire hydrant yellow (or as specified). (The wetted surface of the hydrant shoe shall be epoxy coated to prevent corrosion of the waterway, optional.)

5.0 **Markings**

Hydrant shall be marked with the name of the manufacturer, size of valve opening, and the year of manufacture, all in accordance with AWWA C-502.

Sewer/Water Utility – Trace Wire Specification

1.0 General

All trace wire shall have HDPE insulation intended for direct bury, color coated per APWA standard for the specific utility being marked. THHN is prohibited from use in the tracer wire system.

All trace wire, test stations and accessories shall be supplied by a single manufacturer and domestically made in the USA.

All tracer wire and accessories shall be installed per plan details and per manufacturers recommended installation methods. All wire and connectors shall be rated for direct bury applications.

2.0 Materials

Copper Clad Steel (CCS) Trace Wire

Open Trench – 12 Gauge Copper Clad Steel with a Break Load of 452 pounds

Directional Drilling - 12 Gauge Copper Clad Steel with a Break Load of 1,150 pounds

Connectors

2-Way Splice Connector with Strain Relief

3-Way Connector

Termination/Access/Test Stations

Non-Roadway: Equal to Copperhead LD14TP

Concrete / Driveway: Equal to Copperhead CD14TP

Roadway: Equal to Copperhead RB14TP

Fire Hydrant: Equal to Copperhead T2-FLPKG

Grounding

Magnesium Anode: Equal to Copperhead ANO-12

3.0 Testing

All new trace wire installations shall be located using typical low frequency (512Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project. Continuity testing in lieu of actual line tracing shall not be accepted.

4.0 Connectors

All mainline trace wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector. Connectors shall be dielectric silicon filled to seal out moisture and corrosion, and shall be installed in a manner so as to prevent any uninsulated wire exposure.

Non-locking friction fit, twist on or taped connectors are prohibited.

5.0 Termination/Access/Test Stations

All trace wire termination points must utilize an approved tracer wire access box, specifically manufactured for this purpose or as detailed on the plans

All grade level/in-ground access boxes shall be appropriately identified with “sewer” or “water” cast into the cap and be color coded (blue – water / green – sewer).

Test stations at dead ends shall be two-terminal.

Test stations in between dead ends shall be single terminal.

A minimum of 2 ft. of excess/slack wire is required in all trace wire access boxes after meeting final elevation.

Grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.

Hydrants – Trace wire must terminate at an approved above-ground trace wire access box, properly affixed to the hydrant grade flange.

6.0 Grounding

Trace wire must be properly grounded at all dead ends/stubs.

Grounding of trace wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20ft of #12 red HDPE insulated copper clad steel wire connected to anode specifically manufactured for this purpose, and buried at the same elevation as the utility.

Where the anode wire will be connected to a trace wire access box, a minimum of 2 ft. of excess/slack wire is required after meeting final elevation.

7.0 Sanitary Sewer System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of manholes/structures on the North or East side.

Trace wire on all sanitary service laterals must terminate at the cleanout and located directly above the service lateral at the edge of road right of way as detailed in the plans.

8.0 Water System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to

the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of valves and fittings on the North or East side.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

9.0 Installation

Trace wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.

Trace wire shall be installed at the bottom half of the pipe and secured (taped/tied) at 5' intervals.

Trace wire on all service laterals/stubs must terminate directly above the utility, at the edge of the road right-of-way, but out of the roadway.

At all mainline dead-ends, trace wire shall go to ground using an approved connection to a drive-in magnesium grounding anode rod, buried at the same depth as the trace wire.

Mainline trace wire shall not be connected to existing conductive pipes. Treat as a mainline dead-end, ground using an approved waterproof connection to a grounding anode buried at the same depth as the trace wire.

All service lateral trace wires shall be a single wire, connected to the mainline trace wire using a mainline to lateral 3-way connector, installed without cutting/splicing the mainline trace wire.

In occurrences where an existing trace wire is encountered on an existing utility that is being extended or tied into, the new trace wire and existing trace wire shall be connected using approved splice connectors, and shall be properly grounded at the splice location as specified.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

GENERAL
SUBMERSIBLE PUMP AND PANEL SPECIFICATION

4.01 PUMPS

There shall be supplied as shown by the plans two vertical submersible, non-clogging vortex-type slurry pumping unit(s) specifically designed to pump slurries of grit, debris and organic solids without clogging.

4.121 QUALITY ASSURANCE

- A. All pumping equipment furnished under this Section shall be of a design and manufacture that has been used in similar applications, and it shall be demonstrated to the satisfaction of the Owner that the quality is equal to equipment made by that manufacturer specifically named herein.
- B. To insure a consistent high standard of quality, the manufacturer of this pumping equipment shall comply with the requirements of the ISO 9001 Quality System, and such compliance shall be verified by an independent certification agency approved by the International Organization for Standardization. Documentation shall be submitted for approval showing compliance with this requirement, and the equipment will not be released for shipment until approved.
- C. Pump(s), complete with motor, slide-away couplings and all other specified accessories and appurtenances shall be furnished by the pump manufacturer to insure compatibility and integrity of the individual components, and provide the specified warranty for all components. The pump manufacturer accepts unit responsibility for each pump assembly.
- D. The vortex-type pumps specified in this section shall be furnished by and be the product of one manufacturer. Pump manufacturer shall have been in business manufacturing vortex type pumps for at least 25 years and shall have installations nationally. The pump manufacturer shall be capable of manufacturing various size pumps from 3" through 10" suction diameter and 3" through 8" discharge diameter.

4.122 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 6.
- B. The submittal data shall be prepared, in its entirety, by the equipment manufacturer and each page shall be initialed by the manufacturer's employee responsible for the preparation of the data. Shop drawings prepared by the

manufacturer's sales representative, fabrication shop or other than the listed manufacturers shall not be acceptable. No additions or modifications to the manufacturer's submittal will be accepted, with the sole exception of a cover sheet provided by the manufacturer's local representative.

4.123 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of the Supplemental General Conditions, Article 1 – Special Conditions
- B. Include installation instructions, assembly views, lubrication instructions, and replacement parts lists.

4.124 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, handle and protect under provisions of Section 6.

4.125 SERVICES OF MANUFACTURER

- A. Furnish the services of a representative of the pump manufacturer to assist in adjusting and testing the equipment furnished, to supervise the initial operation, and to make final adjustments as may be necessary to assure the OWNER that the pump(s) is (are) in satisfactory operating condition.
- B. Furnish sufficient supervision, data, and information from the manufacturer to train operators in the proper operation and maintenance of the pump(s) furnished.

4.126 PERFORMANCE

- A. The pumps shall be designed for continuous operation and will be operated continuously under normal service.
- B. Operation Criteria:

	Flow GPM	TDH FT	Max. Pump RPM	Solids Passage	Min. Suction Dia.	Min. Disch. Dia.	Min. Motor Size
Design Condition	80	25	1800	3"	3"	3"	5HP
Secondary Condition							

4.127 DESIGN

- A. The pump(s) shall be end-type vertical suction and horizontal discharge, and shall be completely open from suction to discharge with no wearing rings or impeller faceplates required. All flow path clearances within the pump(s) shall be equal to or greater than the discharge diameter, so that all solids which will pass through the discharge will pass through the pump. The discharge connection shall be located on the pump case centerline.
- B. The impeller shall be of the recessed design, and shall be mounted completely out of the flow path between the suction inlet and discharge connections, so that the solids pumped are not required to flow through the impeller. The impeller shall be keyed to the shaft and secured by an impeller bolt.

4.128 MATERIALS OF CONSTRUCTION

- A. The volute shall be manufactured of Cast Iron material, ASTM A48 Class 25 or 30.
- B. The impeller shall be manufactured of Cast Iron material, ASTM A48 Class 25 or 30.
- C. The impeller back plate shall be manufactured of Cast Iron material, ASTM A48 Class 25 or 30.

4.129 MOUNTING

- A. Slide Away Coupling Type
 - 1. The pump manufacturer shall supply a slide away coupling for the pump, designed such that the pump can be removed from the installation without entering the pit or disconnecting the discharge piping.
 - 2. The slide away coupling shall consist of a foot mounted discharge elbow and adapter, steel base plate, upper and lower guide rail supports, lifting yoke and cable.
 - a. The coupling halves shall be angled, and the locking lugs shall be adjustable in order to eliminate any mechanical looseness that could cause leakage.
 - b. The slide away couplings shall be designed for use with two stainless steel 2" schedule 40 guide rails.

3. The foot mounted discharge elbow and adapter shall be cast iron, ASTM A 48 Class 30.
4. The slide away coupling shall include a self-energizing U cupped rubber gasket, to provide positive sealing under all conditions. This gasket shall be serviceable as required with pump removal.

4.1210 MOTOR

- A. Motor shall be a submersible type, 5 HP, 3 Phase, 60 Cycle, 230 Volt, 1150 RPM, and shall be directly connected to the pump. All motors shall be Reliance air filled submersible and labeled by Underwriters Laboratory, Inc. or Factory Mutual as approved for use in Class 1, Group D hazardous locations, rated for submergence in raw sewage and shall conform to NEMA standards and specifications.
- B. The motor(s) shall be provided with thrust and radial bearings of sufficient size to carry the entire load which may be imposed upon it under all operating conditions.
- C. The motor shall include two mechanical seals. The lower (outer) mechanical seal shall be located to exclude the pumped material from entering the lower cavity of the motor. The upper (inner) seal shall be located in an oil filled chamber such that it excludes any moisture from entering the winding compartment of the motor. The seal material for both upper and lower seal faces shall be Silica Carbide vs Silica Carbide with Buna-N o-rings.
- D. The motor shall include thermal overload protectors, which shall be imbedded in the motor windings and connected to the motor starter in such a way that the motor automatically shuts down in the event of overload.
- E. The motor shall include a moisture probe located in the oil chamber, which shall be connected to a customer-supplied alarm to indicate the presence of moisture in the seal chamber.

4.02 PANEL

- A. General: All electrical components and materials supplied shall function as a complete unit to automatically control the pump down of the sewage pump station wet well. All devices and material shall be new and of standard product design. Electrical work shall be in accordance with the latest edition

of the National Electrical Code (NEC) and subject to local codes. Panel supplier shall be a certified UL 508 manufacturer.

All power wire shall be stranded copper and sized as required for load and application according to NEC. All control and signal wire shall be a minimum of #16 AWG, 90 degree C insulated and color-coded. Colors shall be red for all AC control, blue for all DC control, yellow for external source control, white for AC neutral and green for equipment ground wiring. All wiring on the rear of the inner door shall be neatly bundled using tie wraps or other means. All internal wiring on the backplate shall be neatly routed in wire duct with removable covers. All wiring shall be continuous point to point (no splices) and be totally accessible.

- B. Scope and Panel Operation: The control panel shall provide power and logic control to operate two submersible pumps at the rated voltage and FLA of the pump motors. The control voltage shall be 120-Volt, single phase.

The control logic shall provide for the automatic operation and alternation of the lead pump under normal conditions. If the incoming flow exceeds the pumping capacity of the lead pump, the lag pump shall automatically operate to handle the increased flow. As the wet well level decreases, both pumps shall shut off at the pumps off level. In the event of a pump failure or a flow that exceeds the capacity of both pumps, a high alarm level shall operate a red flashing alarm light. The pump designated as lead pump shall alternate each duty cycle

- C. Enclosure Construction and Materials: The pump controls shall be housed in a NEMA 4X, 304Stainless Steel enclosure sized to house all the required components and allow adequate space for testing and maintenance as necessary, with minimum enclosure size 36"X30"X12". The enclosure shall have a drip shield, padlockable three-point latch (clamp hasp are not acceptable), steel back plate painted white, continuous door hinge, and an aluminum inner door with continuous hinge to protect all live internal wiring from operator personnel. The inner door shall be able to open a minimum of 150 degrees to allow safe access to the components. All controls, switches, indicator pilot lights, and elapsed time meters shall be mounted through the inner door.

All other components shall be securely mounted to the backplate with stainless steel hardware through machine thread tapped holes in the backplate. The screws shall be of adequate size for the device being secured. Permanent marking to identify each component as shown on the drawing shall be provided on the back plate and schematic laminated on inside of enclosure door.

- D. Duplex Pump Controller: The Duplex Float Switch Controller shall be a dedicated solid-state controller, easily replaceable, that automatically controls two wastewater pumps. Conventional relay/timer logic is not acceptable. The controller shall have five normally open floats as level sensing inputs so when the tank is empty all of the floats are open. The lowest float shall be the low alarm float. On rising water the Off float closes first which causes the controller to take no action. The Lead float will close next as the water rises. The controller will then turn on the lead pump. If this pump causes the water level to fall the lead pump will be turned off when both the Lead and Off float are out of the water and open. If the lead pump is not sufficient to control the water level then the lag pump will be started when the Lag float closes. The two pumps will not be turned off until the Lag, Lead, and Off floats are out of the water and open, at which time, all pumps will be turned off. The controller shall be designed in such a way that any single float which is stuck in either the closed or open position will not cause a station overflow or cause the station to be pumped down below the low float level.

The controller shall have selectable soft start delays built into the software, which will insure when both pumps are called the second pump cannot start for at least 6 or 12 seconds, and a minimum 4 second soft stop delay to insure both pumps cannot stop at the same time. These delays shall insure smooth pump operation and prevent excessive electrical surges and water hammer.

The controller shall include; three position selector switch for alternation, inputs for pump seal fail sensors and motor thermal sensors. If a seal fail is detected the pump with this condition shall be automatically demoted to lag pump until failure is corrected. Temp fail condition shall disable pump with this condition and the other pump called in its place. This condition shall not be cleared until the sensor in the pump is cleared and the controller is manually reset. Indicating lights for: pump run, temp fail, seal fail, high alarm, low alarm, floats "out of order" and pump disable. Also controller shall provide integrated indicator lamps with push-to-test switches for each float input. Externally wired push-to-test switches will not be considered equal. Power input for controller shall be fused and transient protected. Float inputs shall be no more than 6Vdc when open and 26 Ma max when closed. All input and output wiring shall use quick connect removable terminal strips.

- E. Control Panel: Provide properly sized transfer switch for main and emergency power, Square D motor circuit breaker, NEMA rated motor starter with overload protection or soft start as required (25HP and larger), ground and neutral block, fused 115V control circuit with circuit breaker, phase monitor relay, and lightning arrestor (shipped loose for installation at incoming feed by the contractor). Elapsed Time Meters for each pump,

Elapsed Time Meters for simultaneous pump run non-reset type, 22mm HOA switches, 22mm pump run indicator lights and general-purpose duplex GFCI outlet minimum rating of 10 amps to be mounted on inner door. Provide circuit breaker for GFCI outlet. Provide weatherproof exterior 3 1/2" diameter flashing alarm light with red Lexan lens mounted as required. An automatic fluorescent panel light with override switch, and a thermostatically controlled electric panel heater shall be installed in each panel.

- F. Site Visual Alarm System: The red alarm light shall be activated for pump failure and high-water level.
- G. Float Switch: Float switch shall be of type 316 stainless steel, 5-1/2" diameter. Cable shall be 40 feet in length, minimum, type SO with Nitrile PVC jacket, containing three #14 AWG fine-stranded conductors for heavy flexing and underwater service. Floats shall contain a sealed mercury switch rated for 20 amps at 115 volts. Float switches shall be furnished complete with stainless steel clamp tube, bracket and bolts to clamp to a vertical 1-inch aluminum pipe weighted at the bottom and suspended from the top via stainless steel cable assembly. Stainless steel cable hanger to be provided also.
- H. Level Transducer: For flows 250GPM or greater, a submersible pressure/level transducer shall be provided. It shall be contained in rugged stainless-steel housing and shall incorporate features to protect the solid-state sensor from viscous liquids and slurries, including raw sewage. Range shall be 0 to 35 feet (0-15 psi). The excitation voltage and analog signal output shall be compatible with the digital meter/controller of the control panel. Operating temperature shall be from -40 degrees F to 176 degrees F. Sensor cable shall be polyethylene shielded cable a minimum of 40 feet in length.

4.03 WIRELESS MONITORING SYSTEM

The Wireless Monitoring System shall be manufactured by Mission Communications and shall be model number **M150** for flows up to 250GPM and model number **M850** for flows 250GPM or greater. It shall be incorporated into the construction of the control panel to insure the proper integration of the monitoring and control system. It shall be capable of reacting to various external alarm inputs to include 8 inputs as follows:

- Input One: Pump One runtime
- Input Two: Pump Two runtime
- Input Three: Simultaneous pump runtime
- Input Four: High Level Alarm

Input Five: Spare
Input Six: Spare
Input Seven: Spare
Input Eight: Spare

In addition, it shall report power/phase failure independent of the eight inputs.

It shall report these inputs/alarms to a central monitoring facility continuously operated by the monitoring company, which will in turn notify the designated local recipients via telephone, fax, email, pager or web determined by the local utility. The central monitoring facility shall also have the capability of responding to queries for information from the user via the WEB, and shall automatically generate useful reports giving details of all activity, and summary reports. The system and service shall be specifically designed and intended for use in the water and wastewater industry.

It shall have battery-back-up with integral charging to insure the report of all alarms in the event of power failure. It shall have an externally mounted key-reader to allow the technician to put the unit in service mode before servicing any equipment at the site.

4.04 START UP/PERFORMANCE TEST

The start up shall be conducted by equipment provider so as to meet all of the requirements of utility, the Engineer, and the requirements outlined by the equipment manufacture. The cost of the test shall be included in the pump supplier pricing to the contractor. This test shall include one full day of site testing. It shall be scheduled with the contractor, engineer, and local utility after all equipment installation has been completed. Reports shall be provided to the engineer and owner as per the utility's specifications immediately following commissioning of the lift station.

4.05 DRAWINGS AND MARKINGS

- A. Panel Markings: All component parts in the control panel shall be permanently marked and identified as they are indicated on the back plate, adjacent to the component.
- B. Nameplates: The panel shall include engraved nameplates on the inner door for all components to indicate the device function. The nameplates shall be permanently affixed with plated machine screws or a bonding adhesive suitable for the application.

- C. Final Drawings: Upon completion of the panel a complete set of As Built drawings and Bill of Materials shall be supplied to the owner. The drawings shall include a power and control schematic and a terminal block diagram showing each remote connection to the panel. An adhesive Mylar copy of the schematic drawings and terminal diagram must be permanently affixed to the inside of the control panel door.

4.06 WARRANTY

Control panel shall be warranted against defects in material and workmanship for a period of Two (2) years from the date of Owner's final inspection and acceptance or thirty (30) months from date of shipment, to the effect that any defective equipment shall be repaired or replaced, at the discretion of the supplier.

Municipal-use pumps and motors shall be covered by a limited five (5) year warranty that shall comprise the following terms: The initial year from start-up of the equipment shall be covered 100% for parts and labor. The following years 2 through 5 shall be covered 100% for parts. This warranty shall not be limited by hours of running time or operation from variable speed drives.

ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the City of **Hattiesburg**, MISSISSIPPI, will receive sealed bids until **10:00AM** on **June 15, 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**COMSWIP SEWER IMPROVEMENTS - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
COMSWIP SEWER IMPROVEMENTS - PHASE IX
EAST 2ND STREET AREA
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

PUBLIC UTILITIES

CABLE
COMCAST
2100 LINCOLN RD
HATTIESBURG, MS 39402
(601) 264-1188

COMMUNICATION
AT&T
P.O. BOX 1191
HATTIESBURG, MS 39401
(601) 545-6424

BAY SPRINGS TELEPHONE CO
382 HWY 18
BAY SPRINGS, MS 39422
(601) 764-3181

CSPIRE
1000 HIGHLAND COLONY PKWY
SUITE 3001
RIDGELAND, MS 39157
(877) 276-8841

EARTHLINK
6026 US HWY 98
HATTIESBURG, MS 39402
(800) 239-3000

INLINE
405 LEGACY PARK
RIDGELAND, MS 39157
(601) 956-8909

TELEPAK DBA CSPIRE FIBER
1018 HIGHLAND COLONY PKWY
SUITE 420
RIDGELAND, MS 39157

UNITI FIBER
10802 EXECUTIVE CENTER DR
BENTON BLDG., STE 300
LITTLE ROCK, AR 72211
(501) 850-0820

WINDSTREAM KDL
209 E CAPITOL ST
JACKSON, MS 39201
(601) 358-9391

GAS
SPIRE ENERGY
314 MAIN ST
HATTIESBURG, MS 39401
(601) 544-6001

POWER
MISSISSIPPI POWER, CO.
6356 U.S. HIGHWAY 49
HATTIESBURG, MS 39401
(601) 544-6511

SEWER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES ST
HATTIESBURG, MS 39403
(601) 545-4530

TRANSPORTATION
CANADIAN NATIONAL RAILWAY
JOSEPH WOJCIK
17641 S. ASHLAND AVENUE
HOMEWOOD, IL 60430
(708) 332-4739

NORFOLK SOUTHERN RAILWAY
1700 MARKET STREET
16TH FLOOR
PHILADELPHIA, PA 19103

CITY OF HATTIESBURG
TRAFFIC DEPT.
125 WALNUT ST
HATTIESBURG, MS 39403
(601) 545-4626

WATER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES ST
HATTIESBURG, MS 39403
(601) 545-4530

TRAFFIC
CITY OF HATTIESBURG
TRAFFIC DEPT.
125 WALNUT ST
HATTIESBURG, MS 39401
(601) 545-4626



Know what's below.
Call before you dig.

MISSISSIPPI 811 TICKETS	
TICKET NUMBER	AREA
18041813010931	E 2ND ST
18042408060141	JACKSON ST
19041010530678	E 3RD ST
19041010440662	JACKSON ST
19041010430660	NEW ORLEANS ST

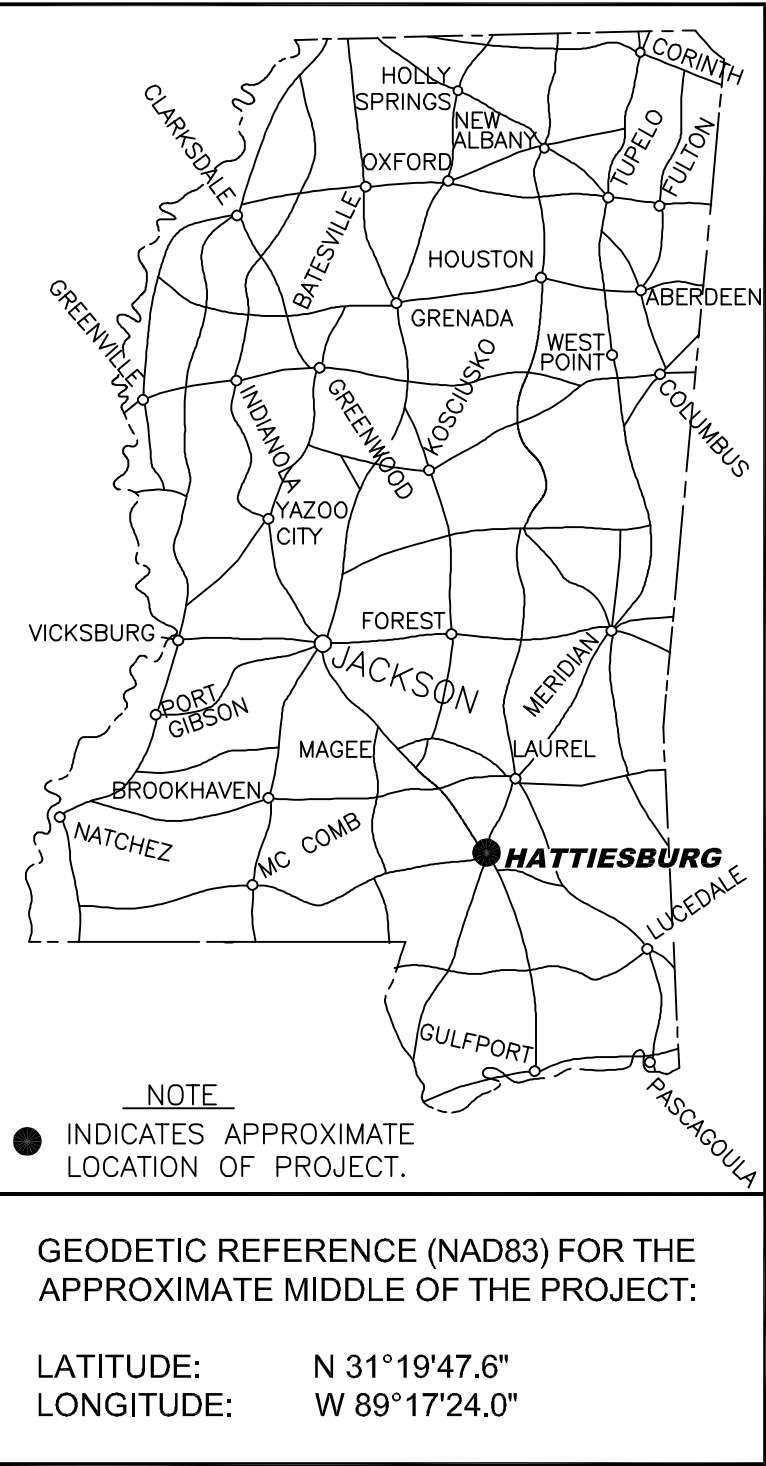
SPECIAL UTILITY NOTES:

- UTILITY LOCATION REQUESTS WERE SUBMITTED TO MISSISSIPPI 811 (FORMERLY MISSISSIPPI ONE CALL) DURING THE FIELD DATA COLLECTION PHASE FOR THE DESIGN OF THIS PROJECT. ALL UTILITIES THAT LOCATED DURING THE FIELD DATA COLLECTION ARE SHOWN ON THESE PLANS. ALL CONFLICTS WITH EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE COORDINATED WITH THE UTILITY OWNER, THE ENGINEER AND THE PROJECT OWNER PRIOR TO INSTALLATION OF THE PROPOSED SEWER STRUCTURES AND PIPE. (NO SEPARATE PAY FOR COORDINATION)
- THE CONTRACTOR SHALL DOCUMENT THE EXISTENCE OF ANY MISSING AND/OR OVERLAPPING UNDERGROUND UTILITIES AND STORM DRAINAGE NOT SHOWN ON THESE CONSTRUCTION DRAWINGS.

CONSTRUCTION PLANS
FOR
COMPREHENSIVE SEWER
IMPROVEMENTS - PHASE IX
EAST 2ND STREET AREA

FOR THE
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI

APRIL 2023



DETAILED INDEX	
SHEET No.	DESCRIPTION
1	COVER SHEET
2	VICINITY MAP, LEGEND & ABBREVIATIONS
3	SEWER SYSTEM MAP
4	GENERAL NOTES
5	JACKSON STREET STA 10+00 - STA 16+60
6	JACKSON STREET STA 16+60 - STA 21+00
7	E 3RD STREET STA 10+60 - STA 16+00 & PUMP STATION STA 1+00 - STA 2+50
8	E 2ND STREET STA 10+00 - STA 16+60
9	E 2ND STREET STA 16+60 - STA 23+20
10	E 2ND STREET STA 23+20 - STA 25+50
11	EVANS STREET STA 11+00 - STA 17+60
12	SEWER INSTALLATION DETAILS
13	SEWER INSTALLATION DETAILS
14	TRACER WIRE DETAILS
15	DUPLEX SEWER PUMP STATION DETAILS
16	CONCRETE CONFLICT BOX DETAILS
17	PAVEMENT REPAIR, SIGNING & STRIPING DETAILS
18	VEGETATION SCHEDULE & FLUSH HYDRANT DETAIL
6057	TYPICAL PLACEMENT OF WARNING SIGNS AND PAVEMENT MARKINGS AT RAILROAD HIGHWAY GRADE CROSSINGS
6101	TYPICAL TEMPORARY EROSION/SEDIMENT CONTROL APPLICATIONS
6102	DETAILS OF SEDIMENT BARRIER APPLICATIONS
6103	DETAILS OF SILT FENCE INSTALLATION
6104	DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS
6106	DETAILS OF EROSION CONTROL WATTLE DITCH CHECK
6111	TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION
6113	INLET PROTECTION DETAILS OF WATTLES
6115	INLET PROTECTION DETAILS OF SANDBAGS
6185	FENCE: CHAIN LINK CLASS II
6191	FENCE: CHAIN LINK GATE
6351	TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)
6358	HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS
6501	PIPE CULVERT INSTALLATION
6502	FLEXIBLE PIPE CULVERT INSTALLATION
6503	CONCRETE PIPE COLLAR
6506	JUNCTION BOX TYPE 2



MAYOR
Toby Barker

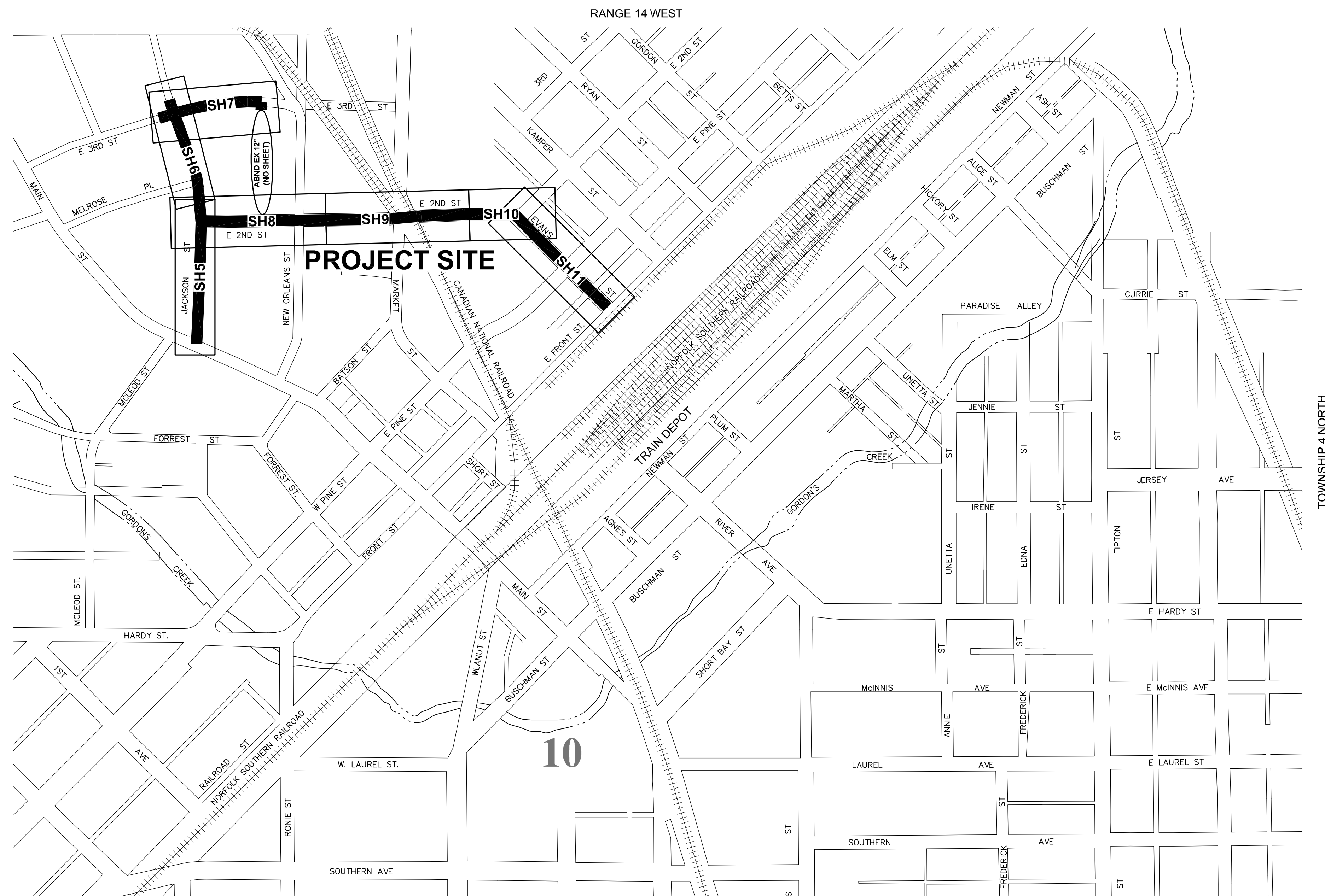
COUNCIL PERSONS
Carter Carroll, President
Jeffery George, Vice President
Deborah Denard Delgado
Nicholas Brown
Dave Ware

PREPARED BY:

sdw
Engineering Progress

301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | (f) 601.544.0501 | sd-w.com

Sheet No. 1
Drawing No.: 1273-S014

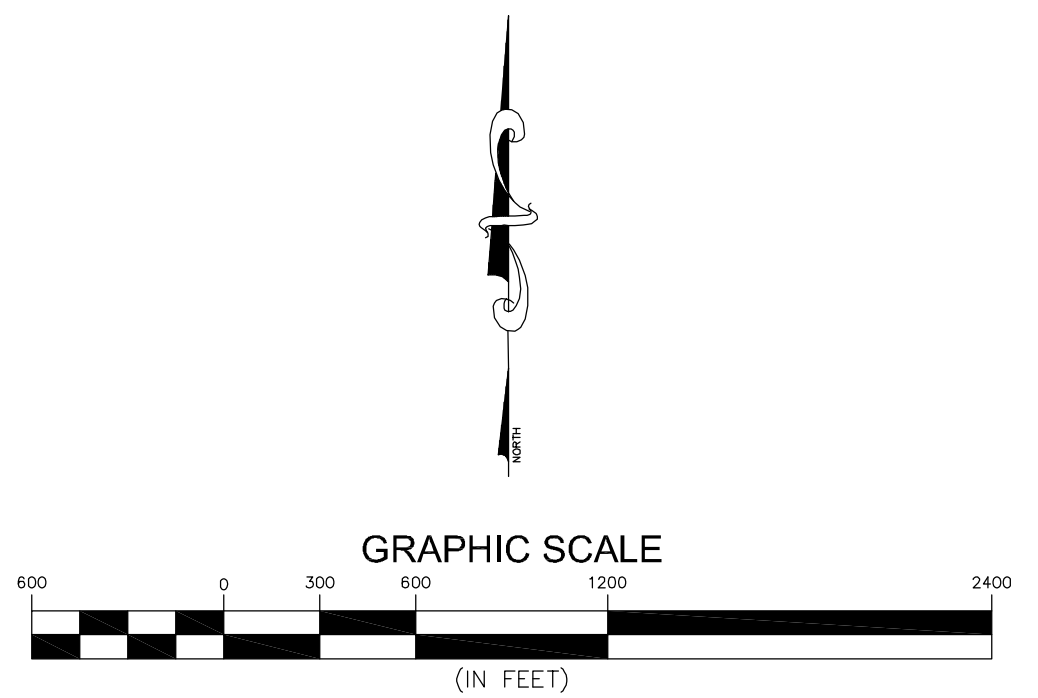


ABBREVIATION LEGEND:

ABND	— ABANDONED
APPURT	— APPURTENANCES
ASPH	— ASPHALT
BLDG	— BUILDING
CIR	— CIRCLE
℄ CONST	— CENTERLINE CONSTRUCTION
CONC	— CONCRETE
CONN.	— CONNECTION
CONT'D	— CONTINUED
CMP	— CORRUGATED METAL PIPE
CPP	— CORRUGATED PLASTIC PIPE
DIA	— DIAMETER
DR	— DIAMETER RATIO
DRV	— DRIVE
DI	— DUCTILE IRON PIPE
DS FL	— DOWNSTREAM FLOW LINE
E	— EAST
EXIST	— EXISTING
FES	— FLARED END SECTION
FL	— FLOW LINE
GRVL	— GRAVEL
HDPE	— HIGH DENSITY POLYETHYLENE PIPE
HYD	— HYDRANT
INCL	— INCLUDING
INV	— INVERT
LT	— LEFT
LF	— LINEAR FEET
MH	— MANHOLE
MIN	— MINIMUM
N	— NORTH
No.	— NUMBER
PRKG	— PARKING
PVC	— POLYVINYL CHLORIDE PIPE
RCAP	— REINFORCED CONCRETE ARCHED PIPE
RCP	— REINFORCED CONCRETE PIPE
REQ'D	— REQUIRED
RT	— RIGHT
ROW	— RIGHT OF WAY
SAN	— SANITARY
STA	— STATION
SVC	— SERVICE
SWR	— SEWER
S	— SOUTH
TYP	— TYPICAL
US FL	— UPSTREAM FLOW LINE
VAR	— VARIABLE
W	— WEST
W/	— WITH

SYMBOL LEGEND:

	— AIR CONDITIONER
	— BENCHMARK
	— CONTROL MONUMENT
	— FENCE
	— FIBER OPTIC PEDESTAL
	— FIBER OPTIC PULL BOX
	— FIRE HYDRANT
	— GAS INDICATOR POST
	— GAS LINE
	— GAS METER
	— GAS VALVE
	— GATE POST
	— IRRIGATION CONTROL VALVE
	— LIGHT ON UTILITY POLE
	— LIGHT ON DECORATIVE POLE
	— MAILBOX
	— METAL PIPE
	— OVERHEAD UTILITY LINES
	— OVERHEAD UTILITY LINES
	— POLE GUY WIRE
	— PROPERTY LINE
	— SAN SWR CLEAN-OUT
	— SAN SWR FORCE MAIN
	— SAN SWR LINE
	— SAN SWR MANHOLE
	— SIGN
	— SIGNAL
	— STORM DRAIN MANHOLE
	— TELEPHONE MANHOLE
	— TELEPHONE PEDESTAL
	— TREE LINE
	— UNDERGROUND FIBER OPTIC LINE
	— UNDERGROUND POWER LINE
	— UNDERGROUND TELEPHONE LINE
	— UTILITY METER ON POLE
	— UTILITY POLE
	— UTILITY PULL-BOX
	— UTILITY SERVICE POLE
	— WATER LINE
	— WATER METER
	— WATER TEST WELL
	— WATER VALVE

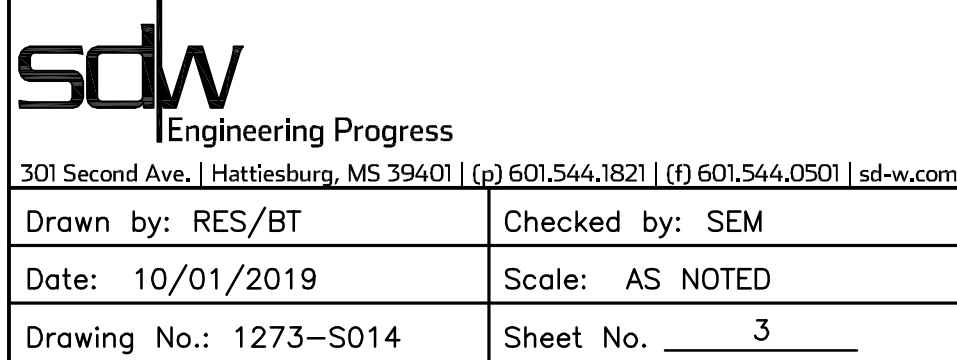


NO.	DATE	DESCRIPTION	BY

COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI



Drawn by: RES/BT	Checked by: SEM
Date: 10/01/2019	Scale: AS NOTED
Drawing No.: 1273-S014	Sheet No. <u>2</u>



G:\PROJECTS\Hattiesburg_City of 1273-S014 - ComSWIP Sewer Phase IX Boeshart & 2nd 1273S014 CAD Files\1273S014_2nd-Exemptnotes.dwg-4, 10/7/2019 2:07:40 PM

GENERAL NOTES:

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES.
2. THE CONTRACTOR SHALL KEEP A SET OF CONSTRUCTION PLANS OF THE PROJECT ON THE JOB SITE SHOWING THE ACCURATE MEASUREMENTS AND ELEVATIONS OF THE "AS-BUILT" SYSTEM. THIS DATA WILL BE COLLECTED AND PUT ON THE DRAWINGS DAILY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE ENTIRE PROJECT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CITY OF HATTIESBURG AND/OR FORREST COUNTY FEES AND PERMITS ASSOCIATED WITH CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND THE LOCATION OF THE PROJECT. CONTROL COORDINATE SYSTEM AND ELEVATION CONTROL ARE SHOWN ON THE PLAN SHEETS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN SUB-SURFACE SOIL INVESTIGATIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING TOPOGRAPHIC DATA AND ALL OTHER SITE CONDITIONS PRIOR TO THE BEGINNING OF CONSTRUCTION. ANY CONFLICT SHALL BE COORDINATED WITH THE CONTRACTOR, OWNER AND ENGINEER/ARCHITECT. THE ENGINEER CANNOT AND DOES NOT WARRANT THAT THIS INFORMATION IS COMPLETE OR ACCURATE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES WITHIN THE WORK AREA.
9. ALL UNDERGROUND UTILITIES, FOR THE ENTIRE PROJECT, SHALL BE LOCATED BY THE CONTRACTOR AND UTILITY OWNERS PRIOR TO THE CONSTRUCTION OF THE PROJECT. ANY CONFLICTS SHALL BE COORDINATED BETWEEN CONTRACTOR, UTILITY OWNER AND ENGINEER.
10. ALL CULVERT CROSS DRAINS AND SIDE DRAINS SHALL BE PROTECTED. REMOVAL AND REPLACEMENT, IF REQUIRED, SHALL BE PAID AS NOTED.

10.1. ANY EXISTING CROSS DRAINS SHOWN TO BE REMOVED AND REPLACED SHALL BE REPLACED WITH NEW RCP AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING CROSS DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.

10.2. ANY EXISTING SIDE DRAINS THAT CONFLICT WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH NEW CORRUGATED HDPE PIPE AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING SIDE DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.

10.3. IF THE EXISTING DRAIN PIPES ARE CONNECTED TO INLETS, HEADWALLS OR ANY OTHER DRAINAGE STRUCTURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTION TO THOSE STRUCTURES, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. CONCRETE PIPE COLLARS SHALL BE USED AS WARRANTED, AS APPROVED BY THE ENGINEER. SOME INLETS ARE NOTED FOR REPLACEMENT ON THE PLANS AND SHALL BE REPLACED AS DETAILED.

10.4. ANY EXISTING DRAINS THAT SHOWN TO BE REMOVED AND RESET SHALL BE REMOVED, SALVAGED AND RESET PER NEW PIPE INSTALLATION DETAILS CONTAINED HEREIN. ANY DAMAGE TO THE SALVAGED PIPE SHALL BE REPLACED AT NO ADDITIONAL COST TO THE PROJECT.

10.5. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING STORM DRAINAGE STRUCTURES DURING THE CONSTRUCTION PROCESS. ANY DAMAGE, OTHER THAN THAT NOTED ABOVE, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.

10.6. ABSOLUTELY NO NEW CORRUGATED METAL PIPE SHALL BE INSTALLED ON THIS PROJECT.
11. THE COST OF CLEARING AND GRUBBING/REMOVAL AND DISPOSAL OF CLEARING AND GRUBBING MATERIAL SHALL BE PAID LUMP SUM, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EXTENT OF CLEARING REQUIRED PRIOR TO BIDDING. OFFSITE DISPOSAL AREAS ARE TO BE FURNISHED BY THE CONTRACTOR.
12. PROPER MAINTENANCE OF STREETS, INCLUDING DUST CONTROL, SHALL BE STRICTLY ADHERED TO.
13. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
14. THE CONTRACTOR SHALL PROVIDE PROPER TRAFFIC CONTROL SIGNS AND FLAGGERS TO MAINTAIN ONE LANE TRAFFIC DURING CONSTRUCTION, WHERE LANE CLOSURES ARE NEEDED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SEE SHEET No. 6250 FOR TYPICAL LANE CLOSURE DETAILS. ANY ROAD CLOSURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO IMPLEMENTATION.
15. ALL DISTURBED UNPAVED AREAS SHALL BE RESTORED AS FOLLOWS:

15.1. GRASSED AREAS SHALL RECEIVE SOLID SOD WHICH SHALL BE FERTILIZED AND WATERED AS PER THE VEGETATION SCHEDULE. PERMANENT ESTABLISHMENT OF GRASS GROWTH SHALL BE A REQUIREMENT BEFORE FINAL COMPLETION.

15.2. ALL LANDSCAPED AREAS SHALL BE RESTORED IN KIND AND SHALL INCLUDE TOP SOIL (4" DEPTH MIN), WATERING, FERTILIZER AND MULCH, IF PRESENT (IN KIND), AS PER THE VEGETATION SCHEDULE. CONTRACTOR SHALL MATCH SPECIES AND SIZE AS CLOSE AS POSSIBLE. SUBSTITUTIONS SHALL BE ALLOWED ONLY BY WRITTEN APPROVAL FROM THE ENGINEER AND COORDINATION WITH THE AFFECTED RESIDENT.
16. ALL EXISTING MAILBOXES, STREET SIGNS, FENCES, AND OTHER STRUCTURES LOCATED WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND RESET AS DICTATED BY CONSTRUCTION ACTIVITIES. (NO SEPARATE PAY, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER). EXISTING FLOWER BEDS, GARDENS, SHRUBS, ETC. WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED AND RESET AS DICTATED BY CONSTRUCTION ACTIVITIES. (NO SEPARATE PAY, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER). ALL ITEMS (INCLUDING REMOVAL OF OBSTRUCTIONS, REMOVED AND RESET AND/OR REPLACEMENT OF STORM DRAIN STRUCTURES, ETC.) FOR WHICH NO PAY ITEM IS LISTED, SHALL BE INCLUDED IN THE COST OF THE PIPE LAYING OPERATION. (NO SEPARATE PAY).
17. PAVED ROADS SHALL BE OPEN CUT AND REPAIRED AS DETAILED. CASING SHALL BE USED ONLY WHERE NOTED ON THE PLANS.
18. ALL GRAVEL ROADS AND GRAVEL DRIVEWAYS SHALL BE OPEN CUT WITHOUT CASING, UNLESS OTHERWISE NOTED, AND REPLACED IN KIND.
19. ALL PAVED DRIVEWAYS SHALL BE OPEN CUT AND REPAIRED IN KIND, UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL DRIVEWAY CUTS AND EXCAVATION WITH THE OWNERS OF SAID DRIVEWAYS.
21. ANY DAMAGE TO PAVED ROADS OR DRIVEWAYS, WHICH ARE OUTSIDE OF THE PROJECT LIMITS, SHALL BE REPAIRED IN KIND, AT THE CONTRACTOR'S EXPENSE.
22. ALL TRENCHES IN PAVED AREAS SHALL BE REPAIRED AS DETAILED. CRUSHED AGGREGATE SHALL ALSO BE INSTALLED AND USED FOR A TEMPORARY SURFACE UNTIL SUCH TIME THAT THE OWNER DECIDES TO ALLOW INSTALLATION OF PAVEMENT (SEE DETAILS). ALL CRUSHED AGGREGATE SHALL BE SIZE 610. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXISTING PAVEMENT AND OR CRUSHED AGGREGATE PRIOR TO PLACEMENT OF PAVEMENT IN PATCHED AREAS TO MAKE A SMOOTH JOINT WITH THE EXISTING PAVEMENT. SAW CUT TO FULL DEPTH OF EXISTING PAVEMENT SHALL BE REQUIRED ON ALL PAVEMENT REPAIR, UNLESS OTHERWISE DIRECTED. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SURFACE IN AN ACCEPTABLE CONDITION UNTIL SUCH TIME AS FINAL PAVEMENT IS INSTALLED.
23. ALL ROAD BORES SHALL BE IN ACCORDANCE TO THE DETAILS.
24. ALL SELECT FILL MATERIAL SHALL MEET THE SPECIFICATIONS FOR CLASS 9, GROUP C AND MODIFIED TO CONSIST OF A PLASTICITY INDEX (PI) BETWEEN 5 AND 15. THE SELECT FILL MATERIAL SHALL BE INSTALLED AT THE DIRECTION OF THE ENGINEER OR HIS REPRESENTATIVE.
25. PRIOR TO THE BEGINNING OF ANY EXCAVATION, ALL EXISTING PAVEMENT SHALL BE SCORED OR SAW CUT TO A DEPTH SUCH THAT A STRAIGHT AND UNIFORM VERTICAL EDGE IS ESTABLISHED PRIOR TO REMOVAL OF SAID PAVEMENT FROM THE PROJECT. IF VERTICAL EDGE IS DISTURBED, THEN A SECOND CUT SHALL BE REQUIRED PRIOR TO ASPHALT OR CONCRETE PATCHING. ALL ASPHALT OR CONCRETE SHALL BE REMOVED FROM THE PROJECT SITE PRIOR TO EXCAVATION PROCEDURES. (NO SEPARATE PAY FOR SAW CUTTING, DEBRIS REMOVAL, PAVEMENT REMOVAL AND DISPOSAL)
26. WORK FOR THIS PROJECT REQUIRES EXCAVATION IN THE IMMEDIATE VICINITY OF TRAFFIC AND ADJACENT PROPERTIES. THEREFORE, THE RISK OF A FAILURE OCCURRING DURING THE EXCAVATION REQUIRES THAT EXTREME CAUTION BE EXERCISED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING WHAT BRACING, SHORING OR GROUND SUPPORT SYSTEM THAT IS DEEMED NECESSARY TO PREVENT A FAILURE AND PROTECT THE PERSONS WORKING NEAR THE EXCAVATION, THE PUBLIC THAT MAY BE ABOVE THE EXCAVATION, OR ANY STRUCTURE ADJACENT TO THE EXCAVATION. ALL COSTS FOR ANY PROTECTIVE MEASURES INCLUDING THE MATERIALS AND LABOR FOR DESIGNING, DRAWING AND CONSTRUCTING THE FACILITY SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BRACING, SHORING OR ANY GROUND SUPPORT SYSTEM REQUIRED TO PREVENT A FAILURE FROM OCCURRING DURING EXCAVATION. ALL COST FOR ANY PROTECTIVE MEASURES, INCLUDING THE MATERIALS AND LABOR FOR DESIGNING AND CONSTRUCTING THE SUPPORT SYSTEM, SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
28. THE EROSION CONTROL DEVICES SHALL BE REQUIRED AS DIRECTED BY THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SILT DOES NOT LEAVE THE CONSTRUCTION SITE OR CONTAMINATE WATERS OF THE U.S. DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE PLAN DURING CONSTRUCTION UNTIL PERMANENT GRASS IS ESTABLISHED OR THE DISTURBED SURFACED IS PAVED.
29. THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR EROSION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL TESTING BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER AND/OR OWNER.
31. MATERIAL SUBMITTALS SHALL BE MADE TO OWNER THROUGH THE ENGINEER PRIOR TO USE FOR APPROVAL.
32. ALL WATER AND SEWER SYSTEMS INSTALLED ON THIS PROJECT SHALL REQUIRE A TRACER WIRE SYSTEM.
33. THE CONTRACTOR SHALL HAVE A COMPETENT AND EXPERIENCED SUPERINTENDENT ON SITE AT ALL TIMES. THE SUPERINTENDENT SHALL NOT OPERATE EQUIPMENT WHILE ON THE PROJECT SITE. WORK ON THE PROJECT SHALL STOP IF THE ASSIGNED PROJECT SUPERINTENDENT IS NOT ON SITE.
34. MANHOLE LIDS, FIRE HYDRANTS & VALVES NOTED FOR REMOVAL IN THESE PLANS, SHALL BE SALVAGED FOR THE OWNER. ALL ITEMS SALVAGED ITEMS SHALL BE CLEANED BY POWER WASHING. SAID ITEMS SHALL BE STACKED AND SECURED ON PALLETS. SAID ITEMS SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO A SITE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF SAID ITEMS PRIOR TO DELIVERY TO THE OWNER AND FOR REPLACEMENT IN KIND FOR ANY MISSING ITEMS. (NO SEPARATE PAY)
35. ALL MATERIALS FOR THE PROJECT SHALL BE A PRODUCT OF THE U.S.A.
36. ALL EXISTING STAMPED AND DYED ASPHALT CROSSWALKS SHALL BE RESTORED BY OWNER AFTER CONSTRUCTION IS COMPLETE.
37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL EXISTING PAVEMENT MARKINGS. ALL PAVEMENT MARKINGS RELATED TO THE RAILROAD CROSSINGS SHALL BE REPLACED USING THE DETAILS CONTAINED HEREIN AND SHALL COMPLY WITH THE MUTCD, LATEST EDITION.

SEWER NOTES:

1. NO PIPE SHALL BE LAID IN THE PRESENCE OF WATER. NO MANHOLE OR WET WELL SHALL BE SET IN THE PRESENCE OF WATER.
2. WELL POINTS, IF REQUIRED, SHALL BE INCLUDED IN THE COST OF THE PIPING LAYING OPERATION.
3. WHERE THE WATER MAIN IS WITHIN 10 FEET OF A SEWER MAIN HORIZONTALLY, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18" FROM THE TOP OF THE SEWER MAIN, UNLESS OTHERWISE NOTED.
4. THE FINISHED ELEVATION OF ALL MANHOLE TOPS FOR MANHOLES TO BE CONSTRUCTED IN PAVED AREAS SHALL BE AT EXISTING PAVEMENT ELEVATION OR AS DIRECTED BY THE ENGINEER. MANHOLE AND PIPE ELEVATIONS SHALL BE TAKEN FROM CUT SHEETS FURNISHED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION. PAYMENT FOR SEWER WILL BE BASED ENTIRELY ON THE ENGINEER APPROVED CUT SHEETS.
5. MANHOLES SHALL HAVE 20 MIL. COAL TAR EPOXY COATING ON THE INSIDE, UNLESS OTHERWISE NOTED. DUCTILE IRON PIPE SHALL BE LINED AS NOTED IN THE SPECIFICATIONS.
6. ALL SEWER MAINS, SERVICE LINES AND FITTINGS SHALL BE SDR 26 PVC AND OF THE SIZE AS NOTED IN THESE PLANS, UNLESS OTHERWISE NOTED. ALL FITTINGS REQUIRED FOR DUCTILE IRON OR PVC PIPE SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM FOR THE PIPE AND AT NO ADDITIONAL COST TO THE PROJECT EXCEPT SERVICE TEE'S AND CLEANOUTS. CLEANOUTS SHALL INCLUDE TEE, SERVICE CAP, TRAFFIC COVER IF NEEDED, AND ANY PIPE LENGTH TO BRING CLEANOUT TO SURFACE GRADE. ALL CLEANOUTS LOCATED IN PAVED AREAS SHALL BE INSTALLED WITH A TRAFFIC LOAD RATED FRAME AND COVER SET FLUSH WITH PAVEMENT. (NO SEPARATE PAY)
7. ALL DUCTILE IRON PIPE SHALL BE LOCKING JOINT TYPE AND OF THE SIZE AS NOTED ON THESE PLANS.
8. INFILTRATION/EXFILTRATION ON NEWLY INSTALLED SEWER MAIN SHALL BE REQUIRED AS DIRECTED. MANDREL TESTS SHALL BE REQUIRED ON ALL SEWER MAIN INSTALLED. CONTRACTOR SHALL BE REQUIRED TO PULL A MANDREL FOR TESTING PURPOSES IN ALL SEWER LINES INSTALLED ON THE PROJECT PRIOR TO FINAL ACCEPTANCE. MANDREL TEST SHALL BE PERFORMED IN LIVE OR BYPASS PUMPED SEWER AS NECESSARY AT THE DISCRETION OF THE ENGINEER
9. ALL MANHOLES SHALL BE 48" IN DIAMETER, WITH ECCENTRIC TOP CONE SECTIONS, UNLESS OTHERWISE NOTED. (SEE PLAN AND PROFILE SHEETS FOR PROPER SIZING)
10. ALL SINGLE DROPS FOR SEWER PIPE 8" AND UNDER IN DIAMETER SHALL BE PLACED INSIDE THE MANHOLE AS DETAILED. ALL MULTIPLE DROPS OR DROPS FOR SEWER PIPE OVER 8" IN DIAMETER SHALL BE PLACED OUTSIDE OF THE MANHOLE AS DETAILED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
11. THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR SANITARY SEWER CONSTRUCTION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BY-PASS PUMPING AS REQUIRED BY THE ENGINEER. (NO SEPARATE PAY)
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTING ANY SEWER SERVICE LINES WHICH ARE CUT AND/OR REMOVED DURING THIS PROJECT.

13.1. ALL SERVICE CONNECTIONS SHOWN ON THE PLAN SHEETS SHALL BE CONNECTED TO THE PROPOSED SEWER LINE, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.

13.2. FLEXIBLE COUPLINGS SHALL BE USED ONLY WITH ENGINEER'S APPROVAL.

13.3. THE CONTRACTOR SHALL VERIFY THE LOCATION AND FLOWLINE ELEVATION OF THE SERVICE CONNECTION POINTS AT EACH STRUCTURE PRIOR TO CONSTRUCTION. LENGTH OF SERVICE CONNECTIONS MAY VARY FROM WHAT IS SHOWN DUE TO LOCATION OF SERVICE CONNECTION POINT.

13.4. THE MINIMUM GRADE FOR SEWER SERVICE CONNECTIONS SHALL BE 0.50%. SERVICE CONNECTION TO MAIN, TEE'S, REDUCERS, CONNECTIONS TO EXISTING SERVICE AND ANY OTHER FITTINGS NECESSARY TO MAKE THE CONNECTION SHALL BE PAID PER EACH CONNECTION. SERVICE LINE SHALL BE PAID BY LINEAR FOOT.

13.5. CLEANOUTS SHALL BE PAID PER EACH. CLEANOUTS FOR SANITARY SEWER SERVICES SHALL BE PLACED AT THE RIGHT OF WAY LINE (AS DETAILED), AT EVERY TURN AND CHANGE IN GRADE, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.

13.6. SERVICE CONNECTIONS NOTED ON THESE PLANS ARE LOCATED BASED ON FIELD EVIDENCE, INSPECTION REPORTS AND OTHER INFORMATION THAT IS AVAILABLE TO THE ENGINEER. THE LOCATION OF ANY SERVICE NOTED AS "FIELD VERIFY" IS QUESTIONABLE AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION OF THE MAIN LINE.
14. ALL SERVICE CONNECTIONS (FOR ALL UTILITY TYPES) WHICH ARE TEMPORARILY DISCONNECTED DUE TO CONSTRUCTION REQUIREMENTS, DAMAGED OR OTHERWISE DISCONNECTED, SHALL BE REPAIRED IN KIND AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED. (NO SEPARATE PAY). SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH THE UTILITY OWNER AND THE AFFECTED STRUCTURE OWNER. EXCEPTION 1: WATER SERVICE CONNECTIONS WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER, REPAIRED AND PAID AS OUTLINED IN THE BID PROPOSAL (SIZE TO MATCH EXISTING). EXCEPTION 2: ANY OTHER SERVICE CONNECTIONS, EXCEPT WATER & SEWER, WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER AND REPORTED TO THE UTILITY OWNER.
15. THE CONTRACTOR SHALL NOTE MINIMUM GRADES FOR VARIOUS LOCATIONS OF PROPOSED SEWER LINES WITHIN THE PROJECT. THE CONTRACTOR SHALL HAVE THE EXPERTISE TO INSTALL PIPING ON THESE GRADES. ANY INSTALLED PIPE FOUND TO HAVE MORE THAN ¼" OF STANDING WATER SHALL BE REMOVED AND RE-LAID AT THE CONTRACTOR'S EXPENSE.
16. ALL BEDDING MATERIAL FOR ALL PIPE SHALL BE ABSORBED IN THE PRICE OF THE PIPE LAYING OPERATION.
17. ALL MANHOLES LOCATED IN FLOOD ZONES SHALL HAVE BOLTED LIDS AND FRAMES AS SHOWN ON PLANS.

SPECIAL SEWER ABANDONMENT / REMOVAL NOTES:

1. ALL EXISTING MANHOLES NOTED TO BE REMOVED SHALL BE REMOVED ENTIRELY. REMOVED ITEMS SHALL BE DISPOSED OF APPROPRIATELY.
2. ALL EXISTING MANHOLES NOTED TO BE ABANDONED, SHALL BE PAID FOR PER EACH AND SHALL BE MODIFIED AS FOLLOWS:

2.1. REMOVE AND DISPOSE OF SANITARY WASTE.

2.2. REMOVE COVER, FRAME AND THE TOP 36" OF MANHOLE STRUCTURE. DISPOSE OF REMOVED OBJECTS APPROPRIATELY.

2.3. FILL THE MANHOLE WITH SAND.

2.4. CAP THE MANHOLE WITH 3000 PSI, NON-REINFORCED CONCRETE (6" DEPTH).

2.5. BACKFILL WITH NATIVE SOIL MATERIAL AND/OR FILL MATERIAL (CL B9) AND COMPACT. GRADE TO DRAIN AS REQUIRED. GRASS DISTURBED AREA OR REPAIR PAVEMENT AREAS.
3. ALL EXISTING SEWER PIPES NOTED TO BE REMOVED, SHALL BE REMOVED ENTIRELY.
4. ALL EXISTING SEWER PIPES NOTED TO BE ABANDONED SHALL BE DISCONNECTED AND CAPPED IN PLACE (NO SEPARATE PAY)
5. WHERE ABANDONED SEWER PIPES AND/OR MANHOLES CONFLICT WITH THE NEW CONSTRUCTION, THE EXISTING PIPE OR MANHOLE SHALL BE REMOVED, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.
6. ALL EXISTING SEPTIC TANKS SHALL BE ABANDONED IN PLACE. ABANDONMENT OF SEPTIC TANKS SHALL BE PAID PER EACH AND INCLUDE THE FOLLOWING:

6.1. DISCONNECT EXISTING SERVICE FROM SEPTIC TANK.

6.2. REMOVE AND PROPERLY DISPOSE OF SEPTIC TANK TOP.

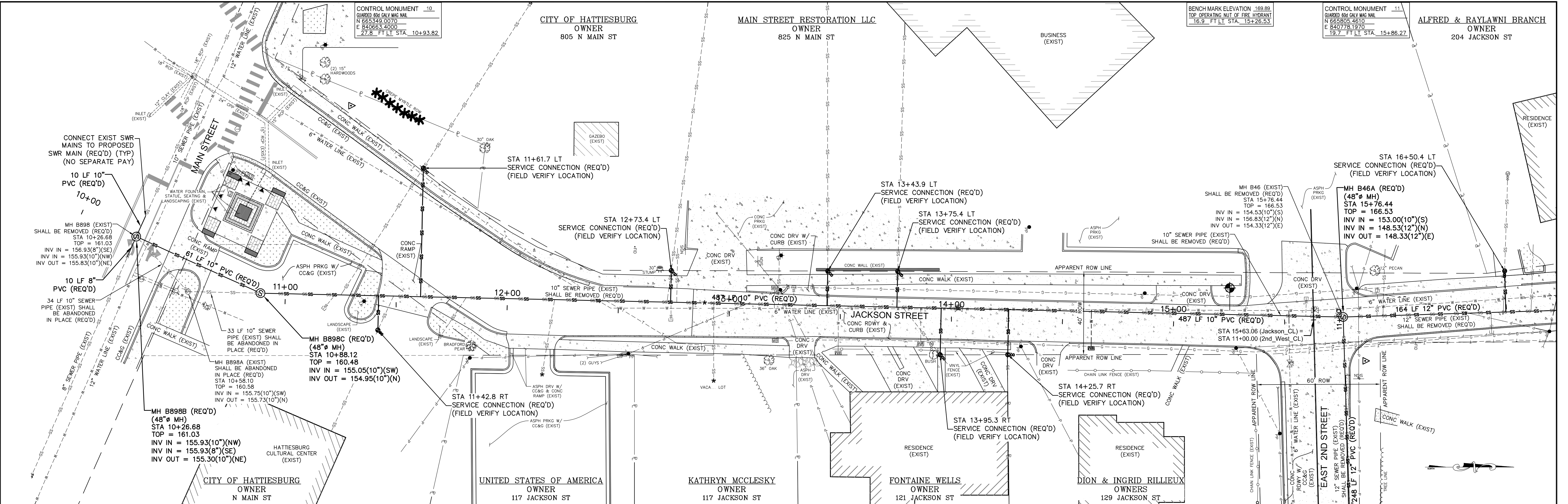
6.3. REMOVE AND DISPOSE OF EXISTING WASTE. ALL SEPTIC WASTE SHALL BE REMOVED BY AN APPROVED STATE LICENSED HAULER. ALL SEPTIC TANK WASTE SHALL BE DISPOSED OF IN OR AT A FACILITY APPROVED BY THE STATE AND MDEQ TO RECEIVE SUCH WASTE (NO SEPARATE PAY).

6.4. FILL TANK COMPLETELY, WITH GRANULAR MATERIAL (SAND).

6.5. COVER FILLED TANK WITH INSITU AND OR FILL MATERIAL, IF NEEDED, FILL MATERIAL SHALL BE CLASS B9, FURNISHED BY CONTRACTOR (ABSORBED IN SEPTIC TANK ITEM).

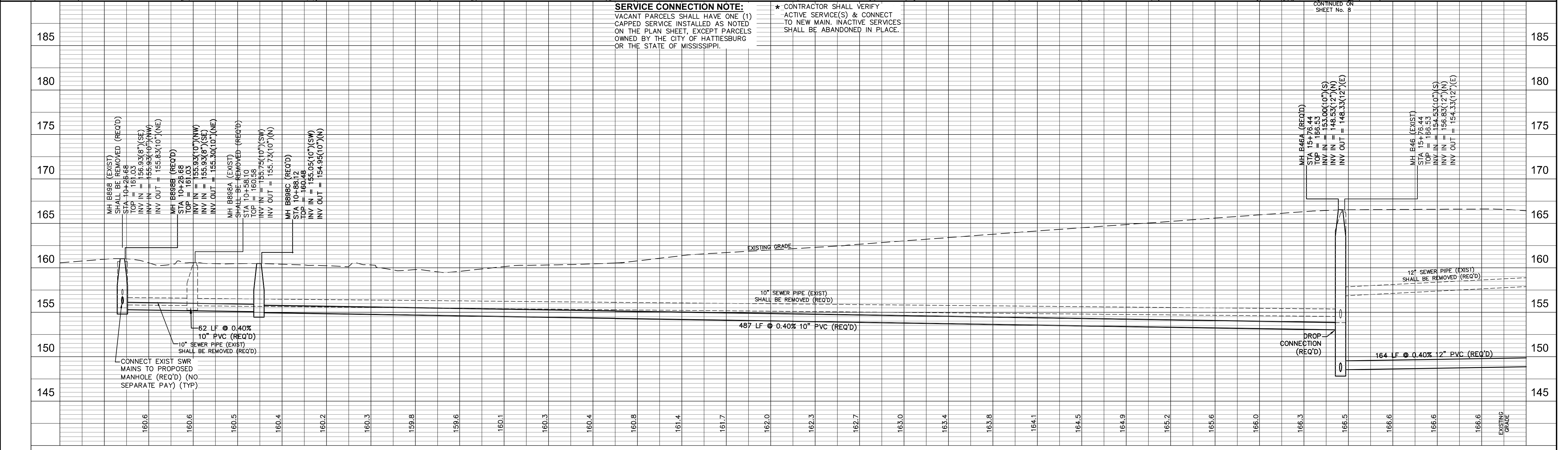
NO.	DATE	DESCRIPTION	BY
GENERAL NOTES			
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave, Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 10/01/2019		Scale: NONE	
Drawing No.: 1273-S014		Sheet No. _____4_____	

G:\PROJECTS\Hattiesburg_City of 1275-S014 - ComSWIP Sewer Phase IX - Bushman & 2nd 1275-S014 CAD Files\1275-S014 - ComSWIP Sewer Phase IX - Bushman & 2nd.dwg, 5, 10/30/2019 11:21:13 AM



SERVICE CONNECTION NOTE:
VACANT PARCELS SHALL HAVE ONE (1) CAPPED SERVICE INSTALLED AS NOTED ON THE PLAN SHEET, EXCEPT PARCELS OWNED BY THE CITY OF HATTIESBURG OR THE STATE OF MISSISSIPPI.

* CONTRACTOR SHALL VERIFY ACTIVE SERVICE(S) & CONNECT TO NEW MAIN. INACTIVE SERVICES SHALL BE ABANDONED IN PLACE.



JACKSON STREET STA 10+00 - STA 16+60

COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX
HATTIESBURG, MISSISSIPPI

DRAWN BY: RES/RT		DATE: 10/30/2019		CHECKED BY: SEM		SCALE: 1" = 20' H, 1" = 5' V	
DATE	REVISION	BY					



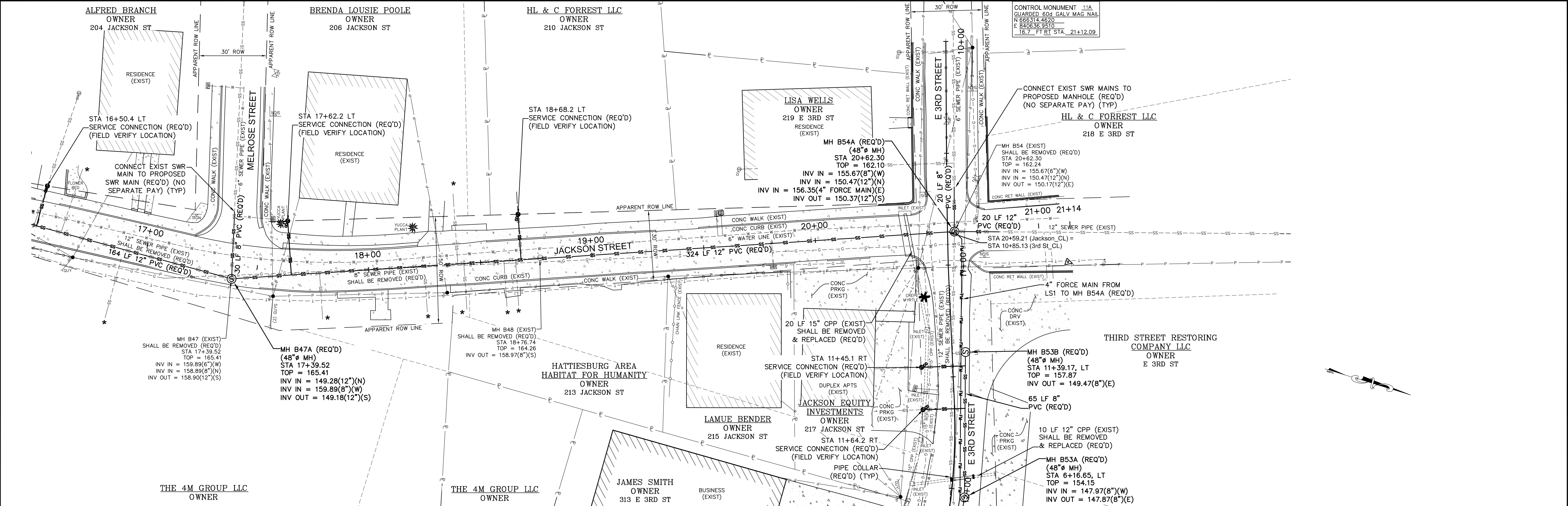
Engineering Progress

301 Second Ave., | Hattiesburg, MS 39401 | (p) 601.544.1821 | (f) 601.544.0501 | sdw.com

DRAWING NO.
1273-S014

SHEET
5

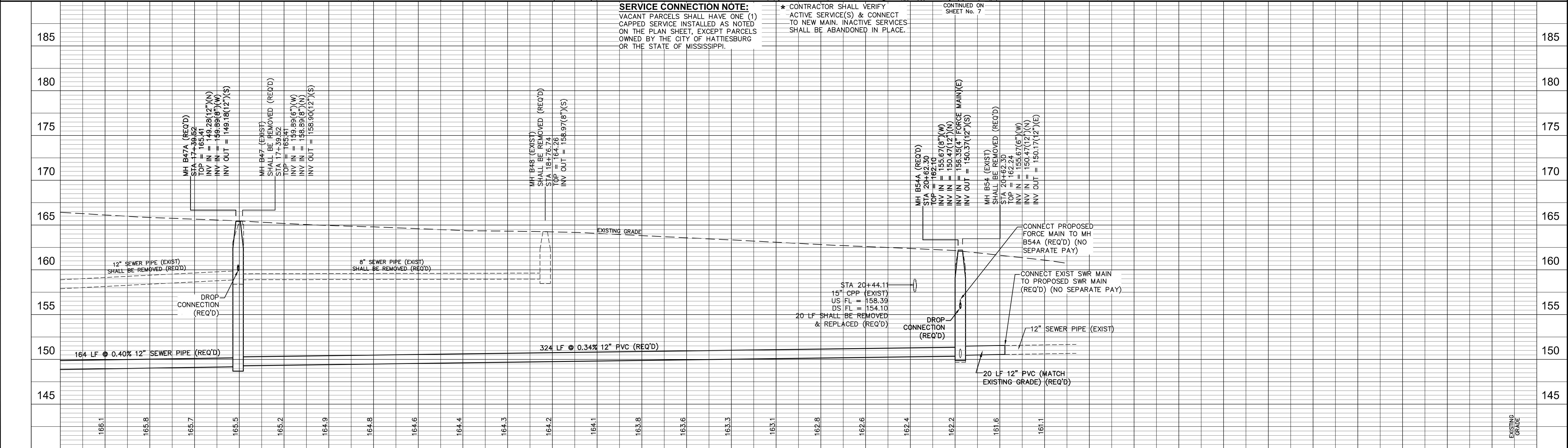
G:\PROJECTS\Hattiesburg_City of 2275014 - ComSWIP Sewer Phase IX Bushtam & 2nd 1275014 CAD Files\2275014 - Plan_2nd.dwg, 6, 10/30/2019 11:12:16 AM



SERVICE CONNECTION NOTE:
VACANT PARCELS SHALL HAVE ONE (1) CAPPED SERVICE INSTALLED AS NOTED ON THE PLAN SHEET, EXCEPT PARCELS OWNED BY THE CITY OF HATTIESBURG OR THE STATE OF MISSISSIPPI.

* CONTRACTOR SHALL VERIFY ACTIVE SERVICE(S) & CONNECT TO NEW MAIN. INACTIVE SERVICES SHALL BE ABANDONED IN PLACE.

CONTINUED ON SHEET No. 7



JACKSON STREET STA 16+00 - STA 21+00

COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX
HATTIESBURG, MISSISSIPPI

DRAWN BY: RES/BT		DATE: 10/30/2019		CHECKED BY: SEM		SCALE: 1" = 20' H, 1" = 5' V	
DATE	REVISION	BY					



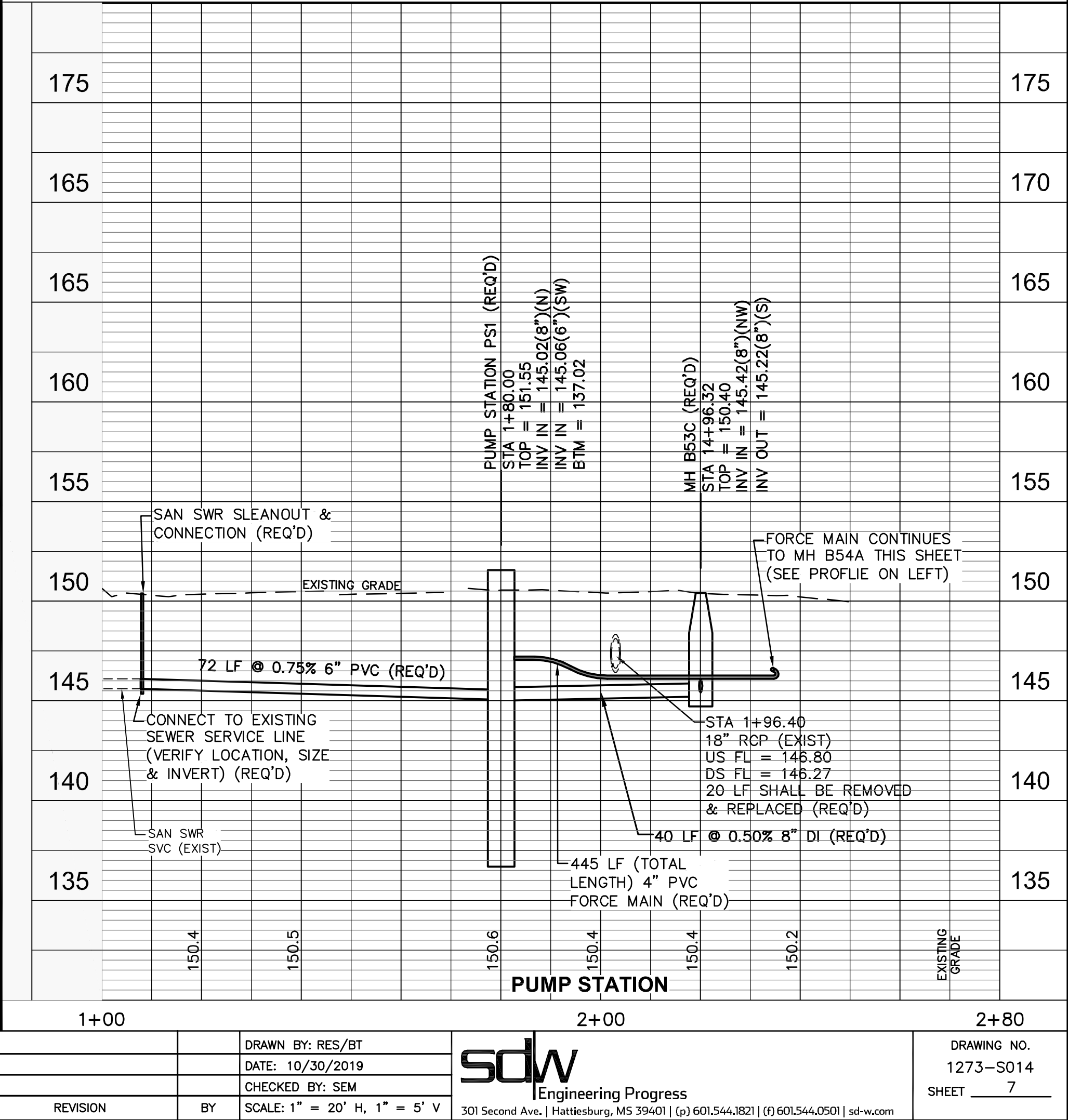
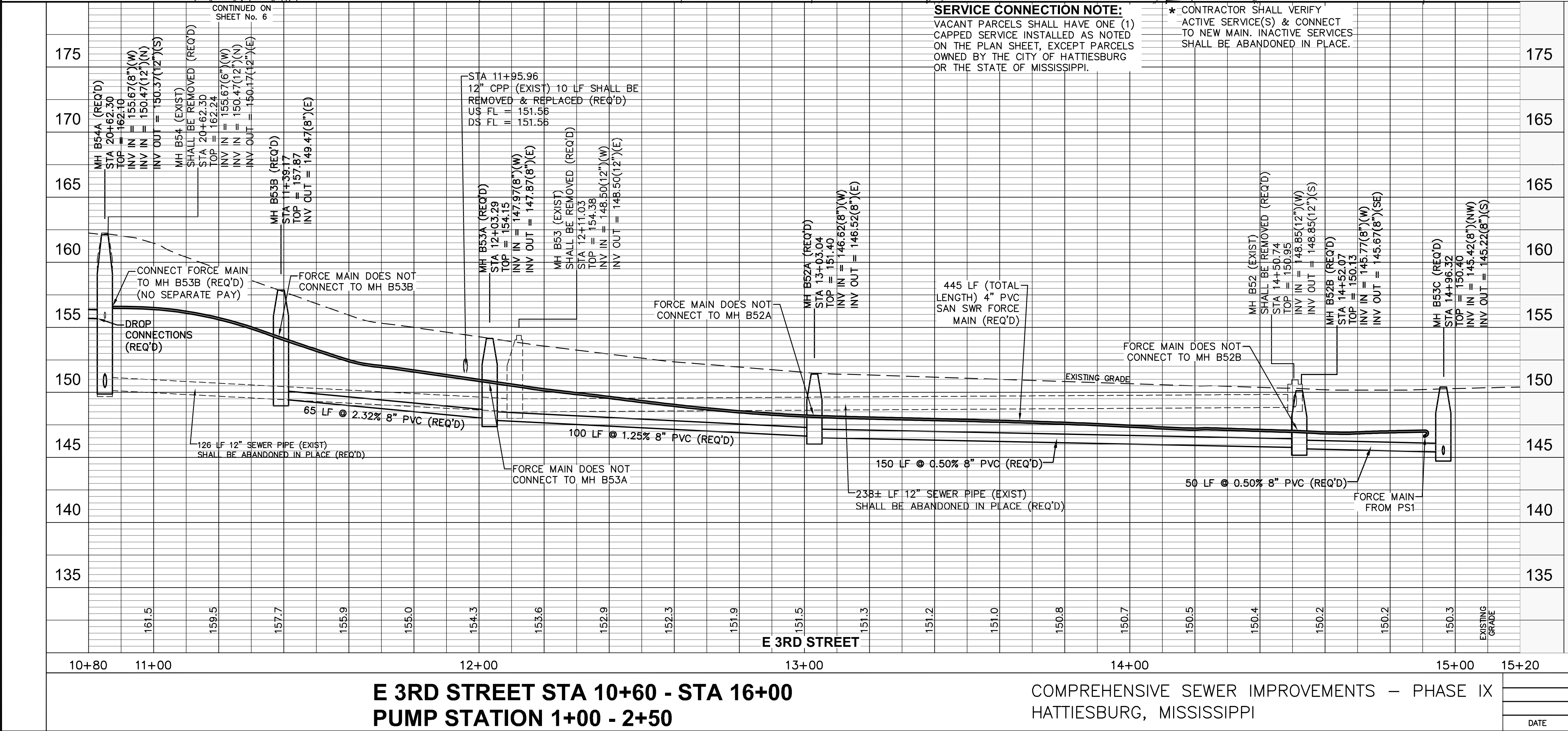
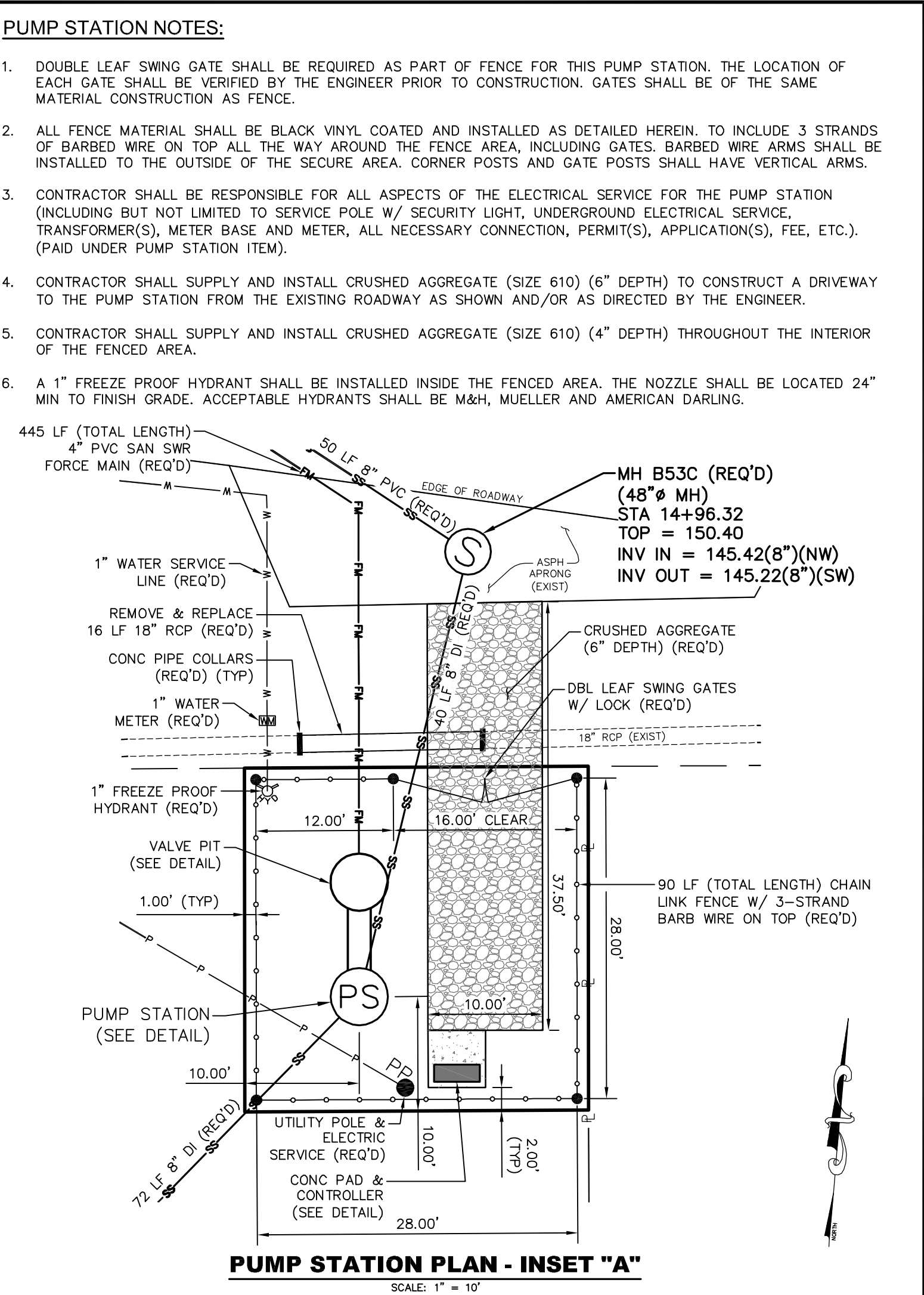
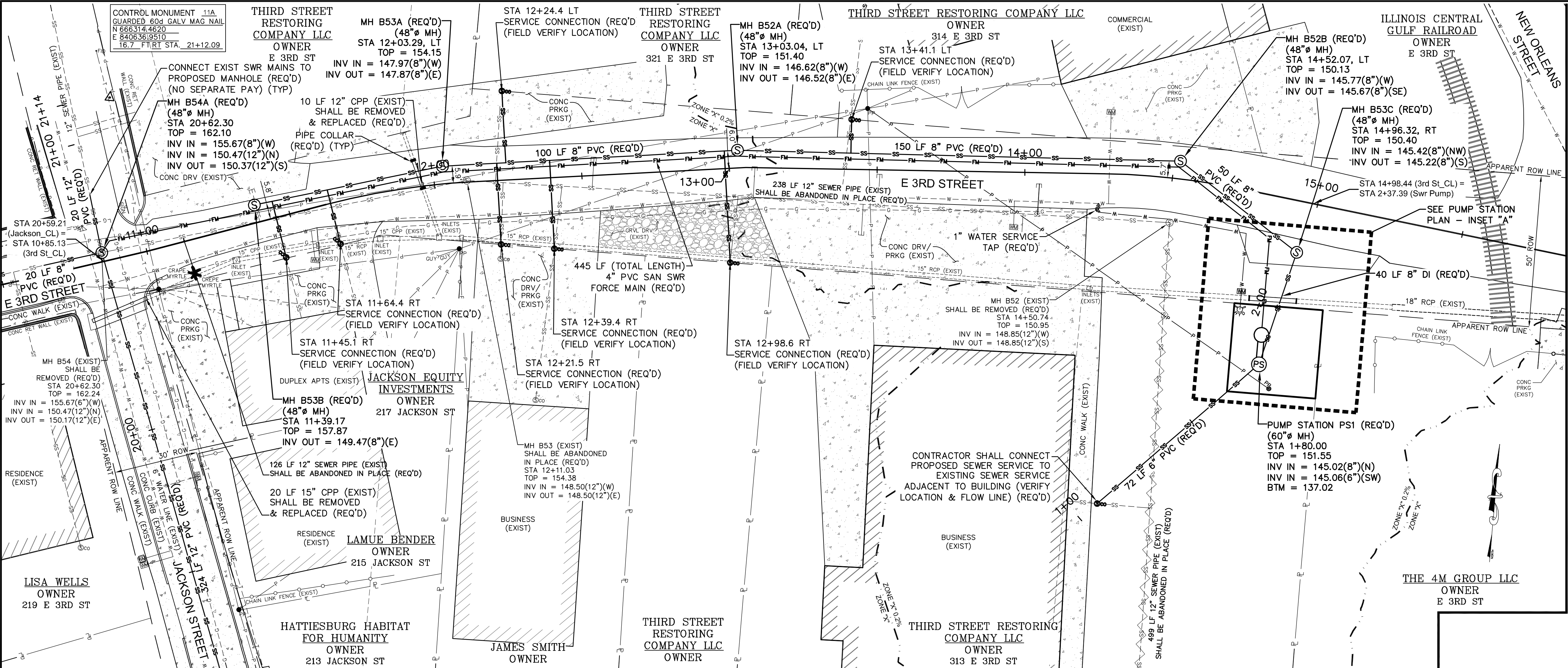
Engineering Progress

301 Second Ave., | Hattiesburg, MS 39401 | (p) 601.544.1821 | (f) 601.544.0501 | sd-w.com

DRAWING NO.
1273-S014

SHEET
6

G:\PROJECTS\Hattiesburg_City of 1275-S014 - Comprehensive Sewer Phase IX\Boschman & 2nd 1275-S014 CAD Files\1275-S014_Plan_2nd.dwg, 7/10/2019 11:21:21 AM

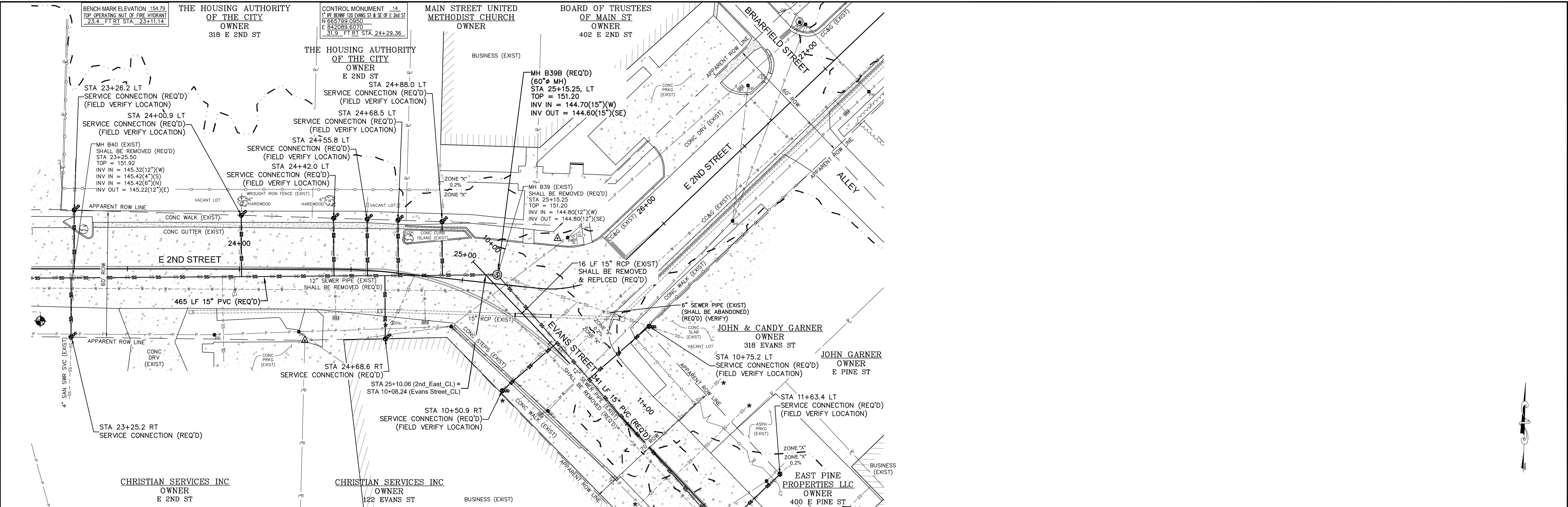


E 3RD STREET STA 10+60 - STA 16+00
PUMP STATION 1+00 - 2+50

COMPREHENSIVE SEWER IMPROVEMENTS - PHASE IX
HATTIESBURG, MISSISSIPPI

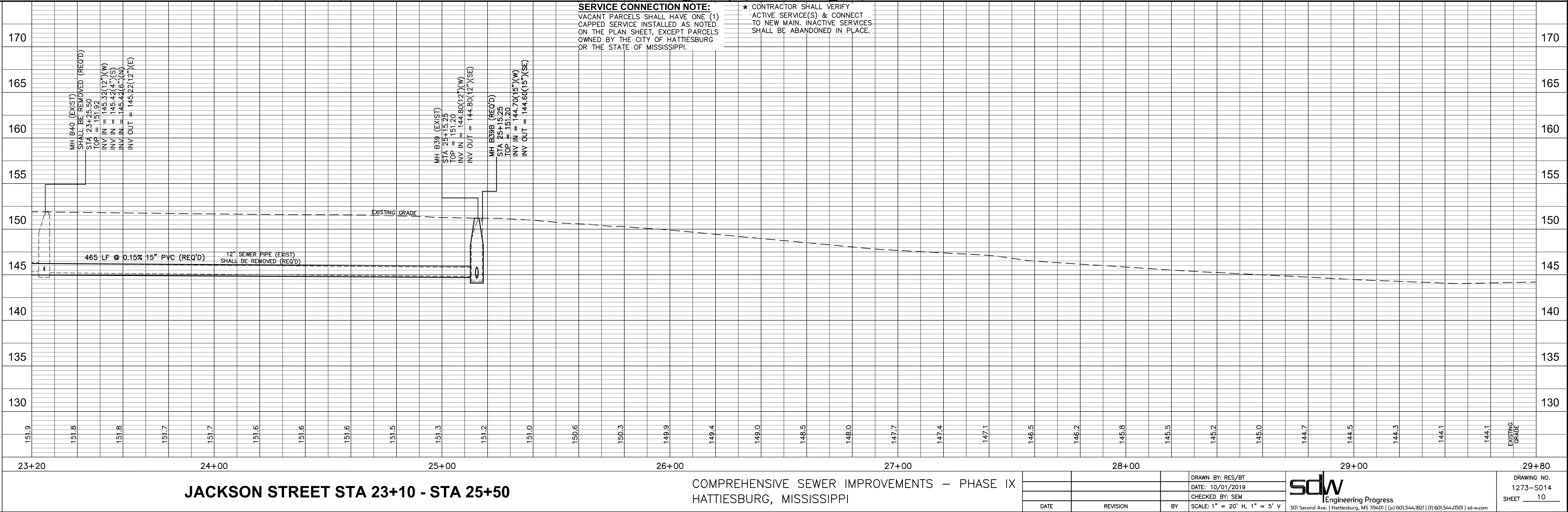
DATE	REVISION	BY	SCALE: 1" = 20', 1" = 5' V	DRAWN BY: RES/BT DATE: 10/30/2019 CHECKED BY: SEM	sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.821 (f) 601.544.050 sdw.com	DRAWING NO. 1273-S014 SHEET 7
------	----------	----	----------------------------	---	--	--

G:\PROJECTS\Hattiesburg_City of 12735014 - ComSWIP Sewer Phase IX Bushman & 2nd 12735014 CAD Files\2735014.dwg, 10/10/2019 2:05:49 PM



SERVICE CONNECTION NOTE:
VACANT PARCELS SHALL HAVE ONE (1) CAPPED SERVICE INSTALLED AS NOTED ON THE PLAN SHEET, EXCEPT PARCELS OWNED BY THE CITY OF HATTIESBURG OR THE STATE OF MISSISSIPPI.

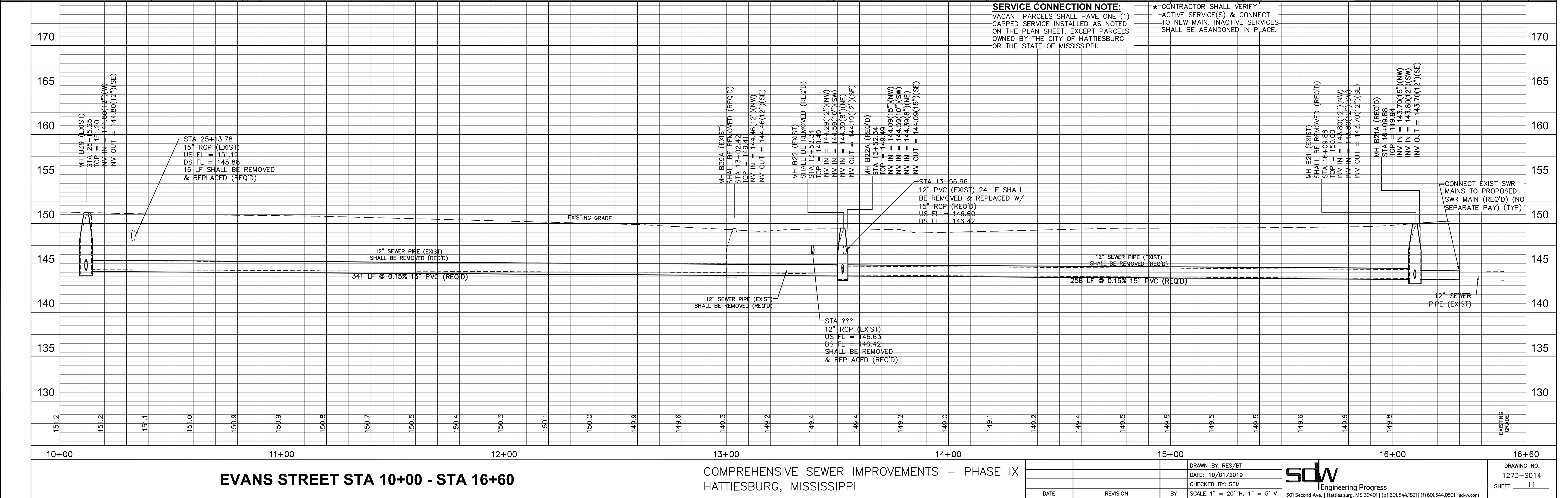
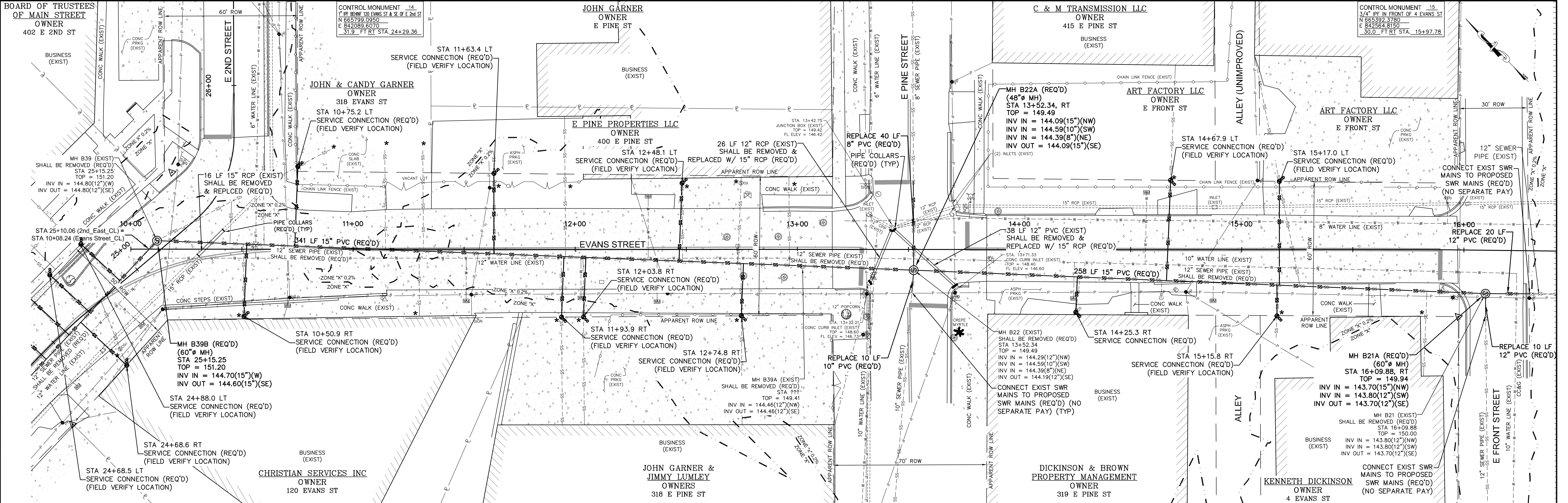
* CONTRACTOR SHALL VERIFY ACTIVE SERVICE(S) & CONNECT TO NEW MAIN. INACTIVE SERVICES SHALL BE ABANDONED IN PLACE.



JACKSON STREET STA 23+10 - STA 25+50

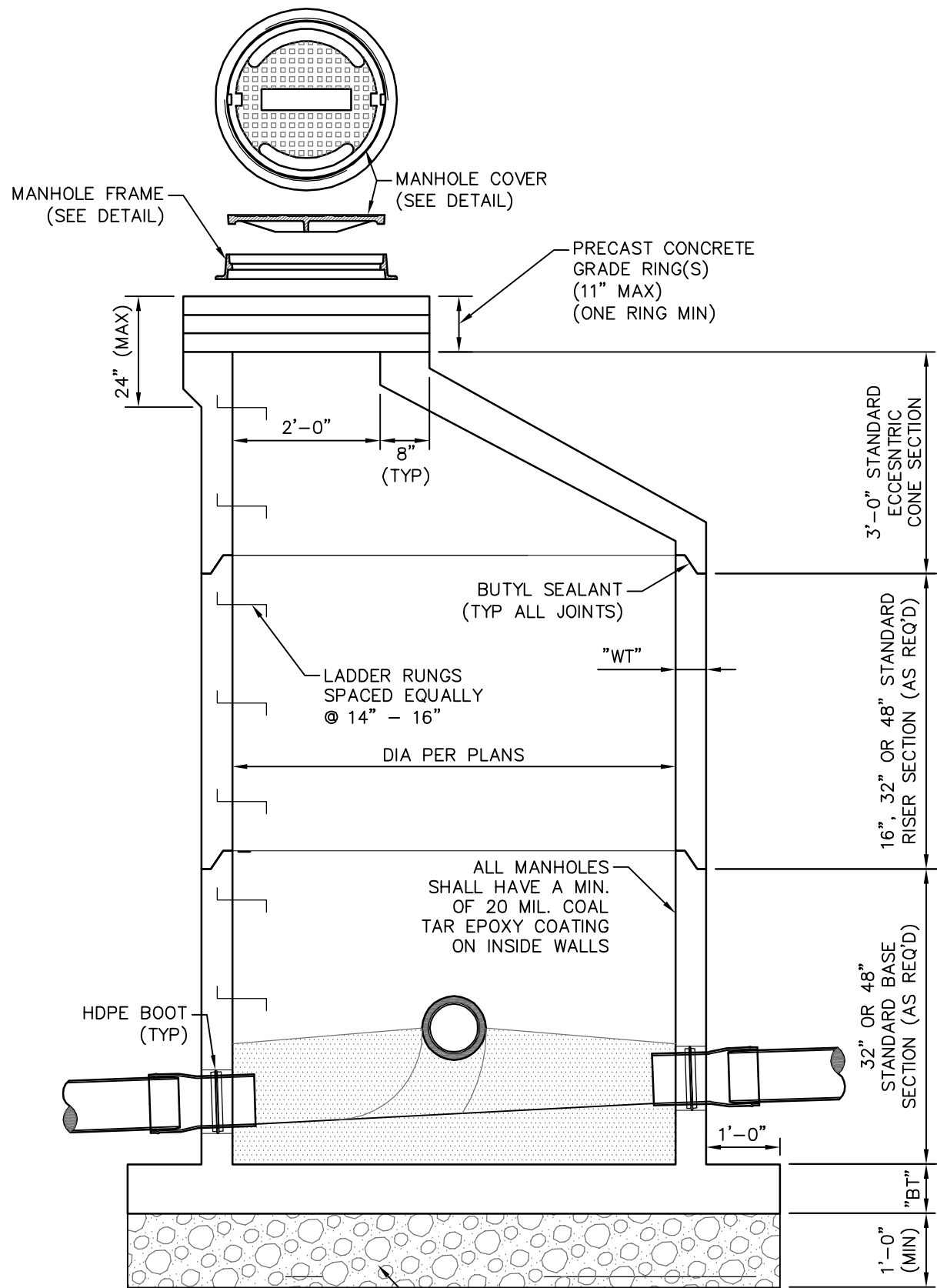
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX
HATTIESBURG, MISSISSIPPI

			DRAWN BY: RES/BT	 Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com	DRAWING NO. 1273-S014
			DATE: 10/01/2019		SHEET 10
			CHECKED BY: SEM		
DATE	REVISION	BY	SCALE: 1" = 20' H, 1" = 5' V		

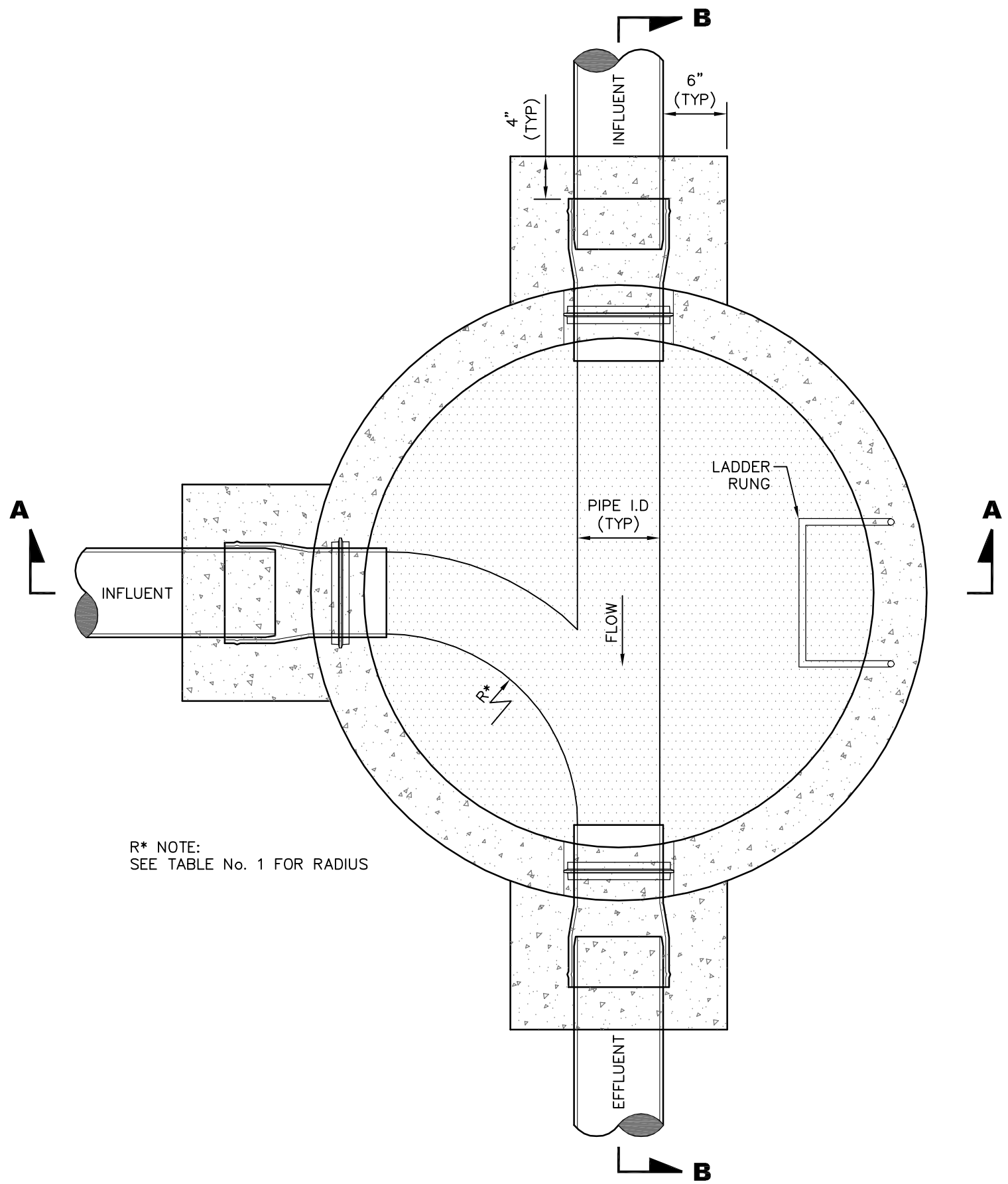


G:\PROJECTS\Hattiesburg_City of 1273-S014 - ComSWIP Sewer Phase IX Bushman & 2nd 1273S014 CAD Files\273S014.dwg, 11/07/2019 2:05:52 PM

CONCRETE WALL THICKNESS TABLE		
MANHOLE DIA (INCHES)	(WT) MINIMUM WALL THICKNESS (INCHES)	(BT) MINIMUM BASE THICKNESS (INCHES)
48	5	6
60	6	8
72	7	8
96	8	8



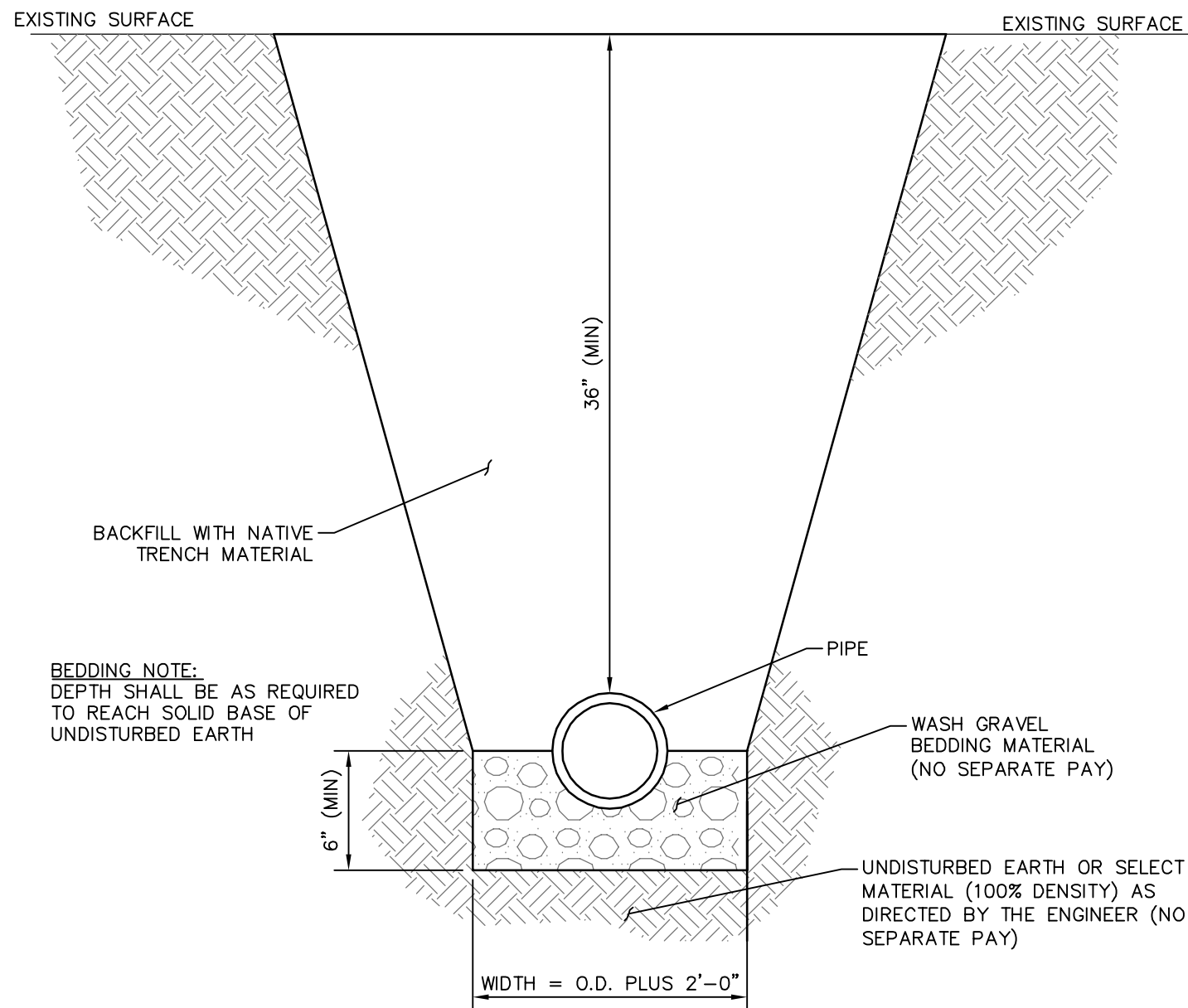
TYPICAL MANHOLE SECTION



STANDARD PRECAST CONCRETE MANHOLE - PLAN VIEW

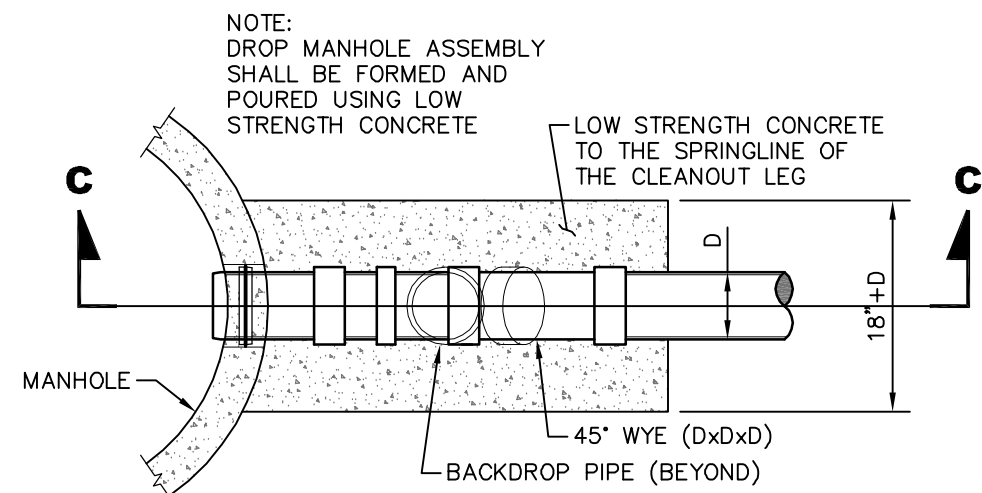
SHOWN WITH 48" Ø MANHOLE, LARGER DIAMETER MANHOLES MAY BE SIMILAR DESIGN, IF APPROVED BY THE ENGINEER. SHOWN WITH PVC PIPE.

TABLE NO. 1 GOVERNING DIMENSIONS FOR MANHOLES			
PIPE SIZE	ANGLE	MIN. BASE Ø	"R"*
8" - 12"	0° - 90°	48"	18"
15"	0° - 60°	60"	22"
15"	60° - 90°	60"	22"
18"	0° - 90°	60"	27"
18"	60° - 90°	60"	22"
21"	0° - 90°	60"	31"
21"	60° - 90°	60"	28"
24"	0° - 45°	72"	36"
24"	45° - 90°	72"	27"
30"	0° - 60°	72"	45"
30"	60° - 90°	72"	32"
36"	0° - 30°	84"	54"

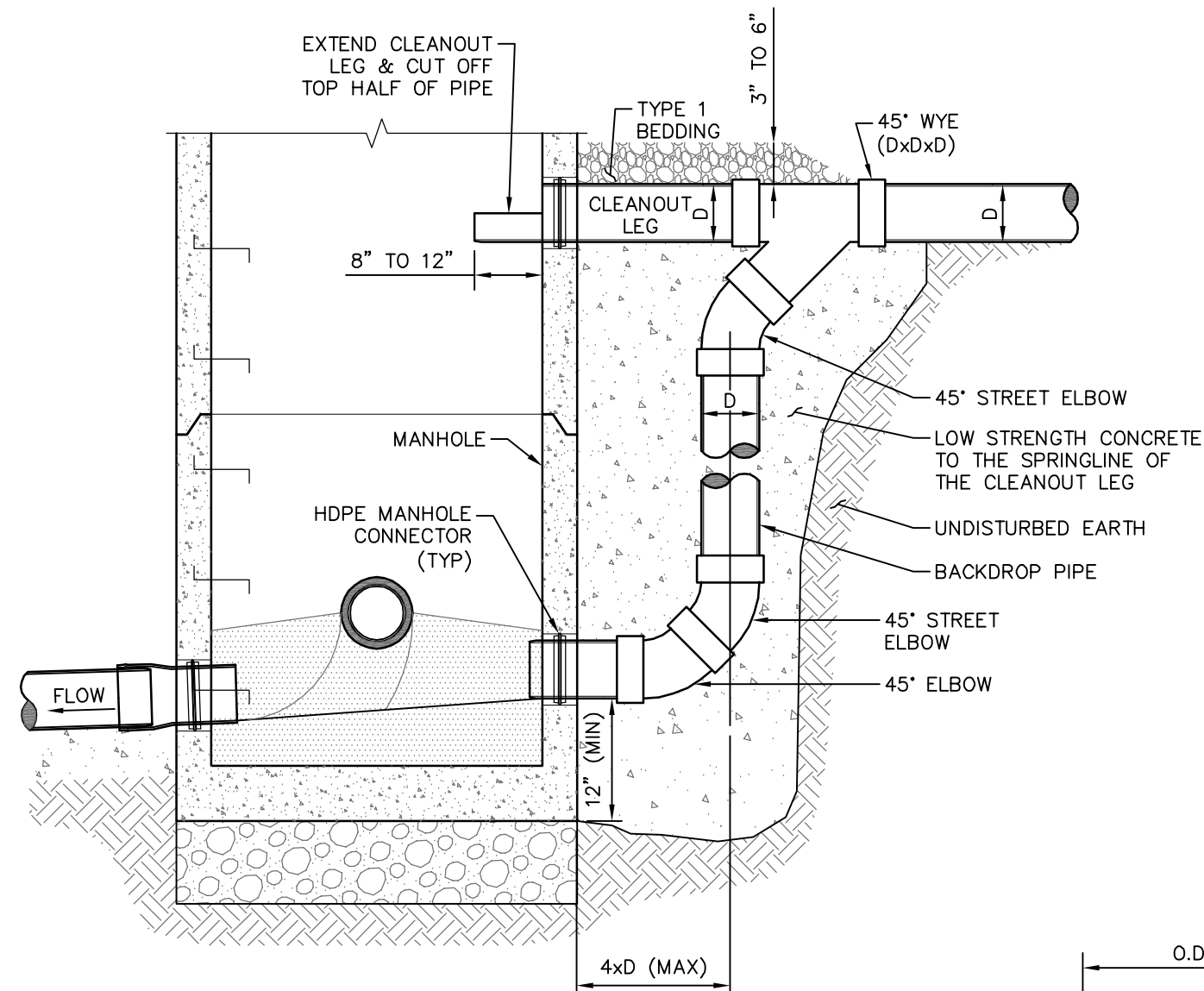


TYPICAL TRENCH IN NON-PAVED AREAS DETAIL

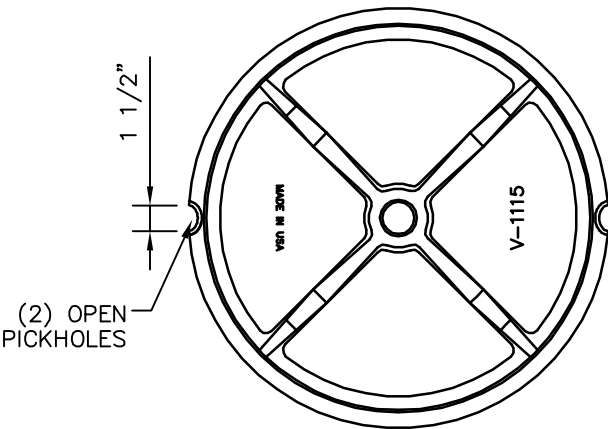
NOTE: TRENCH WIDTHS SHALL BE MINIMIZED BY THE CONTRACTOR TO ONLY NECESSARY FOR CONSTRUCTION AS DETERMINED BY THE ENGINEER.



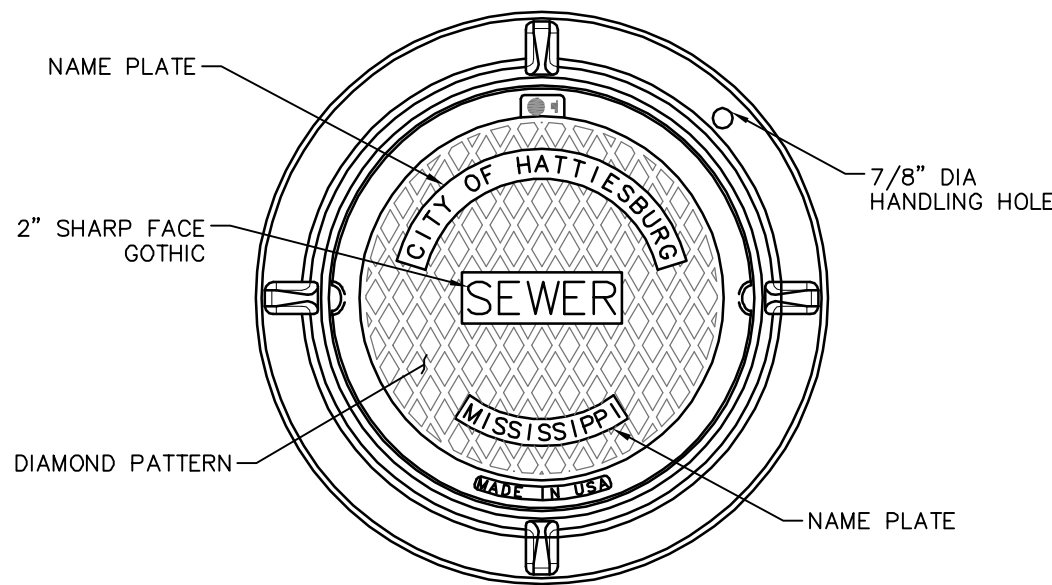
EXTERIOR DROP CLEANOUT MANHOLE ASSEMBLY - PLAN VIEW



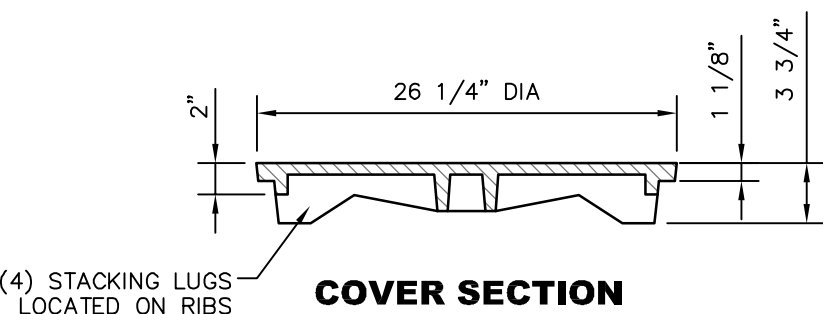
DETAIL "B" TYPICAL EXTERIOR DROP CLEANOUT ASSEMBLY ELEVATION



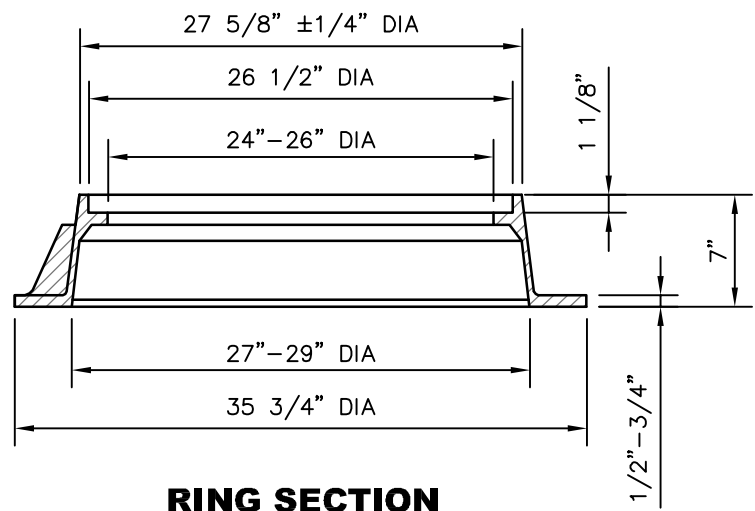
INVERTED PLAN COVER



PLAN WITH FRAME



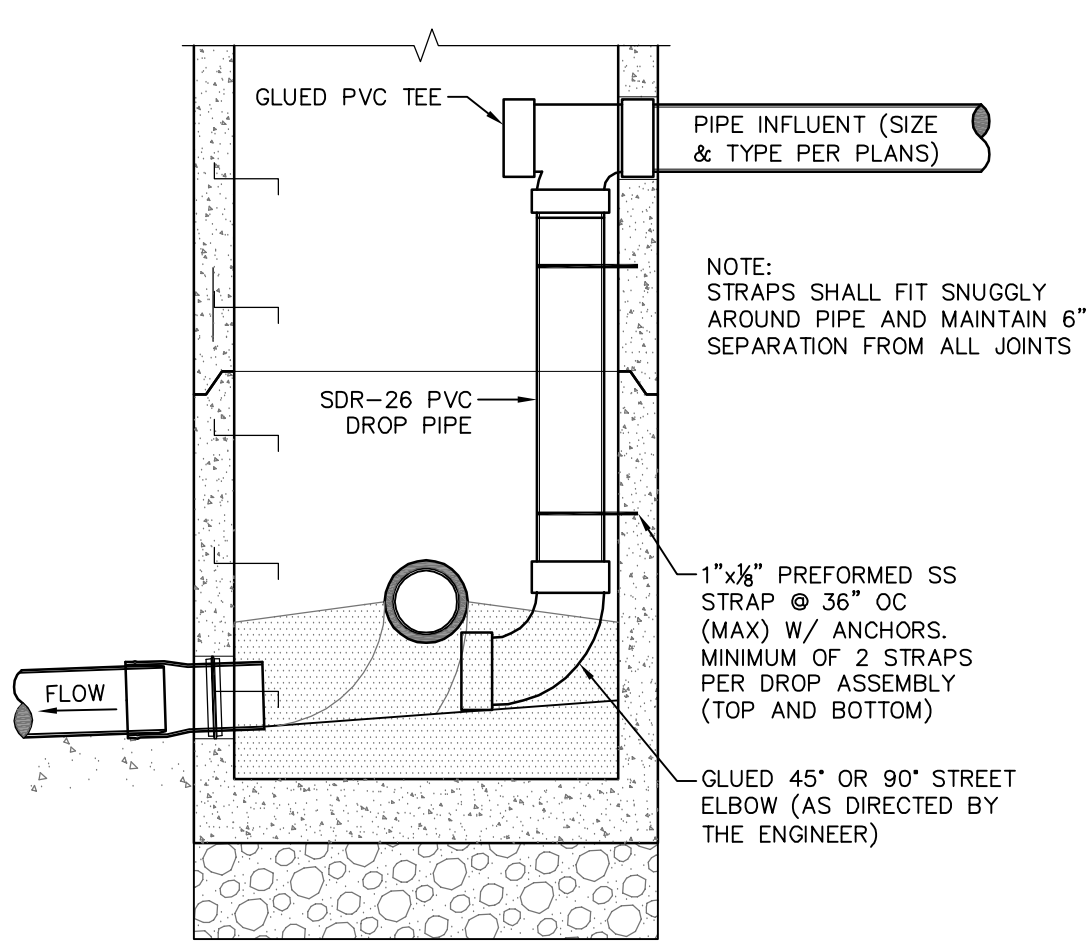
COVER SECTION



RING SECTION

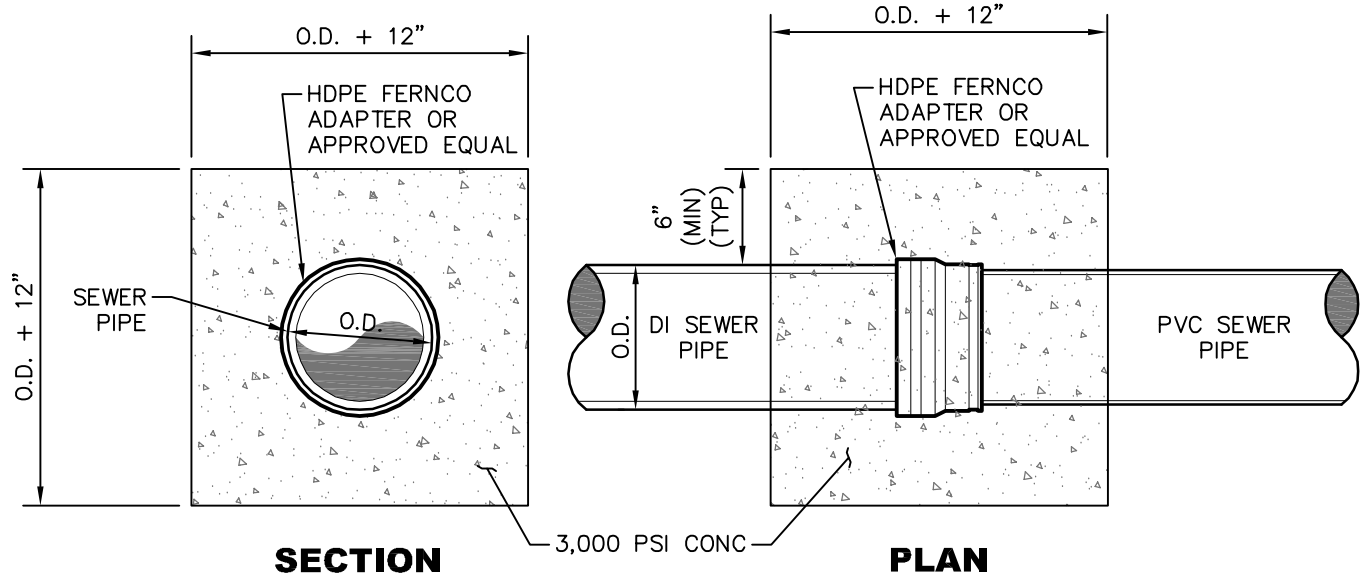
HEAVY DUTY COVER & FRAME V-1115 OR USF 370 WITH OUT HOLES ONLY
HEAVY DUTY WATERTIGHT COVER & FRAME V-2115-3 AGS WITH OUT HOLES, WITH GASKET & BOLTS ONLY

MANHOLE COVER DETAILS

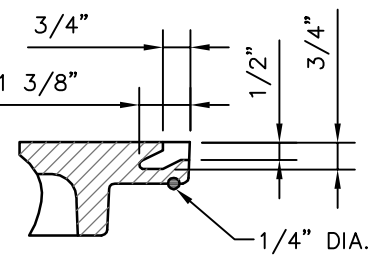


DETAIL "A" TYPICAL INTERIOR DROP CLEANOUT ASSEMBLY ELEVATION

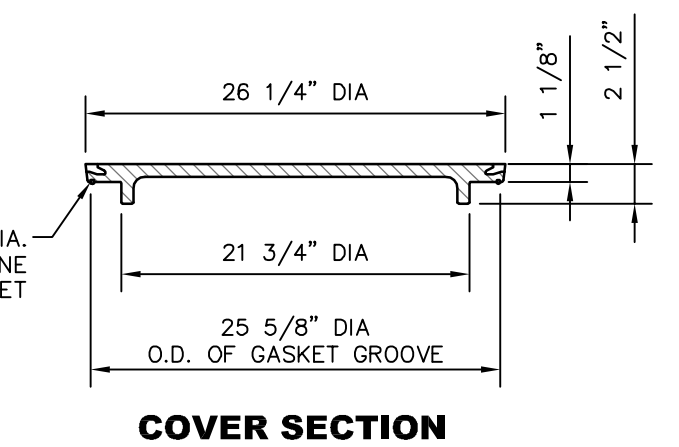
DROP CLEANOUT NOTES:
1. USE DETAIL "A" SHOWN ABOVE, ONLY WHERE A SINGLE 8" DROP ASSEMBLY CONNECTION INSIDE A 48" DIA. MANHOLE IS REQUIRED. FOR MULTIPLE DROP CONNECTIONS INSIDE A 48" MANHOLE USE DETAIL "B", SHOWN AT LEFT. FOR MULTIPLE DROP CONNECTION ASSEMBLIES IN LARGER DIAMETER MANHOLES THE DROP CONNECTIONS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
2. ALL HARDWARE SHALL BE STAINLESS STEEL.
3. ALL APPURTENANCES REQUIRED FOR A COMPLETE DROP CONNECTION ASSEMBLY SHALL BE INCLUDED IN THE BID PRICE.



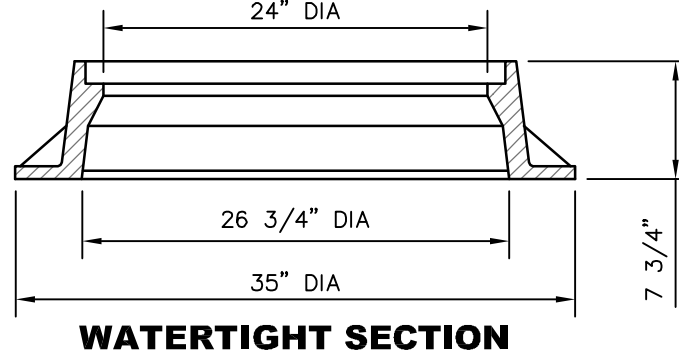
TYPICAL PVC SEWER PIPE TO SAME SIZE DUCTILE IRON SEWER PIPE CONNECTION



PICKHOLE DETAIL



COVER SECTION

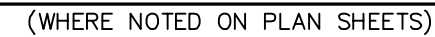
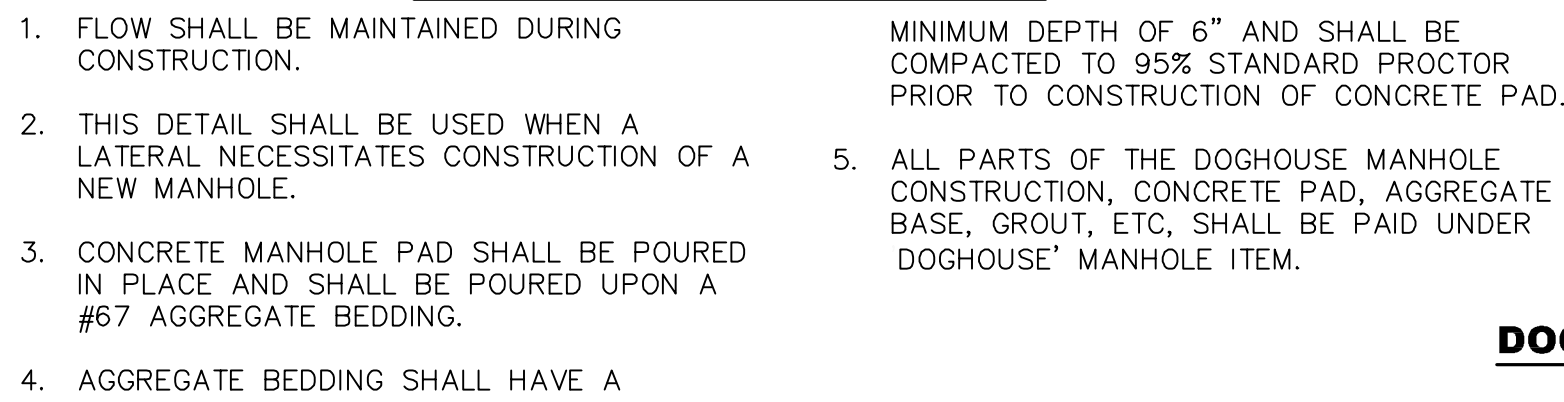


WATERTIGHT SECTION

GENERAL NOTES:

- ALL MANHOLES SHALL BE STANDARD PRECAST WITH EXTENDED BASES, UNLESS OTHERWISE DIRECTED. FLEXIBLE INLET AND OUTLET CONNECTION BOOTS REQUIRED ON ALL PIPES AND FORCE MAINS.
- ALL ELEMENTS SHALL CONFORM TO PRECAST MANHOLE SPECIFICATION. A.S.T.M. C-478 LATEST REVISION.
- PRECAST CONCRETE RINGS SHALL BE USED TO BRING MANHOLE FRAME AND COVER TO GRADE USE (11" MAX. RISE).
- MANHOLES IN PAVED AREAS SHALL BE FURNISHED WITH ADJUSTING RINGS.

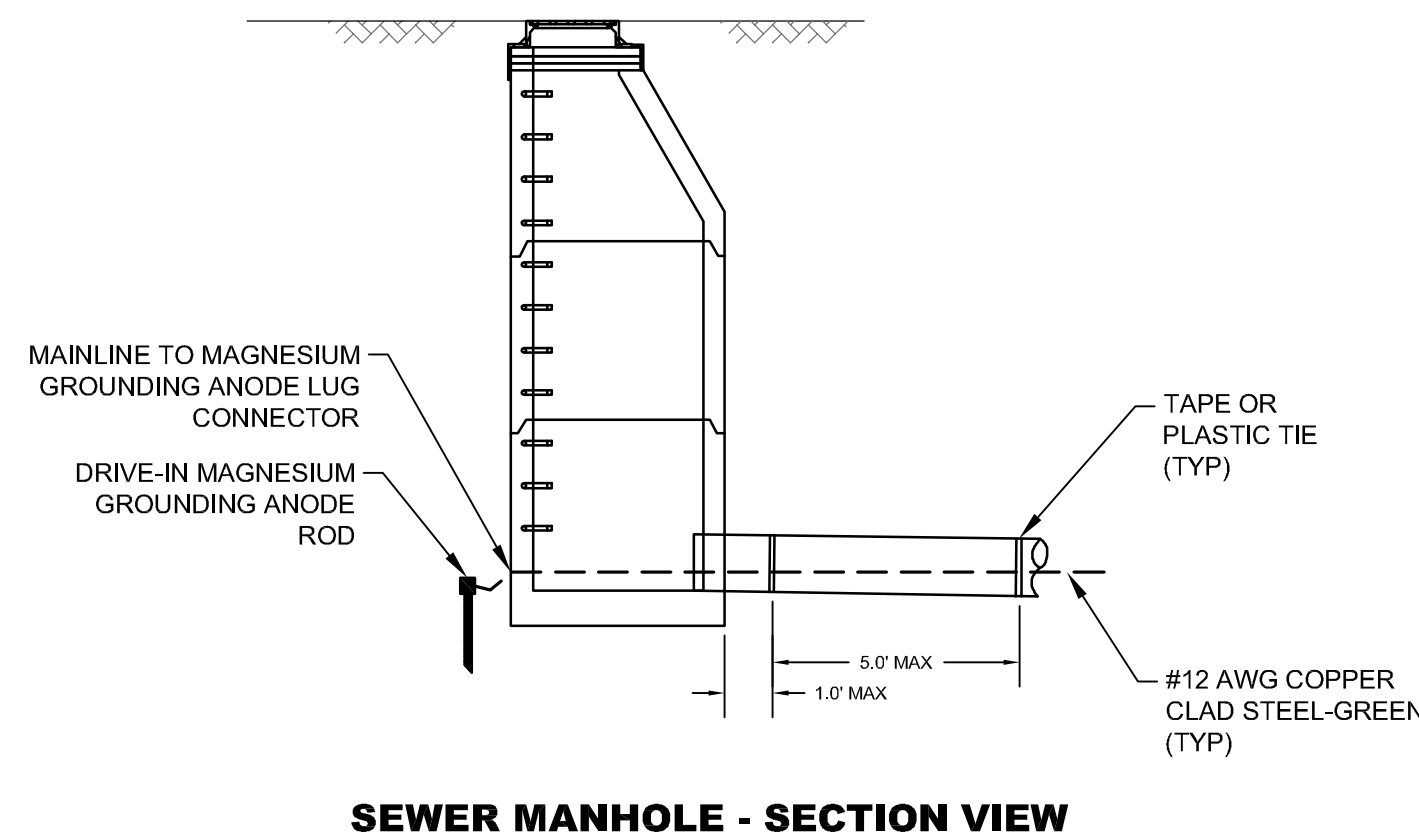
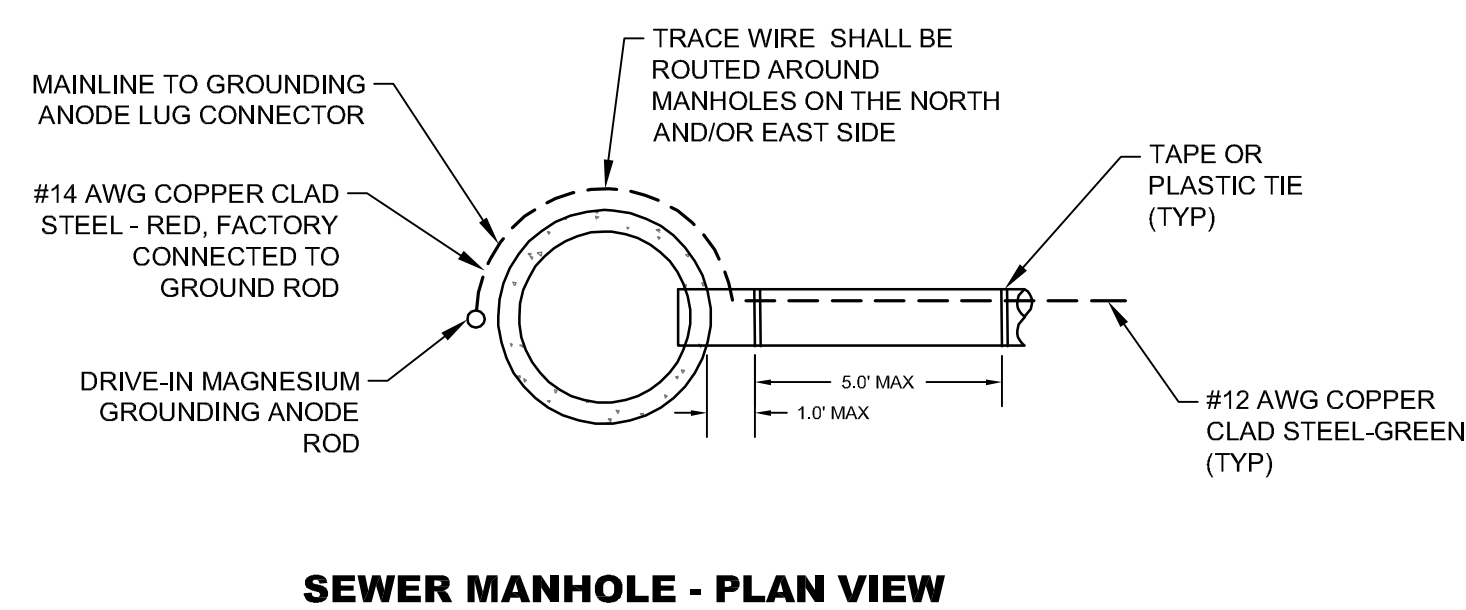
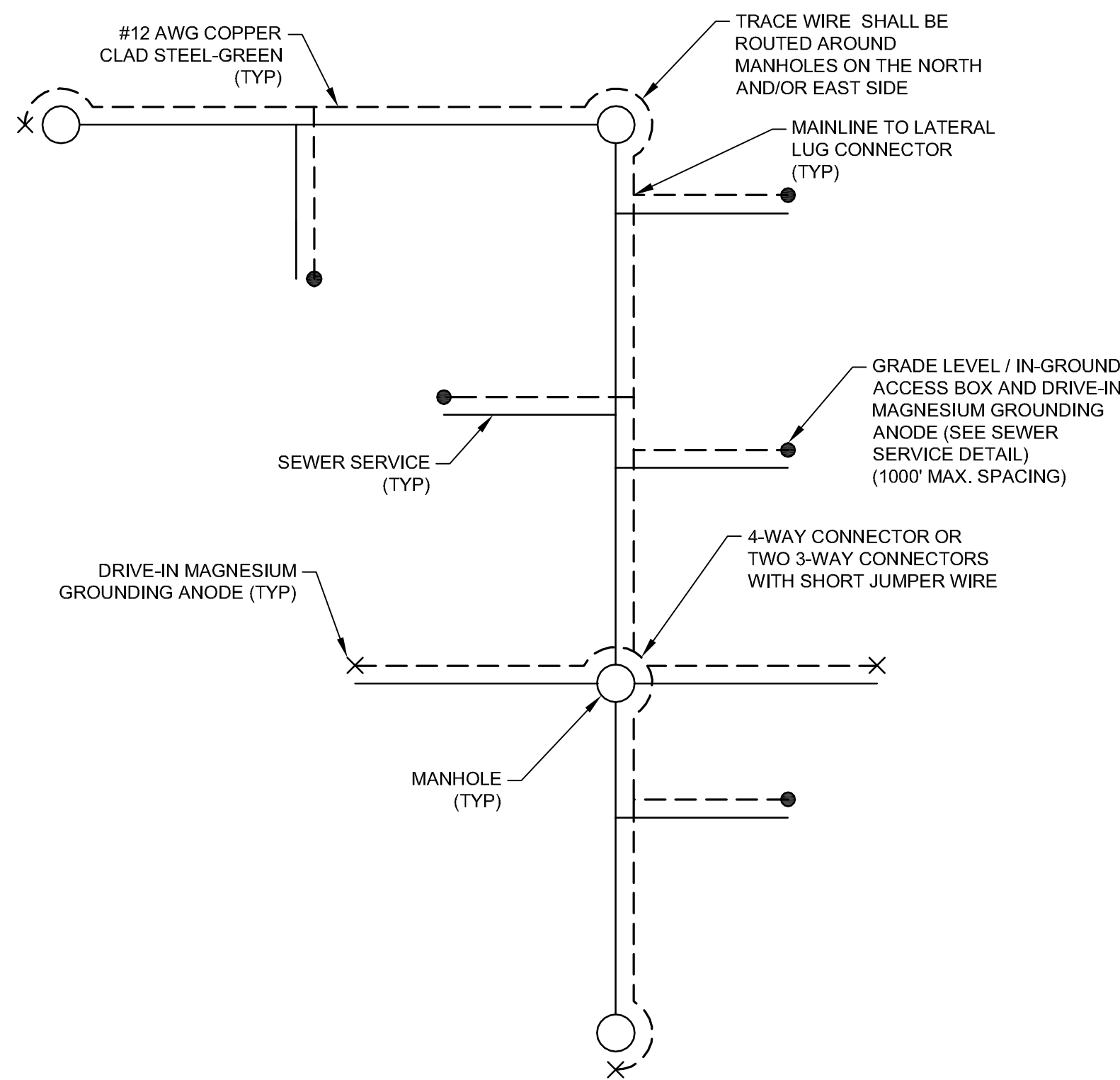
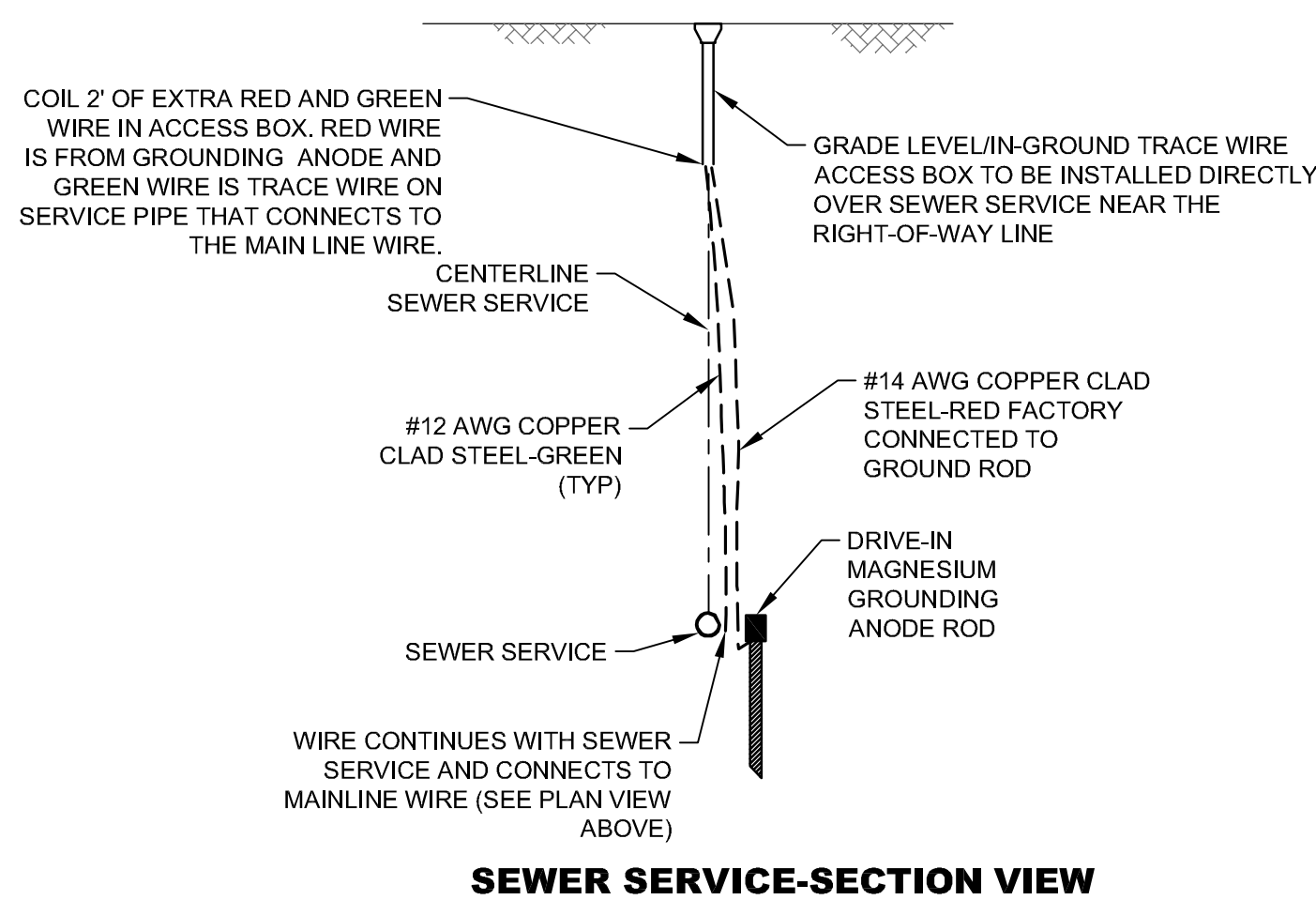
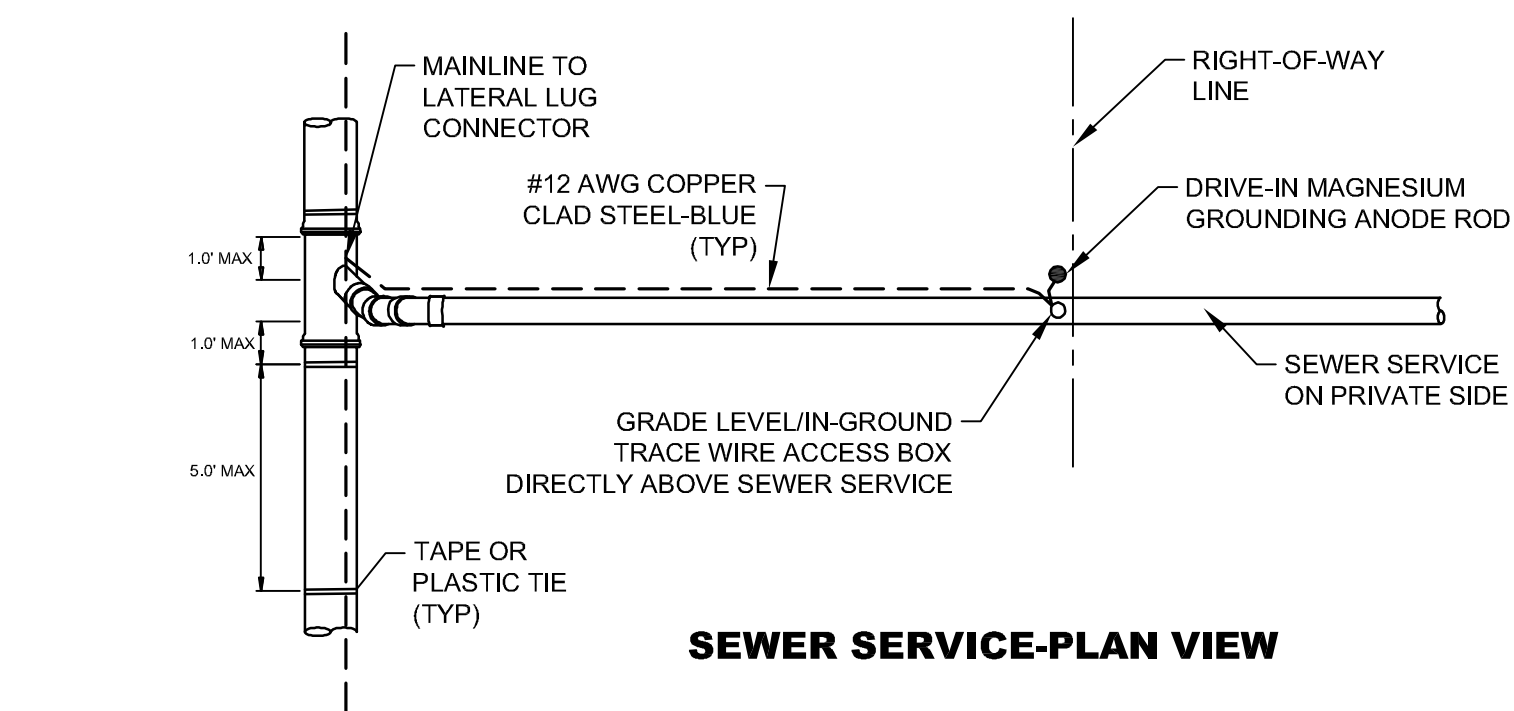
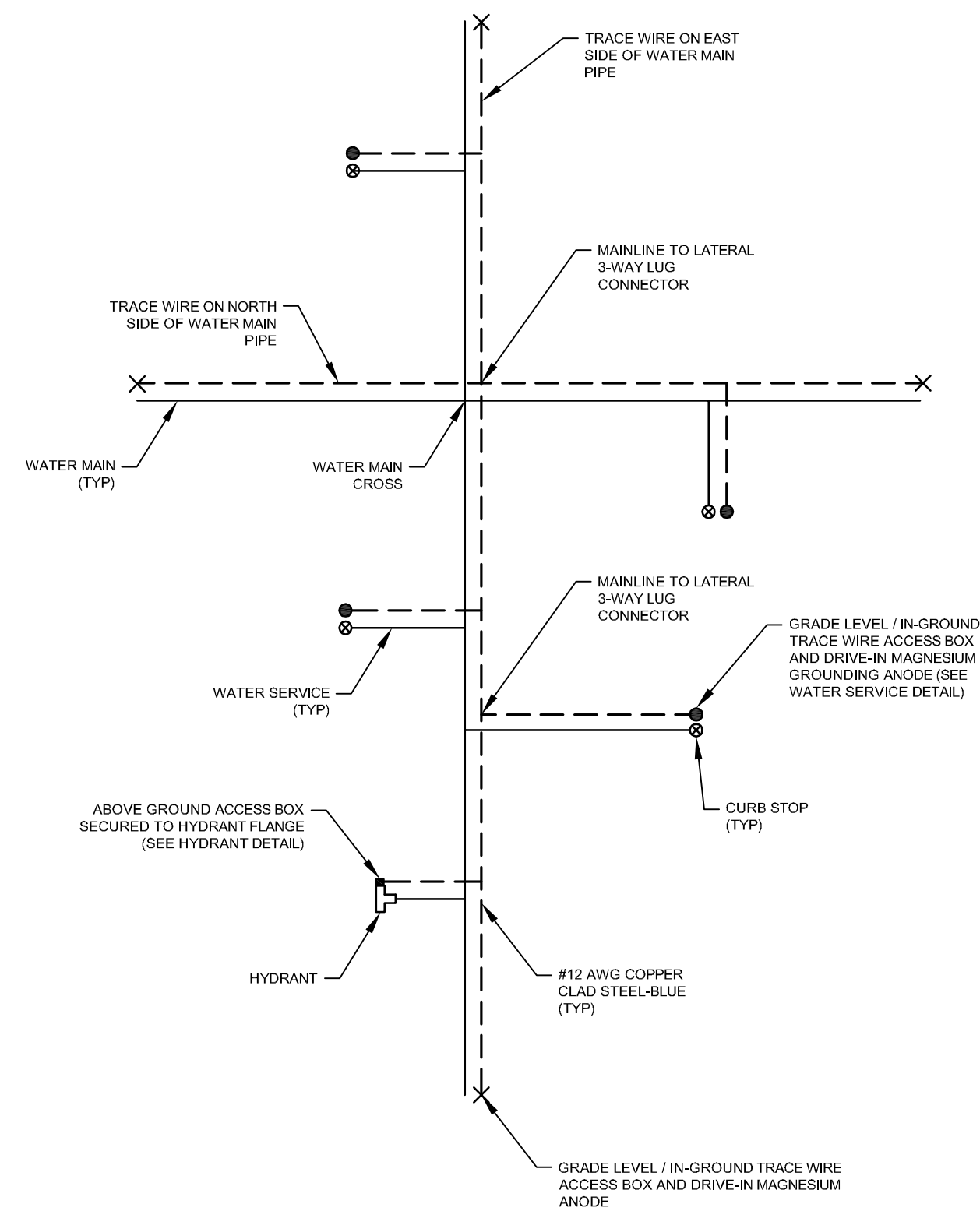
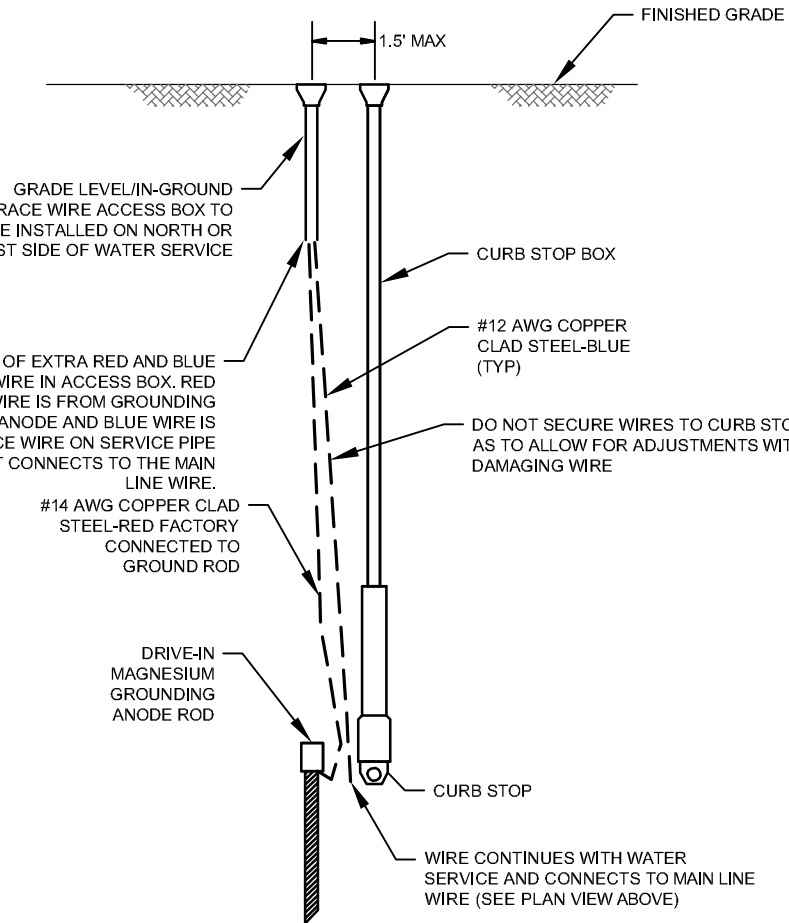
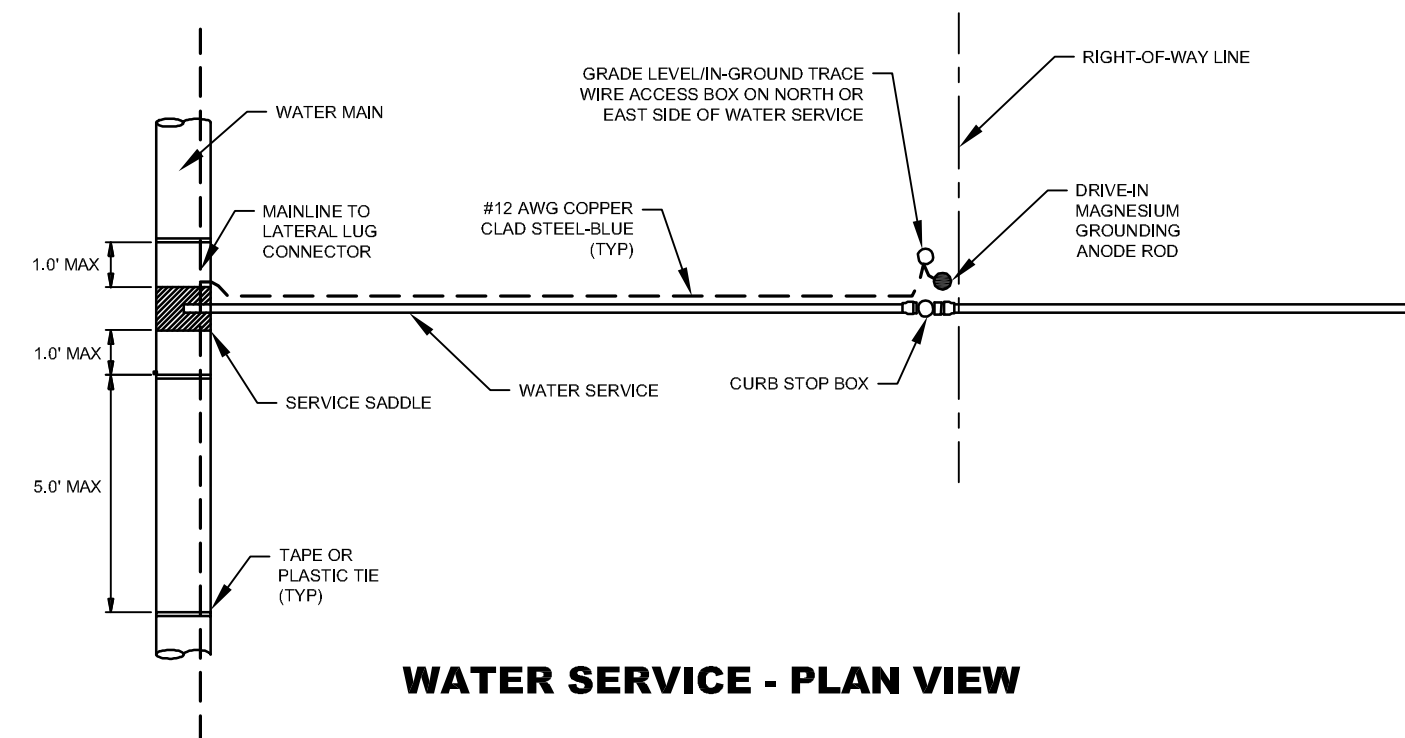
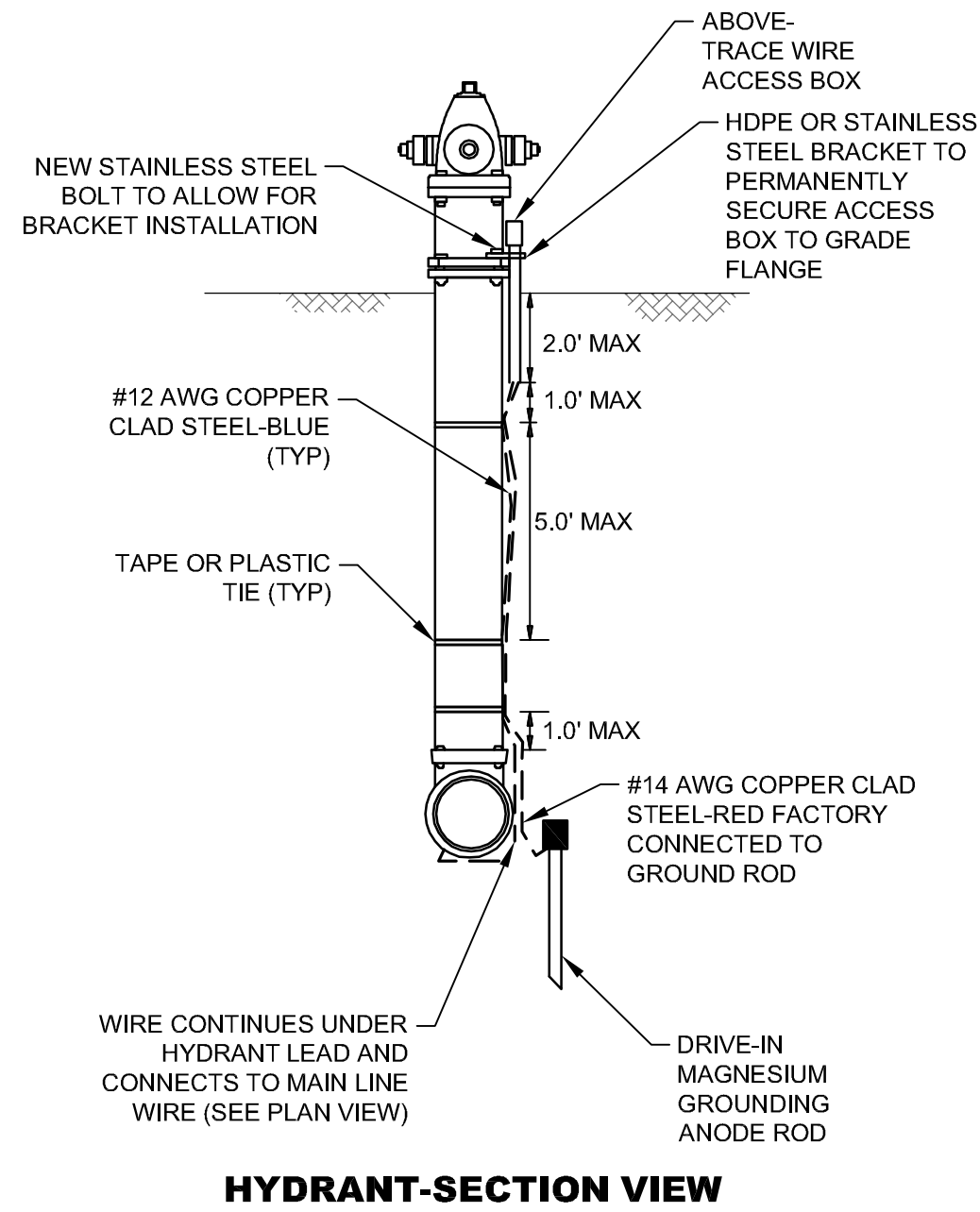
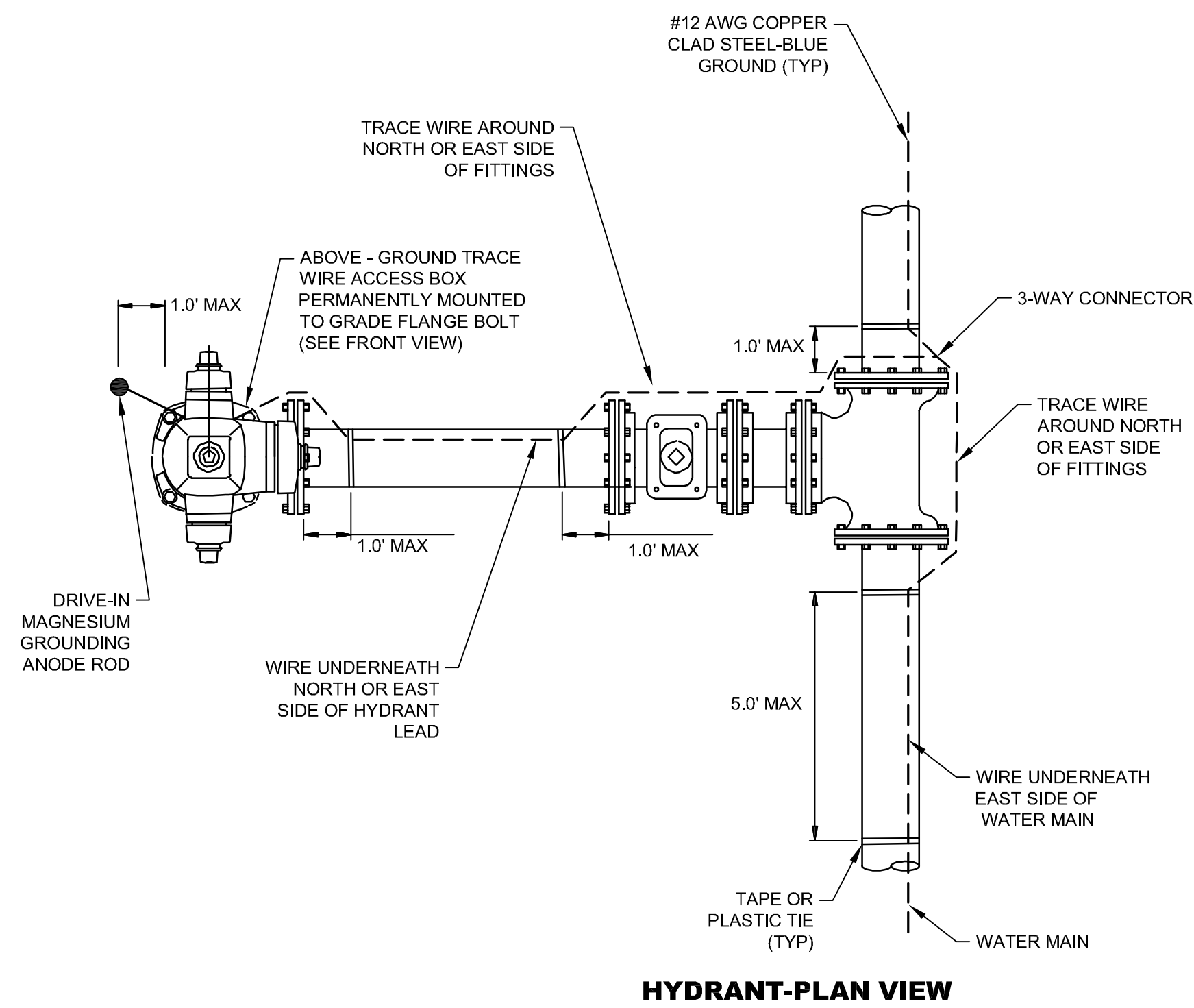
NO.	DATE	DESCRIPTION	BY
SEWER INSTALLATION DETAILS			
COMPREHENSIVE SEWER IMPROVEMENTS - PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 07/05/2019		Scale: NONE	
Drawing No.: 1273-S014		Sheet No. 12	



CLEANOUTS SHALL BE PLACED AT ALL BENDS IN SERVICE LINES OVER 22.5' AND ALL CHANGES IN GRADE. CLEANOUTS SHALL BE PLACED AT ROW LINES AS DETAILED.

Drawing No.: 1273-S014 Sheet No. 13

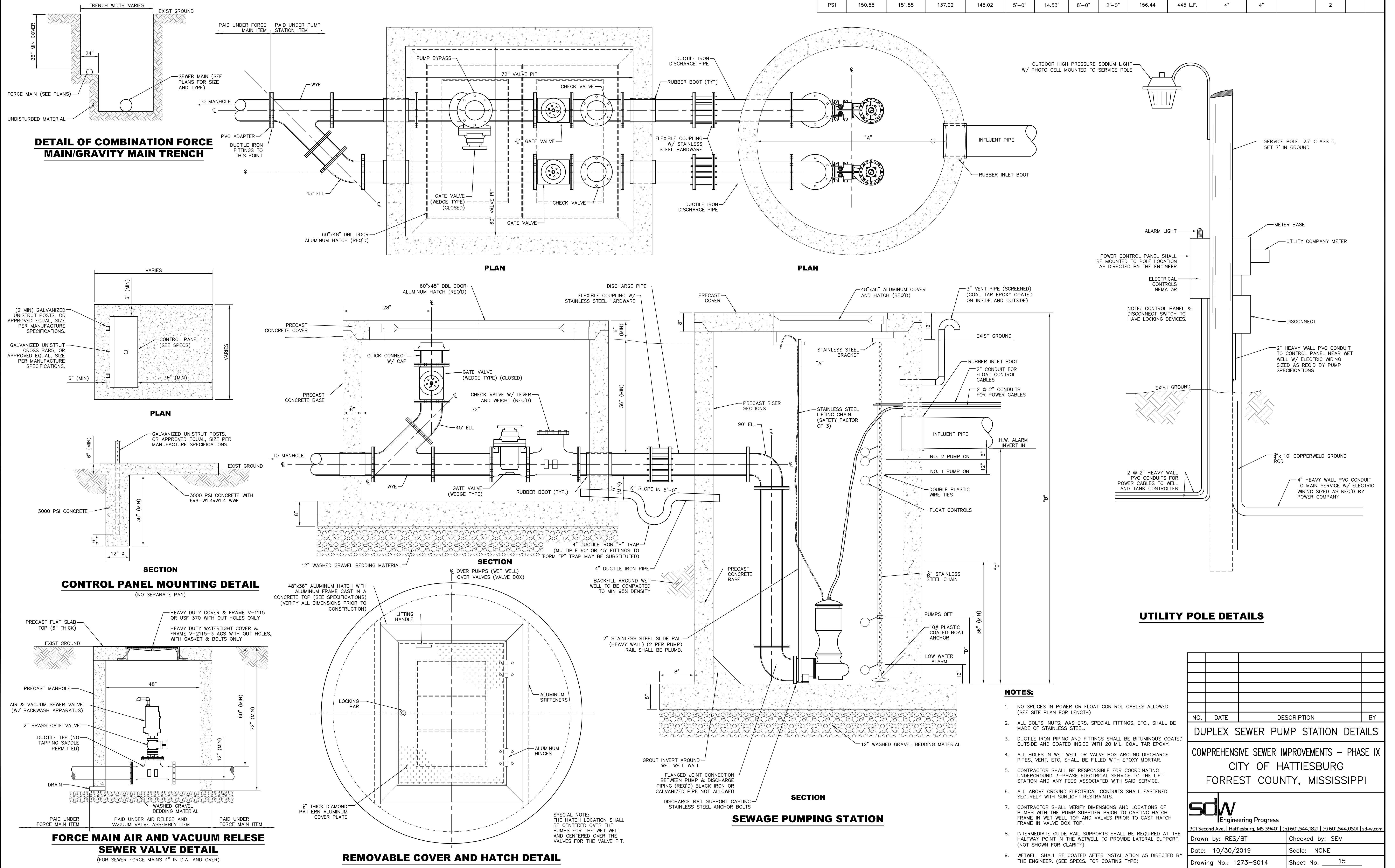
G:\PROJECTS\Hattiesburg_City of 1273-S014 - ComSWIP Sewer Phase IX Bushman & 2nd 1273S014 CAD Files\1273S014_2nd Tracer Wire.dwg, 14, 10/1/2019 10:44:48 AM



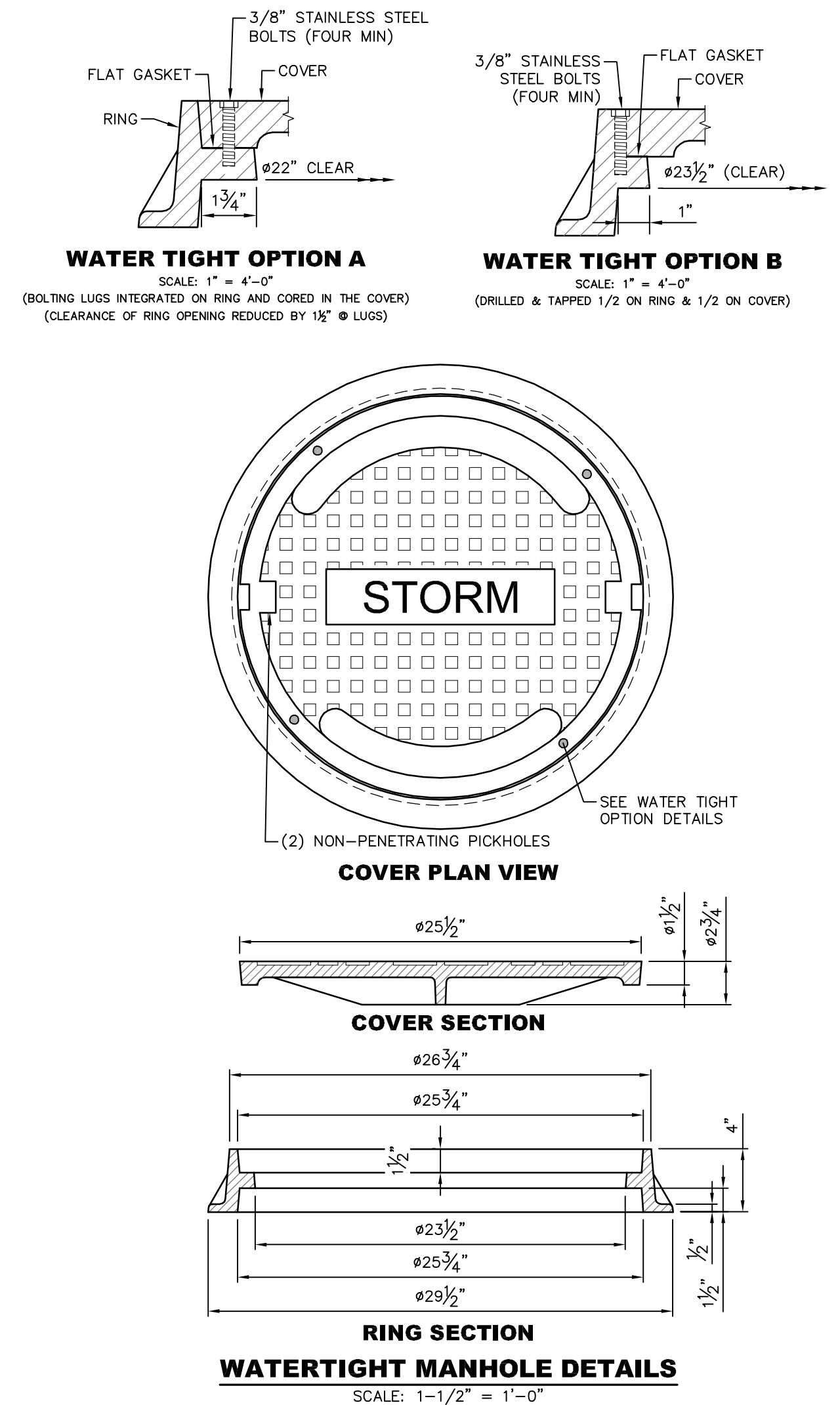
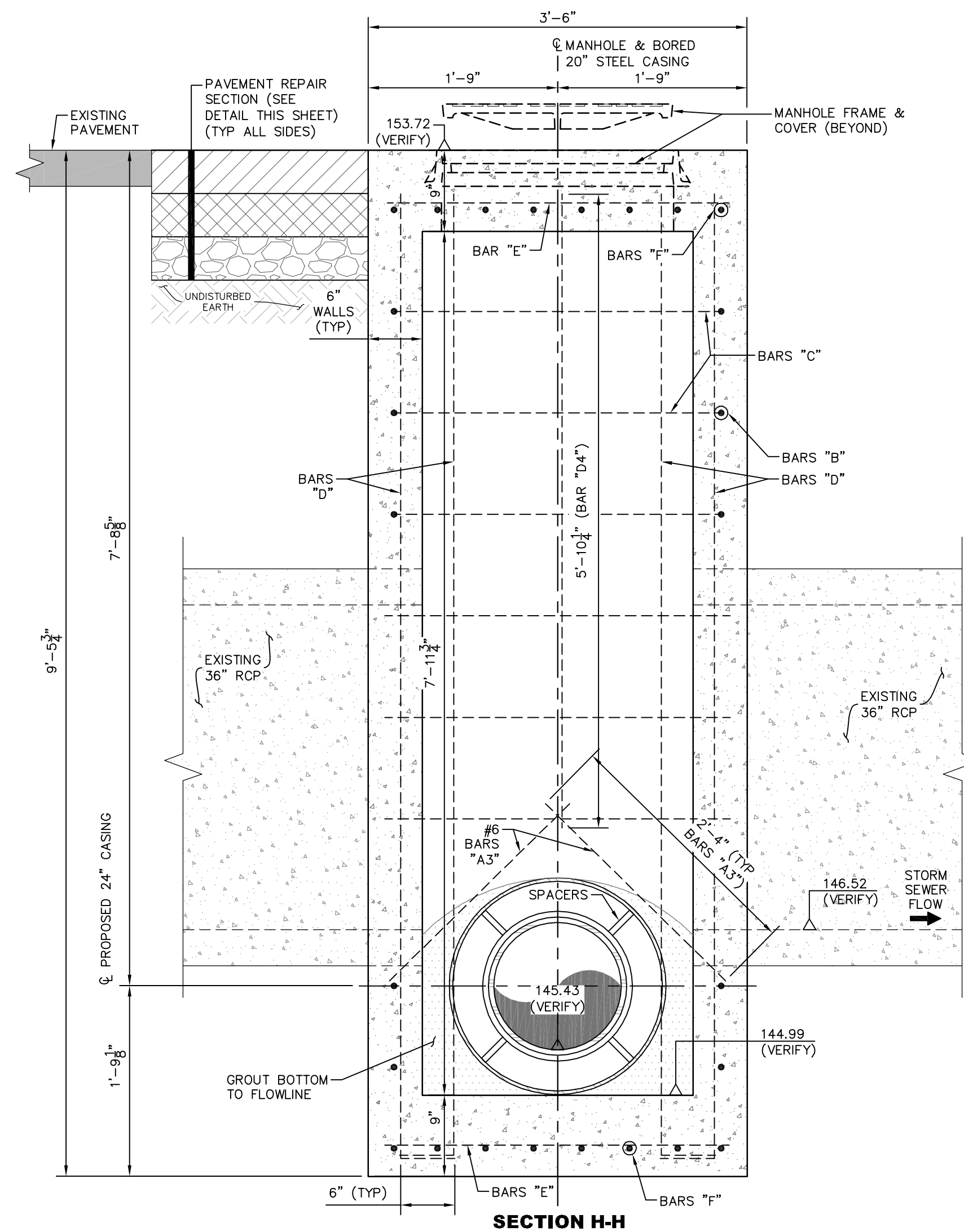
NOTE:
WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

NO.	DATE	DESCRIPTION	BY
TRACER WIRE DETAILS			
COMPREHENSIVE SEWER IMPROVEMENTS - PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress			
301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 10/01/2019		Scale: NONE	
Drawing No.: 1273-S014		Sheet No. 14	

STATION NUMBER	GROUND ELEVATION	TOP ELEVATION	BOTTOM ELEVATION	INVERT ELEV INLET PIPE	DIM "A"	DIM "B"	DIM "C"	DIM "D"	HIGH POINT ELEVATION	TOTAL FORCE MAIN LENGTH	DISCHARGE PIPE SIZE	VALVE SIZE	PUMP HORSE POWER	NO. OF PUMPS	GPM	TDH
PS1	150.55	151.55	137.02	145.02	5'-0"	14.53'	8'-0"	2'-0"	156.44	445 L.F.	4"	4"		2		

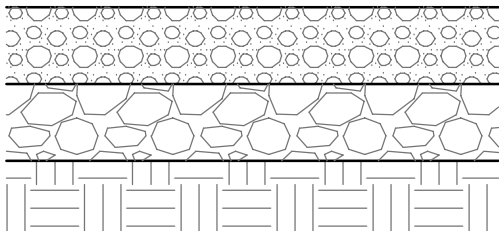


NO.	DATE	DESCRIPTION	BY
DUPLIX SEWER PUMP STATION DETAILS			
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress			
301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 10/30/2019		Scale: NONE	
Drawing No.: 1273-S014		Sheet No. 15	



1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE "AMERICAN CONCRETE INSTITUTE BUILDING CODE" (ACI 318) AND THE "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS" (ACI 1301), LATEST EDITIONS.
2. ALL NORMAL WEIGHT CONCRETE (145 P.C.F.) SHALL OBTAIN A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 3000 PSI.
3. REINFORCING BARS SHALL BE DEFORMED BARS OF NEW BILLET STEEL CONFORMING TO ASTM SPECIFICATIONS A-615, GRADE 60. ALL REINFORCING AND ACCESSORIES SHALL BE DETAILED AND PLACED IN ACCORDANCE WITH ACI STANDARDS 315-80 AND 315R-80.
4. PLACE TWO (2) #5 BARS (EACH WAY) WITH A 24" PROJECTION FROM THE OPEN END OF THE WALL. ALL REINFORCEMENT SHOWN OR NOTED, REINFORCEMENT SHALL BE CONTINUOUS ACROSS JOINTS AND AROUND CORNERS OR SPICE BARS SHALL BE PROVIDED IN ACCORDANCE WITH ACI STANDARDS 315-80 AND 315R-80. CORNER REINFORCEMENT SHALL BE PROVIDED AT ALL WALL CORNERS, EQUAL TO HORIZONTAL WALL REINFORCEMENT.
5. ALL REINFORCING SHALL BE BOUND TOGETHER BY 9 GAUGE TIES.
6. ALL IN-SITU MATERIAL SHALL BE PROOF ROLLED PRIOR TO CONSTRUCTION. SOFT OR YIELDING AREAS SHALL BE UNDERCUT TO A DEPTH OF NOT LESS THAN 12 INCHES, AND NOT EXTENDED BEYOND THE PROPOSED STRUCTURE BY 12 INCHES. FILL MATERIAL SHALL BE ENGINEERED FILL AS DETAILED IN THE GEOTECHNICAL REPORT.
7. NO HORIZONTAL CONSTRUCTION OR EXPANSION JOINTS SHALL BE ALLOWED, OTHER THAN THE CONSTRUCTION JOINT NOTED ON THE DETAIL. VERTICAL CONSTRUCTION OR EXPANSION JOINTS SHALL BE SPACED AS DETAILED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

NO.	DATE	DESCRIPTION	BY
CONCRETE CONFLICT BOX DETAILS			
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
 Engineering Progress 301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by:	RES/BT	Checked by:	SEM
Date:	07/05/2019	Scale:	AS NOTED
Drawing No.:	1273-S014	Sheet No.	16

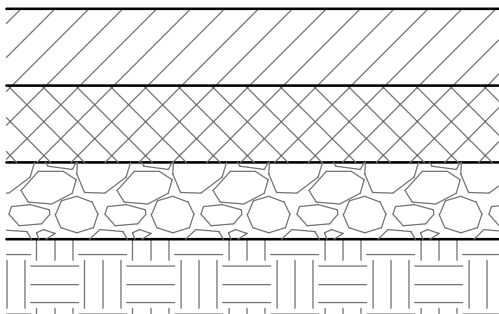
- 
- TEMPORARY: 6" CRUSHED AGGREGATE (SIZE 610) (REMOVE PRIOR TO PAVING)

PERMANENT: 6" 3000 PSI CONCRETE W/ FIBER GLASS REINFORCEMENT

— 6" CRUSHED AGGREGATE (SIZE 610) COMPACTED TO 95%

— EXISTING SUBGRADE AND/OR FILL MATERIAL COMPACTED TO 95%

TYPICAL CONCRETE PAVEMENT REPAIR (NEW ROADWAY)

- 
- PERMANENT: 1 1/2" HOT MIX ASPHALT, 9.5 mm, ST OVERLAY

TEMPORARY: 2" CRUSHED AGGREGATE (SIZE 610) (REMOVED PRIOR TO PAVING)

PERMANENT: 2" HOT MIX ASPHALT, 19 mm, ST

— 6" CRUSHED AGGREGATE (SIZE 610) COMPACTED TO 95%

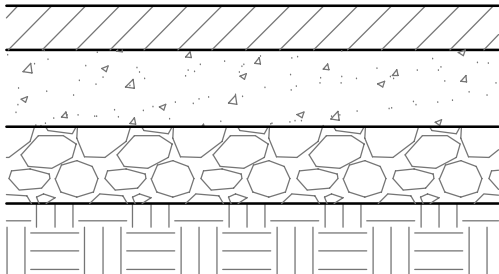
— EXISTING SUBGRADE AND/OR FILL MATERIAL COMPACTED TO 95%

- PAVEMENT REPAIR NOTES:
1. TEMPORARY CRUSHED AGGREGATE REMOVED DURING PAVING SHALL BECOME THE PROPERTY OF THE CONTRACTOR.

2. TRENCHES SHALL HAVE A TEMPORARY SURFACE OF CRUSHED AGGREGATE (SIZE 610) TEMPORARY SURFACE INSTALLED FOR A PERIOD OF TIME TO BE DETERMINED BY THE ENGINEER AND REMOVED PRIOR TO PAVING (NO SEPARATE PAY)

TYPICAL ASPHALT PAVEMENT REPAIR

SCALE : NONE

- 
- 1 1/2" HOT MIX ASPHALT, 9.5 mm, ST OVERLAY

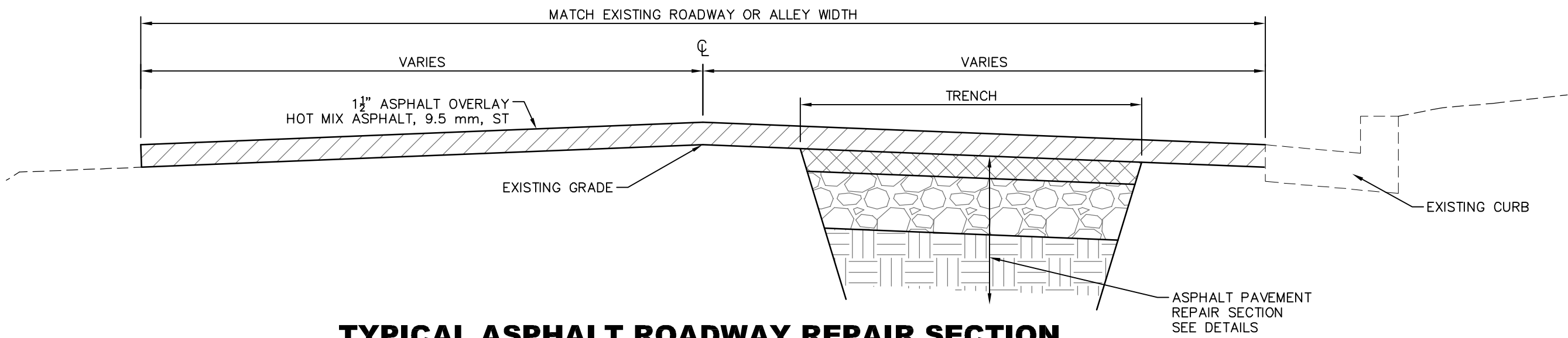
— 3000 PSI CONCRETE W/ FIBER GLASS REINFORCEMENT (8" DEPTH FOR DRIVEWAYS; 8" DEPTH FOR ROADWAYS)

— 6" CRUSHED AGGREGATE (SIZE 610) COMPACTED TO 95%

— EXISTING SUBGRADE AND/OR FILL MATERIAL COMPACTED TO 95%

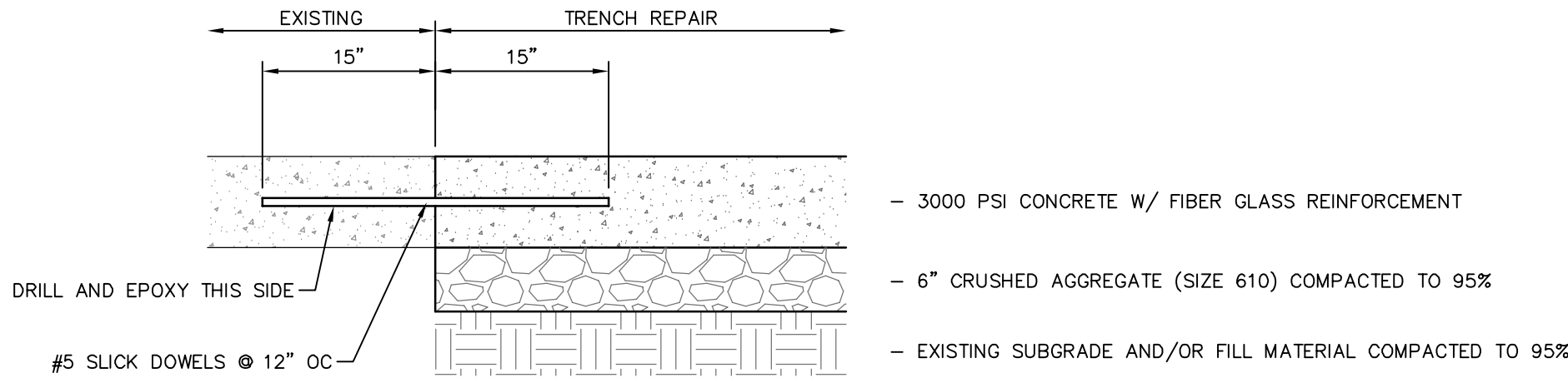
TYPICAL CONCRETE PAVEMENT REPAIR WITH ASPHALT OVERLAY

SCALE : NONE



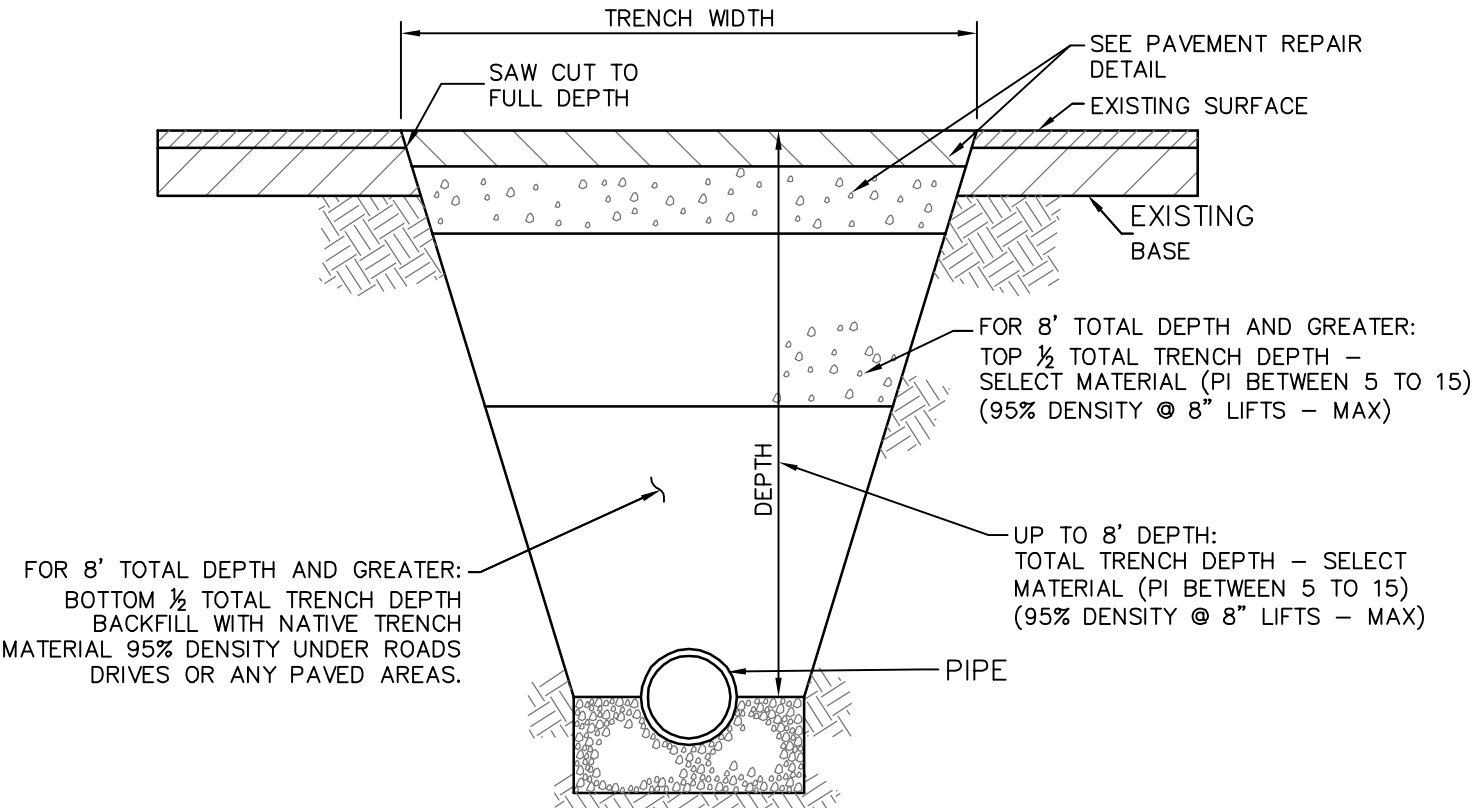
TYPICAL ASPHALT ROADWAY REPAIR SECTION

SCALE : NONE



TYPICAL CONCRETE ROADWAY TRENCH REPAIR SECTION

SCALE : NONE



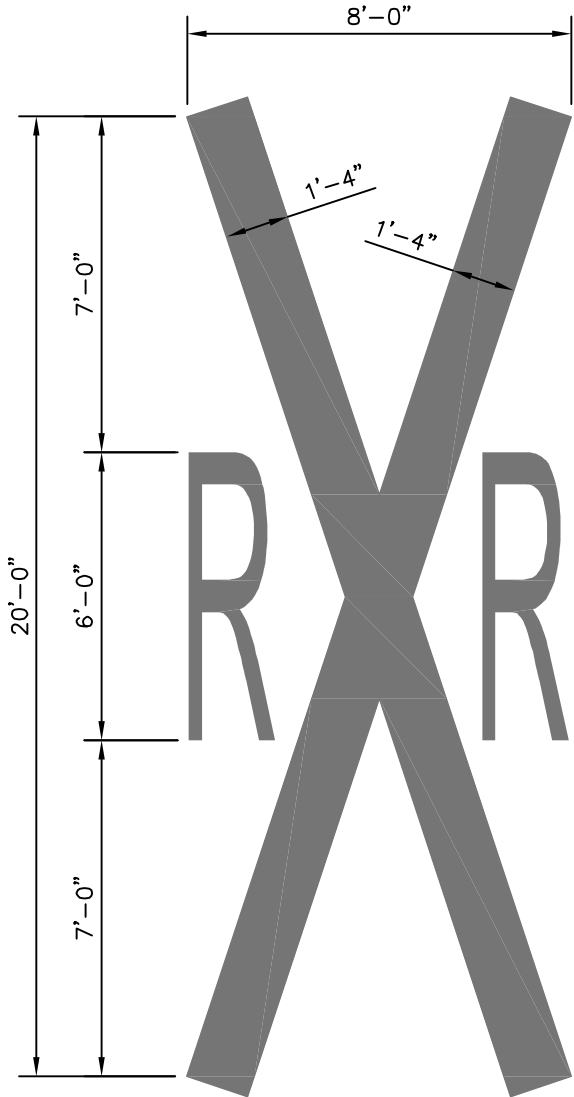
TYPICAL TRENCH IN ROADWAY DETAIL

SCALE : NONE

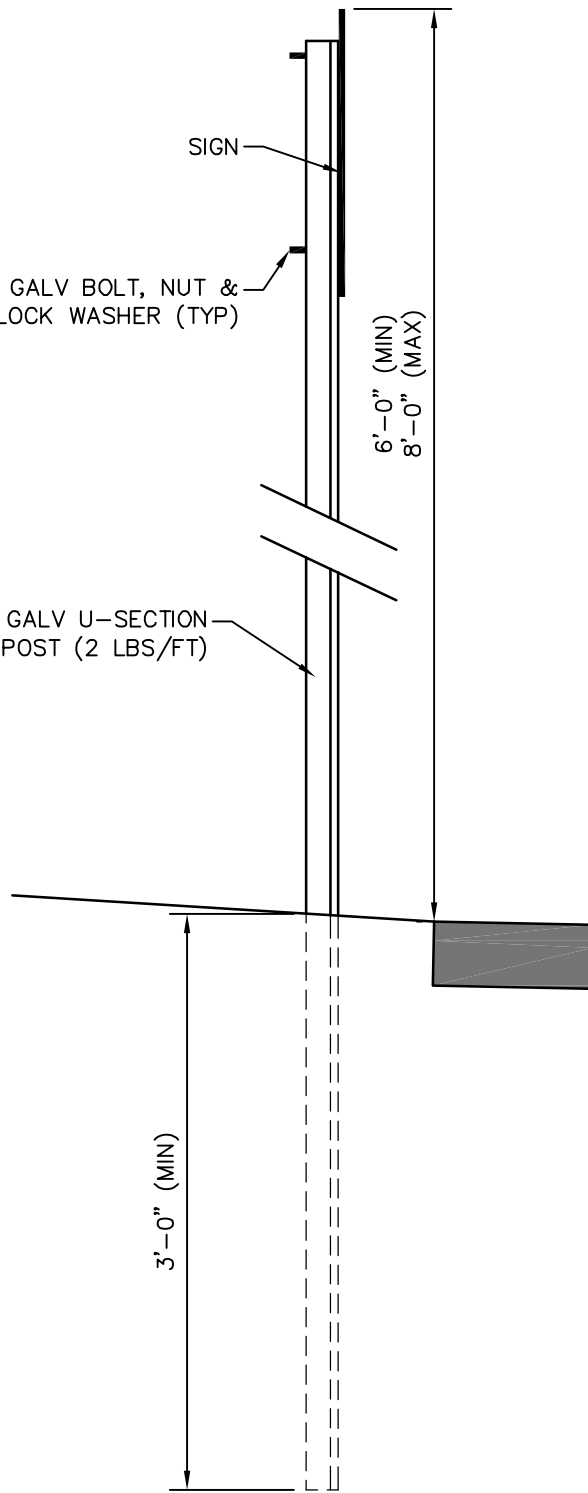
NOTE: TRENCH WIDTHS SHALL BE MINIMIZED BY THE CONTRACTOR TO ONLY THE WIDTH NECESSARY FOR CONSTRUCTION AS DETERMINED BY THE ENGINEER.

RAILROAD MARKING PAY QUANTITIES	
ROADWAY	
LEGEND	AREA
STRIPE	58 L.F. *
SYMBOL	10.2 FT²

* BASED ON 6" EQUIVALENT WIDTH

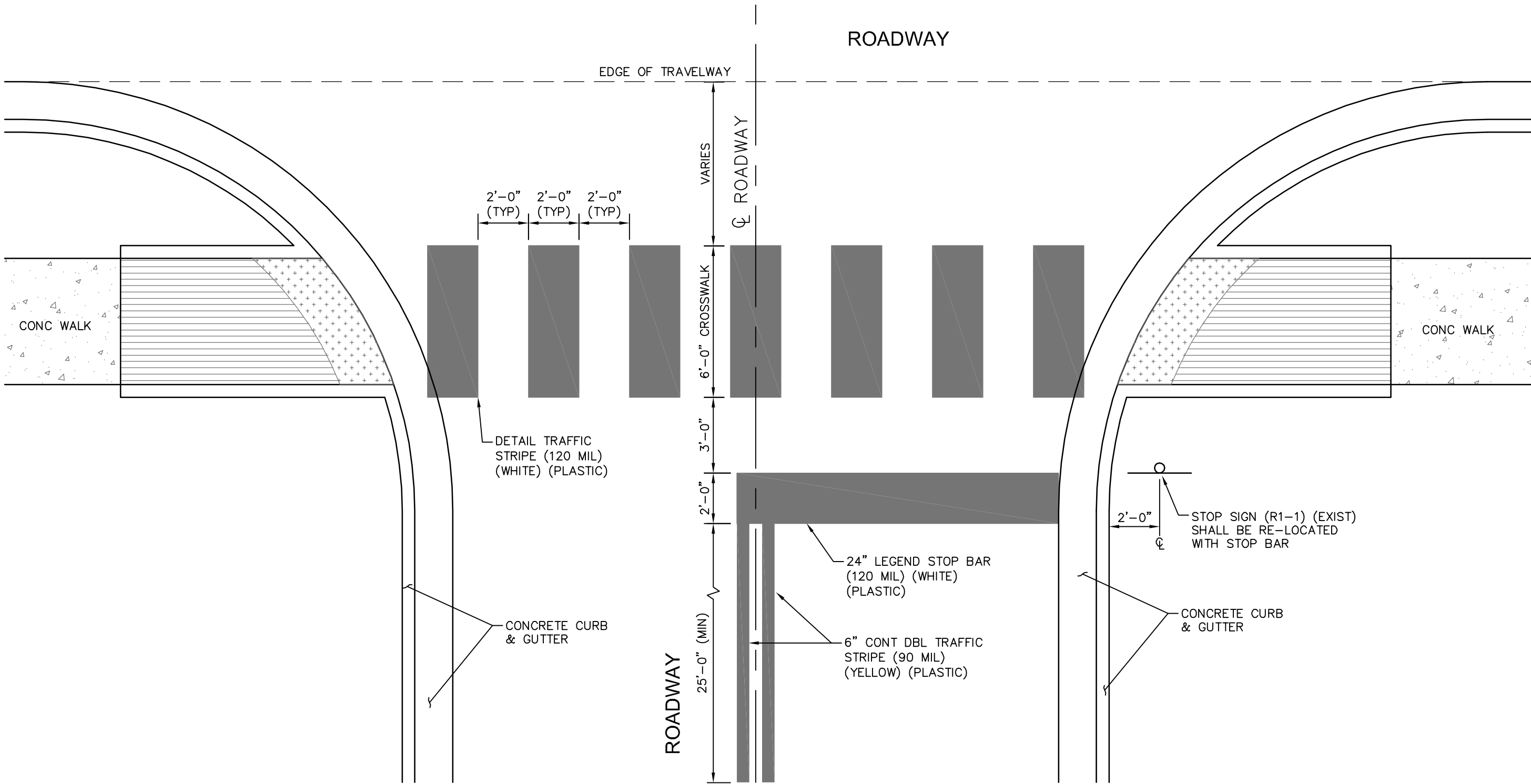


TYPICAL RAILROAD LEGEND MARKING ON ROADWAY DETAIL

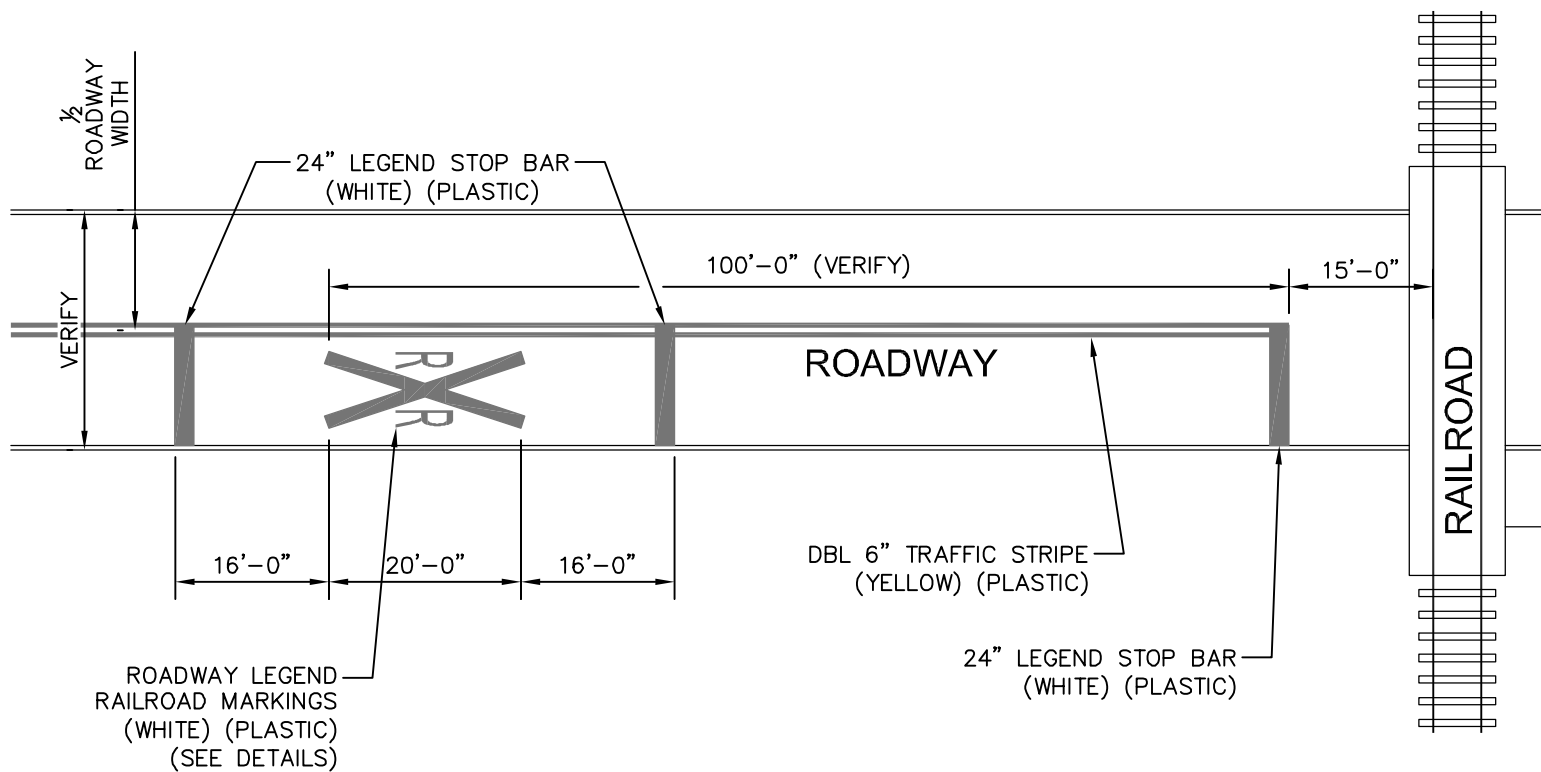


TYPICAL SIGN INSTALLATION SECTION DETAIL

(FOR SIGN REPAIR)



TYPICAL INTERSECTION CROSSWALK & STOP BAR PAVEMENT MARKING DETAIL



RAILROAD CROSSING RAILROAD DETAIL

(LEFT HALF SHOWN, RIGHT HALF SIMILAR)

NO.	DATE	DESCRIPTION	BY
PAVEMENT REPAIR, SIGNING & STRIPING DETAILS			
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 07/05/2019		Scale: AS NOTED	
Drawing No.: 1273-S014		Sheet No. 17	

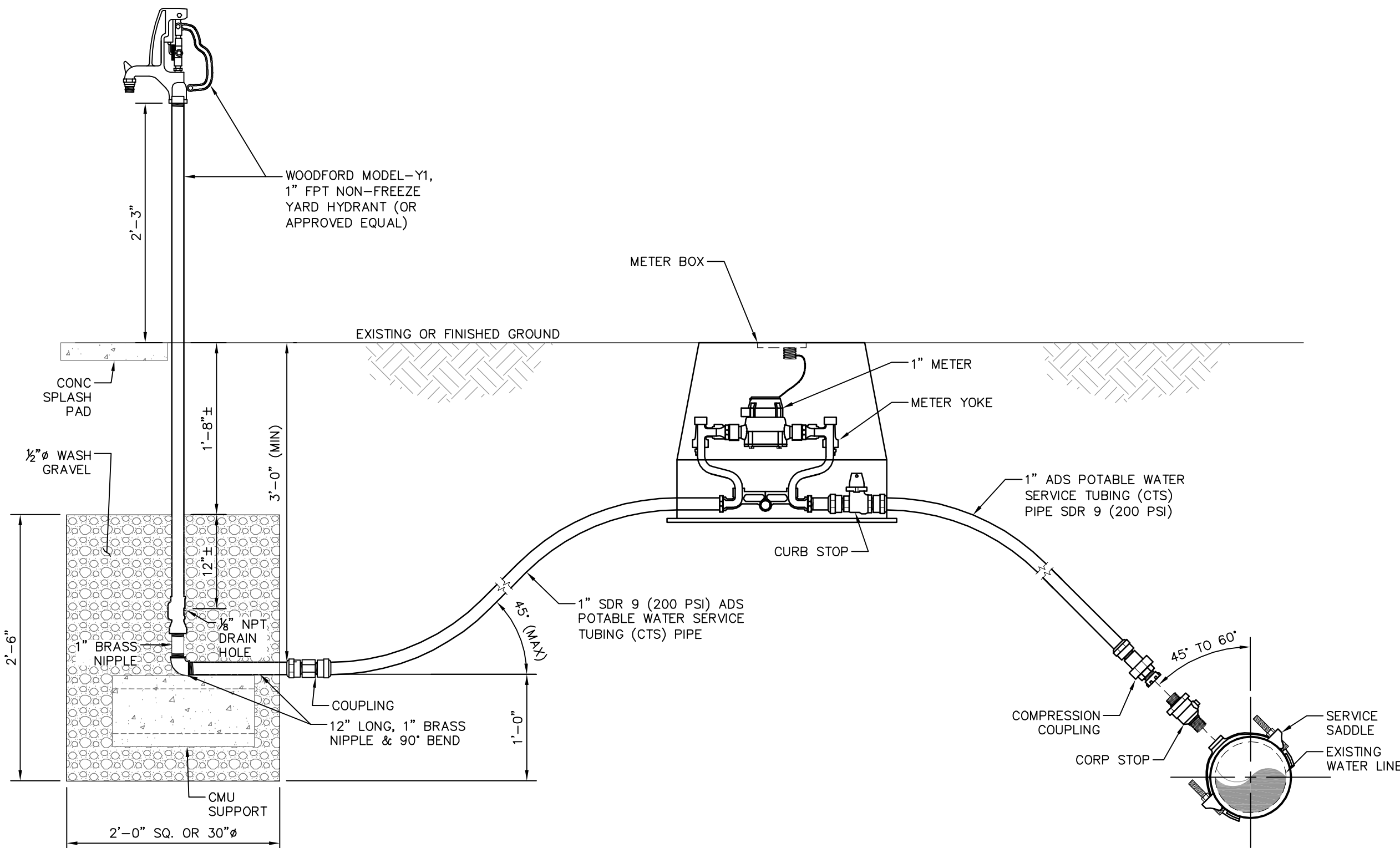
G:\PROJECTS\Hattiesburg_City of 1273-S014 - ComSMP Sever Phase IX Bushman & 2nd 1273S014 CAD Files\1273S014_2nd Swr_Dbs.dwg, 18, 10/7/2019 2:04:26 PM

VEGETATION SCHEDULE						
EROSION CONTROL ITEMS		SEASONAL APPLICATIONS - DATES & RATES				REQUIREMENTS
		SPRING & SUMMER		FALL & WINTER		
	ITEMS	RATES	DATES	RATES	DATES	
	TOPSOIL FOR SLOPE TREATMENT (LVM)	4" THICK	MARCH 1 TO SEPTEMBER 1	4" THICK	SEPTEMBER 1 TO MARCH 1	TOPSOIL REQUIRED ON SLOPES DETERMINED BY THE ENGINEER DURING CONSTRUCTION
	STANDARD GROUND PREPARATION	PER SQ. FT.	MARCH 1 TO SEPTEMBER 1	PER SQ. FT.	SEPTEMBER 1 TO MARCH 1	GROUND PREPARATION REQUIRED ON AREAS TO RECEIVE SOLID SODDING OR SEEDING, AS APPLICABLE
	AGRICULTURAL LIMESTONE	3 TONS / ACRE	MARCH 1 TO SEPTEMBER 1	3 TONS / ACRE	SEPTEMBER 1 TO MARCH 1	LIMESTONE SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	COMBINATION FERTILIZER (13–13–13)	1000 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	1000 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	FERTILIZER SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	SUPER PHOSPHATE	0.5 TON / ACRE (EST)	MARCH 1 TO SEPTEMBER 1			SUPER PHOSPHATE (FOR BID ITEM PURPOSES)
	SEEDING (BERMUDA GRASS)	20 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	20 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	SEED REQUIRED ON DISTURBED AREAS. UNHULLED SEED MAY BE REQUIRED DURING THE DORMANT SEASON AS DIRECTED
	SEEDING (TALL FESCUE)			15 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED IN DISTURBED AREAS
	SEEDING (CRIMSON CLOVER)			20 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED ON DISTURBED AREA
	VEGETATIVE MATERIAL FOR MULCH	2 TONS / ACRE (EST)	MARCH 1 TO SEPTEMBER 1	2 TONS / ACRE (EST)	SEPTEMBER 1 TO MARCH 1	THE ENGINEER WILL DESIGNATE THE RATES OF APPLICABLE (SEE SUBSECTION 215–03.3)
	SOLID SODDING	PER SQ. YD.	MARCH 1 TO SEPTEMBER 1	PER SQ. YD.	SEPTEMBER 1 TO MARCH 1	SOLID SOD REQUIRED ON AREAS SPECIFIED IN THE CONTRACT OR BY THE ENGINEER
	WATERING	20 GAL / S.Y. (EST)	MARCH 1 TO SEPTEMBER 1	20 GAL. / S.Y. (EST)	SEPTEMBER 1 TO MARCH 1	TO BE USED AS DIRECTED IN THE PLANTING AND ESTABLISHING OF SOLID SOD
	INSECT PEST CONTROL	PER ACRE		PER ACRE		SEE SECTION 220
TEMPORARY EROSION CONTROL ITEMS						
	LIGHT GROUND PREPARATION	PER SQ. YD.		PER SQ. YD.		APPROXIMATELY HALF SQ.YD. STANDARD GROUND PREPARATION
	COMBINATION FERTILIZER (13–13–13)	0.25 TONS/ ACRE		0.25 TONS/ ACRE		QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (BROWN TOP MILLET)	20 LBS / ACRE	APRIL 1 TO AUGUST 31			QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (RYE GRASS)			25 LBS / ACRE	SEPTEMBER 1 TO MARCH 31	QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (OATS)			90 LBS / ACRE	SEPTEMBER 1 TO DECEMBER 15	QUANTITY BASED ON LIGHT GROUND PREPARATION
	VEGETATIVE MATERIAL FOR MULCH	1 TON / ACRE (EST)		1 TON / ACRE (EST)		QUANTITY BASED ON LIGHT GROUND PREPARATION

- ① ALL AREAS THAT HAVE BEEN VEGETATED, UNDER THIS CONTRACT, FOR AT LEAST (60) SIXTY DAYS, SHALL RECEIVE ADDITIONAL APPLICATION(S) OF FERTILIZER(S) OF THE TYPE(S) AND RATE(S) OF APPLICATIONS AS DETERMINED BY SOIL TEST OR AS DIRECTED DURING THE GROWING SEASONS THE CONTRACT IS IN FORCE. GROUND PREPARATION WILL NOT BE REQUIRED FOR THE ADDITIONAL APPLICATIONS.
- ② PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 100% OF THE ACREAGE WILL BE SEEDED.
- ③ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE WILL BE SEEDED.
- ④ QUANTITY ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE VEGETATED MAY REQUIRED TREATMENT.
- ⑤ THIS ITEM MAY BE OMITTED ON AREAS SELECTED BY THE ENGINEER.
- ⑥ BAHIAGRASS WILL NOT BE PERMITTED AS A MULCH MATERIAL.
- ⑦ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 75% OF THE ACREAGE SEEDED MAY REQUIRE TOPSOIL

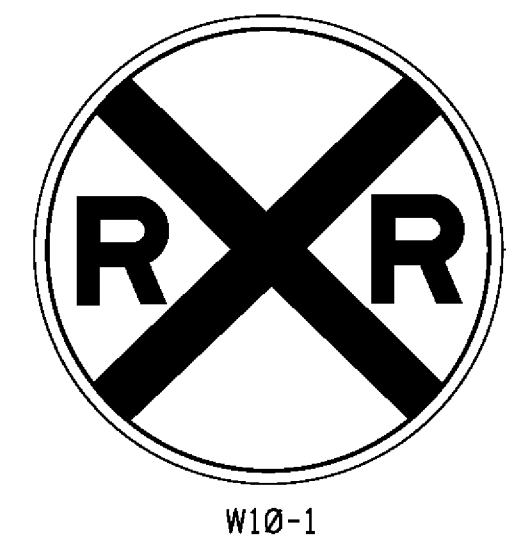
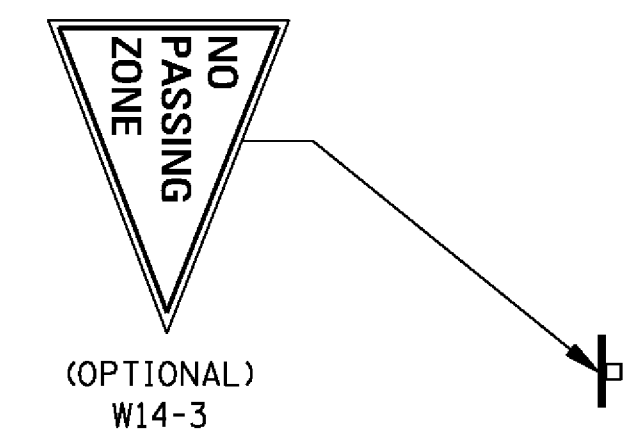
TEMPORARY EROSION CONTROL ITEMS REQUIRED FOR DETOURS		
ITEM	RATE	SEASONAL LIMITATIONS
STANDARD GROUND PREPARATION	---	---
COMBINATION FERTILIZER (13-13-13)	500 LBS/ACRE	---
SEEDING (BERMUDA GRASS)	10 LBS/ACRE	---
SEEDING (TALL FESCUE)	20 LBS/ACRE	AUGUST 15 TO MARCH 15
VEGETATIVE MATERIAL FOR MULCH	2 LBS/ACRE	---

NOTE: ALL VEGETATION ON THIS PROJECT SHALL BE PAID FOR UNDER AS OUTLINED IN THE BID PROPOSAL. ITEMS SHALL BE APPLIED USING THE RATES OF APPLICATION AS SHOWN ON THIS SHEET AND WILL NOT BE MEASURED FOR SEPARATE PAYMENT.



1" METER & FLUSHING HYDRANT DETAIL

NO.	DATE	DESCRIPTION	BY
VEGETATION SCHEDULE & FLUSH HYDRANT DETAIL			
COMPREHENSIVE SEWER IMPROVEMENTS – PHASE IX			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 (f) 601.544.0501 sd-w.com			
Drawn by: RES/BT		Checked by: SEM	
Date: 10/01/2019		Scale: NONE	
Drawing No.: 1273-S014		Sheet No. 18	



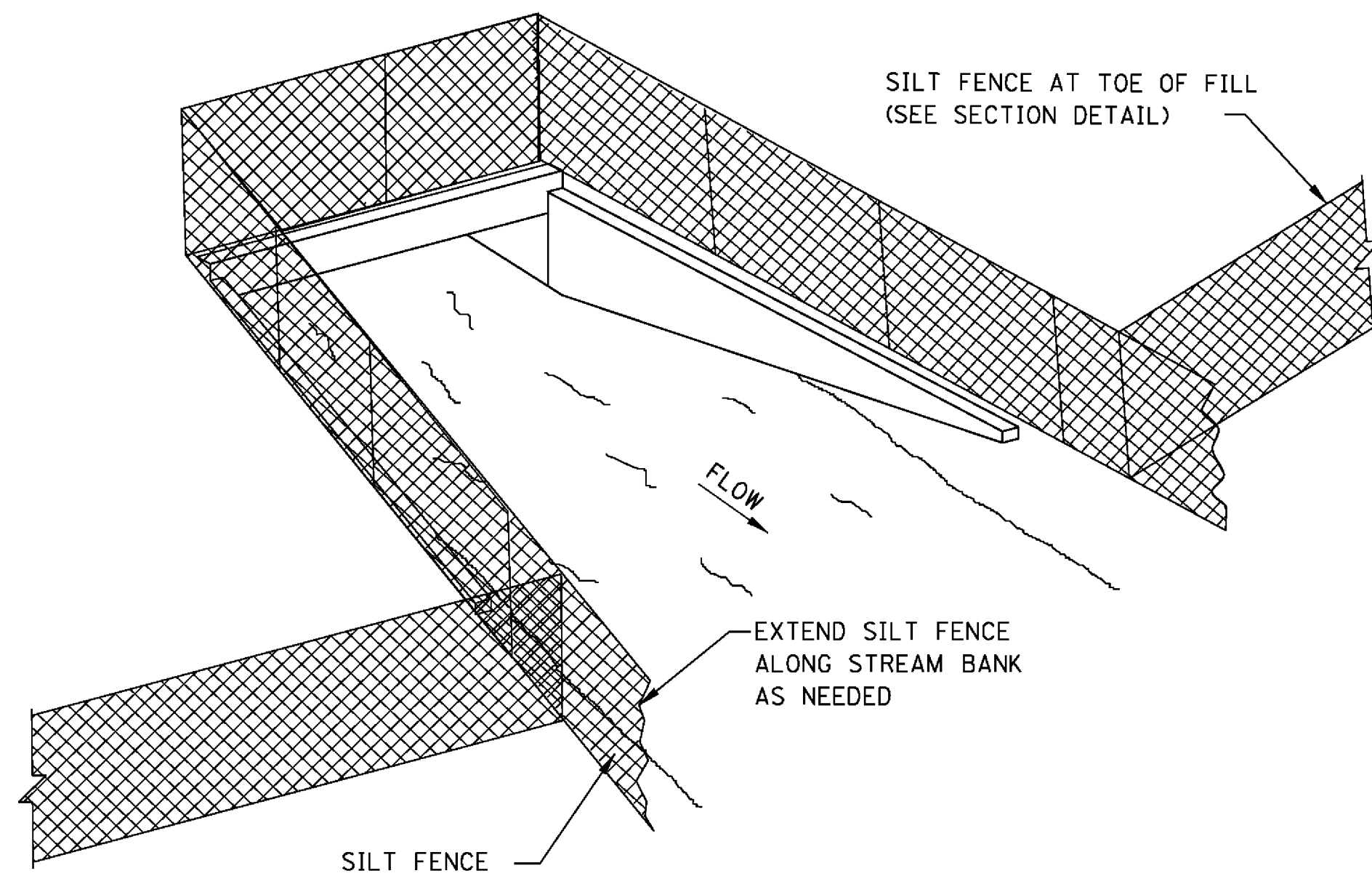
NOTE:
① DISTANCE "X" MAY BE ADJUSTED IF PROHIBITIVE PHYSICAL CONDITIONS EXIST AT THE DESIGNATED DISTANCE.

- | | | | | | |
|--|--|--|--|----------|--|
| | | | | BY | MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN |
| | | | | REVISION | |
| | | | | | |
| | | | | | |
| | | | | DATE | <p>TYPICAL PLACEMENT OF
WARNING SIGNS AND
PAVEMENT MARKINGS
AT RAILROAD HIGHWAY
GRADE CROSSINGS</p> <p>ISSUE DATE: <u> AUGUST 01, 2017 </u></p> |
- 

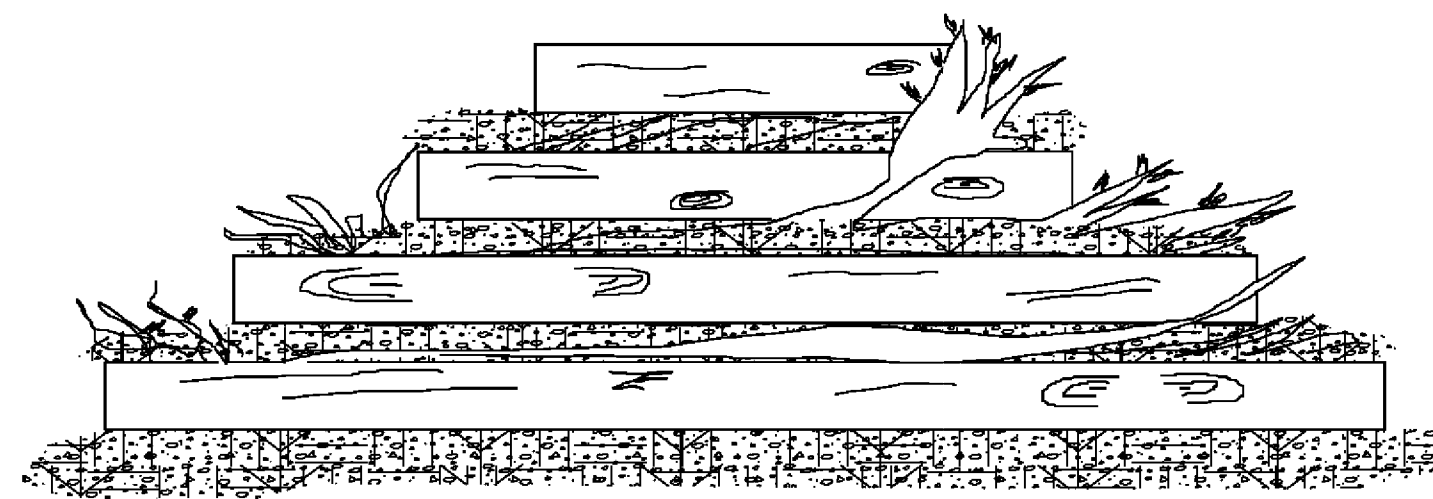
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

WORKING NUMBER
PM-7

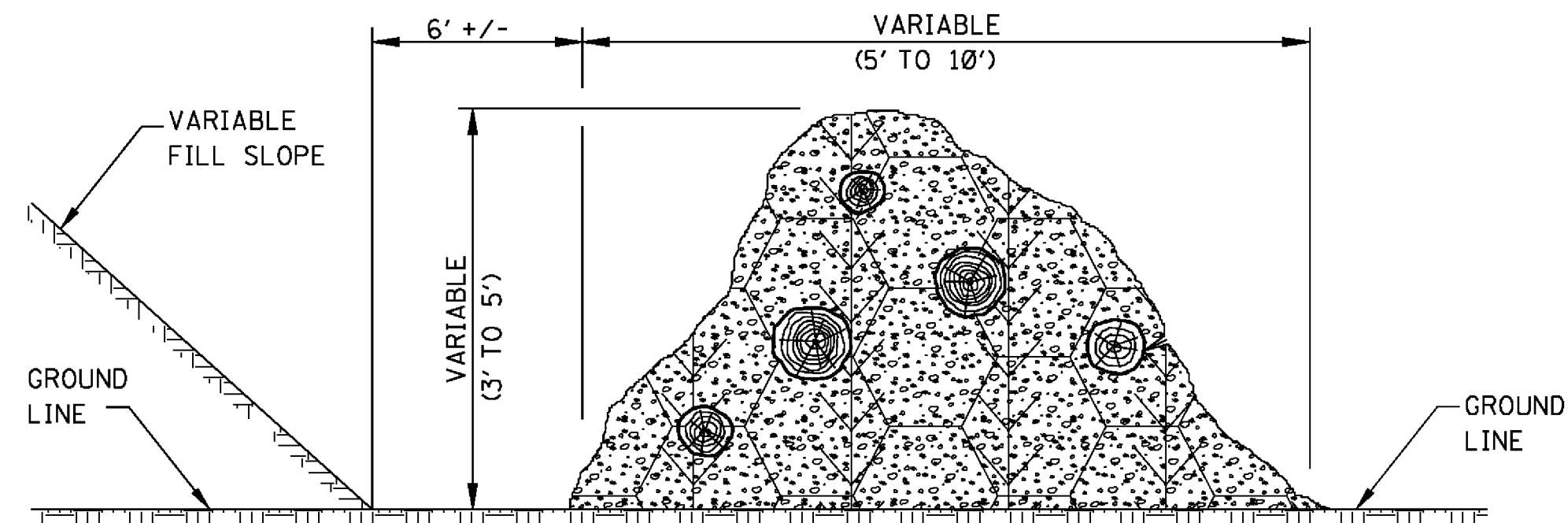
SHEET NUMBER
6057



SEDIMENT BARRIER AT CROSS DRAIN



FRONT ELEVATION



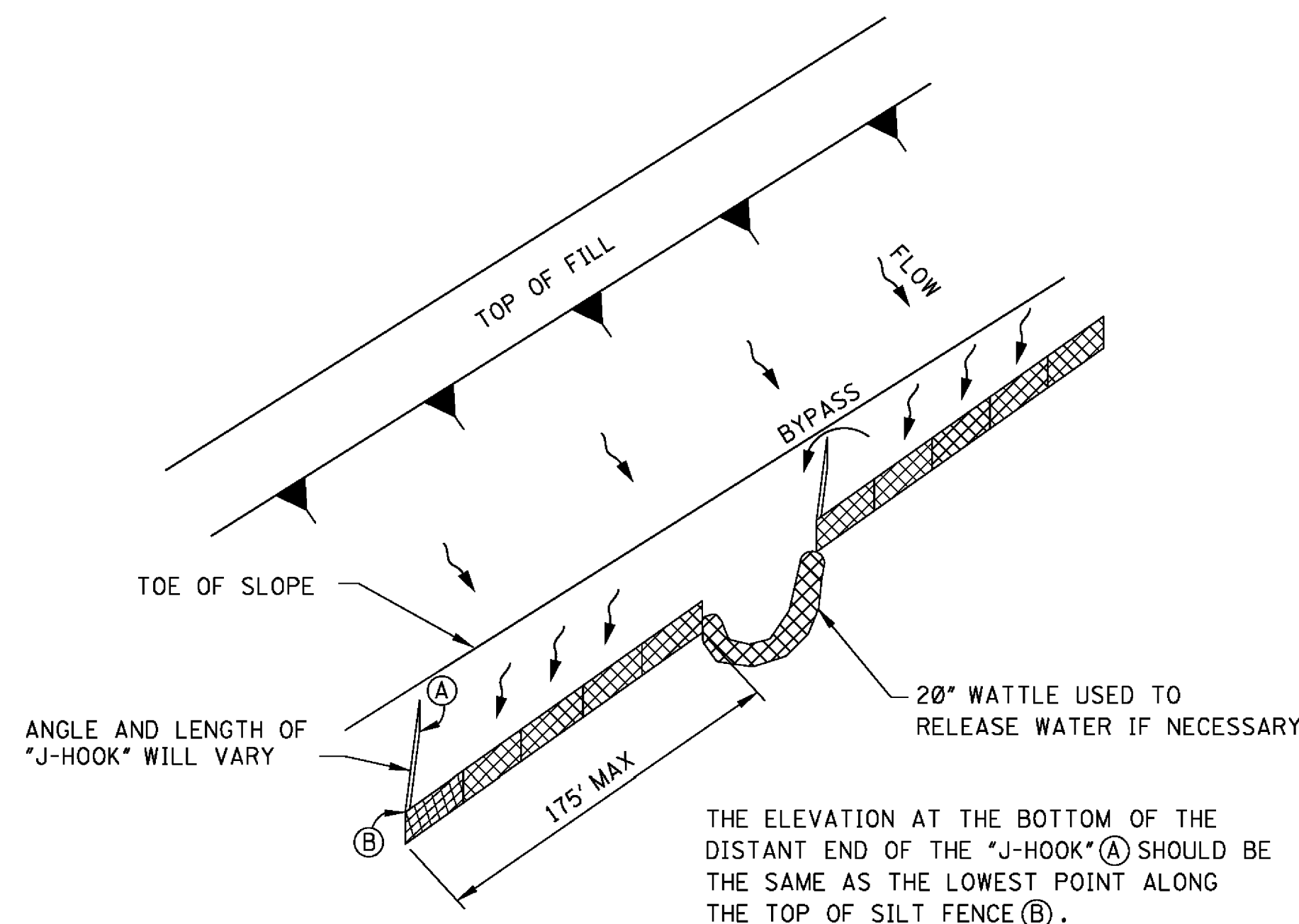
SIDE ELEVATION

TEMPORARY BRUSH BARRIER

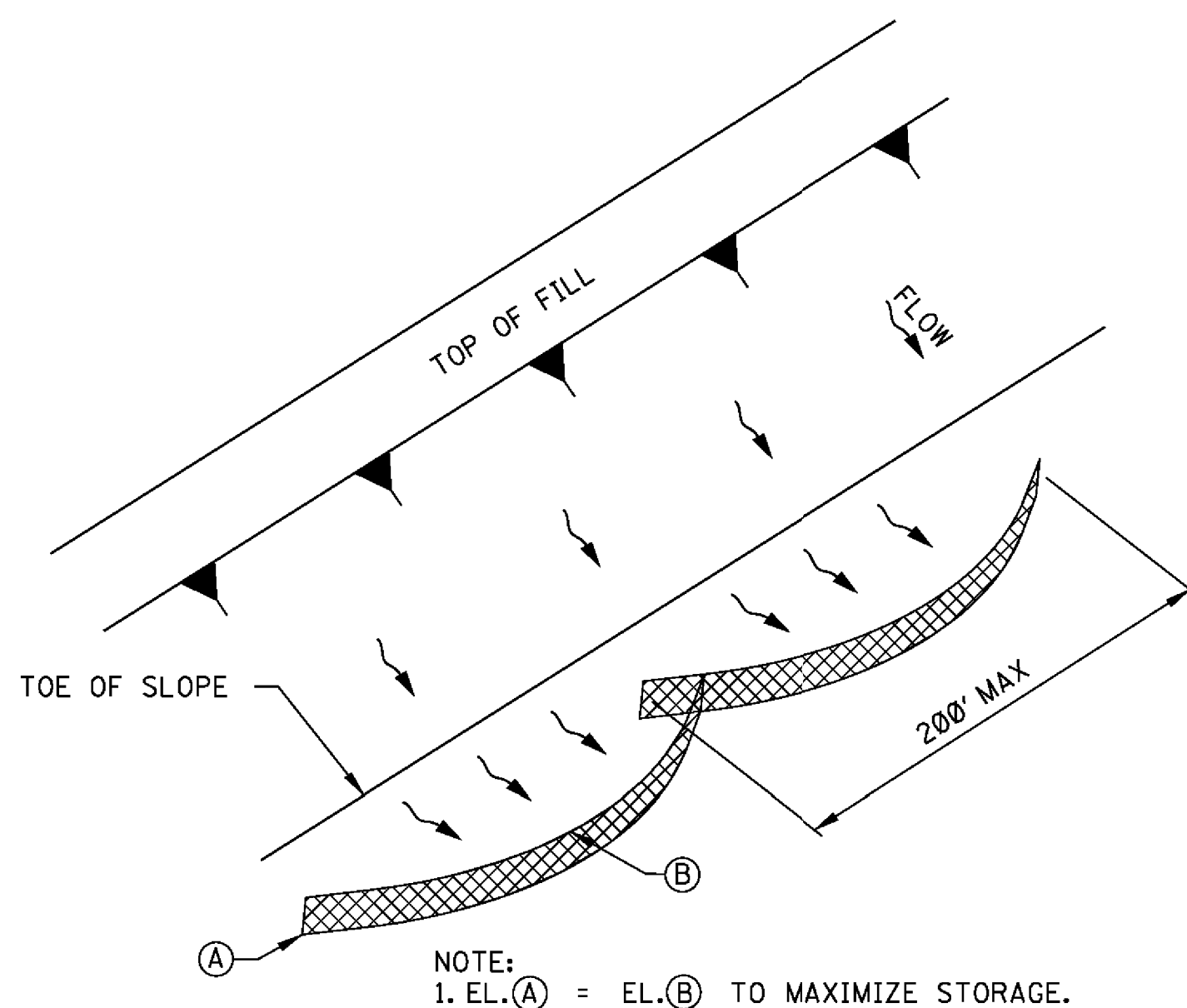
NOTES:

- BRUSH BARRIER MAY BE USED WHERE NATURAL GROUND IS LEVEL OR SLOPING AWAY FROM PROJECT.
- PLACE BRUSH, LOG AND TREE LAPS APPROXIMATELY PARALLEL TO TOE OF FILL SLOPE WITH SOME OF THE HEAVIER MATERIALS BEING PLACED ON TO TO PROPERLY SECURE THE BARRIER AS DETAILED AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED OR PERMITTED BY THE ENGINEER.
- TO ALLOW WATER TO SEEP THROUGH BRUSH BARRIER, INTERMINGLE THE BRUSH, LOG AND TREE LAPS SO AS NOT TO FORM A SOLID DAM.
- THE BRUSH BARRIER MAY BE CHOKED WITH FILTER FABRIC. THE COST OF FABRIC TO BE INCLUDED IN OTHER ITEMS BID.
- TEMPORARY BRUSH BARRIER WILL NOT BE MEASURED FOR SEPARATE PAYMENT.

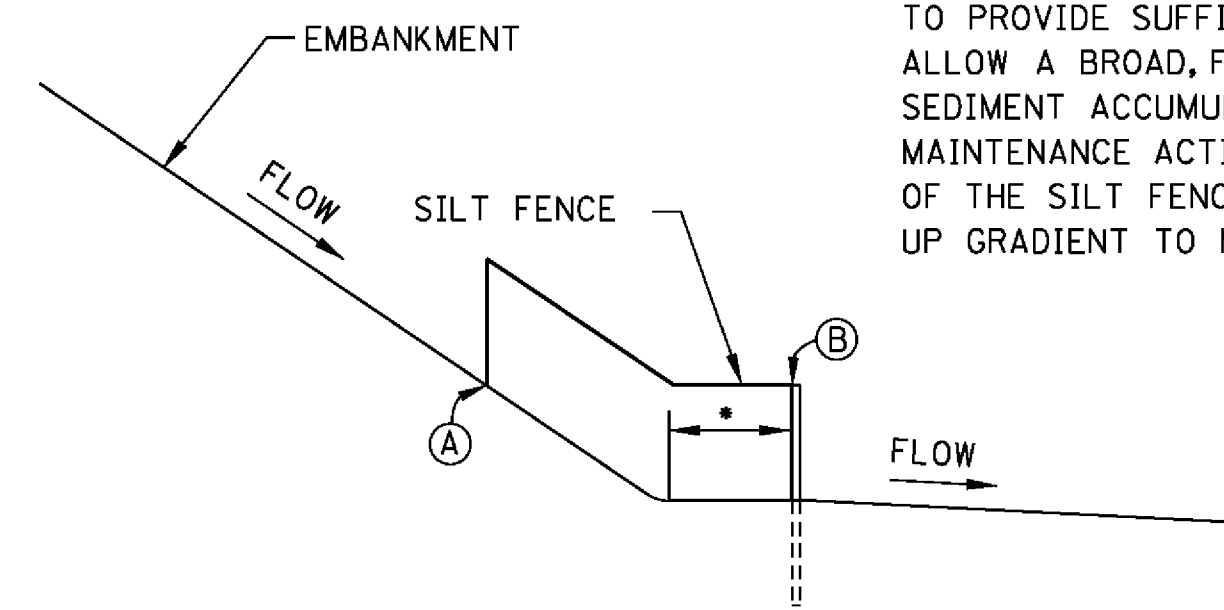
NOTE: ANCHOR AND INSTALL SILT FENCE PER DETAILS SHOWN ON WK. NO. ECD-3



"J-HOOK" SILT FENCE APPLICATION



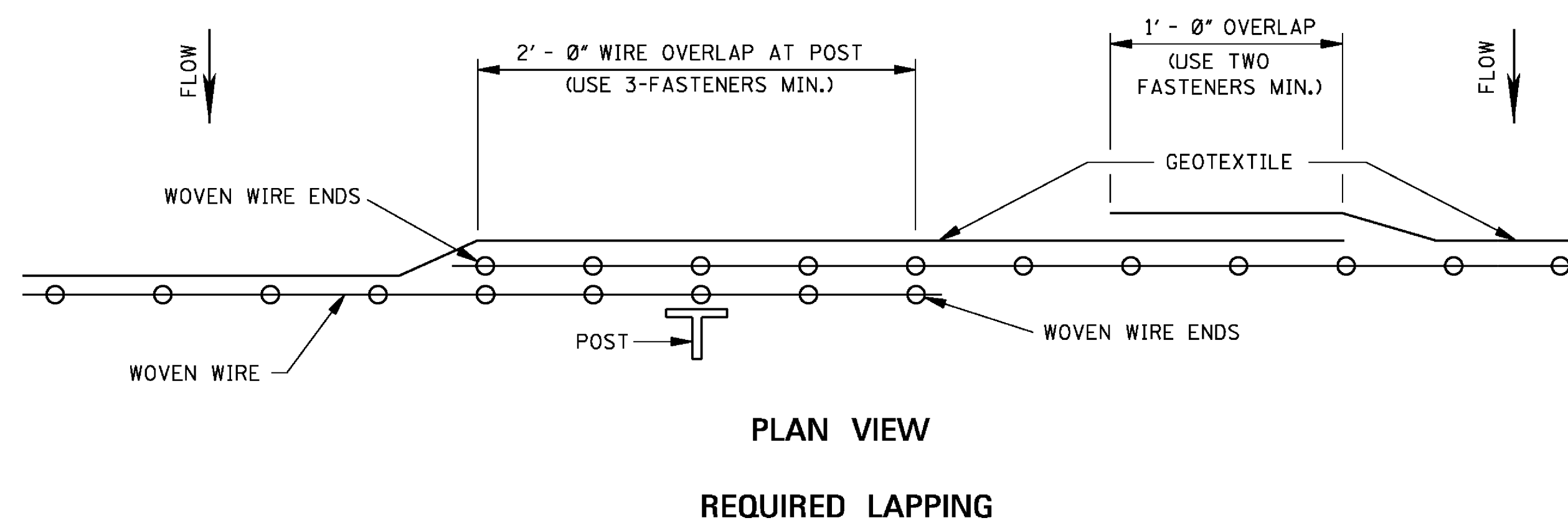
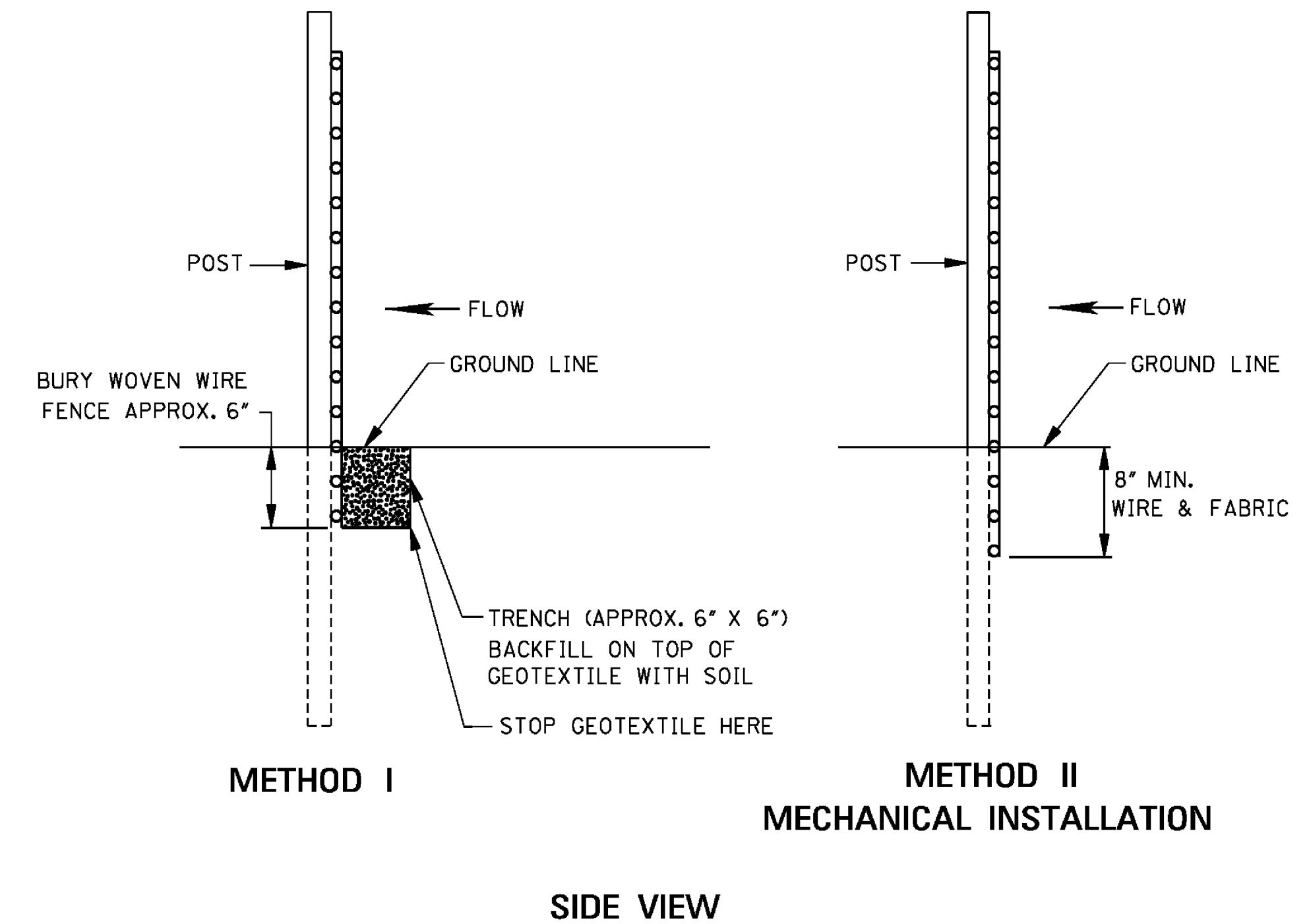
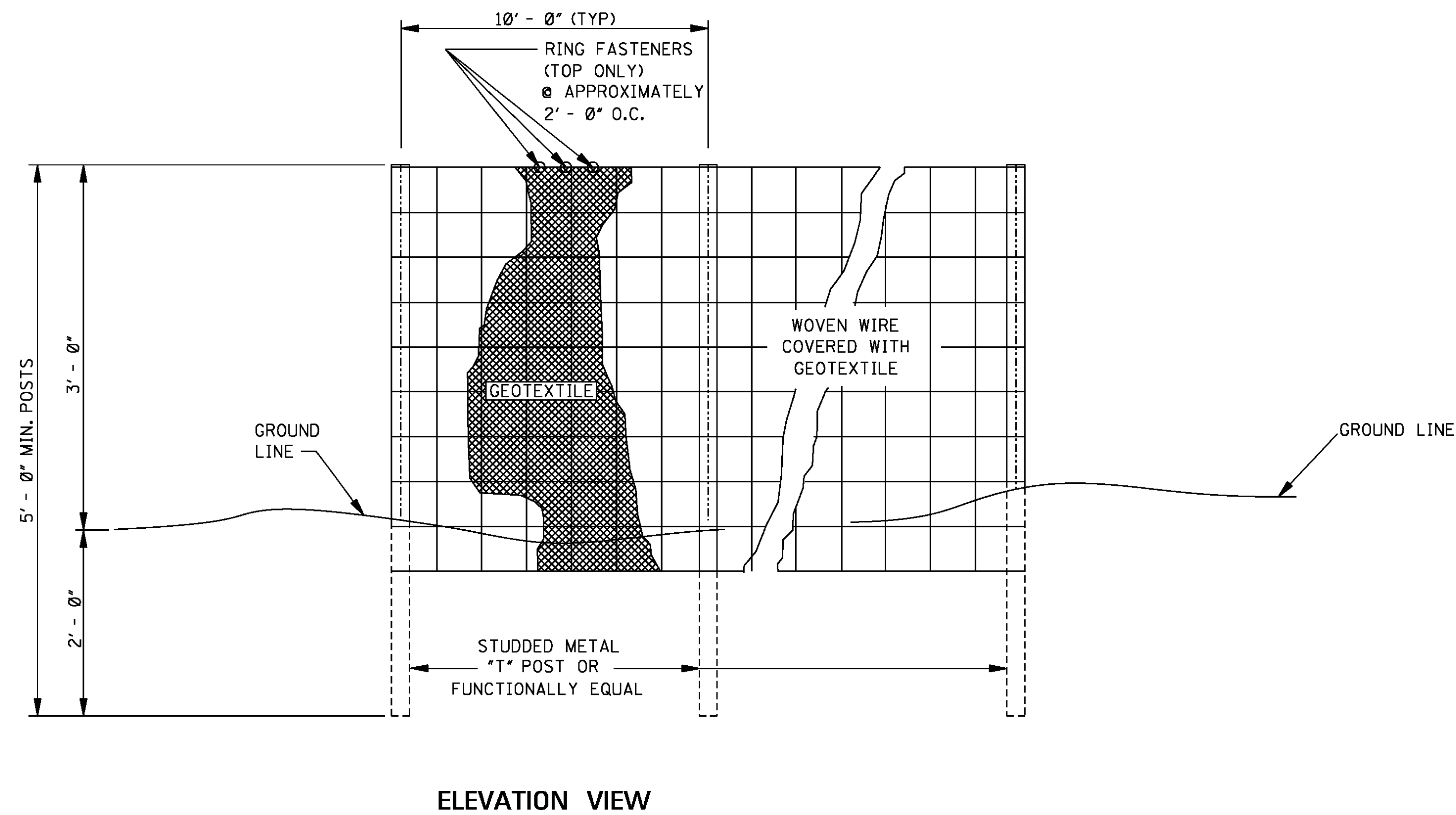
"SMILE-CONFIGURATION" SILT FENCE APPLICATION



SILT FENCE SECTION AT TOE OF FILL

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	DETAILS OF SEDIMENT BARRIER APPLICATIONS
				DATE	WORKING NUMBER ECD-2
					SHEET NUMBER 6102
					ISSUE DATE: AUGUST 01, 2017

STATE	PROJECT NO.
MISS.	

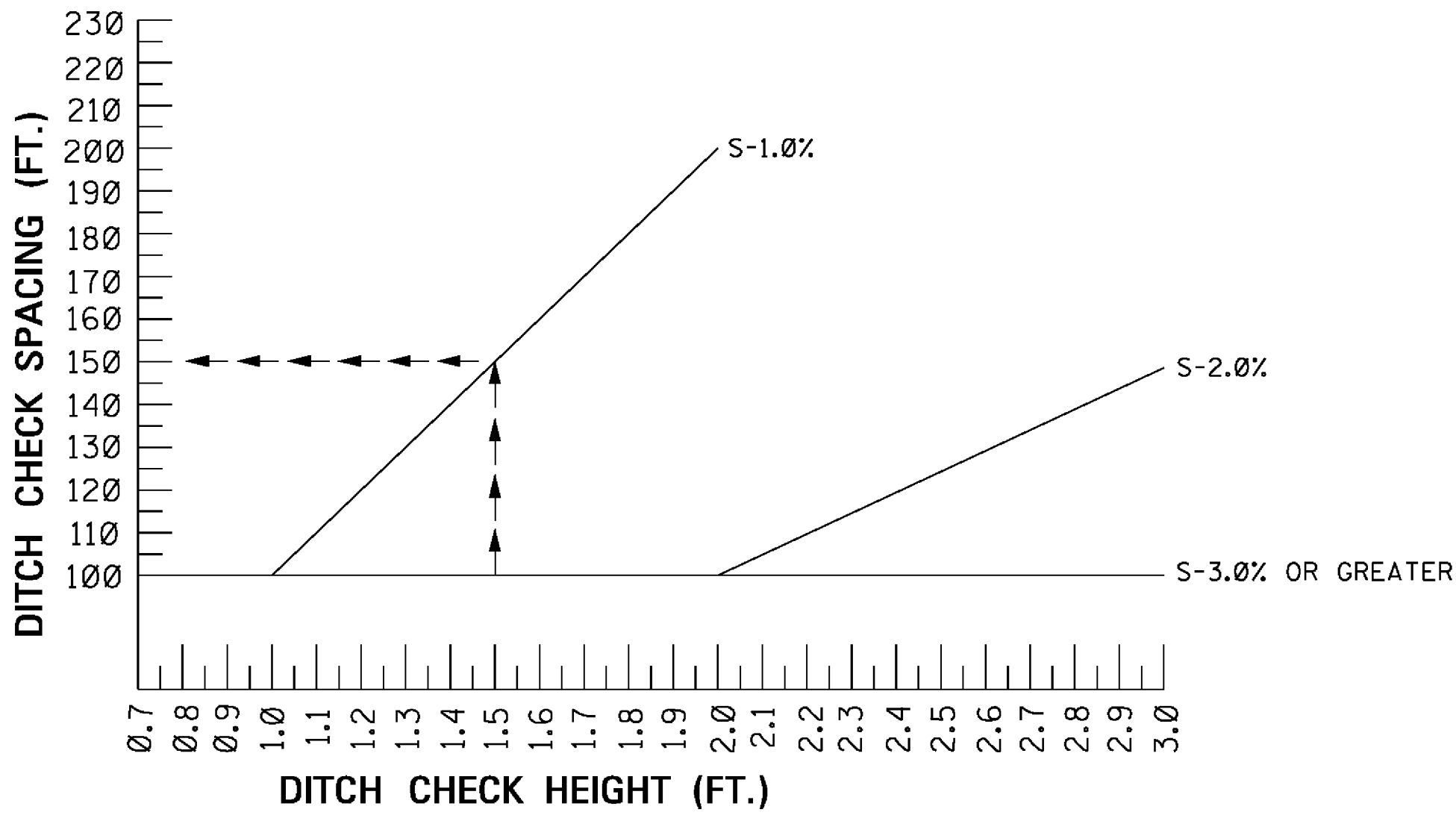
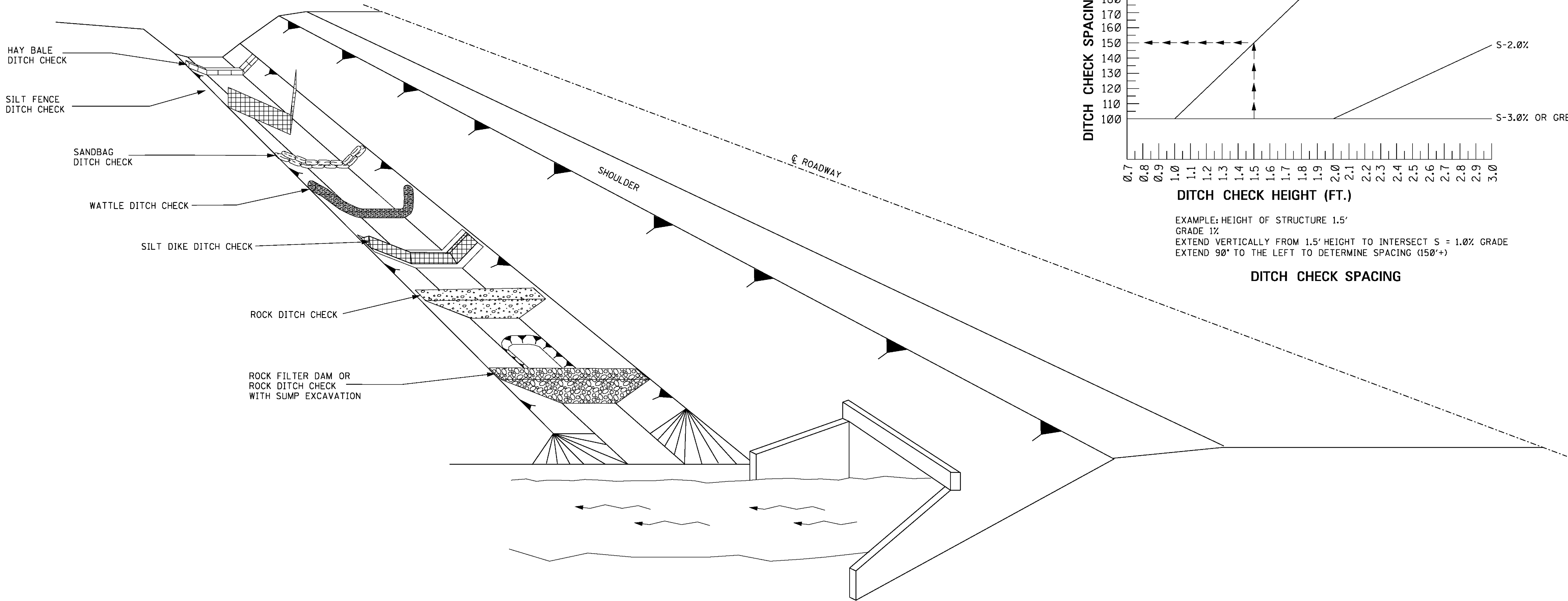


- GENERAL NOTES:
1. SILT FENCES SHOULD BE USED IN AREAS WHERE FLOW IS NOT SEVERE.
 2. SILT FENCES ARE TEMPORARY SEDIMENT CONTROL ITEMS THAT SHOULD BE ERECTED OPPOSITE ERODIBLE AREAS SUCH AS NEWLY GRADED FILL SLOPES AND ADJACENT TO STEAMS AND CHANNELS.
 3. SILT FENCE SHOULD BE PLACED WELL INSIDE RIGHT-OF-WAY AND ALONG EDGE OF CLEARING LIMITS. THIS WILL ALLOW ROOM FOR BACK-UP FENCE IF FIRST FENCE BECOMES FULL.
 4. WHENEVER POSSIBLE SILT FENCE SHOULD BE CONSTRUCTED ACROSS A LEVEL AREA IN THE SHAPE OF A SMILE. THIS AIDS IN PONDING OF RUNOFF AND FACILITATES SEDIMENTATION.
 5. THE CONTRACTOR MAY ELECT TO USE EITHER METHOD I OR METHOD II. COST TO BE LINEAR FEET OF SILT FENCE.
 6. METHOD II INSTALLATION SHALL BE ACCOMPLISHED USING AN IMPLEMENT THAT IS MANUFACTURED FOR THE APPLICATION AND PROVIDES A CONFIGURATION MEETING THE REQUIREMENTS OF DETAIL.
 7. WIRE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
 8. GEOTEXTILE FABRIC MEETING THE TYPE II MATERIAL REQUIREMENTS AND INSTALLED ACCORDING TO SPECIFICATION MAY BE USED WITHOUT WIRE FENCE.

[illegible]

G:\PROJECTS\Hattiesburg_City of 1273-S014 - ConsSWP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_DWG.dwg, 6/04, 10/1/2019 10:45:12 AM

STATE	PROJECT NO.
MISS.	



EXAMPLE: HEIGHT OF STRUCTURE 1.5'
GRADE 1%
EXTEND VERTICALLY FROM 1.5' HEIGHT TO INTERSECT S = 1.0% GRADE
EXTEND 90° TO THE LEFT TO DETERMINE SPACING (150'+)

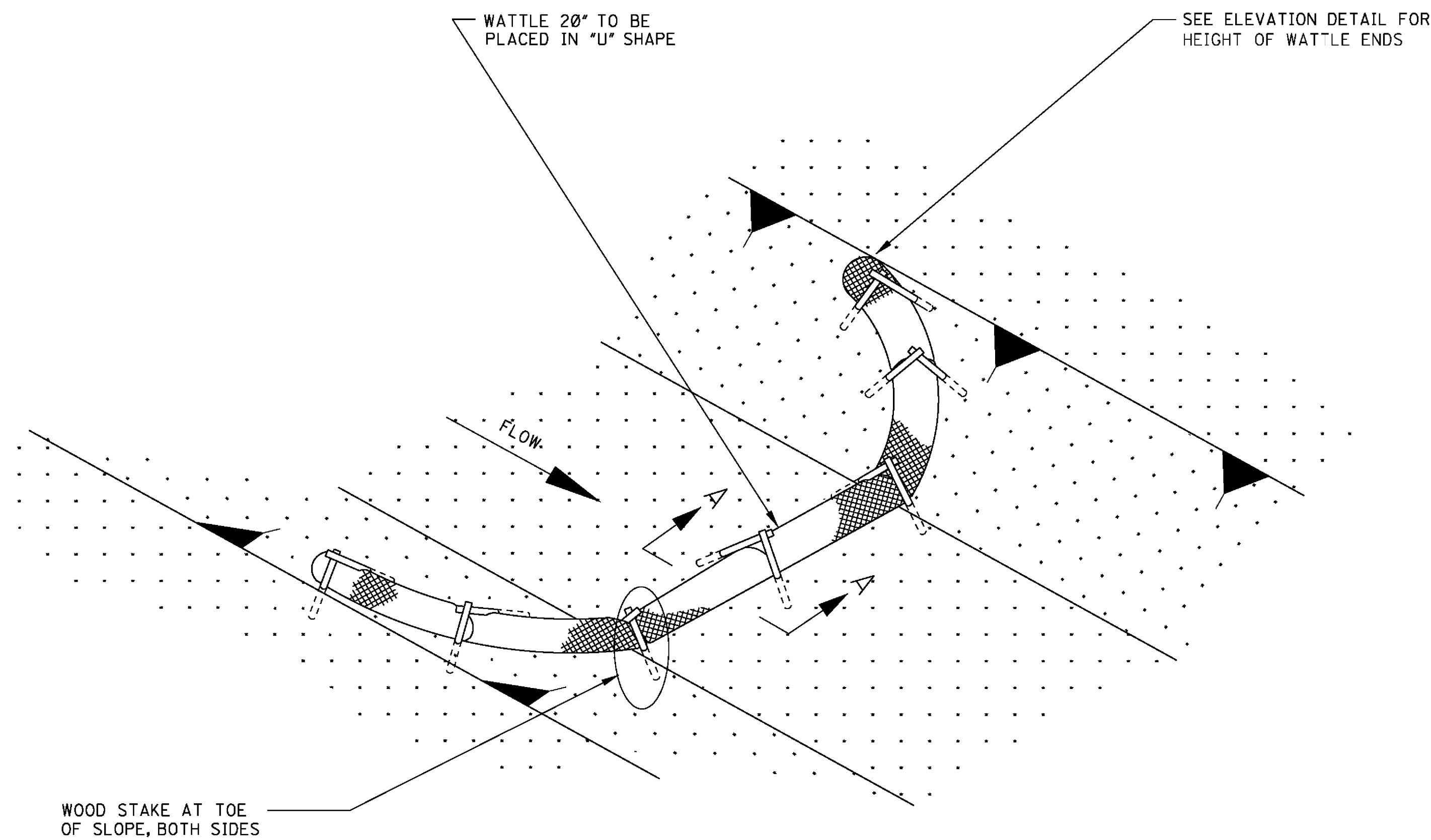
DITCH CHECK SPACING

GENERAL NOTES:

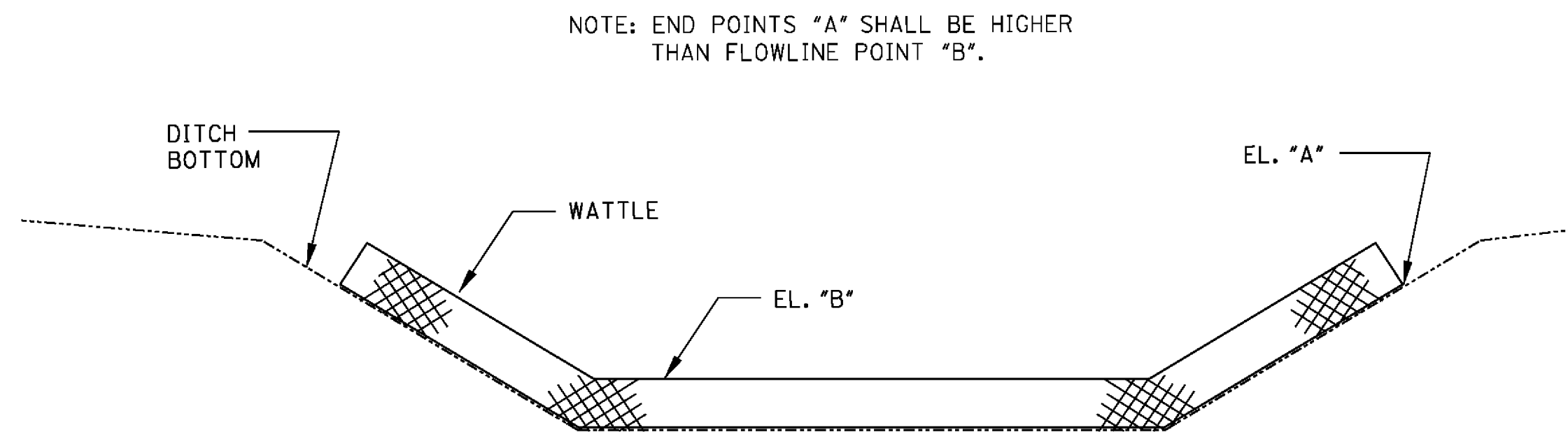
1. THE DITCH CHECK PERSPECTIVE ILLUSTRATES A TOOL BOX OF TEMPORARY PRACTICES THAT MAY BE USED. DITCH CHECKS ARE INSTALLED TO CONTROL RUNOFF VELOCITY AND THUS REDUCE EROSION AND PROVIDE FOR TRAPPING OF SEDIMENTS.
2. SELECTION OF THE APPROPRIATE DITCH CHECK SHOULD BE A FUNCTION OF CONSTRUCTION PHASE, DRAINAGE AREA, DITCH GRADIENT, SOIL TYPE, ECONOMY AND SAFETY.
3. DITCH CHECKS CAN BE REMOVED FOR MAINTENANCE AND/OR REPLACEMENT BUT MUST REMAIN IN PLACE UNTIL UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED. MAINTENANCE INCLUDES REMOVAL OF SEDIMENT BEGINNING WHEN SEDIMENT ACCUMULATION REACHES $\frac{1}{2}$ THE CAPACITY OR HEIGHT OF THE STRUCTURE AND NEVER ALLOWING FOR SEDIMENT TO ACCUMULATE MORE THAN $\frac{1}{2}$ THE VOLUME OR HEIGHT OF THE DITCH CHECK STRUCTURE.
4. HAY BALES SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
5. SILT FENCE DITCH CHECKS SHOULD BE USED WHERE IT HAS BEEN DETERMINED THAT HAY BALE CHECKS ARE INADEQUATE. SILT FENCE DITCH CHECKS SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
6. SANDBAG DITCH CHECKS SHOULD BE USED FOR VELOCITY REDUCTION AND MINIMAL SEDIMENT TRAPPING IN CONCRETE PAVED DITCHES OR IN DITCHES THAT HAVE ROCK BOTTOMS.
7. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
8. SILT DIKES CAN BE USED IN DITCHES WITH CONCENTRATED FLOWS WITHIN THE CLEAR ZONE WHERE RIPRAP CAN NOT BE USED. AS CONSTRUCTION PROGRESSES.
9. ROCK DITCH CHECKS WITH SUMP EXCAVATION CAN BE PLACED IN DITCHES TO ASSURE ON-SITE SEDIMENT TRAPPING REQUIREMENTS ARE MET. DITCH CHECK WITH SUMP EXCAVATION IS USED WHEN DITCHES RECEIVE DRAINAGE FROM CUT OR FILL SLOPES OR OTHER CRITICAL AREAS WHERE SOIL EROSION IS EXPECTED. DRAINAGE AREA FOR A TEMPORARY SEDIMENT TRAP SHOULD BE LIMITED TO 3 ACRES. THEY CAN BE USED IN SERIES TO INCREASE ON-SITE SEDIMENT TRAPPING EFFICIENCY.
10. DITCH CHECKS, IN NO CASE, SHALL BE PLACED IN LIVE STREAMS.
11. CONFIGURATION AND SPACING MAY BE ADJUSTED IF APPROVED BY THE ENGINEER TO ACCOMMODATE TRAVELWAY SAFETY, WATER FLOW, OR SOIL AND INSTALLATION CHALLENGES.

					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
					REVISION	DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS
					DATE	ISSUE DATE: AUGUST 01, 2017
						WORKING NUMBER ECD-4 SHEET NUMBER 6104

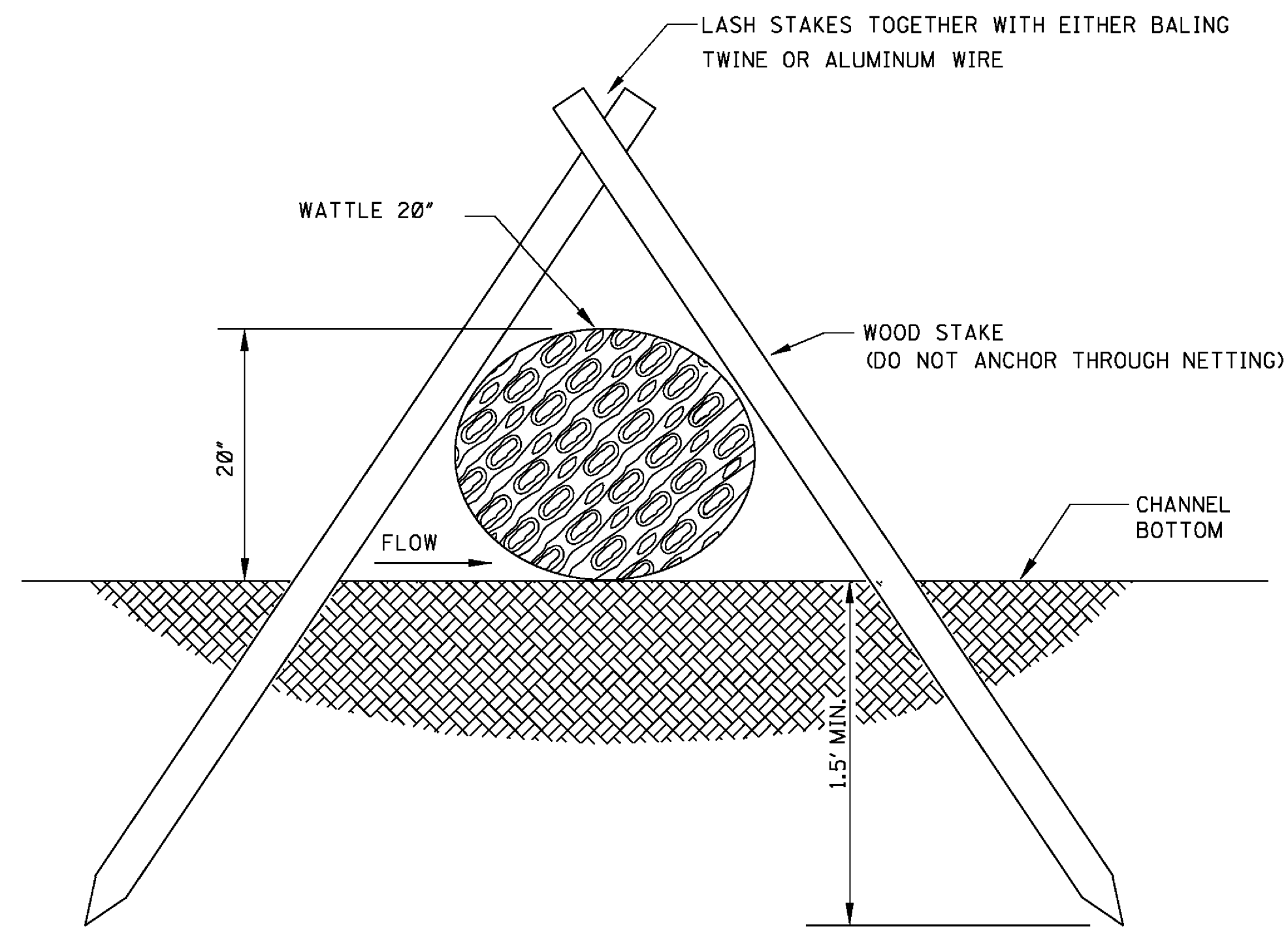
STATE	PROJECT NO.
MISS.	



DETAIL (DITCH CHECK)



ELEVATION DETAIL

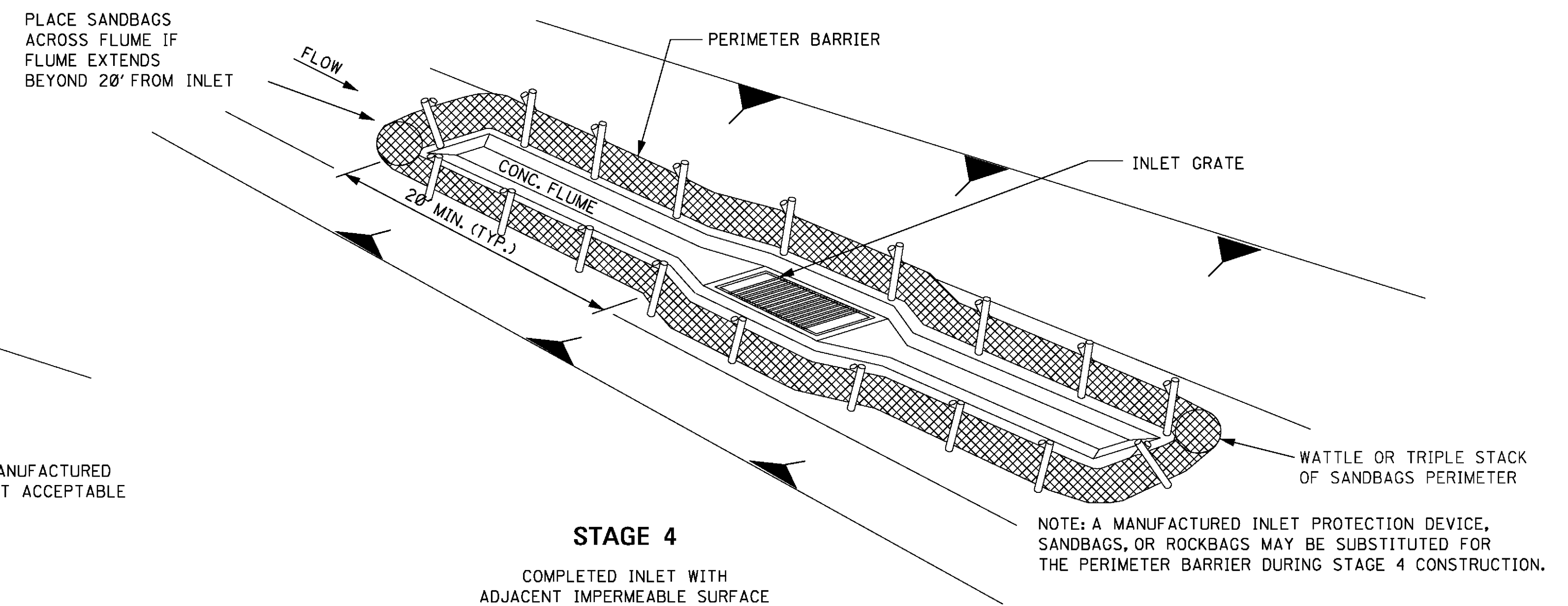
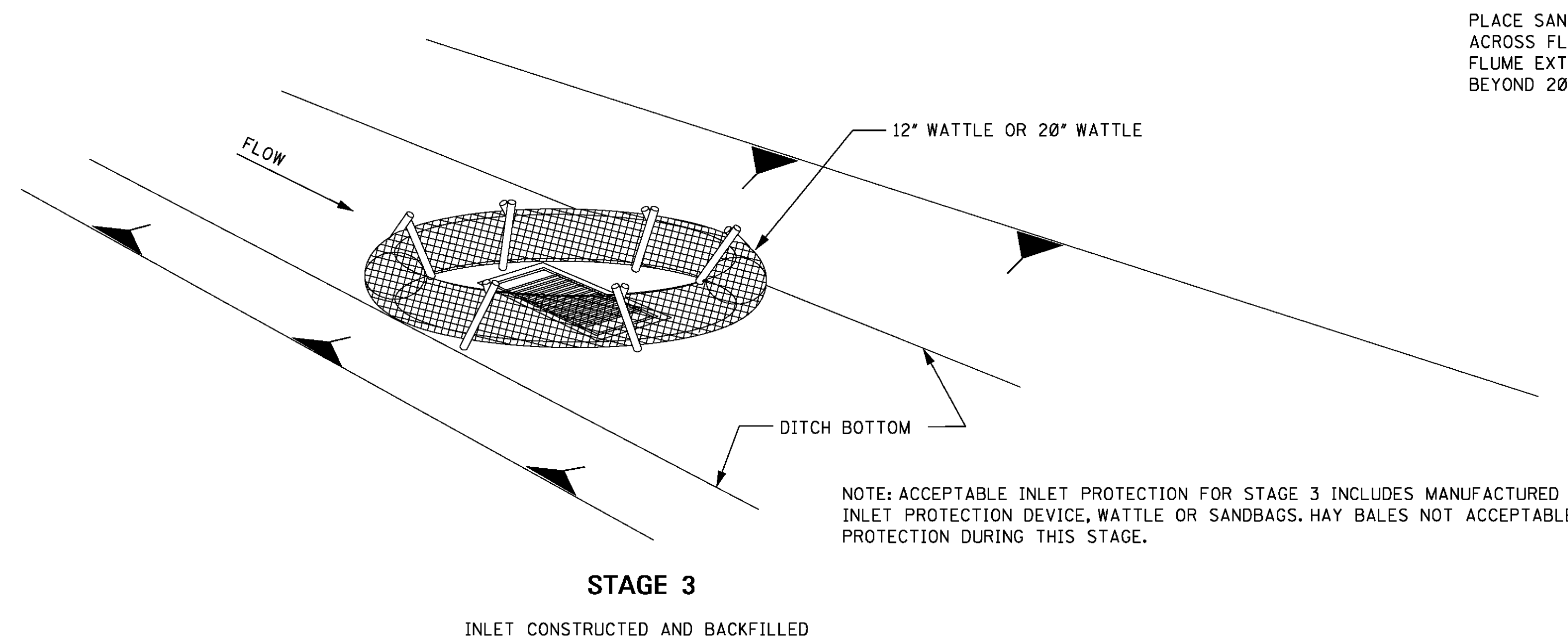
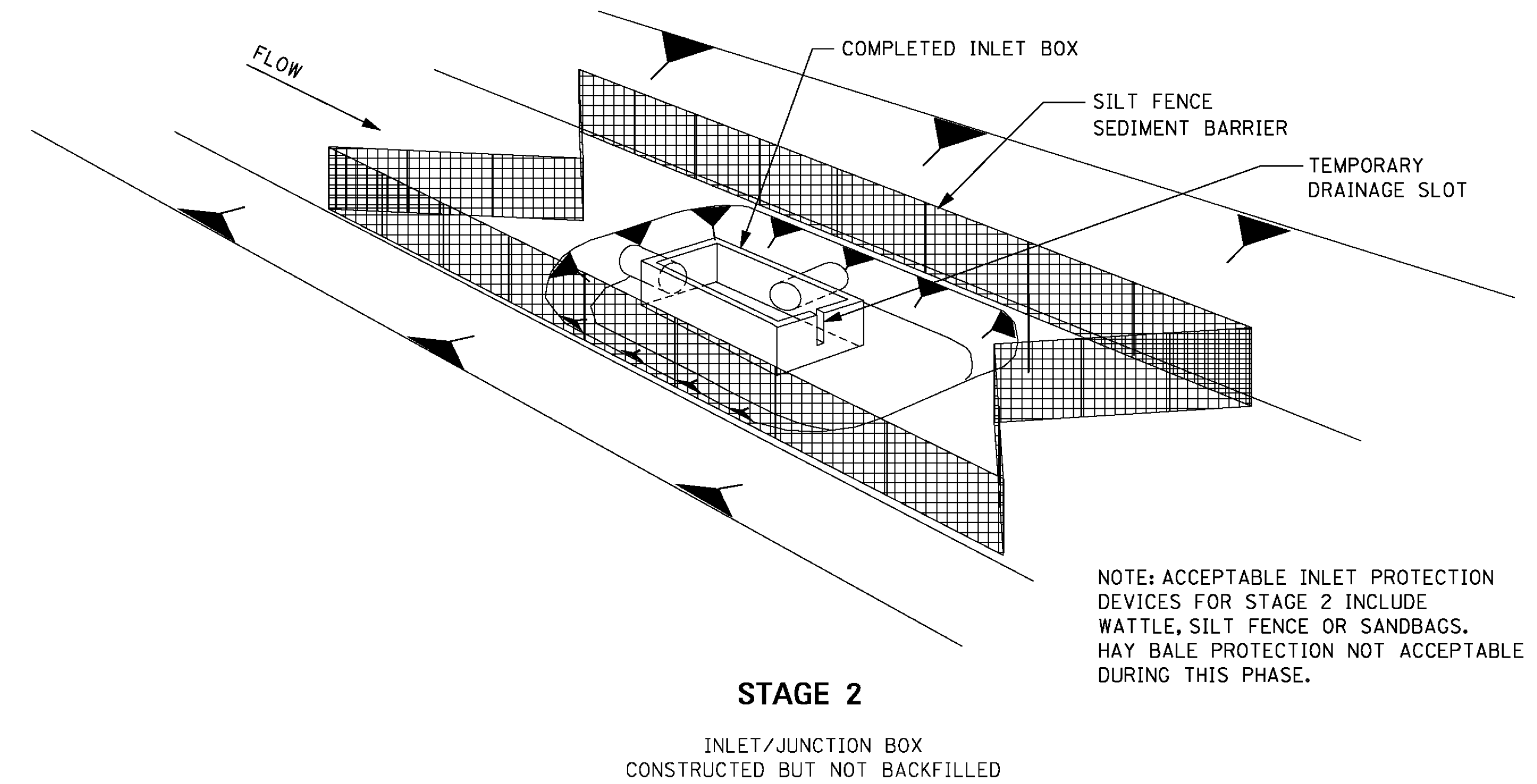
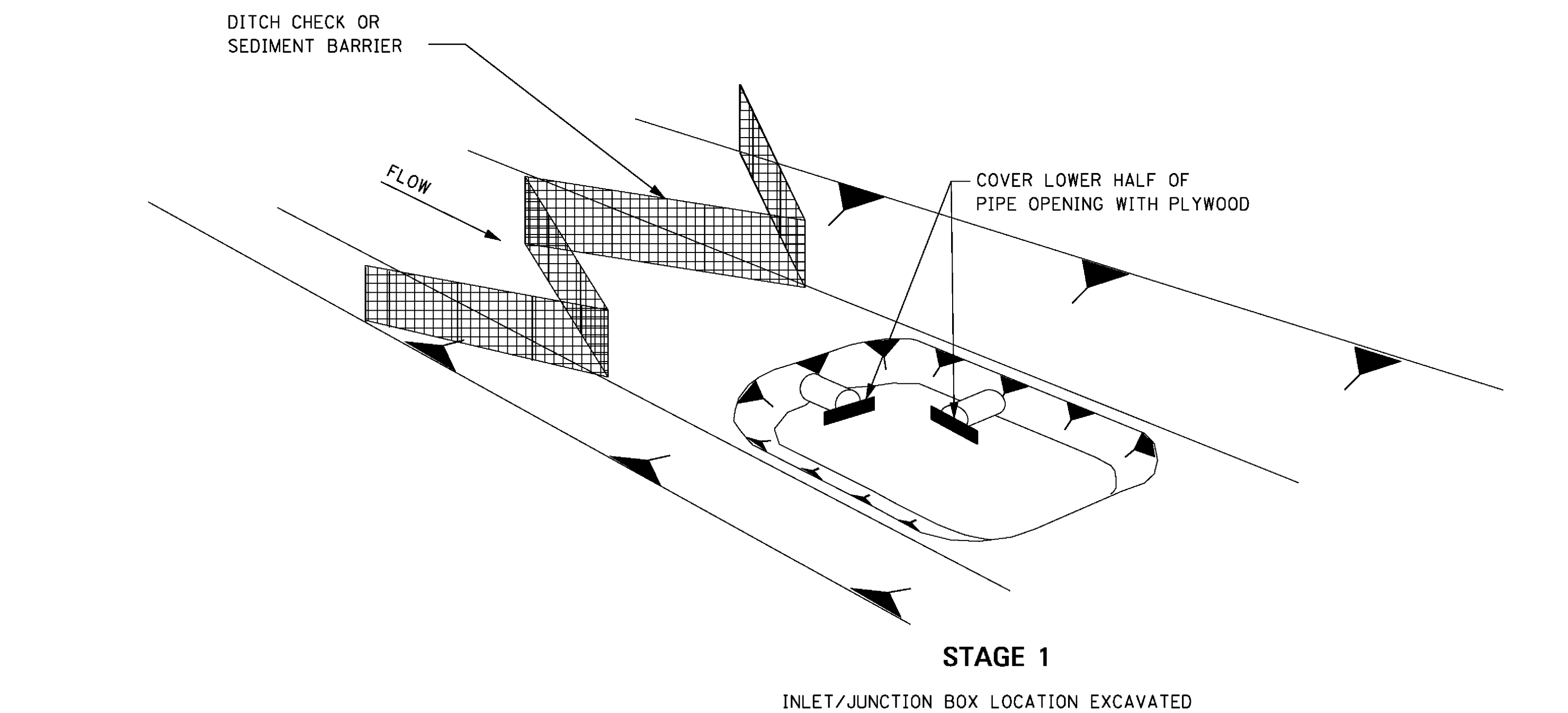


SECTION A-A

NOTES:

1. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
2. THE PLACEMENT INTERVAL BETWEEN WATTLE DITCH CHECK SHALL BE 100' UNLESS SHOWN OTHERWISE ON THE PLANS OR EROSION CONTROL PLAN APPROVED BY THE ENGINEER. SEE SPACING GUIDANCE ON WK. NO. ECD-4.
3. ANCHORING WOOD STAKES SHALL BE SIZED, SPACED, DRIVEN, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE CHECK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET. ALL NON-DEGRADABLE MATERIALS SHALL BE REMOVED WHEN NO LONGER NEEDED.
4. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
5. WATTLES SHOULD NOT BE USED IN HARD BOTTOM CHANNELS.
6. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SAND BAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE THE WATTLES IN PLACE. IF SANDS BAGS ARE USED IN THIS APPLICATION THEY WILL NOT BE A SEPARATE PAY ITEM.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	DETAILS OF EROSION CONTROL WATTLE DITCH CHECK
				DATE	ISSUE DATE: <u>AUGUST 01, 2017</u>
					 WORKING NUMBER ECD-6 SHEET NUMBER 6106

[illegible]

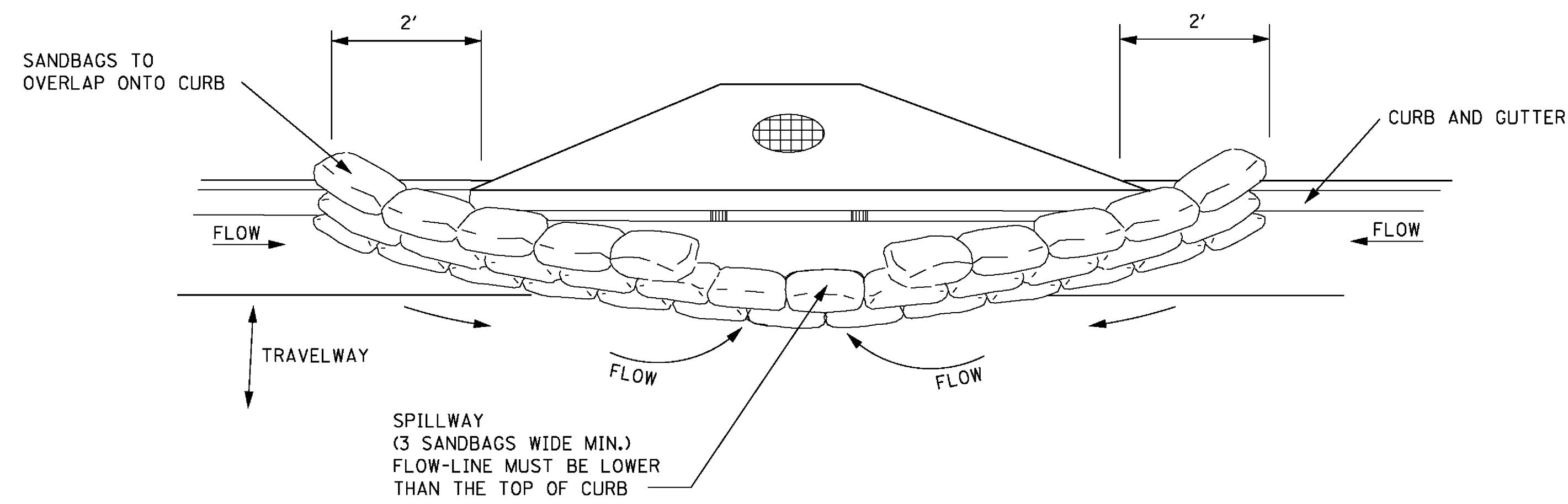
DITCH INLET CONSTRUCTION STAGES

NOTES:

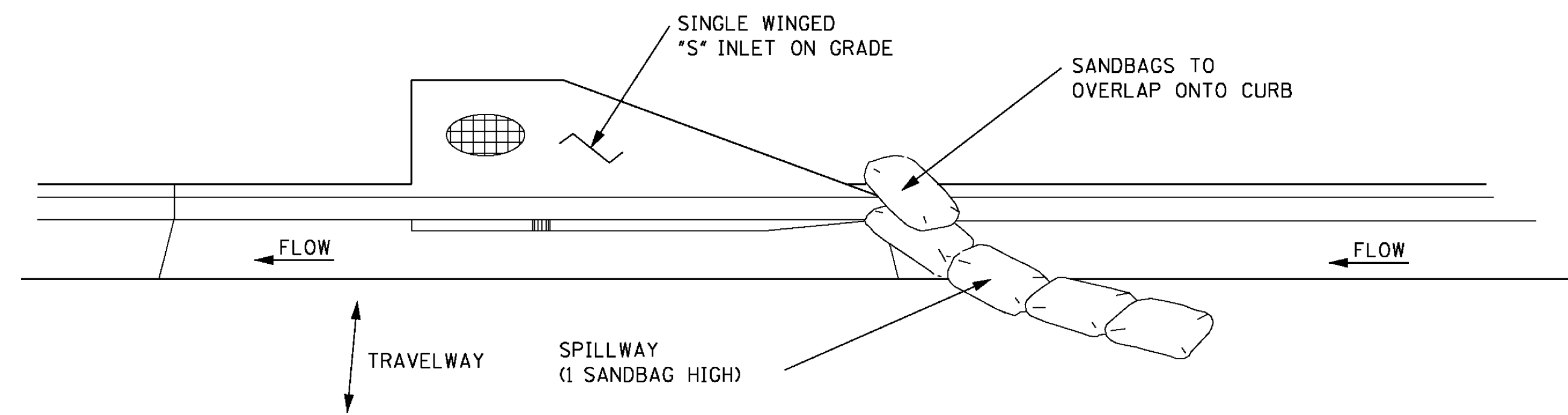
1. DRAINAGE STRUCTURE BACKFILL SHOULD BE PLACED IN STAGE 1 IMMEDIATELY AFTER PIPE INSTALLATION. INLET CONSTRUCTION SHOULD COMMENCE AS SOON AS POSSIBLE AND BE CONTINUOUS THROUGH COMPLETION.
2. CONFIGURATIONS MAY BE ADJUSTED WITH APPROVAL OF THE ENGINEER FOR TRAVELWAY SAFETY, WATER FLOW, OR SOIL AND INSTALLATION CHALLENGES.
3. DURING STAGE 1 AND STAGE 2, SILT FENCE MAY BE REQUIRED UPSLOPE OF THE INLET EXCAVATION AS DIRECTED BY THE ENGINEER.
4. IF SILT FENCE IS INSTALLED AROUND THE INLET INSTALLATION IT SHOULD BE IN A CONFIGURATION THAT WILL ALLOW INLET CONSTRUCTION.
5. FOR INLET PROTECTION TO BE USED IN STAGES 1 AND 2 OF CONSTRUCTION, SEE WK. NO. ECD-12.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
					TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION
				DATE	 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-11 ISSUE DATE: <u>AUGUST 01, 2017</u> SHEET NUMBER 6111

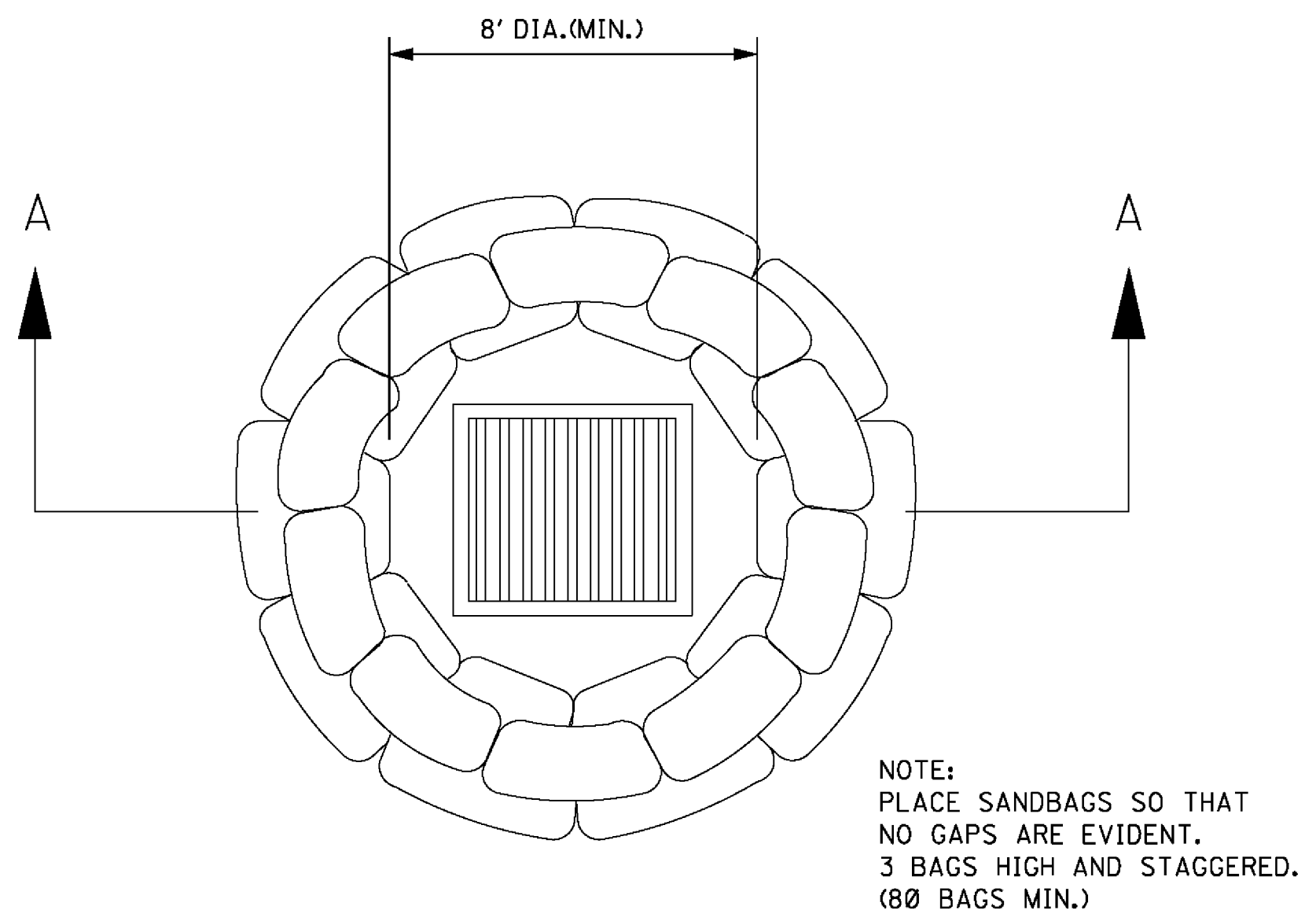
STATE	PROJECT NO.
MISS.	



TYPICAL (SANDBAG) PROTECTION FOR INLET IN SAG

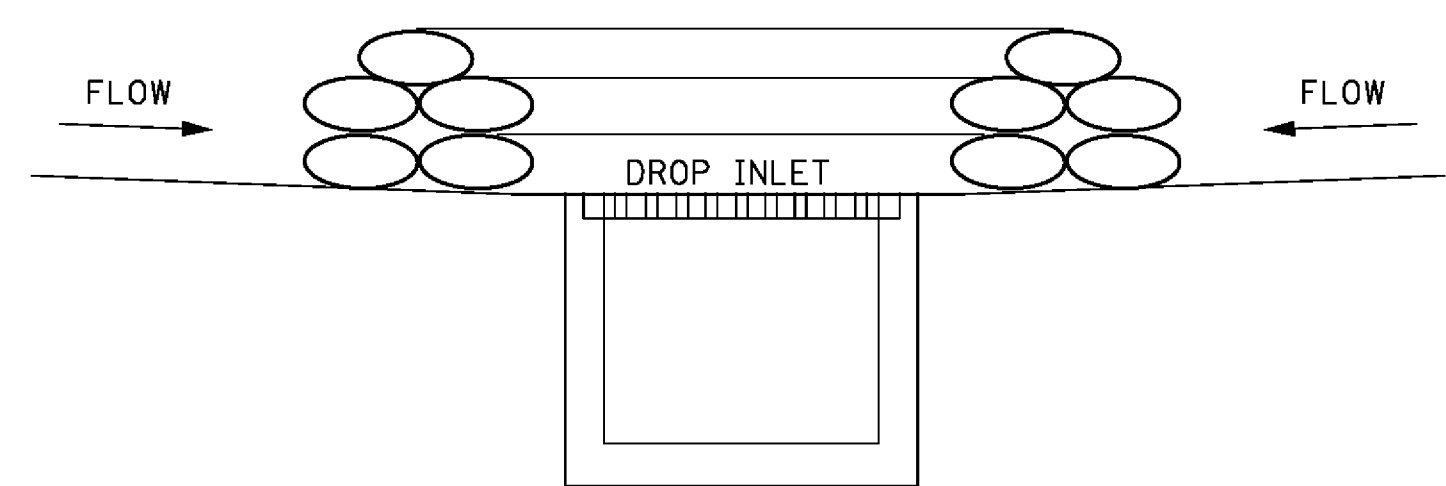


TYPICAL (SANDBAG) PROTECTION FOR INLET ON GRADE



DROP INLET

PLAN VIEW

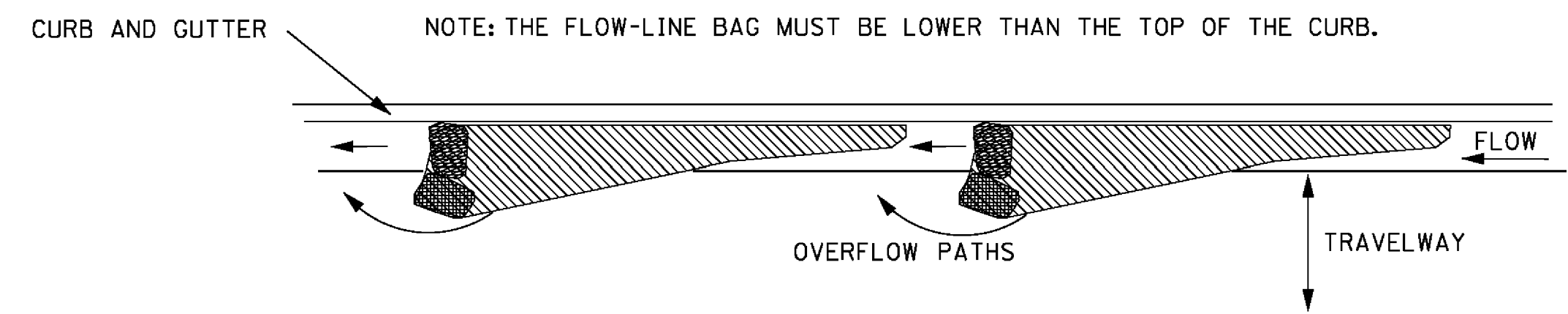


SECTION A-A

SANDBAG BARRIER

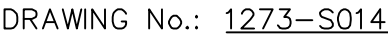
CURB INLET PROTECTION NOTES:

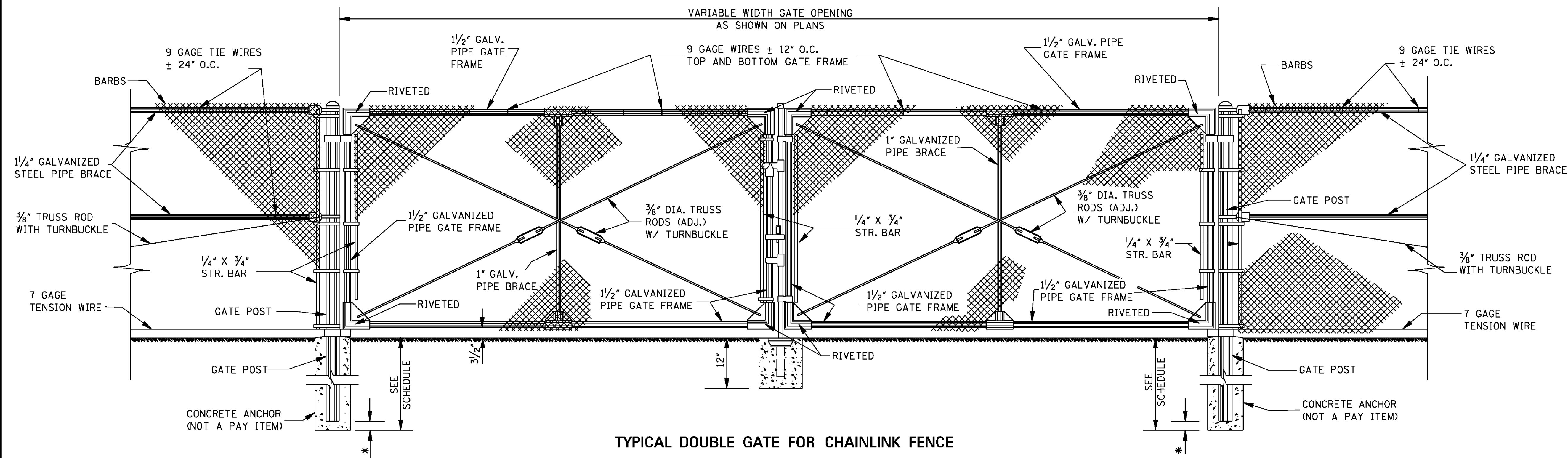
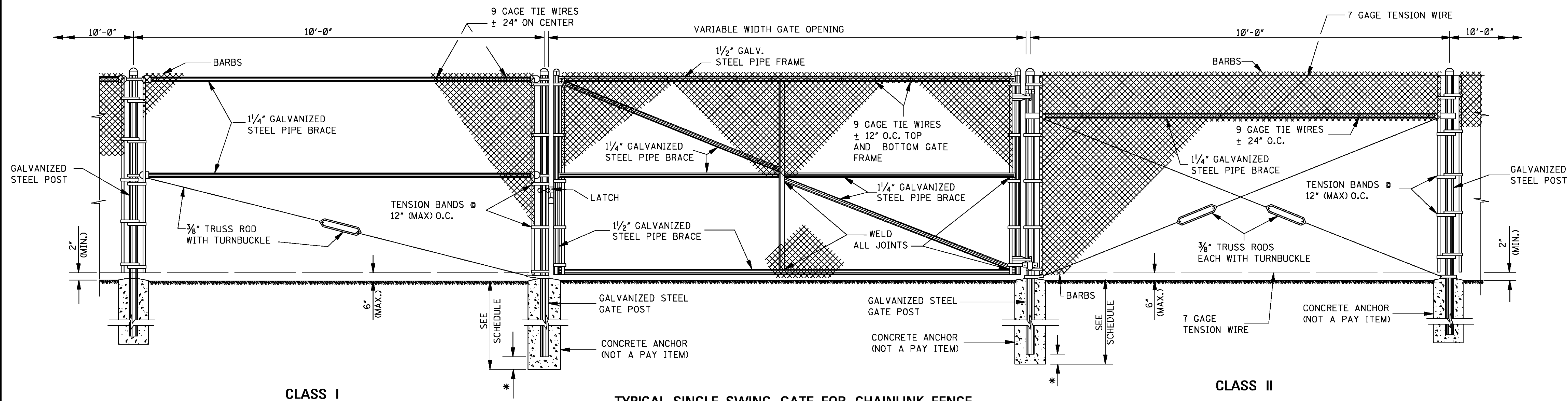
1. THIS CURB INLET PROTECTION METHOD CAN BE USED DURING ANY STAGE OF BASE AND PAVEMENT CONSTRUCTION.
2. BAG HEIGHT AND NUMBER OF BAGS SHOULD BE BASED ON CURB HEIGHT AND USE OF TRAVELWAY.
3. SEDIMENT SHOULD BE CONTROLLED PRIOR TO ENTERING GUTTER. GUTTER CHECKS AND INLET PROTECTION ARE FOR SECONDARY CONTROL.
4. REMOVE ACCUMULATED SEDIMENT AFTER EVERY RAINFALL. SWEEP SEDIMENT FROM HARD SURFACES AND DISPOSE OF APPROPRIATELY AWAY FROM INLETS AND/OR WATER BODIES.
5. IF DENUDEED AREAS EXIST BEHIND THE INLET, A SEDIMENT BARRIER SHOULD BE INSTALLED AROUND ITS PERIMETER TO CONTROL SEDIMENT.



CURB AND GUTTER SEDIMENT CONTAINMENT SYSTEM

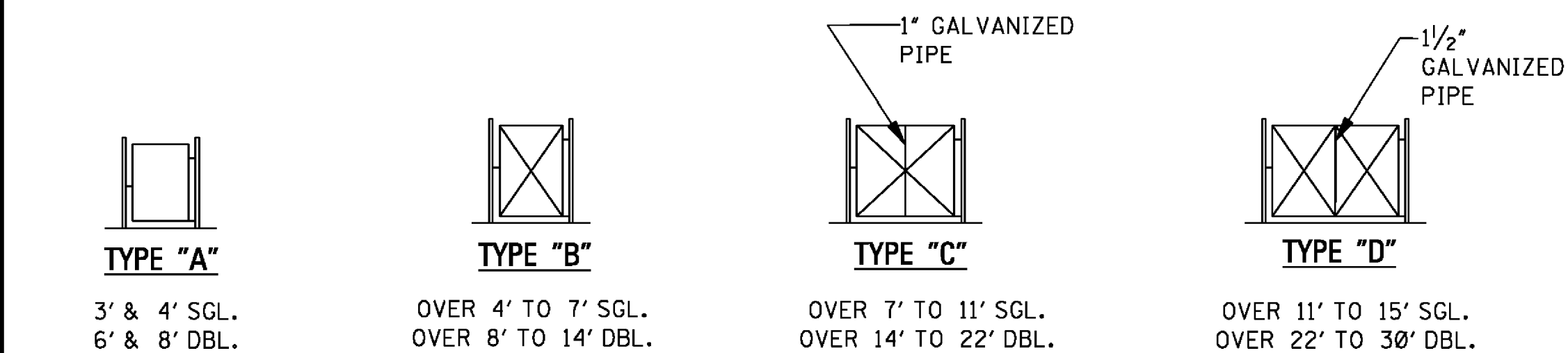
[illegible]



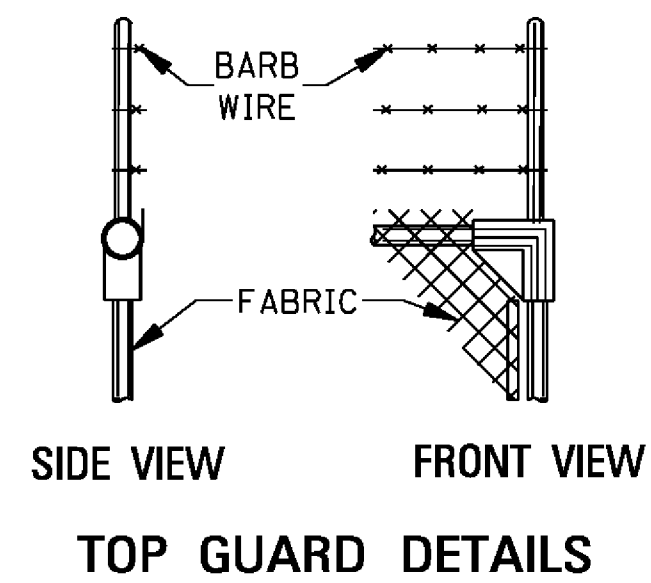


- GENERAL NOTES:
- CHAIN LINK FENCE TO BE 2" MESH FABRIC (9 GAGE WIRES).
 - PIPE SIZES SHOWN FOR POSTS, BRACES AND RAILS ARE NOMINAL INSIDE DIAMETERS. ALL POSTS, BRACES AND RAILS SHALL CONFORM TO THE REQUIREMENTS OF THE MISSISSIPPI DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
 - 3/8" TRUSS RODS NOT REQUIRED WHEN CONNECTING LESS THAN 4 PANELS LENGTHS TO STRUCTURES.
 - MESH TO BE ATTACHED AT 24" INTERVALS TO TOP & BOTTOM TENSION WIRE WITH HOG RINGS OR OTHER APPROVED METHODS.
 - THE FENCE SHALL BE GROUNDED IN ACCORDANCE WITH THE MISSISSIPPI DEPARTMENT OF TRANSPORTATION SPECIFICATIONS. COST TO BE ABSORBED IN OTHER ITEMS BID.

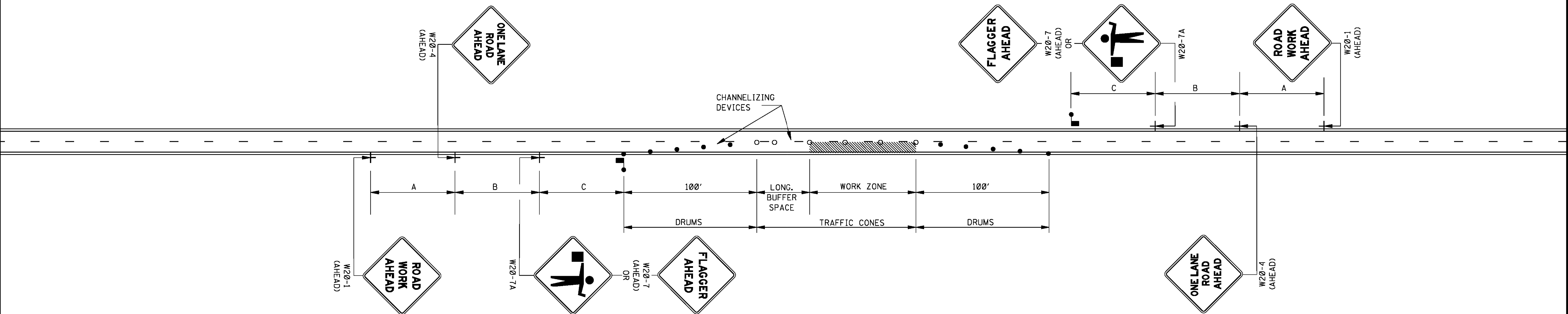
* = HOLE DEPTH - POST DEPTH



GATE OPENING	POST SCHEDULE		MIN. ANCHOR SIZE		
	POST TYPE & MIN. SIZE		HOLE DIA.	HOLE DEPTH	POST DEPTH
	ROUND SIZE (NPS)	"C" BEAM SIZE			
UP TO 6' SINGLE UP TO 12' DOUBLE	2 1/2"	3.50" X 3.50"	12"	40"	34"
OVER 6' TO 13' SINGLE OVER 12' TO 26' DOUBLE	3 1/2"		14"	42"	34"
OVER 13' TO 18' SINGLE OVER 26' TO 36' DOUBLE	6"		16"	46"	40"



MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
FENCE: CHAIN LINK GATE	
WORKING NUMBER CLG-1	SHEET NUMBER 6191
DATE	ISSUE DATE: AUGUST 01, 2017



LEGEND

- FLAGGER
- RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
- TRAFFIC CONES (28" HEIGHT MINIMUM)

GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE. FLAGGER STATIONS SHALL BE LOCATED SUCH THAT APPROACHING VEHICLES WILL HAVE SUFFICIENT DISTANCE TO STOP. VALUES IN STOPPING SIGHT DISTANCE COLUMN MAY BE USED AS A MINIMUM FOR THIS DISTANCE.

POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (ft)		LONGITUDINAL BUFFER SPACE (ft)	STOPPING SIGHT DISTANCE
	TAPER	ALONG LANE LINE & WORK ZONE		
mph				
25	20	50	55	155
30	20	60	85	200
35	20	70	120	250
40	20	80	170	305
45	20	90	220	360
50	20	100	280	425
55	20	110	335	495
60	20	120	415	570
65	20	130	485	645

† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.

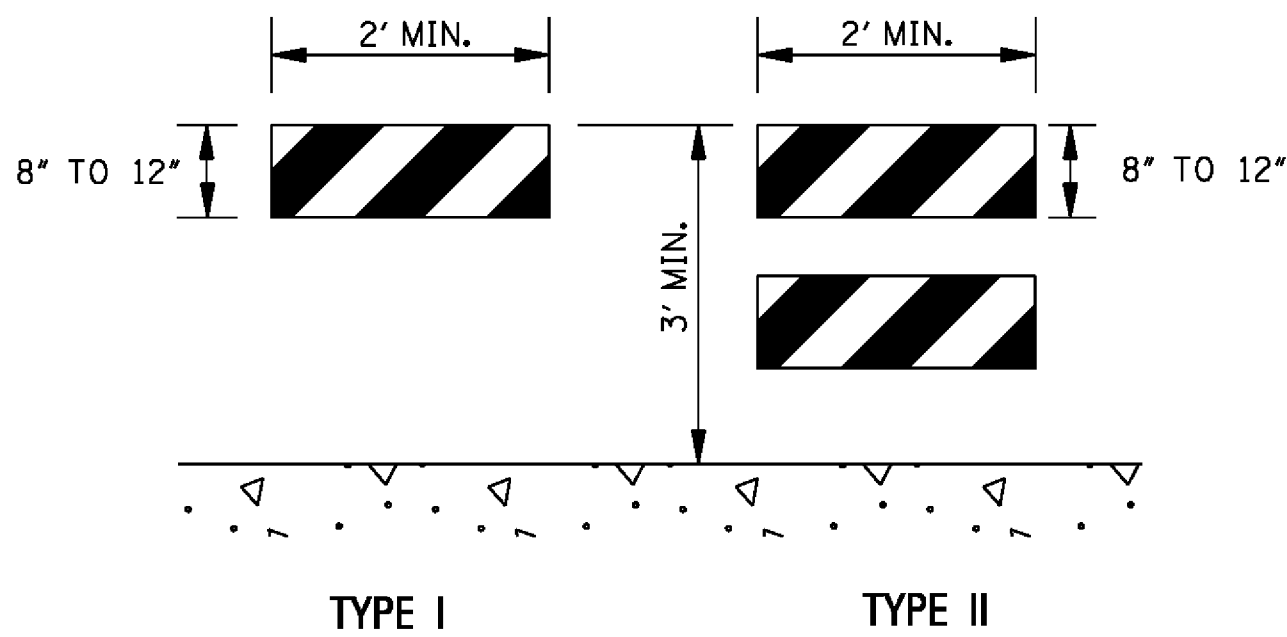
2. ALL CHANNELIZING DEVICES SHALL BE A MINIMUM OF 28" IN HEIGHT.
3. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 36" x 36" AND BLACK COPY ON FLUORESCENT ORANGE SHEETING.
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND ALL CHANNELIZING DEVICES SHALL BE MOVED TO THE SHOULDER EDGE.
5. ADDITIONAL FLAGGERS MAY BE NEEDED AS DIRECTED BY THE ENGINEER.
6. WHEN WORK IS REQUIRED AT NIGHT, FLAGGER STATIONS SHALL BE ILLUMINATED.
7. CHANNELIZING DEVICE TYPES FOR:
 - A. APPROACH AND EXIT TAPERS- RETROREFLECTIVE PLASTIC DRUMS
 - B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT)
8. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

DISTANCE BETWEEN SIGNS

DISTANCE BETWEEN SIGNS			
ROAD TYPE	A	B	C
URBAN (35 MPH OR LESS)	100 FT.	100 FT.	100 FT.
URBAN (40 - 70 MPH)	350 FT.	350 FT.	350 FT.
RURAL	500 FT.	500 FT.	500 FT.
EXPRESSWAY / FREEWAY	1000 FT.	1500 FT.	2640 FT.

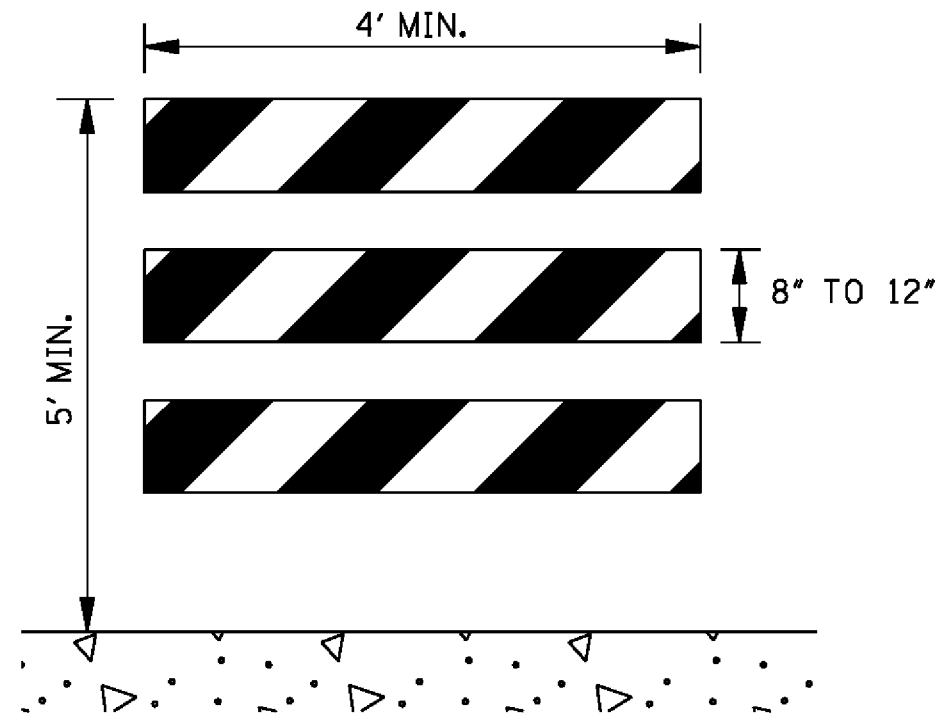
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN					
				REVISION						
					TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)					
				DATE	 WORKING NUMBER TCP-1 SHEET NUMBER 6351 ISSUE DATE: AUGUST 01, 2017					

G:\PROJECTS\Hatchberg_Cip of 1273-S014 - ComSMP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_Dtl.dwg, 6358, [01/2019 10:45:17 AM]



TYPE I

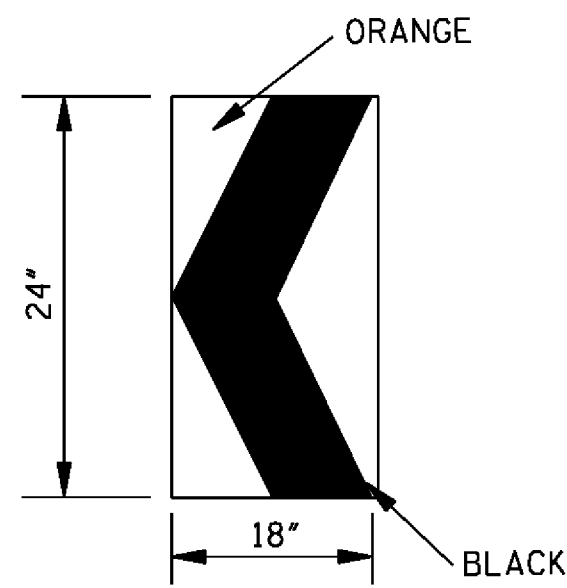
TYPE II



TYPE III

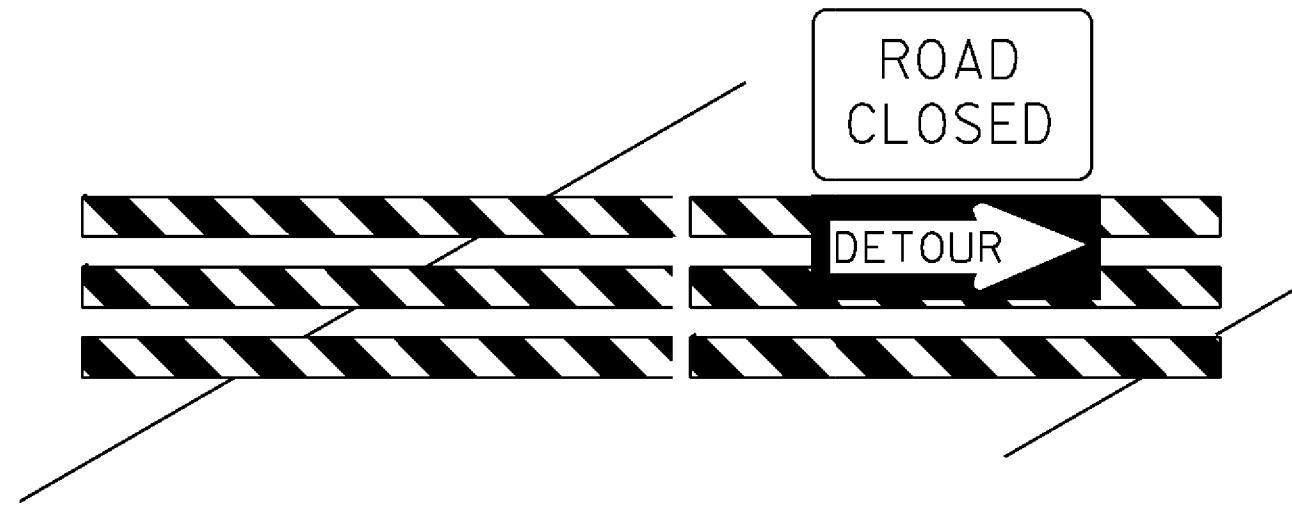
STANDARD BARRICADES

1. THE MARKING FOR BARRICADE RAILS SHALL BE ORANGE AND WHITE (SLOPING DOWNWARD AT AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).
2. RAIL STRIPE SHOULD BE 6 INCHES, EXCEPT THAT 4-INCH WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36 INCHES.
3. DO NOT PLACE SANDBAGS OR OTHER DEVICES TO PROVIDE MASS ON THE BOTTOM RAIL THAT WILL BLOCK VIEW OR RAIL FACE.
4. FOR ADDITIONAL INFORMATION OR DETAILS, SEE MUTCD, LATEST EDITION.
5. BARRICADES ARE CLASSIFIED BY FHWA AS CATEGORY II WORK ZONE DEVICES WHICH REQUIRE CRASHWORTHINESS ACCEPTANCE LETTERS. TO DATE, 2-IN. THICK TIMBER RAILS HAVE NOT BEEN SUCCESSFULLY CRASH TESTED. A LIST OF CRASHWORTHY BARRICADES AND OTHER CATAGORY II DEVICES CAN BE FOUND ON FHWA'S WEBSITE:
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/cat2.cfm



CHEVRON SIGN
DETAIL

1. A CHEVRON SIGN CONSISTS OF A BLACK CHEVRON TYPE MARKING ON AN ORANGE BACKGROUND AND SHALL POINT IN THE DIRECTION OF TRAFFIC FLOW.
2. THE CHEVRON SIGN SHALL BE MOUNTED ON CRASHWORTHY SUPPORT.
3. CHEVRON SIGNS MAY BE USED TO SUPPLEMENT OTHER STANDARD DEVICES WHERE ONE OR MORE LANES ARE CLOSED FOR CONSTRUCTION OR MAINTENANCE. THEY SHOULD BE PLACED APPROXIMATELY 2'-0" BEHIND THE LANE TRANSITION STRIPE.

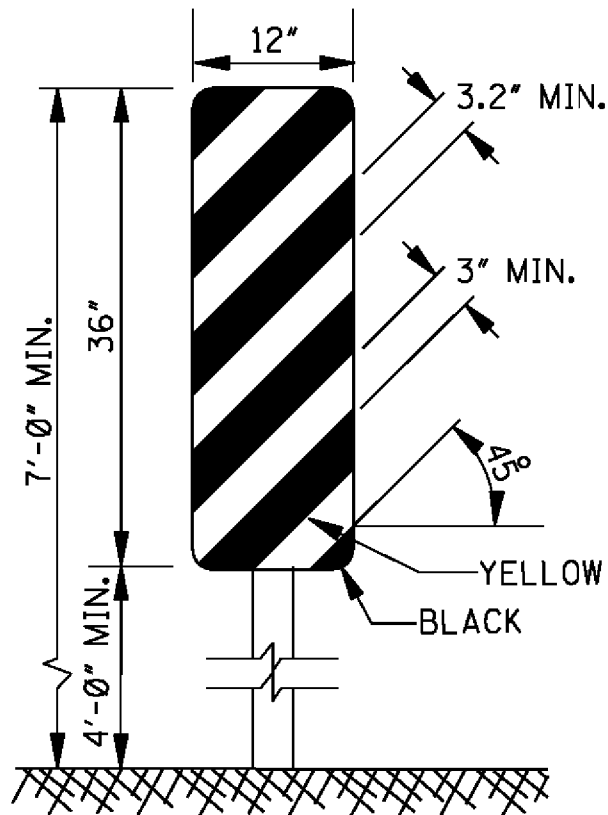


BARRICADE CLOSING A ROAD

BARRICADE CHARACTERISTICS

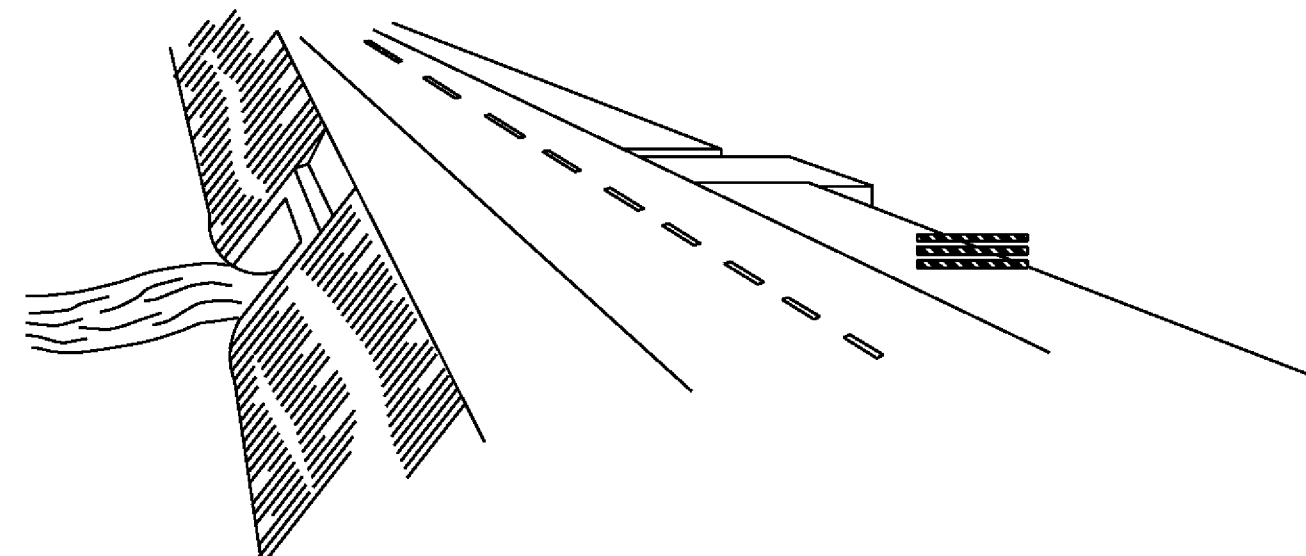
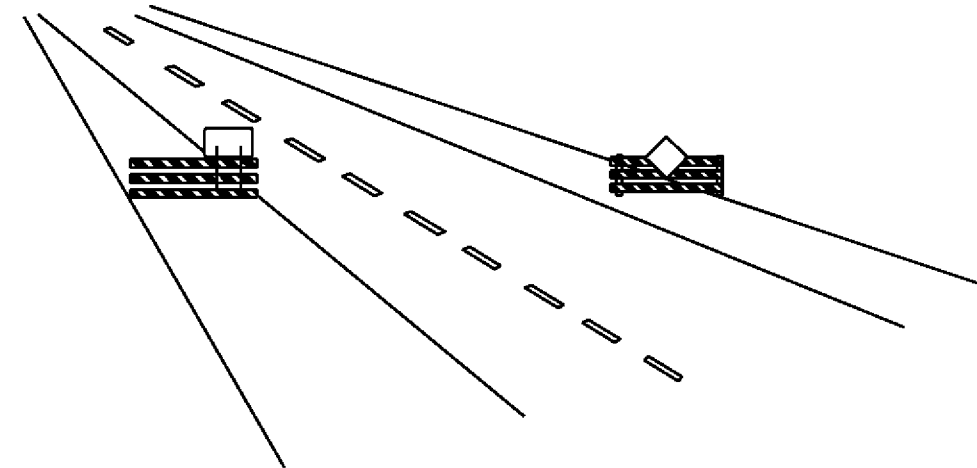
	I	II	III
WIDTH OF RAIL **	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.
LENGTH OF RAIL **	24" MIN.	24" MIN.	48" MIN.
WIDTH OF STRIPE *	6"	6"	6"
HEIGHT	36" MIN.	36" MIN.	60" MIN.
NUMBER OF RETROREFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS

- * 1. FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
- ** 2. BARRICADES INTENDED FOR USE ON EXPRESSWAYS, FREEWAYS AND OTHER HIGH SPEED ROADWAYS, SHALL HAVE A MINIMUM OF 270 in² OF REFLECTIVE AREA FACING TRAFFIC.



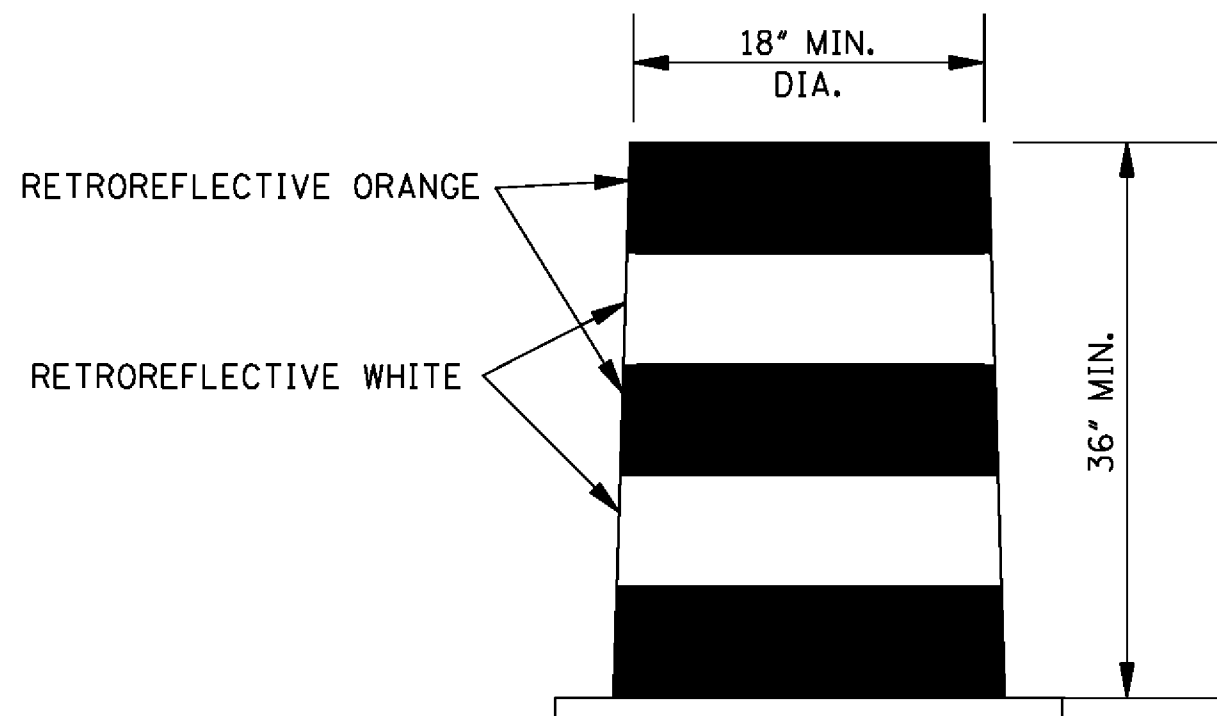
TYPE 3 OBJECT MARKER
(OM-3R)

1. TYPE 3 OBJECT MARKERS SHALL BE USED AT ALL EXPOSED BRIDGE ABUTMENTS AND AT OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER.
2. THE OM-3R IS SHOWN. THE OM-3L IS SIMILAR EXCEPT THE STRIPES SLOPE DOWNWARD FROM THE UPPER LEFT SIDE TO THE LOWER RIGHT SIDE AND SHALL BE PLACED ON THE LEFT SIDE OF THE OBJECT.
3. THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION.



WING BARRICADES

1. WING BARRICADES ARE TYPE III BARRICADES ERECTED ON THE SHOULDER ON ONE OR BOTH SIDES OF THE PAVEMENT TO GIVE THE SENSATION OF A NARROWING OR RESTRICTED ROADWAY. WING BARRICADES MAY BE USED AS A MOUNTING FOR THE ADVANCE WARNING SIGNS OR FLASHERS.
2. WING BARRICADES SHOULD BE USED:
A. IN ADVANCE OF A CONSTRUCTION PROJECT EVEN WHEN NO PART OF THE ROADWAY IS ACTUALLY CLOSED.
B. IN ADVANCE OF ALL BRIDGE OR CULVERT WIDENING OPERATIONS.



PLASTIC DRUM STRIPING DETAIL

1. PLASTIC DRUMS SHALL BE ON END AND USED AS AN EXPEDIENT METHOD FOR TRAFFIC CHANNELIZATION. THE COLOR AND MARKING OF DRUMS SHALL BE CONSISTENT WITH MARKING STANDARDS FOR BARRICADE. THE PREDOMINANT COLOR ON DRUMS SHALL BE ORANGE WITH FOUR (4) RETROREFLECTIVE, HORIZONTAL, CIRCUMFERENTIAL STRIPES (2 ORANGE & 2 WHITE) 6" WIDE.
2. DRUMS SHOULD NEVER BE PLACED IN THE ROADWAY WITHOUT WARNING SIGNS.
3. WHERE PRACTICAL PLASTIC DRUMS SHOULD BE PLACED NO CLOSER THAN 3'-0" FROM THE EDGE OF TRAVELED LANE.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS
				DATE	ISSUE DATE: AUGUST 01, 2017
					WORKING NUMBER TCP-8 SHEET NUMBER 6358

G:\PROJECTS\Hatchings_Cip of 1273-S014 - ConsSWIP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_Disc.dwg, 6501, 10/1/2019 10:45:18 AM

STATE

PROJECT NO.

MISS.

CORRUGATED STEEL AND ALUMINUM PIPE (ROUND)

PIPE DIAMETER (in)	MINIMUM COVER FROM TOP OF PIPE TO TOP OF SUBGRADE (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft)					
		SHEET THICKNESS (in)					
		0.064 STEEL 0.060 ALUM. 16 GAGE	0.079 STEEL 0.075 ALUM. 14 GAGE	0.109 STEEL 0.105 ALUM. 12 GAGE	0.138 STEEL 0.135 ALUM. 10 GAGE	0.168 STEEL 0.164 ALUM. 8 GAGE	
		2 2/3" X 1/2" CORRUGATED STEEL HELICAL	3" X 1" OR 5" X 1" CORRUGATED STEEL HELICAL	2 2/3" X 1/2" CORRUGATED ALUMINUM HELICAL			
12"	12"	207' / - / 125'	259' / - / 157'	- / - / -	- / - / -	- / - / -	- / - / -
15"	12"	165' / - / 100'	207' / - / 125'	- / - / -	- / - / -	- / - / -	- / - / -
18"	12"	138' / - / 83'	172' / - / 104'	242' / - / -	- / - / -	- / - / -	- / - / -
24"	12"	103' / - / 62'	129' / - / 78'	181' / - / 109'	- / - / -	- / - / -	- / - / -
30"	12"	82' / - / -	103' / - / 69'	145' / - / 97'	- / - / -	- / - / -	- / - / -
36"	12"	68' / - / -	86' / - / 62'	120' / - / 87'	155' / - / 94'	- / - / -	- / - / -
42"	12"	58' / - / -	73' / - / 51'	103' / - / 73'	133' / - / 80'	163' / - / -	- / - / -
48"	12"	51' / - / -	64' / - / -	90' / - / 62'	116' / - / 70'	142' / - / 85'	- / - / -
54"	12"	- / 46' / -	57' / 58' / -	80' / 82' / 54'	103' / 106' / 62'	126' / 129' / 76'	- / - / -
60"	12"	- / 42' / -	- / 52' / -	72' / 74' / 48'	93' / 95' / 52'	114' / 116' / 64'	- / - / -
66"	12"	- / 38' / -	- / 47' / -	- / 66' / -	84' / 86' / -	103' / 106' / 52'	- / - / -
72"	12"	- / 35' / -	- / 43' / -	- / 61' / -	77' / 79' / -	94' / 97' / 43'	- / - / -
78"	12"	- / 32' / -	- / 40' / -	- / 56' / -	- / 73' / -	84' / 89' / -	- / - / -
84"	12"	- / 29' / -	- / 37' / -	- / 52' / -	- / 68' / -	72' / 83' / -	- / - / -
90"	12"	- / 27' / -	- / 34' / -	- / 49' / -	- / 63' / -	- / 77' / -	- / - / -
96"	12"	- / - / -	- / 32' / -	- / 46' / -	- / 59' / -	- / 72' / -	- / - / -
102"	24"	- / - / -	- / 30' / -	- / 43' / -	- / 55' / -	- / 68' / -	- / - / -
108"	24"	- / - / -	- / - / -	- / 40' / -	- / 52' / -	- / 64' / -	- / - / -
114"	24"	- / - / -	- / - / -	- / 38' / -	- / 50' / -	- / 61' / -	- / - / -
120"	24"	- / - / -	- / - / -	- / 36' / -	- / 47' / -	- / 58' / -	- / - / -

NOTE: THE AVERAGE INSIDE DIAMETER SHALL NOT VARY MORE THAN ONE (1) PERCENT OR 1/2", WHICHEVER IS GREATER, FROM THE NOMINAL DIAMETER WHEN MEASURED ON THE INSIDE CREST OF THE CORRUGATIONS (AASHTO M 36M/M 36 & AASHTO M 196M/M 196).

TRENCH SECTION

EMBANKMENT SECTION

CLASS B

12" (MIN.)

O.D.

12" (MIN.)

4" (MIN.)

BEDDING BLANKET

0.15 (O.D.) (MIN.)

0.3 (O.D.) (MIN.)

TRENCH SECTION

EMBANKMENT SECTION

CLASS C

12" (MIN.)

O.D.

45°

0.1 (O.D.) (MIN.)

SHAPE TRENCH ACCURATELY TO FIT PIPE.

CLASS C MODIFIED

12" (MIN.)

O.D.

12" (MIN.)

0.1 (O.D.) (MIN.)

d = 1" FOR 1/2" DEEP CORRUGATION

d = 2" FOR 1" DEEP CORRUGATION

BEDDING BLANKET

CORRUGATED METAL PIPE ARCHES

EQUIV. DIAMETER (in)	PIPE DIMENSION (SPAN X RISE) (in)	MINIMUM COVER	STEEL		ALUMINUM	
			MINIMUM THICKNESS REQUIRED (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft) FOR THE FOLLOWING CORNER BEARING PRESSURE (tons/ft²)	MINIMUM THICKNESS REQUIRED (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft) FOR THE FOLLOWING CORNER BEARING PRESSURE (tons/ft²)
				2 2/3" X 1/2" CORRUGATION HELICAL		2 2/3" X 1/2" CORRUGATION RIVETED OR HELICAL
15"	17" X 13"	12"	0.064"	13'	0.060"	13'
18"	21" X 15"	12"	0.064"	12'	0.060"	12'
24"	28" X 20"	12"	0.064"	12'	0.075"	12'
30"	35" X 24"	12"	0.064"	12'	0.075"	12'
36"	42" X 29"	12"	0.064"	12'	0.105"	12'
42"	49" X 33"	12"	0.079"	12'	0.105"	12'
48"	57" X 38"	12"	0.109"	12'	0.135"	12'
54"	64" X 43"	12"	0.109"	12'	0.135"	12'
60"	71" X 47"	12"	0.138"	12'	0.164"	12'
66"	77" X 52"	12"	0.168"	12'		
72"	83" X 57"	12"	0.168"	12'		
				3" X 1" CORRUGATION HELICAL		5" X 1" CORRUGATION HELICAL
48"	53" X 41"	12" / -	0.079" / -	12' / -		
54"	60" X 46"	15" / -	0.079" / -	20' / -		
60"	66" X 51"	15" / -	0.079" / -	20' / -		
66"	73" X 55"	18" / -	0.079" / -	20' / -		
72"	81" X 59"	18" / 18'	0.079" / 0.109"	17' / 17'		
78"	87" X 63"	18" / 18"	0.079" / 0.109"	16' / 16'		
84"	95" X 67"	18" / 18"	0.079" / 0.109"	16' / 16'		
90"	103" X 71"	18" / 18"	0.109" / 0.109"	16' / 16'		
96"	112" X 75"	21" / 21"	0.109" / 0.109"	16' / 16'		
102"	117" X 79"	21" / 21"	0.109" / 0.109"	16' / 16'		
108"	128" X 83"	24" / 24"	0.138" / 0.138"	16' / 16'		
114"	137" X 87"	24" / 24"	0.138" / 0.138"	16' / 16'		
120"	142" X 91"	27" / 27"	0.168" / 0.168"	16' / 16'		

NOTES:

1. THE AVERAGE INSIDE DIAMETER SHALL NOT VARY MORE THAN ONE (1) PERCENT OR 1/2", WHICHEVER IS GREATER, FROM THE NOMINAL DIAMETER WHEN MEASURED ON THE INSIDE CREST OF THE CORRUGATIONS. (AASHTO M 36M/M 36 & AASHTO M 196M/M 196).

2. BEARING PRESSURES FOR GIVEN FILL HEIGHT SHALL HAVE FOUNDATION MATERIALS INVESTIGATED TO DETERMINE BEARING CAPACITY.

GENERAL NOTES:

1. MINIMUM SPACING BETWEEN MULTIPLE LINES OF PARALLEL PIPE SHALL BE THE DISTANCE REQUIRED FOR INSTALLING THE ADJACENT FLARED END SECTIONS OR AS SHOWN ON THE HEADWALL DRAWINGS FOR CONDUITS REQUIRING HEADWALLS.

2. UNLESS OTHERWISE INDICATED, THE TOP OF THE PIPE SHALL BE BELOW THE TOP OF THE SUBGRADE, AND A MINIMUM OF 12" OF COVER OVER THE TOP OF THE PIPE SHALL BE MAINTAINED BETWEEN THE SHOULDER LINES.

3. WHERE PRE-BED PIPE IS INSTALLED, FLARED END SECTIONS FROM OTHER MANUFACTURERS MAY BE JOINED TO PRE-BED PIPE PROVIDED A CONCRETE COLLAR IS PLACED AT THE CONTRACTOR'S EXPENSE AND A DEFORMATION TO THE PIPE'S FLOWLINE IS NOT EVIDENT ON FINAL PLACEMENT.

4. THE BACKFILL SHALL BE EITHER CLASS "B", CLASS "C", OR CLASS "C" MODIFIED. A MINIMUM COMPACTION LEVEL OF 95% STANDARD PROCTOR DENSITY PER AASHTO T99 SHALL BE ACHIEVED BY USE OF VIBRATORY PLATE. HYDROHAMMER TYPE COMPACTORS SHALL NOT BE USED OVER THE PIPE. ALL COMPACTION EQUIPMENT USED SHALL BE APPROVED BY THE ENGINEER.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

ROADWAY DESIGN DIVISION

STANDARD PLAN

PIPE CULVERT
INSTALLATION

MDOT

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

WORKING NUMBER
PI-1

SHEET NUMBER
6501

DATE

ISSUE DATE: AUGUST 01, 2017

DRAWING No.: 1273-S014

G:\PROJECTS\Hatchberg_Cip of 1273-S014 - ConsSWIP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_Disc.dwg, 6/02, 10/1/2019 10:45:19 AM

STATE	PROJECT NO.
MISS.	

STANDARD INSTALLATION DETAIL

TABLE 1: BEDDING AND BACKFILL REQUIREMENTS

BEDDING AND BACKFILL REQUIREMENTS FOR NON-RIGID PIPE IN CROSS DRAIN AND STORM DRAIN APPLICATIONS	
A.	BEDDING SHALL BE CLASS B IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
B.	BACKFILL MATERIAL SHALL BE ONE OF THE FOLLOWING:
1.	FLOWABLE FILL IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION.
2.	CRUSHED STONE AGGREGATE BACKFILL IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
IF FLOWABLE FILL IS UTILIZED, CARE SHALL BE TAKEN TO PREVENT "FLOATING" OF THE PIPE. THE COST OF FURNISHING AND PLACING THE REQUIRED BEDDING AND BACKFILL MATERIAL INDICATED IN A AND B SHALL BE INCLUDED IN THE UNIT COST OF THE NON-RIGID PIPE ALTERNATE, I.E., THERE IS NO SEPARATE PAY ITEM FOR NON-RIGID PIPE BEDDING AND BACKFILL MATERIAL.	
BEDDING AND BACKFILL REQUIREMENTS FOR NON-RIGID PIPE IN SIDE DRAIN APPLICATIONS	
A.	BEDDING SHALL BE CLASS C IN ACCORDANCE WITH THE MISSISSIPPI SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
B.	BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE MISSISSIPPI SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. PIPES THAT SERVE AS A SIDE DRAIN ON DEPARTMENT RIGHT OF WAY, BUT CARRY DRAINAGE UNDER A COUNTY OR LOCAL ROAD SHALL ADHERE TO THE BEDDING AND BACKFILL REQUIREMENTS FOR A CROSS DRAIN CONTAINED ABOVE.
THE COST OF FURNISHING AND PLACING THE REQUIRED BEDDING AND BACKFILL MATERIAL INDICATED IN A AND B SHALL BE INCLUDED IN THE UNIT COST OF THE NON-RIGID ALTERNATE PIPE, I.E., THERE IS NO SEPARATE PAY ITEM FOR NON-RIGID BEDDING AND BACKFILL MATERIAL.	

TABLE 2:
HIGH DENSITY CORRUGATED POLYETHYLENE PIPE
HEIGHT OF COVER

NOMINAL DIAMETER IN.	MINIMUM COVER IN.	MAXIMUM COVER - FT.	
		CROSS DRAIN	SIDE DRAIN
12	12	38	11
15	12	36	12
18	12	35	11
24	12	30	10
30	12	25	9
36	21	29	10
42	21	27	9
48	21	25	8

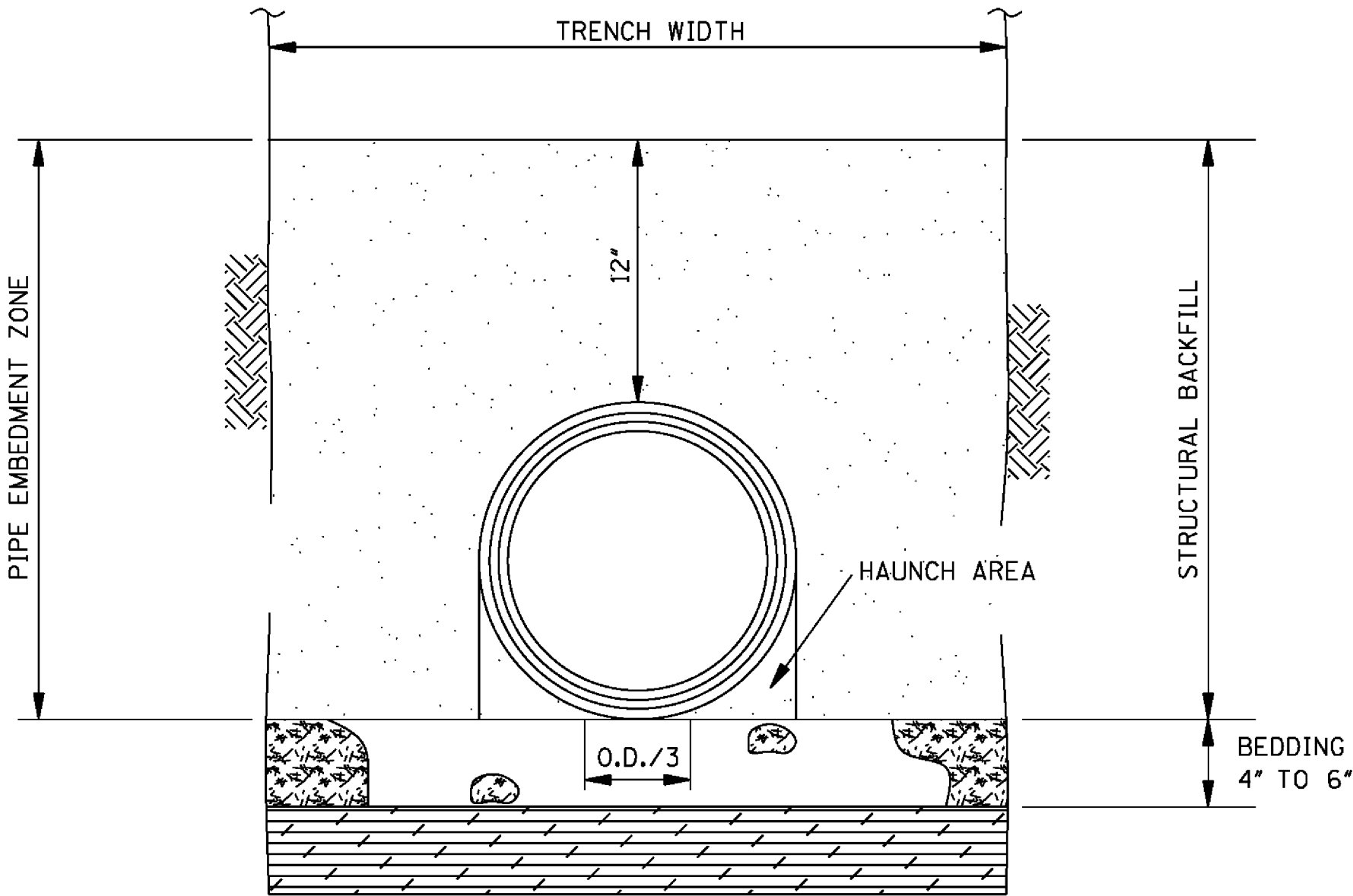
TABLE 3: RECOMMENDED TRENCH WIDTH

DIAMETER IN.	O.D. IN.	TRENCH WIDTH IN.
12	14.45	34
15	17.57	38
18	21.20	44
24	27.80	54
30	35.10	65
36	41.70	75
42	47.70	84
48	53.60	92

THE TRENCH WIDTH MUST BE WIDE ENOUGH TO
ACCOMODATE COMPATION EQUIPMENT

TABLE 4: MULTIPLE INSTALLATION OF
POLYETHYLENE PIPES

DIAMETER OF PIPE IN.	CLEAR DISTANCE BETWEEN PIPES FT.-IN.
18	1'-2"
24	1'-5"
30	1'-8"
36	1'-11"
42	2'-2"
48	2'-5"



TRENCH CROSS SECTION SHOWING TERMINOLOGY

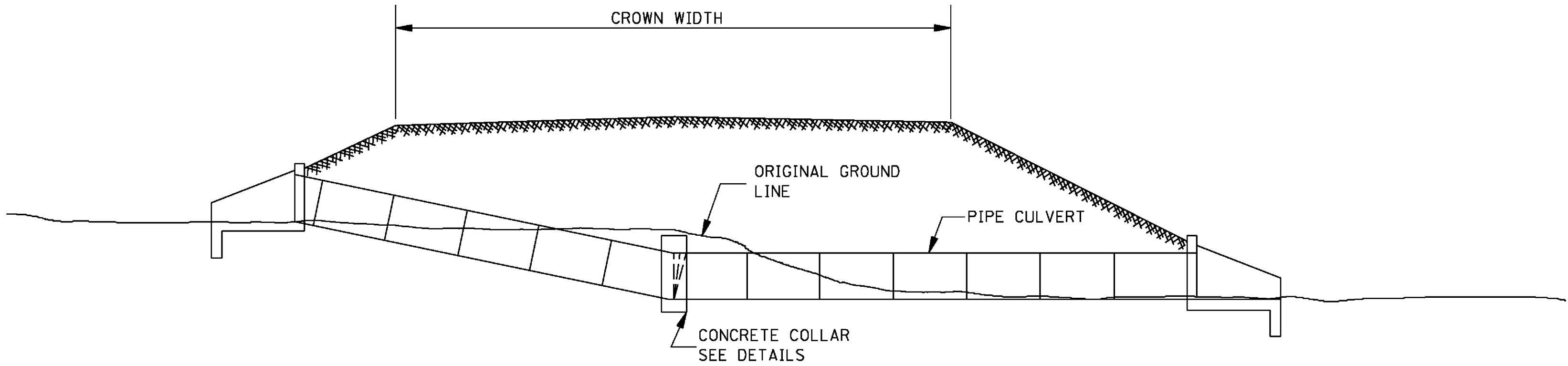
GENERAL NOTES:

- MATERIALS
THERMOPLASTIC PIPE
POLYETHYLENE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 294, LATEST EDITION.
DESIGNATION OF TYPE: TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS SECTION WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.
BEDDING MATERIAL AND STRUCTURAL BACKFILL
BEDDING MATERIAL AND STRUCTURAL BACKFILL SHALL MEET THE REQUIREMENTS OF TABLE 1.
- JOINTS
JOINTS FOR THERMOPLASTIC PIPE SHALL MEET THE PERFORMANCE REQUIREMENTS OF SOILTIGHTNESS UNLESS WATERTIGHTNESS IS SPECIFIED.
SUITABLE JOINTS CAN BE OBTAINED WITH THE FOLLOWING TYPES OF CONNECTIONS:
A) CORRUGATED BANDS (WITH OR WITHOUT GASKETS)
B) BELL AND SPIGOT PIPE ENDS (WITH OF WITHOUT GASKETS)
C) DOUBLE BELL COUPLINGS (WITH OR WITHOUT GASKETS)
- INSTALLATION
MINIMUM TRENCH WIDTHS SHALL MEET THE REQUIREMENTS OF TABLE 3.
THE MIDDLE THIRD OF THE BEDDING MATERIAL UNDER THE PIPE SHOULD BE LOOSELY PLACED, WHILE THE REMAINDER SHALL BE COMPACTED TO A MINIMUM 90% OF MAXIMUM DENSITY PER AASHTO T 99.
A MINIMUM OF 4 INCHES OF BEDDING SHALL BE PROVIDED PRIOR TO PLACEMENT OF THE PIPE.
STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING AN 8" LOOSE LIFT THICKNESS AND BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE WITH AN ELEVATION NOT LESS THAN 12 INCHES ABOVE THE TOP OF THE PIPE. A MINIMUM COMPACTION LEVEL OF 90% STANDARD DENSITY PER AASHTO T 99 SHALL BE ACHIEVED.
MINIMUM COVER REQUIREMENTS SHALL MEET THE REQUIREMENTS OF TABLE 2.
FOR MULTIPLE INSTALLATIONS OF POLYETHYLENE PIPES, A CLEAR DISTANCE BETWEEN THE PIPES SHALL MEET THE REQUIREMENTS OF TABLE 4.
- CALCULATIONS FOR FILL DEPTHS ARE BASED ON PROPERTIES DEFINED IN
AASHTO M294 AND CALCULATIONS IN AASHTO SEC. 19.

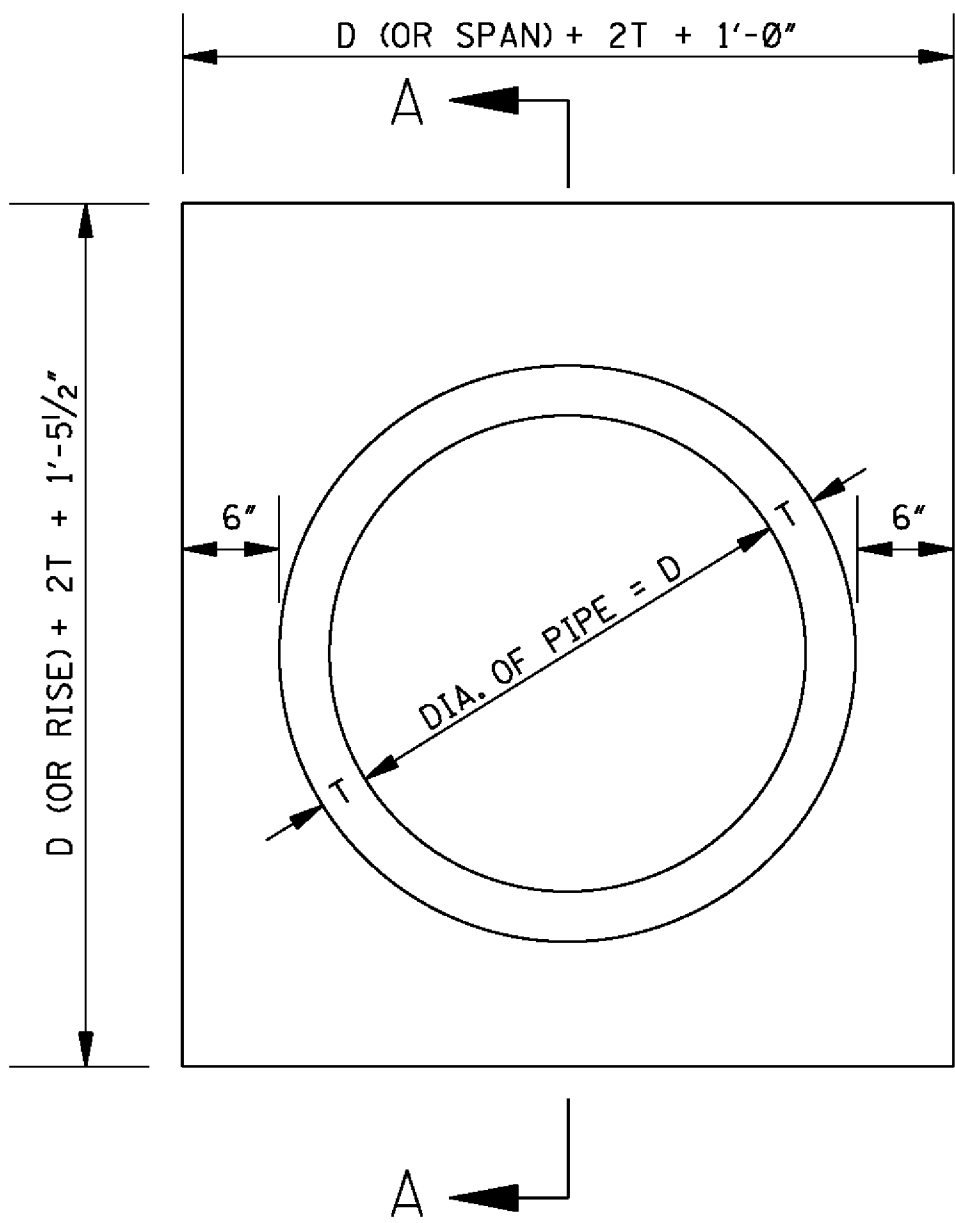
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
				REVISION	FLEXIBLE PIPE CULVERT INSTALLATION	
				DATE	ISSUE DATE: AUGUST 01, 2017	 WORKING NUMBER PI-2 SHEET NUMBER 6502

G:\PROJECTS\Hatching_Clip of 1273-S014 - ConsSWIP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_Disc.dwg, 6/30, 10/1/2019 10:45:20 AM

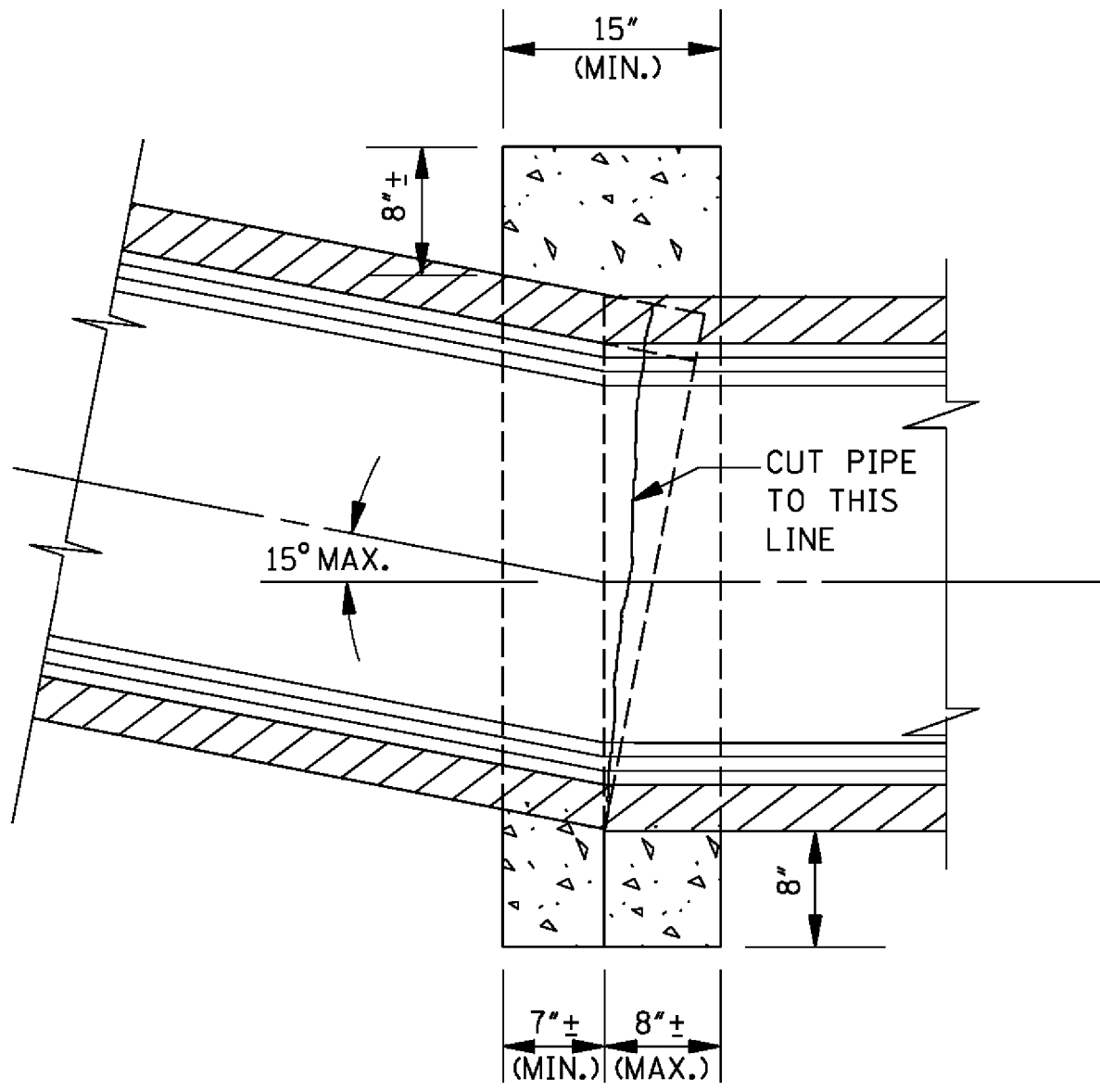
STATE	PROJECT NO.
MISS.	



TYPICAL INSTALLATION FOR PIPE CULVERT WITH BROKEN FLOW LINE



ELEVATION OF CONCRETE COLLAR
NOTE: CIRCULAR PIPE IS SHOWN, ARCH PIPE IS SIMILAR.



SECTION A-A

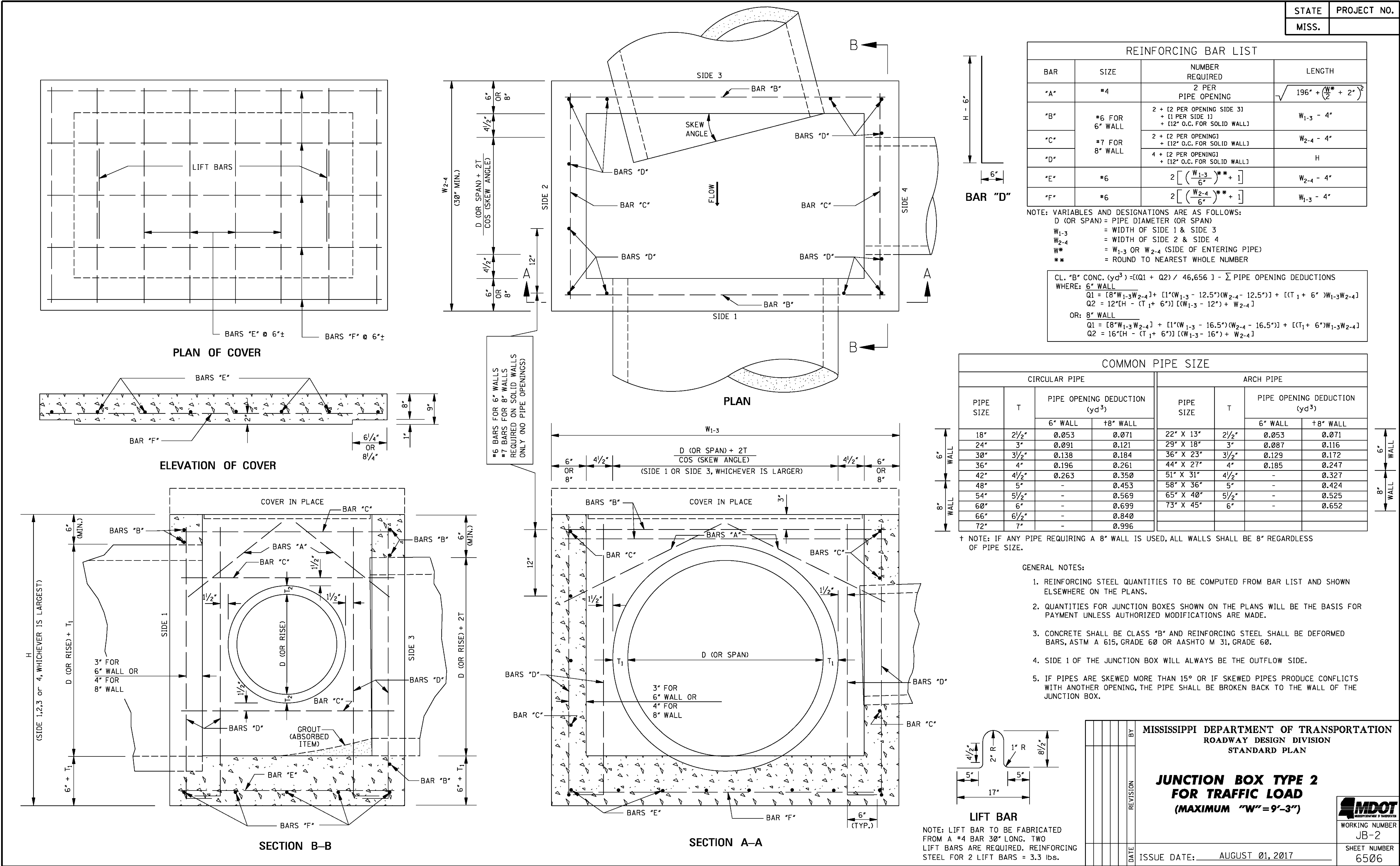
GENERAL NOTES:

1. THE MAXIMUM BEND ANGLE IS 15 DEGREES.
2. THE FOLLOWING QUANTITIES SHALL BE THE BASIS FOR PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE:

QUANTITIES FOR CONCRETE COLLAR FOR PIPE CULVERTS			
CIRCULAR PIPE		ARCH PIPE	
DIA. OF PIPE	CLASS "B" CONCRETE (yd ³)	SIZE OF PIPE	CLASS "B" CONCRETE (yd ³)
12"	0.240		
15"	0.260	18 x 11	0.280
18"	0.320	22 x 13	0.310
24"	0.410	29 x 18	0.410
30"	0.510	36 x 23	0.490
36"	0.620	44 x 27	0.600
42"	0.730	51 x 31	0.690
48"	0.850	58 x 36	0.820
54"	0.980	65 x 40	0.920
60"	1.110	73 x 45	1.070
66"	1.248	88 x 54	1.366
72"	1.393		

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
				REVISION	CONCRETE PIPE COLLAR	
				DATE	ISSUE DATE: AUGUST 01, 2017	
					WORKING NUMBER PC-1	
					SHEET NUMBER 6503	

G:\PROJECTS\Hattiesburg_City of 1273-S014 - ConsSWIP Sever Phase 1A Bushman & 2nd 1273S014 CAD Files\1273S014_2nd_Sumit_Disc.dwg, 6/06, 10/1/2019 10:45:21 AM





Engineering Progress

April 21, 2023

City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403

Attn: Hunter White

Re: COMSWIP Sewer Improvements – Phase IX
East 2nd Street Area
City of Hattiesburg

Dear Hunter:

Enclosed please find a copy of Street Ready Plans and Specifications for the above referenced project for your review to be placed on the agenda for Council approval to advertise.

Should you have any questions or comments, please do not hesitate to call.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Shea E. McNease', is written over the word 'Sincerely,'.

Shea E. McNease, P.E.
Project Engineer

/sm

Enclosure



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Plans and Specifications for the MLK Avenue Area Infrastructure Improvements Project and authorize advertisement for bids for same.
File Number: 2023-296
Minute Book #

Summary

Approve Plans and Specifications for the MLK Avenue Area Infrastructure Improvements Project and authorize advertisement for bids for same.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.

SPECIFICATIONS AND CONTRACT DOCUMENTS

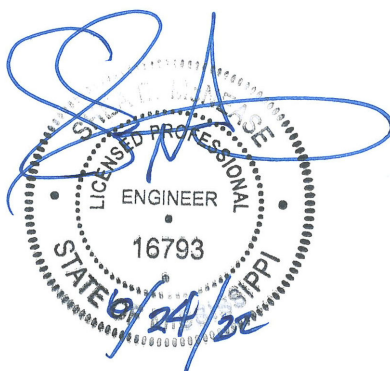
FOR

**MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS**

FOR THE

CITY OF HATTIESBURG

JUNE, 2022

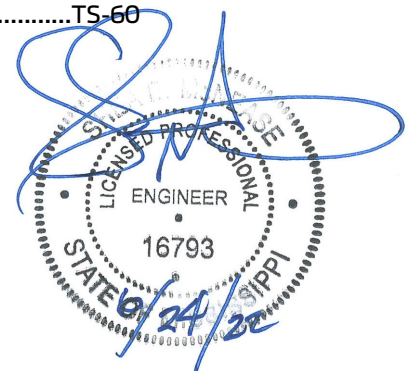


PREPARED BY:

**SHOWS, DEARMAN & WAITS, INC.
CONSULTING ENGINEERS**

Table of Contents

Advertisement For Bids.....	3
Information For Bidders.....	4
Proposal Form.....	7
Proposal.....	8
Bid Bond.....	13
Contract Agreement.....	15
Payment And Performance Bond.....	19
General Conditions.....	21
Definitions.....	21
Preliminary Matters.....	24
Correlation, Interpretation And Intent of Contract Documents.....	27
Availability Of Lands; Subsurface Conditions; Reference Points.....	28
Bonds And Insurance.....	30
Contractor's Responsibilities.....	31
Work By Others.....	41
Owner's Responsibilities.....	42
Engineer's Status During Construction.....	43
Changes In Work.....	46
Change Of Contract Price.....	47
Change Of Contract Time.....	52
Guaranty.....	52
Payments And Completion.....	53
Suspension Of Work And Termination.....	57
Dispute Settlement.....	59
Miscellaneous.....	59
Supplemental General Conditions.....	62
Article 1 - Special Conditions.....	62
Scope And Intent.....	62
Examination Of Premises.....	62
Permits, Taxes, And Ordinances.....	62
Insurances, Etc.....	62
Cleaning Up.....	65
Special Instructions.....	65
Limitations.....	65
Product/Materials Substitution.....	65
Inspection.....	65
Specifications And Drawings Are Reciprocal.....	65
As-Built Drawings.....	66
Guarantees, Warranties And Bonds.....	66
Close-Out Documents.....	67
Measurement And Payment.....	68
Technical Specifications.....	TS-1
Sanitary Sewer Systems.....	TS-1
Standard Specification for Lining Ductile Iron Pipe.....	TS-18
Manholes.....	TS-20
Restoration of Roads, Driveways, Fences, Lawns and other Grassed Areas.....	TS-27
Seeding and Sodding.....	TS-33
Concrete.....	TS-39
Ductile Iron Water Systems.....	TS-42
Fire Hydrant.....	TS-57
Sewer – Tracer Wire Specification.....	TS-60



ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the **City of Hattiesburg, MISSISSIPPI**, will receive sealed bids until **10:00 AM** on **June 15, 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

INFORMATION FOR BIDDERS

BIDS will be received by City of Hattiesburg, MS herein called the "OWNER", at City Hall until 10:00 AM on June 15, 2023, and then at said office publicly opened and read aloud.

Each BID must be submitted in sealed envelope, addressed to the City Clerk of said City. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **MLK Avenue Area Infrastructure Improvements, Hattiesburg, Mississippi** and the envelope should bear on the outside the BIDDER'S name, address, and license number if applicable. If forwarded by mail, the sealed BID shall be included in a delivery package addressed to the Owner at 200 Forrest Street, Hattiesburg, MS 39401.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID BOND payable to the OWNER for five percent (5%) of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsive, responsible

BIDDERS upon request of the BIDDER. When the Agreement is executed the BONDS of the two remaining unsuccessful BIDDERS will be returned upon request of the BIDDER. The BID BOND of the successful BIDDER will be retained until the PAYMENT BOND and PERFORMANCE BOND have been executed and approved, after which it will be returned upon request of the BIDDER. A certified check may be used in lieu of a BID BOND.

A PERFORMANCE BOND and a PAYMENT BOND, each in the amount of 100 percent (100%) of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dates copy of their Power of Attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the PERFORMANCE BOND and PAYMENT BOND within ten (10) calendar days from the date when NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within thirty (30) days of receipt of acceptable PERFORMANCE BOND, PAYMENT BOND and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within thirty (30) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period; the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the thirty (30) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

The contract time stipulated, will be strictly enforced, if the CONTRACTOR fails to complete the work within the time stipulated, a deduction will be made of \$750 a day

from the money due the CONTRACTOR not as a penalty but as liquidated damages. The CONTRACTOR and the CONTRACTOR'S sureties shall be liable for all liquidated damages in excess of money due the CONTRACTOR.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest and best responsive and responsible BIDDER.

All applicable Laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

FURTHER, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause.

The BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

The ENGINEER is SHOWS, DEARMAN & WAITS, INC. The address of the ENGINEER is 301 2nd Avenue, HATTIESBURG, MISSISSIPPI.

PROPOSAL FORM

I (we) agree to begin work within (10) calendar days after the issuance of Notice to Proceed, and to complete the work within 350 calendar days thereafter.

It is understood that the quantities of work listed for unit prices bid are approximate, and are intended to merely indicate the general scope of the various items entering into the complete work and for comparison of bids. It is further understood and agreed that the Owner may increase or decrease the quantities listed in the Proposal and that no change in the unit prices proposed shall be occasioned thereby.

The undersigned further agrees that the unit and lump sum prices quoted include all items of work required or necessary for the accomplishment of the projected work and that these items include all work indicated on the Plans and Specifications for which no specific pay items have been established.

The undersigned certifies that the bid prices contained herein have been carefully checked and are submitted as correct and final.

If within sixty (60) days the scheduled closing time for receipt of bids, this Proposal is accepted, the undersigned will execute a formal contract within ten (10) days after official notification thereof, will deliver a surety bond for the faithful performance of this contract, and will complete the work within the time specified from the date of execution of the contract.

Respectfully Submitted,

Authorized by:

ADDRESS

PROPOSAL

MLK AVENUE AREA INFRASTRUCTURE IMPROVEMENTS

Item	Description	Unit	Quantity	Unit Price	Extension
Sewer Pipe Items					
1	6" Ductile Iron Sewer Pipe (0'- 6')(Open Cut)	LF	60		
2	6" Ductile Iron Sewer Pipe (6'- 8')(Open Cut)	LF	95		
3	6" Ductile Iron Sewer Pipe (6'- 8')(Dry Jacked)	LF	90		
4	8" SDR 26 PVC Sewer Pipe (0'- 6') (Open Cut)	LF	1,205		
5	8" SDR 26 PVC Sewer Pipe (6'- 8') (Open Cut)	LF	1,920		
6	8" SDR 26 PVC Sewer Pipe (8'- 10') (Open Cut)	LF	1,125		
7	8" SDR 26 PVC Sewer Pipe (10'- 12') (Open Cut)	LF	960		
8	8" SDR 26 PVC Sewer Pipe (12'- 14') (Open Cut)	LF	835		
9	8" SDR 26 PVC Sewer Pipe (14'- 16') (Open Cut)	LF	196		
10	8" SDR 26 PVC Sewer Pipe (6'- 8') (Dry Jacked)	LF	60		
11	10" SDR 26 PVC Sewer Pipe (0'- 6') (Open Cut)	LF	504		
12	10" SDR 26 PVC Sewer Pipe (6'- 8') (Open Cut)	LF	180		
13	10" SDR 26 PVC Sewer Pipe (8'- 10') (Open Cut)	LF	955		
14	10" SDR 26 PVC Sewer Pipe (10'- 12') (Open Cut)	LF	565		
15	10" SDR 26 PVC Sewer Pipe (12'- 14') (Open Cut)	LF	316		
16	10" SDR 26 PVC Sewer Pipe (14'- 16') (Open Cut)	LF	176		
17	10" Ductile Iron Sewer Pipe (0'- 6') (Open Cut)	LF	100		
18	Removal of Existing Sewer Line	LF	6,524		
19	Abandonment of Existing Sewer Line (All Sizes)	LF	2,095		
20	Tracer Wire System for Sewer	LS	1		

	Sewer Manhole Items				
21	48" Precast Concrete Sewer Manhole (0' - 6')	EA	6		
22	48" Precast Concrete Sewer Manhole (6' - 8')	EA	8		
23	48" Precast Concrete Sewer Manhole (8' - 10')	EA	7		
24	48" Precast Concrete Sewer Manhole (10' - 12')	EA	6		
25	48" Precast Concrete Sewer Manhole (12' - 14')	EA	2		
26	48" Precast Concrete Sewer Manhole (14' - 16')	EA	2		
27	60" Precast Concrete Sewer Manhole (6' - 8') (Splitter Manhole)	EA	2		
28	Demolition and Removal of Existing Manholes (All Types)	EA	25		
29	Abandonment of Existing Manhole	EA	2		
30	Drop Manhole Assembly (All Depths)	EA	1		
	Sewer Service Items				
31	4" Sanitary Sewer Service Cleanout	EA	110		
32	4" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings) (All Depths)	LF	1,060		
33	6" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings) (All Depths)	LF	2,410		
34	8"x8"x6" PVC Service Tee	EA	77		
35	10"x10"x6" PVC Service Tee	EA	31		
36	Existing Sewer Service Investigation	EA	20		
	Water Pipe Items				
37	2" & Under 150 PSI PVC Water Pipe for Connections (Open Cut)	LF	20		

38	6" Class 350 Ductile Iron Water Pipe (Open Cut)	LF	2,360		
39	Tracer Wire System for Water	LS	1		
	Water Connection Items				
40	Cut and Cap Existing Lines	Each	12		
41	Connection: Prop 6" to Exist 6" (Coupling & other fittings)	Each	2		
42	Connection: Prop 6" to Exist 6" (Hot Tap w/ Valve & other fittings)	Each	4		
	Water Valve Items				
43	6" Gate Valve	Each	1		
	Water Fire Protection Items				
44	3 Way Fire Hydrant w/ Appurtenances (Incl. Tee, Valve, Hydrant, Brass Tag, Pipe, & other fittings)	Each	1		
	Water Service Items				
45	Residential Service Tap (All Sizes) (Incl: Open Cut Service Tubing, Tapping Saddle, Corp Stop, etc)	Each	88		
46	Commercial Service Tap (All Sizes) (Incl: Open Cut Service Tubing, Tapping Saddle, Corp Stop, etc)	Each	4		
47	Residential Service Tubing (Open Cut) (All Sizes)	LF	1,800		
48	Residential Service Tubing (Bored) (All Sizes)	LF	790		
49	Commercial Service Tubing (Open Cut) (All Sizes)	LF	20		
50	Commercial Service Tubing (Bored) (All Sizes)	LF	160		
51	Remove and Reset Water Meter	Each	13		

	Miscellaneous Construction Items				
52	Crushed Aggregate (Size 610)	Ton	4,770		
53	Select Fill Material (Class 9, Group C), LVM	CY	12,550		
54	Concrete Pavement for Driveway and Parking Lot Repair (All Depths)	SY	175		
55	Concrete Pavement for Street Repair (All Depths)	SY	2		
56	9.5mm Hot Mix Asphalt	Ton	1,975		
57	19mm Hot Mix Asphalt	Ton	1,405		
58	Cold Milling of Bituminous Pavement (All Depths) (for Tie-Ins)	SY	1,300		
59	Concrete Sidewalk Repair (All Depths)	SY	125		
60	Concrete Curb & Gutter (Match Existing Type)	LF	570		
61	Loose RipRap, Size 200	Ton	15		
62	Geotextile Fabric for RipRap	SY	15		
63	Class "B" Concrete, Minor Structures	CY	16		
64	Reinforcing Steel	LBS	250		
65	Castings & Gratings	LBS	400		
66	10" & Under Corrugated HDPE Pipe (Dual Wall) (Including Bedding Material)	LF	16		
67	12" Corrugated HDPE Pipe (Dual Wall) (Including Bedding Material)	LF	16		
68	15" Corrugated HDPE Pipe (Dual Wall) (Including Bedding Material)	LF	16		
69	12" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	80		
70	15" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	112		
71	18" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	32		

72	24" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	48		
73	36" Reinforced Concrete Pipe (Class III) (Rubber Gaskets)	LF	16		
74	22"x13" Reinforced Concrete Arch Pipe (Class III) (Plastic Gaskets)	LF	16		
75	Removal of Existing Pipe Cross Drains (All Sizes and Depths)	LF	272		
76	Remove and Replace Existing Chain Link Fence	LF	530		
77	Remove and Replace Existing Wood Fence	LF	10		
78	6" Paint Traffic Stripe, Detail Yellow	LF	50		
79	6" Thermoplastic Traffic Stripe, Continuous Yellow	LF	3,810		
80	6" Thermoplastic Traffic Stripe, Detail Yellow	LF	935		
81	Paint Legend Traffic Stripe, White (6" Equivalent)	LF	60		
82	Thermoplastic Legend Traffic Stripe, White (6" Equivalent)	LF	1,720		
83	Solid Sod (Incl. Sod, Top Soil, Fertilizer, Watering, etc.)	SY	2,435		
84	Grassing (Incl. Seed, Top Soil, Fertilizer, Watering, etc.)	SY	465		
85	Landscape Restoration (Inc. Top Soil, Plants, Mulch, Watering, etc.)	SF	275		
86	Clearing and Grubbing	Acre	1		
87	Temporary Erosion Control	LS	1		
88	Maintenance of Traffic	LS	1		
89	Mobilization	LS	1		
			BID TOTAL:		

Base Bid Respectfully Submitted, Name of Firm or Bidder: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that we, the under signed, _____ Principal, and _____ as Surety, are hereby held and firmly bound unto the City of Hattiesburg as Owner in the penal sum of 5% (Five Percent) for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20_____.

The Condition of the above obligation is such that whereas the Principal has submitted to a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the following project:

**MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year set forth above.

PRINCIPAL

SURETY

BY: _____

IMPORTANT: Surety companies executing BONDS must appear on the Treasure Department's most current line (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this ____ day of _____, 20____ by and between _____ hereinafter called the CONTRACTOR, the City of Hattiesburg hereinafter called the OWNER, Witnesseth that the CONTRACTOR and the OWNER, for the consideration hereafter named and agrees as follows.

ARTICLE 1: SCOPE OF WORK

The CONTRACTOR agrees to furnish all tools, labor, equipment, materials, and supplies required to be furnished, and perform all work required under and in accordance with the plans entitled:

MLK AVENUE AREA INFRASTRUCTURE IMPROVEMENTS HATTIESBURG, MISSISSIPPI

which are on file at the office of the OWNER, and the Specifications, Proposals, General and Special Conditions, attached hereto and made a part hereof as fully as though copied herein, under the direct supervision and to the entire satisfaction of the OWNER and in accordance with the Laws of the State of Mississippi.

ARTICLE 2: THE CONTRACT SUM

It is further agreed and understood by and between the parties hereunto that the OWNER agrees to pay and the CONTRACTOR agrees to accept full and final compensation for all work done under this agreement, the lump sum amount adjusted for variation of quantities at the unit prices named in the Proposal, which is hereto attached, such payment to be made in lawful money of the United States, at the time and in the manner hereinafter set forth.

ARTICLE 3: TIME OF COMPLETION

The CONTRACTOR agrees, for the consideration above expressed, to begin and complete the work within the time specified in the Proposal. If the CONTRACTOR fails to complete the work in the time specified, he shall pay the OWNER as **liquidated damages**, ascertained and agreed, and not in the nature of a penalty, the sum of \$ _____ for each day delayed, which shall be deducted from the final amount to be paid under the contract; provided that the extension of time with the waiver of liquidation damages may be granted as provided for in the Specifications.

ARTICLE 4: PROGRESS PAYMENTS

The OWNER agrees to make progress payments during the construction as provided herein as follows:

The CONTRACTOR will on or before the tenth (10th) day of each month make an estimate of the value of the work done, based on contract prices, and submit to the ENGINEER, along with an affidavit by the CONTRACTOR that progress payments theretofore received from OWNER have discharged in full all the CONTRACTOR's obligations stated in prior progress payments. ENGINEER will recommend partial payment to the OWNER within a reasonable time of receipt of CONTRACTOR's estimate based on the ENGINEER's estimated quantities.

The OWNER agrees to pay the CONTRACTOR one hundred percent (100%) of the value of the work done each month, less retainage in accordance with MS Code of 1972 Section 31-5-33 until final acceptance of the work has been made. If defective and/or materials are discovered or reasonable doubt arises to the integrity of any part of the work for which partial payment has been allowed, a deduction from subsequent estimates in the amount equal to the work in question will be made until the defects have been remedied or the cause for doubt removed.

ARTICLE 5: ACCEPTANCE AND FINAL PAYMENT

Upon receipt of written notice that the work is ready for final acceptance and inspection, the ENGINEER shall promptly make such inspection, and when he finds the work acceptable under the contract, and the contract fully performed, he shall promptly issue a final certificate, over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof. Then, the entire balance shall be due the CONTRACTOR within forty-five (45) days the date of said final acceptance and receipt of the closeout documents required per the Supplement to General Conditions and recommendation of the same to the OWNER.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the ENGINEER that all payrolls, materials, bills, and other indebtedness connected with the work have been paid.

The making and acceptance of the final payment shall constitute a waiver of all claims by the OWNER, other than those arising from unsettled liens, from faulty work or materials appearing within one (1) year after payment, or claims previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER, so certifies, the OWNER shall, upon certificate of the ENGINEER and without terminating the Contract, make payment of the balance due for that portion of the work fully completed and

accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

ARTICLE 6: THE PERFORMANCE BOND

The CONTRACTOR agrees to furnish a bond, with an approved surety thereon guaranteeing the performance of this contract, in no less than one hundred percent (100%) of the amount of the Contract. Said Bond shall be conditioned on full and complete performance of the Contract, and for the payment of all labor and materials for a period of one (1) year after completion. The Surety on said Bond shall be a surety company of financial resources satisfactory to the OWNER and authorized to do business in the State of Mississippi.

ARTICLE 7 INSURANCE

The CONTRACTOR agrees to also carry public liability insurance, property damage insurance, and workman's compensation insurance in amounts as required by the specifications.

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of the project specified herein.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR will commence the work required by the "Contract Documents" and complete the project on or before the completion date unless the period for completion is extended otherwise by the "Contract Documents."
4. The CONTRACTOR agrees to perform all of the work described in the "Contract Documents" and comply with the terms therein for the sum as shown in the bid schedule.
5. The term "Contract Documents" means and includes the following:

Advertisement for Bids	Notice of Award
Instructions to Bidders	Notice to Proceed
Bid	Change Order
Bid Bond	General Conditions
Contract Agreement	Supplemental General Conditions
Payment Bond	Technical Specifications

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the "General Conditions" such amounts as required by the "Contract Documents."
7. This "Contract Agreement" shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

OWNERS:

SEAL

City of Hattiesburg

Authorized by:

ATTEST _____

(Printed Name & Title)

CONTRACTOR:

SEAL

ATTEST _____

IMPORTANT NOTE: Surety companies executing bonds must appear on the US Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the state where the project is located.

PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: THAT WE, the Undersigned _____ (hereinafter called the Principal), a corporation, partnership or individual duly unauthorized by law to do business as a construction contractor in the State of Mississippi, and _____ of _____ (herein called the Surety), a corporation duly authorized to do surety business under the laws of the State of Mississippi, are held and firmly bound unto the City of Hattiesburg, MS (hereinafter called the Obligee), a Municipality existing under the laws of the State of Mississippi, in the penal sum of _____ Dollars (_____) lawful money of the United States, for the payment of which well and truly to be made, the said Principal and the said Surety do hereby bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, by these presents, as follows:

The Condition of this obligation is such that; whereas Principal by an instrument in writing attached hereto and bearing date of _____ has agreed with said Obligee to do all work necessary and to furnish labor, materials, tools, supplies and services to construct **MLK AVENUE AREA INFRASTRUCTURE IMPROVEMENTS, HATTIESBURG, MISSISSIPPI** as shown on Plans and specified thereby in the Specifications, Proposal and other Contract Documents hereto attached.

NOW THEREFORE, if said Principal shall well and truly in good, sufficient and workmanlike manner, and to the satisfaction of Obligee perform and complete the work required, and shall defend, indemnify and save harmless said Obligee against all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising out of injury or damage to persons or property by reason or arising from any act, omission or neglect of said Principal, his agent, servants or employees with relation to said work; and shall pay all cost, charges, rentals and expenses for labor, material, supplies and equipment and deliver the said improvement to Obligee completed and ready for occupancy or operation, and free from all liens, encumbrances or claims for labor, material or otherwise; and shall pay all other expenses lawfully chargeable to Obligee by reason of any default or neglect of the said Principal in the relation of said agreement and said work, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety for value received hereby stipulates and agrees that no charge, extension of time, alteration or addition to the terms of the Contract, or the work to be performed thereunder, or the Specifications accompanying the same, shall in any way affect its obligation on this bond and does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

PROVIDED FURTHER, that if Principal, or his, or its subcontractor or

subcontractors fail to duly pay for any labor, materials, team hire, sustenance provisions or any other supplies or materials used or consumed by such Principal or his, their or its subcontractors in performance of the work contracted to be done, the Surety will pay the same in any amount not exceeding the sum specified in the bond, together with interest as provided by law.

IN WITNESS THEREOF: Said Principal and Surety have hereunto set their hands and seals at _____ this _____ day of _____, 20__.

(SEAL)

WITNESSES:

PRINCIPAL

ADDRESS

Name of person executing for Principal

TITLE

SURETY

ADDRESS

WITNESSES:

Name of person executing for Surety

TITLE

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meaning indicated which shall be applicable to both the singular and plural thereof.

ACCEPTANCE: By the OWNER of the Work as being fully complete in accordance with the Contract Documents.

AGREEMENT: The written agreement between the OWNER and the CONTRACTOR covering the Work to be performed: The Contract Documents are attached to and made a part of the Agreement. Also designated as the Contract.

ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by addition, deletions, clarifications or corrections.

APPLICATION FOR PAYMENT: The form furnished by the ENGINEER which is to be used by the CONTRACTOR in requesting progress payments and an affidavit of the CONTRACTOR that progress payments theretofore received from the OWNER on account of the WORK have been applied by the CONTRACTOR to discharge in full all of the CONTRACTOR'S obligations stated in prior Applications for Payment.

APPROVAL: Accept as satisfactory.

BID: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BIDDER: Any person, firm or corporation submitting a Bid for the Work.

BONDS: Bid, performance and payment bonds and other instruments of security furnished by the CONTRACTOR and his surety in accordance with the Contract Documents and in accordance with the law of the place of the project.

CHANGE ORDER: A written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

CONTRACT DOCUMENTS: The Agreement, Addenda, Instruction's to Bidders, CONTRACTOR'S BID, the Bonds, the Notice of Award, these General Conditions,

the Supplementary conditions, Special Conditions, Technical Conditions, the Specifications, Drawings and Modifications, and Notice to Proceed.

CONTRACT PRICE: The total moneys payable to the CONTRACTOR under the Contract Documents.

CONTRACT TIME: The number of calendar days stated in the Agreement for the completion of the Work.

CONTRACTING OFFICER: The OWNER (Grantee) - The individual who is authorized to sign the contract documents on behalf of the OWNER'S governing body.

CONTRACTOR: The person, firm or corporation with whom the OWNER has executed the Agreement.

DAY: A calendar day of twenty-four hours measured from midnight to the next midnight.

DRAWINGS: The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the ENGINEER and are referred to in the Contract Documents.

ENGINEER: The person, firm or corporation named as such in the Contract Documents.

FIELD ORDER: A written order issued by the ENGINEER which clarifies or interprets the Contract Documents in accordance with Paragraph 9.3 or orders minor changes in the Work in accordance with paragraph 10.2.

HE, HIS, AND HIM: These are several pronouns that shall represent both male and female genders.

MODIFICATION: (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order (c) a written clarification or interpretation issued by the ENGINEER in accordance with paragraph 9.3 or (d) a written order for a minor change or alteration in the Work issued by the ENGINEER pursuant to paragraph 10.2. A modification may only be issued after execution of the Agreement.

NOTICE OF AWARD: The written notice by OWNER to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, OWNER will execute and deliver the Agreement to him.

NOTICE TO PROCEED: A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligations under the Contract Documents.

OWNER: A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

PROJECT: The entire construction to be performed as provided in the Contract Documents.

CONSTRUCTION OBSERVER, RESIDENT INSPECTOR, CONSTRUCTION INSPECTOR, PROJECT REPRESENTATIVE: An authorized representative of the ENGINEER assigned to observe the Work performed and materials furnished by the CONTRACTOR or such other person as may be appointed by the OWNER as his representative. The CONTRACTOR shall be notified in writing of the identity of this representative.

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work and as required by the Contract Documents.

SAMPLES: Physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

SPECIFICATIONS: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work.

SUBCONTRACTOR: An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

SUBSTANTIAL COMPLETION: Substantial completion may be granted for all or portions of the work prior to final completion and stopping of contract time. Substantial completion is defined as the date when the construction is sufficiently completed in accordance with the contract documents so that the project or specified part of the project can be utilized for the purpose for which it was intended. The contract provides that the retainer may be reduced for that portion of the work which substantial completion is granted, but the granting of substantial completion will not stop contract time or liquidated damages.

SUPPLEMENTARY GENERAL CONDITIONS: Federal and State conditions in effect at time of submission of Bid in addition to those Supplementary General

Conditions attached here to.

SUPPLIER: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

SPECIAL CONDITIONS: When included as a part of the Contract Documents, Special Conditions refer only to the Work under this Contract.

SURETY: The corporate body which is bound with the CONTRACTOR and which engages to be responsible for the CONTRACTOR and his acceptable performance of the Work.

WORK: Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by CONTRACTOR under the Contract Documents, including all labor, materials, equipment and other incidentals, and the furnishing thereof.

WRITTEN NOTICE: The term "Notice" as used herein shall mean and include all written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with Contract requirements. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or to an authorized representative of such individual, firm or corporation, or if delivered at or sent by registered mail to the last business address known to him who gives the notice. Unless otherwise stated in writing, any notice to or demand upon the OWNER under this Contract shall be delivered to the OWNER through the ENGINEER.

ARTICLE 2 - PRELIMINARY MATTERS:

AWARD:

2.2 The award of the Contract, if it is awarded, will be to the lowest and best responsible, responsive Bidder. No Notice of Award will be given until the OWNER has concluded such investigations as he deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the BID of any Bidder who does not pass such investigation to the OWNER'S satisfaction. In analyzing Bids, the OWNER may take into consideration alternates and unit prices, if requested by the Bid Form. If the Contract is awarded, the OWNER will issue the NOTICE of AWARD and give the successful Bidder a contract for execution within sixty (60) days after the opening of Bids.

EXECUTION OF AGREEMENT:

2.3 At least three counterparts of the Agreement and such other Contract Documents will be executed and delivered by CONTRACTOR to the ENGINEER within 10 days of receipt from the OWNER.

FORFEITURE OF BID SECURITY:

2.4 Failure of the successful Bidder to execute and deliver the Agreement and deliver the required Bonds as stipulated in paragraph 2.3 shall be just cause for the OWNER to annul the Notice of Award and declare the Bid and any security therefore forfeited.

The quantities appearing in the bid schedule are approximate and have been prepared for comparison of bids. The OWNER does not guarantee or assume any responsibility that quantities shown on the plans will not vary during actual construction of the contract. The CONTRACTOR further acknowledges the possibility of variation of quantities, shall be precluded from claiming in the construction of the project, and the CONTRACTOR shall not claim deception or misunderstanding because of any variation in quantities, location, character of work, or any other condition. Payment will be made only for actual quantities of work performed and accepted.

The OWNER makes no guarantees regarding the character or extent of water levels, soil, rock, utilities, or any other subsurface condition the BIDDER may encounter during work. The OWNER requires BIDDERS to make their own evaluation of subsurface soil conditions and to determine how these conditions may affect methods of construction.

CONTRACTOR'S PRE-BID REPRESENTATIONS:

2.1 CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work, Locality, and local conditions and will obey all federal, state, and local laws, ordinances, rules and regulations that may in any manner affect performance of the Work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. CONTRACTOR also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

COMMENCEMENT OF CONTRACT TIME:

2.5 The Contract Time will commence to run in accordance with the Notice to Proceed.

STARTING THE PROJECT:

2.6 CONTRACTOR shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No Work shall be done at the site prior to the date on which the Contract Time commences to run, except with the written consent of the OWNER.

BEFORE STARTING CONSTRUCTION:

2.7 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to ENGINEER any conflict, error or discrepancy which he may discover; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications. CONTRACTOR shall pot-hole existing utilities to ascertain exact location throughout the entire project. CONTRACTOR shall notify the ENGINEER any such locations of utilities which will prevent the work from being performed as designed, any work performed in which conflicts with an existing utility shall be remedied by the CONTRACTOR at his sole expense.

SCHEDULE OF COMPLETION:

2.8 Within ten (10) days after delivery of the Notice to Proceed by OWNER to CONTRACTOR, CONTRACTOR shall submit to ENGINEER an estimated progress schedule with earnings indicating the starting and completion dates of the various stages of the Work, and a preliminary schedule of Shop Drawing submissions. (See paragraphs 6.22 through 6.26.) The ENGINEER shall review and return this schedule or require revisions thereto within 14 days of its submittal. If there is more than one CONTRACTOR involved in a project, the responsibility for coordinating the Work of all CONTRACTORS shall be as provided in the Special Conditions.

2.9 At a time deemed appropriate by the OWNER to but before starting the Work at the site, a preconstruction conference may be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the project. Present at the conference will be the OWNER or his representative, ENGINEER, Resident Project

Representatives, CONTRACTOR and his Superintendent.

QUALIFICATION OF SUBCONTRACTORS MATERIALMEN AND SUPPLIERS:

2.10 Within ten (10) working days after bid opening, the CONTRACTOR will (if required) submit to the OWNER and the ENGINEER, for acceptance, a list of the names of Subcontractors and such other persons and organizations (including those who are to furnish principal items of material or equipment) proposed for those portions of the Work as to which the identity of the Subcontractors and other person and organizations must be submitted as specified in the Contract Documents. Within thirty (30) working days after receiving the list, the ENGINEER will notify the CONTRACTOR in writing if either the OWNER or the ENGINEER, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the OWNER or the ENGINEER to make objection to any Subcontractor, person or organization on the list within thirty days of receipt shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the OWNER or the ENGINEER to reject defective Work, material or equipment, or Work, material or equipment not in conformance with the requirements of the Contract Documents.

ARTICLE 3 - CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS:

3.1 It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR. They may be altered only by a Modification.

3.2 The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall call it to the ENGINEER'S attention in writing at once and before proceeding with the Work affected thereby; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Specifications or Drawings. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Agreement Modifications, Addenda, Special Conditions, and Instruction's to Bidders, General Conditions, Technical Specifications and Drawings. If the requirements of one are more stringent than the other, the more stringent requirements shall apply.

3.3 The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service."

3.4 Miscellaneous items and accessories which are not specifically mentioned, but which are essential to produce a complete and properly operating installation, or usable structure or plant providing the indicated function, shall be furnished and installed without change in the Contract Price. Such miscellaneous items and accessories shall be of the same quality standards including material, style, finish, strength, class, weight and other applicable characteristics, as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the ENGINEER before installation. The above requirement is not intended to include major components not covered by or inferable from the Drawings and Specifications.

3.5 The Work of all trades under this Contract shall be coordinated by the CONTRACTOR in such a manner as to obtain the best workmanship possible for the entire Project, and all components of Work shall be installed or erected in accordance with the best practices of the particular trade.

3.6 Manufacturer's literature, when referenced, shall be dated and numbered and is intended to establish the minimum requirements acceptable. Whenever reference is given to codes or standard specifications or other data published by regulating agencies or accepted organizations, including but not limited to National Electrical Code, applicable State Building Code, Federal Specifications, ASTM Specifications, various institute specifications, and the like, it shall be understood that such reference is to the latest edition including addenda in effect on the date of Bid.

3.7 Brand names where used in the Technical Specifications, are intended to denote the standard of quality required for the particular material or product. The use of a brand name item is to set a standard of quality and is not intended to restrict the Contractor from offering an equal item from other source(s) of supply. The term "equal" or "equivalent" when used in connection with brand names, shall be interpreted to mean a material or product that is similar and equal in type, quality, size, capacity, composition, finish, color and other applicable characteristics to the material or product specified by trade name, and that is for the same use and capable of performing the same function, in the opinion of the ENGINEER, as the material or product so specified. Proposed equivalent items must be approved by ENGINEER before they are purchased or incorporated in the Work.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE CONDITIONS; REFERENCE POINTS:

Availability of Lands

4.1 The OWNER will furnish, as indicated in Contract Documents, the lands upon

which the Work is to be done, rights-of-way for access thereto, and such other lands which are designated for use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise specified in the Contract Documents. Other access to such lands or rights-of-way for the CONTRACTOR'S convenience shall be the responsibility of the CONTRACTOR. The CONTRACTOR will provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 The OWNER will, upon request, furnish to the BIDDERS copies of all available boundary surveys.

Subsurface Conditions:

4.3 The CONTRACTOR acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the grounds, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The CONTRACTOR further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done on behalf of the OWNER on the site or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. Any additional information necessary to ascertain subsurface soil conditions, including test holes and soil borings, not provided by the OWNER shall be undertaken by the BIDDER prior to bidding at his cost. Such exploration shall be adequate to satisfy the BIDDER of the materials expected to be encountered on the project. The OWNER assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the OWNER.

Differing Site Conditions

4.4 (a) The CONTRACTOR shall promptly, and before such conditions are disturbed, notify the OWNER in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent

in work of the character provided for in this contract. The OWNER shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

(b) No claim of the CONTRACTOR under this clause shall be allowed unless the CONTRACTOR has given the notice required in (a) above.

(c) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

ARTICLE 5 - BONDS AND INSURANCE:

Performance and Payment Bonds:

5.1 The contractor's attention is directed to the Information for Bidders and Supplement to General Conditions.

Contractor's Liability Insurance:

5.2 The CONTRACTOR shall provide the OWNER with insurance certificates certifying that all required insurance is in force; and such insurance certificates shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

5.3 The CONTRACTOR agrees that if any part of the Work under the contract is sublet, he will require the Subcontractor(s) to carry insurance as required, and that he will require the Subcontractor(s) to furnish to him insurance certificates similar to those required by the OWNER in 5.1 and 5.2 above.

5.4 The CONTRACTOR agrees to add ENGINEER to insurance policy as additional insured.

Owner's Liability Insurance

5.4 The OWNER will be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain such insurance as will protect him against claims which may arise from operations under the Contract Documents.

Fire and Extended Coverage Insurance (Builders' Risk):

5.5 The CONTRACTOR shall maintain, as applicable, in an Insurance Company or

Insurance Companies acceptable to the OWNER, Fire, Extended Coverage and Vandalism & Malicious Mischief Insurance on buildings and structures, while in the course of construction, including foundations, additions, attachments and all permanent fixtures belonging to and constituting a part of said buildings or structures. The policy or policies shall also cover machinery, if the cost of machinery is included in the Contract. The amount of insurance should at all times be at least equal to the actual cash value of the insured property. The policy shall be in the name of the OWNER and the CONTRACTOR, as their interests may appear, and shall also cover the interests of all Subcontractors performing work.

5.6 The CONTRACTOR shall provide the OWNER with satisfactory evidence certifying that the foregoing insurance is in force; and such evidence shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

Cancellation and Re-Insurance:

5.7 If any insurance should be canceled or changed by the insurance company or should any insurance expire during the period of this Contract, the CONTRACTOR shall be responsible for securing other acceptable insurance to provide the coverage specified in this section to maintain continuous coverage during the life of this Contract.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES:

Supervision and Superintendence:

6.1 The CONTRACTOR will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, safety, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the Work a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. (Copies of written communications given to the Superintendent shall be mailed to the Contractor's home or office.)

Labor, Materials and Equipment:

6.2 The CONTRACTOR will provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order at the site.

6.3 The CONTRACTOR will furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, local telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work.

6.4 All materials and equipment will be new, except as otherwise provided in the Contract Documents. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or approved, such materials shall be delivered to the site in their original packages or container with seals unbroken and labels intact.

6.5 All materials and equipment shall be applied, handled, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors and industry standards, except as otherwise provided in the Contract Documents.

Materials, Equipment, Products and Substitutions:

6.6 Materials, equipment and products incorporated in the Work must be approved for use before being purchased by the CONTRACTOR. The CONTRACTOR shall submit to the ENGINEER a list of proposed materials, equipment or products, together with such samples as may be necessary for him to determine their acceptability and obtain his approval, within ninety (90) calendar days after award of Contract. No request for payment for "or equal" equipment will be approved until this list has been received and approved by the ENGINEER.

6.6.1 Whenever a material, article or piece of equipment is identified on the drawings or Specifications by reference to brand names or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand names or catalog number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Incidental charges or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the Contract Price, or Contract Time.

6.6.2 No substitute shall be ordered or installed without the written approval of the ENGINEER who shall be the judge of equality.

6.6.3 Delay caused by obtaining approvals for substitute materials will not be considered justifiable grounds for an extension of construction time.

6.6.4 Should any work or materials, equipment or products not conform to requirements of the Drawings and Specifications or become damaged during the process of the Work, such Work or materials shall be removed and replaced, together with any work disarranged by such alterations, at any time before completion and acceptance of the Project. All such work shall be done at the expense of the CONTRACTOR. (See paragraph 7.10)

6.6.5 No materials or supplies for the Work shall be purchased by the CONTRACTOR or by any Subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the Seller. The CONTRACTOR warrants that he has good title to all materials and supplies used by him in the Work.

Concerning Subcontractors:

6.7 The CONTRACTOR will not employ any Subcontractor, other person or organization of the types referred to in paragraph 2.10 (whether initially or as a substitute) against whom the OWNER or the ENGINEER may have reasonable objection, nor will the CONTRACTOR be required to employ any Subcontractor against whom he has reasonable objection. The CONTRACTOR will not make any substitution for any Subcontractor who has been accepted by the OWNER and the ENGINEER, unless the ENGINEER determines that there is good cause for doing so.

6.8 The CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any Subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER or ENGINEER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done in accordance with the schedule of values.

6.9 The divisions and sections of the Specifications and the identifications of any drawings shall not control the CONTRACTOR in dividing the work among Subcontractors or delineating the Work to be performed by any specific trade.

6.10 The CONTRACTOR agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER.

6.11 All Work performed for the CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between the CONTRACTOR and the Subcontractor.

6.12 The CONTRACTOR shall be responsible for the coordination of the trades, Subcontractors and material men engaged upon his Work.

6.12.1 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the CONTRACTOR by the terms of these General Conditions and other Contract Documents insofar as applicable to the Work of Subcontractors, and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provisions of the Contract Documents.

6.12.2 The OWNER or ENGINEER will not undertake to settle any differences between the CONTRACTOR and his Subcontractors or between Subcontractors.

6.12.3 If in the opinion of the ENGINEER, any Subcontractor on the project proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

Patent Fees and Royalties:

6.13 The CONTRACTOR will pay all license fees and royalties and assume all costs incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others. He will indemnify and hold harmless the OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of such rights during or after completion of the Work, and shall defend all such claims in connection with any alleged infringement of such rights.

6.14 The CONTRACTOR shall be responsible for determining the application of patent rights and royalties on materials, appliances, articles or systems prior to bidding. However, he shall not be responsible for such determination on systems which do not involve purchase by him of materials, appliances, and articles.

Permits:

6.15 The CONTRACTOR will secure and pay for all construction permits and licenses and will pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of his Bid. When such charges are normally made by the OWNER, there will be no charges to the CONTRACTOR. The OWNER shall assist the CONTRACTOR, when necessary, in

obtaining such permits and licenses. The CONTRACTOR will also pay all public utility charges.

Laws and Regulations:

6.16 The CONTRACTOR will give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, he will give the ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the ENGINEER, he will bear all costs arising wherefrom; however, it shall not be his primary responsibility to make certain that the Drawings and Specifications are in accordance with such laws, ordinances, rules and regulations.

Taxes:

6.17 Cost of all sales and other taxes for which the CONTRACTOR is liable under the Contract shall be included in the Contract Price stated by the CONTRACTOR.

Record Drawings:

6.18 The CONTRACTOR will keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the Engineer and shall be delivered to him for the OWNER upon completion of the Project. It shall be used for this purpose only.

Safety and Protection:

6.19 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to:

6.19.1 All employees on the work and other persons who may be affected thereby.

6.19.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

6.19.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

6.20 The CONTRACTOR will designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S superintendent unless otherwise designated in writing by the CONTRACTOR to the OWNER.

Emergencies:

6.21 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the ENGINEER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall be issued covering the changes and deviations involved. If the CONTRACTOR believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in Articles 11 & 12.

Shop Drawing and Samples:

6.22 After checking and verifying all field measurements, the CONTRACTOR will submit to the ENGINEER for review, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9) three (3) copies (or at the ENGINEER'S option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of the CONTRACTOR. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the ENGINEER to review the information as required.

6.23 The CONTRACTOR will also submit to the ENGINEER for review, with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

6.24 At the time of each submission, the CONTRACTOR will in writing call the ENGINEER'S attention to any deviations that the Shop Drawings or sample may have from the requirements of the Contract Documents.

6.25 The ENGINEER will review with reasonable promptness Shop Drawings and samples, but his review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review of a separate item as such will not indicate review of the assembly in which the item functions. The CONTRACTOR will make any corrections required by the ENGINEER and will return the required number of

corrected copies of Shop Drawings and resubmit new samples until the review is satisfactory to the ENGINEER. The CONTRACTOR shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the ENGINEER on previous submissions. The CONTRACTOR'S stamp of approval on any Shop Drawings or sample shall constitute a representative to the OWNER and the ENGINEER that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalogue numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawings or sample with the requirements of the Work and the Contract Documents.

6.26 No Work requiring a Shop Drawing or sample submission shall be commenced until the submission has been reviewed by the ENGINEER. A copy of each Shop Drawing and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6.27 The ENGINEER'S review of Shop Drawings or samples shall not relieve the CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing called the ENGINEER'S attention to such deviation at the time of submission and the ENGINEER has given written approval to the specific deviation, nor shall any review by the ENGINEER relieve the CONTRACTOR from responsibility for errors or omission in the Shop Drawings.

Cleaning Up:

6.28 The CONTRACTOR shall clean up behind the Work as much as is reasonably possible as the Work progresses. Upon completion of the Work, and before acceptance of and final payment for the Project by the OWNER, the CONTRACTOR shall remove all his surplus and discarded materials excavated material and rubbish from the roadways, sidewalks, parking areas, lawns and all adjacent property; shall clean his portion of Work involved in any building under this Contract, so that no further cleaning by the OWNER is necessary prior to his occupancy; shall restore all property, both public and private, which has been disturbed or damaged during the prosecution of the Work; and shall leave the whole in a neat and presentable condition.

6.29 Clean-up operations shall consistently be carried on by the CONTRACTOR at all times to keep the premises free from accumulation of waste materials and rubbish. Upon completion of the Work he shall remove all rubbish, tools, scaffolding, surplus materials, etc., and shall leave his work "broom clean", or its equivalent, unless more exactly specified elsewhere in the Contract. The CONTRACTOR shall do the cleaning for all trades upon completion of the Work.

6.30 General. In case of dispute, the OWNER may remove the rubbish and charge

the cost to the CONTRACTOR as the ENGINEER shall determine to be just.

Public Convenience and Safety:

6.31 The CONTRACTOR shall, at all times, conduct the Work in such a manner as to insure the least practicable obstruction to public travel. The convenience of the general public and of the residents along and adjacent to the area of the Work shall be provided for in a satisfactory manner, consistent with the operation and local conditions. "Street Closed" signs shall be placed immediately adjacent to the Work, in a conspicuous position at such locations as traffic demands in accordance with the MUTCD. At any time that streets are required to be closed, the CONTRACTOR shall notify law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. The CONTRACTOR shall keep the portion of the project being used by the public in satisfactory condition. It may become necessary for the CONTRACTOR to sweep the roadway surface to completely remove debris.

Sanitary Provisions:

6.32 The CONTRACTOR shall furnish necessary toilet conveniences, secluded from public observation, for use of all personnel on the Work, whether or not in his employ. They shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the Public Authorities having jurisdiction. He shall commit no public nuisance. Temporary sanitary facilities shall be removed upon completion of the Work and the premises shall be left clean.

Indemnification:

6.33 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than Work itself) including the loss of use resulting wherefrom and (b) is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

6.34 In any and all claims against the OWNER or the ENGINEER or any of their agents or employees, by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.33 shall not be limited in any way by any limitation on the amount or type of damages,

compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.35 The obligations of the CONTRACTOR under paragraph 6.33 shall not extend to the liability of the Engineer's negligent acts, errors or omissions or those of his employees or agents.

Responsibility for Connecting to Existing Work:

6.36 It shall be the express responsibility of the CONTRACTOR to connect his Work to each part of the existing work or work previously installed as required by the Drawings and Specifications to provide a complete installation.

Work in Street, Highway and Other Rights-of-Way:

6.37 Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights-of-way of streets, highways, public carrier lines, utility lines (either aerial, surface or subsurface), etc., shall be done in accordance with requirements of the Contract Documents. The CONTRACTOR will be responsible for obtaining all permits necessary for the work. Upon completion of the Work, CONTRACTOR shall present to ENGINEER certificates, in triplicate, from the proper authorities stating that the Work has been done in accordance with their requirements.

6.37.1 The OWNER will cooperate with the CONTRACTOR in obtaining action from any utilities or public authorities involved in the above requirements.

6.37.2 The ENGINEER shall be responsible for obtaining elevations of curbs and gutters, pavement, storm drainage structures, and other such items which must be established by governmental departments as soon as grading operations are begun on the site and, in any case, sufficiently early in the construction period to prevent any adverse effect on the Project.

Cooperation with Governmental Departments, Public Utilities, Etc:

6.38 The OWNER shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, telephone, and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structure connected therewith, that are encountered in the work in order that such items may be properly shored, supported and protected, or the CONTRACTOR may relocate them if he so desires. The CONTRACTOR shall give all proper notices, shall comply with requirements of such parties in the performance of his Work, shall permit entrance of such parties

on the Project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

6.38.1 The CONTRACTOR'S attention is called to the fact that there may be delays on the Project due to work to be done by governmental departments, public utilities, and others in repairing or moving poles, conduits, etc. The CONTRACTOR shall cooperate with the above parties, in every way possible, so that the construction can be completed in the least possible time.

6.38.2 The CONTRACTOR shall have made himself familiar with all codes, laws, ordinances and regulations which in any manner affect those engaged or employed in the Work, or materials and equipment used in or upon the Work, or in any way affect the conduct of the Work, and no plea of misunderstanding will be considered on account of his ignorance thereof.

Use of Premises:

6.39 CONTRACTOR shall confine his apparatus, storage of materials, and operations of his workmen to limits indicated by law, ordinances, permits, and directions of ENGINEER and OWNER, and shall not unnecessarily encumber any part of site.

6.39.1 CONTRACTOR shall not overload or permit any part of any structure to be loaded with such weight as will endanger its safety, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

6.39.2 CONTRACTOR shall enforce OWNER'S instructions in connection with signs, advertisements, fires and smoking.

6.39.3 CONTRACTOR shall arrange and cooperate with OWNER in routing and parking of automobiles of his employees, subcontractors and other personnel and in routing material delivery trucks and other vehicles to the Project Site.

Protection of Existing Property Improvements:

6.40 Any existing surface or subsurface improvements, such as pavements, curbs, sidewalks, pipes or utilities, footings or structures (including portions thereof), trees, and shrubbery not indicated on the Drawings or noted in the Specifications as being removed or altered shall be protected from damage during construction of the Project. Any such improvements damaged during construction of the Project shall be restored to a condition equal to that existing at time of award of Contract.

Temporary Heat:

6.41 The General CONTRACTOR shall provide heat, fuel and services as necessary to protect all work and materials, within all habitable areas of permanent building construction, for all contracts against injury from dampness and cold until final acceptance of all work and materials for the Project, unless building is fully occupied by the OWNER prior to such acceptance, in which case the OWNER shall assume all expenses of heating from date of full occupancy. In areas outside those covered above, each prime contractor shall be responsible for providing such temporary heat, fuel and services as required to protect his work or shall make all necessary arrangements with the General CONTRACTOR for providing such temporary heat, fuel and services. Unless otherwise specifically permitted by Special Conditions, the permanent heating system shall not be used to provide temporary heat. CONTRACTOR'S proposed methods of heating shall be submitted for approval.

ARTICLE 7 - WORK BY OTHERS:

7.1 The OWNER may perform additional work related to the Project by himself, or he may let other direct contracts therefore which shall contain General Conditions similar to these. The CONTRACTOR will afford the other contractors who are parties to such direct contracts (or the OWNER, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2 If any part of the CONTRACTOR'S work depends for proper execution or results upon the work of any such other CONTRACTOR (or the OWNER), the CONTRACTOR will promptly report to the ENGINEER in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results.

7.3 The CONTRACTOR will do all cutting, fitting, and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The CONTRACTOR will not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and of the other contractors whose work will be affected.

7.4 If the performance of additional work by other contractors or the OWNER is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional work. If the CONTRACTOR believes that the performance of such additional work by the OWNER or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefore as provide in Articles 11 and 12.

7.5 Where practicable, the CONTRACTOR shall build around the work of other separate contractors or shall leave chases, slots and holes as required to receive and to conceal within the general construction work the work of such other separate contractors as directed by them. Where such chases, slots, etc., are impracticable, the work shall require specific approval of the ENGINEER.

7.6 Necessary chases, slots and holes not built or left by the CONTRACTOR shall be cut by the separate contractor requiring such alterations after approval of the CONTRACTOR. The CONTRACTOR shall do all patching and finishing of his Work where cut by other contractors at the expense of such other contractors.

7.7 Cooperation is required in the use of site facilities and in the detailed execution of the Work. Each contractor shall coordinate his operations with those of the other contractors for the best interest of the Work in order to prevent delay in the execution thereof.

7.8 Each contractor shall keep himself informed of the progress of the work of other contractors. Should lack of progress or defective workmanship on the part of other contractors interfere with his operations, the CONTRACTOR shall notify the ENGINEER immediately. Lack of such notice to the ENGINEER will be construed as acceptance by the CONTRACTOR of the status of the work of other contractors as being satisfactory for proper coordination of his own work.

7.9 Each contractor shall give notices of the progress of his work so as to allow other contractors adequate opportunity to properly direct and coordinate their work. The CONTRACTOR shall give notices of the progress of his Work so that work of other contractors, when required to be concealed, may be placed before the general construction Work. All such notices shall be submitted to the ENGINEER with copies to other prime contractors on the Project sufficiently ahead of job progress to permit adequate time for the other prime contractors to coordinate their work.

7.10 The cost of extra work resulting from lack of notices, untimely notices, failure to respond to notices, defective work or lack of coordination shall be borne by the CONTRACTOR responsible for such lack of notices, etc.

ARTICLE 8 - OWNER'S RESPONSIBILITIES:

8.1 The OWNER will issue all communications to the CONTRACTOR through the ENGINEER.

8.2 In case of termination of the employment of the ENGINEER, the OWNER will appoint an engineer against whom the CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to

arbitration, if mutually agreeable.

8.3 The OWNER will furnish the data required of him under the Contract Documents promptly and shall make payments to the CONTRACTOR promptly after they are due as provided in Article 14.

8.4 OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1, 4.4 and the Special Conditions. Paragraphs 4.2 and 4.3 refer to OWNER'S identifying and making available to CONTRACTOR copies of surveys and investigation reports of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.5 The OWNER'S responsibilities in respect of liability and property insurance are set forth in paragraph 5.4.

8.6 In addition to his rights to request changes in the Work in accordance with Article 10, the OWNER (especially in certain instances as provided in paragraph 10.4) will be obligated to execute Change Orders.

8.7 In connection with the OWNER'S right to stop Work or suspend Work; see paragraph 15.1. Paragraph 15.3 deals with the OWNER'S right to terminate services of the CONTRACTOR under certain circumstances.

8.8 The OWNER shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or any portion thereof may not have expired; but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the Work, the CONTRACTOR shall be entitled to such extra compensation or extension of time or both, except by prior agreement, as the ENGINEER may determine. See paragraph 14.11.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION:

Owner's Representative:

9.1 The ENGINEER shall be the OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER'S representative during construction are set forth in Articles 1 through 17 of these General Conditions and shall not be extended without written consent of the OWNER and the ENGINEER.

9.1.1 The ENGINEER'S decision, in matters relating to aesthetics shall be final, if

within the terms of the Contract Documents.

9.1.2 Except as may be otherwise provided in this contract all claims, counter-claims, disputes and other matters in question between the OWNER and the CONTRACTOR arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the State in which the OWNER is located.

Visits to Site:

9.2 The ENGINEER will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. He will not be required to make continuous on-site observations to check the quality or quantity of the Work. His efforts will be directed toward ascertaining on behalf of the OWNER that the completed Project will conform to the requirements of the Contract Documents. On the basis of his on-site observations as an experienced and qualified design professional, he will keep the OWNER informed of the progress of the Work and will endeavor to guard the OWNER against defects and deficiencies in the Work of contractors.

Clarifications and Interpretations:

9.3 The ENGINEER will issue with reasonable promptness such written clarification or interpretations of the Contract Documents (in the form of Drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

Measurement of Quantities:

9.4 All Work completed under the Contract will be measured by the CONTRACTOR according to the United States Standard Measures. All linear surface measurements will be made horizontally or vertically as required by the item measured.

Rejecting Defective Work:

9.5 The ENGINEER will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not meet the requirements of any inspection, test or approval or has been damaged prior to final acceptance). He will also have authority to require special inspection or testing of the Work whether or not the

Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.6 In connection with the ENGINEER'S responsibility as to Shop Drawings and samples, see paragraphs 6.22 through 6.27, inclusive.

9.7 In connection with the ENGINEER'S responsibility for Change Orders; see Articles 10, 11, and 12.

9.8 In connection with the ENGINEER'S responsibilities in respect of Application for Payment, etc., see Article 14.

Resident Project Representative:

9.9 The OWNER or the ENGINEER will provide on-site representation sufficient to guarantee that construction is in general compliance with the construction drawings and the contract specifications.

Decisions on Disagreements:

9.10 The ENGINEER will be the initial interpreter of the terms and conditions of the Contract Documents and the judge of the performance hereunder. In his capacity as interpreter and judge, he will exercise his best efforts to insure faithful performance by both the OWNER and the CONTRACTOR. He will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the Work or the interpretation of or performance under the Contract Documents shall be referred initially to the ENGINEER for decision; which he shall render in writing within a reasonable time.

9.11 Either the OWNER or the CONTRACTOR, if the other agrees, may request legal action with respect to any such claim, dispute or other matter that has been referred to the ENGINEER, except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.11, such legal action to be in accordance with Article 16. However, no request for legal action of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which the ENGINEER has rendered his decision or (b) the tenth day after the parties have presented their evidence to the ENGINEER if he has not rendered his written decision before that date. No request for legal action shall be made later than thirty (30) days after the date on which the ENGINEER rendered his written decision in respect of the claim, dispute or other matter as to which legal action is sought; and the failure to request legal action within said thirty (30) days period shall result in the ENGINEER'S decision being final and binding upon the OWNER and the CONTRACTOR. If the ENGINEER renders a decision after legal proceedings have

been initiated, such decision may be entered as evidence but shall not supersede the legal proceedings, except where the decision is acceptable to the parties concerned.

Limitations on Engineer's Responsibilities:

9.12 Neither the ENGINEER'S authority to act under this Article 9 nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any of their agents or employees or any other person performing any of the Work.

9.13 The ENGINEER will not be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions and programs incident thereto, and he will not be responsible for the CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.14 The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR, or any Subcontractors, or any of his or their agents or employees, or any other person performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK:

10.1 Without invalidating the Agreement, the OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, the CONTRACTOR will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12. A Change Order signed by the CONTRACTOR indicates his agreement therewith.

10.2 The ENGINEER may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the CONTRACTOR believes that any minor change or alteration authorized by the ENGINEER entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

10.3 Additional Work performed by the CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.21 and except as provided in paragraph 10.2.

10.4 The OWNER will execute appropriate Change Orders prepared by the ENGINEER covering changes in the Work to be performed as provided in paragraph 4.4, and Work performed in an emergency as provided in paragraph 6.21 and any other claim of the CONTRACTOR for a change in the Contract Time or the Contract Price which is approved by the ENGINEER.

10.5 It is the CONTRACTOR'S responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The CONTRACTOR will furnish proof of such adjustment to the OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE:

11.1 The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the CONTRACTOR shall be at his expense without changing the Contract Price.

11.2 (a) The OWNER may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make any change in the Work within the general scope of the contract, including but not limited to changes:

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Owner-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the OWNER, which causes any such change, shall be treated as a change order under this clause, provided that the CONTRACTOR gives the OWNER written notice stating the date, circumstances, and source of the order and that the CONTRACTOR regards the order as a change order.

(c) Except as herein provided, no order, statement, or conduct of the OWNER shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

(d) If any change under this clause causes an increase or decrease in the CONTRACTOR'S cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly: PROVIDED, HOWEVER, that except for claims based on defective specifications, no claim for any change under (b) above shall be allowed for any costs incurred more than 20 days before the CONTRACTOR gives written notice as therein required.

And provided further, that in the case of defective specifications for which the OWNER is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the CONTRACTOR in attempting to comply with such defective specifications.

(e) If the CONTRACTOR intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the OWNER a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the OWNER. The statement of claim hereunder may be included in the notice under (b) above.

(f) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents by application of unit prices to the quantities of the items involved.

11.3.2 By negotiated lump sum.

11.3.3 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work plus a fixed amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise maybe agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to salaries and wages plus the costs of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by OWNER.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturer's field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such Bids to OWNER who will then determine with the advice of ENGINEER, which Bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of Work plus a Fee, the cost of the Work shall be determined in accordance with paragraphs 11.4 and 11.5.

11.4.4 Costs of special consultants (including but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travelling and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or other in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the cost of transportation, loading, unloading, installation, dismantling and removal thereof--all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall end when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable imposed by any governmental authority.

11.4.5.5 Deposits lost for causes other than CONTRACTOR'S negligence, royalty

payments and fees for permits and licenses. Costs for permits and licenses must be shown as a separate item.

11.4.5.6 Losses, damages and expenses, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the execution of, and to, the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of Work for the purpose of determining CONTRACTOR'S fee. If however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and Insurance required because of changes in the Work.

11.5 The term cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals, (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the schedule referred to in subparagraph 11.4.1 -- all of which are to be considered administrative costs covered by the CONTRACTOR'S Fee.

11.5.2 Expenses of CONTRACTOR'S principal and branch offices other than his office at the site.

11.5.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR'S for delinquent payments.

11.5.4 Cost of premiums for all bonds and for all insurance policies whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except as otherwise provide in subparagraph 11.4.5.9.)

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6 The CONTRACTOR'S Fee which shall be allowed to CONTRACTOR for his overhead and profit shall be determined as follows;

11.6.1 A mutually acceptable firm fixed price; or if none can be agreed upon,

11.6.2 A mutually acceptable fixed fee based on the estimate of the various portions of the Cost of the Work.

11.7 The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the net shall be computed to include overhead and profit, identified separately, for both additions and credits.

11.8 Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will submit in form prescribed by ENGINEER an itemized cost breakdown together with supporting data.

11.9 Allowances: It is understood that the CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such material men, suppliers, or Subcontractors and for such sums within the limit of the allowances as the ENGINEER may approve. Upon final payment, the Contract Price shall be adjusted as required and an appropriate Change Order issued. The CONTRACTOR agrees that the original Contract Price includes such sums as he deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be allowed.

11.9.1 These allowances shall cover the cost to the CONTRACTOR less any applicable trade discount, of the materials and equipment required by the allowance delivered at the site, and all applicable taxes.

11.9.2 The CONTRACTOR'S costs for unloading and handling on site, labor, installation costs, overhead, profit and other expenses contemplated for the original

allowance shall be included in the Contract Price and not in the allowance.

11.9.3 Whenever the cost, as described in 11.9.1 above, is more than or less than the allowance, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses, except that whenever unit price allowances are stipulated for brick, the Change Order will not include any cost as described in 11.5 above.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME:

12.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to OWNER and ENGINEER within ten days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if he makes a claim therefore as provided in paragraph 12.1. Such delays shall include, but not be restricted to, acts or neglect by any separate contractor employed by OWNER, fires, floods, labor disputes, epidemics, or acts of God.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of the Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either parties.

12.4 No claim for delay shall be allowed because of failure to furnish Drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

12.5 This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

ARTICLE 13 - GUARANTY:

13.1 The CONTRACTOR shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the

completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs or adjustments, in the Work that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

ARTICLE 14 - PAYMENTS AND COMPLETION:

Payments to Contractors:

14.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or revise the partial payment estimate provides the same to the CONTRACTOR indicating in writing his reasons for refusing or revising payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within forty-five (45) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER may retain a portion of the amount otherwise due the CONTRACTOR. Except as State law otherwise provides, the amount the OWNER retains shall be limited to the following:

14.1.1 Withholding of not more than 5 percent of the payment claimed until work is 50 percent complete;

14.1.2 When Work is 50 percent complete, reduction of the withholding to 2.5 percent of the dollar value of all Work satisfactorily completed to date, provided that the CONTRACTOR is making satisfactory progress and there is no specific cause for greater withholding and the same is requested by the CONTRACTOR in writing;

14.1.3 When the Work is substantially complete (operational or beneficial occupancy), the withheld amount shall be further reduced below 5 percent to only

that amount necessary to assure completion.

14.1.4 The OWNER may reinstate up to 5 percent withholding if the OWNER determines, at its discretion, that the CONTRACTOR is not making satisfactory progress or there is other specific cause for such withholding.

Contractor's Warranty of Title:

14.2 The CONTRACTOR warrants and guarantees that title to all work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the OWNER prior to the making of the Application for payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens") and that no work, materials or equipment covered by an Application for Payment will have been acquired by the CONTRACTOR or by any other person performing the Work at the Site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

Approval of Payments:

14.3 The ENGINEER'S approval of any payment requested in an Application for Payment shall constitute a representation by him to the OWNER, based on the ENGINEER'S on-site observations of the Work in progress as an experienced and qualified design professional and on his review of the Application of Payment and the supporting data, that the Work has progressed to the point indicated; That, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval), and that the CONTRACTOR is entitled to payment of the amount approved. However, by approving any such payment, the ENGINEER shall not thereby be deemed to have represented that he made exhaustive or continuous on-site observations to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the CONTRACTOR has used the moneys paid or to be paid to him on account of the Contract Price, or that title to any Work, materials, or equipment has passed to the OWNER free and clear of any Liens.

14.4 The CONTRACTOR shall make the following certification on each request for payment:

"I hereby certify that the labor and materials listed on this request for payment has been used in the construction of this work or that all materials included in this request for payment and not yet incorporated into the construction are now on the

site or stored at an approved location; and payment received from the last request for payment has been used to make payments to all first tier subcontractors and suppliers except as listed below."

14.5 The ENGINEER'S approval of final payment shall constitute an additional representation by him to the OWNER that the conditions precedent to the CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.11 have been fulfilled.

14.6 The ENGINEER may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. He may also refuse to approve any such payment, because of subsequently discovered evidence or the results of subsequent inspections or tests nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect the OWNER from loss because:

14.6.1 The Work is defective, reasonable doubt exists to the integrity, or completed Work has been damaged requiring correction or replacement,

14.6.2 The Work for which payment is request cannot be verified,

14.6.3 Claims or Liens have been filed or there is reasonable evidence indicating the probable filing thereof,

14.6.4 The Contract Price has been reduced because of Modifications,

14.6.5 The OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.1,

14.6.6. Of unsatisfactory prosecution of the Work, including failure to clean up as required by paragraphs 6.29 and 6.30,

14.6.7. Of persistent failure to cooperate with other contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents,

14.6.8. Of liquidated damages payable by the CONTRACTOR or,

14.6.9. Of any other violation of, or failure to comply with, the provisions of the Contract Documents.

14.7 Prior to Substantial Completion, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the Work. Such use shall not constitute and acceptance of such portions of the Work.

14.8 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the Work, or restoration of any damaged Work, except such as may be caused by agents or employees of the OWNER.

14.9 Upon completion and acceptance of the Work, the ENGINEER shall issue a certificate attached to the final payment request that the Work has been accepted by him under the conditions of the Contract Documents. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within forty-five (45) days of completion and acceptance of the Work.

14.10 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the Work. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the Contract Documents by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

Acceptance of Final Payment as Release:

14.11 When all items of work are completed to the satisfaction of the ENGINEER and the ENGINEER has been advised by the CONTRACTOR that a final inspection is desired, time will be suspended until final inspection is conducted and for an additional 14 calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 14-day suspension all necessary items of work have not been completed, time changes will resume. If the specified completion date had not been reached at the time the CONTRACTOR called for a final inspection, the calendar day difference between the specified completion date and the date the CONTRACTOR called for a final inspection will be added after the 14-day period before starting liquidated damages. If a project is on liquidated

damages at the time a final inspection is scheduled, liquidated damages will be suspended until the final inspection is conducted and for seven (7) calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 7-day suspension all necessary items of work have not been completed, liquidated damages will resume. When final inspection has been made by the ENGINEER and all items of work have been completed, the daily time charge will cease.

14.12 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this Work and for every act and neglect of the OWNER and others relating to or arising out of this Work. Any payment however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bonds.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION:

Owner May Suspend Work:

15.1 The OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to the CONTRACTOR and the ENGINEER which shall fix the date on which Work shall be resumed. The CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefore as provided in Articles 11 and 12.

Work During Inclement Weather:

15.2 No Work shall be done under these Specifications except by permission of the OWNER when the weather is unfit for good and careful work to be performed. Should the severity of the weather continue, the CONTRACTOR, upon the direction of the OWNER, shall suspend all work until instructed to resume operations by the OWNER and the Contract Time shall be extended to cover the duration of the order. Work damaged during periods of suspension due to inclement weather shall be repaired and/or replaced by the CONTRACTOR. Any compensation for repairs or replacements shall be subject to approval of the OWNER.

Owner May Terminate:

15.3 If the CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property; or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or

similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment or he disregards laws, ordinances, rules regulations or orders of any public body having jurisdiction, or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the Contract Documents, then the OWNER may without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety seven days written notice, terminate the services of the CONTRACTOR and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the Work by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR or the Surety will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a Change Order.

15.4 Where the CONTRACTOR'S services have been so terminated by the OWNER, said terminations shall not affect any rights of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys by the OWNER due the CONTRACTOR will not release the CONTRACTOR from liability.

15.5 Upon seven days written notice to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, the CONTRACTOR shall be paid for all Work executed and any expense sustained plus a reasonable profit.

Removal of Equipment:

15.6 In the case of termination of this Contract before completion, for any cause whatever, the CONTRACTOR if notified to do so by the OWNER, shall promptly remove any part or all of his equipment and supplies from the property of the OWNER. Should the CONTRACTOR not remove such equipment and supplies, the OWNER shall have the right to remove them at the expense of the CONTRACTOR. Equipment and supplies shall not be construed to include such items for which the CONTRACTOR has been paid in whole or in part.

Contractor May Stop Work or Terminate:

15.7 If, through no act or fault of the CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or

other public authority, or the ENGINEER fails to act on any Application for Payment within sixty (60) days after it is submitted, or the OWNER fails to pay the CONTRACTOR any sum approved by the ENGINEER or awarded by court ruling within forty-five (45) days of its approval and presentation, then the CONTRACTOR may, upon seven (7) days written notice to the OWNER and the ENGINEER, and if the OWNER or ENGINEER fails to reasonable respond in writing, terminate the Agreement and recover from the OWNER payment for all Work executed and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if the ENGINEER has failed to act on an Application for Payment or the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon seven (7) days notice to the OWNER and the ENGINEER stop the Work until he has been paid all amounts then due.

Owner Furnished Equipment:

15.8 In case the OWNER furnishes equipment to the CONTRACTOR to install, but fails to deliver it to the CONTRACTOR as required and in case such failure causes the CONTRACTOR additional expense or need for extension of time, the CONTRACTOR may make such claims upon the OWNER and obtain adjustments as provided herein.

Liquidated Damages:

15.9 If the CONTRACTOR shall fail to complete the work within the contract time, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the Contract Documents for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract Documents.

ARTICLE 16 - DISPUTE SETTLEMENT:

16.1 All claims, disputes and other matters in question arising out of, or relating to, this Agreement or the breach thereof except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.11, shall be decided in a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS:

17.1 Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to him who gives the notice.

17.2 If the OWNER fails to make payment forty-five (45) days after payment is

due, in addition to other remedies available to the CONTRACTOR, there shall be added to each such progress payment, interest at 1% per month commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

17.3 All Specifications, Drawings and copies thereof furnished by the ENGINEER shall remain his property. They shall not be used on another Project, and, with the exception of those sets which have been signed in connection with the execution of the Agreement, shall be returned to him on request upon completion of the Project.

17.4 The duties and obligations imposed by these General Conditions, and the rights and remedies available hereunder, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.36 and 14.3 and the rights and remedies available to OWNER and ENGINEER there under, shall be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available by law, by special guarantee or by other provisions of the CONTRACT DOCUMENTS.

17.5 Should the OWNER or the CONTRACTOR suffer injury or damage to its person or property because of any error, omission or act of the other or of any of his employee or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.

17.6 The CONTRACT DOCUMENTS shall be governed by the law of the place of the Project.

Progress Charts and Requirements for Overtime Work

17.7 The CONTRACTOR shall within 5 days or within such time as determined by the OWNER after date of commencement of work prepare and submit to the OWNER for approval a practicable schedule, showing the order in which the CONTRACTOR proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plans and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The CONTRACTOR shall enter on the chart the actual progress at such intervals as directed by the OWNER and shall immediately deliver to the OWNER three (3) copies thereof. If the CONTRACTOR fails to submit a progress schedule within the time herein prescribed, the owner may withhold approval of progress payment estimates until such time as the CONTRACTOR submits the required progress schedule.

17.8 If, in the opinion of the OWNER, the CONTRACTOR falls behind the progress schedule, the CONTRACTOR shall take such steps as may be necessary to improve

his progress and the OWNER may require him to increase the number of shifts, or overtime operations, days of work, or the amount of construction plant, or update the progress schedule to reflect increased production for meeting the completion date, or all of them, and to submit for approval such supplementary schedule or schedules in chart form as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the OWNER.

17.9 Failure of the CONTRACTOR to comply with the requirements of the OWNER under this provision shall be grounds for determination by the OWNER that the CONTRACTOR is not prosecuting the work with such diligence as will insure completion within the time specified. Upon such determination the OWNER may terminate the CONTRACTOR'S right to proceed with the work or any separable part thereof in accordance with the clause of the contract entitled, "Termination for Default-Damages for Delay - Time Extensions.

17.10 Should the Contractor fail to complete the work within the specified time, or within any extra time allowed under these specifications, a sum of money, determined by the following schedule, shall be deducted from any funds due the Contractor, the Owner shall have the right recover the said sum or sums from the Contractor or from the surety, or from both. The amounts of these deductions are to cover the liquidated damages to the Owner incurred by additional or other expenses due to the failure of the Contractor to complete the work or any part of the work within the time specified, and such deductions are not to be considered penalties.

17.11 The damages indicated above shall be considered as liquidated damages for the loss to the OWNER on account of the expense due to the employment of Engineers and their assistants and to any others expenses incurred after the expiration of the Contract time as determined by the ENGINEER in section 14.11

17.12 Work requiring the presence or services of the ENGINEER, based-solely on the opinion of the ENGINEER, will not be permitted on Sunday or holidays observed by the State unless the ENGINEER determines that an emergency or necessity exists. Work on these days solely to complete the project within the contract time will not be considered a necessity or emergency.

17.13 The ENGINEER will prepare and submit to the CONTRACTOR one (1) preliminary punch list of items that do not meet the contract requirements after the final inspection and one (1) final punch list immediately before final completion and final payment.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 1 - SPECIAL CONDITIONS

SCOPE AND INTENT

Special conditions shall prevail over General Conditions in case of conflict. The Contractor shall furnish all labor, materials, equipment (including fuel), tools, appliances, transportation and perform all operations in connection with the construction of, alterations to, or repair of, the building, including utilities, complete, in strict accordance with the specifications and the plans governing the construction of, alterations to, or repair of, the project.

EXAMINATION OF PREMISES

Before submitting a proposal for his work, each bidder shall be held responsible to have examined the site and satisfied himself as to the conditions under which work is to be performed.

PERMITS, TAXES, AND ORDINANCES

The Contractor shall pay for all required permits, give legal notices, and pay taxes and assessments levied in connection with this contract. Building regulations shall be strictly adhered to and the contractor shall be responsible for knowledge thereof.

INSURANCES, ETC.

In addition to the requirements of the General Conditions, insurance coverage specified herein constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of the **CONTRACTOR** under the terms of the Contract. The **CONTRACTOR** shall procure and maintain at his own expense any additional kinds and amounts of insurance that, in his own judgment, may be necessary for his proper protection in the prosecution of the Work.

The **CONTRACTOR** shall carry insurance as prescribed herein and all policies shall be with companies satisfactory to the **OWNER**.

If a part of this Contract is sublet, the **CONTRACTOR** shall require each Subcontractor to carry insurance of the same kinds and in like amounts as carried by the **CONTRACTOR**. Certificates of insurance shall state that 30 days written notice will be given to the **OWNER** before the policy is canceled or changed. No **CONTRACTOR** or Subcontractor will be allowed to start any construction work on this Contract until certificates of all insurance required herein are filed and approved by the **OWNER**. The certificates shall show the type, amount, class of operations covered, effective dates and the dates of expiration of policies.

The **CONTRACTOR** shall secure and maintain in effect for the period of the Contract and pay all premiums for the following kinds and amounts of insurance.

A. Workers' Compensation and Employer's Liability Insurance

This insurance shall protect the **CONTRACTOR** against all claims under applicable State Worker's Compensation Laws. The **CONTRACTOR** shall also be protected and shall cause each Subcontractor to be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Worker's Compensation Law. The liability limits shall not be less than the required statutory limits for Worker's Compensation and Employer's Liability or the amount of ONE HUNDRED THOUSAND DOLLARS (\$100,000.00) for each person whichever is more. This policy shall include an all states endorsement.

B. **CONTRACTOR'S** Comprehensive Public Liability and Property Damage Insurance, covering all operations in connection with the performance of this Contract in amounts not less than the following:

Bodily injury liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) for all damages arising out of the injury or destruction of property in any one accident and subject to that limit per accident a total for aggregate limit of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of injury to or destruction of property during the policy period.

The Comprehensive Public Liability and Property Damage policies carried by both the **CONTRACTOR** and the Subcontractors shall contain an endorsement to include the coverage of the following hazards:

- a. Explosion, collapse, and underground property damage to include any damage or destruction of property below the surface of the ground, such as wires, conduits, pipes, mains, sewers, etc., caused by the **CONTRACTOR'S** operations.
- b. The collapse of and structural injury to any building, structure or property on or adjacent to the **OWNER'S** premises or right-of-way caused by the **CONTRACTOR'S** operations in the removal of other buildings, structures, or supports, or by excavation below the surface of the ground.
- c. Contractual Liability Coverage for the Hold Harmless segments of the Contract Documents.

C. **CONTRACTOR'S Contingent or Protective Liability and Property Damage:**

In case part of this Contract is sublet, the **CONTRACTOR** shall secure contingent or protective liability and property damage insurance to protect him from any and all claims arising from the operation of his Subcontractors in the execution of Work included in the Contract. In no case shall the amount of such protection be less than the limits of \$500,000/\$1,000,000 for Public Liability Insurance and \$500,000/\$1,000,000 for Property Damage Insurance. The coverage in each case shall be acceptable to the **OWNER**.

D. **Automotive Public Liability and Property Damage**

The **CONTRACTOR** shall maintain automobile public liability insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for injury to one person and ONE MILLION DOLLARS (\$1,000,000) for one accident; and automobile property damage insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for one accident to protect him from any and all claims arising from the use of the following:

- a. **CONTRACTOR'S** own automobiles and trucks.
- b. Hired automobiles and trucks.
- c. Automobiles and trucks owned by Subcontractors.

The aforementioned is to cover use of automobiles and trucks on and off the site of the Project.

E. **OWNER'S Protective Liability Policy**

The **CONTRACTOR** shall maintain **OWNER'S** Protective Liability Insurance with the **OWNER** as the named insured, and the **ENGINEER**, and their servants, agents and employees as additional insureds in amounts not less than the following:

- a. Bodily Injury in the amount of ONE MILLION DOLLARS (\$1,000,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of an injury or destruction of property in any one accident and subject to that limit per accident a total (or aggregate) limit of ONE MILLION DOLLARS (\$1,000,000) for all damages arising out of injury to or destruction of property during the policy period.

CLEANING UP

The CONTRACTOR shall, at all times, keep the premises free from accumulations of waste materials and at the completion of the work, be shall remove all his rubbish, tools, temporary buildings, etc. from and about the site and shall leave his work “broom” clean unless more exactly specified elsewhere. All glass shall be washed and left free from stains of any nature.

SPECIAL INSTRUCTIONS

LIMITATIONS

During construction, care is to be taken to prevent damage to the work in place. As soon as work is completed, all work is to be thoroughly cleaned. Before completion, all damaged work is to be repaired and left in perfect condition. The CONTRACTOR will be responsible for all clean up of the premises. All trash, etc. will be hauled away from the site, and the site left in a clean and neat condition. Alcoholic beverages of any type will not be permitted on job site.

PRODUCT/MATERIALS SUBSTITUTION

CONTRACTOR will submit prior to starting work on project any changes to materials specified. CONTRACTOR will submit all specification data, company name, and supplier of material that he wishes to substitute. All material will be evaluated. CONTRACTOR will be given approval/disapproval by OWNER. No substitutes will be taken into consideration after work has begun, no substitutes will be allowed if CONTRACTOR does not submit specification data within time allowed.

INSPECTION

All work covered by these specifications shall be subject to inspection by OWNER or his authorized representative. CONTRACTOR will coordinate with OWNER for inspections as required during construction, and furnish to the OWNER in writing a project schedule prior to mobilization of work at the job site.

SPECIFICATIONS AND DRAWINGS ARE RECIPROCAL

The specifications and drawings are intended mutually to explain each other and anything which is referred to in the specifications and not shown on the drawings shall be considered as being shown and mentioned and referred to in both of these documents. Such work shall be done and performed accordingly. Any drawing attached to this specification form is an integral part thereof and where such drawings, if any, differ from these specifications, the specifications shall govern.

AS-BUILT DRAWINGS

Occasionally, during the course of construction, modifications and changes may occur due to site conditions, unforeseen circumstances and problems encountered. This may result in a modification of construction as originally depicted on drawings. Contractor will furnish the OWNER a marked-up set of prints in red line of all changes and/or modifications that pertain to this contract. Drawings will be labeled. "AS-BUILT DRAWINGS".

GUARANTEES, WARRANTIES AND BONDS

1. All work will be guaranteed by the CONTRACTOR for a period of one (1) year from the date of substantial completion.
2. Wording for the notarized guarantee shall be as follows:
"We hereby guarantee all work performed by us on the above captioned project to be free from defective materials and workmanship for a period of one (1) year, or such longer period of time as may be called for in the Contract Documents for such portions of the work."
3. Guarantee Compliance:
Except as otherwise specified, all work shall be guaranteed by the CONTRACTOR and through him each sub-contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the date of substantial completion of the Contract. In case of work performed by his sub-contractors, the CONTRACTOR shall secure warranties from said sub-contractors and deliver copies of the same to the OWNER upon completion of the work. If, within any guarantee period, repairs or changes are required in connection with guaranteed work which, in the OWNER'S opinion, are rendered necessary as the result of use of materials, equipment or workmanship which are inferior, defective or not in accordance with terms of the Contract: CONTRACTOR shall promptly upon receipt of OWNER'S written notice, and without expense of the OWNER;
 - a. Place in satisfactory condition in every particular all such guaranteed work, correct all defects therein.
 - b. Make good all damage to the building, site, equipment or building contents which in the OWNER'S opinion is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with terms of the Contract.
 - c. Make good any work or material or the equipment and contents of building or site disturbed in fulfilling such guarantee.

In any case where fulfilling the requirements of the Contract, or any guarantee embraced in or required thereby, the CONTRACTOR disturbs any work guaranteed under another's Contract, he shall restore such disturbed work to condition satisfactory to the OWNER and guarantee such restored work to the same extent as it was guaranteed under such other contract. If the CONTRACTOR, after notice, fails to proceed promptly to comply with terms of the guarantee, the OWNER may have the defects corrected and the CONTRACTOR

and his surety shall be liable for all expense incurred. All special guarantees applicable to definite parts of the work that may be stipulated in the specification or other Contract Documents shall be subject to the terms of this Specification Section during the first year of the life of such special guarantees. All guarantees and warranties shall be obtained in the OWNER'S name and evidence thereof shall be promptly delivered to the OWNER'S Representative for transfer to the OWNER.

CLOSE-OUT DOCUMENTS

In general documents for close out, to be submitted by the CONTRACTOR to the OWNER, prior to final payment, shall be; but not limited to the following:

1. APPLICATION FOR PAYMENT: AIA Document G-702
2. CERTIFICATE OF SUBSTANTIAL COMPLETION: AIA Document G-704
3. CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS:
AIA Documents G-706 and G-706A: The Contractor shall furnish these AIA Documents complete with attached notarized full release of liens, damages, and a guarantee that all materials and labor are paid in accordance with Contract Documents with the following wording:
"WE HEREBY CERTIFY THAT ALL BILLS FOR LABOR AND MATERIALS INCORPORATED INTO THE ABOVE CAPTIONED PROJECT UNDER OUR CONTRACT HAVE BEEN PAID AND THAT THE OWNER IS RELEASED FROM ANY AND ALL CLAIMS AND/OR DAMAGES UNDER THIS CONTRACT."
4. CONSENT OF SURETY COMPANY TO FINAL PAYMENT: AIA Document G-707
To be completed in full by the Bonding Company.
5. CONTRACTOR'S NOTARIZED STATEMENT:
Notarized statement that project has been constructed in accordance with Contract Documents.
6. CONTRACTOR'S NOTARIZED STATEMENT OF GUARANTEE/S:
All work will be guaranteed by the Contractor for a period of one (1) year from the date of substantial completion. Wording will be as follows:
"WE HEREBY GUARANTEE ALL WORK PERFORMED BY US ON ABOVE CAPTIONED PROJECT TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR, OR SUCH LONGER PERIOD OF TIME AS MAY BE CALLED FOR IN THE CONTRACT DOCUMENTS FOR SUCH PORTIONS OF THE WORK."
In the case of work performed by his sub-contractors, the Contractor shall secure warranties from said sub-contractors and deliver copies of same to the Owner upon completion of work.
7. OPERATING AND MAINTENANCE MANUALS:
All manufacturer's operating instructions and maintenance manuals will be compiled in a tabbed and labeled 3-ring binder. (Furnish Owner with two (2) sets).
8. FORM W-9, PAYER'S REQUEST FOR TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION (IRS):
Form W-9 is to be completed by non-corporation contractors. Non-applicable if Contractor's firm is Incorporated.
9. FINAL CLEANING:
At close out time clean and re-clean entire work to normal level for "FIRST CLASS" maintenance/cleaning.

MEASUREMENT AND PAYMENT

Measurement and payment for the following bid items shall be as described and shall include all material equipment, labor and testing to install and make operational a complete sewer system as detailed on the contract drawings and in these specifications.

SEWER MAIN (SDR-26), HDPE, DUCTILE IRON, OR OTHER

Payment for all sewer mains will be per linear foot for various diameter pipe measured from centerline of manhole to centerline of manhole in relation to the diameter of the pipe and the depth of cut as shown in the individual bid items. The item shall be paid per linear foot.

REMOVAL OF EXISTING SEWER LINE

Payment for removal of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

ABANDONMENT OF EXISTING SEWER LINE

Payment for abandonment of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

TRACER WIRE SYSTEM FOR WATER/SEWER

Installation requirements for tracer wire shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to provide a complete tracer system for the sewer infrastructure with proper grounding and connection points as shown in the plans and specifications. Grounding and hook-up locations shall be absorbed in the price of the tracer wire. The item shall be paid per linear foot.

MANHOLES

Payment for manholes will be per each and depth of manhole in appropriate depth bracket measured from lid of manhole to downstream invert. Depth shall be based on individual bid items.

DEMOLITION AND REMOVAL OF EXISTING MANHOLE

Payment for demolition and removal of existing manhole shall be as indicated on the construction plans. The item shall include the removal of the manhole frame and lid assembly with storage and delivery to City of Hattiesburg, demolition of the remainder of the manhole as indicated on the construction plans removal of the manhole as indicated. The item shall include all labor, equipment and materials necessary to demolish and remove an existing manhole. Bypass pumping shall be an absorbed portion of this item should it be necessary for the removal. The item shall be paid per each.

ABANDONMENT OF EXISTING MANHOLE

Payment for abandonment of existing manhole shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the

item. The item shall be paid per each.

DROP MANHOLE ASSEMBLY

Payment for drop manhole assembly shall include furnishing and installing all hardware required to assemble a drop as detailed in the plans and specifications. Payment shall be per each.

SANITARY SEWER SERVICE CLEANOUT

Payment for sewer cleanout will be per each to include all labor, materials and equipment at the bid size. Price shall reflect each necessary cleanout as determined by the ENGINEER to provide sanitary sewer service to project area.

SANITARY SEWER SERVICE

Payment for sanitary sewer service will be per linear foot for various diameter pipe. Item shall include PVC pipe, fittings, and other items necessary for a functioning service. Item shall include all labor, equipment and materials necessary to install all equipment. The item shall be per linear foot.

SANITARY SEWER SERVICE TEE

Payment for sanitary sewer service tee will be per each at the bid size and type. Price shall include all labor, materials and equipment necessary to install sanitary sewer service tee based on plans and specifications.

DUCTILE IRON, PVC and HDPE WATER SYSTEMS

Payment for item shall include furnishing and installing all pipe, trenching, compaction of required bedding and backfill excavation, disposal of excess excavated material sheeting, shoring, bracing, dewatering, testing, fittings, reducers, flushing the system and related items not specifically covered under other pay items. The contract price shall be determined by the measured distance of pipe installed and accepted per linear foot.

CONNECTION ITEMS

Payment for connection items shall include installation of reducers, fittings, valve boxes, trenching, excavation, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

GATE VALVES

Payment for installation of gate valves shall include furnishing gate valves, valve boxes, trenching, excavating, compaction of backfill, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

FIRE HYDRANT WITH APPURTENANCES

Payment for installation of fire hydrant with appurtenance shall include furnishing fire hydrant, gate valve, valve box, piping, trenching, excavating, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items. Pay shall be determined per each to include fire hydrant, tees, gate valve, valve box, pipe and other miscellaneous items as required to provide an operational hydrant. Pay shall be determined per each.

REMOVAL OF EXISTING FIRE HYDRANT

Payment for removal of fire hydrant shall include capping/plugging existing service line and removal of the hydrant. Item shall be paid per each.

SERVICE TAP

Payment for service tap shall include all fittings, tubing, tapping saddle, corporation stop, materials, labor and equipment to provide a new water service. Item shall be paid per each.

SERVICE TUBING

Payment for installation of service tubing shall include furnishing and installing service tubing as directed by the ENGINEER. Item shall include all boring, trenching, excavating, compaction of backfill, disposal of excess excavated material etc. to install service tubing as directed. Payment shall be per linear foot measured from each connection point.

RESIDENTIAL METER

Payment for residential meter shall include all components, labor and equipment for a fully operational water meter. Meter shall meet the requirements of the plans and specifications and function fully within the existing system. Item shall include meter, box and any necessary fittings and shall be paid per each.

CRUSHED AGGREGATE

Payment for crushed aggregate shall include furnishing and installing material as specified in the plans and specifications. Crushed aggregate shall be installed as a base material for the pavement repairs. Crushed aggregate may be used for a temporary riding surface and will be the surface of Camp Street throughout the life of the project. Temporary riding surface will be removed prior to pavement repairs and moved to another location as directed by the engineer at no additional cost to the project. Payment shall be per ton from certified scales.

SELECT FILL MATERIAL

Payment for select fill material will be based on loose vehicular measurement. Haul vehicles shall be measured and volumes calculated. It shall be the discretion of ENGINEER as to the overall percentage full of haul material and that determination shall be final. Item shall include material, haul, placement and testing necessary to meet the plans and specifications.

CONCRETE PAVEMENT REPAIR

Payment for concrete pavement repair shall include furnishing and installing concrete pavement as specified in the plans and specifications. Item shall include forming, material, haul, placement, finishing and testing necessary to meet the plans and specifications. Payment shall be per square yard.

CONCRETE

Payment for concrete shall include furnishing and installing concrete with specified class as specified in the plans and specifications. Item shall include forming, material, haul, placement compaction and testing necessary to meet the plans and specifications. Item shall include reinforcing steel, grates, etc. as necessary and required. Payment shall be per cubic yard.

HOT MIX ASPHALT

Payment for hot mix asphalt shall include furnishing and installing asphalt pavement as specified in the plans and specifications. Item shall include material, haul, placement compaction and testing necessary to meet the plans and specifications. Payment shall be per ton.

CONCRETE SIDEWALK REPAIR

Payment for concrete sidewalk repair shall include furnishing and installing sidewalk to match removed concrete sidewalk. Item shall include saw cutting, forming, material, haul, placement, compaction and testing necessary to meet the plans and specifications. Item shall not be used for damage to sidewalk as a result of poor construction methods or neglect from the contractor. Payment shall be per square yard.

CONCRETE CURB AND GUTTER

Payment for concrete curb and gutter shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing curb and gutter. Item shall be paid per linear foot.

CONCRETE DITCH REPAIR

Payment for concrete ditch repair shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing paved ditch. Item shall be paid per square yard.

CLASS "B" CONCRETE, MINOR STRUCTURES

Payment for Class "B" Concrete, Minor Structures shall include grading, forming, materials, placement, compaction and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per cubic yard.

REINFORCING STEEL

Payment for reinforcing steel shall include grading, forming, materials, tying, spacing and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET GRATINGS

Payment for inlet gratings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET CASTINGS

Payment for inlet castings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

DRAINAGE PIPE

Payment for all drainage pipe will be per linear foot for various diameter pipe and material type measured from end of pipe to end of pipe installed in relation to the diameter of the pipe.

REMOVAL OF EXISTING PIPE CROSS DRAINS

Payment for removal of existing pipe cross drains shall include removal of all pipe materials from project site. Item shall be as authorized by the engineer. Item shall be paid per linear foot.

REMOVAL OF EXISTING CORRUGATED HDPE PIPE AND RESET

Payment for removal of existing corrugated HDPE pipe and reset shall include removal of all pipe materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

REMOVAL, SALVAGE, AND RESET EXISTING FENCE

Payment for removal, salvage, and reset of existing fence shall include removal of all fence materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

6" YELLOW THERMOPLASTIC DETAIL TRAFFIC STRIPE

Payment for 6" Yellow Thermoplastic Detail Stripe shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

LEGEND WHITE THERMOPLASTIC TRAFFIC MARKING

Payment for Legend White Thermoplastic Traffic Marking shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

SOLID SOD

Payment for solid sod shall include furnishing and installing sod, fertilizer, lime and other components required to establish permanent grassing matching existing conditions. Solid Sod shall include final grading prior to installation of sod materials. The unit measurement shall be per square yard.

LANDSCAPE RESTORATION

Payment for Landscape Restoration shall include furnishing and installing of top soil, mulch, plants, fertilizer, watering, final grading and other components required to re-establish landscaping to matching existing conditions. The unit measurement shall be per square foot.

CLEARING AND GRUBBING

Payment for clearing and grubbing shall include removal of all items within the required limits of construction necessary to complete the project based on the construction plans and specifications. Payment shall include off site removal of all items removed during clearing and grubbing. Item shall include all materials, labor and equipment necessary to meet the plans and specifications. Payment shall be per acre.

TEMPORARY EROSION CONTROL

Payment for Temporary Erosion Control shall include furnishing, installing and maintaining hay bales or silt fence as required by current Mississippi Department of Environmental Quality standards. Hay bales and silt fence shall be installed and maintained to prevent erosion under or excess siltation within 24 hours of a rain event. The unit measurement shall be lump sum and includes any required maintenance.

MAINTENANCE OF TRAFFIC

Payment for maintenance of traffic will be lump sum. Item shall include all materials, labor and equipment to maintain traffic based on the current MUTCD or as required by the ENGINEER.

MOBILIZATION

Payment for mobilization shall enable contractor to assemble materials, equipment, etc. on site, to prepare for construction. The unit measurement shall be lump sum. Mobilization shall be paid 50 percent at 5 percent of construction complete and 100 percent at 25 percent of construction complete.

SANITARY SEWERAGE SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of sewer pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139/139M Electric-Fusion (Arc) Welded Steel Pipe (HPS 4 inch and over).
- A 252 Welded and Seamless Steel Pipe Piles.
- C 31/C 31M Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Specifications for Concrete Aggregate
- C 39/C 39M Compressive Strength of Cylindrical Concrete Specimens.
- D 1248 Polyethylene Plastics Extrusion Materials for Wire and Cable
- D 1784 Rigid Poly(Vinyl Chloride)(PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds.
- D 2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel Plate Loading.
- D 2922 Density of Soil and Soil Aggregate in place by Nuclear Methods (Shallow Depths).
- D 3034 Specifications for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- D 3212 Joints for Drain and Sewer Plastic Pipes using Flexible Elastomeric Seals.
- F 477 Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

F 794 Poly (Vinyl Chloride)(PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

A21.10 Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.

A21.11 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

A21.50 Ductile Iron Pipe, Design Requirements

A21.51 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-lined Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

C 104 Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water and Other Liquids.

C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

C 151 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction Current Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer and bear on the submittal a certification from the Contractor the submittal is in conformance with the specifications.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

3.2 PVC Pipe: The Contractor shall submit manufacturer's certificate which certifies the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the Contractor shall submit the following:

A. PVC Piping: PVC Pipe shall be sampled, tested, and inspected in accordance with the provisions of ASTM D3034. Copies of test results shall be attached. Test results shall be similar material and not be more than one year old from the date of material delivery.

B. Joints: The following submittals shall be required for PVC joints.

1. Certificate with test results for joints for compliance to ASTM D 3212. Gaskets shall conform to ASTM F 477. Test results shall be for similar material and not be more than one year old.

4.0 MATERIALS

4.1 Gravity Sewer Pipe: Where the type of gravity sewer piping is not indicated on the plans, the Contractor shall furnish polyvinyl chloride (PVC) pipe.

The Contractor shall be restricted to furnishing the exact type of pipe material where indicated on the Contract Drawings.

The Contractor shall be limited to the use of only one type of pipe (so selected by the Contractor and indicated on the Proposal Form) and shall not change the type of gravity sewer pipe except as follows:

1. Where indicated on the plans, or
2. If permitted in writing by the Engineer.

A. **Ductile Iron Pipe:** Ductile iron shall be designed in accordance with the latest revision of ANSI/AWWA C150/A21.50 for a minimum 50psi.

Ductile Iron Pipe shall be manufactured in accordance with the latest revision of ANSI/AWWA C151/A21.51. Each pipe shall be subjected to a hydrostatic pressure test of at least 500 psi at the point of manufacture.

Pipe shall be standard asphaltic coating on the exterior. Pipe shall also have 40 mils of Protecto 401 Ceramic Epoxy on the interior per "Standard Specification for Lining Ductile Iron Pipe for Sewer Service".

The class or nominal thickness, net weight without lining, and casting period shall be clearly marked on each length of pipe. Additionally, the manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "Ductile" shall be cast or stamped on the pipe.

All pipe shall be furnished with Push-On Type Joints, such as Tyton or Fastite. Joints shall be in accordance with ANSI/AWWA C111/A21.11, of latest revision, and be furnished complete with all necessary accessories.

Fittings shall be ductile iron. Fittings shall conform to the latest revision of either ANSI/AWWA C600.

B. **PVC Pipe:** PVC gravity sewer pipe and fittings shall conform to the requirements of ASTM D 3034 with an SDR of 26 and a minimum stiffness of 46 lb./in. - in and 115 lb./in. - in, respectively. Joints for sewer pipe shall be either push-up or mechanical conforming to the requirements of ASTM 3212. Gaskets for sewer pipe shall conform to the requirements of ASTM F 477.

Approved adaptors shall be used for making connections between PVC pipe and

concrete manholes. Pipe connections to new manholes shall be made using a flexible synthetic rubber boot mechanically clamped to the manhole and to the pipe to provide a watertight seal.

C. Service Laterals: Service laterals for local services shall consist of fittings, pipe lengths, and connections of 6 inch or 4 inch pipe. The fittings, pipe lengths and plugs shall be of the same material as the run pipe unless otherwise indicated on the Contract Drawings. The modified sewer tees shall be an integral part of the run pipe. The remainder of the branch shall consist of standard fittings (elbows, reducers, and lengths of pipe) in accordance with the manufacturer's standard products and as specified. Pipe lengths and joint connections shall meet the specified requirements for the type materials used.

4.2 Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of sewer pipe or force main and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch. (Hwy) and 0.28 inch (RR). Contractor shall verify the I.D. of the casing pipe is adequate for the carrier pipe prior to installation.

4.3 Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table:)

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 - ½"	95 - 100
¾"	35 - 70
⅜"	10 - 30
No. 4	0 - 5

4.4 Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1 - ½" sieve.

4.5 Clay Gravel Material: Clay Gravel Material shall meet MDOT Specifications, Group

4.6 Concrete: Concrete shall be in accordance with the requirements of Technical Specifications - CONCRETE

4.7 Select Fill Material: General : The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in

character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material. Material shall meet the Standard Specifications for Road and Bridge Construction, Latest Edition for Class 9 Group C and modified to consist of a P.I of between 5 and 15.

4.8 Backfill: All other backfill shall consist of excavated material removed from the trench unless otherwise directed by the Engineer. CONTRACTOR shall separate poor and acceptable material during excavation. Failure to separate material shall require CONTRACTOR to furnish acceptable backfill at no additional cost to the project. Unacceptable material shall be disposed of off-site at the Contractor's expense.

5.0 CONSTRUCTION:

5.1 Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

Where possible, Contractor shall remove turf in sections, keep damp, and replace upon completion of backfilling.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor at his expense. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should

the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe. In the event trench width is wider than allowed on the plans, Contractor shall absorb the cost of additional wash gravel bedding based on neat line quantity calculations.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

If adequate area is not available on the construction site, the Contractor will be required to stockpile material off site. Owner shall not bear any additional expense.

Ledge Rock, boulders and large stones shall be removed to provide a minimum clearance of 4 inches (10 cm) below and on each side of all pipes.

It is the intention of these specification that there shall be a minimum interruption to traffic and all traffic control shall be in accordance with the MUTCD.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of sewer pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches and dikes and shall perform all pumping and other work necessary to divert or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade

made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the pipe laying operation.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with wash gravel bedding and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation, without direction of the Engineer, shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the subgrade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the subgrade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the subgrade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in

the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to a minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grade, and cross section with proper bell holes at each joint to ensure that pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

- a Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.
- b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.
- c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.

5.2 PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

5.3 PIPE LAYING: Pipe laying shall proceed upgrade with the spigot ends of the bell-and-spigot pipe and tongue ends of the tongue and groove pipe jointing in the direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the sewer shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water, earth, or other substance will enter the pipe or fittings.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

The Contractor shall utilize a commercial grade laser beam specifically manufactured to aid in maintaining grade and alignment of pipelines during installation. The primary unit shall be mounted on a heavy duty base and firmly anchored in the downstream manhole of the reach under construction. The maximum distance shall not exceed four hundred feet (400') per set-up without the approval of the Engineer.

Each joint of pipe shall be installed using an approved target to align the pipe with the projected laser beam. The methods and procedures shall be in strict accordance with the manufacturer's recommendations and instructions. Proper ventilation shall be maintained at all times. Care shall be exercised in order to prevent bumping or misalignment of the projected beam. Sewer lines shall be laid such that the installed variation of invert elevations when compared with the construction plans does not exceed 0.05 feet. Sewer lines in which said variation exceeds 0.05 feet may be rejected. Sewer pipe shall be visually inspected for alignment by lamping, televising or by other appropriate means to determine alignment.

Whenever a movable steel box is used in place of sheeting, the Contractor shall take care to prevent the pipe from moving when the steel box is moved.

5.4 PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

A. **PVC Pipe Joint Construction:** The bell and spigot ends of PVC sewer pipe shall be cleaned of all foreign material that could interfere with proper assembly of the joints. The spigot

ends shall be cleaned one inch (1") beyond the joint assembly reference mark.

The spigot end of the pipe shall be thoroughly lubricated in accordance with the manufacturer's recommendations. The coating should be the equivalent of a brush coat of enamel paint and maybe applied by hand, cloth, pad sponge or glove.

The lubricated spigot end shall be inserted into the bell keeping the pipe length in proper alignment. The bell shall be braced while the spigot end is pushed in under the rubber ring, so that previously competed joints in the line will not be closed up. The spigot end shall be pushed into the bell until the reference mark is flush with the end of the bell. Pipe shall be pushed by use of a bar or other means approved by the Engineer. Hydraulic excavators, backhoes, or other machinery shall not be used to push slip-joint pipe together.

Generally, the installation and jointing of PVC Pipe shall conform to the requirement so the latest edition of ASTM D-2321, "Underground Installation of Flexible Thermoplastic Sewer Pipe".

Any pipe cuts shall be of neat line. Pipe shall have bevel edges according to the manufacturer's recommendations.

B. Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe and shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space.

When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first; then the top; next the bolts on either side; and last , the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

C. Jointing Dissimilar Pipes: Suitable adaptor couplings are required for connecting dissimilar pipes. The couplings shall be approved by the Engineer before installation.

5.5 STREAM CROSSING: Ductile iron pipe Class 50 shall be used as shown on the Drawings. Granular fill, concrete, and concrete collars shall be placed or constructed as shown on the contract drawings.

5.6 SERVICE LATERALS (LINES): Modified sewer tees shall be installed on the run pipe at the appropriate field locations. Service lines of the sizes specified shall be laid to a uniform grade so that the customer being served can be tied-in using good construction practices. All tamping and backfilling operations shall be performed the same as on main line pipe. Removable plugs shall be securely installed in pipe ends and a 2" x 2" treated post extending 12" above the ground line shall mark the pipe end location if the lateral is not connected to an existing sewer. For service laterals in which a connection to an existing service is required, the Contractor shall make the connection. Contractor shall verify the location of all service laterals within the project area prior to construction.

5.7 BORINGS: Borings shall be accomplished in accordance with Mississippi Standard Specifications for Road and Bridge Construction or Railway Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the crossing.

A. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be water tight.

B. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

C. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under surcharged sewage conditions.

D. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end with a quick setting grout.

5.8 RELATION TO WATER MAINS:

A. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

5.9 CONTINUATION OF SERVICE

The existing wastewater system shall remain in operation during the duration of the project until such time it is no longer needed. Should removal of facilities from operation become necessary, a plan which will avoid or minimize pollution effects on any receiving stream and provide alternate service for wastewater facilities shall be reviewed and approved in advance by the Mississippi Department of Environmental Quality and shall be adhered to during construction.

Where shown on the plans or directed by the Engineer, new sewers shall be connected to existing sewers either by constructing a manhole over an existing line (doghouse) or by coring through the wall of an existing manhole.

6.0 TESTING

6.1 Ductile Iron Pipe:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

6.2 PVC PIPING: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittal. No other material test shall be required.

6.3 STEEL CASING PIPE: Material test shall be included as part the submittal. No other material test shall be required.

6.4 BEDDING MATERIAL AND STABILIZATION MATERIAL: Test for gradation and test for material passing the No. 40 sieve shall be as follows:

Gradation	- AASHTO T 88
Liquid Limit	- AASHTO T 89
Plasticity Index	- AASHTO T 90

One set of each test listed above will be required for every 500 cubic yards or major fraction thereof.

6.5 COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a

change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99	
AASHTO T-191	or
ASTM D 2922	
Select Backfill Material OR	
Stabilization Material	1
One per 100 CY	
Bedding Material	2
One per 600 LF	
Tamped Backfill	2
One per 600 LF	

6.6 INFILTRATION/EXFILTRATION/LAMP TEST: The Contractor shall provide all plugs, water supply, measuring devices, and all other equipment, material, labor and supervision to measure the infiltration and exfiltration tests as specified below. The Contractor shall perform the test in the presence of the Engineer. All gravity sewer pipe shall be tested in accordance with the following applicable requirements.

A. Infiltration Test: The infiltration test shall be conducted between adjacent manholes. The outlet pipe on the downstream manhole shall be plugged and tested for water tightness to the satisfaction of the Engineer. The accumulated depth of water in the downstream manhole shall be read at 12 hour intervals for two (2) days and the infiltration rate calculated from the data obtained. Any section exceeding an infiltration rate of 200 gallons/day/inch diameter/mile shall be relayed at the Contractor's expense. This means that the Contractor shall locate and repair leaks as necessary to pass the infiltration test. Infiltration test shall be utilized only when ground water is above pipe.

B. Low Pressure Air Test: Air test shall be conducted in strict accordance with the manufacturer's instructions, including all recommended safety precautions. Equipment used for air testing shall be specifically designed for such and include a monitoring gauge with 0 to 5 psi with a minimum division of 0.1 psi and an accuracy of no less than 0.05 psi

1. Air testing shall be conducted for completed gravity sewer mains
2. After an internal pressure of 4.0 psi is obtained, allow at least 2 minutes for pressure to stabilize, adding only the amount of air necessary to maintain pressure. After stabilization period, adjust the pressure to 3.5 psi and valve off air supply.

3. Determine the minimum pressure holding time allowed for pressure to drop from 3.5 psi to 3.0 psi as shown on the table below.

Minimum Holding Time for Low Pressure Air Test

Nominal Pipe Size (inches)	Time per 100 ft.
6	42 sec.
8	1 min. - 12 sec.
10	1 min. - 30 sec.
12	1 min. - 48 sec.
15	2 min. - 6 sec.
18	2 min. - 24 sec.
21	3 min.
24	3 min. - 36 sec.
27	4 min. - 12 sec.
30	4 min. - 48 sec.
33	5 min. - 24 sec.
36	6 min.

C. Visual Test: Gravity sewer lines will be lamped and shall show a true line between manholes without defects in conditions, grade, or alignment. Any defective lines shall be subject to a closed-circuit television inspection performed at the Contractor's expense.

6.7 DEFLECTION TESTS: 100% of the PVC gravity sewer mains shall be tested 30 days after the final backfill has been in place by the following method:

Use a "Go-, no-go" mandrel which is sized to such dimensions that it will not "go" when encountering a deflection greater than 5%. The instructions for its use are as follows:

A. Completely flush the line making sure the pipe is clean of any mud or debris that would hinder the passage of the mandrel.

B. During the final flushing of the line, attach a floating block or ball to the end of the mandrel, pull rope and float the rope through the line. (A nylon ski rope is recommended)

C. After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.

D. Connect a retrieval rope to the back of the mandrel to pull it back if necessary.

E. By hand, remove all the slack in the pull rope and place a tape marker on the top at the end of the pipe where the mandrel will exit, determining the location of the mandrel in the line.

F. By hand, draw mandrel through the sewer lines. If any irregularities or obstructions are encountered in the line, they shall be corrected by the Contractor.

G. If a section with excessive deflection is found, locate it; dig down and uncover the pipe; if any damaged pipe is found, replace it; if pipe is not damaged, realign and thoroughly tamp haunching and initial backfill; replace remainder of backfill.

H. Re-test this section for deflection after 30 days from initial testing.

STANDARD SPECIFICATION
FOR LINING DUCTILE IRON PIPE
FOR SEWER SERVICE

1.0 Condition of Ductile Iron Prior to Surface Preparation

All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface. Because removal of old linings may not be possible, the intent of this specification is that the entire interior of the ductile iron pipe and fittings shall not have been lined with any substance prior to the application of the specified lining material and no coating shall have been applied to the first six inches of the exterior of the spigot ends.

2.0 Lining Material

The Standard of Quality is Protecto 401 Ceramic Epoxy. The material shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe and fittings for sewer service, a test report verifying the following properties, and a certification of the test results.

A permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.

The following test must be run on coupons from factory lined ductile iron pipe:

ASTM B-117 Salt Spray (scribed panel) - Results to equal 0.0 undercutting after two years.

ASTM G-95 Cathodic Disbondment 1.5 volts @ 77°F. Results to equal no more than 0.5mm undercutting after 30 days.

Immersion Testing rated using ASTM D-714-87.

20% Sulfuric Acid - No effect after two years.

140°F 25% Sodium Hydroxide - No effect after two years.

160°F Distilled Water - No effect after two years.

120°F Tap Water (scribed panel) - 0.0 undercutting after two years with no effect.

An abrasion resistance of no more than 3 mils (.075mm) loss after one million cycles using European Standard EN 598: 1994 Section 7.8 Abrasion Resistance.

3.0 Application

Applicator

The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.

Surface Preparation

Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any areas with oil, grease, or any substance which can be removed by solvent, shall be solvent cleaned to remove those substances. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be reblasted.

Lining

After the surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. No lining shall take place when the substrate or ambient temperature is below 40 degrees Fahrenheit. The surface also must be dry and dust free. If flange pipe or fittings are included in the project, the lining shall not be used on the face of the flange.

Coating of Bell Sockets and Spigot Ends

Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.

Number of Coats

The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. **To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.**

Touch-Up & Repair

Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

4.0 Inspection and certification

Inspection

All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PA-2 Film Thickness Rating.

The interior lining of all pipe barrels and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any pinholes found shall be repaired prior to shipment.

Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.

Certification

The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

5.0 Handling

Protecto 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying. The pipe shall not be dropped or unloaded by rolling. Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded. Ductile iron pipe should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.

MANHOLES

1.0 GENERAL:

This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals for the construction of standard manholes, in accordance with the Contract Drawings and Specifications. Included in the work are structural excavation, backfill, and disposal of excess material.

2.0 APPLICABLE DOCUMENTS:

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

American Society for Testing and Materials (ASTM)

A 48/A48M	Standard Specification for Gray Iron Casting
C 39/C39M	Standard Specification for Test for Compressive Strength of Cylindrical Concrete Specimens
C 443	Standard Specification for Joints for Circular Concrete Pipe and Manholes Using Rubber Gaskets
C 478	Standard Specification for Precast Reinforced Concrete Manhole Sections
C 497	Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile
C 2922	Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

American Association of State Highway and Transportation Officials (AASHTO):

M-198 Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.

T-99 Standard Method of Test for the Moisture-Density Relations of Soils Using a (2.5kg) Rammer and (305 mm) Drop.

T-191 Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method.

3.0 SUBMITTALS

The following tests or data shall be submitted to the Engineer from the Contractor for approval prior to incorporation into the work:

3.1 Certificates: The Contractor shall furnish certificates from supplier certifying the products conform to the required specifications included herein for the following items:

- 3.1.1. Flexible Plastic Gaskets
- 3.1.2. Precast Manhole Bases
- 3.1.3. Precast Manhole Riser Sections
- 3.1.4. Manhole Steps
- 3.1.5. Manhole Frames and Covers (ASTM A 48)
- 3.1.6. Epoxy Grout

3.2 Catalogue Cuts or Brochures: The Contractor shall also submit catalogue cuts or product brochures providing descriptive data, recommended application and use, and installation procedure for the following items:

- 3.2.1. Manhole Frames and Covers
- 3.2.2. Epoxy Grouts
- 3.2.3. Manhole Steps

4.0 MATERIALS

4.1 Manhole Riser Sections: Manhole riser sections shall be precast reinforced sections conforming to ASTM C 478 and as shown on the Contract Drawings.

4.2 Joints: Joints for precast riser sections shall be concrete pipe type flexible plastic gaskets. Joint material shall be pre-formed conforming the requirements of AASHTO M-198. Installation shall be in accordance with manufacturer's recommendations.

4.3 Concrete Manhole Bases: Concrete manhole bases shall be precast or cast-in-place as follows:

4.3.1 Cast-In-Place Manhole Bases and Box Type Bases (if used): Concrete and reinforcing steel shall conform to the requirements of Technical Specifications - CONCRETE.

4.3.2 Precast Concrete Bases: Precast concrete bases shall conform to the requirements of ASTM 478 with reinforcing steel (size and spacing as indicated on the plans).

4.4 Manhole Steps: Manhole steps shall be plastic coated corrosion resistant with a minimum

design load of 300 pounds and shall be installed as shown on the Contract Drawings.

4.5 Cement Grout: Cement grout shall be high strength, non-metallic conforming to Corps of Engineers CRD-C-588. The grout shall be V-3 by W. R. Meadows, Inc., Masterflow 713 by Master Builders or equal.

4.6 Manhole Frame and Covers: Manhole frame and covers shall conform to ASTM A 48 as well as to the following requirements. All frame and covers shall be new when installed for the project and shall meet AASHTO H-20 loading condition.

4.6.1 Standard Manhole Cover and Frame - shall be as manufactured by Dews Foundry, Jackson Standard, Model DF-25 (7) or Vulcan Foundry, Model V-1115, 420 Pounds, marked "CITY OF HATTIESBURG SEWER", domestic origin, or equal.

4.6.2 Water Tight Manhole Cover and Frame - shall be as manufactured by Vulcan Foundry, Model V2357, or Dews Foundry, Model DF-25(7)W.T., 410 pounds with neoprene gasket, four 5/8 inch stainless steel bolts recessed into cover. Cover labeled "CITY OF HATTIESBURG SEWER", domestic origin, or approved equal.

4.7 Epoxy Grout: Epoxy Grout shall be high strength non-metallic, non-shrinking. The grout shall be as by EMBECO, Inc., SEAL-COAT or approved equal.

4.8 Drop Manholes: Concrete for drop manholes shall conform to the requirements of Technical Specifications - CONCRETE. Pipe and fittings shall be the same material and size as the incoming gravity sewer.

4.9 Flexible Connection: At all sewer connections to manholes, provide gasket flexible watertight connection that allows for differential settlement of the pipe and manhole wall. Bands, clamps and other metal accessories shall be of Series 304 stainless steel.

4.10 All manholes: All manholes shall be lined inside with a twenty (20) mil dry film thickness of an acceptable coal tar epoxy system.

5.0 CONSTRUCTION

5.1 Earthwork

5.1.1 General: Excavation shall be to the extent required to allow proper construction of the manhole. Shoring and sheeting shall be utilized where required by Federal, State and local codes and regulations for safe working conditions. In addition, shoring and sheeting shall be required to protect the integrity of adjacent structures or prevent adverse effects on surrounding areas. Dewatering shall be employed to the extent required to allow dry working conditions.

5.1.2 General Excavation: The Contractor shall "lay back" or employ shoring and sheeting as required to assure stability of the excavation. Material shall be stockpiled so as not to surcharge adjoining pipe trenches. Topsoil shall be separated so as to allow the maximum reuse in grassing operations.

5.1.3 Structural Excavation: The area immediately beneath the manhole bases shall be graded and compacted. Compaction shall be to 96% of maximum laboratory density as determined by AASHTO T 99. Should unsuitable material be encountered, the Engineer may direct that the area be over excavated and filled with stabilization material. Specification for stabilization material and payment for such shall be in accordance with Technical Specifications.

5.1.4 Backfilling: Backfill material shall consist of select backfill in accordance with Technical Specifications. Backfilling shall be uniformly placed around the structure in 10-inch layers and be compacted to 90% of maximum density to full depth in unimproved areas. Backfill in paved areas and within five feet to any edge of pavement shall be compacted to 95% of maximum laboratory density in 6-inch layers to the subgrade line. Refer to Technical Specifications.

5.1.5 Salvage: Manhole frames and covers removed during excavation shall remain the property of the Owner and shall be delivered to a location designated by the Owner. All other items removed shall be disposed of by the CONTRACTOR at his expense.

5.2 Riser Installation: Precast concrete riser sections shall be installed plumb and in accordance with the details shown on the Contract Drawings. Joints shall be installed in accordance with manufacturer's recommendations.

The manhole invert channels shall be formed in the bases, smooth and semi-circular in shape conforming to the inside of the adjacent sewer section. Changes in the direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be formed directly in the concrete of the manhole base. The joint between the base and riser section shall be sealed with epoxy grout. Clean pea gravel shall be used as the epoxy grout filler.

Standard manhole cut-outs and lifting holes shall be sealed with epoxy grout.

5.3 Cast-In-Place Concrete: Bases, flat tops, and drop manhole risers shall be constructed in accordance with Technical specifications - CONCRETE.

5.4 Manhole Steps: Manhole steps shall be installed during the manufacturing of the riser or cone sections. Risers and cones shall be joined so the steps are vertically aligned.

5.5 Manhole Frame and Covers: Manhole frame and covers shall be set and grouted in place

with cement grout. For manholes located in roads or streets, the manhole cover shall be flush with pavement or surface course.

6.0 TESTING

6.1 General: The Contractor shall conduct (and bear the cost of) all testing (Laboratory Approved by the Owner) as directed by the Engineer and furnish results of such tests prior to incorporating the material into the work. All testing is subsidiary to Manhole Payment Items.

6.1.1 Cast-In-Place Concrete Items: The concrete quality testing for manhole bases, drop manholes, and valve boxes shall be tested in accordance with Technical specifications - CONCRETE.

6.1.2 Manhole Risers and Precast Concrete Bases: Manhole risers and precast concrete bases shall be tested for concrete compressive strength. If the place of manufacture is local and reasonably available to the Engineer, Paragraph (a) shall be followed for testing requirements. Should the place of manufacture not be available, Paragraph (b) shall apply.

The contractor shall prepare (in the presence of the Engineer) standard rodded concrete cylinder or cylinders compacted and cured in a similar manner to the manhole sections. Concrete for such cylinders shall be typical fresh concrete mix drawn from the actual casting operation of a riser or base. Cylinders shall be tested in accordance with ASTM C 39. The average compressive strength shall be equal to or greater than the specified design strength (4000 psi). Not more than 10% of the cylinders shall fall below the design strength (4000 psi). In no case shall any cylinder tested fall below 3200 psi. Number of such cylinder tests shall be as follows:

6.1.2.1 One set of cylinders for each day's run castings or

6.1.2.2 One set of cylinders for each 200 linear feet of riser sections manufactured.

6.1.2.3 One set of cylinders per 20 bases or flat tops manufactured.

The Engineer may require additional tests should compressive test results fail.

6.1.3 Earthwork Test: Maximum laboratory density shall be measured in accordance with AASHTO T-99. Field densities shall be determined in accordance with AASHTO T-191 or ASTM D 2992. Standard proctors and field densities shall be performed in accordance with the following schedule.

Standard proctor tests shall be required for earthwork associated with manhole construction. At least two (2) field density tests shall be conducted for earth work associated with each manhole construction.

6.1.4 Inspection for Watertightness: All manholes shall be inspected for watertightness prior to placing into service.

RESTORATION OF ROADS, DRIVEWAYS, FENCES

LAWNS AND OTHER GRASSED AREAS

1.0 GENERAL

The work under this item of work shall consist of furnishing all necessary materials, labor, supervision, tools, equipment and incidentals for the restoration of roads, driveways, fences, lawns and other grassed areas so as to provide satisfactory repair to all damage caused by general construction work. It is the intent of this Specifications to restore all such features to the general conditions that existed prior to construction activity insofar as practical. It is not the intention of this Specification that trees, which must be cut and removed, be restored. The Contractor is expected to be familiar with the overall area and be satisfied as to the materials required and level of effort needed to accomplish such restoration in accordance with this Specification.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work:

American Association of State Highway and Transportation Officials (AASHTO).

- T 99 Standard Method of Test for the Moisture Density Relations of Soils Using a 5.5 lg. (2.5 kg) Rammer and a 12-inch (305 mm) Drop.
- T 167 Compressive Strength of Bituminous Mixture
- T 191 Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method
- T 230 Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

American Society for Testing and Materials (ASTM)

- D 2922 Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

Mississippi Department of Transportation (MDOT)

Standard Specifications for Road and Bridge Construction, Current Edition.

Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)

3.0 SUBMITTALS

3.1 Mix Designs: Design mix will be provided by Contractor and approved by Engineer prior to production of asphalt.

4.0 MATERIALS

4.1 Subbase and Base Courses: Subbase and base courses under paved areas shall be as specified in MDOT Specification Section 301.

4.2 Prime Coat: Prime coat shall consist of Grade MC-30 or Grade MS-70 in accordance with the applicable requirements of MDOT Specification Section 702.

4.3 Bituminous Pavement: Bituminous Pavement for roadway and parking areas, wearing and binder courses, shall consist of a mix in accordance with MDOT Specifications Section 403. Materials shall conform to the following subsection of MDOT Specifications Sections 702 and 703.

A. **Hot Mix Asphalt All Sizes:** Mississippi Standard Specifications for Road and Bridge Construction, Latest Edition

B. **Topsoil:** Topsoil shall be in accordance with Technical Specifications – SEEDING AND SODDING.

C. **Seeding and Sodding:** Seeding and sodding operations shall be in accordance with Technical Specifications - SEEDING AND SODDING.

5.0 CONSTRUCTION

5.1 Maintenance of Traffic: Prior to limiting or restricting traffic on any street or road, the Contractor shall obtain permission from the Engineer. Through or local traffic shall at all times be accommodated by the use of temporary approaches, crossings or detours (if allowed by the Engineer). Satisfactory (to the Property Owner) ingress and egress to any public or private property shall be properly maintained. Proper barricades, signs and detour signs shall be provided by the Contractor to adequately warn motorists of obstructions ahead. Lighted (flashing) barricades shall be used at night.

Flagmen shall be provided to direct traffic around equipment and for one way movement of

traffic around equipment and for one way movement of vehicles. The Contractor may have to stop construction and restore full traffic during certain rush hours.

The Contractor shall at all times (unless otherwise permitted in writing by the Engineer) maintain open one lane to traffic during construction operations and restore roadways to two-way traffic during non-construction hours. All traffic shall be maintained in accordance with the MUTCD, current Edition.

5.2 Repair of Asphalt/Concrete Streets/Driveways/Parking Lots:

A. Removal and Earthwork: The existing asphalt pavement shall be uniformly saw cut on straight lines and the material shall be removed. Other methods of cutting the existing asphalt surface which will result in a uniform straightedge similar to a sawed cut may be acceptable. Upon completion of the pipe laying, select backfill shall be placed in the excavation in maximum 8-inch lifts and compacted to at least 90% of maximum laboratory density to within one foot of the top subgrade and to 95% of maximum laboratory density in the upper one foot of the subgrade.

Maximum density of typical select backfill material shall be determined in accordance with AASHTO T 191 or ASTM D 2922. Portable mechanical tampers or vibratory compactors shall be used in the trenches. Rollers may be used at street level. Existing base and asphalt surfaces which become undermined during construction shall be removed until firm undisturbed subgrade is reached.

A. Select Fill: Class 9, Group "C" Modified for a PI of between 5 and 15 as per latest Edition of Mississippi standard specifications for Road and Bridge construction

B. Asphalt Repair: Temporary Asphalt repair shall be made using 3" thickness of 825 crushed stone.

C. Concrete Repair: Concrete repair shall be made using 3,000 psi concrete meeting Technical Specifications - CONCRETE

D. Prime Coat: Prime coat shall be applied to exposed existing base material prior to overlay with asphaltic base course in accordance with MDOT Specification Section 408.

F. Tack Coat: Tack coat shall be applied to existing or new asphaltic wearing course and asphaltic base, or concrete which is to require asphalt wearing course.

G. Asphalt Wearing Course: Placement and compaction of the bituminous pavement shall be in accordance with MDOT Specification Section 403.03.

E. Utilities: All utility covers excavated during removal of streets, driveways, parking lots shall be restored to finished grade.

5.3 Driveways and Sidewalks: Driveways and sidewalks shall be repaired in similar manner to the original construction. Asphalt drives shall be saw cut where required and repaired in accordance with Paragraph (b) of this Specification. Concrete drives shall be saw cut or removed to the next joint. The minimum thickness for concrete driveway repair is 7 inches and for sidewalks is 4 inches.

Concrete surfaces shall be properly tooled and receive a broom finish. Installation (if required) of new driveway drainage culvert shall be made only at the direction of the Engineer. The Contractor shall take all reasonable precautions to allow for reuse of existing drainage culverts.

5.4 Repair to Gravel Roads: Gravel roads shall be backfilled and compacted in accordance with Paragraph (B) of this Specification. The final surface shall consist of 12-inch in-place compacted clay gravel. Compaction shall be to 100% of maximum laboratory density in accordance with AASHTO T99.

5.5 Repair to Lawns:

A. General: The Contractor shall exercise extreme care to minimize damage to improved lawns. Trees and shrubs within the limits of work shall be removed only for essential construction requirements. Any shrubs, which are removed or damaged, shall be replaced by satisfactory (to the Property Owner) planting by the contractor. Any grass seed areas, roads, streets, driveways, culverts, fences, water lines, metal boxes or other items (excluding trees unavoidably cut) which are damaged by the Contractor, shall be satisfactorily restored by Contractor. Acceptance of improved lawn repairs shall be based on the firm establishment of live stand of grasses and live growth of any replanted and acceptable shrubs. The Contractor shall water and fertilize such areas until healthy growth of grass (and shrubs, if applicable) are attained.

B. Grading: The surface areas shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall strip topsoil and sod and stockpile for later use. Upon completion of trenching over the area. Additional topsoil shall be furnished if required (at no additional cost) to provide a uniform thickness of 3 inches. Lime at a rate of 1 - ½ tons per acre and fertilizer (13-13-13) at a rate of 800 pounds per acre shall be applied as needed to further establish grass growth.

D. Grassing: Grass seed, sprigs, or sod similar to the existing lawn grasses shall be planted in accordance with the supplier's recommendations. Winter cover grasses such as rye grass shall be applied (in addition to planting the permanent grasses) if seeding, sprigging, or sodding is done at a time of year when the permanent grasses will not actively grow. The type (s) of permanent grasses shall be the same as the grass (es) in the damaged lawns. If the lawn repairs are accomplished between September 1 and March 1, the Contractor shall continue the restoration

work during the next period of March 15 and April 5 and mow the grass and continue the restoration until satisfactory growth of the permanent grass (es) is obtained. Such additional restoration work shall include the 1 - ½ tons of lime per acre, application of 13-13-13 fertilizer at a rate of 800 pounds per acre and replanting and watering permanent grass as necessary to obtain satisfactory (to Engineer) growth. No time will be charged against the Contract Time for any such additional restoration work.

Sodding: Sodding shall be in accordance with Technical Specifications: - Seeding and Sodding

5.6 Erosion Control: During all phases of construction, the Contractor shall adequately protect all work from adverse erosion. Soil shall not be allowed to flow off the limits of work area. The Contractor shall employ the use of ditch checks, matting, temporary grass cover, blankets, or other measures to control erosion. The Contractor shall be responsible to correct damage caused by erosion. During the construction of this project, all work areas will be strictly monitored. All trench lines will be kept in excellent condition, all streets and drives will receive careful maintenance, keeping potholes and settled areas filled in. Dust control is essential and will also be strictly monitored.

5.7 General Grassing of Unimproved Areas

A. General: The Contractor shall seed and establish grass growth in all disturbed areas in unimproved areas (to include pastures and roadsides). Acceptance of the grass cover shall be based upon the firm establishment of a live stand of grass. The contractor shall water such grass if natural rainfall fails to adequately provide moisture. On slopes and other areas subject to erosion, grassing shall be accomplished as soon as practical (within 48 hours unless weather is prohibiting) after finish grading operations.

B. Grading: The surface area shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall remove existing topsoil and stockpile for later use. Upon completion of backfilling (to establish contours as before construction), the topsoil shall be uniformly spread back over the area. The Engineer may require additional topsoil be furnished by the Contractor at no expense to the project, if in the opinion of the Engineer, adequate provisions and efforts were not made by the Contractor to stockpile and re-use existing topsoil material.

D. Fertilizer and Agricultural Limestone: The Contractor shall uniformly apply 800 lbs. per acre of 13-13-13 fertilizer and also apply two (2) tons per acre of agricultural limestone to the area to be seeded. The fertilizer and limestone shall be tilled into the soil to a depth of four (4) inches.

E. Mulch Cover: Erosion prone areas such as steep slopes and highway shoulders shall receive a layer of loose straw mulch or equivalent at the rate of one and one-half (1-1/2) tons per acre. The mulch cover shall be established by the application of an emulsified asphalt or by "crimping" parts of the material into the soil.

5.8 Miscellaneous Items: Items such as fences, gates, paved ditches, and other items shall be replaced or repaired as required for restoration. Should additional fencing material be required, new post and new wire of similar size, type and gauge shall be provided and installed.

5.9 General Care: Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees, which do not have to be removed in the opinion of the Engineer, and which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

6.0 TESTING

6.1 General: All sampling and testing shall be accomplished by the testing laboratory approved by the Owner and employed by the Contractor to perform such services. Results shall be immediately forwarded to the Engineer by the Contractor.

6.2 Earthwork: Earthwork directly involved with road and street repair shall be tested as follows:

A. Moisture Density Relationship (Standard Proctors): Two tests of sampled native material shall be required. Tests shall be in accordance with AASHTO T 99.

B. Field Density: A minimum of two and a maximum of four field density tests shall be required. Density tests shall be in accordance with AASHTO T 191 or ASTM D 2922.

C. Topsoil: Two pH tests and two organic content tests (wet combustion method) will be required.

SEEDING AND SODDING

1.0 DESCRIPTION

This item consists of furnishing all labor, supervision, materials, tools, incidentals and equipment and performing all work for topsoiling, tilling, fertilizing, seeding, watering, and otherwise establishing, protecting and maintaining seeded and sodded areas as required by the Contract Drawings and these specifications, and including repair, refertilizing and reseeding as required until final inspection and acceptance of the project.

2.0 SUBMITTALS

Certificates for fertilizer, limestone, seed.

3.0 MATERIAL

3.1 Topsoil: Topsoil shall be the surface layer of soil that is stockpiled by the Contractor during stripping and/or excavation on the site. The topsoil shall be free of subsoil, clay, lumps, stones, brush or seed. Topsoil shall have a pH value of not less than 4.5 nor more than 8.0.

3.2 Lime: Lime shall be ground limestone containing not less than 80% of total carbonates and shall be ground to such fineness that 80% will pass through a No. 10 mesh sieve and 40% will pass through a No. 40 mesh sieve.

3.3 Fertilizer: Fertilizer shall be water soluble commercial carriers of available plant food elements or combinations thereof, as stated herein and shall conform to the applicable state fertilizer laws. They shall be uniform in composition, dry, and free flowing materials in condition for application by suitable equipment. The fertilizer shall be delivered in standard bags or other convenient standard containers, each fully labeled with manufacturer's guaranteed analysis. Any fertilizer shall contain not less than the percentages by weight of the ingredients set out as follows: (1) Nitrogen, 13% (2) Phosphorous P O, 13%, (3) Potash K C, 13%. Invoices for fertilizer will show the kind and have analysis furnished.

3.4 Seed: Seeds with a minimum pure live seed content of 90% shall be used. They shall be of the best grade and of known vitality, purity, and germination and shall be delivered in containers bearing seed tags as required by law showing percentages of germination content and purity of seed as well as percentages of weed seed content.

All seeds shall be free of wild onion, Canadian thistle, Johnson grass, crab grass or other seeds of noxious weeds. All seeds shall be furnished in standard containers, or as acceptable to the Engineer. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be acceptable.

Purity, Germination and Planting Schedule

Spring and Summer Seeding (March 1 to September 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Hulled Bermuda	95	90	20
Pensacola Bahia	95	90	30

TOTAL 50
Fall and Winter Seeding (September 1 to March 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Unhulled Bermuda	95	90	20
Pensacola Bahia	95	90	30
Rye	95	85	15
Crimson Clover	95	85	8

TOTAL 73

Seeding in Existing Lawns: Grass seeds for existing lawns shall be the same as the existing grass.

3.5 Leguminous Inoculants: Inoculation media containing live nitrogen-fixing bacteria shall be supplied with all legume seed. The inoculants shall be standard, pure culture of nitrogen-fixing bacteria. Each kind of legume will require a cultural bacteria that is adapted to that particular kind of seed. The bacteria shall be supplied in convenient containers of a proper size to treat the amount of seed to be planted. The legume seeds shall be treated according to the directions, and before the expiration date for use of the media shown on the container.

3.6 Soil for Repairs: For fills or areas to be repaired, soil shall be topsoil of a least equal quality to that which exists in areas adjacent to the area to be repaired.

3.7 Water: Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass, and shall be from a source accepted prior to use.

3.8 Solid Sod: Bermuda or Carpet Grass and shall be native to the locality of the work and shall, when placed be live, fresh, growing grass with at least two and one-half (2 ½) inches of soil adhering firmly to the roots. The sod shall be reasonably free from obnoxious weeds or other

grasses, and shall not contain any matter deleterious to its growth; or which might affect its subsistence or hardness when transplanted. The sod shall be in blocks at least 3" x 8", and free from ragged edges.

4.0 INSPECTION AND TESTS

4.1 Fertilizer and Limestones: Duplicate copies of material invoices shall be furnished to the Engineer. Invoices shall show quantities and grade of fertilizer, quantity of limestone, percentages of calcium carbonate and magnesium carbonate, as applicable, and the percentages of limestone that pass the No. 40 and the No. 10 mesh sieves. Samples of each lot of fertilizer and limestone shall be furnished for testing. Upon completion of project a final check of total quantities of fertilizer and limestone used will be made against total area treated, and if minimum rates of application have not been met, additional quantities of these materials to make up minimum application specified shall be distributed.

4.2 Seed: Contractor shall furnish to the Engineer duplicate signed copies of statement(s) from vendor(s), certifying that each container of seed delivered is labeled in accordance with Federal Seed Act and is at least equal to requirements specified therein. This certification shall be obtained from vendor and shall be furnished before application.

5.0. PREPARATION OF GROUND SURFACE

5.1 General: Equipment, in good operating condition, shall be used for the proper preparation of the ground and for handling and placing all materials. Equipment shall be acceptable before work is started.

5.2 Topsoiling: Topsoil shall be obtained from job site stockpiles formed during stripping and/or excavation operations and shall be free from subsoil, clay lumps, stones, brush, grasses or weeds, excess acids or alkali, or any other material to subsequent, smooth, grading, planting, and maintenance operations.

The topsoil shall be evenly spread on tilled areas to a uniform depth of at least 3 inches after compaction. Spreading shall be performed so that seeding can proceed with a minimum of soil preparation or tilling. After preplanting fertilization is completed, the topsoil shall be compacted by rolling with a cultipacker or by other approved means.

Rehabilitation of the stockpile areas shall include returning the area to near pre-construction conditions, including seeding of the area to re-establish the growth of grass.

5.3 Grading: Previously established grades shall be maintained on the areas to be treated in a true and even condition; necessary repairs shall be made to previously graded areas by means of graders or other approved equipment.

5.4 Tillage: After the areas required to be treated have been brought to the grades shown, the

soil shall be tilled to a depth of at least 4 inches by plowing, disking, harrowing, or other acceptable operations until the condition of the soil is acceptable. The work shall be performed only during period when beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. Undulations or irregularities in the surface shall be leveled before the next specified operation.

6.0 APPLICATION OF FERTILIZER AND LIMESTONE

6.1 Preplanting fertilization of areas to be seeded: Fertilizer shall be distributed uniformly at a rate of 800 pounds per acre over areas to be seeded and shall be mixed into the soil to a depth of at least 4 inches by disking, harrowing, or other acceptable methods. Application of fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.2 Liming: Immediately following or simultaneously with incorporation of fertilizer, limestone shall be distributed uniformly at a rate of 4000 pounds per acre, and shall be mixed into the soil to a depth of at least 4 inches by disking , harrowing, or other acceptable methods. Application of limestone along with fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.3 Leveling: Surface irregularities resulting from tillage, fertilizing, liming, or other operations shall be leveled before seeding.

6.4 Postplanting fertilization: From 40 to 60 days after seeding, ammonium nitrate or its nitrogen equivalent shall be applied uniformly at a rate of 225 pounds per acre over areas seeded. Fertilizer shall be applied when grass blades are dry to minimize burning. The planted area shall be watered to thoroughly moisten the upper 6 inches of the soil surface after the fertilizer is applied.

7.0 PLANTING SEED

7.1 General : A satisfactory method of sowing shall be employed, using approved mechanical power-drawn drills or seeders, or other approved methods. When drills are used, markers or other means shall be provided to insure that the successive seeded strips will overlap or be separated by a space no greater than 6 inches. When delays in operations extend the work beyond the most favorable planting season for species designated or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be halted as directed and resumed only when conditions are favorable or when approved alternate or corrective measure and procedures have been effected. If inspection during or after seeding operations indicates that strips wider than 6 inches have been left unplanted or other areas skipped, additional seed shall be sown.

7.2 Broadcast Seeding: Seeding shall be broadcast either by hand or with acceptable seeding equipment, in combination with fertilizer, or with other acceptable sowing equipment. Seed shall be distributed uniformly over designated areas. Half of the seed shall be sown with sower moving

at right angles to first sowing. Seed shall be covered to an average depth of 1/4 inches by brush harrow, spiketooth harrow, chain harrow, cultipacker, hand rake with wood tines, or other approved device. Seed shall not be broadcast during windy weather.

7.3 Drill Seeding: Drill seeding shall be accomplished with approved equipment with drills set not more than 6 inches apart. Seed shall be sown uniformly over designated areas to average depth of 1/4 inch.

7.4 Sodding: All solid sod shall be procured areas where the soil is fertile and contains a high percentage of loamy topsoil, and from areas that have been grazed or mowed sufficiently to form a dense turf.

Mechanical devices, such as sod cutter, may be used for cutting the sod into strips or blocks. Care shall be exercised at all times to retain the native soil on the roots of the sod during the process of excavating, hauling and planting.

The solid sod blocks shall be transplanted within 24 hours from the time of cutting, unless they are stacked, to their destination in a manner satisfactory to the Engineer. All solid sod in stacks shall be kept moist and protected from exposure to the air and sun, and from freezing. In no event shall more than two (2) days elapse between the cutting and planting of the solid sod.

Solid sod shall be planted during the period between March 1st and December 15th, unless written permission is given by the Engineer to extend the planting season. The solid sod shall be placed on the prepared surface with the edges in close contact. All cracks between blocks of solid sod shall be closed with small pieces of fresh sod, and all cracks too small for sod shall be filled by a light dressing of topsoil. The entire sodded area shall then be compacted and watered to the satisfaction of the Engineer. Rollers, hand tamps or other approved equipment may be used for compacting.

Surfaces of solid sodding which, in the opinion of the Engineer, may slide due to the height and slope of the surface or nature of the soil, shall, upon direction of the Engineer, be "pegged" with wooden pegs driven through the sod blocks into firm earth, sufficiently close to hold the sod in place.

8.0 MAINTENANCE

Seeded areas shall be maintained until all work or designated portions thereof have been completed and accepted. Tall grass and weeds that tend to impede the desired grass species shall be mowed, and any damage resulting from these operations shall be repaired at the Contractor's expense.

9.0 ESTABLISHMENT OF GROWTH

9.1 General : The Contractor shall be responsible for proper care of seeded areas while grass is becoming established for three (3) months after completion of treatment on the entire project, unless desired cover is established in a shorter period of time and the Owner shortens responsibility period. The Contractor shall be responsible for providing a satisfactory stand of grass. A satisfactory stand of grass is determined as a cover of living grass in which gaps larger than 12 inches square do not occur as determined by an acceptance inspection made at the end of the maintenance period. Maintenance work shall be performed at the Contractor's expense.

9.2 Mowing: Seeded and sodded areas shall be mowed with acceptable mowing equipment to a height of about 4 inches when average height of grass becomes about 8 inches. When amount of cut grass is heavy, grass shall be removed to prevent destruction of underlying turf. If weeds or other undesirable vegetation threatens to impede the growth of planted species, such vegetation shall be mowed, or in case of excessive growth, shall be uprooted, raked and removed from area.

9.3 Refertilizing: The Contractor will determine areas needing refertilization at least 15 days before application is required. Fertilization shall be distributed on designated area during periods when grass is dry. 13-13-13 grade fertilizer shall be applied uniformly at a rate of 800 pounds per acre. Fertilizer conforming to physical condition, packaging and marking as specified herein before shall be provided.

9.4 Reseeding: The Contractor will determine areas requiring reseeding at least 15 days before period specified for reseeding. Seed specified hereinbefore shall be drilled at rates hereinbefore specified, in a manner that will cause minimum disturbance to existing stand of grass, and at an angle of not less than 15 degrees from direction of previously seeded rows.

CONCRETE

1.0 GENERAL

- A. This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals and performing all forms of work; furnishing and placing reinforcement, inserts and anchors; mixing, placing, curbing, and furnishing of portland cement concrete.
- B. The work includes, but is not necessarily limited to manholes, pumping stations, lift stations, driveways, and minor concrete work.

2.0 APPLICABLE DOCUMENTS

The following publications form a part of this Specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publication referenced shall apply to the work.

A. American Society for Testing and Materials (ASTM):

- A 615 Billet Steel for Concrete Reinforcement
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field
- C 33 Concrete Aggregates
- C-39 Compressive Strength of Molded Concrete Cylinders
- C 143 Slump of Portland Cement Concrete
- C 150 Portland Cement

B. Mississippi Department of Transportation (MDOT):

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS:

The following data shall be submitted to the Engineer for review prior to incorporation into the work:

- A. Letter from the manufacturer certifying the concrete mix conforms to the requirements for Class B concrete as defined in Section 804 of the MDOT Standard Specifications for Road and Bridge Construction.

B. Letter of certificate from the manufacturer certifying that the reinforcing steel conforms to the herein specified requirements.

4.0 MATERIALS:

A. General: The concrete shall be ready-mix concrete manufactured by a plant for delivery to the site of the work in a plastic state. The Contractor may batch the concrete at the work site by use of portable mixers providing the following requirements are met:

1. Facilities shall be provided to properly weight, proportion and control the components of the concrete mix.

2. The mixer(s) shall be of such capacity so as to allow the complete placement of the plastic concrete mix prior to the initial set of any portion of the particular concrete pour.

B. Concrete Mix: The concrete materials and mix design, shall conform to the requirements for Class B concrete Section 804, MDOT Standard Specifications for Road and Bridge Construction. The compressive strength of the concrete shall be a minimum of 3000 psi at 28 days, or earlier. Type I Portland Cement shall be used in the mix, except where otherwise specified or permitted. Prior to producing any concrete for cast-in-place construction on the project, the Contractor shall submit to the Engineer the proposed mix design and shall obtain Engineer's approval of the mix design.

C. Reinforcing Steel - shall be new stock, deformed bars conforming to ASTM A 615, Grade 40 or Grade 60.

D. Curing Material - shall consist of wetted burlap, wetted cotton mats, plastic sheeting, or an approved liquid membrane material which will satisfactorily keep the new concrete in a moist condition for at least seven (7) days.

5.0 CONSTRUCTION:

A. Weather Limitations: Concrete shall be placed when the atmospheric temperature is a Minimum of thirty-five (35) degrees F. and rising. Newly placed concrete shall be protected from cold temperatures for at least four (4) days at a temperature of not less than forty (40) degrees F.

B. Forms: Forms shall be securely anchored in place and properly aligned. Wood forms shall be oiled prior to placement of fresh concrete mix.

C. Reinforcement: Reinforcing bars shall be securely mounted by the use of chairs or other approved methods so as to not become displaced during placement of concrete mix. The positioning of reinforcing by working the bars into the newly placed concrete mix shall not be allowed.

D. Placement: The plastic concrete mix shall be worked (and vibrated if required) into the formwork. The mix shall be consolidated so as to remove all voids and finished to form a true and level surface.

E. Curing: The hardened concrete shall be kept moist by the use of curing materials for a minimum of seven (7) days.

F. Slump Requirements: The following slump requirement shall apply:
Class B Concrete 2-4 Inches

G. Chamfered Corners: All exposed corners shall be chamfered one (1) inch or as indicated.

H. Finish:

1. All surfaces shall be "floated" to provide a uniform and level surface. Defects (honeycombs, ties, etc.) shall be repaired. No rubbing shall be required.

2. Sidewalks, driveways and other surfaces subject to pedestrian traffic shall be floated as noted in paragraph 1 above and shall receive a "broom" finish.

6.0 TESTING

The following test shall be required:

A. Slump: The Contractor shall test the concrete mix for conformance to the slump requirements as required. Test shall be in accordance with ASTM C 143.

B. Compressive Strength: The Contractor shall sample the concrete mix and prepare test cylinders for conformance to the compressive strength requirements. The Contractor shall transport the cylinders to the testing laboratory (employed by the Contractor) and have the cylinders tested in accordance with ASTM C 31 and C 39. The results of such test shall be forwarded to the Engineer. Test shall be performed at the following schedule.

One test per 15 cubic yards or major fraction thereof. A minimum of one test for each day of mixing shall be performed.

DUCTILE IRON WATER SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of water pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of these Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139 Electric-Fusion (Arc) welded steel pipe (sizes 4 inch and over).
- A 252 Welded and Seamless steel pipe piles.
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Concrete Aggregates
- C 39 Test for Compressive Strength of Cylindrical Concrete Specimens.
- D 2922 Density of Soil Aggregate in place by the clear Method (shallow depths).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- 21.10 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.
- 21.11 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.
- 21.50 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-line Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

- C 104 Cement-Mortar Lining for Cast Iron Pipe and Fittings for Water and Other Liquids.
- C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.

C 150 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as Specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

4.0 MATERIALS

WATER SYSTEM:

A. Ductile Iron Pipe: Ductile iron pipe shall be designed in accordance with the latest revision of ANSI/AWWA C 151/A21.51), rated working pressure of 350 psi plus a 100 psi surge allowance; a 2 to 1 safety factor on the sum of working pressure plus surge pressure in Type 3 Laying condition with a depth of cover as required per plans.

Pipe shall have standard asphaltic coating on the exterior. Pipe also shall have a cement mortar lining on the interior in accordance with the latest revision of ANSI/AWWA C104/A21.4. If corrosion protection is required, polyethylene encasement shall be installed prior to the pipes installation in accordance with ANSI/AWWA C105/A21.5-88.

All non-restrained pipe shall be furnished with push-on type joints such as "Fastite", or equal. Joints shall be in accordance with the latest revision of ANSI/AWWA C111/A21.11 and shall be furnished complete with all necessary accessories.

Where restrained joint pipe is required, "Fast Grip", "Flex-Ring", or "Field Flex-Ring" or approved equal shall be used. The length of restrained pipe shall be as tabulated or noted on the plans.

Ductile iron fittings shall conform to the latest revisions of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Fittings, linings, and coatings shall be as specified for the pipe above.

All pipe, fittings and accessories shall be installed and tested in accordance with the latest revision of AWWA C600. Newly installed ductile iron water mains shall be disinfected in accordance with the latest revision of AWWA C651 prior to placing in service.

B. Gate Valves: Where indicated on the Plans or directed by the ENGINEER, the CONTRACTOR shall furnish and install gate valves as hereinafter specified.

All gate valves shall be cast iron mechanical joint, M.J., Mueller A-2380-20, equivalent or better.

All gate valves shall be furnished with O-ring packing and 2" square operating nut, AWWA 200lb., for cast iron water main.

Valve boxes shall be cast iron top and bottom. Extension pieces shall be provided as required.

All valves will be set at a perfect 90 degree angle from level pipe, (perpendicular) so as to be easily accessible through properly set valve box as per specifications above.

The CONTRACTOR shall furnish and install either a two-piece or three-piece, slip type, cast iron valve box over each gate valve. Valve boxes will be set over valve operating nut, centered so as to be easily accessible with a valve operating wrench or key. They will be set to correspond with the finished grade of street, lot, or easement. No dirt will be left in box; box will not rest directly on valve body.

C. Fittings, Valves and Hydrants, Etc.: All fittings, valves and valve boxes, hydrants, and other appurtenances are to be set at the points indicated on the plans, or as directed by the ENGINEER, and omission to do so shall be corrected by the CONTRACTOR without extra cost to the OWNER.

All fittings shall either be Ductile Iron Compact (ANSI/AWWA C153/A21.53) or Cast Iron (ANSI/AWWA-C110/A21-10) and shall have mechanical joint ends and mechanical joint restraints (Series 1120) and shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices.

The mechanical joint restraint device shall have a working pressure of a least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron., MEGALUG or equal.

To improve the sealing capacity, the gaskets for all mechanical joints conforming to the requirements of ANSI/AWWA C110/A/21.10, C111/A21.11, or C153/A21.53 shall be of a design that causes the gasket to deflect approximately 30% during assembly of the mechanical joint. The gasket material shall conform to the requirements of ANSI/AWWA C111/A21.11, Section 1-6.4 of the latest revision. Mechanical joint gaskets shall be EBAA Iron's EBAA Seal-Improved Mechanical Joint Gasket or approved equal.

Fittings (bends, tees, plus, and caps) shall be securely braced by mechanical joint restraints, as indicated on the Plans, to prevent the possibility of blowing off under pressure. And a full length of pipe shall be installed on each end of the fitting. Then cut pieces can be installed beyond the full lengths of pipe.

D. Plugs and Caps: Where indicated on the Plans, or as directed by the ENGINEER, the CONTRACTOR shall install plugs for anticipated future extensions by placing a branch fitting

(tee or cross) in the line and plugging the unused branch or branches. In general, such plugs will be located at street intersections where present plans provided lines running in only two or three directions from the intersections and where, in the opinion of the ENGINEER, a connection may be required for future extension. Where "dead end" lines are installed, the ends of such lines shall be plugged or capped as required.

For the various hot taps required according to the plans, and up to 12 inches, the JCM 432, stainless Tapping Sleeve, or approved equal, shall be required. The CONTRACTOR shall furnish all materials for these various taps.

E. Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of water pipe and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch.

F. Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1" sieve.

G. Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table)

H. Meter: Water meter shall be Badger "Radio Read" and all fittings shall be Ford brand consistent with current City Standards.

I. Polyethylene Pipe: Shall be in accordance with AWWA C906, ASTM D3035, PE4710, C200 (DR11), with ductile iron outside diameter (DIOD)

J. Fittings for Polyethylene Pipe: Shall be in accordance with AWWA C906, AWWA D3035, molded and manufactured to comply with ASTM F714. AWWA C906, AWWA M55, ASTM D3261 for butt fusion fittings ANSI Class 150 or as necessary to provide minimum pressure rating.

K. Joints and Jointing Materials

a. Mechanical Joint: DIOD Mechanical joint adapter and gaskets for mechanical joints for joint connections between pipe and metal fittings, valves, and other accessories, AWWA C111/A21.11.

b. Butt Fusion: Jointing is to comply with ASTM D2657, Butt Fusion. No offset in alignment between adjacent pipe joints of fittings is permitted.

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 1/2"	95 - 100
3/4"	35 - 70
3/8"	10 - 30
No. 4	0 - 5

H. Select Backfill: General: The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material.

Gradation: Any coarse aggregate contained in the material shall pass the one and one-half (1-1/2), sieve and not more than thirty-five percent (35%) shall be retained in the Number 10 sieve. The plasticity index (P.I.) shall not exceed 12, nor shall the liquid limit exceed 30.

The composite selected sand-clay material passing the Number 10 sieve shall conform to the following minimum and maximum gradation limits:

<u>Sieve</u>	<u>Percent Passing by Weight</u>
Number 40	40 - 85
Number 60	30 - 70
Number 270	8 - 30
Silt (.05 to .005 mm)	3 - 15
Clay (Passing .005 mm)	3 - 15

I. Backfill: All other backfill shall consist of excavated material removed from the trench.

5.0 CONSTRUCTION:

Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas and Excavation, Trenching and Backfilling.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of water pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall

install drainage ditches and dikes and shall perform all pumping and other work necessary to divert or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the bid price.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with select backfill and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation without direction of the Engineer shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the sub-grade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the sub-grade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the sub-grade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density

as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grad, and cross section with proper bell holes at each joint to insure the pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

a. Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS AND OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.

c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND

OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

F. PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

G. PIPE LAYING: Each pipe shall be laid true to line and grade and in such manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the water shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water earth, or other substance will enter the pipe or fittings. The minimum depth of water mains shall be 30 inches below finished grade to the top of the water main.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

H. PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space. When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first, then the top; next the bolts on either side; and last, the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

I. BORINGS: Borings shall be accomplished in accordance with Mississippi Department of Transportation Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the crossing.

1. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be watertight.

2. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

3. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under all conditions.

4. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end by installing WMSON Type U end seals, as manufactured by T.D. Williamson, Inc. Tulsa, Oklahoma, or equal, in accordance with the instructions of the manufacturer of the seals.

J. Separation of Water and Sewer Mains:

1. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

K. INCIDENTAL CONCRETE:

1. GENERAL: The following specifications shall apply to any and all items of incidental work with Portland Cement with or without reinforcement, including such items as concrete piers to support cast iron pipe above ground, erosion control bulkheads or structures, cradles and encasement, blocking and the like.

All concrete used in the construction of this project shall comply with the requirements herein specified for its particular class and kind.

2. MATERIALS: All materials used in this work shall consist of (a) Portland Cement, (b) Sand, (c) Gravel, and (d) Clean Water.

(a) The cement used shall be domestic manufacture, either "Standard" or "high Early Strength" Portland Cement, which shall meet all the requirements of the current A.S.T.M. Specifications for the type used at the time it is incorporated in the work.

(b) The fine aggregate shall consist of clean, sharp sand, well graded from coarse to fine, consisting of hard, durable particles, free from coarse to fine, consisting of hard, durable particles, free from silt, salt or organic matter. It shall meet all the requirements of the ASTM

Specifications C33, Paragraph 1, 2 and 3, and ASTM C-40.

(c) The coarse aggregate used shall consist of clean washed gravel, free from particles of wood or lumps of clay. Not more than 10% shall pass the No. 4 sieve, and it shall conform with the requirements of ASTM Specifications C33, Paragraph 5 to 8 inclusive.

(d) The water used for mixing concrete shall be clear, free from oil, salt, strong acid, alkali organic matter, and shall be approved by the Engineer.

(e) Reinforcing steel shall conform to the requirements of the "Standard Specifications for Billet-Steel Concrete Reinforcing Bars" of intermediate grade (Serial Designation: A 15-39) or the Standard Specifications for Rail-Steel Concrete Reinforcement Bars (Serial Designation; A-16-35) of the American Society for Testing Materials.

3. CONSTRUCTION METHODS:

All concrete materials shall be as handled and stored that they will not become damaged after delivery at the site. The cement shall be thoroughly protected from the weather, and the sand and gravel, shall be so stored that they will not become intermixed, and so as to prevent the admixture with either of any foreign materials. Reinforcing steel shall be so stored that it will not come in contact with the ground, shall be protected from the weather, and shall be clean and free from rust when incorporated in the work.

Concrete materials shall be mixed in the proportions and in a manner that will produce concrete of the class and strength specified to its use.

Unless indicated otherwise, all concrete shall be Class A which shall have a crushing strength of not less than 3,000 pounds per square inch at 28 days, as determined by the Standard Methods for testing concrete materials.

Class B concrete, which shall have a crushing strength of not less than 2,500 pounds per square inch at 28 days, and shall be used for erosion control bulkheads and blocking pipelines at bends to prevent blowing off under pressure.

Class C concrete, which shall have a crushing strength of not less than 2,000 pounds per square inch at 28 days, shall be used for cradles and encasement and may be used for backfill below grade.

After concrete has been properly mixed, it shall be deposited in the forms in reasonably uniform layers and in such manner as to prevent segregation of the aggregates. It shall be thoroughly spaded or puddled while being placed to insure maximum density and prevent honey-combing.

No concrete shall be deposited when the air temperature is less than 40 degrees F. No material shall be deposited on a frozen sub-grade, nor shall any frozen moisture or material be incorporated into the mixture.

No concrete shall be placed in water, nor shall water be permitted to rise on it or to run over it within a period of 24 hours after it has been placed.

Unsatisfactory concrete, resulting from failure to observe the above requirements or otherwise, shall be removed and replaced as directed by the Engineer.

4. COMPENSATION:

Payment for all concrete, except as may be elsewhere herein provided, shall be included in the prices bid for the construction units with which it is placed and no separate or extra compensation will be allowed directly therefore.

6.0 TESTING

DUCTILE IRON PIPE:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

STEEL CASING PIPE: Material test shall be included as part of the submittal. No other material test shall be required.

COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99 2922	AASHTO T-191 or ASTM D	
Select Backfill Material OR Stabilization Material	1	One per 100 CY
Bedding Material	2	One per 600 LF
Tamped Backfill	2	One per 600 LF

HYDROSTATIC TESTING:

The completed system shall be tested as herein stated. The pipe shall be filled with water and all air exhausted. Each section shall be tested under a hydrostatic pressure of 150 pounds per square inch and shall not show leakage exceeding 10 gallons per inch of diameter per mile of pipe per 24 hours when so tested. Whatever shall be measured into a container and refilled to the pre-test level. The pressure shall be maintained for 4 hours by pumping as necessary, and if the pipe has been backfilled, a 24-hour test is required.

All visible leaks at exposed joints and all leaks evident on the surface where joints are covered shall be repaired, and leakage eliminated, regardless of total leakage shown by the tests. Lines which fail to meet tests shall be removed, if necessary, or repaired and retested until compliance with these test requirements is affected.

These tests are to be made at the Contractor's expense, and he is to provide all necessary fittings, equipment, appliances, and any other necessary items to conduct the tests in a manner satisfactory to the Engineer. All costs incidental to conducting these tests are to be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

CLEANING AND DISINFECTION:

Before each section of work is placed in service, it shall be thoroughly flushed to remove any dirt or other foreign material from inside the lines; and the inside of the lines shall be disinfected by pumping into and through them as solution of chlorine of 50mg/l for 24 hours in such manner as to meet the requirements of the State Board of Health.

At least two (2) samples of chlorine free water, taken from each section shall be submitted to the

State Board of Health for examination to determine if the system is free from organisms of the Coli-Aerogenes group. If such samples are not negative from organisms of the Coli-Aerogenes group, the system shall be disinfected and re-disinfected in a manner meeting the requirements of the State Board of Health, until the system is freed of contamination.

All water mains will be flushed, chlorinated and re-chlorinated until two (2) consecutive negative water samples are obtained by the Local Health Department or a representative of the water systems certified as an operator by the Mississippi Department of Health.

The CONTRACTOR shall be responsible for the conduct of all of the above defined activities, and any and all costs incident thereto shall be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

EXISTING DRINKING WATER FACILITIES

The Contractor is required to keep existing drinking water facilities in operation during construction. Should the Contractor require that existing facilities be taken out of operation, a plan to provide for alternative service shall be reviewed and approved in advance by the Health Department and shall be adhered to during construction.

FIRE HYDRANT

1.0 General

Fire hydrants shall comply in all respects with AWWA Standard C-502, latest revision, and shall be M & H or approved equal. Fire hydrants shall be of the compression type with the main valve opening against the pressure and closing with the pressure. The main valve opening shall be 4-1/2", 5-1/4", or 6-1/4" in diameter. Fire hydrant shall be of a dry barrel, dry top design. The main valve on the hydrant shall remain closed should the hydrant nozzle section be broken off by a traffic accident. The nozzle section shall consist of two (2) hose nozzles and one (1) pumper nozzle or other, as specified.

2.0 Rating

Fire hydrants shall be rated at 150 psi water working pressure, tested at 300 pounds hydrostatic for structural soundness in the following manner: 300 pounds hydrostatic test supplied from the inlet side, first with the main valve closed for the testing of the valve seat; second, with the main valve open for testing of the drain valves and the hydrant barrel. Testing is to be completed in accordance with AWWA C-502.

3.0 End Configurations

Hydrants shall be connected to the main by a 4", 6", or 8" mechanical joint, flange shoe, A.C., or hub shoe. Mechanical joint shoes, A.C., and hub shoes shall be fitted with strapping lugs.

4.0 Design

- 4.1 The main valve seat of the hydrant shall be made of rubber and be supported by a one-piece bronze top plate and drain valve mechanism and bottom plate. The bottom stem threads of the main valve rod shall be fitted with a cast iron cap nut (epoxy coated, optional) suitable for sealing the threads from the water. Drain valves shall be faced with rubber.
- 4.2 Changes in size or shape of the waterway shall be accomplished by means of easy curves. Exclusive of the main valve opening, the net area of the waterway of the barrel and the foot piece at the smallest part shall not be less than one hundred twenty percent (120%) of that of the net opening of the main valve.
- 4.3 Hose and steamer nozzles shall be threaded and screwed into the nozzle section and then pinned to prevent turning.
- 4.4 The hydrant shall be so designed that when it is in place, no excavation will be required to remove the main valve and moveable parts of the drain valve. Further, the hydrants shall be of the type that can be extended without excavating. Hydrants shall be so designed that, in the event of accident or breaking of the hydrant above or near grade level, the main valve will remain closed. The main

valve rod shall be made in two parts and fitted with breakable feature at the ground line flange.

- 4.5** The ground line connection between nozzle section and the barrel shall incorporate the use of eight (8) breakable bolts. This connection shall be so designed that the nozzle section can be rotated in increments of forty-five (45) degrees. The ground line connection between the barrel and nozzle section shall be gasketed to provide a seal.
- 4.6** The operating threads of the hydrant shall be so designed as to avoid the working of any iron or steel parts against either iron or steel. The operating stem and operating nut threads shall be square or acme type.
- 4.7** The operating thread shall be grease lubricated at the factory. Access shall be provided to field lubricate the operating mechanism.
- 4.8** The operating thread shall be sealed from water at all items when the valve is either in the opened or closed position. The operating rod shall be bronze sheathed where it passes through the double “O” ring seal plate.
- 4.9** The bonnet shall be weather proof.
- 4.10** The operating nut shall be of bronze and a self-lubricating, anti-friction thrust bearing shall be provided to reduce operating torque.
- 4.11** Hydrants shall be of the dry type and hydrant shoe shall have two positive acting non-corrodible drain valves that shall drain the hydrant completely by opening when the main valve is closed and close tightly in accordance with AWWA C-500 requirements when the valve is open. The main valve assembly shall be seated in the hydrant (with a bronze-to-bronze interface as an option) to facilitate removal of the main valve should maintenance be required. The nozzle section shall consist of two 2” hose nozzles to the specified thread designation (NST or other, as specified) and one pumper nozzle 4-1/2” in diameter to the specified thread designation (NST or other, as specified) or other combination of nozzle outlets including independent hose gate valves as specified.
- 4.12** Two “O” ring seals shall be utilized where the main hydrant rod passes through the seal plate.
- 4.13** Hydrant standpipe shall be ductile or cast iron and single piece for all bury depths.
- 4.14** All like parts of hydrants of the same size and model produced by the same manufacturer shall be interchangeable.
- 4.15** Hydrant shall open by turning to the left.

- 4.16** Threads or hose and streamer nozzles shall be national standard unless otherwise specified.
- 4.17** Auxiliary shut-off (isolation) gate valves, when required, shall be of the same manufacture as the hydrant.
- 4.18** The inside of all hydrants shall be coated in accordance with AWWA standards and federal specification TT-C-494A or equal except for bronze and machined surfaces. Exterior of hydrant shall be painted fire hydrant yellow (or as specified). (The wetted surface of the hydrant shoe shall be epoxy coated to prevent corrosion of the waterway, optional.)

5.0 **Markings**

Hydrant shall be marked with the name of the manufacturer, size of valve opening, and the year of manufacture, all in accordance with AWWA C-502.

Sewer/Water Utility – Trace Wire Specification

1.0 General

All trace wire shall have HDPE insulation intended for direct bury, color coated per APWA standard for the specific utility being marked. THHN is prohibited from use in the tracer wire system.

All trace wire, test stations and accessories shall be supplied by a single manufacturer and domestically made in the USA.

All tracer wire and accessories shall be installed per plan details and per manufacturers recommended installation methods. All wire and connectors shall be rated for direct bury applications.

2.0 Materials

Copper Clad Steel (CCS) Trace Wire

Open Trench – 12 Gauge Copper Clad Steel with a Break Load of 452 pounds

Directional Drilling - 12 Gauge Copper Clad Steel with a Break Load of 1,150 pounds

Connectors

2-Way Splice Connector with Strain Relief

3-Way Connector

Termination/Access/Test Stations

Non-Roadway: Equal to Copperhead LD14TP

Concrete / Driveway: Equal to Copperhead CD14TP

Roadway: Equal to Copperhead RB14TP

Fire Hydrant: Equal to Copperhead T2-FLPKG

Grounding

Magnesium Anode: Equal to Copperhead ANO-12

3.0 Testing

All new trace wire installations shall be located using typical low frequency (512Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project. Continuity testing in lieu of actual line tracing shall not be accepted.

4.0 Connectors

All mainline trace wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector.

Connectors shall be dielectric silicon filled to seal out moisture and corrosion, and shall be installed in a manner so as to prevent any uninsulated wire exposure.

Non-locking friction fit, twist on or taped connectors are prohibited.

5.0 Termination/Access/Test Stations

All trace wire termination points must utilize an approved tracer wire access box, specifically manufactured for this purpose or as detailed on the plans

All grade level/in-ground access boxes shall be appropriately identified with “sewer” or “water” cast into the cap and be color coded (blue – water / green – sewer).

Test stations at dead ends shall be two-terminal.

Test stations in between dead ends shall be single terminal.

A minimum of 2 ft. of excess/slack wire is required in all trace wire access boxes after meeting final elevation.

Grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.

Hydrants – Trace wire must terminate at an approved above-ground trace wire access box, properly affixed to the hydrant grade flange.

6.0 Grounding

Trace wire must be properly grounded at all dead ends/stubs.

Grounding of trace wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20ft of #12 red HDPE insulated copper clad steel wire connected to anode specifically manufactured for this purpose, and buried at the same elevation as the utility. Where the anode wire will be connected to a trace wire access box, a minimum of 2 ft. of excess/slack wire is required after meeting final elevation.

7.0 Sanitary Sewer System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of manholes/structures on the North or East side.

Trace wire on all sanitary service laterals must terminate at the cleanout and located directly above the service lateral at the edge of road right of way as detailed in the plans.

8.0 Water System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of valves and fittings on the North or East side.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

9.0 Installation

Trace wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.

Trace wire shall be installed at the bottom half of the pipe and secured (taped/tied) at 5' intervals.

Trace wire on all service laterals/stubs must terminate directly above the utility, at the edge of the road right-of-way, but out of the roadway.

At all mainline dead-ends, trace wire shall go to ground using an approved connection to a drive-in magnesium grounding anode rod, buried at the same depth as the trace wire.

Mainline trace wire shall not be connected to existing conductive pipes. Treat as a mainline dead-end, ground using an approved waterproof connection to a grounding anode buried at the same depth as the trace wire.

All service lateral trace wires shall be a single wire, connected to the mainline trace wire using a mainline to lateral 3-way connector, installed without cutting/splicing the mainline trace wire.

In occurrences where an existing trace wire is encountered on an existing utility that is being extended or tied into, the new trace wire and existing trace wire shall be connected using approved splice connectors, and shall be properly grounded at the splice location as specified.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the **City of Hattiesburg, MISSISSIPPI**, will receive sealed bids until **10:00 AM** on **June 15, 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
MLK AVENUE AREA
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_CivilMapNotes.dwg, CVR, 024/2022 8:17:23 AM

DETAILED INDEX

SHEET No.	WRK No.	DESCRIPTION
1	CVR	COVER SHEET
2	VM	VICINITY MAP
3	GN1	GENERAL NOTES
4	GN2	GENERAL NOTES
5	KEY1	LEGEND, ABBREVIATIONS & SHEET KEY
6	PSM1	PROJECT SCOPE MAP
7	PSM2	SEWER SYSTEM MAP
8	PSM3	WATER SYSTEM MAP
9	PhP1	MLK AVENUE STA 10+00 - STA 15+00
10	PhP2	MLK AVENUE STA 15+00 - STA 18+00
11	PhP3	YEAGERS ALLY STA 10+00 - STA 13+00
12	PhP4	SEWER EASEMENT STA 4+00 - STA 9+00
13	PhP5	SEWER EASEMENT STA 9+00 - STA 15+60
14	PhP6	SEWER EASEMENT STA 4+60 - STA 11+20
15	PhP7	EASTSIDE AVENUE STA 10+00 - STA 16+60
16	PhP8	EASTSIDE AVENUE STA 15+40 - STA 22+00
17	PhP9	FRANCIS STREET STA 9+40 - STA 16+00
18	PhP10	FRANCIS STREET STA 15+40 - STA 22+00
19	PhP11	MARTIN LUTHER KING AVENUE STA 11+00 - STA 17+60
20	PhP12	MARTIN LUTHER KING AVENUE STA 19+60 - STA 26+20
21	PhP13	MARTIN LUTHER KING AVENUE STA 26+00 - STA 32+60
22	PhP14	TOWNSEND STREET STA 10+20 - STA 16+80
23	PhP15	INDEPENDENCE AVENUE STA 7+60 - STA 14+20
24	PhP16	INDEPENDENCE AVENUE STA 13+80 - STA 20+40
25	PhP17	MAY AVENUE STA 10+00 - STA 16+60
26	PhP18	MAY AVENUE STA 14+00 - STA 20+60
27	PhP19	HARRELL STREET STA 10+40 - STA 17+00
28	PhP20	FLORENCE STREET STA 10+40 - STA 17+00
29	PhP21	ROYAL STREET STA 11+00 - STA 17+60
30	PhP22	KATIE AVENUE STA 10+00 - STA 13+00
31	WPin1	MLK AVENUE - WATER PLAN
32	WPin2	CYPRESS AVENUE - WATER PLAN
33	WPin3	CYPRESS AVENUE - WATER PLAN
34	WPin4	RUBY AVENUE - WATER PLAN
35	WPin5	RUBY AVENUE - WATER PLAN
36	SSD1	SEWER INSTALLATION DETAILS
37	SSD2	SEWER INSTALLATION DETAILS
38	SSD3	SPECIAL DESIGN - SEWER INSTALLATION DETAILS
39	ADN1	SEWER ABANDONMENT DETAILS
40	WTRD1	WATER INSTALLATION DETAILS
41	WTRD2	WATER INSTALLATION DETAILS
42	TWD1	TRACER WIRE DETAILS
43	PRD1	PAVEMENT REPAIR DETAILS
44	PvPin1	PAVING & MARKING PLAN
45	PvPin2	PAVING & MARKING PLAN
46	PvPin3	PAVING & MARKING PLAN
47	PvPin4	PAVING & MARKING PLAN
48	PvPin5	PAVING & MARKING PLAN
49	PvPin6	PAVING & MARKING PLAN
50	PvPin7	PAVING & MARKING PLAN
51	PvPin8	PAVING & MARKING PLAN
52	VS1	VEGETATION SCHEDULE
6101	ECD-1	TYPICAL TEMPORARY EROSION/SEDIMENT CONTROL APPLICATIONS
6102	ECD-2	DETAILS OF SEDIMENT BARRIER APPLICATIONS
6103	ECD-3	DETAILS OF SILT FENCE INSTALLATION
6104	ECD-4	DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS
6106	ECD-6	DETAILS OF EROSION CONTROL WATTLE DITCH CHECK
6111	ECD-11	TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION
6113	ECD-13	INLET PROTECTION DETAILS OF WATTLES
6115	ECD-15	INLET PROTECTION DETAILS OF SANDBAGS
6123	DT-1	DETAILS OF TYPICAL DITCH TREATMENTS
6351	TCP-1	TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)
6358	TCP-8	HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS
6501	PI-1	PIPE CULVERT INSTALLATION
6502	PI-2	FLEXIBLE PIPE CULVERT INSTALLATION
6503	PC-1	CONCRETE PIPE COLLAR

CONSTRUCTION PLANS

FOR

INFRASTRUCTURE IMPROVEMENTS

MARTIN LUTHER KING AVENUE AREA

FOR THE

CITY OF HATTIESBURG

FORREST COUNTY

MISSISSIPPI

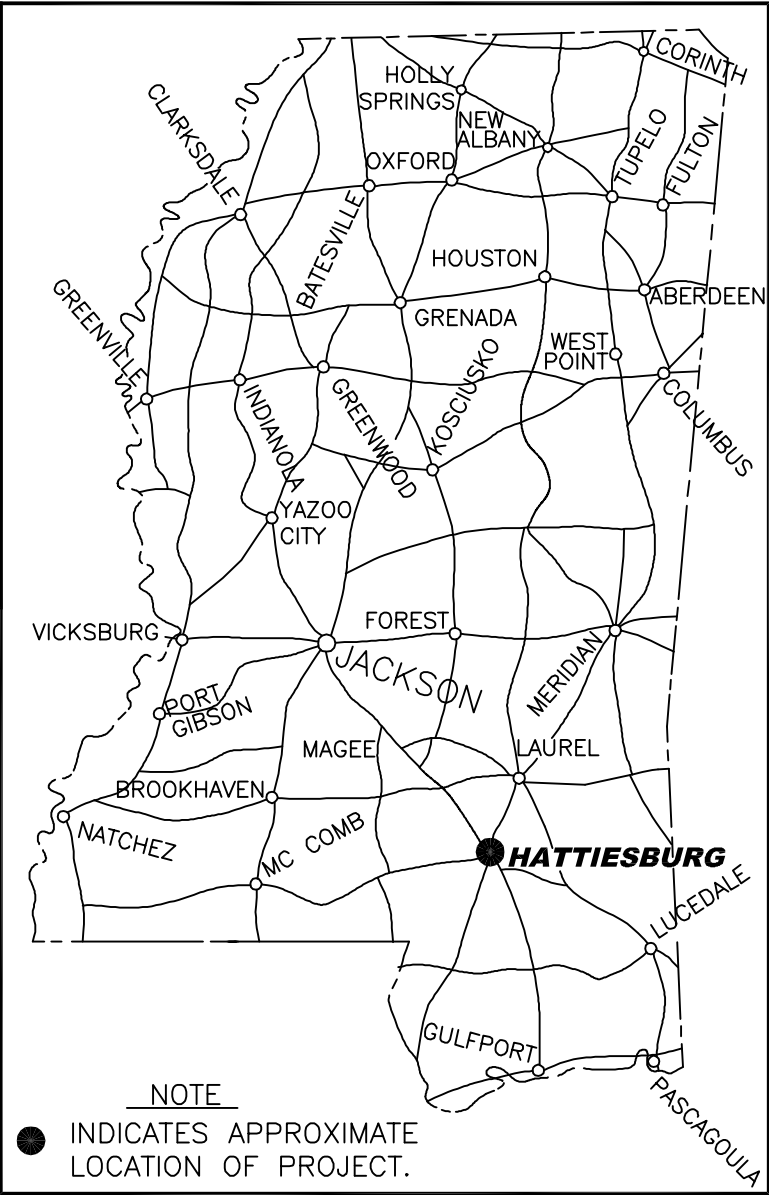
GEODETC REFERENCE (NAD83) FOR THE APPROXIMATE MIDDLE OF THE PROJECT:

NORTH PROJECT - SITE 1
LATITUDE: N 31°18'51.7"
LONGITUDE: W 89°18'03.0"

NORTH PROJECT - SITE 2
LATITUDE: N 31°18'41.0"
LONGITUDE: W 89°17'48.0"

SOUTH PROJECT - SITE 3
LATITUDE: N 31°18'19.0"
LONGITUDE: W 89°17'58.0"

SOUTH PROJECT - SITE 4
LATITUDE: N 31°18'05.2"
LONGITUDE: W 89°18'01.4"



PUBLIC UTILITIES

CABLE
COMCAST
2100 LINCOLN ROAD
HATTIESBURG, MS 39402
(601) 264-1188

TELEPHONE
AT&T
P.O. BOX 1191
HATTIESBURG, MS 39401
(601) 545-6424

UNITI FIBER - SOUTHERN LIGHT 1
107 ST. FRANCIS STREET
SUITE 1800
MOBILE, AL 36602

WATER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES STREET
HATTIESBURG, MS 39403
(601) 545-4530

TRAFFIC
CITY OF HATTIESBURG
TRAFFIC DEPT.
125 WALNUT ST
HATTIESBURG, MS 39401
(601) 545-4626

GAS
SPIRE INC.
315 MAIN STREET
HATTIESBURG, MS 39401
(601) 544-6001

TELEPAK DBA CSPIRE FIBER
1018 HIGHLAND COLONY PKWY
SUITE 420
RIDGELAND, MS 39157

SEWER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES STREET
HATTIESBURG, MS 39403
(601) 545-4530

POWER
MISSISSIPPI POWER, CO.
6356 U.S. HIGHWAY 49
HATTIESBURG, MS 39401
(601) 544-6511



Know what's below.
Call before you dig.

SPECIAL UTILITY NOTES:

- UTILITY LOCATION REQUESTS WERE SUBMITTED TO MISSISSIPPI 811 (FORMERLY MISSISSIPPI ONE CALL) DURING THE FIELD DATA COLLECTION PHASE FOR THE DESIGN OF THIS PROJECT. ALL UTILITIES THAT LOCATED DURING THE FIELD DATA COLLECTION ARE SHOWN ON THESE PLANS. ALL CONFLICTS WITH EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE COORDINATED WITH THE UTILITY OWNER, THE ENGINEER AND THE PROJECT OWNER PRIOR TO INSTALLATION OF THE PROPOSED WATER SYSTEM. (NO SEPARATE PAY FOR COORDINATION)
- THE CONTRACTOR SHALL DOCUMENT THE EXISTENCE OF ANY MISSING AND/OR OVERLAPPING UNDERGROUND UTILITIES AND STORM DRAINAGE NOT SHOWN ON THESE CONSTRUCTION DRAWINGS.

MISSISSIPPI 811 TICKETS	
TICKET No.	DESCRIPTION
20080509220650	MAY AVENUE
20072809450770	HARRELL STREET
20072810040830	FRANCIS STREET
20080509270700	MARTIN LUTHER KING AVENUE
20081311060687	CYPRESS AVENUE
20081311020677	RUBY AVENUE
20081310560662	MARTIN LUTHER KING AVENUE
20060210401025	BOWLING STREET
20060211081178	WILLIAM CAREY PARKWAY
20060210571126	MARTIN LUTHER KING AVENUE

JUNE 2022

NO.	DATE	DESCRIPTION	BY

MAYOR

Toby Barker

COUNCIL PERSONS

Carter Carroll, President
Jeffrey George, Vice President
Deborah Denard Delgado
Nicholas Brown
Dave Ware

DIRECTOR OF ENGINEERING

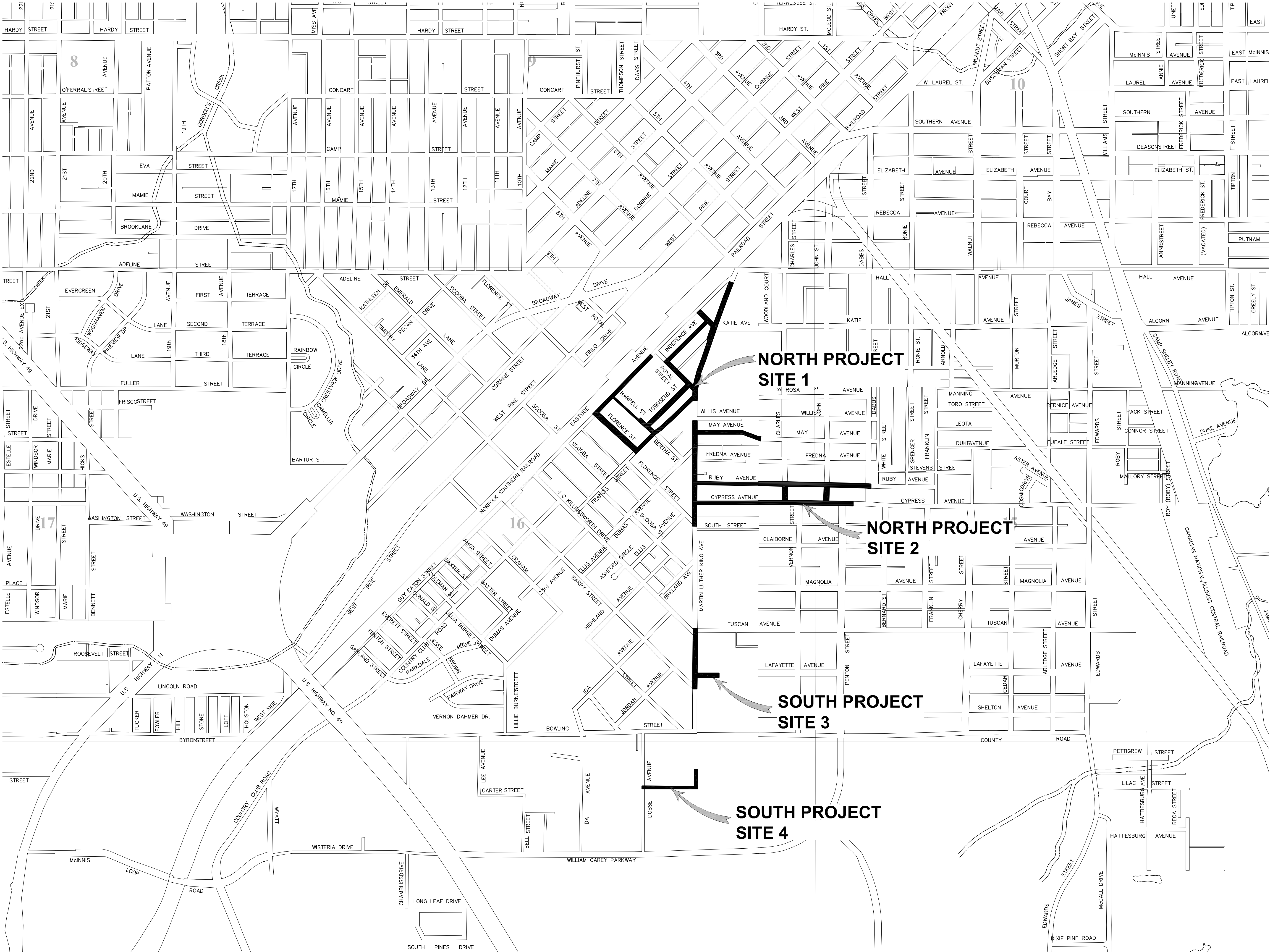
Lamar Rutland, PE

PREPARED BY:

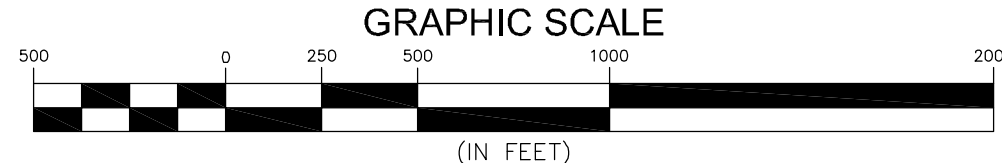
sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Working No. CVR
Sheet No. 1
Drawing No.: 11295

RANGE 13 WEST



TOWNSHIP 4 NORTH



NO.	DATE	DESCRIPTION	BY
VICINITY MAP			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: SLS	Checked by:	Scale: 1" = 500'	
Date: 05-27-2022	Working No. VM		
Drawing No.: 11295	Sheet No. 2		

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295 - CovMapNotes.dwg, GNT, 6/7/2022 9:29:19 AM

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES.
2. THE CONTRACTOR SHALL KEEP A SET OF CONSTRUCTION PLANS OF THE PROJECT ON THE JOB SITE SHOWING THE ACCURATE MEASUREMENTS AND ELEVATIONS OF THE "AS-BUILT" SYSTEM. THIS DATA WILL BE COLLECTED AND PUT ON THE DRAWINGS DAILY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE ENTIRE PROJECT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MDOT, CITY OF HATTIESBURG AND/OR FORREST COUNTY FEES AND PERMITS ASSOCIATED WITH CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND THE LOCATION OF THE PROJECT. CONTROL COORDINATE SYSTEM AND ELEVATION CONTROL ARE SHOWN ON THE PLAN SHEETS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN SUB-SURFACE SOIL INVESTIGATIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING TOPOGRAPHIC DATA AND ALL OTHER SITE CONDITIONS PRIOR TO THE BEGINNING OF CONSTRUCTION. ANY CONFLICT SHALL BE COORDINATED WITH THE CONTRACTOR, OWNER AND ENGINEER/ARCHITECT. THE ENGINEER CANNOT AND DOES NOT WARRANT THAT THIS INFORMATION IS COMPLETE OR ACCURATE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES WITHIN THE WORK AREA.
9. ALL UNDERGROUND UTILITIES, FOR THE ENTIRE PROJECT, SHALL BE LOCATED BY THE CONTRACTOR AND UTILITY OWNERS PRIOR TO THE CONSTRUCTION OF THE PROJECT. ANY CONFLICTS SHALL BE COORDINATED BETWEEN CONTRACTOR, UTILITY OWNER AND ENGINEER.
10. ALL CULVERT CROSS DRAINS AND SIDE DRAINS SHALL BE PROTECTED. ALL DRAINS AND DRAINAGE STRUCTURES INSIDE THE PROJECT AREA ON THESE PLANS SHALL BE CLEANED OF ALL FOREIGN MATTER, INCLUDING SILT, PRIOR TO COMPLETION OF THE PROJECT. REMOVAL AND REPLACEMENT, IF REQUIRED, SHALL BE PAID AS NOTED.
- 10.1. ANY EXISTING CROSS DRAINS SHOWN TO BE REMOVED AND REPLACED SHALL BE REPLACED WITH NEW RCP OR RCAP AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING CROSS DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.
- 10.2. ANY EXISTING SIDE DRAINS THAT CONFLICT WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH NEW CORRUGATED HDPE PIPE AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING SIDE DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.
- 10.3. IF THE EXISTING DRAIN PIPES ARE CONNECTED TO INLETS, HEADWALLS OR ANY OTHER DRAINAGE STRUCTURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTION TO THOSE STRUCTURES, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. CONCRETE PIPE COLLARS SHALL BE USED AS WARRANTED, AS APPROVED BY THE ENGINEER. SOME INLETS MAY BE NOTED FOR REPLACEMENT ON THE PLANS AND SHALL BE REPLACED AS DETAILED.
- 10.4. ANY EXISTING DRAINS THAT SHOWN TO BE REMOVED AND RESET SHALL BE REMOVED, SALVAGED AND RESET PER NEW PIPE INSTALLATION DETAILS CONTAINED HEREIN. ANY DAMAGE TO THE SALVAGED PIPE SHALL BE REPLACED AT NO ADDITIONAL COST TO THE PROJECT.
- 10.5. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING STORM DRAINAGE STRUCTURES DURING THE CONSTRUCTION PROCESS. ANY DAMAGE, OTHER THAN THAT NOTED ABOVE, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 10.6. ABSOLUTELY NO NEW CORRUGATED METAL PIPE SHALL BE INSTALLED ON THIS PROJECT.
11. THE COST OF CLEARING AND GRUBBING/REMOVAL AND DISPOSAL OF CLEARING AND GRUBBING MATERIAL SHALL BE PAID LUMP SUM, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EXTENT OF CLEARING REQUIRED PRIOR TO BIDDING. OFFSITE DISPOSAL AREAS ARE TO BE FURNISHED BY THE CONTRACTOR.
12. PROPER MAINTENANCE OF STREETS, INCLUDING DUST CONTROL, SHALL BE STRICTLY ADHERED TO.
13. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
14. THE CONTRACTOR SHALL PROVIDE PROPER TRAFFIC CONTROL SIGNS AND FLAGGERS TO MAINTAIN ONE LANE TRAFFIC DURING CONSTRUCTION, WHERE LANE CLOSURES ARE NEEDED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SEE SHEET No. 6351 FOR TYPICAL LANE CLOSURE DETAILS. ANY ROAD CLOSURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE OWNER PRIOR TO IMPLEMENTATION.
15. ALL DISTURBED UNPAVED AREAS SHALL BE RESTORED AS FOLLOWS:
- 15.1. GRASSED AREAS SHALL RECEIVE SOLID SOD WHICH SHALL BE FERTILIZED AND WATERED AS PER THE VEGETATION SCHEDULE. PERMANENT ESTABLISHMENT OF GRASS GROWTH SHALL BE A REQUIREMENT BEFORE FINAL COMPLETION.
- 15.2. ALL LANDSCAPED AREAS SHALL BE RESTORED IN KIND AND SHALL INCLUDE TOP SOIL (4" DEPTH MIN), WATERING, FERTILIZER AND MULCH, IF PRESENT (IN KIND), AS PER THE VEGETATION SCHEDULE. CONTRACTOR SHALL MATCH SPECIES AND SIZE AS CLOSE AS POSSIBLE. SUBSTITUTIONS SHALL BE ALLOWED ONLY BY WRITTEN APPROVAL FROM THE ENGINEER AND COORDINATION WITH THE AFFECTED PROPERTY OWNER.
16. ALL EXISTING MAILBOXES, STREET SIGNS, FENCES, AND OTHER STRUCTURES LOCATED WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED, SALVAGED AND RESET AS DICTATED BY CONSTRUCTION ACTIVITIES. (NO SEPARATE PAY, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER). ALL ITEMS (INCLUDING REMOVAL OF OBSTRUCTIONS, REMOVAL AND RESET AND/OR REPLACEMENT OF STORM DRAIN STRUCTURES, ETC.) FOR WHICH NO PAY ITEM IS ESTABLISHED, SHALL BE INCLUDED IN THE COST OF THE PIPE LAYING OPERATION. (NO SEPARATE PAY).
17. PAVED ROADS SHALL BE OPEN CUT AND REPAIRED AS DETAILED. CASING SHALL BE USED ONLY WHERE NOTED ON THE PLANS.
18. ALL GRAVEL ROADS AND GRAVEL DRIVEWAYS SHALL BE OPEN CUT WITHOUT CASING, UNLESS OTHERWISE NOTED, AND REPLACED IN KIND.
19. ALL PAVED DRIVEWAYS SHALL BE OPEN CUT WITHOUT CASING AND REPAIRED IN KIND, UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL DRIVEWAY CUTS AND EXCAVATION WITH THE OWNERS OF SAID DRIVEWAYS.
21. ANY DAMAGE TO PAVED ROADS OR DRIVEWAYS, WHICH ARE OUTSIDE OF THE PROJECT LIMITS, SHALL BE REPAIRED IN KIND, AT THE CONTRACTOR'S EXPENSE.
22. ALL TRENCHES IN PAVED AREAS SHALL BE REPAIRED AS DETAILED. CRUSHED AGGREGATE SHALL ALSO BE INSTALLED AND USED FOR A TEMPORARY SURFACE UNTIL SUCH TIME THAT THE PROJECT OWNER DECIDES TO ALLOW INSTALLATION OF PAVEMENT (SEE DETAILS). ALL CRUSHED AGGREGATE SHALL BE SIZE 610. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXISTING PAVEMENT AND OR CRUSHED AGGREGATE PRIOR TO PLACEMENT OF PAVEMENT IN PATCHED AREAS TO MAKE A SMOOTH JOINT WITH THE EXISTING PAVEMENT. SAW CUT TO FULL DEPTH OF EXISTING PAVEMENT SHALL BE REQUIRED ON ALL PAVEMENT REPAIR, UNLESS OTHERWISE DIRECTED. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SURFACE IN AN ACCEPTABLE CONDITION UNTIL SUCH TIME AS FINAL PAVEMENT IS INSTALLED.
23. PRIOR TO THE BEGINNING OF ANY EXCAVATION, ALL EXISTING PAVEMENT SHALL BE SCORED OR SAW CUT TO A DEPTH SUCH THAT A STRAIGHT AND UNIFORM VERTICAL EDGE IS ESTABLISHED PRIOR TO REMOVAL OF SAID PAVEMENT FROM THE PROJECT. IF VERTICAL EDGE IS DISTURBED, THEN A SECOND CUT SHALL BE REQUIRED PRIOR TO ASPHALT OR CONCRETE PATCHING. ALL ASPHALT OR CONCRETE SHALL BE REMOVED FROM THE PROJECT SITE PRIOR TO EXCAVATION PROCEDURES. (NO SEPARATE PAY FOR SAW CUTTING, DEBRIS REMOVAL, PAVEMENT REMOVAL AND DISPOSAL)
24. ALL ROAD BORES SHALL BE IN ACCORDANCE TO THE DETAILS.
25. ALL SELECT FILL MATERIAL SHALL MEET THE SPECIFICATIONS FOR CLASS 9, GROUP C AND MODIFIED TO CONSIST OF A PLASTICITY INDEX (PI) BETWEEN 5 AND 15. THE SELECT FILL MATERIAL SHALL BE INSTALLED AS DETAILED & AT THE DIRECTION OF THE ENGINEER OR HIS REPRESENTATIVE.
26. WORK FOR THIS PROJECT REQUIRES EXCAVATION IN THE IMMEDIATE VICINITY OF TRAFFIC AND ADJACENT PROPERTIES. THEREFORE, THE RISK OF A FAILURE OCCURRING DURING THE EXCAVATION REQUIRES THAT EXTREME CAUTION BE EXERCISED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING WHAT BRACING, SHORING OR GROUND SUPPORT SYSTEM THAT IS DEEMED NECESSARY TO PREVENT A FAILURE AND PROTECT THE PERSONS WORKING NEAR THE EXCAVATION, THE PUBLIC THAT MAY BE ABOVE THE EXCAVATION, OR ANY STRUCTURE ADJACENT TO THE EXCAVATION. ALL COSTS FOR ANY PROTECTIVE MEASURES INCLUDING THE MATERIALS AND LABOR FOR DESIGNING, DRAWING AND CONSTRUCTING THE FACILITY SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BRACING, SHORING OR ANY GROUND SUPPORT SYSTEM REQUIRED TO PREVENT A FAILURE FROM OCCURRING DURING EXCAVATION. ALL COST FOR ANY PROTECTIVE MEASURES, INCLUDING THE MATERIALS AND LABOR FOR DESIGNING AND CONSTRUCTING THE SUPPORT SYSTEM, SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
28. THE EROSION CONTROL DEVICES SHALL BE REQUIRED AS DIRECTED BY THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SILT DOES NOT LEAVE THE CONSTRUCTION SITE OR CONTAMINATE WATERS OF THE U.S. DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE PLAN DURING CONSTRUCTION UNTIL PERMANENT GRASS IS ESTABLISHED OR THE DISTURBED SURFACE IS PAVED.

29. THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR EROSION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL TESTING BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER AND/OR OWNER.
31. MATERIAL SUBMITTALS SHALL BE MADE TO OWNER THROUGH THE ENGINEER PRIOR TO USE FOR APPROVAL.
32. ALL WATER AND SEWER SYSTEMS, INCLUDING SERVICES, INSTALLED ON THIS PROJECT SHALL REQUIRE A TRACER WIRE SYSTEM.
33. THE CONTRACTOR SHALL HAVE A COMPETENT AND EXPERIENCED SUPERINTENDENT ON SITE AT ALL TIMES. THE SUPERINTENDENT SHALL NOT OPERATE EQUIPMENT WHILE ON THE PROJECT SITE. WORK ON THE PROJECT SHALL STOP IF THE ASSIGNED PROJECT SUPERINTENDENT IS NOT ON SITE.
34. MANHOLE LIDS, FIRE HYDRANTS & VALVES NOTED FOR REMOVAL IN THESE PLANS, SHALL BE SALVAGED FOR THE OWNER. ALL SALVAGED ITEMS SHALL BE CLEANED BY POWER WASHING. SAID ITEMS SHALL BE STACKED AND SECURED ON PALLETS. SAID ITEMS SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO A SITE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF SAID ITEMS PRIOR TO DELIVERY TO THE OWNER AND FOR REPLACEMENT, IN KIND, FOR ANY MISSING ITEMS. (NO SEPARATE PAY)
35. ALL MATERIALS FOR THE PROJECT SHALL BE A PRODUCT OF THE U.S.A.

CONSTRUCTION PHASING NOTES

1. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO MINIMIZE TRAFFIC DISRUPTIONS TO LOCAL RESIDENTS AND BUSINESSES.
2. THE CONTRACTOR SHALL HAVE A THOROUGH UNDERSTANDING ON THE WATER AND SEWER SYSTEMS WITHIN THE VICINITY OF THIS PROJECT IN ORDER TO FACILITATE THE CONSTRUCTION OF THIS PROJECT IN A MANOR WHICH WILL PROVIDE THE LEAST AMOUNT OF DISRUPTIONS TO THE PROJECT AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION, THRU THE ENGINEER, WITH THE OWNER.
3. THE CONTRACTOR SHALL PHASE CONSTRUCTION SUCH THAT THE WORK LOCATED FROM TUSCAN AVENUE THROUGH ALL POINTS SOUTH SHALL BE CONSTRUCTED AND COMPLETED FIRST. THE OWNER IS PLANNING FOR ADDITIONAL WORK (TO BE COMPLETED BY OTHERS – NOT THIS PROJECT) IN THE VICINITY OF SAID AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION, THRU THE ENGINEER, WITH THE OWNER.
4. ONCE CONSTRUCTION IS COMPETED FOR AREAS SOUTH OF TUSCAN AVENUE, TO THE OWNER'S SATISFACTION, THE CONTRACTOR MAY PROCEED WITH THE REMAINDER OF THE PROJECT BASED ON THE SUBMITTED PHASES OF CONSTRUCTION.
5. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASES OF CONSTRUCTION TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

SPECIAL HAZARD NOTE

1. CERTAIN PARTS OF THIS PROJECT ARE LOCATED IN AREAS KNOWN TO HAVE SEMI-VOLATILE SOIL AND GROUND WATER CONTAMINANTS (CREOSOTE) AS DESIGNATED AND MONITORED BY THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY AND THE US ENVIRONMENTAL PROTECTION AGENCY. THE CONTRACTOR SHALL CONSULT THE SPECIFICATIONS FOR THIS PROJECT FOR SPECIFIC DETAILS REGARDING SAID CONTAMINATION. THE CONTRACTOR SHALL BE QUALIFIED TO HANDLE SAID CONTAMINATION AND FOLLOW ALL, INCLUDING OSHA, GUIDELINES AND REGULATIONS. DISPOSAL OF ANY CONTAMINATED CONSTRUCTION ELEMENTS (SOIL, GROUND WATER, ETC) AT A DISPOSAL SITE APPROVED TO HANDLE SUCH CONTAMINANTS SHALL BE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTOR SHALL BE AWARE OF PREVIOUS CONTAMINATE REMEDIATION PROJECTS IN THE VICINITY OF THIS PROJECT. SOME OF THE ARCHIVED PLANS FOR SAID PROJECT(S) ARE AVAILABLE THRU THE ENGINEER.

NO.	DATE	DESCRIPTION	BY
GENERAL NOTES			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	SLS	Checked by:	Scale: NONE
Date:	06-01-2022	Working No.	GN1
Drawing No.:	11295	Sheet No.	3

- NO PIPE SHALL BE LAID IN THE PRESENCE OF WATER. NO MANHOLE OR WET WELL SHALL BE SET IN THE PRESENCE OF WATER.
- WELL POINTS, IF REQUIRED, SHALL BE INCLUDED IN THE COST OF THE PIPING LAYING OPERATION.
- WHERE THE WATER MAIN IS WITHIN 10 FEET OF A SEWER MAIN HORIZONTALLY, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18" FROM THE TOP OF THE SEWER MAIN, UNLESS OTHERWISE NOTED.
- THE FINISHED ELEVATION OF ALL MANHOLE TOPS FOR MANHOLES TO BE CONSTRUCTED IN PAVED AREAS SHALL BE AT EXISTING PAVEMENT ELEVATION OR AS DIRECTED BY THE ENGINEER. MANHOLE AND PIPE ELEVATIONS SHALL BE TAKEN FROM CUT SHEETS FURNISHED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION. PAYMENT FOR SEWER WILL BE BASED ENTIRELY ON THE ENGINEER APPROVED CUT SHEETS.
- MANHOLES SHALL HAVE 20 MIL. COAL TAR EPOXY COATING ON THE INSIDE, UNLESS OTHERWISE NOTED. DUCTILE IRON PIPE SHALL BE LINED AS NOTED IN THE SPECIFICATIONS.
- ALL SEWER MAINS, SERVICE LINES AND FITTINGS SHALL BE SDR 26 PVC AND OF THE SIZE AS NOTED IN THESE PLANS, UNLESS OTHERWISE NOTED. ALL FITTINGS REQUIRED FOR DUCTILE IRON OR PVC PIPE SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM FOR THE PIPE AND NOT AT ADDITIONAL COST TO THE PROJECT EXCEPT SERVICE TEE'S AND CLEANOUTS. CLEANOUTS SHALL INCLUDE TEE, SERVICE CAP, CONCRETE RING, TRAFFIC COVER IF NEEDED, AND ANY PIPE LENGTH NEEDED TO BRING CLEANOUT TO SURFACE GRADE. ALL CLEANOUTS LOCATED IN PAVED AREAS SHALL BE INSTALLED WITH A TRAFFIC LOAD RATED FRAME AND COVER SET FLUSH WITH PAVEMENT. (NO SEPARATE PAY)
- ALL DUCTILE IRON PIPE SHALL BE LOCKING JOINT TYPE AND OF THE SIZE AS NOTED ON THESE PLANS.
- INFILTRATION/EXFILTRATION ON NEWLY INSTALLED SEWER MAIN SHALL BE REQUIRED AS DIRECTED. MANDREL TESTS SHALL BE REQUIRED ON ALL SEWER MAIN INSTALLED. CONTRACTOR SHALL BE REQUIRED TO PULL A MANDREL FOR TESTING PURPOSES IN ALL SEWER LINES INSTALLED ON THE PROJECT PRIOR TO FINAL ACCEPTANCE. MANDREL TEST SHALL BE PERFORMED IN LIVE OR BYPASS PUMPED SEWER AS NECESSARY AT THE DISCRETION OF THE ENGINEER
- ALL MANHOLES SHALL BE 48" IN DIAMETER, WITH ECCENTRIC TOP CONE SECTIONS, UNLESS OTHERWISE NOTED. (SEE PLAN AND PROFILE SHEETS FOR PROPER SIZING)
- ALL SINGLE DROPS FOR SEWER PIPE 8" AND UNDER IN DIAMETER SHALL BE PLACED INSIDE THE MANHOLE AS DETAILED. ALL MULTIPLE DROPS OR DROPS FOR SEWER PIPE OVER 8" IN DIAMETER SHALL BE PLACED OUTSIDE OF THE MANHOLE AS DETAILED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR SANITARY SEWER CONSTRUCTION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR BY-PASS PUMPING AS REQUIRED BY THE ENGINEER. (NO SEPARATE PAY)
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTING ANY SEWER SERVICE LINES WHICH ARE CUT AND/OR REMOVED DURING THIS PROJECT, UNLESS OTHERWISE NOTED.
 - ALL SERVICE CONNECTIONS SHOWN ON THE PLAN SHEETS SHALL BE CONNECTED TO THE PROPOSED SEWER LINE, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.
 - FLEXIBLE COUPLINGS SHALL BE USED ONLY WITH ENGINEER'S APPROVAL.
- THE CONTRACTOR SHALL VERIFY THE LOCATION AND FLOW LINE ELEVATION OF THE SERVICE CONNECTION POINTS AT EACH STRUCTURE PRIOR TO CONSTRUCTION. LENGTH OF SERVICE CONNECTIONS MAY VARY FROM WHAT IS SHOWN DUE TO LOCATION OF SERVICE CONNECTION POINT.
- THE MINIMUM GRADE FOR SEWER SERVICE CONNECTIONS SHALL BE 0.50% SERVICE CONNECTION TO MAIN, TEE'S, REDUCERS, CONNECTIONS TO EXISTING SERVICE AND ANY OTHER FITTINGS NECESSARY TO MAKE THE CONNECTION SHALL BE PAID PER EACH CONNECTION. SERVICE LINE SHALL BE PAID BY LINEAR FOOT.
- CLEANOUTS SHALL BE PAID PER EACH. CLEANOUTS FOR SANITARY SEWER SERVICES SHALL BE PLACED AT THE RIGHT OF WAY LINE (AS DETAILED), AT EVERY TURN AND CHANGE IN GRADE, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.
- SERVICE CONNECTIONS NOTED ON THESE PLANS ARE LOCATED BASED ON FIELD EVIDENCE, INSPECTION REPORTS AND OTHER INFORMATION THAT IS AVAILABLE TO THE ENGINEER. THE LOCATION OF ANY SERVICE NOTED AS "FIELD VERIFY" IS QUESTIONABLE AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION OF THE MAIN LINE.
- ALL SERVICE CONNECTIONS (FOR ALL UTILITY TYPES) WHICH ARE TEMPORARILY DISCONNECTED DUE TO CONSTRUCTION REQUIREMENTS, DAMAGED OR OTHERWISE DISCONNECTED DURING CONSTRUCTION, SHALL BE REPAIRED IN KIND AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED. (NO SEPARATE PAY). SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH THE UTILITY OWNER AND THE AFFECTED STRUCTURE OWNER. EXCEPTION 1: WATER SERVICE CONNECTIONS WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER, REPAIRED AND PAID AS OUTLINED IN THE BID PROPOSAL (SIZE TO MATCH EXISTING). EXCEPTION 2: ANY OTHER SERVICE CONNECTIONS, EXCEPT WATER & SEWER, WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER AND REPAIRED TO THE UTILITY OWNER.
- THE CONTRACTOR SHALL NOTE MINIMUM GRADES FOR VARIOUS LOCATIONS OF PROPOSED SEWER LINES WITHIN THE PROJECT. THE CONTRACTOR SHALL HAVE THE EXPERTISE TO INSTALL PIPING ON THESE GRADES. ANY INSTALLED PIPE FOUND TO HAVE MORE THAN 1/4" OF STANDING WATER SHALL BE REMOVED AND RE-LAID AT THE CONTRACTOR'S EXPENSE.
- ALL BEDDING MATERIAL FOR ALL PIPE SHALL BE ABSORBED IN THE PRICE OF THE PIPE LAYING OPERATION.
- ALL MANHOLES LOCATED IN FLOOD ZONES SHALL HAVE BOLTED LIDS AND FRAMES AS SHOWN ON PLANS.

1. ALL EXISTING MANHOLES NOTED TO BE REMOVED SHALL BE REMOVED ENTIRELY. REMOVED ITEMS SHALL BE DISPOSED OF APPROPRIATELY.
2. ALL EXISTING MANHOLES NOTED TO BE ABANDONED, SHALL BE PAID FOR PER EACH AND SHALL BE MODIFIED AS FOLLOWS:
 - 2.1. REMOVE AND DISPOSE OF SANITARY WASTE.
 - 2.2. REMOVE COVER, FRAME AND THE TOP 36" OF MANHOLE STRUCTURE. DISPOSE OF REMOVED OBJECTS APPROPRIATELY.
 - 2.3. FILL THE MANHOLE WITH SAND.
 - 2.4. CAP THE MANHOLE WITH 3000 PSI, NON-REINFORCED CONCRETE (6" DEPTH).
 - 2.5. BACKFILL WITH NATIVE SOIL MATERIAL AND/OR FILL MATERIAL (CL B9) AND COMPACT. GRADE TO DRAIN AS REQUIRED. GRASS DISTURBED AREA OR REPAIR PAVEMENT AREAS.
3. ALL EXISTING SEWER PIPES NOTED TO BE REMOVED, SHALL BE REMOVED ENTIRELY. (NO SEPARATE PAY)
 - 4.1. ALL EXISTING SEWER PIPES NOTED TO BE ABANDONED SHALL BE PAID FOR BY LINEAR FOOT AND SHALL BE MODIFIED AS FOLLOWS:
 - 4.1. REMOVE AND DISPOSE OF SANITARY WASTE.
 - 4.2. FILL THE PIPE WITH FLOWABLE FILL.
 - 4.3. PLUG ENDS.
5. WHERE ABANDONED SEWER PIPES AND/OR MANHOLES CONFLICT WITH THE NEW CONSTRUCTION, THE EXISTING PIPE OR MANHOLE SHALL BE REMOVED, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.

3. ALL WORK ITEMS FOR WHICH NO PAY ITEMS ARE ESTABLISHED SHALL BE ABSORBED IN THE COST OF THE PIPE LAYING OPERATION.
2. NO PIPE SHALL BE LAID IN THE PRESENCE OF WATER.
3. WHERE THE WATER MAIN IS WITHIN 10 FEET OF A SEWER MAIN HORIZONTALLY, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18" FROM THE TOP OF THE SEWER MAIN, UNLESS OTHERWISE NOTED.
4. ALL STEEL CASINGS SHALL BE 0.250" WALL THICKNESS, UNLESS OTHERWISE NOTED, AND OF THE SIZE AS NOTED ON THESE PLANS.
5. ALL ROAD BORES SHALL BE IN ACCORDANCE TO THE DETAILS.
6. ALL WATER PIPE SHALL BE DUCTILE IRON, CLASS 350, AND/OR HDPE DR 11, 200 PSI, AS NOTED ON PLANS.
7. ALL FITTINGS AND VALVES SHALL BE DUCTILE IRON WITH CONCRETE THRUST BLOCK AT ALL BENDS AND SECURED TOGETHER WITH MEGA LUG CONNECTIONS. ALL TEES AND VALVES SHALL BE SECURED TOGETHER AS ONE UNIT. VALVES AND FIRE HYDRANTS SHALL BE SECURED TOGETHER BUT SEPARATE FROM THE TEE AND OTHER VALVES. ALL FITTINGS, EXCEPT VALVES SHALL BE ABSORBED ITEMS.
8. ALL BENDS SHOWN IN THE PROPOSED WATERLINE SHALL BE ACCOMPLISHED THROUGH THE USE OF THE REQUIRED FITTINGS (22.5°, 30°, 45°, ...). SINGLE 90° BEND FITTINGS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON THE PLANS AND/OR APPROVED BY THE ENGINEER. 90° BENDS SHALL BE ACCOMPLISHED BY USING MULTIPLE SMALLER BEND FITTINGS. BENDS SHOWN ON THE PLAN SHEETS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING AND CONSTRUCTION. ONLY MAJOR BENDS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FITTINGS NECESSARY TO INSTALL THE PROPOSED WATER LINE. (NO SEPARATE PAY) TEES AND CROSSES SHALL BE PAID FOR UNDER THE CONNECTION ITEM.
9. ALL PROPOSED FIRE HYDRANTS SHOWN FOR INSTALLATION ON THE PLANS SHEETS SHALL BE 3-WAY HYDRANTS AS DETAILED. ALL HYDRANTS SHALL BE SAFETY YELLOW IN COLOR FROM THE MANUFACTURER. ACCEPTABLE FIRE HYDRANTS SHALL BE M & H, MUELLER AND AMERICAN DARLING.
10. FULL LENGTH PIPE SECTIONS ARE REQUIRED BEFORE AND AFTER ALL FITTINGS.
11. ALL VALVES NOTED ON THESE PLANS SHALL BE GATE VALVES.
12. ALL EXISTING WATER LINES NOTED FOR ABANDONMENT ON THIS PROJECT SHALL BE COMPLETELY DISCONNECTED FROM THE EXISTING SYSTEM AND CAPPED.
13. PRESSURE TESTS SHALL BE REQUIRED ON ALL WATER MAIN INSTALLED.
14. ALL NEW CONSTRUCTION SHALL BE FLUSHED WITH CLOSE SUPERVISION OF THE SYSTEM OPERATOR.
15. ALL BACTI-SAMPLES SHALL BE TAKEN BY THE SYSTEM OPERATOR OR HIS REPRESENTATIVES. ANY AND ALL SAMPLING FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
16. WATER SERVICE NOTES:
 - 16.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING WATER METERS ALONG ALL STREETS WITHIN THE PROJECT AREA WHICH ARE NOTED FOR WATER MAIN CONSTRUCTION. SOME METERS MAY NOT HAVE BEEN LOCATED DURING THE DESIGN PHASE OF THIS PROJECT DUE TO FIELD CONDITIONS. HOWEVER, ALL METERS WITHIN THE PROJECT AREA SHALL BE RECONNECTED. ABSOLUTELY NO STRUCTURE SHALL HAVE A SERVICE CONNECTION WITHOUT A METER.
 - 16.2. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTING ANY SERVICE, WHICH IS PRESENTLY CONNECTED TO AN EXISTING WATER MAIN THAT IS NOTED FOR ABANDONMENT ON THIS PROJECT, TO AN ADJACENT PROPOSED WATER LINE (SEE PLAN SHEETS).
 - 16.3. A CRITERIA FOR THIS PROJECT IS TO ELIMINATE UNDER SIZED (UNDER 4" DIAMETER) WATER MAINS WITHIN THE PROJECT AREA. WATER SERVICES SHALL BE RECONNECTED TO AN ADJACENT EXISTING LARGE WATER MAIN (4" DIAMETER AND OVER).
 - 16.4. SERVICE CONNECTIONS SHALL INCLUDE (BUT MAY NOT BE LIMITED TO) TAPPING SADDLE, CORPORATION STOP AND/OR ALL NECESSARY FITTINGS. SERVICE RECONNECTIONS SHALL BE PAID PER EACH AS OUTLINED IN THE BID DOCUMENTS. SERVICE CONNECTION SHALL INCLUDE CONNECTION TO THE MAIN AND THE CONNECTION TO NEW OR EXISTING WATER METERS. SERVICE LINE (LENGTH AS REQUIRED) OF MATCHING SIZE SHALL BE PAID PER LINEAR FOOT AS OUTLINED IN THE CONTRACT DOCUMENTS.
 - 16.5. NEW SERVICE CONNECTIONS SHALL BE INSTALLED AS ONE CONTINUOUS PIPE FROM THE WATER MAIN TO THE METER. SPIICES SHALL NOT BE ALLOWED. THE ENTIRE SERVICE BETWEEN THE METER AND THE NEW MAIN SHALL BE REPLACED. SERVICE LINE BORES SHALL BE PAID SEPARATELY.
 - 16.6. METERS SHALL ONLY BE INSTALLED WHERE NOTED ON THE PLANS AND SHALL BE PAID SEPARATELY. METERS SHALL MATCH SERVICE LINE SIZE.
 - 16.7. THE CONTRACTOR SHALL TAKE NOTE THAT THERE ARE SERVICES SHOWN ON THE PLANS TO BE DISCONNECTED FROM EXISTING WATER MAINS AND RECONNECTED TO AN EXISTING WATER MAIN. THIS SERVICE CONNECTION ITEM SHALL BE PAID UNDER "RECONNECTION OF WATER SERVICE" AND SHALL INCLUDE TAPPING SADDLE, CORPORATION STOP AND/OR ALL NECESSARY FITTINGS. SERVICE CONNECTION SHALL INCLUDE CONNECTION TO THE EXISTING MAIN AND THE CONNECTION TO THE EXISTING METER. THE ENTIRE SERVICE BETWEEN THE METER AND THE EXISTING MAIN SHALL BE REPLACED. SERVICE LINE (LENGTH AS REQUIRED) OF MATCHING SIZE SHALL BE PAID PER LINEAR FOOT AS OUTLINED IN THE CONTRACT DOCUMENTS. SERVICE LINE BORES SHALL BE PAID SEPARATELY.
 - 16.8. ALL NEW WATER METERS, IF REQUIRED, SHALL BE BADGER RADIO READ. ALL SERVICE FITTINGS SHALL BE FORD BRAND, ONLY.

NO.	DATE	DESCRIPTION	BY
GENERAL NOTES			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			

The logo features the lowercase letters "sdw" in a bold, sans-serif font. To its right, the words "Engineering Progress" are written in a smaller, regular weight sans-serif font.

301 Second Ave., | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Drawn by: SLS	Checked by:	Scale: NONE
Date: 05-27-2022	Working No. GN2	
Drawing No.: 11295	Sheet No. 4	



NOTE

ALL ITEMS SHOWN HERE ARE EXISTING
ON THE GROUND OR UNDERGROUND.

NO.	DATE	DESCRIPTION	BY
LEGAL, ABBREVIATIONS & SHEET KEY			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			



Engineering Progress

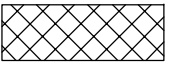
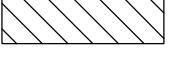
301 Second Ave., | Hattiesburg, MS 39401 | (p) 601,544,1821 | sd-w.com

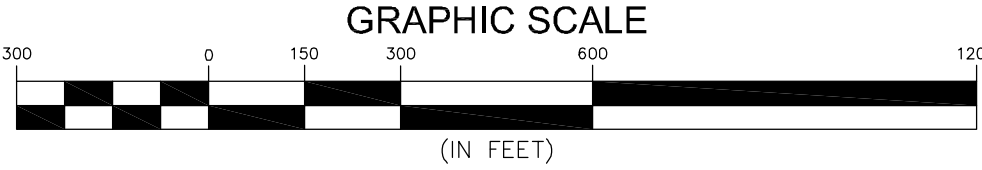
Drawn by: RES\SLS	Checked by: SEM	Scale: NONE
Date: 05-27-2022	Working No. KEY1	
Drawing No.: 11295	Sheet No. 5	

G:\PROJECTS\Hattiesburg_City of 11295-CAD Files\11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295 - Project Map.dwg, PSM1, 5/31/2021 1:55:16 PM



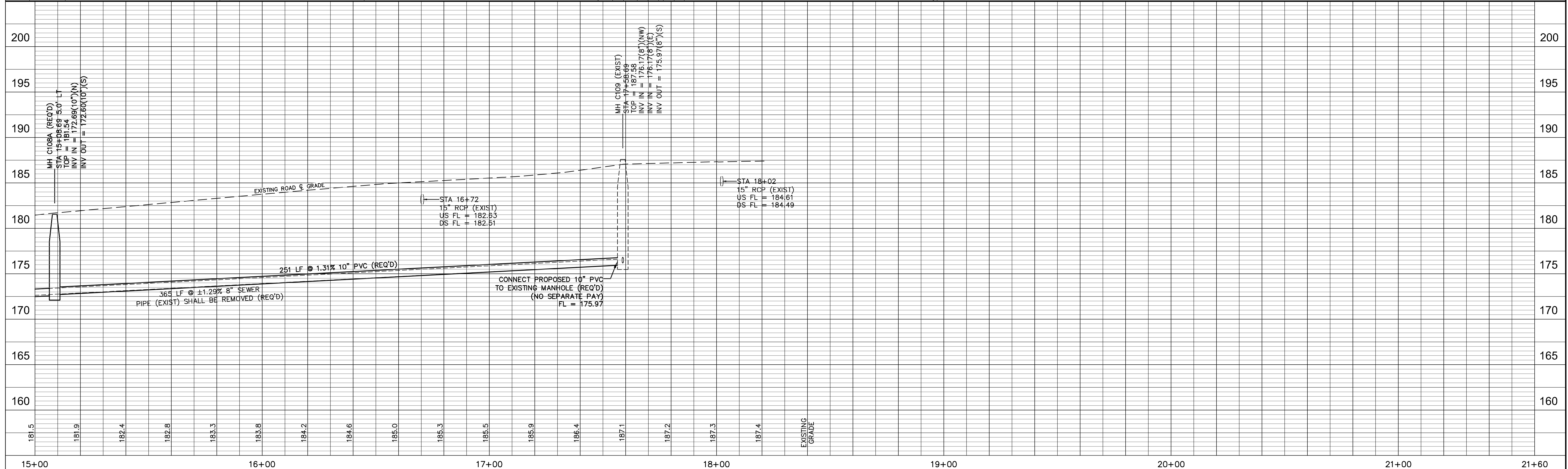
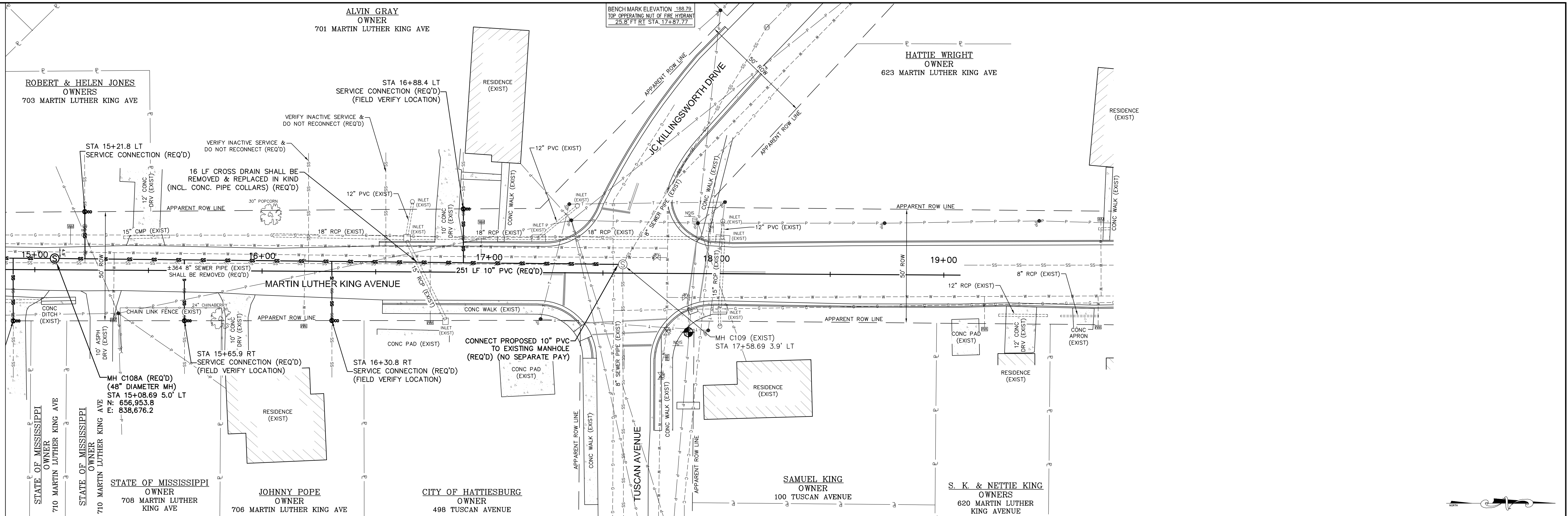
LEGEND:

-  - SEWER MAIN REPLACEMENT
-  - WATER SERVICE REPLACEMENT
-  - WATER & SEWER MAIN REPLACEMENT
-  - WATER MAIN REPLACEMENT



NO.	DATE	DESCRIPTION	BY
PROJECT SCOPE MAP			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
HATTIESBURG, MISSISSIPPI			
 Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES/SLS		Checked by: SEM	Scale: 1" = 300'
Date: 05-27-2022		Working No. PSM1	
Drawing No.: 11295		Sheet No. 6	

G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295 - Design Data_South_x2.dwg, mnp2, 5/31/2022 1:19:34 PM

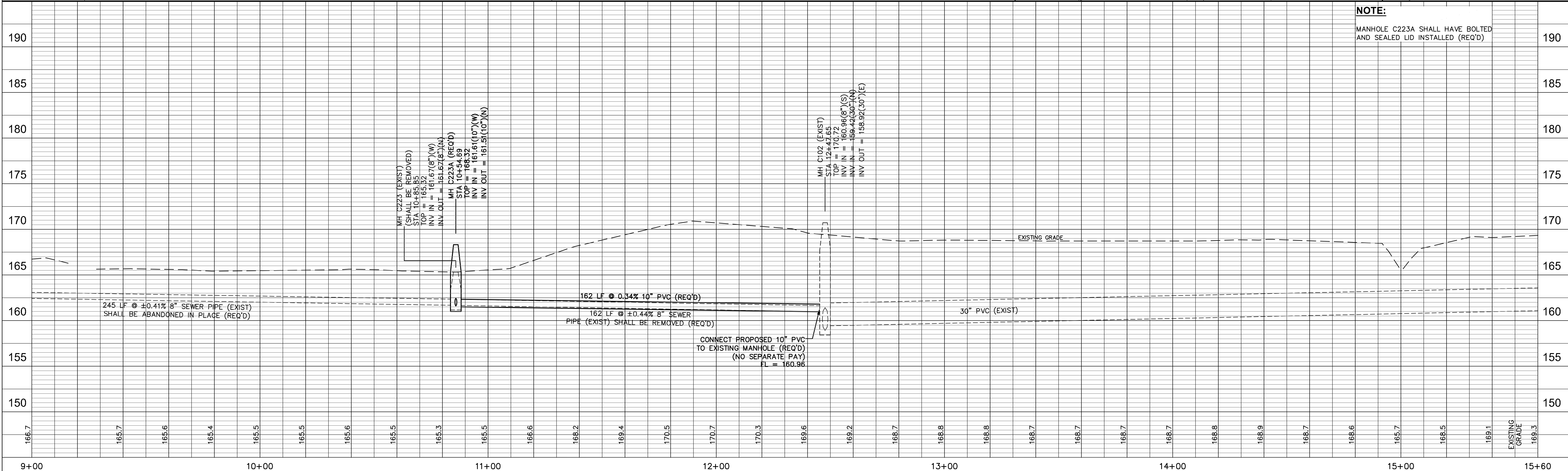
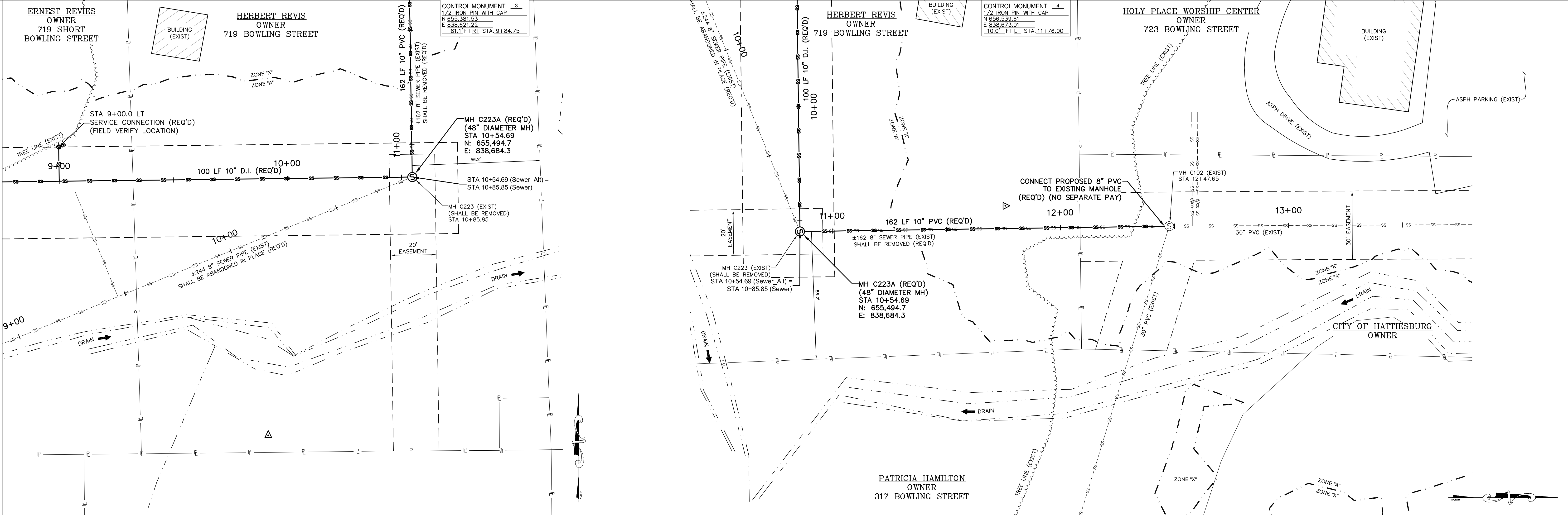


MLK AVENUE STA 15+00 - STA 18+00

MLK AREA INFRASTRUCTURE IMPROVEMENTS
CITY OF HATTIESBURG, MISSISSIPPI

			DRAWN BY: RES\SLS	 sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com	DRAWING NO. 11295
			DATE: 05-27-2022		WORKING No. <u>PnP2</u>
			CHECKED BY: SEM		SHEET No. <u>10</u>
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V		

G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295 - Design Data_South_v2.dwg, mhp5, 6/1/2022 9:47:50 AM



NOTE:
MANHOLE C223A SHALL HAVE BOLTED
AND SEALED LID INSTALLED (REQ'D)

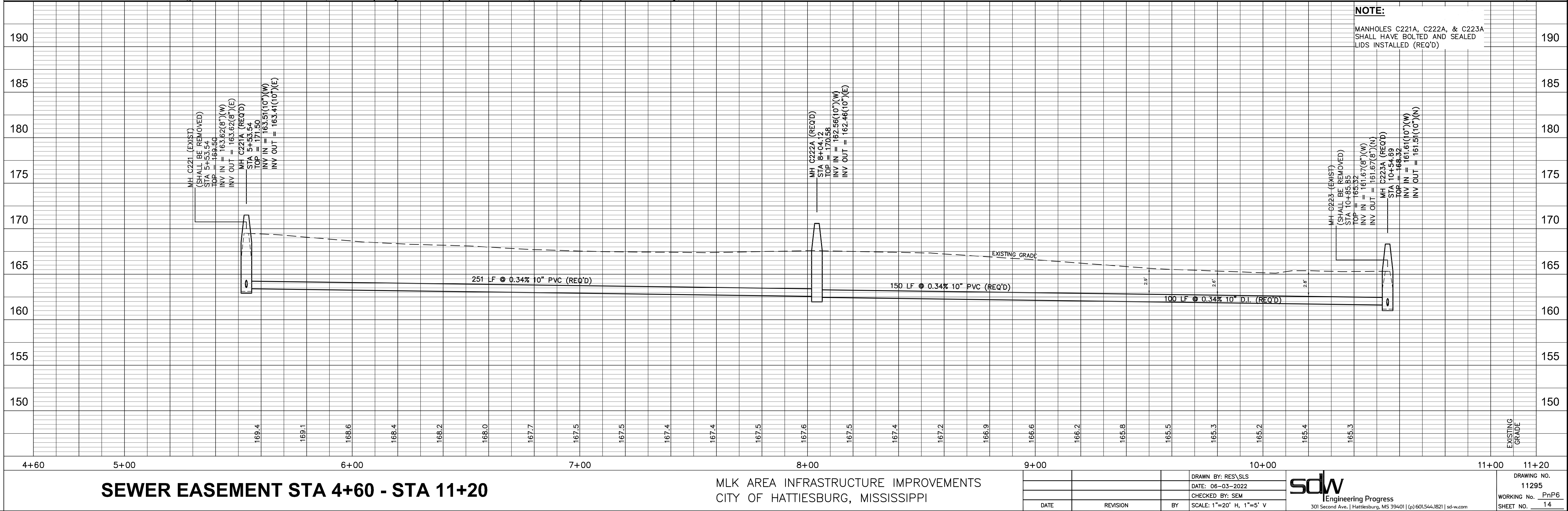
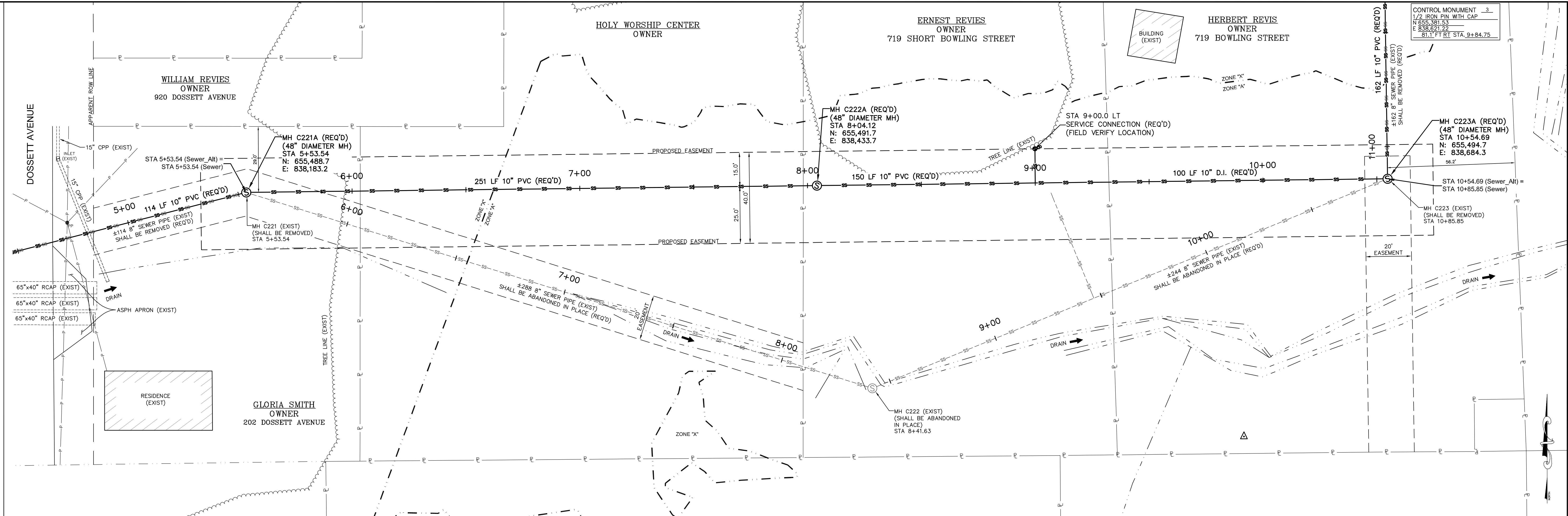
SEWER EASEMENT STA 9+00 - STA 15+60

MLK AREA INFRASTRUCTURE IMPROVEMENTS
CITY OF HATTIESBURG, MISSISSIPPI

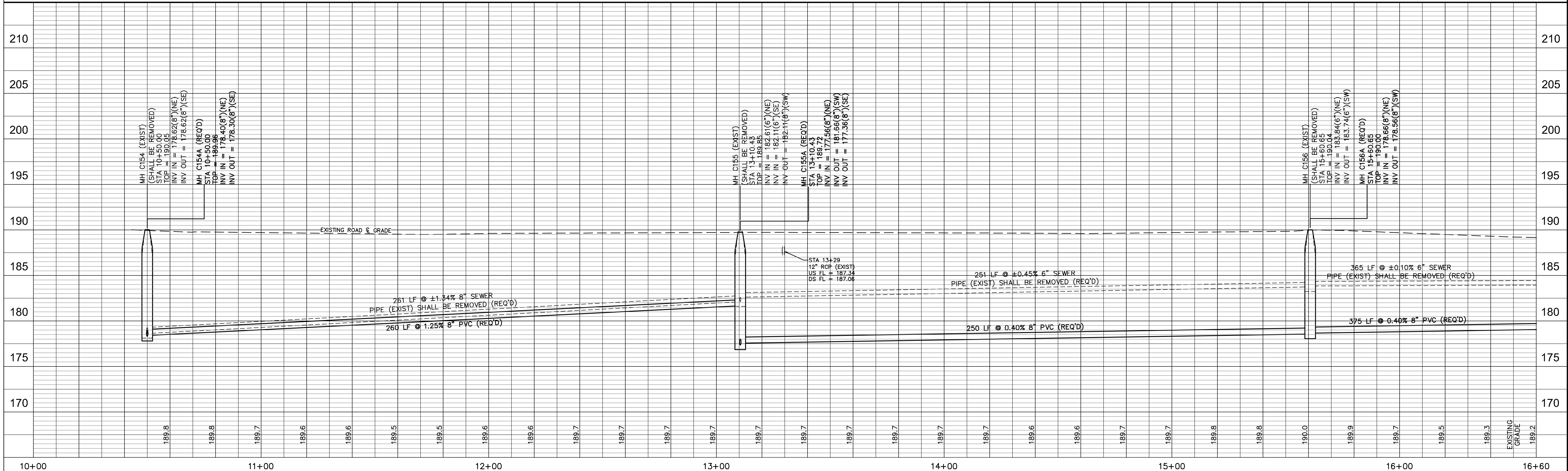
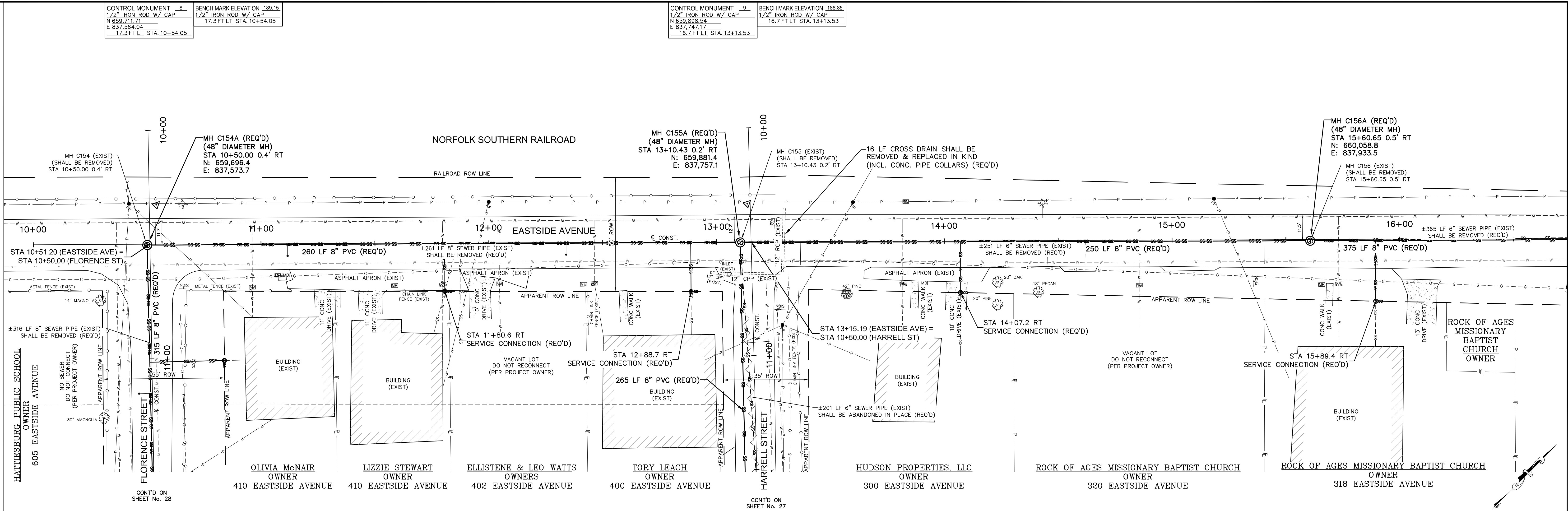
			DRAWN BY: RES\SLS	 Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sdw.com	DRAWING NO. 11295
			DATE: 06-03-2022		
			CHECKED BY: SEM		WORKING No. PnP5
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V		SHEET NO. 13

301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295 Design Data_South_v2.dwg, mbrp, 6/1/2022 9:47:51 AM



G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Pn7\asssksdwg_Pn7.dwg, 5/31/2022 12:16 PM

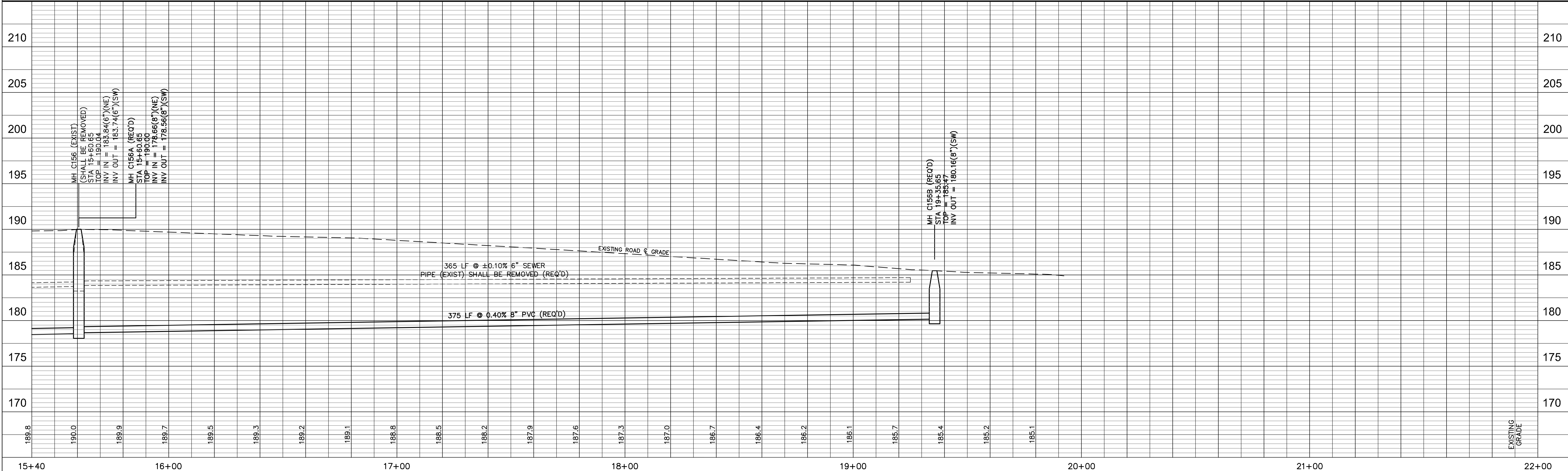
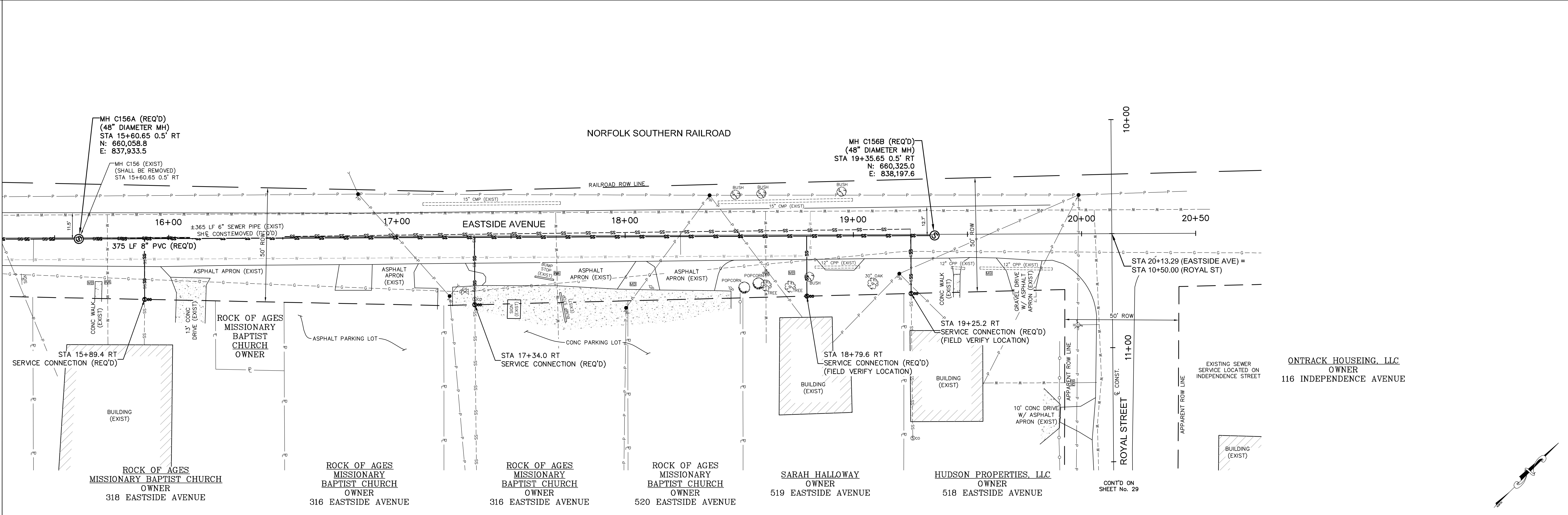


EASTSIDE AVENUE STA 10+00 - STA 16+00

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

			DRAWN BY: RES/SLS	 sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com	DRAWING NO. 11295
			DATE: 05-27-2022		WORKING No. Pn7
			CHECKED BY: SEM		SHEET NO. 15
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V		

G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_Plan\assessing_Park_S312022 12:18 PM



EASTSIDE AVENUE STA 15+40 - STA 22+00

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

21+00		22+00	
DRAWN BY: RES/SLS		DRAWING NO. 11295	
DATE: 05-27-2022		WORKING No. PnPB	
CHECKED BY: SEM		SHEET NO. 16	
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V

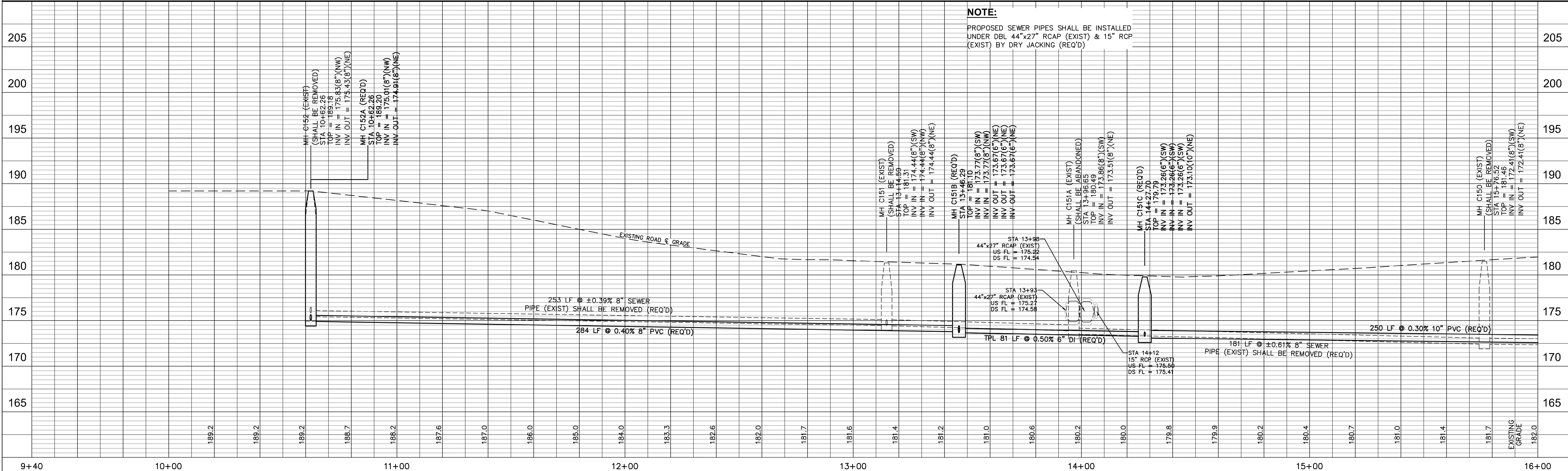
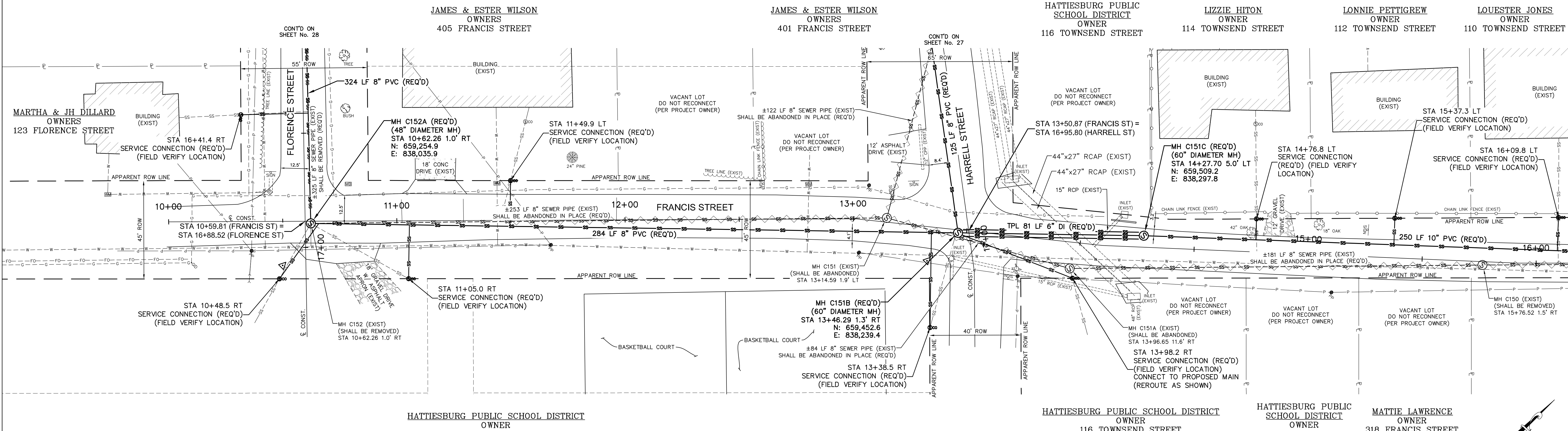
sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

CONTROL MONUMENT - 3
1/2" IRON ROD W/ CAP
N 659,233.21
E 838,040.24
19.3 FT RT STA. 10+49.86

BENCH MARK ELEVATION - 189.21
1/2" IRON ROD W/ CAP
N 659,233.21
E 838,040.24
19.3 FT RT STA. 10+49.86

CONTROL MONUMENT - 4
1/2" IRON ROD W/ CAP
N 659,434.30
E 838,238.45
14.9 FT RT STA. 13+34.09

BENCH MARK ELEVATION - 181.17
1/2" IRON ROD W/ CAP
N 659,434.30
E 838,238.45
14.9 FT RT STA. 13+34.09



NOTE:
PROPOSED SEWER PIPES SHALL BE INSTALLED UNDER DBL 44"x27" RCAP (EXIST) & 15" RCP (EXIST) BY DRY JACKING (REQ'D)

FRANCIS STREET STA 9+40 - STA 16+00

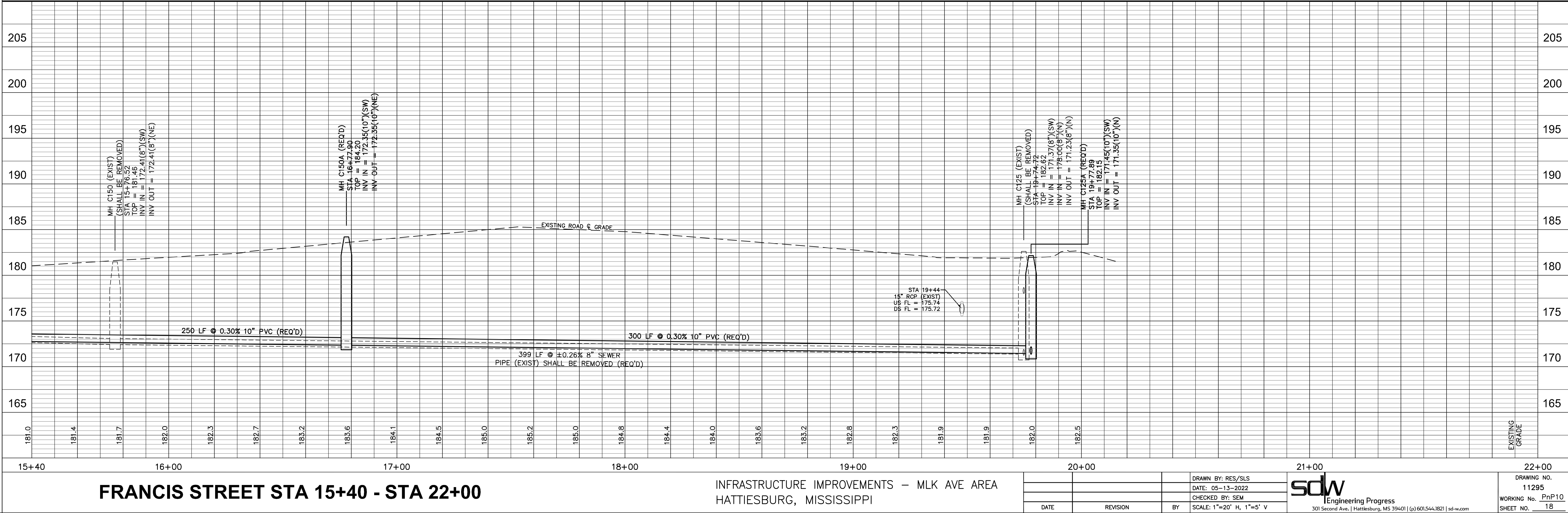
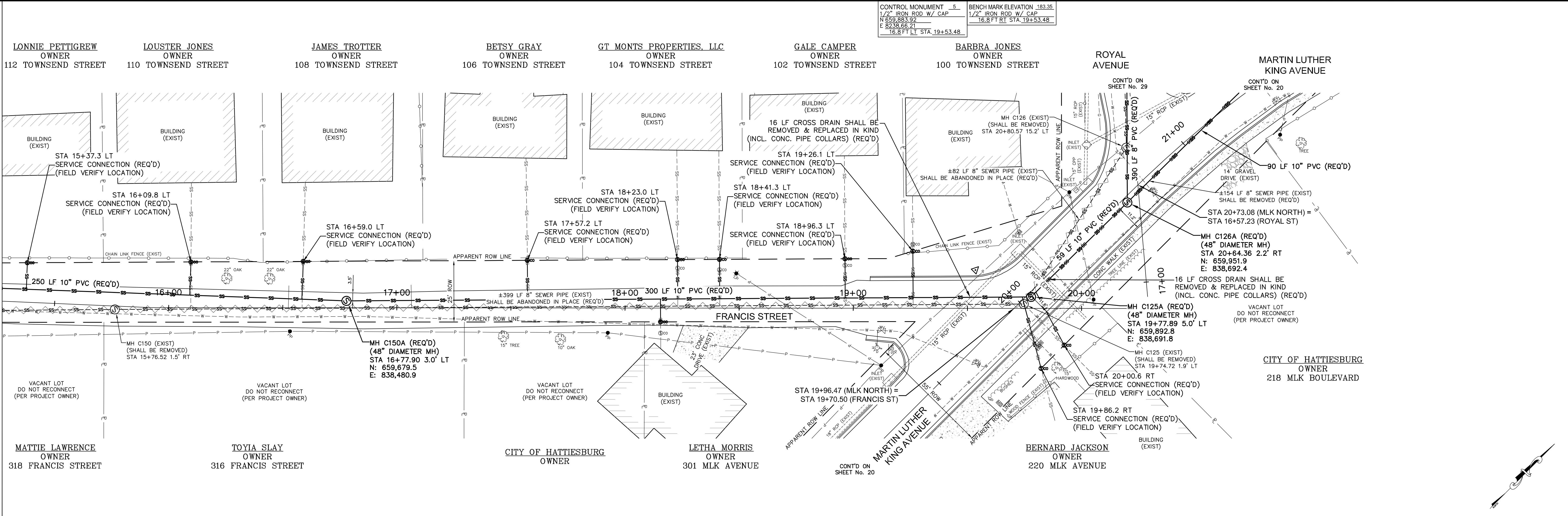
INFRASTRUCTURE IMPROVEMENTS - MLK AVE AREA
HATTIESBURG, MISSISSIPPI

DRAWN BY: RES/SLS		DATE: 06-03-2022		CHECKED BY: SEM		SCALE: 1"=20' H, 1"=5' V	
DATE	REVISION	BY					

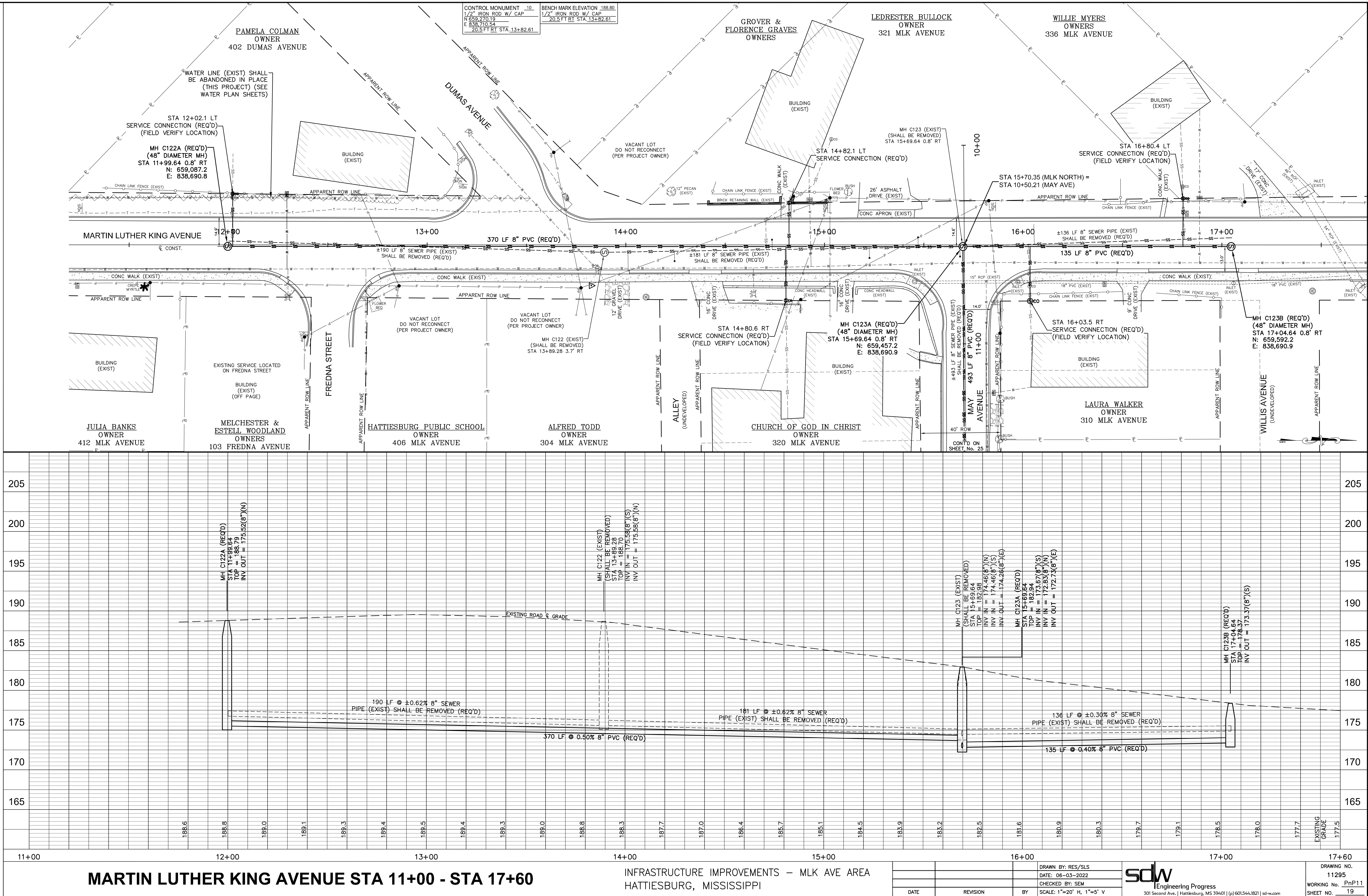
sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

DRAWING No.
11295
WORKING No. PnPg
SHEET NO. 17

G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_Plan Francis.dwg, 5/31/2022 1:38:24 PM

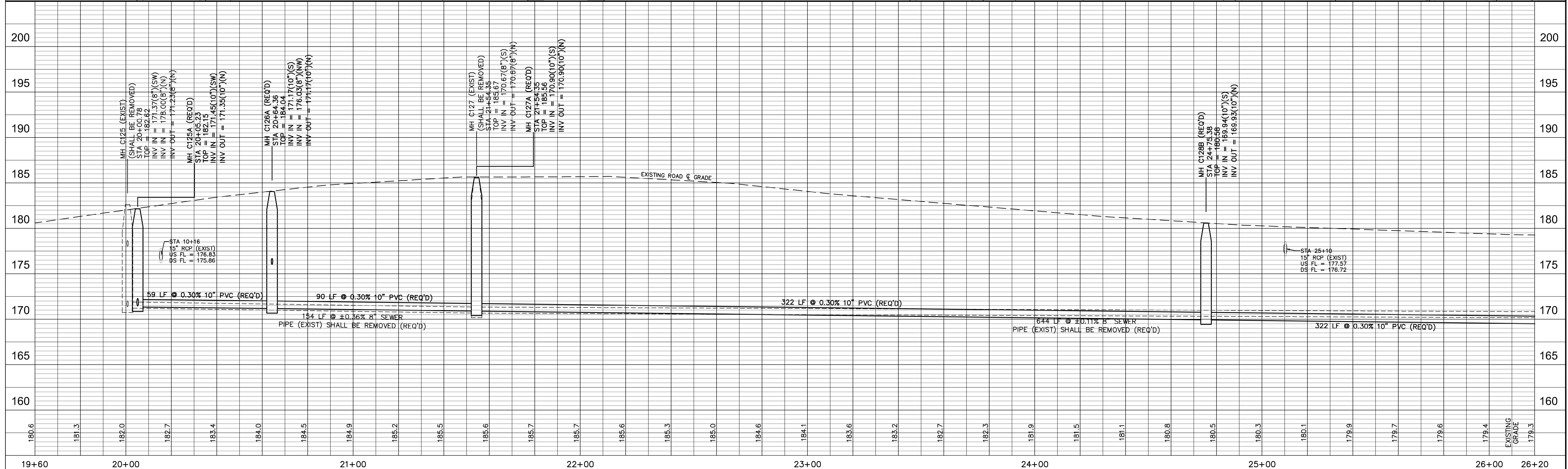
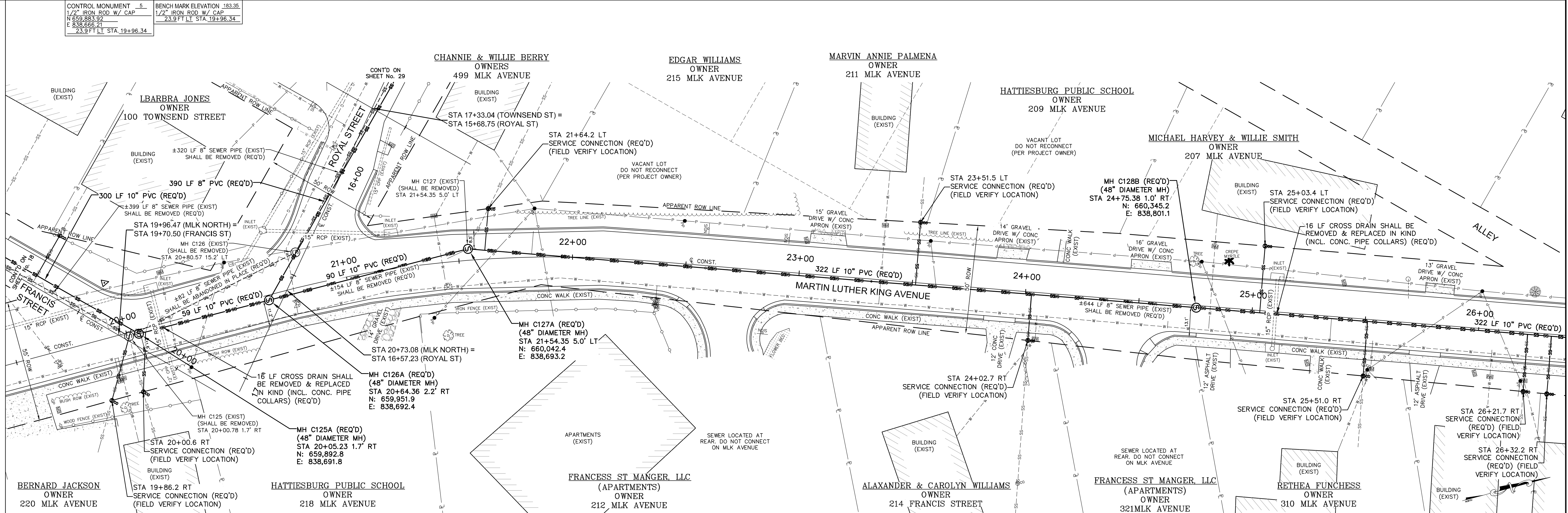


G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_PIP MLK.dwg, PIP1, 6/1/2022 10:58 PM



G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_PIP MLK.dwg, Plot12, 6/1/2022 10:00 PM

CONTROL MONUMENT .5	BENCH MARK ELEVATION 183.35
1/2" IRON ROD W/ CAP	1/2" IRON ROD W/ CAP
N 659,883.92	23.9 FT LT STA 19+96.34
E 838,666.21	
23.9 FT LT STA 19+96.34	



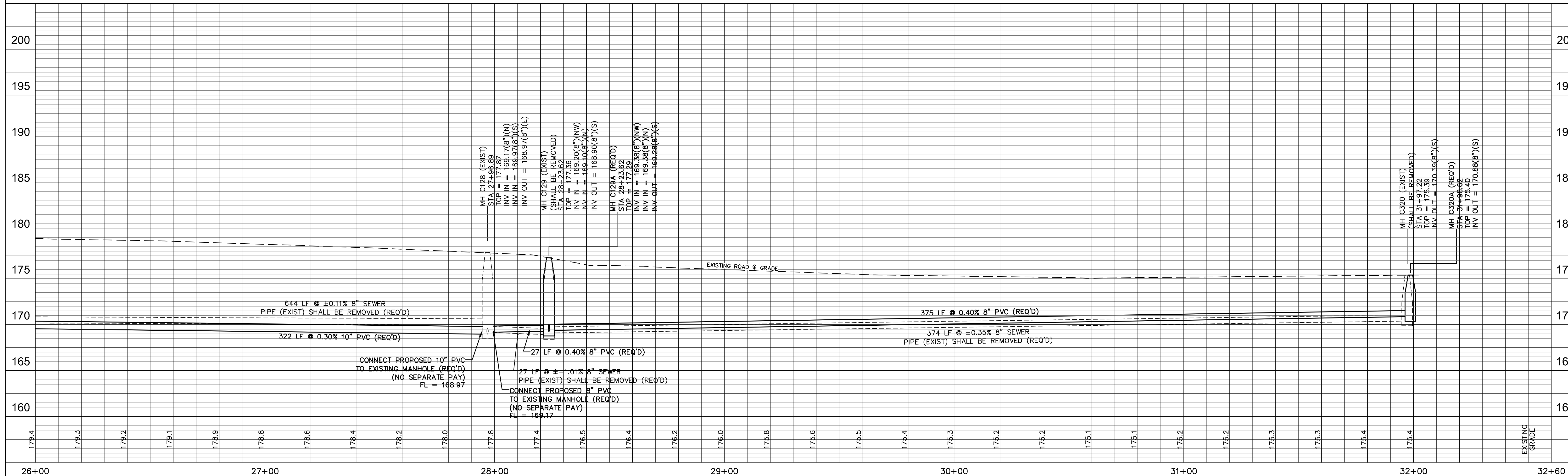
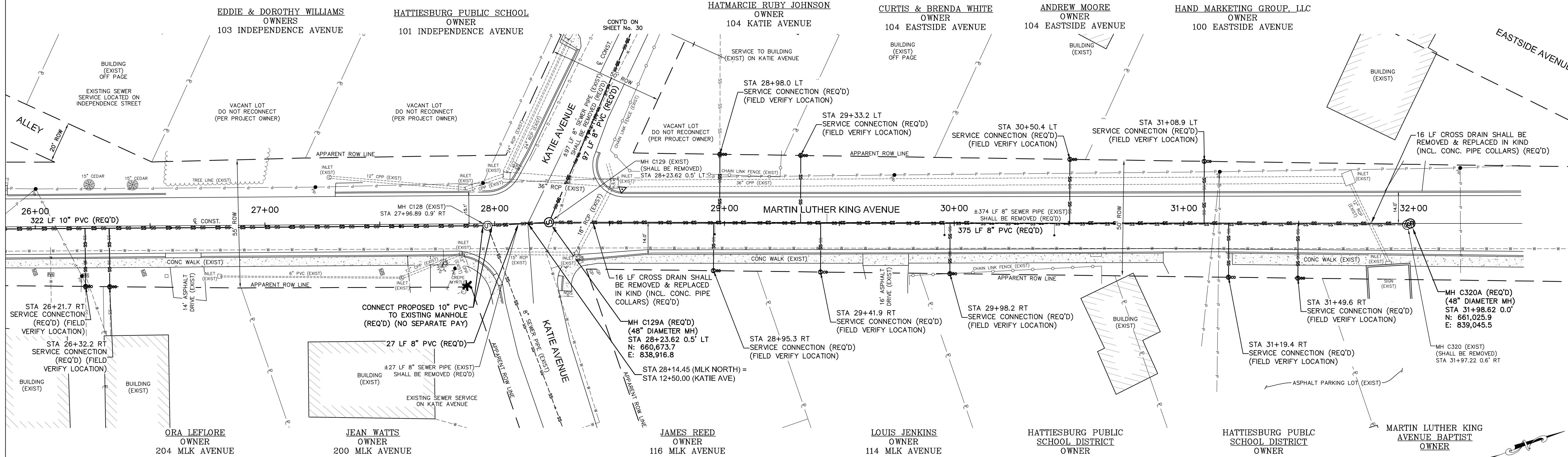
MARTIN LUTHER KING AVENUE STA 19+60 - STA 26+20

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

DATE	REVISION	BY	DRAWN BY: RES/SLS DATE: 06-03-2022 CHECKED BY: SEM SCALE: 1"=20' H, 1"=5' V	SDW Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com	DRAWING NO. 11295 WORKING NO. PnP12 SHEET NO. 20
------	----------	----	--	--	---

CONTROL MONUMENT 7
1/2" IRON ROD W/ CAP
N 660.708.51
E 838.914.19
14.9 FT LT STA. 28+55.51

BENCH MARK ELEVATION 176.38
1/2" IRON ROD W/ CAP
N 660.708.51
E 838.914.19
14.9 FT LT STA. 28+55.51



MARTIN LUTHER KING AVENUE STA 26+00 - STA 32+60

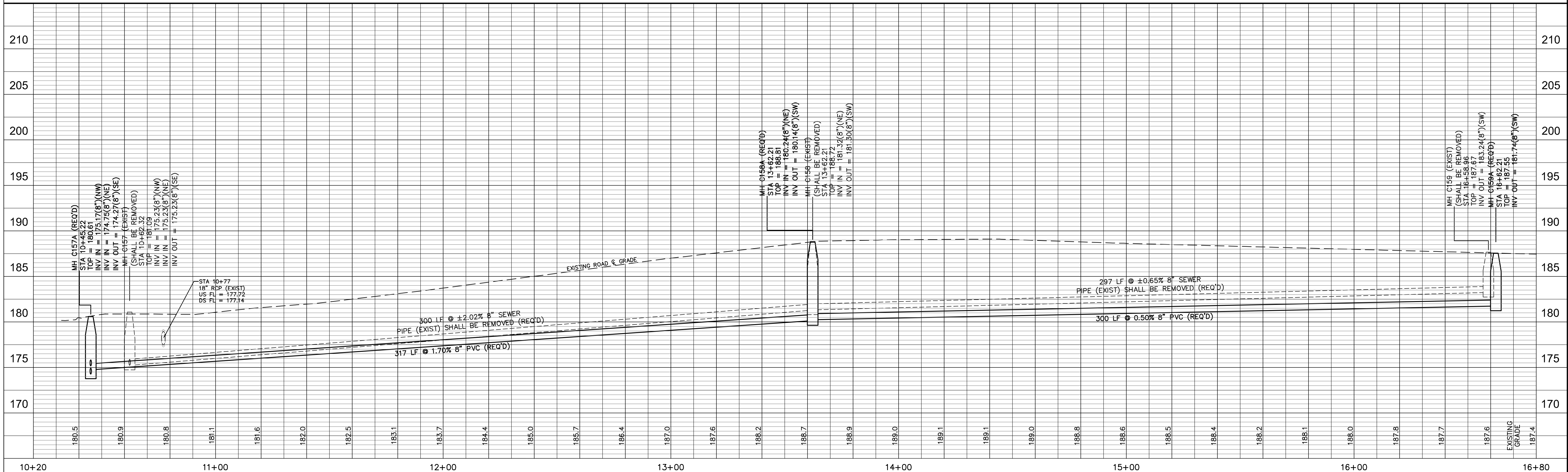
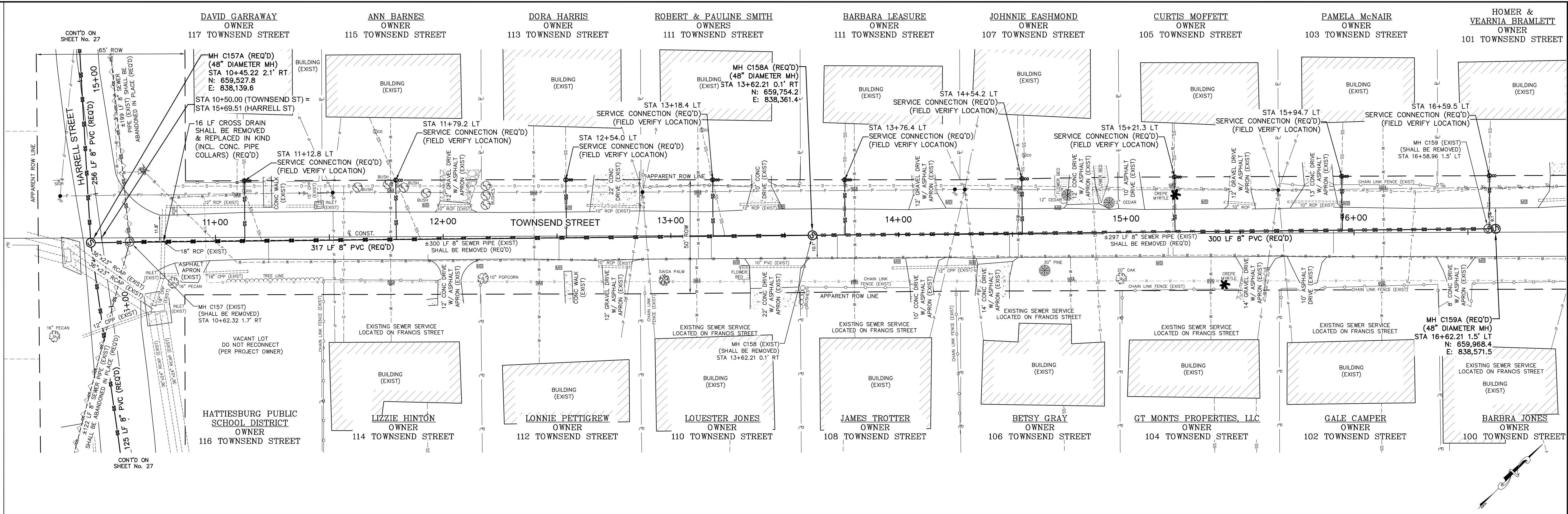
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

			DRAWN BY: RES/SLS	 SDW Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sdw-w.com	DRAWING NO. 11295
			DATE: 06-03-2022		WORKING No. <u>PnP</u>
			CHECKED BY: SEM		SHEET NO. <u>21</u>
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V		



301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

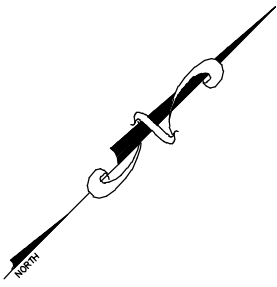
G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_Prop Townsend.dwg, PLOT: 12/28/2022 12:38:38 PM

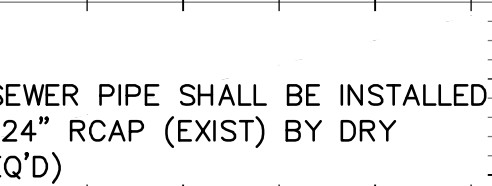
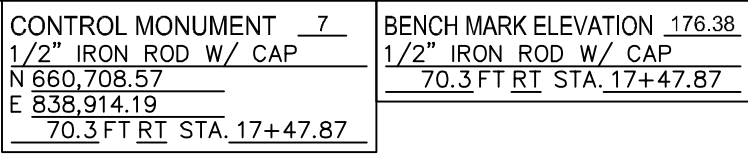


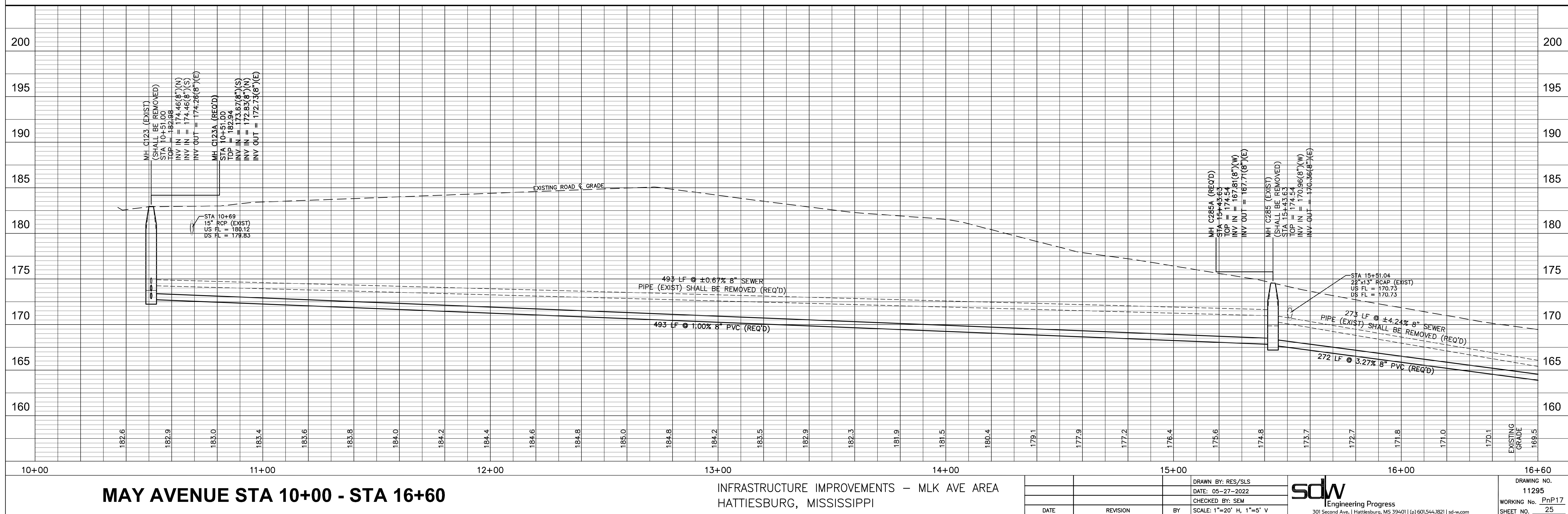
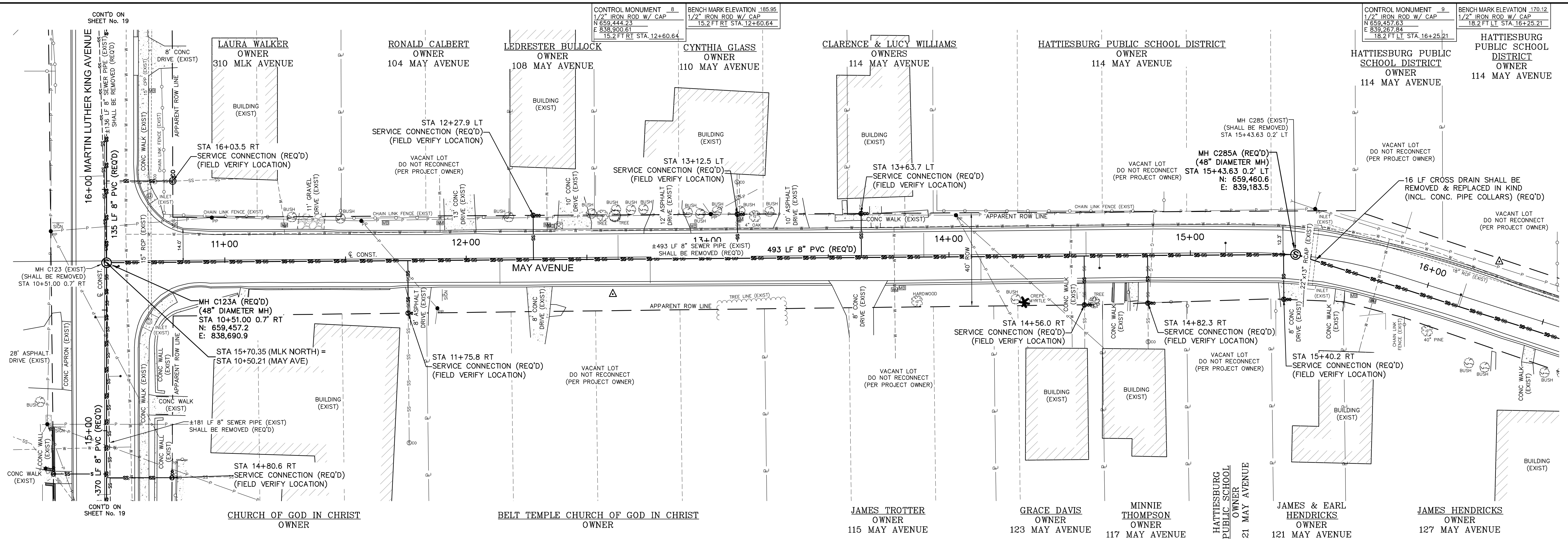
TOWNSEND STREET STA 10+20 - STA 16+80

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

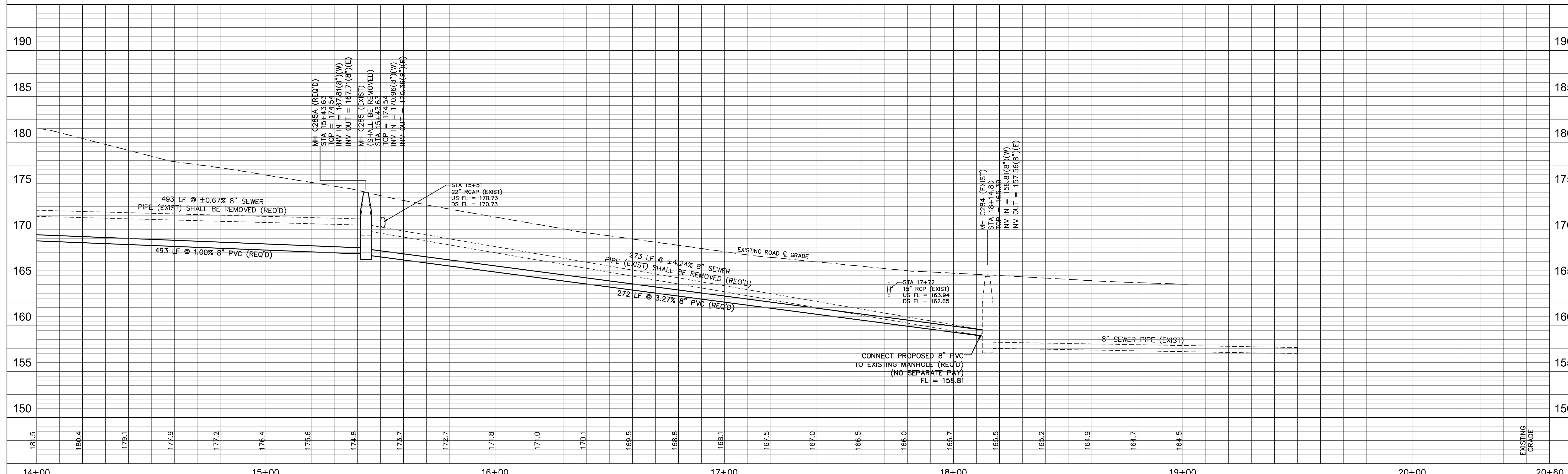
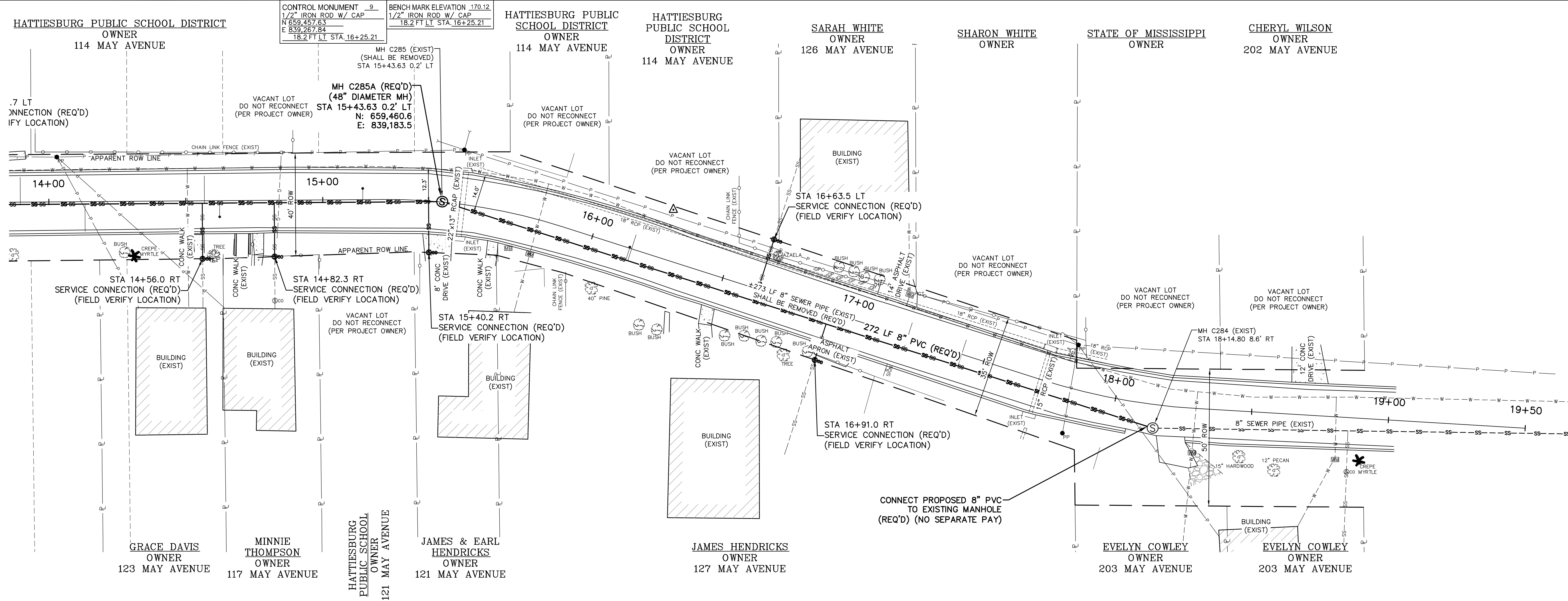
DATE		REVISION		BY		DRAWN BY: RES/SLS		DATE: 06-03-2022		CHECKED BY: SEM		SCALE: 1"=20' H, 1"=5' V		SDW		Engineering Progress		301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com		DRAWING NO. 11295		WORKING NO. PnP14		SHEET NO. 22	
------	--	----------	--	----	--	-------------------	--	------------------	--	-----------------	--	--------------------------	--	-----	--	----------------------	--	---	--	-------------------	--	-------------------	--	--------------	--







G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_PIP Map.dwg, Plot18, 6/1/2022 10:03:22 AM

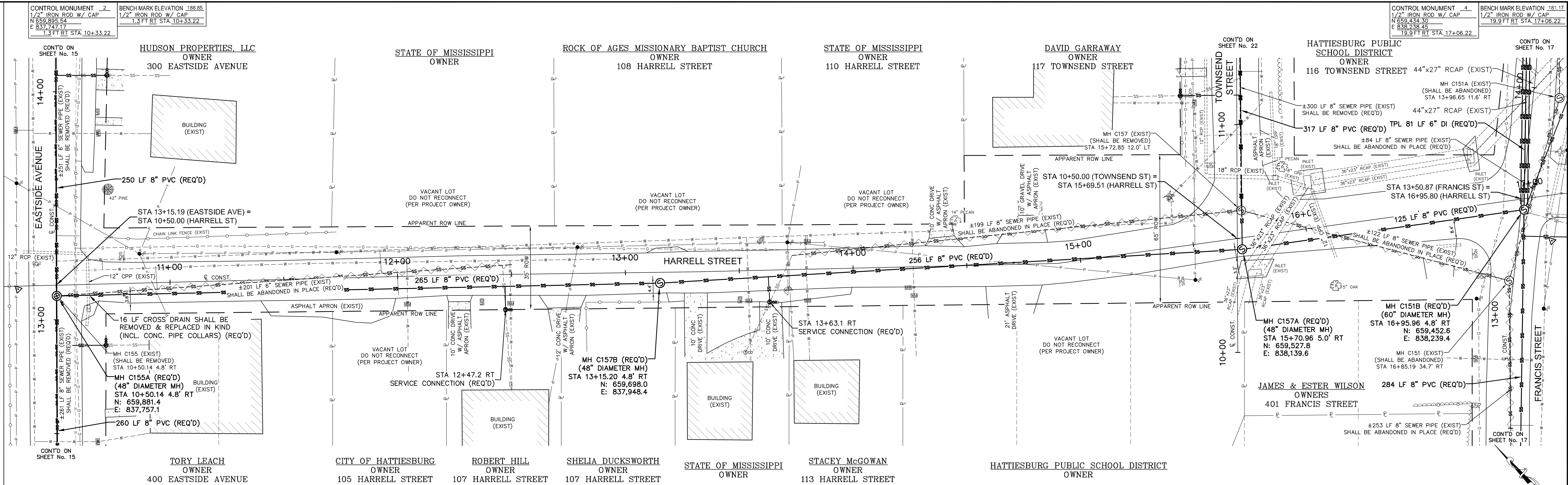


MAY AVENUE STA 14+00 - STA 20+60

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

DATE	REVISION	BY	DRAWN BY: RES/SLS DATE: 06-01-2022 CHECKED BY: SEM SCALE: 1"=20' H, 1"=5' V	SDW Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com	DRAWING NO. 11295 WORKING No. PnP18 SHEET NO. 26
------	----------	----	--	--	---

G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_PIP Harrell.dwg, 6/1/2022 11:47:49 AM



G:\PROJECTS\Hattiesburg_City of 1295 - Infrastructure Improvements for MLK Avenue Area\1295 CAD Files\1295_Plan\Hattiesburg.dwg, Plot20, 6/1/2022 10:09:51 AM

CONTROL MONUMENT 1
1/2" IRON ROD W/ CAP
N 659,711.71
E 837,564.04
3.1FT LT STA 10+32.75

BENCH MARK ELEVATION 189.15
1/2" IRON ROD W/ CAP
N 659,711.71
E 837,564.04
3.1FT LT STA 10+32.75

CONTROL MONUMENT 3
1/2" IRON ROD W/ CAP
N 659,233.21
E 838,040.24
10.2 FT RT STA 17+07.70

BENCH MARK ELEVATION 189.21
1/2" IRON ROD W/ CAP
N 659,233.21
E 838,040.24
10.2 FT RT STA 17+07.70

HATTIESBURG
PUBLIC SCHOOL
OWNER
104 FLORENCE STREET

ORLENA WALKER
OWNER
106 FLORENCE STREET

JEANIE THOMAS
OWNER
108 FLORENCE STREET

Y W & LENORA HATTEN
OWNERS
110 FLORENCE STREET

WALKER PROPERTIES OF MS, LLC
OWNER
114 FLORENCE STREET

CITY OF
HATTIESBURG
OWNER
120 FLORENCE STREET

CITY OF
HATTIESBURG
OWNER
120 FLORENCE STREET

JAMES & ESTER WILSON
OWNER
405 FRANCIS STREET

HATTIESBURG PUBLIC SCHOOL
OWNER
605 EASTSIDE AVENUE

HATTIESBURG PUBLIC SCHOOL
OWNER
309 FORENCE STREET

HATTIESBURG PUBLIC SCHOOL
OWNER
109 FLORENCE STREET

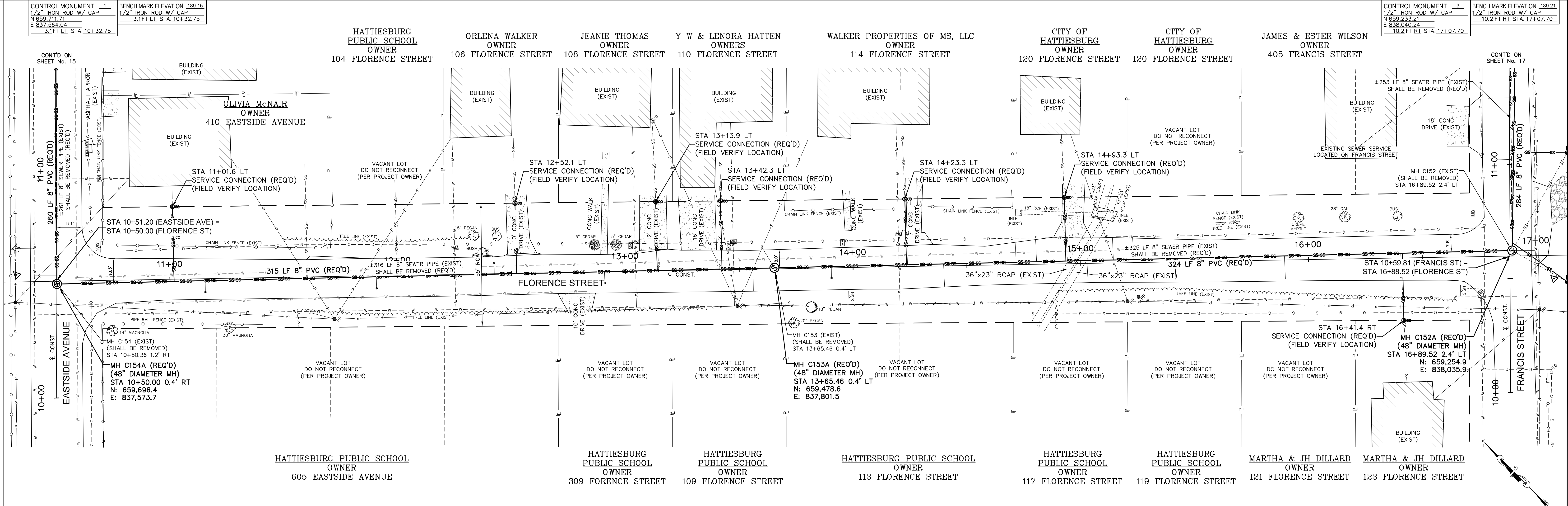
HATTIESBURG PUBLIC SCHOOL
OWNER
113 FLORENCE STREET

HATTIESBURG PUBLIC SCHOOL
OWNER
117 FLORENCE STREET

HATTIESBURG PUBLIC SCHOOL
OWNER
119 FLORENCE STREET

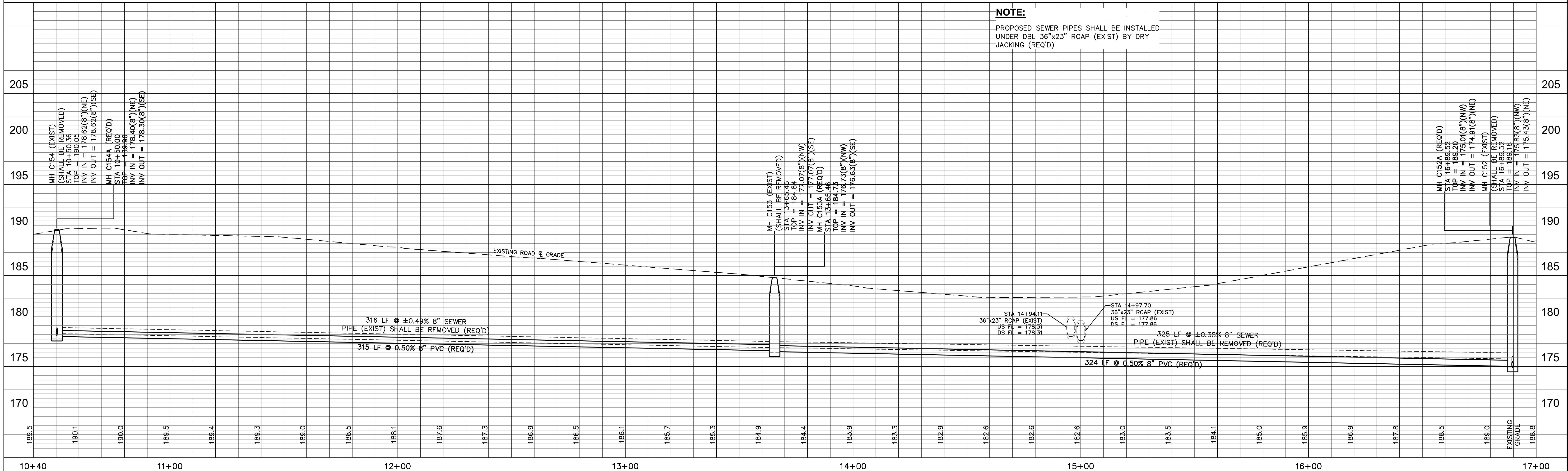
MARTHA & JH DILLARD
OWNER
121 FLORENCE STREET

MARTHA & JH DILLARD
OWNER
123 FLORENCE STREET



NOTE:

PROPOSED SEWER PIPES SHALL BE INSTALLED UNDER DBL 36"x23" RCAP (EXIST) BY DRY JACKING (REQ'D)



FLORENCE STREET STA 10+40 - STA 17+00

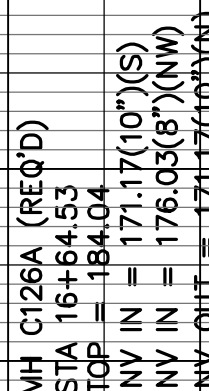
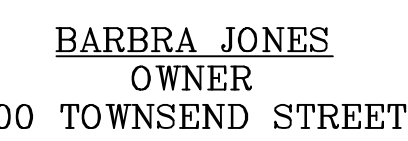
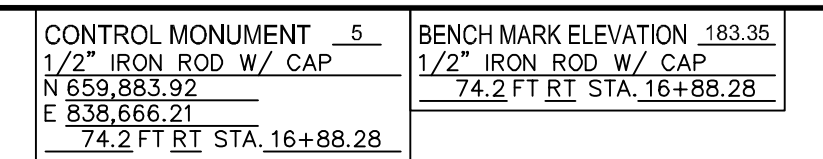
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
HATTIESBURG, MISSISSIPPI

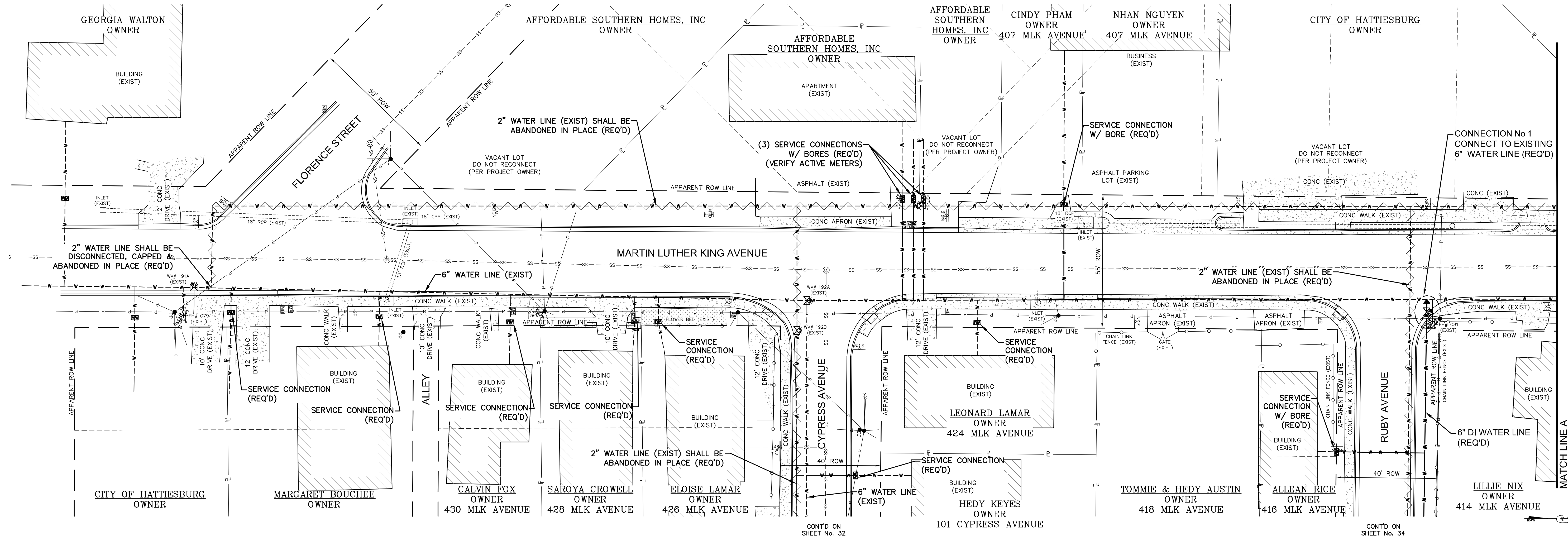
DRAWN BY: RES/SLS		DATE: 06-03-2022	CHECKED BY: SEM	BY:	SCALE: 1"=20' H, 1"=5' V	SHEET NO. 28
DATE	REVISION					

sdw
Engineering Progress

301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

DRAWING NO.
11295
WORKING NO. PnP20
SHEET NO. 28

KING No. PnP21



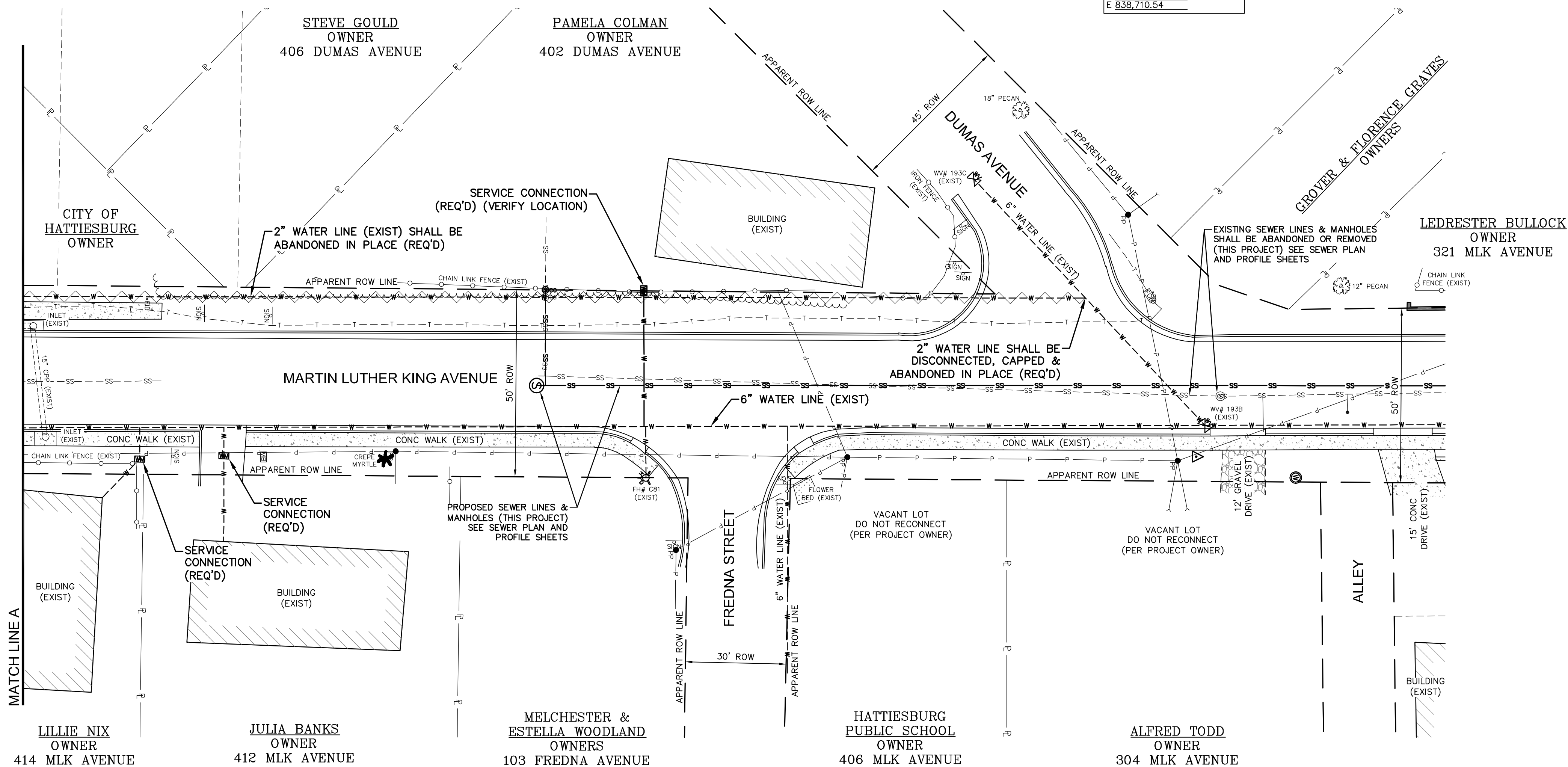
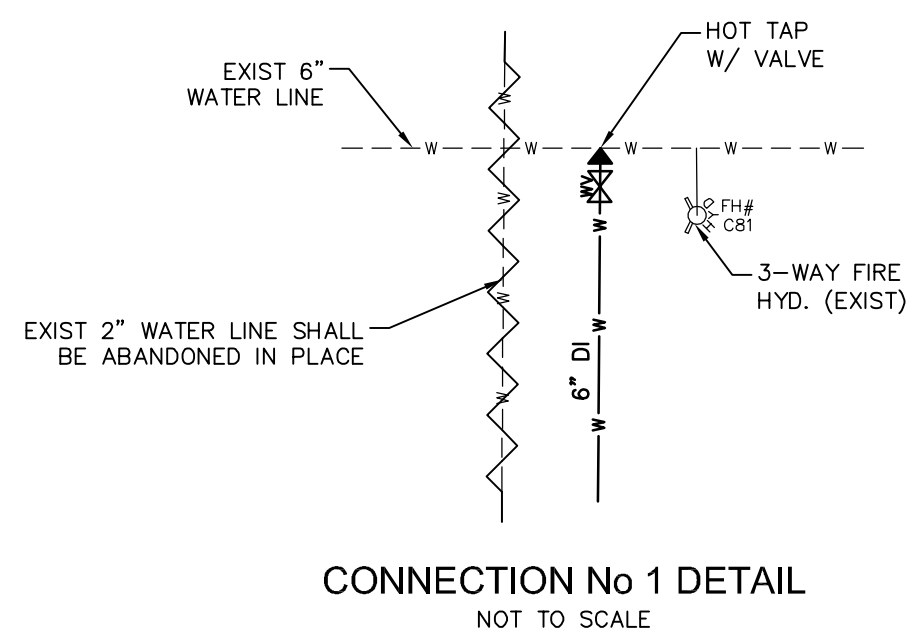
CONT'D ON
SHEET No. 32

CONT'D ON
SHEET No. 34

CONTROL MONUMENT	10
1/2" REBAR W/ CAP	
N 659,270.19	
E 836,710.54	

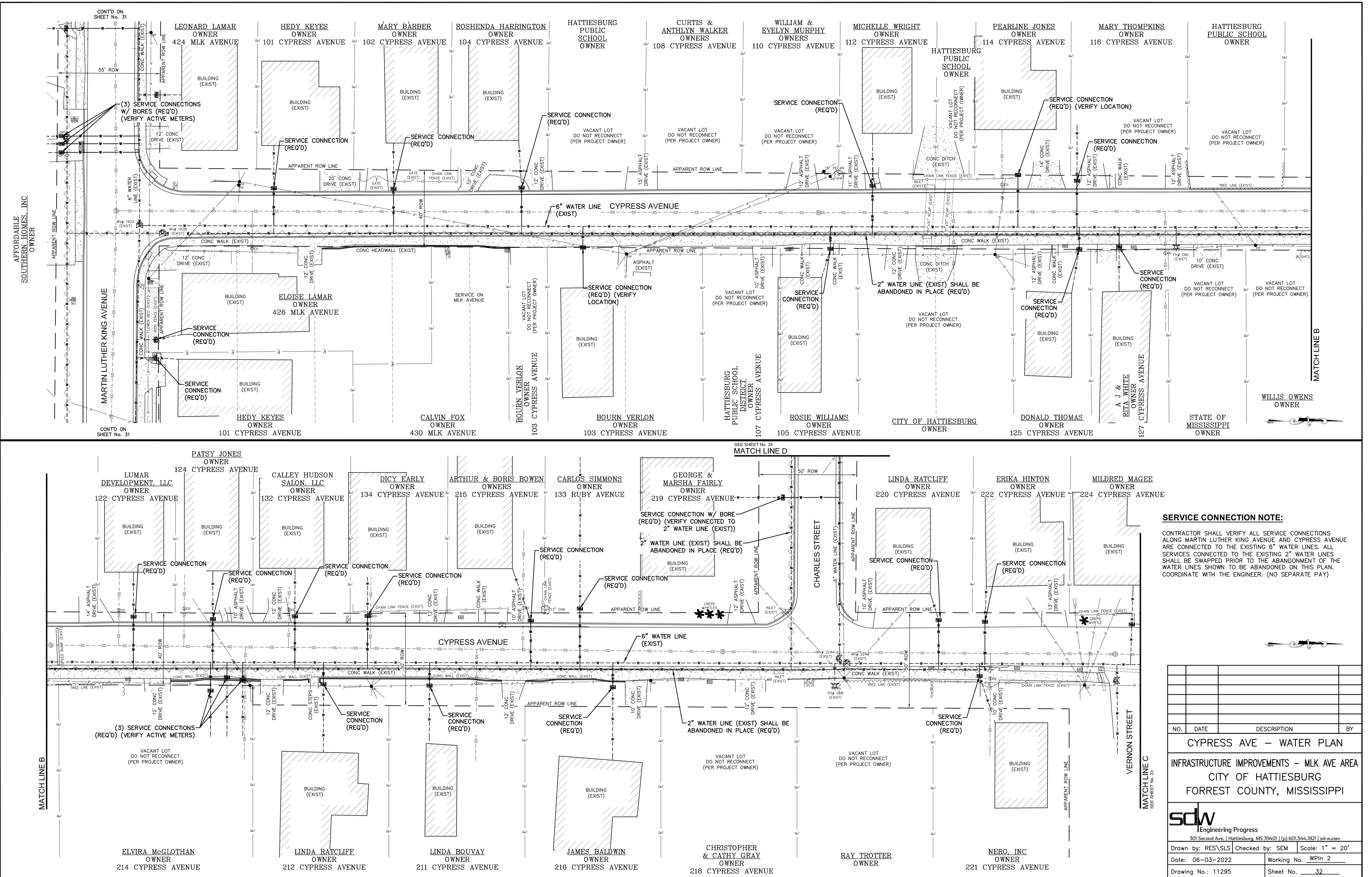
SERVICE CONNECTION NOTE:

CONTRACTOR SHALL VERIFY ALL SERVICE CONNECTIONS ALONG MARTIN LUTHER KING AVENUE AND CYPRESS AVENUE ARE CONNECTED TO THE EXISTING 6" WATER LINES. ALL SERVICES CONNECTED TO THE EXISTING 2" WATER LINES SHALL BE SWAPPED PRIOR TO THE ABANDONMENT OF THE WATER LINES SHOWN TO BE ABANDONED ON THIS PLAN. COORDINATE WITH THE ENGINEER. (NO SEPARATE PAY)



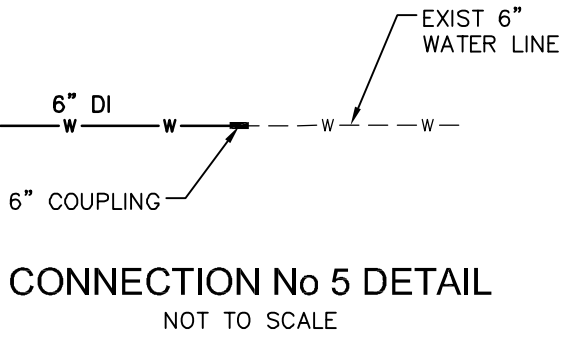
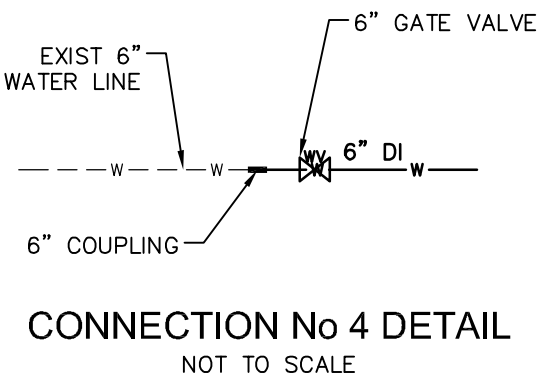
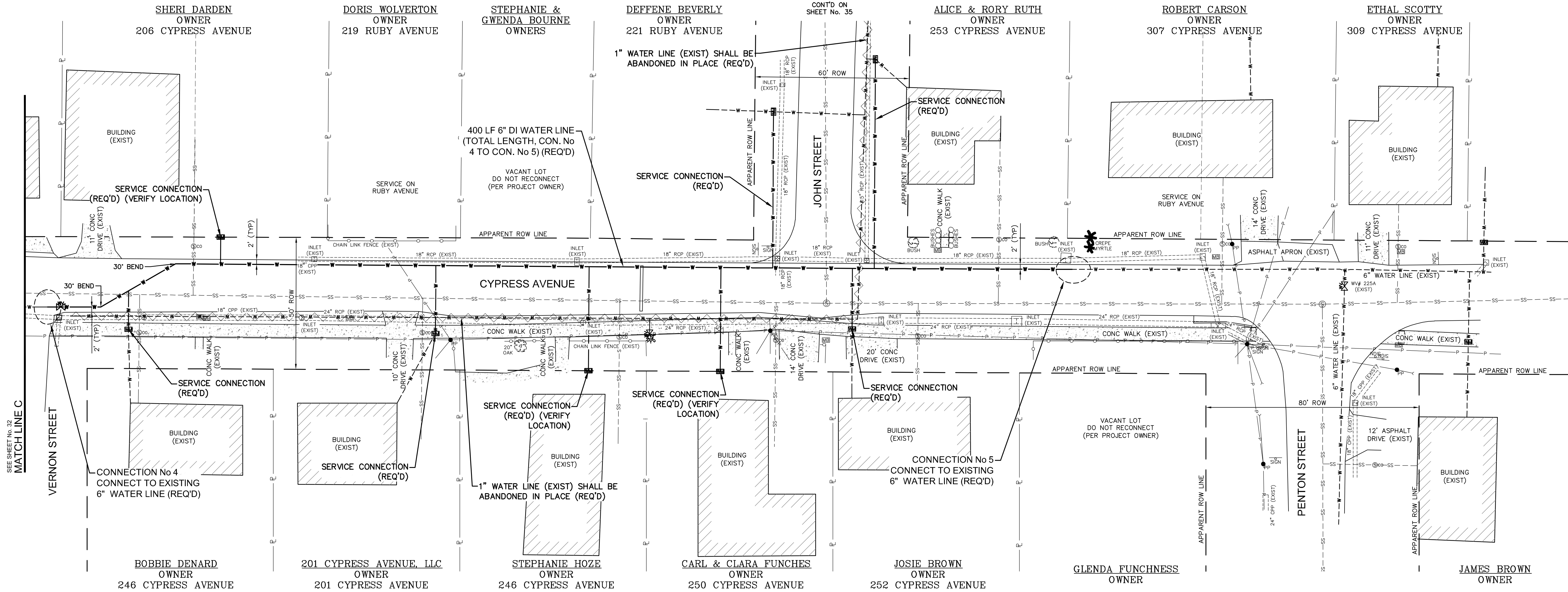
NO.	DATE	DESCRIPTION	BY
MLK AVE – WATER PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No. WPin 1	
Drawing No.: 11295		Sheet No. 31	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295 - Pkg - Working - WPIN 2.dwg, 02/20/2022 10:07:21 AM

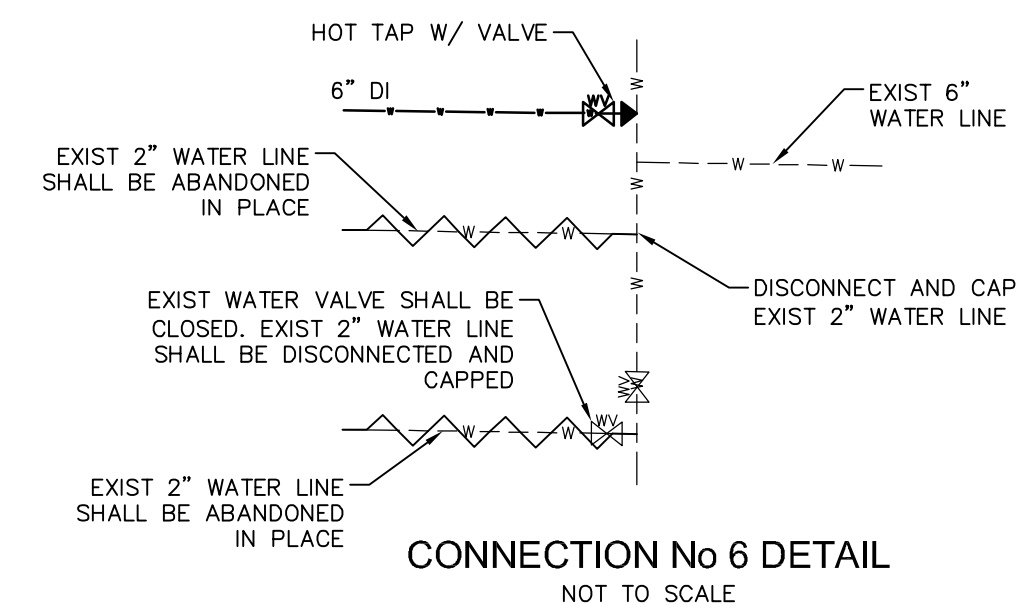
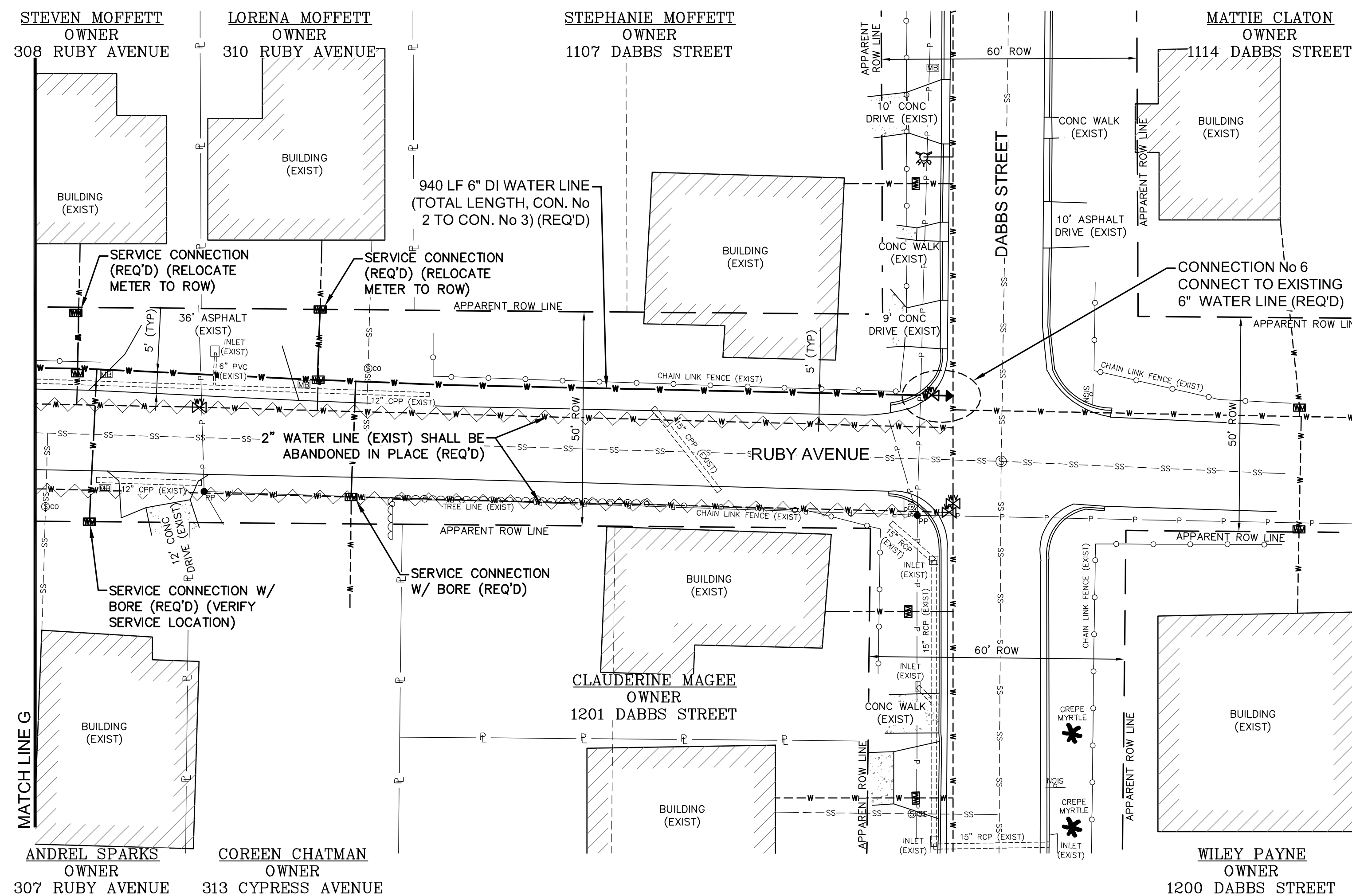
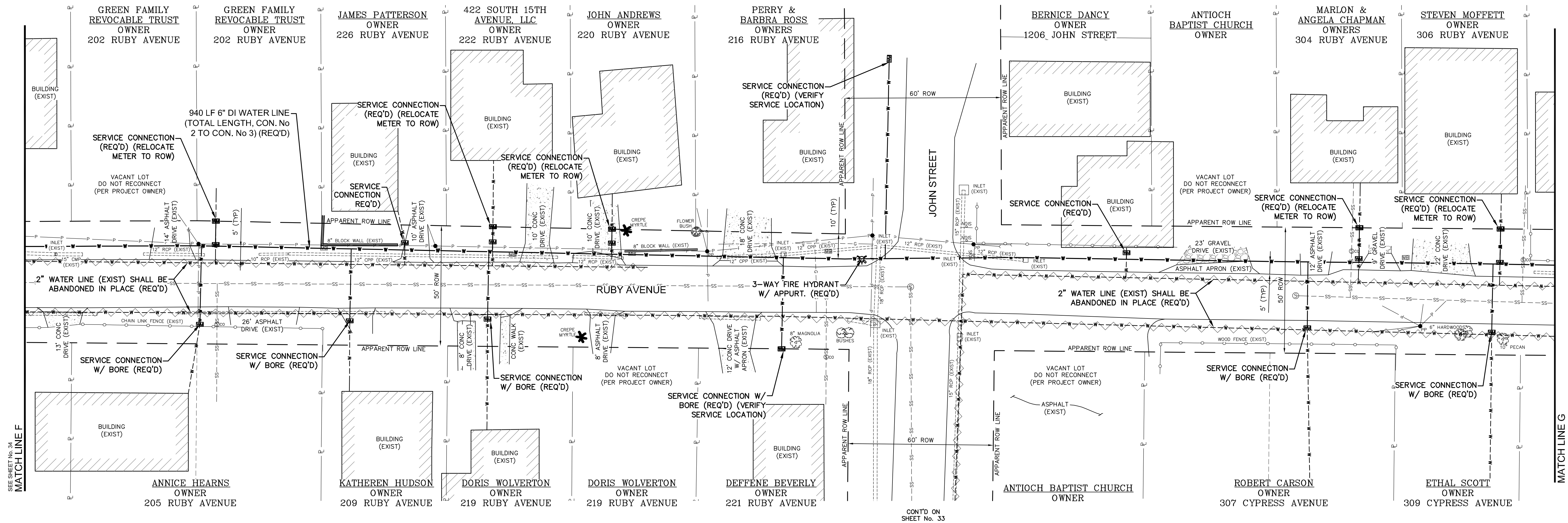


SERVICE CONNECTION NOTE:
CONTRACTOR SHALL VERIFY ALL SERVICE CONNECTIONS ALONG MARTIN LUTHER KING AVENUE AND CYPRESS AVENUE ARE CONNECTED TO THE EXISTING 6" WATER LINES. ALL SERVICES CONNECTED TO THE EXISTING 2" WATER LINES SHALL BE SWAPPED PRIOR TO THE ABANDONMENT OF THE WATER LINES SHOWN TO BE ABANDONED ON THIS PLAN. COORDINATE WITH THE ENGINEER. (NO SEPARATE PAY)

NO.	DATE	DESCRIPTION	BY
CYPRESS AVE – WATER PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES/SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No. WPIN 2	
Drawing No.: 11295		Sheet No. 32	



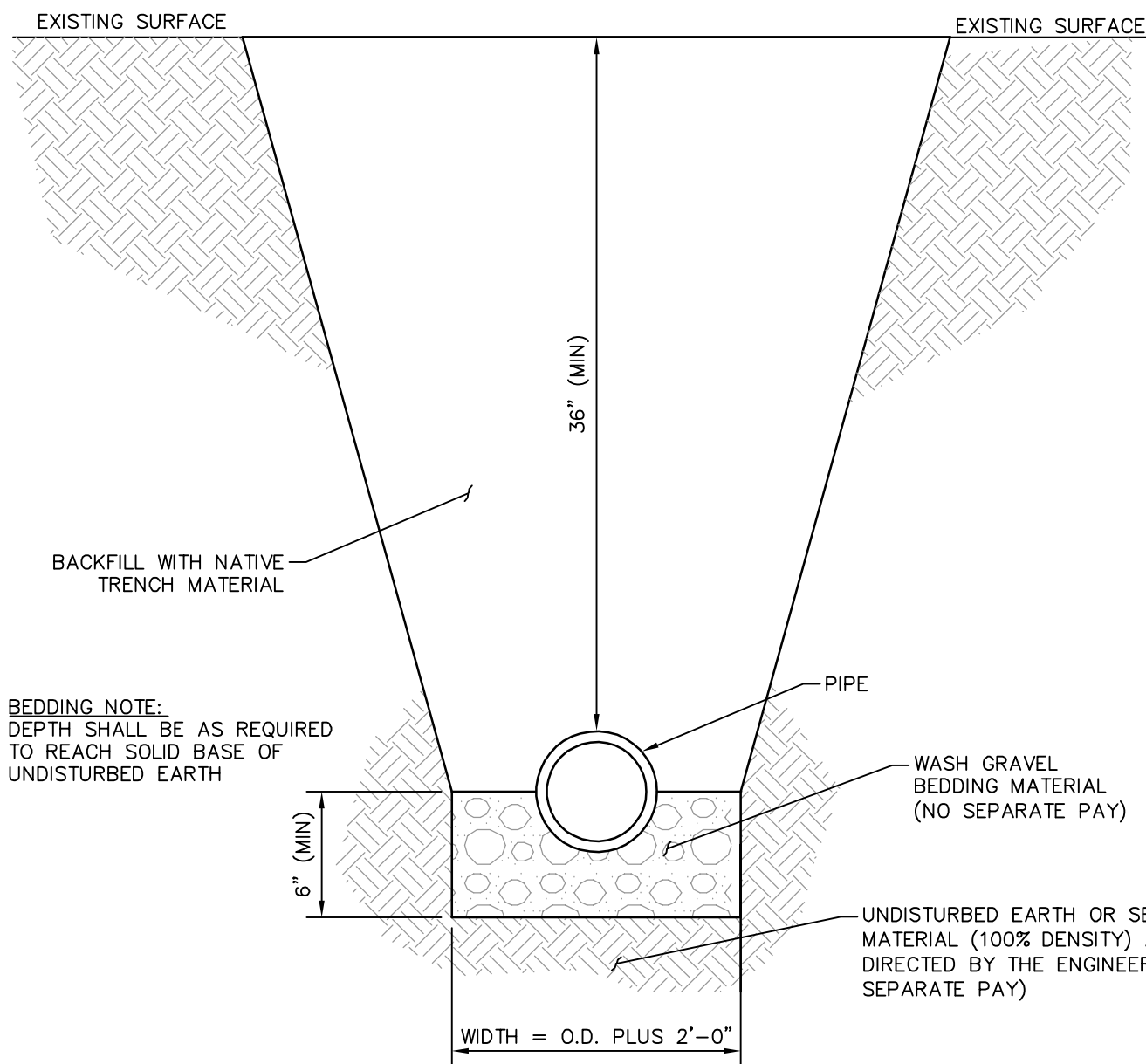
NO.	DATE	DESCRIPTION	BY
CYPRESS AVE – WATER PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No. WPIn 3	
Drawing No.: 11295		Sheet No. 33	



RUBY AVE – WATER PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS	Checked by: SEM	Scale: 1" = 20'	
Date: 06-03-2022	Working No. WPIn 5		
Drawing No.: 11295	Sheet No. 35		

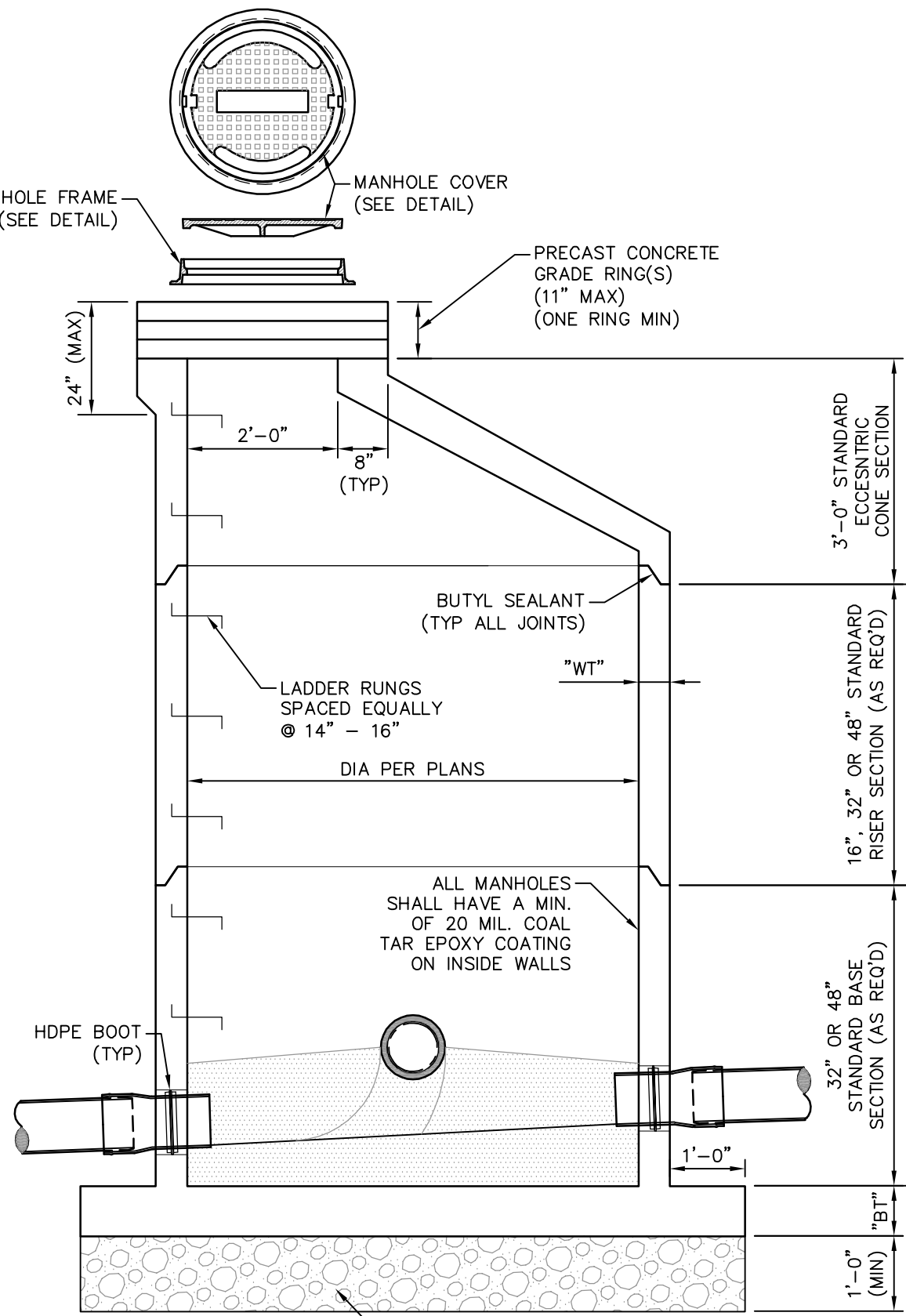
TABLE NO. 1 GOVERNING DIMENSIONS FOR MANHOLES			
PIPE SIZE	ANGLE	MIN. BASE Ø	"R"*
8" - 12"	0° - 90°	48"	18"
15"	0° - 60°	60"	22"
15"	60° - 90°	60"	22"
18"	0° - 90°	60"	27"
18"	60° - 90°	60"	22"
21"	0° - 90°	60"	31"
21"	60° - 90°	60"	28"
24"	0° - 45°	72"	36"
24"	45° - 90°	72"	27"
30"	0° - 60°	72"	45"
30"	60° - 90°	72"	32"
36"	0° - 30°	84"	54"

CONCRETE WALL THICKNESS TABLE		
MANHOLE DIA (INCHES)	(WT) MINIMUM WALL THICKNESS (INCHES)	(BT) MINIMUM BASE THICKNESS (INCHES)
48	5	6
60	6	8
72	7	8
96	8	8



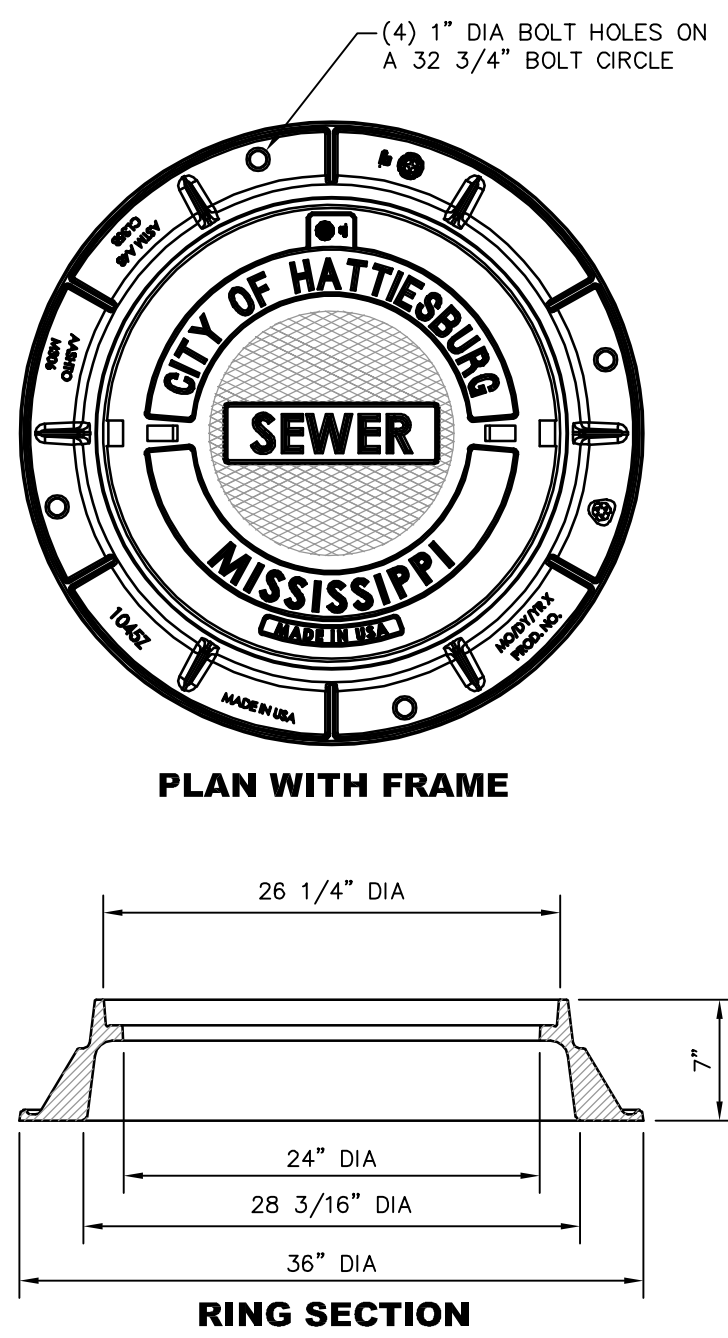
TYPICAL TRENCH IN NON-PAVED AREAS DETAIL

NOTE: TRENCH WIDTHS SHALL BE MINIMIZED BY THE CONTRACTOR TO ONLY NECESSARY FOR CONSTRUCTION AS DETERMINED BY THE ENGINEER.

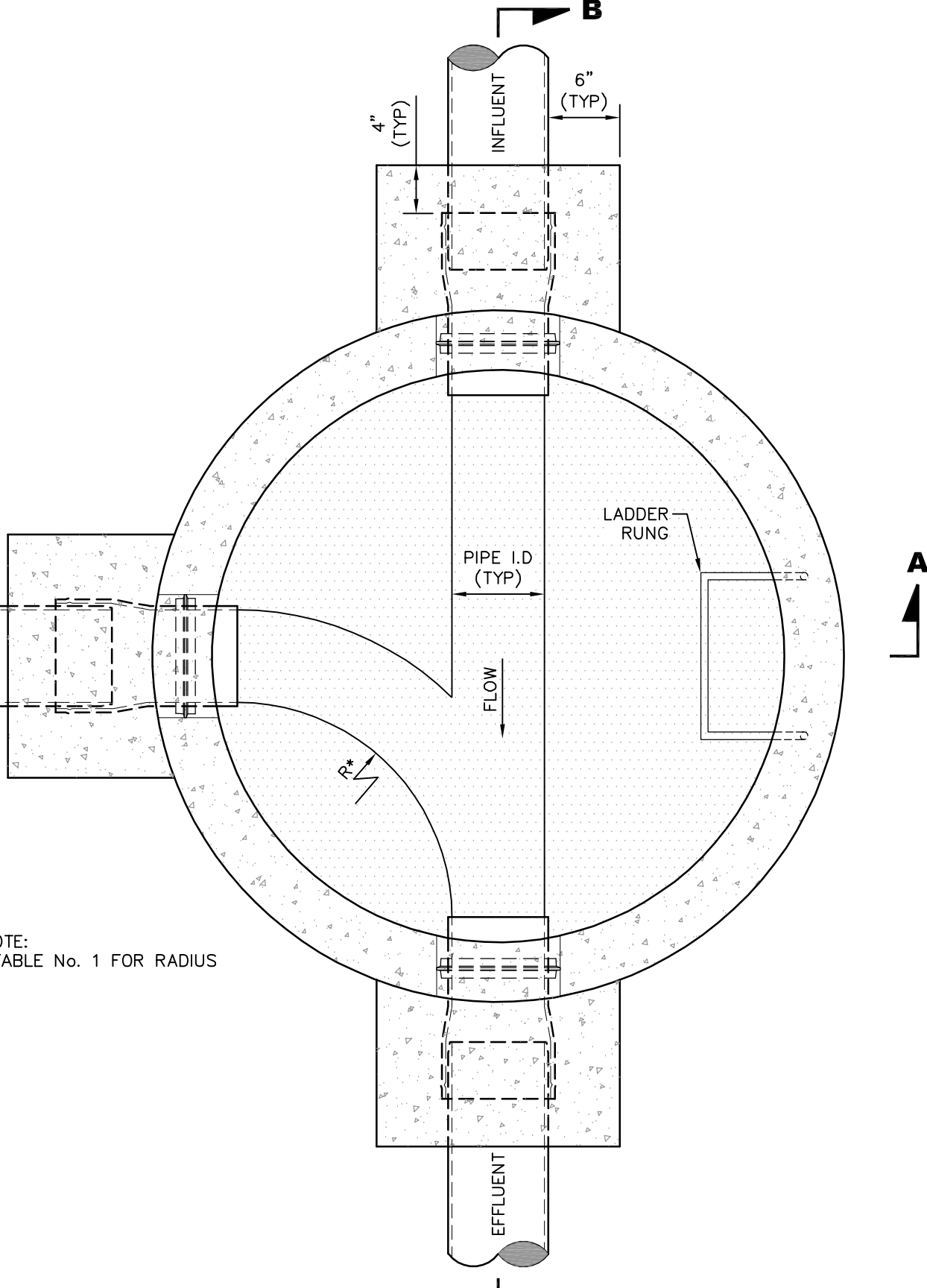


TYPICAL MANHOLE SECTION

NOTE: DETAILS FOR RISER & BASE SECTIONS ARE SAME AS SHOWN IN SECTION(S) A-A & B-B.

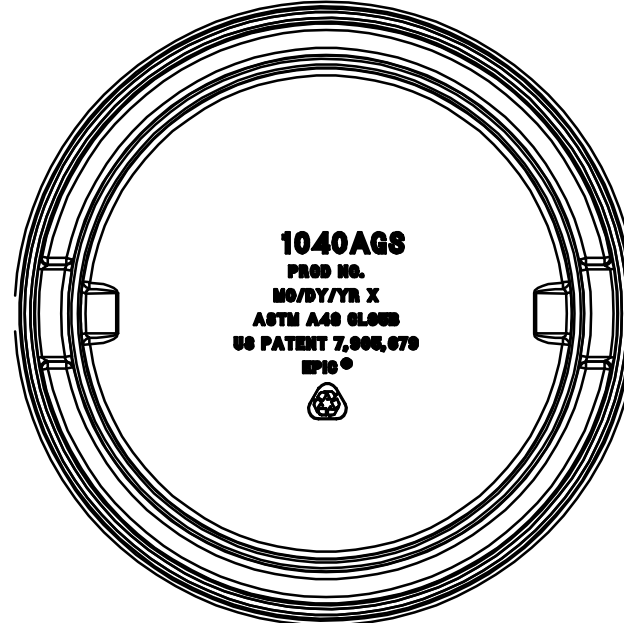


HEAVY DUTY COVER & FRAME

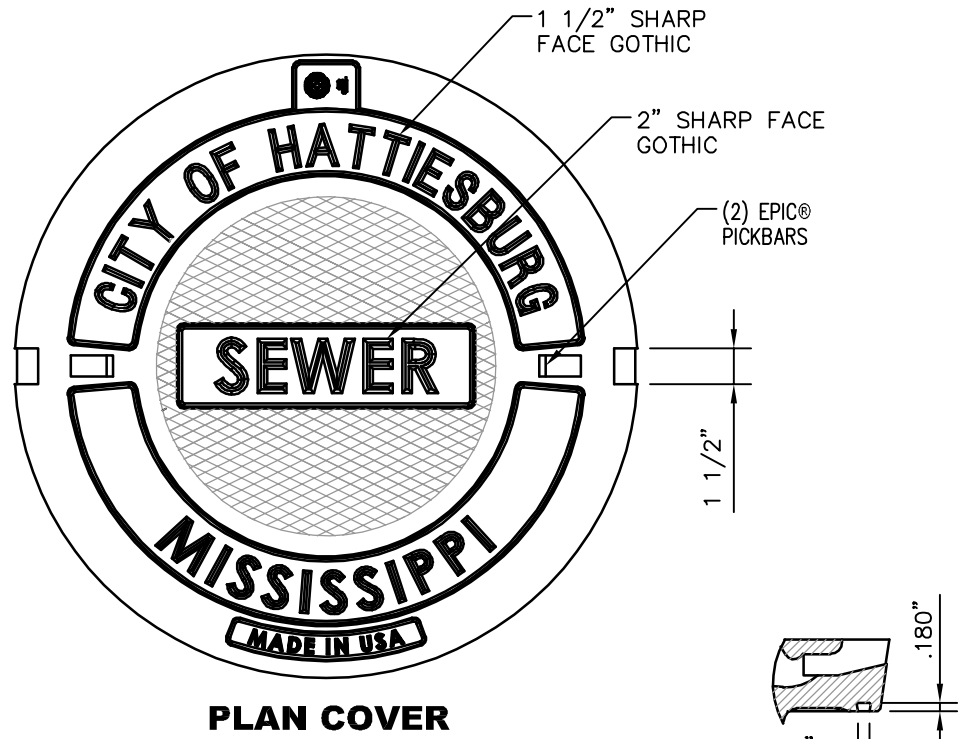


STANDARD PRECAST CONCRETE MANHOLE - PLAN VIEW

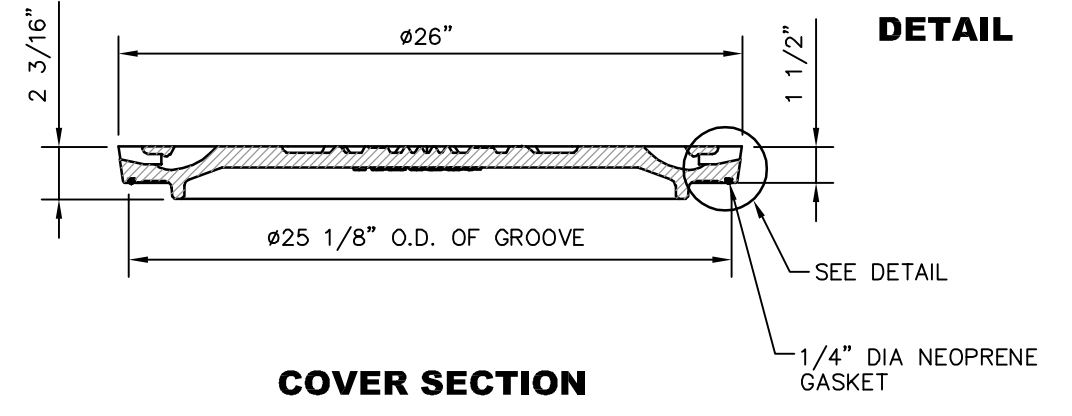
SHOWN WITH 48" Ø MANHOLE, LARGER DIAMETER MANHOLES MAY BE SIMILAR DESIGN, IF APPROVED BY THE ENGINEER. SHOWN WITH PVC PIPE.



INVERTED PLAN COVER



PLAN COVER

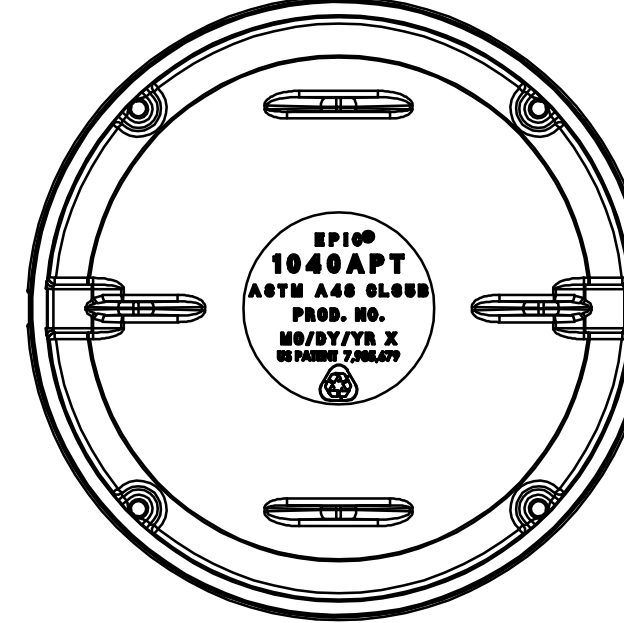


COVER SECTION

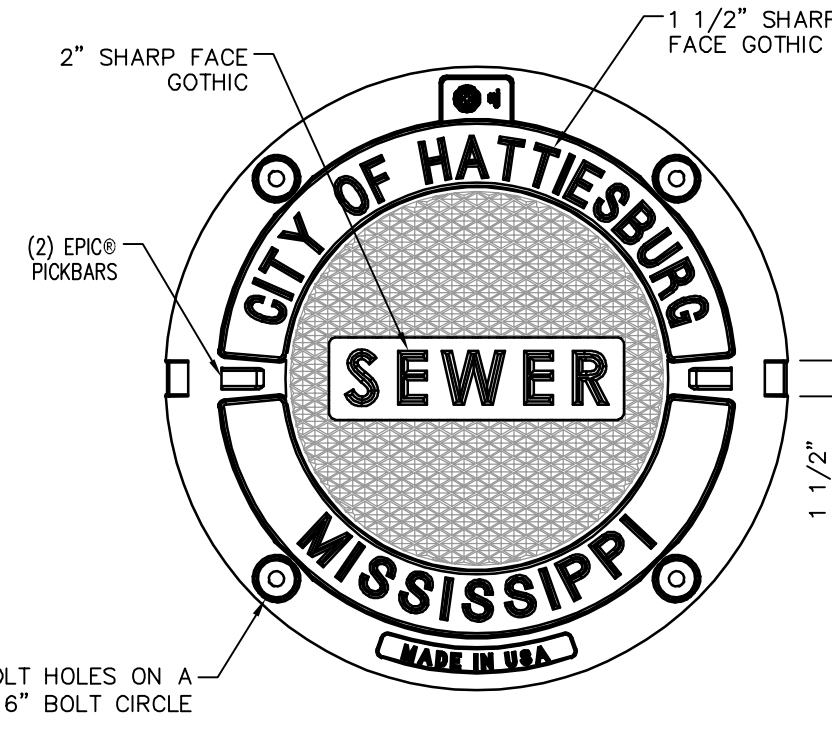
HEAVY DUTY COVER & FRAME 1040AGS OR USF 370 WITH NEOPRENE GASKET & WITHOUT HOLES ONLY

HEAVY DUTY WATERTIGHT COVER & FRAME 1040APT

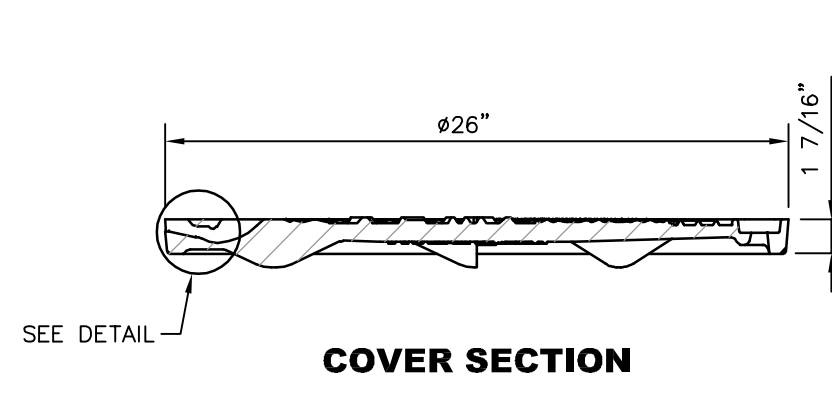
MANHOLE COVER DETAILS



INVERTED PLAN COVER



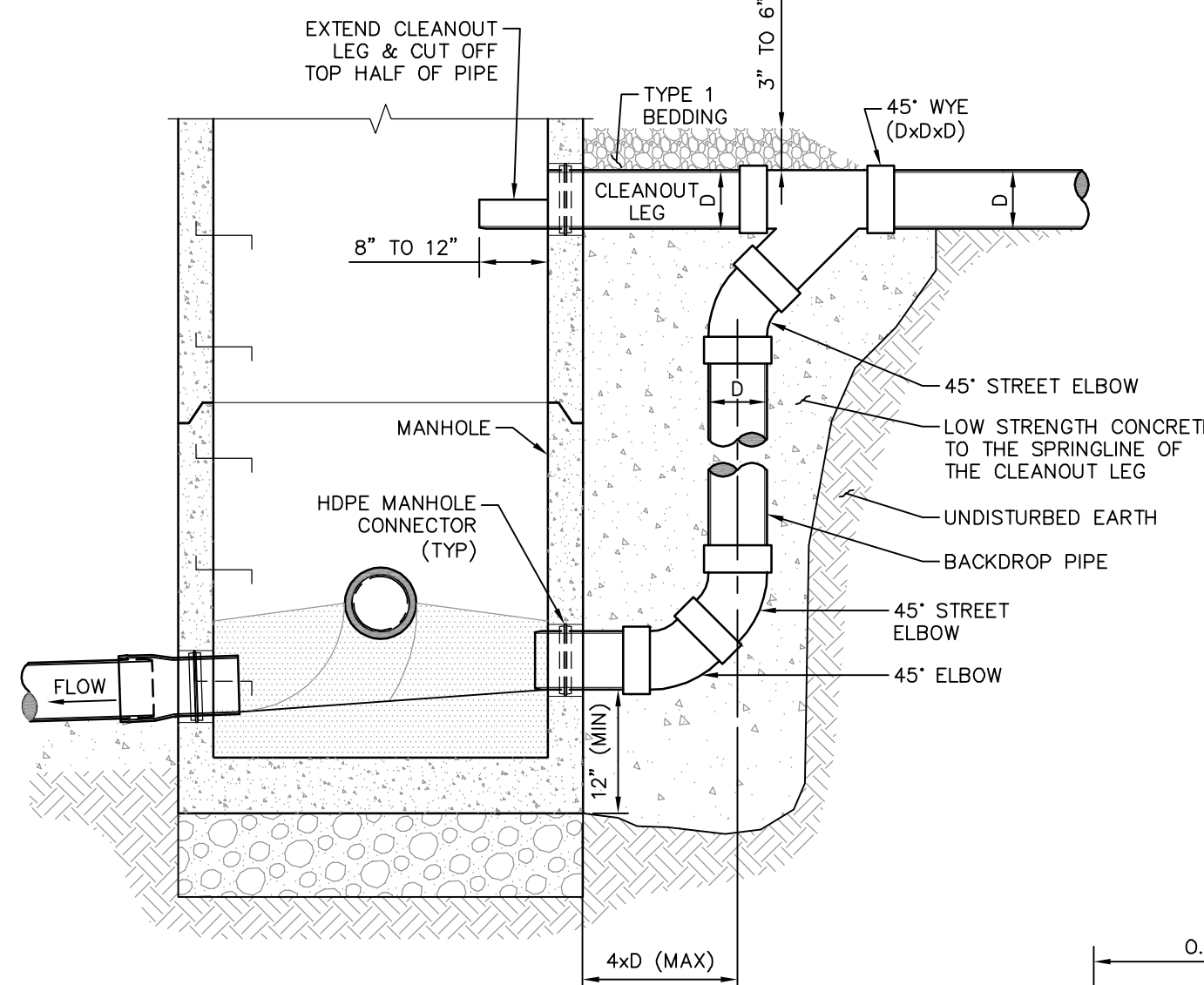
PLAN COVER



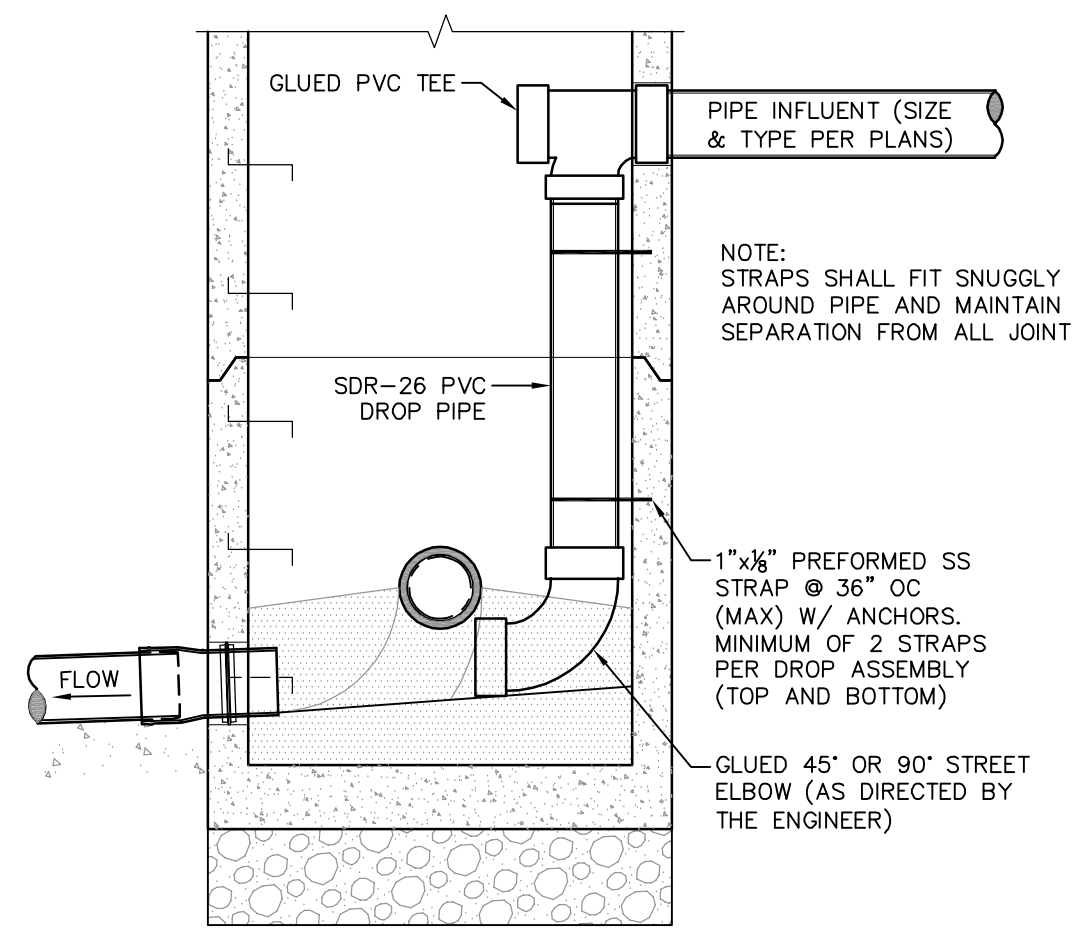
COVER SECTION

HEAVY DUTY WATERTIGHT COVER & FRAME

EXTERIOR DROP CLEANOUT MANHOLE ASSEMBLY - PLAN VIEW

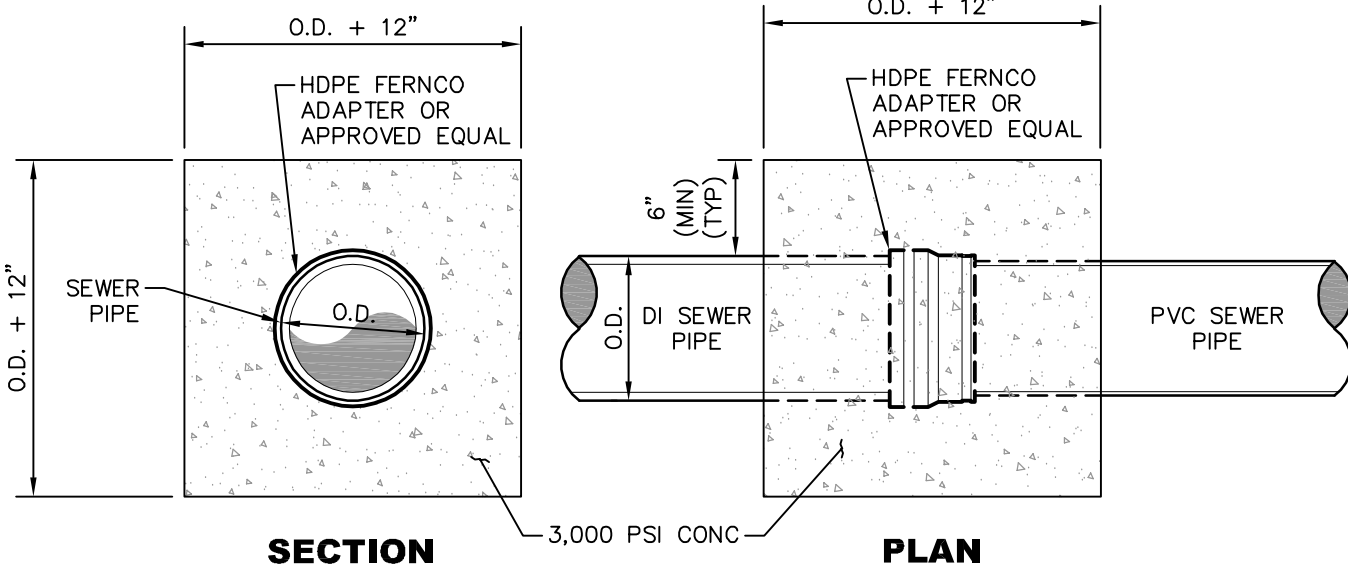


DETAIL "B" TYPICAL EXTERIOR DROP CLEANOUT ASSEMBLY ELEVATION



DETAIL "A" TYPICAL INTERIOR DROP CLEANOUT ASSEMBLY ELEVATION

DROP CLEANOUT NOTES:
1. USE DETAIL "A" SHOWN ABOVE, ONLY WHERE A SINGLE 8" DROP ASSEMBLY CONNECTION INSIDE A 48" DIA. MANHOLE IS REQUIRED. FOR MULTIPLE DROP CONNECTIONS INSIDE A 48" MANHOLE USE DETAIL "B", SHOWN AT LEFT, FOR MULTIPLE DROP CONNECTION ASSEMBLIES IN LARGER DIAMETER MANHOLES THE DROP CONNECTIONS SHALL BE INSTALLED AS DIRECTED BY THE ENGINEER.
2. ALL HARDWARE SHALL BE STAINLESS STEEL.
3. ALL APPURTENANCES REQUIRED FOR A COMPLETE DROP CONNECTION ASSEMBLY SHALL BE INCLUDED IN THE BID PRICE.

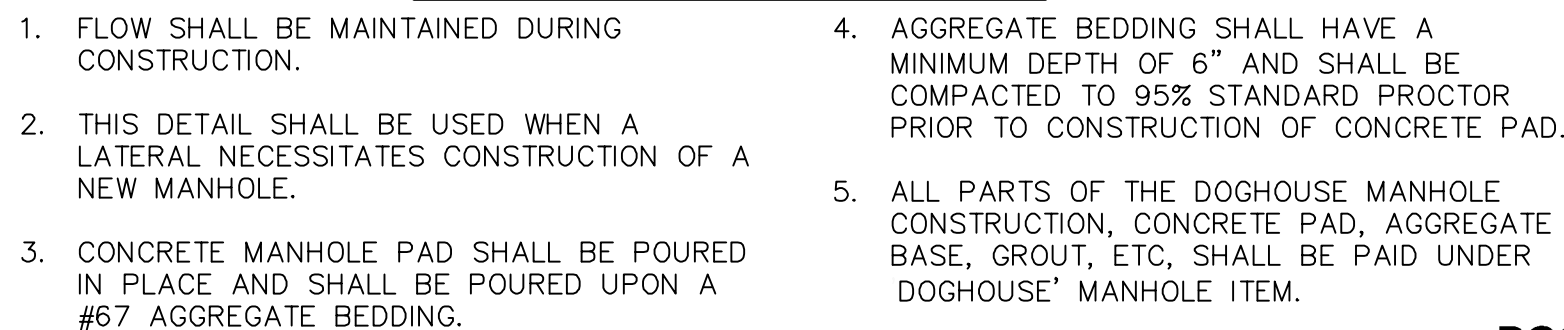


TYPICAL PVC SEWER PIPE TO SAME SIZE DUCTILE IRON SEWER PIPE CONNECTION

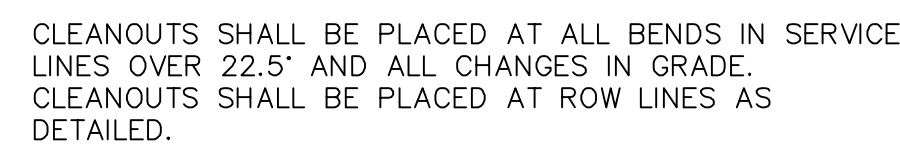
GENERAL NOTES:

1. ALL MANHOLES SHALL BE STANDARD PRECAST WITH EXTENDED BASES, UNLESS OTHERWISE DIRECTED. FLEXIBLE INLET AND OUTLET CONNECTION BOOTS REQUIRED ON ALL PIPES AND FORCE MAINS.
2. ALL ELEMENTS SHALL CONFORM TO PRECAST MANHOLE SPECIFICATION. A.S.T.M. C-478 LATEST REVISION.
3. PRECAST CONCRETE RINGS SHALL BE USED TO BRING MANHOLE FRAME AND COVER TO GRADE USE (11" MAX. RISE).
4. MANHOLES IN PAVED AREAS SHALL BE FURNISHED WITH ADJUSTING RINGS.

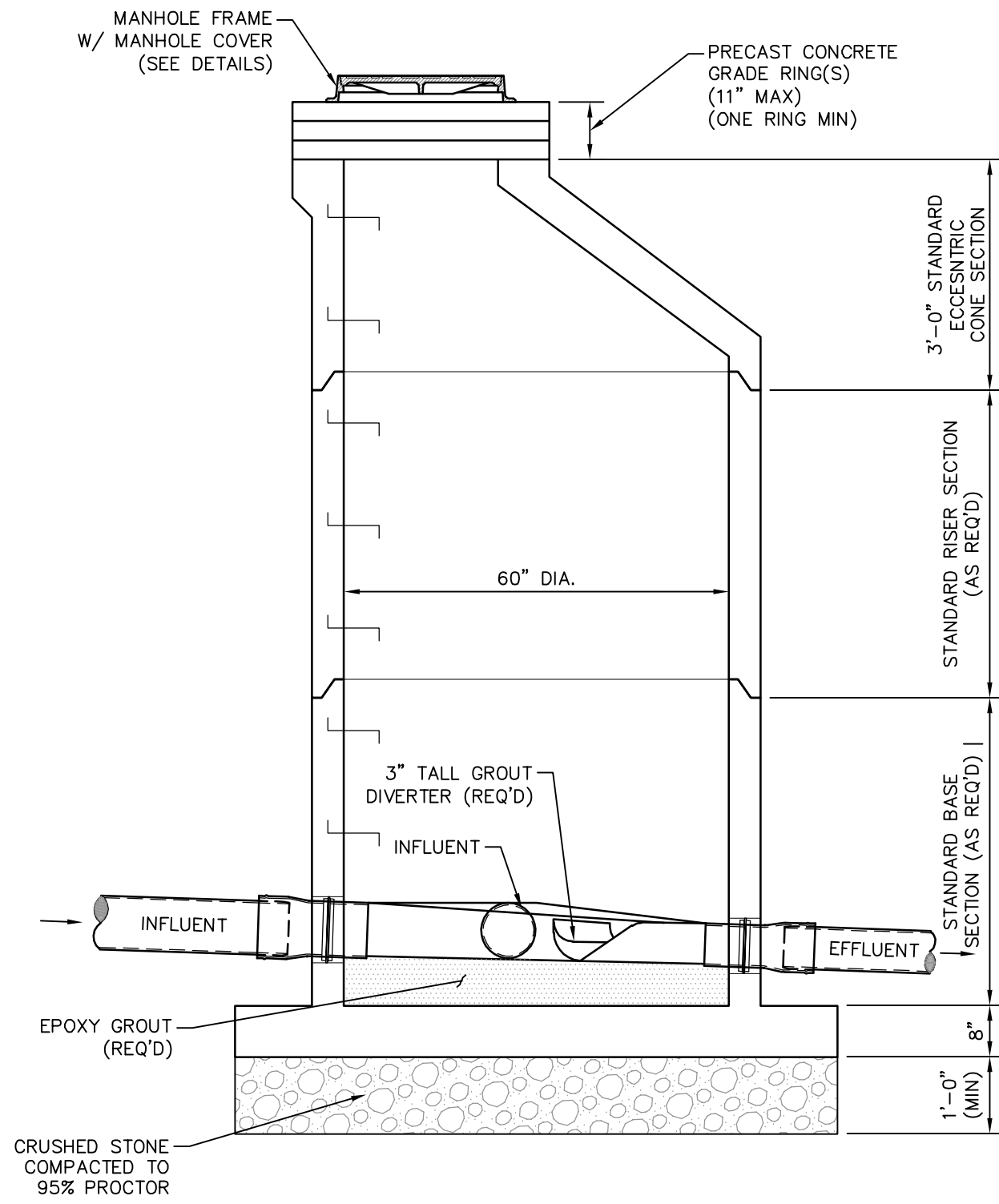
NO.	DATE	DESCRIPTION	BY
SEWER INSTALLATION DETAILS			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: SLS		Checked by: SEM	Scale: NONE
Date: 09–26–2022		Working No. <u>SSD1</u>	
Drawing No.: 11295		Sheet No. <u>36</u>	



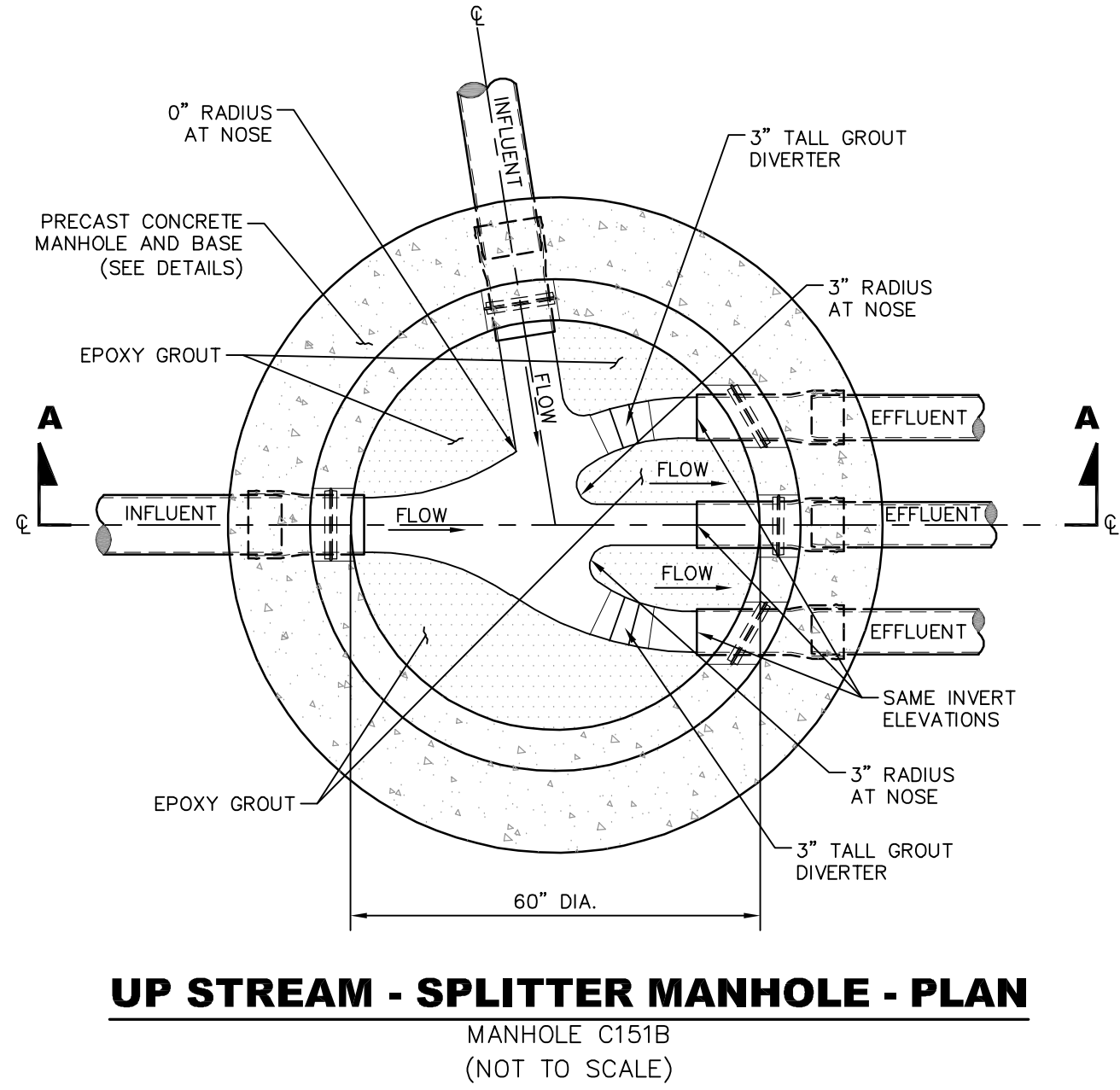
TYPICAL ADDITIONAL PAVING DETAIL @ FLAT TOP MANHOLE



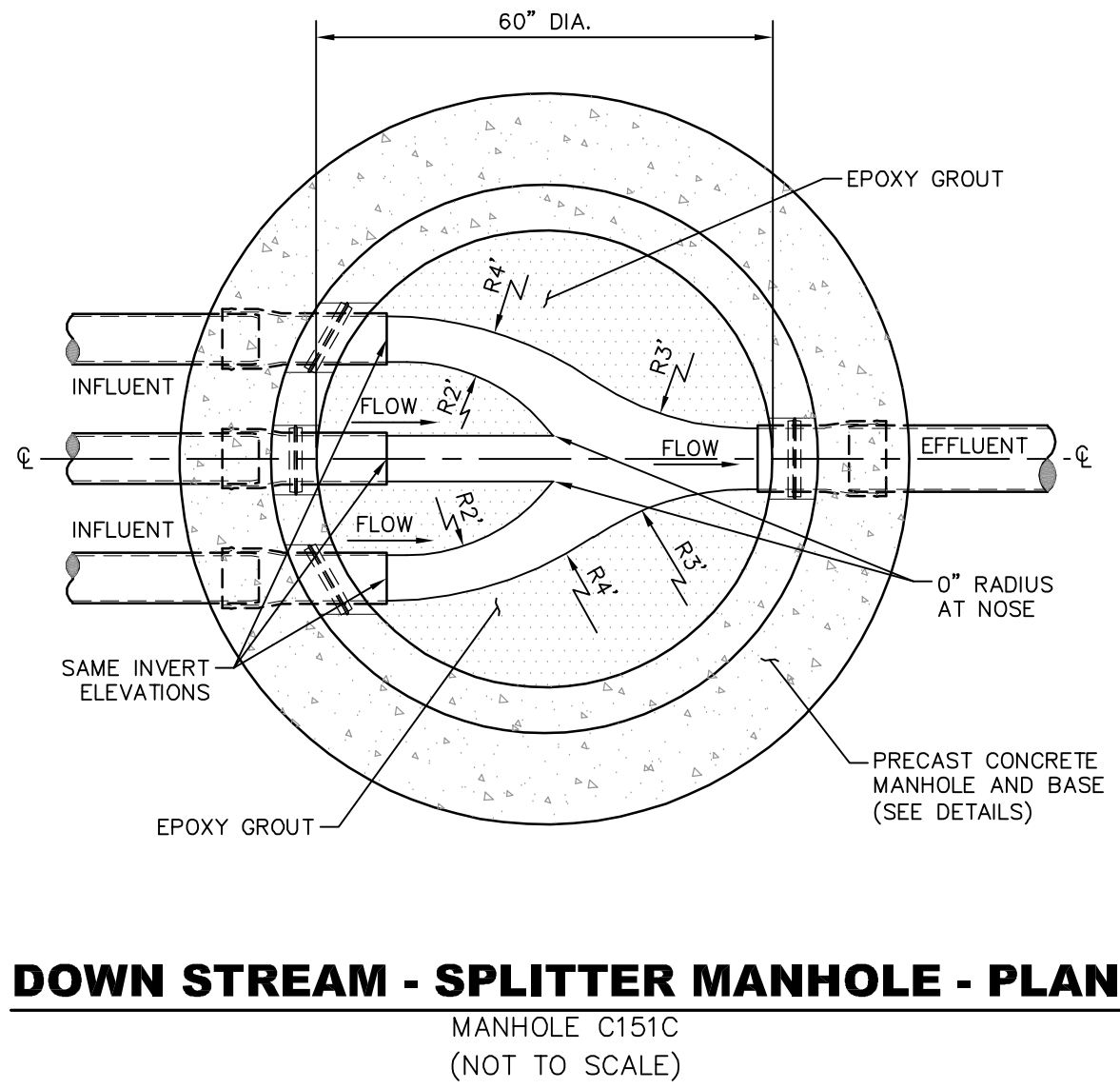
Date: 05-27-2022	Working No. 3332
Drawn: No. 11005	Sheet No. 33



SPLITTER MANHOLE SECTION A-A
(NOT TO SCALE)



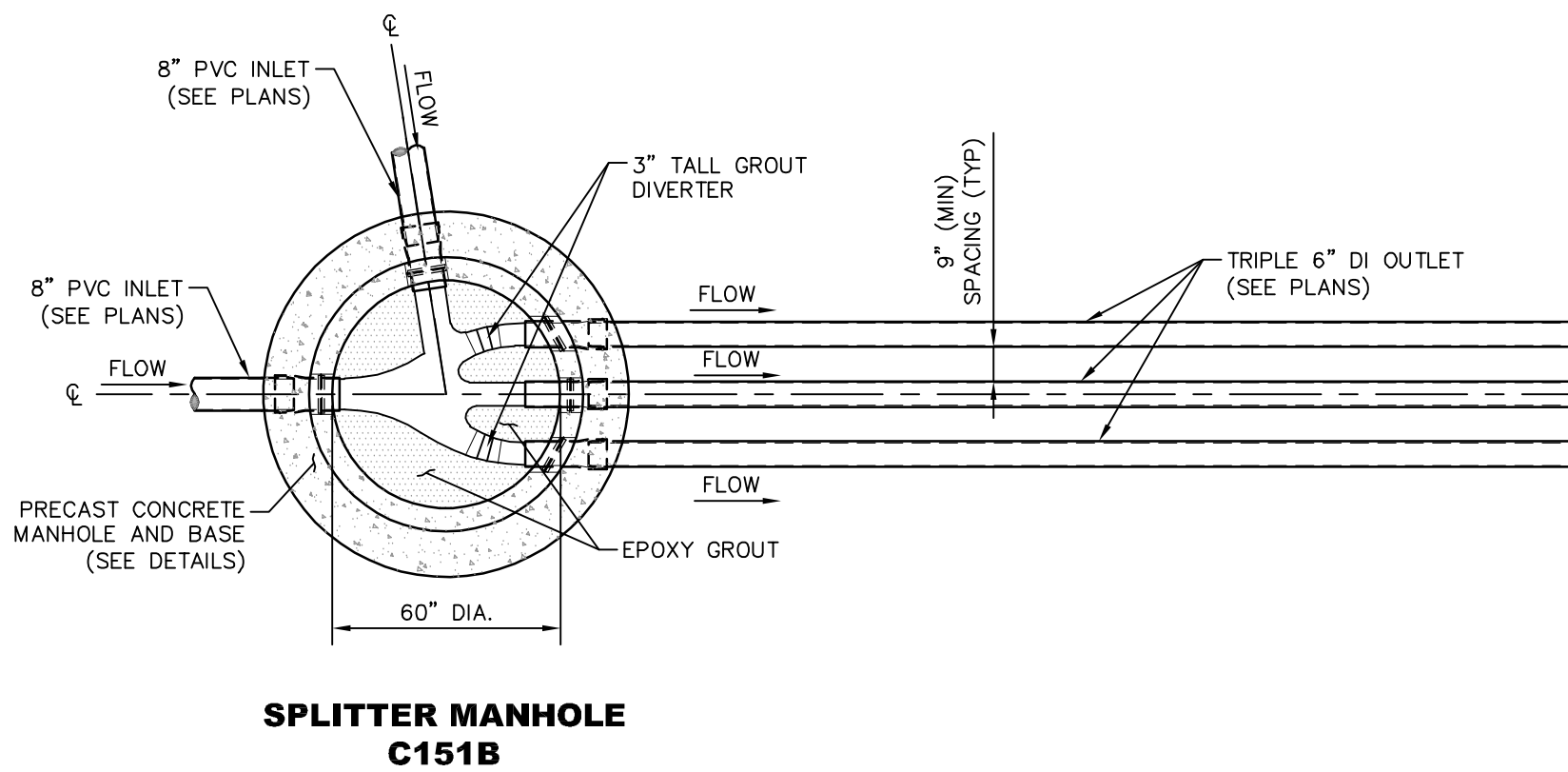
UP STREAM - SPLITTER MANHOLE - PLAN



DOWN STREAM - SPLITTER MANHOLE - PLAN

SPLITTER MANHOLE NOTE

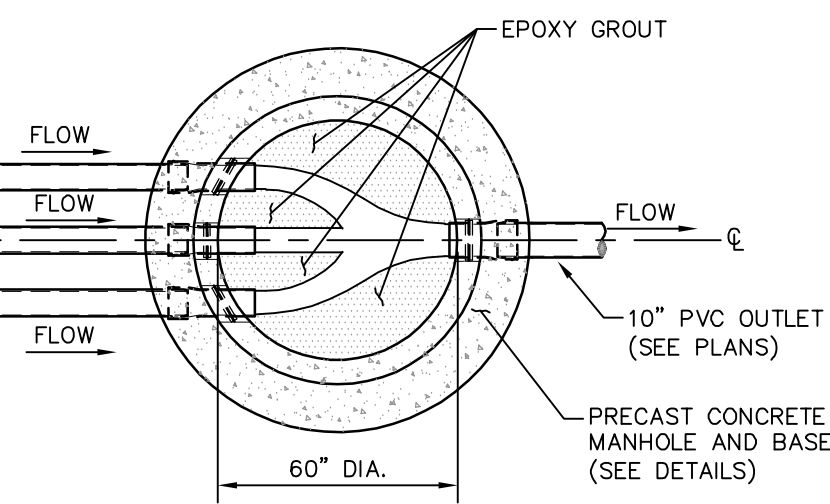
CONTRACTOR SHALL SUBMIT FINAL DESIGN FOR APPROVAL
BY THE ENGINEER PRIOR TO CONSTRUCTION.



**SPLITTER MANHOLE
C151B**

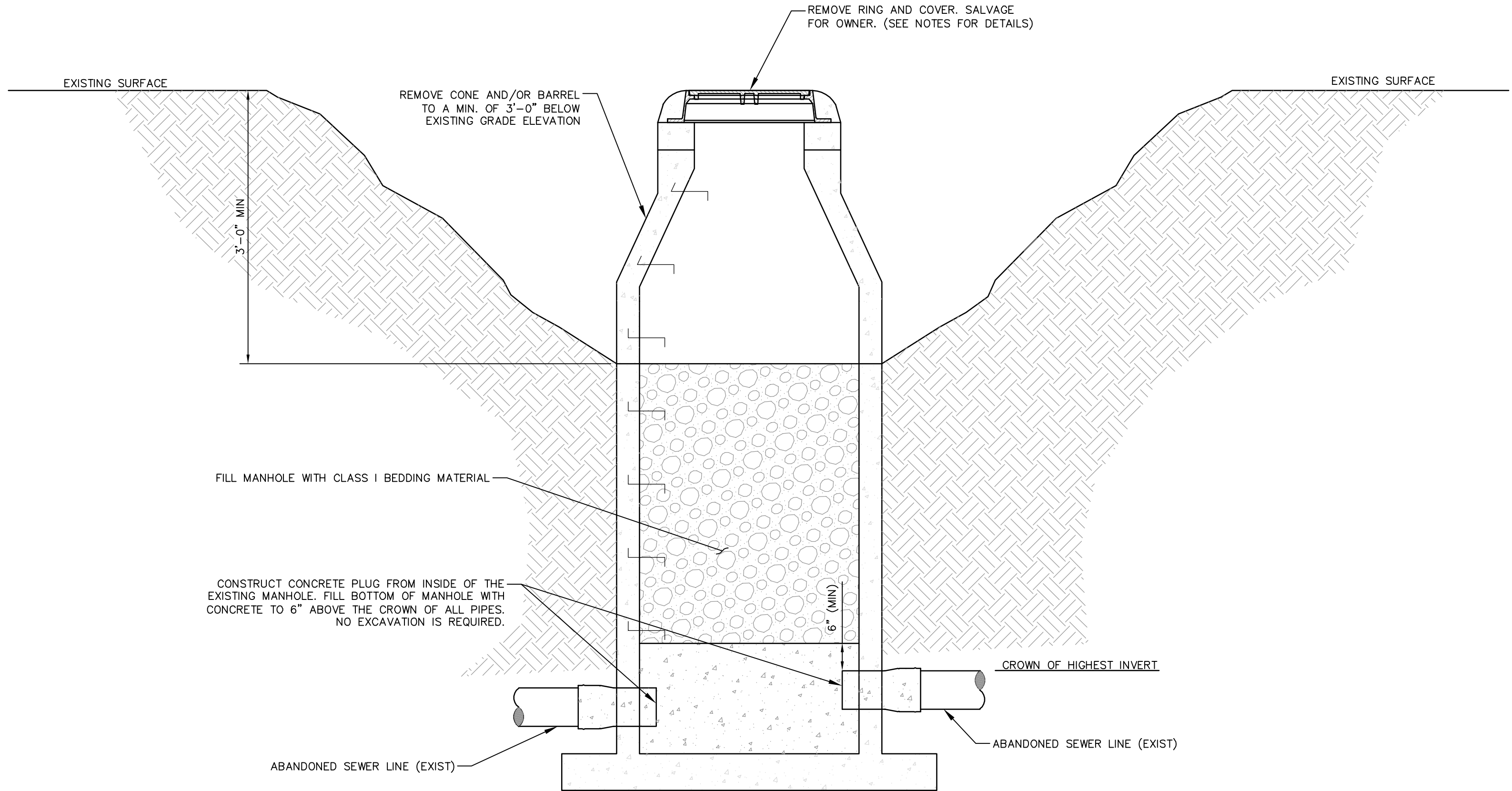
SPECIAL DETAIL AT DOUBLE PIPE CROSSING - PLAN

SCALE: 1" = 4'



**SPLITTER MANHOLE
C151C**

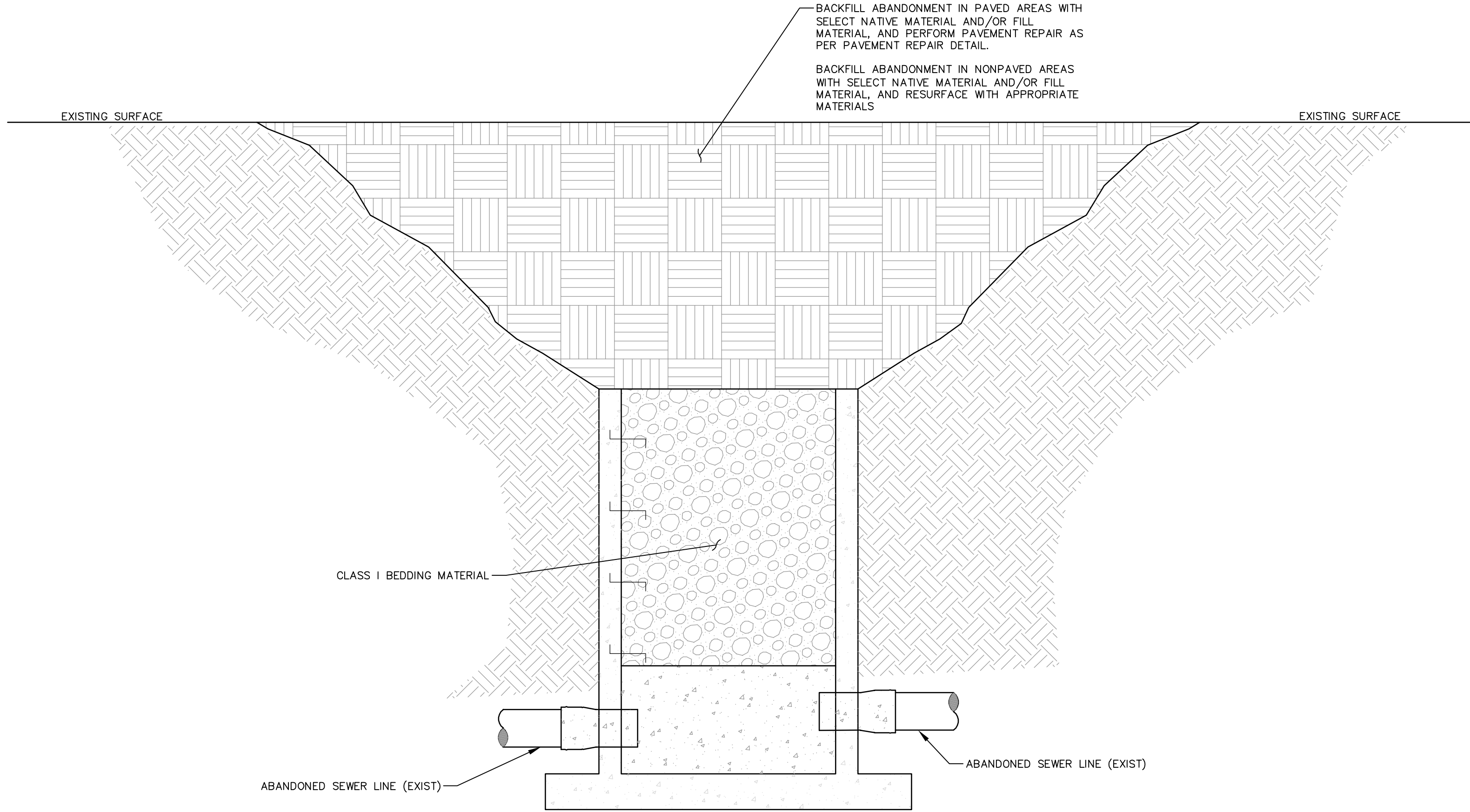
NO.	DATE	DESCRIPTION	BY
SPECIAL DESIGN – SEWER INSTALLATION DETAILS			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: SLS		Checked by: SEM	Scale: AS NOTED
Date: 06-03-2022		Working No. <u>SSD3</u>	
Drawing No.: 11295		Sheet No. <u>38</u>	



EXISTING MANHOLE ABANDONMENT DETAIL
NOT TO SCALE

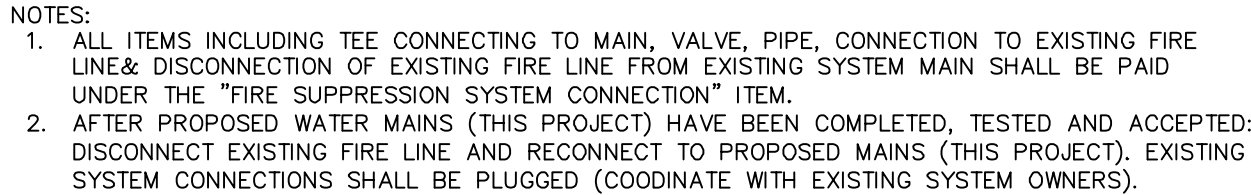
SPECIAL SEWER ABANDONMENT / REMOVAL NOTES:

- ALL EXISTING MANHOLES NOTED TO BE REMOVED SHALL BE REMOVED ENTIRELY. REMOVED ITEMS SHALL BE DISPOSED OF APPROPRIATELY.
- ALL EXISTING MANHOLES NOTED TO BE ABANDONED, SHALL BE PAID FOR PER EACH AND SHALL BE MODIFIED AS FOLLOWS:
 - REMOVE AND DISPOSE OF SANITARY WASTE.
 - REMOVE COVER, FRAME AND THE TOP 36" OF MANHOLE STRUCTURE. DISPOSE OF REMOVED OBJECTS APPROPRIATELY.
 - FILL BOTTOM OF MANHOLE WITH CONCRETE, MINIMUM 6" ABOVE THE CROWN OF ALL PIPES.
 - FILL THE MANHOLE WITH CLASS I BEDDING MATERIAL.
 - BACKFILL WITH NATIVE SOIL MATERIAL AND/OR FILL MATERIAL (CL B9) AND COMPACT. GRADE TO DRAIN AS REQUIRED. GRASS DISTURBED AREA OR REPAIR PAVEMENT AREAS.
- ALL EXISTING SEWER PIPES NOTED TO BE REMOVED, SHALL BE REMOVED ENTIRELY. (NO SEPARATE PAY)
- ALL EXISTING SEWER PIPES NOTED TO BE ABANDONED SHALL BE PAID FOR BY LINEAR FOOT AND SHALL BE MODIFIED AS FOLLOWS:
 - REMOVE AND DISPOSE OF SANITARY WASTE.
 - FILL THE PIPE WITH FLOWABLE FILL.
 - PLUG ENDS.
- WHERE ABANDONED SEWER PIPES AND/OR MANHOLES CONFLICT WITH THE NEW CONSTRUCTION, THE EXISTING PIPE OR MANHOLE SHALL BE REMOVED, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.
- MANHOLE RINGS AND COVERS NOTED FOR REMOVAL IN THESE PLANS, SHALL BE SALVAGED FOR THE OWNER. ALL ITEMS SALVAGED ITEMS SHALL BE CLEANED BY POWER WASHING. SAID ITEMS SHALL BE STACKED AND SECURED ON PALLETS. SAID ITEMS SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO A SITE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF SAID ITEMS PRIOR TO DELIVERY TO THE OWNER AND FOR REPLACEMENT IN KIND FOR ANY MISSING ITEMS. (NO SEPARATE PAY)

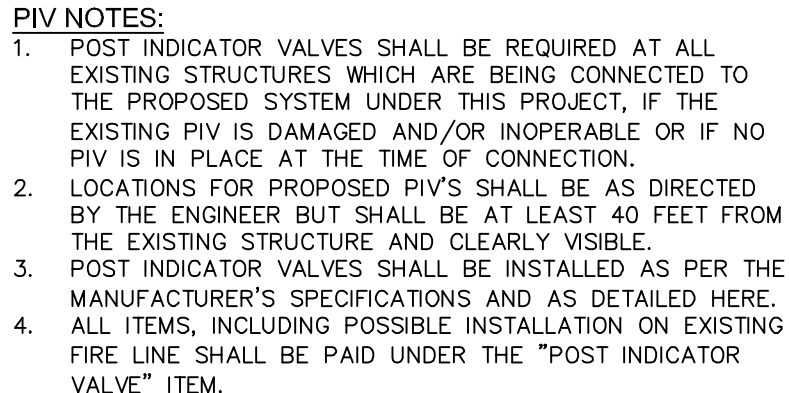


EXISTING MANHOLE ABANDONMENT COMPLETE DETAIL
NOT TO SCALE

NO.	DATE	DESCRIPTION	BY
SEWER ABANDONMENT DETAILS			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	SLS	Checked by:	Scale: NONE
Date:	05-13-2022	Working No.:	ABN1
Drawing No.:	11295	Sheet No.:	39



(UNPAVED AREA)



(PAVED AREA)



(UNPAVED AREA)

INFRASTRUCTURE IMPROVEMENTS – MLK AREA
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI



Engineering Progress

301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Drawn by: SLS	Checked by:	Scale: NONE
---------------	-------------	-------------

Date: 09-26-2022	Working No. WTRD1
------------------	-------------------

2019: 10 21 2022	Working No. _____
2019: 11 21 2022	2019: 11 21 2022



(LEFT HALF SHOWN, RIGHT HALF SIMILAR)



NOTE:
ALL ITEMS SHOWN IN DETAIL ARE INCLUDED
IN PRESSURE REDUCING VALVE BID ITEM.



HEAVY DUTY WATERTIGHT COVER & FRAME
V-2115-3 AGS WITH OUT HOLES, WITH GASKE
& BOLTS ONLY

PRESSURE REDUCING VALVE DETAIL



SECTION B-B

ISOMETRIC

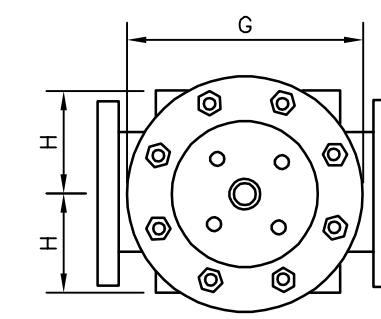
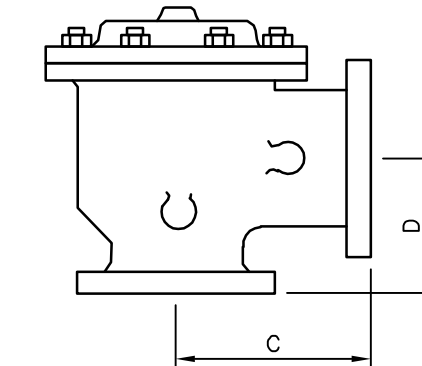


TEES

PLUGS

THRUST BLOCKING DETAILS

PRESSURE VALVE DIMENSIONS (INCHES)					
DIM	ANSI CLASS	VALVE SIZE (INCHES)			
		3	4	6	8
A	SE	1½	—	—	—
	150	10½	13½	17½	25½
	300	11½	14½	18½	26½
B	SE	2½	—	—	—
	150	3¾	4½	5½	6¾
	300	4¾	5	6¼	7¾
C	SE	5½ ₁₆	—	—	—
	150	6	7½	10	13½ ₁₆
	300	6¾	7½ ₁₆	10½	13½ ₁₆
D	SE	5¾	—	—	—
	150	4	5¼	6	8½
	300	4¾	5¾	6½	9
E	ALL	7	8	10	11½
F	ALL	3¾	3¾	3¾	6½
G	ALL	7½ ₁₆	10	14	21
H	ALL	11	12	13	14



NO.	DATE	DESCRIPTION	BY

WATER INSTALLATION DETAILS

INFRASTRUCTURE IMPROVEMENTS – MLK AREA
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI



Engineering Progress

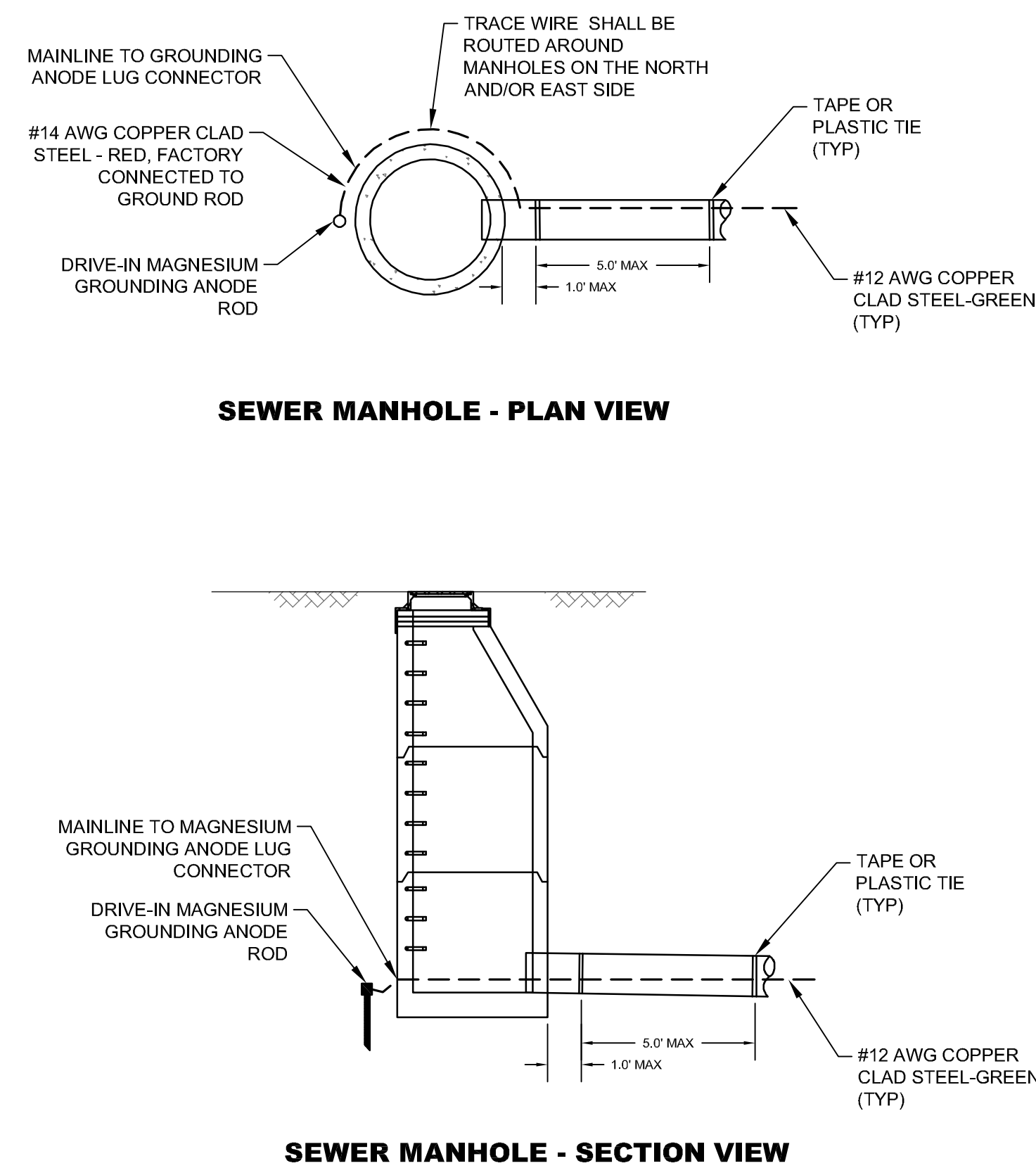
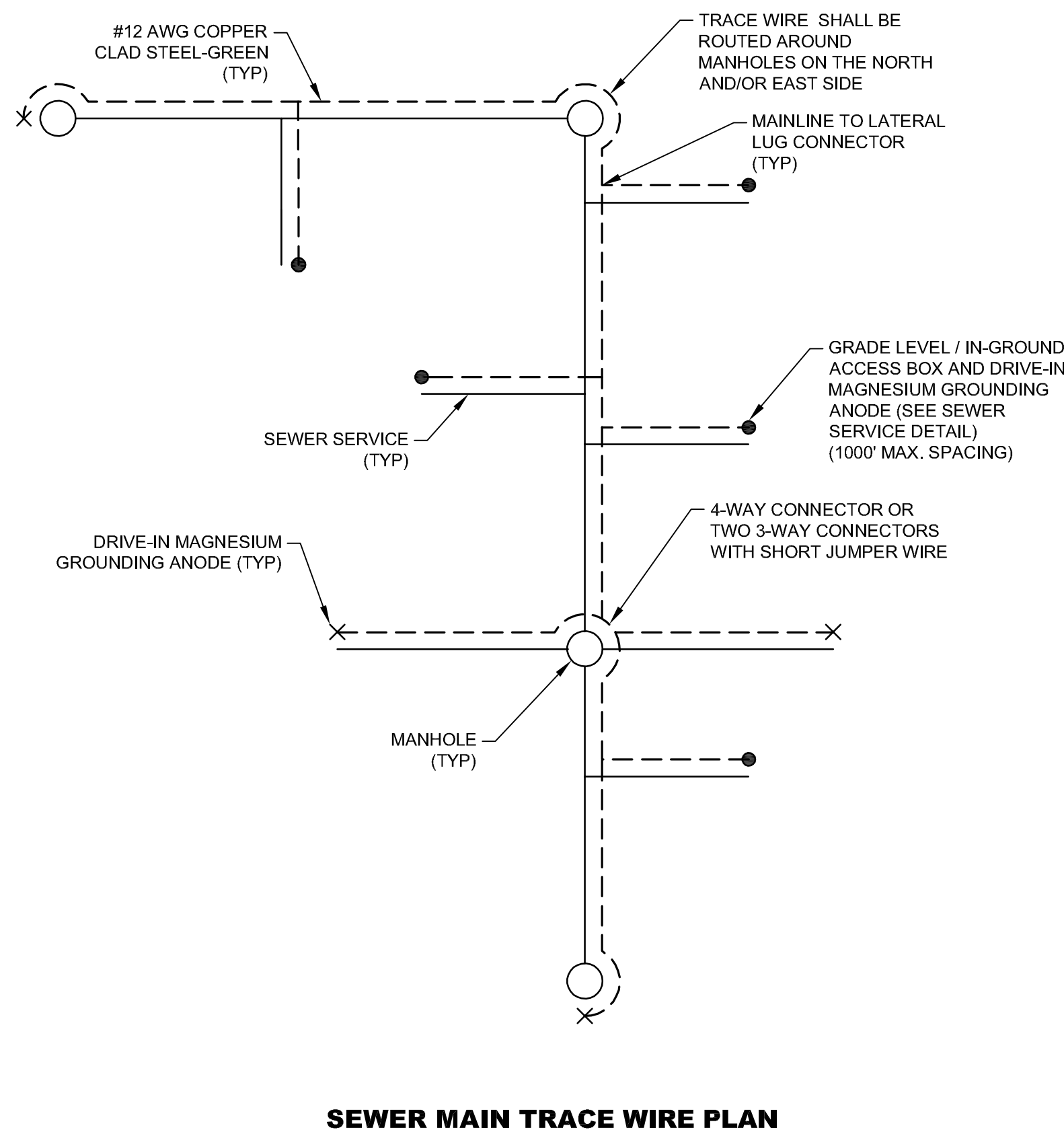
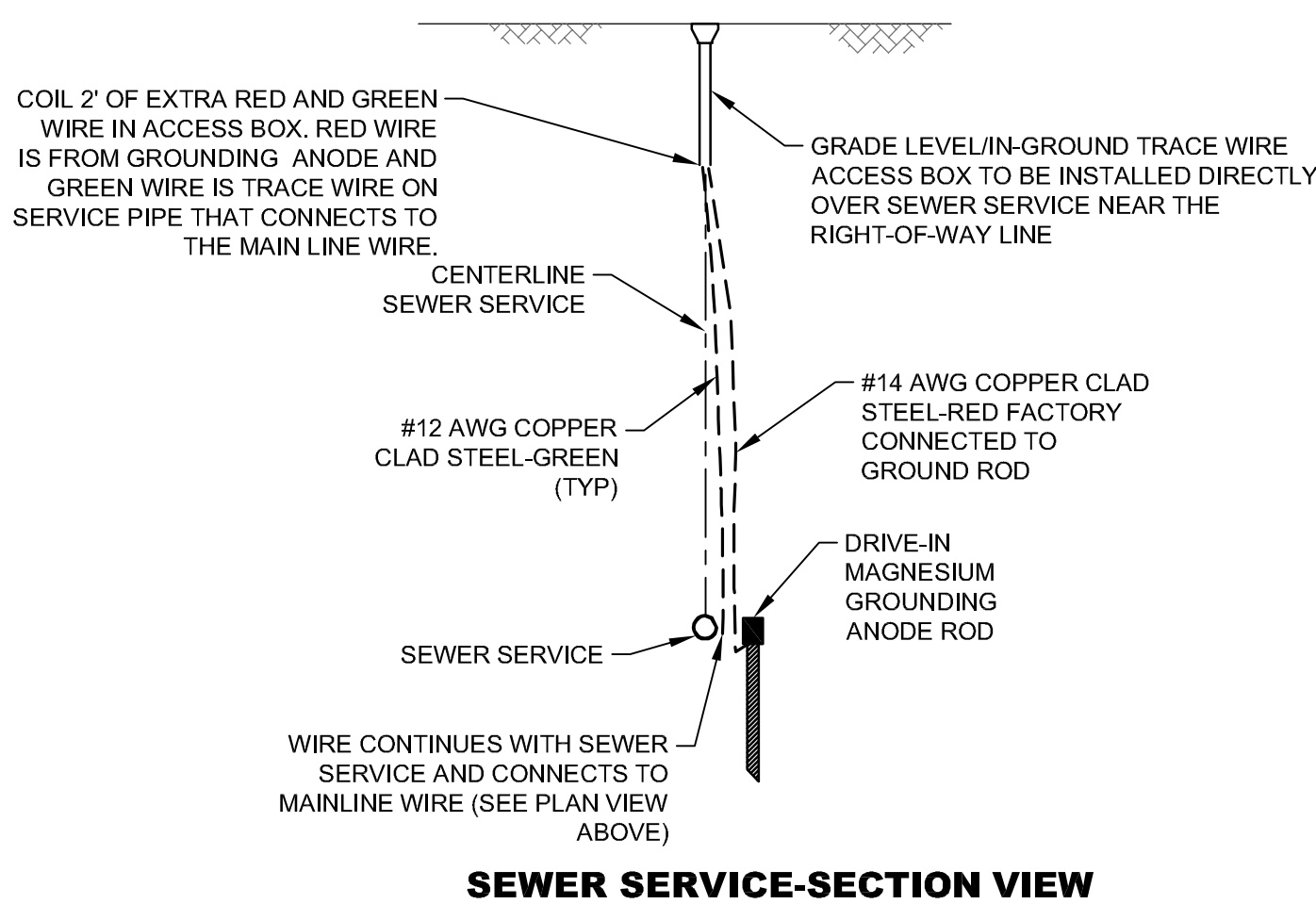
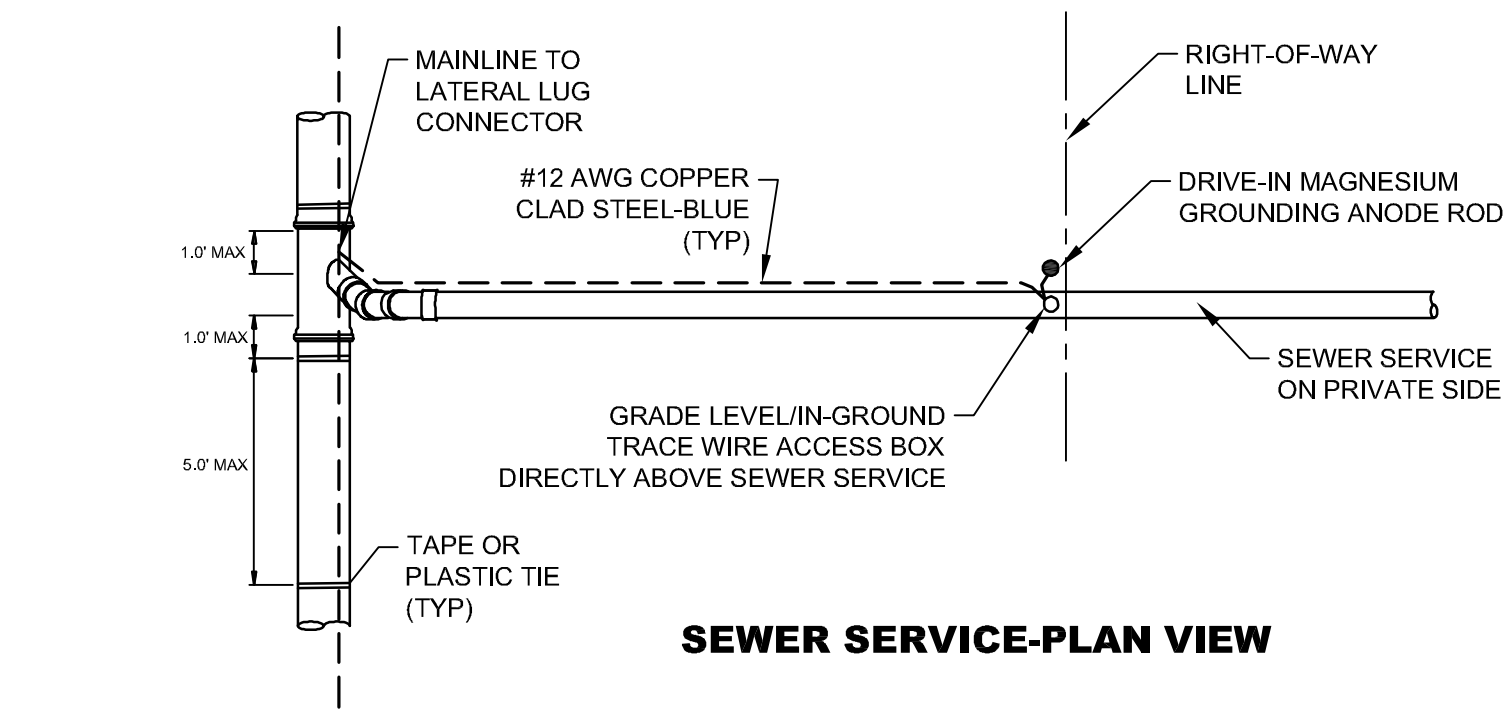
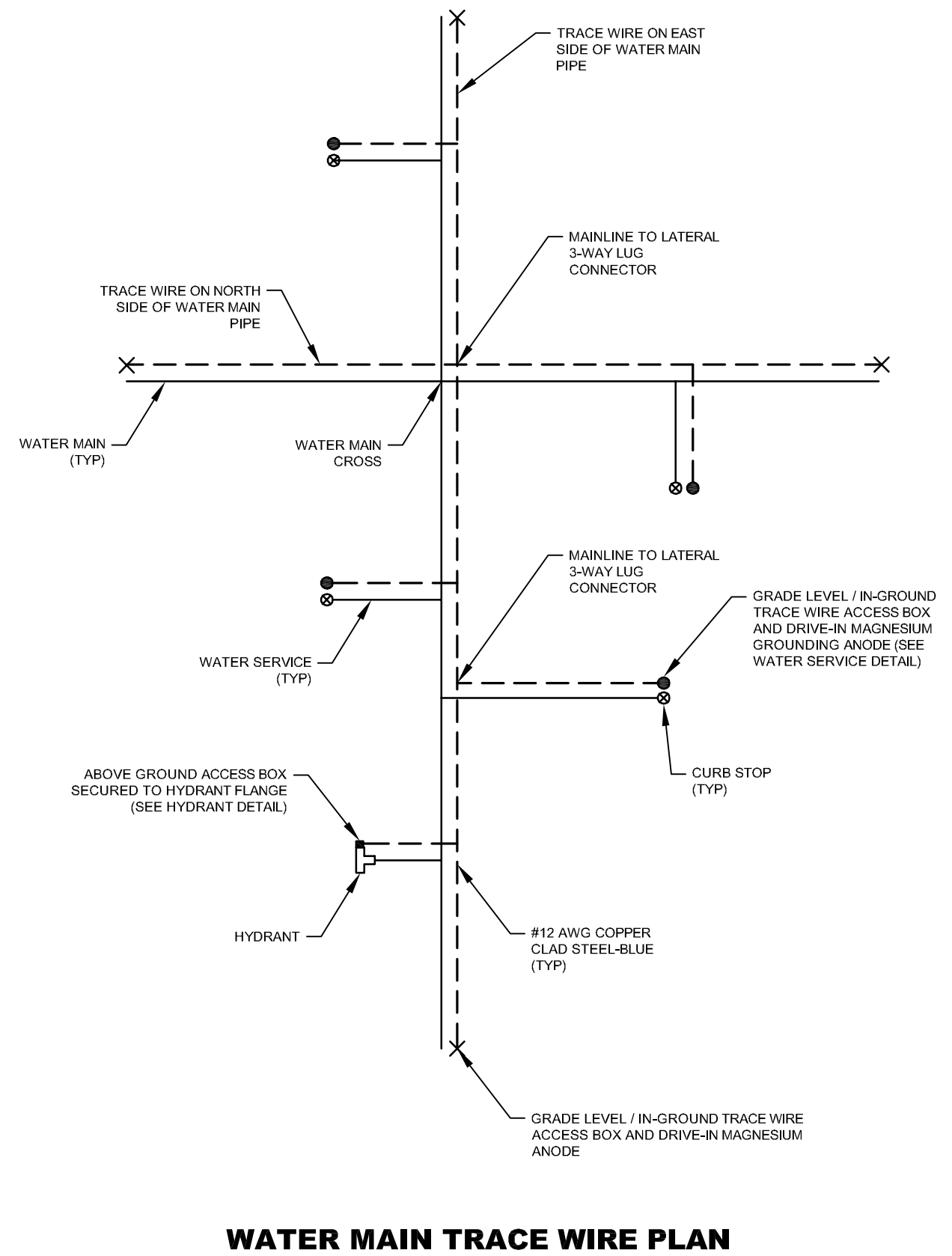
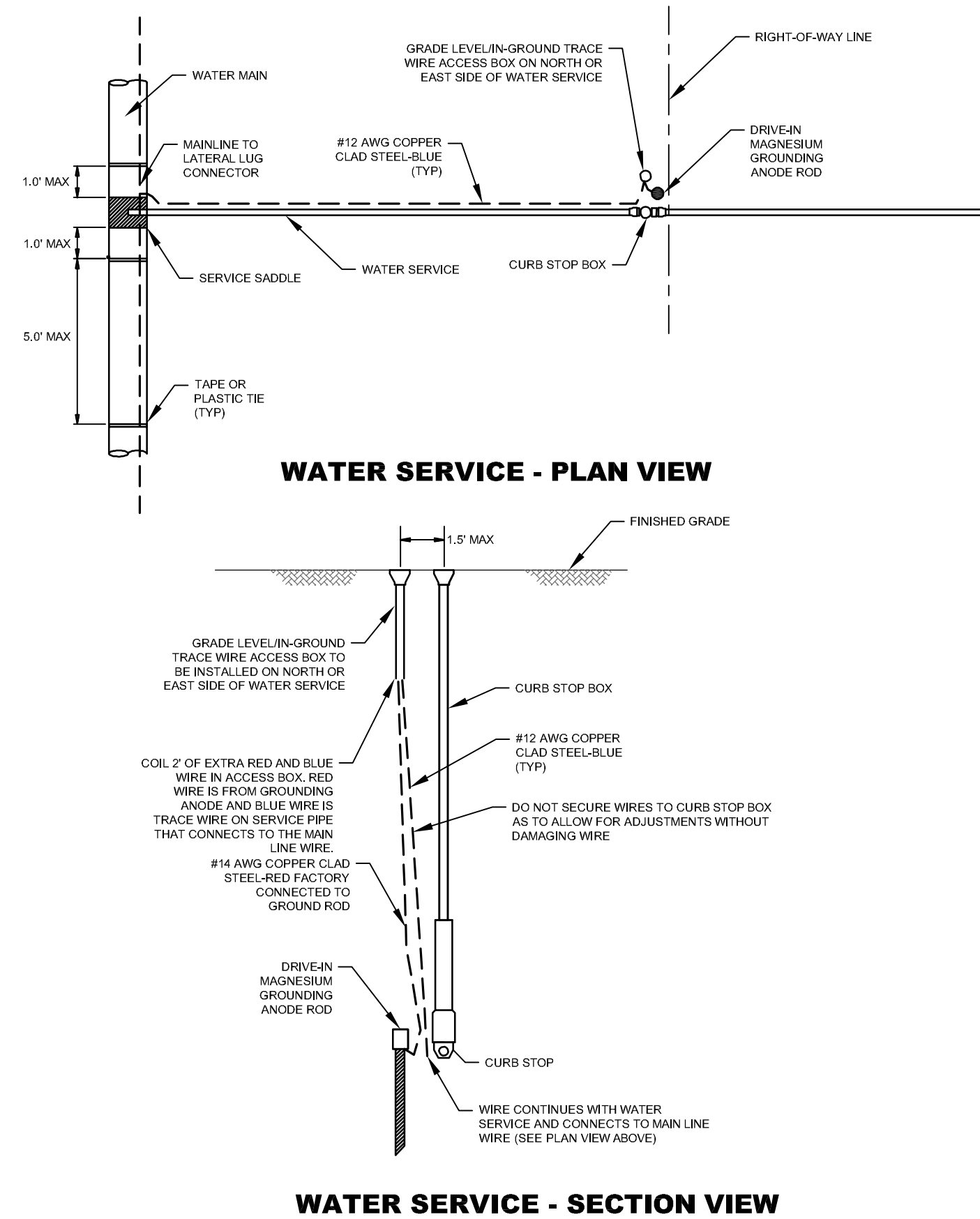
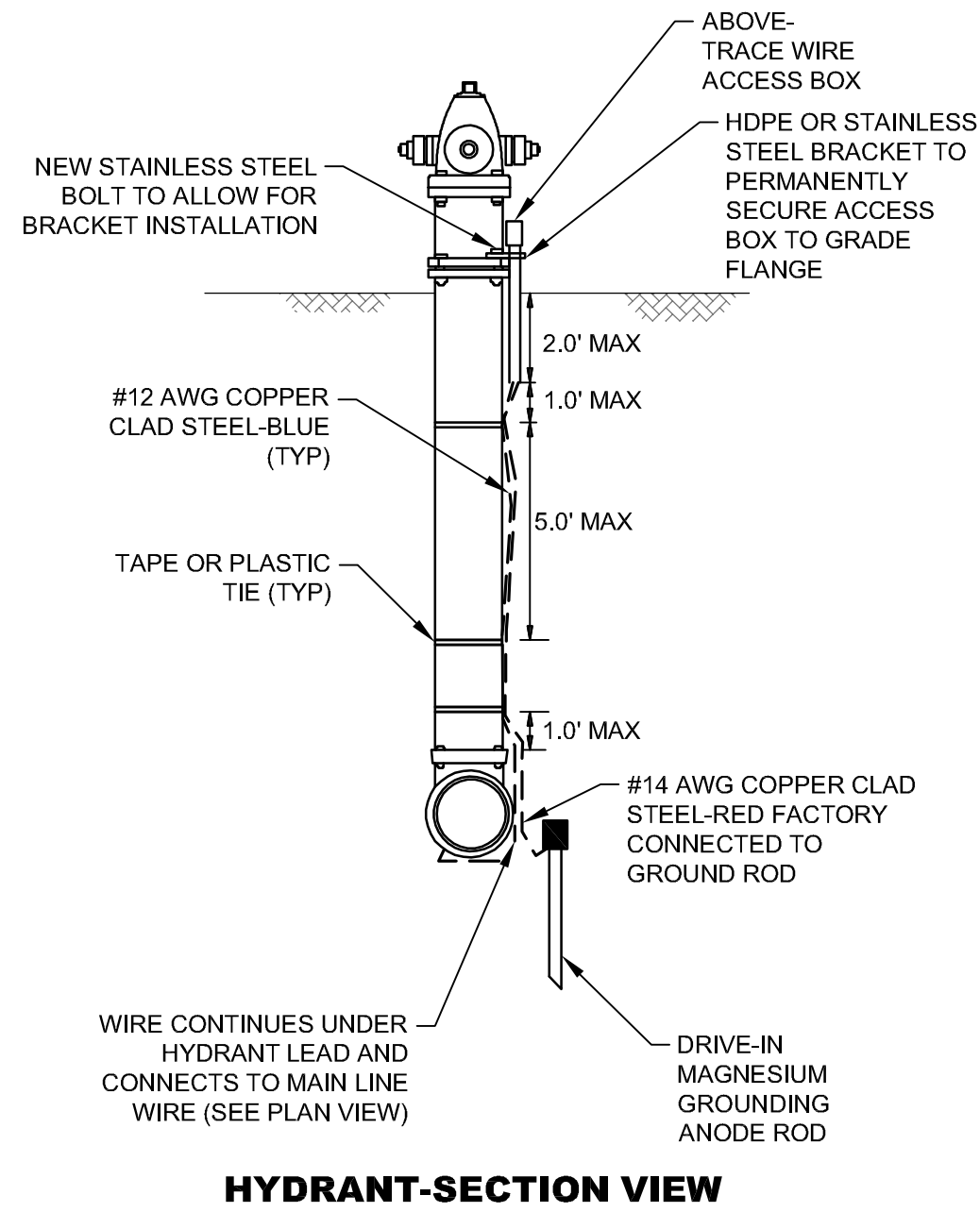
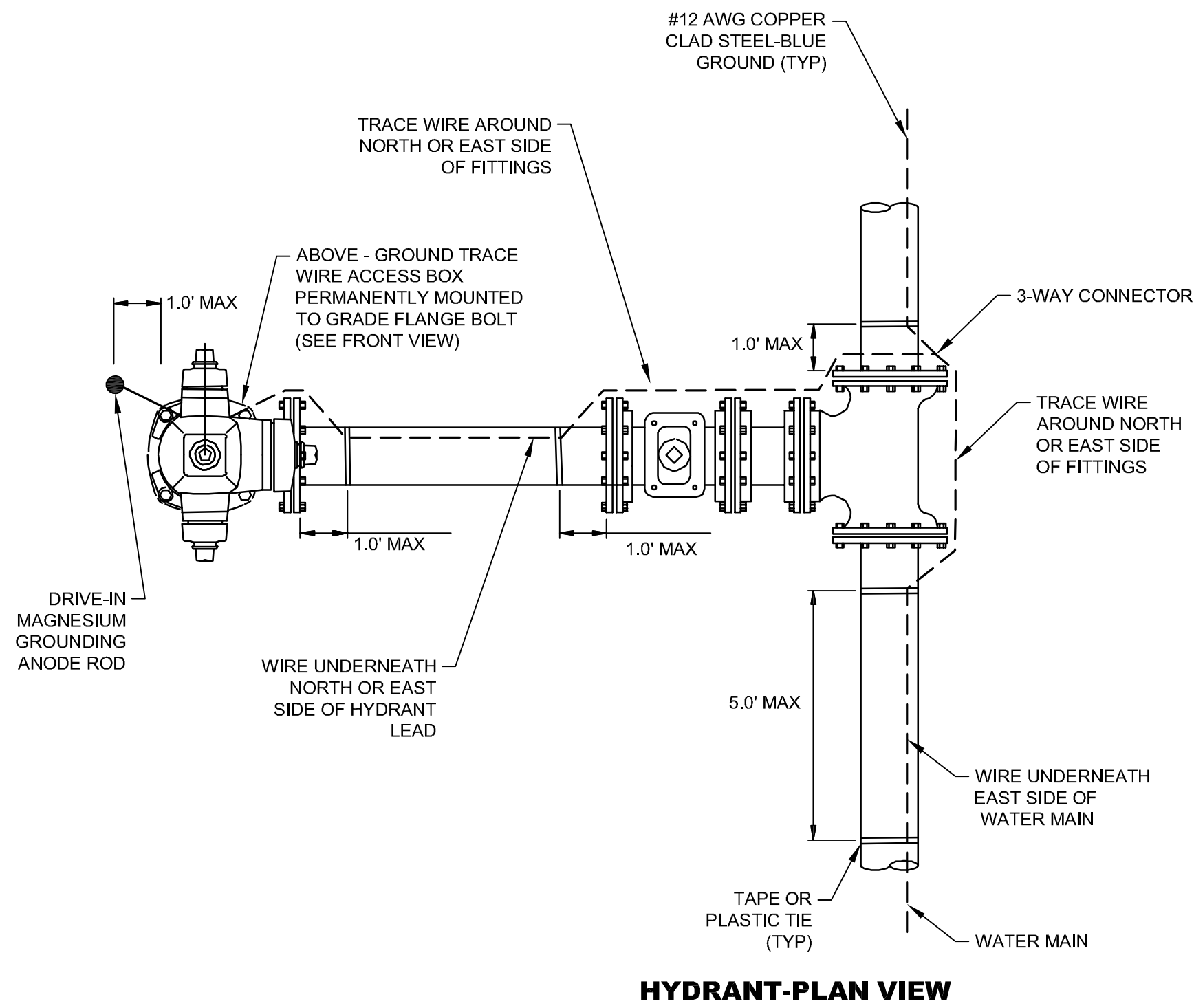
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Drawn by: SLS	Checked by:	Scale: NONE
---------------	-------------	-------------

Date: 09-26-2022	Working No. WTRD2
------------------	-------------------

Date: 03-20-2022	Working No. _____
Page: 11 of 11	Page: 11 of 11

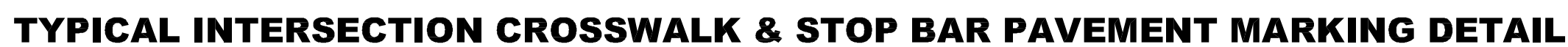
G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295 - Tracer Wire_01.dwg TWD1: 5/17/2022 10:31 PM



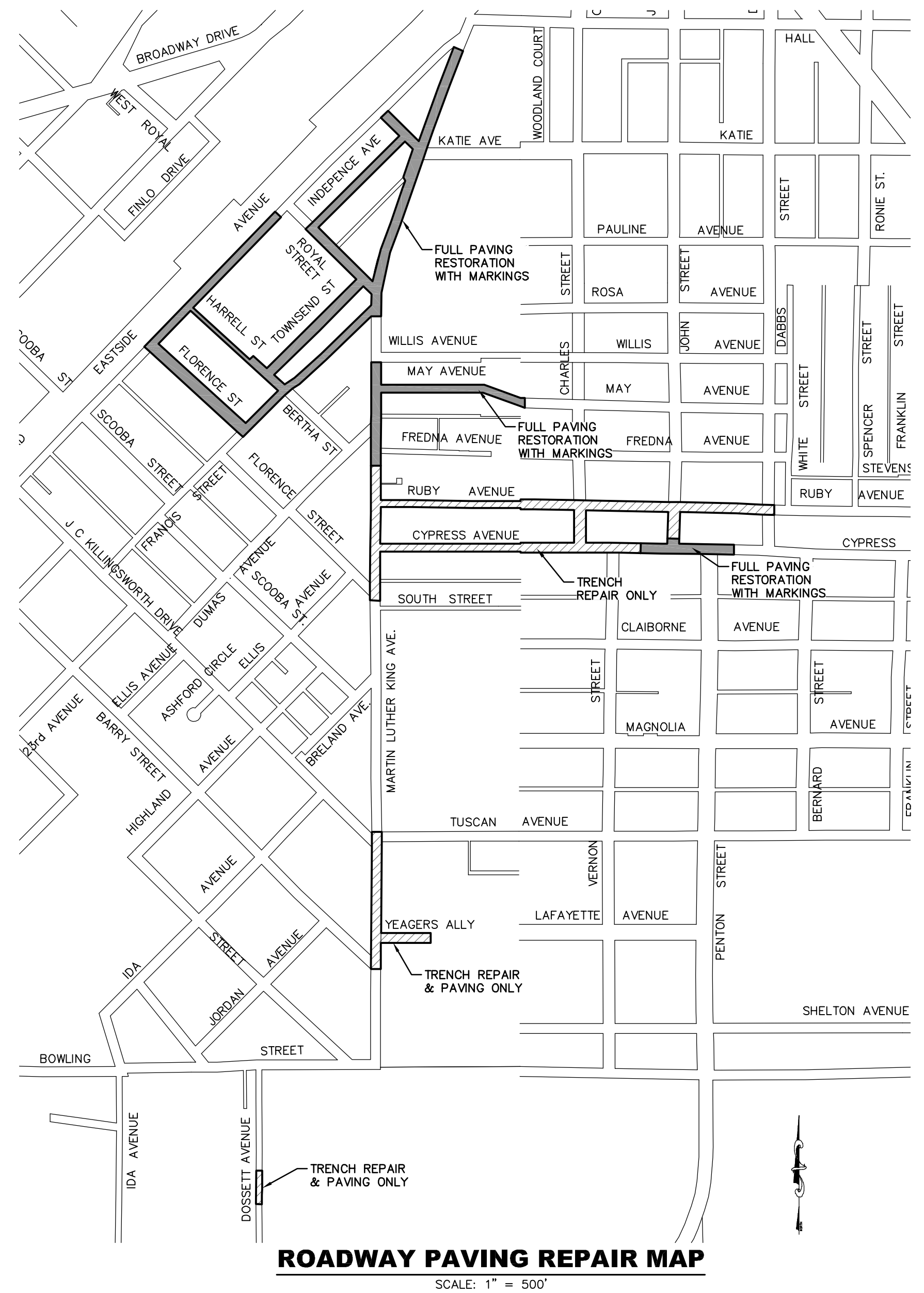
NOTE:
WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

NO.	DATE	DESCRIPTION	BY
TRACER WIRE DETAILS			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	SLS	Checked by:	JTW
Date:	05-27-2022	Working No.:	TWD1
Drawing No.:	11295	Sheet No.:	42

1. TEMPORARY CRUSHED AGGREGATE REMOVED DURING PAVING SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
2. TRENCHES SHALL HAVE A TEMPORARY SURFACE OF CRUSHED AGGREGATE (SIZE 610). TEMPORARY SURFACE INSTALLED FOR A PERIOD OF TIME TO BE DETERMINED BY THE ENGINEER AND REMOVED PRIOR TO PAVING (NO SEPARATE PAY)



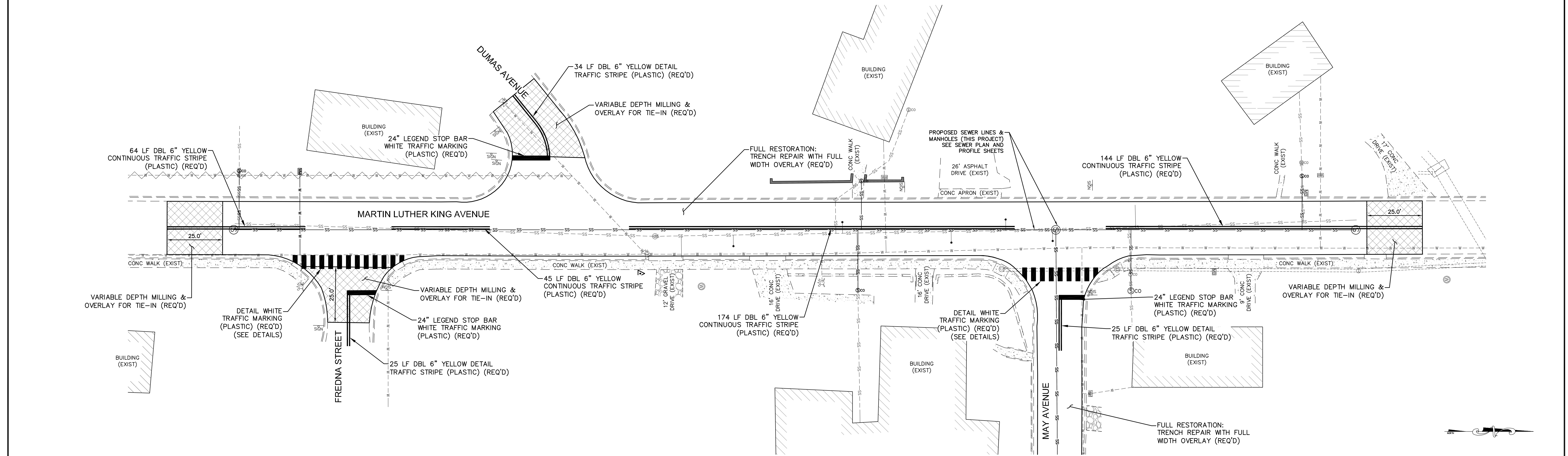
BEDDING NOTE:
DEPTH SHALL BE AS
REQUIRED TO REACH
SOLID BASE OF
UNDISTURBED EARTH



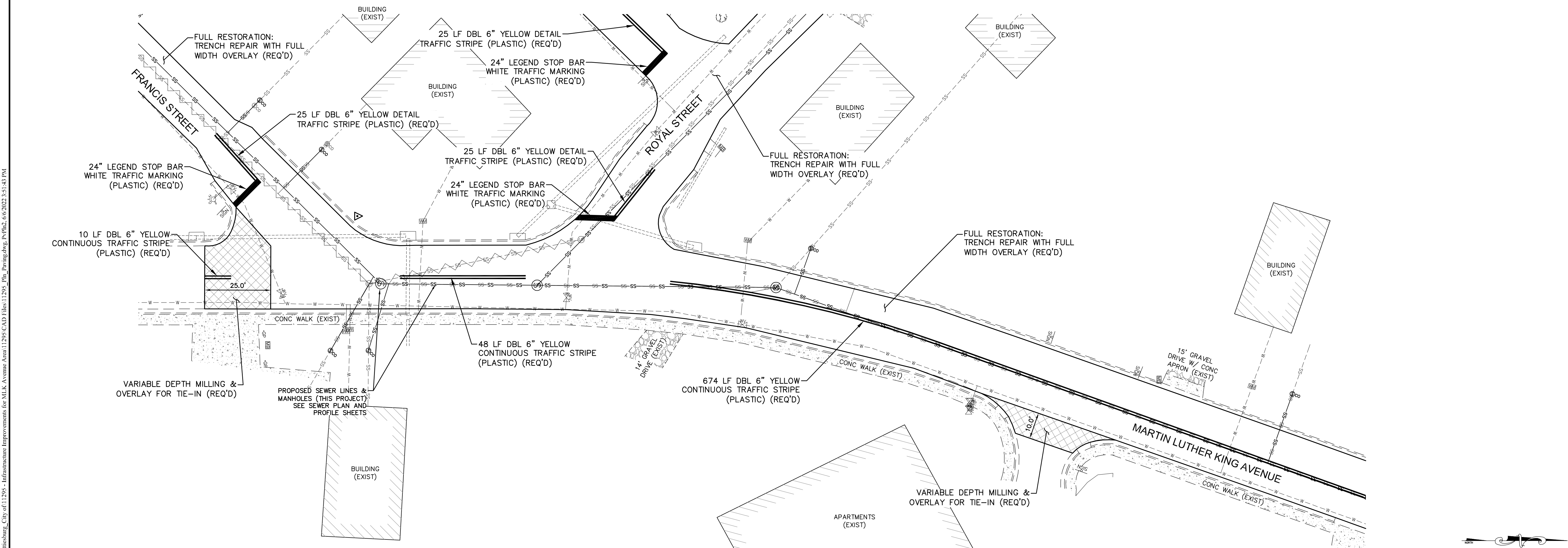
1. PAVEMENT DISTURBED AND/OR REMOVED IN/ON THE ROADWAYS, DRIVEWAY APRONS OR OTHER AREAS IN THE PUBLIC RIGHT OF WAY SHALL BE REPAIRED AS NOTED AND MAINTAINED THROUGHOUT THE PROJECT. SEE PAVING MAP.
- 1.1. ROADWAYS NOTED FOR FULL RESTORATION SHALL HAVE MARKINGS RESTORED AFTER PAVING. MARKINGS SHALL MATCH EXISTING MARKINGS OR AS DIRECTED BY THE ENGINEER.
2. PAVEMENT DISTURBED AND/OR REMOVED ON PRIVATE PROPERTY SHALL BE REPAIRED AS DETAILED OR IN KIND, OR AS DIRECTED BY THE ENGINEER.

NO.	DATE	DESCRIPTION	BY	
PAVEMENT REPAIR DETAILS				
INFRASTRUCTURE IMPROVEMENTS – MLK AREA CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI				
 Engineering Progress				
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com				
Drawn by: SLS		Checked by: SEM		Scale: NONE
Date: 05–27–2022			Working No. _____ PRD1 _____	
Drawing No.: 11295			Sheet No. _____ 43 _____	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Plan_Paving.dwg, P:\P2, 6/2/2022 3:51:43 PM



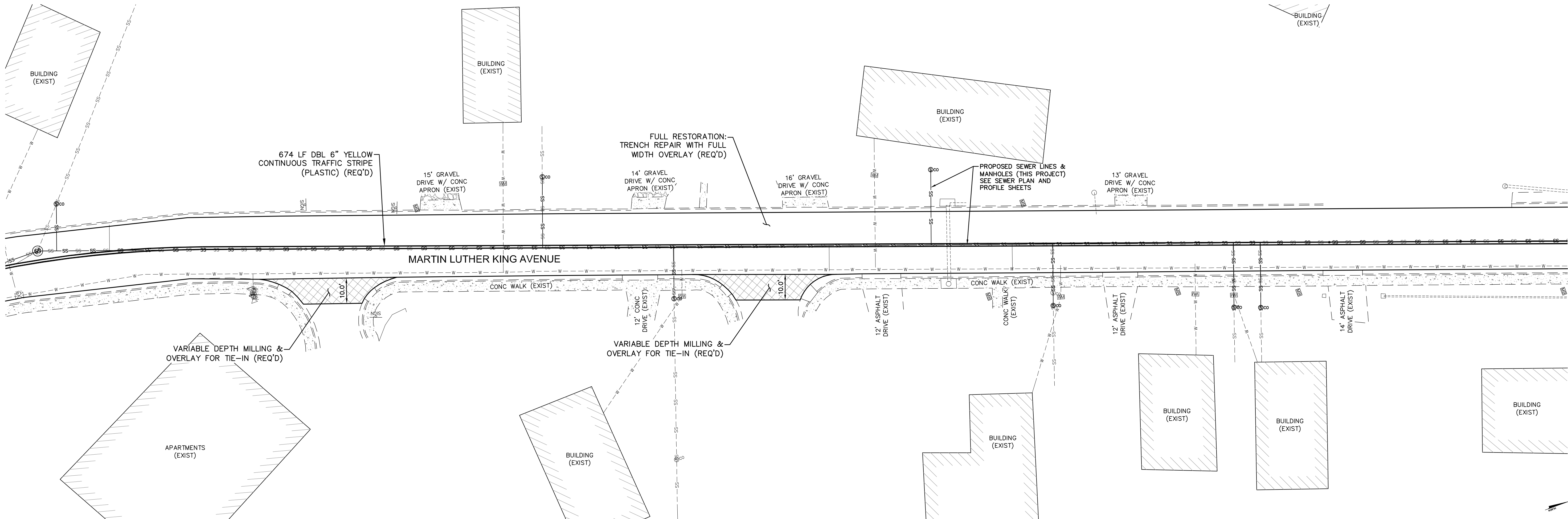
MARTIN LUTHER KING AVENUE
MARTIN LUTHER KING AVENUE



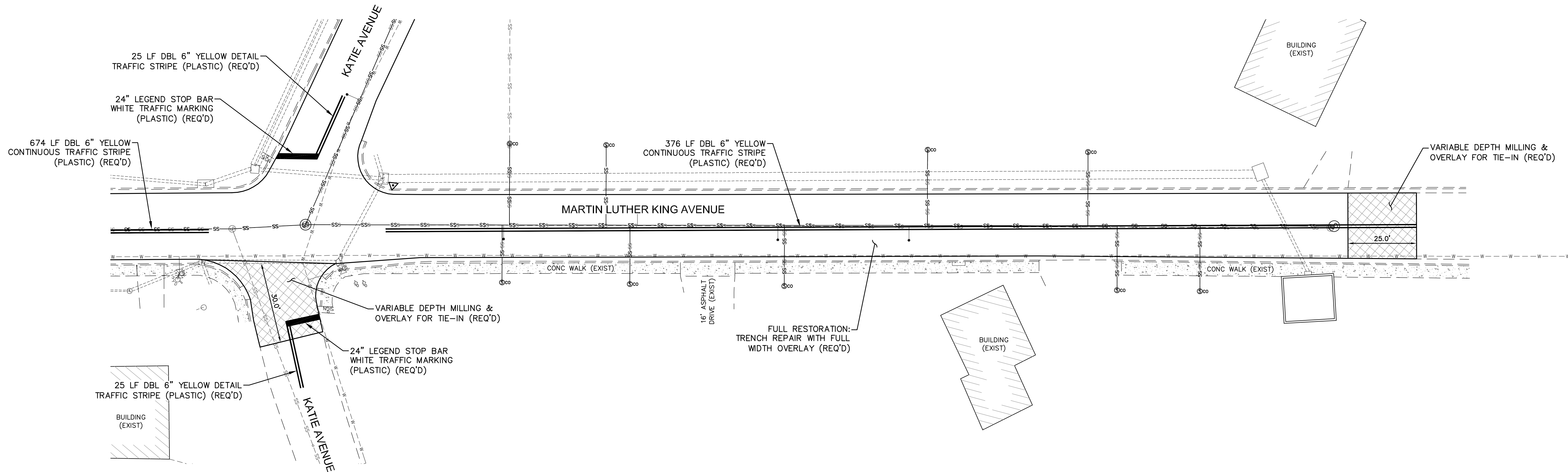
GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No. PvPin2	
Drawing No.: 11295		Sheet No. 45	



MARTIN LUTHER KING AVENUE
MARTIN LUTHER KING AVENUE



GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY

PAVING & MARKING PLAN

INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA

CITY OF HATTIESBURG

FORREST COUNTY, MISSISSIPPI

sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Drawn by: RES\SLS

Checked by: SEM

Scale: 1" = 20'

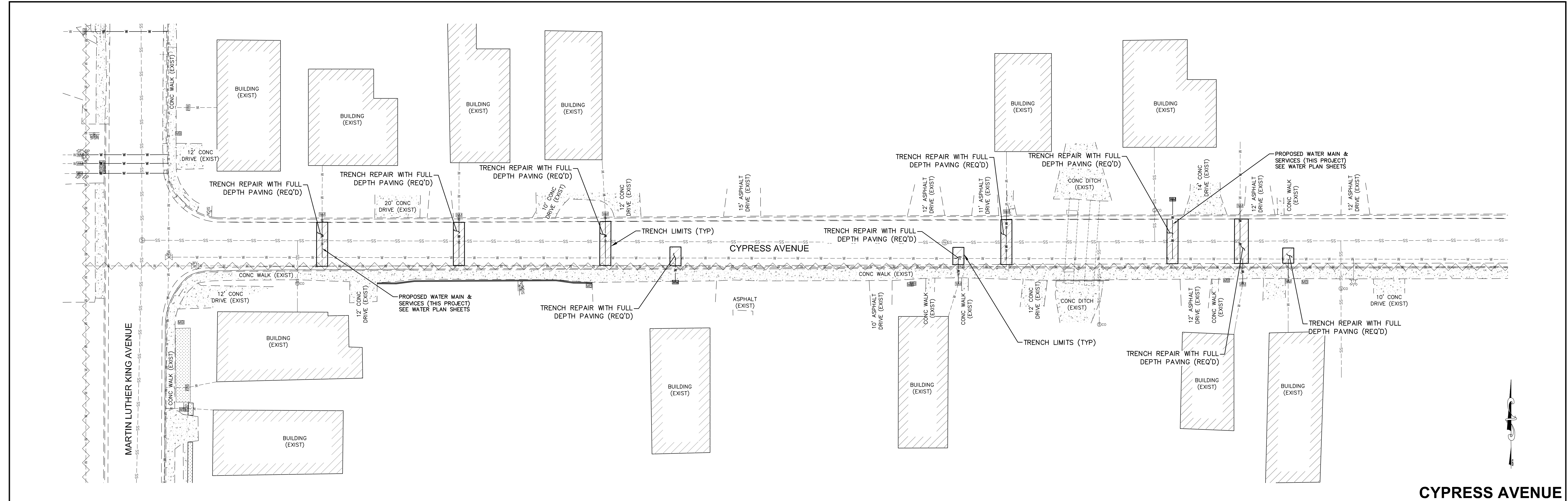
Date: 06-03-2022

Working No.: PvPin3

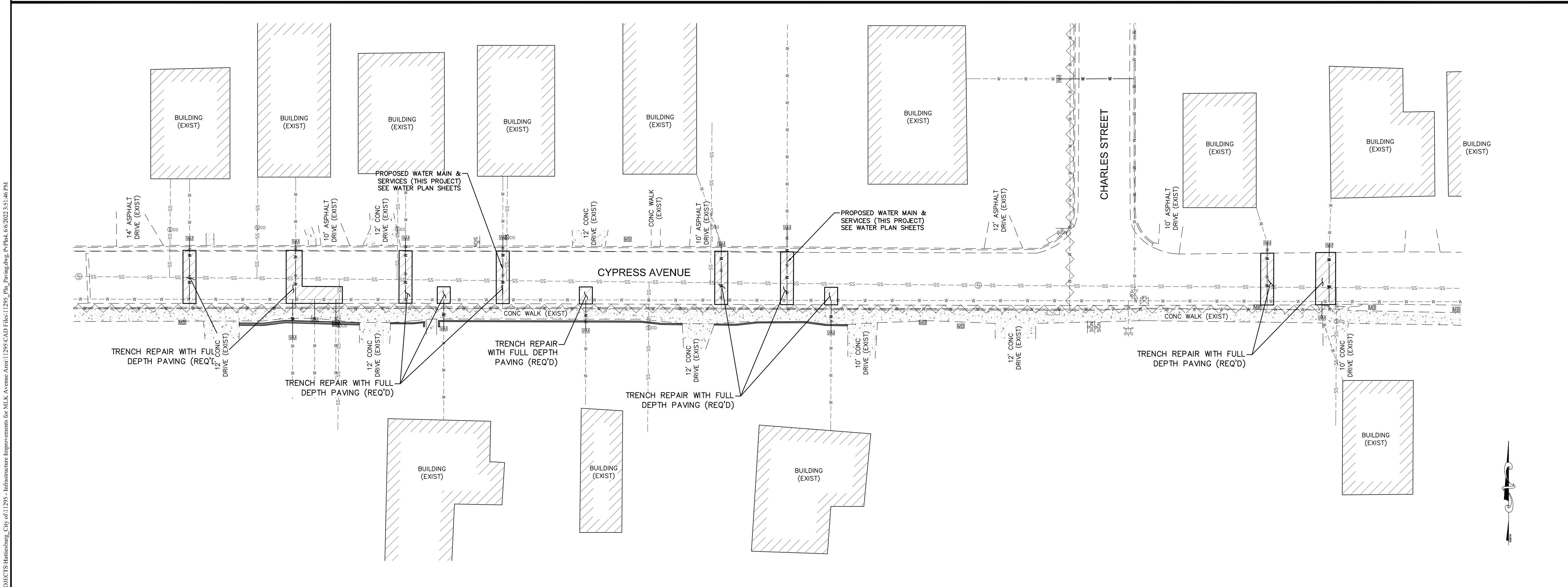
Drawing No.: 11295

Sheet No.: 46

G:\PROJECTS\Hattiesburg_City of 11295-CAD Files\11295_Plan_Paving.dwg, P:\Pin4_6/6/2022 3:51:46 PM



CYPRESS AVENUE
CYPRESS AVENUE

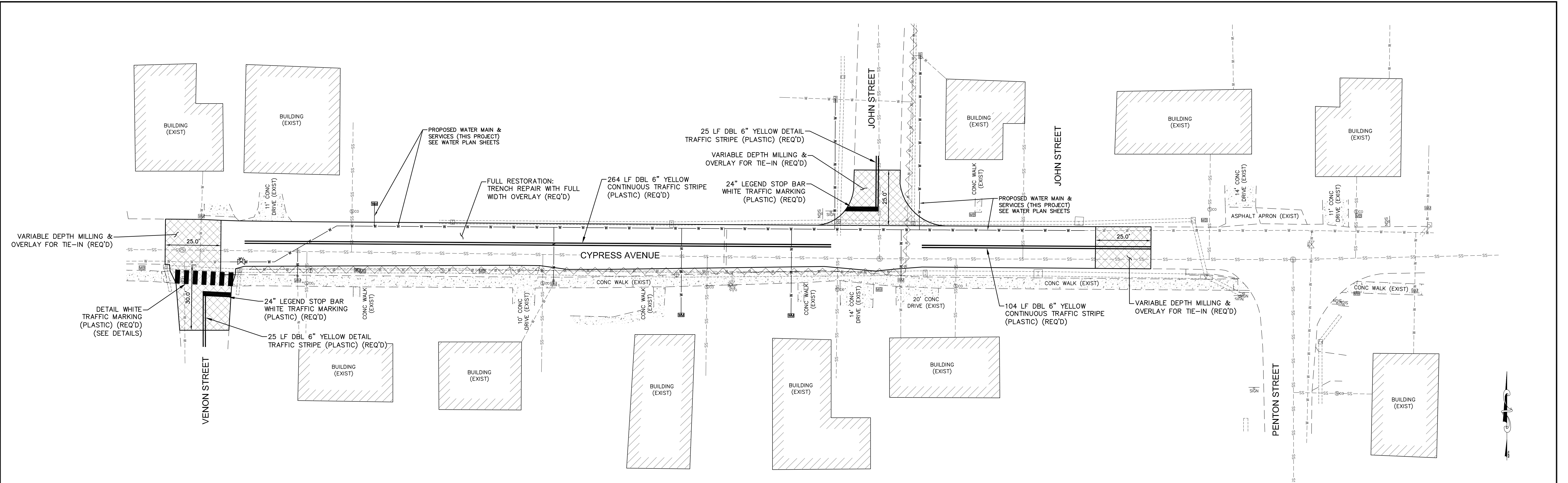


GENERAL NOTES:

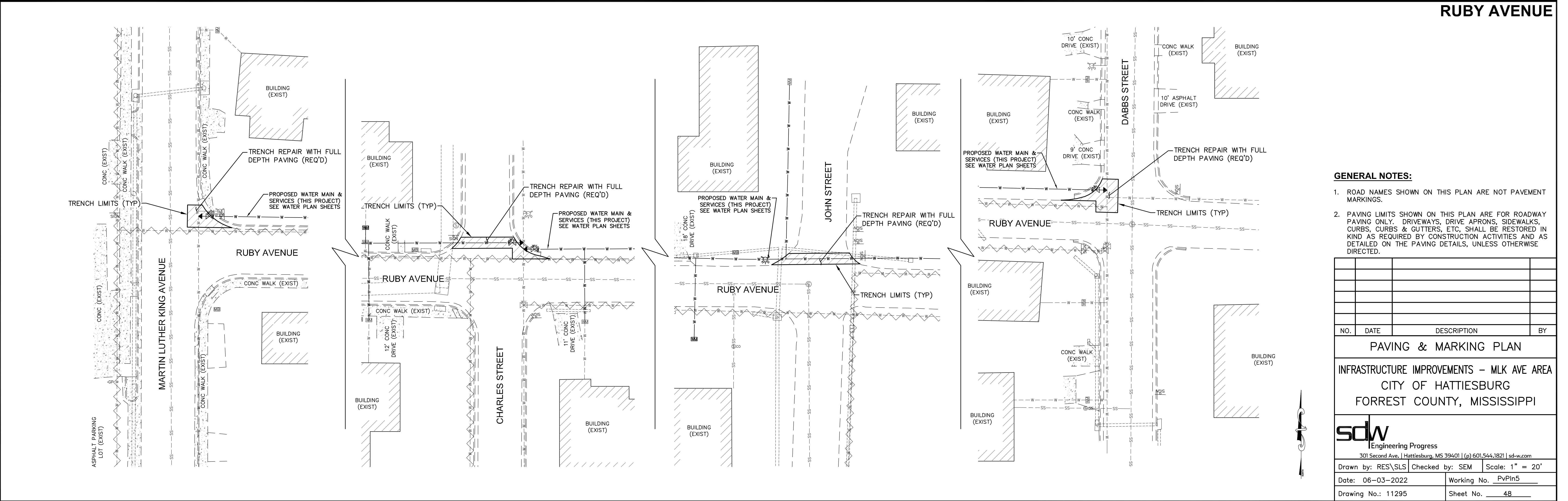
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC., SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress 301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 05-27-2022		Working No. PvPin4	
Drawing No.: 11295		Sheet No. 47	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Plan_Paving.dwg, P:\P15, 6/6/2022 3:51:48 PM



CYPRESS AVENUE
RUBY AVENUE

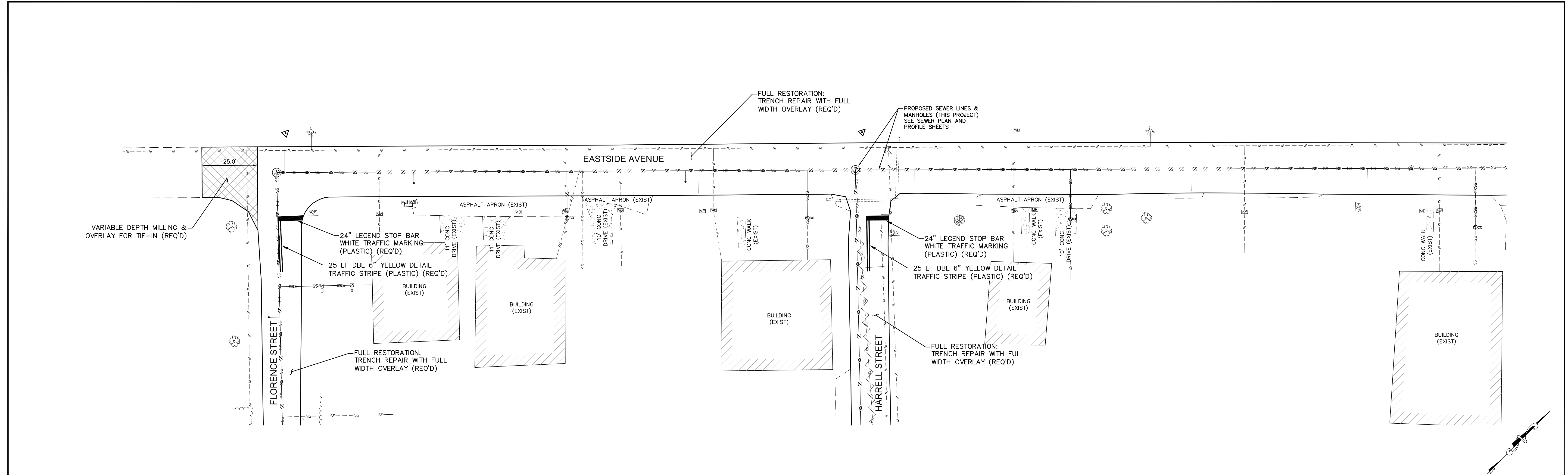


GENERAL NOTES:

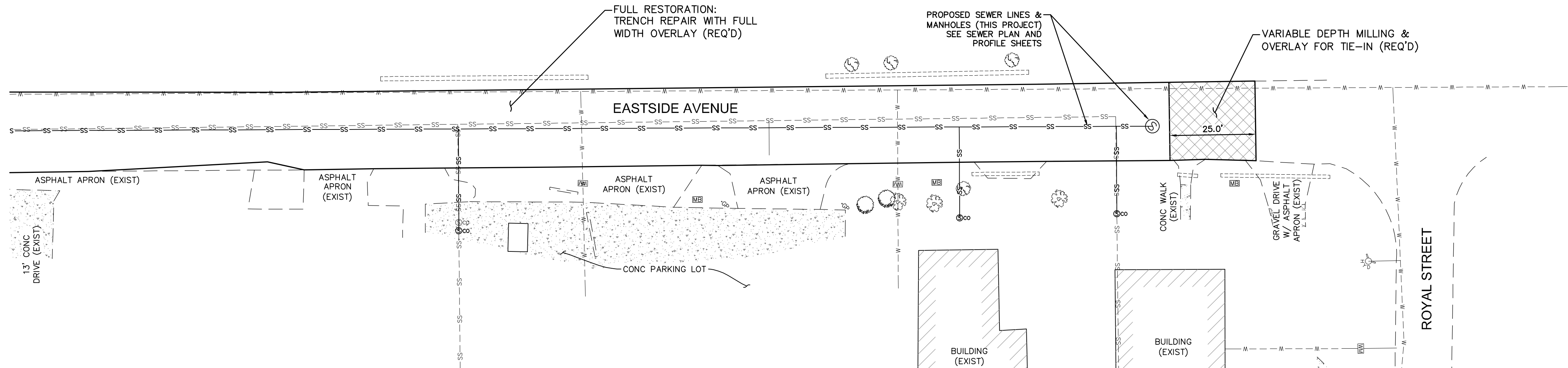
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No. PvPin5	
Drawing No.: 11295		Sheet No. 48	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Plan_Paving.dwg, P:\P\6.6.2022 3:51:51 PM



EASTSIDE AVENUE
EASTSIDE AVENUE



GENERAL NOTES:

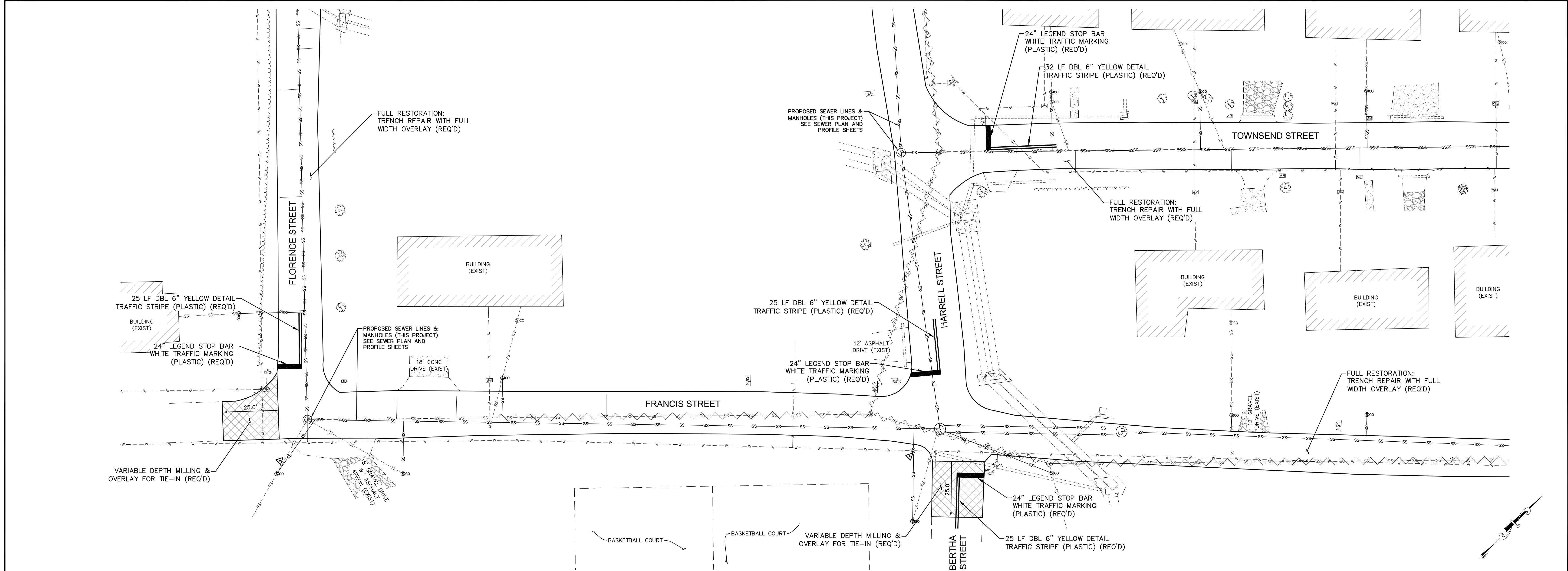
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY

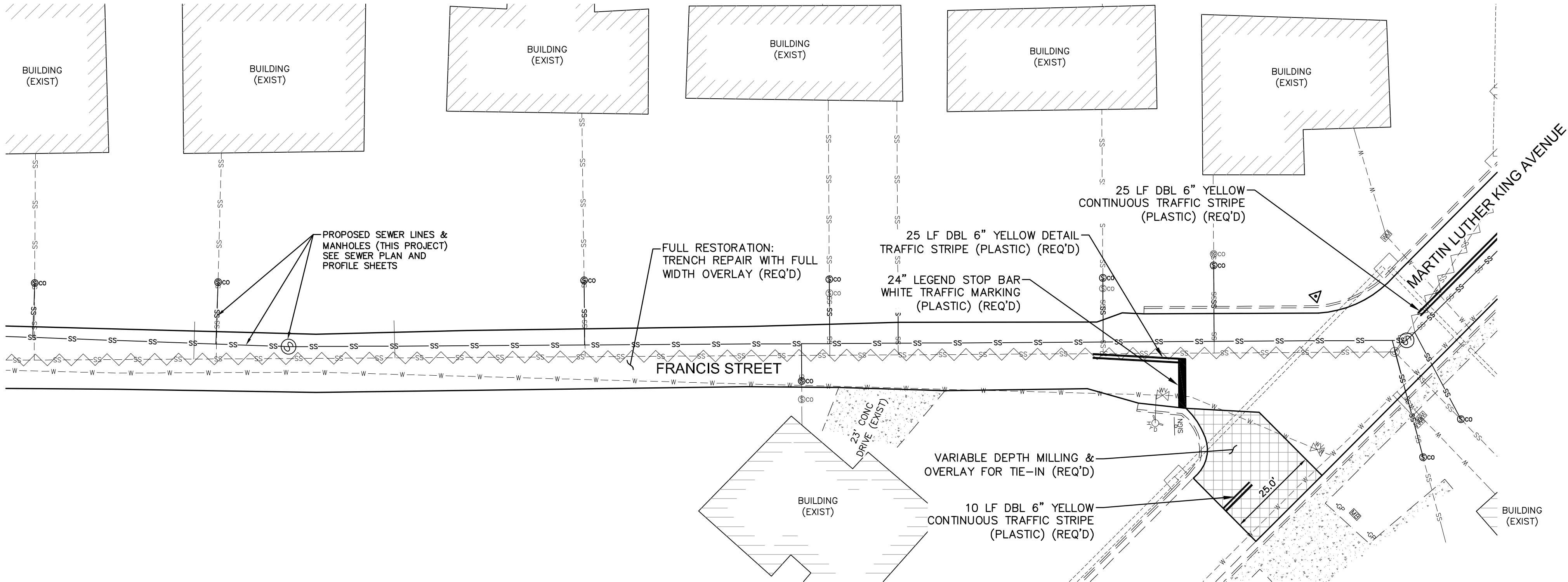
PAVING & MARKING PLAN
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI

sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com		
Drawn by: RES\SLS	Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022	Working No. PvPin6	
Drawing No.: 11295	Sheet No. 49	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Plan_Paving.dwg, P:\Plot7, 6/6/2022 3:51:53 PM



FRANCIS STREET & TOWNSEND STREET
FRANCIS STREET

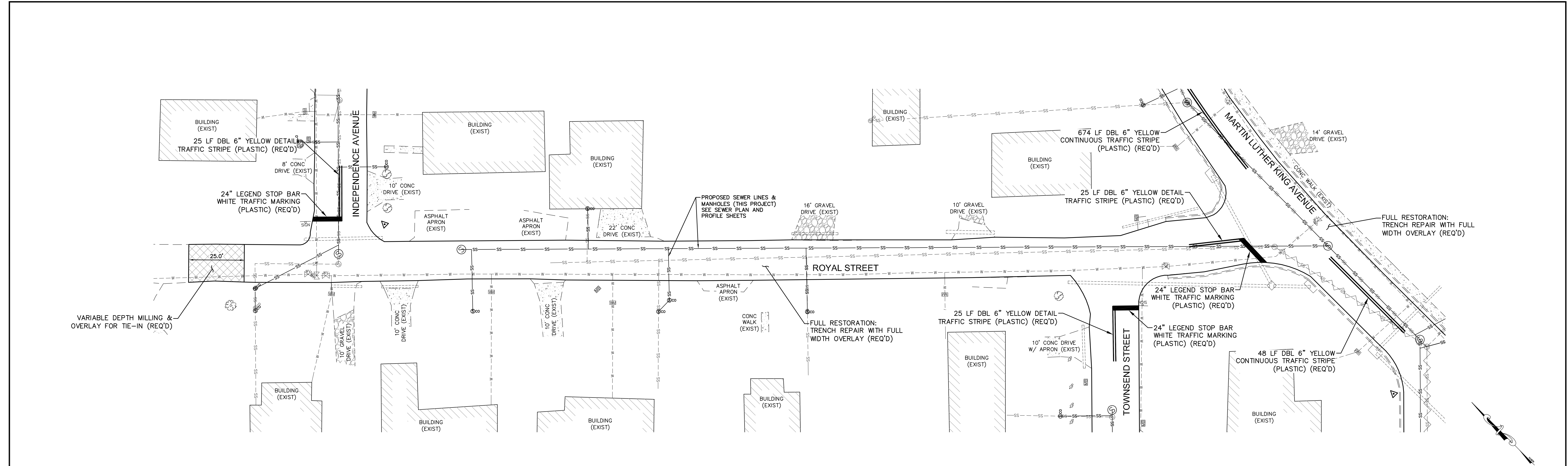


GENERAL NOTES:

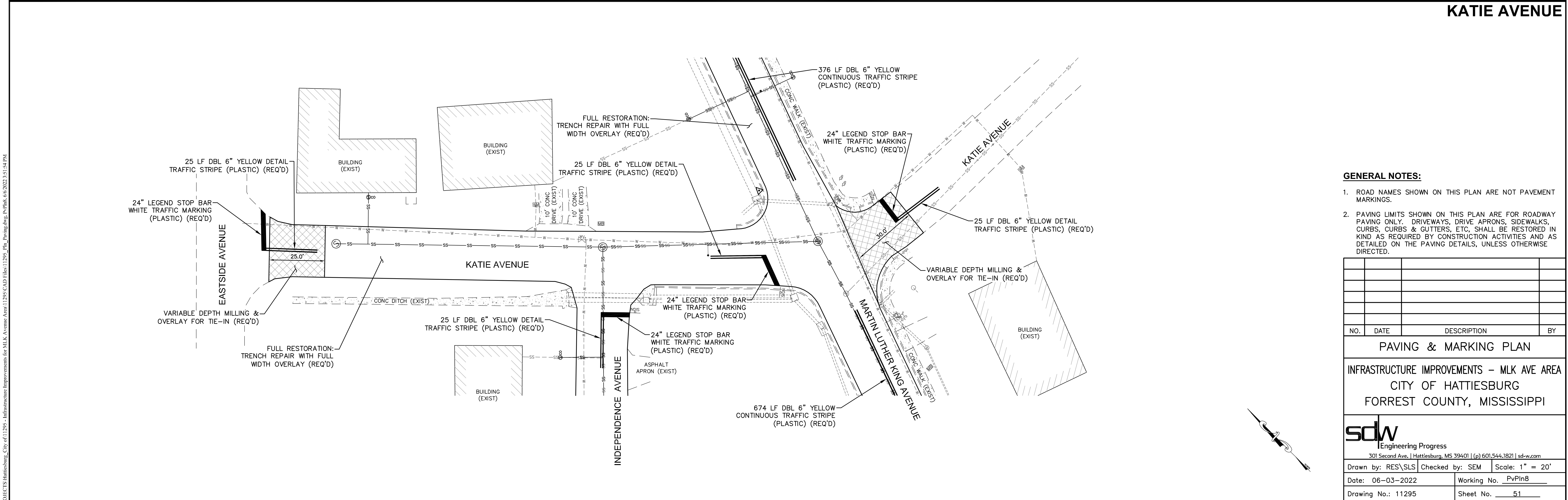
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-03-2022		Working No.: PvPin7	
Drawing No.: 11295		Sheet No.: 50	

G:\PROJECTS\Hattiesburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Plan_Paving.dwg, P:\P18, 6/6/2022 3:51:54 PM



ROYAL STREET
KATIE AVENUE



GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
INFRASTRUCTURE IMPROVEMENTS – MLK AVE AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	RES\SLS	Checked by:	SEM
Date:	06-03-2022	Working No.:	PvPin8
Drawing No.:	11295	Sheet No.:	51

G:\PROJECTS\Hattiesburg_City of\11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_CivilMapNotes.dwg, V\$1, 5/31/2022 1:18:28 PM

VEGETATION SCHEDULE						
EROSION CONTROL ITEMS		SEASONAL APPLICATIONS - DATES & RATES				REQUIREMENTS
		SPRING & SUMMER		FALL & WINTER		
	ITEMS	RATES	DATES	RATES	DATES	
	TOPSOIL FOR SLOPE TREATMENT (LVM)	4" THICK	MARCH 1 TO SEPTEMBER 1	4" THICK	SEPTEMBER 1 TO MARCH 1	TOPSOIL REQUIRED ON SLOPES DETERMINED BY THE ENGINEER DURING CONSTRUCTION
	STANDARD GROUND PREPARATION	PER SQ. FT.	MARCH 1 TO SEPTEMBER 1	PER SQ. FT.	SEPTEMBER 1 TO MARCH 1	GROUND PREPARATION REQUIRED ON AREAS TO RECEIVE SOLID SODDING OR SEEDING, AS APPLICABLE
	AGRICULTURAL LIMESTONE	3 TONS / ACRE	MARCH 1 TO SEPTEMBER 1	3 TONS / ACRE	SEPTEMBER 1 TO MARCH 1	LIMESTONE SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	COMBINATION FERTILIZER (13–13–13)	1000 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	1000 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	FERTILIZER SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	SUPER PHOSPHATE	0.5 TON / ACRE (EST)	MARCH 1 TO SEPTEMBER 1			SUPER PHOSPHATE (FOR BID ITEM PURPOSES)
	SEEDING (BERMUDA GRASS)	20 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	20 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	SEED REQUIRED ON DISTURBED AREAS. UNHULLED SEED MAY BE REQUIRED DURING THE DORMANT SEASON AS DIRECTED
	SEEDING (TALL FESCUE)			15 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED IN DISTURBED AREAS
	SEEDING (CRIMSON CLOVER)			20 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED ON DISTURBED AREA
	VEGETATIVE MATERIAL FOR MULCH	2 TONS / ACRE (EST)	MARCH 1 TO SEPTEMBER 1	2 TONS / ACRE (EST)	SEPTEMBER 1 TO MARCH 1	THE ENGINEER WILL DESIGNATE THE RATES OF APPLICABLE (SEE SUBSECTION 215–03.3)
	SOLID SODDING	PER SQ. YD.	MARCH 1 TO SEPTEMBER 1	PER SQ. YD.	SEPTEMBER 1 TO MARCH 1	SOLID SOD REQUIRED ON AREAS SPECIFIED IN THE CONTRACT OR BY THE ENGINEER
	WATERING	20 GAL / S.Y. (EST)	MARCH 1 TO SEPTEMBER 1	20 GAL. / S.Y. (EST)	SEPTEMBER 1 TO MARCH 1	TO BE USED AS DIRECTED IN THE PLANTING AND ESTABLISHING OF SOLID SOD
	INSECT PEST CONTROL	PER ACRE		PER ACRE		SEE SECTION 220
TEMPORARY EROSION CONTROL ITEMS						
	LIGHT GROUND PREPARATION	PER SQ. YD.		PER SQ. YD.		APPROXIMATELY HALF SQ.YD. STANDARD GROUND PREPARATION
	COMBINATION FERTILIZER (13–13–13)	0.25 TONS/ ACRE		0.25 TONS/ ACRE		QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (BROWN TOP MILLET)	20 LBS / ACRE	APRIL 1 TO AUGUST 31			QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (RYE GRASS)			25 LBS / ACRE	SEPTEMBER 1 TO MARCH 31	QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (OATS)			90 LBS / ACRE	SEPTEMBER 1 TO DECEMBER 15	QUANTITY BASED ON LIGHT GROUND PREPARATION
	VEGETATIVE MATERIAL FOR MULCH	1 TON / ACRE (EST)		1 TON / ACRE (EST)		QUANTITY BASED ON LIGHT GROUND PREPARATION

- ① ALL AREAS THAT HAVE BEEN VEGETATED, UNDER THIS CONTRACT, FOR AT LEAST (60) SIXTY DAYS, SHALL RECEIVE ADDITIONAL APPLICATION(S) OF FERTILIZER(S) OF THE TYPE(S) AND RATE(S) OF APPLICATIONS AS DETERMINED BY SOIL TEST OR AS DIRECTED DURING THE GROWING SEASONS THE CONTRACT IS IN FORCE. GROUND PREPARATION WILL NOT BE REQUIRED FOR THE ADDITIONAL APPLICATIONS.
- ② PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 100% OF THE ACREAGE WILL BE SEEDDED.
- ③ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE WILL BE SEEDDED.
- ④ QUANTITY ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE VEGETATED MAY REQUIRED TREATMENT.
- ⑤ THIS ITEM MAY BE OMITTED ON AREAS SELECTED BY THE ENGINEER.
- ⑥ BAHIAGRASS WILL NOT BE PERMITTED AS A MULCH MATERIAL.
- ⑦ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 75% OF THE ACREAGE SEEDDED MAY REQUIRE TOPSOIL

TEMPORARY EROSION CONTROL ITEMS REQUIRED FOR DETOURS

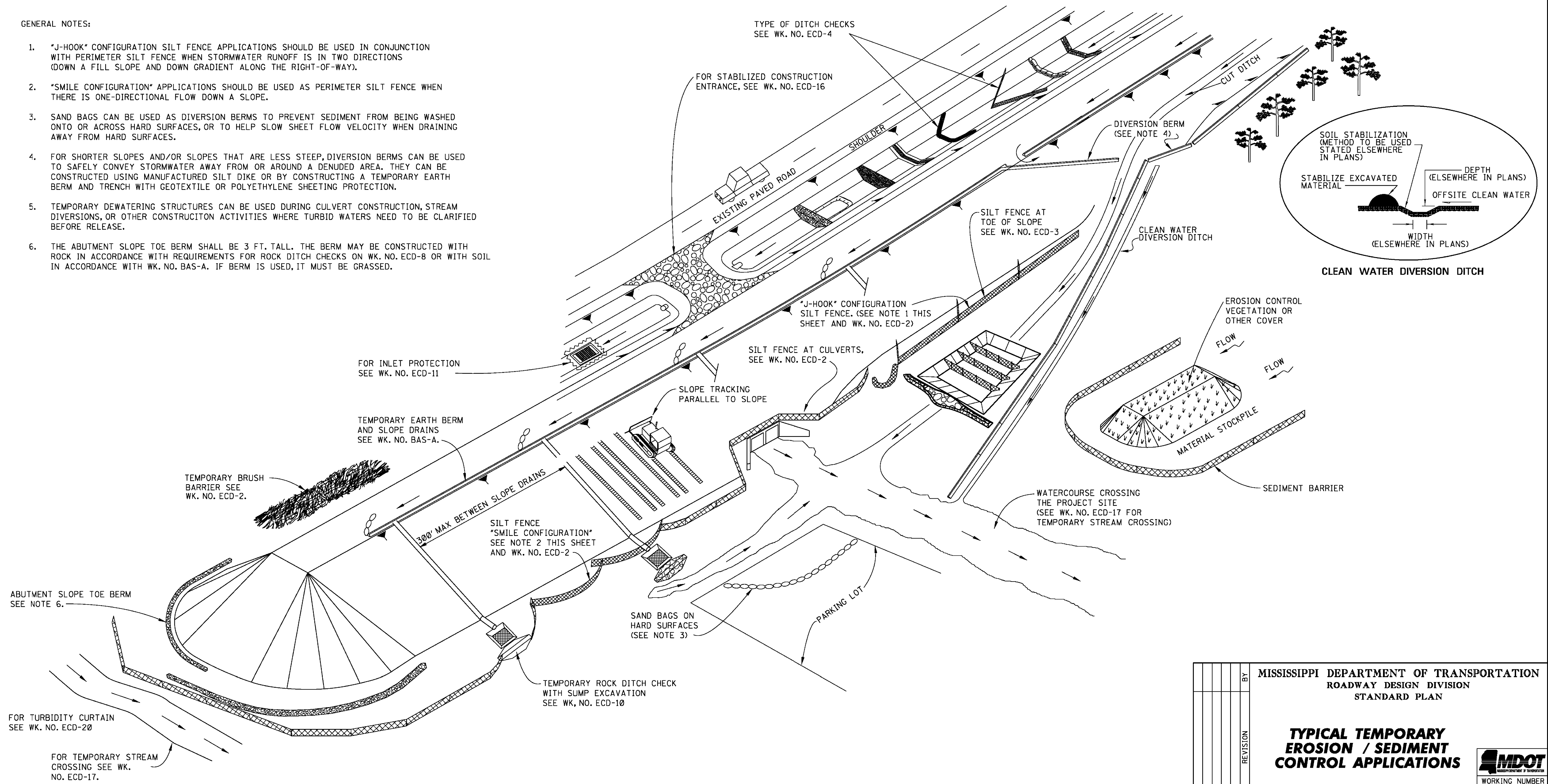
ITEM	RATE	SEASONAL LIMITATIONS
STANDARD GROUND PREPARATION	---	---
COMBINATION FERTILIZER (13–13–13)	500 LBS/ACRE	---
SEEDING (BERMUDA GRASS)	10 LBS/ACRE	---
SEEDING (TALL FESCUE)	20 LBS/ACRE	AUGUST 15 TO MARCH 15
VEGETATIVE MATERIAL FOR MULCH	2 LBS/ACRE	---

NOTE: ALL VEGETATION ON THIS PROJECT SHALL BE PAID FOR UNDER AS OUTLINED IN THE BID PROPOSAL. ITEMS SHALL BE APPLIED USING THE RATES OF APPLICATION AS SHOWN ON THIS SHEET AND WILL NOT BE MEASURED FOR SEPARATE PAYMENT.

NO.	DATE	DESCRIPTION	BY
VEGETATION SCHEDULE			
INFRASTRUCTURE IMPROVEMENTS – MLK AREA			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	SLS	Checked by:	SEM Scale: NONE
Date:	05–27–2022	Working No.	VS1
Drawing No.:	11295	Sheet No.	52

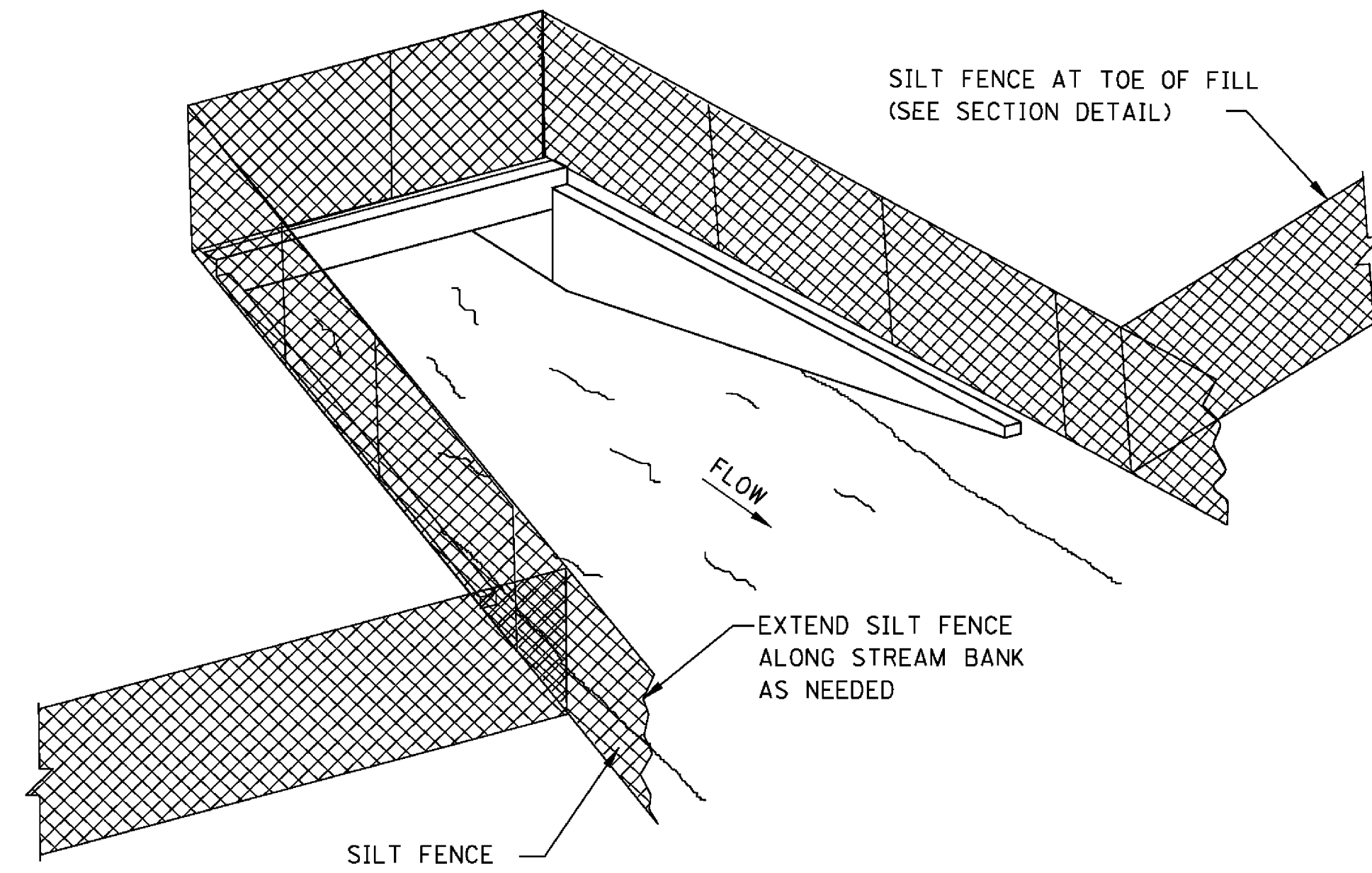
GENERAL NOTES:

1. "J-HOOK" CONFIGURATION SILT FENCE APPLICATIONS SHOULD BE USED IN CONJUNCTION WITH PERIMETER SILT FENCE WHEN STORMWATER RUNOFF IS IN TWO DIRECTIONS (DOWN A FILL SLOPE AND DOWN GRADIENT ALONG THE RIGHT-OF-WAY).
2. "SMILE CONFIGURATION" APPLICATIONS SHOULD BE USED AS PERIMETER SILT FENCE WHEN THERE IS ONE-DIRECTIONAL FLOW DOWN A SLOPE.
3. SAND BAGS CAN BE USED AS DIVERSION BERMS TO PREVENT SEDIMENT FROM BEING WASHED ONTO OR ACROSS HARD SURFACES, OR TO HELP SLOW SHEET FLOW VELOCITY WHEN DRAINING AWAY FROM HARD SURFACES.
4. FOR SHORTER SLOPES AND/OR SLOPES THAT ARE LESS STEEP, DIVERSION BERMS CAN BE USED TO SAFELY CONVEY STORMWATER AWAY FROM OR AROUND A DENUDED AREA. THEY CAN BE CONSTRUCTED USING MANUFACTURED SILT DIKE OR BY CONSTRUCTING A TEMPORARY EARTH BERM AND TRENCH WITH GEOTEXTILE OR POLYETHYLENE SHEETING PROTECTION.
5. TEMPORARY DEWATERING STRUCTURES CAN BE USED DURING CULVERT CONSTRUCTION, STREAM DIVERSIONS, OR OTHER CONSTRUCTION ACTIVITIES WHERE TURBID WATERS NEED TO BE CLARIFIED BEFORE RELEASE.
6. THE ABUTMENT SLOPE TOE BERM SHALL BE 3 FT. TALL. THE BERM MAY BE CONSTRUCTED WITH ROCK IN ACCORDANCE WITH REQUIREMENTS FOR ROCK DITCH CHECKS ON WK. NO. ECD-8 OR WITH SOIL IN ACCORDANCE WITH WK. NO. BAS-A. IF BERM IS USED, IT MUST BE GRASSED.

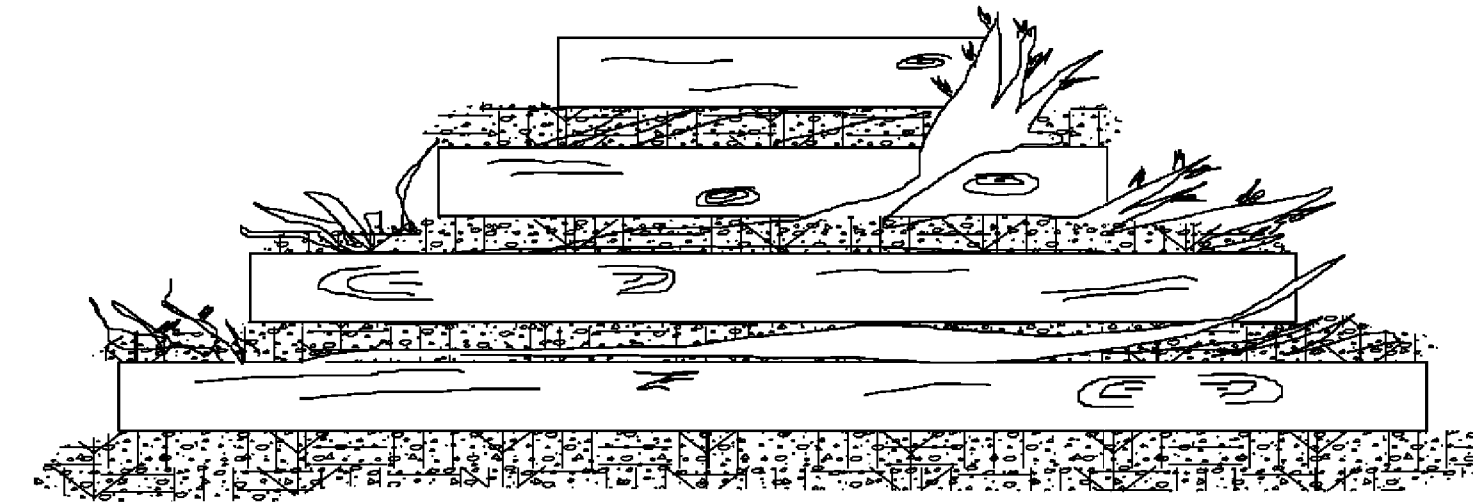


MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
TYPICAL TEMPORARY EROSION / SEDIMENT CONTROL APPLICATIONS	
WORKING NUMBER ECD-1	
SHEET NUMBER 6101	
ISSUE DATE: AUGUST 01, 2017	

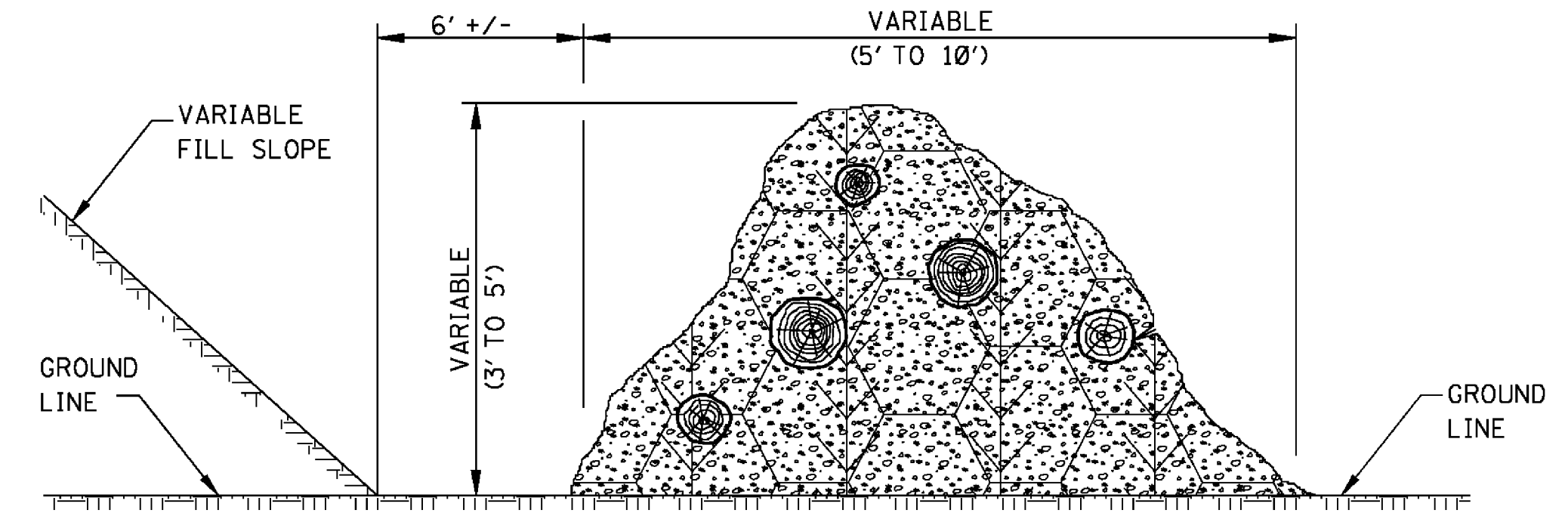
STATE	PROJECT NO.
MISS.	



SEDIMENT BARRIER AT CROSS DRAIN



FRONT ELEVATION



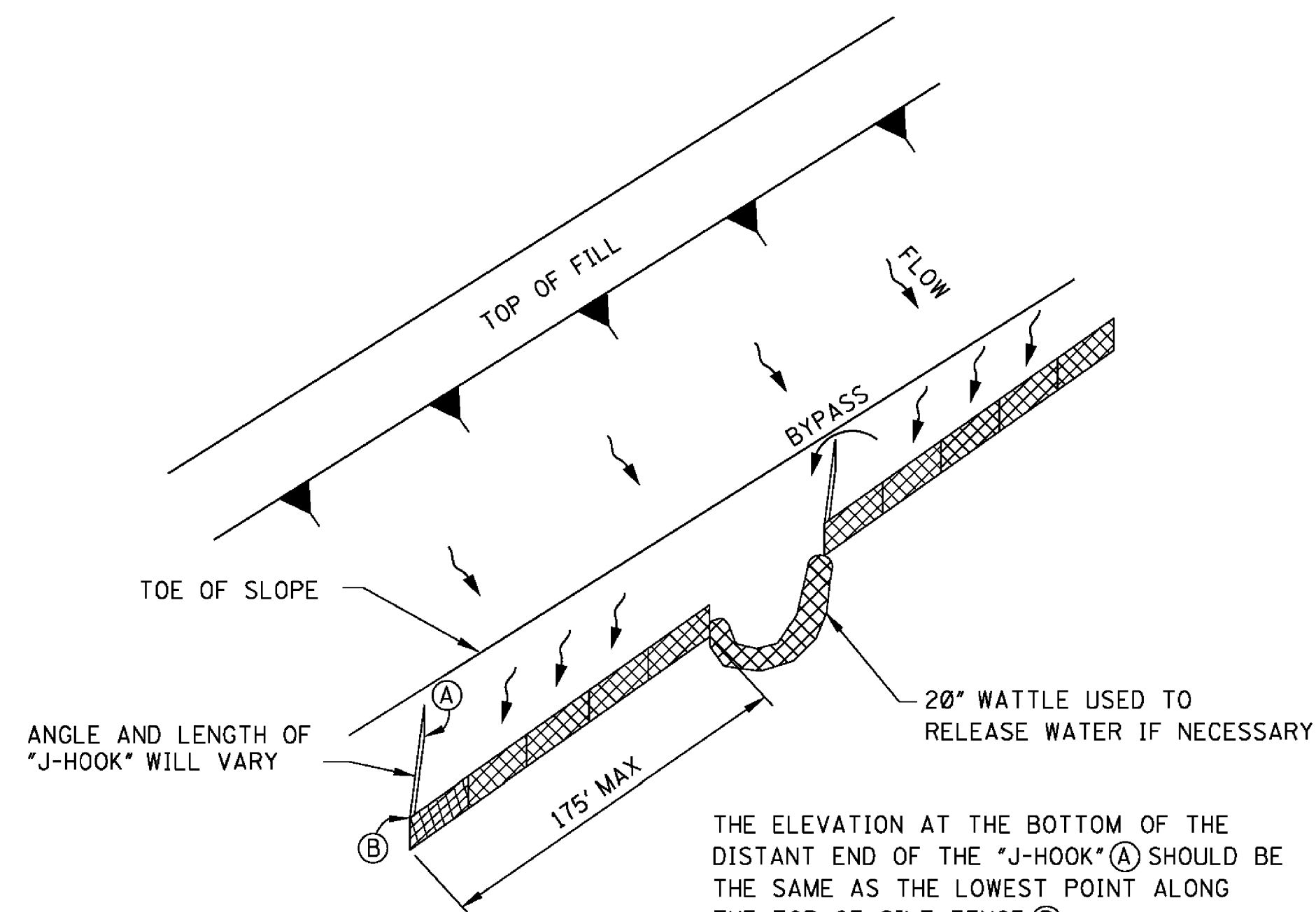
SIDE ELEVATION

TEMPORARY BRUSH BARRIER

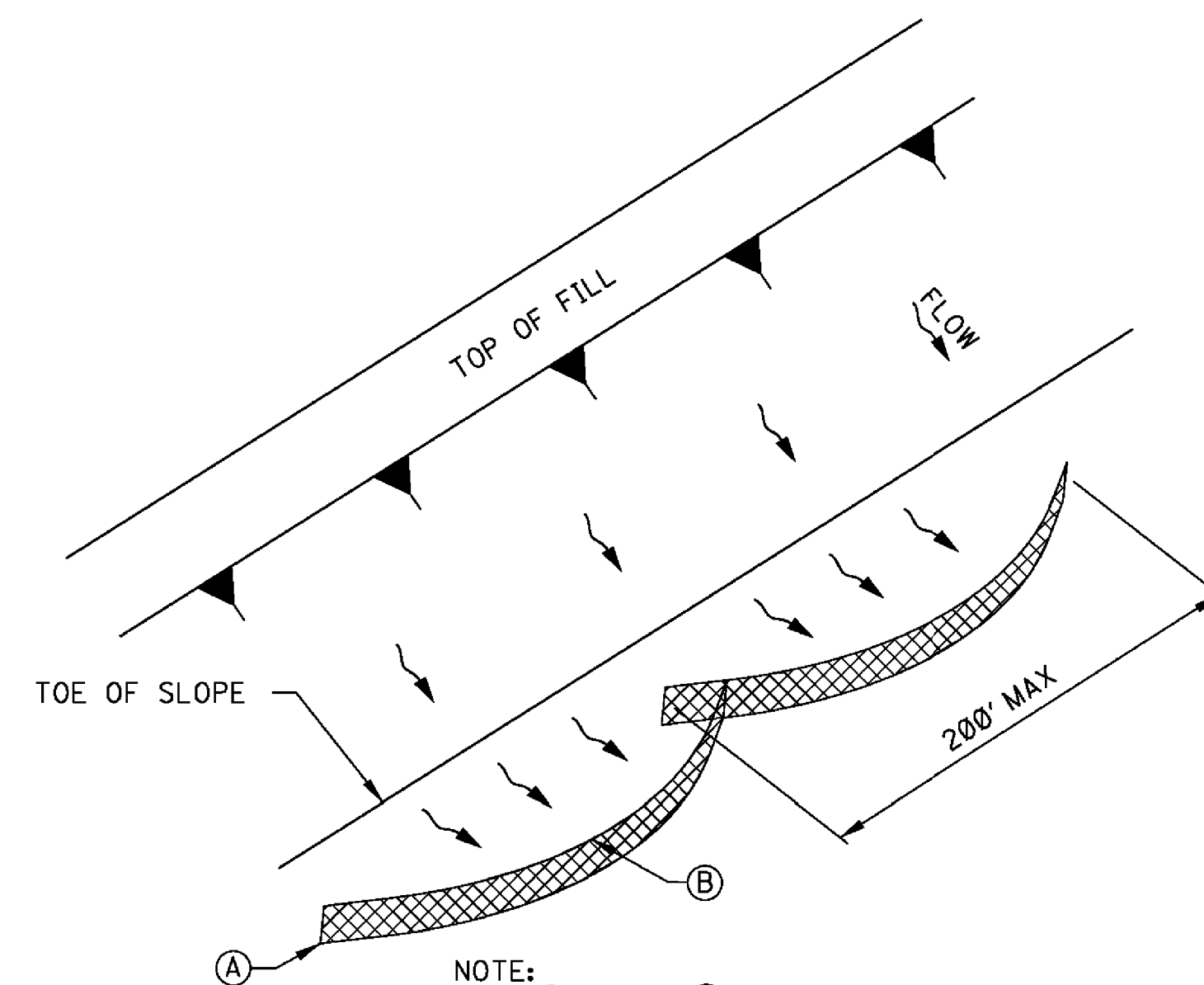
NOTES:

1. BRUSH BARRIER MAY BE USED WHERE NATURAL GROUND IS LEVEL OR SLOPING AWAY FROM PROJECT.
2. PLACE BRUSH, LOG AND TREE LAPS APPROXIMATELY PARALLEL TO TOE OF FILL SLOPE WITH SOME OF THE HEAVIER MATERIALS BEING PLACED ON TO TO PROPERLY SECURE THE BARRIER AS DETAILED AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED OR PERMITTED BY THE ENGINEER.
3. TO ALLOW WATER TO SEEP THROUGH BRUSH BARRIER, INTERMINGLE THE BRUSH, LOG AND TREE LAPS SO AS NOT TO FORM A SOLID DAM.
4. THE BRUSH BARRIER MAY BE CHOKED WITH FILTER FABRIC. THE COST OF FABRIC TO BE INCLUDED IN OTHER ITEMS BID.
5. TEMPORARY BRUSH BARRIER WILL NOT BE MEASURED FOR SEPARATE PAYMENT.

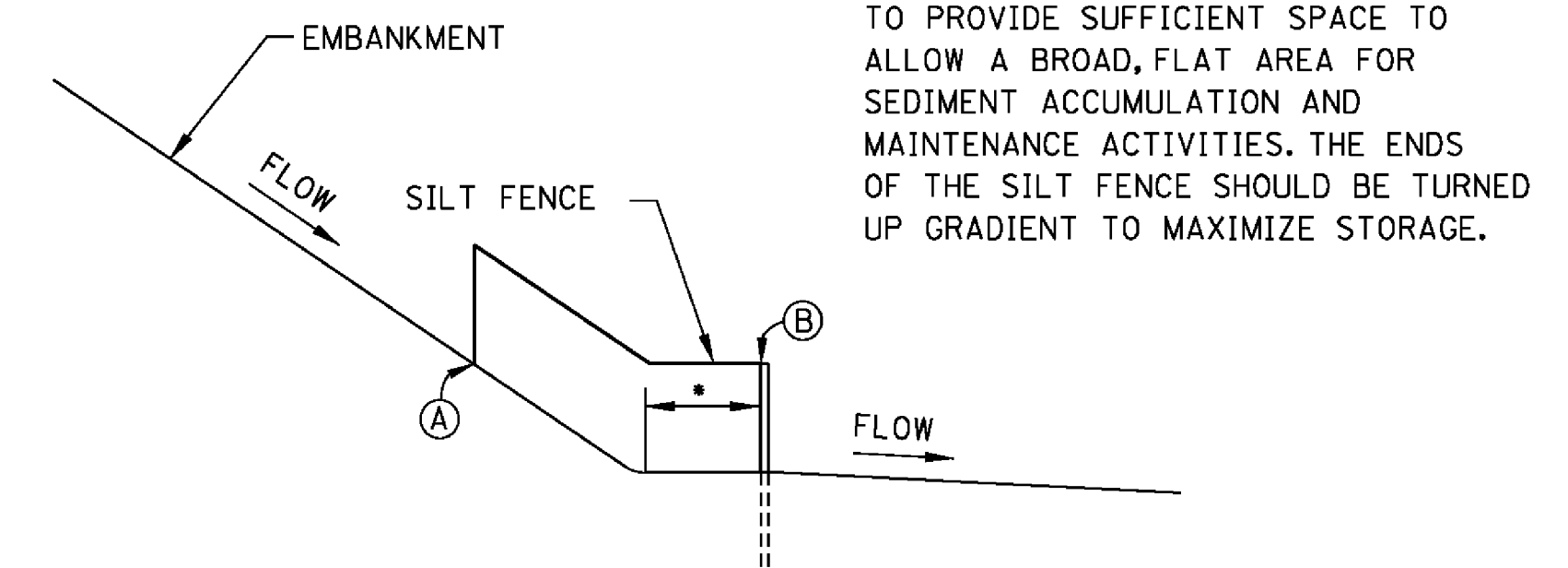
NOTE: ANCHOR AND INSTALL SILT FENCE PER DETAILS SHOWN ON WK. NO. ECD-3



"J-HOOK" SILT FENCE APPLICATION



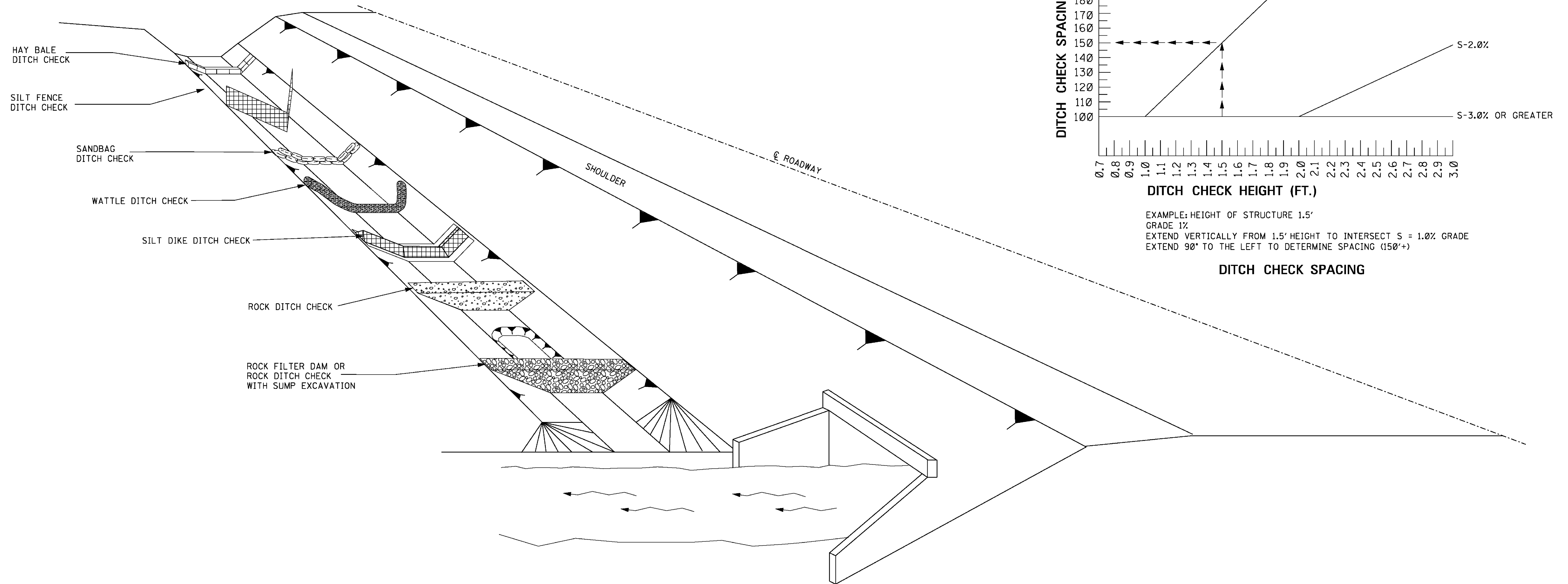
"SMILE-CONFIGURATION" SILT FENCE APPLICATION



**SILT FENCE SECTION AT
TOE OF FILL**

- SILT FENCE SHOULD BE LOCATED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE SUFFICIENT SPACE TO ALLOW A BROAD, FLAT AREA FOR SEDIMENT ACCUMULATION AND MAINTENANCE ACTIVITIES. THE ENDS OF THE SILT FENCE SHOULD BE TURNED UP GRADIENT TO MAXIMIZE STORAGE.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
					<i>DETAILS OF SEDIMENT BARRIER APPLICATIONS</i>
				DATE	 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-2 ISSUE DATE: AUGUST 01, 2017 SHEET NUMBER 6102



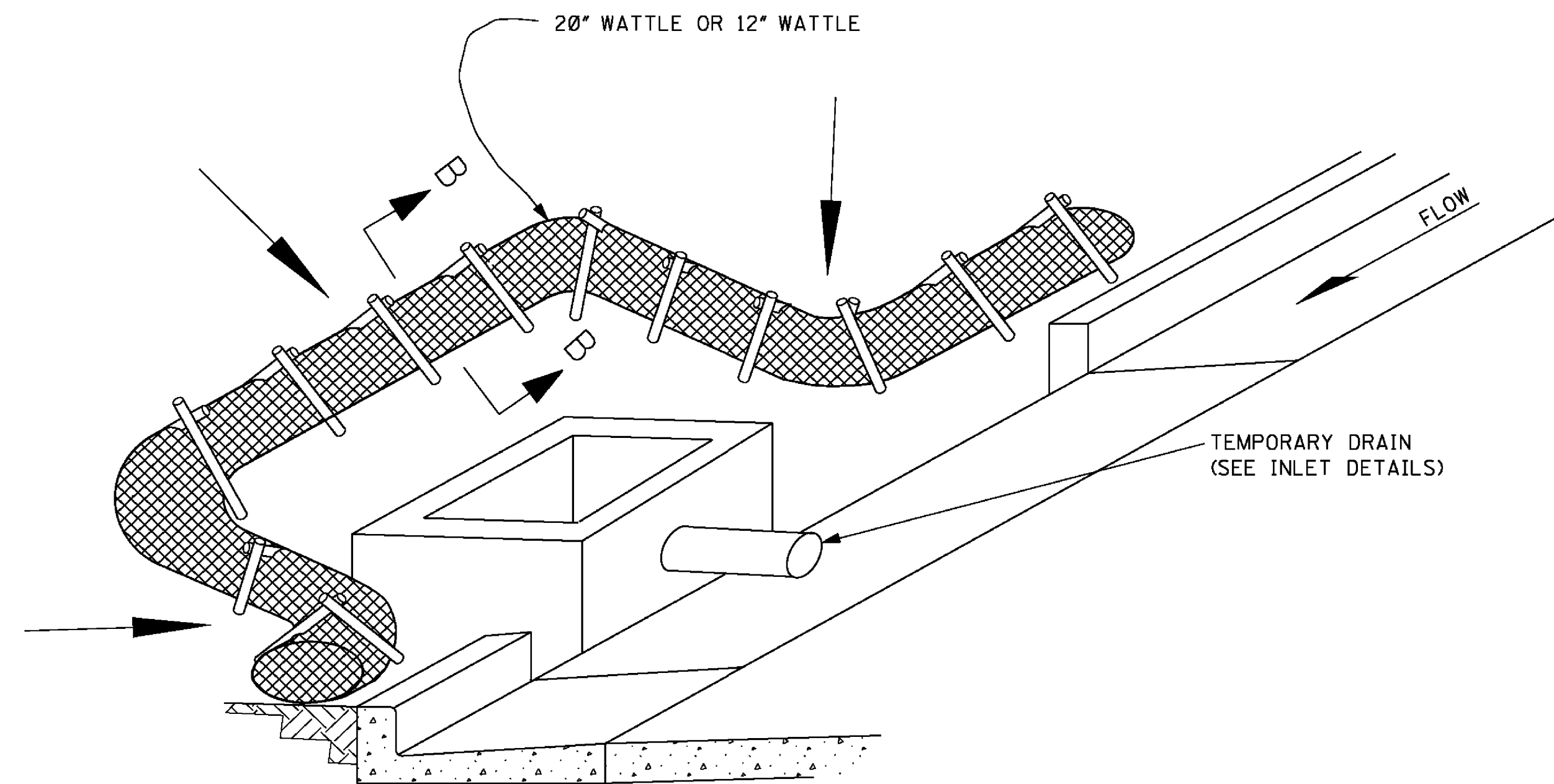
GENERAL NOTES:

1. THE DITCH CHECK PERSPECTIVE ILLUSTRATES A TOOL BOX OF TEMPORARY PRACTICES THAT MAY BE USED. DITCH CHECKS ARE INSTALLED TO CONTROL RUNOFF VELOCITY AND THUS REDUCE EROSION AND PROVIDE FOR TRAPPING OF SEDIMENTS.
2. SELECTION OF THE APPROPRIATE DITCH CHECK SHOULD BE A FUNCTION OF CONSTRUCTION PHASE, DRAINAGE AREA, DITCH GRADIENT, SOIL TYPE, ECONOMY AND SAFETY.
3. DITCH CHECKS CAN BE REMOVED FOR MAINTENANCE AND/OR REPLACEMENT BUT MUST REMAIN IN PLACE UNTIL UPSLOPE AREAS HAVE BEEN PERMANENTLY STABILIZED. MAINTENANCE INCLUDES REMOVAL OF SEDIMENT BEGINNING WHEN SEDIMENT ACCUMULATION REACHES $\frac{1}{2}$ THE CAPACITY OR HEIGHT OF THE STRUCTURE AND NEVER ALLOWING FOR SEDIMENT TO ACCUMULATE MORE THAN $\frac{1}{2}$ THE VOLUME OR HEIGHT OF THE DITCH CHECK STRUCTURE.
4. HAY BALES SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
5. SILT FENCE DITCH CHECKS SHOULD BE USED WHERE IT HAS BEEN DETERMINED THAT HAY BALE CHECKS ARE INADEQUATE. SILT FENCE DITCH CHECKS SHOULD BE USED TO INTERCEPT LOW VOLUME FLOWS IN LOW TO MODERATE GRADIENT DITCHES.
6. SANDBAG DITCH CHECKS SHOULD BE USED FOR VELOCITY REDUCTION AND MINIMAL SEDIMENT TRAPPING IN CONCRETE PAVED DITCHES OR IN DITCHES THAT HAVE ROCK BOTTOMS.
7. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
8. SILT DIKES CAN BE USED IN DITCHES WITH CONCENTRATED FLOWS WITHIN THE CLEAR ZONE WHERE RIPRAP CAN NOT BE USED. AS CONSTRUCTION PROGRESSES.
9. ROCK DITCH CHECKS WITH SUMP EXCAVATION CAN BE PLACED IN DITCHES TO ASSURE ON-SITE SEDIMENT TRAPPING REQUIREMENTS ARE MET. DITCH CHECK WITH SUMP EXCAVATION IS USED WHEN DITCHES RECEIVE DRAINAGE FROM CUT OR FILL SLOPES OR OTHER CRITICAL AREAS WHERE SOIL EROSION IS EXPECTED. DRAINAGE AREA FOR A TEMPORARY SEDIMENT TRAP SHOULD BE LIMITED TO 3 ACRES. THEY CAN BE USED IN SERIES TO INCREASE ON-SITE SEDIMENT TRAPPING EFFICIENCY.
10. DITCH CHECKS, IN NO CASE, SHALL BE PLACED IN LIVE STREAMS.
11. CONFIGURATION AND SPACING MAY BE ADJUSTED IF APPROVED BY THE ENGINEER TO ACCOMMODATE TRAVELWAY SAFETY, WATER FLOW, OR SOIL AND INSTALLATION CHALLENGES.

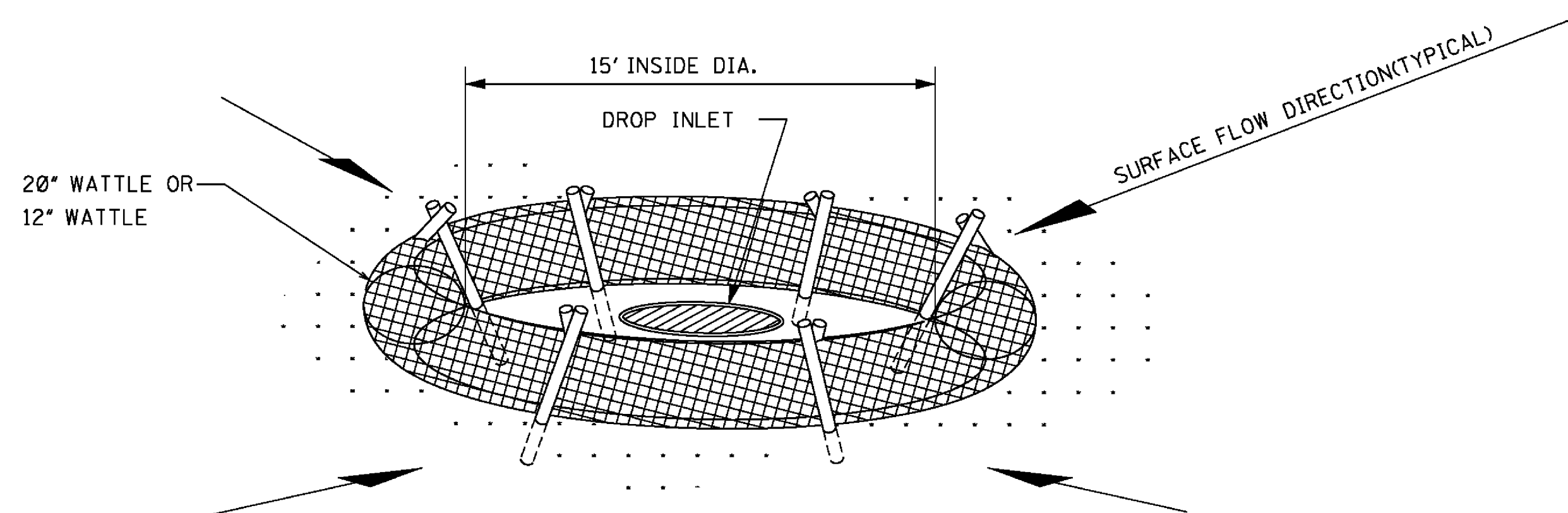
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN		 WORKING NUMBER ECD-4
				REVISION	DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS		
				DATE	ISSUE DATE: AUGUST 01, 2017		SHEET NUMBER 6104

STATE	PROJECT NO.
MISS.	

NOTE: SILT FENCE OR SANDBAGS MAY ALSO BE USED FOR THIS APPLICATION.
HAY BALES NOT ACCEPTABLE DURING THIS STAGE.



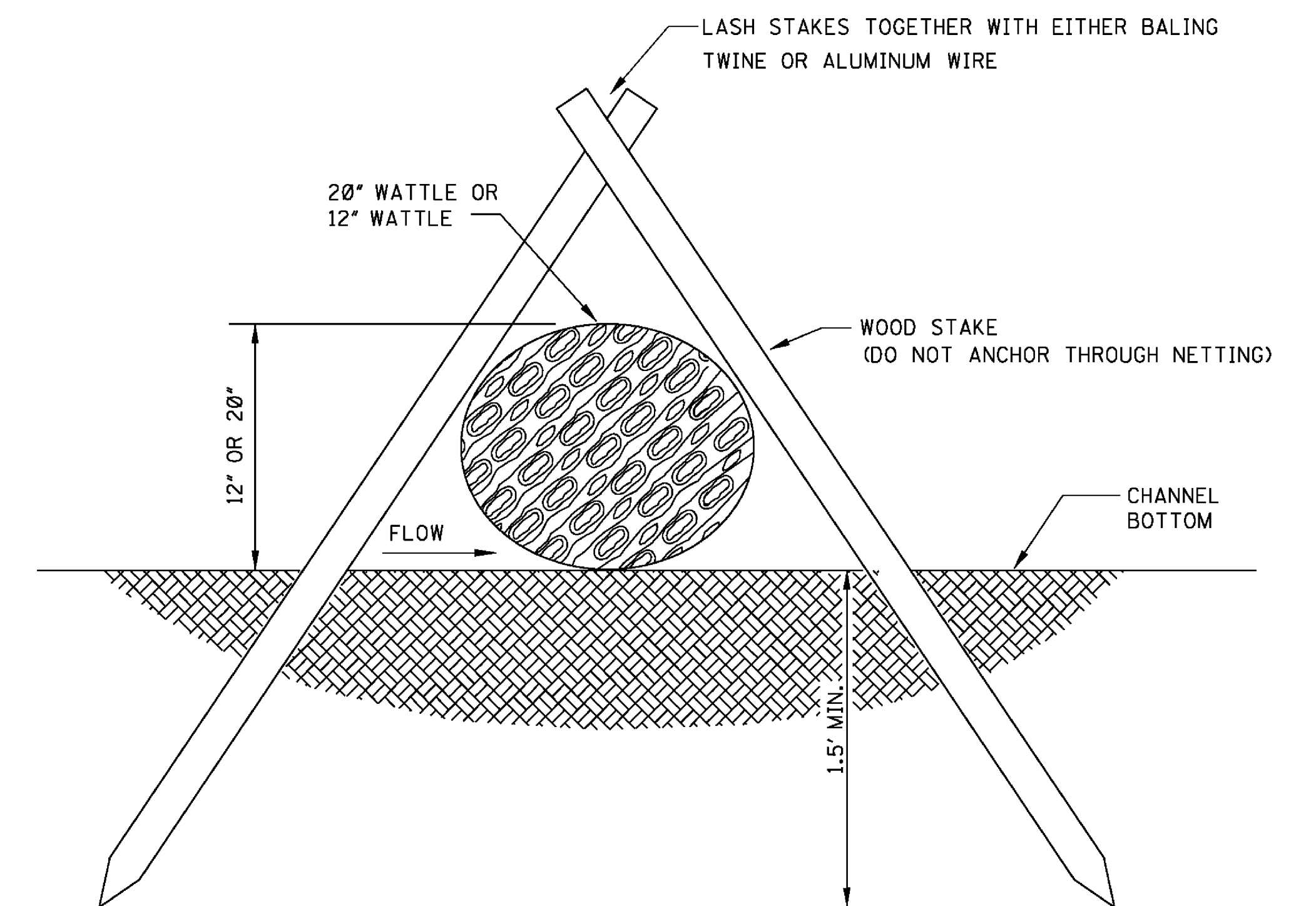
CURB INLET PROTECTION (STAGE 2)
SINGLE OR DOUBLE WING INLET



DROP INLET PROTECTION

NOTES:

1. ANCHORING STAKES SHALL BE SIZED, SPACED, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE WATTLE. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET.
2. OVERLAP ENDS OF WATTLES PER MANUFACTURER'S RECOMMENDATIONS (1' MIN., 3' MAX.)
3. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
4. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SANDBAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE WATTLES IN PLACE. COST OF SANDBAGS USED IN THIS APPLICATION SHALL BE INCLUDED IN OTHER ITEMS BID.



SECTION B-B

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
				DATE	<i>INLET PROTECTION DETAILS OF WATTLES</i> ISSUE DATE: <u> AUGUST 01, 2017 </u>

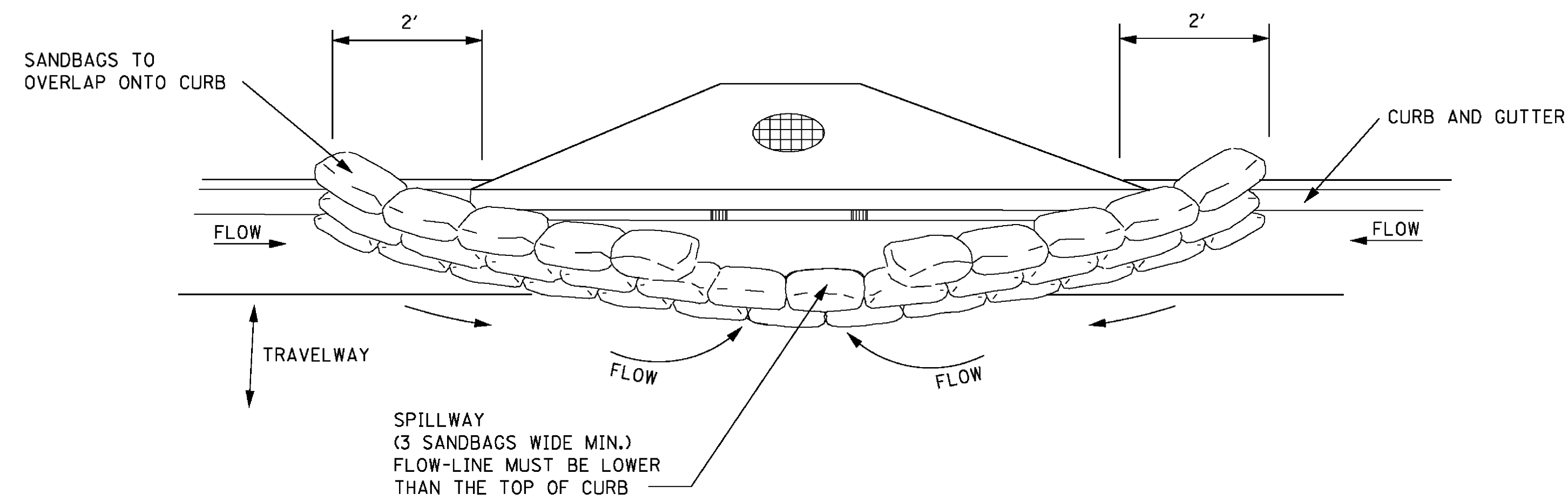


MISSISSIPPI DEPARTMENT OF TRANSPORTATION

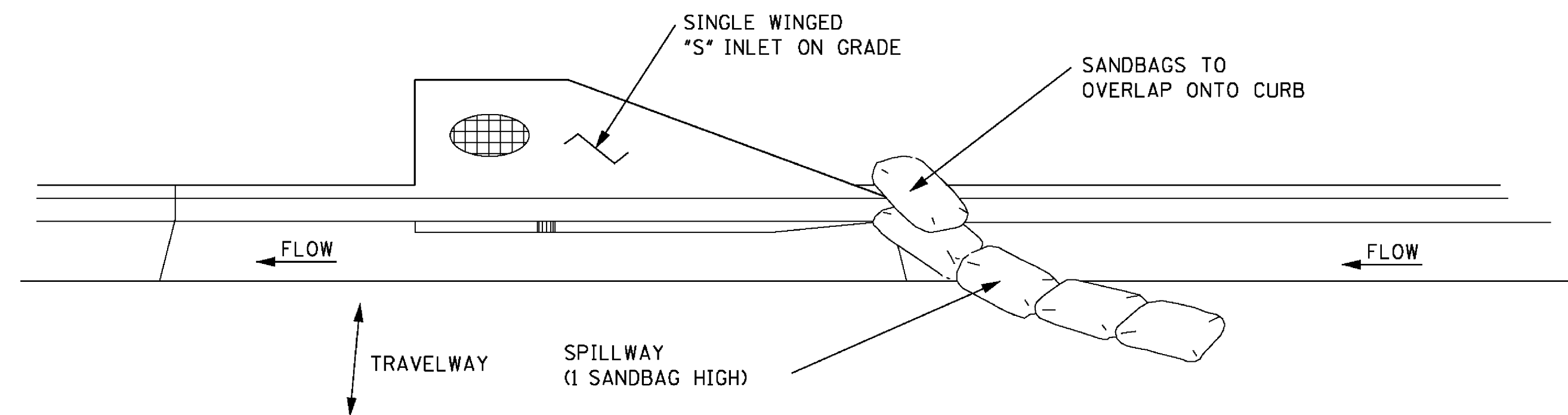
WORKING NUMBER
ECD-13

SHEET NUMBER
6113

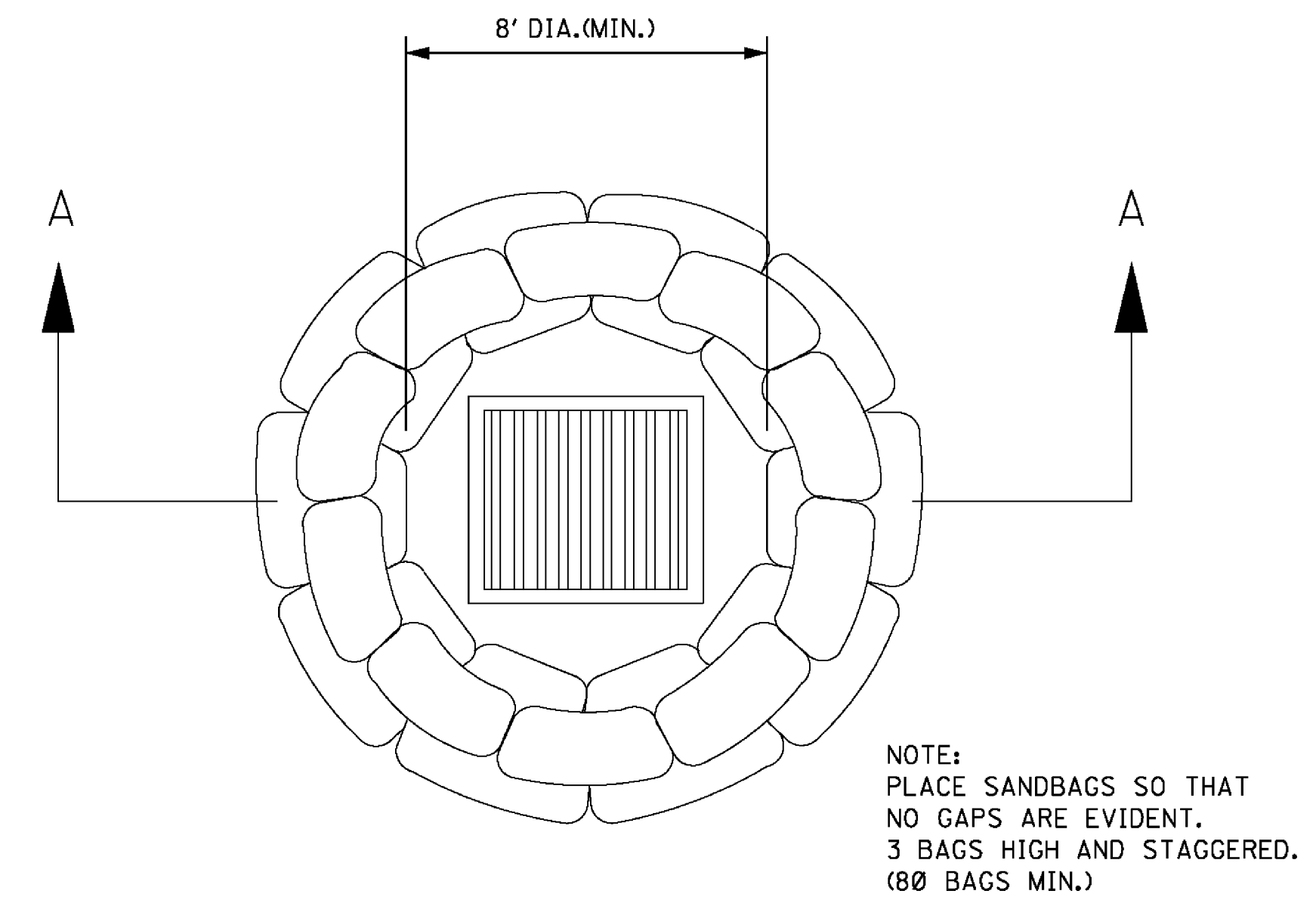
STATE	PROJECT NO.
MISS.	



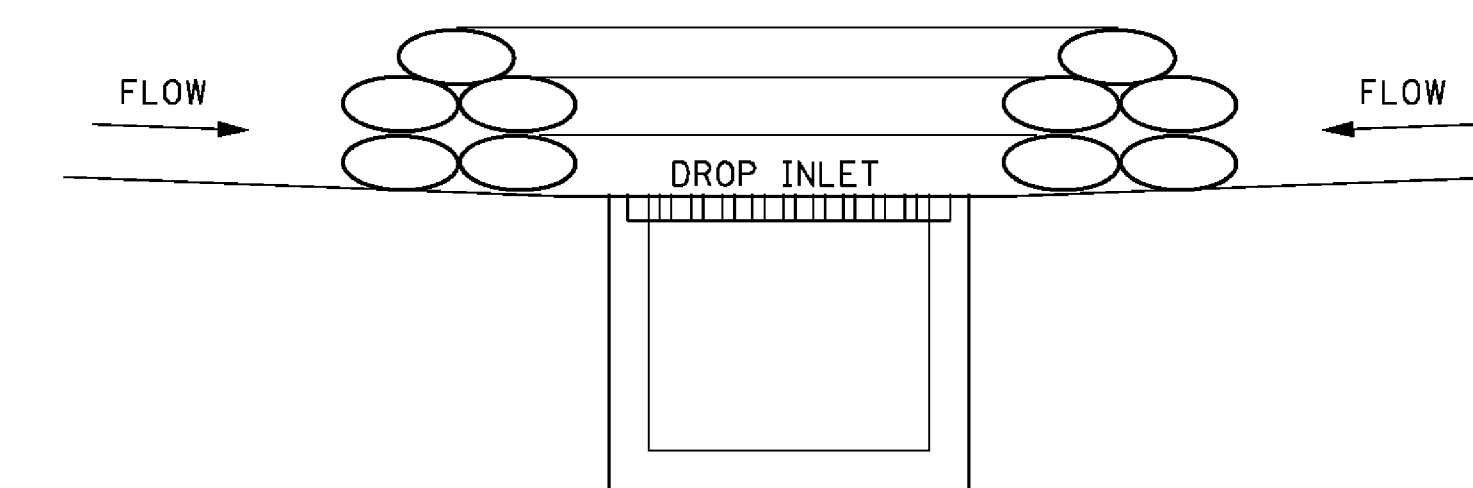
TYPICAL (SANDBAG) PROTECTION FOR INLET IN SAG



TYPICAL (SANDBAG) PROTECTION FOR INLET ON GRADE



DROP INLET
PLAN VIEW

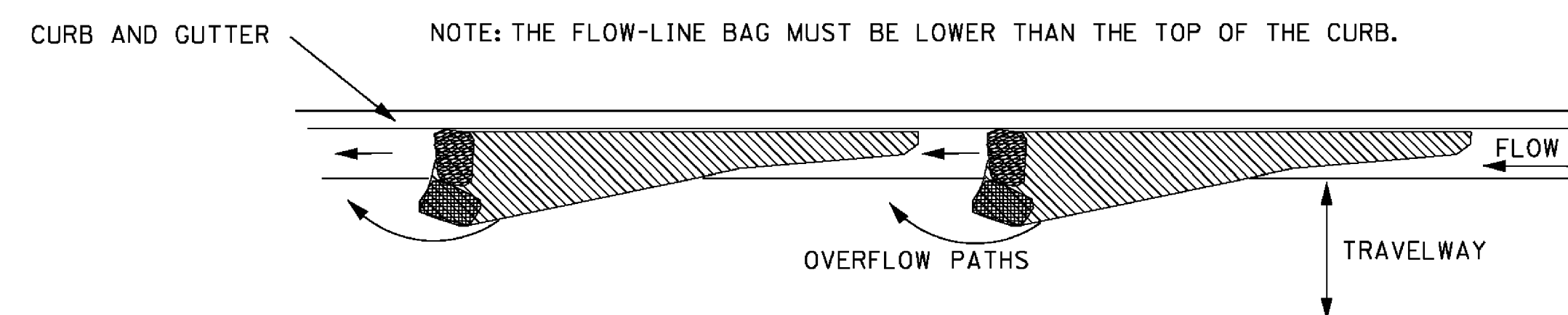


SECTION A-A

SANDBAG BARRIER

CURB INLET PROTECTION NOTES:

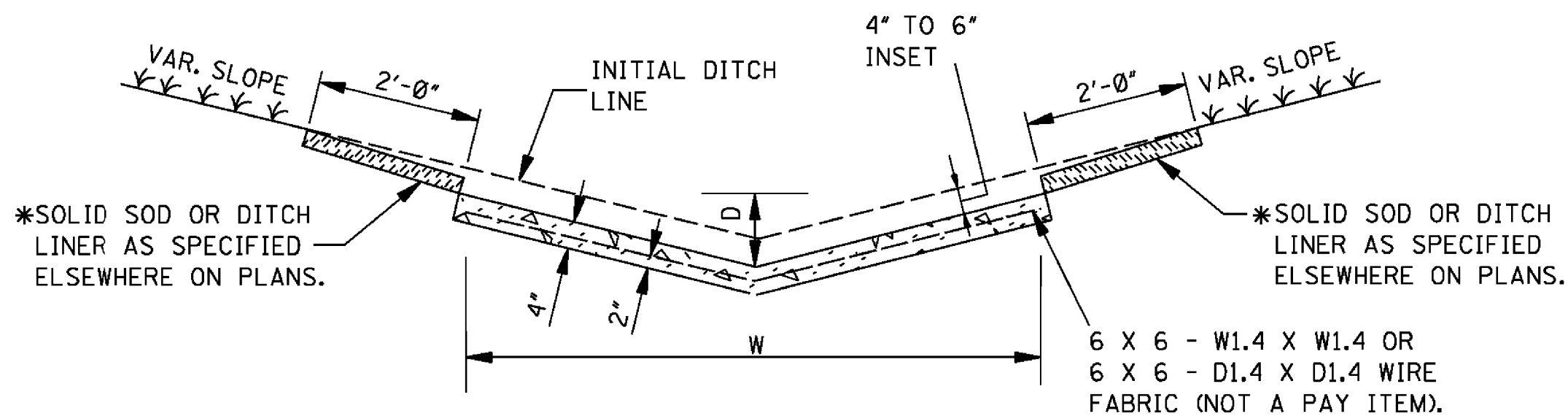
1. THIS CURB INLET PROTECTION METHOD CAN BE USED DURING ANY STAGE OF BASE AND PAVEMENT CONSTRUCTION.
2. BAG HEIGHT AND NUMBER OF BAGS SHOULD BE BASED ON CURB HEIGHT AND USE OF TRAVELWAY.
3. SEDIMENT SHOULD BE CONTROLLED PRIOR TO ENTERING GUTTER. GUTTER CHECKS AND INLET PROTECTION ARE FOR SECONDARY CONTROL.
4. REMOVE ACCUMULATED SEDIMENT AFTER EVERY RAINFALL. SWEEP SEDIMENT FROM HARD SURFACES AND DISPOSE OF APPROPRIATELY AWAY FROM INLETS AND/OR WATER BODIES.
5. IF DENUDEED AREAS EXIST BEHIND THE INLET, A SEDIMENT BARRIER SHOULD BE INSTALLED AROUND ITS PERIMETER TO CONTROL SEDIMENT.



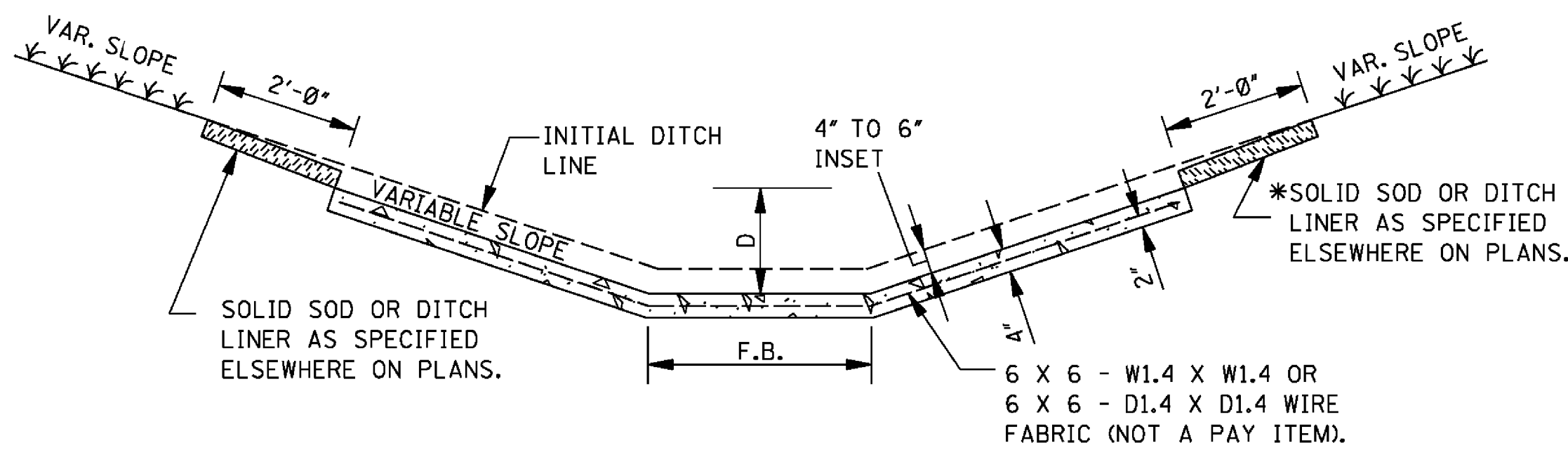
CURB AND GUTTER SEDIMENT CONTAINMENT SYSTEM

[illegible]

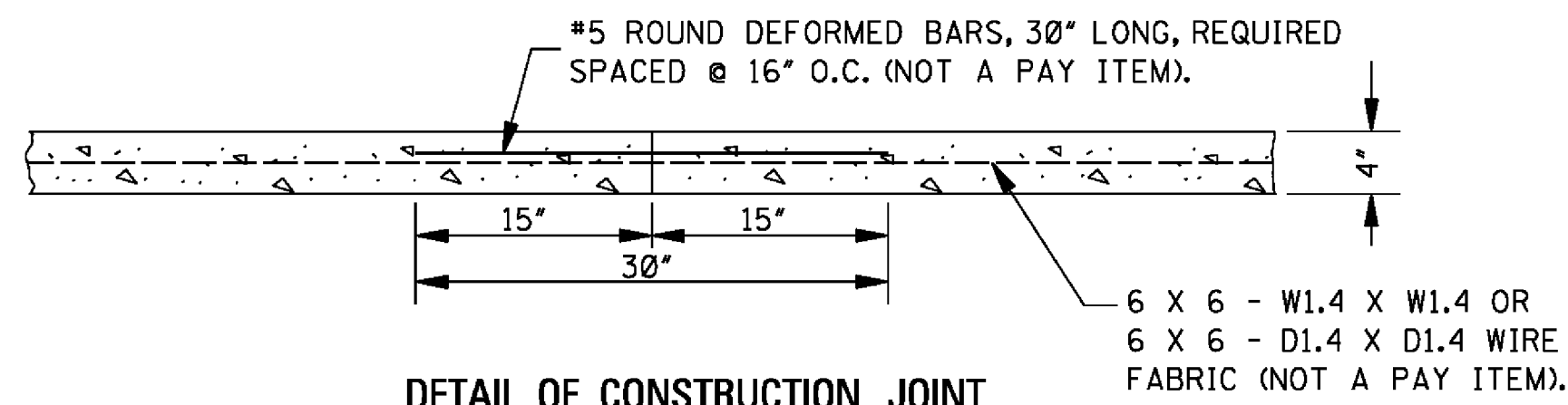
G:\PROJECTS\Hatchburg_City of 11295 - Infrastructure Improvements for MLK Avenue Area\11295 CAD Files\11295_Stand_DWG.dwg, 6/23/2022 1:56:28 PM



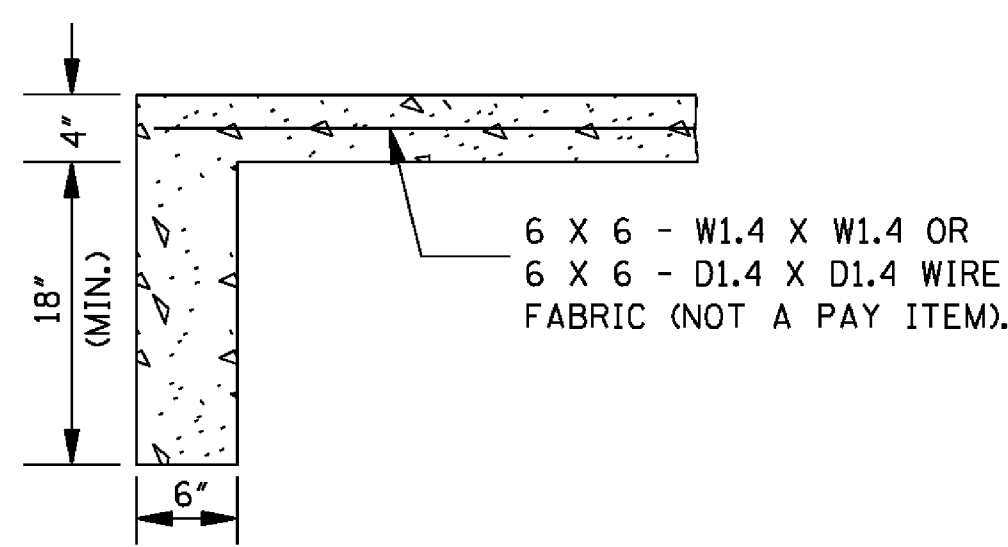
"V" TYPE SECTION



FLAT BOTTOM SECTION



DETAIL OF CONSTRUCTION JOINT



DETAIL OF TOE WALL

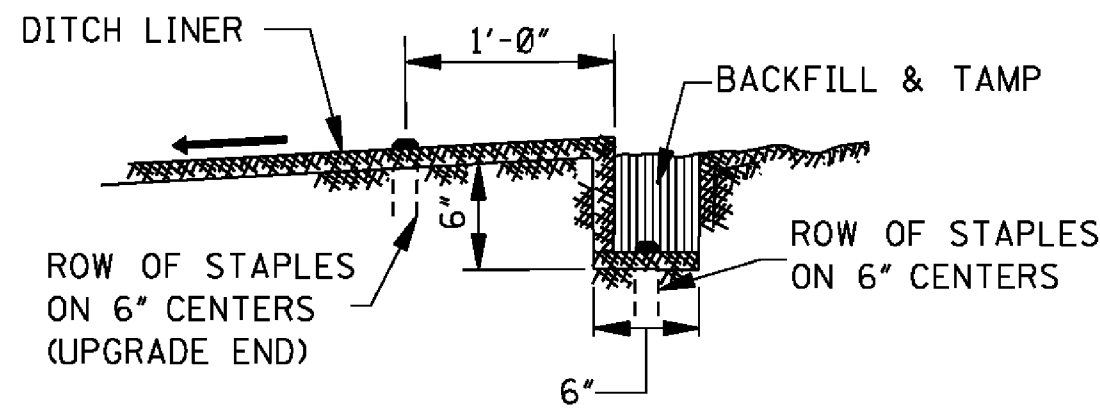
NOTE: TOE WALL REQUIRED UPSTREAM AND DOWNSTREAM.

CONCRETE PAVED DITCH

NOTES:

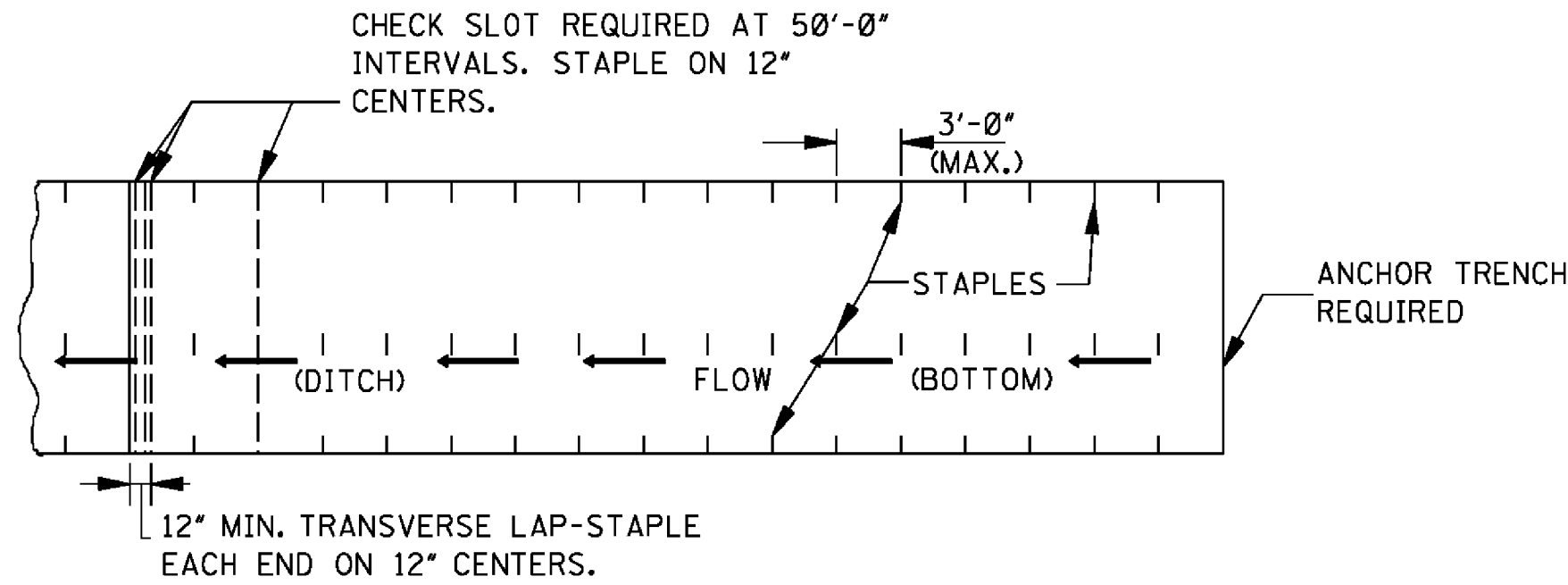
1. CONCRETE PAVED DITCHES SHALL BE GROOVED AT 20'-0" INTERVALS. THE GROOVES SHALL BE CUT TO A DEPTH OF NOT LESS THAN 1".
2. DIMENSIONS D & W ARE AS FOLLOWS:
D(MINIMUM) = 6"
D(NOMINAL) = 9"
W(MINIMUM) = 24"
3. CHAIR SUPPORTS FOR THE WIRE MESH WILL NOT BE REQUIRED. HOWEVER, THE CONTRACTOR SHALL PLACE THE WIRE MESH IN A SATISFACTORY AND WORKMANLIKE MANNER TO ENSURE THAT THE FINAL POSITION IS REASONABLY NEAR THE POSITION INDICATED.

* 4. CENTER ROW OF STAPLES MAY BE OMITTED ON DITCH LINER.

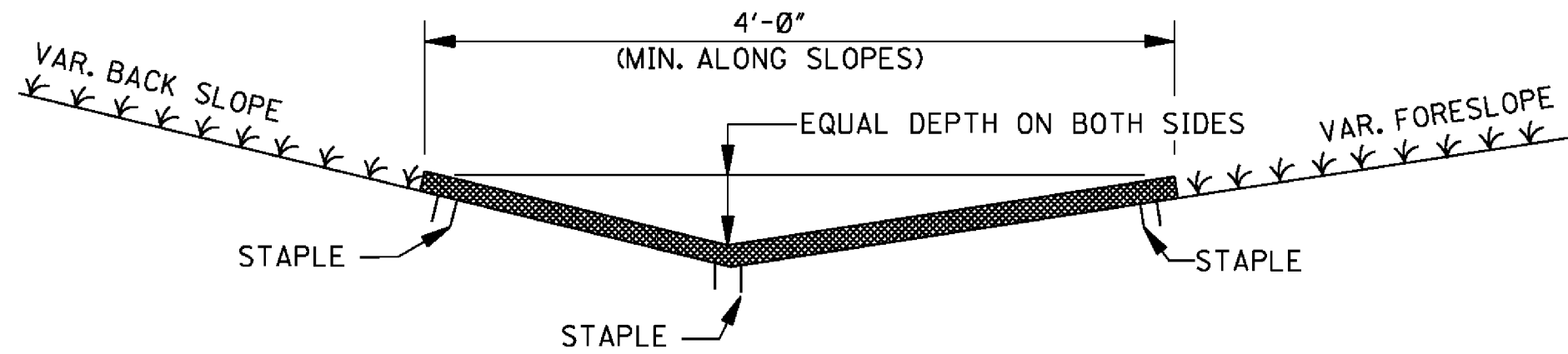


ANCHOR TRENCH DETAIL

NOTE: ANCHOR TRENCH REQUIRED AT THE BEGINNING AND ENDING OF EACH AREA TO BE COVERED, EXCEPT DOWNSTREAM END ADJOINING A STRUCTURE.



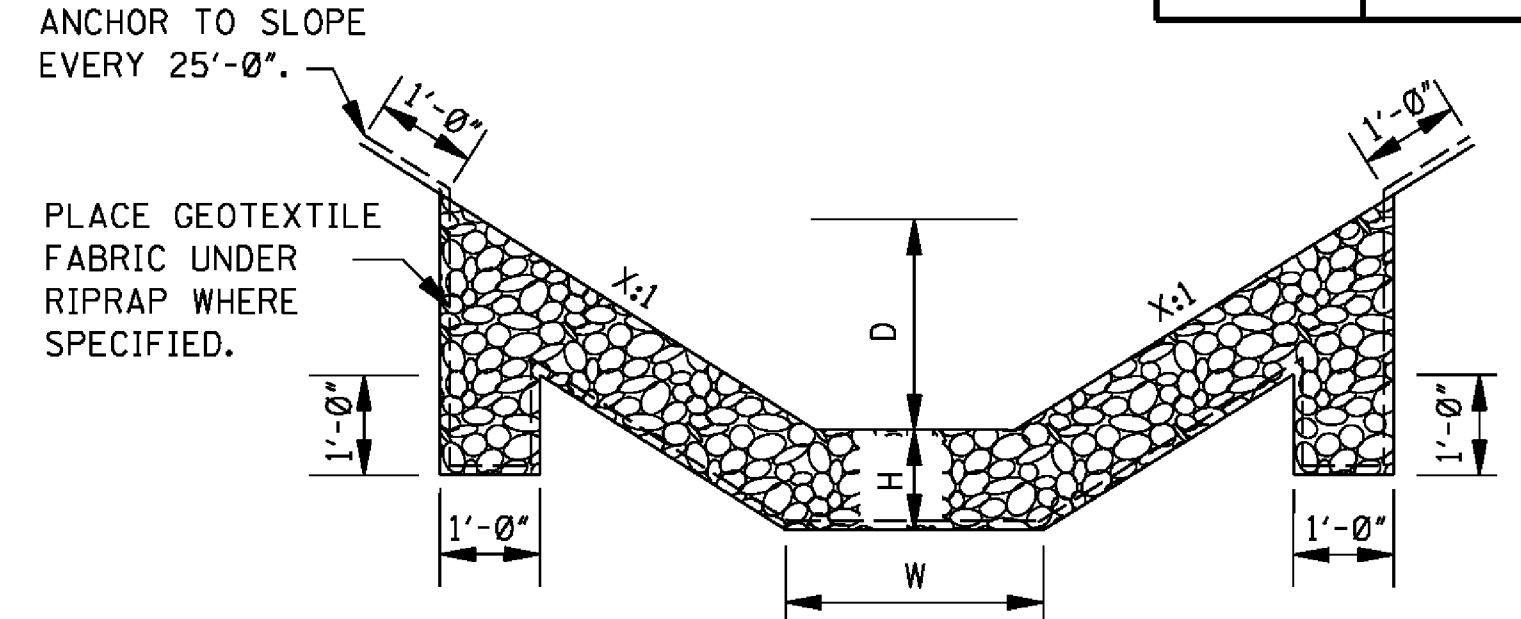
PLAN



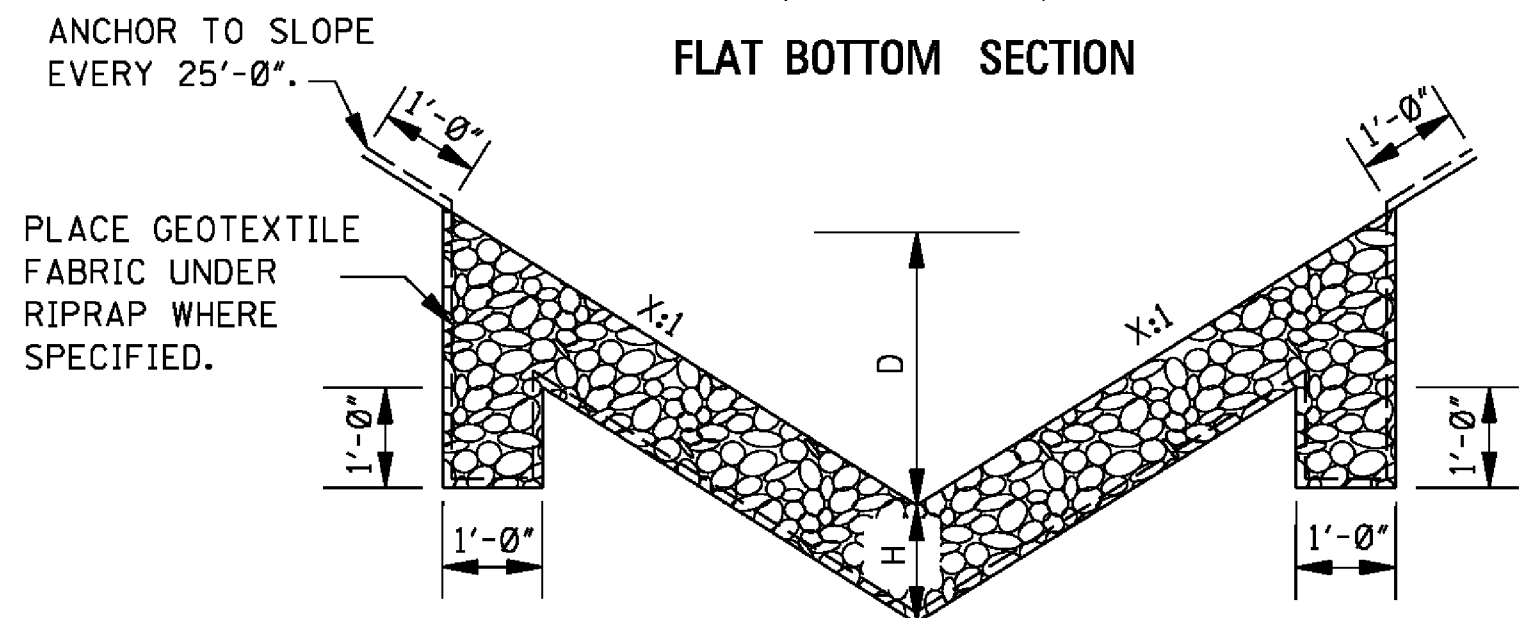
SECTION

DITCH LINER TREATMENT (EXCELSIOR BLANKET, JUTE MESH OR EROSION CONTROL FABRIC)

NOTE: DITCHES TREATED WITH DITCH LINER WILL BE VEGETATED PRIOR TO TREATMENT, UNLESS OTHERWISE INDICATED.



FLAT BOTTOM SECTION

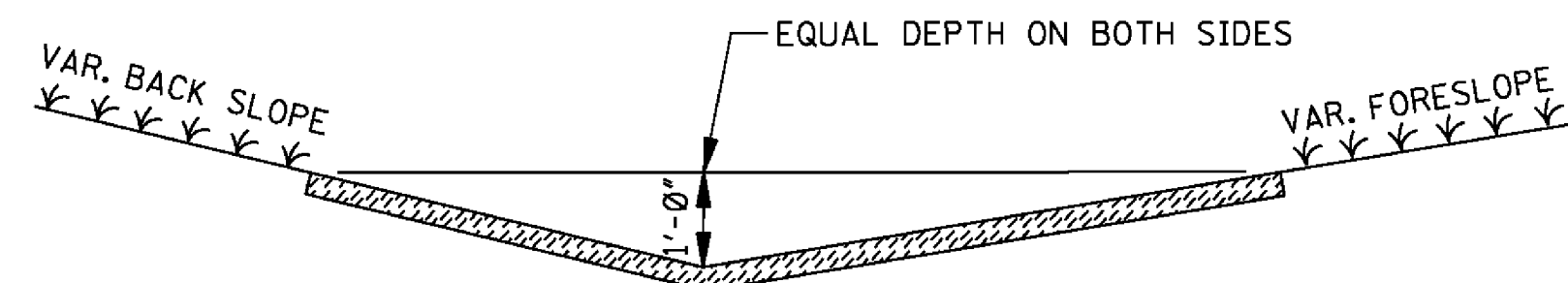


"V" TYPE SECTION
RIPRAP TREATMENT

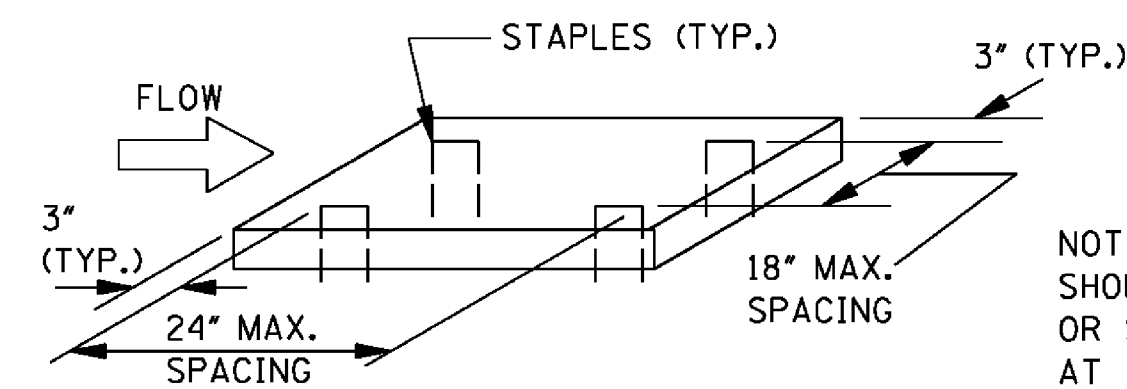
NOTES:

1. DIMENSIONS D, W AND X ARE VARIABLE AND ARE SHOWN ELSEWHERE ON THE PLANS.
2. THE RIPRAP SIZE AND MINIMUM DEPTH "H" FOR RIPRAP TREATMENT ARE AS FOLLOWS.

RIPRAP SIZE & MINIMUM DEPTH "H"	
H	RIPRAP SIZE
(in)	(lbs)
12"	100
18"	300



SOLID SOD TREATMENT



NOTE: SOLID SOD (STRIPS OR BLOCKS) SHOULD BE STAPLED, PINNED, PEGGED OR STAKED AT THE FOUR CORNERS OR AT THE MAXIMUM SPECIFIED SPACING.

GENERAL NOTE:

1. FOR LOCATION OF APPROPRIATE DITCH TREATMENTS, SEE PLAN SHEETS AS DENOTED BY THE FOLLOWING LEGEND OR AS DIRECTED BY THE ENGINEER:

	DITCH LINER
	SOLID SOD
	CONCRETE PAVED DITCH
	RIPRAP

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

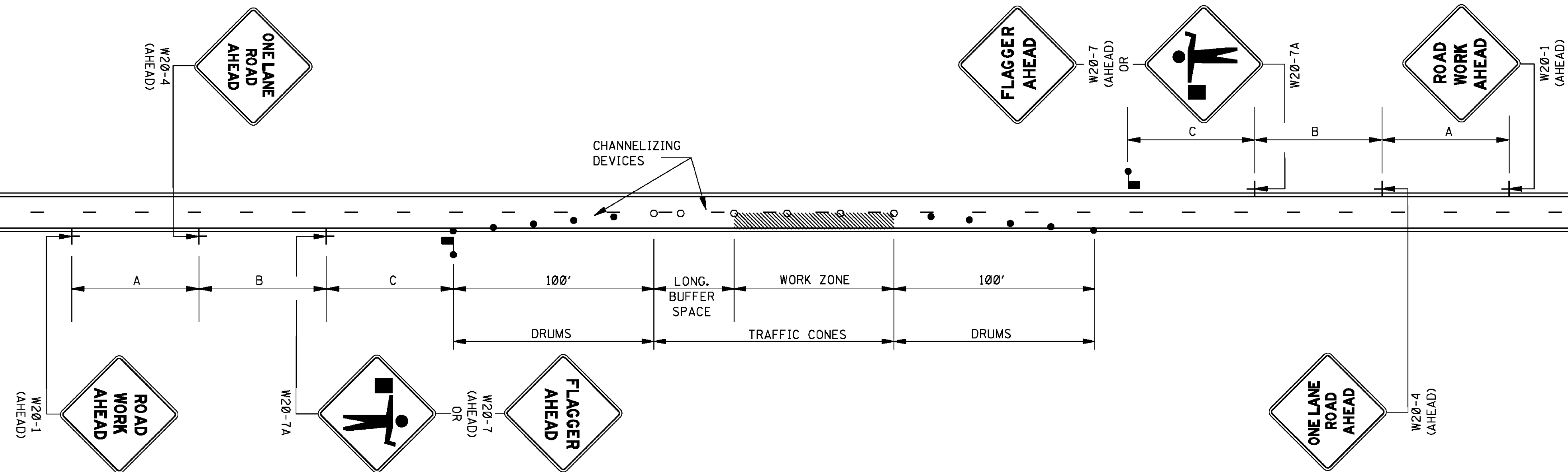
DETAILS OF TYPICAL DITCH TREATMENTS



WORKING NUMBER
DT-1

SHEET NUMBER
6123

ISSUE DATE: AUGUST 01, 2017



LEGEND

- FLAGGER
- RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
- TRAFFIC CONES (28" HEIGHT MINIMUM)

GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE. FLAGGER STATIONS SHALL BE LOCATED SUCH THAT APPROACHING VEHICLES WILL HAVE SUFFICIENT DISTANCE TO STOP. VALUES IN STOPPING SIGHT DISTANCE COLUMN MAY BE USED AS A MINIMUM FOR THIS DISTANCE.

POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (ft)		LONGITUDINAL BUFFER SPACE (ft)	STOPPING SIGHT DISTANCE
	TAPER	ALONG LANE LINE & WORK ZONE		
mph				
25	20	50	55	155
30	20	60	85	200
35	20	70	120	250
40	20	80	170	305
45	20	90	220	360
50	20	100	280	425
55	20	110	335	495
60	20	120	415	570
65	20	130	485	645

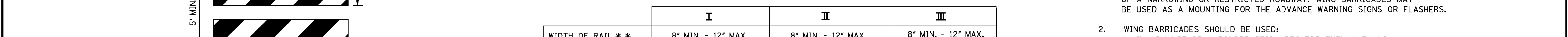
† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.

2. ALL CHANNELIZING DEVICES SHALL BE A MINIMUM OF 28" IN HEIGHT.
3. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 36" x 36" AND BLACK COPY ON FLUORESCENT ORANGE SHEETING.
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND ALL CHANNELIZING DEVICES SHALL BE MOVED TO THE SHOULDER EDGE.
5. ADDITIONAL FLAGGERS MAY BE NEEDED AS DIRECTED BY THE ENGINEER.
6. WHEN WORK IS REQUIRED AT NIGHT, FLAGGER STATIONS SHALL BE ILLUMINATED.
7. CHANNELIZING DEVICE TYPES FOR:
 - A. APPROACH AND EXIT TAPERS- RETROREFLECTIVE PLASTIC DRUMS
 - B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT)
8. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

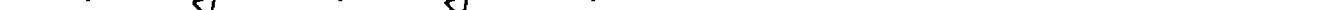
DISTANCE BETWEEN SIGNS

ROAD TYPE	A	B	C
URBAN (35 MPH OR LESS)	100 FT.	100 FT.	100 FT.
URBAN (40 - 70 MPH)	350 FT.	350 FT.	350 FT.
RURAL	500 FT.	500 FT.	500 FT.
EXPRESSWAY / FREEWAY	1000 FT.	1500 FT.	2640 FT.

[illegible]

[illegible]

	WIDTH OF RAIL**	0' MIN. TO MAX.	0' MIN. TO MAX.	0' MIN. TO MAX.	A. IN ADVANCE OF A CONSTRUCTION PROJECT EVEN WHEN NO PART OF THE ROADWAY IS ACTUALLY CLOSED. B. IN ADVANCE OF ALL BRIDGE OR CULVERT WIDENING OPERATIONS.
	LENGTH OF RAIL**	24' MIN.	24' MIN.	48' MIN.	
	WIDTH OF STRIPE	6"	6"	6"	

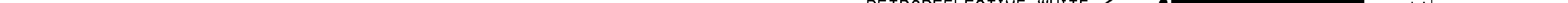
- | | | | | |
|--|-------------------|----------|----------|----------|
|  | WIDTH OF STRIPE * | 6" | 6" | 6" |
| | HEIGHT | 36" MIN. | 36" MIN. | 60" MIN. |

TYPE III		NUMBER OF RETROREFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS
STANDARD BARRICADES					

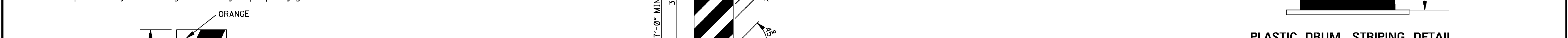
STANDARD BARRICADES					IN TWO DIRECTIONS
1. THE MARKING FOR BARRICADE RAILS SHALL BE ORANGE AND WHITE (SLOPING DOWNWARD AT					18" MIN

- AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).
2. RAIL STRIPE SHOULD BE 6 INCHES, EXCEPT THAT 4-INCH WIDE STRIPES MAY BE USED IF RAIL LENGTHS ARE LESS THAN 36 INCHES.
- * 1. FOR RAILS LESS THAN 36" LONG, 4" WIDE STRIPES MAY BE USED.
- ** 2. BARRICADES INTENDED FOR USE ON EXPRESSWAYS, FREEWAYS AND OTHER HIGH SPEED ROADWAYS SHALL HAVE A MINIMUM OF 270 SQ. FT. OF REFLECTIVE AREA.
- RETROREFLECTIVE ORANGE
- 
- The diagram shows a cross-section of a barricade. It is a dark, rectangular object. Above the object, there is a dimension line indicating a width of 18" MIN. DIA. To the left of the object, there is a label "RETROREFLECTIVE ORANGE" with an arrow pointing to the side of the object. To the right of the object, there is a vertical line with an arrow pointing upwards, indicating the height of the object.

3. DO NOT PLACE SANDBAGS OR OTHER DEVICES TO PROVIDE MASS ON THE BOTTOM RAIL THAT WILL BLOCK VIEW OR RAIL FACE.

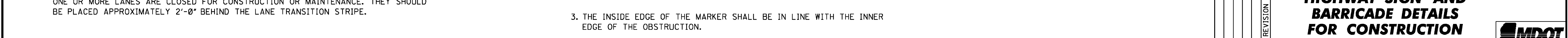
4. FOR ADDITIONAL INFORMATION OR DETAILS, SEE MUTCD, LATEST EDITION.
5. BARRICADES ARE CLASSIFIED BY FHWA AS CATEGORY II WORK ZONE DEVICES WHICH REQUIRE CRASHWORTHINESS CERTIFICATION. ITTERS TO TYPE C IN THIS GROUP MAY HAVE NOT BEEN
- 
- The diagram illustrates a Category II Work Zone Device, which is a rectangular barricade. It features a top section that is 12 inches wide and 3.2 inches high, with a minimum height of 3.2 inches. The main body of the barricade is 36 inches high and is made of retroreflective white material. The diagram also shows a cross-section of the barricade, indicating its thickness and the placement of the retroreflective material.

- CRASHWORTHINESS ACCEPTANCE LETTERS. TO DATE, 2-IN. THICK TIMBER RAILS HAVE NOT BEEN SUCCESSFULLY CRASH TESTED. A LIST OF CRASHWORTHY BARRICADES AND OTHER CATEGORY II DEVICES CAN BE FOUND ON FHWA'S WEBSITE:
http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware/cat2.cfm

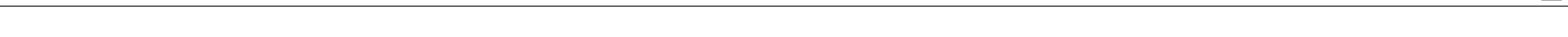


1.	A CHEVRON SIGN CONSISTS OF A BLACK CHEVRON TYPE MARKING ON AN ORANGE BACKGROUND AND SHALL POINT IN THE DIRECTION OF TRAFFIC FLOW.	1.	TYPE 3 OBJECT MARKERS SHALL BE USED AT ALL EXPOSED BRIDGE ABUTMENTS AND AT OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER.	<table border="1"> <tr> <td></td> <td></td> <td></td> <td></td> <td>BY</td> <td> MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION </td> </tr> </table>					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION					

- | | | |
|---|--|------------------|
| 2. THE CHEVRON SIGN SHALL BE MOUNTED ON CRASHWORTHY SUPPORT. | 2. THE OM-3R IS SHOWN. THE OM-3L IS SIMILAR EXCEPT THE STRIPES SLOPE DOWNWARD FROM THE UPPER LEFT SIDE TO THE LOWER RIGHT SIDE AND SHALL BE PLACED ON THE LEFT SIDE OF THE OBJECT. | STANDARD PLAN |
| 3. CHEVRON SIGNS MAY BE USED TO SUPPLEMENT OTHER STANDARD DEVICES WHERE | | HIGHWAY SIGN AND |

[illegible]

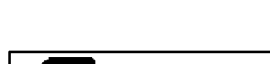
- | | | | |
|--|------|------------------------------------|-----------------------------|
| | DATE | ISSUE DATE: <u>AUGUST 01, 2017</u> | SHEET NUMBER
6358 |
|--|------|------------------------------------|-----------------------------|
- DRAWING No.: 11295



- | | | |
|---|---|--|
| 2 | | <p>SHALL BE ORANGE WITH FOUR (4) RETROREFLECTIVE, HORIZONTAL, CIRCUMFERENTIAL STRIPES (2 ORANGE & 2 WHITE) 6" WIDE.</p> <p>2. DRUMS SHOULD NEVER BE PLACED IN THE ROADWAY WITHOUT WARNING SIGNS.</p> |
|---|---|--|

-

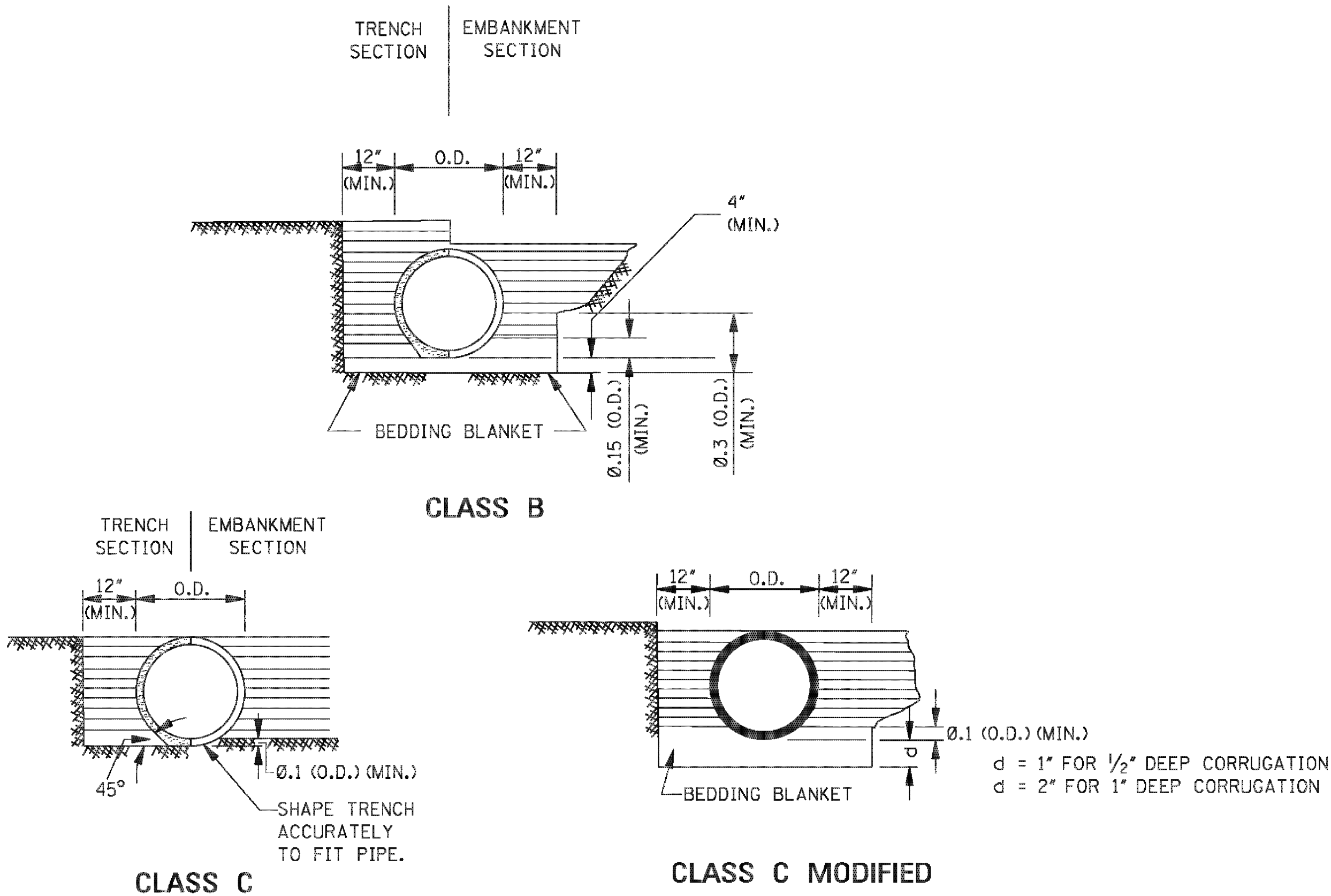
- CHEVRON SIGN
DETAIL**

1.	A CHEVRON SIGN CONSISTS OF A BLACK CHEVRON TYPE MARKING ON AN ORANGE BACKGROUND AND SHALL POINT IN THE DIRECTION OF TRAFFIC FLOW.	1.	ABUTMENTS AND AT OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER.	BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	 WORKING NUMBER TCP-8 SHEET NUMBER 6358	
2.	THE CHEVRON SIGN SHALL BE MOUNTED ON CRASHWORTHY SUPPORT.	2.	THE OM-3R IS SHOWN. THE OM-3L IS SIMILAR EXCEPT THE STRIPES SLOPE DOWNWARD FROM THE UPPER LEFT SIDE TO THE LOWER RIGHT SIDE AND SHALL BE PLACED ON THE LEFT SIDE OF THE OBJECT.				REVISION
3.	CHEVRON SIGNS MAY BE USED TO SUPPLEMENT OTHER STANDARD DEVICES WHERE ONE OR MORE LANES ARE CLOSED FOR CONSTRUCTION OR MAINTENANCE. THEY SHOULD BE PLACED APPROXIMATELY 2'-0" BEHIND THE LANE TRANSITION STRIPE.	3.	THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION.				
				DATE	ISSUE DATE: AUGUST 01, 2017		

STATE	PROJECT NO.
MISS.	

CORRUGATED STEEL AND ALUMINUM PIPE (ROUND)						
PIPE DIAMETER (in)	MINIMUM COVER FROM TOP OF PIPE TO TOP OF SUBGRADE (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft)				
		SHEET THICKNESS (in)				
		0.064 STEEL 0.060 ALUM. 16 GAGE	0.079 STEEL 0.075 ALUM. 14 GAGE	0.109 STEEL 0.105 ALUM. 12 GAGE	0.138 STEEL 0.135 ALUM. 10 GAGE	0.168 STEEL 0.164 ALUM. 8 GAGE
		2 3/8" X 1/2" CORRUGATED STEEL / 3" X 1" OR 5" X 1" CORRUGATED STEEL / 2 3/8" X 1/2" CORRUGATED ALUMINUM HELICAL				
12"	12"	207' / - / 125'	259' / - / 157'	- / - / -	- / - / -	- / - / -
15"	12"	165' / - / 100'	207' / - / 125'	- / - / -	- / - / -	- / - / -
18"	12"	138' / - / 83'	172' / - / 104'	242' / - / -	- / - / -	- / - / -
24"	12"	103' / - / 62'	129' / - / 78'	181' / - / 109'	- / - / -	- / - / -
30"	12"	82' / - / -	103' / - / 69'	145' / - / 97'	- / - / -	- / - / -
36"	12"	68' / - / -	86' / - / 62'	120' / - / 87'	155' / - / 94'	- / - / -
42"	12"	58' / - / -	73' / - / 51'	103' / - / 73'	133' / - / 80'	163' / - / -
48"	12"	51' / - / -	64' / - / -	90' / - / 62'	116' / - / 70'	142' / - / 85'
54"	12"	- / 46' / -	57' / 58' / -	80' / 82' / 54'	103' / 106' / 62'	126' / 129' / 76'
60"	12"	- / 42' / -	- / 52' / -	72' / 74' / 48'	93' / 95' / 52'	114' / 116' / 64'
66"	12"	- / 38' / -	- / 47' / -	- / 66' / -	84' / 86' / -	103' / 106' / 52'
72"	12"	- / 35' / -	- / 43' / -	- / 61' / -	77' / 79' / -	94' / 97' / 43'
78"	12"	- / 32' / -	- / 40' / -	- / 56' / -	- / 73' / -	84' / 89' / -
84"	12"	- / 29' / -	- / 37' / -	- / 52' / -	- / 68' / -	72' / 83' / -
90"	12"	- / 27' / -	- / 34' / -	- / 49' / -	- / 63' / -	- / 77' / -
96"	12"	- / - / -	- / 32' / -	- / 46' / -	- / 59' / -	- / 72' / -
102"	24"	- / - / -	- / 30' / -	- / 43' / -	- / 55' / -	- / 68' / -
108"	24"	- / - / -	- / - / -	- / 40' / -	- / 52' / -	- / 64' / -
114"	24"	- / - / -	- / - / -	- / 38' / -	- / 50' / -	- / 61' / -
120"	24"	- / - / -	- / - / -	- / 36' / -	- / 47' / -	- / 58' / -

NOTE: THE AVERAGE INSIDE DIAMETER SHALL NOT VARY MORE THAN ONE (1) PERCENT OR 1/2", WHICHEVER IS GREATER, FROM THE NOMINAL DIAMETER WHEN MEASURED ON THE INSIDE CREST OF THE CORRUGATIONS (AASHTO M 36/M 36 & AASHTO M 196/M 196).



MAXIMUM HEIGHT OF FILL OVER REINFORCED CONCRETE PIPE		
CLASS OF PIPE	MAXIMUM COVER (ft)	
	CLASS "C" BEDDING	CLASS "B" BEDDING
III	12'	19'
IV	18'	30'
V	28'	48'
SPECIAL DESIGN	>28'	>48'

NOTE: CLASS OF PIPE AND BEDDING TO BE CONSISTENT THROUGHOUT THE PIPE LENGTH.

CORRUGATED METAL PIPE ARCHES						
EQUIV. DIAMETER (in)	PIPE DIMENSION (SPAN X RISE) (in)	MINIMUM COVER	STEEL		ALUMINUM	
			MINIMUM THICKNESS REQUIRED (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft) FOR THE FOLLOWING CORNER BEARING PRESSURE (tons/ft²)	MINIMUM THICKNESS REQUIRED (in)	MAXIMUM FILL HEIGHT ABOVE TOP OF PIPE (ft) FOR THE FOLLOWING CORNER BEARING PRESSURE (tons/ft²)
				† 4 tons/ft²		† 4 tons/ft²
			2 3/8" X 1/2" CORRUGATION HELICAL		2 3/8" X 1/2" CORRUGATION RIVETED OR HELICAL	
15"	17" X 13"	12"	0.064"	13'	0.060"	13'
18"	21" X 15"	12"	0.064"	12'	0.060"	12'
24"	28" X 20"	12"	0.064"	12'	0.075"	12'
30"	35" X 24"	12"	0.064"	12'	0.075"	12'
36"	42" X 29"	12"	0.064"	12'	0.105"	12'
42"	49" X 33"	12"	0.079"	12'	0.105"	12'
48"	57" X 38"	12"	0.109"	12'	0.135"	12'
54"	64" X 43"	12"	0.109"	12'	0.135"	12'
60"	71" X 47"	12"	0.138"	12'	0.164"	12'
66"	77" X 52"	12"	0.168"	12'		
72"	83" X 57"	12"	0.168"	12'		
			3" X 1" CORRUGATION HELICAL / 5" X 1" CORRUGATION HELICAL			
48"	53" X 41"	12" / -	0.079" / -	12' / -		
54"	60" X 46"	15" / -	0.079" / -	20' / -		
60"	66" X 51"	15" / -	0.079" / -	20' / -		
66"	73" X 55"	18" / -	0.079" / -	20' / -		
72"	81" X 59"	18" / 18'	0.079" / 0.109"	17' / 17'		
78"	87" X 63"	18" / 18'	0.079" / 0.109"	16' / 16'		
84"	95" X 67"	18" / 18'	0.079" / 0.109"	16' / 16'		
90"	103" X 71"	18" / 18'	0.109" / 0.109"	16' / 16'		
96"	112" X 75"	21" / 21'	0.109" / 0.109"	16' / 16'		
102"	117" X 79"	21" / 21'	0.109" / 0.109"	16' / 16'		
108"	128" X 83"	24" / 24'	0.138" / 0.138"	16' / 16'		
114"	137" X 87"	24" / 24'	0.138" / 0.138"	16' / 16'		
120"	142" X 91"	27" / 27'	0.168" / 0.168"	16' / 16'		

NOTES:
1. THE AVERAGE INSIDE DIAMETER SHALL NOT VARY MORE THAN ONE (1) PERCENT OR 1/2", WHICHEVER IS GREATER, FROM THE NOMINAL DIAMETER WHEN MEASURED ON THE INSIDE CREST OF THE CORRUGATIONS. (AASHTO M 36/M 36 & AASHTO M 196/M 196).

† 2. BEARING PRESSURES FOR GIVEN FILL HEIGHT SHALL HAVE FOUNDATION MATERIALS INVESTIGATED TO DETERMINE BEARING CAPACITY.

- GENERAL NOTES:
1. MINIMUM SPACING BETWEEN MULTIPLE LINES OF PARALLEL PIPE SHALL BE THE DISTANCE REQUIRED FOR INSTALLING THE ADJACENT FLARED END SECTIONS OR AS SHOWN ON THE HEADWALL DRAWINGS FOR CONDUITS REQUIRING HEADWALLS.
 2. UNLESS OTHERWISE INDICATED, THE TOP OF THE PIPE SHALL BE BELOW THE TOP OF THE SUBGRADE, AND A MINIMUM OF 12" OF COVER OVER THE TOP OF THE PIPE SHALL BE MAINTAINED BETWEEN THE SHOULDER LINES.
 3. WHERE PRE-BED PIPE IS INSTALLED, FLARED END SECTIONS FROM OTHER MANUFACTURERS MAY BE JOINED TO PRE-BED PIPE PROVIDED A CONCRETE COLLAR IS PLACED AT THE CONTRACTOR'S EXPENSE AND A DEFORMATION TO THE PIPE'S FLOWLINE IS NOT EVIDENT ON FINAL PLACEMENT.
 4. THE BACKFILL SHALL BE EITHER CLASS "B", CLASS "C", OR CLASS "C" MODIFIED. A MINIMUM COMPACTION LEVEL OF 95% STANDARD PROCTOR DENSITY PER AASHTO T99 SHALL BE ACHIEVED BY USE OF VIBRATORY PLATE, HYDROHAMMER TYPE COMPACTIONERS SHALL NOT BE USED OVER THE PIPE. ALL COMPACTION EQUIPMENT USED SHALL BE APPROVED BY THE ENGINEER.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
				REVISION	PIPE CULVERT INSTALLATION	
				DATE	ISSUE DATE: AUGUST 01, 2017	WORKING NUMBER PI-1 SHEET NUMBER 6501

STANDARD INSTALLATION DETAIL

TABLE 1: BEDDING AND BACKFILL REQUIREMENTS

BEDDING AND BACKFILL REQUIREMENTS FOR NON-RIGID PIPE IN CROSS DRAIN AND STORM DRAIN APPLICATIONS	
A.	BEDDING SHALL BE CLASS B IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
B.	BACKFILL MATERIAL SHALL BE ONE OF THE FOLLOWING: 1. FLOWABLE FILL IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST EDITION. 2. CRUSHED STONE AGGREGATE BACKFILL IN ACCORDANCE WITH THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
IF FLOWABLE FILL IS UTILIZED, CARE SHALL BE TAKEN TO PREVENT "FLOATING" OF THE PIPE. THE COST OF FURNISHING AND PLACING THE REQUIRED BEDDING AND BACKFILL MATERIAL INDICATED IN A AND B SHALL BE INCLUDED IN THE UNIT COST OF THE NON-RIGID PIPE ALTERNATE, I.E., THERE IS NO SEPARATE PAY ITEM FOR NON-RIGID PIPE BEDDING AND BACKFILL MATERIAL.	
BEDDING AND BACKFILL REQUIREMENTS FOR NON-RIGID PIPE IN SIDE DRAIN APPLICATIONS	
A.	BEDDING SHALL BE CLASS C IN ACCORDANCE WITH THE MISSISSIPPI SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
B.	BACKFILL MATERIAL SHALL BE IN ACCORDANCE WITH THE MISSISSIPPI SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. PIPES THAT SERVE AS A SIDE DRAIN ON DEPARTMENT RIGHT OF WAY, BUT CARRY DRAINAGE UNDER A COUNTY OR LOCAL ROAD SHALL ADHERE TO THE BEDDING AND BACKFILL REQUIREMENTS FOR A CROSS DRAIN CONTAINED ABOVE.
THE COST OF FURNISHING AND PLACING THE REQUIRED BEDDING AND BACKFILL MATERIAL INDICATED IN A AND B SHALL BE INCLUDED IN THE UNIT COST OF THE NON-RIGID ALTERNATE PIPE, I.E., THERE IS NO SEPARATE PAY ITEM FOR NON-RIGID BEDDING AND BACKFILL MATERIAL.	

TABLE 2:
HIGH DENSITY CORRIGATED POLYETHYLENE PIPE
HEIGHT OF COVER

NOMINAL DIAMETER IN.	MINIMUM COVER IN.	MAXIMUM COVER - FT.	
		CROSS DRAIN	SIDE DRAIN
12	12	38	11
15	12	36	12
18	12	35	11
24	12	30	10
30	12	25	9
36	21	29	10
42	21	27	9
48	21	25	8

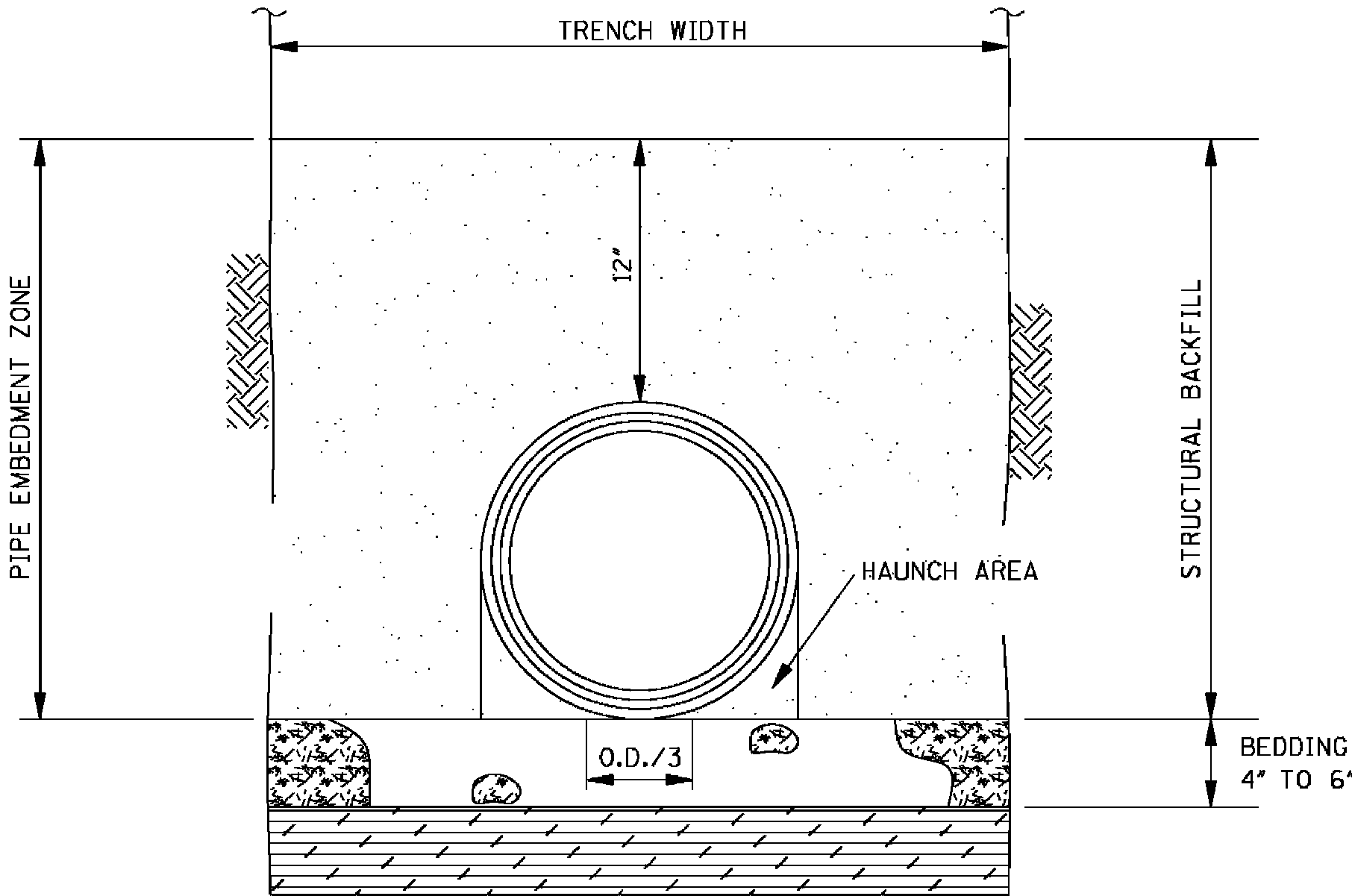
TABLE 3: RECOMMENDED TRENCH WIDTH

DIAMETER IN.	O.D. IN.	TRENCH WIDTH IN.
12	14.45	34
15	17.57	38
18	21.20	44
24	27.80	54
30	35.10	65
36	41.70	75
42	47.70	84
48	53.60	92

THE TRENCH WIDTH MUST BE WIDE ENOUGH TO ACCOMODATE COMPATION EQUIPMENT

TABLE 4: MULTIPLE INSTALLATION OF
POLYETHYLENE PIPES

DIAMETER OF PIPE IN.	CLEAR DISTANCE BETWEEN PIPES FT.-IN.
18	1'-2"
24	1'-5"
30	1'-8"
36	1'-11"
42	2'-2"
48	2'-5"



TRENCH CROSS SECTION SHOWING TERMINOLOGY

GENERAL NOTES:

1. MATERIALS

THERMOPLASTIC PIPE

POLYETHYLENE PIPE SHALL CONFORM TO THE REQUIREMENTS OF AASHTO M 294, LATEST EDITION.

DESIGNATION OF TYPE: TYPE S: THIS PIPE WILL HAVE A FULL CIRCULAR CROSS SECTION WITH AN OUTER CORRUGATED PIPE WALL AND A SMOOTH INNER LINER.

BEDDING MATERIAL AND STRUCTURAL BACKFILL

BEDDING MATERIAL AND STRUCTURAL BACKFILL SHALL MEET THE REQUIREMENTS OF TABLE 1.
2. JOINTS

JOINTS FOR THERMOPLASTIC PIPE SHALL MEET THE PERFORMANCE REQUIREMENTS OF SOILTIGHTNESS UNLESS WATERTIGHTNESS IS SPECIFIED.

SUITABLE JOINTS CAN BE OBTAINED WITH THE FOLLOWING TYPES OF CONNECTIONS:

A) CORRUGATED BANDS (WITH OR WITHOUT GASKETS)

B) BELL AND SPIGOT PIPE ENDS (WITH OF WITHOUT GASKETS)

C) DOUBLE BELL COUPLINGS (WITH OR WITHOUT GASKETS)
3. INSTALLATION

MINIMUM TRENCH WIDTHS SHALL MEET THE REQUIREMENTS OF TABLE 3.

THE MIDDLE THIRD OF THE BEDDING MATERIAL UNDER THE PIPE SHOULD BE LOOSELY PLACED, WHILE THE REMAINDER SHALL BE COMPACTED TO A MINIMUM 90% OF MAXIMUM DENSITY PER AASHTO T 99.

A MINIMUM OF 4 INCHES OF BEDDING SHALL BE PROVIDED PRIOR TO PLACEMENT OF THE PIPE.

STRUCTURAL BACKFILL SHALL BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING AN 8" LOOSE LIFT THICKNESS AND BROUGHT UP EVENLY ON BOTH SIDES OF THE PIPE WITH AN ELEVATION NOT LESS THAN 12 INCHES ABOVE THE TOP OF THE PIPE. A MINIMUM COMPACTION LEVEL OF 90% STANDARD DENSITY PER AASHTO T 99 SHALL BE ACHIEVED.

MINIMUM COVER REQUIREMENTS SHALL MEET THE REQUIREMENTS OF TABLE 2.

FOR MULTIPLE INSTALLATIONS OF POLYETHYLENE PIPES, A CLEAR DISTANCE BETWEEN THE PIPES SHALL MEET THE REQUIREMENTS OF TABLE 4.
4. CALCULATIONS FOR FILL DEPTHS ARE BASED ON PROPERTIES DEFINED IN AASHTO M294 AND CALCULATIONS IN AASHTO SEC.19.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
				REVISION		
				DATE		
					ISSUE DATE: AUGUST 01, 2017	

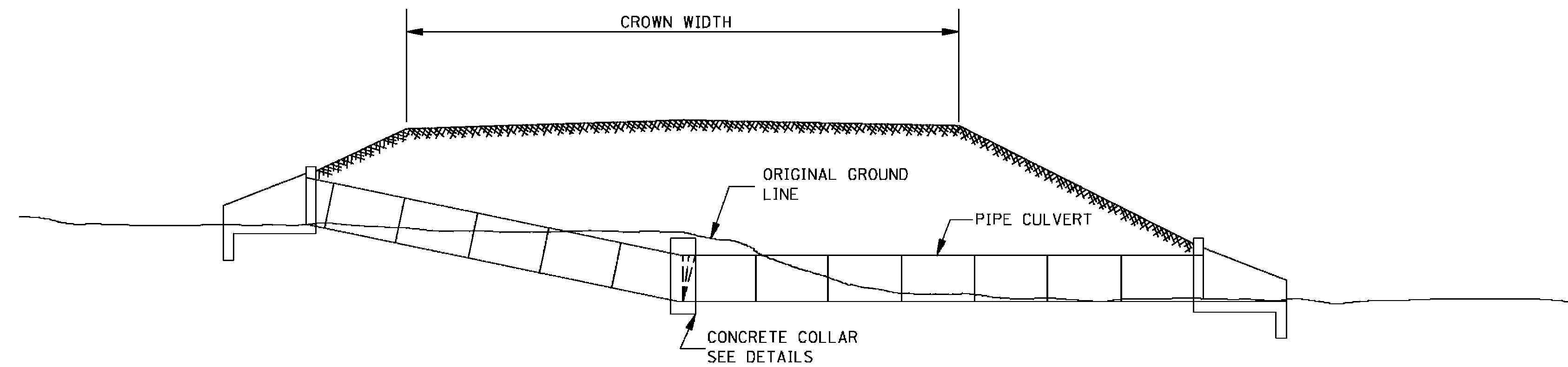
MDOT

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

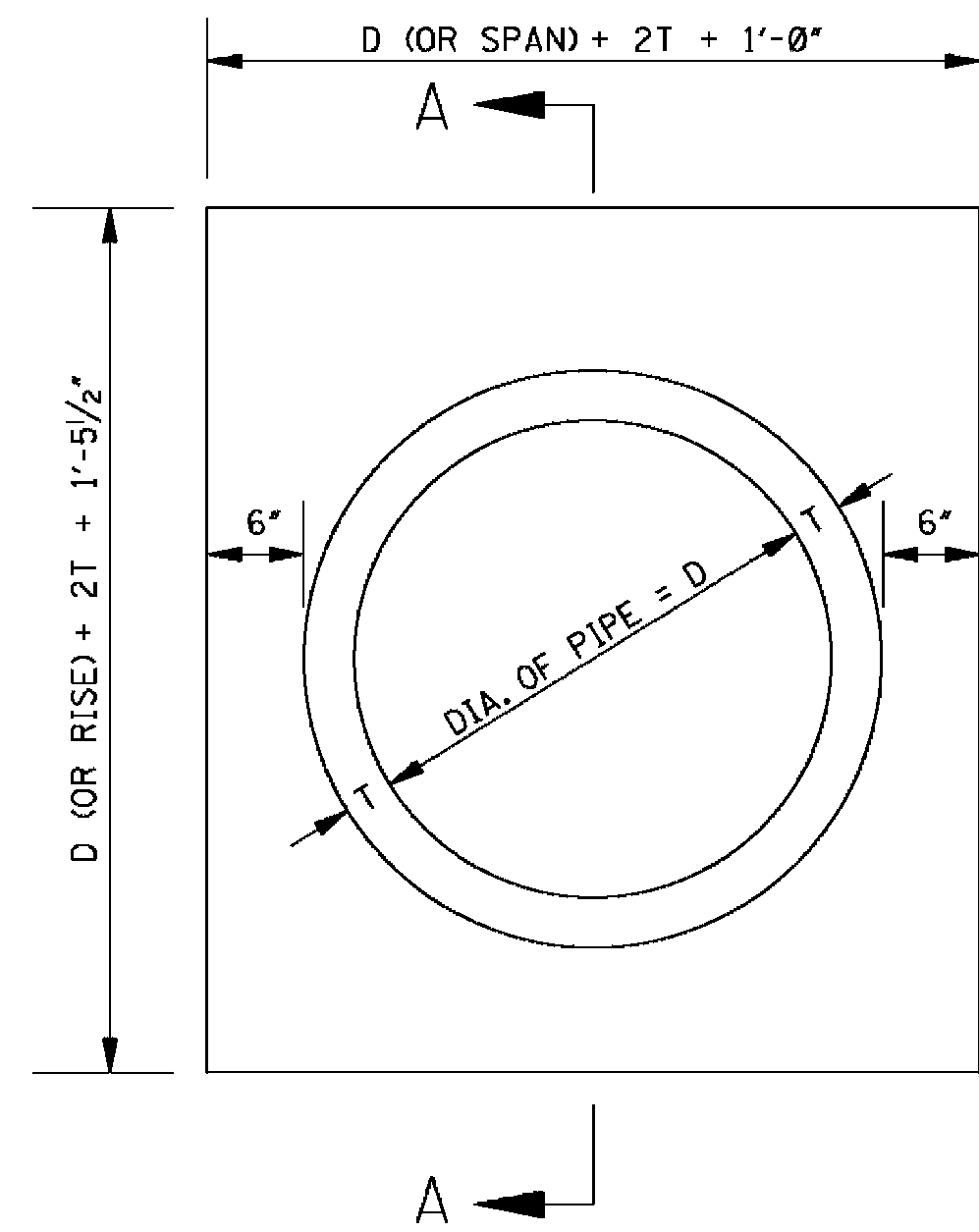
WORKING NUMBER
PI-2

SHEET NUMBER
6502

FLEXIBLE PIPE CULVERT
INSTALLATION

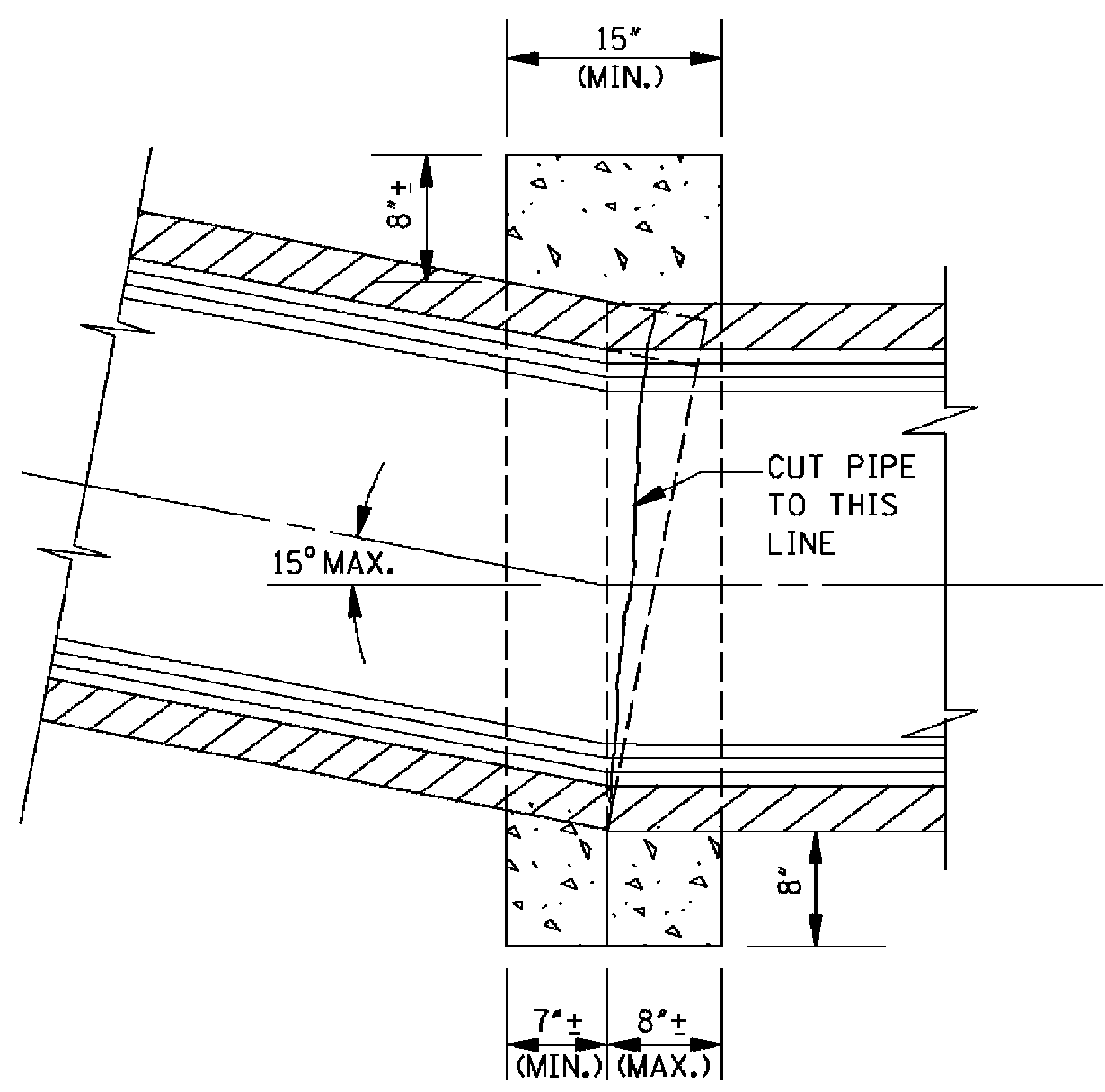


TYPICAL INSTALLATION FOR PIPE CULVERT WITH BROKEN FLOW LINE



ELEVATION OF CONCRETE COLLAR

NOTE: CIRCULAR PIPE IS SHOWN, ARCH PIPE IS SIMILAR.



SECTION A-A

GENERAL NOTES:

1. THE MAXIMUM BEND ANGLE IS 15 DEGREES.
2. THE FOLLOWING QUANTITIES SHALL BE THE BASIS FOR PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE:

QUANTITIES FOR CONCRETE COLLAR FOR PIPE CULVERTS			
CIRCULAR PIPE		ARCH PIPE	
DIA. OF PIPE	CLASS "B" CONCRETE (yd ³)	SIZE OF PIPE	CLASS "B" CONCRETE (yd ³)
12"	0.240		
15"	0.260	18 x 11	0.280
18"	0.320	22 x 13	0.310
24"	0.410	29 x 18	0.410
30"	0.510	36 x 23	0.490
36"	0.620	44 x 27	0.600
42"	0.730	51 x 31	0.690
48"	0.850	58 x 36	0.820
54"	0.980	65 x 40	0.920
60"	1.110	73 x 45	1.070
66"	1.248	88 x 54	1.366
72"	1.393		

[illegible]



Engineering Progress

April 21, 2023

City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403

Attn: Hunter White

**Re: MLK Avenue Area Infrastructure Improvements
City of Hattiesburg**

Dear Hunter:

Enclosed please find a copy of Street Ready Plans and Specifications for the above referenced project for your review to be placed on the agenda for Council approval to advertise.

Should you have any questions or comments, please do not hesitate to call.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Shea E. McNease', with a large, stylized loop at the end.

Shea E. McNease, P.E.
Project Engineer

/sm

Enclosure



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Plans and Specifications for the Edwards Street Infrastructure Improvements Project and authorize advertisement for bids for same.
File Number: 2023-295
Minute Book #

Summary

Approve Plans and Specifications for the Edwards Street Infrastructure Improvements Project and authorize advertisement for bids for same.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.



Engineering Progress

April 21, 2023

City of Hattiesburg
P.O. Box 1898
Hattiesburg, MS 39403

Attn: Hunter White

**Re: Edwards Street Infrastructure Improvements
City of Hattiesburg**

Dear Hunter:

Enclosed please find a copy of Street Ready Plans and Specifications for the above referenced project for your review to be placed on the agenda for Council approval to advertise.

Should you have any questions or comments, please do not hesitate to call.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Shea E. McNease', with a large, stylized loop at the end.

Shea E. McNease, P.E.
Project Engineer

/sm

Enclosure

SPECIFICATIONS AND CONTRACT DOCUMENTS

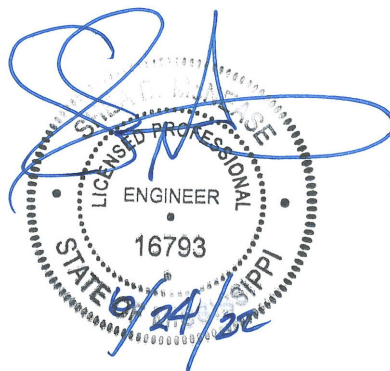
FOR

**EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS**

FOR THE

CITY OF HATTIESBURG

JUNE, 2022

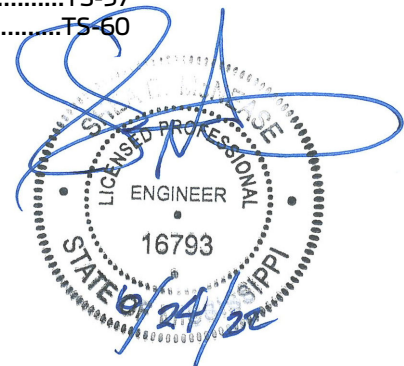


PREPARED BY:

**SHOWS, DEARMAN & WAITS, INC.
CONSULTING ENGINEERS**

Table of Contents

Advertisement For Bids.....	3
Information For Bidders.....	4
Proposal Form.....	7
Proposal.....	8
Bid Bond.....	12
Contract Agreement.....	14
Payment And Performance Bond.....	18
General Conditions.....	20
Definitions.....	20
Preliminary Matters.....	23
Correlation, Interpretation And Intent of Contract Documents.....	26
Availability Of Lands; Subsurface Conditions; Reference Points.....	27
Bonds And Insurance.....	29
Contractor's Responsibilities.....	30
Work By Others.....	40
Owner's Responsibilities.....	41
Engineer's Status During Construction.....	42
Changes In Work.....	45
Change Of Contract Price.....	46
Change Of Contract Time.....	51
Guaranty.....	51
Payments And Completion.....	52
Suspension Of Work And Termination.....	56
Dispute Settlement.....	58
Miscellaneous.....	58
Supplemental General Conditions.....	61
Article 1 - Special Conditions.....	61
Scope And Intent.....	61
Examination Of Premises.....	61
Permits, Taxes, And Ordinances.....	61
Insurances, Etc.....	61
Cleaning Up.....	64
Special Instructions.....	64
Limitations.....	64
Product/Materials Substitution.....	64
Inspection.....	64
Specifications And Drawings Are Reciprocal.....	64
As-Built Drawings.....	65
Guarantees, Warranties And Bonds.....	65
Close-Out Documents.....	66
Measurement And Payment.....	67
Technical Specifications.....	TS-1
Sanitary Sewer Systems.....	TS-1
Standard Specification for Lining Ductile Iron Pipe.....	TS-18
Manholes.....	TS-20
Restoration of Roads, Driveways, Fences, Lawns and other Grassed Areas.....	TS-27
Seeding and Sodding.....	TS-33
Concrete.....	TS-39
Ductile Iron Water Systems.....	TS-42
Fire Hydrant.....	TS-57
Sewer – Tracer Wire Specification.....	TS-60



ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the **City of Hattiesburg**, MISSISSIPPI, will receive sealed bids until **10:00 AM** on **June 15 , 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

INFORMATION FOR BIDDERS

BIDS will be received by City of Hattiesburg, MS herein called the "OWNER", at City Hall until 10:00 AM on June 15, 2023, and then at said office publicly opened and read aloud.

Each BID must be submitted in sealed envelope, addressed to the City Clerk of said City. Each sealed envelope containing a BID must be plainly marked on the outside as BID for **Edwards Street Infrastructure Improvements, Hattiesburg, Mississippi** and the envelope should bear on the outside the BIDDER'S name, address, and license number if applicable. If forwarded by mail, the sealed BID shall be included in a delivery package addressed to the Owner at 200 Forrest Street, Hattiesburg, MS 39401.

All BIDS must be made on the required BID form. All blank spaces for BID prices must be filled in, in ink or typewritten, and the BID form must be completed and executed when submitted. Only one copy of the BID form is required.

The OWNER may waive any informalities or minor defects or reject any and all BIDS. Any BID may be withdrawn prior to the above scheduled time for the opening of BIDS or authorized postponement thereof. Any BID received after the time and date specified shall not be considered. No BIDDER may withdraw a BID within 60 days after the actual date of the opening thereof. Should there be reasons why the contract cannot be awarded within the specified period; the time may be extended by mutual agreement between the OWNER and the BIDDER.

BIDDERS must satisfy themselves of the accuracy of the estimated quantities in the BID Schedule by examination of the site and a review of the drawings and specifications including ADDENDA. After BIDS have been submitted, the BIDDER shall not assert that there was a misunderstanding concerning the quantities of WORK or of the nature of the WORK to be done.

The OWNER shall provide to BIDDERS prior to BIDDING, all information which is pertinent to, and delineates and describes, the land owned and rights-of-way acquired or to be acquired.

The CONTRACT DOCUMENTS contain the provisions required for the construction of the PROJECT. Information obtained from an officer, agent, or employee of the OWNER or any other person shall not affect the risks or obligations assumed by the CONTRACTOR or relieve him from fulfilling any of the conditions of the contract.

Each BID must be accompanied by a BID BOND payable to the OWNER for five percent (5%) of the total amount of the BID. As soon as the BID prices have been compared, the OWNER will return the BONDS of all except the three lowest responsive, responsible

BIDDERS upon request of the BIDDER. When the Agreement is executed the BONDS of the two remaining unsuccessful BIDDERS will be returned upon request of the BIDDER. The BID BOND of the successful BIDDER will be retained until the PAYMENT BOND and PERFORMANCE BOND have been executed and approved, after which it will be returned upon request of the BIDDER. A certified check may be used in lieu of a BID BOND.

A PERFORMANCE BOND and a PAYMENT BOND, each in the amount of 100 percent (100%) of the CONTRACT PRICE, with a corporate surety approved by the OWNER, will be required for the faithful performance of the contract.

Attorneys-in-fact who sign BID BONDS or PAYMENT BONDS and PERFORMANCE BONDS must file with each BOND a certified and effective dates copy of their Power of Attorney.

The party to whom the contract is awarded will be required to execute the Agreement and obtain the PERFORMANCE BOND and PAYMENT BOND within ten (10) calendar days from the date when NOTICE OF AWARD shall be accompanied by the necessary Agreement and BOND forms. In case of failure of the BIDDER to execute the Agreement, the OWNER may consider the BIDDER in default, in which case the BID BOND accompanying the proposal shall become the property of the OWNER.

The OWNER within thirty (30) days of receipt of acceptable PERFORMANCE BOND, PAYMENT BOND and Agreement signed by the party to whom the Agreement was awarded, shall sign the Agreement and return to such party an executed duplicate of the Agreement. Should the OWNER not execute the Agreement within such period, the BIDDER may by WRITTEN NOTICE withdraw the signed Agreement. Such notice of withdrawal shall be effective upon receipt of the notice by the OWNER.

The NOTICE TO PROCEED shall be issued within thirty (30) days of the execution of the Agreement by the OWNER. Should there be reasons why the NOTICE TO PROCEED cannot be issued within such period; the time may be extended by mutual agreement between the OWNER and CONTRACTOR. If the NOTICE TO PROCEED has not been issued within the thirty (30) day period or within the period mutually agreed upon, the CONTRACTOR may terminate the Agreement without further liability on the part of either party.

The OWNER may make such investigations as deemed necessary to determine the ability of the BIDDER to perform the WORK, and the BIDDER shall furnish to the OWNER all such information and data for this purpose as the OWNER may request. The OWNER reserves the right to reject any BID if the evidence submitted by, or investigation of, such BIDDER fails to satisfy the OWNER that such BIDDER is properly qualified to carry out the obligations of the Agreement and to complete the WORK contemplated therein.

The contract time stipulated, will be strictly enforced, if the CONTRACTOR fails to complete the work within the time stipulated, a deduction will be made of \$750 a day

from the money due the CONTRACTOR not as a penalty but as liquidated damages. The CONTRACTOR and the CONTRACTOR'S sureties shall be liable for all liquidated damages in excess of money due the CONTRACTOR.

A conditional or qualified BID will not be accepted.

Award will be made to the lowest and best responsive and responsible BIDDER.

All applicable Laws, ordinances, and the rules and regulations of all authorities having jurisdiction over construction of the PROJECT shall apply to the contract throughout.

Each BIDDER is responsible for inspecting the site and for reading and being thoroughly familiar with the CONTRACT DOCUMENTS. The failure or omission of any BIDDER to do any of the foregoing shall in no way relieve any BIDDER from any obligation in respect to his BID.

FURTHER, the BIDDER agrees to abide by the requirements under Executive Order No. 11246, as amended, including specifically the provisions of the equal opportunity clause.

The BIDDER shall supply the names and addresses of major material SUPPLIERS and SUBCONTRACTORS when required to do so by the OWNER.

The ENGINEER is SHOWS, DEARMAN & WAITS, INC. The address of the ENGINEER is 301 2nd Avenue, HATTIESBURG, MISSISSIPPI.

PROPOSAL FORM

I (we) agree to begin work within (10) calendar days after the issuance of Notice to Proceed, and to complete the work within 150 calendar days thereafter.

It is understood that the quantities of work listed for unit prices bid are approximate, and are intended to merely indicate the general scope of the various items entering into the complete work and for comparison of bids. It is further understood and agreed that the Owner may increase or decrease the quantities listed in the Proposal and that no change in the unit prices proposed shall be occasioned thereby.

The undersigned further agrees that the unit and lump sum prices quoted include all items of work required or necessary for the accomplishment of the projected work and that these items include all work indicated on the Plans and Specifications for which no specific pay items have been established.

The undersigned certifies that the bid prices contained herein have been carefully checked and are submitted as correct and final.

If within sixty (60) days the scheduled closing time for receipt of bids, this Proposal is accepted, the undersigned will execute a formal contract within ten (10) days after official notification thereof, will deliver a surety bond for the faithful performance of this contract, and will complete the work within the time specified from the date of execution of the contract.

Respectfully Submitted,

Authorized by:

ADDRESS

PROPOSAL

EDWARDS STREET INFRASTRUCTURE IMPROVEMENTS

Item	Description	Unit	Quantity	Unit Price	Extension
Sewer Pipe Items					
1	6" SDR 26 PVC Sewer Pipe (0'- 6') (Open Cut)	LF	10		
2	8" SDR 26 PVC Sewer Pipe (0'- 6') (Open Cut)	LF	10		
3	8" SDR 26 PVC Sewer Pipe (6'- 8') (Open Cut)	LF	800		
4	8" SDR 26 PVC Sewer Pipe (8'- 10') (Open Cut)	LF	465		
5	8" SDR 26 PVC Sewer Pipe (10'- 12') (Open Cut)	LF	400		
6	Removal of Existing Sewer Line	LF	715		
7	Abandonment of Existing Sewer Line (All Sizes)	LF	615		
8	Tracer Wire System for Sewer	LS	1		
Sewer Manhole Items					
9	48" Precast Concrete Sewer Manhole (6' - 8')	EA	3		
10	48" Precast Concrete Sewer Manhole (8' - 10')	EA	2		
11	48" Precast Concrete Sewer Manhole (10' - 12')	EA	2		
12	Demolition and Removal of Existing Manholes (All Types)	EA	3		
13	Abandonment of Existing Manhole	EA	4		
Sewer Service Items					
14	4" Sanitary Sewer Service Cleanout	EA	21		
15	4" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings) (All Depths)	LF	440		

16	6" SDR 26 PVC Pipe Sanitary Sewer Service (Incl Fittings) (All Depths)	LF	525		
17	8"x8"x6" PVC Service Tee	EA	21		
18	Existing Sewer Service Investigation	EA	7		
	Water Pipe Items				
19	2" & Under 150 PSI PVC Water Pipe for Connections (Open Cut)	LF	30		
20	6" Class 350 Ductile Iron Water Pipe (Open Cut)	LF	2,640		
21	8" 200 PSI, DR 11, HDPE (Directional Bore) (Incl. adapter fittings)	LF	220		
22	Tracer Wire System for Water	LS	1		
	Water Connection Items				
23	Cut and Cap Existing Lines	Each	11		
24	Connection: Prop 2" to Exist 2" (Coupling & other fittings)	Each	1		
25	Connection: Prop 6" to Exist 2" (Coupling & other fittings)	Each	1		
26	Connection: Prop 6" to Exist 6" (Hot Tap w/ Valve & other fittings)	Each	7		
27	Connection: Prop 6" to Prop 6" (6"x6"x6" Tee & other fittings)	Each	1		
28	Connection: Prop 6" to Prop 6" & Prop 2" (6"x6"x6" Tee & other fittings)	Each	1		
	Water Valve Items				
29	6" Gate Valve	Each	6		
	Water Fire Protection Items				

30	3 Way Fire Hydrant w/ Appurtenances (Incl. Tee, Valve, Hydrant, Brass Tag, Pipe, & other fittings)	Each	7		
31	Removal of Existing Fire Hydrant	Each	2		
	Water Service Items				
31	Residential Service Tap (All Sizes) (Incl: Open Cut Service Tubing, Tapping Saddle, Corp Stop, etc)	Each	20		
32	Commercial Service Tap (All Sizes) (Incl: Open Cut Service Tubing, Tapping Saddle, Corp Stop, etc)	Each	4		
33	Residential Service Tubing (Open Cut) (All Sizes)	LF	470		
34	Residential Service Tubing (Bored) (All Sizes)	LF	210		
35	Commercial Service Tubing (Open Cut) (All Sizes)	LF	70		
36	Remove and Reset Water Meter	Each	18		
	Miscellaneous Construction Items				
37	Crushed Aggregate (Size 610)	Ton	1,330		
38	Select Fill Material (Class 9, Group C), LVM	CY	3,730		
39	Concrete Pavement for Driveway and Parking Lot Repair (All Depths)	SY	200		
40	9.5mm Hot Mix Asphalt	Ton	440		
41	19mm Hot Mix Asphalt	Ton	290		
42	Cold Milling of Bituminous Pavement (All Depths) (for Tie-Ins)	SY	420		
43	Concrete Sidewalk Repair (All Depths)	SY	200		
44	Concrete Curb & Gutter (Match Existing Type)	LF	405		
45	Remove and Replace Existing Chain Link Fence	LF	190		
46	6" Thermoplastic Traffic Stripe, Detail Yellow	LF	400		
47	Thermoplastic Legend Traffic Stripe, White (6" Equivalent)	LF	364		

48	Solid Sod (Incl. Sod, Top Soil, Fertilizer, Watering, etc.)	SY	1,470		
49	Grassing (Incl. Seed, Top Soil, Fertilizer, Watering, etc.)	SY	190		
50	Landscape Restoration (Inc. Top Soil, Plants, Mulch, Watering, etc.)	SF	150		
51	Clearing and Grubbing	Acre	0.1		
52	Temporary Erosion Control	LS	1		
53	Maintenance of Traffic	LS	1		
54	Mobilization	LS	1		
			BID TOTAL:		

Base Bid Respectfully Submitted, Name of Firm or Bidder: _____

BID BOND

KNOW ALL MEN BY THESE PRESENTS: that we, the under signed, _____ Principal, and _____ as Surety, are hereby held and firmly bound unto the City of Hattiesburg as Owner in the penal sum of 5% (Five Percent) for payment of which, well and truly to be made, we hereby jointly and severally bind ourselves, successors and assigns.

Signed, this _____ day of _____, 20_____.

The Condition of the above obligation is such that whereas the Principal has submitted to a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing, for the following project:

**EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

NOW, THEREFORE,

(a) If said BID shall be rejected, or

(b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year set forth above.

PRINCIPAL

SURETY

BY: _____

IMPORTANT: Surety companies executing BONDS must appear on the Treasure Department's most current line (Circular 570 as amended) and be authorized to transact business in the State where the project is located.

CONTRACT AGREEMENT

THIS AGREEMENT made and entered into this ____ day of _____, 20____ by and between _____ hereinafter called the CONTRACTOR, the City of Hattiesburg hereinafter called the OWNER, Witnesseth that the CONTRACTOR and the OWNER, for the consideration hereafter named and agrees as follows.

ARTICLE 1: SCOPE OF WORK

The CONTRACTOR agrees to furnish all tools, labor, equipment, materials, and supplies required to be furnished, and perform all work required under and in accordance with the plans entitled:

**EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

which are on file at the office of the OWNER, and the Specifications, Proposals, General and Special Conditions, attached hereto and made a part hereof as fully as though copied herein, under the direct supervision and to the entire satisfaction of the OWNER and in accordance with the Laws of the State of Mississippi.

ARTICLE 2: THE CONTRACT SUM

It is further agreed and understood by and between the parties hereunto that the OWNER agrees to pay and the CONTRACTOR agrees to accept full and final compensation for all work done under this agreement, the lump sum amount adjusted for variation of quantities at the unit prices named in the Proposal, which is hereto attached, such payment to be made in lawful money of the United States, at the time and in the manner hereinafter set forth.

ARTICLE 3: TIME OF COMPLETION

The CONTRACTOR agrees, for the consideration above expressed, to begin and complete the work within the time specified in the Proposal. If the CONTRACTOR fails to complete the work in the time specified, he shall pay the OWNER as **liquidated damages**, ascertained and agreed, and not in the nature of a penalty, the sum of \$ _____ for each day delayed, which shall be deducted from the final amount to be paid under the contract; provided that the extension of time with the waiver of liquidation damages may be granted as provided for in the Specifications.

ARTICLE 4: PROGRESS PAYMENTS

The OWNER agrees to make progress payments during the construction as provided herein as follows:

The CONTRACTOR will on or before the tenth (10th) day of each month make an estimate of the value of the work done, based on contract prices, and submit to the ENGINEER, along with an affidavit by the CONTRACTOR that progress payments theretofore received from OWNER have discharged in full all the CONTRACTOR's obligations stated in prior progress payments. ENGINEER will recommend partial payment to the OWNER within a reasonable time of receipt of CONTRACTOR's estimate based on the ENGINEER's estimated quantities.

The OWNER agrees to pay the CONTRACTOR one hundred percent (100%) of the value of the work done each month, less retainage in accordance with MS Code of 1972 Section 31-5-33 until final acceptance of the work has been made. If defective and/or materials are discovered or reasonable doubt arises to the integrity of any part of the work for which partial payment has been allowed, a deduction from subsequent estimates in the amount equal to the work in question will be made until the defects have been remedied or the cause for doubt removed.

ARTICLE 5: ACCEPTANCE AND FINAL PAYMENT

Upon receipt of written notice that the work is ready for final acceptance and inspection, the ENGINEER shall promptly make such inspection, and when he finds the work acceptable under the contract, and the contract fully performed, he shall promptly issue a final certificate, over his own signature, stating that the work provided for in this Contract has been completed and is accepted by him under the terms and conditions thereof. Then, the entire balance shall be due the CONTRACTOR within forty-five (45) days the date of said final acceptance and receipt of the closeout documents required per the Supplement to General Conditions and recommendation of the same to the OWNER.

Before issuance of final certificate, the CONTRACTOR shall submit evidence satisfactory to the ENGINEER that all payrolls, materials, bills, and other indebtedness connected with the work have been paid.

The making and acceptance of the final payment shall constitute a waiver of all claims by the OWNER, other than those arising from unsettled liens, from faulty work or materials appearing within one (1) year after payment, or claims previously made and still unsettled.

If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the CONTRACTOR, and the ENGINEER, so certifies, the OWNER shall, upon certificate of the ENGINEER and without terminating the Contract, make payment of the balance due for that portion of the work fully completed and

accepted. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

ARTICLE 6: THE PERFORMANCE BOND

The CONTRACTOR agrees to furnish a bond, with an approved surety thereon guaranteeing the performance of this contract, in no less than one hundred percent (100%) of the amount of the Contract. Said Bond shall be conditioned on full and complete performance of the Contract, and for the payment of all labor and materials for a period of one (1) year after completion. The Surety on said Bond shall be a surety company of financial resources satisfactory to the OWNER and authorized to do business in the State of Mississippi.

ARTICLE 7 INSURANCE

The CONTRACTOR agrees to also carry public liability insurance, property damage insurance, and workman's compensation insurance in amounts as required by the specifications.

WITNESSETH: that for and in consideration of the payments and agreements hereinafter mentioned:

1. The CONTRACTOR will commence and complete the construction of the project specified herein.
2. The CONTRACTOR will furnish all of the material, supplies, tools, equipment, labor, and other services necessary for the construction and completion of the project described herein.
3. The CONTRACTOR will commence the work required by the "Contract Documents" and complete the project on or before the completion date unless the period for completion is extended otherwise by the "Contract Documents."
4. The CONTRACTOR agrees to perform all of the work described in the "Contract Documents" and comply with the terms therein for the sum as shown in the bid schedule.
5. The term "Contract Documents" means and includes the following:

Advertisement for Bids	Notice of Award
Instructions to Bidders	Notice to Proceed
Bid	Change Order
Bid Bond	General Conditions
Contract Agreement	Supplemental General Conditions
Payment Bond	Technical Specifications

6. The OWNER will pay to the CONTRACTOR in the manner and at such times as set forth in the "General Conditions" such amounts as required by the "Contract Documents."
7. This "Contract Agreement" shall be binding upon all parties hereto and their respective heirs, executors, administrators, successors, and assigns.

OWNERS:

SEAL

City of Hattiesburg

Authorized by:

ATTEST _____

(Printed Name & Title)

CONTRACTOR:

SEAL

ATTEST _____

IMPORTANT NOTE: Surety companies executing bonds must appear on the US Treasury Department's most current list (Circular 570, as amended) and be authorized to transact business in the state where the project is located.

PAYMENT AND PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS: THAT WE, the Undersigned _____ (hereinafter called the Principal), a corporation, partnership or individual duly unauthorized by law to do business as a construction contractor in the State of Mississippi, and _____ of _____ (herein called the Surety), a corporation duly authorized to do surety business under the laws of the State of Mississippi, are held and firmly bound unto the City of Hattiesburg, MS (hereinafter called the Obligee), a Municipality existing under the laws of the State of Mississippi, in the penal sum of _____ Dollars (_____) lawful money of the United States, for the payment of which well and truly to be made, the said Principal and the said Surety do hereby bind ourselves, our heirs, executors, administrators and assigns, jointly and severally, by these presents, as follows:

The Condition of this obligation is such that; whereas Principal by an instrument in writing attached hereto and bearing date of _____ has agreed with said Obligee to do all work necessary and to furnish labor, materials, tools, supplies and services to construct **EDWARDS STREET INFRASTRUCTURE IMPROVEMENTS, HATTIESBURG, MISSISSIPPI** as shown on Plans and specified thereby in the Specifications, Proposal and other Contract Documents hereto attached.

NOW THEREFORE, if said Principal shall well and truly in good, sufficient and workmanlike manner, and to the satisfaction of Obligee perform and complete the work required, and shall defend, indemnify and save harmless said Obligee against all damages, claims, demands, expense and charge of every kind (including claims of patent infringement) arising out of injury or damage to persons or property by reason or arising from any act, omission or neglect of said Principal, his agent, servants or employees with relation to said work; and shall pay all cost, charges, rentals and expenses for labor, material, supplies and equipment and deliver the said improvement to Obligee completed and ready for occupancy or operation, and free from all liens, encumbrances or claims for labor, material or otherwise; and shall pay all other expenses lawfully chargeable to Obligee by reason of any default or neglect of the said Principal in the relation of said agreement and said work, then this obligation shall be void, otherwise to remain in full force and effect.

PROVIDED FURTHER, that the said surety for value received hereby stipulates and agrees that no charge, extension of time, alteration or addition to the terms of the Contract, or the work to be performed thereunder, or the Specifications accompanying the same, shall in any way affect its obligation on this bond and does hereby waive notice of any change, extension of time, alteration or addition to the terms of the Contract, or to the work, or to the Specifications.

PROVIDED FURTHER, that if Principal, or his, or its subcontractor or

subcontractors fail to duly pay for any labor, materials, team hire, sustenance provisions or any other supplies or materials used or consumed by such Principal or his, their or its subcontractors in performance of the work contracted to be done, the Surety will pay the same in any amount not exceeding the sum specified in the bond, together with interest as provided by law.

IN WITNESS THEREOF: Said Principal and Surety have hereunto set their hands and seals at _____ this _____ day of _____, 20__.

(SEAL)

WITNESSES:

PRINCIPAL

ADDRESS

Name of person executing for Principal

TITLE

SURETY

ADDRESS

WITNESSES:

Name of person executing for Surety

TITLE

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS

Wherever used in these General Conditions or in the other Contract Documents, the following terms shall have the meaning indicated which shall be applicable to both the singular and plural thereof.

ACCEPTANCE: By the OWNER of the Work as being fully complete in accordance with the Contract Documents.

AGREEMENT: The written agreement between the OWNER and the CONTRACTOR covering the Work to be performed: The Contract Documents are attached to and made a part of the Agreement. Also designated as the Contract.

ADDENDA: Written or graphic instruments issued prior to the execution of the Agreement which modify or interpret the Contract Documents, Drawings and Specifications, by addition, deletions, clarifications or corrections.

APPLICATION FOR PAYMENT: The form furnished by the ENGINEER which is to be used by the CONTRACTOR in requesting progress payments and an affidavit of the CONTRACTOR that progress payments theretofore received from the OWNER on account of the WORK have been applied by the CONTRACTOR to discharge in full all of the CONTRACTOR'S obligations stated in prior Applications for Payment.

APPROVAL: Accept as satisfactory.

BID: The offer or proposal of the Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

BIDDER: Any person, firm or corporation submitting a Bid for the Work.

BONDS: Bid, performance and payment bonds and other instruments of security furnished by the CONTRACTOR and his surety in accordance with the Contract Documents and in accordance with the law of the place of the project.

CHANGE ORDER: A written order to the CONTRACTOR signed by the OWNER authorizing an addition, deletion or revision in the Work, or an adjustment in the Contract Price or the Contract Time issued after execution of the Agreement.

CONTRACT DOCUMENTS: The Agreement, Addenda, Instruction's to Bidders, CONTRACTOR'S BID, the Bonds, the Notice of Award, these General Conditions,

the Supplementary conditions, Special Conditions, Technical Conditions, the Specifications, Drawings and Modifications, and Notice to Proceed.

CONTRACT PRICE: The total moneys payable to the CONTRACTOR under the Contract Documents.

CONTRACT TIME: The number of calendar days stated in the Agreement for the completion of the Work.

CONTRACTING OFFICER: The OWNER (Grantee) - The individual who is authorized to sign the contract documents on behalf of the OWNER'S governing body.

CONTRACTOR: The person, firm or corporation with whom the OWNER has executed the Agreement.

DAY: A calendar day of twenty-four hours measured from midnight to the next midnight.

DRAWINGS: The drawings which show the character and scope of the Work to be performed and which have been prepared or approved by the ENGINEER and are referred to in the Contract Documents.

ENGINEER: The person, firm or corporation named as such in the Contract Documents.

FIELD ORDER: A written order issued by the ENGINEER which clarifies or interprets the Contract Documents in accordance with Paragraph 9.3 or orders minor changes in the Work in accordance with paragraph 10.2.

HE, HIS, AND HIM: These are several pronouns that shall represent both male and female genders.

MODIFICATION: (a) A written amendment of the Contract Documents signed by both parties, (b) a Change Order (c) a written clarification or interpretation issued by the ENGINEER in accordance with paragraph 9.3 or (d) a written order for a minor change or alteration in the Work issued by the ENGINEER pursuant to paragraph 10.2. A modification may only be issued after execution of the Agreement.

NOTICE OF AWARD: The written notice by OWNER to the apparent successful Bidder stating that upon compliance with the conditions precedent to be fulfilled by him within the time specified, OWNER will execute and deliver the Agreement to him.

NOTICE TO PROCEED: A written notice given by OWNER to CONTRACTOR (with a copy to ENGINEER) fixing the date on which the Contract Time will commence to run and on which CONTRACTOR shall start to perform his obligations under the Contract Documents.

OWNER: A public body or authority, corporation, association, partnership, or individual for whom the Work is to be performed.

PROJECT: The entire construction to be performed as provided in the Contract Documents.

CONSTRUCTION OBSERVER, RESIDENT INSPECTOR, CONSTRUCTION INSPECTOR, PROJECT REPRESENTATIVE: An authorized representative of the ENGINEER assigned to observe the Work performed and materials furnished by the CONTRACTOR or such other person as may be appointed by the OWNER as his representative. The CONTRACTOR shall be notified in writing of the identity of this representative.

SHOP DRAWINGS: All drawings, diagrams, illustrations, brochures, schedules and other data which are prepared by the CONTRACTOR, a Subcontractor, manufacturer, supplier or distributor and which illustrate the equipment, material or some portion of the Work and as required by the Contract Documents.

SAMPLES: Physical examples which illustrate materials, equipment or workmanship and establish standards by which the Work will be judged.

SPECIFICATIONS: Those portions of the Contract Documents consisting of written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work.

SUBCONTRACTOR: An individual, firm or corporation having a direct contract with CONTRACTOR or with any other Subcontractor for the performance of a part of the Work at the site.

SUBSTANTIAL COMPLETION: Substantial completion may be granted for all or portions of the work prior to final completion and stopping of contract time. Substantial completion is defined as the date when the construction is sufficiently completed in accordance with the contract documents so that the project or specified part of the project can be utilized for the purpose for which it was intended. The contract provides that the retainer may be reduced for that portion of the work which substantial completion is granted, but the granting of substantial completion will not stop contract time or liquidated damages.

SUPPLEMENTARY GENERAL CONDITIONS: Federal and State conditions in effect at time of submission of Bid in addition to those Supplementary General

Conditions attached here to.

SUPPLIER: Any person or organization who supplies materials or equipment for the Work, including that fabricated to a special design, but who does not perform labor at the site.

SPECIAL CONDITIONS: When included as a part of the Contract Documents, Special Conditions refer only to the Work under this Contract.

SURETY: The corporate body which is bound with the CONTRACTOR and which engages to be responsible for the CONTRACTOR and his acceptable performance of the Work.

WORK: Any and all obligations, duties and responsibilities necessary to the successful completion of the Project assigned to or undertaken by CONTRACTOR under the Contract Documents, including all labor, materials, equipment and other incidentals, and the furnishing thereof.

WRITTEN NOTICE: The term "Notice" as used herein shall mean and include all written notices, demands, instructions, claims, approvals, and disapprovals required to obtain compliance with Contract requirements. Written notice shall be deemed to have been duly served if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or to an authorized representative of such individual, firm or corporation, or if delivered at or sent by registered mail to the last business address known to him who gives the notice. Unless otherwise stated in writing, any notice to or demand upon the OWNER under this Contract shall be delivered to the OWNER through the ENGINEER.

ARTICLE 2 - PRELIMINARY MATTERS:

AWARD:

2.2 The award of the Contract, if it is awarded, will be to the lowest and best responsible, responsive Bidder. No Notice of Award will be given until the OWNER has concluded such investigations as he deems necessary to establish the responsibility, qualifications, and financial ability of the Bidders to do the Work in accordance with the Contract Documents to the satisfaction of the OWNER within the time prescribed. The OWNER reserves the right to reject the BID of any Bidder who does not pass such investigation to the OWNER'S satisfaction. In analyzing Bids, the OWNER may take into consideration alternates and unit prices, if requested by the Bid Form. If the Contract is awarded, the OWNER will issue the NOTICE of AWARD and give the successful Bidder a contract for execution within sixty (60) days after the opening of Bids.

EXECUTION OF AGREEMENT:

2.3 At least three counterparts of the Agreement and such other Contract Documents will be executed and delivered by CONTRACTOR to the ENGINEER within 10 days of receipt from the OWNER.

FORFEITURE OF BID SECURITY:

2.4 Failure of the successful Bidder to execute and deliver the Agreement and deliver the required Bonds as stipulated in paragraph 2.3 shall be just cause for the OWNER to annul the Notice of Award and declare the Bid and any security therefore forfeited.

The quantities appearing in the bid schedule are approximate and have been prepared for comparison of bids. The OWNER does not guarantee or assume any responsibility that quantities shown on the plans will not vary during actual construction of the contract. The CONTRACTOR further acknowledges the possibility of variation of quantities, shall be precluded from claiming in the construction of the project, and the CONTRACTOR shall not claim deception or misunderstanding because of any variation in quantities, location, character of work, or any other condition. Payment will be made only for actual quantities of work performed and accepted.

The OWNER makes no guarantees regarding the character or extent of water levels, soil, rock, utilities, or any other subsurface condition the BIDDER may encounter during work. The OWNER requires BIDDERS to make their own evaluation of subsurface soil conditions and to determine how these conditions may affect methods of construction.

CONTRACTOR'S PRE-BID REPRESENTATIONS:

2.1 CONTRACTOR represents that he has familiarized himself with, and assumes full responsibility for having familiarized himself with, the nature and extent of the Contract Documents, Work, Locality, and local conditions and will obey all federal, state, and local laws, ordinances, rules and regulations that may in any manner affect performance of the Work, and represents that he has correlated his study and observations with the requirements of the Contract Documents. CONTRACTOR also represents that he has studied all surveys and investigation reports of subsurface and latent physical conditions referred to in the Specifications and made such additional surveys and investigations as he deems necessary for the performance of the Work at the Contract Price in accordance with the requirements of the Contract Documents and that he has correlated the results of all such data with the requirements of the Contract Documents.

COMMENCEMENT OF CONTRACT TIME:

2.5 The Contract Time will commence to run in accordance with the Notice to Proceed.

STARTING THE PROJECT:

2.6 CONTRACTOR shall start to perform his obligations under the Contract Documents on the date when the Contract Time commences to run. No Work shall be done at the site prior to the date on which the Contract Time commences to run, except with the written consent of the OWNER.

BEFORE STARTING CONSTRUCTION:

2.7 Before undertaking each part of the Work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. He shall at once report in writing to ENGINEER any conflict, error or discrepancy which he may discover; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Drawings or Specifications. CONTRACTOR shall pot-hole existing utilities to ascertain exact location throughout the entire project. CONTRACTOR shall notify the ENGINEER any such locations of utilities which will prevent the work from being performed as designed, any work performed in which conflicts with an existing utility shall be remedied by the CONTRACTOR at his sole expense.

SCHEDULE OF COMPLETION:

2.8 Within ten (10) days after delivery of the Notice to Proceed by OWNER to CONTRACTOR, CONTRACTOR shall submit to ENGINEER an estimated progress schedule with earnings indicating the starting and completion dates of the various stages of the Work, and a preliminary schedule of Shop Drawing submissions. (See paragraphs 6.22 through 6.26.) The ENGINEER shall review and return this schedule or require revisions thereto within 14 days of its submittal. If there is more than one CONTRACTOR involved in a project, the responsibility for coordinating the Work of all CONTRACTORS shall be as provided in the Special Conditions.

2.9 At a time deemed appropriate by the OWNER to but before starting the Work at the site, a preconstruction conference may be held to review the above schedules, to establish procedures for handling shop drawings and other submissions and for processing Applications for Payment, and to establish a working understanding between the parties as to the project. Present at the conference will be the OWNER or his representative, ENGINEER, Resident Project

Representatives, CONTRACTOR and his Superintendent.

QUALIFICATION OF SUBCONTRACTORS MATERIALMEN AND SUPPLIERS:

2.10 Within ten (10) working days after bid opening, the CONTRACTOR will (if required) submit to the OWNER and the ENGINEER, for acceptance, a list of the names of Subcontractors and such other persons and organizations (including those who are to furnish principal items of material or equipment) proposed for those portions of the Work as to which the identity of the Subcontractors and other person and organizations must be submitted as specified in the Contract Documents. Within thirty (30) working days after receiving the list, the ENGINEER will notify the CONTRACTOR in writing if either the OWNER or the ENGINEER, after due investigation, has reasonable objection to any Subcontractor, person or organization on such list. The failure of the OWNER or the ENGINEER to make objection to any Subcontractor, person or organization on the list within thirty days of receipt shall constitute an acceptance of such Subcontractor, person or organization. Acceptance of any such Subcontractor, person or organization shall not constitute a waiver of any right of the OWNER or the ENGINEER to reject defective Work, material or equipment, or Work, material or equipment not in conformance with the requirements of the Contract Documents.

ARTICLE 3 - CORRELATION, INTERPRETATION AND INTENT OF CONTRACT DOCUMENTS:

3.1 It is the intent of the Specifications and Drawings to describe a complete Project to be constructed in accordance with the Contract Documents. The Contract Documents comprise the entire Agreement between the OWNER and the CONTRACTOR. They may be altered only by a Modification.

3.2 The Contract Documents are complementary; what is called for by one is as binding as if called for by all. If CONTRACTOR finds a conflict, error or discrepancy in the Contract Documents, he shall call it to the ENGINEER'S attention in writing at once and before proceeding with the Work affected thereby; however, he shall not be liable to OWNER or ENGINEER for his failure to discover any conflict, error or discrepancy in the Specifications or Drawings. The various Contract Documents shall be given precedence, in case of conflict, error or discrepancy, as follows: Agreement Modifications, Addenda, Special Conditions, and Instruction's to Bidders, General Conditions, Technical Specifications and Drawings. If the requirements of one are more stringent than the other, the more stringent requirements shall apply.

3.3 The words "furnish", "furnish and install", "install", and "provide" or words with similar meaning shall be interpreted, unless otherwise specifically stated, to mean "furnish and install complete in place and ready for service."

3.4 Miscellaneous items and accessories which are not specifically mentioned, but which are essential to produce a complete and properly operating installation, or usable structure or plant providing the indicated function, shall be furnished and installed without change in the Contract Price. Such miscellaneous items and accessories shall be of the same quality standards including material, style, finish, strength, class, weight and other applicable characteristics, as specified for the major component of which the miscellaneous item or accessory is an essential part, and shall be approved by the ENGINEER before installation. The above requirement is not intended to include major components not covered by or inferable from the Drawings and Specifications.

3.5 The Work of all trades under this Contract shall be coordinated by the CONTRACTOR in such a manner as to obtain the best workmanship possible for the entire Project, and all components of Work shall be installed or erected in accordance with the best practices of the particular trade.

3.6 Manufacturer's literature, when referenced, shall be dated and numbered and is intended to establish the minimum requirements acceptable. Whenever reference is given to codes or standard specifications or other data published by regulating agencies or accepted organizations, including but not limited to National Electrical Code, applicable State Building Code, Federal Specifications, ASTM Specifications, various institute specifications, and the like, it shall be understood that such reference is to the latest edition including addenda in effect on the date of Bid.

3.7 Brand names where used in the Technical Specifications, are intended to denote the standard of quality required for the particular material or product. The use of a brand name item is to set a standard of quality and is not intended to restrict the Contractor from offering an equal item from other source(s) of supply. The term "equal" or "equivalent" when used in connection with brand names, shall be interpreted to mean a material or product that is similar and equal in type, quality, size, capacity, composition, finish, color and other applicable characteristics to the material or product specified by trade name, and that is for the same use and capable of performing the same function, in the opinion of the ENGINEER, as the material or product so specified. Proposed equivalent items must be approved by ENGINEER before they are purchased or incorporated in the Work.

ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE CONDITIONS; REFERENCE POINTS:

Availability of Lands

4.1 The OWNER will furnish, as indicated in Contract Documents, the lands upon

which the Work is to be done, rights-of-way for access thereto, and such other lands which are designated for use of the CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by the OWNER, unless otherwise specified in the Contract Documents. Other access to such lands or rights-of-way for the CONTRACTOR'S convenience shall be the responsibility of the CONTRACTOR. The CONTRACTOR will provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 The OWNER will, upon request, furnish to the BIDDERS copies of all available boundary surveys.

Subsurface Conditions:

4.3 The CONTRACTOR acknowledges that he has investigated prior to bidding and satisfied himself as to the conditions affecting the Work, including but not restricted to those bearing upon transportation, disposal, handling and storage of materials, availability of labor, water, electric power, roads and uncertainties of weather, river stages, tides, water tables or similar physical conditions at the site, the conformation and conditions of the grounds, the character of equipment and facilities needed preliminary to and during prosecution of the Work. The CONTRACTOR further acknowledges that he has satisfied himself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, including all exploratory work done on behalf of the OWNER on the site or any contiguous site, as well as from information presented by the Drawings and Specifications made a part of this Contract, or any other information made available to him prior to receipt of Bids. Any failure by the CONTRACTOR to acquaint himself with the available information will not relieve him from responsibility for estimating properly the difficulty or cost of successfully performing the Work. Any additional information necessary to ascertain subsurface soil conditions, including test holes and soil borings, not provided by the OWNER shall be undertaken by the BIDDER prior to bidding at his cost. Such exploration shall be adequate to satisfy the BIDDER of the materials expected to be encountered on the project. The OWNER assumes no responsibility for any conclusions or interpretations made by the CONTRACTOR on the basis of the information made available by the OWNER.

Differing Site Conditions

4.4 (a) The CONTRACTOR shall promptly, and before such conditions are disturbed, notify the OWNER in writing of: (1) subsurface or latent physical conditions at the site differing materially from those indicated in this contract, or (2) unknown physical conditions at the site, of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent

in work of the character provided for in this contract. The OWNER shall promptly investigate the conditions, and if he finds that such conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performance of any part of the work under this contract, whether or not changed as a result of such conditions, an equitable adjustment shall be made and the contract modified in writing accordingly.

(b) No claim of the CONTRACTOR under this clause shall be allowed unless the CONTRACTOR has given the notice required in (a) above.

(c) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

ARTICLE 5 - BONDS AND INSURANCE:

Performance and Payment Bonds:

5.1 The contractor's attention is directed to the Information for Bidders and Supplement to General Conditions.

Contractor's Liability Insurance:

5.2 The CONTRACTOR shall provide the OWNER with insurance certificates certifying that all required insurance is in force; and such insurance certificates shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

5.3 The CONTRACTOR agrees that if any part of the Work under the contract is sublet, he will require the Subcontractor(s) to carry insurance as required, and that he will require the Subcontractor(s) to furnish to him insurance certificates similar to those required by the OWNER in 5.1 and 5.2 above.

5.4 The CONTRACTOR agrees to add ENGINEER to insurance policy as additional insured.

Owner's Liability Insurance

5.4 The OWNER will be responsible for purchasing and maintaining his own liability insurance and, at his option, may purchase and maintain such insurance as will protect him against claims which may arise from operations under the Contract Documents.

Fire and Extended Coverage Insurance (Builders' Risk):

5.5 The CONTRACTOR shall maintain, as applicable, in an Insurance Company or

Insurance Companies acceptable to the OWNER, Fire, Extended Coverage and Vandalism & Malicious Mischief Insurance on buildings and structures, while in the course of construction, including foundations, additions, attachments and all permanent fixtures belonging to and constituting a part of said buildings or structures. The policy or policies shall also cover machinery, if the cost of machinery is included in the Contract. The amount of insurance should at all times be at least equal to the actual cash value of the insured property. The policy shall be in the name of the OWNER and the CONTRACTOR, as their interests may appear, and shall also cover the interests of all Subcontractors performing work.

5.6 The CONTRACTOR shall provide the OWNER with satisfactory evidence certifying that the foregoing insurance is in force; and such evidence shall include provisions that the insurance shall not be canceled, allowed to expire or be materially changed without giving the OWNER advance notice by registered mail.

Cancellation and Re-Insurance:

5.7 If any insurance should be canceled or changed by the insurance company or should any insurance expire during the period of this Contract, the CONTRACTOR shall be responsible for securing other acceptable insurance to provide the coverage specified in this section to maintain continuous coverage during the life of this Contract.

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES:

Supervision and Superintendence:

6.1 The CONTRACTOR will supervise and direct the Work. He will be solely responsible for the means, methods, techniques, safety, sequences and procedures of construction. The CONTRACTOR will employ and maintain on the Work a qualified supervisor or superintendent who shall have been designated in writing by the CONTRACTOR as the CONTRACTOR'S representative at the site. The supervisor shall have full authority to act on behalf of the CONTRACTOR and all communications given to the supervisor shall be as binding as if given to the CONTRACTOR. The supervisor shall be present on the site at all times as required to perform adequate supervision and coordination of the Work. (Copies of written communications given to the Superintendent shall be mailed to the Contractor's home or office.)

Labor, Materials and Equipment:

6.2 The CONTRACTOR will provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. He will at all times maintain good discipline and order at the site.

6.3 The CONTRACTOR will furnish all materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, local telephone, water and sanitary facilities and all other facilities and incidentals necessary for the execution, testing, initial operation and completion of the Work.

6.4 All materials and equipment will be new, except as otherwise provided in the Contract Documents. When special makes or grades of material which are normally packaged by the supplier or manufacturer are specified or approved, such materials shall be delivered to the site in their original packages or container with seals unbroken and labels intact.

6.5 All materials and equipment shall be applied, handled, installed, connected, erected, used, cleaned and conditioned in accordance with the instructions of the applicable manufacturer, fabricator or processors and industry standards, except as otherwise provided in the Contract Documents.

Materials, Equipment, Products and Substitutions:

6.6 Materials, equipment and products incorporated in the Work must be approved for use before being purchased by the CONTRACTOR. The CONTRACTOR shall submit to the ENGINEER a list of proposed materials, equipment or products, together with such samples as may be necessary for him to determine their acceptability and obtain his approval, within ninety (90) calendar days after award of Contract. No request for payment for "or equal" equipment will be approved until this list has been received and approved by the ENGINEER.

6.6.1 Whenever a material, article or piece of equipment is identified on the drawings or Specifications by reference to brand names or catalogue number, it shall be understood that this is referenced for the purpose of defining the performance or other salient requirements and that other products of equal capacities, quality and function shall be considered. The CONTRACTOR may recommend the substitution of a material, article, or piece of equipment of equal substance and function for those referred to in the Contract Documents by reference to brand names or catalog number, and if, in the opinion of the ENGINEER, such material, article, or piece of equipment is of equal substance and function to that specified, the ENGINEER may approve its substitution and use by the CONTRACTOR. Incidental charges or extra component parts required to accommodate the substitute will be made by the CONTRACTOR without a change in the Contract Price, or Contract Time.

6.6.2 No substitute shall be ordered or installed without the written approval of the ENGINEER who shall be the judge of equality.

6.6.3 Delay caused by obtaining approvals for substitute materials will not be considered justifiable grounds for an extension of construction time.

6.6.4 Should any work or materials, equipment or products not conform to requirements of the Drawings and Specifications or become damaged during the process of the Work, such Work or materials shall be removed and replaced, together with any work disarranged by such alterations, at any time before completion and acceptance of the Project. All such work shall be done at the expense of the CONTRACTOR. (See paragraph 7.10)

6.6.5 No materials or supplies for the Work shall be purchased by the CONTRACTOR or by any Subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the Seller. The CONTRACTOR warrants that he has good title to all materials and supplies used by him in the Work.

Concerning Subcontractors:

6.7 The CONTRACTOR will not employ any Subcontractor, other person or organization of the types referred to in paragraph 2.10 (whether initially or as a substitute) against whom the OWNER or the ENGINEER may have reasonable objection, nor will the CONTRACTOR be required to employ any Subcontractor against whom he has reasonable objection. The CONTRACTOR will not make any substitution for any Subcontractor who has been accepted by the OWNER and the ENGINEER, unless the ENGINEER determines that there is good cause for doing so.

6.8 The CONTRACTOR shall be fully responsible for all acts and omissions of his Subcontractors and of persons and organizations directly or indirectly employed by them and of persons and organizations for whose acts any of them may be liable to the same extent that he is responsible for the acts and omissions of persons directly employed by him. Nothing in the Contract Documents shall create any contractual relationship between OWNER or ENGINEER and any Subcontractor or other person or organization having a direct contract with CONTRACTOR, nor shall it create any obligation on the part of OWNER or ENGINEER to pay or to see to the payment of any moneys due any Subcontractor or other person or organization, except as may otherwise be required by law. OWNER or ENGINEER may furnish to any Subcontractor or other person or organization, to the extent practicable, evidence of amounts paid to CONTRACTOR on account of specific Work done in accordance with the schedule of values.

6.9 The divisions and sections of the Specifications and the identifications of any drawings shall not control the CONTRACTOR in dividing the work among Subcontractors or delineating the Work to be performed by any specific trade.

6.10 The CONTRACTOR agrees to bind specifically every Subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of the OWNER.

6.11 All Work performed for the CONTRACTOR by a Subcontractor shall be pursuant to an appropriate agreement between the CONTRACTOR and the Subcontractor.

6.12 The CONTRACTOR shall be responsible for the coordination of the trades, Subcontractors and material men engaged upon his Work.

6.12.1 The CONTRACTOR shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind Subcontractors to the CONTRACTOR by the terms of these General Conditions and other Contract Documents insofar as applicable to the Work of Subcontractors, and to give the CONTRACTOR the same power as regards terminating any subcontract that the OWNER may exercise over the CONTRACTOR under any provisions of the Contract Documents.

6.12.2 The OWNER or ENGINEER will not undertake to settle any differences between the CONTRACTOR and his Subcontractors or between Subcontractors.

6.12.3 If in the opinion of the ENGINEER, any Subcontractor on the project proves to be incompetent or otherwise unsatisfactory, he shall be replaced if and when directed in writing.

Patent Fees and Royalties:

6.13 The CONTRACTOR will pay all license fees and royalties and assume all costs incident to the use of any invention, design, process or device which is the subject of patent rights or copyrights held by others. He will indemnify and hold harmless the OWNER and ENGINEER and anyone directly or indirectly employed by either of them from and against all claims, damages, losses, and expenses (including attorneys' fees) arising out of any infringement of such rights during or after completion of the Work, and shall defend all such claims in connection with any alleged infringement of such rights.

6.14 The CONTRACTOR shall be responsible for determining the application of patent rights and royalties on materials, appliances, articles or systems prior to bidding. However, he shall not be responsible for such determination on systems which do not involve purchase by him of materials, appliances, and articles.

Permits:

6.15 The CONTRACTOR will secure and pay for all construction permits and licenses and will pay all governmental charges and inspection fees necessary for the prosecution of the Work, which are applicable at the time of his Bid. When such charges are normally made by the OWNER, there will be no charges to the CONTRACTOR. The OWNER shall assist the CONTRACTOR, when necessary, in

obtaining such permits and licenses. The CONTRACTOR will also pay all public utility charges.

Laws and Regulations:

6.16 The CONTRACTOR will give all notices and comply with all laws, ordinances, rules and regulations applicable to the Work. If the CONTRACTOR observes that the Specifications or Drawings are at variance therewith, he will give the ENGINEER prompt written notice thereof, and any necessary changes shall be adjusted by an appropriate Modification. If the CONTRACTOR performs any Work knowing it to be contrary to such laws, ordinances, rules and regulations, and without such notice to the ENGINEER, he will bear all costs arising wherefrom; however, it shall not be his primary responsibility to make certain that the Drawings and Specifications are in accordance with such laws, ordinances, rules and regulations.

Taxes:

6.17 Cost of all sales and other taxes for which the CONTRACTOR is liable under the Contract shall be included in the Contract Price stated by the CONTRACTOR.

Record Drawings:

6.18 The CONTRACTOR will keep one record copy of all Specifications, Drawings, Addenda, Modifications, and Shop Drawings at the site in good order and annotated to show all changes made during the construction process. These shall be available to the Engineer and shall be delivered to him for the OWNER upon completion of the Project. It shall be used for this purpose only.

Safety and Protection:

6.19 The CONTRACTOR will be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. He will take all necessary precautions for the safety of, and will provide the necessary protection to prevent damage, injury or loss to:

6.19.1 All employees on the work and other persons who may be affected thereby.

6.19.2 All the Work and all materials or equipment to be incorporated therein, whether in storage on or off the site.

6.19.3 Other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction.

6.20 The CONTRACTOR will designate a responsible member of his organization at the site whose duty shall be the prevention of accidents. This person shall be the CONTRACTOR'S superintendent unless otherwise designated in writing by the CONTRACTOR to the OWNER.

Emergencies:

6.21 In emergencies affecting the safety of persons or the Work or property at the site or adjacent thereto, the CONTRACTOR, without special instruction or authorization from the ENGINEER or OWNER, is obligated to act, at his discretion, to prevent threatened damage, injury or loss. He will give the ENGINEER prompt written notice of any significant changes in the Work or deviations from the Contract Documents caused thereby, and a Change Order shall be issued covering the changes and deviations involved. If the CONTRACTOR believes that additional work done by him in an emergency which arose from causes beyond his control entitles him to an increase in the Contract Price or an extension of the Contract Time, he may make a claim therefore as provided in Articles 11 & 12.

Shop Drawing and Samples:

6.22 After checking and verifying all field measurements, the CONTRACTOR will submit to the ENGINEER for review, in accordance with the accepted schedule of Shop Drawing submissions (see paragraph 2.9) three (3) copies (or at the ENGINEER'S option, one reproducible copy) of all Shop Drawings, which shall have been checked by and stamped with the approval of the CONTRACTOR. The data shown on the Shop Drawings will be complete with respect to dimensions, design criteria, materials of construction and the like to enable the ENGINEER to review the information as required.

6.23 The CONTRACTOR will also submit to the ENGINEER for review, with such promptness as to cause no delay in Work, all samples required by the Contract Documents. All samples will have been checked by and stamped with the approval of the CONTRACTOR, identified clearly as to material, manufacturer, any pertinent catalog numbers and the use for which intended.

6.24 At the time of each submission, the CONTRACTOR will in writing call the ENGINEER'S attention to any deviations that the Shop Drawings or sample may have from the requirements of the Contract Documents.

6.25 The ENGINEER will review with reasonable promptness Shop Drawings and samples, but his review shall be only for conformance with the design concept of the Project and for compliance with the information given in the Contract Documents. The review of a separate item as such will not indicate review of the assembly in which the item functions. The CONTRACTOR will make any corrections required by the ENGINEER and will return the required number of

corrected copies of Shop Drawings and resubmit new samples until the review is satisfactory to the ENGINEER. The CONTRACTOR shall direct specific attention in writing or on resubmitted Shop Drawings to revisions other than the corrections called for by the ENGINEER on previous submissions. The CONTRACTOR'S stamp of approval on any Shop Drawings or sample shall constitute a representative to the OWNER and the ENGINEER that the CONTRACTOR has either determined and verified all quantities, dimensions, field construction criteria, materials, catalogue numbers and similar data or he assumes full responsibility for doing so, and that he has reviewed or coordinated each Shop Drawings or sample with the requirements of the Work and the Contract Documents.

6.26 No Work requiring a Shop Drawing or sample submission shall be commenced until the submission has been reviewed by the ENGINEER. A copy of each Shop Drawing and each approved sample shall be kept in good order by the CONTRACTOR at the site and shall be available to the ENGINEER.

6.27 The ENGINEER'S review of Shop Drawings or samples shall not relieve the CONTRACTOR from his responsibility for any deviations from the requirements of the Contract Documents unless the CONTRACTOR has in writing called the ENGINEER'S attention to such deviation at the time of submission and the ENGINEER has given written approval to the specific deviation, nor shall any review by the ENGINEER relieve the CONTRACTOR from responsibility for errors or omission in the Shop Drawings.

Cleaning Up:

6.28 The CONTRACTOR shall clean up behind the Work as much as is reasonably possible as the Work progresses. Upon completion of the Work, and before acceptance of and final payment for the Project by the OWNER, the CONTRACTOR shall remove all his surplus and discarded materials excavated material and rubbish from the roadways, sidewalks, parking areas, lawns and all adjacent property; shall clean his portion of Work involved in any building under this Contract, so that no further cleaning by the OWNER is necessary prior to his occupancy; shall restore all property, both public and private, which has been disturbed or damaged during the prosecution of the Work; and shall leave the whole in a neat and presentable condition.

6.29 Clean-up operations shall consistently be carried on by the CONTRACTOR at all times to keep the premises free from accumulation of waste materials and rubbish. Upon completion of the Work he shall remove all rubbish, tools, scaffolding, surplus materials, etc., and shall leave his work "broom clean", or its equivalent, unless more exactly specified elsewhere in the Contract. The CONTRACTOR shall do the cleaning for all trades upon completion of the Work.

6.30 General. In case of dispute, the OWNER may remove the rubbish and charge

the cost to the CONTRACTOR as the ENGINEER shall determine to be just.

Public Convenience and Safety:

6.31 The CONTRACTOR shall, at all times, conduct the Work in such a manner as to insure the least practicable obstruction to public travel. The convenience of the general public and of the residents along and adjacent to the area of the Work shall be provided for in a satisfactory manner, consistent with the operation and local conditions. "Street Closed" signs shall be placed immediately adjacent to the Work, in a conspicuous position at such locations as traffic demands in accordance with the MUTCD. At any time that streets are required to be closed, the CONTRACTOR shall notify law enforcement agencies, fire departments, and parties operating emergency vehicles before the street is closed and again as soon as it is opened. Access to fire hydrants and other fire extinguishing equipment shall be provided and maintained at all times. The CONTRACTOR shall keep the portion of the project being used by the public in satisfactory condition. It may become necessary for the CONTRACTOR to sweep the roadway surface to completely remove debris.

Sanitary Provisions:

6.32 The CONTRACTOR shall furnish necessary toilet conveniences, secluded from public observation, for use of all personnel on the Work, whether or not in his employ. They shall be kept in a clean and sanitary condition and shall comply with the requirements and regulations of the Public Authorities having jurisdiction. He shall commit no public nuisance. Temporary sanitary facilities shall be removed upon completion of the Work and the premises shall be left clean.

Indemnification:

6.33 The CONTRACTOR will indemnify and hold harmless the OWNER and the ENGINEER and their agents and employees from and against all claims, damages, losses, and expenses including attorneys' fees arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss, or expense (a) is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than Work itself) including the loss of use resulting wherefrom and (b) is caused in whole or in part by any negligent act or omission of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder.

6.34 In any and all claims against the OWNER or the ENGINEER or any of their agents or employees, by any employee of the CONTRACTOR, any Subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.33 shall not be limited in any way by any limitation on the amount or type of damages,

compensation or benefits payable by or for the CONTRACTOR or any Subcontractor under workmen's compensation acts, disability benefit acts or other employee benefit acts.

6.35 The obligations of the CONTRACTOR under paragraph 6.33 shall not extend to the liability of the Engineer's negligent acts, errors or omissions or those of his employees or agents.

Responsibility for Connecting to Existing Work:

6.36 It shall be the express responsibility of the CONTRACTOR to connect his Work to each part of the existing work or work previously installed as required by the Drawings and Specifications to provide a complete installation.

Work in Street, Highway and Other Rights-of-Way:

6.37 Excavation, grading, fill, storm drainage, paving and any other construction or installations in rights-of-way of streets, highways, public carrier lines, utility lines (either aerial, surface or subsurface), etc., shall be done in accordance with requirements of the Contract Documents. The CONTRACTOR will be responsible for obtaining all permits necessary for the work. Upon completion of the Work, CONTRACTOR shall present to ENGINEER certificates, in triplicate, from the proper authorities stating that the Work has been done in accordance with their requirements.

6.37.1 The OWNER will cooperate with the CONTRACTOR in obtaining action from any utilities or public authorities involved in the above requirements.

6.37.2 The ENGINEER shall be responsible for obtaining elevations of curbs and gutters, pavement, storm drainage structures, and other such items which must be established by governmental departments as soon as grading operations are begun on the site and, in any case, sufficiently early in the construction period to prevent any adverse effect on the Project.

Cooperation with Governmental Departments, Public Utilities, Etc:

6.38 The OWNER shall be responsible for making all necessary arrangements with governmental departments, public utilities, public carriers, service companies and corporations owning or controlling roadways, railways, water, sewer, gas, electrical, telephone, and telegraph facilities such as pavements, tracks, piping, wires, cables, conduits, poles, guys, etc., including incidental structure connected therewith, that are encountered in the work in order that such items may be properly shored, supported and protected, or the CONTRACTOR may relocate them if he so desires. The CONTRACTOR shall give all proper notices, shall comply with requirements of such parties in the performance of his Work, shall permit entrance of such parties

on the Project in order that they may perform their necessary work, and shall pay all charges and fees made by such parties for this work.

6.38.1 The CONTRACTOR'S attention is called to the fact that there may be delays on the Project due to work to be done by governmental departments, public utilities, and others in repairing or moving poles, conduits, etc. The CONTRACTOR shall cooperate with the above parties, in every way possible, so that the construction can be completed in the least possible time.

6.38.2 The CONTRACTOR shall have made himself familiar with all codes, laws, ordinances and regulations which in any manner affect those engaged or employed in the Work, or materials and equipment used in or upon the Work, or in any way affect the conduct of the Work, and no plea of misunderstanding will be considered on account of his ignorance thereof.

Use of Premises:

6.39 CONTRACTOR shall confine his apparatus, storage of materials, and operations of his workmen to limits indicated by law, ordinances, permits, and directions of ENGINEER and OWNER, and shall not unnecessarily encumber any part of site.

6.39.1 CONTRACTOR shall not overload or permit any part of any structure to be loaded with such weight as will endanger its safety, nor shall he subject any part of the Work to stresses or pressures that will endanger it.

6.39.2 CONTRACTOR shall enforce OWNER'S instructions in connection with signs, advertisements, fires and smoking.

6.39.3 CONTRACTOR shall arrange and cooperate with OWNER in routing and parking of automobiles of his employees, subcontractors and other personnel and in routing material delivery trucks and other vehicles to the Project Site.

Protection of Existing Property Improvements:

6.40 Any existing surface or subsurface improvements, such as pavements, curbs, sidewalks, pipes or utilities, footings or structures (including portions thereof), trees, and shrubbery not indicated on the Drawings or noted in the Specifications as being removed or altered shall be protected from damage during construction of the Project. Any such improvements damaged during construction of the Project shall be restored to a condition equal to that existing at time of award of Contract.

Temporary Heat:

6.41 The General CONTRACTOR shall provide heat, fuel and services as necessary to protect all work and materials, within all habitable areas of permanent building construction, for all contracts against injury from dampness and cold until final acceptance of all work and materials for the Project, unless building is fully occupied by the OWNER prior to such acceptance, in which case the OWNER shall assume all expenses of heating from date of full occupancy. In areas outside those covered above, each prime contractor shall be responsible for providing such temporary heat, fuel and services as required to protect his work or shall make all necessary arrangements with the General CONTRACTOR for providing such temporary heat, fuel and services. Unless otherwise specifically permitted by Special Conditions, the permanent heating system shall not be used to provide temporary heat. CONTRACTOR'S proposed methods of heating shall be submitted for approval.

ARTICLE 7 - WORK BY OTHERS:

7.1 The OWNER may perform additional work related to the Project by himself, or he may let other direct contracts therefore which shall contain General Conditions similar to these. The CONTRACTOR will afford the other contractors who are parties to such direct contracts (or the OWNER, if he is performing the additional work himself), reasonable opportunity for the introduction and storage of materials and equipment and the execution of work, and shall properly connect and coordinate his Work with theirs.

7.2 If any part of the CONTRACTOR'S work depends for proper execution or results upon the work of any such other CONTRACTOR (or the OWNER), the CONTRACTOR will promptly report to the ENGINEER in writing any defects or deficiencies in such work that render it unsuitable for such proper execution and results.

7.3 The CONTRACTOR will do all cutting, fitting, and patching of his Work that may be required to make its several parts come together properly and fit it to receive or be received by such other work. The CONTRACTOR will not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of the ENGINEER and of the other contractors whose work will be affected.

7.4 If the performance of additional work by other contractors or the OWNER is not noted in the Contract Documents prior to the execution of the Contract, written notice thereof shall be given to the CONTRACTOR prior to starting any such additional work. If the CONTRACTOR believes that the performance of such additional work by the OWNER or others involves him in additional expense or entitles him to an extension of the Contract Time, he may make a claim therefore as provide in Articles 11 and 12.

7.5 Where practicable, the CONTRACTOR shall build around the work of other separate contractors or shall leave chases, slots and holes as required to receive and to conceal within the general construction work the work of such other separate contractors as directed by them. Where such chases, slots, etc., are impracticable, the work shall require specific approval of the ENGINEER.

7.6 Necessary chases, slots and holes not built or left by the CONTRACTOR shall be cut by the separate contractor requiring such alterations after approval of the CONTRACTOR. The CONTRACTOR shall do all patching and finishing of his Work where cut by other contractors at the expense of such other contractors.

7.7 Cooperation is required in the use of site facilities and in the detailed execution of the Work. Each contractor shall coordinate his operations with those of the other contractors for the best interest of the Work in order to prevent delay in the execution thereof.

7.8 Each contractor shall keep himself informed of the progress of the work of other contractors. Should lack of progress or defective workmanship on the part of other contractors interfere with his operations, the CONTRACTOR shall notify the ENGINEER immediately. Lack of such notice to the ENGINEER will be construed as acceptance by the CONTRACTOR of the status of the work of other contractors as being satisfactory for proper coordination of his own work.

7.9 Each contractor shall give notices of the progress of his work so as to allow other contractors adequate opportunity to properly direct and coordinate their work. The CONTRACTOR shall give notices of the progress of his Work so that work of other contractors, when required to be concealed, may be placed before the general construction Work. All such notices shall be submitted to the ENGINEER with copies to other prime contractors on the Project sufficiently ahead of job progress to permit adequate time for the other prime contractors to coordinate their work.

7.10 The cost of extra work resulting from lack of notices, untimely notices, failure to respond to notices, defective work or lack of coordination shall be borne by the CONTRACTOR responsible for such lack of notices, etc.

ARTICLE 8 - OWNER'S RESPONSIBILITIES:

8.1 The OWNER will issue all communications to the CONTRACTOR through the ENGINEER.

8.2 In case of termination of the employment of the ENGINEER, the OWNER will appoint an engineer against whom the CONTRACTOR makes no reasonable objection, whose status under the Contract Documents shall be that of the former ENGINEER. Any dispute in connection with such appointment shall be subject to

arbitration, if mutually agreeable.

8.3 The OWNER will furnish the data required of him under the Contract Documents promptly and shall make payments to the CONTRACTOR promptly after they are due as provided in Article 14.

8.4 OWNER'S duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.1, 4.4 and the Special Conditions. Paragraphs 4.2 and 4.3 refer to OWNER'S identifying and making available to CONTRACTOR copies of surveys and investigation reports of subsurface and latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by ENGINEER in preparing the Drawings and Specifications.

8.5 The OWNER'S responsibilities in respect of liability and property insurance are set forth in paragraph 5.4.

8.6 In addition to his rights to request changes in the Work in accordance with Article 10, the OWNER (especially in certain instances as provided in paragraph 10.4) will be obligated to execute Change Orders.

8.7 In connection with the OWNER'S right to stop Work or suspend Work; see paragraph 15.1. Paragraph 15.3 deals with the OWNER'S right to terminate services of the CONTRACTOR under certain circumstances.

8.8 The OWNER shall have the right to take possession of and use any completed or partially completed portions of the Work, notwithstanding the fact that the time for completing the entire Work or any portion thereof may not have expired; but such taking possession and use shall not be deemed an acceptance of any Work not completed in accordance with the Contract Documents. If such prior use increases the cost of or delays the Work, the CONTRACTOR shall be entitled to such extra compensation or extension of time or both, except by prior agreement, as the ENGINEER may determine. See paragraph 14.11.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION:

Owner's Representative:

9.1 The ENGINEER shall be the OWNER'S representative during the construction period. The duties and responsibilities and the limitations of authority of the ENGINEER as the OWNER'S representative during construction are set forth in Articles 1 through 17 of these General Conditions and shall not be extended without written consent of the OWNER and the ENGINEER.

9.1.1 The ENGINEER'S decision, in matters relating to aesthetics shall be final, if

within the terms of the Contract Documents.

9.1.2 Except as may be otherwise provided in this contract all claims, counter-claims, disputes and other matters in question between the OWNER and the CONTRACTOR arising out of or relating to this agreement or the breach thereof will be decided by arbitration if the parties hereto mutually agree, or in a court of competent jurisdiction within the State in which the OWNER is located.

Visits to Site:

9.2 The ENGINEER will make periodic visits to the site to observe the progress and quality of the executed Work and to determine, in general, if the Work is proceeding in accordance with the Contract Documents. He will not be required to make continuous on-site observations to check the quality or quantity of the Work. His efforts will be directed toward ascertaining on behalf of the OWNER that the completed Project will conform to the requirements of the Contract Documents. On the basis of his on-site observations as an experienced and qualified design professional, he will keep the OWNER informed of the progress of the Work and will endeavor to guard the OWNER against defects and deficiencies in the Work of contractors.

Clarifications and Interpretations:

9.3 The ENGINEER will issue with reasonable promptness such written clarification or interpretations of the Contract Documents (in the form of Drawings or otherwise) as he may determine necessary, which shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. If the Contractor believes that a written clarification and interpretation entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

Measurement of Quantities:

9.4 All Work completed under the Contract will be measured by the CONTRACTOR according to the United States Standard Measures. All linear surface measurements will be made horizontally or vertically as required by the item measured.

Rejecting Defective Work:

9.5 The ENGINEER will have authority to disapprove or reject Work which is "defective" (which term is hereinafter used to describe Work that is unsatisfactory, faulty or defective, or does not meet the requirements of any inspection, test or approval or has been damaged prior to final acceptance). He will also have authority to require special inspection or testing of the Work whether or not the

Work is fabricated, installed or completed.

Shop Drawings, Change Orders and Payments:

9.6 In connection with the ENGINEER'S responsibility as to Shop Drawings and samples, see paragraphs 6.22 through 6.27, inclusive.

9.7 In connection with the ENGINEER'S responsibility for Change Orders; see Articles 10, 11, and 12.

9.8 In connection with the ENGINEER'S responsibilities in respect of Application for Payment, etc., see Article 14.

Resident Project Representative:

9.9 The OWNER or the ENGINEER will provide on-site representation sufficient to guarantee that construction is in general compliance with the construction drawings and the contract specifications.

Decisions on Disagreements:

9.10 The ENGINEER will be the initial interpreter of the terms and conditions of the Contract Documents and the judge of the performance hereunder. In his capacity as interpreter and judge, he will exercise his best efforts to insure faithful performance by both the OWNER and the CONTRACTOR. He will not show partiality to either and shall not be liable for the result of any interpretation or decision rendered in good faith. Claims, disputes and other matters relating to the execution and progress of the Work or the interpretation of or performance under the Contract Documents shall be referred initially to the ENGINEER for decision; which he shall render in writing within a reasonable time.

9.11 Either the OWNER or the CONTRACTOR, if the other agrees, may request legal action with respect to any such claim, dispute or other matter that has been referred to the ENGINEER, except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.11, such legal action to be in accordance with Article 16. However, no request for legal action of any such claim, dispute or other matter shall be made until the earlier of (a) the date on which the ENGINEER has rendered his decision or (b) the tenth day after the parties have presented their evidence to the ENGINEER if he has not rendered his written decision before that date. No request for legal action shall be made later than thirty (30) days after the date on which the ENGINEER rendered his written decision in respect of the claim, dispute or other matter as to which legal action is sought; and the failure to request legal action within said thirty (30) days period shall result in the ENGINEER'S decision being final and binding upon the OWNER and the CONTRACTOR. If the ENGINEER renders a decision after legal proceedings have

been initiated, such decision may be entered as evidence but shall not supersede the legal proceedings, except where the decision is acceptable to the parties concerned.

Limitations on Engineer's Responsibilities:

9.12 Neither the ENGINEER'S authority to act under this Article 9 nor any decision made by him in good faith either to exercise or not exercise such authority shall give rise to any duty or responsibility of the ENGINEER to the CONTRACTOR, any Subcontractor, any of their agents or employees or any other person performing any of the Work.

9.13 The ENGINEER will not be responsible for the construction means, methods, techniques, sequences or procedures, or the safety precautions and programs incident thereto, and he will not be responsible for the CONTRACTOR's failure to perform the Work in accordance with the Contract Documents.

9.14 The ENGINEER will not be responsible for the acts or omissions of the CONTRACTOR, or any Subcontractors, or any of his or their agents or employees, or any other person performing any of the Work.

ARTICLE 10 - CHANGES IN THE WORK:

10.1 Without invalidating the Agreement, the OWNER may, at any time or from time to time, order additions, deletions or revisions in the Work; these will be authorized by Change Orders. Upon receipt of a Change Order, the CONTRACTOR will proceed with the Work involved. All such Work shall be executed under the applicable conditions of the Contract Documents. If any Change Order causes an increase or decrease in the Contract Price or an extension or shortening of the Contract Time, an equitable adjustment will be made as provided in Article 11 or Article 12. A Change Order signed by the CONTRACTOR indicates his agreement therewith.

10.2 The ENGINEER may authorize minor changes or alterations in the Work not involving extra cost and not inconsistent with the overall intent of the Contract Documents. These may be accomplished by a Field Order. If the CONTRACTOR believes that any minor change or alteration authorized by the ENGINEER entitles him to an increase in the Contract Price or extension of Contract Time, he may make a claim therefore as provided in Articles 11 and 12.

10.3 Additional Work performed by the CONTRACTOR without authorization of a Change Order will not entitle him to an increase in the Contract Price or an extension of the Contract Time, except in the case of an emergency as provided in paragraph 6.21 and except as provided in paragraph 10.2.

10.4 The OWNER will execute appropriate Change Orders prepared by the ENGINEER covering changes in the Work to be performed as provided in paragraph 4.4, and Work performed in an emergency as provided in paragraph 6.21 and any other claim of the CONTRACTOR for a change in the Contract Time or the Contract Price which is approved by the ENGINEER.

10.5 It is the CONTRACTOR'S responsibility to notify his surety of any changes affecting the general scope of the Work or change in the Contract Price and the amount of the applicable bonds shall be adjusted accordingly. The CONTRACTOR will furnish proof of such adjustment to the OWNER.

ARTICLE 11 - CHANGE OF CONTRACT PRICE:

11.1 The Contract Price constitutes the total compensation payable to the CONTRACTOR for performing the Work. All duties, responsibilities and obligations assigned to or undertaken by the CONTRACTOR shall be at his expense without changing the Contract Price.

11.2 (a) The OWNER may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make any change in the Work within the general scope of the contract, including but not limited to changes:

- (1) In the specifications (including drawings and designs);
- (2) In the method or manner of performance of the work;
- (3) In the Owner-furnished facilities, equipment, materials, services, or site; or
- (4) Directing acceleration in the performance of the work.

(b) Any other written order or an oral order (which terms as used in this paragraph (b) shall include direction, instruction, interpretation or determination) from the OWNER, which causes any such change, shall be treated as a change order under this clause, provided that the CONTRACTOR gives the OWNER written notice stating the date, circumstances, and source of the order and that the CONTRACTOR regards the order as a change order.

(c) Except as herein provided, no order, statement, or conduct of the OWNER shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment hereunder.

(d) If any change under this clause causes an increase or decrease in the CONTRACTOR'S cost of, or the time required for, the performance of any part of the work under this contract, whether or not changed by any order, an equitable adjustment shall be made and the contract modified in writing accordingly: PROVIDED, HOWEVER, that except for claims based on defective specifications, no claim for any change under (b) above shall be allowed for any costs incurred more than 20 days before the CONTRACTOR gives written notice as therein required.

And provided further, that in the case of defective specifications for which the OWNER is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the CONTRACTOR in attempting to comply with such defective specifications.

(e) If the CONTRACTOR intends to assert a claim for an equitable adjustment under this clause, he must, within 30 days after receipt of a written change order under (a) above or the furnishing of a written notice under (b) above, submit to the OWNER a written statement setting forth the general nature and monetary extent of such claim, unless this period is extended by the OWNER. The statement of claim hereunder may be included in the notice under (b) above.

(f) No claim by the CONTRACTOR for an equitable adjustment hereunder shall be allowed if asserted after final payment under this contract.

11.3 The value of any Work covered by a Change Order or of any claim for an increase or decrease in the Contract Price shall be determined in one of the following ways:

11.3.1 Where the Work involved is covered by unit prices contained in the Contract Documents by application of unit prices to the quantities of the items involved.

11.3.2 By negotiated lump sum.

11.3.3 The actual cost for labor, direct overhead, materials, supplies, equipment, and other services necessary to complete the work plus a fixed amount to be agreed upon to cover the cost of general overhead and profit to be negotiated.

11.4 The term Cost of the Work means the sum of all costs necessarily incurred and paid by the CONTRACTOR in the proper performance of the Work. Except as otherwise maybe agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items and shall not include any of the costs itemized in paragraph 11.5:

11.4.1 Payroll costs for employees in the direct employ of CONTRACTOR in the performance of the Work under schedules of job classifications agreed upon by OWNER and CONTRACTOR. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to salaries and wages plus the costs of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workmen's compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. The expenses of performing work after regular working hours, on Sunday or legal holidays shall be included in the above to the extent authorized by OWNER.

11.4.2 Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and manufacturer's field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds, and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.

11.4.3 Payments made by CONTRACTOR to the Subcontractors for Work performed by Subcontractors. If required by OWNER, CONTRACTOR shall obtain competitive bids from Subcontractors acceptable to him and shall deliver such Bids to OWNER who will then determine with the advice of ENGINEER, which Bids will be accepted. If a subcontract provides that the Subcontractor is to be paid on the basis of Cost of Work plus a Fee, the cost of the Work shall be determined in accordance with paragraphs 11.4 and 11.5.

11.4.4 Costs of special consultants (including but not limited to, engineers, architects, testing laboratories, surveyors, lawyers and accountants) employed for services specifically related to the Work.

11.4.5 Supplemental costs including the following:

11.4.5.1 The proportion of necessary transportation, travelling and subsistence expenses of CONTRACTOR'S employees incurred in discharge of duties connected with the Work.

11.4.5.2 Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workmen, which are consumed in the performance of the Work, and cost less market value of such items used but not consumed which remain the property of CONTRACTOR.

11.4.5.3 Rentals of all construction equipment and machinery and the parts thereof whether rented from CONTRACTOR or other in accordance with rental agreements approved by OWNER with the advice of ENGINEER, and the cost of transportation, loading, unloading, installation, dismantling and removal thereof--all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall end when the use thereof is no longer necessary for the Work.

11.4.5.4 Sales, use or similar taxes related to the Work, and for which CONTRACTOR is liable imposed by any governmental authority.

11.4.5.5 Deposits lost for causes other than CONTRACTOR'S negligence, royalty

payments and fees for permits and licenses. Costs for permits and licenses must be shown as a separate item.

11.4.5.6 Losses, damages and expenses, not compensated by insurance or otherwise, sustained by CONTRACTOR in connection with the execution of, and to, the Work, provided they have resulted from causes other than the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of OWNER. No such losses, damages and expenses shall be included in the Cost of Work for the purpose of determining CONTRACTOR'S fee. If however, any such loss or damage requires reconstruction and CONTRACTOR is placed in charge thereof, he shall be paid for his services a fee proportionate to that stated in paragraph 11.6.2.

11.4.5.7 The cost of utilities, fuel and sanitary facilities at the site.

11.4.5.8 Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, expressage and similar petty cash items in connection with the Work.

11.4.5.9 Cost of premiums for additional Bonds and Insurance required because of changes in the Work.

11.5 The term cost of the Work shall not include any of the following:

11.5.1 Payroll costs and other compensation of CONTRACTOR'S officers, executives, principals, (of partnership and sole proprietorships), general managers, engineers, architects, estimators, lawyers, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks and other personnel employed by CONTRACTOR whether at the site or in his principal or a branch office for general administration of the Work and not specifically included in the schedule referred to in subparagraph 11.4.1 -- all of which are to be considered administrative costs covered by the CONTRACTOR'S Fee.

11.5.2 Expenses of CONTRACTOR'S principal and branch offices other than his office at the site.

11.5.3 Any part of CONTRACTOR'S capital expenses, including interest on CONTRACTOR'S capital employed for the Work and charges against CONTRACTOR'S for delinquent payments.

11.5.4 Cost of premiums for all bonds and for all insurance policies whether or not CONTRACTOR is required by the Contract Documents to purchase and maintain the same (except as otherwise provide in subparagraph 11.4.5.9.)

11.5.5 Costs due to the negligence of CONTRACTOR, any Subcontractors, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable including but not limited to, the correction of defective work, disposal of materials or equipment wrongly supplied and making good any damage to property.

11.5.6 Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.4.

11.6 The CONTRACTOR'S Fee which shall be allowed to CONTRACTOR for his overhead and profit shall be determined as follows;

11.6.1 A mutually acceptable firm fixed price; or if none can be agreed upon,

11.6.2 A mutually acceptable fixed fee based on the estimate of the various portions of the Cost of the Work.

11.7 The amount of credit to be allowed by CONTRACTOR to OWNER for any such change which results in a net decrease in cost will be the amount of the actual net decrease. When both additions and credits are involved in any one change, the net shall be computed to include overhead and profit, identified separately, for both additions and credits.

11.8 Whenever the cost of any Work is to be determined pursuant to paragraphs 11.4 and 11.5, CONTRACTOR will submit in form prescribed by ENGINEER an itemized cost breakdown together with supporting data.

11.9 Allowances: It is understood that the CONTRACTOR has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be done by such material men, suppliers, or Subcontractors and for such sums within the limit of the allowances as the ENGINEER may approve. Upon final payment, the Contract Price shall be adjusted as required and an appropriate Change Order issued. The CONTRACTOR agrees that the original Contract Price includes such sums as he deems proper for costs and profit on account of cash allowances. No demand for additional cost or profit in connection therewith will be allowed.

11.9.1 These allowances shall cover the cost to the CONTRACTOR less any applicable trade discount, of the materials and equipment required by the allowance delivered at the site, and all applicable taxes.

11.9.2 The CONTRACTOR'S costs for unloading and handling on site, labor, installation costs, overhead, profit and other expenses contemplated for the original

allowance shall be included in the Contract Price and not in the allowance.

11.9.3 Whenever the cost, as described in 11.9.1 above, is more than or less than the allowance, the Contract Price shall be adjusted accordingly by Change Order. The amount of the Change Order will recognize changes, if any, in handling costs on the site, labor, installation costs, overhead, profit and other expenses, except that whenever unit price allowances are stipulated for brick, the Change Order will not include any cost as described in 11.5 above.

ARTICLE 12 - CHANGE OF THE CONTRACT TIME:

12.1 The Contract Time may only be changed by a Change Order. Any claim for an extension in the Contract Time shall be based on written notice delivered to OWNER and ENGINEER within ten days of the occurrence of the event giving rise to the claim. Notice of the extent of the claim with supporting data shall be delivered within forty-five days of such occurrence unless ENGINEER allows an additional period of time to ascertain more accurate data. All claims for adjustment in the Contract Time shall be determined by ENGINEER if OWNER and CONTRACTOR cannot otherwise agree. Any change in the Contract Time resulting from any such claim shall be incorporated in a Change Order.

12.2 The Contract Time will be extended in an amount equal to time lost due to delays beyond the control of CONTRACTOR if he makes a claim therefore as provided in paragraph 12.1. Such delays shall include, but not be restricted to, acts or neglect by any separate contractor employed by OWNER, fires, floods, labor disputes, epidemics, or acts of God.

12.3 All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of the Article 12 shall not exclude recovery for damages (including compensation for additional professional services) for delay by either parties.

12.4 No claim for delay shall be allowed because of failure to furnish Drawings until two weeks after demand for such drawings and not then unless such claim be reasonable.

12.5 This article does not exclude the recovery of damages for delay by either party under other provisions in the Contract Documents.

ARTICLE 13 - GUARANTY:

13.1 The CONTRACTOR shall guarantee all materials and equipment furnished and Work performed for a period of one (1) year from the date of SUBSTANTIAL COMPLETION. The CONTRACTOR warrants and guarantees for a period of one (1) year from the date of SUBSTANTIAL COMPLETION of the system that the

completed system is free from all defects due to faulty materials or workmanship and the CONTRACTOR shall promptly make such corrections as may be necessary by reason of such defects including the repairs of any damage to other parts of the system resulting from such defects. The OWNER will give notice of observed defects with reasonable promptness. In the event that the CONTRACTOR should fail to make such repairs or adjustments, in the Work that may be made necessary by such defects, the OWNER may do so and charge the CONTRACTOR the cost thereby incurred. The Performance Bond shall remain in full force and effect through the guarantee period.

ARTICLE 14 - PAYMENTS AND COMPLETION:

Payments to Contractors:

14.1 At least ten (10) days before each progress payment falls due (but not more often than once a month), the CONTRACTOR will submit to the ENGINEER a partial payment estimate filled out and signed by the CONTRACTOR covering the WORK performed during the period covered by the partial payment estimate and supported by such data as the ENGINEER may reasonably require. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at or near the site, the partial payment estimate shall also be accompanied by such supporting data, satisfactory to the OWNER. The ENGINEER will, within ten (10) days after receipt of each partial payment estimate, either indicate in writing his approval of payment and present the partial payment estimate to the OWNER, or revise the partial payment estimate provides the same to the CONTRACTOR indicating in writing his reasons for refusing or revising payment. In the latter case, the CONTRACTOR may make the necessary corrections and resubmit the partial payment estimate. The OWNER will, within forty-five (45) days of presentation to him of an approved partial payment estimate, pay the CONTRACTOR a progress payment on the basis of the approved partial payment estimate. The OWNER may retain a portion of the amount otherwise due the CONTRACTOR. Except as State law otherwise provides, the amount the OWNER retains shall be limited to the following:

14.1.1 Withholding of not more than 5 percent of the payment claimed until work is 50 percent complete;

14.1.2 When Work is 50 percent complete, reduction of the withholding to 2.5 percent of the dollar value of all Work satisfactorily completed to date, provided that the CONTRACTOR is making satisfactory progress and there is no specific cause for greater withholding and the same is requested by the CONTRACTOR in writing;

14.1.3 When the Work is substantially complete (operational or beneficial occupancy), the withheld amount shall be further reduced below 5 percent to only

that amount necessary to assure completion.

14.1.4 The OWNER may reinstate up to 5 percent withholding if the OWNER determines, at its discretion, that the CONTRACTOR is not making satisfactory progress or there is other specific cause for such withholding.

Contractor's Warranty of Title:

14.2 The CONTRACTOR warrants and guarantees that title to all work, materials and equipment covered by an Application for Payment, whether incorporated in the Project or not, will have passed to the OWNER prior to the making of the Application for payment, free and clear of all liens, claims, security interests and encumbrances (hereafter in these General Conditions referred to as "Liens") and that no work, materials or equipment covered by an Application for Payment will have been acquired by the CONTRACTOR or by any other person performing the Work at the Site or furnishing materials and equipment for the Project, subject to an agreement under which an interest therein or encumbrance thereon is retained by the seller or otherwise imposed by the CONTRACTOR or such other person.

Approval of Payments:

14.3 The ENGINEER'S approval of any payment requested in an Application for Payment shall constitute a representation by him to the OWNER, based on the ENGINEER'S on-site observations of the Work in progress as an experienced and qualified design professional and on his review of the Application of Payment and the supporting data, that the Work has progressed to the point indicated; That, to the best of his knowledge, information and belief, the quality of the Work is in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning Project upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents and any qualifications stated in his approval), and that the CONTRACTOR is entitled to payment of the amount approved. However, by approving any such payment, the ENGINEER shall not thereby be deemed to have represented that he made exhaustive or continuous on-site observations to check the quality or the quantity of the Work, or that he has reviewed the means, methods, techniques, sequences, and procedures of construction or that he has made any examination to ascertain how or for what purpose the CONTRACTOR has used the moneys paid or to be paid to him on account of the Contract Price, or that title to any Work, materials, or equipment has passed to the OWNER free and clear of any Liens.

14.4 The CONTRACTOR shall make the following certification on each request for payment:

"I hereby certify that the labor and materials listed on this request for payment has been used in the construction of this work or that all materials included in this request for payment and not yet incorporated into the construction are now on the

site or stored at an approved location; and payment received from the last request for payment has been used to make payments to all first tier subcontractors and suppliers except as listed below."

14.5 The ENGINEER'S approval of final payment shall constitute an additional representation by him to the OWNER that the conditions precedent to the CONTRACTOR'S being entitled to final payment as set forth in paragraph 14.11 have been fulfilled.

14.6 The ENGINEER may refuse to approve the whole or any part of any payment if, in his opinion, he is unable to make such representations to the OWNER. He may also refuse to approve any such payment, because of subsequently discovered evidence or the results of subsequent inspections or tests nullify any such payment previously approved, to such extent as may be necessary in his opinion to protect the OWNER from loss because:

14.6.1 The Work is defective, reasonable doubt exists to the integrity, or completed Work has been damaged requiring correction or replacement,

14.6.2 The Work for which payment is request cannot be verified,

14.6.3 Claims or Liens have been filed or there is reasonable evidence indicating the probable filing thereof,

14.6.4 The Contract Price has been reduced because of Modifications,

14.6.5 The OWNER has been required to correct defective Work or complete the Work in accordance with paragraph 13.1,

14.6.6. Of unsatisfactory prosecution of the Work, including failure to clean up as required by paragraphs 6.29 and 6.30,

14.6.7. Of persistent failure to cooperate with other contractors on the Project and persistent failure to carry out the Work in accordance with the Contract Documents,

14.6.8. Of liquidated damages payable by the CONTRACTOR or,

14.6.9. Of any other violation of, or failure to comply with, the provisions of the Contract Documents.

14.7 Prior to Substantial Completion, the OWNER, with the approval of the ENGINEER and with the concurrence of the CONTRACTOR, may use any completed or substantially completed portions of the Work. Such use shall not constitute and acceptance of such portions of the Work.

14.8 The OWNER shall have the right to enter the premises for the purpose of doing work not covered by the Contract Documents. This provision shall not be construed as relieving the CONTRACTOR of the sole responsibility for the care and protection of the Work, or restoration of any damaged Work, except such as may be caused by agents or employees of the OWNER.

14.9 Upon completion and acceptance of the Work, the ENGINEER shall issue a certificate attached to the final payment request that the Work has been accepted by him under the conditions of the Contract Documents. The entire balance found to be due the CONTRACTOR, including the retained percentages, but except such sums as may be lawfully retained by the OWNER, shall be paid to the CONTRACTOR within forty-five (45) days of completion and acceptance of the Work.

14.10 The CONTRACTOR will indemnify and save the OWNER or the OWNER'S agents harmless from all claims growing out of the lawful demands of Subcontractors, laborers, workmen, mechanics, material men, and furnishers of machinery and parts thereof, equipment, tools, and all supplies, incurred in the furtherance of the performance of the Work. The CONTRACTOR shall, at the OWNER'S request, furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged, or waived. If the CONTRACTOR fails to do so the OWNER may, after having notified the CONTRACTOR, either pay unpaid bills or withhold from the CONTRACTOR'S unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged whereupon payment to the CONTRACTOR shall be resumed, in accordance with the terms of the Contract Documents, but in no event shall the provisions of this sentence be construed to impose any obligations upon the OWNER to either the CONTRACTOR, any payment so made by the OWNER shall be considered as a payment made under the Contract Documents by the OWNER to the CONTRACTOR and the OWNER shall not be liable to the CONTRACTOR for any such payments made in good faith.

Acceptance of Final Payment as Release:

14.11 When all items of work are completed to the satisfaction of the ENGINEER and the ENGINEER has been advised by the CONTRACTOR that a final inspection is desired, time will be suspended until final inspection is conducted and for an additional 14 calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 14-day suspension all necessary items of work have not been completed, time changes will resume. If the specified completion date had not been reached at the time the CONTRACTOR called for a final inspection, the calendar day difference between the specified completion date and the date the CONTRACTOR called for a final inspection will be added after the 14-day period before starting liquidated damages. If a project is on liquidated

damages at the time a final inspection is scheduled, liquidated damages will be suspended until the final inspection is conducted and for seven (7) calendar days after the CONTRACTOR has been notified in writing of the results of the inspection. If after the end of the 7-day suspension all necessary items of work have not been completed, liquidated damages will resume. When final inspection has been made by the ENGINEER and all items of work have been completed, the daily time charge will cease.

14.12 The acceptance by the CONTRACTOR of final payment shall be and shall operate as a release to the OWNER of all claims and liability to the CONTRACTOR other than claims in stated amounts as may be specifically excepted by the CONTRACTOR for all things done or furnished in connection with this Work and for every act and neglect of the OWNER and others relating to or arising out of this Work. Any payment however, final or otherwise, shall not release the CONTRACTOR or his sureties from any obligations under the Contract Documents or the Performance Bond and Payment Bonds.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION:

Owner May Suspend Work:

15.1 The OWNER may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety days by notice in writing to the CONTRACTOR and the ENGINEER which shall fix the date on which Work shall be resumed. The CONTRACTOR will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if he makes a claim therefore as provided in Articles 11 and 12.

Work During Inclement Weather:

15.2 No Work shall be done under these Specifications except by permission of the OWNER when the weather is unfit for good and careful work to be performed. Should the severity of the weather continue, the CONTRACTOR, upon the direction of the OWNER, shall suspend all work until instructed to resume operations by the OWNER and the Contract Time shall be extended to cover the duration of the order. Work damaged during periods of suspension due to inclement weather shall be repaired and/or replaced by the CONTRACTOR. Any compensation for repairs or replacements shall be subject to approval of the OWNER.

Owner May Terminate:

15.3 If the CONTRACTOR is adjudged bankrupt or insolvent, or if he makes a general assignment for the benefit of his creditors, or if a trustee or receiver is appointed for the CONTRACTOR or for any of his property; or if he files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or

similar laws, or if he repeatedly fails to supply sufficient skilled workmen or suitable materials or equipment, or if he repeatedly fails to make prompt payments to Subcontractors or for labor, materials or equipment or he disregards laws, ordinances, rules regulations or orders of any public body having jurisdiction, or if he disregards the authority of the ENGINEER, or if he otherwise violates any provision of the Contract Documents, then the OWNER may without prejudice to any other right or remedy and after giving the CONTRACTOR and his surety seven days written notice, terminate the services of the CONTRACTOR and take possession of the Project and of all materials, equipment, tools, construction equipment and machinery thereon owned by the CONTRACTOR, and finish the Work by whatever method he may deem expedient. In such case the CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Project, including compensation for additional professional services, such excess shall be paid to the CONTRACTOR. If such costs exceed such unpaid balance, the CONTRACTOR or the Surety will pay the difference to the OWNER. Such costs incurred by the OWNER will be determined by the ENGINEER and incorporated in a Change Order.

15.4 Where the CONTRACTOR'S services have been so terminated by the OWNER, said terminations shall not affect any rights of the OWNER against the CONTRACTOR then existing or which may thereafter accrue. Any retention or payment of moneys by the OWNER due the CONTRACTOR will not release the CONTRACTOR from liability.

15.5 Upon seven days written notice to the CONTRACTOR and the ENGINEER, the OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the Project and terminate the Agreement. In such case, the CONTRACTOR shall be paid for all Work executed and any expense sustained plus a reasonable profit.

Removal of Equipment:

15.6 In the case of termination of this Contract before completion, for any cause whatever, the CONTRACTOR if notified to do so by the OWNER, shall promptly remove any part or all of his equipment and supplies from the property of the OWNER. Should the CONTRACTOR not remove such equipment and supplies, the OWNER shall have the right to remove them at the expense of the CONTRACTOR. Equipment and supplies shall not be construed to include such items for which the CONTRACTOR has been paid in whole or in part.

Contractor May Stop Work or Terminate:

15.7 If, through no act or fault of the CONTRACTOR, the Work is suspended for a period of more than ninety (90) days by the OWNER or under an order of court or

other public authority, or the ENGINEER fails to act on any Application for Payment within sixty (60) days after it is submitted, or the OWNER fails to pay the CONTRACTOR any sum approved by the ENGINEER or awarded by court ruling within forty-five (45) days of its approval and presentation, then the CONTRACTOR may, upon seven (7) days written notice to the OWNER and the ENGINEER, and if the OWNER or ENGINEER fails to reasonable respond in writing, terminate the Agreement and recover from the OWNER payment for all Work executed and any expense sustained plus a reasonable profit. In addition and in lieu of terminating the Agreement, if the ENGINEER has failed to act on an Application for Payment or the OWNER has failed to make any payment as aforesaid, the CONTRACTOR may upon seven (7) days notice to the OWNER and the ENGINEER stop the Work until he has been paid all amounts then due.

Owner Furnished Equipment:

15.8 In case the OWNER furnishes equipment to the CONTRACTOR to install, but fails to deliver it to the CONTRACTOR as required and in case such failure causes the CONTRACTOR additional expense or need for extension of time, the CONTRACTOR may make such claims upon the OWNER and obtain adjustments as provided herein.

Liquidated Damages:

15.9 If the CONTRACTOR shall fail to complete the work within the contract time, or extension of time granted by the OWNER, then the CONTRACTOR will pay to the OWNER the amount for liquidated damages as specified in the Contract Documents for each calendar day that the CONTRACTOR shall be in default after the time stipulated in the Contract Documents.

ARTICLE 16 - DISPUTE SETTLEMENT:

16.1 All claims, disputes and other matters in question arising out of, or relating to, this Agreement or the breach thereof except for claims which have been waived by the making or acceptance of final payment as provided by paragraph 14.11, shall be decided in a court of competent jurisdiction.

ARTICLE 17 - MISCELLANEOUS:

17.1 Whenever any provision of the Contract Documents requires the giving of written notice it shall be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to him who gives the notice.

17.2 If the OWNER fails to make payment forty-five (45) days after payment is

due, in addition to other remedies available to the CONTRACTOR, there shall be added to each such progress payment, interest at 1% per month commencing on the first day after said payment is due and continuing until the payment is received by the CONTRACTOR.

17.3 All Specifications, Drawings and copies thereof furnished by the ENGINEER shall remain his property. They shall not be used on another Project, and, with the exception of those sets which have been signed in connection with the execution of the Agreement, shall be returned to him on request upon completion of the Project.

17.4 The duties and obligations imposed by these General Conditions, and the rights and remedies available hereunder, and, in particular but without limitation, the warranties, guarantees and obligations imposed upon CONTRACTOR by paragraphs 6.36 and 14.3 and the rights and remedies available to OWNER and ENGINEER there under, shall be in addition to, and shall not be construed in any way as a limitation of, any rights and remedies available by law, by special guarantee or by other provisions of the CONTRACT DOCUMENTS.

17.5 Should the OWNER or the CONTRACTOR suffer injury or damage to its person or property because of any error, omission or act of the other or of any of his employee or agents or others for whose acts he is legally liable, claim shall be made in writing to the other party within a reasonable time of the first observance of such injury or damage.

17.6 The CONTRACT DOCUMENTS shall be governed by the law of the place of the Project.

Progress Charts and Requirements for Overtime Work

17.7 The CONTRACTOR shall within 5 days or within such time as determined by the OWNER after date of commencement of work prepare and submit to the OWNER for approval a practicable schedule, showing the order in which the CONTRACTOR proposes to carry on the work, the date on which he will start the several salient features (including procurement of materials, plans and equipment) and the contemplated dates for completing the same. The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion at any time. The CONTRACTOR shall enter on the chart the actual progress at such intervals as directed by the OWNER and shall immediately deliver to the OWNER three (3) copies thereof. If the CONTRACTOR fails to submit a progress schedule within the time herein prescribed, the owner may withhold approval of progress payment estimates until such time as the CONTRACTOR submits the required progress schedule.

17.8 If, in the opinion of the OWNER, the CONTRACTOR falls behind the progress schedule, the CONTRACTOR shall take such steps as may be necessary to improve

his progress and the OWNER may require him to increase the number of shifts, or overtime operations, days of work, or the amount of construction plant, or update the progress schedule to reflect increased production for meeting the completion date, or all of them, and to submit for approval such supplementary schedule or schedules in chart form as may be deemed necessary to demonstrate the manner in which the agreed rate of progress will be regained, all without additional cost to the OWNER.

17.9 Failure of the CONTRACTOR to comply with the requirements of the OWNER under this provision shall be grounds for determination by the OWNER that the CONTRACTOR is not prosecuting the work with such diligence as will insure completion within the time specified. Upon such determination the OWNER may terminate the CONTRACTOR'S right to proceed with the work or any separable part thereof in accordance with the clause of the contract entitled, "Termination for Default-Damages for Delay - Time Extensions.

17.10 Should the Contractor fail to complete the work within the specified time, or within any extra time allowed under these specifications, a sum of money, determined by the following schedule, shall be deducted from any funds due the Contractor, the Owner shall have the right recover the said sum or sums from the Contractor or from the surety, or from both. The amounts of these deductions are to cover the liquidated damages to the Owner incurred by additional or other expenses due to the failure of the Contractor to complete the work or any part of the work within the time specified, and such deductions are not to be considered penalties.

17.11 The damages indicated above shall be considered as liquidated damages for the loss to the OWNER on account of the expense due to the employment of Engineers and their assistants and to any others expenses incurred after the expiration of the Contract time as determined by the ENGINEER in section 14.11

17.12 Work requiring the presence or services of the ENGINEER, based-solely on the opinion of the ENGINEER, will not be permitted on Sunday or holidays observed by the State unless the ENGINEER determines that an emergency or necessity exists. Work on these days solely to complete the project within the contract time will not be considered a necessity or emergency.

17.13 The ENGINEER will prepare and submit to the CONTRACTOR one (1) preliminary punch list of items that do not meet the contract requirements after the final inspection and one (1) final punch list immediately before final completion and final payment.

SUPPLEMENTAL GENERAL CONDITIONS

ARTICLE 1 - SPECIAL CONDITIONS

SCOPE AND INTENT

Special conditions shall prevail over General Conditions in case of conflict. The Contractor shall furnish all labor, materials, equipment (including fuel), tools, appliances, transportation and perform all operations in connection with the construction of, alterations to, or repair of, the building, including utilities, complete, in strict accordance with the specifications and the plans governing the construction of, alterations to, or repair of, the project.

EXAMINATION OF PREMISES

Before submitting a proposal for his work, each bidder shall be held responsible to have examined the site and satisfied himself as to the conditions under which work is to be performed.

PERMITS, TAXES, AND ORDINANCES

The Contractor shall pay for all required permits, give legal notices, and pay taxes and assessments levied in connection with this contract. Building regulations shall be strictly adhered to and the contractor shall be responsible for knowledge thereof.

INSURANCES, ETC.

In addition to the requirements of the General Conditions, insurance coverage specified herein constitutes the minimum requirements and said requirements shall in no way lessen or limit the liability of the **CONTRACTOR** under the terms of the Contract. The **CONTRACTOR** shall procure and maintain at his own expense any additional kinds and amounts of insurance that, in his own judgment, may be necessary for his proper protection in the prosecution of the Work.

The **CONTRACTOR** shall carry insurance as prescribed herein and all policies shall be with companies satisfactory to the **OWNER**.

If a part of this Contract is sublet, the **CONTRACTOR** shall require each Subcontractor to carry insurance of the same kinds and in like amounts as carried by the **CONTRACTOR**. Certificates of insurance shall state that 30 days written notice will be given to the **OWNER** before the policy is canceled or changed. No **CONTRACTOR** or Subcontractor will be allowed to start any construction work on this Contract until certificates of all insurance required herein are filed and approved by the **OWNER**. The certificates shall show the type, amount, class of operations covered, effective dates and the dates of expiration of policies.

The **CONTRACTOR** shall secure and maintain in effect for the period of the Contract and pay all premiums for the following kinds and amounts of insurance.

A. Workers' Compensation and Employer's Liability Insurance

This insurance shall protect the **CONTRACTOR** against all claims under applicable State Worker's Compensation Laws. The **CONTRACTOR** shall also be protected and shall cause each Subcontractor to be protected against claims for injury, disease, or death of employees which, for any reason, may not fall within the provisions of a Worker's Compensation Law. The liability limits shall not be less than the required statutory limits for Worker's Compensation and Employer's Liability or the amount of ONE HUNDRED THOUSAND DOLLARS (\$100,000.00) for each person whichever is more. This policy shall include an all states endorsement.

B. **CONTRACTOR'S** Comprehensive Public Liability and Property Damage Insurance, covering all operations in connection with the performance of this Contract in amounts not less than the following:

Bodily injury liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of TWO HUNDRED FIFTY THOUSAND DOLLARS (\$250,000) for all damages arising out of the injury or destruction of property in any one accident and subject to that limit per accident a total for aggregate limit of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of injury to or destruction of property during the policy period.

The Comprehensive Public Liability and Property Damage policies carried by both the **CONTRACTOR** and the Subcontractors shall contain an endorsement to include the coverage of the following hazards:

- a. Explosion, collapse, and underground property damage to include any damage or destruction of property below the surface of the ground, such as wires, conduits, pipes, mains, sewers, etc., caused by the **CONTRACTOR'S** operations.
- b. The collapse of and structural injury to any building, structure or property on or adjacent to the **OWNER'S** premises or right-of-way caused by the **CONTRACTOR'S** operations in the removal of other buildings, structures, or supports, or by excavation below the surface of the ground.
- c. Contractual Liability Coverage for the Hold Harmless segments of the Contract Documents.

C. **CONTRACTOR'S Contingent or Protective Liability and Property Damage:**

In case part of this Contract is sublet, the **CONTRACTOR** shall secure contingent or protective liability and property damage insurance to protect him from any and all claims arising from the operation of his Subcontractors in the execution of Work included in the Contract. In no case shall the amount of such protection be less than the limits of \$500,000/\$1,000,000 for Public Liability Insurance and \$500,000/\$1,000,000 for Property Damage Insurance. The coverage in each case shall be acceptable to the **OWNER**.

D. **Automotive Public Liability and Property Damage**

The **CONTRACTOR** shall maintain automobile public liability insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for injury to one person and ONE MILLION DOLLARS (\$1,000,000) for one accident; and automobile property damage insurance in the amount of not less than FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for one accident to protect him from any and all claims arising from the use of the following:

- a. **CONTRACTOR'S** own automobiles and trucks.
- b. Hired automobiles and trucks.
- c. Automobiles and trucks owned by Subcontractors.

The aforementioned is to cover use of automobiles and trucks on and off the site of the Project.

E. **OWNER'S Protective Liability Policy**

The **CONTRACTOR** shall maintain **OWNER'S** Protective Liability Insurance with the **OWNER** as the named insured, and the **ENGINEER**, and their servants, agents and employees as additional insureds in amounts not less than the following:

- a. Bodily Injury in the amount of ONE MILLION DOLLARS (\$1,000,000) for each person and ONE MILLION DOLLARS (\$1,000,000) for each accident and property damage liability in the amount of FIVE HUNDRED THOUSAND DOLLARS (\$500,000) for all damages arising out of an injury or destruction of property in any one accident and subject to that limit per accident a total (or aggregate) limit of ONE MILLION DOLLARS (\$1,000,000) for all damages arising out of injury to or destruction of property during the policy period.

CLEANING UP

The CONTRACTOR shall, at all times, keep the premises free from accumulations of waste materials and at the completion of the work, be shall remove all his rubbish, tools, temporary buildings, etc. from and about the site and shall leave his work “broom” clean unless more exactly specified elsewhere. All glass shall be washed and left free from stains of any nature.

SPECIAL INSTRUCTIONS

LIMITATIONS

During construction, care is to be taken to prevent damage to the work in place. As soon as work is completed, all work is to be thoroughly cleaned. Before completion, all damaged work is to be repaired and left in perfect condition. The CONTRACTOR will be responsible for all clean up of the premises. All trash, etc. will be hauled away from the site, and the site left in a clean and neat condition. Alcoholic beverages of any type will not be permitted on job site.

PRODUCT/MATERIALS SUBSTITUTION

CONTRACTOR will submit prior to starting work on project any changes to materials specified. CONTRACTOR will submit all specification data, company name, and supplier of material that he wishes to substitute. All material will be evaluated. CONTRACTOR will be given approval/disapproval by OWNER. No substitutes will be taken into consideration after work has begun, no substitutes will be allowed if CONTRACTOR does not submit specification data within time allowed.

INSPECTION

All work covered by these specifications shall be subject to inspection by OWNER or his authorized representative. CONTRACTOR will coordinate with OWNER for inspections as required during construction, and furnish to the OWNER in writing a project schedule prior to mobilization of work at the job site.

SPECIFICATIONS AND DRAWINGS ARE RECIPROCAL

The specifications and drawings are intended mutually to explain each other and anything which is referred to in the specifications and not shown on the drawings shall be considered as being shown and mentioned and referred to in both of these documents. Such work shall be done and performed accordingly. Any drawing attached to this specification form is an integral part thereof and where such drawings, if any, differ from these specifications, the specifications shall govern.

AS-BUILT DRAWINGS

Occasionally, during the course of construction, modifications and changes may occur due to site conditions, unforeseen circumstances and problems encountered. This may result in a modification of construction as originally depicted on drawings. Contractor will furnish the OWNER a marked-up set of prints in red line of all changes and/or modifications that pertain to this contract. Drawings will be labeled. "AS-BUILT DRAWINGS".

GUARANTEES, WARRANTIES AND BONDS

1. All work will be guaranteed by the CONTRACTOR for a period of one (1) year from the date of substantial completion.
2. Wording for the notarized guarantee shall be as follows:
"We hereby guarantee all work performed by us on the above captioned project to be free from defective materials and workmanship for a period of one (1) year, or such longer period of time as may be called for in the Contract Documents for such portions of the work."
3. Guarantee Compliance:
Except as otherwise specified, all work shall be guaranteed by the CONTRACTOR and through him each sub-contractor against defects resulting from the use of inferior materials, equipment or workmanship for one (1) year from the date of substantial completion of the Contract. In case of work performed by his sub-contractors, the CONTRACTOR shall secure warranties from said sub-contractors and deliver copies of the same to the OWNER upon completion of the work. If, within any guarantee period, repairs or changes are required in connection with guaranteed work which, in the OWNER'S opinion, are rendered necessary as the result of use of materials, equipment or workmanship which are inferior, defective or not in accordance with terms of the Contract: CONTRACTOR shall promptly upon receipt of OWNER'S written notice, and without expense of the OWNER;
 - a. Place in satisfactory condition in every particular all such guaranteed work, correct all defects therein.
 - b. Make good all damage to the building, site, equipment or building contents which in the OWNER'S opinion is the result of the use of materials, equipment or workmanship which are inferior, defective, or not in accordance with terms of the Contract.
 - c. Make good any work or material or the equipment and contents of building or site disturbed in fulfilling such guarantee.

In any case where fulfilling the requirements of the Contract, or any guarantee embraced in or required thereby, the CONTRACTOR disturbs any work guaranteed under another's Contract, he shall restore such disturbed work to condition satisfactory to the OWNER and guarantee such restored work to the same extent as it was guaranteed under such other contract. If the CONTRACTOR, after notice, fails to proceed promptly to comply with terms of the guarantee, the OWNER may have the defects corrected and the CONTRACTOR

and his surety shall be liable for all expense incurred. All special guarantees applicable to definite parts of the work that may be stipulated in the specification or other Contract Documents shall be subject to the terms of this Specification Section during the first year of the life of such special guarantees. All guarantees and warranties shall be obtained in the OWNER'S name and evidence thereof shall be promptly delivered to the OWNER'S Representative for transfer to the OWNER.

CLOSE-OUT DOCUMENTS

In general documents for close out, to be submitted by the CONTRACTOR to the OWNER, prior to final payment, shall be; but not limited to the following:

1. APPLICATION FOR PAYMENT: AIA Document G-702
2. CERTIFICATE OF SUBSTANTIAL COMPLETION: AIA Document G-704
3. CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS:
AIA Documents G-706 and G-706A: The Contractor shall furnish these AIA Documents complete with attached notarized full release of liens, damages, and a guarantee that all materials and labor are paid in accordance with Contract Documents with the following wording:
"WE HEREBY CERTIFY THAT ALL BILLS FOR LABOR AND MATERIALS INCORPORATED INTO THE ABOVE CAPTIONED PROJECT UNDER OUR CONTRACT HAVE BEEN PAID AND THAT THE OWNER IS RELEASED FROM ANY AND ALL CLAIMS AND/OR DAMAGES UNDER THIS CONTRACT."
4. CONSENT OF SURETY COMPANY TO FINAL PAYMENT: AIA Document G-707
To be completed in full by the Bonding Company.
5. CONTRACTOR'S NOTARIZED STATEMENT:
Notarized statement that project has been constructed in accordance with Contract Documents.
6. CONTRACTOR'S NOTARIZED STATEMENT OF GUARANTEE/S:
All work will be guaranteed by the Contractor for a period of one (1) year from the date of substantial completion. Wording will be as follows:
"WE HEREBY GUARANTEE ALL WORK PERFORMED BY US ON ABOVE CAPTIONED PROJECT TO BE FREE FROM DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR, OR SUCH LONGER PERIOD OF TIME AS MAY BE CALLED FOR IN THE CONTRACT DOCUMENTS FOR SUCH PORTIONS OF THE WORK."
In the case of work performed by his sub-contractors, the Contractor shall secure warranties from said sub-contractors and deliver copies of same to the Owner upon completion of work.
7. OPERATING AND MAINTENANCE MANUALS:
All manufacturer's operating instructions and maintenance manuals will be compiled in a tabbed and labeled 3-ring binder. (Furnish Owner with two (2) sets).
8. FORM W-9, PAYER'S REQUEST FOR TAXPAYER IDENTIFICATION NUMBER AND CERTIFICATION (IRS):
Form W-9 is to be completed by non-corporation contractors. Non-applicable if Contractor's firm is Incorporated.
9. FINAL CLEANING:
At close out time clean and re-clean entire work to normal level for "FIRST CLASS" maintenance/cleaning.

MEASUREMENT AND PAYMENT

Measurement and payment for the following bid items shall be as described and shall include all material equipment, labor and testing to install and make operational a complete sewer system as detailed on the contract drawings and in these specifications.

SEWER MAIN (SDR-26), HDPE, DUCTILE IRON, OR OTHER

Payment for all sewer mains will be per linear foot for various diameter pipe measured from centerline of manhole to centerline of manhole in relation to the diameter of the pipe and the depth of cut as shown in the individual bid items. The item shall be paid per linear foot.

REMOVAL OF EXISTING SEWER LINE

Payment for removal of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

ABANDONMENT OF EXISTING SEWER LINE

Payment for abandonment of existing sewer line shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the item. The item shall be paid per linear foot.

TRACER WIRE SYSTEM FOR WATER/SEWER

Installation requirements for tracer wire shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to provide a complete tracer system for the sewer infrastructure with proper grounding and connection points as shown in the plans and specifications. Grounding and hook-up locations shall be absorbed in the price of the tracer wire. The item shall be paid per linear foot.

MANHOLES

Payment for manholes will be per each and depth of manhole in appropriate depth bracket measured from lid of manhole to downstream invert. Depth shall be based on individual bid items.

DEMOLITION AND REMOVAL OF EXISTING MANHOLE

Payment for demolition and removal of existing manhole shall be as indicated on the construction plans. The item shall include the removal of the manhole frame and lid assembly with storage and delivery to City of Hattiesburg, demolition of the remainder of the manhole as indicated on the construction plans removal of the manhole as indicated. The item shall include all labor, equipment and materials necessary to demolish and remove an existing manhole. Bypass pumping shall be an absorbed portion of this item should it be necessary for the removal. The item shall be paid per each.

ABANDONMENT OF EXISTING MANHOLE

Payment for abandonment of existing manhole shall be as indicated on the construction plans. The item shall include all labor, materials and equipment necessary to complete the

item. The item shall be paid per each.

DROP MANHOLE ASSEMBLY

Payment for drop manhole assembly shall include furnishing and installing all hardware required to assemble a drop as detailed in the plans and specifications. Payment shall be per each.

SANITARY SEWER SERVICE CLEANOUT

Payment for sewer cleanout will be per each to include all labor, materials and equipment at the bid size. Price shall reflect each necessary cleanout as determined by the ENGINEER to provide sanitary sewer service to project area.

SANITARY SEWER SERVICE

Payment for sanitary sewer service will be per linear foot for various diameter pipe. Item shall include PVC pipe, fittings, and other items necessary for a functioning service. Item shall include all labor, equipment and materials necessary to install all equipment. The item shall be per linear foot.

SANITARY SEWER SERVICE TEE

Payment for sanitary sewer service tee will be per each at the bid size and type. Price shall include all labor, materials and equipment necessary to install sanitary sewer service tee based on plans and specifications.

DUCTILE IRON, PVC and HDPE WATER SYSTEMS

Payment for item shall include furnishing and installing all pipe, trenching, compaction of required bedding and backfill excavation, disposal of excess excavated material sheeting, shoring, bracing, dewatering, testing, fittings, reducers, flushing the system and related items not specifically covered under other pay items. The contract price shall be determined by the measured distance of pipe installed and accepted per linear foot.

CONNECTION ITEMS

Payment for connection items shall include installation of reducers, fittings, valve boxes, trenching, excavation, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

GATE VALVES

Payment for installation of gate valves shall include furnishing gate valves, valve boxes, trenching, excavating, compaction of backfill, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items as depicted on the construction plans. Pay shall be determined per each.

FIRE HYDRANT WITH APPURTENANCES

Payment for installation of fire hydrant with appurtenance shall include furnishing fire hydrant, gate valve, valve box, piping, trenching, excavating, compaction of backfill, blocking, disposal of excess excavated material, sheeting, shoring, bracing, dewatering, testing, flushing and related items not specifically covered under other pay items. Pay shall be determined per each to include fire hydrant, tees, gate valve, valve box, pipe and other miscellaneous items as required to provide an operational hydrant. Pay shall be determined per each.

REMOVAL OF EXISTING FIRE HYDRANT

Payment for removal of fire hydrant shall include capping/plugging existing service line and removal of the hydrant. Item shall be paid per each.

SERVICE TAP

Payment for service tap shall include all fittings, tubing, tapping saddle, corporation stop, materials, labor and equipment to provide a new water service. Item shall be paid per each.

SERVICE TUBING

Payment for installation of service tubing shall include furnishing and installing service tubing as directed by the ENGINEER. Item shall include all boring, trenching, excavating, compaction of backfill, disposal of excess excavated material etc. to install service tubing as directed. Payment shall be per linear foot measured from each connection point.

RESIDENTIAL METER

Payment for residential meter shall include all components, labor and equipment for a fully operational water meter. Meter shall meet the requirements of the plans and specifications and function fully within the existing system. Item shall include meter, box and any necessary fittings and shall be paid per each.

CRUSHED AGGREGATE

Payment for crushed aggregate shall include furnishing and installing material as specified in the plans and specifications. Crushed aggregate shall be installed as a base material for the pavement repairs. Crushed aggregate may be used for a temporary riding surface and will be the surface of Camp Street throughout the life of the project. Temporary riding surface will be removed prior to pavement repairs and moved to another location as directed by the engineer at no additional cost to the project. Payment shall be per ton from certified scales.

SELECT FILL MATERIAL

Payment for select fill material will be based on loose vehicular measurement. Haul vehicles shall be measured and volumes calculated. It shall be the discretion of ENGINEER as to the overall percentage full of haul material and that determination shall be final. Item shall include material, haul, placement and testing necessary to meet the plans and specifications.

CONCRETE PAVEMENT REPAIR

Payment for concrete pavement repair shall include furnishing and installing concrete pavement as specified in the plans and specifications. Item shall include forming, material, haul, placement, finishing and testing necessary to meet the plans and specifications. Payment shall be per square yard.

CONCRETE

Payment for concrete shall include furnishing and installing concrete with specified class as specified in the plans and specifications. Item shall include forming, material, haul, placement compaction and testing necessary to meet the plans and specifications. Item shall include reinforcing steel, grates, etc. as necessary and required. Payment shall be per cubic yard.

HOT MIX ASPHALT

Payment for hot mix asphalt shall include furnishing and installing asphalt pavement as specified in the plans and specifications. Item shall include material, haul, placement compaction and testing necessary to meet the plans and specifications. Payment shall be per ton.

CONCRETE SIDEWALK REPAIR

Payment for concrete sidewalk repair shall include furnishing and installing sidewalk to match removed concrete sidewalk. Item shall include saw cutting, forming, material, haul, placement, compaction and testing necessary to meet the plans and specifications. Item shall not be used for damage to sidewalk as a result of poor construction methods or neglect from the contractor. Payment shall be per square yard.

CONCRETE CURB AND GUTTER

Payment for concrete curb and gutter shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing curb and gutter. Item shall be paid per linear foot.

CONCRETE DITCH REPAIR

Payment for concrete ditch repair shall include removal, grading, forming, materials, placement, compaction and testing necessary to match existing paved ditch. Item shall be paid per square yard.

CLASS "B" CONCRETE, MINOR STRUCTURES

Payment for Class "B" Concrete, Minor Structures shall include grading, forming, materials, placement, compaction and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per cubic yard.

REINFORCING STEEL

Payment for reinforcing steel shall include grading, forming, materials, tying, spacing and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET GRATINGS

Payment for inlet gratings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

INLET CASTINGS

Payment for inlet castings shall include casting, materials, installation and testing necessary to complete the construction as defined in the plans and specification and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition. Item shall be paid per pound.

DRAINAGE PIPE

Payment for all drainage pipe will be per linear foot for various diameter pipe and material type measured from end of pipe to end of pipe installed in relation to the diameter of the pipe.

REMOVAL OF EXISTING PIPE CROSS DRAINS

Payment for removal of existing pipe cross drains shall include removal of all pipe materials from project site. Item shall be as authorized by the engineer. Item shall be paid per linear foot.

REMOVAL OF EXISTING CORRUGATED HDPE PIPE AND RESET

Payment for removal of existing corrugated HDPE pipe and reset shall include removal of all pipe materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

REMOVAL, SALVAGE, AND RESET EXISTING FENCE

Payment for removal, salvage, and reset of existing fence shall include removal of all fence materials, storing materials, and installation of materials in a new location as directed by the ENGINEER. Item shall be paid per linear foot.

6" YELLOW THERMOPLASTIC DETAIL TRAFFIC STRIPE

Payment for 6" Yellow Thermoplastic Detail Stripe shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

LEGEND WHITE THERMOPLASTIC TRAFFIC MARKING

Payment for Legend White Thermoplastic Traffic Marking shall include materials, labor, and equipment for the installation of striping at locations directed by the ENGINEER and in accordance with the Mississippi Standard Specifications for Road and Bridge Construction, latest edition. Item shall be paid per linear foot.

SOLID SOD

Payment for solid sod shall include furnishing and installing sod, fertilizer, lime and other components required to establish permanent grassing matching existing conditions. Solid Sod shall include final grading prior to installation of sod materials. The unit measurement shall be per square yard.

LANDSCAPE RESTORATION

Payment for Landscape Restoration shall include furnishing and installing of top soil, mulch, plants, fertilizer, watering, final grading and other components required to re-establish landscaping to matching existing conditions. The unit measurement shall be per square foot.

CLEARING AND GRUBBING

Payment for clearing and grubbing shall include removal of all items within the required limits of construction necessary to complete the project based on the construction plans and specifications. Payment shall include off site removal of all items removed during clearing and grubbing. Item shall include all materials, labor and equipment necessary to meet the plans and specifications. Payment shall be per acre.

TEMPORARY EROSION CONTROL

Payment for Temporary Erosion Control shall include furnishing, installing and maintaining hay bales or silt fence as required by current Mississippi Department of Environmental Quality standards. Hay bales and silt fence shall be installed and maintained to prevent erosion under or excess siltation within 24 hours of a rain event. The unit measurement shall be lump sum and includes any required maintenance.

MAINTENANCE OF TRAFFIC

Payment for maintenance of traffic will be lump sum. Item shall include all materials, labor and equipment to maintain traffic based on the current MUTCD or as required by the ENGINEER.

MOBILIZATION

Payment for mobilization shall enable contractor to assemble materials, equipment, etc. on site, to prepare for construction. The unit measurement shall be lump sum. Mobilization shall be paid 50 percent at 5 percent of construction complete and 100 percent at 25 percent of construction complete.

SANITARY SEWERAGE SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of sewer pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139/139M Electric-Fusion (Arc) Welded Steel Pipe (HPS 4 inch and over).
- A 252 Welded and Seamless Steel Pipe Piles.
- C 31/C 31M Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Specifications for Concrete Aggregate
- C 39/C 39M Compressive Strength of Cylindrical Concrete Specimens.
- D 1248 Polyethylene Plastics Extrusion Materials for Wire and Cable
- D 1784 Rigid Poly(Vinyl Chloride)(PVC) Compounds and Chlorinated Poly (Vinyl Chloride)(CPVC) Compounds.
- D 2412 Determination of External Loading Characteristics of Plastic Pipe by Parallel Plate Loading.
- D 2922 Density of Soil and Soil Aggregate in place by Nuclear Methods (Shallow Depths).
- D 3034 Specifications for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
- D 3212 Joints for Drain and Sewer Plastic Pipes using Flexible Elastomeric Seals.
- F 477 Specifications for Elastomeric Seals (Gaskets) for Joining Plastic Pipe.

F 794 Poly (Vinyl Chloride)(PVC) Profile Gravity Sewer Pipe and Fittings Based on Controlled Inside Diameter.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

A21.10 Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.

A21.11 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

A21.50 Ductile Iron Pipe, Design Requirements

A21.51 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-lined Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

C 104 Cement-Mortar Lining for Ductile Iron Pipe and Fittings for Water and Other Liquids.

C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings.

C 151 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction Current Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer and bear on the submittal a certification from the Contractor the submittal is in conformance with the specifications.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

3.2 PVC Pipe: The Contractor shall submit manufacturer's certificate which certifies the pipe and fittings conform to the requirements as specified hereinafter under Article 4.0, Materials. In addition, the Contractor shall submit the following:

A. PVC Piping: PVC Pipe shall be sampled, tested, and inspected in accordance with the provisions of ASTM D3034. Copies of test results shall be attached. Test results shall be similar material and not be more than one year old from the date of material delivery.

B. Joints: The following submittals shall be required for PVC joints.

1. Certificate with test results for joints for compliance to ASTM D 3212. Gaskets shall conform to ASTM F 477. Test results shall be for similar material and not be more than one year old.

4.0 MATERIALS

4.1 Gravity Sewer Pipe: Where the type of gravity sewer piping is not indicated on the plans, the Contractor shall furnish polyvinyl chloride (PVC) pipe.

The Contractor shall be restricted to furnishing the exact type of pipe material where indicated on the Contract Drawings.

The Contractor shall be limited to the use of only one type of pipe (so selected by the Contractor and indicated on the Proposal Form) and shall not change the type of gravity sewer pipe except as follows:

1. Where indicated on the plans, or
2. If permitted in writing by the Engineer.

A. **Ductile Iron Pipe:** Ductile iron shall be designed in accordance with the latest revision of ANSI/AWWA C150/A21.50 for a minimum 50psi.

Ductile Iron Pipe shall be manufactured in accordance with the latest revision of ANSI/AWWA C151/A21.51. Each pipe shall be subjected to a hydrostatic pressure test of at least 500 psi at the point of manufacture.

Pipe shall be standard asphaltic coating on the exterior. Pipe shall also have 40 mils of Protecto 401 Ceramic Epoxy on the interior per "Standard Specification for Lining Ductile Iron Pipe for Sewer Service".

The class or nominal thickness, net weight without lining, and casting period shall be clearly marked on each length of pipe. Additionally, the manufacturer's mark, country where cast, year in which the pipe was produced, and the letters "DI" or "Ductile" shall be cast or stamped on the pipe.

All pipe shall be furnished with Push-On Type Joints, such as Tyton or Fastite. Joints shall be in accordance with ANSI/AWWA C111/A21.11, of latest revision, and be furnished complete with all necessary accessories.

Fittings shall be ductile iron. Fittings shall conform to the latest revision of either ANSI/AWWA C600.

B. **PVC Pipe:** PVC gravity sewer pipe and fittings shall conform to the requirements of ASTM D 3034 with an SDR of 26 and a minimum stiffness of 46 lb./in. - in and 115 lb./in. - in, respectively. Joints for sewer pipe shall be either push-up or mechanical conforming to the requirements of ASTM 3212. Gaskets for sewer pipe shall conform to the requirements of ASTM F 477.

Approved adaptors shall be used for making connections between PVC pipe and

concrete manholes. Pipe connections to new manholes shall be made using a flexible synthetic rubber boot mechanically clamped to the manhole and to the pipe to provide a watertight seal.

C. Service Laterals: Service laterals for local services shall consist of fittings, pipe lengths, and connections of 6 inch or 4 inch pipe. The fittings, pipe lengths and plugs shall be of the same material as the run pipe unless otherwise indicated on the Contract Drawings. The modified sewer tees shall be an integral part of the run pipe. The remainder of the branch shall consist of standard fittings (elbows, reducers, and lengths of pipe) in accordance with the manufacturer's standard products and as specified. Pipe lengths and joint connections shall meet the specified requirements for the type materials used.

4.2 Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of sewer pipe or force main and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch. (Hwy) and 0.28 inch (RR). Contractor shall verify the I.D. of the casing pipe is adequate for the carrier pipe prior to installation.

4.3 Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table:)

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 - ½"	95 - 100
¾"	35 - 70
⅜"	10 - 30
No. 4	0 - 5

4.4 Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1 - ½" sieve.

4.5 Clay Gravel Material: Clay Gravel Material shall meet MDOT Specifications, Group

4.6 Concrete: Concrete shall be in accordance with the requirements of Technical Specifications - CONCRETE

4.7 Select Fill Material: General : The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in

character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material. Material shall meet the Standard Specifications for Road and Bridge Construction, Latest Edition for Class 9 Group C and modified to consist of a P.I of between 5 and 15.

4.8 Backfill: All other backfill shall consist of excavated material removed from the trench unless otherwise directed by the Engineer. CONTRACTOR shall separate poor and acceptable material during excavation. Failure to separate material shall require CONTRACTOR to furnish acceptable backfill at no additional cost to the project. Unacceptable material shall be disposed of off-site at the Contractor's expense.

5.0 CONSTRUCTION:

5.1 Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

Where possible, Contractor shall remove turf in sections, keep damp, and replace upon completion of backfilling.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor at his expense. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should

the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe. In the event trench width is wider than allowed on the plans, Contractor shall absorb the cost of additional wash gravel bedding based on neat line quantity calculations.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

If adequate area is not available on the construction site, the Contractor will be required to stockpile material off site. Owner shall not bear any additional expense.

Ledge Rock, boulders and large stones shall be removed to provide a minimum clearance of 4 inches (10 cm) below and on each side of all pipes.

It is the intention of these specification that there shall be a minimum interruption to traffic and all traffic control shall be in accordance with the MUTCD.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of sewer pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall install drainage ditches and dikes and shall perform all pumping and other work necessary to divert or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water shall be performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade

made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the pipe laying operation.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with wash gravel bedding and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation, without direction of the Engineer, shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the subgrade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the subgrade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the subgrade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in

the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to a minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grade, and cross section with proper bell holes at each joint to ensure that pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

- a Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.
- b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.
- c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND OTHER GRASSED AREAS.

5.2 PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

5.3 PIPE LAYING: Pipe laying shall proceed upgrade with the spigot ends of the bell-and-spigot pipe and tongue ends of the tongue and groove pipe jointing in the direction of flow. Each pipe shall be laid true to line and grade and in such a manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the sewer shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water, earth, or other substance will enter the pipe or fittings.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

The Contractor shall utilize a commercial grade laser beam specifically manufactured to aid in maintaining grade and alignment of pipelines during installation. The primary unit shall be mounted on a heavy duty base and firmly anchored in the downstream manhole of the reach under construction. The maximum distance shall not exceed four hundred feet (400') per set-up without the approval of the Engineer.

Each joint of pipe shall be installed using an approved target to align the pipe with the projected laser beam. The methods and procedures shall be in strict accordance with the manufacturer's recommendations and instructions. Proper ventilation shall be maintained at all times. Care shall be exercised in order to prevent bumping or misalignment of the projected beam. Sewer lines shall be laid such that the installed variation of invert elevations when compared with the construction plans does not exceed 0.05 feet. Sewer lines in which said variation exceeds 0.05 feet may be rejected. Sewer pipe shall be visually inspected for alignment by lamping, televising or by other appropriate means to determine alignment.

Whenever a movable steel box is used in place of sheeting, the Contractor shall take care to prevent the pipe from moving when the steel box is moved.

5.4 PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

A. PVC Pipe Joint Construction: The bell and spigot ends of PVC sewer pipe shall be cleaned of all foreign material that could interfere with proper assembly of the joints. The spigot

ends shall be cleaned one inch (1") beyond the joint assembly reference mark.

The spigot end of the pipe shall be thoroughly lubricated in accordance with the manufacturer's recommendations. The coating should be the equivalent of a brush coat of enamel paint and maybe applied by hand, cloth, pad sponge or glove.

The lubricated spigot end shall be inserted into the bell keeping the pipe length in proper alignment. The bell shall be braced while the spigot end is pushed in under the rubber ring, so that previously competed joints in the line will not be closed up. The spigot end shall be pushed into the bell until the reference mark is flush with the end of the bell. Pipe shall be pushed by use of a bar or other means approved by the Engineer. Hydraulic excavators, backhoes, or other machinery shall not be used to push slip-joint pipe together.

Generally, the installation and jointing of PVC Pipe shall conform to the requirement so the latest edition of ASTM D-2321, "Underground Installation of Flexible Thermoplastic Sewer Pipe".

Any pipe cuts shall be of neat line. Pipe shall have bevel edges according to the manufacturer's recommendations.

B. Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe and shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space.

When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first; then the top; next the bolts on either side; and last , the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

C. Jointing Dissimilar Pipes: Suitable adaptor couplings are required for connecting dissimilar pipes. The couplings shall be approved by the Engineer before installation.

5.5 STREAM CROSSING: Ductile iron pipe Class 50 shall be used as shown on the Drawings. Granular fill, concrete, and concrete collars shall be placed or constructed as shown on the contract drawings.

5.6 SERVICE LATERALS (LINES): Modified sewer tees shall be installed on the run pipe at the appropriate field locations. Service lines of the sizes specified shall be laid to a uniform grade so that the customer being served can be tied-in using good construction practices. All tamping and backfilling operations shall be performed the same as on main line pipe. Removable plugs shall be securely installed in pipe ends and a 2" x 2" treated post extending 12" above the ground line shall mark the pipe end location if the lateral is not connected to an existing sewer. For service laterals in which a connection to an existing service is required, the Contractor shall make the connection. Contractor shall verify the location of all service laterals within the project area prior to construction.

5.7 BORINGS: Borings shall be accomplished in accordance with Mississippi Standard Specifications for Road and Bridge Construction or Railway Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the crossing.

A. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be water tight.

B. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

C. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under surcharged sewage conditions.

D. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end with a quick setting grout.

5.8 RELATION TO WATER MAINS:

A. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

5.9 CONTINUATION OF SERVICE

The existing wastewater system shall remain in operation during the duration of the project until such time it is no longer needed. Should removal of facilities from operation become necessary, a plan which will avoid or minimize pollution effects on any receiving stream and provide alternate service for wastewater facilities shall be reviewed and approved in advance by the Mississippi Department of Environmental Quality and shall be adhered to during construction.

Where shown on the plans or directed by the Engineer, new sewers shall be connected to existing sewers either by constructing a manhole over an existing line (doghouse) or by coring through the wall of an existing manhole.

6.0 TESTING

6.1 Ductile Iron Pipe:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

6.2 PVC PIPING: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittal. No other material test shall be required.

6.3 STEEL CASING PIPE: Material test shall be included as part the submittal. No other material test shall be required.

6.4 BEDDING MATERIAL AND STABILIZATION MATERIAL: Test for gradation and test for material passing the No. 40 sieve shall be as follows:

Gradation	- AASHTO T 88
Liquid Limit	- AASHTO T 89
Plasticity Index	- AASHTO T 90

One set of each test listed above will be required for every 500 cubic yards or major fraction thereof.

6.5 COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a

change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99	
AASHTO T-191	or
ASTM D 2922	
Select Backfill Material OR Stabilization Material	1
One per 100 CY	
Bedding Material	2
One per 600 LF	
Tamped Backfill	2
One per 600 LF	

6.6 INFILTRATION/EXFILTRATION/LAMP TEST: The Contractor shall provide all plugs, water supply, measuring devices, and all other equipment, material, labor and supervision to measure the infiltration and exfiltration tests as specified below. The Contractor shall perform the test in the presence of the Engineer. All gravity sewer pipe shall be tested in accordance with the following applicable requirements.

A. Infiltration Test: The infiltration test shall be conducted between adjacent manholes. The outlet pipe on the downstream manhole shall be plugged and tested for water tightness to the satisfaction of the Engineer. The accumulated depth of water in the downstream manhole shall be read at 12 hour intervals for two (2) days and the infiltration rate calculated from the data obtained. Any section exceeding an infiltration rate of 200 gallons/day/inch diameter/mile shall be relayed at the Contractor's expense. This means that the Contractor shall locate and repair leaks as necessary to pass the infiltration test. Infiltration test shall be utilized only when ground water is above pipe.

B. Low Pressure Air Test: Air test shall be conducted in strict accordance with the manufacturer's instructions, including all recommended safety precautions. Equipment used for air testing shall be specifically designed for such and include a monitoring gauge with 0 to 5 psi with a minimum division of 0.1 psi and an accuracy of no less than 0.05 psi

1. Air testing shall be conducted for completed gravity sewer mains
2. After an internal pressure of 4.0 psi is obtained, allow at least 2 minutes for pressure to stabilize, adding only the amount of air necessary to maintain pressure. After stabilization period, adjust the pressure to 3.5 psi and valve off air supply.

3. Determine the minimum pressure holding time allowed for pressure to drop from 3.5 psi to 3.0 psi as shown on the table below.

Minimum Holding Time for Low Pressure Air Test

Nominal Pipe Size (inches)	Time per 100 ft.
6	42 sec.
8	1 min. - 12 sec.
10	1 min. - 30 sec.
12	1 min. - 48 sec.
15	2 min. - 6 sec.
18	2 min. - 24 sec.
21	3 min.
24	3 min. - 36 sec.
27	4 min. - 12 sec.
30	4 min. - 48 sec.
33	5 min. - 24 sec.
36	6 min.

C. Visual Test: Gravity sewer lines will be lamped and shall show a true line between manholes without defects in conditions, grade, or alignment. Any defective lines shall be subject to a closed-circuit television inspection performed at the Contractor's expense.

6.7 DEFLECTION TESTS: 100% of the PVC gravity sewer mains shall be tested 30 days after the final backfill has been in place by the following method:

Use a "Go-, no-go" mandrel which is sized to such dimensions that it will not "go" when encountering a deflection greater than 5%. The instructions for its use are as follows:

A. Completely flush the line making sure the pipe is clean of any mud or debris that would hinder the passage of the mandrel.

B. During the final flushing of the line, attach a floating block or ball to the end of the mandrel, pull rope and float the rope through the line. (A nylon ski rope is recommended)

C. After the rope is threaded through the line, connect the pull rope to the mandrel and place the mandrel in the entrance of the pipe.

D. Connect a retrieval rope to the back of the mandrel to pull it back if necessary.

E. By hand, remove all the slack in the pull rope and place a tape marker on the top at the end of the pipe where the mandrel will exit, determining the location of the mandrel in the line.

F. By hand, draw mandrel through the sewer lines. If any irregularities or obstructions are encountered in the line, they shall be corrected by the Contractor.

G. If a section with excessive deflection is found, locate it; dig down and uncover the pipe; if any damaged pipe is found, replace it; if pipe is not damaged, realign and thoroughly tamp haunching and initial backfill; replace remainder of backfill.

H. Re-test this section for deflection after 30 days from initial testing.

STANDARD SPECIFICATION
FOR LINING DUCTILE IRON PIPE
FOR SEWER SERVICE

1.0 Condition of Ductile Iron Prior to Surface Preparation

All ductile pipe and fittings shall be delivered to the application facility without asphalt, cement lining, or any other lining on the interior surface. Because removal of old linings may not be possible, the intent of this specification is that the entire interior of the ductile iron pipe and fittings shall not have been lined with any substance prior to the application of the specified lining material and no coating shall have been applied to the first six inches of the exterior of the spigot ends.

2.0 Lining Material

The Standard of Quality is Protecto 401 Ceramic Epoxy. The material shall be an amine cured novalac epoxy containing at least 20% by volume of ceramic quartz pigment. Any request for substitution must be accompanied by a successful history of lining pipe and fittings for sewer service, a test report verifying the following properties, and a certification of the test results.

A permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.

The following test must be run on coupons from factory lined ductile iron pipe:

ASTM B-117 Salt Spray (scribed panel) - Results to equal 0.0 undercutting after two years.

ASTM G-95 Cathodic Disbondment 1.5 volts @ 77°F. Results to equal no more than 0.5mm undercutting after 30 days.

Immersion Testing rated using ASTM D-714-87.

20% Sulfuric Acid - No effect after two years.

140°F 25% Sodium Hydroxide - No effect after two years.

160°F Distilled Water - No effect after two years.

120°F Tap Water (scribed panel) - 0.0 undercutting after two years with no effect.

An abrasion resistance of no more than 3 mils (.075mm) loss after one million cycles using European Standard EN 598: 1994 Section 7.8 Abrasion Resistance.

3.0 Application

Applicator

The lining shall be applied by a certified firm with a successful history of applying linings to the interior of ductile iron pipe and fittings.

Surface Preparation

Prior to abrasive blasting, the entire area to receive the protective compound shall be inspected for oil, grease, etc. Any areas with oil, grease, or any substance which can be removed by solvent, shall be solvent cleaned to remove those substances. After the surface has been made free of grease, oil or other substances, all areas to receive the protective compounds shall be abrasive blasted using sand or grit abrasive media. The entire surface to be lined shall be struck with the blast media so that all rust, loose oxides, etc., are removed from the surface. Only slight stains and tightly adhering oxide may be left on the surface. Any area where rust reappears before lining must be reblasted.

Lining

After the surface preparation and within 8 hours of surface preparation, the interior of the pipe shall receive 40 mils nominal dry film thickness of Protecto 401. No lining shall take place when the substrate or ambient temperature is below 40 degrees Fahrenheit. The surface also must be dry and dust free. If flange pipe or fittings are included in the project, the lining shall not be used on the face of the flange.

Coating of Bell Sockets and Spigot Ends

Due to the tolerances involved, the gasket area and spigot end up to 6 inches back from the end of the spigot end must be coated with 6 mils nominal, 10 mils maximum using Protecto Joint Compound. The Joint Compound shall be applied by brush to ensure coverage. Care should be taken that the Joint Compound is smooth without excess buildup in the gasket seat or on the spigot ends. Coating of the gasket seat and spigot ends shall be done after the application of the lining.

Number of Coats

The number of coats of lining material applied shall be as recommended by the lining manufacturer. However, in no case shall this material be applied above the dry thickness per coat recommended by the lining manufacturer in printed literature. The maximum or minimum time between coats shall be that time recommended by the lining material manufacturer. **To prevent delamination between coats, no material shall be used for lining which is not indefinitely recoatable with itself without roughening of the surface.**

Touch-Up & Repair

Protecto Joint Compound shall be used for touch-up or repair in accordance with manufacturer's recommendations.

4.0 **Inspection and certification**

Inspection

All ductile iron pipe and fitting linings shall be checked for thickness using a magnetic film thickness gauge. The thickness testing shall be done using the method outlined in SSPC-PA-2 Film Thickness Rating.

The interior lining of all pipe barrels and fittings shall be tested for pinholes with a nondestructive 2,500 volt test. Any pinholes found shall be repaired prior to shipment.

Each pipe joint and fitting shall be marked with the date of application of the lining system along with its numerical sequence of application on that date and records maintained by the applicator of his work.

Certification

The pipe or fitting manufacturer must supply a certificate attesting to the fact that the applicator met the requirements of this specification, and that the material used was as specified.

5.0 **Handling**

Protecto 401 lined pipe and fittings must be handled only from the outside of the pipe and fittings. No forks, chains, straps, hooks, etc. shall be placed inside the pipe and fittings for lifting, positioning, or laying. The pipe shall not be dropped or unloaded by rolling. Care should be taken not to let the pipe strike sharp objects while swinging or being off loaded. Ductile iron pipe should never be placed on grade by use of hydraulic pressure from an excavator bucket or by banging with heavy hammers.

MANHOLES

1.0 GENERAL:

This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals for the construction of standard manholes, in accordance with the Contract Drawings and Specifications. Included in the work are structural excavation, backfill, and disposal of excess material.

2.0 APPLICABLE DOCUMENTS:

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

American Society for Testing and Materials (ASTM)

A 48/A48M	Standard Specification for Gray Iron Casting
C 39/C39M	Standard Specification for Test for Compressive Strength of Cylindrical Concrete Specimens
C 443	Standard Specification for Joints for Circular Concrete Pipe and Manholes Using Rubber Gaskets
C 478	Standard Specification for Precast Reinforced Concrete Manhole Sections
C 497	Standard Test Methods for Concrete Pipe, Manhole Sections, or Tile
C 2922	Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

American Association of State Highway and Transportation Officials (AASHTO):

M-198	Standard Specifications for Joints for Concrete Pipe, Manholes, and Precast Box Sections Using Preformed Flexible Joint Sealants.
T-99	Standard Method of Test for the Moisture-Density Relations of Soils Using a (2.5kg) Rammer and (305 mm) Drop.
T-191	Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method.

3.0 SUBMITTALS

The following tests or data shall be submitted to the Engineer from the Contractor for approval prior to incorporation into the work:

3.1 Certificates: The Contractor shall furnish certificates from supplier certifying the products conform to the required specifications included herein for the following items:

- 3.1.1. Flexible Plastic Gaskets
- 3.1.2. Precast Manhole Bases
- 3.1.3. Precast Manhole Riser Sections
- 3.1.4. Manhole Steps
- 3.1.5. Manhole Frames and Covers (ASTM A 48)
- 3.1.6. Epoxy Grout

3.2 Catalogue Cuts or Brochures: The Contractor shall also submit catalogue cuts or product brochures providing descriptive data, recommended application and use, and installation procedure for the following items:

- 3.2.1. Manhole Frames and Covers
- 3.2.2. Epoxy Grouts
- 3.2.3. Manhole Steps

4.0 MATERIALS

4.1 Manhole Riser Sections: Manhole riser sections shall be precast reinforced sections conforming to ASTM C 478 and as shown on the Contract Drawings.

4.2 Joints: Joints for precast riser sections shall be concrete pipe type flexible plastic gaskets. Joint material shall be pre-formed conforming the requirements of AASHTO M-198. Installation shall be in accordance with manufacturer's recommendations.

4.3 Concrete Manhole Bases: Concrete manhole bases shall be precast or cast-in-place as follows:

4.3.1 Cast-In-Place Manhole Bases and Box Type Bases (if used): Concrete and reinforcing steel shall conform to the requirements of Technical Specifications - CONCRETE.

4.3.2 Precast Concrete Bases: Precast concrete bases shall conform to the requirements of ASTM 478 with reinforcing steel (size and spacing as indicated on the plans).

4.4 Manhole Steps: Manhole steps shall be plastic coated corrosion resistant with a minimum

design load of 300 pounds and shall be installed as shown on the Contract Drawings.

4.5 Cement Grout: Cement grout shall be high strength, non-metallic conforming to Corps of Engineers CRD-C-588. The grout shall be V-3 by W. R. Meadows, Inc., Masterflow 713 by Master Builders or equal.

4.6 Manhole Frame and Covers: Manhole frame and covers shall conform to ASTM A 48 as well as to the following requirements. All frame and covers shall be new when installed for the project and shall meet AASHTO H-20 loading condition.

4.6.1 Standard Manhole Cover and Frame - shall be as manufactured by Dews Foundry, Jackson Standard, Model DF-25 (7) or Vulcan Foundry, Model V-1115, 420 Pounds, marked "CITY OF HATTIESBURG SEWER", domestic origin, or equal.

4.6.2 Water Tight Manhole Cover and Frame - shall be as manufactured by Vulcan Foundry, Model V2357, or Dews Foundry, Model DF-25(7)W.T., 410 pounds with neoprene gasket, four 5/8 inch stainless steel bolts recessed into cover. Cover labeled "CITY OF HATTIESBURG SEWER", domestic origin, or approved equal.

4.7 Epoxy Grout: Epoxy Grout shall be high strength non-metallic, non-shrinking. The grout shall be as by EMBECO, Inc., SEAL-COAT or approved equal.

4.8 Drop Manholes: Concrete for drop manholes shall conform to the requirements of Technical Specifications - CONCRETE. Pipe and fittings shall be the same material and size as the incoming gravity sewer.

4.9 Flexible Connection: At all sewer connections to manholes, provide gasket flexible watertight connection that allows for differential settlement of the pipe and manhole wall. Bands, clamps and other metal accessories shall be of Series 304 stainless steel.

4.10 All manholes: All manholes shall be lined inside with a twenty (20) mil dry film thickness of an acceptable coal tar epoxy system.

5.0 CONSTRUCTION

5.1 Earthwork

5.1.1 General: Excavation shall be to the extent required to allow proper construction of the manhole. Shoring and sheeting shall be utilized where required by Federal, State and local codes and regulations for safe working conditions. In addition, shoring and sheeting shall be required to protect the integrity of adjacent structures or prevent adverse effects on surrounding areas. Dewatering shall be employed to the extent required to allow dry working conditions.

5.1.2 General Excavation: The Contractor shall "lay back" or employ shoring and sheeting as required to assure stability of the excavation. Material shall be stockpiled so as not to surcharge adjoining pipe trenches. Topsoil shall be separated so as to allow the maximum reuse in grassing operations.

5.1.3 Structural Excavation: The area immediately beneath the manhole bases shall be graded and compacted. Compaction shall be to 96% of maximum laboratory density as determined by AASHTO T 99. Should unsuitable material be encountered, the Engineer may direct that the area be over excavated and filled with stabilization material. Specification for stabilization material and payment for such shall be in accordance with Technical Specifications.

5.1.4 Backfilling: Backfill material shall consist of select backfill in accordance with Technical Specifications. Backfilling shall be uniformly placed around the structure in 10-inch layers and be compacted to 90% of maximum density to full depth in unimproved areas. Backfill in paved areas and within five feet to any edge of pavement shall be compacted to 95% of maximum laboratory density in 6-inch layers to the subgrade line. Refer to Technical Specifications.

5.1.5 Salvage: Manhole frames and covers removed during excavation shall remain the property of the Owner and shall be delivered to a location designated by the Owner. All other items removed shall be disposed of by the CONTRACTOR at his expense.

5.2 Riser Installation: Precast concrete riser sections shall be installed plumb and in accordance with the details shown on the Contract Drawings. Joints shall be installed in accordance with manufacturer's recommendations.

The manhole invert channels shall be formed in the bases, smooth and semi-circular in shape conforming to the inside of the adjacent sewer section. Changes in the direction of flow shall be made with a smooth curve of as large a radius as the size of the manhole will permit. Changes in size and grade of the channels shall be formed directly in the concrete of the manhole base. The joint between the base and riser section shall be sealed with epoxy grout. Clean pea gravel shall be used as the epoxy grout filler.

Standard manhole cut-outs and lifting holes shall be sealed with epoxy grout.

5.3 Cast-In-Place Concrete: Bases, flat tops, and drop manhole risers shall be constructed in accordance with Technical specifications - CONCRETE.

5.4 Manhole Steps: Manhole steps shall be installed during the manufacturing of the riser or cone sections. Risers and cones shall be joined so the steps are vertically aligned.

5.5 Manhole Frame and Covers: Manhole frame and covers shall be set and grouted in place

with cement grout. For manholes located in roads or streets, the manhole cover shall be flush with pavement or surface course.

6.0 TESTING

6.1 General: The Contractor shall conduct (and bear the cost of) all testing (Laboratory Approved by the Owner) as directed by the Engineer and furnish results of such tests prior to incorporating the material into the work. All testing is subsidiary to Manhole Payment Items.

6.1.1 Cast-In-Place Concrete Items: The concrete quality testing for manhole bases, drop manholes, and valve boxes shall be tested in accordance with Technical specifications - CONCRETE.

6.1.2 Manhole Risers and Precast Concrete Bases: Manhole risers and precast concrete bases shall be tested for concrete compressive strength. If the place of manufacture is local and reasonably available to the Engineer, Paragraph (a) shall be followed for testing requirements. Should the place of manufacture not be available, Paragraph (b) shall apply.

The contractor shall prepare (in the presence of the Engineer) standard rodded concrete cylinder or cylinders compacted and cured in a similar manner to the manhole sections. Concrete for such cylinders shall be typical fresh concrete mix drawn from the actual casting operation of a riser or base. Cylinders shall be tested in accordance with ASTM C 39. The average compressive strength shall be equal to or greater than the specified design strength (4000 psi). Not more than 10% of the cylinders shall fall below the design strength (4000 psi). In no case shall any cylinder tested fall below 3200 psi. Number of such cylinder tests shall be as follows:

6.1.2.1 One set of cylinders for each day's run castings or

6.1.2.2 One set of cylinders for each 200 linear feet of riser sections manufactured.

6.1.2.3 One set of cylinders per 20 bases or flat tops manufactured.

The Engineer may require additional tests should compressive test results fail.

6.1.3 Earthwork Test: Maximum laboratory density shall be measured in accordance with AASHTO T-99. Field densities shall be determined in accordance with AASHTO T-191 or ASTM D 2992. Standard proctors and field densities shall be performed in accordance with the following schedule.

Standard proctor tests shall be required for earthwork associated with manhole construction. At least two (2) field density tests shall be conducted for earth work associated with each manhole construction.

6.1.4 Inspection for Watertightness: All manholes shall be inspected for watertightness prior to placing into service.

RESTORATION OF ROADS, DRIVEWAYS, FENCES

LAWNS AND OTHER GRASSED AREAS

1.0 GENERAL

The work under this item of work shall consist of furnishing all necessary materials, labor, supervision, tools, equipment and incidentals for the restoration of roads, driveways, fences, lawns and other grassed areas so as to provide satisfactory repair to all damage caused by general construction work. It is the intent of this Specifications to restore all such features to the general conditions that existed prior to construction activity insofar as practical. It is not the intention of this Specification that trees, which must be cut and removed, be restored. The Contractor is expected to be familiar with the overall area and be satisfied as to the materials required and level of effort needed to accomplish such restoration in accordance with this Specification.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of this specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work:

American Association of State Highway and Transportation Officials (AASHTO).

- T 99 Standard Method of Test for the Moisture Density Relations of Soils Using a 5.5 lg. (2.5 kg) Rammer and a 12-inch (305 mm) Drop.
- T 167 Compressive Strength of Bituminous Mixture
- T 191 Standard Method of Test for Density of Soil In-Place by the Sand-Cone Method
- T 230 Determining Degree of Pavement Compaction of Bituminous Aggregate Mixtures

American Society for Testing and Materials (ASTM)

- D 2922 Density of Soil and Soil Aggregate in Place by the Nuclear Method (Shallow Depths)

Mississippi Department of Transportation (MDOT)

Standard Specifications for Road and Bridge Construction, Current Edition.

Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)

3.0 SUBMITTALS

3.1 Mix Designs: Design mix will be provided by Contractor and approved by Engineer prior to production of asphalt.

4.0 MATERIALS

4.1 Subbase and Base Courses: Subbase and base courses under paved areas shall be as specified in MDOT Specification Section 301.

4.2 Prime Coat: Prime coat shall consist of Grade MC-30 or Grade MS-70 in accordance with the applicable requirements of MDOT Specification Section 702.

4.3 Bituminous Pavement: Bituminous Pavement for roadway and parking areas, wearing and binder courses, shall consist of a mix in accordance with MDOT Specifications Section 403. Materials shall conform to the following subsection of MDOT Specifications Sections 702 and 703.

A. **Hot Mix Asphalt All Sizes:** Mississippi Standard Specifications for Road and Bridge Construction, Latest Edition

B. **Topsoil:** Topsoil shall be in accordance with Technical Specifications – SEEDING AND SODDING.

C. **Seeding and Sodding:** Seeding and sodding operations shall be in accordance with Technical Specifications - SEEDING AND SODDING.

5.0 CONSTRUCTION

5.1 Maintenance of Traffic: Prior to limiting or restricting traffic on any street or road, the Contractor shall obtain permission from the Engineer. Through or local traffic shall at all times be accommodated by the use of temporary approaches, crossings or detours (if allowed by the Engineer). Satisfactory (to the Property Owner) ingress and egress to any public or private property shall be properly maintained. Proper barricades, signs and detour signs shall be provided by the Contractor to adequately warn motorists of obstructions ahead. Lighted (flashing) barricades shall be used at night.

Flagmen shall be provided to direct traffic around equipment and for one way movement of

traffic around equipment and for one way movement of vehicles. The Contractor may have to stop construction and restore full traffic during certain rush hours.

The Contractor shall at all times (unless otherwise permitted in writing by the Engineer) maintain open one lane to traffic during construction operations and restore roadways to two-way traffic during non-construction hours. All traffic shall be maintained in accordance with the MUTCD, current Edition.

5.2 Repair of Asphalt/Concrete Streets/Driveways/Parking Lots:

A. Removal and Earthwork: The existing asphalt pavement shall be uniformly saw cut on straight lines and the material shall be removed. Other methods of cutting the existing asphalt surface which will result in a uniform straightedge similar to a sawed cut may be acceptable. Upon completion of the pipe laying, select backfill shall be placed in the excavation in maximum 8-inch lifts and compacted to at least 90% of maximum laboratory density to within one foot of the top subgrade and to 95% of maximum laboratory density in the upper one foot of the subgrade.

Maximum density of typical select backfill material shall be determined in accordance with AASHTO T 191 or ASTM D 2922. Portable mechanical tampers or vibratory compactors shall be used in the trenches. Rollers may be used at street level. Existing base and asphalt surfaces which become undermined during construction shall be removed until firm undisturbed subgrade is reached.

A. Select Fill: Class 9, Group "C" Modified for a PI of between 5 and 15 as per latest Edition of Mississippi standard specifications for Road and Bridge construction

B. Asphalt Repair: Temporary Asphalt repair shall be made using 3" thickness of 825 crushed stone.

C. Concrete Repair: Concrete repair shall be made using 3,000 psi concrete meeting Technical Specifications - CONCRETE

D. Prime Coat: Prime coat shall be applied to exposed existing base material prior to overlay with asphaltic base course in accordance with MDOT Specification Section 408.

F. Tack Coat: Tack coat shall be applied to existing or new asphaltic wearing course and asphaltic base, or concrete which is to require asphalt wearing course.

G. Asphalt Wearing Course: Placement and compaction of the bituminous pavement shall be in accordance with MDOT Specification Section 403.03.

E. Utilities: All utility covers excavated during removal of streets, driveways, parking lots shall be restored to finished grade.

5.3 Driveways and Sidewalks: Driveways and sidewalks shall be repaired in similar manner to the original construction. Asphalt drives shall be saw cut where required and repaired in accordance with Paragraph (b) of this Specification. Concrete drives shall be saw cut or removed to the next joint. The minimum thickness for concrete driveway repair is 7 inches and for sidewalks is 4 inches.

Concrete surfaces shall be properly tooled and receive a broom finish. Installation (if required) of new driveway drainage culvert shall be made only at the direction of the Engineer. The Contractor shall take all reasonable precautions to allow for reuse of existing drainage culverts.

5.4 Repair to Gravel Roads: Gravel roads shall be backfilled and compacted in accordance with Paragraph (B) of this Specification. The final surface shall consist of 12-inch in-place compacted clay gravel. Compaction shall be to 100% of maximum laboratory density in accordance with AASHTO T99.

5.5 Repair to Lawns:

A. General: The Contractor shall exercise extreme care to minimize damage to improved lawns. Trees and shrubs within the limits of work shall be removed only for essential construction requirements. Any shrubs, which are removed or damaged, shall be replaced by satisfactory (to the Property Owner) planting by the contractor. Any grass seed areas, roads, streets, driveways, culverts, fences, water lines, metal boxes or other items (excluding trees unavoidably cut) which are damaged by the Contractor, shall be satisfactorily restored by Contractor. Acceptance of improved lawn repairs shall be based on the firm establishment of live stand of grasses and live growth of any replanted and acceptable shrubs. The Contractor shall water and fertilize such areas until healthy growth of grass (and shrubs, if applicable) are attained.

B. Grading: The surface areas shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall strip topsoil and sod and stockpile for later use. Upon completion of trenching over the area. Additional topsoil shall be furnished if required (at no additional cost) to provide a uniform thickness of 3 inches. Lime at a rate of 1 - ½ tons per acre and fertilizer (13-13-13) at a rate of 800 pounds per acre shall be applied as needed to further establish grass growth.

D. Grassing: Grass seed, sprigs, or sod similar to the existing lawn grasses shall be planted in accordance with the supplier's recommendations. Winter cover grasses such as rye grass shall be applied (in addition to planting the permanent grasses) if seeding, sprigging, or sodding is done at a time of year when the permanent grasses will not actively grow. The type (s) of permanent grasses shall be the same as the grass (es) in the damaged lawns. If the lawn repairs are accomplished between September 1 and March 1, the Contractor shall continue the restoration

work during the next period of March 15 and April 5 and mow the grass and continue the restoration until satisfactory growth of the permanent grass (es) is obtained. Such additional restoration work shall include the 1 - ½ tons of lime per acre, application of 13-13-13 fertilizer at a rate of 800 pounds per acre and replanting and watering permanent grass as necessary to obtain satisfactory (to Engineer) growth. No time will be charged against the Contract Time for any such additional restoration work.

Sodding: Sodding shall be in accordance with Technical Specifications: - Seeding and Sodding

5.6 Erosion Control: During all phases of construction, the Contractor shall adequately protect all work from adverse erosion. Soil shall not be allowed to flow off the limits of work area. The Contractor shall employ the use of ditch checks, matting, temporary grass cover, blankets, or other measures to control erosion. The Contractor shall be responsible to correct damage caused by erosion. During the construction of this project, all work areas will be strictly monitored. All trench lines will be kept in excellent condition, all streets and drives will receive careful maintenance, keeping potholes and settled areas filled in. Dust control is essential and will also be strictly monitored.

5.7 General Grassing of Unimproved Areas

A. General: The Contractor shall seed and establish grass growth in all disturbed areas in unimproved areas (to include pastures and roadsides). Acceptance of the grass cover shall be based upon the firm establishment of a live stand of grass. The contractor shall water such grass if natural rainfall fails to adequately provide moisture. On slopes and other areas subject to erosion, grassing shall be accomplished as soon as practical (within 48 hours unless weather is prohibiting) after finish grading operations.

B. Grading: The surface area shall receive finish grading so the finish topsoil surface (after settlement) will meet the existing contour grade of the area prior to construction. The natural drainage during and after construction shall not be altered so as to cause adverse effects to adjoining properties.

C. Topsoil: The Contractor shall remove existing topsoil and stockpile for later use. Upon completion of backfilling (to establish contours as before construction), the topsoil shall be uniformly spread back over the area. The Engineer may require additional topsoil be furnished by the Contractor at no expense to the project, if in the opinion of the Engineer, adequate provisions and efforts were not made by the Contractor to stockpile and re-use existing topsoil material.

D. Fertilizer and Agricultural Limestone: The Contractor shall uniformly apply 800 lbs. per acre of 13-13-13 fertilizer and also apply two (2) tons per acre of agricultural limestone to the area to be seeded. The fertilizer and limestone shall be tilled into the soil to a depth of four (4) inches.

E. Mulch Cover: Erosion prone areas such as steep slopes and highway shoulders shall receive a layer of loose straw mulch or equivalent at the rate of one and one-half (1-1/2) tons per acre. The mulch cover shall be established by the application of an emulsified asphalt or by "crimping" parts of the material into the soil.

5.8 Miscellaneous Items: Items such as fences, gates, paved ditches, and other items shall be replaced or repaired as required for restoration. Should additional fencing material be required, new post and new wire of similar size, type and gauge shall be provided and installed.

5.9 General Care: Reasonable care shall be taken during construction to avoid damage to vegetation. Ornamental shrubbery and tree branches shall be temporarily tied back, where appropriate, to minimize damage. Trees, which do not have to be removed in the opinion of the Engineer, and which receive damage to branches shall be trimmed of those branches to improve the appearance of the tree. Tree trunks receiving damage from equipment shall be treated with a tree dressing.

6.0 TESTING

6.1 General: All sampling and testing shall be accomplished by the testing laboratory approved by the Owner and employed by the Contractor to perform such services. Results shall be immediately forwarded to the Engineer by the Contractor.

6.2 Earthwork: Earthwork directly involved with road and street repair shall be tested as follows:

A. Moisture Density Relationship (Standard Proctors): Two tests of sampled native material shall be required. Tests shall be in accordance with AASHTO T 99.

B. Field Density: A minimum of two and a maximum of four field density tests shall be required. Density tests shall be in accordance with AASHTO T 191 or ASTM D 2922.

C. Topsoil: Two pH tests and two organic content tests (wet combustion method) will be required.

SEEDING AND SODDING

1.0 DESCRIPTION

This item consists of furnishing all labor, supervision, materials, tools, incidentals and equipment and performing all work for topsoiling, tilling, fertilizing, seeding, watering, and otherwise establishing, protecting and maintaining seeded and sodded areas as required by the Contract Drawings and these specifications, and including repair, refertilizing and reseeding as required until final inspection and acceptance of the project.

2.0 SUBMITTALS

Certificates for fertilizer, limestone, seed.

3.0 MATERIAL

3.1 Topsoil: Topsoil shall be the surface layer of soil that is stockpiled by the Contractor during stripping and/or excavation on the site. The topsoil shall be free of subsoil, clay, lumps, stones, brush or seed. Topsoil shall have a pH value of not less than 4.5 nor more than 8.0.

3.2 Lime: Lime shall be ground limestone containing not less than 80% of total carbonates and shall be ground to such fineness that 80% will pass through a No. 10 mesh sieve and 40% will pass through a No. 40 mesh sieve.

3.3 Fertilizer: Fertilizer shall be water soluble commercial carriers of available plant food elements or combinations thereof, as stated herein and shall conform to the applicable state fertilizer laws. They shall be uniform in composition, dry, and free flowing materials in condition for application by suitable equipment. The fertilizer shall be delivered in standard bags or other convenient standard containers, each fully labeled with manufacturer's guaranteed analysis. Any fertilizer shall contain not less than the percentages by weight of the ingredients set out as follows: (1) Nitrogen, 13% (2) Phosphorous P O, 13%, (3) Potash K C, 13%. Invoices for fertilizer will show the kind and have analysis furnished.

3.4 Seed: Seeds with a minimum pure live seed content of 90% shall be used. They shall be of the best grade and of known vitality, purity, and germination and shall be delivered in containers bearing seed tags as required by law showing percentages of germination content and purity of seed as well as percentages of weed seed content.

All seeds shall be free of wild onion, Canadian thistle, Johnson grass, crab grass or other seeds of noxious weeds. All seeds shall be furnished in standard containers, or as acceptable to the Engineer. Seed which has become wet, moldy or otherwise damaged in transit or storage will not be acceptable.

Purity, Germination and Planting Schedule

Spring and Summer Seeding (March 1 to September 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Hulled Bermuda	95	90	20
Pensacola Bahia	95	90	30

TOTAL 50
Fall and Winter Seeding (September 1 to March 1)

<u>Name</u>	<u>Percent Purity</u>	<u>Percent Germination</u>	<u>Mix (Dry Wt. Lbs.) Per Acre</u>
Unhulled Bermuda	95	90	20
Pensacola Bahia	95	90	30
Rye	95	85	15
Crimson Clover	95	85	8

TOTAL 73

Seeding in Existing Lawns: Grass seeds for existing lawns shall be the same as the existing grass.

3.5 Leguminous Inoculants: Inoculation media containing live nitrogen-fixing bacteria shall be supplied with all legume seed. The inoculants shall be standard, pure culture of nitrogen-fixing bacteria. Each kind of legume will require a cultural bacteria that is adapted to that particular kind of seed. The bacteria shall be supplied in convenient containers of a proper size to treat the amount of seed to be planted. The legume seeds shall be treated according to the directions, and before the expiration date for use of the media shown on the container.

3.6 Soil for Repairs: For fills or areas to be repaired, soil shall be topsoil of a least equal quality to that which exists in areas adjacent to the area to be repaired.

3.7 Water: Water shall be free from oil, acid, alkali, salt, and other substances harmful to growth of grass, and shall be from a source accepted prior to use.

3.8 Solid Sod: Bermuda or Carpet Grass and shall be native to the locality of the work and shall, when placed be live, fresh, growing grass with at least two and one-half (2 ½) inches of soil adhering firmly to the roots. The sod shall be reasonably free from obnoxious weeds or other

grasses, and shall not contain any matter deleterious to its growth; or which might affect its subsistence or hardness when transplanted. The sod shall be in blocks at least 3" x 8", and free from ragged edges.

4.0 INSPECTION AND TESTS

4.1 Fertilizer and Limestones: Duplicate copies of material invoices shall be furnished to the Engineer. Invoices shall show quantities and grade of fertilizer, quantity of limestone, percentages of calcium carbonate and magnesium carbonate, as applicable, and the percentages of limestone that pass the No. 40 and the No. 10 mesh sieves. Samples of each lot of fertilizer and limestone shall be furnished for testing. Upon completion of project a final check of total quantities of fertilizer and limestone used will be made against total area treated, and if minimum rates of application have not been met, additional quantities of these materials to make up minimum application specified shall be distributed.

4.2 Seed: Contractor shall furnish to the Engineer duplicate signed copies of statement(s) from vendor(s), certifying that each container of seed delivered is labeled in accordance with Federal Seed Act and is at least equal to requirements specified therein. This certification shall be obtained from vendor and shall be furnished before application.

5.0. PREPARATION OF GROUND SURFACE

5.1 General: Equipment, in good operating condition, shall be used for the proper preparation of the ground and for handling and placing all materials. Equipment shall be acceptable before work is started.

5.2 Topsoiling: Topsoil shall be obtained from job site stockpiles formed during stripping and/or excavation operations and shall be free from subsoil, clay lumps, stones, brush, grasses or weeds, excess acids or alkali, or any other material to subsequent, smooth, grading, planting, and maintenance operations.

The topsoil shall be evenly spread on tilled areas to a uniform depth of at least 3 inches after compaction. Spreading shall be performed so that seeding can proceed with a minimum of soil preparation or tilling. After preplanting fertilization is completed, the topsoil shall be compacted by rolling with a cultipacker or by other approved means.

Rehabilitation of the stockpile areas shall include returning the area to near pre-construction conditions, including seeding of the area to re-establish the growth of grass.

5.3 Grading: Previously established grades shall be maintained on the areas to be treated in a true and even condition; necessary repairs shall be made to previously graded areas by means of graders or other approved equipment.

5.4 Tillage: After the areas required to be treated have been brought to the grades shown, the

soil shall be tilled to a depth of at least 4 inches by plowing, disking, harrowing, or other acceptable operations until the condition of the soil is acceptable. The work shall be performed only during period when beneficial results are likely to be obtained. When drought, excessive moisture, or other unsatisfactory conditions prevail, the work shall be stopped when directed. Undulations or irregularities in the surface shall be leveled before the next specified operation.

6.0 APPLICATION OF FERTILIZER AND LIMESTONE

6.1 Preplanting fertilization of areas to be seeded: Fertilizer shall be distributed uniformly at a rate of 800 pounds per acre over areas to be seeded and shall be mixed into the soil to a depth of at least 4 inches by disking, harrowing, or other acceptable methods. Application of fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.2 Liming: Immediately following or simultaneously with incorporation of fertilizer, limestone shall be distributed uniformly at a rate of 4000 pounds per acre, and shall be mixed into the soil to a depth of at least 4 inches by disking , harrowing, or other acceptable methods. Application of limestone along with fertilizer may be part of the operation specified in Section 5.4: TILLAGE of this specifications.

6.3 Leveling: Surface irregularities resulting from tillage, fertilizing, liming, or other operations shall be leveled before seeding.

6.4 Postplanting fertilization: From 40 to 60 days after seeding, ammonium nitrate or its nitrogen equivalent shall be applied uniformly at a rate of 225 pounds per acre over areas seeded. Fertilizer shall be applied when grass blades are dry to minimize burning. The planted area shall be watered to thoroughly moisten the upper 6 inches of the soil surface after the fertilizer is applied.

7.0 PLANTING SEED

7.1 General : A satisfactory method of sowing shall be employed, using approved mechanical power-drawn drills or seeders, or other approved methods. When drills are used, markers or other means shall be provided to insure that the successive seeded strips will overlap or be separated by a space no greater than 6 inches. When delays in operations extend the work beyond the most favorable planting season for species designated or when conditions are such by reason of drought, high winds, excessive moisture, or other factors that satisfactory results are not likely to be obtained, work shall be halted as directed and resumed only when conditions are favorable or when approved alternate or corrective measure and procedures have been effected. If inspection during or after seeding operations indicates that strips wider than 6 inches have been left unplanted or other areas skipped, additional seed shall be sown.

7.2 Broadcast Seeding: Seeding shall be broadcast either by hand or with acceptable seeding equipment, in combination with fertilizer, or with other acceptable sowing equipment. Seed shall be distributed uniformly over designated areas. Half of the seed shall be sown with sower moving

at right angles to first sowing. Seed shall be covered to an average depth of 1/4 inches by brush harrow, spiketooth harrow, chain harrow, cultipacker, hand rake with wood tines, or other approved device. Seed shall not be broadcast during windy weather.

7.3 Drill Seeding: Drill seeding shall be accomplished with approved equipment with drills set not more than 6 inches apart. Seed shall be sown uniformly over designated areas to average depth of 1/4 inch.

7.4 Sodding: All solid sod shall be procured areas where the soil is fertile and contains a high percentage of loamy topsoil, and from areas that have been grazed or mowed sufficiently to form a dense turf.

Mechanical devices, such as sod cutter, may be used for cutting the sod into strips or blocks. Care shall be exercised at all times to retain the native soil on the roots of the sod during the process of excavating, hauling and planting.

The solid sod blocks shall be transplanted within 24 hours from the time of cutting, unless they are stacked, to their destination in a manner satisfactory to the Engineer. All solid sod in stacks shall be kept moist and protected from exposure to the air and sun, and from freezing. In no event shall more than two (2) days elapse between the cutting and planting of the solid sod.

Solid sod shall be planted during the period between March 1st and December 15th, unless written permission is given by the Engineer to extend the planting season. The solid sod shall be placed on the prepared surface with the edges in close contact. All cracks between blocks of solid sod shall be closed with small pieces of fresh sod, and all cracks too small for sod shall be filled by a light dressing of topsoil. The entire sodded area shall then be compacted and watered to the satisfaction of the Engineer. Rollers, hand tamps or other approved equipment may be used for compacting.

Surfaces of solid sodding which, in the opinion of the Engineer, may slide due to the height and slope of the surface or nature of the soil, shall, upon direction of the Engineer, be "pegged" with wooden pegs driven through the sod blocks into firm earth, sufficiently close to hold the sod in place.

8.0 MAINTENANCE

Seeded areas shall be maintained until all work or designated portions thereof have been completed and accepted. Tall grass and weeds that tend to impede the desired grass species shall be mowed, and any damage resulting from these operations shall be repaired at the Contractor's expense.

9.0 ESTABLISHMENT OF GROWTH

9.1 General : The Contractor shall be responsible for proper care of seeded areas while grass is becoming established for three (3) months after completion of treatment on the entire project, unless desired cover is established in a shorter period of time and the Owner shortens responsibility period. The Contractor shall be responsible for providing a satisfactory stand of grass. A satisfactory stand of grass is determined as a cover of living grass in which gaps larger than 12 inches square do not occur as determined by an acceptance inspection made at the end of the maintenance period. Maintenance work shall be performed at the Contractor's expense.

9.2 Mowing: Seeded and sodded areas shall be mowed with acceptable mowing equipment to a height of about 4 inches when average height of grass becomes about 8 inches. When amount of cut grass is heavy, grass shall be removed to prevent destruction of underlying turf. If weeds or other undesirable vegetation threatens to impede the growth of planted species, such vegetation shall be mowed, or in case of excessive growth, shall be uprooted, raked and removed from area.

9.3 Refertilizing: The Contractor will determine areas needing refertilization at least 15 days before application is required. Fertilization shall be distributed on designated area during periods when grass is dry. 13-13-13 grade fertilizer shall be applied uniformly at a rate of 800 pounds per acre. Fertilizer conforming to physical condition, packaging and marking as specified herein before shall be provided.

9.4 Reseeding: The Contractor will determine areas requiring reseeding at least 15 days before period specified for reseeding. Seed specified hereinbefore shall be drilled at rates hereinbefore specified, in a manner that will cause minimum disturbance to existing stand of grass, and at an angle of not less than 15 degrees from direction of previously seeded rows.

CONCRETE

1.0 GENERAL

- A. This item shall consist of furnishing all materials, labor, supervision, tools, equipment and incidentals and performing all forms of work; furnishing and placing reinforcement, inserts and anchors; mixing, placing, curbing, and furnishing of portland cement concrete.
- B. The work includes, but is not necessarily limited to manholes, pumping stations, lift stations, driveways, and minor concrete work.

2.0 APPLICABLE DOCUMENTS

The following publications form a part of this Specification and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publication referenced shall apply to the work.

A. American Society for Testing and Materials (ASTM):

- A 615 Billet Steel for Concrete Reinforcement
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field
- C 33 Concrete Aggregates
- C-39 Compressive Strength of Molded Concrete Cylinders
- C 143 Slump of Portland Cement Concrete
- C 150 Portland Cement

B. Mississippi Department of Transportation (MDOT):

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS:

The following data shall be submitted to the Engineer for review prior to incorporation into the work:

- A. Letter from the manufacturer certifying the concrete mix conforms to the requirements for Class B concrete as defined in Section 804 of the MDOT Standard Specifications for Road and Bridge Construction.

B. Letter of certificate from the manufacturer certifying that the reinforcing steel conforms to the herein specified requirements.

4.0 MATERIALS:

A. General: The concrete shall be ready-mix concrete manufactured by a plant for delivery to the site of the work in a plastic state. The Contractor may batch the concrete at the work site by use of portable mixers providing the following requirements are met:

1. Facilities shall be provided to properly weight, proportion and control the components of the concrete mix.

2. The mixer(s) shall be of such capacity so as to allow the complete placement of the plastic concrete mix prior to the initial set of any portion of the particular concrete pour.

B. Concrete Mix: The concrete materials and mix design, shall conform to the requirements for Class B concrete Section 804, MDOT Standard Specifications for Road and Bridge Construction. The compressive strength of the concrete shall be a minimum of 3000 psi at 28 days, or earlier. Type I Portland Cement shall be used in the mix, except where otherwise specified or permitted. Prior to producing any concrete for cast-in-place construction on the project, the Contractor shall submit to the Engineer the proposed mix design and shall obtain Engineer's approval of the mix design.

C. Reinforcing Steel - shall be new stock, deformed bars conforming to ASTM A 615, Grade 40 or Grade 60.

D. Curing Material - shall consist of wetted burlap, wetted cotton mats, plastic sheeting, or an approved liquid membrane material which will satisfactorily keep the new concrete in a moist condition for at least seven (7) days.

5.0 CONSTRUCTION:

A. Weather Limitations: Concrete shall be placed when the atmospheric temperature is a Minimum of thirty-five (35) degrees F. and rising. Newly placed concrete shall be protected from cold temperatures for at least four (4) days at a temperature of not less than forty (40) degrees F.

B. Forms: Forms shall be securely anchored in place and properly aligned. Wood forms shall be oiled prior to placement of fresh concrete mix.

C. Reinforcement: Reinforcing bars shall be securely mounted by the use of chairs or other approved methods so as to not become displaced during placement of concrete mix. The positioning of reinforcing by working the bars into the newly placed concrete mix shall not be allowed.

D. Placement: The plastic concrete mix shall be worked (and vibrated if required) into the formwork. The mix shall be consolidated so as to remove all voids and finished to form a true and level surface.

E. Curing: The hardened concrete shall be kept moist by the use of curing materials for a minimum of seven (7) days.

F. Slump Requirements: The following slump requirement shall apply:
Class B Concrete 2-4 Inches

G. Chamfered Corners: All exposed corners shall be chamfered one (1) inch or as indicated.

H. Finish:

1. All surfaces shall be "floated" to provide a uniform and level surface. Defects (honeycombs, ties, etc.) shall be repaired. No rubbing shall be required.

2. Sidewalks, driveways and other surfaces subject to pedestrian traffic shall be floated as noted in paragraph 1 above and shall receive a "broom" finish.

6.0 TESTING

The following test shall be required:

A. Slump: The Contractor shall test the concrete mix for conformance to the slump requirements as required. Test shall be in accordance with ASTM C 143.

B. Compressive Strength: The Contractor shall sample the concrete mix and prepare test cylinders for conformance to the compressive strength requirements. The Contractor shall transport the cylinders to the testing laboratory (employed by the Contractor) and have the cylinders tested in accordance with ASTM C 31 and C 39. The results of such test shall be forwarded to the Engineer. Test shall be performed at the following schedule.

One test per 15 cubic yards or major fraction thereof. A minimum of one test for each day of mixing shall be performed.

DUCTILE IRON WATER SYSTEMS

1.0 GENERAL

This item shall consist of furnishing all of the necessary materials, supervision, labor, tools, equipment and incidentals, and the installation of various types and sizes of water pipe and related items in accordance with the Contract Drawings and Specifications, as stated in the Proposal.

2.0 APPLICABLE PUBLICATIONS

The following publications form a part of these Specifications and where referred to by basic designation only, are applicable to the extent indicated. The latest editions of the publications referenced shall apply to the work.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- A 139 Electric-Fusion (Arc) welded steel pipe (sizes 4 inch and over).
- A 252 Welded and Seamless steel pipe piles.
- C 31 Making and Curing Concrete Compressive and Flexural Strength Test Specimens in the Field.
- C 33 Concrete Aggregates
- C 39 Test for Compressive Strength of Cylindrical Concrete Specimens.
- D 2922 Density of Soil Aggregate in place by the clear Method (shallow depths).

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

- 21.10 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch for Water and other Liquids.
- 21.11 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.
- 21.50 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-line Molds, for Water or other Liquids.

AMERICAN WATER WORKS ASSOCIATION (AWWA)

- C 104 Cement-Mortar Lining for Cast Iron Pipe and Fittings for Water and Other Liquids.
- C 106 Cast Iron Pipe Centrifugally Cast in Metal Molds, for water and other Liquids.

C 110 Gray Iron and Ductile Iron Fittings, 3 inch through 48 inch, for Water and Other Liquids.

C 111 Rubber Gasket Joints for Cast Iron and Ductile Iron Pressure Pipe and Fittings.

C 150 Ductile Iron Pipe, Centrifugally Cast in Metal Molds or Sand-Lined Molds, for Water or other Liquids.

AMERICAN ASSOCIATION OF STATE HIGHWAY & TRANSPORTATION OFFICIALS (AASHTO)

T-88 Particle Size Analysis of Soils.

T-89 Determining the Liquid Limit of Soils.

T-90 Determining the Plastic Limit and Plasticity Index of Soils.

T-99 Moisture Density Relations of Soils Using a 5.5 lb. Rammer and 12 inch Drop.

T-191 Density of Soil In-Place by the Sand-Cone Method.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

Standard Specifications for Road and Bridge Construction, Latest Edition.

3.0 SUBMITTALS

The following submittals shall be required for the respective materials used in the work. All submittals shall be submitted through the Contractor to the Engineer.

3.1 Ductile Iron Pipe: The following submittals shall be required for ductile iron pipe systems utilized on the project. The Contractor shall furnish manufacturer's certificates certifying that the pipe and fittings conform to the requirements as Specified hereinafter under Article 4.0, Materials. In addition, the submittals shall include the following:

A. Joints: The following shall be required for ductile iron joints.

1. Drawings or Manufacturer's Catalogue data indicating dimensions and tolerance.
2. Gaskets shall be tested in accordance with the respective standards as indicated in ANSI 21.11 and results shall be included in the submittals. Test shall be for similar materials on the gaskets and be not more than one year old.
3. Mechanical Joints: Should the Contractor elect to use mechanical joints in lieu of push-on joints, manufacturer's data shall be submitted in accordance with the "Special Requirements for the Mechanical Joint" as stated in ANSI 21.11 (AWWA C 111).

B. Ductile Iron Pipe Submittal Shall Include the Results of:

1. Tension Test
2. Impact Test
3. Low Temperature Impact Test

Sampling procedure shall be as indicated in ANSI 21.51.

4.0 MATERIALS

WATER SYSTEM:

A. Ductile Iron Pipe: Ductile iron pipe shall be designed in accordance with the latest revision of ANSI/AWWA C 151/A21.51), rated working pressure of 350 psi plus a 100 psi surge allowance; a 2 to 1 safety factor on the sum of working pressure plus surge pressure in Type 3 Laying condition with a depth of cover as required per plans.

Pipe shall have standard asphaltic coating on the exterior. Pipe also shall have a cement mortar lining on the interior in accordance with the latest revision of ANSI/AWWA C104/A21.4. If corrosion protection is required, polyethylene encasement shall be installed prior to the pipes installation in accordance with ANSI/AWWA C105/A21.5-88.

All non-restrained pipe shall be furnished with push-on type joints such as "Fastite", or equal. Joints shall be in accordance with the latest revision of ANSI/AWWA C111/A21.11 and shall be furnished complete with all necessary accessories.

Where restrained joint pipe is required, "Fast Grip", "Flex-Ring", or "Field Flex-Ring" or approved equal shall be used. The length of restrained pipe shall be as tabulated or noted on the plans.

Ductile iron fittings shall conform to the latest revisions of either ANSI/AWWA C110/A21.10 or ANSI/AWWA C153/A21.53. Fittings, linings, and coatings shall be as specified for the pipe above.

All pipe, fittings and accessories shall be installed and tested in accordance with the latest revision of AWWA C600. Newly installed ductile iron water mains shall be disinfected in accordance with the latest revision of AWWA C651 prior to placing in service.

B. Gate Valves: Where indicated on the Plans or directed by the ENGINEER, the CONTRACTOR shall furnish and install gate valves as hereinafter specified.

All gate valves shall be cast iron mechanical joint, M.J., Mueller A-2380-20, equivalent or better.

All gate valves shall be furnished with O-ring packing and 2" square operating nut, AWWA 200lb., for cast iron water main.

Valve boxes shall be cast iron top and bottom. Extension pieces shall be provided as required.

All valves will be set at a perfect 90 degree angle from level pipe, (perpendicular) so as to be easily accessible through properly set valve box as per specifications above.

The CONTRACTOR shall furnish and install either a two-piece or three-piece, slip type, cast iron valve box over each gate valve. Valve boxes will be set over valve operating nut, centered so as to be easily accessible with a valve operating wrench or key. They will be set to correspond with the finished grade of street, lot, or easement. No dirt will be left in box; box will not rest directly on valve body.

C. Fittings, Valves and Hydrants, Etc.: All fittings, valves and valve boxes, hydrants, and other appurtenances are to be set at the points indicated on the plans, or as directed by the ENGINEER, and omission to do so shall be corrected by the CONTRACTOR without extra cost to the OWNER.

All fittings shall either be Ductile Iron Compact (ANSI/AWWA C153/A21.53) or Cast Iron (ANSI/AWWA-C110/A21-10) and shall have mechanical joint ends and mechanical joint restraints (Series 1120) and shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices.

The mechanical joint restraint device shall have a working pressure of a least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron., MEGALUG or equal.

To improve the sealing capacity, the gaskets for all mechanical joints conforming to the requirements of ANSI/AWWA C110/A/21.10, C111/A21.11, or C153/A21.53 shall be of a design that causes the gasket to deflect approximately 30% during assembly of the mechanical joint. The gasket material shall conform to the requirements of ANSI/AWWA C111/A21.11, Section 1-6.4 of the latest revision. Mechanical joint gaskets shall be EBAA Iron's EBAA Seal-Improved Mechanical Joint Gasket or approved equal.

Fittings (bends, tees, plus, and caps) shall be securely braced by mechanical joint restraints, as indicated on the Plans, to prevent the possibility of blowing off under pressure. And a full length of pipe shall be installed on each end of the fitting. Then cut pieces can be installed beyond the full lengths of pipe.

D. Plugs and Caps: Where indicated on the Plans, or as directed by the ENGINEER, the CONTRACTOR shall install plugs for anticipated future extensions by placing a branch fitting

(tee or cross) in the line and plugging the unused branch or branches. In general, such plugs will be located at street intersections where present plans provided lines running in only two or three directions from the intersections and where, in the opinion of the ENGINEER, a connection may be required for future extension. Where "dead end" lines are installed, the ends of such lines shall be plugged or capped as required.

For the various hot taps required according to the plans, and up to 12 inches, the JCM 432, stainless Tapping Sleeve, or approved equal, shall be required. The CONTRACTOR shall furnish all materials for these various taps.

E. Casing Pipe: Steel pipe utilized as casing at locations shown on the Contract Drawings shall be new round piling pipe conforming to the requirements of ASTM A 252 or A 139. Casing diameter shall be adequate to allow pushing of the specified diameter of water pipe and make proper connections at the ends. Minimum Wall Thickness for steel casing is 0.25 inch.

F. Stabilization Material: Stabilization Material shall be a pit run mixture of sand and gravel. The sand shall be hard, sharp and durable particles. All gravel shall pass a 1" sieve.

G. Wash Gravel Bedding Material: Select Granular material for pipe bedding shall be coarse concrete aggregate. The coarse concrete aggregate shall conform to the gradation sizing Number 467 specified in Table 2 of ASTM Standard Specification C-33. (See Following Table)

H. Meter: Water meter shall be Badger "Radio Read" and all fittings shall be Ford brand consistent with current City Standards.

I. Polyethylene Pipe: Shall be in accordance with AWWA C906, ASTM D3035, PE4710, C200 (DR11), with ductile iron outside diameter (DIOD)

J. Fittings for Polyethylene Pipe: Shall be in accordance with AWWA C906, AWWA D3035, molded and manufactured to comply with ASTM F714. AWWA C906, AWWA M55, ASTM D3261 for butt fusion fittings ANSI Class 150 or as necessary to provide minimum pressure rating.

K. Joints and Jointing Materials

a. Mechanical Joint: DIOD Mechanical joint adapter and gaskets for mechanical joints for joint connections between pipe and metal fittings, valves, and other accessories, AWWA C111/A21.11.

b. Butt Fusion: Jointing is to comply with ASTM D2657, Butt Fusion. No offset in alignment between adjacent pipe joints of fittings is permitted.

SIZE NO. 467

<u>Nominal Size</u> <u>(Sieves w/Square Openings)</u>	<u>Percent Passing by Weight</u>
2"	100
1 1/2"	95 - 100
3/4"	35 - 70
3/8"	10 - 30
No. 4	0 - 5

H. Select Backfill: General: The select material shall be composed of a natural or artificial mixture of sand, silt, clay or soil binder or other material of satisfactory cementing value. The sand shall be hard, sharp, and durable particles, preferably siliceous. The binder shall be a grade of clay or other material having satisfactory cementing qualities and shall be homogenous in character, free from vegetable matter, clay balls or other deleterious substances that cannot be classed as serviceable base material.

Gradation: Any coarse aggregate contained in the material shall pass the one and one-half (1-1/2), sieve and not more than thirty-five percent (35%) shall be retained in the Number 10 sieve. The plasticity index (P.I.) shall not exceed 12, nor shall the liquid limit exceed 30.

The composite selected sand-clay material passing the Number 10 sieve shall conform to the following minimum and maximum gradation limits:

<u>Sieve</u>	<u>Percent Passing by Weight</u>
Number 40	40 - 85
Number 60	30 - 70
Number 270	8 - 30
Silt (.05 to .005 mm)	3 - 15
Clay (Passing .005 mm)	3 - 15

I. Backfill: All other backfill shall consist of excavated material removed from the trench.

5.0 CONSTRUCTION:

Earthwork:

A. Site Preparation: Topsoil shall be stripped and stockpiled in accordance with Technical Specifications - Restoration of Roads, Driveways, Fences, Lawns, and other Grassed Areas and Excavation, Trenching and Backfilling.

All vegetation such as brush, heavy sod, heavy growth of grass, decayed vegetative matter, rubbish and any other unsuitable material within the area of trenching shall be stripped or otherwise removed before the trenching is started, and in no case shall such objectionable material be allowed in the trench.

Stripping operation shall be to a depth of not less than 6 inches in all cases.

B. Asphalt or Concrete Removal: Before trenching operations begin, the existing asphalt or concrete pavement shall be scored or cut to a proper depth to give a straight vertical edge when removed. The asphalt or concrete shall be disposed of offsite by the Contractor. While removing the asphalt or concrete in the trench line, never shall the adjacent asphalt be raised or pulled from its base.

C. Trenching: The Contractor shall determine all requirements for trench dimensions, alignment, and grades. The trench shall be excavated in conformance with all federal, state and local regulations for the protection of the workmen. Shoring, sheeting and/or a moveable form shall be used as required to provide earth stability during the laying operations.

The final excavation of the trench for the pipe installation shall be as indicated on the Plans. Minor variations in horizontal (within the permanent easement) or vertical alignment during construction shall be made during construction (with the Engineer's approval) to facilitate ease of installation and operation (due to potential conflicts; i.e., utility conflict) at no additional cost to the Owner except for additional piping, if any. The trench from the top of the pipe down to the bottom of the bedding shall be of a consistent width as indicated on the plans. Should the excavated width of the trench be larger than the design width, the Engineer may direct that a higher type or class of bedding be used; or other adjustments be made to increase the load carrying capacity of the pipe.

The Contractor shall not excavate more trench in advance of pipe laying than is necessary to perform the work efficiently. No more than 100 feet of open trench shall be allowed unless approved by the Engineer.

Excavated material shall be placed in a manner that will not obstruct sidewalks, driveways, or other structures. Excavated material shall not be placed so as to surcharge the walls and jeopardize trench stability.

D. Disposal: The Contractor shall satisfactorily dispose of all excess earth from excavations either in approved (by the Engineer) areas within the construction limits or away from the project in disposal sites obtained by the Contractor.

The Contractor will be permitted to mound excess earth over the trench to a maximum depth of 12 inches above the original ground surface or finished grade where the trench is located in unimproved property. Wasting of excess excavated material will not be permitted within any road ROW. All material within the construction limits shall be placed so that natural drainage is maintained and the surface shall be graded to a smooth and uniform appearance. The disposal of waste and excess excavating materials, including hauling, handling, grading, and surfacing shall be subsidiary obligation of the contractor and no separate payment will be made. Therefore, the cost of such work shall be included in the Contract Unit Price for installation of water pipe.

E. Dewatering: The site shall be kept free of surface water at all times. The Contractor shall

install drainage ditches and dikes and shall perform all pumping and other work necessary to divert or remove rainfall and other accumulations of surface water from the excavations. The diversion and removal of surface water performed in a manner that will prevent the accumulation of water behind temporary structures or at any other locations within the construction area where it may be detrimental. The Contractor shall provide, install, and operate sufficient trenches, sumps, pumps, hoses, piping, well points, deep wells, etc., necessary to depress and maintain the ground water level at least one foot below the base of the excavation during all stages of construction operations. The ground water table shall be lowered in advance of excavation and maintained a minimum of one foot below the lowest excavation subgrade made until the structure has sufficient strength and weight to withstand horizontal and vertical soil and water pressures.

Where groundwater is encountered, the Contractor shall make the effort necessary to secure a dry trench bottom before laying pipe. In sandy and in other suitable type soils, dewatering shall be done by well pointing. If, in the opinion of the Engineer, the Contractor has failed to obtain an absolutely dry trench bottom by insufficient use of all known methods of trench dewatering, the Engineer may order the Contractor to excavate below grade and place not less than 6 inches of graded crushed stone fill material over the trench bottom to form trench drains to suitably located sumps and to remove the water by bailing or pumping. The graded crushed stone fill material shall be placed at the Contractor's own expense and shall be of such depth that there shall be not water in bell holes at the time of coupling pipe. All costs of equipment, labor, and materials required for dewatering shall be included in the bid price.

F. Bedding: The Contractor shall satisfactorily shape the trench area (to specified line, grade and cross section) to receive bedding material. The bottom of the trench shall be undisturbed soil. Should the Contractor over excavate the trench without direction from the Engineer, the trench shall be brought up to grade with select backfill and compacted to at least 90% of maximum laboratory density as measured by AASHTO T 99. Such additional work and materials for over excavation without direction of the Engineer shall be at the expense of the Contractor.

Holes for the bells shall be provided at each joint in the sub-grade or in the granular fill bedding material as required. The holes shall be no larger than necessary for joint assembly and assurance that the pipe barrel will lie flat on the material. The Contractor shall install the proper bedding for the respective type of pipe and depth of installation as shown in the details and schedules on the plans. When depths vary in a particular manhole run, the Contractor shall change bedding systems in accordance with the depth installation requirements.

1. Stabilization Materials: When the sub-grade is found to be unstable or to include ashes, refuse, organic material, or other unsuitable material, the Engineer may direct that the sub-grade be over excavated to remove such material. The depths of over excavation shall be as directed by the Engineer. Stabilization material shall be placed into the over excavated area of the trench and shall be paid for in accordance with these specifications. Stabilization shall be compacted to at least 90% of maximum laboratory density in six inch lifts.

2. Bedding Materials: As detailed in the plans, bedding material shall be placed to the specified depth below the pipe and tamped to a minimum of 90% of maximum laboratory density

as determined in accordance with AASHTO T 99. Following placement of pipe, additional bedding material shall be placed and consolidated under the haunches of the pipe. Special tools shall be required to work the material into place and leave no voids beneath the pipe. The bedding material shall be tamped along the spring line (or along the top of the bedding material as indicated) of the pipe to sufficiently compact the material insofar as practical.

The Engineer may direct additional moisture be added to the bedding material to aid in the compaction effort. Mechanical tampers may be employed to aid the process. Depending on the particular bedding required, additional bedding shall be added and tamped to minimum of 90% of maximum laboratory density, with AASHTO T-99.

3. Select Backfill: Select backfill shall be placed in 6 inch lifts and tamped to a minimum laboratory density with AASHTO T-99. Overall depth of the select backfill shall be as directed by the Engineer.

4. Normal Condition Bedding: Under normal conditions the trench bottom shall be undisturbed earth shaped to the specified line, grad, and cross section with proper bell holes at each joint to insure the pipe barrel lies flat on trench bottom. The bedding material will be selected native materials excavated from the trench and placed in two lifts. The first lift being placed up to the spring line of the pipe and extending out to the trench walls and hand tamped to a minimum of 90% of maximum laboratory density. Special care shall be used in placing and tamping bedding to insure no voids under the haunches of the pipe. The second lift shall extend to approximately 6" above pipe (Material permitting) and hand tamped to 90% density.

5. Backfilling: Upon completion of placement of select material the excavated materials shall be immediately placed back into the trench. Specific requirements are:

a. Backfill requirements for road crossings, parking lots, driveways, and sidewalks shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS AND OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

b. Backfill requirements for unimproved areas (pastures, wooded areas) shall consist of placement and shaping of the soil in such a manner as to allow maximum natural consolidation. No compaction of the general backfill in the unimproved areas will be required, except that caused by conventional shaping equipment.

c. No debris shall be used as backfill which has a volume in excess of one-half of one cubic foot or a weight excess of 75 pounds.

6. Sheeting Removal: Wooden sheeting or other thick sheeting or shoring members which have been driven or otherwise placed along the trench walls to an elevation below the spring line of the pipe shall be cut off at the spring line or higher and left in place.

7. Grading and Grassing: Final grading and grassing shall be in accordance with Technical Specifications - RESTORATION OF ROADS, DRIVEWAYS, FENCES, LAWNS, AND

OTHER GRASSED AREAS AND EXCAVATION, TRENCHING AND BACKFILLING.

F. PIPE HANDLING AND STORAGE: Pipe shall be handled, staked, and stored in accordance with manufacturer's printed literature. The Contractor shall provide security as required to prevent damage by vandals. PVC pipe shall be shaded from sunlight for extended lengths of time. Pipe damaged during storage and handling shall be rejected.

G. PIPE LAYING: Each pipe shall be laid true to line and grade and in such manner as to form a close concentric joint with the adjoining pipe and to prevent sudden offsets of the flow line. As the work progresses, the interior of the water shall be cleared of all dirt and superfluous materials of every description. Where cleaning after laying is difficult because of small pipe size, a suitable swab or drag shall be kept in the pipe and pulled forward past each joint immediately after the jointing has been completed. Trenches shall be kept free of water and pipe shall not be laid when the condition of the trench or the weather is unsuitable for such work. At times when work is not in progress, open ends of pipe and fittings shall be securely and satisfactorily closed so that no trench water, earth, or other substance will enter the pipe or fittings. The minimum depth of water mains shall be 30 inches below finished grade to the top of the water main.

Pipe laying shall be performed in such a manner that no foreign material enters the pipe. The Engineer may require that before lowering pipe, heavy canvas bags be placed over each end, and left in place until joints are ready to be made. If water is in the trench, the seals shall remain in place until the trench is pumped completely dry. If conditions are unsuitable, no pipe shall be laid until satisfactory laying conditions are obtained in accordance with the above specified requirements.

H. PIPE JOINTING: Piping shall be jointed in accordance with the manufacturer's printed recommendations. Gaskets shall be firmly set within the bells and grooves as required. The manufacturer's recommended lubricant or an approved equal shall be applied for slip type joints.

Ductile Iron Pipe Joint Construction: The installation and jointing of ductile iron pipe shall generally conform to the applicable provisions of AWWA Standard Specifications C-600 for pipe laying.

Where mechanical joint pipe is used, the surfaces which come in contact with the gasket shall be thoroughly brushed with a wire brush just prior to assembly. The gasket should be brushed with soapy water prior to installation to remove loose dirt and to lubricate gasket as it is forced into its retaining space. When tightening bolts, it is essential that the gland be brought up toward the pipe flange evenly. The bolts should be partially tightened; the bottom bolt first, then the top; next the bolts on either side; and last, the remaining bolts. Overstressing of bolts to compensate for poor installation will not be permitted. Bolt torque shall be in accordance with manufacturer's specifications.

All joints of whatever type shall be completely water tight after being subjected to the required tests.

I. BORINGS: Borings shall be accomplished in accordance with Mississippi Department of Transportation Standards. The contractor shall provide all necessary sheeting, bracing, cribbing, supports and appurtenances to insure the proper line and grade throughout the entire length of the crossing.

1. Casing Pipe: Casing Pipe shall be installed as indicated on the Contract Drawings. Joints shall be completely welded to provide structural integrity and shall be watertight.

2. Carrier Pipe: Carrier pipe may be any of the allowed options of piping. However, the piping and joints shall be capable of withstanding the stress exerted by pushing the pipe within the casing.

3. Carrier Pipe Supports: Supports for the carrier pipe shall be as recommended by the manufacturer for such installation. Supports shall be spaced to adequately support the piping under all conditions.

4. Casing Seal: The annulus between the casing and carrier pipe shall be sealed at each end by installing WMSON Type U end seals, as manufactured by T.D. Williamson, Inc. Tulsa, Oklahoma, or equal, in accordance with the instructions of the manufacturer of the seals.

J. Separation of Water and Sewer Mains:

1. Water mains shall be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line shall be a minimum of 18 inches from the top of the sewer line.

K. INCIDENTAL CONCRETE:

1. GENERAL: The following specifications shall apply to any and all items of incidental work with Portland Cement with or without reinforcement, including such items as concrete piers to support cast iron pipe above ground, erosion control bulkheads or structures, cradles and encasement, blocking and the like.

All concrete used in the construction of this project shall comply with the requirements herein specified for its particular class and kind.

2. MATERIALS: All materials used in this work shall consist of (a) Portland Cement, (b) Sand, (c) Gravel, and (d) Clean Water.

(a) The cement used shall be domestic manufacture, either "Standard" or "high Early Strength" Portland Cement, which shall meet all the requirements of the current A.S.T.M. Specifications for the type used at the time it is incorporated in the work.

(b) The fine aggregate shall consist of clean, sharp sand, well graded from coarse to fine, consisting of hard, durable particles, free from coarse to fine, consisting of hard, durable particles, free from silt, salt or organic matter. It shall meet all the requirements of the ASTM

Specifications C33, Paragraph 1, 2 and 3, and ASTM C-40.

(c) The coarse aggregate used shall consist of clean washed gravel, free from particles of wood or lumps of clay. Not more than 10% shall pass the No. 4 sieve, and it shall conform with the requirements of ASTM Specifications C33, Paragraph 5 to 8 inclusive.

(d) The water used for mixing concrete shall be clear, free from oil, salt, strong acid, alkali organic matter, and shall be approved by the Engineer.

(e) Reinforcing steel shall conform to the requirements of the "Standard Specifications for Billet-Steel Concrete Reinforcing Bars" of intermediate grade (Serial Designation: A 15-39) or the Standard Specifications for Rail-Steel Concrete Reinforcement Bars (Serial Designation; A-16-35) of the American Society for Testing Materials.

3. CONSTRUCTION METHODS:

All concrete materials shall be as handled and stored that they will not become damaged after delivery at the site. The cement shall be thoroughly protected from the weather, and the sand and gravel, shall be so stored that they will not become intermixed, and so as to prevent the admixture with either of any foreign materials. Reinforcing steel shall be so stored that it will not come in contact with the ground, shall be protected from the weather, and shall be clean and free from rust when incorporated in the work.

Concrete materials shall be mixed in the proportions and in a manner that will produce concrete of the class and strength specified to its use.

Unless indicated otherwise, all concrete shall be Class A which shall have a crushing strength of not less than 3,000 pounds per square inch at 28 days, as determined by the Standard Methods for testing concrete materials.

Class B concrete, which shall have a crushing strength of not less than 2,500 pounds per square inch at 28 days, and shall be used for erosion control bulkheads and blocking pipelines at bends to prevent blowing off under pressure.

Class C concrete, which shall have a crushing strength of not less than 2,000 pounds per square inch at 28 days, shall be used for cradles and encasement and may be used for backfill below grade.

After concrete has been properly mixed, it shall be deposited in the forms in reasonably uniform layers and in such manner as to prevent segregation of the aggregates. It shall be thoroughly spaded or puddled while being placed to insure maximum density and prevent honey-combing.

No concrete shall be deposited when the air temperature is less than 40 degrees F. No material shall be deposited on a frozen sub-grade, nor shall any frozen moisture or material be incorporated into the mixture.

No concrete shall be placed in water, nor shall water be permitted to rise on it or to run over it within a period of 24 hours after it has been placed.

Unsatisfactory concrete, resulting from failure to observe the above requirements or otherwise, shall be removed and replaced as directed by the Engineer.

4. COMPENSATION:

Payment for all concrete, except as may be elsewhere herein provided, shall be included in the prices bid for the construction units with which it is placed and no separate or extra compensation will be allowed directly therefore.

6.0 TESTING

DUCTILE IRON PIPE:

A. Field Inspection: The Engineer shall perform visual inspection of the material prior to placement by the Contractor. The Engineer may make non-destructive tests to determine the soundness of the pipe. The Contractor shall assist the Engineer in handling and moving the pipe as required.

B. Material Test: Material test shall be conducted during the manufacturing process and the results shall be included as part of the submittals. No other material test shall be required.

STEEL CASING PIPE: Material test shall be included as part of the submittal. No other material test shall be required.

COMPACTION TESTS: Compaction tests shall be performed in accordance with AASHTO T191 and ASTM D 2922. Maximum compaction shall be determined in accordance with AASHTO T99.

CONTRACTOR shall establish a compaction method or pattern which results in the proper density for the material utilized in the backfill operation. CONTRACTOR shall verify the compaction method by testing each lift for density in the first run of pipe to be laid. Upon satisfactory performance and approval of the ENGINEER the established compaction method shall be used for compaction of each lift of similar material.

The CONTRACTOR shall provide additional density testing to verify the compaction effort; twice in random locations as selected by the ENGINEER every 1,500 linear feet of pipe, if there is a change in material, or if in the sole opinion of the ENGINEER the compaction effort is not yielding the proper results.

(Number of Compaction Tests)

AASHTO T-99 Select Backfill Material OR Stabilization Material	AASHTO T-191 or ASTM D 2922	
	1	One per 100 CY
Bedding Material	2	One per 600 LF
Tamped Backfill	2	One per 600 LF

HYDROSTATIC TESTING:

The completed system shall be tested as herein stated. The pipe shall be filled with water and all air exhausted. Each section shall be tested under a hydrostatic pressure of 150 pounds per square inch and shall not show leakage exceeding 10 gallons per inch of diameter per mile of pipe per 24 hours when so tested. Whatever shall be measured into a container and refilled to the pre-test level. The pressure shall be maintained for 4 hours by pumping as necessary, and if the pipe has been backfilled, a 24-hour test is required.

All visible leaks at exposed joints and all leaks evident on the surface where joints are covered shall be repaired, and leakage eliminated, regardless of total leakage shown by the tests. Lines which fail to meet tests shall be removed, if necessary, or repaired and retested until compliance with these test requirements is affected.

These tests are to be made at the Contractor's expense, and he is to provide all necessary fittings, equipment, appliances, and any other necessary items to conduct the tests in a manner satisfactory to the Engineer. All costs incidental to conducting these tests are to be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

CLEANING AND DISINFECTION:

Before each section of work is placed in service, it shall be thoroughly flushed to remove any dirt or other foreign material from inside the lines; and the inside of the lines shall be disinfected by pumping into and through them as solution of chlorine of 50mg/l for 24 hours in such manner as to meet the requirements of the State Board of Health.

At least two (2) samples of chlorine free water, taken from each section shall be submitted to the State Board of Health for examination to determine if the system is free from organisms of the

Coli-Aerogenes group. If such samples are not negative from organisms of the Coli-Aerogenes group, the system shall be disinfected and re-disinfected in a manner meeting the requirements of the State Board of Health, until the system is freed of contamination.

All water mains will be flushed, chlorinated and re-chlorinated until two (2) consecutive negative water samples are obtained by the Local Health Department or a representative of the water systems certified as an operator by the Mississippi Department of Health.

The CONTRACTOR shall be responsible for the conduct of all of the above defined activities, and any and all costs incident thereto shall be included in the prices bid for the various items of construction as no separate or extra compensation is to be allowed therefore.

EXISTING DRINKING WATER FACILITIES

The Contractor is required to keep existing drinking water facilities in operation during construction. Should the Contractor require that existing facilities be taken out of operation, a plan to provide for alternative service shall be reviewed and approved in advance by the Health Department and shall be adhered to during construction.

FIRE HYDRANT

1.0 General

Fire hydrants shall comply in all respects with AWWA Standard C-502, latest revision, and shall be M & H or approved equal. Fire hydrants shall be of the compression type with the main valve opening against the pressure and closing with the pressure. The main valve opening shall be 4-1/2", 5-1/4", or 6-1/4" in diameter. Fire hydrant shall be of a dry barrel, dry top design. The main valve on the hydrant shall remain closed should the hydrant nozzle section be broken off by a traffic accident. The nozzle section shall consist of two (2) hose nozzles and one (1) pumper nozzle or other, as specified.

2.0 Rating

Fire hydrants shall be rated at 150 psi water working pressure, tested at 300 pounds hydrostatic for structural soundness in the following manner: 300 pounds hydrostatic test supplied from the inlet side, first with the main valve closed for the testing of the valve seat; second, with the main valve open for testing of the drain valves and the hydrant barrel. Testing is to be completed in accordance with AWWA C-502.

3.0 End Configurations

Hydrants shall be connected to the main by a 4", 6", or 8" mechanical joint, flange shoe, A.C., or hub shoe. Mechanical joint shoes, A.C., and hub shoes shall be fitted with strapping lugs.

4.0 Design

- 4.1 The main valve seat of the hydrant shall be made of rubber and be supported by a one-piece bronze top plate and drain valve mechanism and bottom plate. The bottom stem threads of the main valve rod shall be fitted with a cast iron cap nut (epoxy coated, optional) suitable for sealing the threads from the water. Drain valves shall be faced with rubber.
- 4.2 Changes in size or shape of the waterway shall be accomplished by means of easy curves. Exclusive of the main valve opening, the net area of the waterway of the barrel and the foot piece at the smallest part shall not be less than one hundred twenty percent (120%) of that of the net opening of the main valve.
- 4.3 Hose and steamer nozzles shall be threaded and screwed into the nozzle section and then pinned to prevent turning.
- 4.4 The hydrant shall be so designed that when it is in place, no excavation will be required to remove the main valve and moveable parts of the drain valve. Further, the hydrants shall be of the type that can be extended without excavating. Hydrants shall be so designed that, in the event of accident or breaking of the hydrant above or near grade level, the main valve will remain closed. The main

valve rod shall be made in two parts and fitted with breakable feature at the ground line flange.

- 4.5** The ground line connection between nozzle section and the barrel shall incorporate the use of eight (8) breakable bolts. This connection shall be so designed that the nozzle section can be rotated in increments of forty-five (45) degrees. The ground line connection between the barrel and nozzle section shall be gasketed to provide a seal.
- 4.6** The operating threads of the hydrant shall be so designed as to avoid the working of any iron or steel parts against either iron or steel. The operating stem and operating nut threads shall be square or acme type.
- 4.7** The operating thread shall be grease lubricated at the factory. Access shall be provided to field lubricate the operating mechanism.
- 4.8** The operating thread shall be sealed from water at all items when the valve is either in the opened or closed position. The operating rod shall be bronze sheathed where it passes through the double “O” ring seal plate.
- 4.9** The bonnet shall be weather proof.
- 4.10** The operating nut shall be of bronze and a self-lubricating, anti-friction thrust bearing shall be provided to reduce operating torque.
- 4.11** Hydrants shall be of the dry type and hydrant shoe shall have two positive acting non-corrodible drain valves that shall drain the hydrant completely by opening when the main valve is closed and close tightly in accordance with AWWA C-500 requirements when the valve is open. The main valve assembly shall be seated in the hydrant (with a bronze-to-bronze interface as an option) to facilitate removal of the main valve should maintenance be required. The nozzle section shall consist of two 2” hose nozzles to the specified thread designation (NST or other, as specified) and one pumper nozzle 4-1/2” in diameter to the specified thread designation (NST or other, as specified) or other combination of nozzle outlets including independent hose gate valves as specified.
- 4.12** Two “O” ring seals shall be utilized where the main hydrant rod passes through the seal plate.
- 4.13** Hydrant standpipe shall be ductile or cast iron and single piece for all bury depths.
- 4.14** All like parts of hydrants of the same size and model produced by the same manufacturer shall be interchangeable.
- 4.15** Hydrant shall open by turning to the left.

- 4.16** Threads or hose and streamer nozzles shall be national standard unless otherwise specified.
- 4.17** Auxiliary shut-off (isolation) gate valves, when required, shall be of the same manufacture as the hydrant.
- 4.18** The inside of all hydrants shall be coated in accordance with AWWA standards and federal specification TT-C-494A or equal except for bronze and machined surfaces. Exterior of hydrant shall be painted fire hydrant yellow (or as specified). (The wetted surface of the hydrant shoe shall be epoxy coated to prevent corrosion of the waterway, optional.)

5.0 **Markings**

Hydrant shall be marked with the name of the manufacturer, size of valve opening, and the year of manufacture, all in accordance with AWWA C-502.

Sewer/Water Utility – Trace Wire Specification

1.0 General

All trace wire shall have HDPE insulation intended for direct bury, color coated per APWA standard for the specific utility being marked. THHN is prohibited from use in the tracer wire system.

All trace wire, test stations and accessories shall be supplied by a single manufacturer and domestically made in the USA.

All tracer wire and accessories shall be installed per plan details and per manufacturers recommended installation methods. All wire and connectors shall be rated for direct bury applications.

2.0 Materials

Copper Clad Steel (CCS) Trace Wire

Open Trench – 12 Gauge Copper Clad Steel with a Break Load of 452 pounds

Directional Drilling - 12 Gauge Copper Clad Steel with a Break Load of 1,150 pounds

Connectors

2-Way Splice Connector with Strain Relief

3-Way Connector

Termination/Access/Test Stations

Non-Roadway: Equal to Copperhead LD14TP

Concrete / Driveway: Equal to Copperhead CD14TP

Roadway: Equal to Copperhead RB14TP

Fire Hydrant: Equal to Copperhead T2-FLPKG

Grounding

Magnesium Anode: Equal to Copperhead ANO-12

3.0 Testing

All new trace wire installations shall be located using typical low frequency (512Hz) line tracing equipment, witnessed by the contractor, engineer and facility owner as applicable, prior to acceptance of ownership.

This verification shall be performed upon completion of rough grading and again prior to final acceptance of the project. Continuity testing in lieu of actual line tracing shall not be accepted.

4.0 Connectors

All mainline trace wires must be interconnected in intersections, at mainline tees and mainline crosses. At tees, the three wires shall be joined using a single 3-way lockable connector.

Connectors shall be dielectric silicon filled to seal out moisture and corrosion, and shall be installed in a manner so as to prevent any uninsulated wire exposure.

Non-locking friction fit, twist on or taped connectors are prohibited.

5.0 Termination/Access/Test Stations

All trace wire termination points must utilize an approved tracer wire access box, specifically manufactured for this purpose or as detailed on the plans

All grade level/in-ground access boxes shall be appropriately identified with “sewer” or “water” cast into the cap and be color coded (blue – water / green – sewer).

Test stations at dead ends shall be two-terminal.

Test stations in between dead ends shall be single terminal.

A minimum of 2 ft. of excess/slack wire is required in all trace wire access boxes after meeting final elevation.

Grounding anode wire shall be connected to the identified (or bottom) terminal on all access boxes.

Hydrants – Trace wire must terminate at an approved above-ground trace wire access box, properly affixed to the hydrant grade flange.

6.0 Grounding

Trace wire must be properly grounded at all dead ends/stubs.

Grounding of trace wire shall be achieved by use of a drive-in magnesium grounding anode rod with a minimum of 20ft of #12 red HDPE insulated copper clad steel wire connected to anode specifically manufactured for this purpose, and buried at the same elevation as the utility. Where the anode wire will be connected to a trace wire access box, a minimum of 2 ft. of excess/slack wire is required after meeting final elevation.

7.0 Sanitary Sewer System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of manholes/structures on the North or East side.

Trace wire on all sanitary service laterals must terminate at the cleanout and located directly above the service lateral at the edge of road right of way as detailed in the plans.

8.0 Water System

A mainline trace wire must be installed, with all service lateral trace wires properly connected to the mainline trace wire, to ensure full tracing/locating capabilities from a single connection point.

Lay mainline trace wire continuously, by-passing around the outside of valves and fittings on the North or East side.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

9.0 Installation

Trace wire systems must be installed as a single continuous wire, except where using approved connectors. No looping or coiling of wire is allowed.

Trace wire shall be installed at the bottom half of the pipe and secured (taped/tied) at 5' intervals.

Trace wire on all service laterals/stubs must terminate directly above the utility, at the edge of the road right-of-way, but out of the roadway.

At all mainline dead-ends, trace wire shall go to ground using an approved connection to a drive-in magnesium grounding anode rod, buried at the same depth as the trace wire.

Mainline trace wire shall not be connected to existing conductive pipes. Treat as a mainline dead-end, ground using an approved waterproof connection to a grounding anode buried at the same depth as the trace wire.

All service lateral trace wires shall be a single wire, connected to the mainline trace wire using a mainline to lateral 3-way connector, installed without cutting/splicing the mainline trace wire.

In occurrences where an existing trace wire is encountered on an existing utility that is being extended or tied into, the new trace wire and existing trace wire shall be connected using approved splice connectors, and shall be properly grounded at the splice location as specified.

Trace wire on all water service laterals must terminate at an approved trace wire access box color coded blue and located directly above the service lateral at the edge of road right of way.

Above-ground tracer wire access boxes will be installed on all fire hydrants.

All conductive and non-conductive service lines shall include tracer wire.

ADVERTISEMENT FOR BIDS:

NOTICE is hereby given that the City Clerk of the **City of Hattiesburg**, MISSISSIPPI, will receive sealed bids until **10:00 AM** on **June 15 , 2023** in the City Clerk's Office in the City Hall of said City for furnishing the City's requirements for the following:

**EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

Official bid documents can be downloaded from www.sd-wprojects.com. Electronic bids can be submitted at www.sd-wprojects.com. For any questions relating to the electronic bidding process, please call Plan House at 662-407-0193. All bids must be accompanied by bid security equal to 5% of the amount of the bid, in the form of a certified check, cashier's check or a bid bond written by a company properly licensed in Mississippi.

Each BID must be received sealed and marked EXACTLY as follows:

**BID:
EDWARDS STREET
INFRASTRUCTURE IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

No bid may be withdrawn for a period of sixty (60) days. The lowest and best proposal received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated and Amended, and other applicable State law; but the Board reserves the right to reject any or all proposals received and to waive informalities.

PUBLISHED by Order of the Council on the 2 day of May A.D., 2023.

CITY OF HATTIESBURG, MISSISSIPPI

BY: _____
Kermas Eaton, City Clerk

Publish on May 11, 2023 and May 18, 2023
City of Hattiesburg
Return PROOF to SDW, Inc.
301 Second Avenue
Hattiesburg, MS 39401

G:\PROJECTS\Hattiesburg_City of 122204002 - Edwards Street Infrastructure Rehabilitation\122204002_CAD Files\122204002_CoverSheet.dwg, CVR, 6/24/2022 8:24:39 AM

DETAILED INDEX

SHEET No.	WRK No.	DESCRIPTION
1	CVR	COVER SHEET
2	VM	VICINITY MAP
3	KEY1	LEGEND, ABBREVIATIONS & SHEET KEY
4	GN1	GENERAL NOTES
5	GN2	GENERAL NOTES
6	PSM1	PROJECT SCOPE MAP
7	PSM2	SEWER SYSTEM MAP
8	PSM3	WATER SYSTEM MAP
9	PhP3	DUKE AVENUE STA 10+00 - STA 16+40
10	PhP4	MOBILE HOME PARK STA 10+00 - STA 14+60
11	PhP2	EUFALA AVENUE STA 10+00 - STA 14+60
12	PhP1	EDWARDS STREET STA 10+00 - STA 16+00
13	PhP5	MAGNOLIA AVENUE STA 10+00 - STA 15+60
14	WPin1	SHORT KATIE AVENUE - WATER PLAN
15	WPin2	BERNICE AVENUE & CLAIBORNE AVENUE - WATER PLAN
16	WPin3	CYPRESS AVENUE & ROY STREET - WATER PLAN
17	WPin4	EDWARDS STREET - WATER PLAN
18	WPin5	EDWARDS STREET - WATER PLAN
19	SSD1	SEWER INSTALLATION DETAILS
20	SSD2	SEWER INSTALLATION DETAILS
21	ABN1	SEWER ABANDONMENT DETAILS
22	WTRD1	WATER INSTALLATION DETAILS
23	WTRD2	WATER INSTALLATION DETAILS
24	TWD1	TRACER WIRE DETAILS
25	PRD1	PAVEMENT REPAIR DETAILS
26	PvPin1	PAVING & MARKING PLAN
27	PvPin2	PAVING & MARKING PLAN
28	PvPin3	PAVING & MARKING PLAN
29	PvPin2	PAVING & MARKING PLAN
30	PvPin3	PAVING & MARKING PLAN
31	VS1	VEGETATION SCHEDULE
6101	ECD-1	TYPICAL TEMPORARY EROSION/SEDIMENT CONTROL APPLICATIONS
6102	ECD-2	DETAILS OF SEDIMENT BARRIER APPLICATIONS
6103	ECD-3	DETAILS OF SILT FENCE INSTALLATION
6104	ECD-4	DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS
6106	ECD-6	DETAILS OF EROSION CONTROL WATTLE DITCH CHECK
6111	ECD-11	TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION
6113	ECD-13	INLET PROTECTION DETAILS OF WATTLES
6115	ECD-15	INLET PROTECTION DETAILS OF SANDBAGS
6123	DT-1	DETAILS OF TYPICAL DITCH TREATMENTS
6351	TCP-1	TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)
6358	TCP-8	HIGHWAY SIGN AND BARRICADE DETAILS FOR CONSTRUCTION PROJECTS

CONSTRUCTION PLANS

FOR

EDWARDS STREET
INFRASTRUCTURE
REHABILITATION

FOR THE

CITY OF HATTIESBURG

FORREST COUNTY
MISSISSIPPI



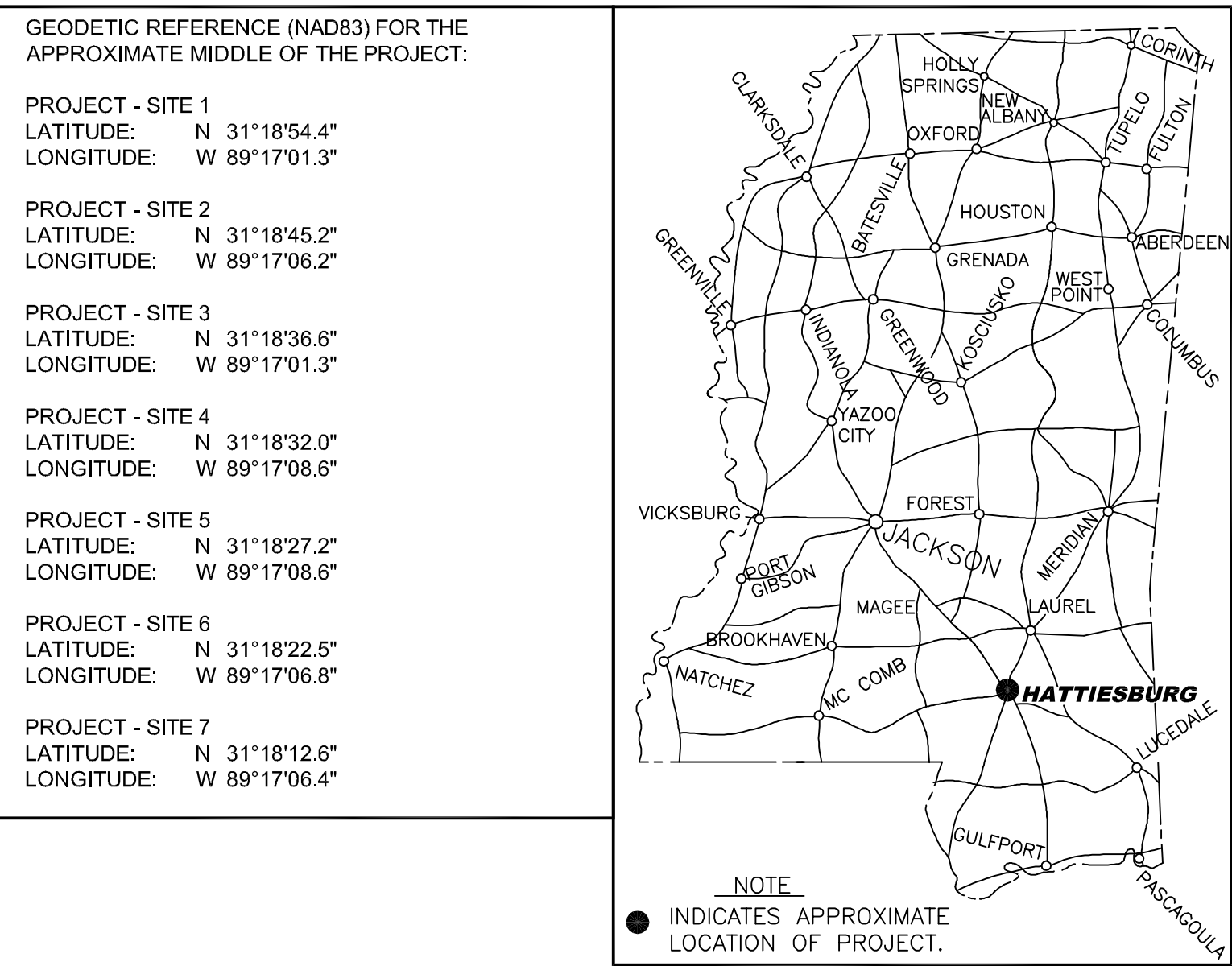
Know what's below.
Call before you dig.

SPECIAL UTILITY NOTES:

- UTILITY LOCATION REQUESTS WERE SUBMITTED TO MISSISSIPPI 811 (FORMERLY MISSISSIPPI ONE CALL) DURING THE FIELD DATA COLLECTION PHASE FOR THE DESIGN OF THIS PROJECT. ALL UTILITIES THAT LOCATED DURING THE FIELD DATA COLLECTION ARE SHOWN ON THESE PLANS. ALL CONFLICTS WITH EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION SHALL BE COORDINATED WITH THE UTILITY OWNER, THE ENGINEER AND THE PROJECT OWNER PRIOR TO INSTALLATION OF THE PROPOSED WATER SYSTEM. (NO SEPARATE PAY FOR COORDINATION)
- THE CONTRACTOR SHALL DOCUMENT THE EXISTENCE OF ANY MISSING AND/OR OVERLAPPING UNDERGROUND UTILITIES AND STORM DRAINAGE NOT SHOWN ON THESE CONSTRUCTION DRAWINGS.

MISSISSIPPI 811 TICKETS	
TICKET No.	DESCRIPTION
22012812550965	EDWARDS STREET
22021414531784	DUKE AVENUE
22012812110873	EUFALA STREET
22012812320914	MALLORY STREET
22012812140878	EDWARDS STREET
22012812350921	MOBILE HOME PARK
22012812420933	MAGNOLIA AVENUE
22012012331059	EDWARDS STREET
22012010160733	SHORT KATIE STREET
22012010160737	SHORT KATIE STREET
22012010340790	EDWARDS STREET
22012010350794	EDWARDS STREET
22012011210916	EDWARDS STREET
22012010380798	MILTON BARNES AVENUE

JUNE 2022



PUBLIC UTILITIES

CABLE
COMCAST
2100 LINCOLN ROAD
HATTIESBURG, MS 39402
(601) 264-1188

TELEPHONE
AT&T
P.O. BOX 1191
HATTIESBURG, MS 39401
(601) 545-6424

WATER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES STREET
HATTIESBURG, MS 39403
(601) 545-4530

TRANSPORTATION
CITY OF HATTIESBURG
TRAFFIC DEPT.
125 WALNUT ST
HATTIESBURG, MS 39401
(601) 545-4626

POWER
MISSISSIPPI POWER, CO
6356 U.S. HIGHWAY 49
HATTIESBURG, MS 39401
(601) 544-6511

GAS
SPIRE INC.
315 MAIN STREET
HATTIESBURG, MS 39401
(601) 544-6001

TELEPAK DBA CSPIRE FIBER
1018 HIGHLAND COLONY PKWY
SUITE 420
RIDGELAND, MS 39157

SEWER
CITY OF HATTIESBURG
WATER & SEWER DEPT.
900 JAMES STREET
HATTIESBURG, MS 39403
(601) 545-4530

CANADIAN NATIONAL RAILROAD
17641 S ASHLAND AVENUE
HOMEWOOD, IL 60430
(708) 332-4739

MAYOR

Toby Barker

COUNCIL PERSONS

Carter Carroll, President
Jeffrey George, Vice President
Deborah Denard Delgado
Nicholas Brown
Dave Ware

DIRECTOR OF ENGINEERING

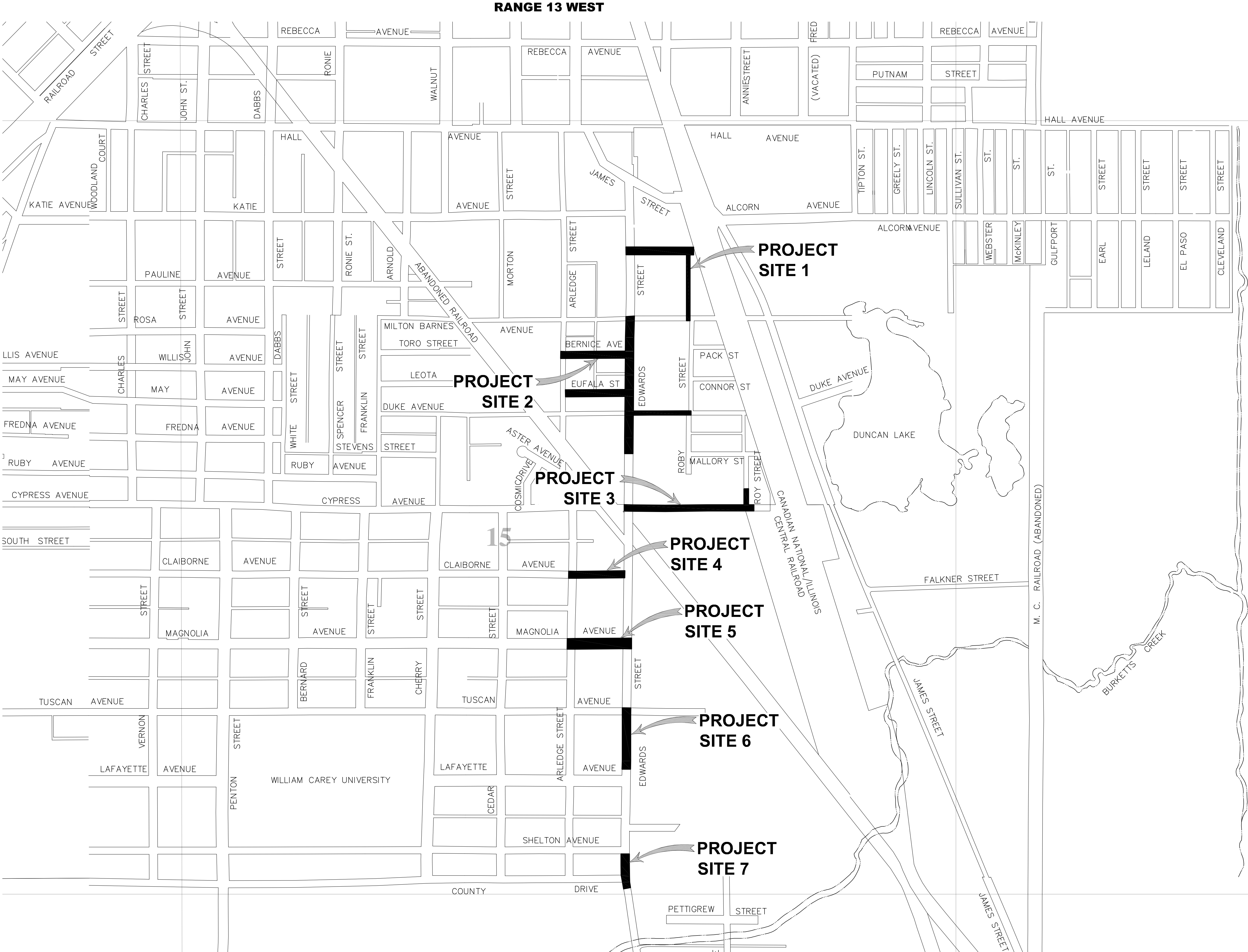
Lamar Rutland, PE

PREPARED BY:

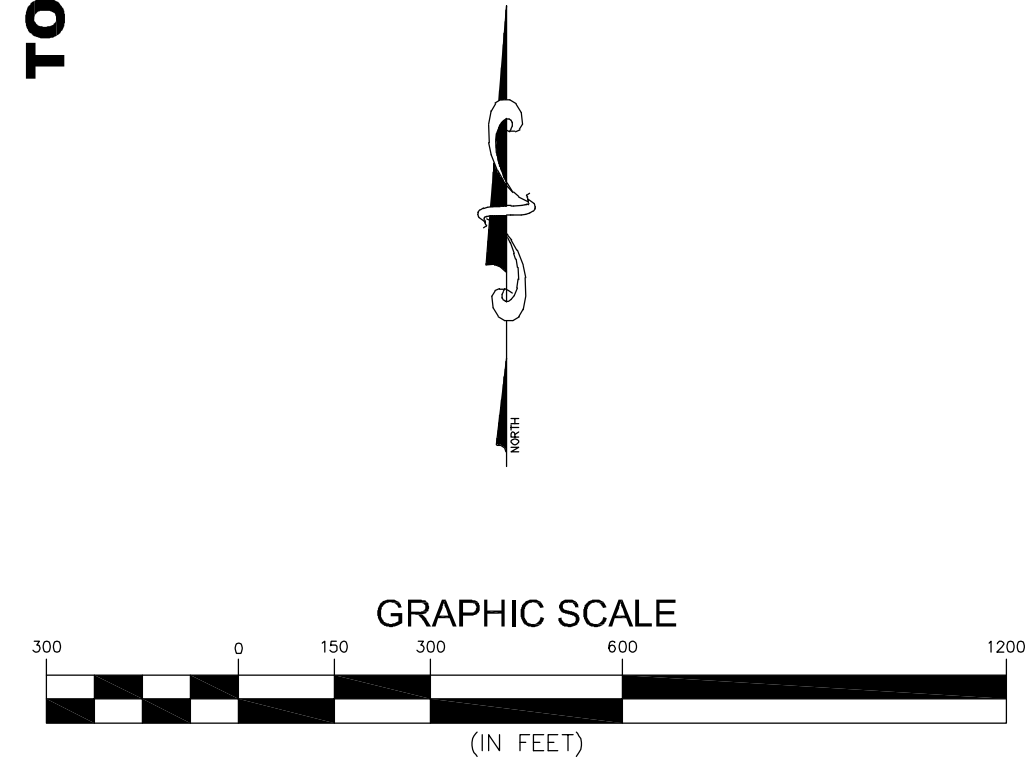
sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Working No. CVR
Sheet No. 1
Drawing No.: 12220-002

G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation\12220-002 CAD Files\12220-002_CoverSheet.dwg, VM, 6/16/2022 1:45:27 PM

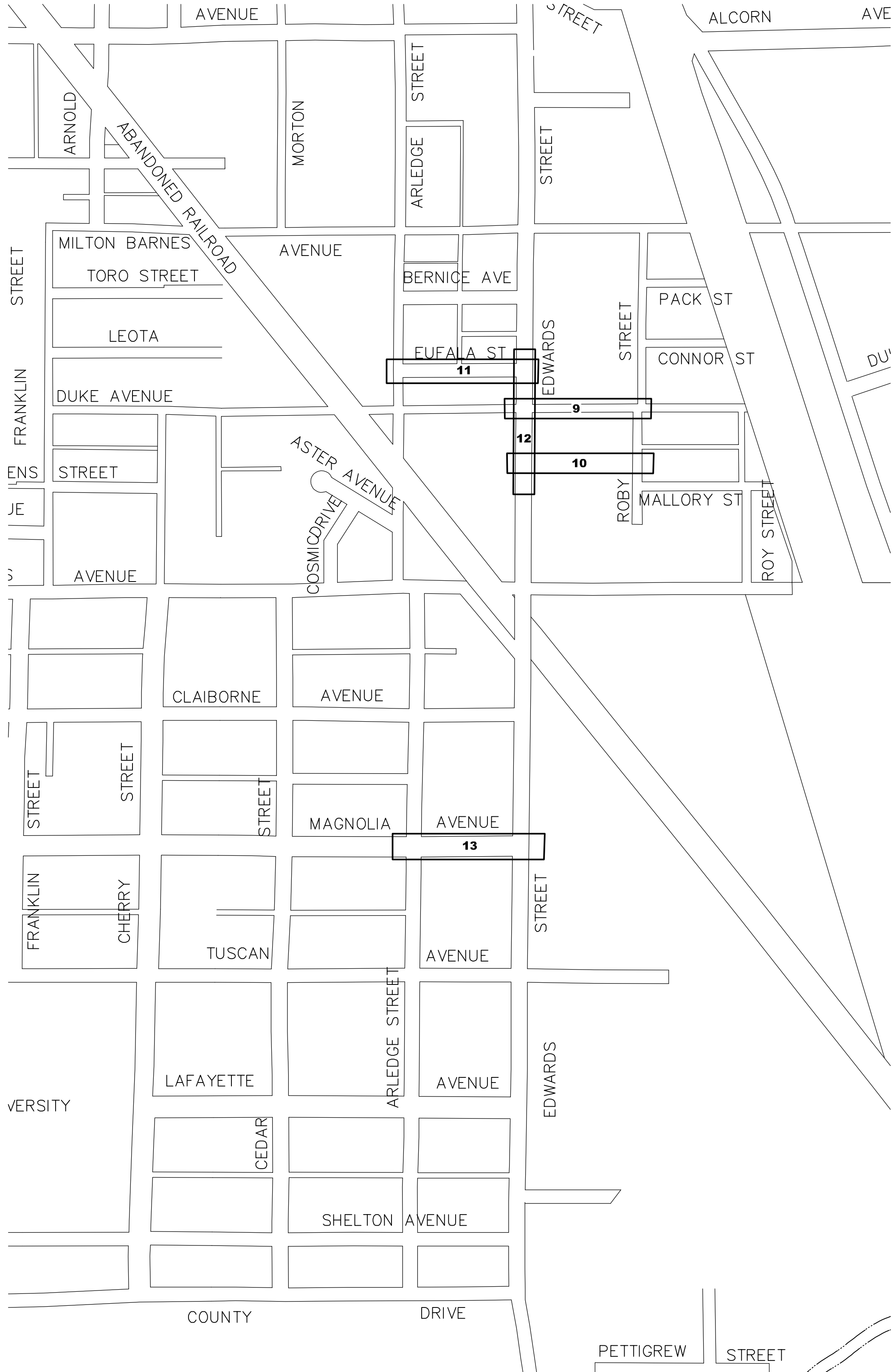


TOWNSHIP 4 NORTH

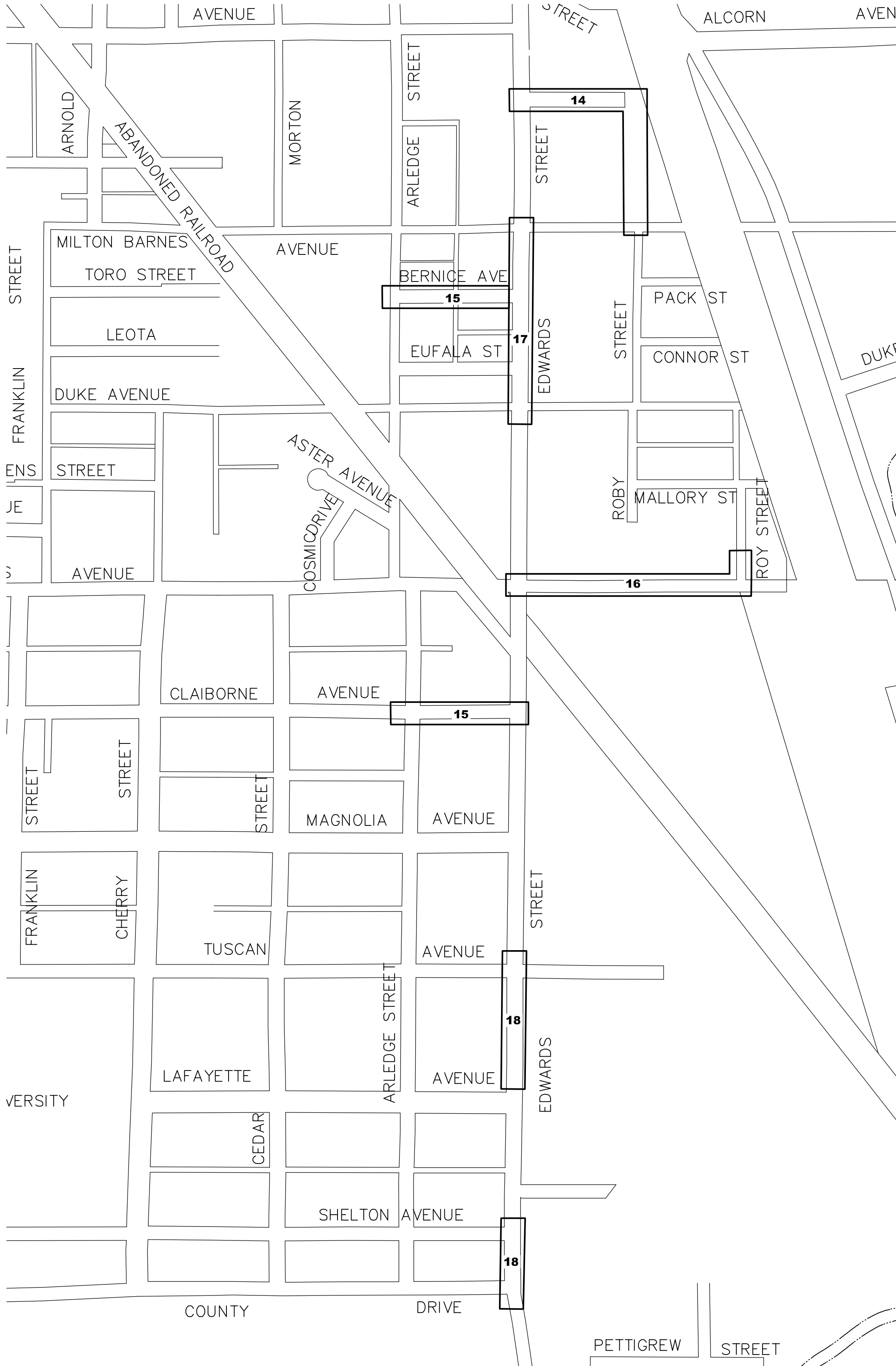


NO.	DATE	DESCRIPTION	BY
VICINITY MAP			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: AS NOTED
Date: 06-24-2022		Working No. VM	
Drawing No.: 12220-002		Sheet No. 2	

G:\PROJECTS\Hattiesburg_City of 12220\02 - Edwards Street Infrastructure Rehabilitation\12220\02 CAD Files\12220\02_Civil\Notes.dwg, KEY1, 6/15/2022 1:02:56 PM



SANITARY SEWER PLAN - SHEET KEY



WATER PLAN - SHEET KEY

ABBREVIATION LEGEND:

- ABND - ABANDONED
- APPURT - APPURTENANCES
- CONST - CENTERLINE CONSTRUCTION
- CONC - CONCRETE
- CON. - CONNECTION
- CONT'D - CONTINUED
- CMP - CORRUGATED METAL PIPE
- CPP - CORRUGATED PLASTIC PIPE
- DIA - DIAMETER
- DR - DIAMETER RATIO
- DRV - DRIVE
- DI - DUCTILE IRON PIPE
- DS FL - DOWNSTREAM FLOW LINE
- E - EAST
- EXIST - EXISTING
- FES - FLARED END SECTION
- FL - FLOW LINE
- GRVL - GRAVEL
- HDPE - HIGH DENSITY POLYETHYLENE PIPE
- HYD - HYDRANT
- INCL - INCLUDING
- INV - INVERT
- LT - LEFT
- LF - LINEAR FEET
- MH - MANHOLE
- MIN - MINIMUM
- N - NORTH
- No. - NUMBER
- PVC - POLYVINYL CHLORIDE PIPE
- RCAP - REINFORCED CONCRETE ARCHED PIPE
- RCP - REINFORCED CONCRETE PIPE
- REQ'D - REQUIRED
- RT - RIGHT
- ROW - RIGHT OF WAY
- SAN - SANITARY
- STA - STATION
- SWR - SEWER
- S - SOUTH
- TYP - TYPICAL
- US FL - UPSTREAM FLOW LINE
- VAR - VARIABLE
- W - WEST
- W/ - WITH

SYMBOL LEGEND:

- AIR CONDITIONER
- FENCE
- FIBER OPTIC PEDESTAL
- FIBER OPTIC PULL BOX
- FIRE HYDRANT
- GAS INDICATOR POST
- GAS LINE
- GAS METER
- GAS VALVE
- GATE POST
- GROUND LANDSCAPE LIGHT
- IRRIGATION CONTROL VALVE
- LIGHT ON UTILITY POLE
- LIGHT ON DECORATIVE POLE
- MAILBOX
- METAL PIPE
- OVERHEAD UTILITY LINES
- OVERHEAD UTILITY LINES
- POLE GUY WIRE
- PROPERTY LINE
- SAN SWR CLEAN-OUT
- SAN SWR FORCE MAIN
- SAN SWR LINE
- SAN SWR MANHOLE
- SIGN
- STORM DRAIN MANHOLE
- TELEPHONE MANHOLE
- TELEPHONE PEDESTAL
- UNDERGROUND FIBER OPTIC LINE
- UNDERGROUND POWER LINE
- UNDERGROUND TELEPHONE LINE
- UTILITY POLE
- UTILITY PULL-BOX
- UTILITY SERVICE POLE
- WATER LINE
- WATER METER
- WATER TEST WELL
- WATER VALVE

NOTE

ALL ITEMS SHOWN HERE ARE EXISTING ON THE GROUND OR UNDERGROUND.

NO.	DATE	DESCRIPTION	BY
LEGEND, ABBREVIATIONS & SHEET KEY			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	RES\SLS	Checked by:	SEM Scale: NONE
Date:	06-24-2022	Working No.:	KEY1
Drawing No.:	12220-002	Sheet No.:	3

G:\PROJECTS\Hattiesburg_City of 12220a002 - Edwards Street Infrastructure Rehabilitation\12220a002 CAD Files\12220a002_ConsultNotes.dwg, DN1, 6/15/2022, 102:56 PM

GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODES.
2. THE CONTRACTOR SHALL KEEP A SET OF CONSTRUCTION PLANS OF THE PROJECT ON THE JOB SITE SHOWING THE ACCURATE MEASUREMENTS AND ELEVATIONS OF THE "AS-BUILT" SYSTEM. THIS DATA WILL BE COLLECTED AND PUT ON THE DRAWINGS DAILY.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLETING THE ENTIRE PROJECT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MDOT, CITY OF HATTIESBURG AND/OR FORREST COUNTY FEES AND PERMITS ASSOCIATED WITH CONSTRUCTION.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION STAKING AND THE LOCATION OF THE PROJECT. CONTROL COORDINATE SYSTEM AND ELEVATION CONTROL ARE SHOWN ON THE PLAN SHEETS.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS OWN SUB-SURFACE SOIL INVESTIGATIONS.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING TOPOGRAPHIC DATA AND ALL OTHER SITE CONDITIONS PRIOR TO THE BEGINNING OF CONSTRUCTION. ANY CONFLICT SHALL BE COORDINATED WITH THE CONTRACTOR, OWNER AND ENGINEER/ARCHITECT. THE ENGINEER CANNOT AND DOES NOT WARRANT THAT THIS INFORMATION IS COMPLETE OR ACCURATE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE LOCATION AND PROTECTION OF ALL UTILITIES WITHIN THE WORK AREA.
9. ALL UNDERGROUND UTILITIES, FOR THE ENTIRE PROJECT, SHALL BE LOCATED BY THE CONTRACTOR AND UTILITY OWNERS PRIOR TO THE CONSTRUCTION OF THE PROJECT. ANY CONFLICTS SHALL BE COORDINATED BETWEEN CONTRACTOR, UTILITY OWNER AND ENGINEER.
10. ALL CULVERT CROSS DRAINS AND SIDE DRAINS SHALL BE PROTECTED. ALL DRAINS AND DRAINAGE STRUCTURES INSIDE THE PROJECT AREA ON THESE PLANS SHALL BE CLEANED OF ALL FOREIGN MATTER, INCLUDING SILT, PRIOR TO COMPLETION OF THE PROJECT. REMOVAL AND REPLACEMENT, IF REQUIRED, SHALL BE PAID AS NOTED.
- 10.1. ANY EXISTING CROSS DRAINS SHOWN TO BE REMOVED AND REPLACED SHALL BE REPLACED WITH NEW RCP OR RCAP AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING CROSS DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.
- 10.2. ANY EXISTING SIDE DRAINS THAT CONFLICT WITH CONSTRUCTION SHALL BE REMOVED AND REPLACED WITH NEW CORRUGATED HDPE PIPE AND SHALL BE INSTALLED AT THE SAME GRADE AS THE EXISTING SIDE DRAIN, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSURING THAT THE GRADES OF THE REPLACED PIPE ARE CORRECT AND TO INSURE PROPER FLOW.
- 10.3. IF THE EXISTING DRAIN PIPES ARE CONNECTED TO INLETS, HEADWALLS OR ANY OTHER DRAINAGE STRUCTURES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTION TO THOSE STRUCTURES, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER. CONCRETE PIPE COLLARS SHALL BE USED AS WARRANTED, AS APPROVED BY THE ENGINEER. SOME INLETS MAY BE NOTED FOR REPLACEMENT ON THE PLANS AND SHALL BE REPLACED AS DETAILED.
- 10.4. ANY EXISTING DRAINS THAT SHOWN TO BE REMOVED AND RESET SHALL BE REMOVED, SALVAGED AND RESET PER NEW PIPE INSTALLATION DETAILS CONTAINED HEREIN. ANY DAMAGE TO THE SALVAGED PIPE SHALL BE REPLACED AT NO ADDITIONAL COST TO THE PROJECT.
- 10.5. THE CONTRACTOR SHALL TAKE CARE NOT TO DAMAGE THE EXISTING STORM DRAINAGE STRUCTURES DURING THE CONSTRUCTION PROCESS. ANY DAMAGE, OTHER THAN THAT NOTED ABOVE, SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
- 10.6. ABSOLUTELY NO NEW CORRUGATED METAL PIPE SHALL BE INSTALLED ON THIS PROJECT.
11. THE COST OF CLEARING AND GRUBBING/REMOVAL AND DISPOSAL OF CLEARING AND GRUBBING MATERIAL SHALL BE PAID LUMP SUM, UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL BE FAMILIAR WITH THE EXTENT OF CLEARING REQUIRED PRIOR TO BIDDING. OFFSITE DISPOSAL AREAS ARE TO BE FURNISHED BY THE CONTRACTOR.
12. PROPER MAINTENANCE OF STREETS, INCLUDING DUST CONTROL, SHALL BE STRICTLY ADHERED TO.
13. MAINTENANCE OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
14. THE CONTRACTOR SHALL PROVIDE PROPER TRAFFIC CONTROL SIGNS AND FLAGGERS TO MAINTAIN ONE LANE TRAFFIC DURING CONSTRUCTION, WHERE LANE CLOSURES ARE NEEDED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER. SEE SHEET No. 6351 FOR TYPICAL LANE CLOSURE DETAILS. ANY ROAD CLOSURES SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL BY THE OWNER PRIOR TO IMPLEMENTATION.
15. ALL DISTURBED UNPAVED AREAS SHALL BE RESTORED AS FOLLOWS:
- 15.1. GRASSED AREAS SHALL RECEIVE SOLID SOD WHICH SHALL BE FERTILIZED AND WATERED AS PER THE VEGETATION SCHEDULE. PERMANENT ESTABLISHMENT OF GRASS GROWTH SHALL BE A REQUIREMENT BEFORE FINAL COMPLETION.
- 15.2. ALL LANDSCAPED AREAS SHALL BE RESTORED IN KIND AND SHALL INCLUDE TOP SOIL (4" DEPTH MIN), WATERING, FERTILIZER AND MULCH, IF PRESENT (IN KIND), AS PER THE VEGETATION SCHEDULE. CONTRACTOR SHALL MATCH SPECIES AND SIZE AS CLOSE AS POSSIBLE. SUBSTITUTIONS SHALL BE ALLOWED ONLY BY WRITTEN APPROVAL FROM THE ENGINEER AND COORDINATION WITH THE AFFECTED PROPERTY OWNER.
16. ALL EXISTING MAILBOXES, STREET SIGNS, FENCES, AND OTHER STRUCTURES LOCATED WITHIN THE CONSTRUCTION LIMITS SHALL BE REMOVED, SALVAGED AND RESET AS DICTATED BY CONSTRUCTION ACTIVITIES. (NO SEPARATE PAY, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER). ALL ITEMS (INCLUDING REMOVAL OF OBSTRUCTIONS, REMOVAL AND RESET AND/OR REPLACEMENT OF STORM DRAIN STRUCTURES, ETC.) FOR WHICH NO PAY ITEM IS ESTABLISHED, SHALL BE INCLUDED IN THE COST OF THE PIPE LAYING OPERATION. (NO SEPARATE PAY).
17. PAVED ROADS SHALL BE OPEN CUT AND REPAIRED AS DETAILED. CASING SHALL BE USED ONLY WHERE NOTED ON THE PLANS.
18. ALL GRAVEL ROADS AND GRAVEL DRIVEWAYS SHALL BE OPEN CUT WITHOUT CASING, UNLESS OTHERWISE NOTED, AND REPLACED IN KIND.
19. ALL PAVED DRIVEWAYS SHALL BE OPEN CUT WITHOUT CASING AND REPAIRED IN KIND, UNLESS OTHERWISE NOTED.
20. CONTRACTOR SHALL PROVIDE ACCESS TO ALL BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE ALL DRIVEWAY CUTS AND EXCAVATION WITH THE OWNERS OF SAID DRIVEWAYS.
21. ANY DAMAGE TO PAVED ROADS OR DRIVEWAYS, WHICH ARE OUTSIDE OF THE PROJECT LIMITS, SHALL BE REPAIRED IN KIND, AT THE CONTRACTOR'S EXPENSE.
22. ALL TRENCHES IN PAVED AREAS SHALL BE REPAIRED AS DETAILED. CRUSHED AGGREGATE SHALL ALSO BE INSTALLED AND USED FOR A TEMPORARY SURFACE UNTIL SUCH TIME THAT THE PROJECT OWNER DECIDES TO ALLOW INSTALLATION OF PAVEMENT (SEE DETAILS). ALL CRUSHED AGGREGATE SHALL BE SIZE 610. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL OF EXISTING PAVEMENT AND OR CRUSHED AGGREGATE PRIOR TO PLACEMENT OF PAVEMENT IN PATCHED AREAS TO MAKE A SMOOTH JOINT WITH THE EXISTING PAVEMENT. SAW CUT TO FULL DEPTH OF EXISTING PAVEMENT SHALL BE REQUIRED ON ALL PAVEMENT REPAIR, UNLESS OTHERWISE DIRECTED. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING SURFACE IN AN ACCEPTABLE CONDITION UNTIL SUCH TIME AS FINAL PAVEMENT IS INSTALLED.
23. PRIOR TO THE BEGINNING OF ANY EXCAVATION, ALL EXISTING PAVEMENT SHALL BE SCORED OR SAW CUT TO A DEPTH SUCH THAT A STRAIGHT AND UNIFORM VERTICAL EDGE IS ESTABLISHED PRIOR TO REMOVAL OF SAID PAVEMENT FROM THE PROJECT. IF VERTICAL EDGE IS DISTURBED, THEN A SECOND CUT SHALL BE REQUIRED PRIOR TO ASPHALT OR CONCRETE PATCHING. ALL ASPHALT OR CONCRETE SHALL BE REMOVED FROM THE PROJECT SITE PRIOR TO EXCAVATION PROCEDURES. (NO SEPARATE PAY FOR SAW CUTTING, DEBRIS REMOVAL, PAVEMENT REMOVAL AND DISPOSAL)
24. ALL ROAD BORES SHALL BE IN ACCORDANCE TO THE DETAILS.
25. ALL SELECT FILL MATERIAL SHALL MEET THE SPECIFICATIONS FOR CLASS 9, GROUP C AND MODIFIED TO CONSIST OF A PLASTICITY INDEX (PI) BETWEEN 5 AND 15. THE SELECT FILL MATERIAL SHALL BE INSTALLED AS DETAILED & AT THE DIRECTION OF THE ENGINEER OR HIS REPRESENTATIVE.
26. WORK FOR THIS PROJECT REQUIRES EXCAVATION IN THE IMMEDIATE VICINITY OF TRAFFIC AND ADJACENT PROPERTIES. THEREFORE, THE RISK OF A FAILURE OCCURRING DURING THE EXCAVATION REQUIRES THAT EXTREME CAUTION BE EXERCISED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING WHAT BRACING, SHORING OR GROUND SUPPORT SYSTEM THAT IS DEEMED NECESSARY TO PREVENT A FAILURE AND PROTECT THE PERSONS WORKING NEAR THE EXCAVATION, THE PUBLIC THAT MAY BE ABOVE THE EXCAVATION, OR ANY STRUCTURE ADJACENT TO THE EXCAVATION. ALL COSTS FOR ANY PROTECTIVE MEASURES INCLUDING THE MATERIALS AND LABOR FOR DESIGNING, DRAWING AND CONSTRUCTING THE FACILITY SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
27. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING BRACING, SHORING OR ANY GROUND SUPPORT SYSTEM REQUIRED TO PREVENT A FAILURE FROM OCCURRING DURING EXCAVATION. ALL COST FOR ANY PROTECTIVE MEASURES, INCLUDING THE MATERIALS AND LABOR FOR DESIGNING AND CONSTRUCTING THE SUPPORT SYSTEM, SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT ITEMS.
28. THE EROSION CONTROL DEVICES SHALL BE REQUIRED AS DIRECTED BY THE ENGINEER. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SILT DOES NOT LEAVE THE CONSTRUCTION SITE OR CONTAMINATE WATERS OF THE U.S. DURING CONSTRUCTION. THE CONTRACTOR SHALL MAINTAIN THE PLAN DURING CONSTRUCTION UNTIL PERMANENT GRASS IS ESTABLISHED OR THE DISTURBED SURFACE IS PAVED.

29. THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR EROSION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
30. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MATERIAL TESTING BY AN INDEPENDENT LABORATORY APPROVED BY THE ENGINEER AND/OR OWNER.
31. MATERIAL SUBMITTALS SHALL BE MADE TO OWNER THROUGH THE ENGINEER PRIOR TO USE FOR APPROVAL.
32. ALL WATER AND SEWER SYSTEMS, INCLUDING SERVICES, INSTALLED ON THIS PROJECT SHALL REQUIRE A TRACER WIRE SYSTEM.
33. THE CONTRACTOR SHALL HAVE A COMPETENT AND EXPERIENCED SUPERINTENDENT ON SITE AT ALL TIMES. THE SUPERINTENDENT SHALL NOT OPERATE EQUIPMENT WHILE ON THE PROJECT SITE. WORK ON THE PROJECT SHALL STOP IF THE ASSIGNED PROJECT SUPERINTENDENT IS NOT ON SITE.
34. MANHOLE LIDS, FIRE HYDRANTS & VALVES NOTED FOR REMOVAL IN THESE PLANS, SHALL BE SALVAGED FOR THE OWNER. ALL SALVAGED ITEMS SHALL BE CLEANED BY POWER WASHING. SAID ITEMS SHALL BE STACKED AND SECURED ON PALLETS. SAID ITEMS SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO A SITE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF SAID ITEMS PRIOR TO DELIVERY TO THE OWNER AND FOR REPLACEMENT, IN KIND, FOR ANY MISSING ITEMS. (NO SEPARATE PAY)
35. ALL MATERIALS FOR THE PROJECT SHALL BE A PRODUCT OF THE U.S.A.

CONSTRUCTION PHASING NOTES

1. THE CONTRACTOR SHALL PHASE CONSTRUCTION TO MINIMIZE TRAFFIC DISRUPTIONS TO EDWARDS STREET DURING NORMAL BUSINESS HOURS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH THE ENGINEER, OWNER AND EMERGENCY SERVICES FOR ROADWAY CLOSURES. THE CONTRACTOR SHALL SUBMIT A DETAILED TRAFFIC CONTROL PLAN AND DETOUR PLAN, PRIOR TO ROADWAY CLOSURE.
2. THE CONTRACTOR SHALL SUBMIT A DETAILED PHASES OF CONSTRUCTION TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION.

SPECIAL PROJECT SCOPE NOTES

1. THE CONTRACTOR SHALL BE FAMILIAR WITH THE WATER AND SEWER SYSTEMS IN THE VICINITY OF THIS PROJECT TO FACILITATE CONSTRUCTION AND ELIMINATE UNNECESSARY DELAYS FOR SERVICE OUTAGES.
2. THE CONTRACTOR MAY HAVE TO EMPLOY A VARIETY OF METHODS TO LOCATE EXISTING SEWER SERVICES, INCLUDING USE OF CCTV SERVICES, DYE TESTING, PROBING AND/OR SPOT DIGGING OR A COMBINATION OF ANY OR ALL OF SAID METHODS. SAID INVESTIGATIVE METHODS SHALL BE ABSORBED IN THE SERVICE CONNECTION ITEM(S). THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION WITH STRUCTURE OWNERS FOR TESTING, SERVICE LOCATING AND SERVICE INTERRUPTION DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO, A RIGHT OF ENTRY.

NO.	DATE	DESCRIPTION	BY
GENERAL NOTES			
EDWARDS STREET INFRASTRUCTURE REHABILITATION CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: NONE
Date: 06-24-2022		Working No. GN1	
Drawing No.: 12220-002		Sheet No. 4	

G:\PROJECTS\Hattiesburg_City of 122204002 - Edwards Street Infrastructure Rehabilitation\122204002_CAD Files\122204002_CoverSheet.dwg, GN2, 6/12/2021, 10:25:51 PM

SEWER NOTES:

1. NO PIPE SHALL BE LAID IN THE PRESENCE OF WATER. NO MANHOLE OR WET WELL SHALL BE SET IN THE PRESENCE OF WATER.
2. WELL POINTS, IF REQUIRED, SHALL BE INCLUDED IN THE COST OF THE PIPING LAYING OPERATION.
3. WHERE THE WATER MAIN IS WITHIN 10 FEET OF A SEWER MAIN HORIZONTALLY, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18" FROM THE TOP OF THE SEWER MAIN, UNLESS OTHERWISE NOTED.
4. THE FINISHED ELEVATION OF ALL MANHOLE TOPS FOR MANHOLES TO BE CONSTRUCTED IN PAVED AREAS SHALL BE AT EXISTING PAVEMENT ELEVATION OR AS DIRECTED BY THE ENGINEER. MANHOLE AND PIPE ELEVATIONS SHALL BE TAKEN FROM CUT SHEETS FURNISHED BY THE CONTRACTOR FOR APPROVAL BY THE ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO CONSTRUCTION. PAYMENT FOR SEWER WILL BE BASED ENTIRELY ON THE ENGINEER APPROVED CUT SHEETS.
5. MANHOLES SHALL HAVE 20 MIL. COAL TAR EPOXY COATING ON THE INSIDE, UNLESS OTHERWISE NOTED. DUCTILE IRON PIPE SHALL BE LINED AS NOTED IN THE SPECIFICATIONS.
6. ALL SEWER MAINS, SERVICE LINES AND FITTINGS SHALL BE SDR 26 PVC AND OF THE SIZE AS NOTED IN THESE PLANS, UNLESS OTHERWISE NOTED. ALL FITTINGS REQUIRED FOR DUCTILE IRON OR PVC PIPE SHALL BE INCLUDED IN THE APPROPRIATE BID ITEM FOR THE PIPE AND AT NO ADDITIONAL COST TO THE PROJECT EXCEPT SERVICE TEES AND CLEANOUTS. CLEANOUTS SHALL INCLUDE TEE, SERVICE CAP, CONCRETE RING, TRAFFIC COVER IF NEEDED, AND ANY PIPE LENGTH NEEDED TO BRING CLEANOUT TO SURFACE GRADE. ALL CLEANOUTS LOCATED IN PAVED AREAS SHALL BE INSTALLED WITH A TRAFFIC LOAD RATED FRAME AND COVER SET FLUSH WITH PAVEMENT. (NO SEPARATE PAY)
7. ALL BORED AND OPEN CUT HDPE SEWER MAINS SHALL BE DR11, UNLESS OTHERWISE NOTED AND OF THE SIZE NOTED ON THE PLANS.
8. ALL DUCTILE IRON PIPE SHALL BE LOCKING JOINT TYPE AND OF THE SIZE AS NOTED ON THESE PLANS.
9. INFILTRATION/EXFILTRATION ON NEWLY INSTALLED SEWER MAIN SHALL BE REQUIRED AS DIRECTED. MANDREL TESTS SHALL BE REQUIRED ON ALL SEWER MAIN INSTALLED. CONTRACTOR SHALL BE REQUIRED TO PULL A MANDREL FOR TESTING PURPOSES IN ALL SEWER LINES INSTALLED ON THE PROJECT PRIOR TO FINAL ACCEPTANCE. MANDREL TEST SHALL BE PERFORMED IN LIVE OR BYPASS PUMPED SEWER AS NECESSARY AT THE DISCRETION OF THE ENGINEER
10. ALL MANHOLES SHALL BE 48" IN DIAMETER, WITH ECCENTRIC TOP CONE SECTIONS, UNLESS OTHERWISE NOTED. (SEE PLAN AND PROFILE SHEETS FOR PROPER SIZING)
11. ALL SINGLE DROPS FOR SEWER PIPE 8" AND UNDER IN DIAMETER SHALL BE PLACED INSIDE THE MANHOLE AS DETAILED. ALL MULTIPLE DROPS OR DROPS FOR SEWER PIPE OVER 8" IN DIAMETER SHALL BE PLACED OUTSIDE OF THE MANHOLE AS DETAILED, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
12. THE CONTRACTOR SHALL ADHERE TO ALL MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY REQUIREMENTS FOR SANITARY SEWER CONSTRUCTION CONTROL AND ANY OTHER PERTINENT GUIDELINES.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR BY-PASS PUMPING AS REQUIRED BY THE ENGINEER. (NO SEPARATE PAY)
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTING ANY SEWER SERVICE LINES WHICH ARE CUT AND/OR REMOVED DURING THIS PROJECT, UNLESS OTHERWISE NOTED.
- 14.1. ALL SERVICE CONNECTIONS SHOWN ON THE PLAN SHEETS SHALL BE CONNECTED TO THE PROPOSED SEWER LINE, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.
- 14.2. FLEXIBLE COUPLINGS SHALL BE USED ONLY WITH ENGINEER'S APPROVAL.
- 14.3. THE CONTRACTOR SHALL VERIFY THE LOCATION AND FLOWLINE ELEVATION OF THE SERVICE CONNECTION POINTS AT EACH STRUCTURE PRIOR TO CONSTRUCTION. LENGTH OF SERVICE CONNECTIONS MAY VARY FROM WHAT IS SHOWN DUE TO LOCATION OF SERVICE CONNECTION POINT.
- 14.4. THE MINIMUM GRADE FOR SEWER SERVICE CONNECTIONS SHALL BE 0.50%. SERVICE CONNECTION TO MAIN, TEE'S, REDUCERS, CONNECTIONS TO EXISTING SERVICE AND ANY OTHER FITTINGS NECESSARY TO MAKE THE CONNECTION SHALL BE PAID PER EACH CONNECTION. SERVICE LINE SHALL BE PAID BY LINEAR FOOT.
- 14.5. CLEANOUTS SHALL BE PAID PER EACH. CLEANOUTS FOR SANITARY SEWER SERVICES SHALL BE PLACED AT THE RIGHT OF WAY LINE (AS DETAILED), AT EVERY TURN AND CHANGE IN GRADE, UNLESS OTHERWISE NOTED OR DIRECTED BY THE ENGINEER.
- 14.6. SERVICE CONNECTIONS NOTED ON THESE PLANS ARE LOCATED BASED ON FIELD EVIDENCE, INSPECTION REPORTS AND OTHER INFORMATION THAT IS AVAILABLE TO THE ENGINEER. THE LOCATION OF ANY SERVICE NOTED AS "FIELD VERIFY" IS QUESTIONABLE AND SHOULD BE VERIFIED PRIOR TO CONSTRUCTION OF THE MAIN LINE.
15. ALL SERVICE CONNECTIONS (FOR ALL UTILITY TYPES) WHICH ARE TEMPORARILY DISCONNECTED DUE TO CONSTRUCTION REQUIREMENTS, DAMAGED OR OTHERWISE DISCONNECTED DURING CONSTRUCTION, SHALL BE REPAIRED IN KIND AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE DIRECTED. (NO SEPARATE PAY). SERVICE INTERRUPTIONS SHALL BE COORDINATED WITH THE UTILITY OWNER AND THE AFFECTED STRUCTURE OWNER. EXCEPTION 1: WATER SERVICE CONNECTIONS WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER, REPAIRED AND PAID AS OUTLINED IN THE BID PROPOSAL (SIZE TO MATCH EXISTING). EXCEPTION 2: ANY OTHER SERVICE CONNECTIONS, EXCEPT WATER & SEWER, WHICH ARE DEGRADED BEYOND REPAIR, LEAKING, BROKEN, ETC. PRIOR TO CONSTRUCTION, SHALL BE DOCUMENTED, REPORTED TO THE ENGINEER AND REPORTED TO THE UTILITY OWNER.
16. THE CONTRACTOR SHALL NOTE MINIMUM GRADES FOR VARIOUS LOCATIONS OF PROPOSED SEWER LINES WITHIN THE PROJECT. THE CONTRACTOR SHALL HAVE THE EXPERTISE TO INSTALL PIPING ON THESE GRADES. ANY INSTALLED PIPE FOUND TO HAVE MORE THAN ¼" OF STANDING WATER SHALL BE REMOVED AND RE-LAID AT THE CONTRACTOR'S EXPENSE.
17. ALL BEDDING MATERIAL FOR ALL PIPE SHALL BE ABSORBED IN THE PRICE OF THE PIPE LAYING OPERATION.
18. ALL MANHOLES LOCATED IN FLOOD ZONES SHALL HAVE BOLTED LIDS AND FRAMES AS SHOWN ON PLANS.

SPECIAL SEWER ABANDONMENT / REMOVAL NOTES:

1. ALL EXISTING MANHOLES NOTED TO BE REMOVED SHALL BE REMOVED ENTIRELY. REMOVED ITEMS SHALL BE DISPOSED OF APPROPRIATELY.
2. ALL EXISTING MANHOLES NOTED TO BE ABANDONED, SHALL BE PAID FOR PER EACH AND SHALL BE MODIFIED AS FOLLOWS:

2.1. REMOVE AND DISPOSE OF SANITARY WASTE.

2.2. REMOVE COVER, FRAME AND THE TOP 36" OF MANHOLE STRUCTURE. DISPOSE OF REMOVED OBJECTS APPROPRIATELY.

2.3. FILL THE MANHOLE WITH SAND.

2.4. CAP THE MANHOLE WITH 3000 PSI, NON-REINFORCED CONCRETE (6" DEPTH).

2.5. BACKFILL WITH NATIVE SOIL MATERIAL AND/OR FILL MATERIAL (CL B9) AND COMPACT. GRADE TO DRAIN AS REQUIRED. GRASS DISTURBED AREA OR REPAIR PAVEMENT AREAS.
3. ALL EXISTING SEWER PIPES NOTED TO BE REMOVED, SHALL BE REMOVED ENTIRELY. (NO SEPARATE PAY)
4. ALL EXISTING SEWER PIPES NOTED TO BE ABANDONED SHALL BE PAID FOR BY LINEAR FOOT AND SHALL BE MODIFIED AS FOLLOWS:

4.1. REMOVE AND DISPOSE OF SANITARY WASTE.

4.2. FILL THE PIPE WITH FLOWABLE FILL.

4.3. PLUG ENDS.
5. WHERE ABANDONED SEWER PIPES AND/OR MANHOLES CONFLICT WITH THE NEW CONSTRUCTION, THE EXISTING PIPE OR MANHOLE SHALL BE REMOVED, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.

WATER NOTES

1. ALL WORK ITEMS FOR WHICH NO PAY ITEMS ARE ESTABLISHED SHALL BE ABSORBED IN THE COST OF THE PIPE LAYING OPERATION.
2. NO PIPE SHALL BE LAID IN THE PRESENCE OF WATER.
3. WHERE THE WATER MAIN IS WITHIN 10 FEET OF A SEWER MAIN HORIZONTALLY, THE BOTTOM OF THE WATER MAIN SHALL BE AT LEAST 18" FROM THE TOP OF THE SEWER MAIN, UNLESS OTHERWISE NOTED.
4. ALL STEEL CASINGS SHALL BE 0.250" WALL THICKNESS, UNLESS OTHERWISE NOTED, AND OF THE SIZE AS NOTED ON THESE PLANS.
5. ALL ROAD BORES SHALL BE IN ACCORDANCE TO THE DETAILS.
6. ALL WATER PIPE SHALL BE DUCTILE IRON, CLASS 350, AND/OR HDPE DR 11, 200 PSI, AS NOTED ON PLANS.
7. ALL FITTINGS AND VALVES SHALL BE DUCTILE IRON WITH CONCRETE THRUST BLOCK AT ALL BENDS AND SECURED TOGETHER WITH MEGA LUG CONNECTIONS. ALL TEES AND VALVES SHALL BE SECURED TOGETHER AS ONE UNIT. VALVES AND FIRE HYDRANTS SHALL BE SECURED TOGETHER BUT SEPARATE FROM THE TEE AND OTHER VALVES. ALL FITTINGS, EXCEPT VALVES SHALL BE ABSORBED ITEMS.
8. ALL BENDS SHOWN IN THE PROPOSED WATERLINE SHALL BE ACCOMPLISHED THROUGH THE USE OF THE REQUIRED FITTINGS (22.5', 30', 45'...). SINGLE 90' BEND FITTINGS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY NOTED ON THE PLANS AND/OR APPROVED BY THE ENGINEER. 90' BENDS SHALL BE ACCOMPLISHED BY USING MULTIPLE SMALLER BEND FITTINGS. BENDS SHOWN ON THE PLAN SHEETS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO BIDDING AND CONSTRUCTION. ONLY MAJOR BENDS ARE SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FITTINGS NECESSARY TO INSTALL THE PROPOSED WATER LINE. (NO SEPARATE PAY) TEES AND CROSSES SHALL BE PAID FOR UNDER THE CONNECTION ITEM.
9. ALL PROPOSED FIRE HYDRANTS SHOWN FOR INSTALLATION ON THE PLANS SHEETS SHALL BE 3-WAY HYDRANTS AS DETAILED. ALL HYDRANTS SHALL BE SAFETY YELLOW IN COLOR FROM THE MANUFACTURER. ACCEPTABLE FIRE HYDRANTS SHALL BE M & H, MUELLER AND AMERICAN DARLING.
10. FULL LENGTH PIPE SECTIONS ARE REQUIRED BEFORE AND AFTER ALL FITTINGS.
11. ALL VALVES NOTED ON THESE PLANS SHALL BE GATE VALVES.
12. ALL EXISTING WATER LINES NOTED FOR ABANDONMENT ON THIS PROJECT SHALL BE COMPLETELY DISCONNECTED FROM THE EXISTING SYSTEM AND CAPPED.
13. PRESSURE TESTS SHALL BE REQUIRED ON ALL WATER MAIN INSTALLED.
14. ALL NEW CONSTRUCTION SHALL BE FLUSHED WITH CLOSE SUPERVISION OF THE SYSTEM OPERATOR.
15. ALL BACTI-SAMPLES SHALL BE TAKEN BY THE SYSTEM OPERATOR OR HIS REPRESENTATIVES. ANY AND ALL SAMPLING FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
16. WATER SERVICE NOTES:

16.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL EXISTING WATER METERS ALONG ALL STREETS WITHIN THE PROJECT AREA WHICH ARE NOTED FOR WATER MAIN CONSTRUCTION. SOME METERS MAY NOT HAVE BEEN LOCATED DURING THE DESIGN PHASE OF THIS PROJECT DUE TO FIELD CONDITIONS. HOWEVER, ALL METERS WITHIN THE PROJECT AREA SHALL BE RECONNECTED. ABSOLUTELY NO STRUCTURE SHALL HAVE A SERVICE CONNECTION WITHOUT A METER.

16.2. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECONNECTING ANY SERVICE, WHICH IS PRESENTLY CONNECTED TO AN EXISTING WATER MAIN THAT IS NOTED FOR ABANDONMENT ON THIS PROJECT, TO AN ADJACENT PROPOSED WATER LINE (SEE PLAN SHEETS).

16.3. A CRITERIA FOR THIS PROJECT IS TO ELIMINATE UNDER SIZED (UNDER 4" DIAMETER) WATER MAINS WITHIN THE PROJECT AREA. WATER SERVICES SHALL BE RECONNECTED TO AN ADJACENT EXISTING LARGE WATER MAIN (4" DIAMETER AND OVER).

16.4. SERVICE CONNECTIONS SHALL INCLUDE (BUT MAY NOT BE LIMITED TO) TAPPING SADDLE, CORPORATION STOP AND/OR ALL NECESSARY FITTINGS. SERVICE RECONNECTIONS SHALL BE PAID PER EACH AS OUTLINED IN THE BID DOCUMENTS. SERVICE CONNECTION SHALL INCLUDE CONNECTION TO THE MAIN AND THE CONNECTION TO NEW OR EXISTING WATER METERS. SERVICE LINE (LENGTH AS REQUIRED) OF MATCHING SIZE SHALL BE PAID PER LINEAR FOOT AS OUTLINED IN THE CONTRACT DOCUMENTS.

16.5. NEW SERVICE CONNECTIONS SHALL BE INSTALLED AS ONE CONTINUOUS PIPE FROM THE WATER MAIN TO THE METER. SPLICES SHALL NOT BE ALLOWED. THE ENTIRE SERVICE BETWEEN THE METER AND THE NEW MAIN SHALL BE REPLACED. SERVICE LINE BORES SHALL BE PAID SEPARATELY.

16.6. METERS SHALL ONLY BE INSTALLED WHERE NOTED ON THE PLANS AND SHALL BE PAID SEPARATELY. METERS SHALL MATCH SERVICE LINE SIZE.

16.7. THE CONTRACTOR SHALL TAKE NOTE THAT THERE ARE SERVICES SHOWN ON THE PLANS TO BE DISCONNECTED FROM EXISTING WATER MAINS AND RECONNECTED TO AN EXISTING WATER MAIN. THIS SERVICE CONNECTION ITEM SHALL BE PAID UNDER "RECONNECTION OF WATER SERVICE" AND SHALL INCLUDE TAPPING SADDLE, CORPORATION STOP AND/OR ALL NECESSARY FITTINGS. SERVICE CONNECTION SHALL INCLUDE CONNECTION TO THE EXISTING MAIN AND THE CONNECTION TO THE EXISTING METER. THE ENTIRE SERVICE BETWEEN THE METER AND THE EXISTING MAIN SHALL BE REPLACED. SERVICE LINE (LENGTH AS REQUIRED) OF MATCHING SIZE SHALL BE PAID PER LINEAR FOOT AS OUTLINED IN THE CONTRACT DOCUMENTS. SERVICE LINE BORES SHALL BE PAID SEPARATELY.

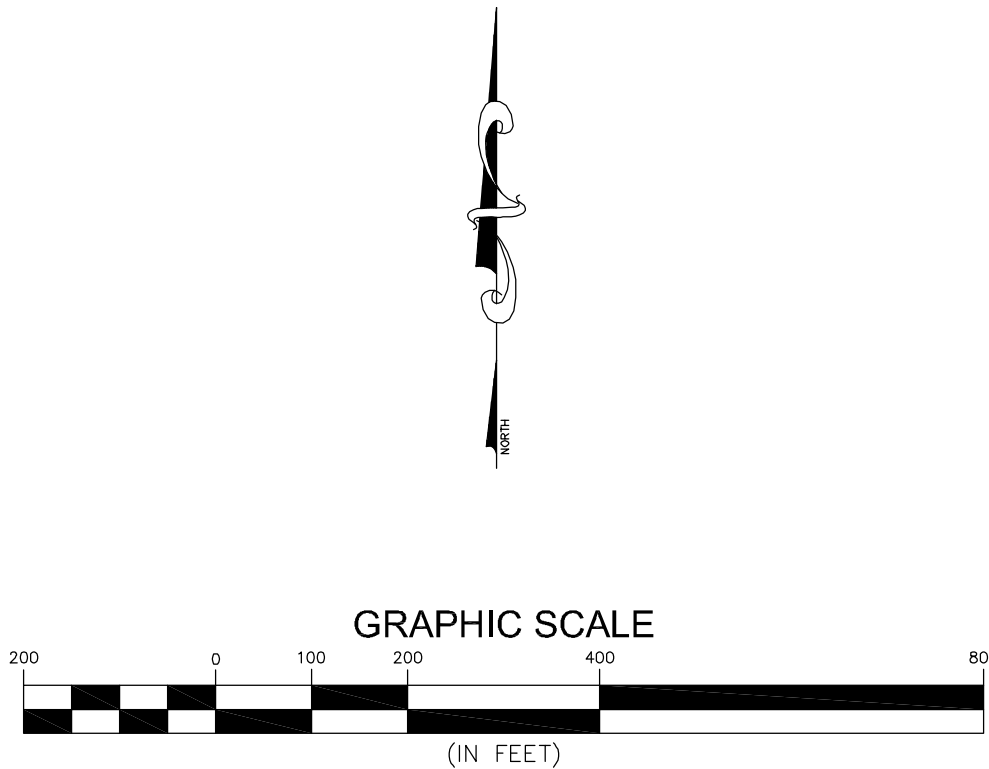
16.8. ALL NEW WATER METERS, IF REQUIRED, SHALL BE BADGER RADIO READ. ALL SERVICE FITTINGS SHALL BE FORD BRAND, ONLY.

NO.	DATE	DESCRIPTION	BY
GENERAL NOTES			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: NONE
Date: 06-24-2022		Working No. GN2	
Drawing No.: 12220-002		Sheet No. 5	

G:\PROJECTS\Hattiesburg_City of 12220\002 - Edwards Street Infrastructure Rehabilitation\12220\002 CAD Files\12220\002_Proposal_Map.dwg (PSM1, 6/17/2022 9:52:13 AM)

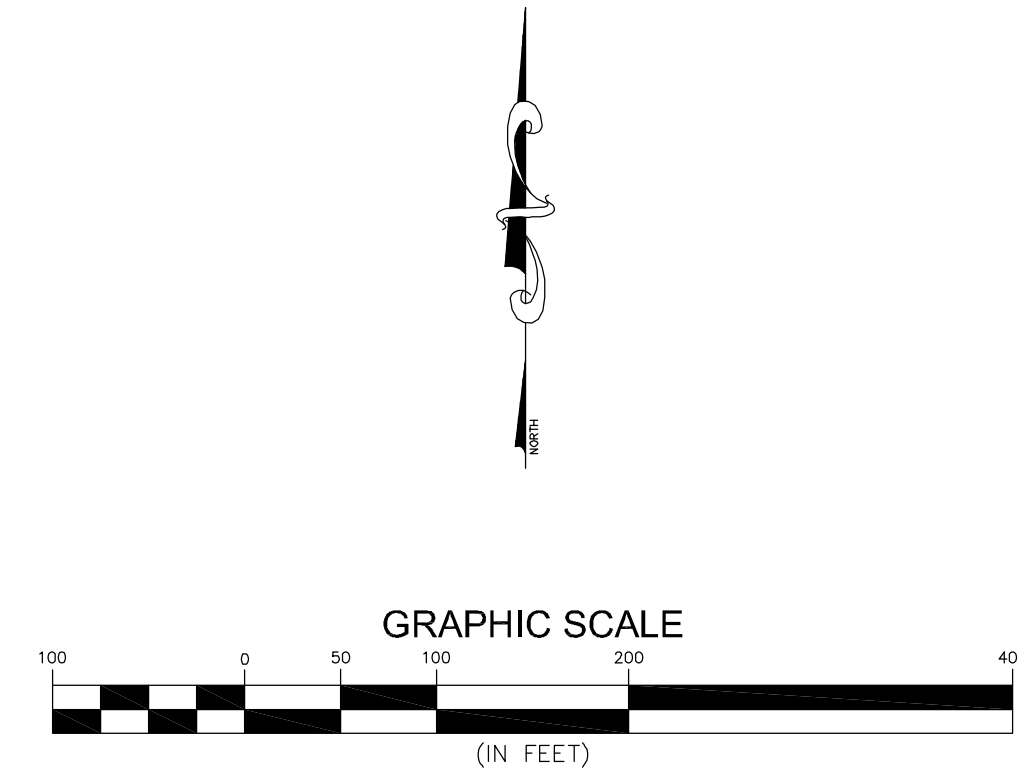


- LEGEND:**
- SEWER MAIN REPLACEMENT
 - WATER SERVICE SWAP
 - SEWER MAIN REPLACEMENT & WATER SERVICE SWAP
 - WATER MAIN REPLACEMENT



NO.	DATE	DESCRIPTION	BY
PROJECT SCOPE MAP			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: AS NOTED
Date: 06-24-2022		Working No. <u>PSM1</u>	
Drawing No.: 12220-002		Sheet No. <u>6</u>	

G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation\12220-002 CAD Files\12220-002_Plan_Map.dwg (PSB2, 6/17/2022 9:52:14 AM)



LEGEND:

- ABND - ABANDONED
- EX - EXISTING
- MH - MANHOLE
- RMV - REMOVED
- ⊙ - SEWER MANHOLE
- TP - THIS PROJECT

NO.	DATE	DESCRIPTION	BY

SEWER SYSTEM MAP

EDWARDS STREET INFRASTRUCTURE REHABILITATION

CITY OF HATTIESBURG

FORREST COUNTY, MISSISSIPPI

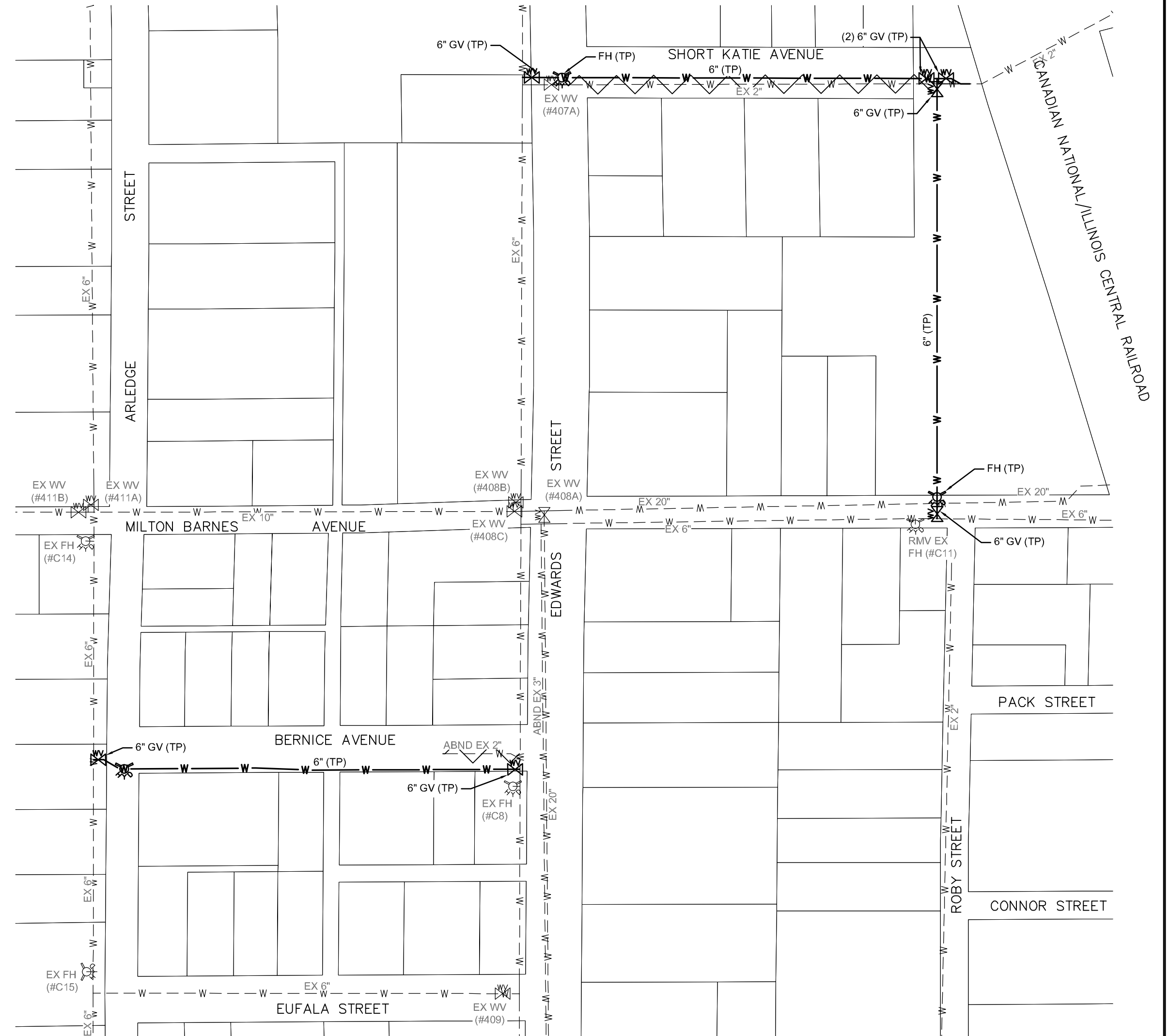
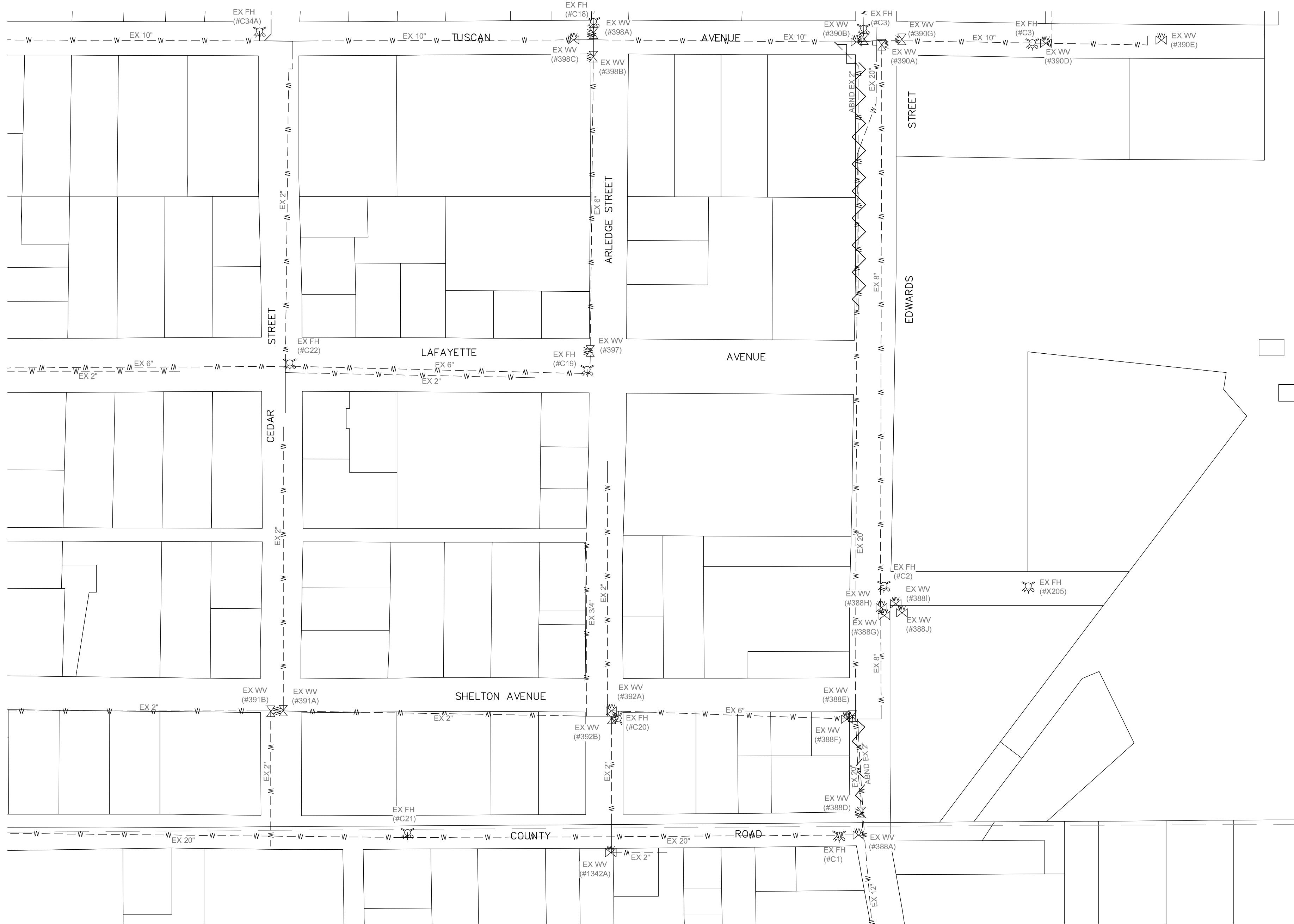
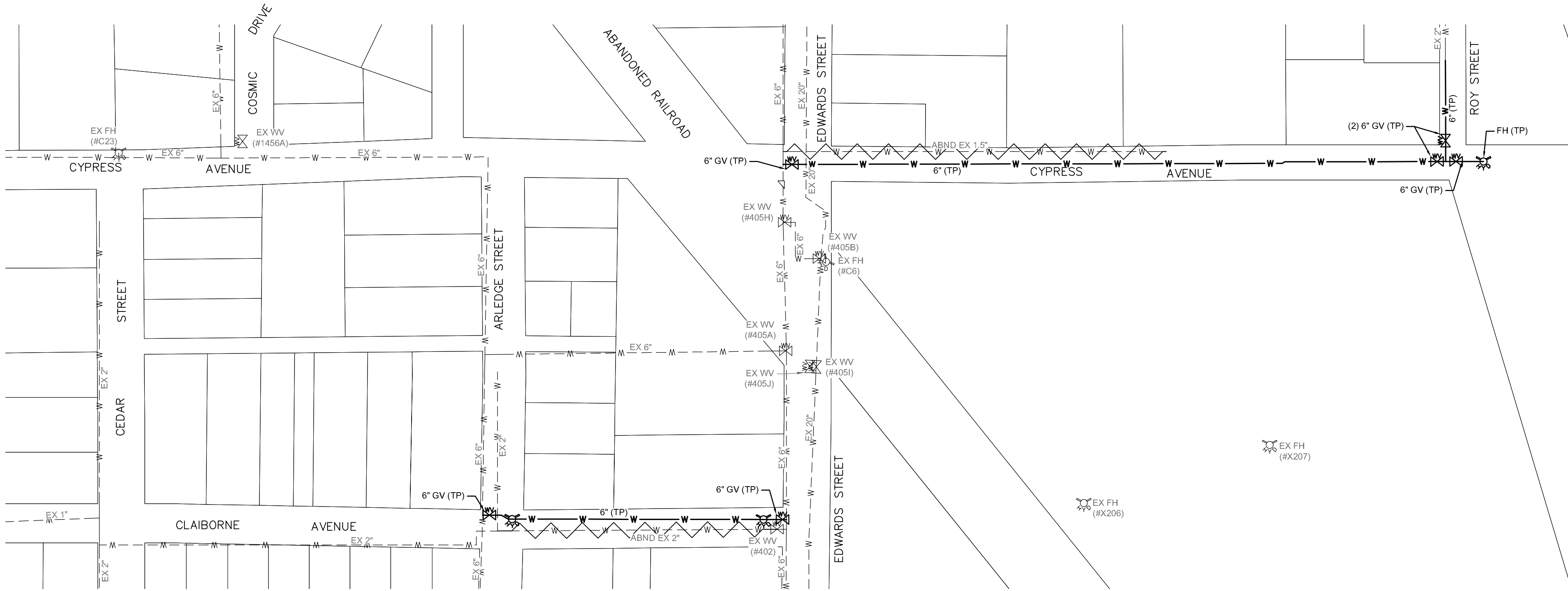
sdw

Engineering Progress

301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

Drawn by: RES\SLS	Checked by: SEM	Scale: AS NOTED
Date: 06-24-2022	Working No. PSM2	
Drawing No.: 12220-002	Sheet No. 7	

G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation\12220-002 CAD Files\12220-002_Proposal_Map.dwg (PSM3, 6/17/2022 8:52:16 AM)



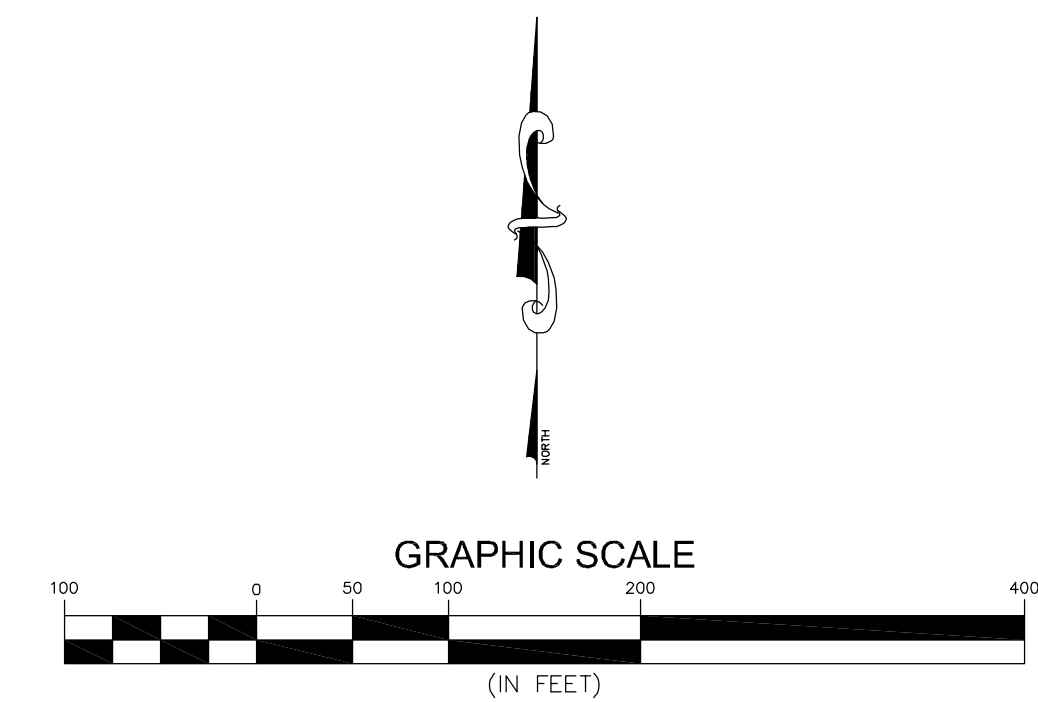
ABBREVIATION LEGEND:

ABND	-	ABANDONED
EX	-	EXISTING
FH	-	FIRE HYDRANT
GV	-	GATE VALVE
RMV	-	REMOVED
TP	-	THIS PROJECT

NO.	DATE	DESCRIPTION	BY
-----	------	-------------	----

WATER SYSTEM MAP
EDWARDS STREET INFRASTRUCTURE REHABILITATION
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI

sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com		
Drawn by: RES\SLS	Checked by: SEM	Scale: AS NOTED
Date: 06-24-2022	Working No. PSM3	
Drawing No.: 12220-002	Sheet No. 8	



CSJ, LLC
OWNER

WILLIE SIMS
OWNER
1009 EDWARDS STREET



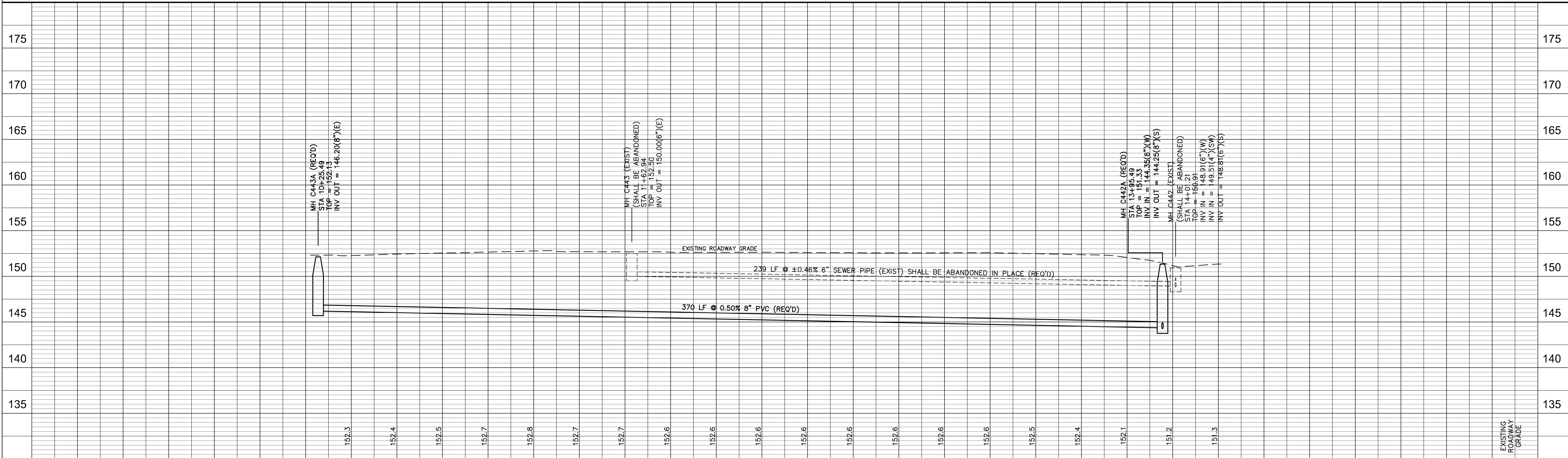
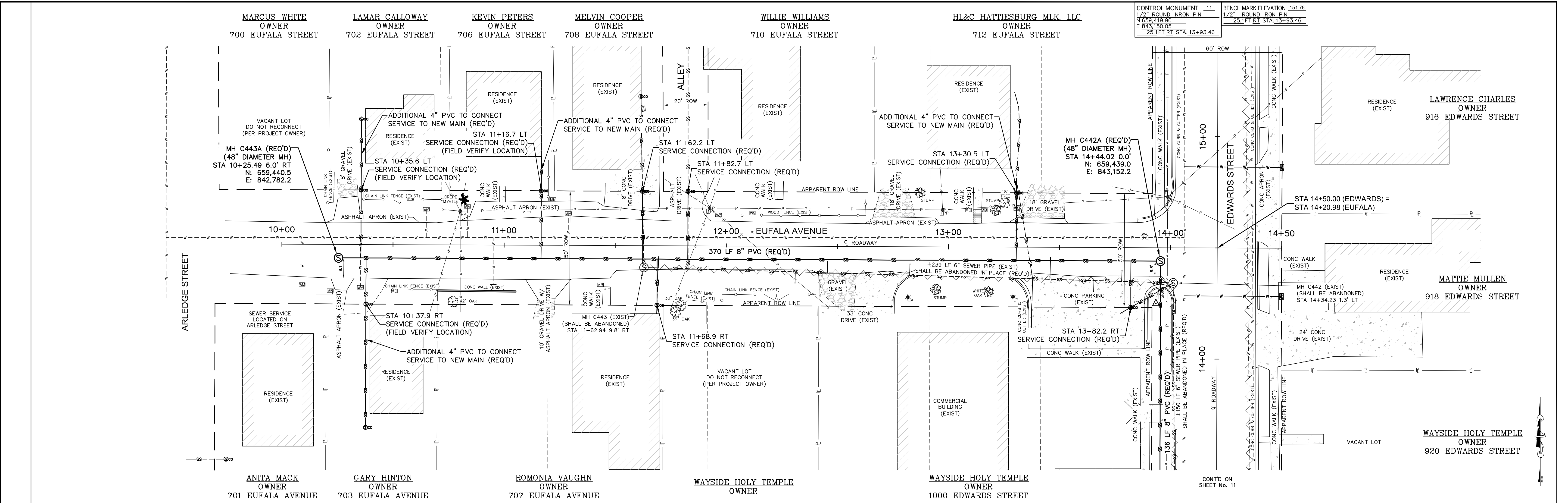
CSJ, LLC
OWNER



EDWARDS STREET INFRASTRUCTURE REHABILITATION
HATTIESBURG, MISSISSIPPI

			DRAWN BY: RES/SLS	 sdw Engineering Progress	DRAWING NO.
			DATE: 06-24-2022		12230
			CHECKED BY: SEM		WORKING NO. <u>PnP2</u>
DATE	REVISION	BY	SCALE: 1"=20' H, 1"=5' V		SHEET NO. 10

G:\PROJECTS\Hattiesburg_City of 2220402 - Edwards Street Infrastructure Rehabilitation\2220402_CAD Files\2220402_Plan\Title.dwg, Pn4, 6/15/2022 1:20:46 PM



EUFALA AVENUE STA 10+00 - STA 14+50

EDWARDS STREET INFRASTRUCTURE REHABILITATION
HATTIESBURG, MISSISSIPPI

DATE	REVISION	BY

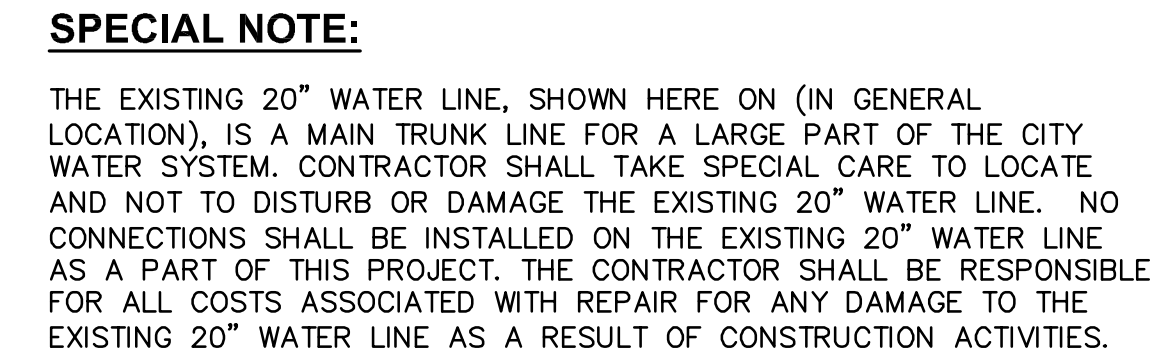
DRAWN BY: RES/SLS
DATE: 06-24-2022
CHECKED BY: SEM
SCALE: 1"=20' H, 1"=5' V

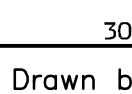
sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

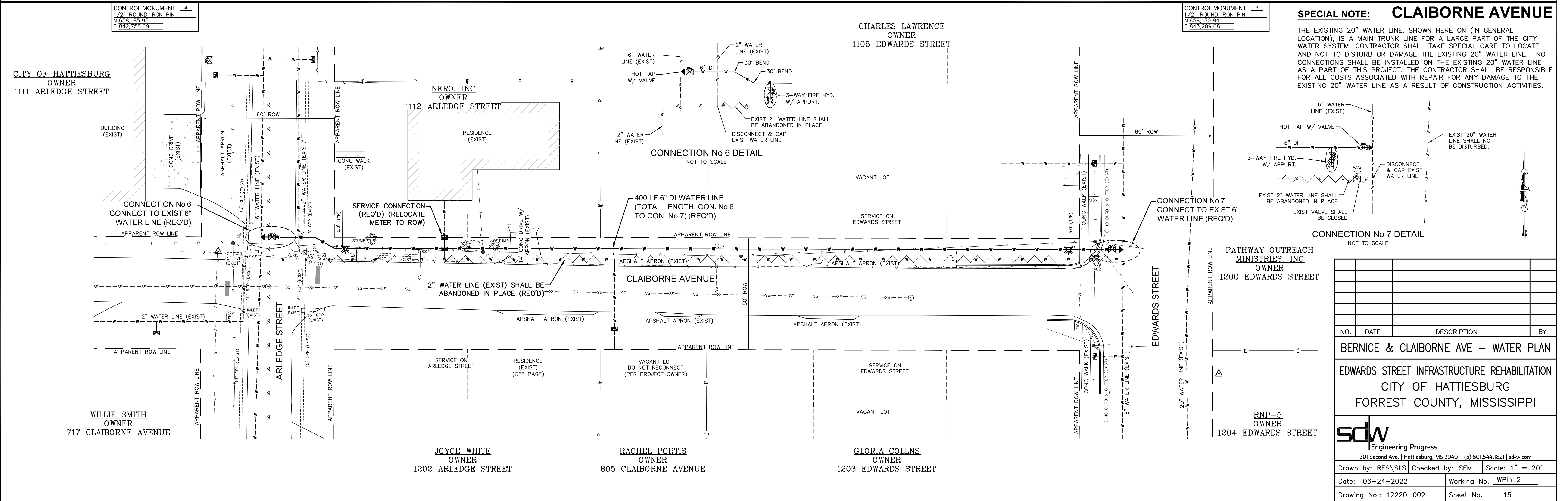
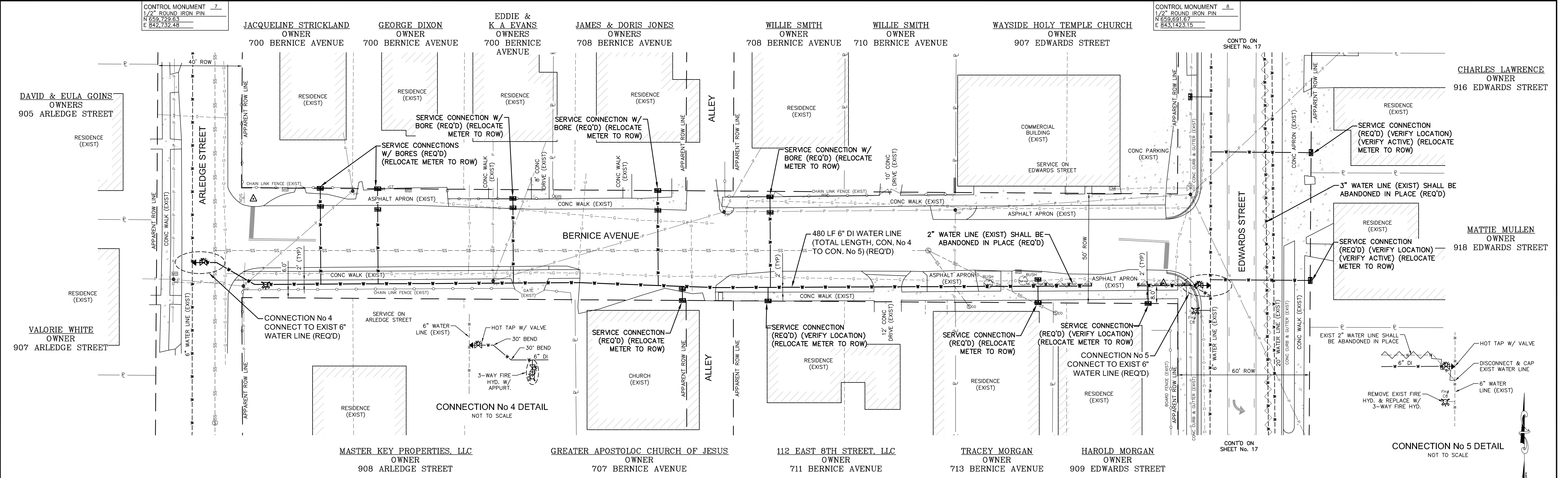
DRAWING NO. 12230
WORKING NO. Pn4
SHEET NO. 12

PATHWAY OUTREACH
MINISTRIES, INC
OWNER
1200 EDWARDS STREET

ET NO. 13



NO.	DATE	DESCRIPTION	BY
SHORT KATIE AVE – WATER PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
 Engineering Progress 301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date:	06-24-2022	Working No.	_WPIn 1_
Inquiry No.	12220-002	Sheet No.	_14_



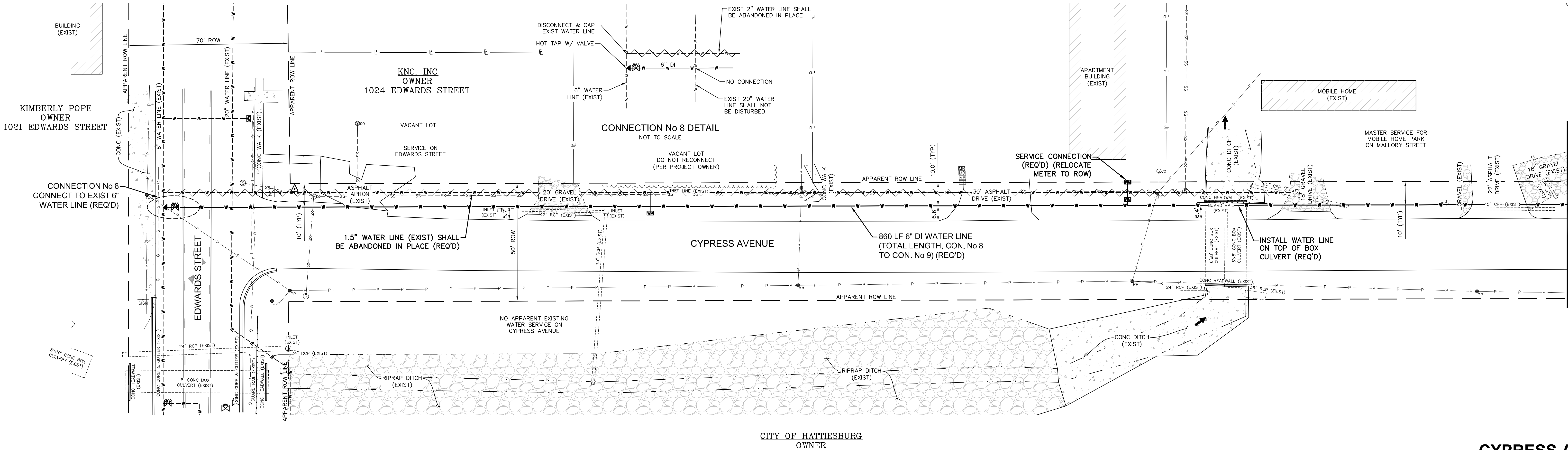
G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation\12220-002 CAD Files\12220-002_Plan_Waterline.dwg, WPlot 2, 6/15/2022 12:48:40 PM

CONTROL MONUMENT 6
1/2" ROUND IRON PIN
N 858.637.61
E 843.217.97

CSJ, INC
OWNER
1022 EDWARDS STREET

WIDGETS, LLC
OWNER

CALEYCO, LLC
OWNER
1093 CYPRESS AVENUE



CYPRESS AVENUE

CYPRESS AVENUE & ROY STREET SPECIAL NOTE:

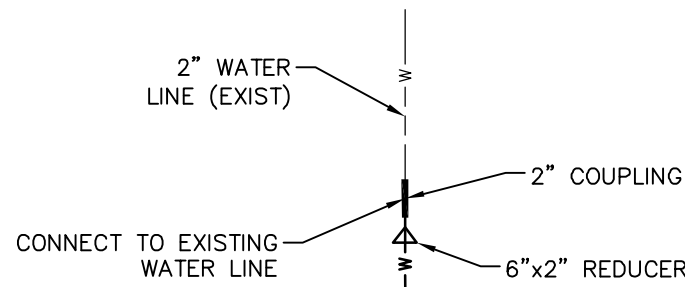
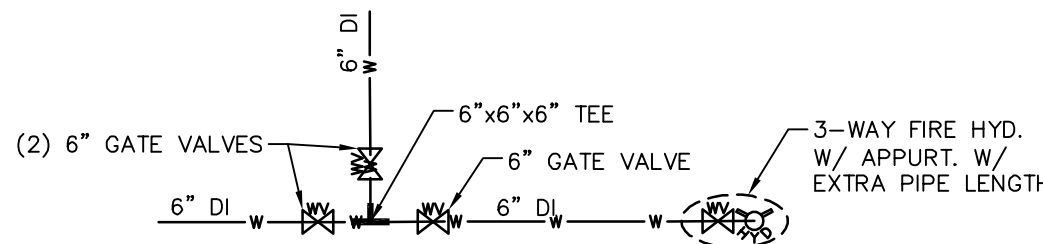
THE EXISTING 20" WATER LINE, SHOWN HERE ON (IN GENERAL LOCATION), IS A MAIN TRUNK LINE FOR A LARGE PART OF THE CITY WATER SYSTEM. CONTRACTOR SHALL TAKE SPECIAL CARE TO LOCATE AND NOT TO DISTURB OR DAMAGE THE EXISTING 20" WATER LINE. NO CONNECTIONS SHALL BE INSTALLED ON THE EXISTING 20" WATER LINE AS A PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR FOR ANY DAMAGE TO THE EXISTING 20" WATER LINE AS A RESULT OF CONSTRUCTION ACTIVITIES.

CONTROL MONUMENT 5
1/2" ROUND IRON PIN
N 838.677.48
E 843.877.90

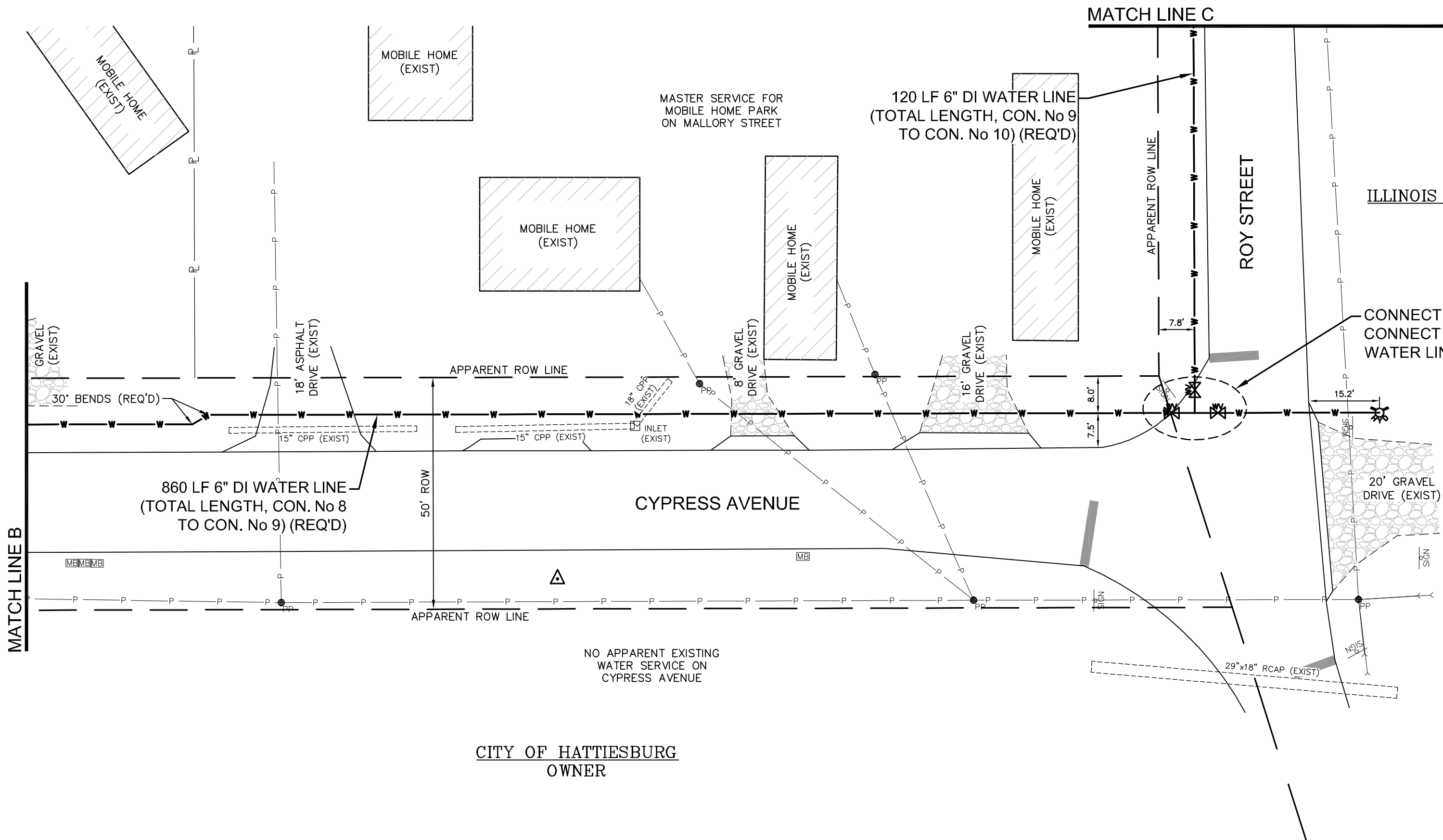
KNC, LLC
OWNER

ILLINOIS CENTRAL GULF RAILROAD
OWNER

CONNECTION No 9 DETAIL NOT TO SCALE



CONNECTION No 10 DETAIL NOT TO SCALE



TEC, LLC
OWNER
100 ROY STREET

TROY COBB
OWNER
102 ROY STREET

KNC, LLC
OWNER

ILLINOIS CENTRAL GULF RAILROAD
OWNER

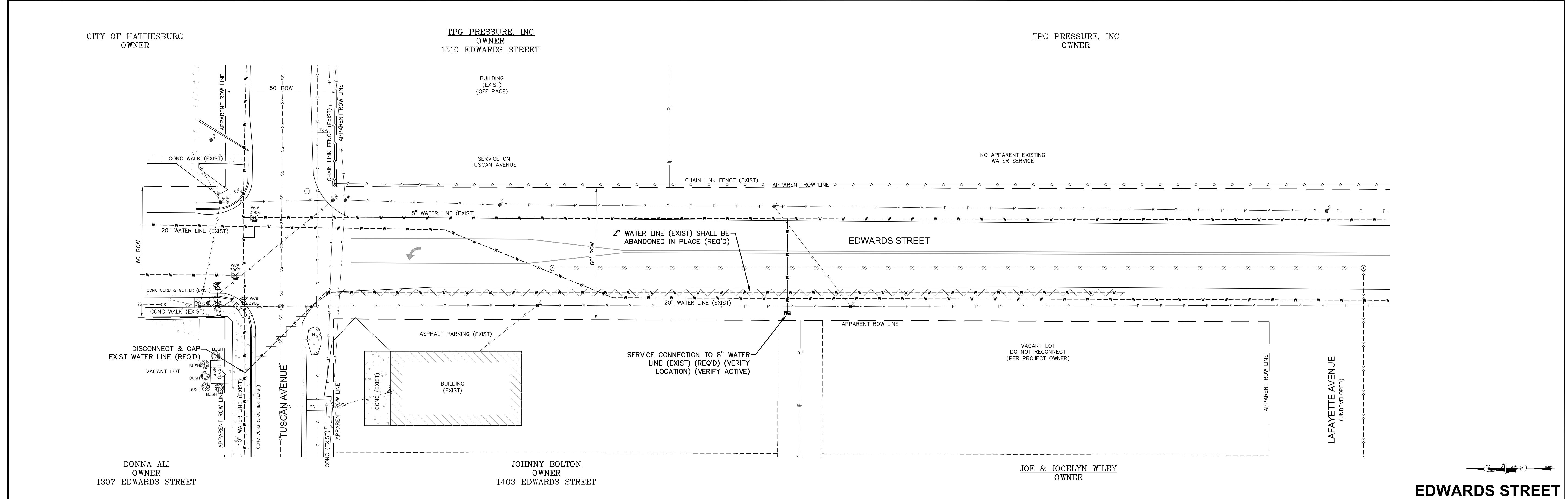
NO.	DATE	DESCRIPTION	BY
CYPRESS AVE & ROY ST – WATER PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave., Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS	Checked by: SEM	Scale: 1" = 20'	
Date: 06-24-2022	Working No. WPIN 3		
Drawing No.: 12220-002	Sheet No. 16		



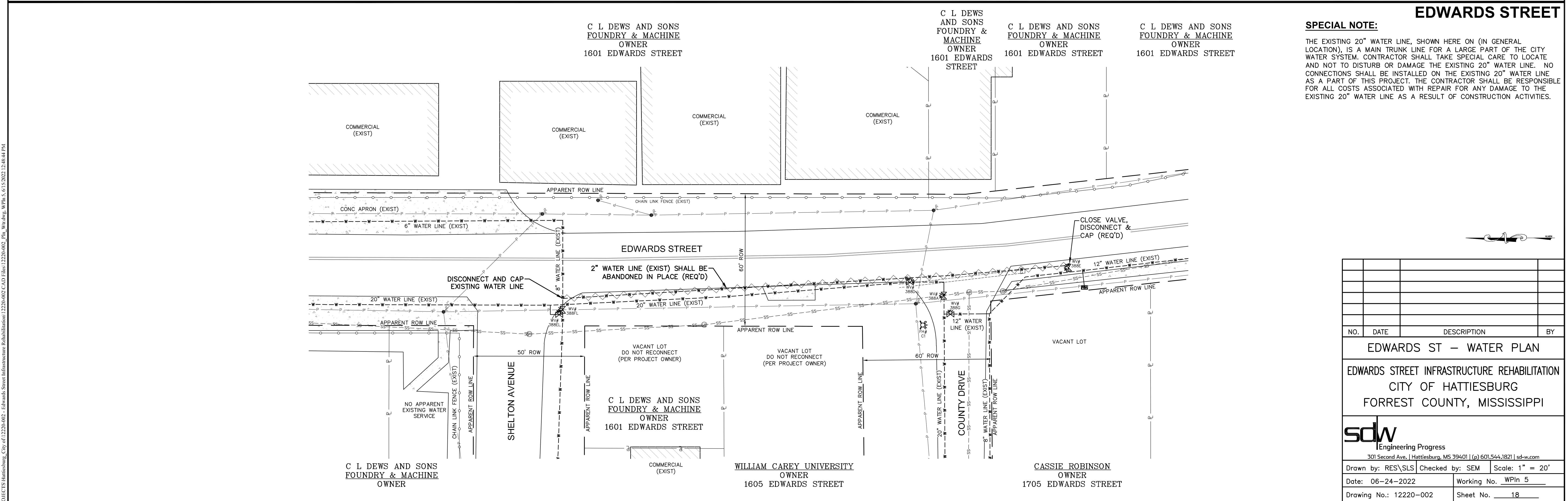
THE EXISTING 20" WATER LINE, SHOWN HERE ON (IN GENERAL LOCATION), IS A MAIN TRUNK LINE FOR A LARGE PART OF THE CITY WATER SYSTEM. CONTRACTOR SHALL TAKE SPECIAL CARE TO LOCATE AND NOT TO DISTURB OR DAMAGE THE EXISTING 20" WATER LINE. NO CONNECTIONS SHALL BE INSTALLED ON THE EXISTING 20" WATER LINE AS A PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR FOR ANY DAMAGE TO THE EXISTING 20" WATER LINE AS A RESULT OF CONSTRUCTION ACTIVITIES.



G:\PROJECTS\Hattiesburg_City of 122204002 - Edwards Street Infrastructure Rehabilitation\122204002 CAD Files\122204002_Plan_Wrking.WPIn 5.6.15.2022 12:48:44 PM

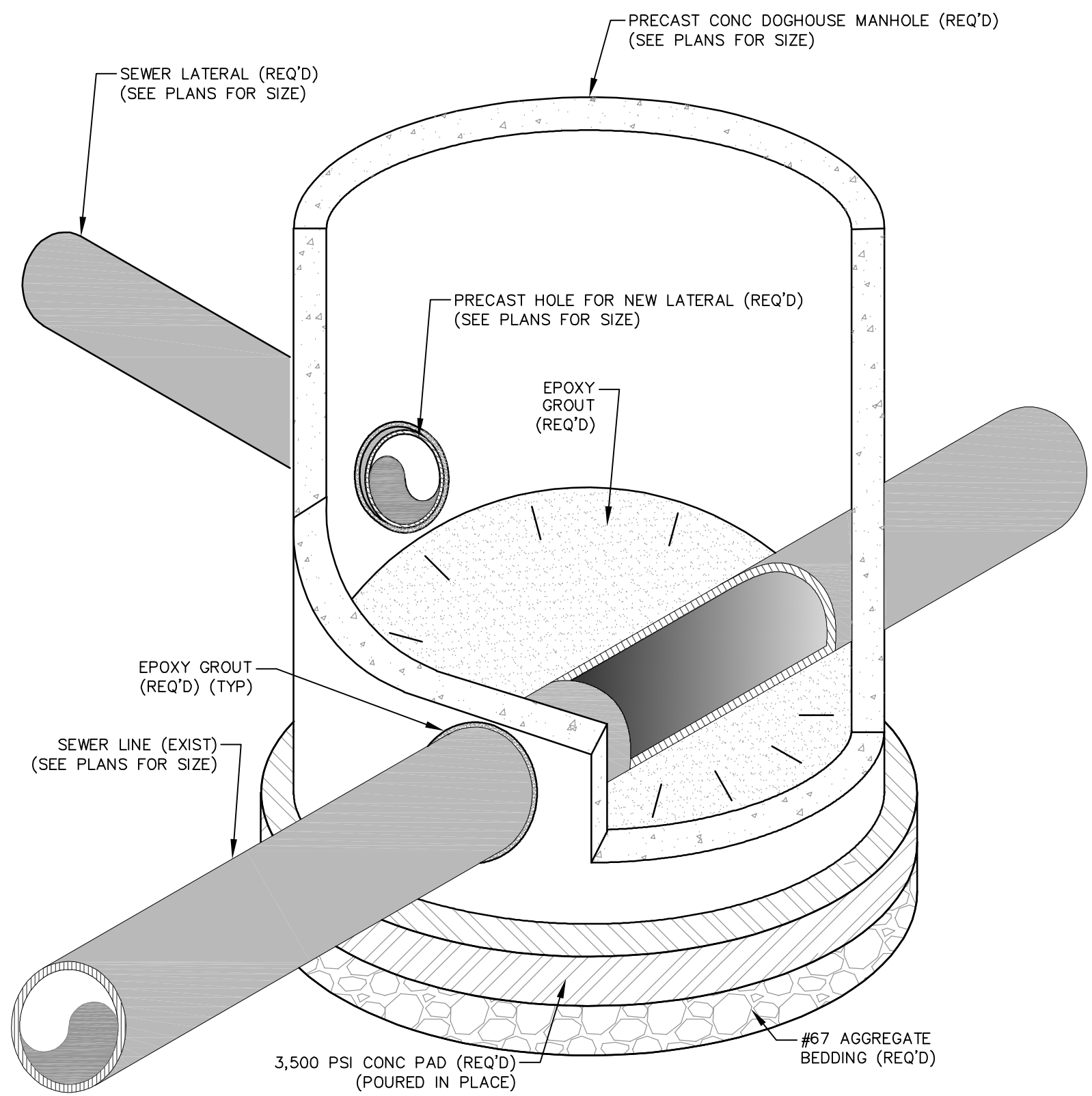


EDWARDS STREET
EDWARDS STREET



SPECIAL NOTE:
THE EXISTING 20" WATER LINE, SHOWN HERE ON (IN GENERAL LOCATION), IS A MAIN TRUNK LINE FOR A LARGE PART OF THE CITY WATER SYSTEM. CONTRACTOR SHALL TAKE SPECIAL CARE TO LOCATE AND NOT TO DISTURB OR DAMAGE THE EXISTING 20" WATER LINE. NO CONNECTIONS SHALL BE INSTALLED ON THE EXISTING 20" WATER LINE AS A PART OF THIS PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH REPAIR FOR ANY DAMAGE TO THE EXISTING 20" WATER LINE AS A RESULT OF CONSTRUCTION ACTIVITIES.

NO.	DATE	DESCRIPTION	BY
EDWARDS ST – WATER PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. WPIn 5	
Drawing No.: 12220-002		Sheet No. 18	

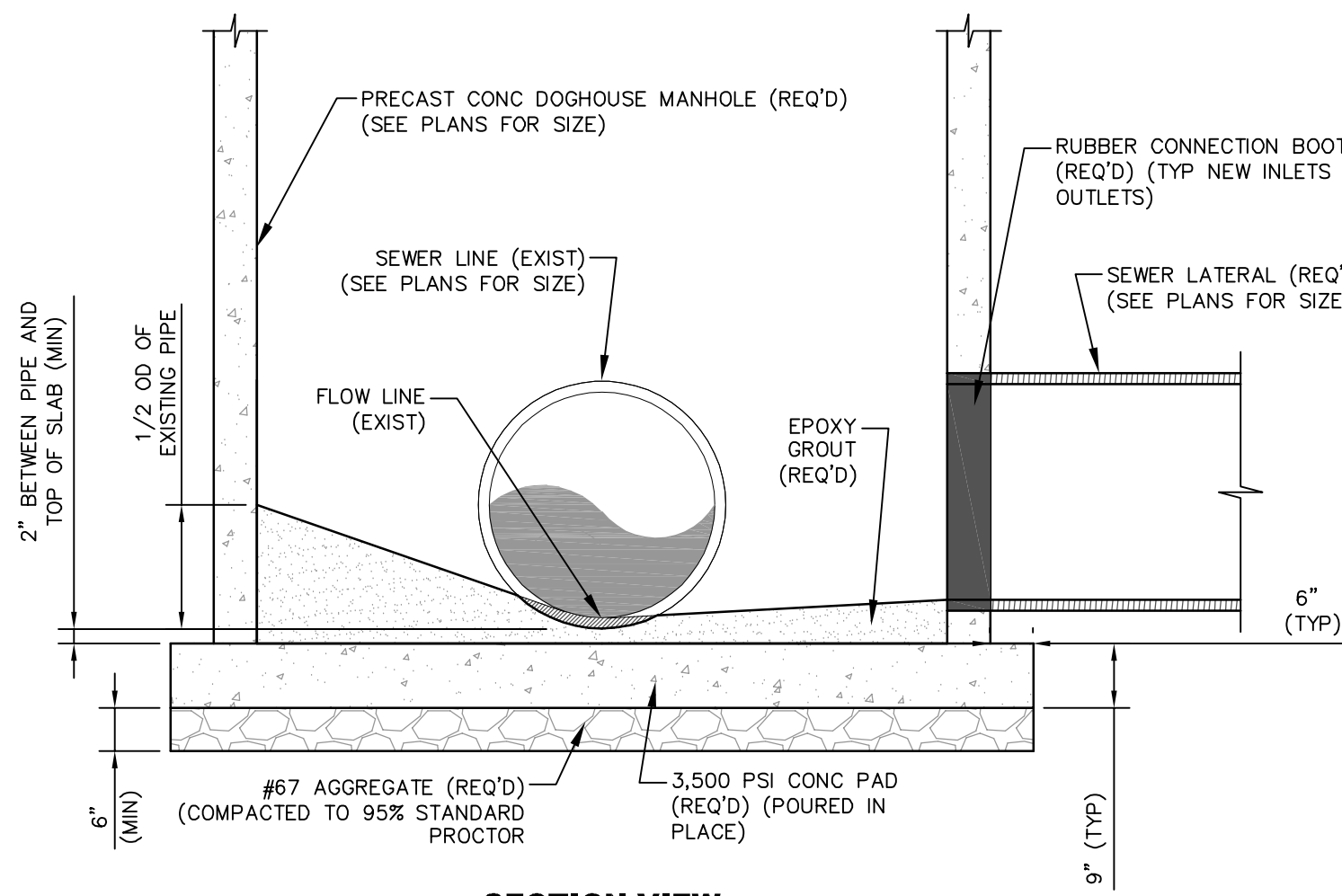


ISOMETRIC VIEW

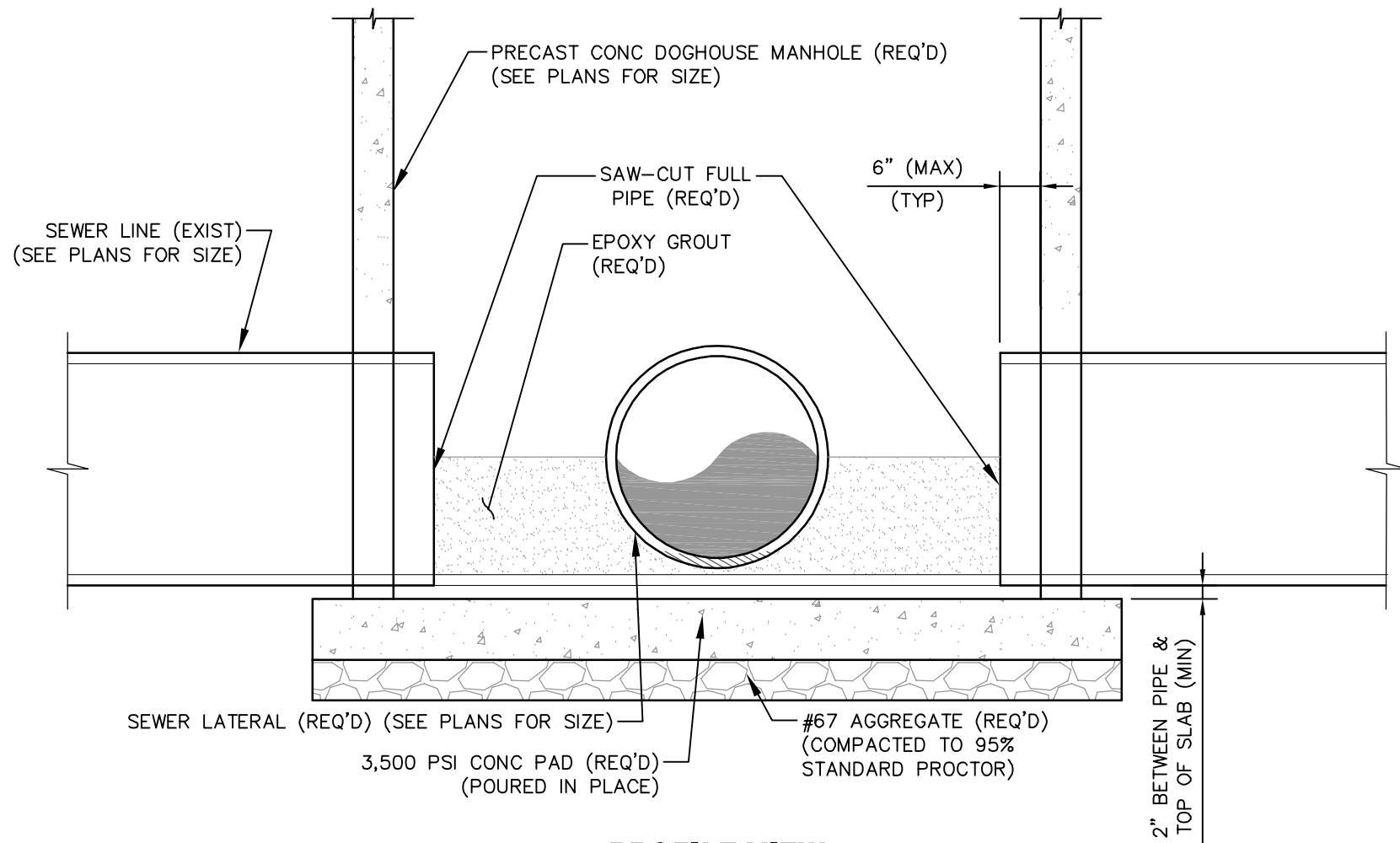
DOGHOUSE MANHOLE NOTES:

1. FLOW SHALL BE MAINTAINED DURING CONSTRUCTION.
2. THIS DETAIL SHALL BE USED WHEN A LATERAL NECESSITATES CONSTRUCTION OF A NEW MANHOLE.
3. CONCRETE MANHOLE PAD SHALL BE POURED IN PLACE AND SHALL BE POURED UPON A #67 AGGREGATE BEDDING.
4. AGGREGATE BEDDING SHALL HAVE A MINIMUM DEPTH OF 6" AND SHALL BE COMPACTED TO 95% STANDARD PROCTOR PRIOR TO CONSTRUCTION OF CONCRETE PAD.
5. ALL PARTS OF THE DOGHOUSE MANHOLE CONSTRUCTION, CONCRETE PAD, AGGREGATE BASE, GROUT, ETC., SHALL BE PAID UNDER DOGHOUSE' MANHOLE ITEM.

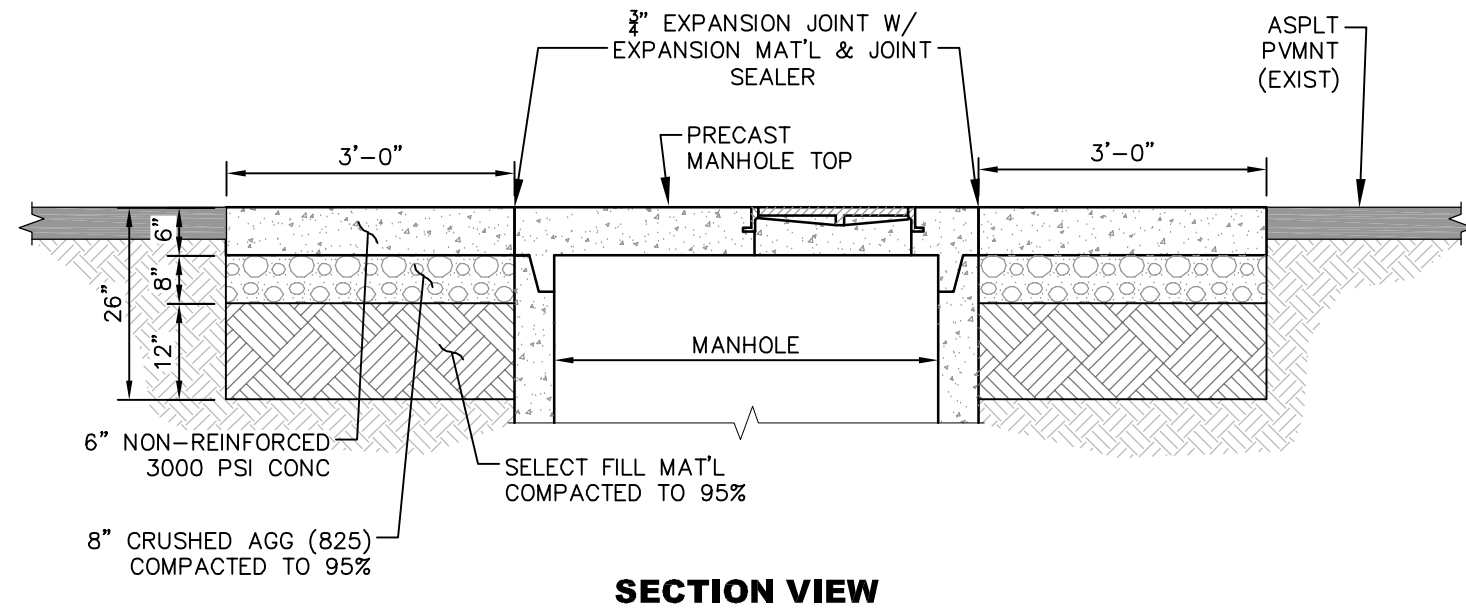
DOGHOUSE MANHOLE DETAIL



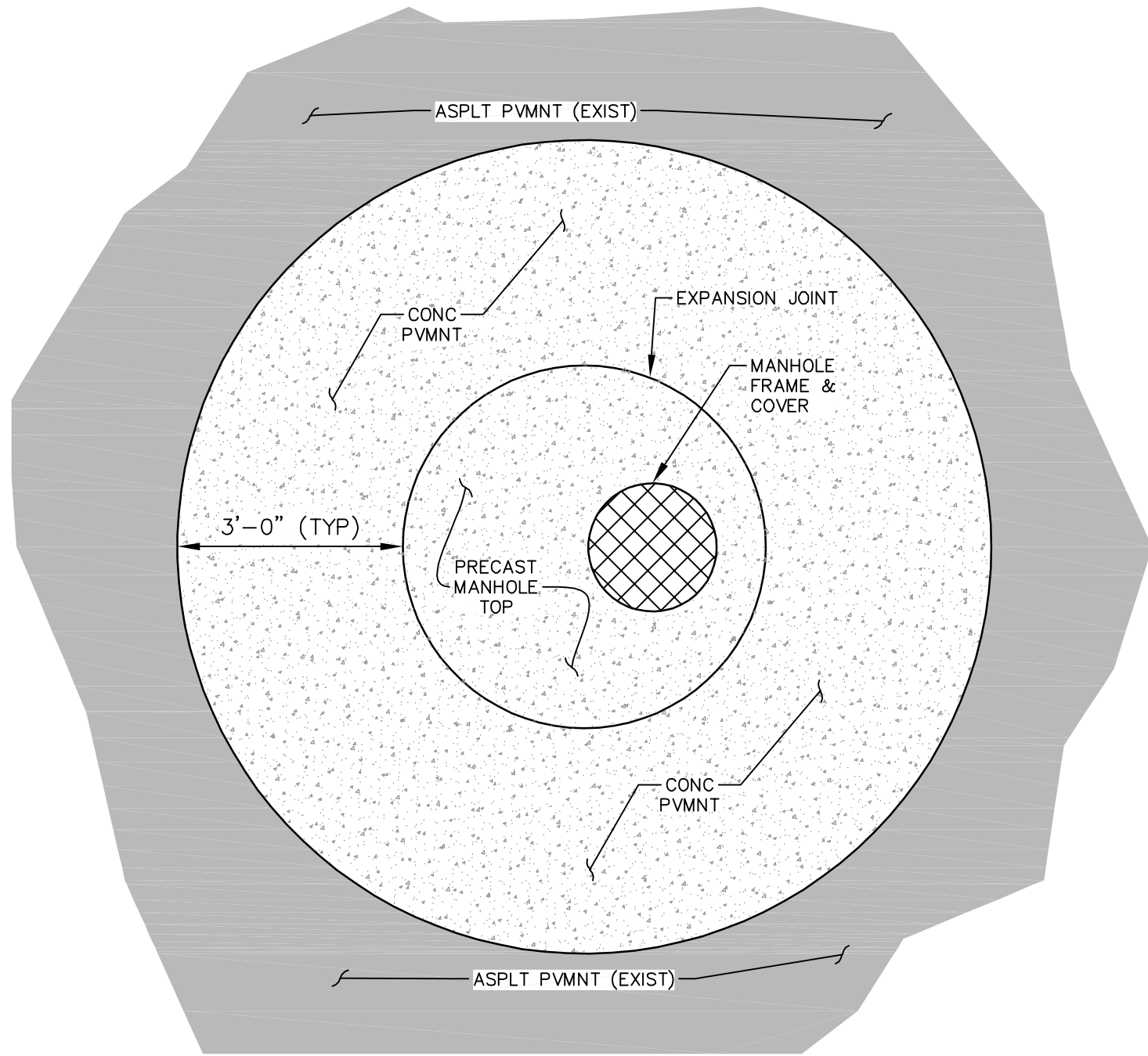
SECTION VIEW



PROFILE VIEW

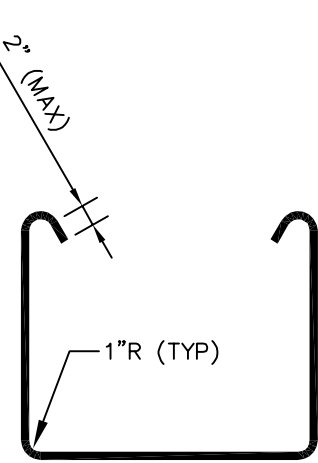


SECTION VIEW

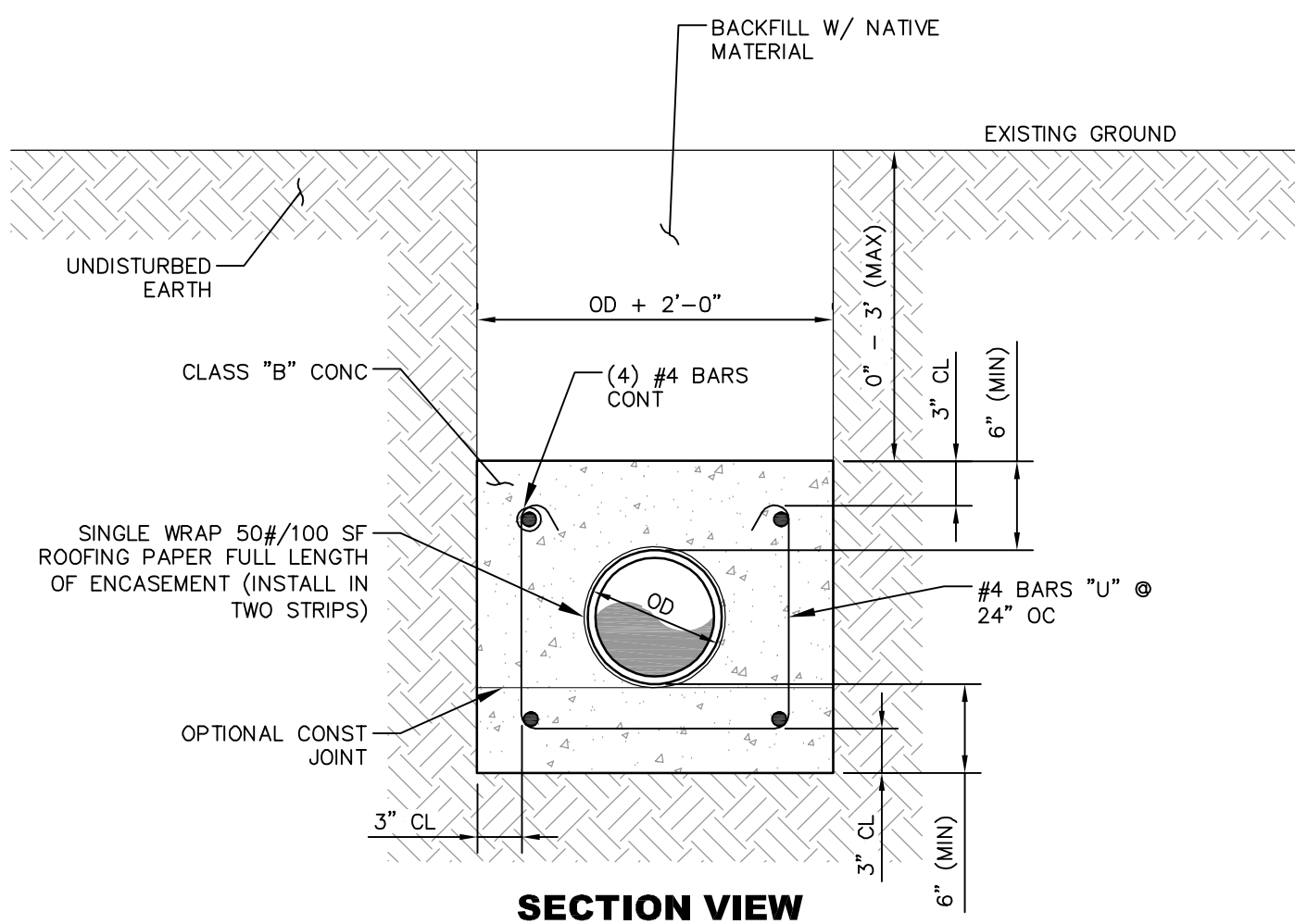


PLAN VIEW

TYPICAL ADDITIONAL PAVING DETAIL @ FLAT TOP MANHOLE

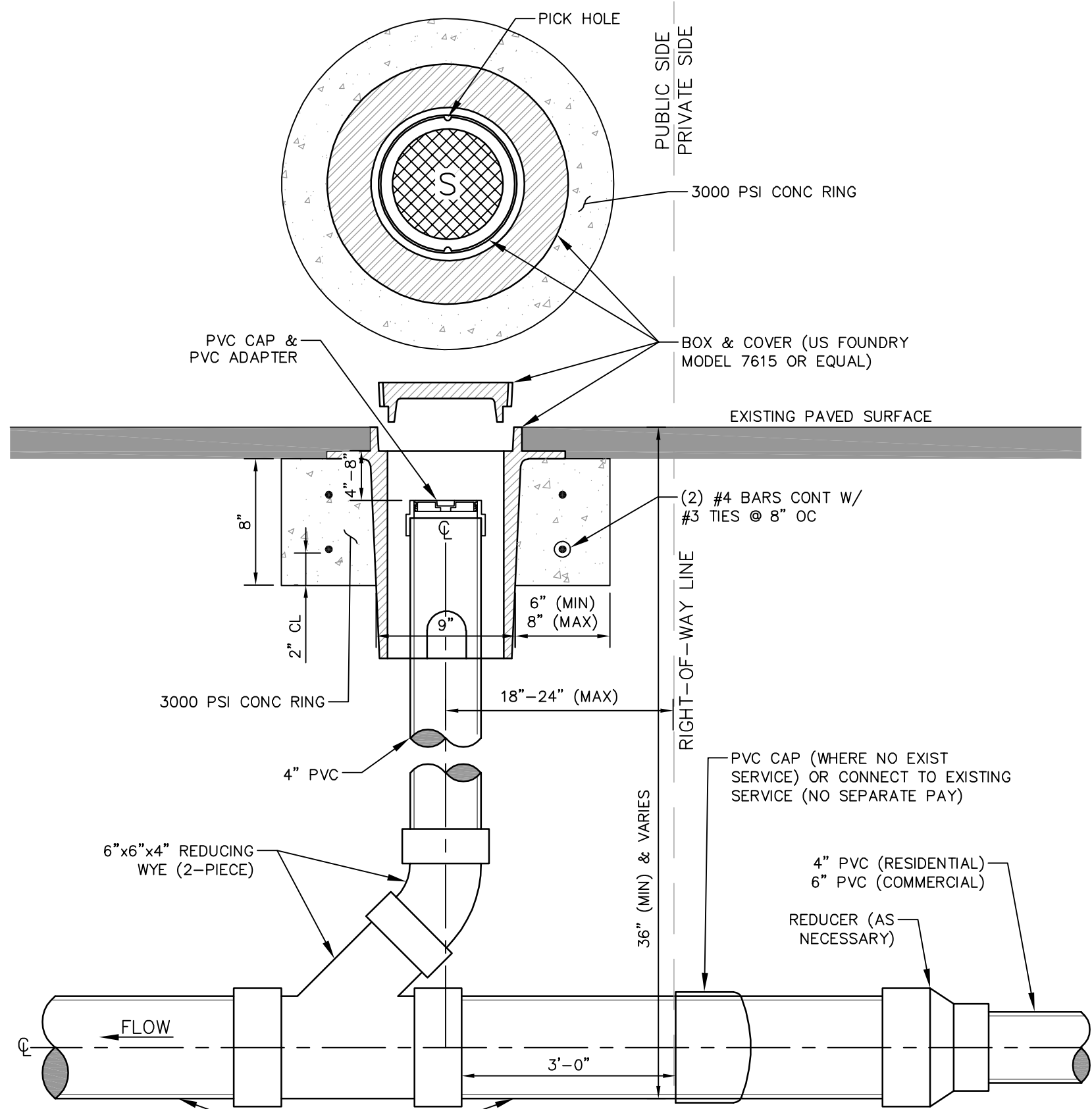


BAR "U" DETAIL



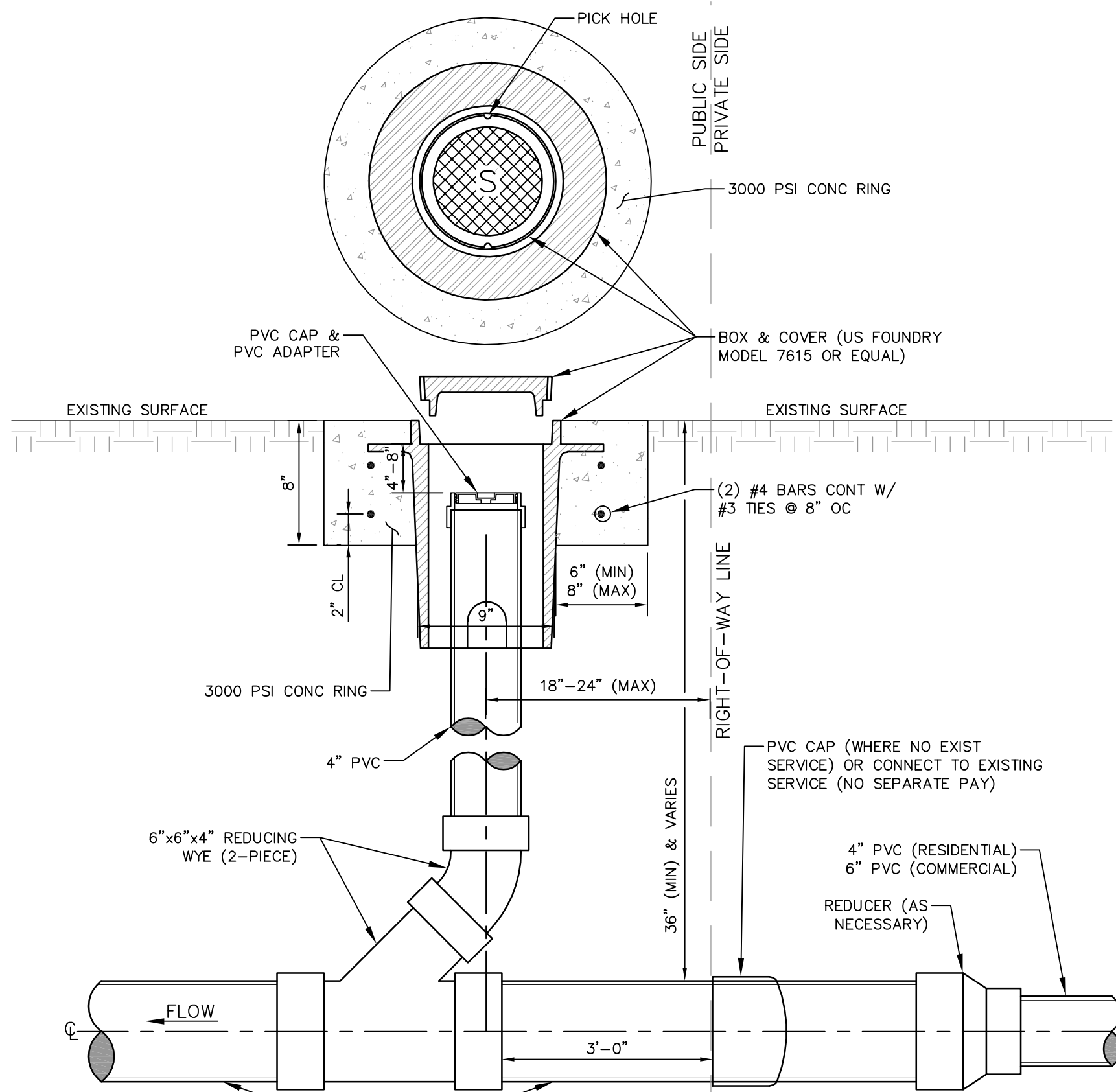
SECTION VIEW

CONCRETE ENCASEMENT FOR LOW COVER DETAIL



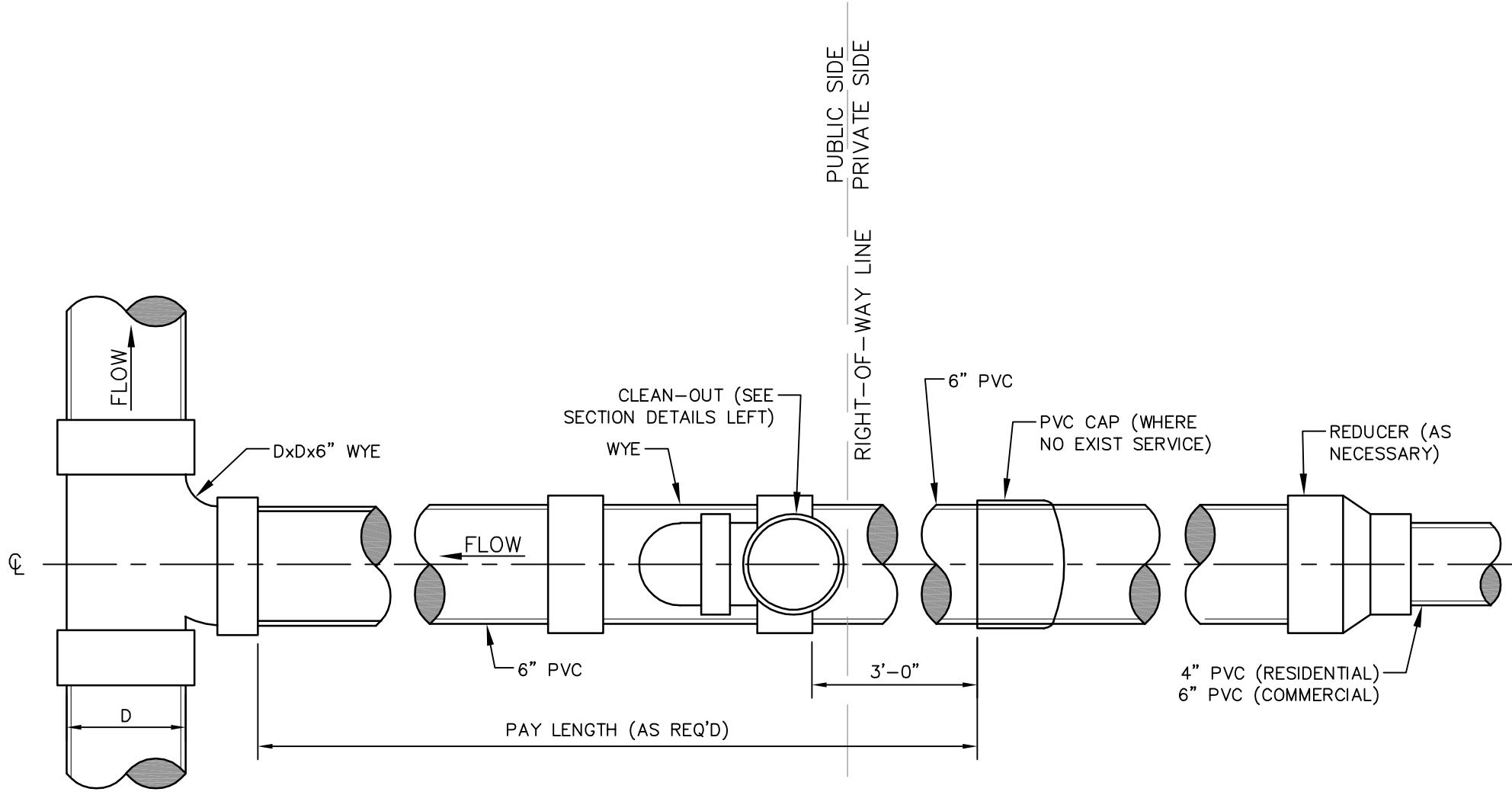
SANITARY SEWER CLEANOUT DETAIL - SECTION VIEW

FOR PAVED AREA



SANITARY SEWER CLEANOUT DETAIL - SECTION VIEW

FOR NON-PAVED AREA

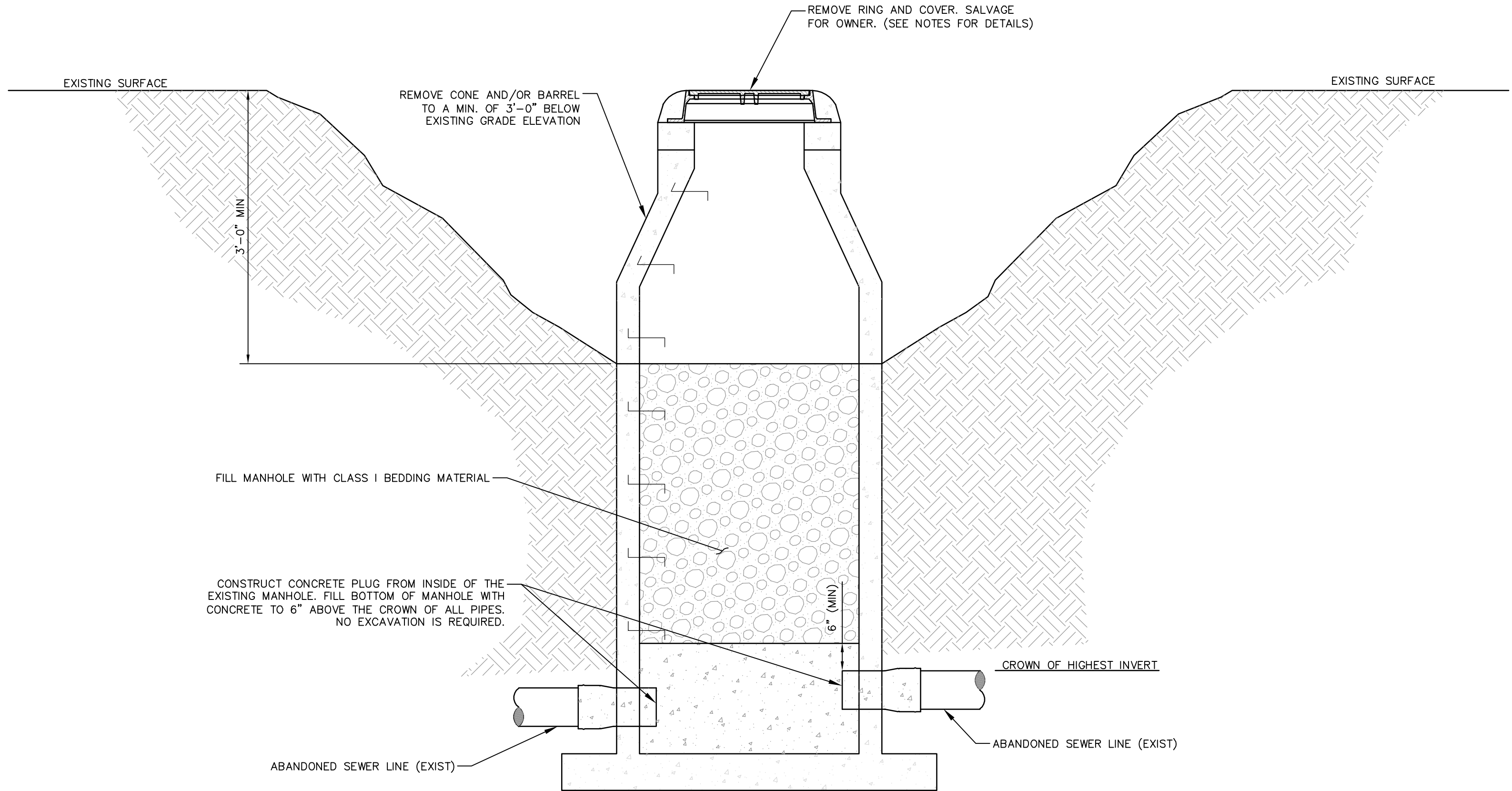


SERVICE CONNECTION - PLAN VIEW

CLEANOUT NOTE:

CLEANOUTS SHALL BE PLACED AT ALL BENDS IN SERVICE LINES OVER 22.5' AND ALL CHANGES IN GRADE. CLEANOUTS SHALL BE PLACED AT ROW LINES AS DETAILED.

NO.	DATE	DESCRIPTION	BY
SEWER INSTALLATION DETAILS			
EDWARDS STREET INFRASTRUCTURE REHABILITATION CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	RES/SLS	Checked by:	SEM
Date:	06-24-2022	Working No.:	SSD2
Drawing No.:	12220-002	Sheet No.:	20

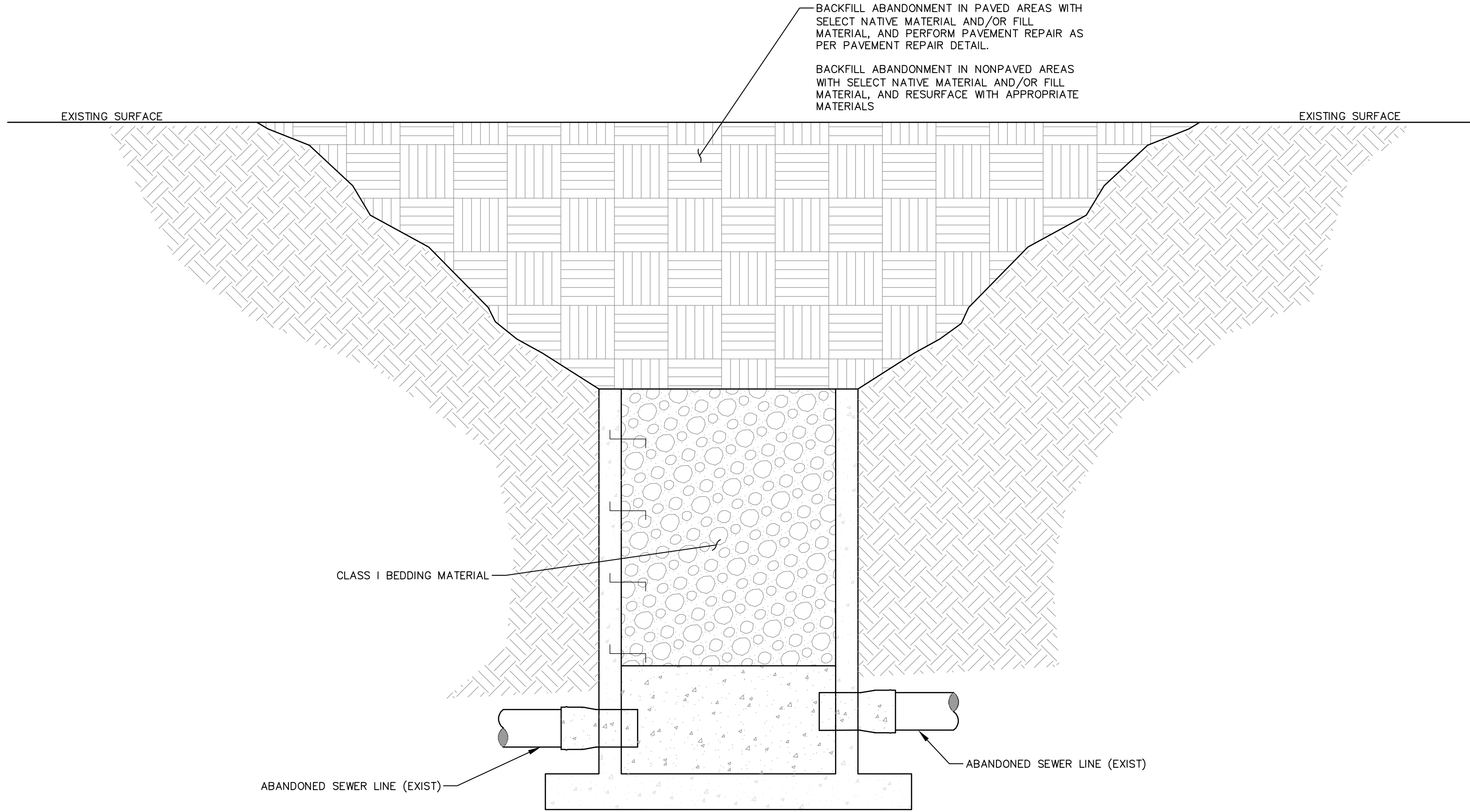


EXISTING MANHOLE ABANDONMENT DETAIL

NOT TO SCALE

SPECIAL SEWER ABANDONMENT / REMOVAL NOTES:

- ALL EXISTING MANHOLES NOTED TO BE REMOVED SHALL BE REMOVED ENTIRELY. REMOVED ITEMS SHALL BE DISPOSED OF APPROPRIATELY.
- ALL EXISTING MANHOLES NOTED TO BE ABANDONED, SHALL BE PAID FOR PER EACH AND SHALL BE MODIFIED AS FOLLOWS:
 - REMOVE AND DISPOSE OF SANITARY WASTE.
 - REMOVE COVER, FRAME AND THE TOP 36" OF MANHOLE STRUCTURE. DISPOSE OF REMOVED OBJECTS APPROPRIATELY.
 - FILL BOTTOM OF MANHOLE WITH CONCRETE, MINIMUM 6" ABOVE THE CROWN OF ALL PIPES.
 - FILL THE MANHOLE WITH CLASS I BEDDING MATERIAL.
 - BACKFILL WITH NATIVE SOIL MATERIAL AND/OR FILL MATERIAL (CL B9) AND COMPACT. GRADE TO DRAIN AS REQUIRED. GRASS DISTURBED AREA OR REPAIR PAVEMENT AREAS.
- ALL EXISTING SEWER PIPES NOTED TO BE REMOVED, SHALL BE REMOVED ENTIRELY. (NO SEPARATE PAY)
- ALL EXISTING SEWER PIPES NOTED TO BE ABANDONED SHALL BE PAID FOR BY LINEAR FOOT AND SHALL BE MODIFIED AS FOLLOWS:
 - REMOVE AND DISPOSE OF SANITARY WASTE.
 - FILL THE PIPE WITH FLOWABLE FILL.
 - PLUG ENDS.
- WHERE ABANDONED SEWER PIPES AND/OR MANHOLES CONFLICT WITH THE NEW CONSTRUCTION, THE EXISTING PIPE OR MANHOLE SHALL BE REMOVED, UNLESS NOTED OTHERWISE OR DIRECTED BY THE ENGINEER.
- MANHOLE RINGS AND COVERS NOTED FOR REMOVAL IN THESE PLANS, SHALL BE SALVAGED FOR THE OWNER. ALL ITEMS SALVAGED ITEMS SHALL BE CLEANED BY POWER WASHING. SAID ITEMS SHALL BE STACKED AND SECURED ON PALLETS. SAID ITEMS SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO A SITE DETERMINED BY THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF SAID ITEMS PRIOR TO DELIVERY TO THE OWNER AND FOR REPLACEMENT IN KIND FOR ANY MISSING ITEMS. (NO SEPARATE PAY)

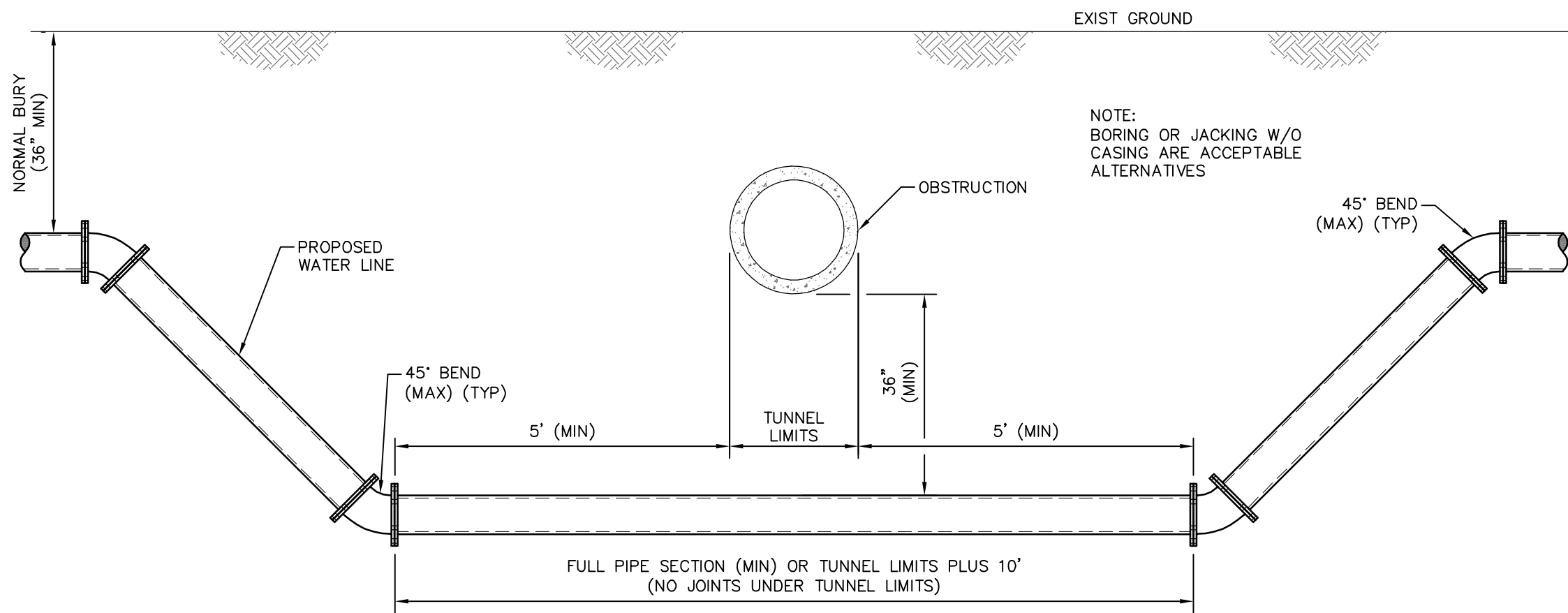


EXISTING MANHOLE ABANDONMENT COMPLETE DETAIL

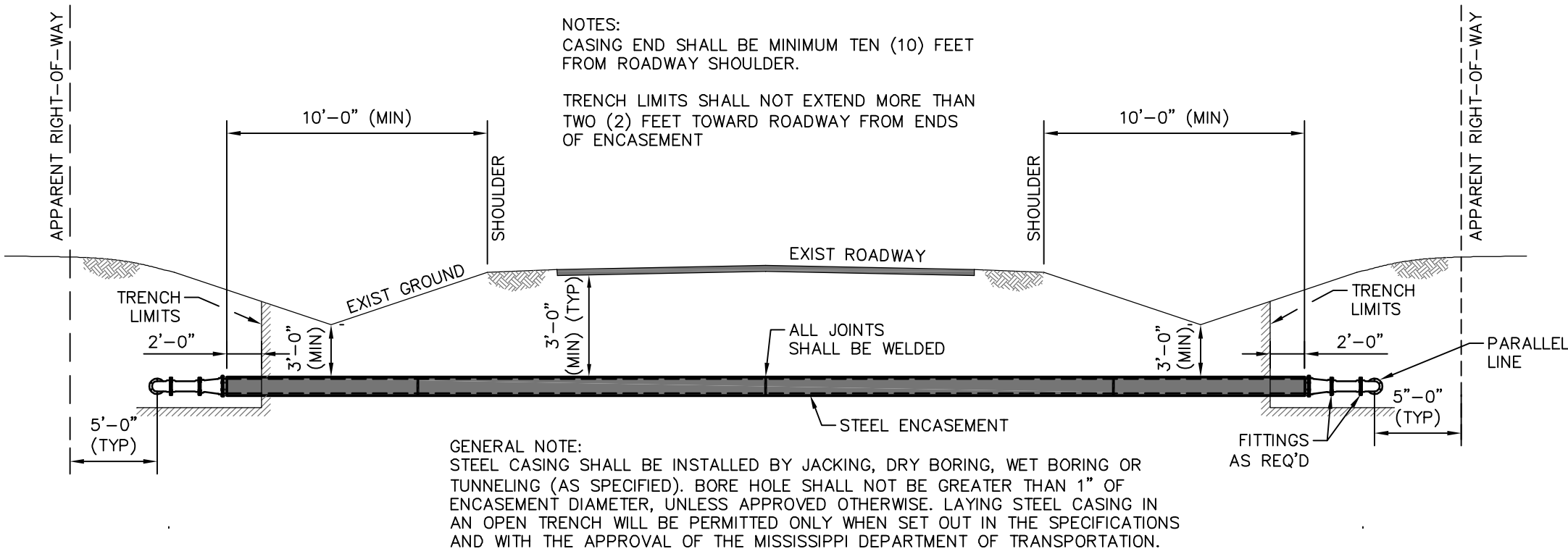
NOT TO SCALE

NO.	DATE	DESCRIPTION	BY
SEWER ABANDONMENT DETAILS			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	RES/SLS	Checked by:	SEM Scale: NONE
Date:	06-24-2022	Working No.:	ABN1
Drawing No.:	12220-002	Sheet No.:	21

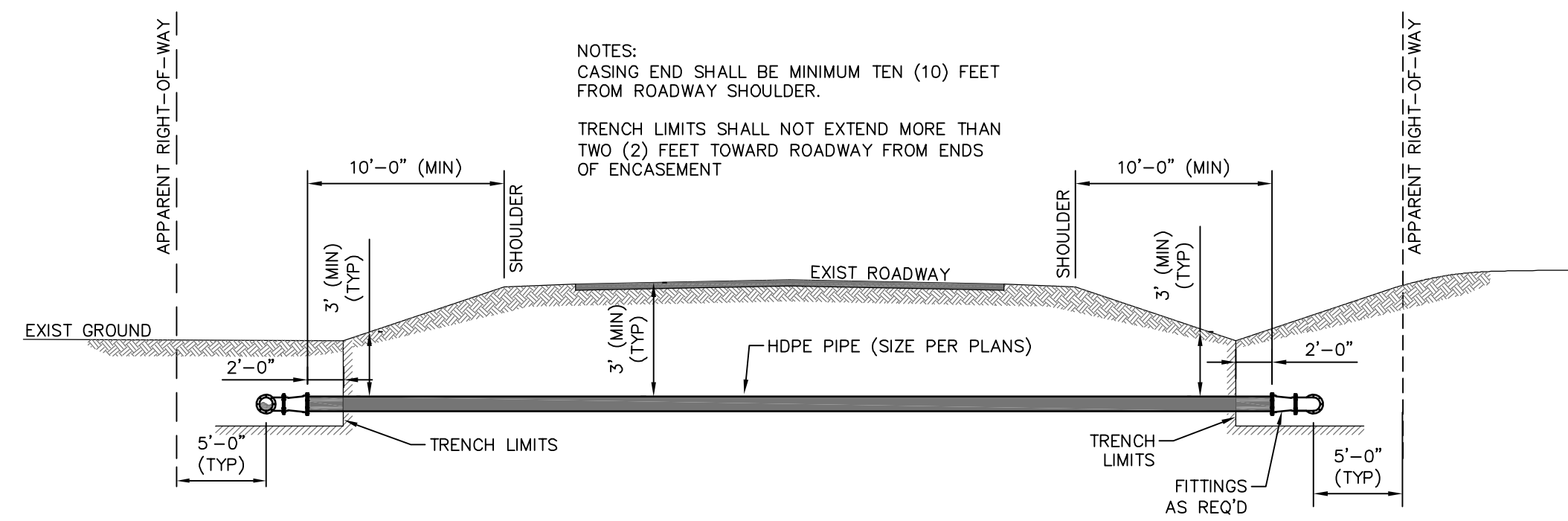
G:\PROJECTS\Hattiesburg_City of 122204002 - Edwards Street Infrastructure Rehabilitation\122204002 CAD Files\122204002_Wr.Dwg_v3.dwg, WTRD2, 12/22/2022 8:24:30 AM



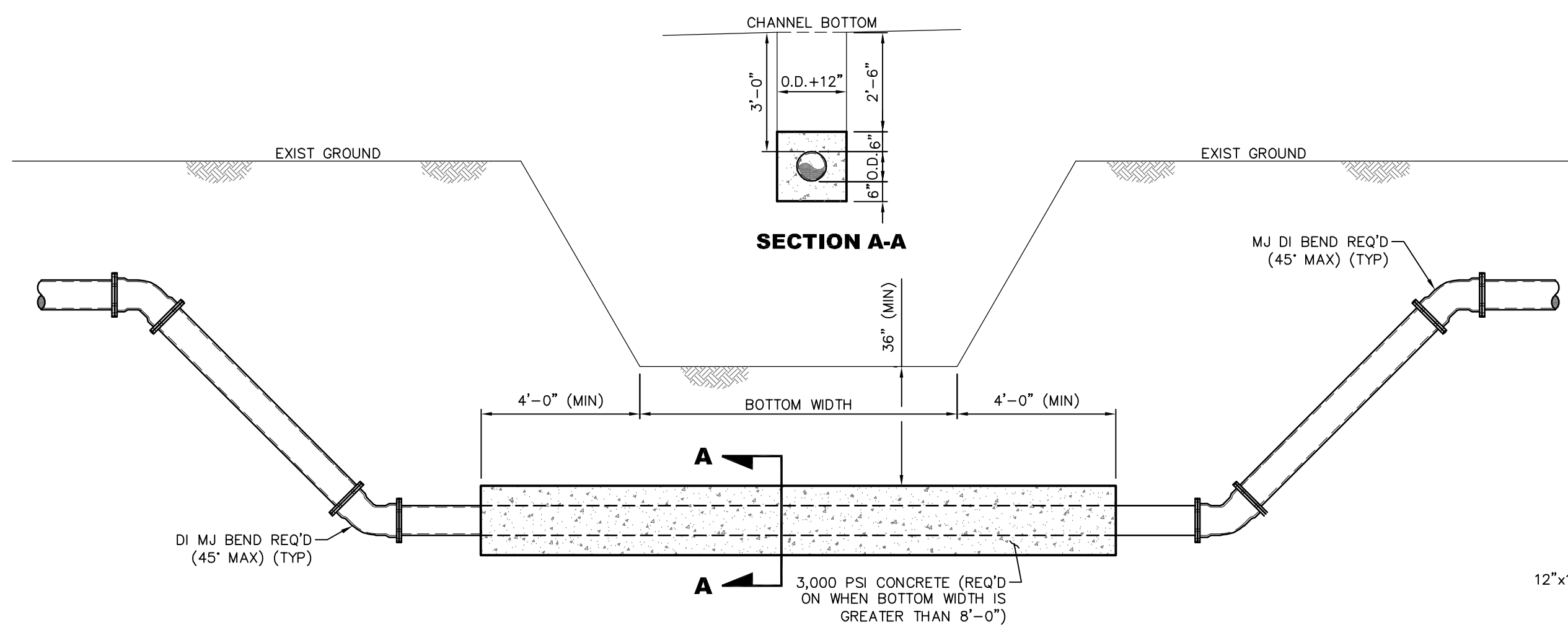
OBSTRUCTION CROSSING DETAIL



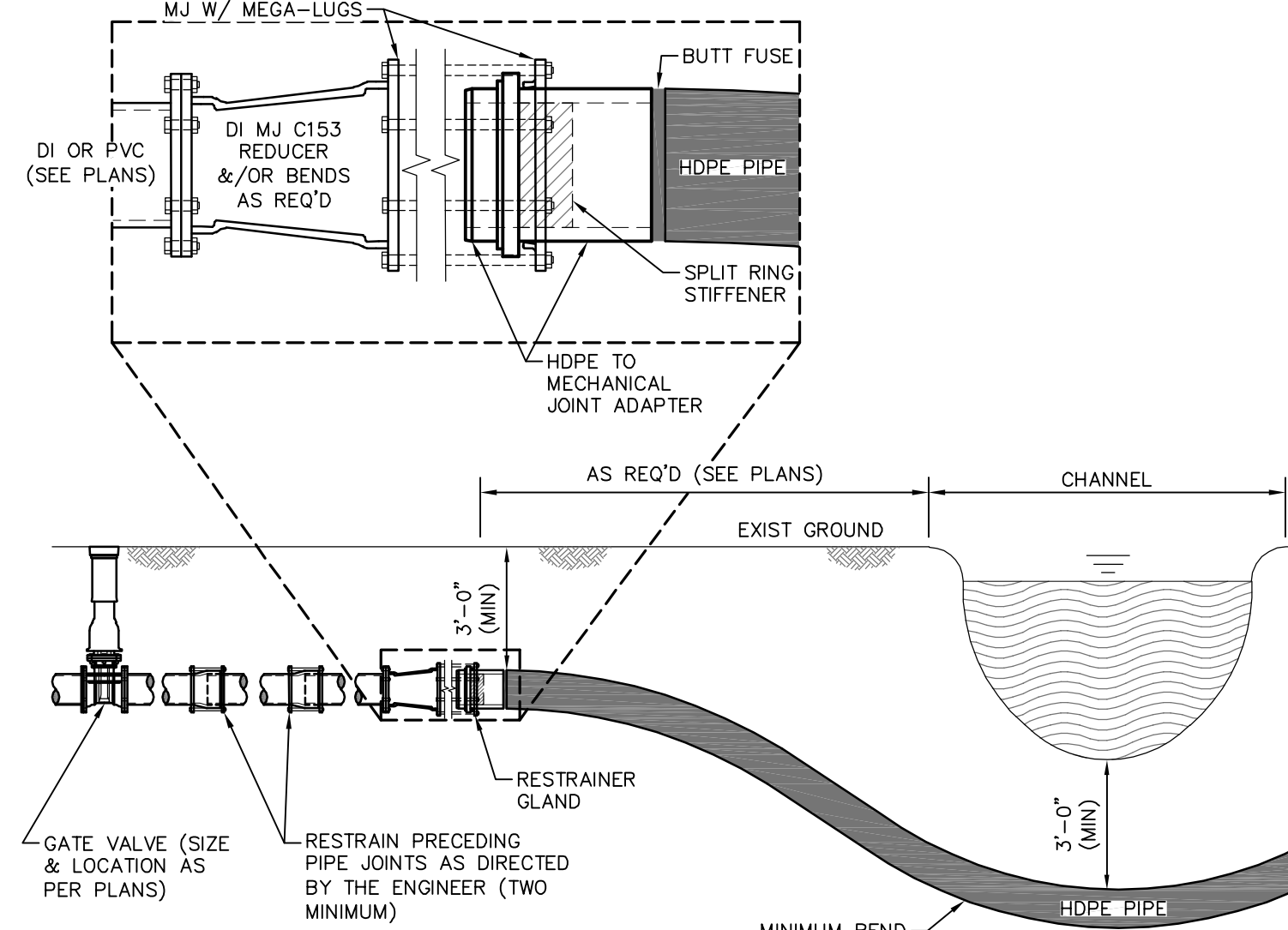
BORED ROADWAY CROSSING & WATER LINE PARALLELING



HDPE DIRECTIONAL BORE ROADWAY CROSSING & WATER LINE PARALLELING

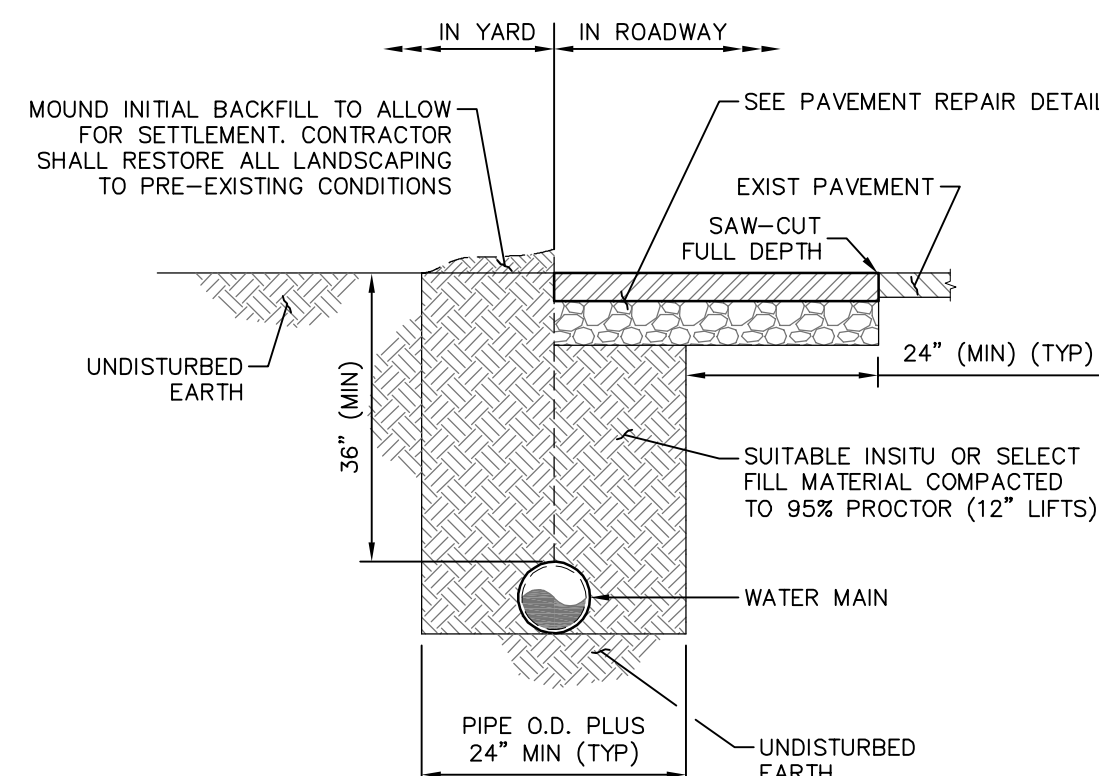


OPEN CUT DRY CHANNEL CROSSING DETAIL (NON-PAVED)

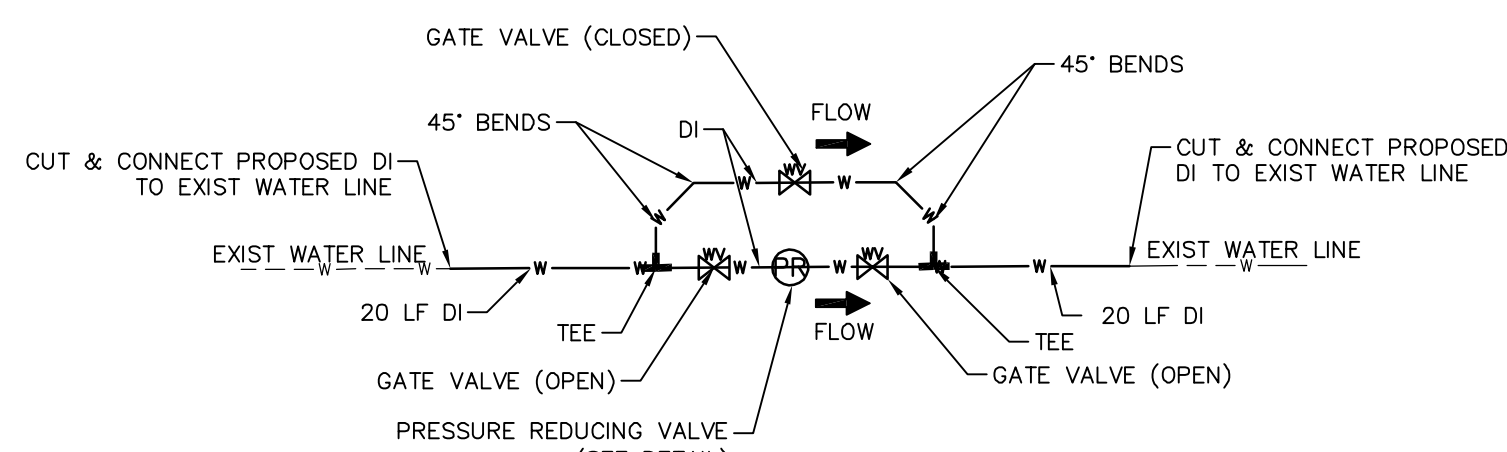


DIRECTIONAL BORE CHANNEL CROSSING DETAIL

(LEFT HALF SHOWN, RIGHT HALF SIMILAR)

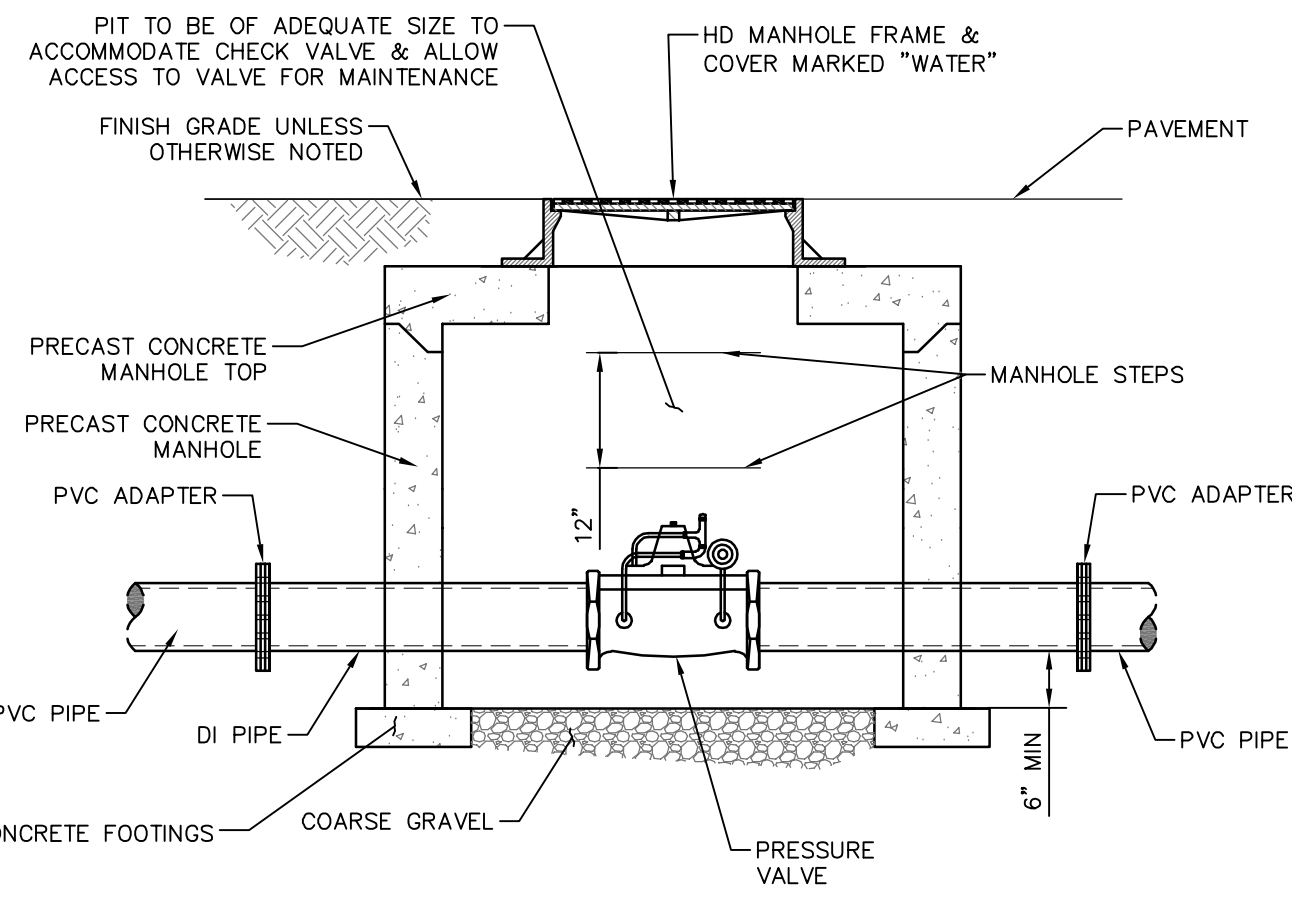


TYPICAL TRENCH DETAIL



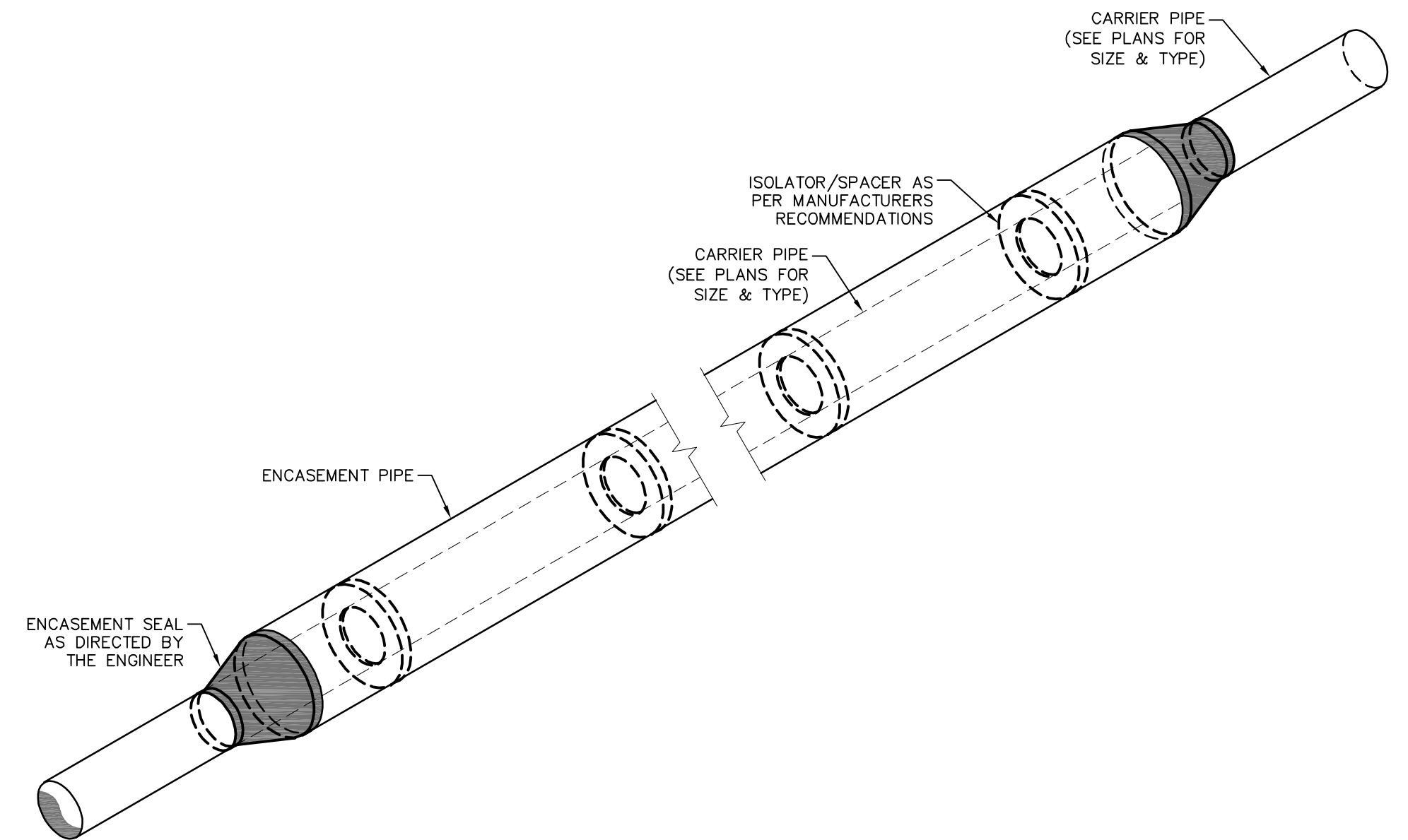
PRESSURE REDUCING VALVE WITH BYPASS DETAIL

NOTE: ALL ITEMS SHOWN IN DETAIL ARE INCLUDED IN PRESSURE REDUCING VALVE BID ITEM.

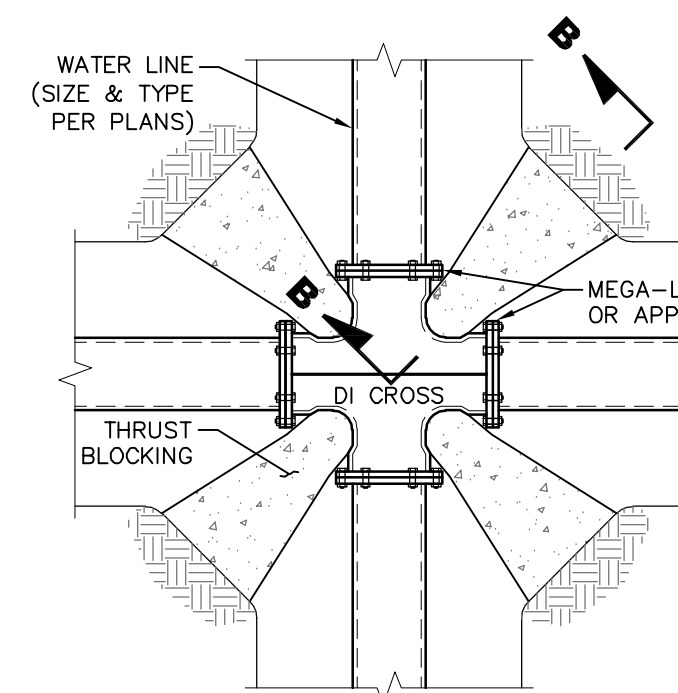


HEAVY DUTY COVER & FRAME V-1115 OR USF 370 WITH OUT HOLES ONLY
HEAVY DUTY WATERTIGHT COVER & FRAME V-2115-3 AGS WITH OUT HOLES, WITH GASKET & BOLTS ONLY

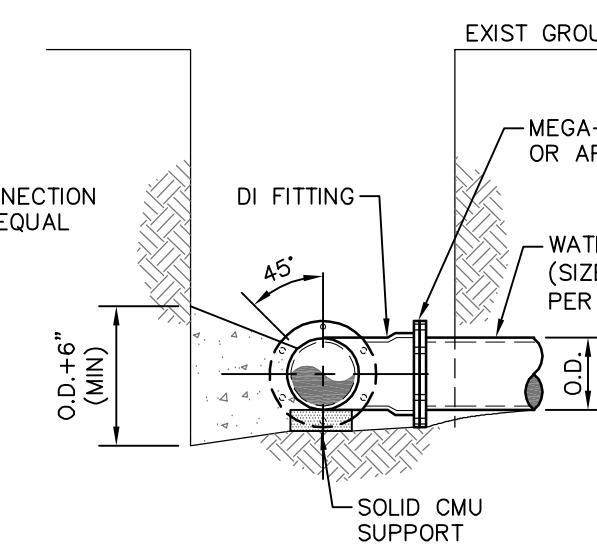
PRESSURE REDUCING VALVE DETAIL



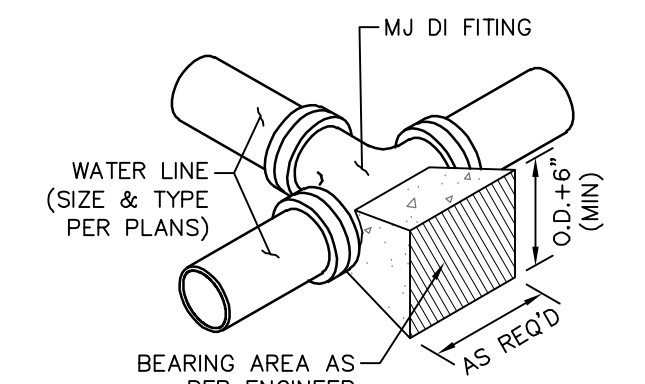
CARRIER PIPE SUPPORT IN STEEL ENCASEMENT ISOMETRIC DETAIL



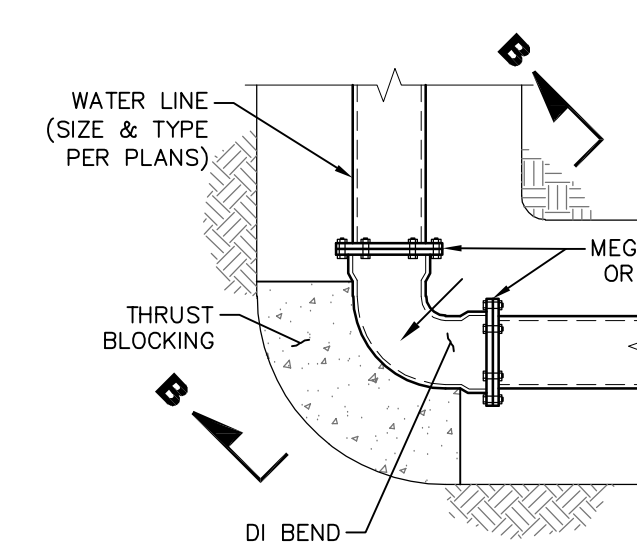
CROSSES



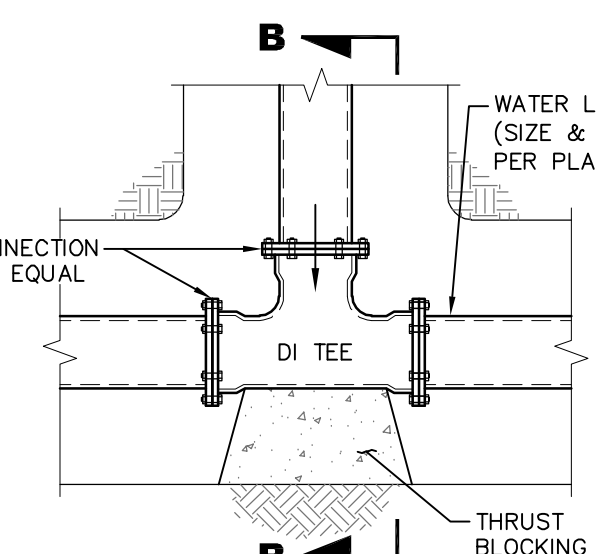
SECTION B-B



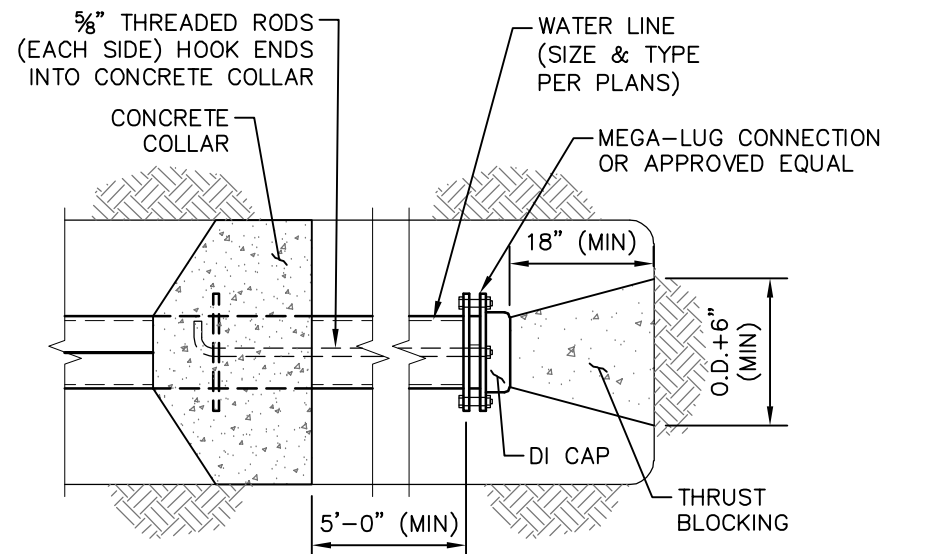
ISOMETRIC



BENDS



TEES

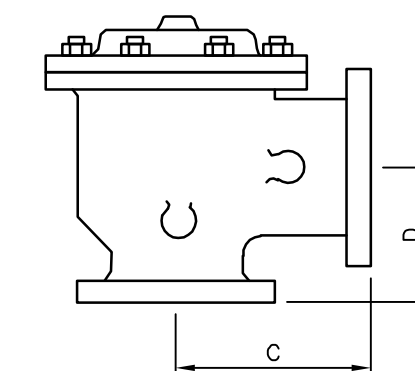
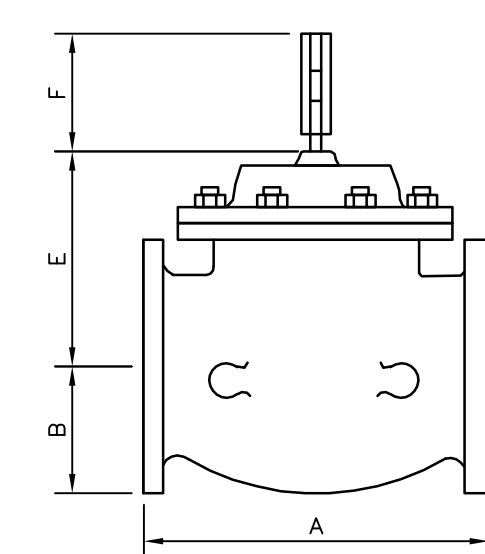


PLUGS

THRUST BLOCKING DETAILS

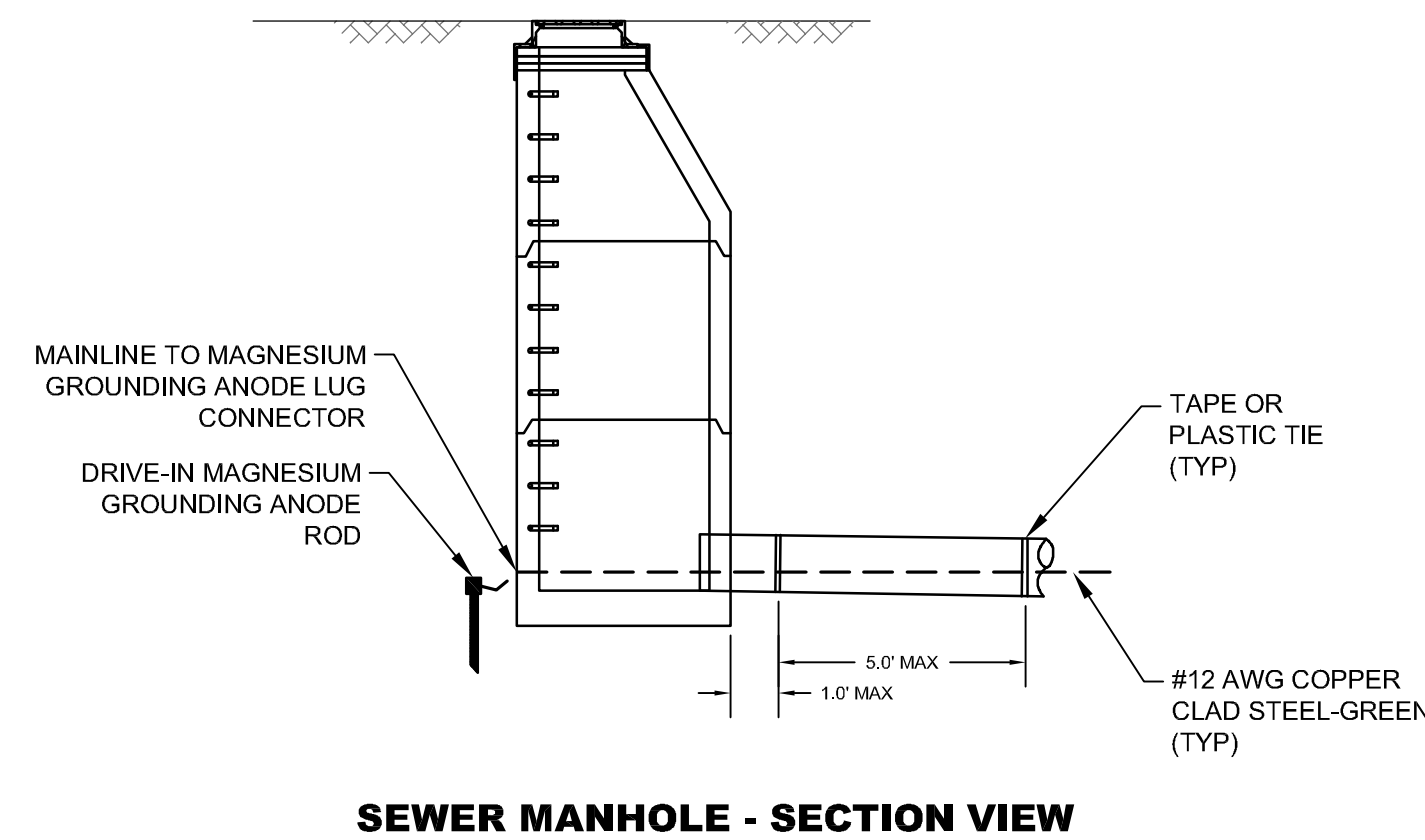
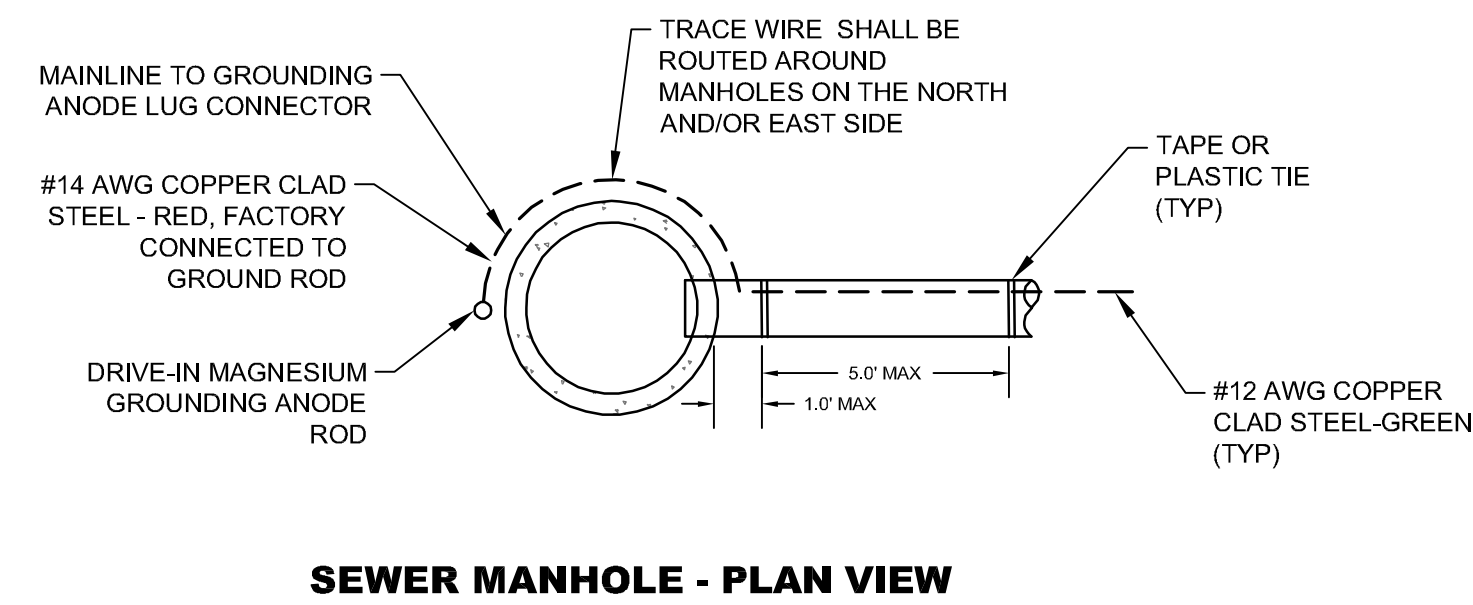
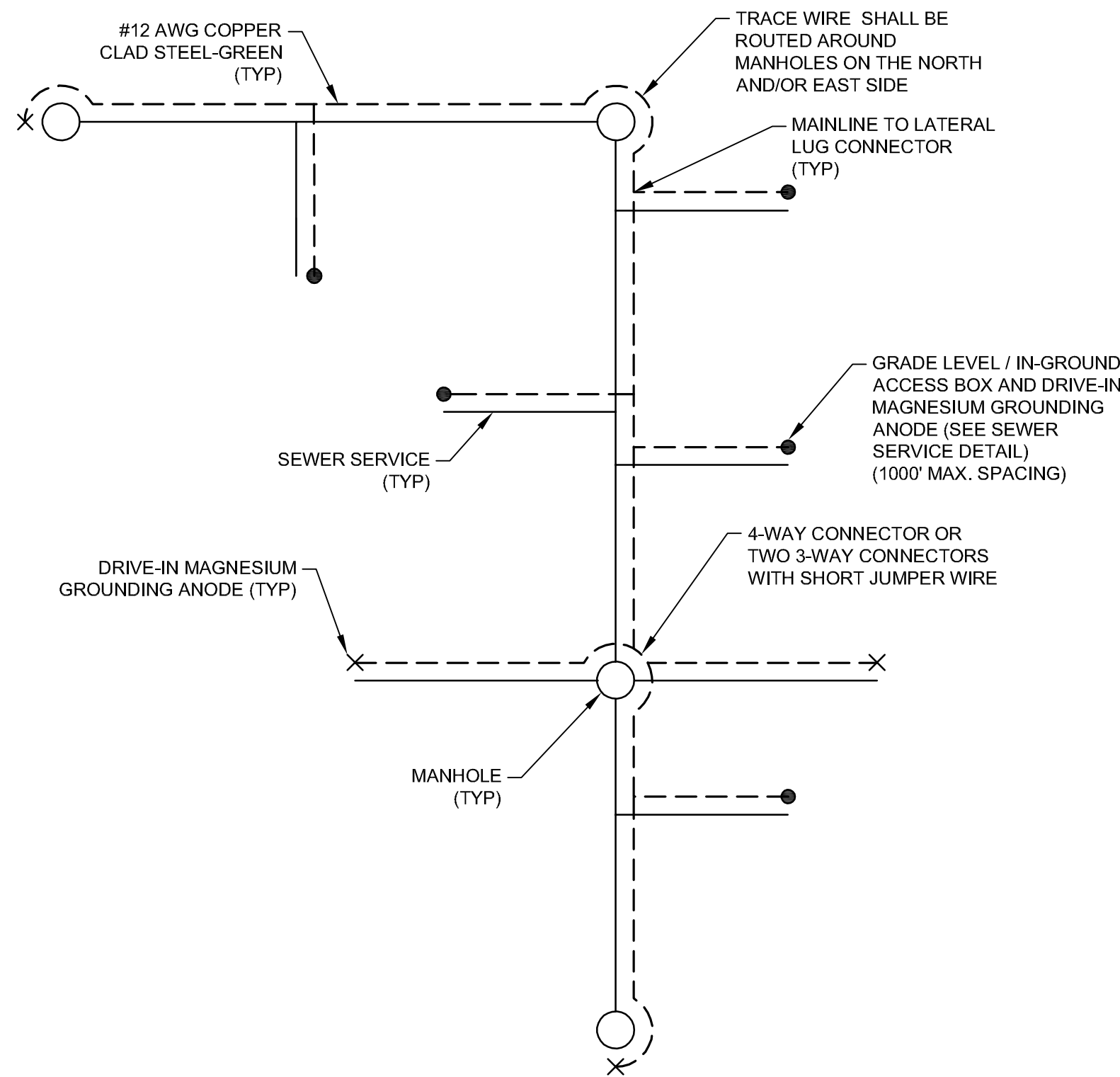
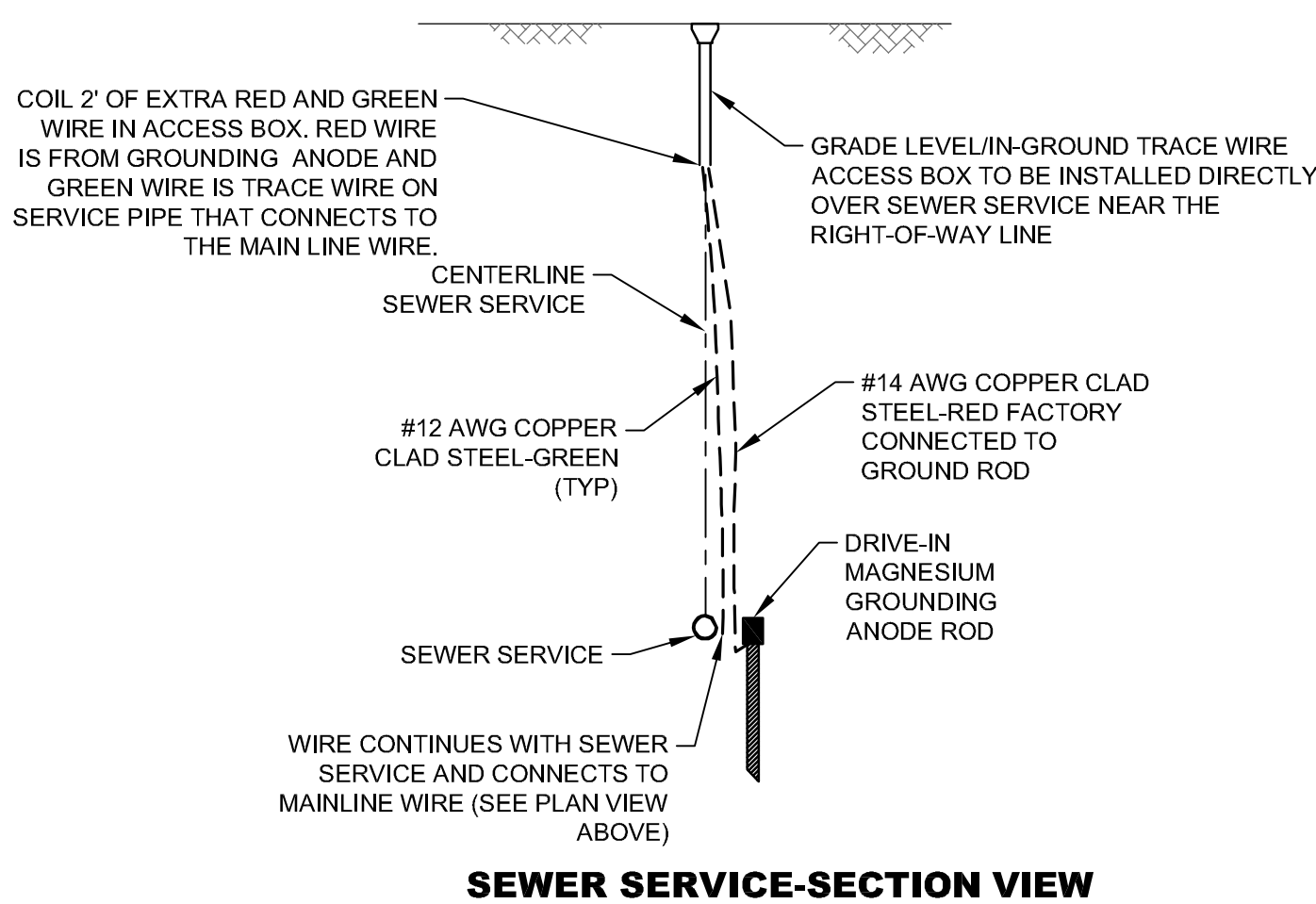
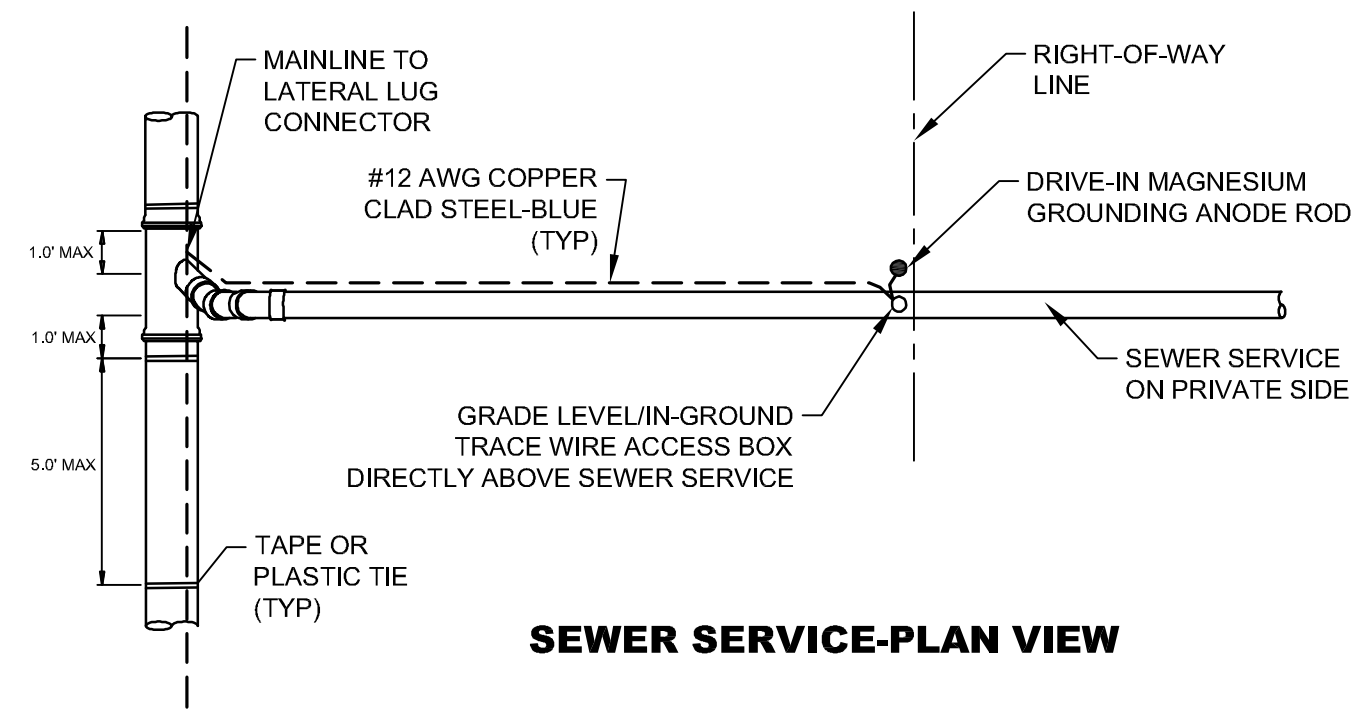
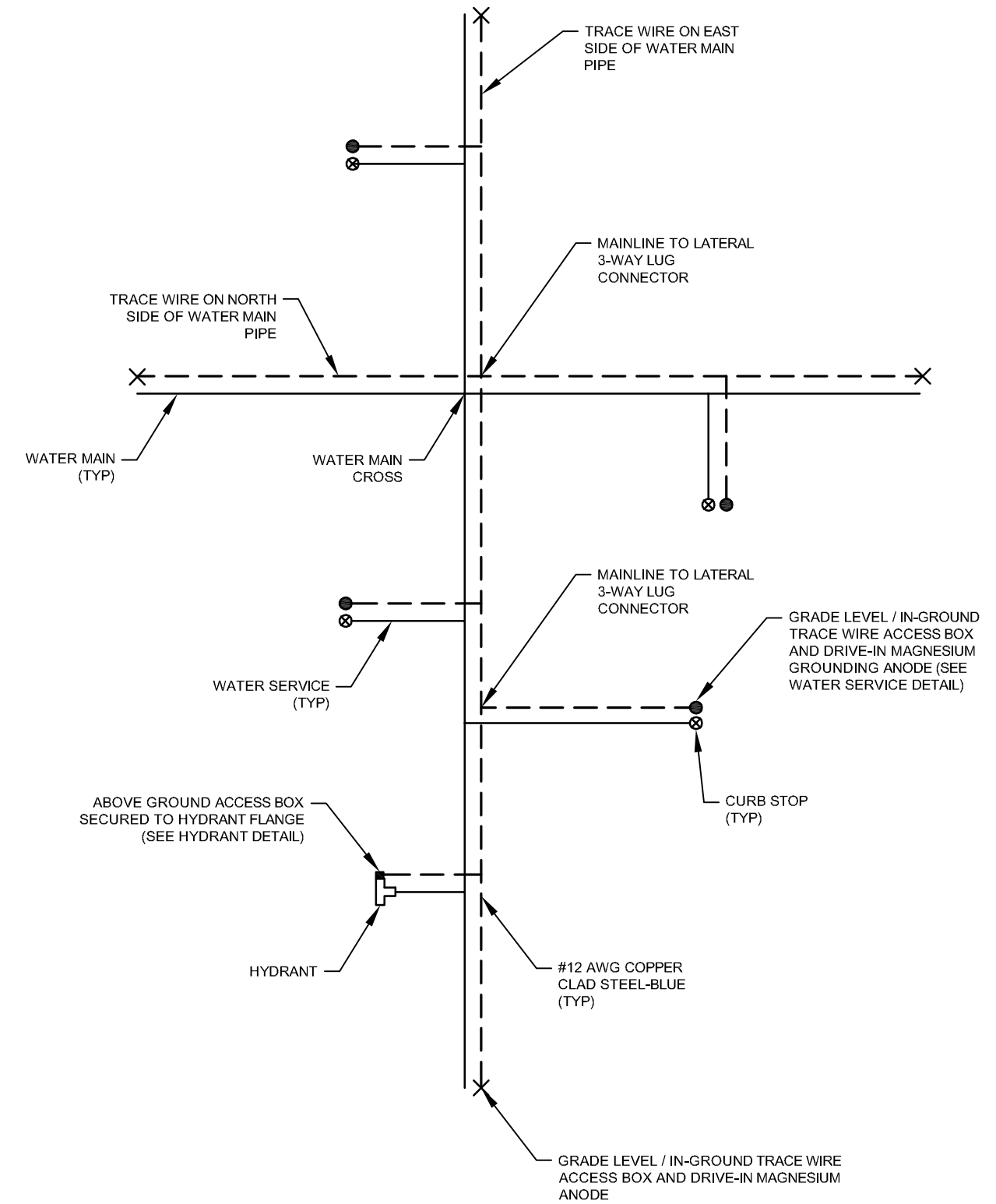
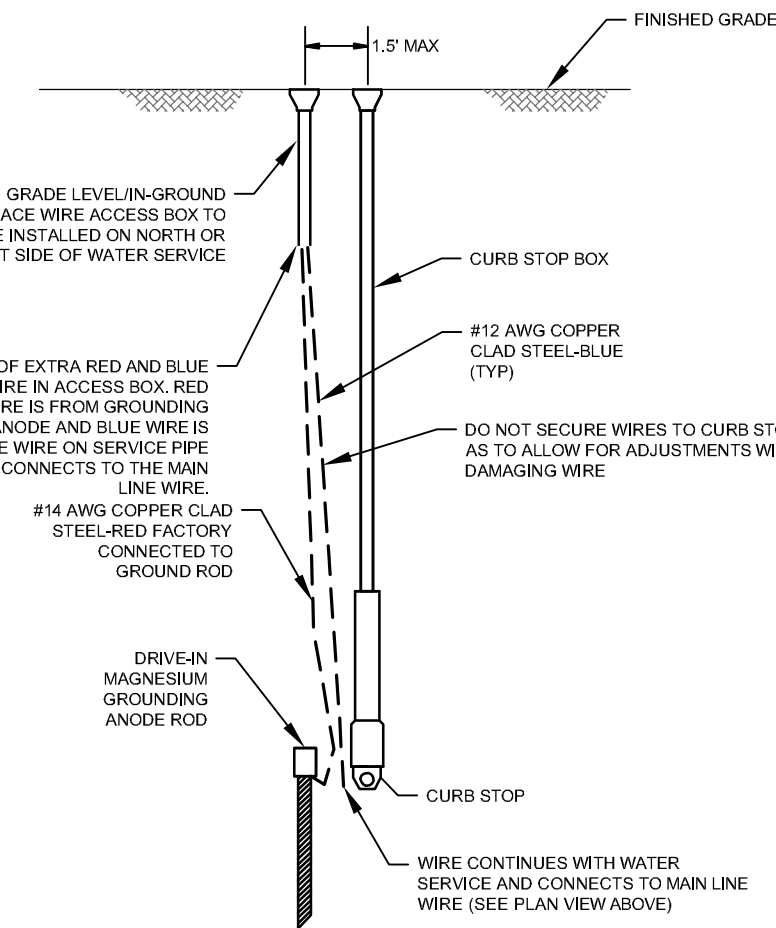
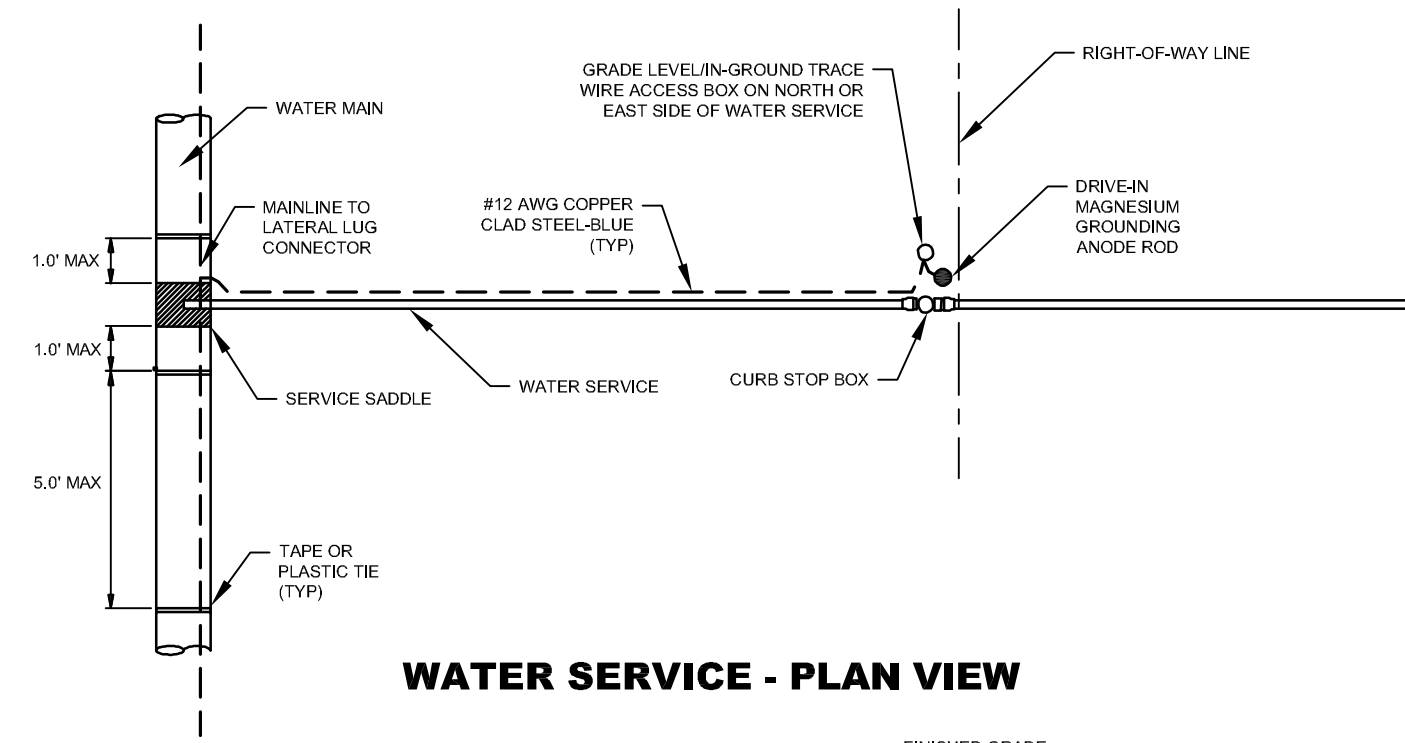
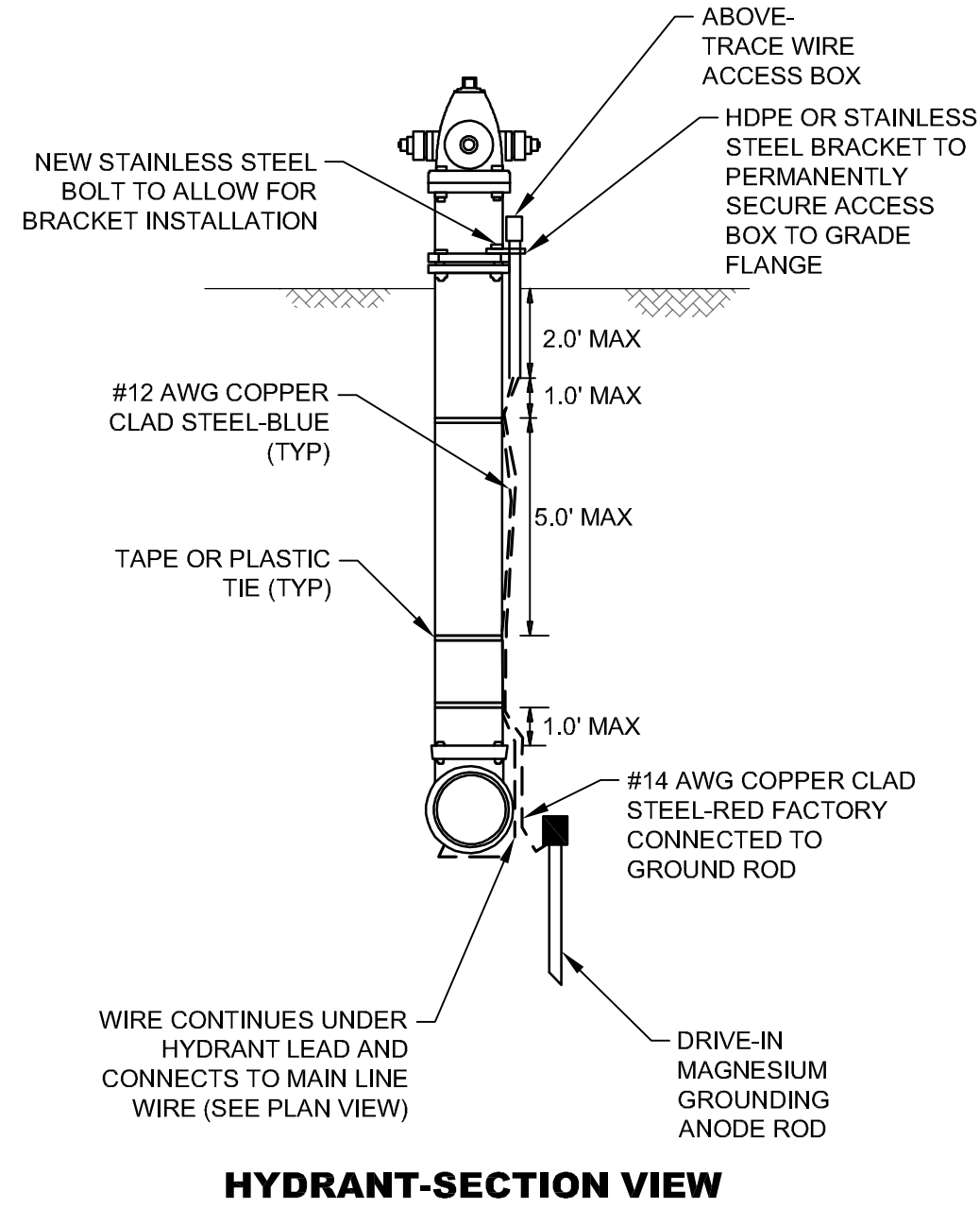
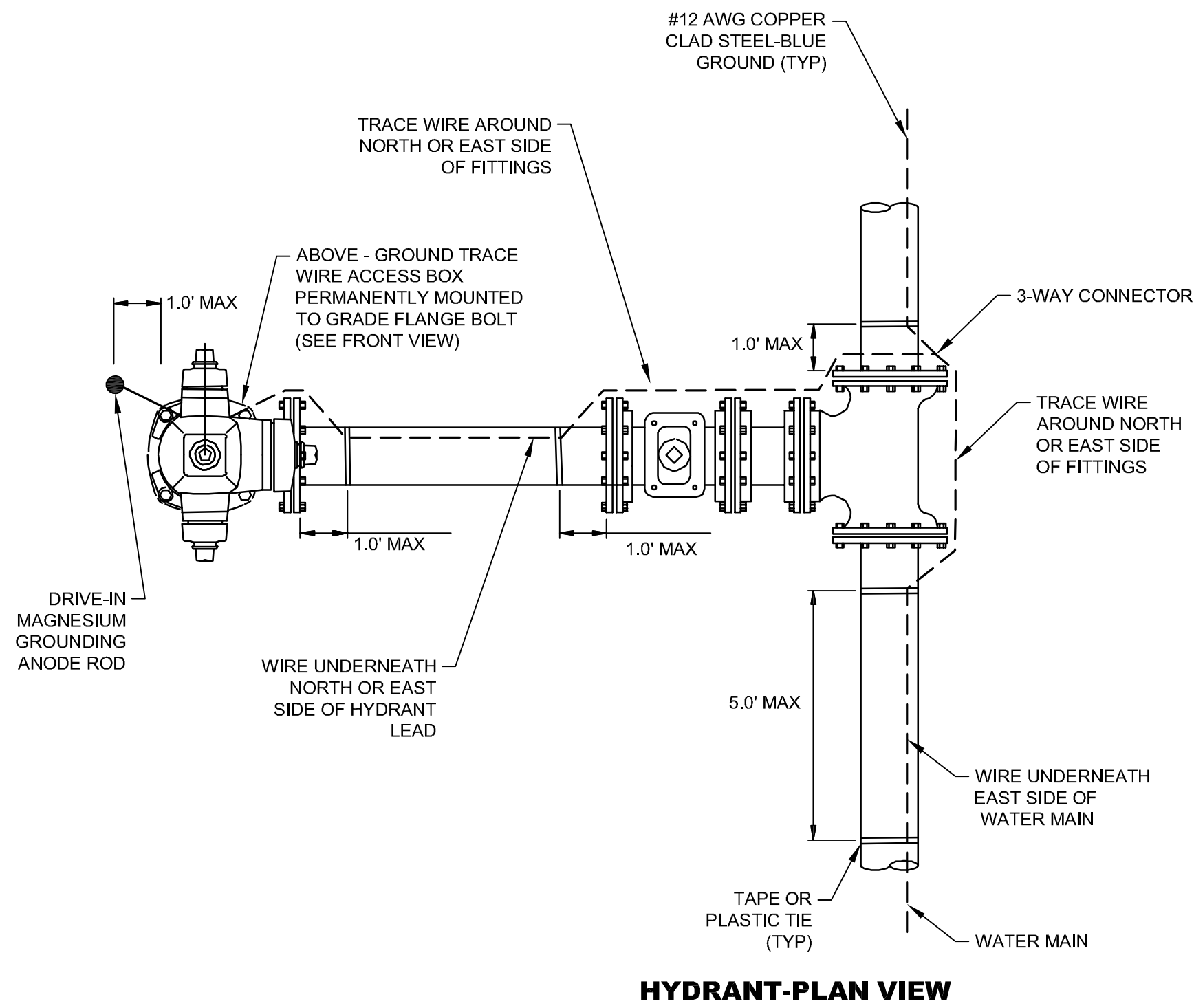
PRESSURE VALVE DIMENSIONS (INCHES)

DIM	ANSI CLASS	VALVE SIZE (INCHES)			
		3	4	6	8
A	SE	11 1/4	-	-	-
	150	10 1/2	13 1/2	17 3/4	25 3/4
	300	11 1/4	14 1/4	18 3/4	26 3/4
B	SE	2 1/4	-	-	-
	150	3 3/4	4 1/2	5 1/2	6 3/4
	300	4 3/4	5	6 1/4	7 1/2
C	SE	5 1/2	-	-	-
	150	6	7 3/4	10	13 3/4
	300	6 3/4	7 3/4	10 1/2	13 3/4
D	SE	5 1/4	-	-	-
	150	4	5 1/4	6	8 1/2
	300	4 3/4	5 3/4	6 1/2	9
E	ALL	7	8	10	11 1/2
F	ALL	3 1/4	3 1/4	3 1/4	6 3/4
G	ALL	7 1/4	10	14	21
H	ALL	11	12	13	14



NO.	DATE	DESCRIPTION	BY
WATER INSTALLATION DETAILS			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES/SLS		Checked by: SEM	Scale: NONE
Date: 09-26-2022		Working No. WTRD2	
Drawing No.: 12220-002		Sheet No. 23	

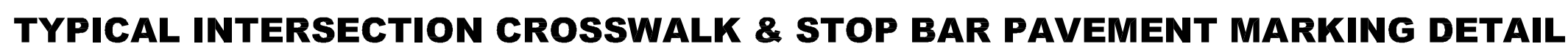
G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation 12220-002 CAD Files\12220-002_Tracer_Wire.dwg, W3D1, 6/15/2022 1:32:49 PM



NOTE:
WIRE SHOWN AWAY FROM PIPE FOR CLARITY. WIRE SHALL BE INSTALLED ON THE BOTTOM SIDE OF THE PIPE BELOW THE SPRING LINE. THE WIRE SHALL BE FASTENED TO THE PIPE WITH TAPE OR PLASTIC TIES AT 5' INTERVALS.

NO.	DATE	DESCRIPTION	BY
TRACER WIRE DETAILS			
EDWARDS STREET INFRASTRUCTURE REHABILITATION CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: SLS		Checked by: SEM	Scale: NONE
Date: 06-24-2022		Working No. TWD1	
Drawing No.: 12220-002		Sheet No. 24	

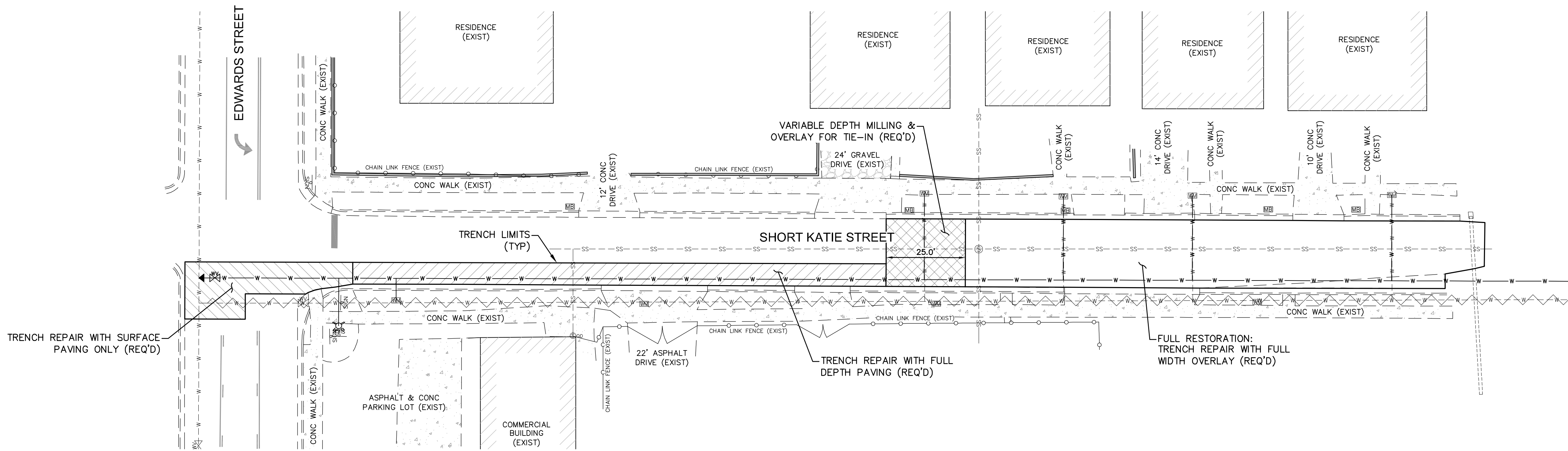
1. TEMPORARY CRUSHED AGGREGATE REMOVED DURING PAVING SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
2. TRENCHES SHALL HAVE A TEMPORARY SURFACE OF CRUSHED AGGREGATE (SIZE 610). TEMPORARY SURFACE INSTALLED FOR A PERIOD OF TIME TO BE DETERMINED BY THE ENGINEER AND REMOVED PRIOR TO PAVING (NO SEPARATE PAY)



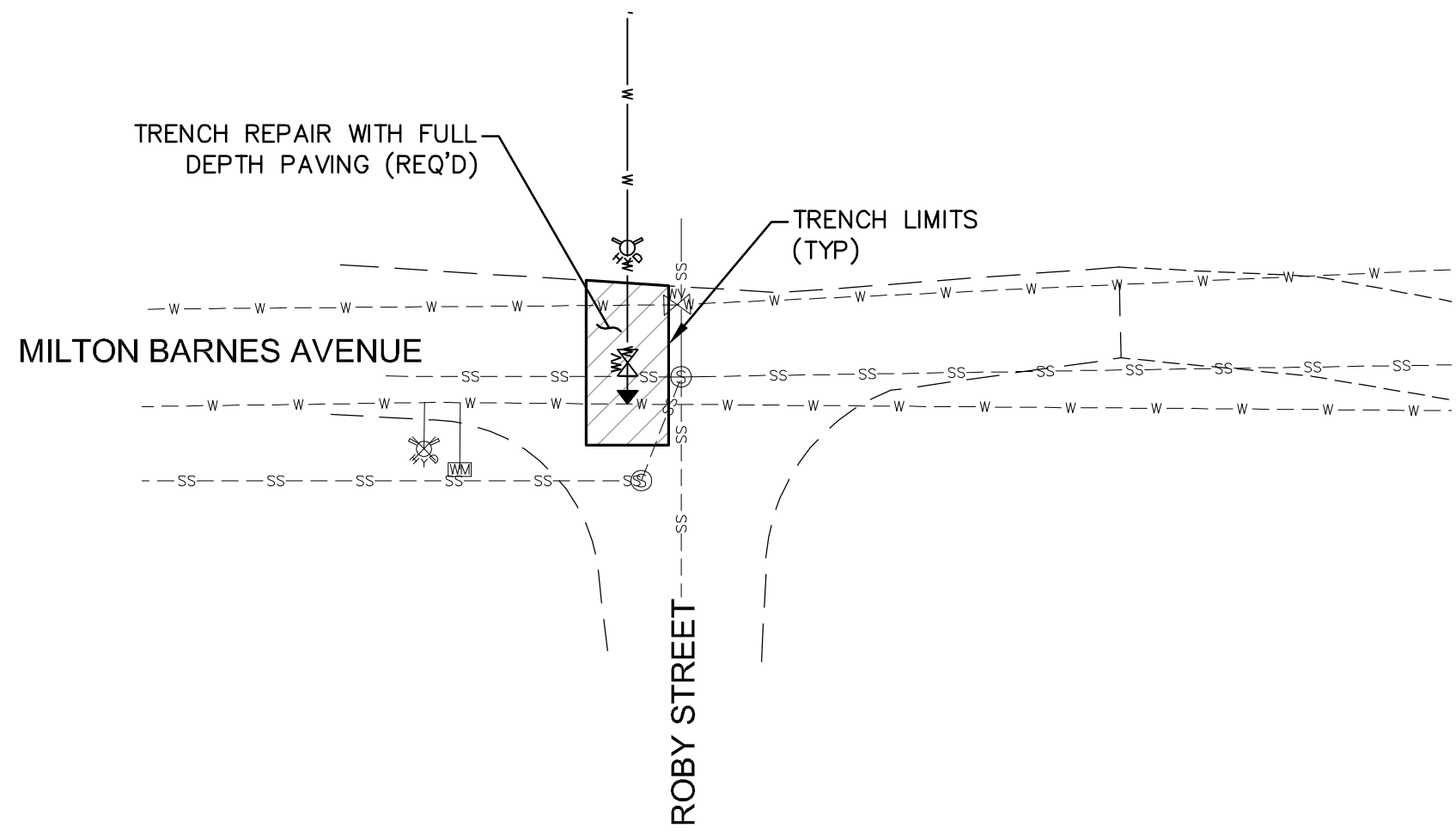
BEDDING NOTE:
DEPTH SHALL BE AS
REQUIRED TO REACH
SOLID BASE OF
UNDISTURBED EARTH

1. PAVEMENT DISTURBED AND/OR REMOVED IN/ON THE ROADWAYS, DRIVEWAY APRONS OR OTHER AREAS IN THE PUBLIC RIGHT OF WAY SHALL BE REPAIRED AS NOTED AND MAINTAINED THROUGHOUT THE PROJECT. SEE PAVING MAP.
- 1.1. ROADWAYS NOTED FOR FULL RESTORATION SHALL HAVE MARKINGS RESTORED AFTER PAVING. MARKINGS SHALL MATCH EXISTING MARKINGS OR AS DIRECTED BY THE ENGINEER.
2. PAVEMENT DISTURBED AND/OR REMOVED ON PRIVATE PROPERTY SHALL BE REPAIRED AS DETAILED OR IN KIND, OR AS DIRECTED BY THE ENGINEER.

sdw
Engineering Progress
301 Second Ave. | Hattiesburg, MS 39401 | (p) 601.544.1821 | sd-w.com

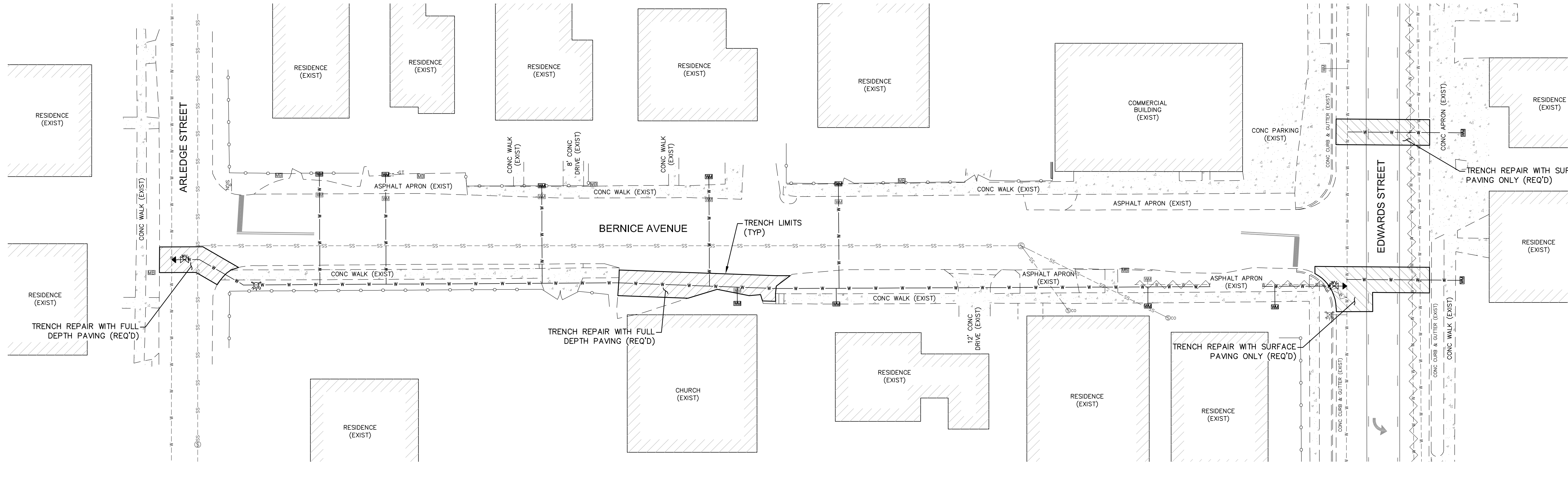


SHORT KATIE AVENUE
MILTON BARNES AVENUE

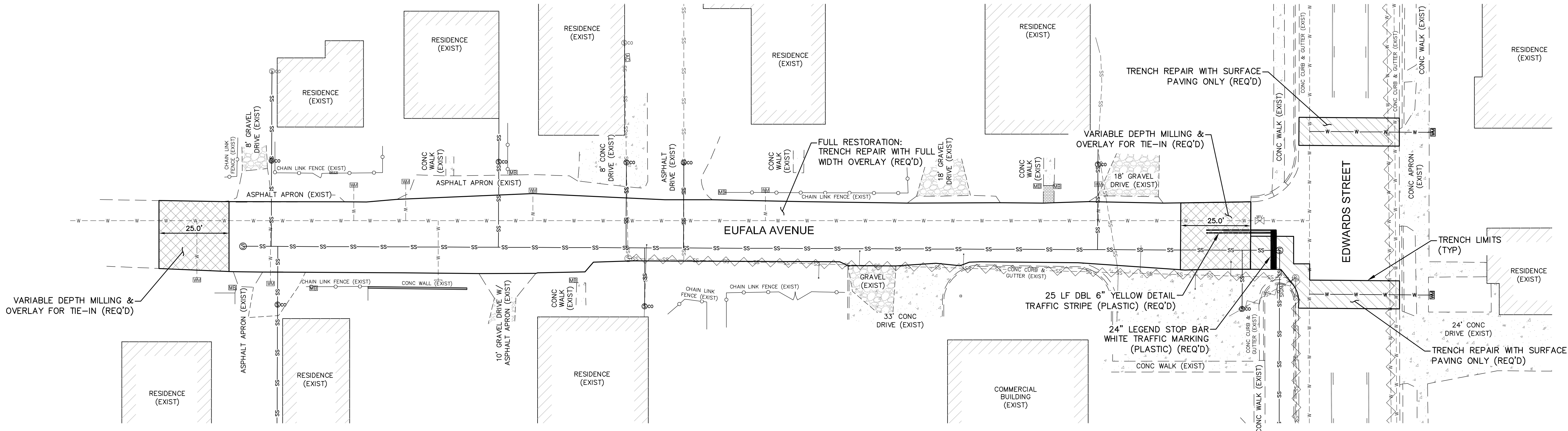


- GENERAL NOTES:**
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
 - PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC, SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. PvPln 1	
Drawing No.: 12220-002		Sheet No. 26	



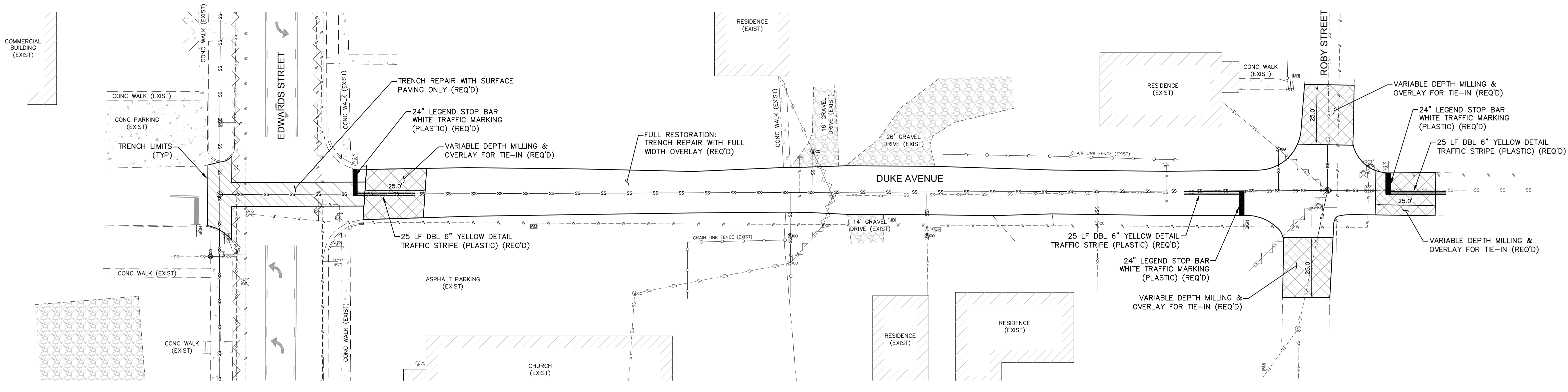
**BERNICE AVENUE
EUFALA AVENUE**



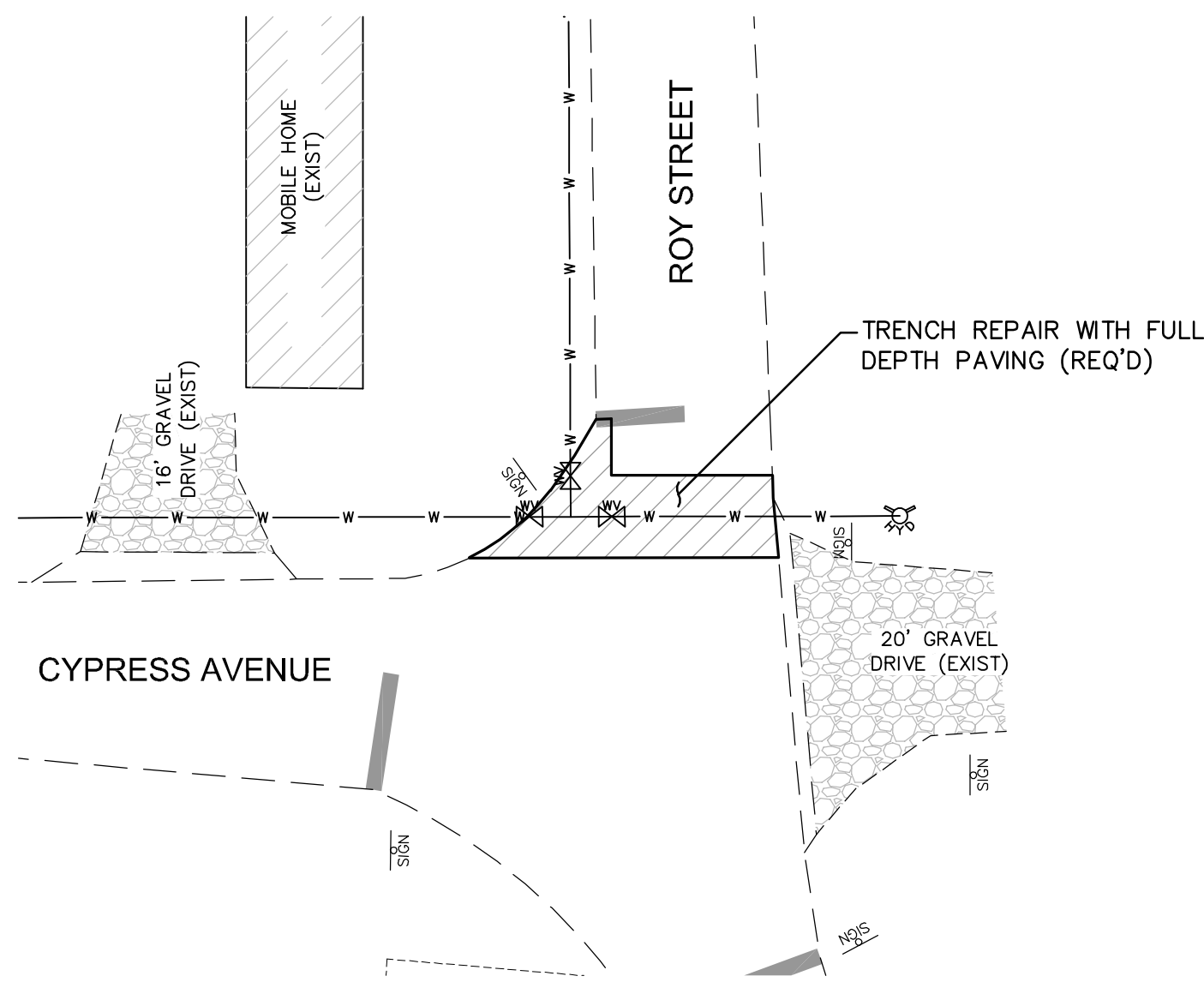
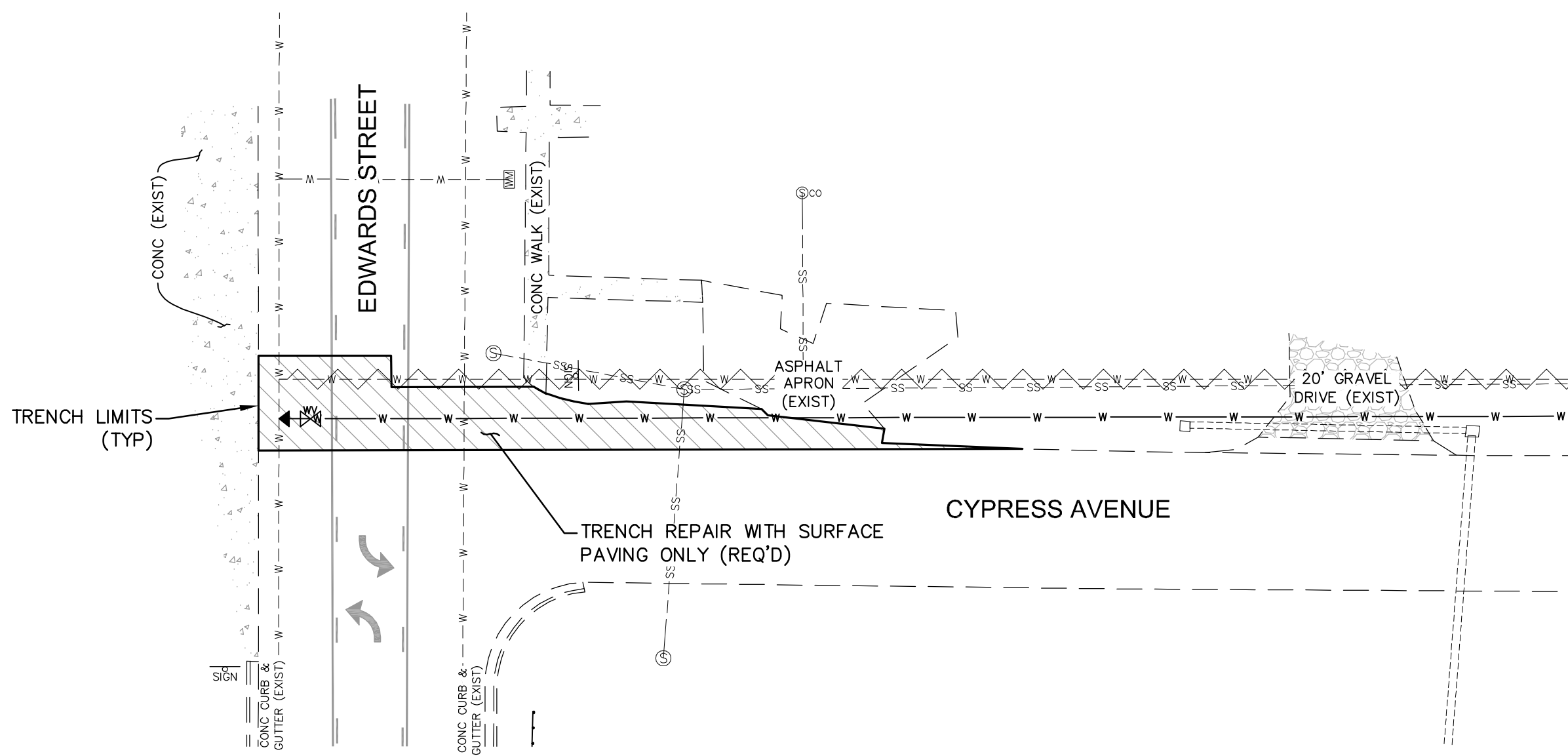
GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
 Engineering Progress			
301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. PvPln 2	
Drawing No.: 12220-002		Sheet No. 27	



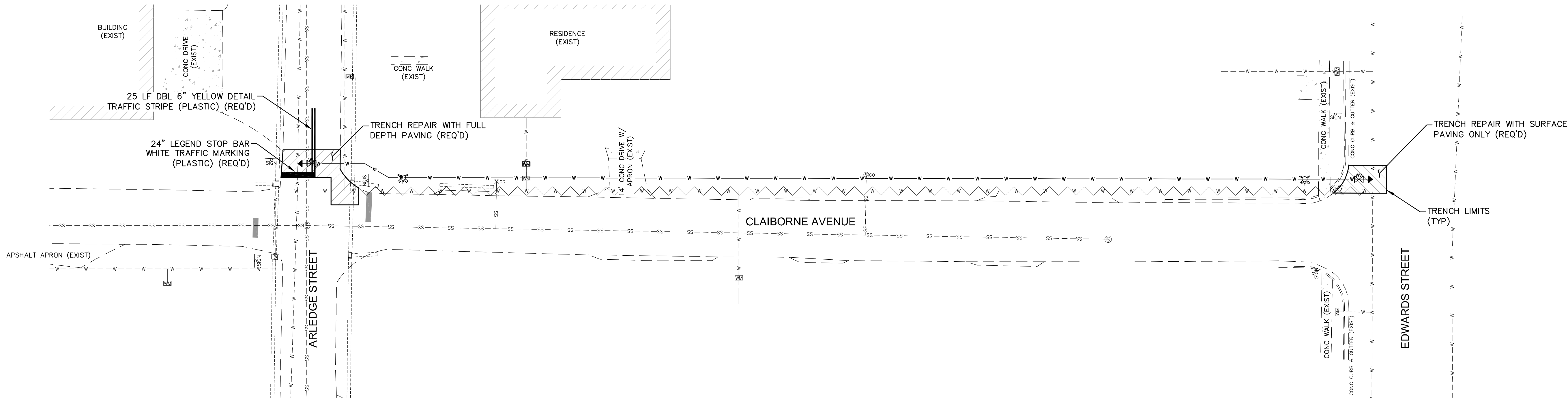
DUKE AVENUE
CYPRESS AVENUE



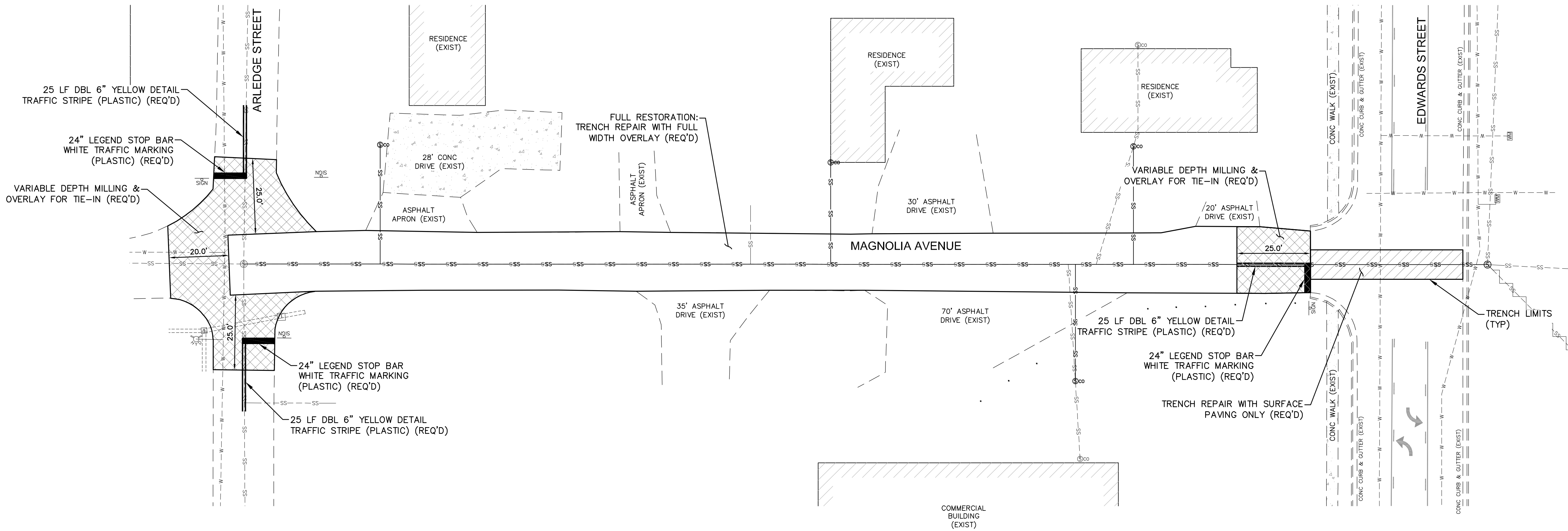
GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. PvPln 3	
Drawing No.: 12220-002		Sheet No. 28	



**CLAIBORNE AVENUE
MAGNOLIA AVENUE**

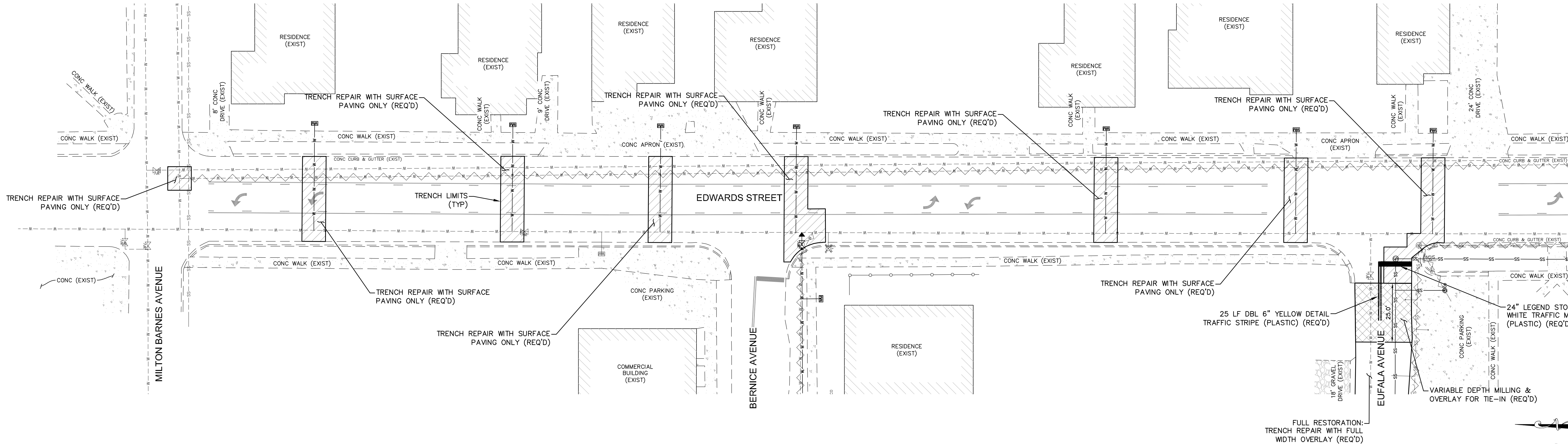


GENERAL NOTES:

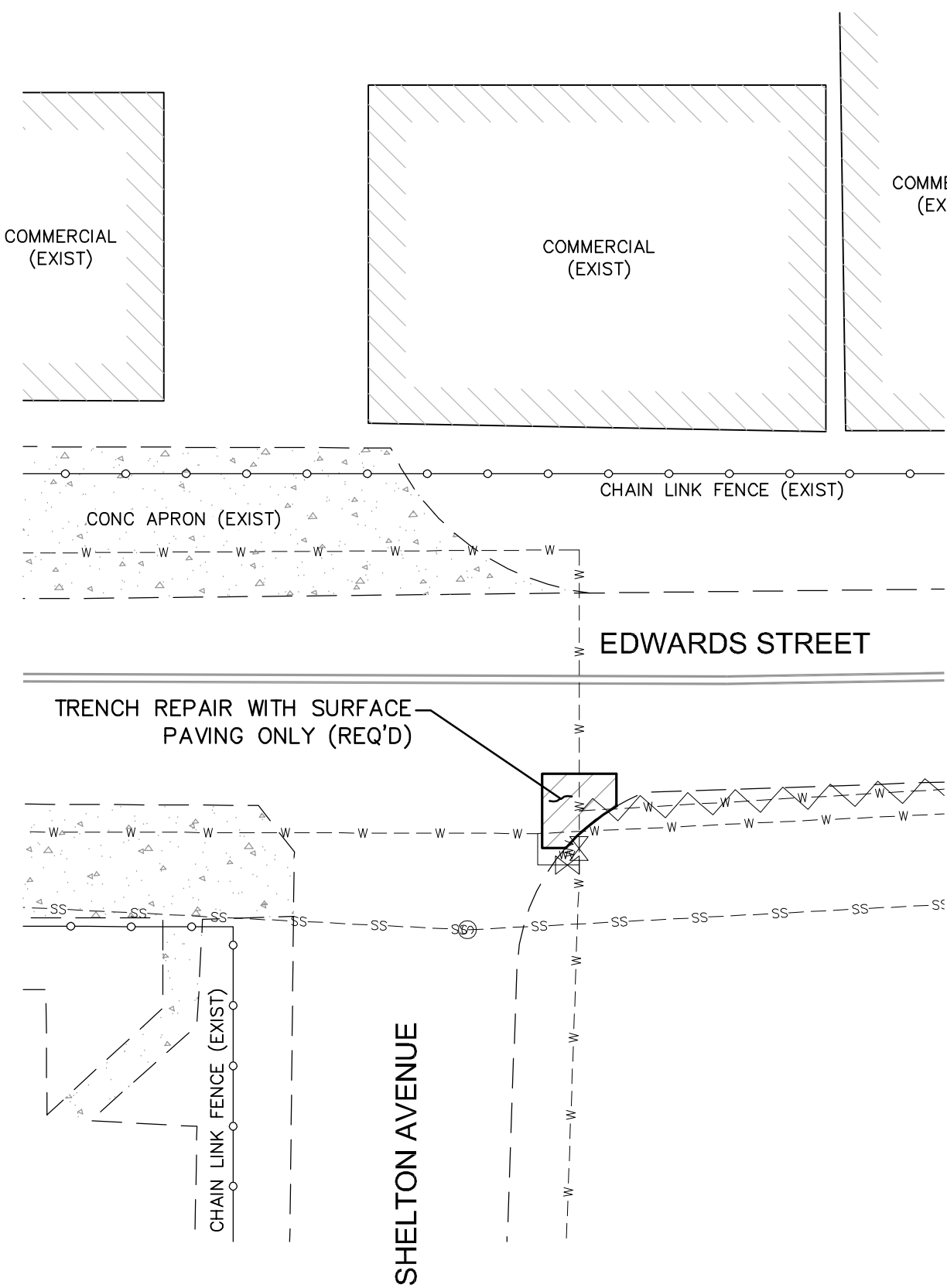
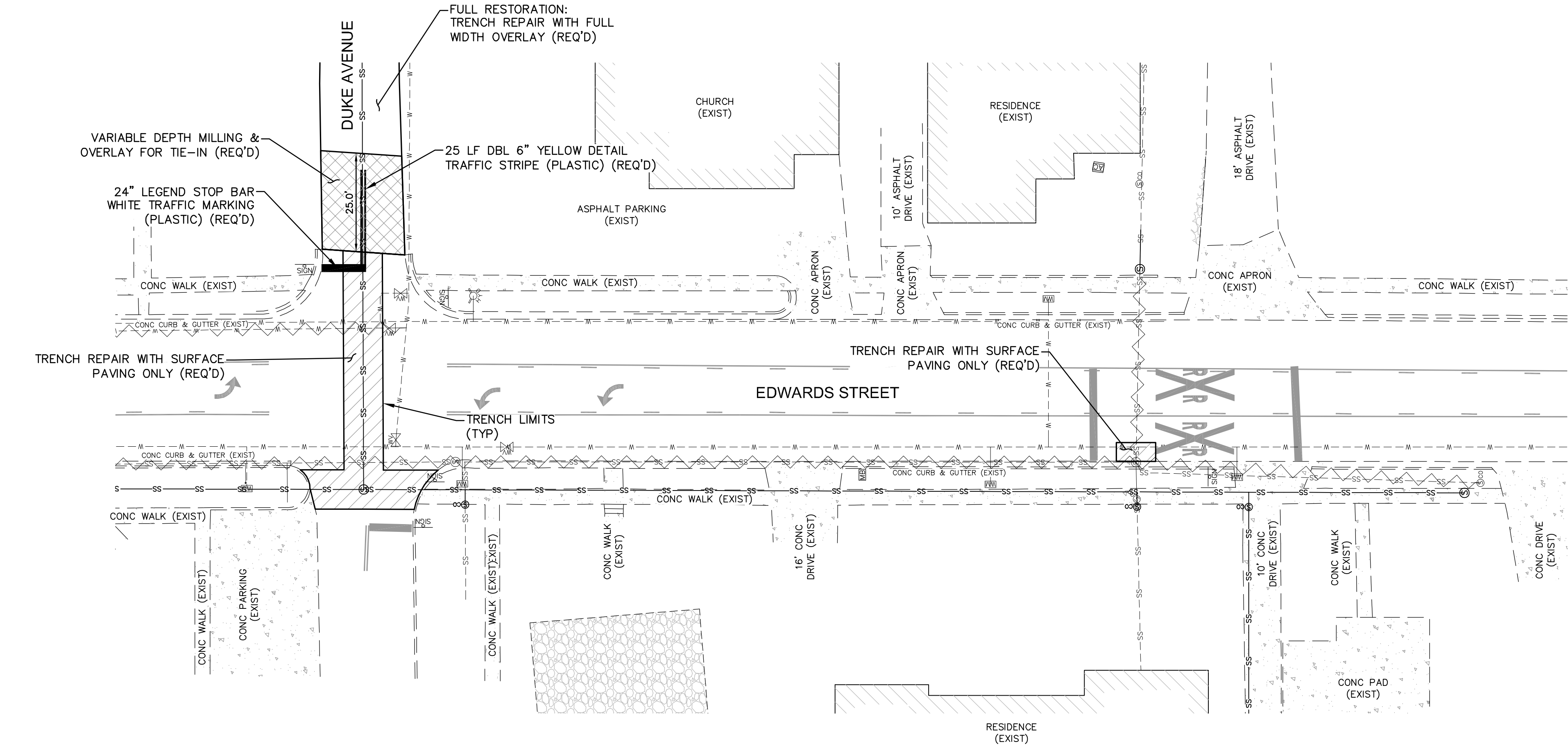
- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. PvPin 4	
Drawing No.: 12220-002		Sheet No. 29	

G:\PROJECTS\Hattiesburg_City of 12220402 - Edwards Street Infrastructure Rehabilitation\12220402 CAD Files\12220402_Plan_Paving.mxd, P:\M\5 6152021 11606 PM



EDWARDS STREET
EDWARDS STREET



GENERAL NOTES:

- ROAD NAMES SHOWN ON THIS PLAN ARE NOT PAVEMENT MARKINGS.
- PAVING LIMITS SHOWN ON THIS PLAN ARE FOR ROADWAY PAVING ONLY. DRIVEWAYS, DRIVE APRONS, SIDEWALKS, CURBS, CURBS & GUTTERS, ETC. SHALL BE RESTORED IN KIND AS REQUIRED BY CONSTRUCTION ACTIVITIES AND AS DETAILED ON THE PAVING DETAILS, UNLESS OTHERWISE DIRECTED.

NO.	DATE	DESCRIPTION	BY
PAVING & MARKING PLAN			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by: RES\SLS		Checked by: SEM	Scale: 1" = 20'
Date: 06-24-2022		Working No. PvPln 5	
Drawing No.: 12220-002		Sheet No. 30	

G:\PROJECTS\Hattiesburg_City of 122204002 - Edwards Street Infrastructure Rehabilitation\122204002\CAD Files\122204002_CoverSheet.dwg, VSI, 6/15/2022, 10:51 PM

VEGETATION SCHEDULE						
EROSION CONTROL ITEMS		SEASONAL APPLICATIONS - DATES & RATES				REQUIREMENTS
		SPRING & SUMMER		FALL & WINTER		
	ITEMS	RATES	DATES	RATES	DATES	
	TOPSOIL FOR SLOPE TREATMENT (LVM)	4" THICK	MARCH 1 TO SEPTEMBER 1	4" THICK	SEPTEMBER 1 TO MARCH 1	TOPSOIL REQUIRED ON SLOPES DETERMINED BY THE ENGINEER DURING CONSTRUCTION
	STANDARD GROUND PREPARATION	PER SQ. FT.	MARCH 1 TO SEPTEMBER 1	PER SQ. FT.	SEPTEMBER 1 TO MARCH 1	GROUND PREPARATION REQUIRED ON AREAS TO RECEIVE SOLID SODDING OR SEEDING, AS APPLICABLE
	AGRICULTURAL LIMESTONE	3 TONS / ACRE	MARCH 1 TO SEPTEMBER 1	3 TONS / ACRE	SEPTEMBER 1 TO MARCH 1	LIMESTONE SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	COMBINATION FERTILIZER (13–13–13)	1000 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	1000 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	FERTILIZER SHALL BE MECHANICALLY SPREAD UNIFORMLY AND INCORPORATED INTO THE SOIL PRIOR TO PLANTING
	SUPER PHOSPHATE	0.5 TON / ACRE (EST)	MARCH 1 TO SEPTEMBER 1			SUPER PHOSPHATE (FOR BID ITEM PURPOSES)
	SEEDING (BERMUDA GRASS)	20 LBS / ACRE	MARCH 1 TO SEPTEMBER 1	20 LBS / ACRE	SEPTEMBER 1 TO MARCH 1	SEED REQUIRED ON DISTURBED AREAS. UNHULLED SEED MAY BE REQUIRED DURING THE DORMANT SEASON AS DIRECTED
	SEEDING (TALL FESCUE)			15 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED IN DISTURBED AREAS
	SEEDING (CRIMSON CLOVER)			20 LBS / ACRE	AUGUST 15 TO MARCH 15	SEED REQUIRED ON DISTURBED AREA
	VEGETATIVE MATERIAL FOR MULCH	2 TONS / ACRE (EST)	MARCH 1 TO SEPTEMBER 1	2 TONS / ACRE (EST)	SEPTEMBER 1 TO MARCH 1	THE ENGINEER WILL DESIGNATE THE RATES OF APPLICABLE (SEE SUBSECTION 215–03.3)
	SOLID SODDING	PER SQ. YD.	MARCH 1 TO SEPTEMBER 1	PER SQ. YD.	SEPTEMBER 1 TO MARCH 1	SOLID SOD REQUIRED ON AREAS SPECIFIED IN THE CONTRACT OR BY THE ENGINEER
	WATERING	20 GAL / S.Y. (EST)	MARCH 1 TO SEPTEMBER 1	20 GAL. / S.Y. (EST)	SEPTEMBER 1 TO MARCH 1	TO BE USED AS DIRECTED IN THE PLANTING AND ESTABLISHING OF SOLID SOD
	INSECT PEST CONTROL	PER ACRE		PER ACRE		SEE SECTION 220
TEMPORARY EROSION CONTROL ITEMS						
	LIGHT GROUND PREPARATION	PER SQ. YD.		PER SQ. YD.		APPROXIMATELY HALF SQ.YD. STANDARD GROUND PREPARATION
	COMBINATION FERTILIZER (13–13–13)	0.25 TONS/ ACRE		0.25 TONS/ ACRE		QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (BROWN TOP MILLET)	20 LBS / ACRE	APRIL 1 TO AUGUST 31			QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (RYE GRASS)			25 LBS / ACRE	SEPTEMBER 1 TO MARCH 31	QUANTITY BASED ON LIGHT GROUND PREPARATION
	SEEDING (OATS)			90 LBS / ACRE	SEPTEMBER 1 TO DECEMBER 15	QUANTITY BASED ON LIGHT GROUND PREPARATION
	VEGETATIVE MATERIAL FOR MULCH	1 TON / ACRE (EST)		1 TON / ACRE (EST)		QUANTITY BASED ON LIGHT GROUND PREPARATION

- ① ALL AREAS THAT HAVE BEEN VEGETATED, UNDER THIS CONTRACT, FOR AT LEAST (60) SIXTY DAYS, SHALL RECEIVE ADDITIONAL APPLICATION(S) OF FERTILIZER(S) OF THE TYPE(S) AND RATE(S) OF APPLICATIONS AS DETERMINED BY SOIL TEST OR AS DIRECTED DURING THE GROWING SEASONS THE CONTRACT IS IN FORCE. GROUND PREPARATION WILL NOT BE REQUIRED FOR THE ADDITIONAL APPLICATIONS.
- ② PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 100% OF THE ACREAGE WILL BE SEEDED.
- ③ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE WILL BE SEEDED.
- ④ QUANTITY ESTIMATED ON THE BASIS THAT 50% OF THE ACREAGE VEGETATED MAY REQUIRED TREATMENT.
- ⑤ THIS ITEM MAY BE OMITTED ON AREAS SELECTED BY THE ENGINEER.
- ⑥ BAHIAGRASS WILL NOT BE PERMITTED AS A MULCH MATERIAL.
- ⑦ PROPOSAL QUANTITIES ESTIMATED ON THE BASIS THAT 75% OF THE ACREAGE SEEDED MAY REQUIRE TOPSOIL

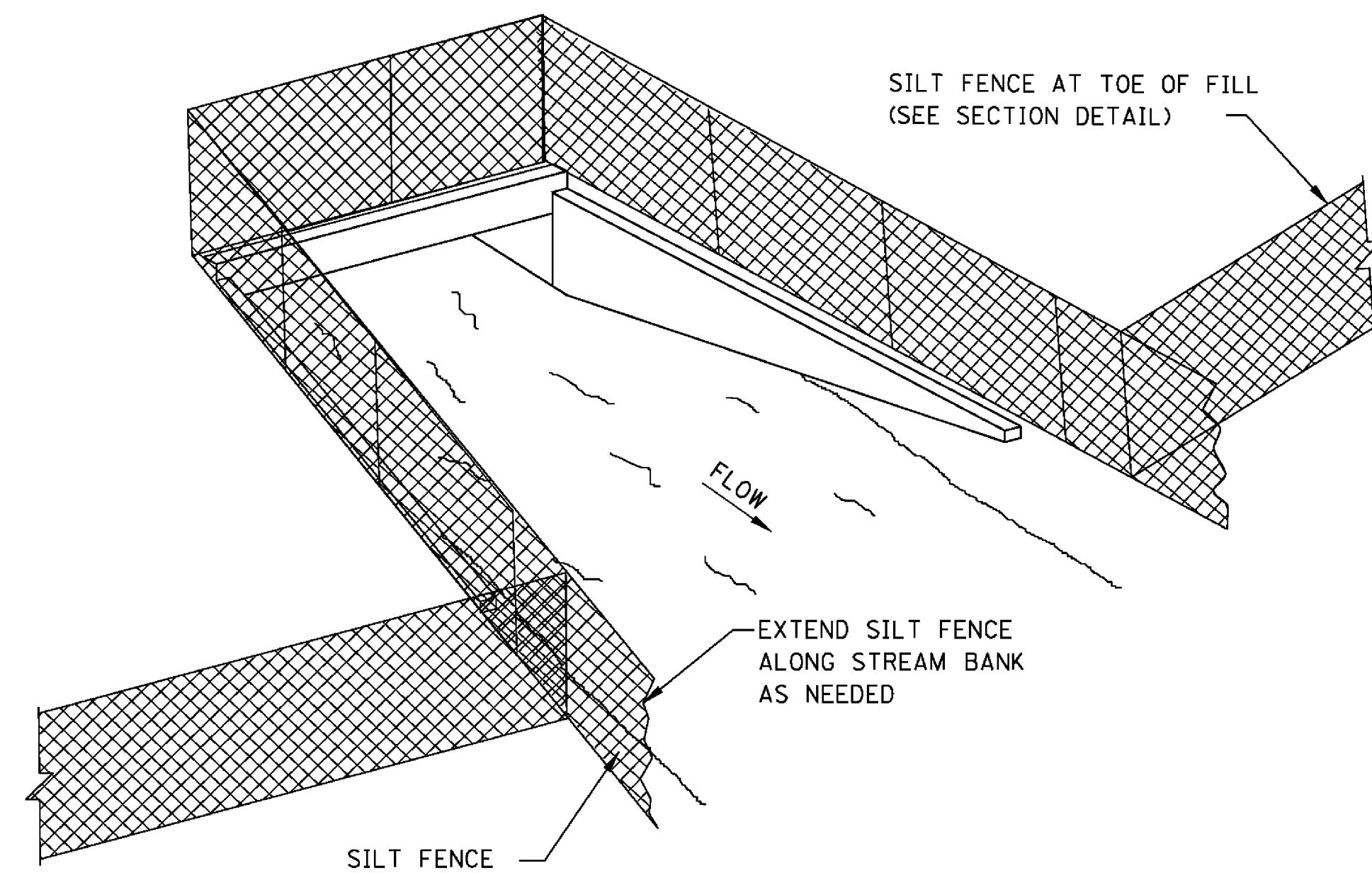
TEMPORARY EROSION CONTROL ITEMS REQUIRED FOR DETOURS

ITEM	RATE	SEASONAL LIMITATIONS
STANDARD GROUND PREPARATION	---	---
COMBINATION FERTILIZER (13-13-13)	500 LBS/ACRE	---
SEEDING (BERMUDA GRASS)	10 LBS/ACRE	---
SEEDING (TALL FESCUE)	20 LBS/ACRE	AUGUST 15 TO MARCH 15
VEGETATIVE MATERIAL FOR MULCH	2 LBS/ACRE	---

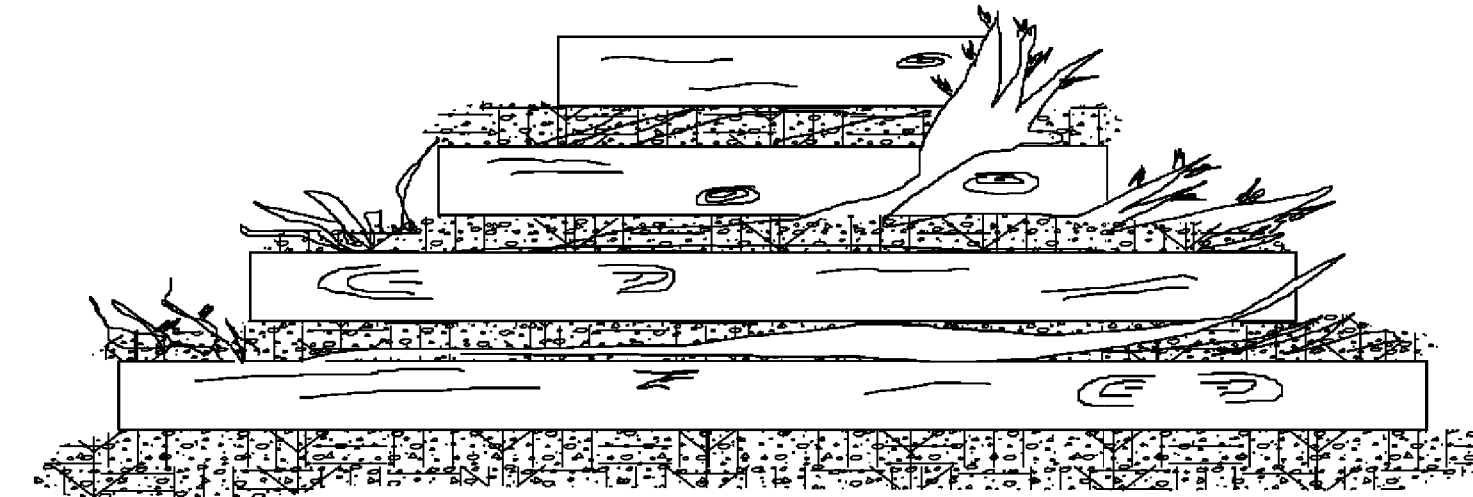
NOTE: ALL VEGETATION ON THIS PROJECT SHALL BE PAID FOR UNDER AS OUTLINED IN THE BID PROPOSAL. ITEMS SHALL BE APPLIED USING THE RATES OF APPLICATION AS SHOWN ON THIS SHEET AND WILL NOT BE MEASURED FOR SEPARATE PAYMENT.

NO.	DATE	DESCRIPTION	BY
VEGETATION SCHEDULE			
EDWARDS STREET INFRASTRUCTURE REHABILITATION			
CITY OF HATTIESBURG			
FORREST COUNTY, MISSISSIPPI			
sdw Engineering Progress 301 Second Ave. Hattiesburg, MS 39401 (p) 601.544.1821 sd-w.com			
Drawn by:	SLS	Checked by:	SEM Scale: NONE
Date:	06-24-2022	Working No.	VS1
Drawing No.:	12220-002	Sheet No.	31

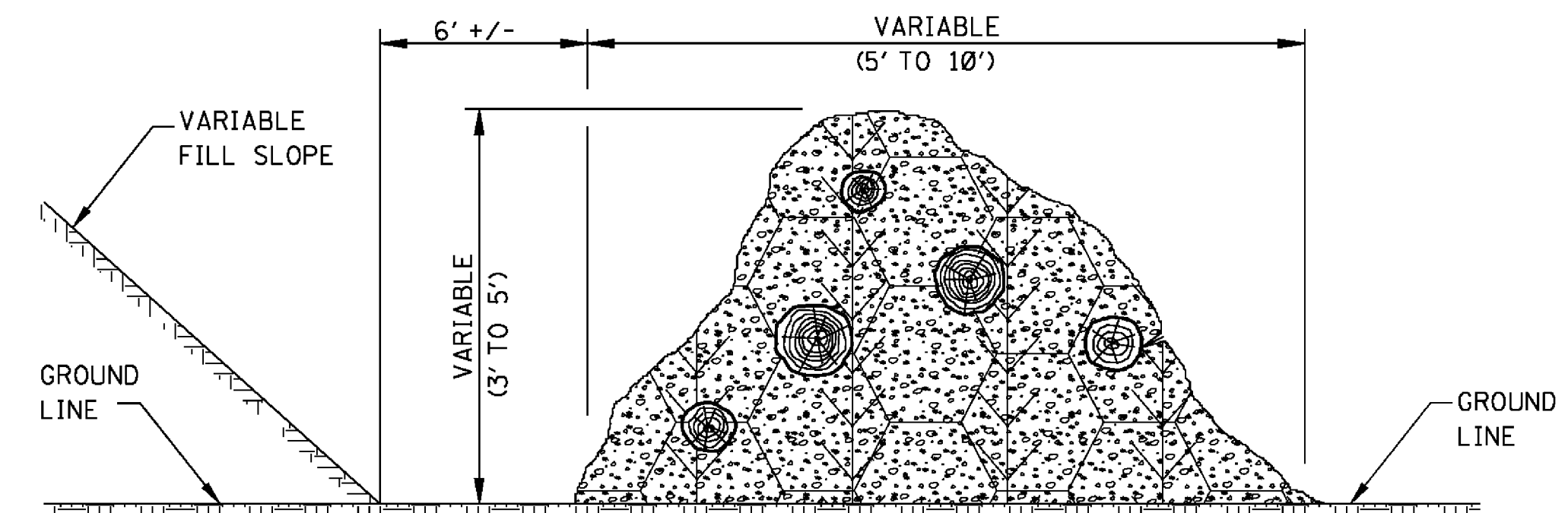
STATE	PROJECT NO.
MISS.	



SEDIMENT BARRIER AT CROSS DRAIN



FRONT ELEVATION



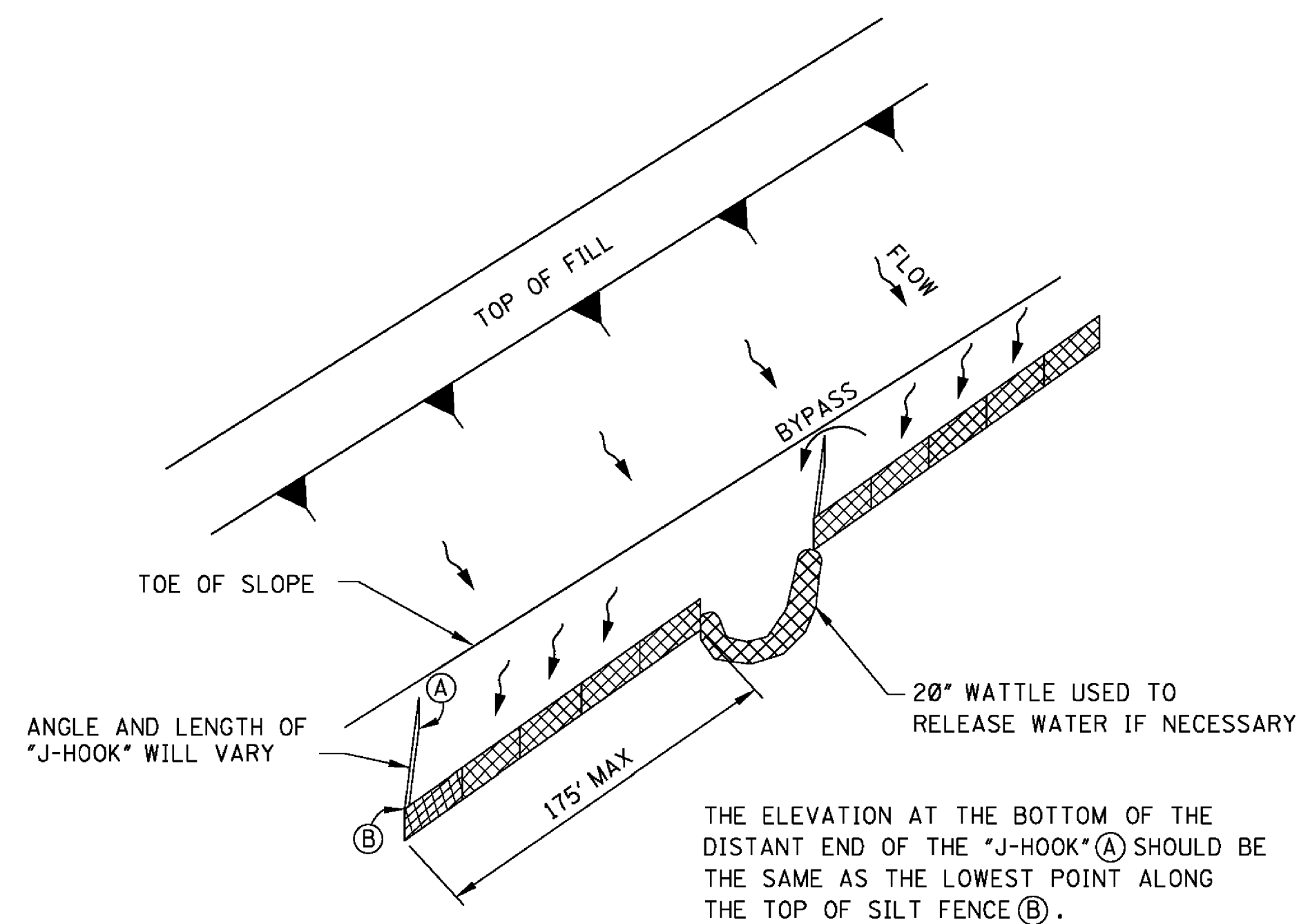
SIDE ELEVATION

TEMPORARY BRUSH BARRIER

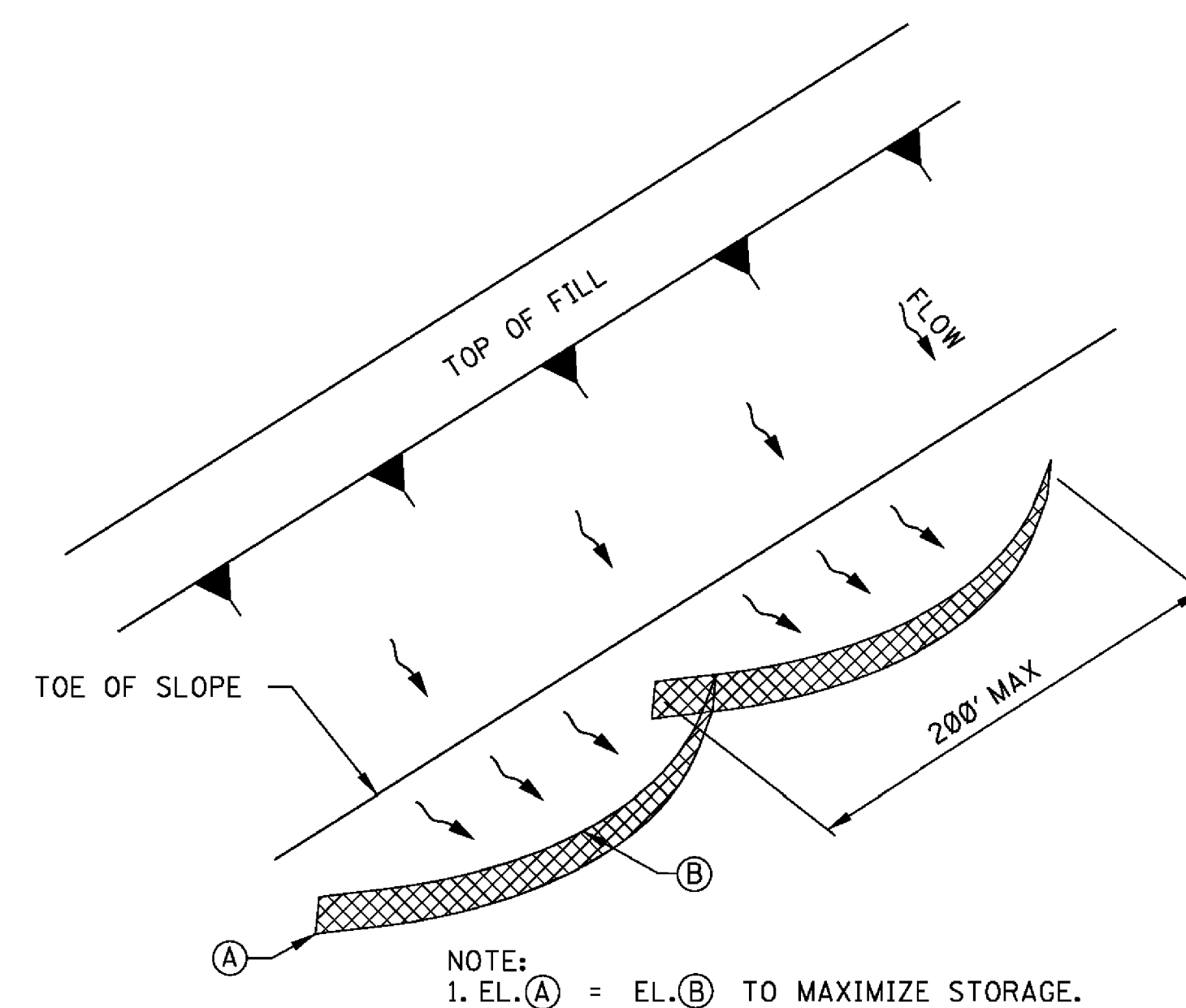
NOTES:

1. BRUSH BARRIER MAY BE USED WHERE NATURAL GROUND IS LEVEL OR SLOPING AWAY FROM PROJECT.
2. PLACE BRUSH, LOG AND TREE LAPS APPROXIMATELY PARALLEL TO TOE OF FILL SLOPE WITH SOME OF THE HEAVIER MATERIALS BEING PLACED ON TO TO PROPERLY SECURE THE BARRIER AS DETAILED AT LOCATIONS SHOWN ON PLANS OR AS DIRECTED OR PERMITTED BY THE ENGINEER.
3. TO ALLOW WATER TO SEEP THROUGH BRUSH BARRIER, INTERMINGLE THE BRUSH, LOG AND TREE LAPS SO AS NOT TO FORM A SOLID DAM.
4. THE BRUSH BARRIER MAY BE CHOKED WITH FILTER FABRIC. THE COST OF FABRIC TO BE INCLUDED IN OTHER ITEMS BID.
5. TEMPORARY BRUSH BARRIER WILL NOT BE MEASURED FOR SEPARATE PAYMENT.

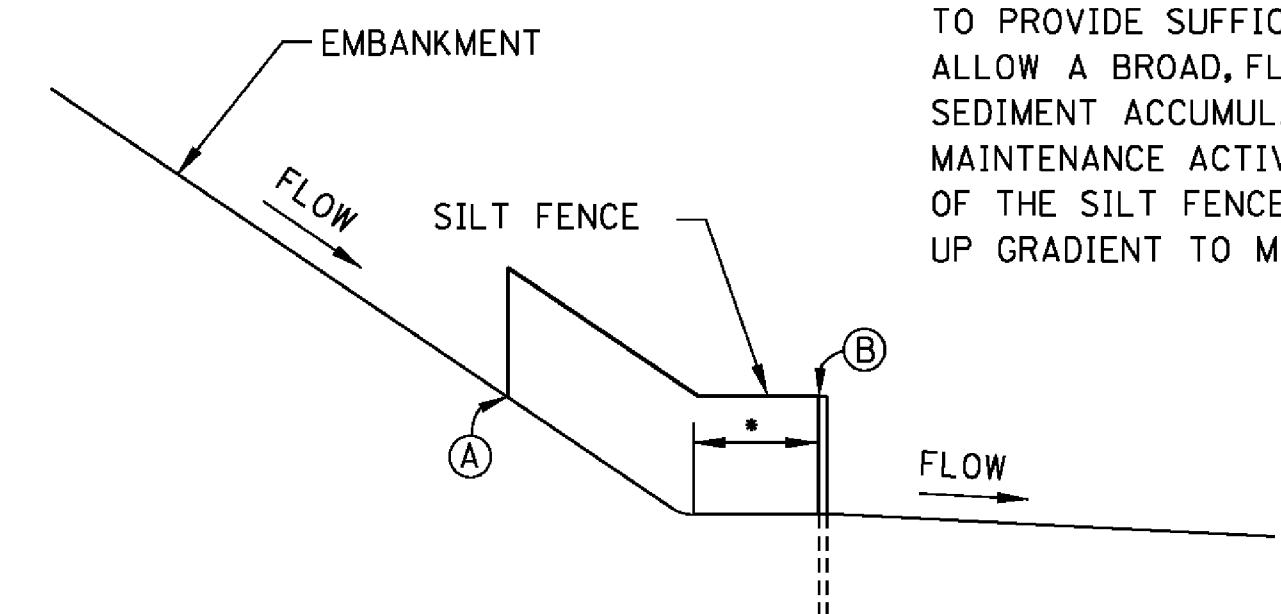
NOTE: ANCHOR AND INSTALL SILT FENCE PER DETAILS SHOWN ON WK. NO. ECD-3



"J-HOOK" SILT FENCE APPLICATION



"SMILE-CONFIGURATION" SILT FENCE APPLICATION

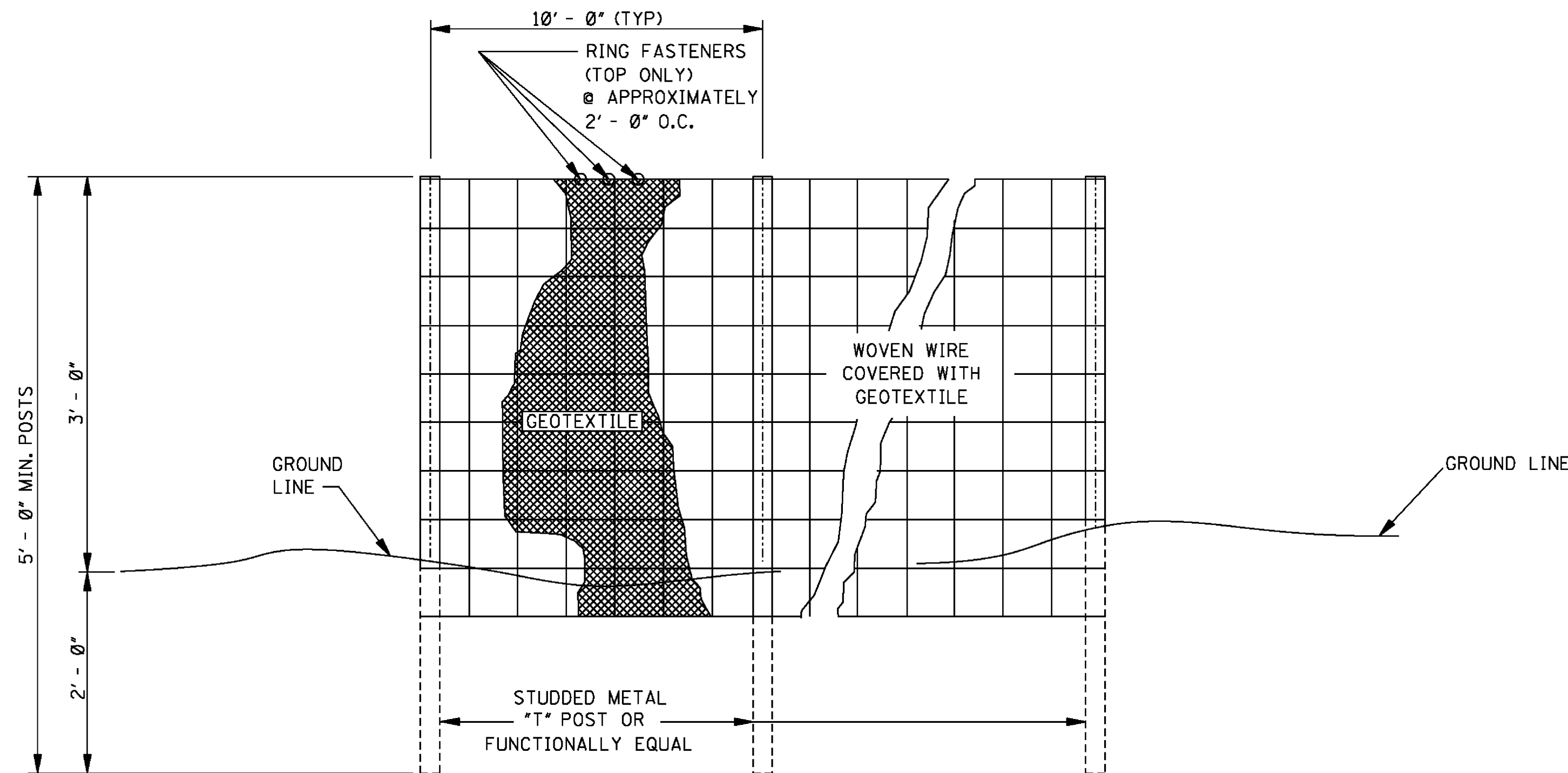


**SILT FENCE SECTION AT
TOE OF FILL**

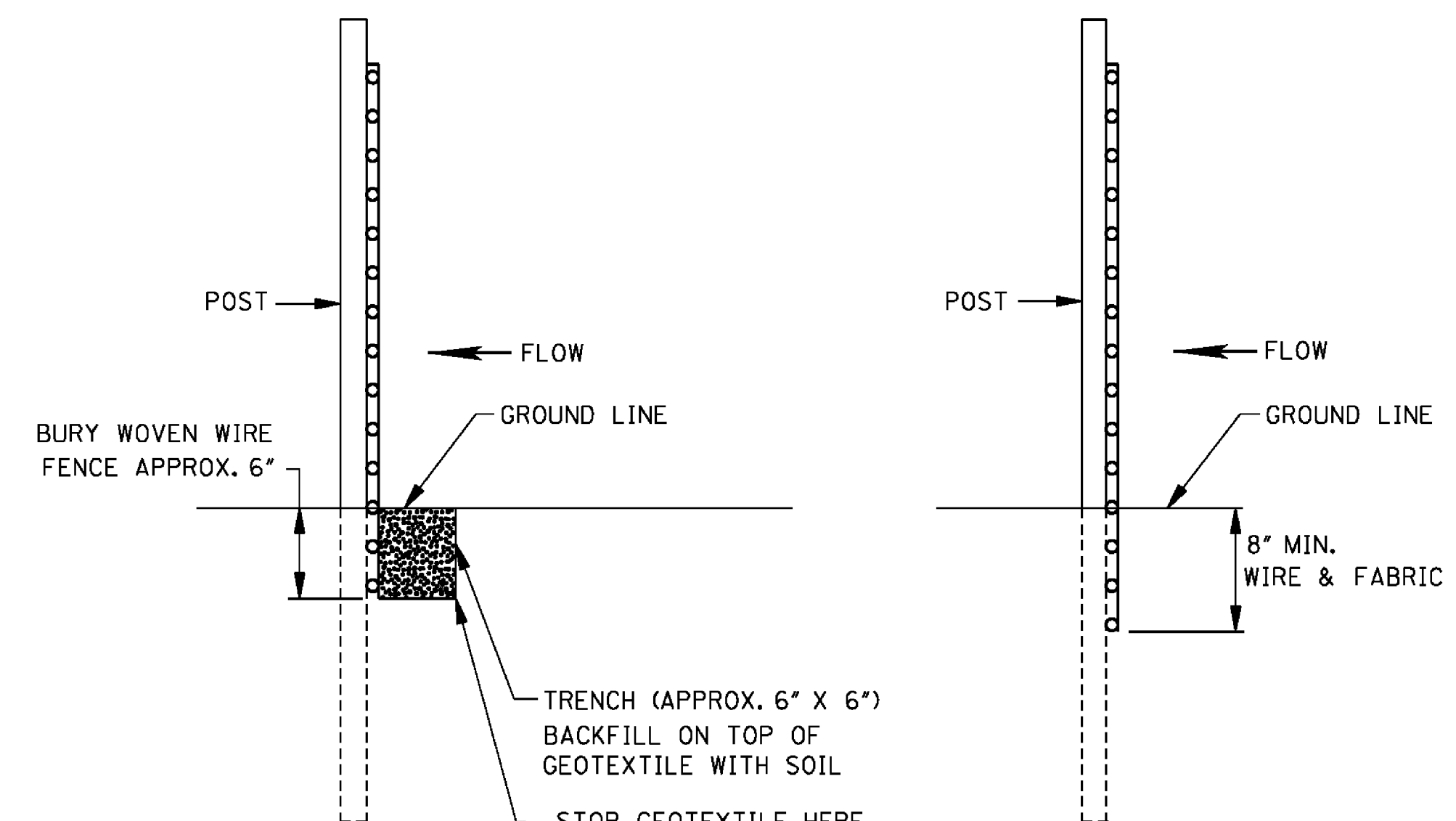
- SILT FENCE SHOULD BE LOCATED AWAY FROM THE TOE OF THE SLOPE TO PROVIDE SUFFICIENT SPACE TO ALLOW A BROAD, FLAT AREA FOR SEDIMENT ACCUMULATION AND MAINTENANCE ACTIVITIES. THE ENDS OF THE SILT FENCE SHOULD BE TURNED UP GRADIENT TO MAXIMIZE STORAGE.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
					<i>DETAILS OF SEDIMENT BARRIER APPLICATIONS</i>
				DATE	 WORKING NUMBER ECD-2 ISSUE DATE: <u> AUGUST 01, 2017 </u> SHEET NUMBER 6102

STATE	PROJECT NO.
MISS.	

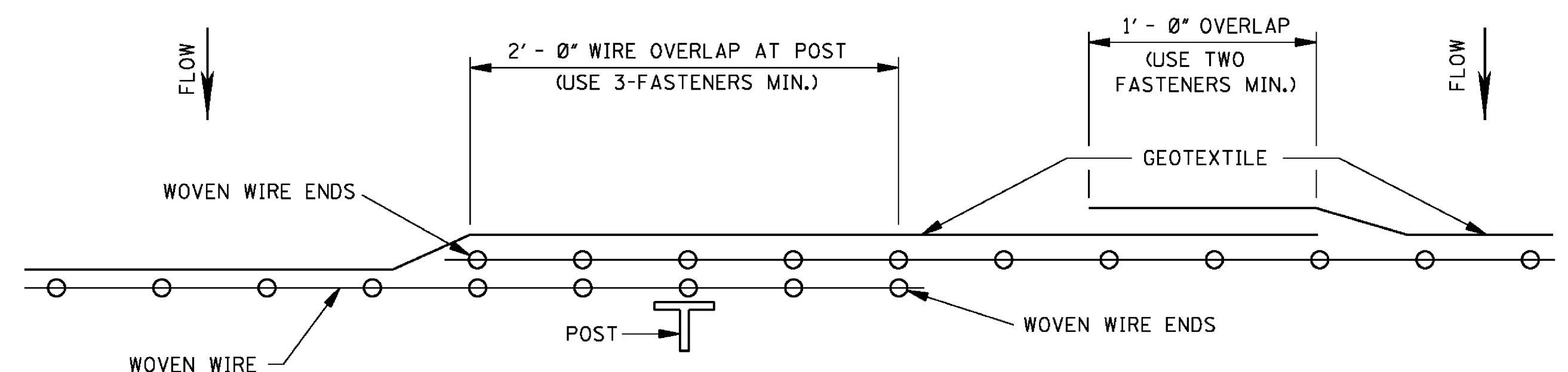


ELEVATION VIEW



METHOD I
METHOD II
MECHANICAL INSTALLATION

SIDE VIEW



PLAN VIEW
REQUIRED LAPPING

GENERAL NOTES:

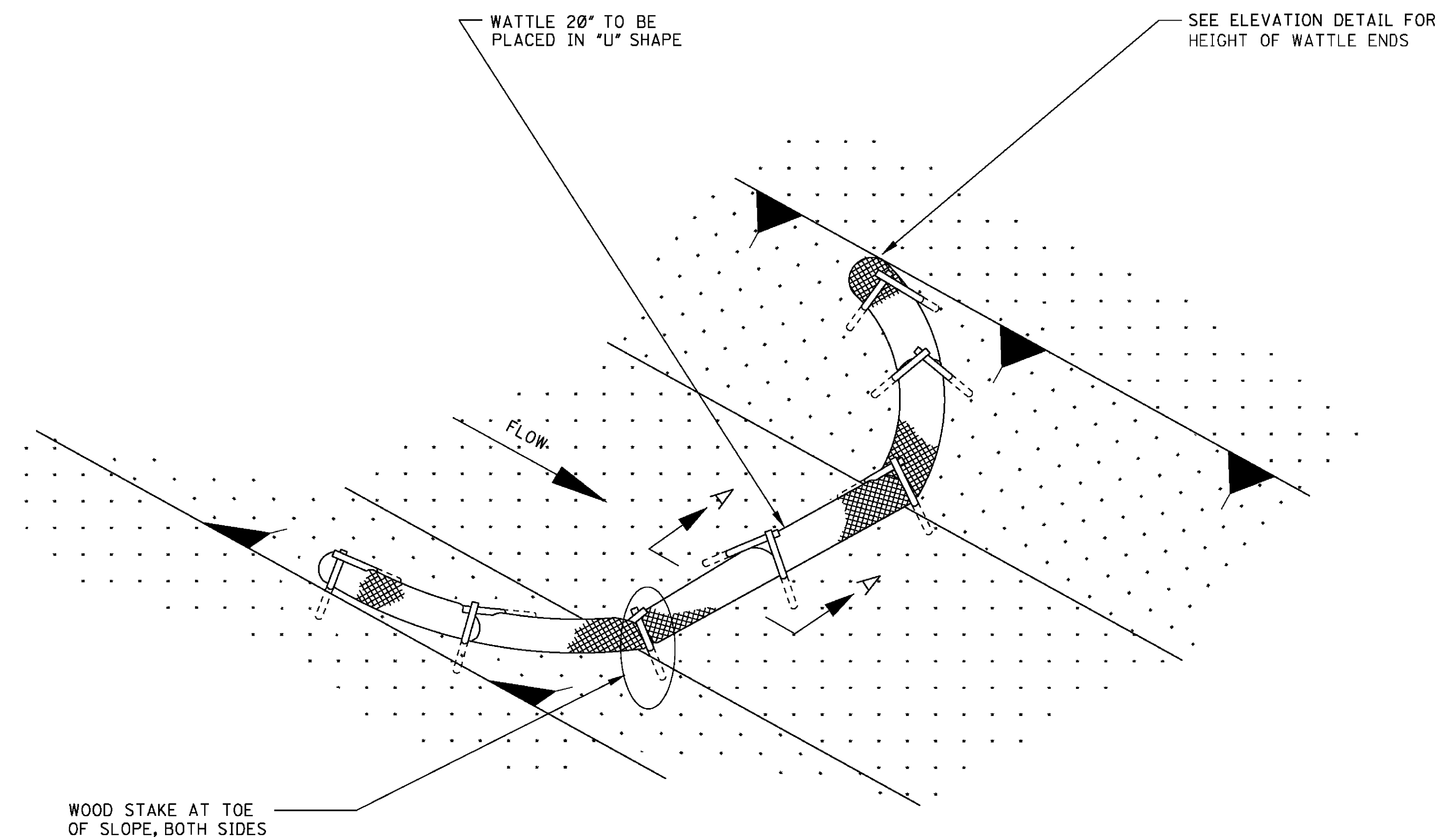
1. SILT FENCES SHOULD BE USED IN AREAS WHERE FLOW IS NOT SEVERE.
2. SILT FENCES ARE TEMPORARY SEDIMENT CONTROL ITEMS THAT SHOULD BE ERECTED OPPOSITE ERODIBLE AREAS SUCH AS NEWLY GRADED FILL SLOPES AND ADJACENT TO STEAMS AND CHANNELS.
3. SILT FENCE SHOULD BE PLACED WELL INSIDE RIGHT-OF-WAY AND ALONG EDGE OF CLEARING LIMITS. THIS WILL ALLOW ROOM FOR BACK-UP FENCE IF FIRST FENCE BECOMES FULL.
4. WHENEVER POSSIBLE SILT FENCE SHOULD BE CONSTRUCTED ACROSS A LEVEL AREA IN THE SHAPE OF A SMILE. THIS AIDS IN PONDING OF RUNOFF AN FACILITATES SEDIMENTATION.
5. THE CONTRACTOR MAY ELECT TO USE EITHER METHOD I OR METHOD II. COST TO BE LINEAR FEET OF SILT FENCE.
6. METHOD II INSTALLATION SHALL BE ACCOMPLISHED USING AN IMPLEMENT THAT IS MANUFACTURED FOR THE APPLICATION AND PROVIDES A CONFIGURATION MEETING THE REQUIREMENTS OF DETAIL.
7. WIRE SHALL BE A MINIMUM OF 32" IN WIDTH AND SHALL HAVE A MINIMUM OF 6 LINE WIRES WITH 12" STAY SPACING.
8. GEOTEXTILE FABRIC MEETING THE TYPE II MATERIAL REQUIREMENTS AND INSTALLED ACCORDING TO SPECIFICATION MAY BE USED WITHOUT WIRE FENCE.

					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
					REVISION	
					DATE	ISSUE DATE: AUGUST 01, 2017

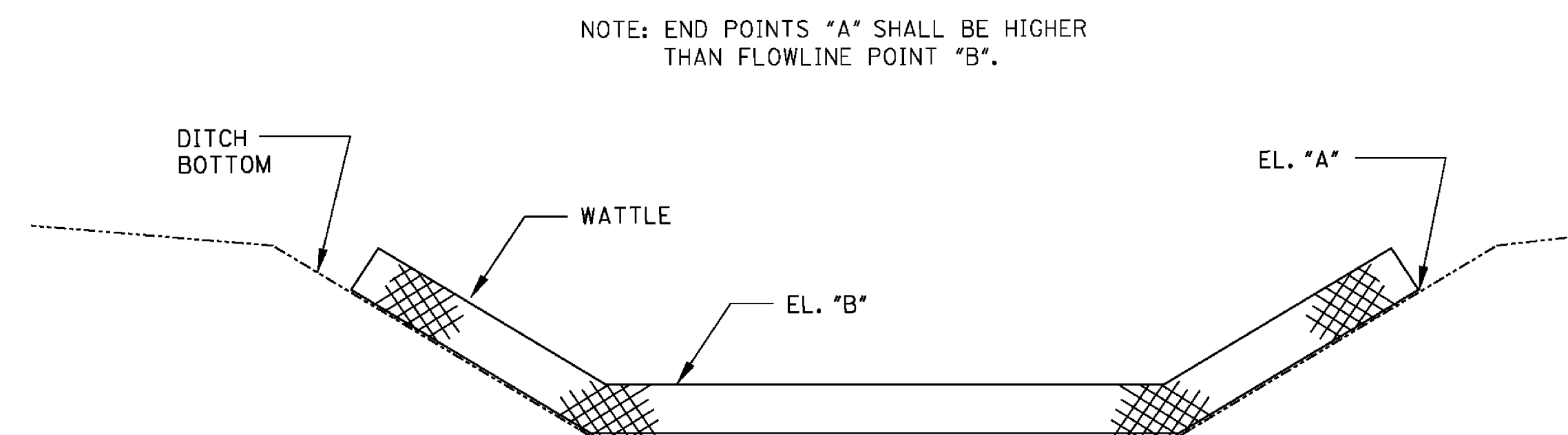
**DETAILS OF SILT
FENCE INSTALLATION**

MDOT
WORKING NUMBER
ECD-3
SHEET NUMBER
6103

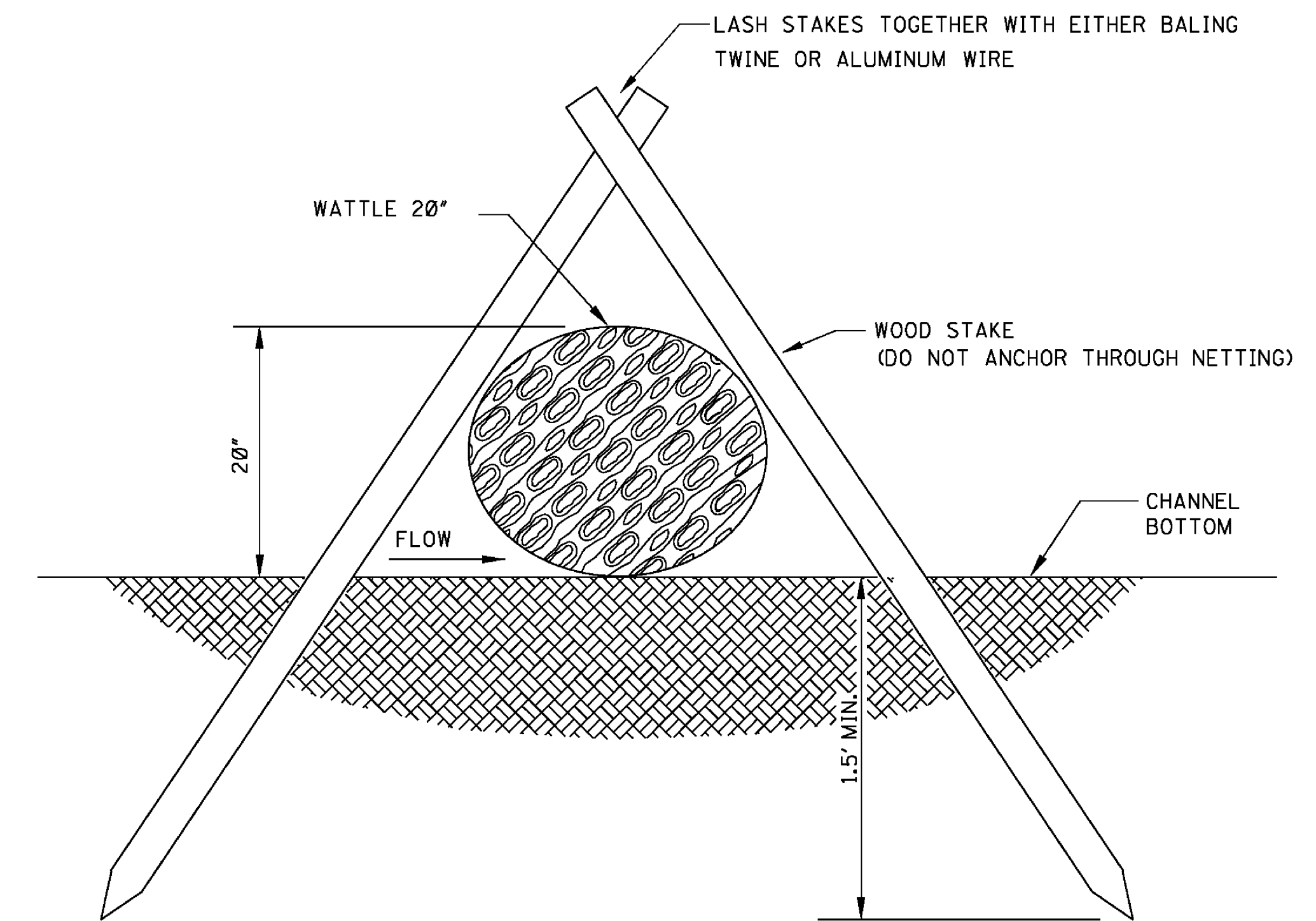
STATE	PROJECT NO.
MISS.	



DETAIL (DITCH CHECK)



ELEVATION DETAIL



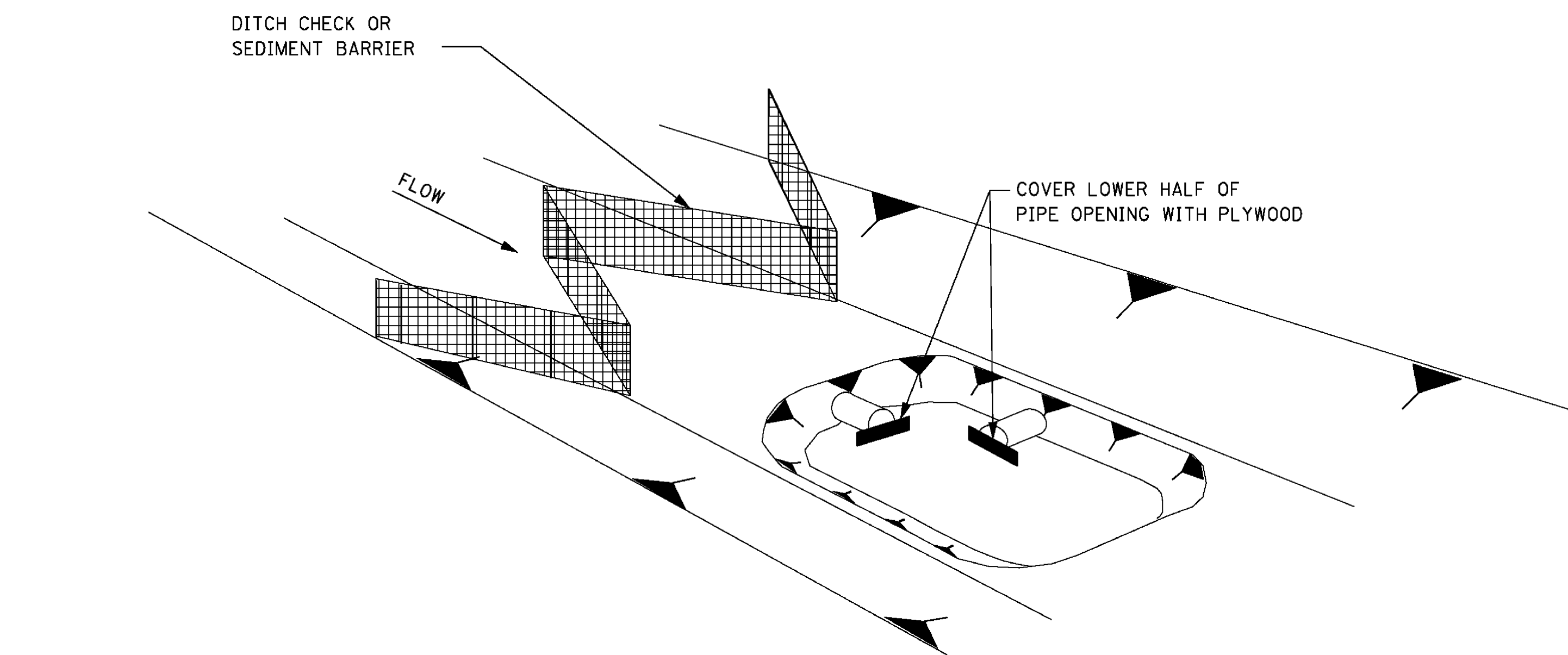
SECTION A-A

NOTES:

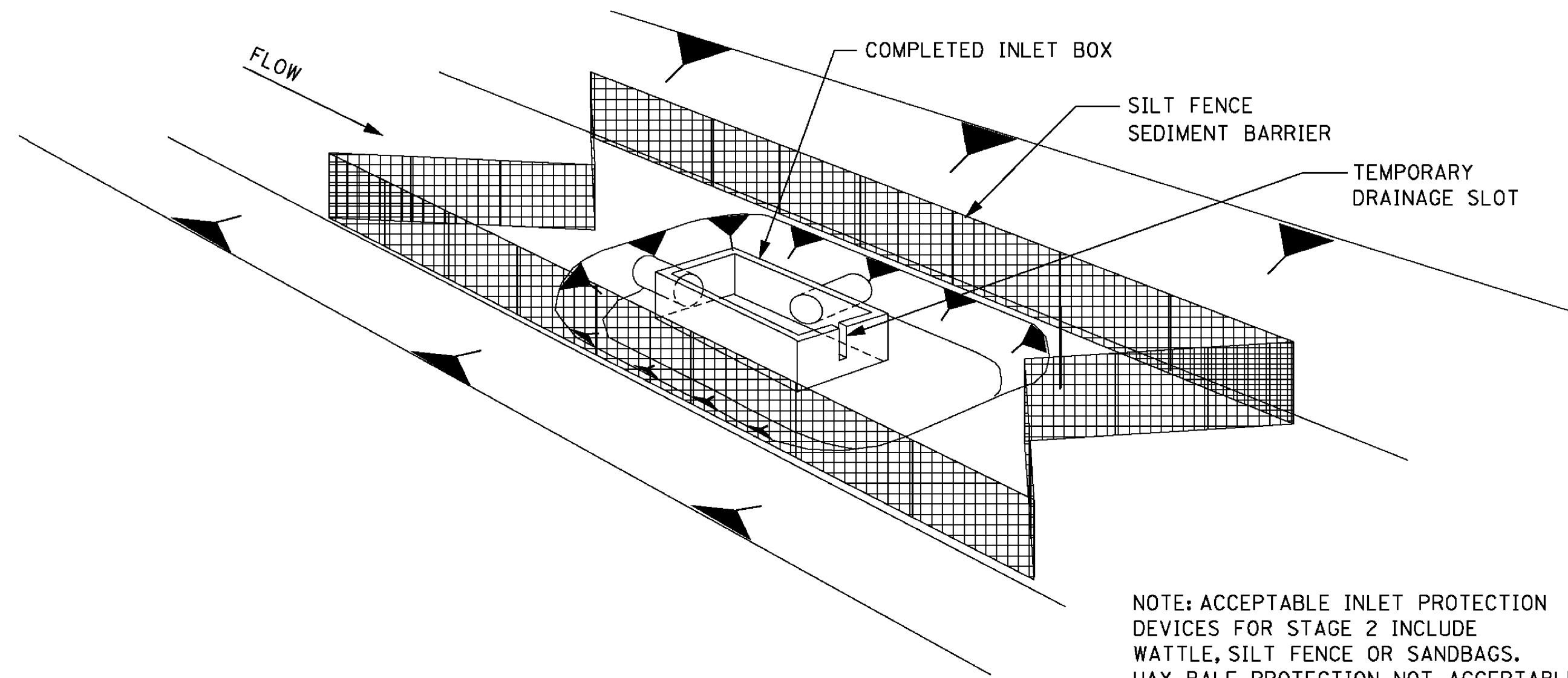
1. WATTLE DITCH CHECKS CAN BE USED FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.
2. THE PLACEMENT INTERVAL BETWEEN WATTLE DITCH CHECK SHALL BE 100' UNLESS SHOWN OTHERWISE ON THE PLANS OR EROSION CONTROL PLAN APPROVED BY THE ENGINEER. SEE SPACING GUIDANCE ON WK. NO. ECD-4.
3. ANCHORING WOOD STAKES SHALL BE SIZED, SPACED, DRIVEN, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE CHECK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET. ALL NON-DEGRADABLE MATERIALS SHALL BE REMOVED WHEN NO LONGER NEEDED.
4. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
5. WATTLES SHOULD NOT BE USED IN HARD BOTTOM CHANNELS.
6. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SAND BAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE THE WATTLES IN PLACE. IF SANDS BAGS ARE USED IN THIS APPLICATION THEY WILL NOT BE A SEPARATE PAY ITEM.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
				DATE	DETAILS OF EROSION CONTROL WATTLE DITCH CHECK  WORKING NUMBER ECD-6 SHEET NUMBER 6106
				DATE	ISSUE DATE: <u> AUGUST 01, 2017 </u>

STATE	PROJECT NO.
MISS.	

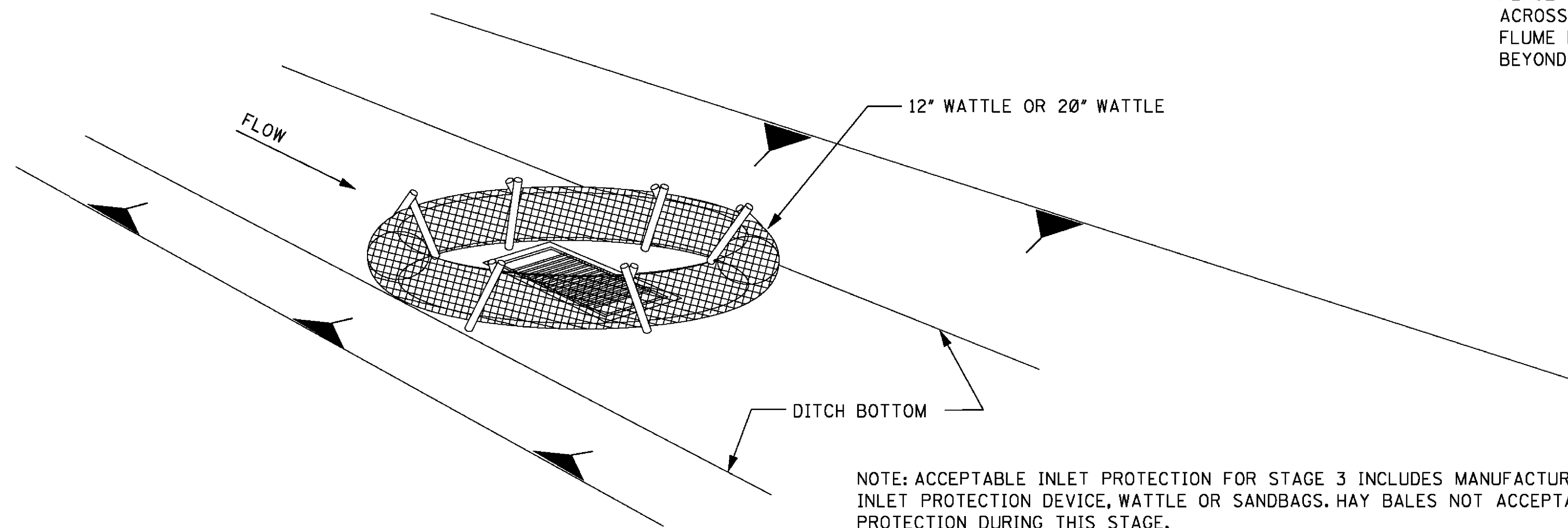


STAGE 1
INLET/JUNCTION BOX LOCATION EXCAVATED



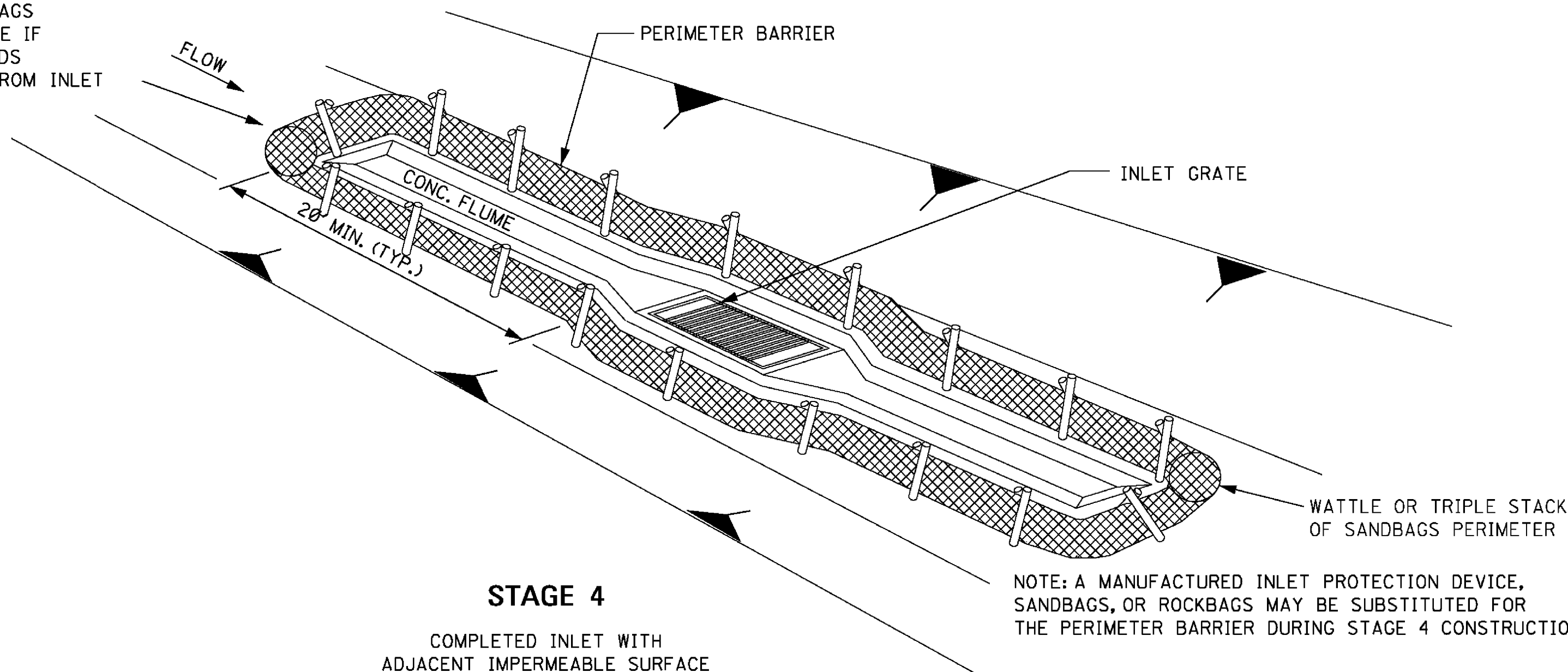
STAGE 2
INLET/JUNCTION BOX
CONSTRUCTED BUT NOT BACKFILLED

NOTE: ACCEPTABLE INLET PROTECTION DEVICES FOR STAGE 2 INCLUDE WATTLE, SILT FENCE OR SANDBAGS. HAY BALE PROTECTION NOT ACCEPTABLE DURING THIS PHASE.



STAGE 3
INLET CONSTRUCTED AND BACKFILLED

PLACE SANDBAGS
ACROSS FLUME IF
FLUME EXTENDS
BEYOND 20' FROM INLET



STAGE 4
COMPLETED INLET WITH
ADJACENT IMPERMEABLE SURFACE

NOTE: A MANUFACTURED INLET PROTECTION DEVICE, SANDBAGS, OR ROCKBAGS MAY BE SUBSTITUTED FOR THE PERIMETER BARRIER DURING STAGE 4 CONSTRUCTION.

DITCH INLET CONSTRUCTION STAGES

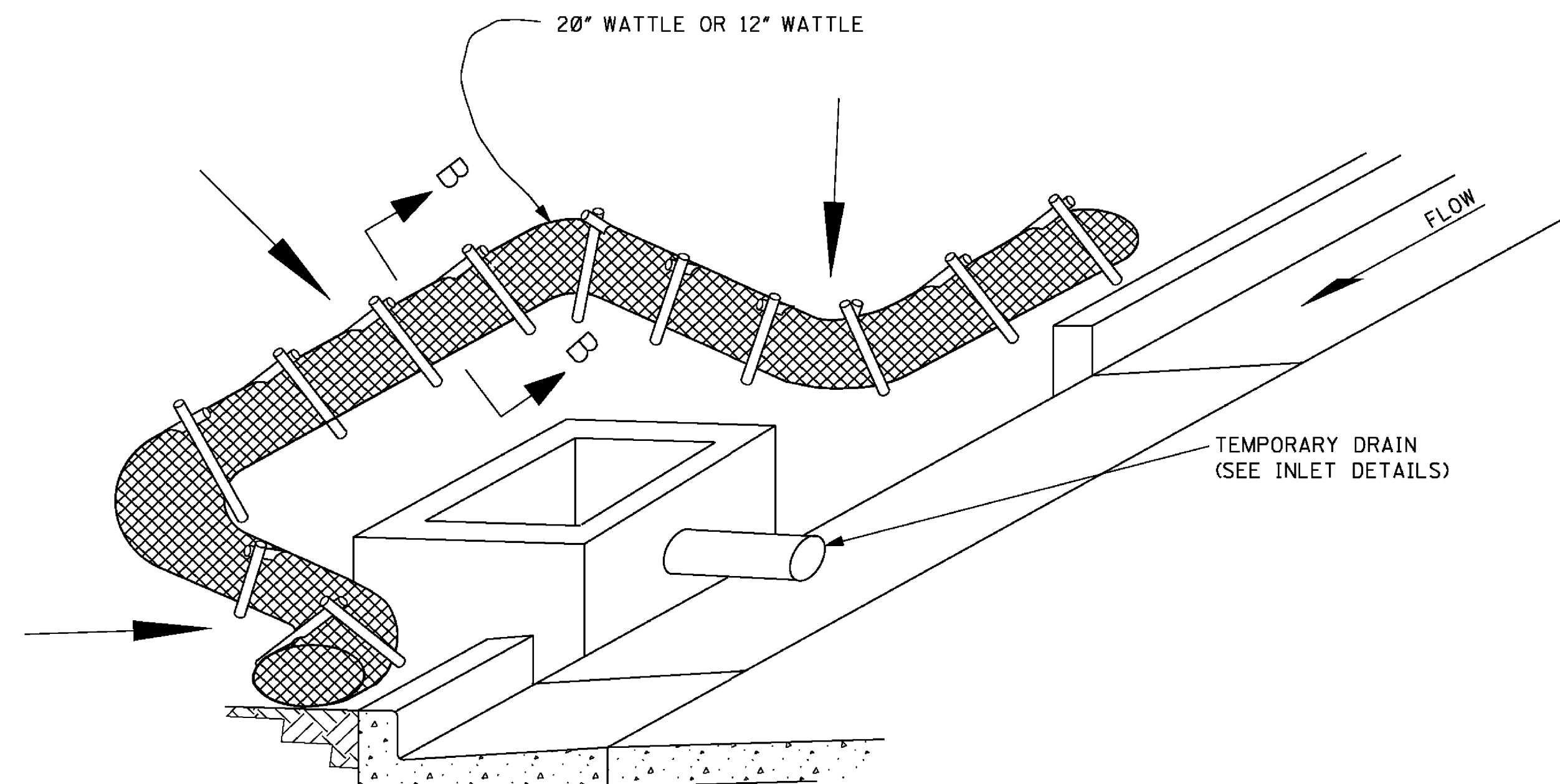
NOTES:

- DRAINAGE STRUCTURE BACKFILL SHOULD BE PLACED IN STAGE 1 IMMEDIATELY AFTER PIPE INSTALLATION. INLET CONSTRUCTION SHOULD COMMENCE AS SOON AS POSSIBLE AND BE CONTINUOUS THROUGH COMPLETION.
- CONFIGURATIONS MAY BE ADJUSTED WITH APPROVAL OF THE ENGINEER FOR TRAVELWAY SAFETY, WATER FLOW, OR SOIL AND INSTALLATION CHALLENGES.
- DURING STAGE 1 AND STAGE 2, SILT FENCE MAY BE REQUIRED UPSLOPE OF THE INLET EXCAVATION AS DIRECTED BY THE ENGINEER.
- IF SILT FENCE IS INSTALLED AROUND THE INLET INSTALLATION IT SHOULD BE IN A CONFIGURATION THAT WILL ALLOW INLET CONSTRUCTION.
- FOR INLET PROTECTION TO BE USED IN STAGES 1 AND 2 OF CONSTRUCTION, SEE WK. NO. ECD-12.

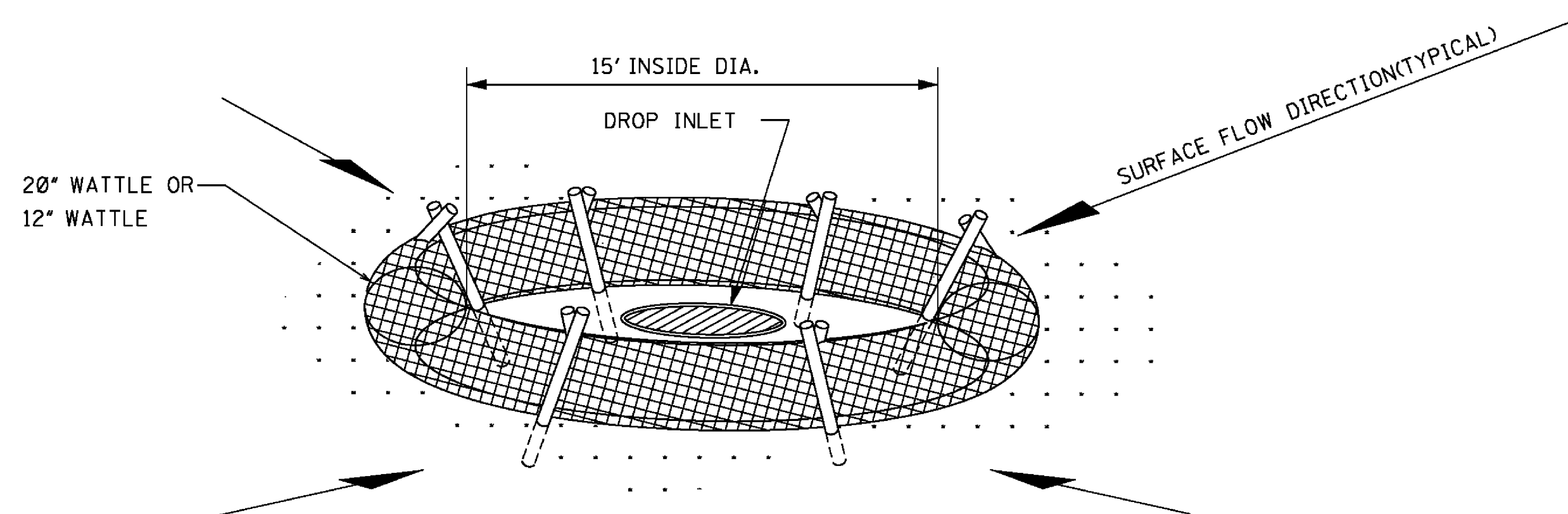
					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
					REVISION	TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION
					DATE	ISSUE DATE: AUGUST 01, 2017
						WORKING NUMBER ECD-11
						SHEET NUMBER 6111

STATE	PROJECT NO.
MISS.	

NOTE: SILT FENCE OR SANDBAGS MAY ALSO BE USED FOR THIS APPLICATION.
HAY BALES NOT ACCEPTABLE DURING THIS STAGE.



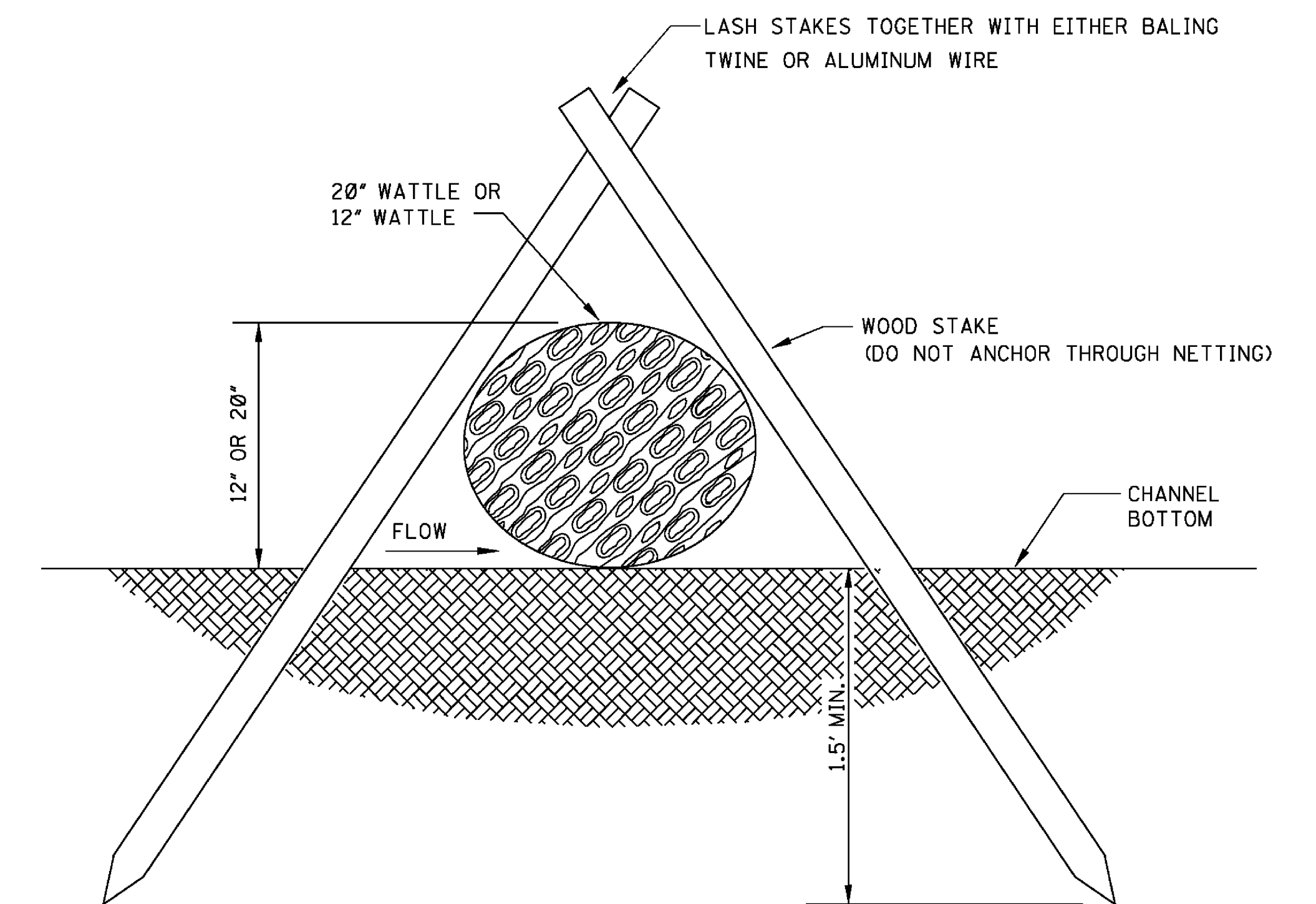
CURB INLET PROTECTION (STAGE 2)
SINGLE OR DOUBLE WING INLET



DROP INLET PROTECTION

NOTES:

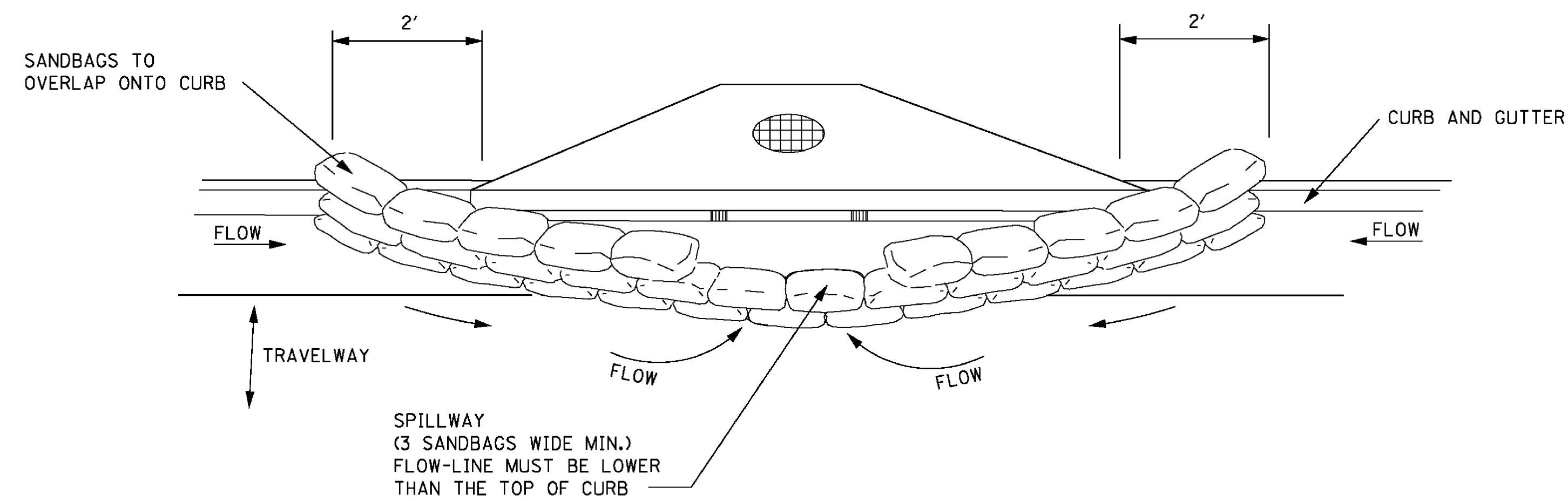
1. ANCHORING STAKES SHALL BE SIZED, SPACED, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE WATTLE. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET.
2. OVERLAP ENDS OF WATTLES PER MANUFACTURER'S RECOMMENDATIONS (1' MIN., 3' MAX.)
3. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
4. IN THE EVENT WATTLES CANNOT BE SECURED IN PLACE USING WOOD STAKES, SANDBAGS MAY BE USED IN LIEU OF WOOD STAKES IN ORDER TO SECURE WATTLES IN PLACE. COST OF SANDBAGS USED IN THIS APPLICATION SHALL BE INCLUDED IN OTHER ITEMS BID.



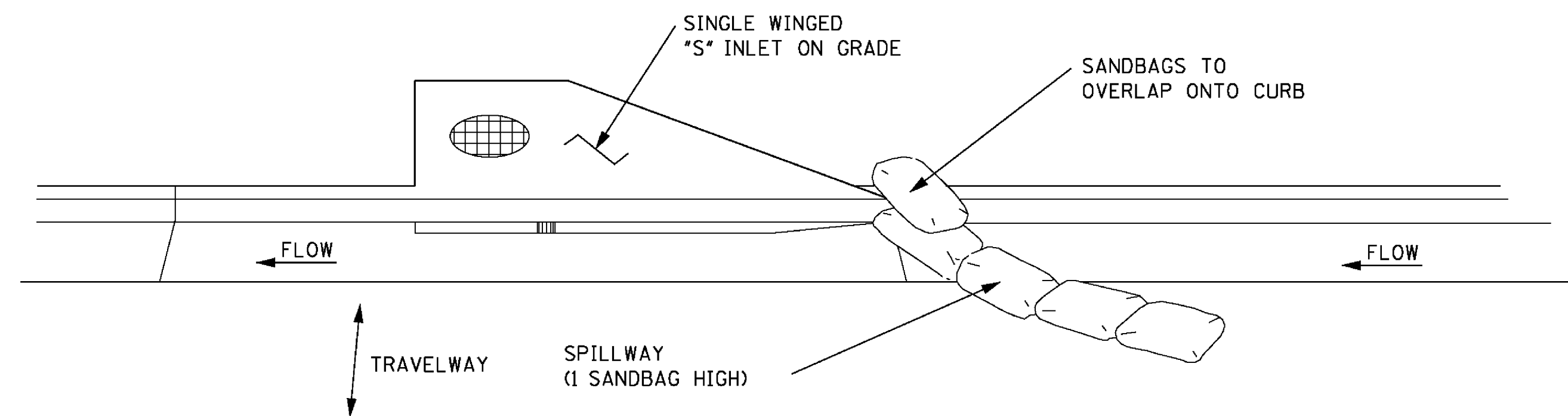
SECTION B-B

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
					<i>INLET PROTECTION DETAILS OF WATTLES</i>
				DATE	 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-13 ISSUE DATE: <u> AUGUST 01, 2017 </u> SHEET NUMBER 6113

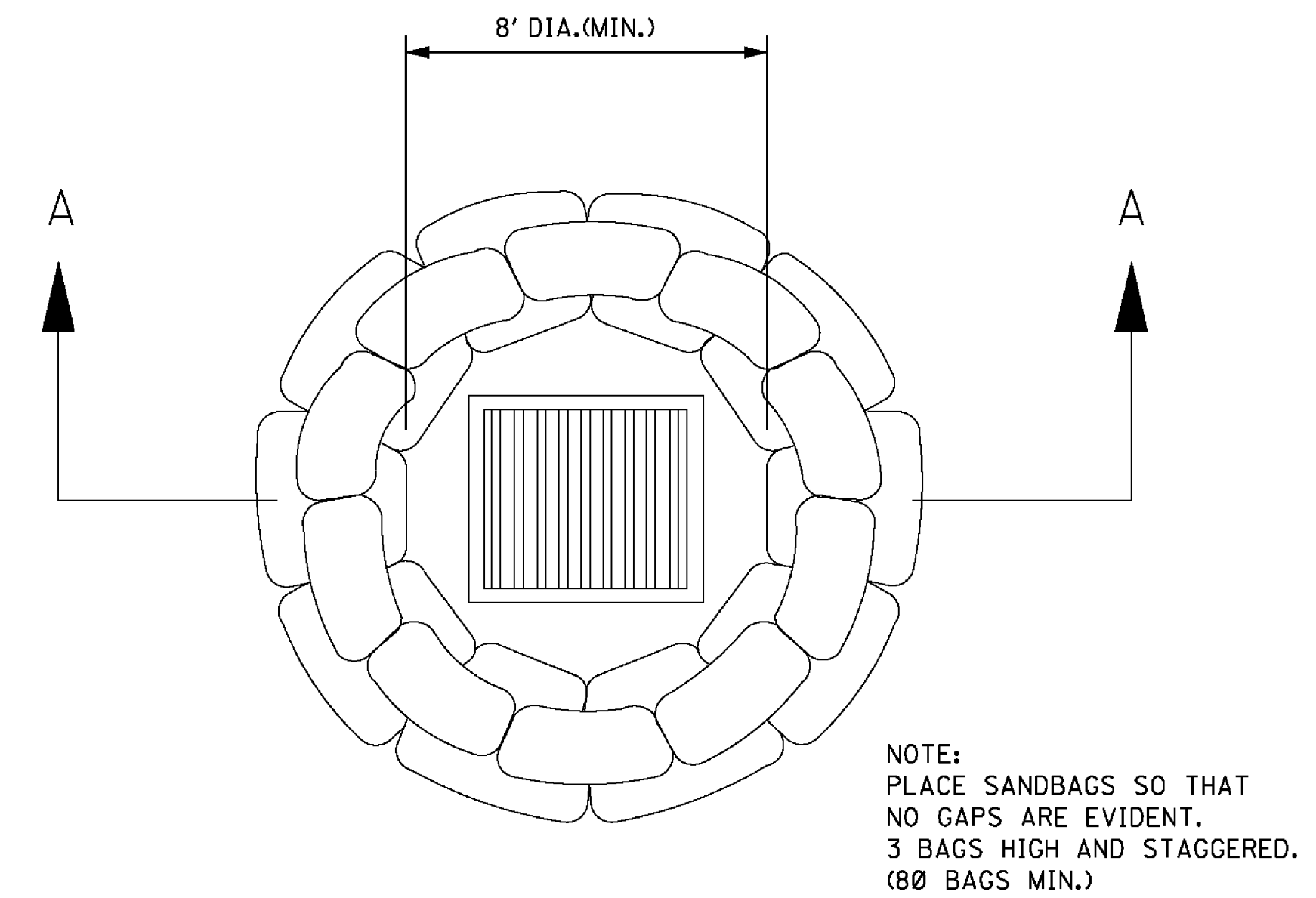
STATE	PROJECT NO.
MISS.	



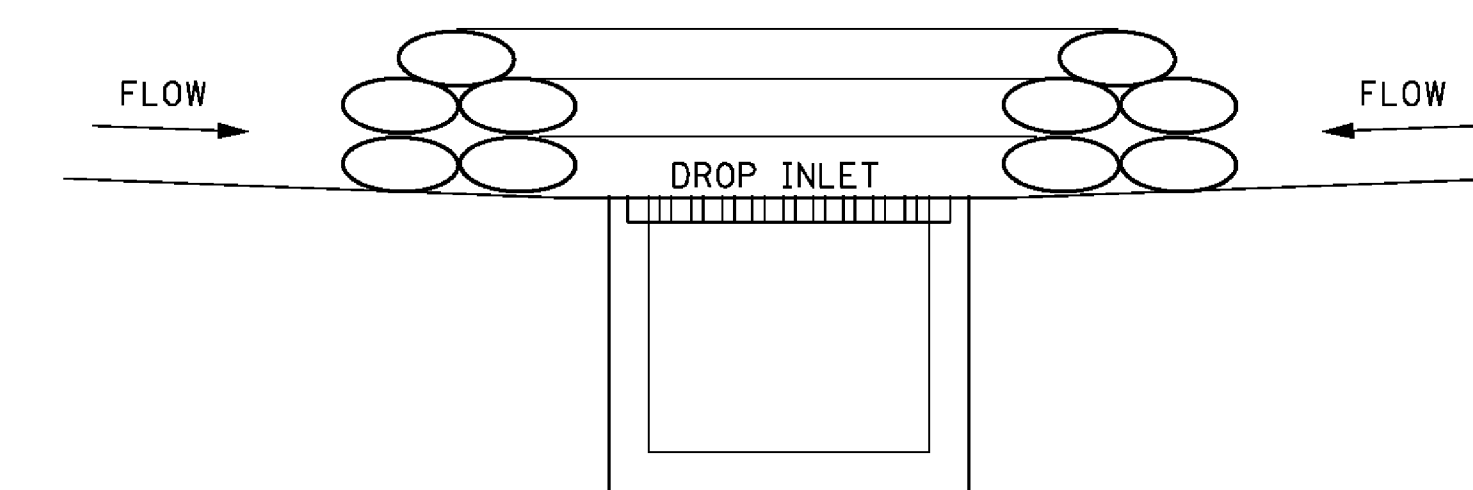
TYPICAL (SANDBAG) PROTECTION FOR INLET IN SAG



TYPICAL (SANDBAG) PROTECTION FOR INLET ON GRADE



DROP INLET
PLAN VIEW

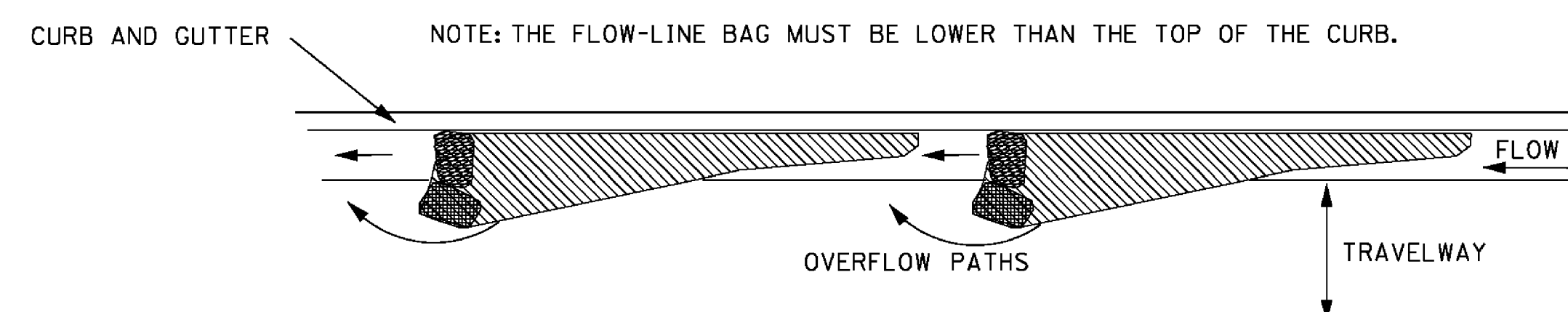


SECTION A-A

SANDBAG BARRIER

CURB INLET PROTECTION NOTES:

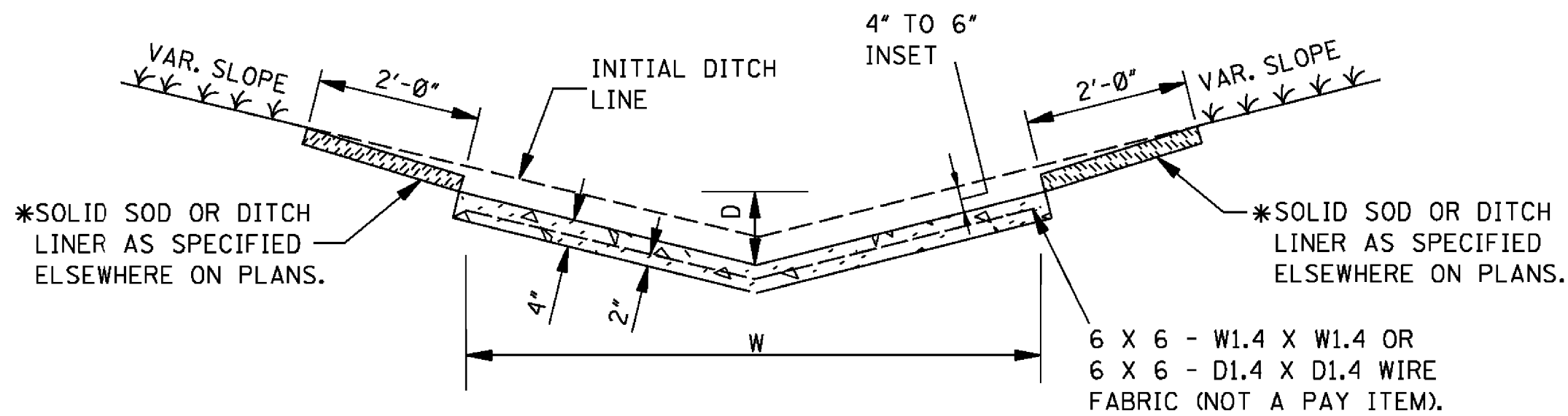
1. THIS CURB INLET PROTECTION METHOD CAN BE USED DURING ANY STAGE OF BASE AND PAVEMENT CONSTRUCTION.
2. BAG HEIGHT AND NUMBER OF BAGS SHOULD BE BASED ON CURB HEIGHT AND USE OF TRAVELWAY.
3. SEDIMENT SHOULD BE CONTROLLED PRIOR TO ENTERING GUTTER. GUTTER CHECKS AND INLET PROTECTION ARE FOR SECONDARY CONTROL.
4. REMOVE ACCUMULATED SEDIMENT AFTER EVERY RAINFALL. SWEEP SEDIMENT FROM HARD SURFACES AND DISPOSE OF APPROPRIATELY AWAY FROM INLETS AND/OR WATER BODIES.
5. IF DENUDEED AREAS EXIST BEHIND THE INLET, A SEDIMENT BARRIER SHOULD BE INSTALLED AROUND ITS PERIMETER TO CONTROL SEDIMENT.



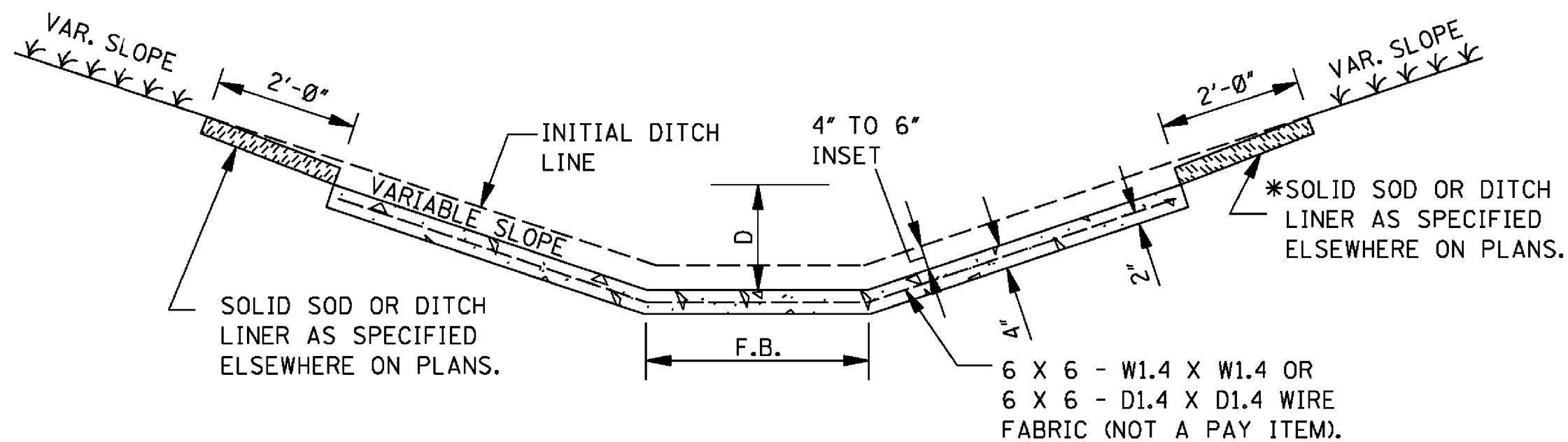
CURB AND GUTTER SEDIMENT CONTAINMENT SYSTEM

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
				DATE	<i>INLET PROTECTION DETAILS OF SANDBAGS</i> ISSUE DATE: <u> AUGUST 01, 2017 </u>
					 WORKING NUMBER ECD-15 SHEET NUMBER 6115

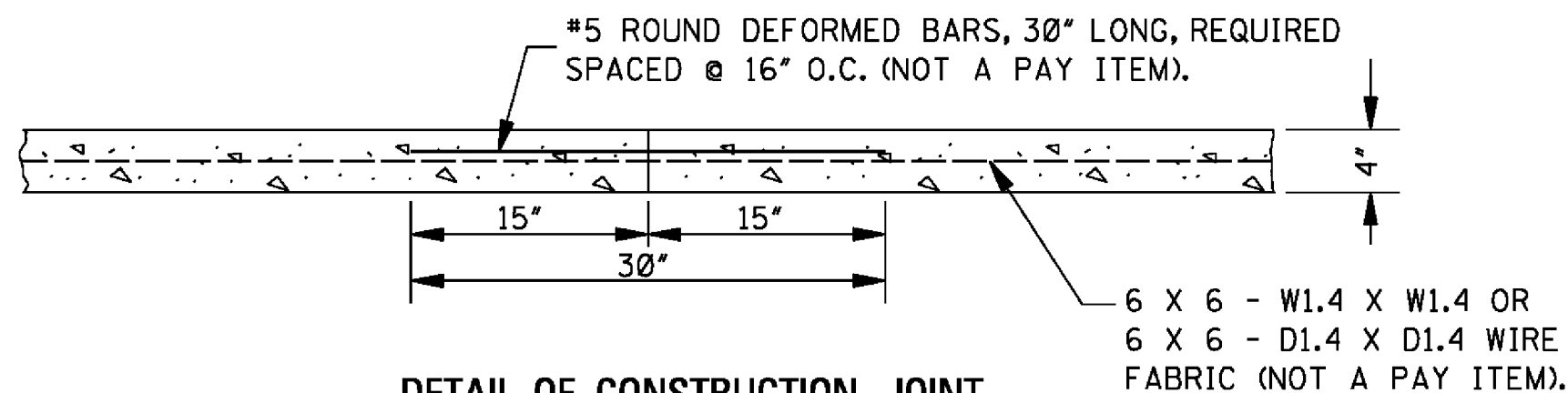
G:\PROJECTS\Hattiesburg_City of 12220-002 - Edwards Street Infrastructure Rehabilitation 12220-002 CAD Files\12220-002_Symbol_Pkls.dwg, 6/15/2021 1:26:18 PM



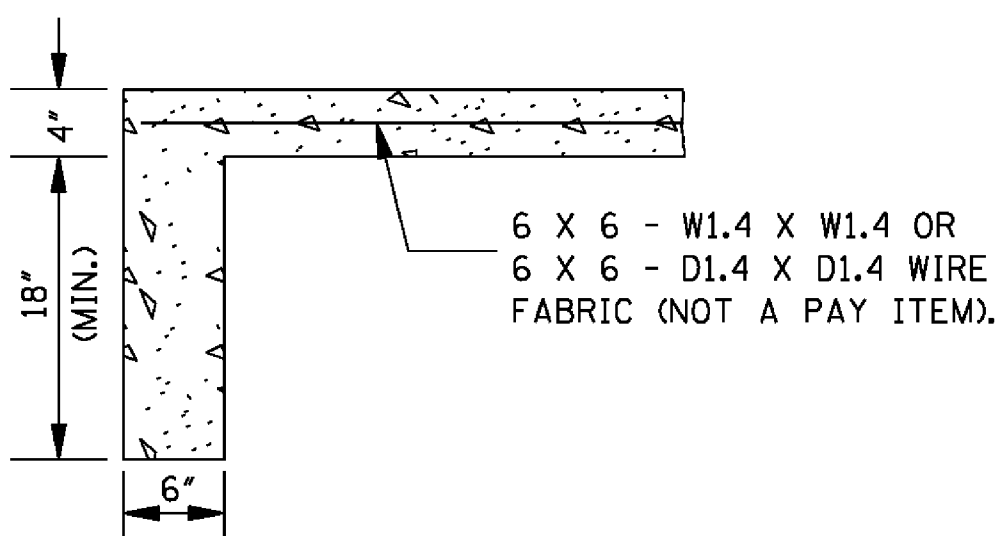
"V" TYPE SECTION



FLAT BOTTOM SECTION



DETAIL OF CONSTRUCTION JOINT



DETAIL OF TOE WALL

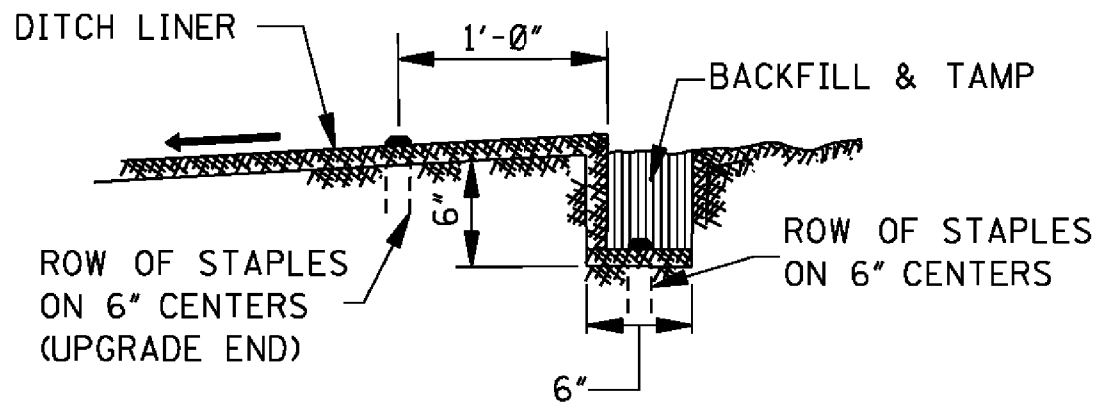
NOTE: TOE WALL REQUIRED
UPSTREAM AND DOWNSTREAM.

CONCRETE PAVED DITCH

NOTES:

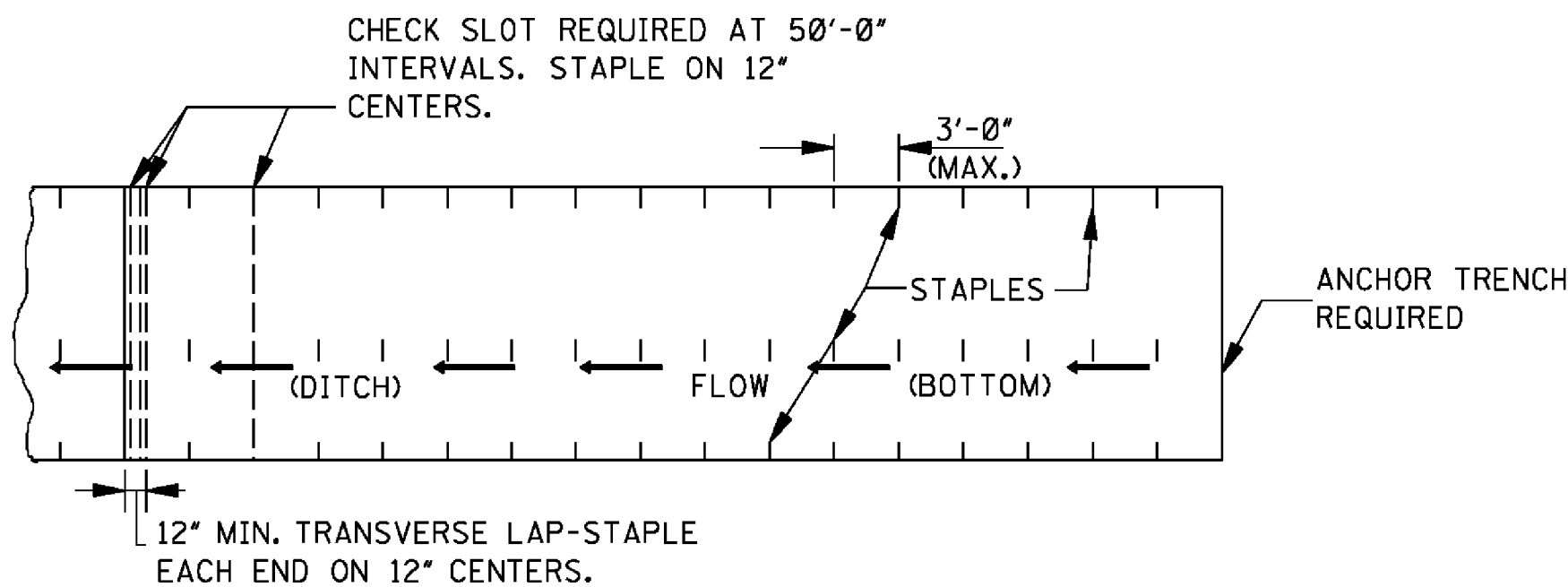
1. CONCRETE PAVED DITCHES SHALL BE GROOVED AT 20'-0" INTERVALS. THE GROOVES SHALL BE CUT TO A DEPTH OF NOT LESS THAN 1".
2. DIMENSIONS D & W ARE AS FOLLOWS:
D(MINIMUM) = 6"
D(NOMINAL) = 9"
W(MINIMUM) = 24"
3. CHAIR SUPPORTS FOR THE WIRE MESH WILL NOT BE REQUIRED. HOWEVER, THE CONTRACTOR SHALL PLACE THE WIRE MESH IN A SATISFACTORY AND WORKMANLIKE MANNER TO ENSURE THAT THE FINAL POSITION IS REASONABLY NEAR THE POSITION INDICATED.

* 4. CENTER ROW OF STAPLES MAY BE OMITTED ON DITCH LINER.

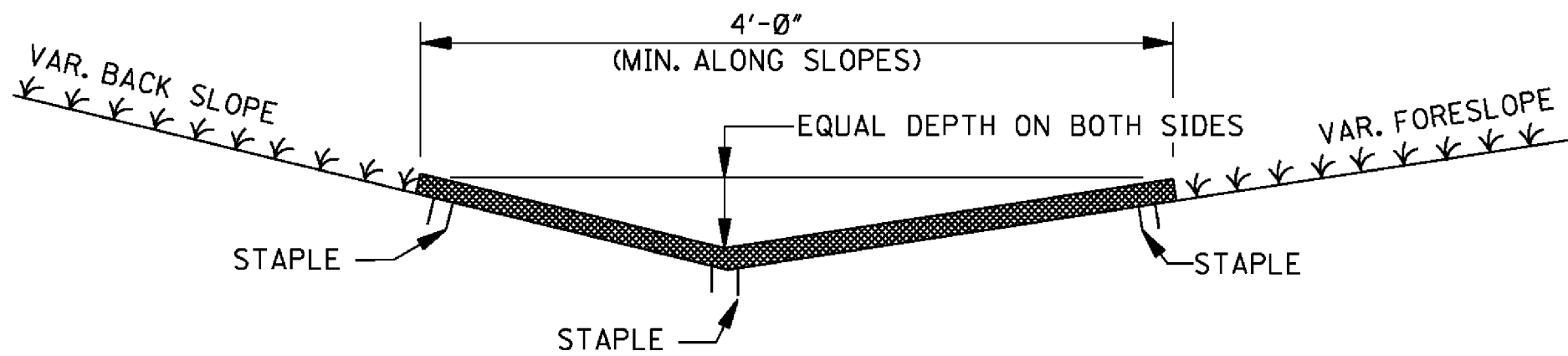


ANCHOR TRENCH DETAIL

NOTE: ANCHOR TRENCH REQUIRED AT THE BEGINNING
AND ENDING OF EACH AREA TO BE COVERED, EXCEPT
DOWNSTREAM END ADJOINING A STRUCTURE.



PLAN

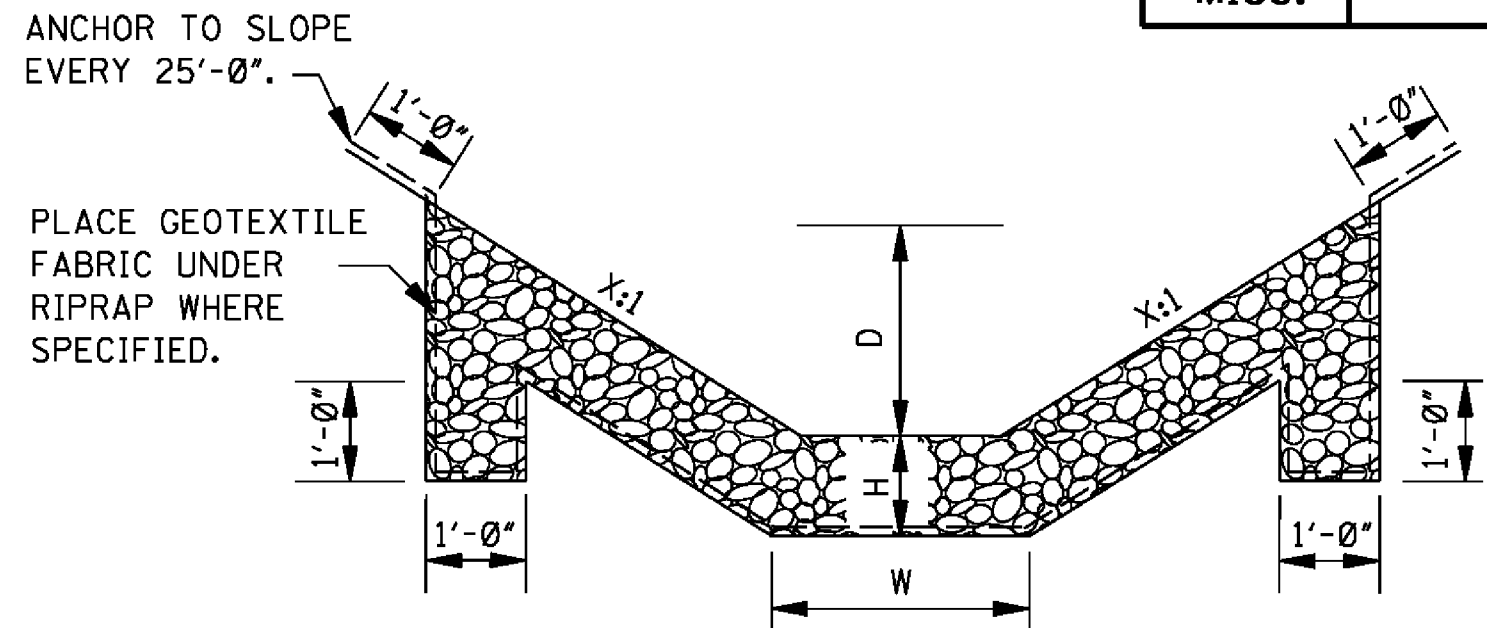


SECTION

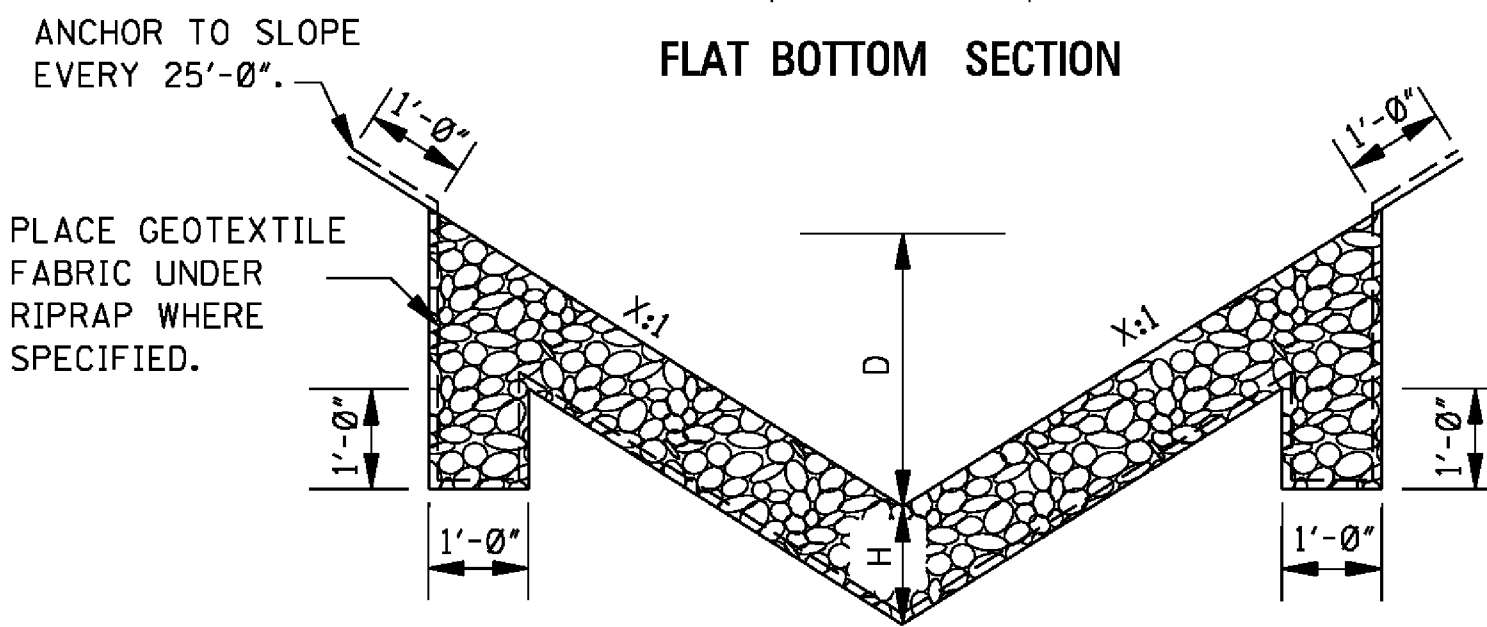
DITCH LINER TREATMENT (EXCELSIOR BLANKET, JUTE MESH OR EROSION CONTROL FABRIC)

NOTE: DITCHES TREATED WITH DITCH LINER
WILL BE VEGETATED PRIOR TO TREATMENT,
UNLESS OTHERWISE INDICATED.

STATE	PROJECT NO.
MISS.	



FLAT BOTTOM SECTION

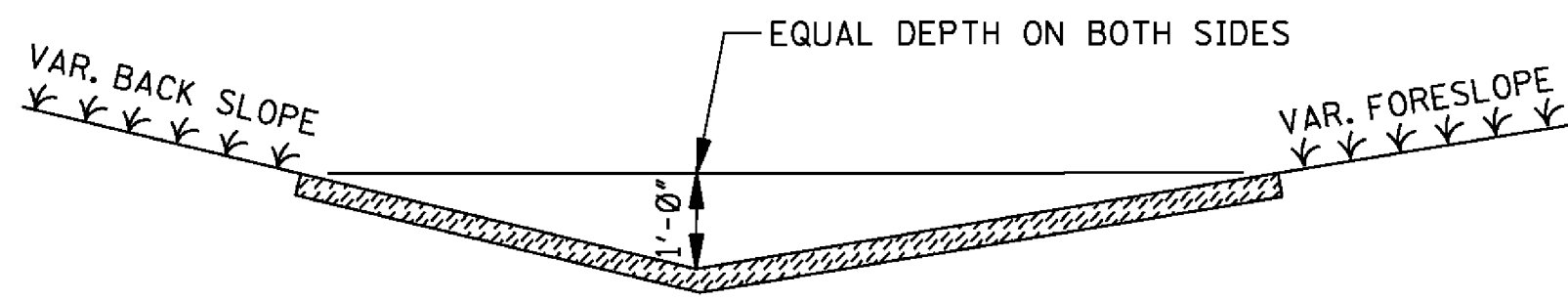


"V" TYPE SECTION
RIPRAP TREATMENT

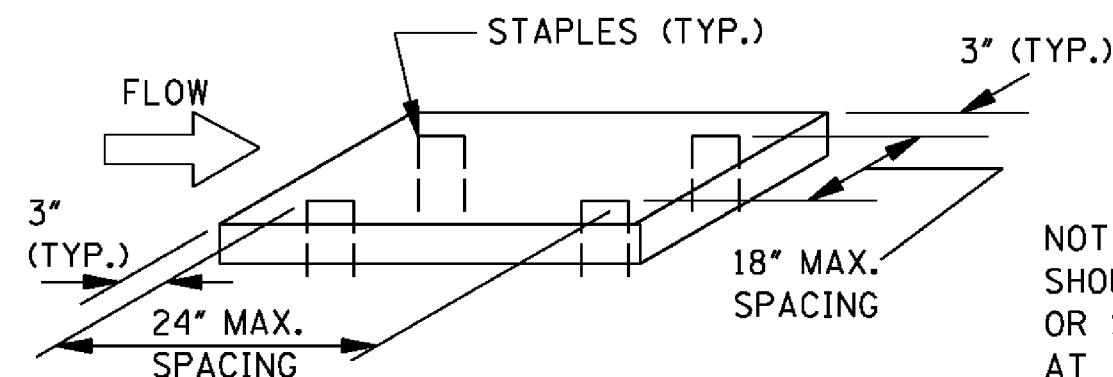
NOTES:

1. DIMENSIONS D, W AND X ARE VARIABLE AND ARE SHOWN ELSEWHERE ON THE PLANS.
2. THE RIPRAP SIZE AND MINIMUM DEPTH "H" FOR RIPRAP TREATMENT ARE AS FOLLOWS.

RIPRAP SIZE & MINIMUM DEPTH "H"	
H (in)	RIPRAP SIZE (lbs)
12"	100
18"	300



SOLID SOD TREATMENT



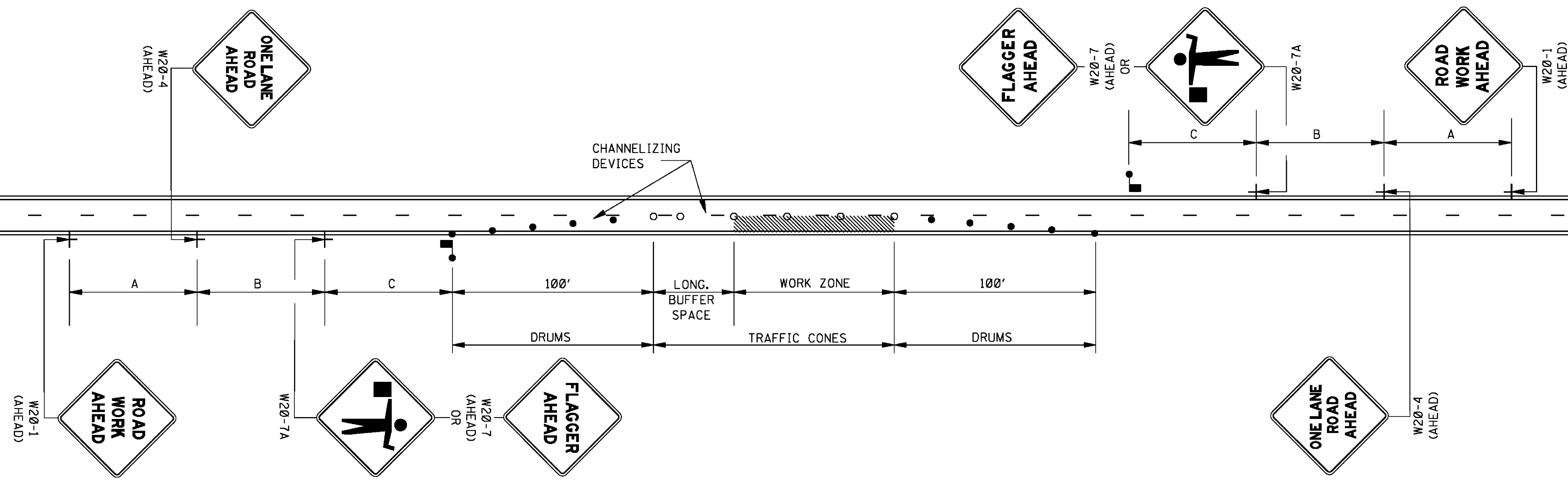
NOTE: SOLID SOD (STRIPS OR BLOCKS)
SHOULD BE STAPLED, PINNED, PEGGED
OR STAKED AT THE FOUR CORNERS OR
AT THE MAXIMUM SPECIFIED SPACING.

GENERAL NOTE:

1. FOR LOCATION OF APPROPRIATE DITCH TREATMENTS, SEE PLAN SHEETS AS DENOTED BY THE FOLLOWING LEGEND OR AS DIRECTED BY THE ENGINEER:

	DITCH LINER
	SOLID SOD
	CONCRETE PAVED DITCH
	RIPRAP

BY		REVISION		DATE	
MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN					
DETAILS OF TYPICAL DITCH TREATMENTS					
ISSUE DATE: AUGUST 01, 2017					
WORKING NUMBER DT-1					
SHEET NUMBER 6123					



GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE. FLAGGER STATIONS SHALL BE LOCATED SUCH THAT APPROACHING VEHICLES WILL HAVE SUFFICIENT DISTANCE TO STOP. VALUES IN STOPPING SIGHT DISTANCE COLUMN MAY BE USED AS A MINIMUM FOR THIS DISTANCE.

POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (ft)		LONGITUDINAL BUFFER SPACE (ft)	STOPPING SIGHT DISTANCE
	TAPER	ALONG LANE LINE & WORK ZONE		
mph				
25	20	50	55	155
30	20	60	85	200
35	20	70	120	250
40	20	80	170	305
45	20	90	220	360
50	20	100	280	425
55	20	110	335	495
60	20	120	415	570
65	20	130	485	645

† NOTE: BUFFER SPACE MAY BE ADJUSTED AS NEEDED ACCORDING TO ROADWAY GEOMETRY TO MEET SIGHT DISTANCE REQUIREMENTS, AS DIRECTED BY THE ENGINEER.

2. ALL CHANNELIZING DEVICES SHALL BE A MINIMUM OF 28" IN HEIGHT.
3. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 36" x 36" AND BLACK COPY ON FLUORESCENT ORANGE SHEETING.
4. WHEN WORK ZONE IS NO LONGER NEEDED, ALL SIGNS SHALL BE COVERED OR REMOVED AND ALL CHANNELIZING DEVICES SHALL BE MOVED TO THE SHOULDER EDGE.
5. ADDITIONAL FLAGGERS MAY BE NEEDED AS DIRECTED BY THE ENGINEER.
6. WHEN WORK IS REQUIRED AT NIGHT, FLAGGER STATIONS SHALL BE ILLUMINATED.
7. CHANNELIZING DEVICE TYPES FOR:
A. APPROACH AND EXIT TAPERS- RETROREFLECTIVE PLASTIC DRUMS
B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT)
8. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT. THIS WORK SHALL BE INCLUDED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.

LEGEND

- FLAGGER
- RETROREFLECTIVE FREE-STANDING PLASTIC DRUMS
- TRAFFIC CONES (28" HEIGHT MINIMUM)

DISTANCE BETWEEN SIGNS			
ROAD TYPE	A	B	C
URBAN (35 MPH OR LESS)	100 FT.	100 FT.	100 FT.
URBAN (40 - 70 MPH)	350 FT.	350 FT.	350 FT.
RURAL	500 FT.	500 FT.	500 FT.
EXPRESSWAY / FREEWAY	1000 FT.	1500 FT.	2640 FT.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
				DATE	ISSUE DATE: AUGUST 01, 2017

**TRAFFIC CONTROL PLAN
WITH FLAGGER
(ONE-LANE CLOSURE OF
TWO-WAY TRAFFIC)**

MDOT
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

WORKING NUMBER
TCP-1

SHEET NUMBER
6351



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Hunter White, Interim Engineering Director
cc:
Date: Tuesday, May 2, 2023
Re: Approve Plans and Specifications for the Bobby L. Chain Runway Taxiway A Realignment and Improvements Project (AIP Project No. 3-28-0031-0030-2023) and authorize advertisement for bids for same.
File Number: 2023-294
Minute Book #

Summary

Approve Plans and Specifications for the Bobby L. Chain Runway Taxiway A Realignment and Improvements Project (AIP Project No. 3-28-0031-0030-2023) and authorize advertisement for bids for same.

Recommendation Statement

I recommend approval of this item.

Please place this on the May 2, 2023 City Council meeting for consideration.

**PLANS OF PROPOSED
CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**CITY OF HATTIESBURG, MISSISSIPPI
FORREST COUNTY**

AIP NO. 3-28-0031-0030-2023

JANUARY 2023

MAYOR
TOBY BARKER

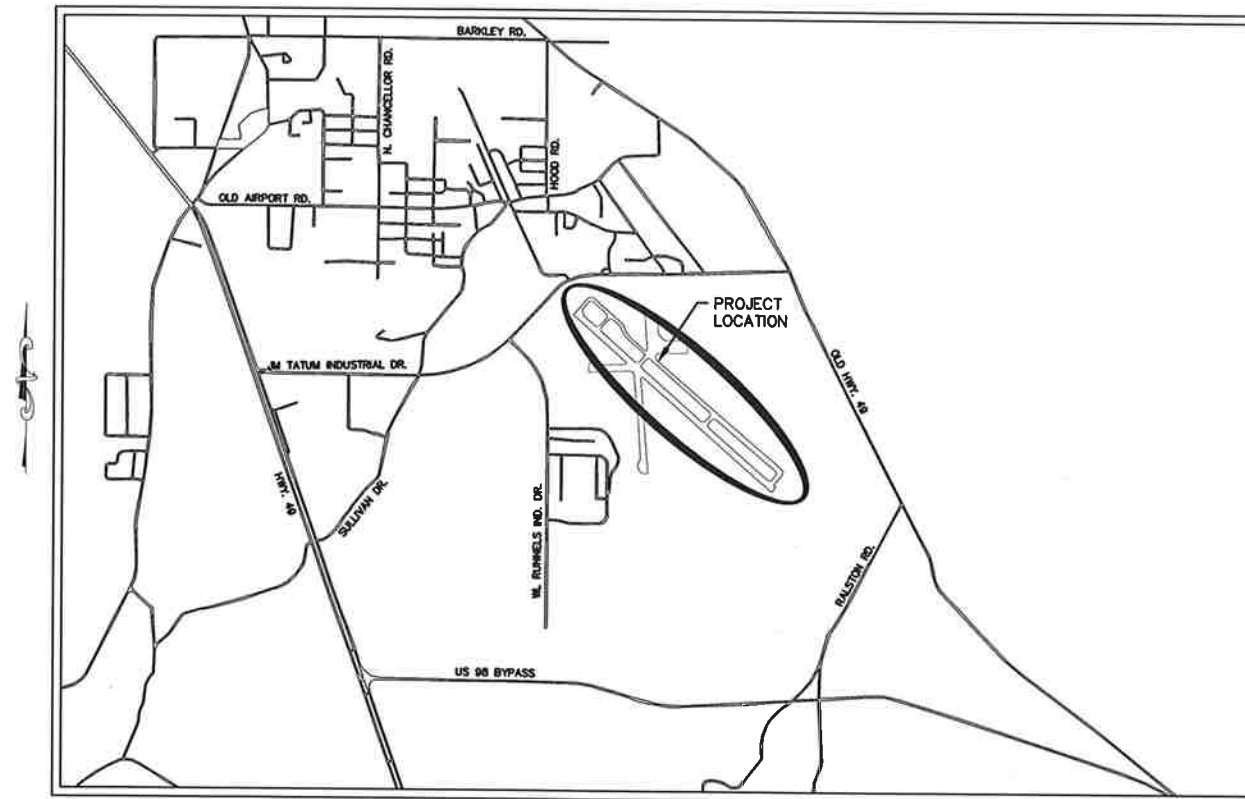
CITY COUNCIL
JEFFREY GEORGE, WARD 1
DEBORAH DELGADO, WARD 2
CARTER CARROLL, WARD 3
DAVE WARE, WARD 4
NICHOLAS BROWN, WARD 5

SUBMITTED BY:



AVIATION FACILITY PLANNING, DESIGN, & MANAGEMENT
2010 Oak Grove Road, Building 4, Suite 1
Hattiesburg, MS 39402
Phone: (601) 408-7829 | www.areconsults.com
a division of FORD ENGINEERING SERVICES, PLLC

INDEX TO SHEETS	
SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	GENERAL LAYOUT, QUANTITIES & NOTES
3	AIRPORT SAFETY & CONSTRUCTION SEQUENCE PLAN
4a	EXISTING CONDITIONS
4b	DEMOLITION PLAN
5	SITE PLAN
6	JOINT PLAN
7	TYPICAL SECTIONS
8	PAVEMENT DETAILS
9	DRAINAGE & EROSION CONTROL DETAILS
10	PLAN AND PROFILE
11	TEMPORARY PAVEMENT MARKING & MARKING REMOVAL
12	PERMANENT PAVEMENT MARKING & MARKING REMOVAL
13	PARTIAL SITE PLAN POWER AND LIGHTING DEMOLITION
14	PARTIAL SITE PLAN POWER AND LIGHTING
15	DETAILS



LOCATION MAP

TYPE OF CONSTRUCTION: DEMOLITION, AIRFIELD LIGHTING, P.C. CONCRETE PAVING, ASPHALTIC CONCRETE PAVING,
ASPHALTIC PAVED TRANSITION, ELECTRICAL, PAVEMENT MARKING, DRAINAGE RESTORATION

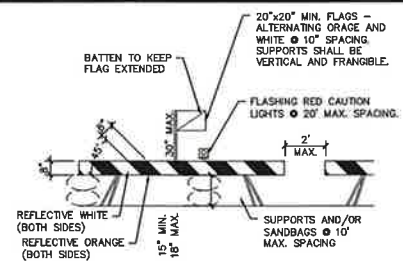
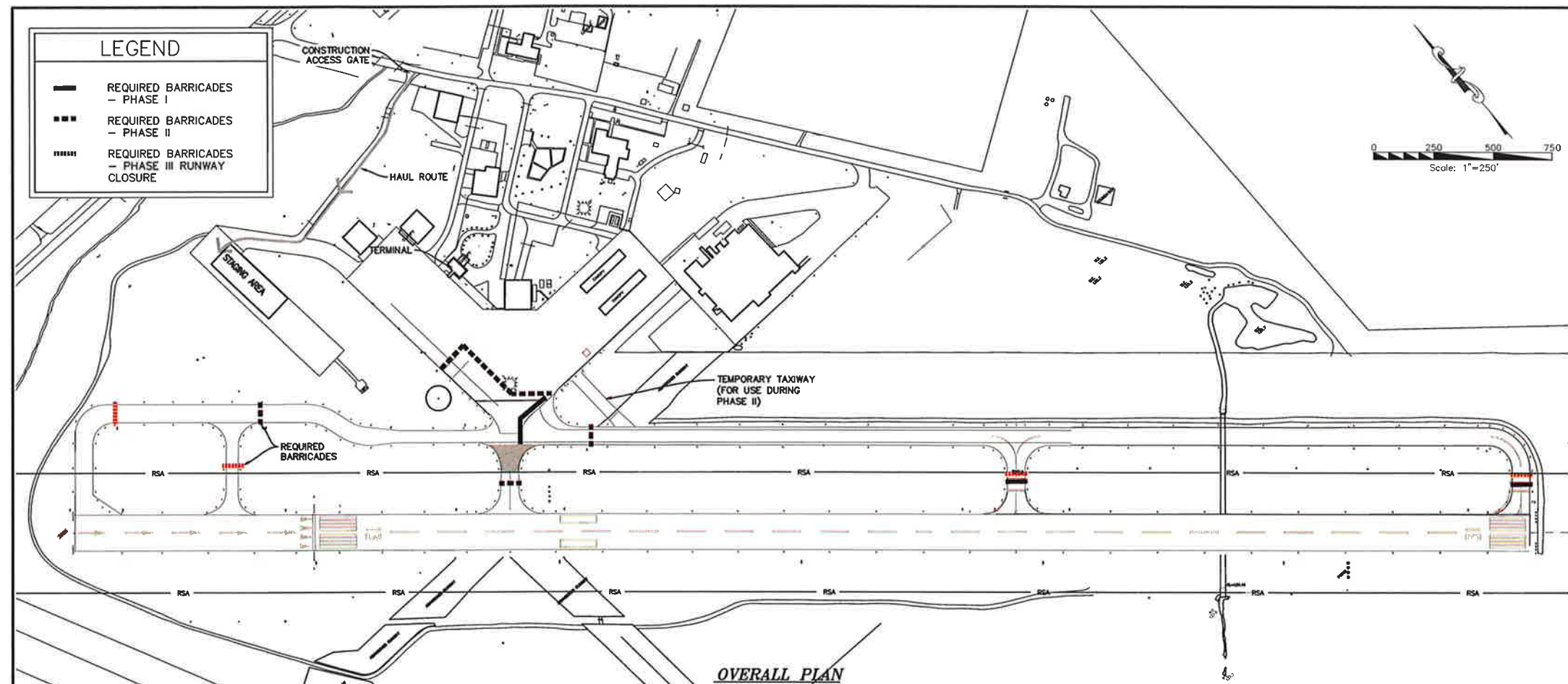
SCHEDULE OF REVISIONS					
DATE	RECOMMENDED	DATE	REVISION	DATE	APPROVED



THOMAS G. SANDERS, PE
MISSISSIPPI STATE P.E. No. 16030



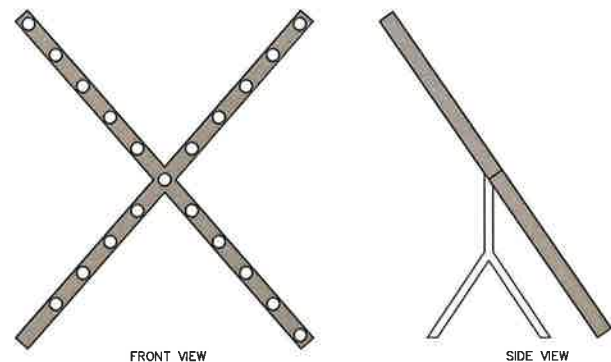
JOEL FORD, PE
P.E. No. 13363



TYPE 1 BARRICADE
N.T.S.

NOTES:

1. ALL BARRICADE MATERIALS AND CAUTION LIGHTS SHALL CONFORM TO THE STANDARDS SET FORTH IN THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS.
2. THE ENTIRE AREA OF ORANGE AND WHITE STRIPES SHALL BE REFLECTORIZED WITH SMOOTH SURFACE TYPE REFLECTIVE SHEETING.
3. BARRICADES SHALL BE PLACED CONTINUOUSLY ACROSS THE ENTIRE FACILITY TO BE CLOSED EXCEPT FOR 2 FOOT MAXIMUM GAPS AT STANDARD LENGTH PANEL ENDS.
4. THE BARRICADES SHALL BE WEIGHTED AGAINST PROPWASH AND CAPABLE OF WITHSTANDING UP TO 100 M.P.H. WIND FORCES.
5. FLASHING RED CAUTION LIGHTS SHALL BE BATTERY OPERATED AND SHALL MAINTAIN SUCH INTENSITY SO AS TO BE READILY IDENTIFIED FROM DISTANCES OF AT LEAST 200 FT. DURING DARKNESS.
6. THE CONTRACTOR SHALL CHECK ALL BARRICADES AND LIGHTS EACH DAY BEFORE LEAVING THE AIRPORT TO ENSURE LIGHTS ARE WORKING PROPERLY AND ARE NOT DAMAGED WITHOUT ALL BARRICADES AND LIGHTS BEING IN PROPER WORKING ORDER.
7. LINES OF BARRICADES ARE REQUIRED AT EACH TAXIWAY ENTRANCE TO THE RUNWAY. A LINE CONSISTS OF 4 BARRICADES, EVENLY SPACED ACROSS TAXIWAY, 4 LOCATIONS AS INDICATED ON SHEET 2.



PORTABLE ELEVATED RUNWAY CLOSURE MARKER
N.T.S.

CONSTRUCTION CONTROL AND SAFETY NOTES

1. THE RUNWAY IS TO REMAIN OPEN THROUGHOUT CONSTRUCTION WITH THE EXCEPTION OF CLOSING AS DUE MAXIMUM WHILE WORKING IN THE RUNWAY SAFETY AREA. IN THE EVENT THE RUNWAY MUST BE CLOSED DUE TO CONSTRUCTION, IT WILL BE CLOSED USING PROPER PROCEDURES AS DESCRIBED BY THE FAA. THIS WILL INCLUDE LIGHTED "X" OVER BOTH RUNWAY END IDENTIFICATION MARKINGS. THE CONTRACTOR SHALL COORDINATE WITH THE AIRPORT MANAGER OR HIS DESIGNATED REPRESENTATIVE FOR POSTING OF NOTAMS TO THE FAA AND FLIGHT SERVICES. THIS WILL INCLUDE CLOSURE AND NOTIFICATION OF CLOSURE TO ILS SYSTEMS OF THE AIRPORT.
2. THE CONTRACTOR SHALL BECOME FAMILIAR WITH ALL REQUIREMENTS APPLICABLE TO AIRPORT CONSTRUCTION AND COOPERATE WITH THE ENGINEER IN MAINTAINING A SAFE CONSTRUCTION SITE.
3. IT IS A GENERAL REQUIREMENT OF THIS PROJECT THAT THE CONTRACTOR BECOME FAMILIAR WITH ALL SECURITY ASPECTS AND RECOGNIZES THAT FROM TIME-TO-TIME THE OWNER MAY REVISE OR MODIFY THIS PROGRAM TO ENSURE SAFETY OR TO MEET FEDERAL REGULATIONS.
4. WHERE SECURITY GATES ARE TO BE INSTALLED OR USED PRIMARILY BY THE CONTRACTOR, SPECIFIC GUIDELINES MUST BE FOLLOWED.
5. THE CONTRACTOR WILL STRICTLY CONFINE THE ACTIVITIES OF ALL PERSONNEL AND EQUIPMENT TO THE WORK AREAS INDICATED FOR THIS CONTRACT.
6. THE SAFETY OF THE PROJECT IS THE ULTIMATE RESPONSIBILITY OF THE CONTRACTOR AND THIS KNOWLEDGE MUST BE DEMONSTRATED BY SUBMITTING A SCHEDULE AND DETAILED SAFETY PLAN USING THIS DOCUMENT AS A MINIMUM GUIDELINE FOR APPROVAL BY THE CONSULTING ENGINEER BEFORE CONSTRUCTION.
7. THE FIELD ENGINEER RESERVES THE RIGHT TO MODIFY THESE SAFETY GUIDELINES AS DEEMED NECESSARY TO HOLD AIRPORT/AIRCRAFT SAFETY AND QUALITY CONTROL TO THE HIGHEST STANDARD.
8. THE CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO THE DUST AND SMOKE CONTROL REQUIREMENTS OF THIS CONTRACT. THE OPERATIONS OF RUNWAYS, TAXIWAYS, AND ASSOCIATED NAVAIDS ARE ESPECIALLY SENSITIVE TO DUST AND SMOKE. THE ENGINEER RESERVES THE RIGHT TO STOP GRADING, HAULING, OR OTHER WORK IF NECESSARY TO BRING UNDER CONTROL THE DUST OR SMOKE SITUATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST AND SMOKE CONTROL WITHIN THE CONSTRUCTION LIMITS AS WELL AS ALONG ANY ROADWAYS USED BY EQUIPMENT AND VEHICLES. FAILURE TO CONTROL DUST AND SMOKE MAY RESULT IN PROJECT SUSPENSION.
9. ALL TRAFFIC WILL BE STRICTLY DIRECTED TO NOT TRAVEL ON THE RUNWAY PAVEMENT.
10. THE CONTRACTOR SHALL FULLY MOBILIZE A SUFFICIENT NUMBER OF WATER TRUCKS ON SITE. THESE WATER TRUCKS WILL BE USED CONTINUOUSLY FOR DUST CONTROL, AS ASSOCIATED NAVAIDS ARE ESPECIALLY SENSITIVE TO DUST; ALL WATERING WILL BE DIRECTED BY THE CONTRACTOR AND OVERSEEN BY THE FIELD ENGINEER.
11. THE MOISTURE CONTENT OF THE EMBANKMENT IN PLACE WILL REQUIRE CONTINUOUS MODIFICATION FOR OBTAINING THE REQUIRED DENSITY AND ALSO FOR DUST CONTROL.
12. THE CONTRACTOR IS RESPONSIBLE FOR SECURING THE AIRPORT AT NIGHT AND ENSURING BARRICADES ARE IN PLACE AND LIGHTS ARE FUNCTIONING.
13. ALL SYSTEMS TESTING MUST BE SUPERVISED OR APPROVED BY THE FIELD ENGINEER AND/OR A DESIGNATED REPRESENTATIVE.
14. THE LOCATION AND SIZE OF THE CONTRACTOR'S STAGING AREAS IS SHOWN FOR REFERENCE ONLY. THE ACTUAL SIZE AND EXACT LOCATION WILL BE ESTABLISHED PRIOR TO CONSTRUCTION. THE FOLLOWING REQUIREMENTS WILL APPLY, HOWEVER:
 - A. ALL OF THE CONTRACTOR'S ACTIVITY WILL BE STAGED FROM THIS AREA. ALL FIELD OFFICE AND EMPLOYEE PARKING WILL BE WITHIN THE STAGING AREA OUTSIDE THE AIRPORT SECURITY AS SHOWN.
 - B. FENCING AROUND THE PROPOSED STAGING AREA IS SUGGESTED BUT NOT MANDATORY. SUCH FENCING SHALL BE CONSIDERED TEMPORARY AND WILL NOT BE MEASURED FOR PAVEMENT.
 - C. THE CONTRACTOR MAY DO SOME GRADING AND DRAINAGE WORK TO ADAPT THE AREA TO SPECIFIC NEEDS. UPON COMPLETION OF THE WORK, HOWEVER, THE AREA WILL BE DRESSED, SEEDED, AND RESTORED TO ITS CONDITION PRIOR TO CONSTRUCTION ACTIVITIES.
 - D. THE CONTRACTOR SHALL SUBMIT A DETAILED PLAN LAYOUT OF THE STAGING AREA TO THE ENGINEER FOR REVIEW AND APPROVAL.
 - E. THE CONTRACTOR SHALL PROVIDE SIGNS, FABRICATED IN A COMMERCIAL SIGN SHOP, INDICATING THE NAME OF THE CONTRACTOR AND A MESSAGE DIRECTING ALL MATERIAL DELIVERIES TO THE STAGING AREA. THESE SIGNS SHALL BE LOCATED AT THE ENTRANCE TO THE STAGING AREA OFF THE PUBLIC ROADWAY. THE COST OF FABRICATING AND ERECTION OF THESE SIGNS SHALL BE INCLUDED IN OTHER ITEMS.
15. PER THE FAA, PROVIDE AT LEAST 48 HOURS NOTICE TO THE AIRPORT MANAGER WHEN THERE IS A NEEDED NOTAM (NOTICE TO AIRMEN).

CONSTRUCTION SEQUENCE

PHASE I:

1. ESTABLISH CONTRACTOR STAGING AREA. MOBILIZE ALL EQUIPMENT. INSTALL EROSION CONTROL.
2. COMPLETE WORK LOCATED SOUTHEAST OF THE APRON-TAXIWAY A INTERSECTION, INCLUDING CONSTRUCTION OF TEMPORARY TAXIWAY.

PHASE II:

3. COMPLETE CONSTRUCTION LOCATED ON AND NORTHWEST OF THE APRON-TAXIWAY INTERSECTION.

PHASE III

4. CLOSE RUNWAY 13-31 FOR UP TO 72 HOURS.
5. COMPLETE ALL WORK THAT FALLS WITHIN THE RUNWAY SAFETY AREA.
6. REOPEN RUNWAY 13-31.
7. CLEANUP AND REMOVAL OF EROSION CONTROL.

NOTE: THE CONTRACTOR SHALL MEET WITH AIRPORT OPERATIONS PERSONNEL PRIOR TO COMMENCING CONSTRUCTION TO IDENTIFY ONSITE UTILITIES AND OWNERSHIP OF UTILITIES FOR FUTURE LOCATION PURPOSES. THE CONTRACTOR IS RESPONSIBLE FOR DETAILED UTILITIES LOCATION IN ALL WORK AREAS.

RUNWAY REOPENING

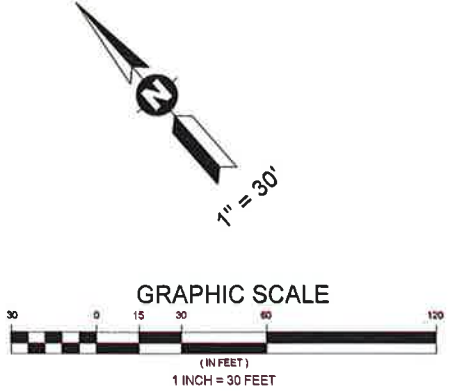
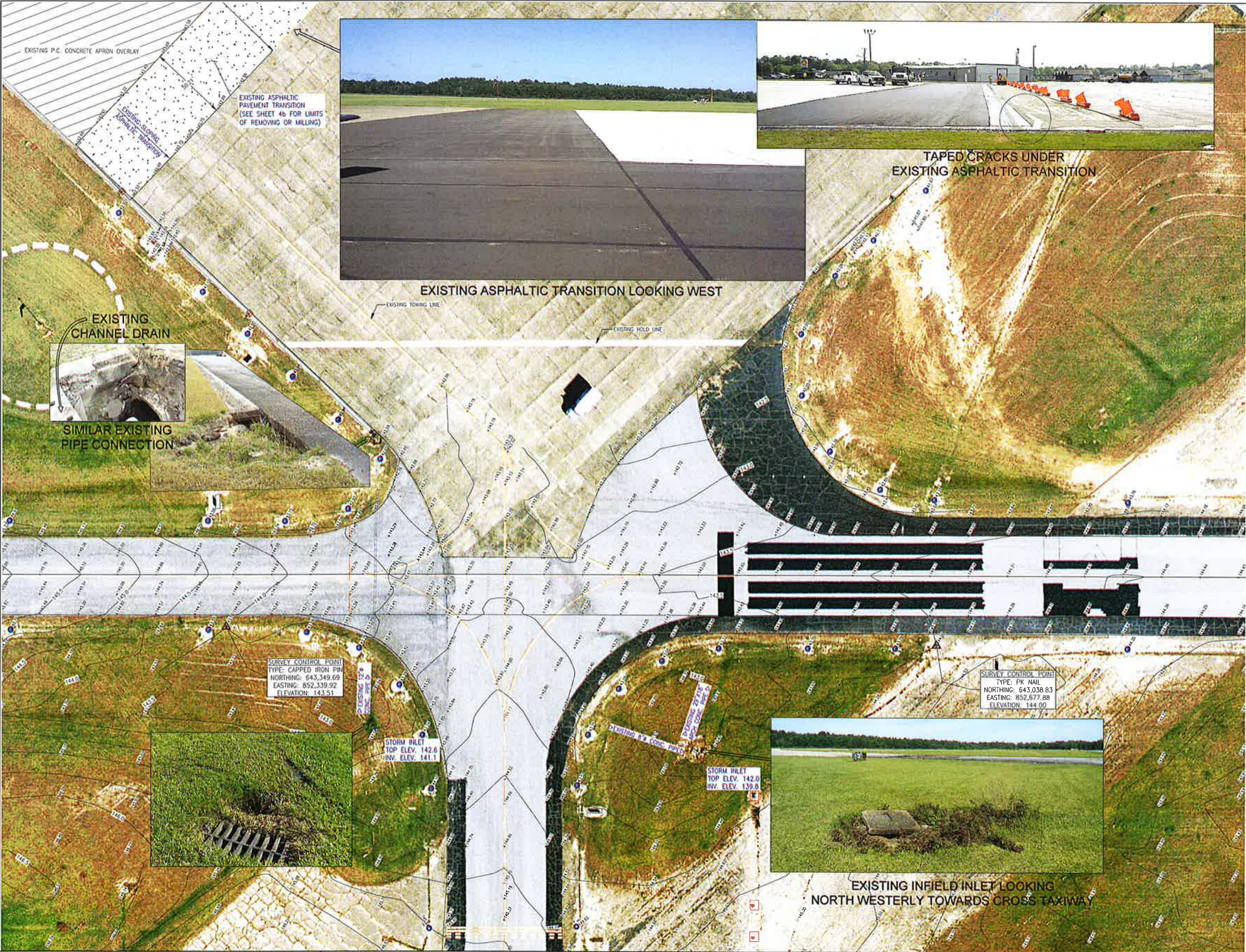
1. REMOVE CROSSES.
2. REMOVE LIGHTED BARRICADES.
3. NOTIFY AIRPORT MANAGER OR HIS REPRESENTATIVE TO CANCEL THE NOTAM.
4. CANCELLATION OF THE NOTAM.

A CLOSED RUNWAY WILL NOT BE REOPENED UNTIL ALL EQUIPMENT AND WORK ARE FURTHER THAN 250 FT. FROM THE AFFECTED RUNWAY CENTERLINE.

SEEDING, FERTILIZING & MULCHING NOTES:

1. STORAGE, HANDLING, TRANSPORTATION AND DISTRIBUTION WILL BE AS DIRECTED BY FIELD ENGINEER.
2. NO STRAW OR HAY SHALL BE ALLOWED TO BLOW AWAY FROM THE WORK AREAS OR ONTO THE RUNWAY.
3. ANY TAR, MULCH, OR SEED THAT COVERS ANY ELECTRICAL ITEM OR OTHER EQUIPMENT WILL BE REMOVED THAT SAME DAY.
4. ALL AIRPORT EQUIPMENT SHALL BE CLEARED OF ANY TURFING MATERIAL THE SAME DAY AS DIRECTED BY FIELD ENGINEER.

DRAWING DISCLAIMER THIS DRAWING HAS PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL APPLIED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL, SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE	DRAWING REVISIONS: <table><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr><tr><td> </td><td> </td><td> </td></tr></table>		NO.	DATE	DESCRIPTION				PREPARED FOR: CITY OF HATTIESBURG BOBBY L. CHAIN MUNICIPAL AIRPORT	PROJECT: TAXIWAY A REALIGNMENT & IMPROVEMENTS HATTIESBURG, MISSISSIPPI	PREPARED BY:  PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS 800 Spring Street, Suite 214 Shreveport, LA 71101 Phone: (504) 222-6252 www.areconsultants.com a division of FORD ENGINEERING SERVICES, PLLC		DRAWING NAME: AIRPORT SAFETY & CONSTRUCTION SEQUENCE PLAN	DRAWN BY: S.M. CHECKED BY: J.S.F. SCALE: AS NOTED DATE: 02/15/23 DRAWING NO. 3
	NO.	DATE	DESCRIPTION											



DRAWING DISCLAIMER
THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL APPLIED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED INVALID AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

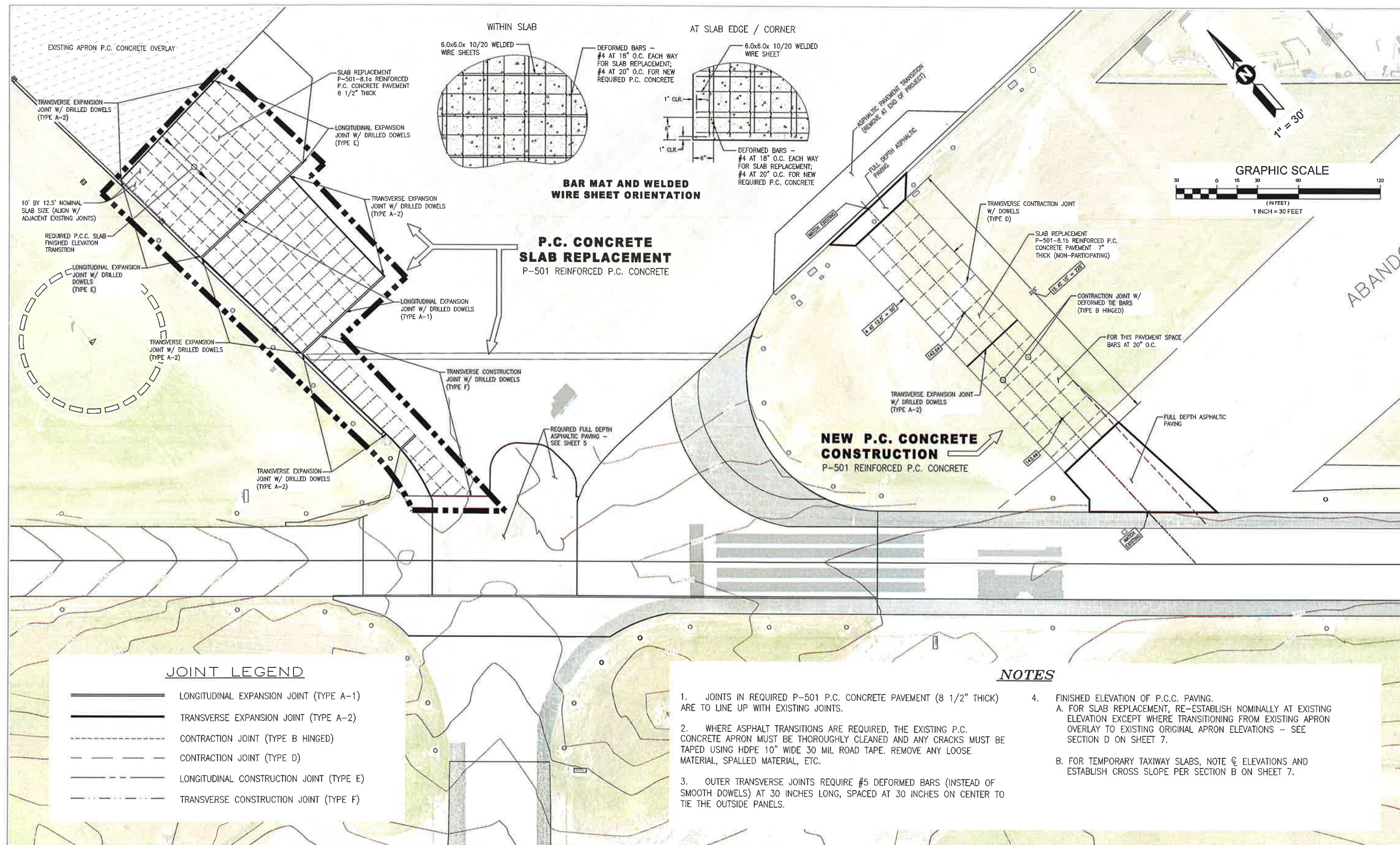
PREPARED BY:
**ARE
ENGINEERING
CONSULTANTS**
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (518) 222-6252
www.are-engineers.com
a division of FORD ENGINEERING SERVICES, PLLC

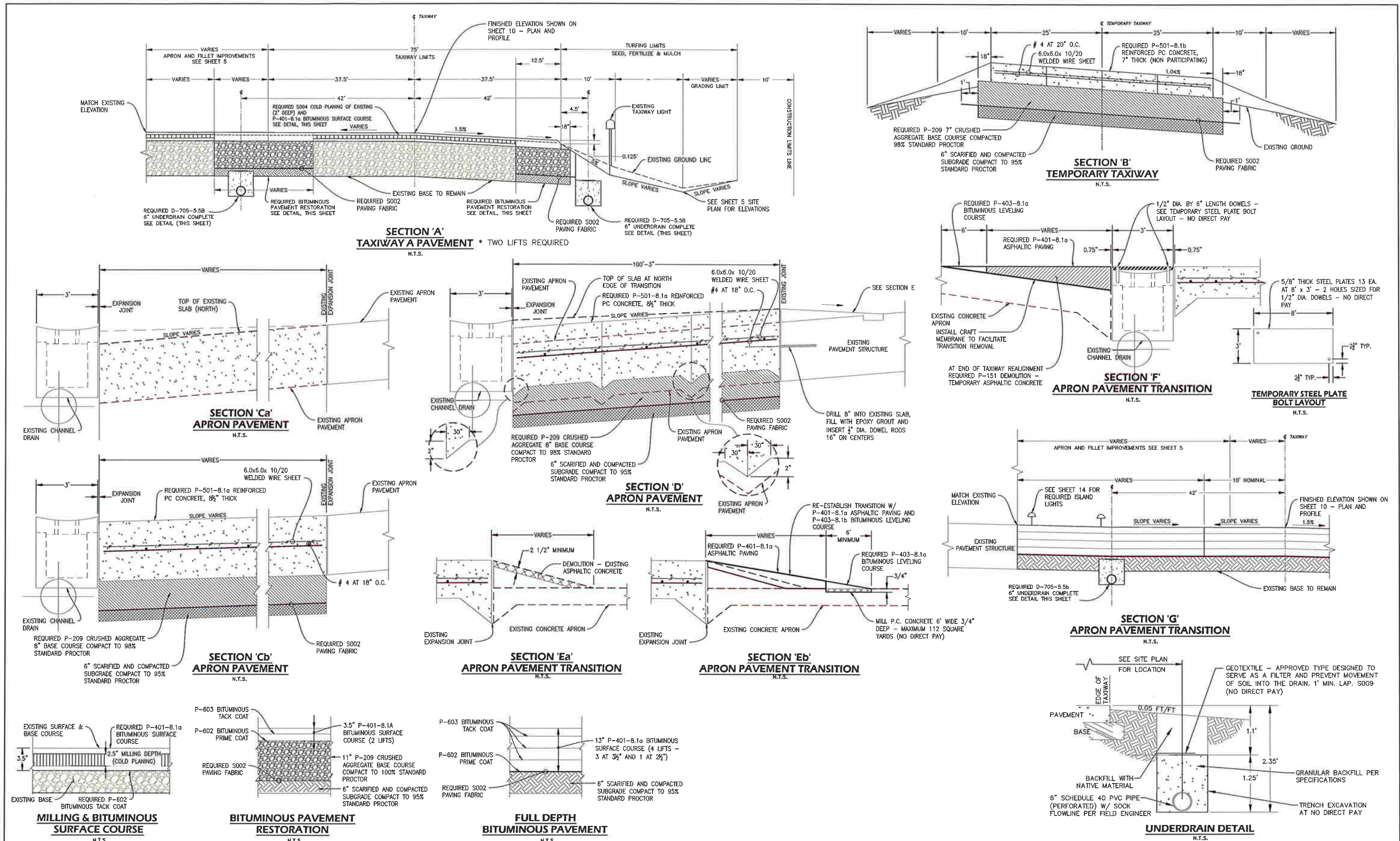


DRAWING NAME:
EXISTING CONDITIONS

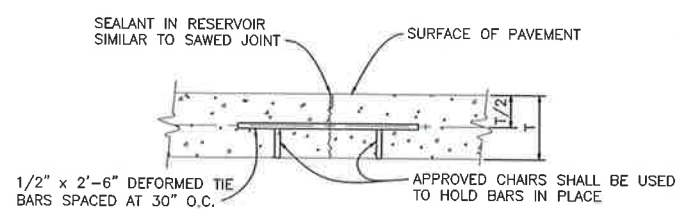
DRAWN BY: S.M.
CHECKED BY: J.S.F.
SCALE: 1" = 30'
DATE: 02/15/23

DRAWING NO.
4a

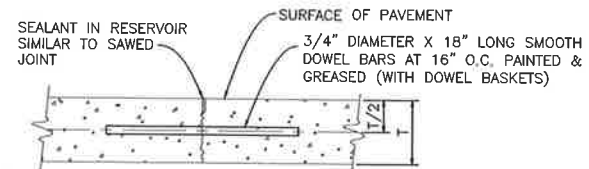




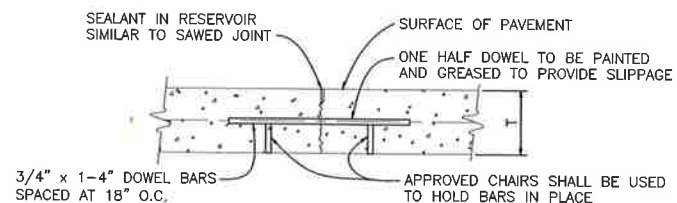
DRAWING DISCLAIMER THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACKNOWLEDGING THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.			DRAWING REVISIONS: <table><thead><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>			NO.	DATE	DESCRIPTION																PREPARED FOR: CITY OF HATTIESBURG BOBBY L. CHAIN MUNICIPAL AIRPORT			PROJECT: TAXIWAY A REALIGNMENT & IMPROVEMENTS HATTIESBURG, MISSISSIPPI			PREPARED BY:  ARE ENGINEERING CONSULTANTS PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS 800 Spring Street, Suite 214 Shreveport, LA 71101 Phone: (504) 222-8252 www.arenconsultants.com a division of FORD ENGINEERING SERVICES, PLLC			 DRAWING NAME: TYPICAL SECTIONS			DRAWN BY: S.M. CHECKED BY: J.S.F. SCALE: N.T.S. DATE: 02/15/23 DRAWING NO. 7		
NO.	DATE	DESCRIPTION																																				



TYPE B HINGED LONGITUDINAL
DUMMY GROOVE JOINT
N.T.S.

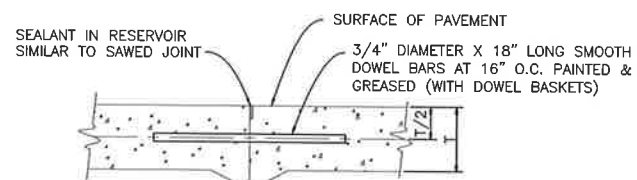


TYPE C DOWELED
N.T.S.

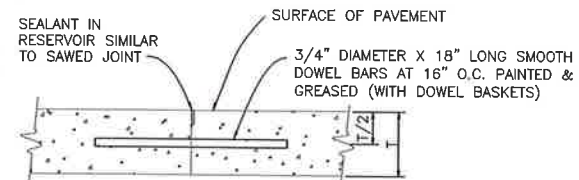


TYPE D TRANSVERSE DUMMY
GROOVE CONTRACTION JOINT
N.T.S.

CONTRACTION JOINTS

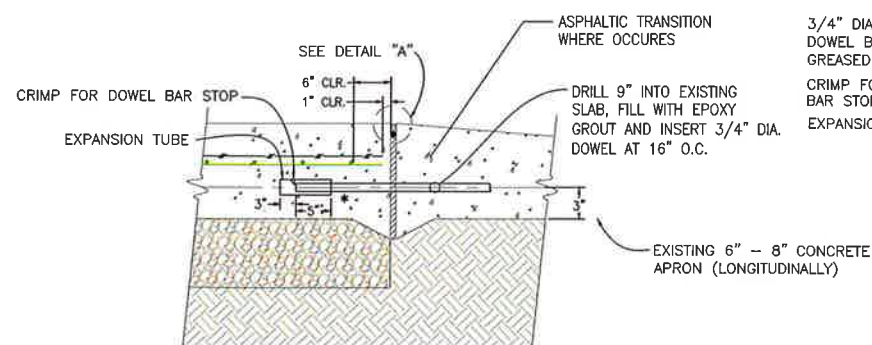


TYPE E DOWELED
N.T.S.
(FOR USE DURING AN INTERRUPTED POUR)

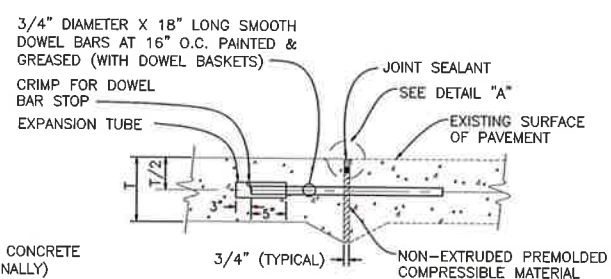


TYPE F BUTT
N.T.S.

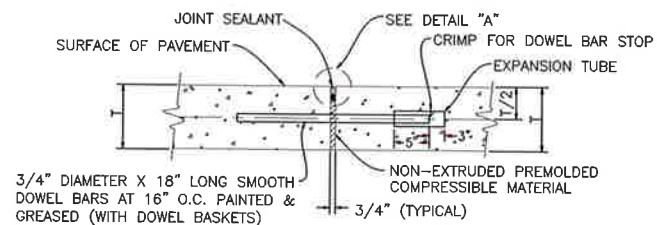
CONSTRUCTION JOINTS



* EXPANSION JOINT MATERIAL AND
EXPANSION TUBE WHERE OCCURS
REQUIRED TO EXISTING P.C. CONCRETE
DRILLED DOWEL DETAIL
N.T.S.

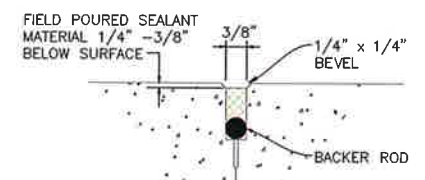


TYPE A-1 LONGITUDINAL EXPANSION JOINT -
THICKENED EDGE W/ DRILLED DOWELS
N.T.S.



TYPE A-2 TRANSVERSE EXPANSION JOINT
N.T.S.

EXPANSION JOINTS



DETAIL A

DRAWING DISCLAIMER

THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:

NO.	DATE	DESCRIPTION

PREPARED FOR:

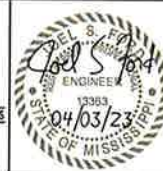
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:

**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

PREPARED BY:

ARE
ENGINEERING
CONSULTANTS
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (518) 222-6222
www.areconsultants.com
a division of FORD ENGINEERING SERVICES, PLLC



DRAWING NAME:

PAVEMENT DETAILS

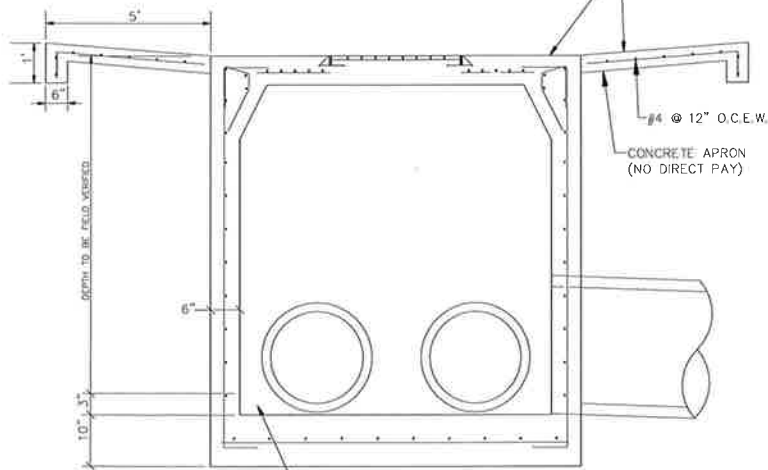
DRAWN BY: S.M.
CHECKED BY: J.S.F.
SCALE: N.T.S.
DATE: 02/15/23

DRAWING NO.

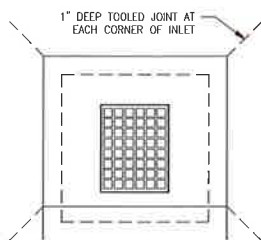
8

GENERAL NOTES:

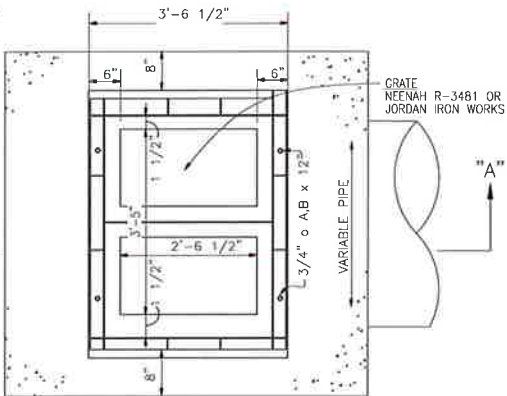
1. ALL CORNERS TO BE CHAMFERED 3/4"
2. RUBBED FINISH REQUIRED ON EXPOSED SURFACES
3. R.C. CATCH BASIN SHALL CONFORM TO A.A.S.H.T.O. DESIGNATION M-85 CLASS A CONCRETE (3800 P.S.I. - 28 DAYS) PORTLAND CEMENT.
4. C.I. FRAME AND LID SHALL BE BITUMINOUS COATED
5. REINFORCE BARS SHALL CONFORM TO A.S.T.M. DESIGNATION A-615 (GRADE 40).
6. STEEL MESH TO CONFORM TO A.S.T.M. A-185.
7. GRATES TO BE CENTERED.
8. BACKFILL TO BE COMPACTED TO 95% DENSITY.



SECTION A-A

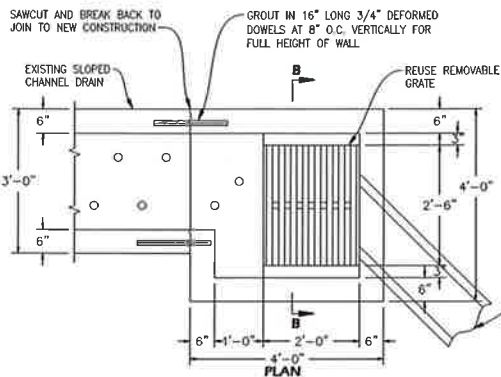


APRON PLAN

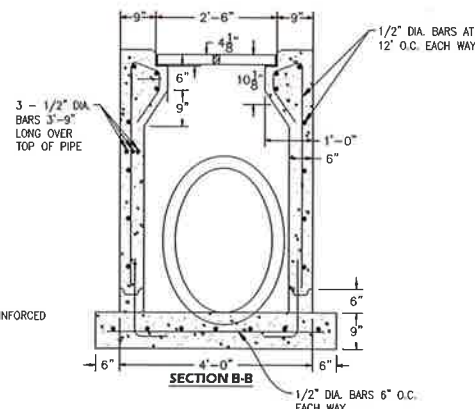


PLAN INLET STRUCTURE
(APRON NOT SHOWN)

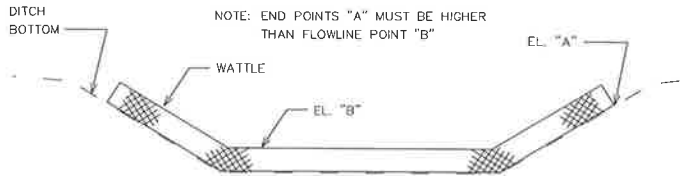
1 INLET DETAILS
SCALE N.T.S.



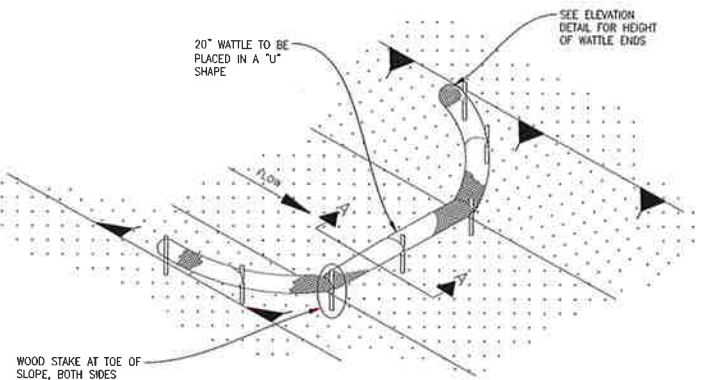
4 JUNCTION BOX AT SOUTH END OF WEST APRON
SCALE N.T.S.



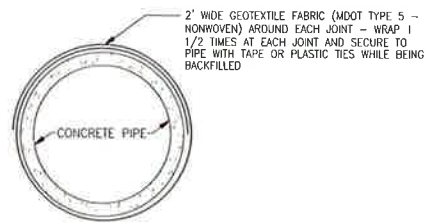
SECTION B-B



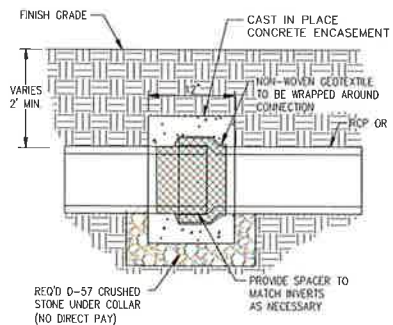
ELEVATION DETAIL



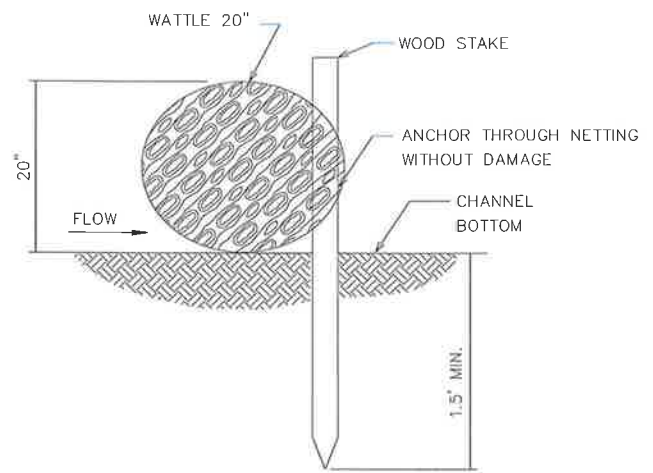
2 WATTLE DITCH CHECK DETAIL
SCALE N.T.S.



3 CONCRETE PIPE JOINT WRAP DETAIL
SCALE N.T.S.



5 PIPE COLLAR CONNECTION DETAIL
SCALE N.T.S.



SECTION A-A

NOTES:

1. MINIMUM RECOMMENDED PLACEMENT INTERVAL BETWEEN WATTLE DITCH CHECK IS 100' UNLESS SHOWN OTHERWISE ON THE PLANS OR EROSION CONTROL PLAN APPROVED BY THE ENGINEER. SEE SPACING GUIDANCE ON ECD-4
2. ANCHORING WOOD STAKES SHALL BE SIZED, SPACED, DRIVEN, AND BE OF A MATERIAL THAT EFFECTIVELY SECURES THE CHECK. STAKE SPACING SHALL BE A MAXIMUM OF THREE FEET.
3. ALL NON-DEGRADABLE MATERIALS SHALL BE REMOVED WHEN NO LONGER NEEDED.
4. TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
5. WATTLES SHOULD NOT BE USED IN HARD BOTTOM CHANNELS.

WATTLE DITCH CHECK SELECTION GUIDELINES

WATTLE DITCH CHECKS ARE APPROPRIATE FOR VELOCITY REDUCTION AND CONTROL OF SEDIMENT TRANSPORT UNDER LOW TO MEDIUM FLOW CONDITIONS.

DRAWING DISCLAIMER
THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY REVISION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

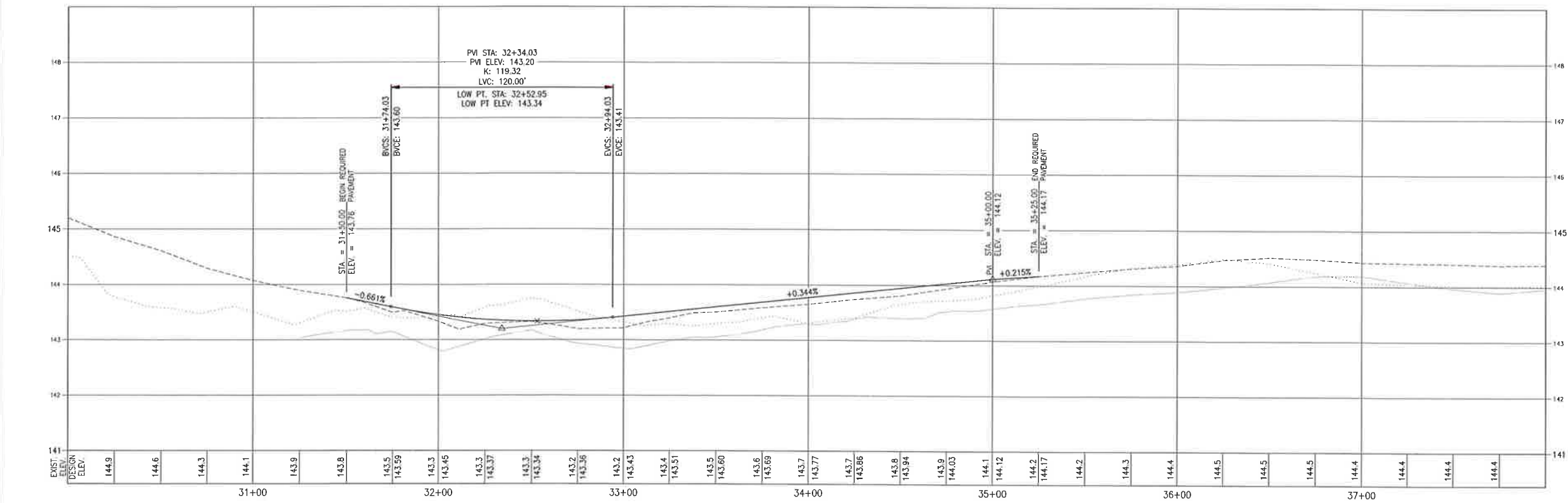
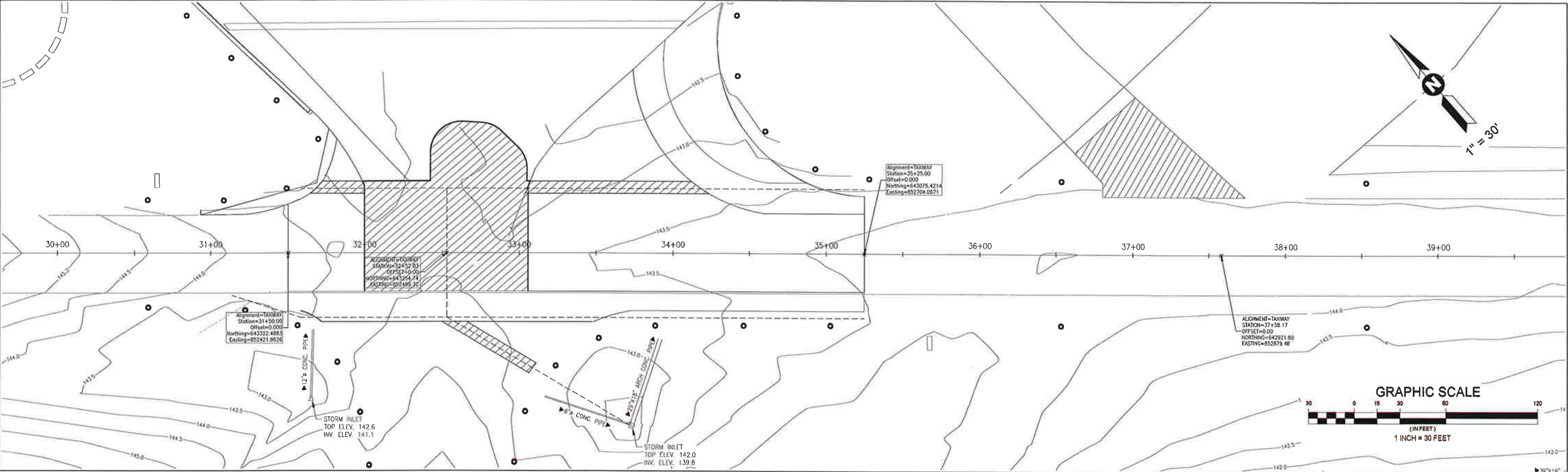
PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

PREPARED BY:
**ARE
ENGINEERING
CONSULTANTS**
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (318) 222-8282
www.areconsultants.com
a division of FORD ENGINEERING SERVICES, PLLC



DRAWING NAME:
**DRAINAGE & EROSION CONTROL
DETAILS**

DRAWN BY: S.M.
CHECKED BY: J.S.F.
SCALE: N.T.S.
DATE: 02/15/23
DRAWING NO.
9



LEGEND	
	FINISHED GRADE TAXIWAY A CENTER
	EXISTING GRADE TAXIWAY A CENTER
	EXISTING GRADE 37.5' RIGHT
	EXISTING GRADE 37.5' LEFT

PROFILE SCALES
HOR.: 1" = 30'
VERT.: 1" = 1'

DRAWING DISCLAIMER
THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING. AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VIOLATION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED GRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

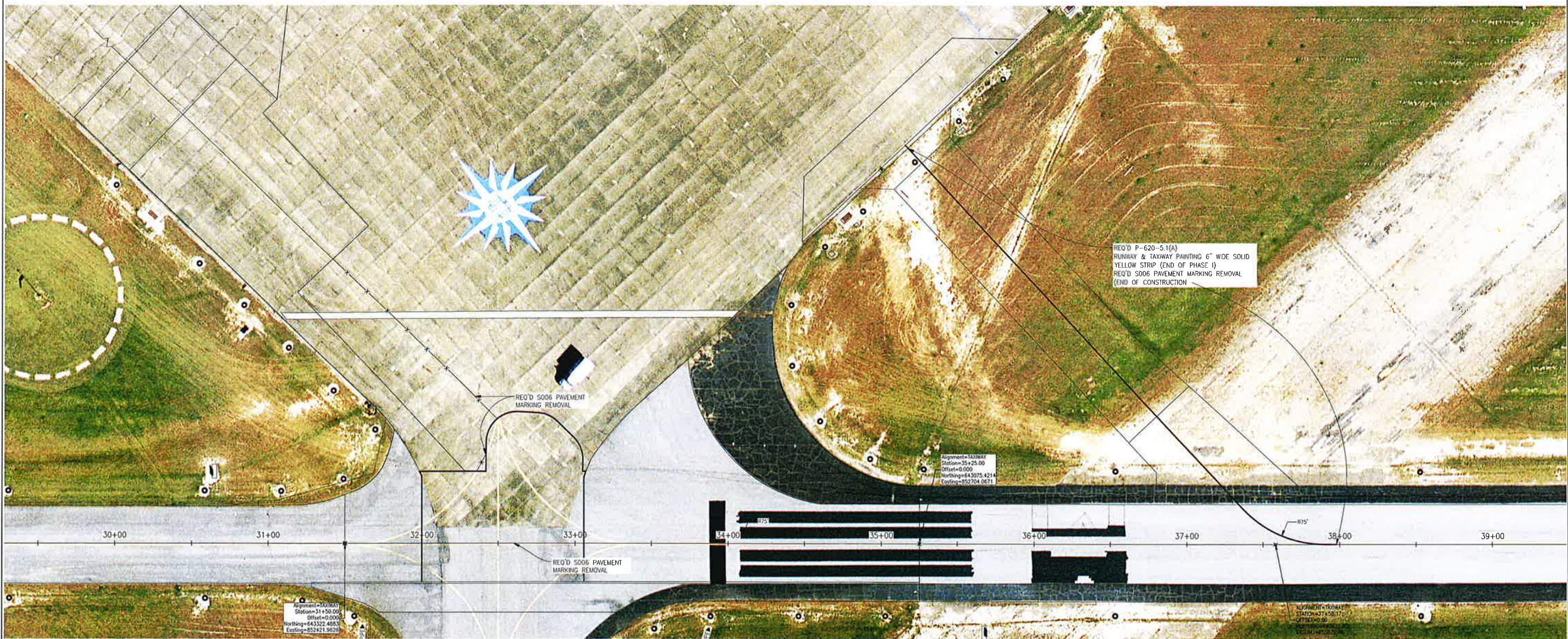
ARE
ENGINEERING
CONSULTANTS
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (518) 222-8222
www.areconsultants.com
a division of FORD ENGINEERING SERVICES, PLLC



DRAWING NAME:
PLAN AND PROFILE

DRAWN BY: JMO
CHECKED BY: JSF
SCALE: 1" = 30'
DATE: 02/15/23

DRAWING NO.
10



DRAWING DISCLAIMER
THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VIOLATION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED GRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

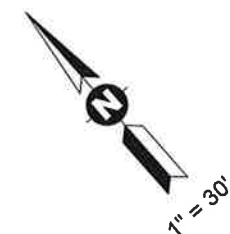
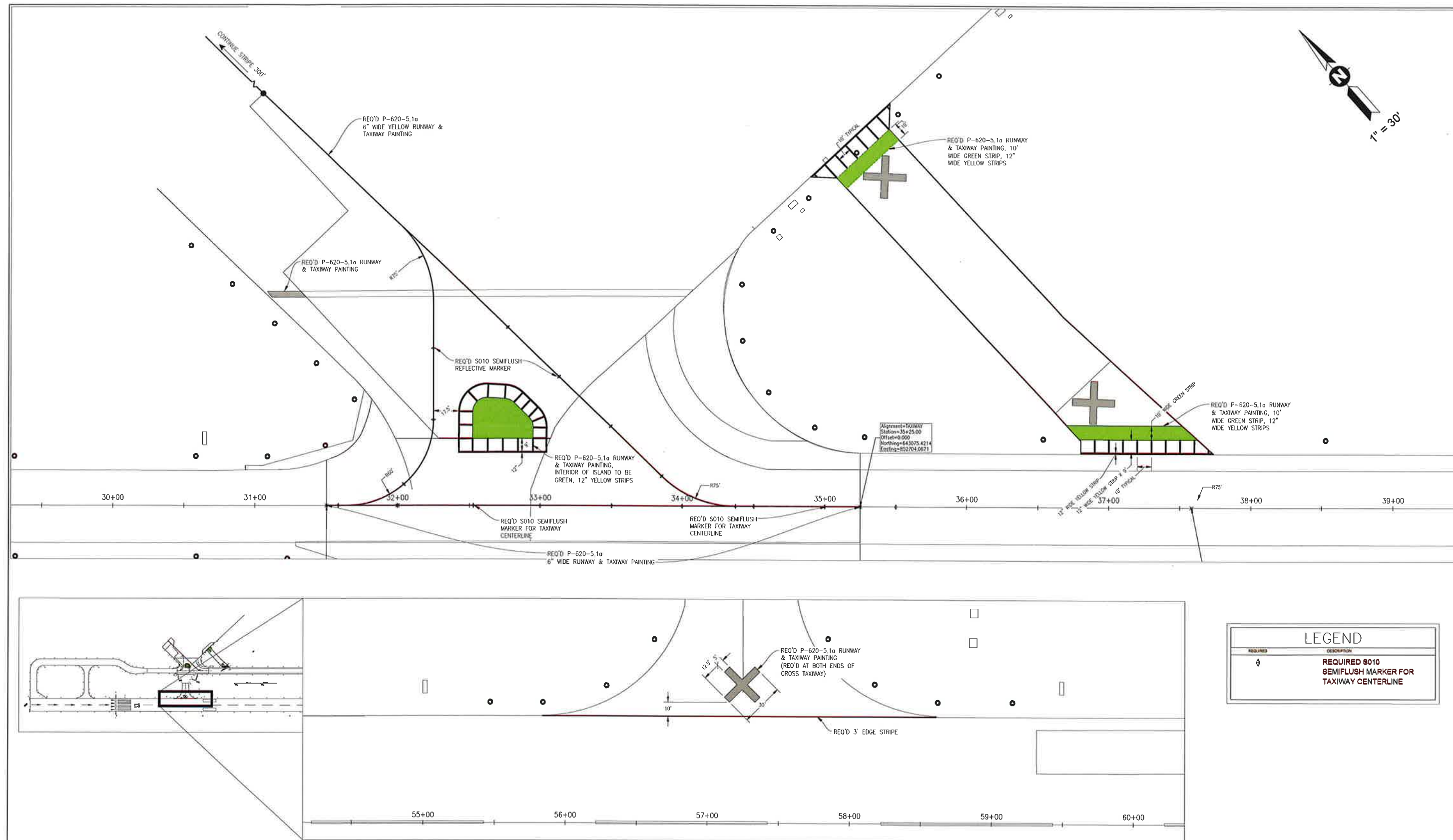
**ARE
ENGINEERING
CONSULTANTS**
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (318) 222-8282
www.areconsults.com
a division of FORD ENGINEERING SERVICES, PLLC



DRAWING NAME:
**TEMPORARY PAVEMENT MARKING
& MARKING REMOVAL**

DRAWN BY: S.M.
CHECKED BY: J.S.F.
SCALE: 1" = 30'
DATE: 02/15/23

DRAWING NO.
11



LEGEND	
REQUIRED	DESCRIPTION
	REQUIRED S010 SEMIFLUSH MARKER FOR TAXIWAY CENTERLINE

DRAWING DISCLAIMER
THIS DRAWING WAS PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IF SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**

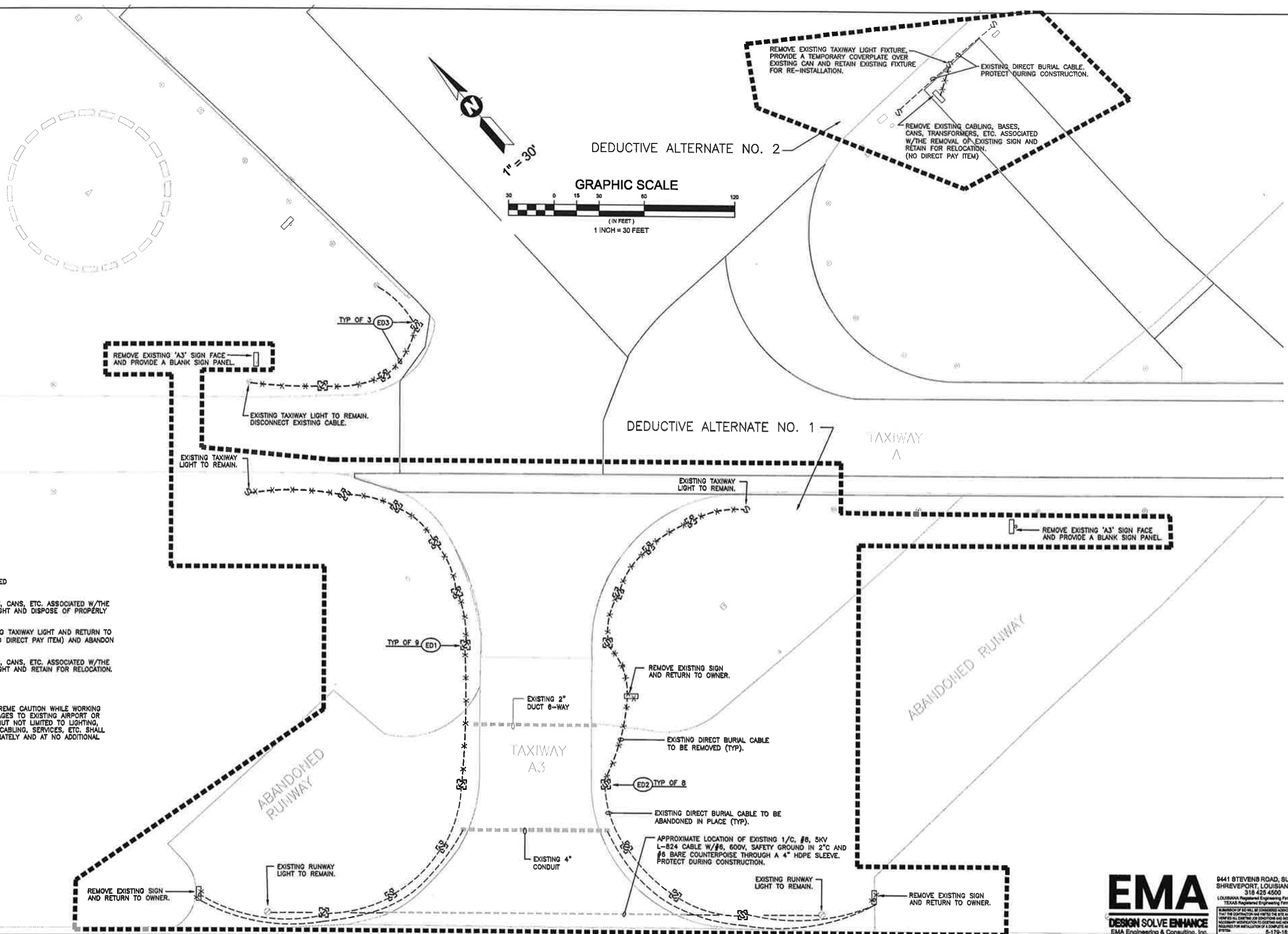
ARE
ENGINEERING
CONSULTANTS
PLANNING, DESIGN, & MANAGEMENT PROFESSIONALS
800 Spring Street, Suite 214 | Shreveport, LA 71101
Phone: (318) 222-8282
www.areconsultants.com
a division of FORD ENGINEERING SERVICES, PLLC



DRAWING NAME:
**PERMANENT PAVEMENT MARKING
& MARKING REMOVAL**

DRAWN BY: S.M.
CHECKED BY: J.S.F.
SCALE: 1" =
DATE: 02/15/23

DRAWING NO.
12



ELECTRICAL DEMOLITION NOTES:

- x-x-x- EXISTING TO BE REMOVED
- EXISTING TO REMAIN

- ED1 REMOVE EXISTING CABLING, BASES, CANS, ETC. ASSOCIATED W/THE REMOVAL OF EXISTING TAXIWAY LIGHT AND DISPOSE OF PROPERLY AT AN OFF-SITE LOCATION.
- ED2 DISCONNECT AND REMOVE EXISTING TAXIWAY LIGHT AND RETURN TO OWNER. PROVIDE COVERPLATE (NO DIRECT PAY ITEM) AND ABANDON CAN IN PLACE.
- ED3 REMOVE EXISTING CABLING, BASES, CANS, ETC. ASSOCIATED W/THE REMOVAL OF EXISTING TAXIWAY LIGHT AND RETAIN FOR RELOCATION.

GENERAL NOTES:

- 01 CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHILE WORKING AROUND PROJECT AREA. ANY DAMAGES TO EXISTING AIRPORT OR FAA INFRASTRUCTURE, INCLUDING BUT NOT LIMITED TO LIGHTING, PIPING, UTILITIES, COMMUNICATION CABLING, SERVICES, ETC. SHALL BE REPAIRED OR REPLACED IMMEDIATELY AND AT NO ADDITIONAL COST TO THE OWNER.

DRAWING DISCLAIMER:

THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:

NO.	DATE	DESCRIPTION

PREPARED FOR:

**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

PROJECT:

**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**



DRAWING NAME:

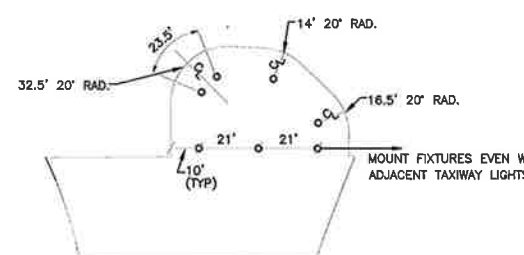
**PARTIAL SITE PLAN
POWER AND LIGHTING
DEMOLITION**



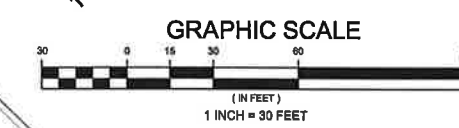
0441 STEVENS ROAD, SUITE 200
SHREVEPORT, LOUISIANA 71106
318 420 4500
LOUISIANA Professional Engineering Firm BEP-0818
TEXAS Professional Engineering Firm BEP-0818
I am a member of the National Society of Professional Engineers (NSPE) and the American Society of Professional Engineers (ASPE).
I am a member of the Louisiana Society of Professional Engineers (LSPE) and the Mississippi Society of Professional Engineers (MSPE).
I am a member of the National Society of Professional Engineers (NSPE) and the American Society of Professional Engineers (ASPE).
I am a member of the Louisiana Society of Professional Engineers (LSPE) and the Mississippi Society of Professional Engineers (MSPE).

DRAWN BY: LW
CHECKED BY: TS
SCALE: AS SHOWN
DATE: 04/23

DRAWING NO.
13



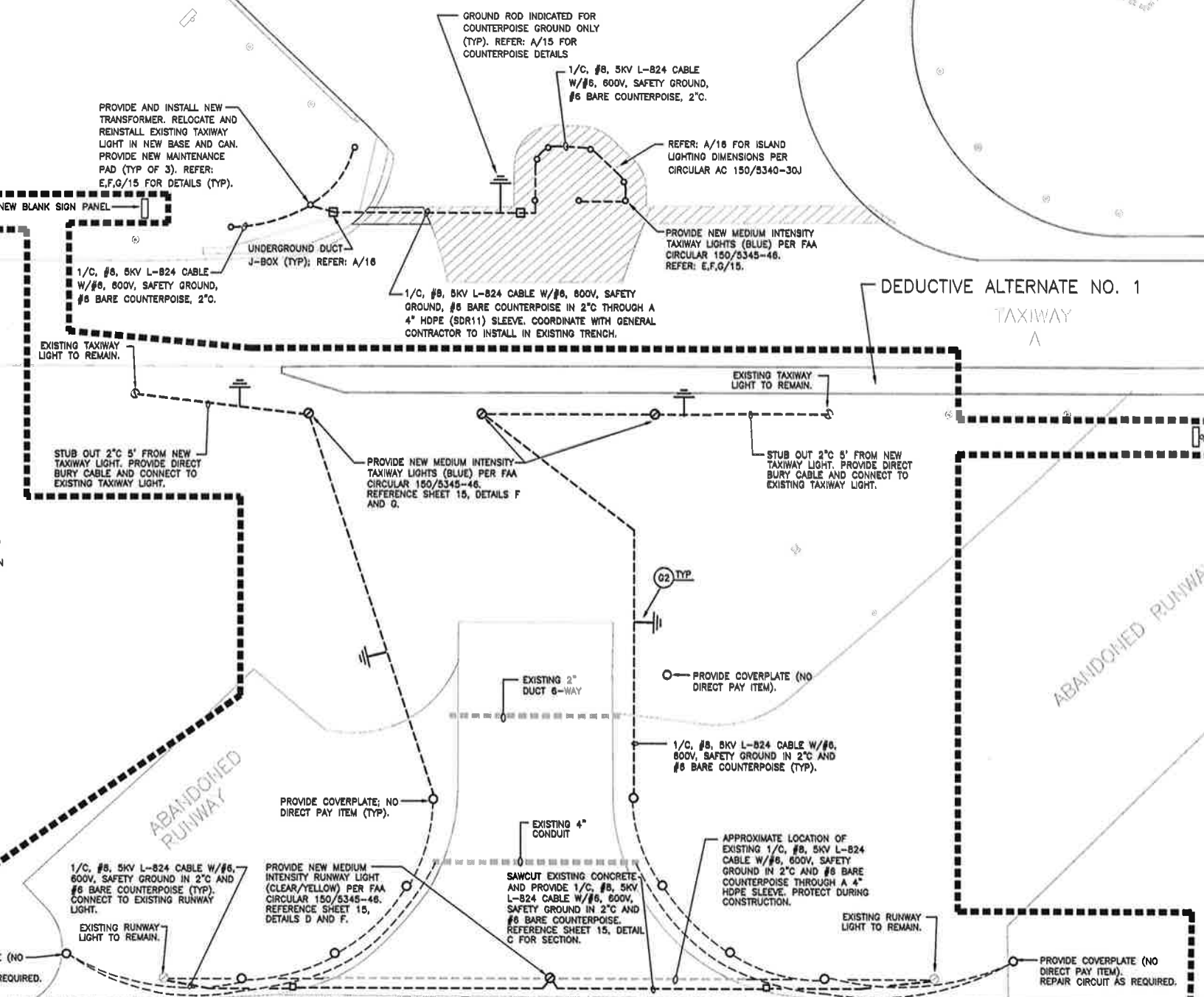
A ISLAND LIGHTING DIMENSIONS
NO SCALE



DEDUCTIVE ALTERNATE NO. 2

1. AFTER TEMPORARY TAXIWAY HAS BEEN REMOVED, CONTRACTOR SHALL REMOVE TEMPORARY COVERPLATE AT EXISTING CAN AND RE-INSTALL TAXIWAY LIGHT FIXTURE AND RECONNECT.
2. RELOCATE AND REINSTALL EXISTING SIGN PER FAA CIRCULAR 150/5340-18G. PROVIDE 1/C, #8, 5KV L-824 CABLE W/#6, 600V, SAFETY GROUND IN 2" C AND #6 BARE COUNTERPOISE. (NO DIRECT PAY ITEM)

- GENERAL NOTES:**
- CONTRACTOR SHALL VERIFY EXACT LOCATION OF ALL UNDERGROUND UTILITIES/16 UNDERGROUND AIRFIELD LTO CKT CONDUCTORS, ETC PRIOR TO EXCAVATION OR TRENCHING. HAND EXCAVATE NEAR AND AROUND EXTG U/G AIRFIELD LTO CKT CONDUCTORS. ANY DAMAGED U/G UTILITIES SHALL BE REPAIRED IMMEDIATELY AT THE CONTRACTORS EXPENSE.
 - THE COUNTERPOISE CONDUCTOR IS NOT SHOWN FOR CLARITY. REFERENCE DETAILS "A", "B" AND "C" ON SHEET 14. THE BARE #6AWG CONDUCTOR IS INSTALLED IN ITS OWN TRENCH 8" BELOW GRADE, HALF WAY BETWEEN THE RUNWAY AND TAXIWAY AND THE LTO CKT CONDUCTORS WHEN RUN ADJACENT TO A RUNWAY OR TAXIWAY, THE COUNTERPOISE IS RUN IN THE SAME TRENCH WITH THE LTO CKT CONDUCTORS WHEN RUN UNDER A RUNWAY/TAXIWAY OR HOMERUN TO AIRFIELD LTO VAULT. GROUND RODS ARE ALSO INSTALLED 500' (FT) APART ON THE COUNTERPOISE SYSTEM. THE COUNTERPOISE TERMINATES WITH A GROUND ROD ON EACH SIDE OF A DUCT CROSSING. REFERENCE A/C 150/5340-30.



DEDUCTIVE ALTERNATE NO. 1

EMA
DESIGN SOLVE ENHANCE
EMA Engineering & Consulting, Inc.

8441 STEVENS ROAD, SUITE 200
SHREVEPORT, LOUISIANA 71106
318 425 4500
LOUISIANA Registered Engineering Firm #14818
Tennessee Registered Engineering Firm #14818

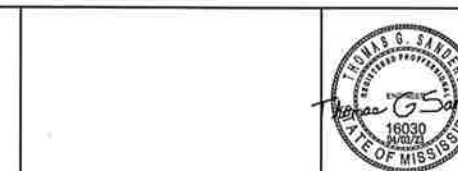
EXEMPTION OF FEE: THIS DRAWING IS CONSIDERED A NON-CONTRACT DOCUMENT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE PROJECT. THE ENGINEER'S RESPONSIBILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE PROJECT.

DRAWING DISCLAIMER
THIS DRAWING HAS BEEN PREPARED FOR THE OWNER FOR USE ON THIS PROJECT ONLY AND IT SHALL NOT BE USED ON ANY PROJECT OTHER THAN THE ONE SPECIFICALLY LISTED ON THIS DRAWING AND IT SHALL NOT BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE ENGINEER. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.

DRAWING REVISIONS:		
NO.	DATE	DESCRIPTION

PREPARED FOR:
**CITY OF HATTIESBURG
BOBBY L. CHAIN MUNICIPAL
AIRPORT**

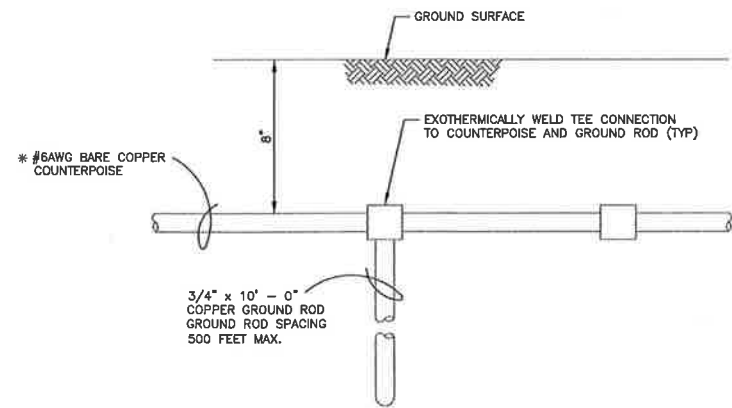
PROJECT:
**TAXIWAY A REALIGNMENT &
IMPROVEMENTS
HATTIESBURG, MISSISSIPPI**



DRAWING NAME:
**PARTIAL SITE PLAN
POWER AND LIGHTING**

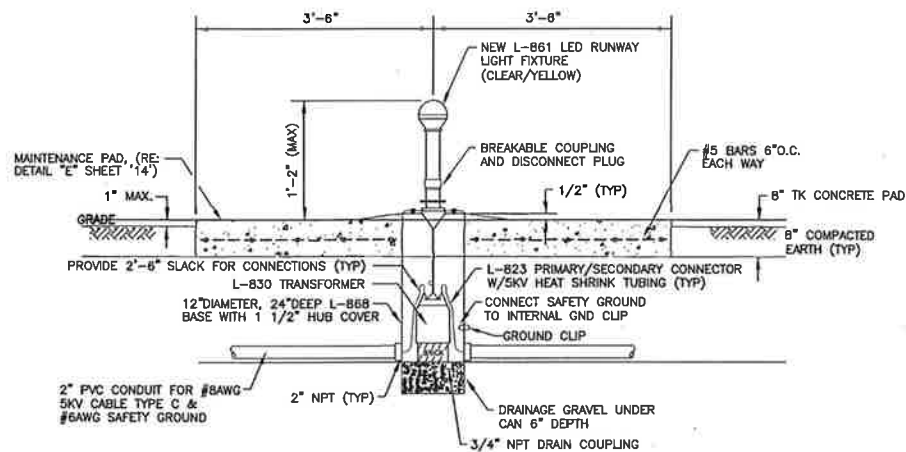
DRAWN BY: LW
CHECKED BY: TS
SCALE: AS SHOWN
DATE: 04/23

DRAWING NO.
14

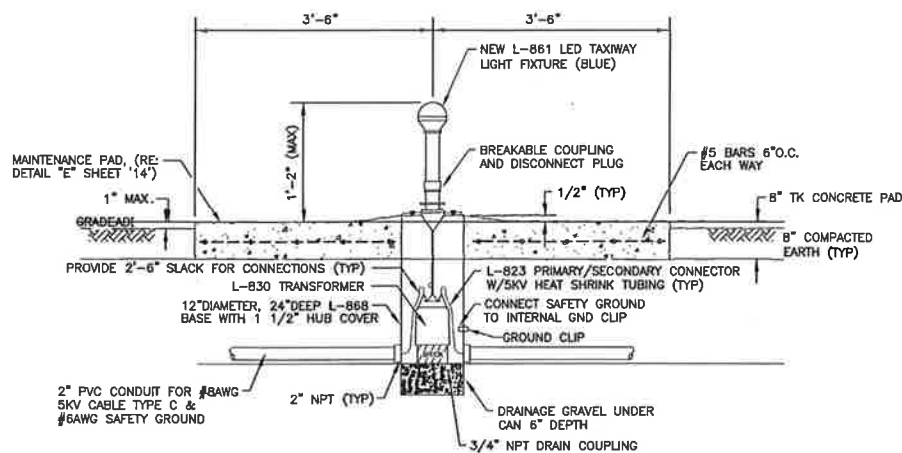


A DETAIL - GROUND ROD/COUNTERPOISE INSTALLATION (TYP) NO SCALE

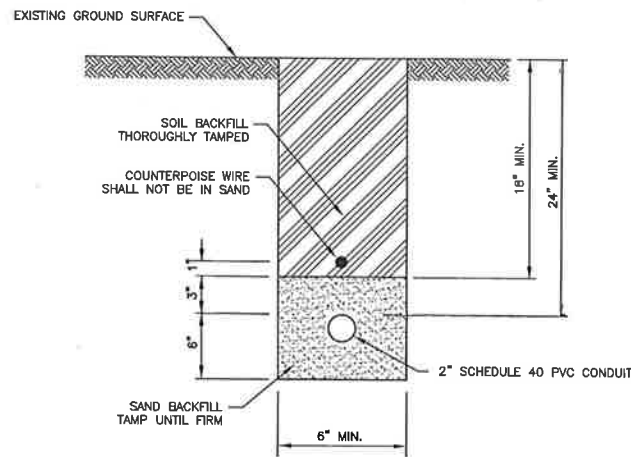
- NOTES:
- 1) COUNTERPOISE SHALL BE LOCATED HALFWAY BETWEEN RUNWAY/TAXIWAY AND LTG CKT CONDUCTORS WHEN RUN ADJACENT W/RUNWAY/TAXIWAY.
 - 2) ROUTE COUNTERPOISE IN TRENCH W/LTG CKT CONDUCTORS, WHEN ROUTING IN DUCT UNDER RUNWAY/TAXIWAY OR WHEN NOT ADJACENT W/RUNWAY/TAXIWAY.
 - 3) TERMINATE COUNTERPOISE AT GROUND RODS LOCATED ON EACH SIDE OF DUCT CROSSING.



D DETAIL - ELEVATED RUNWAY EDGE LIGHT NO SCALE

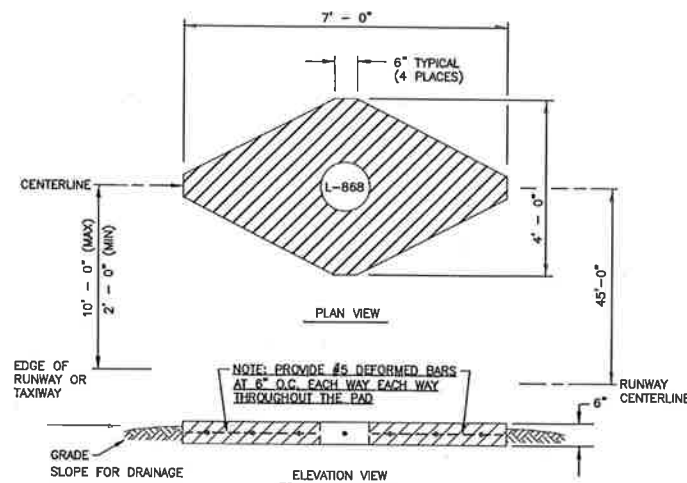


G DETAIL - ELEVATED TAXIWAY EDGE LIGHT NO SCALE

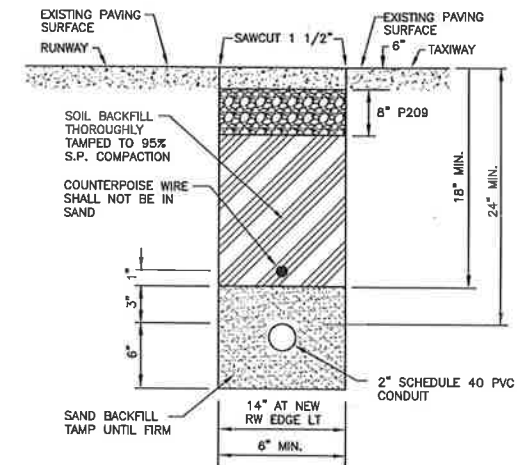


B DETAIL - CONDUIT INSTALLATION (TYP) NO SCALE

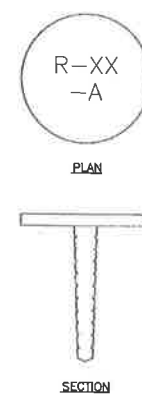
- NOTES:
- 1) WHEN ROUTING CONDUCTORS THAT ARE NOT ADJACENT TO THE RUNWAY/TAXIWAY, COUNTERPOISE SHALL BE ROUTED IN THE SAME TRENCH W/LTG CKT CONDUCTORS.



E DETAIL - RUNWAY/TAXIWAY LIGHT MAINTENANCE PAD - NO DIRECT PAY NO SCALE



C DETAIL - TAXIWAY SAWCUT SECTION NO SCALE



F DETAIL - BRASS FIXTURE IDENTIFICATION MARKER - NO DIRECT PAY NO SCALE

- NOTE:
- PROVIDE AND INSTALL BRASS TAG AT EACH RUNWAY, THRESHOLD AND TAXIWAY FIXTURE TO ID FUNCTION AND/OR CIRCUIT.
- SURV-KAP OR EQUAL, 2\"/>

DRAWING DISCLAIMER THIS DRAWING HAS BEEN PREPARED FOR THE OWNER'S USE ONLY. IT IS NOT TO BE USED FOR ANY OTHER PROJECT WITHOUT WRITTEN CONSENT FROM THE PREPARED. ANY VERSION OF THIS DRAWING WITHOUT AN ENGINEERING SEAL AFFIXED TO IT WITH A SIGNATURE AND DATE ACROSS THE SEAL SHALL BE CONSIDERED DRAFT AND SHALL NOT BE USED FOR PLANNING, CONSTRUCTION, OR FOR ANY OTHER OFFICIAL USE.	DRAWING REVISIONS: <table><thead><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td></tr></tbody></table>	NO.	DATE	DESCRIPTION																															PREPARED FOR: CITY OF HATTIESBURG BOBBY L. CHAIN MUNICIPAL AIRPORT	PROJECT: TAXIWAY A REALIGNMENT & IMPROVEMENTS HATTIESBURG, MISSISSIPPI		DRAWING NAME: DETAILS DRAWN BY: LW CHECKED BY: TS SCALE: AS SHOWN DATE: 05/22 DRAWING NO. 15
NO.	DATE	DESCRIPTION																																				

SPECIFICATIONS AND CONTRACT DOCUMENTS

HATTIESBURG-BOBBY L. CHAIN
MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT
AND IMPROVEMENTS

AIP NO. 3-28-0031-0030-2023

CITY OF
HATTIESBURG

Prepared By

ARE Engineering Consultants

800 Spring Street, Suite 214, Shreveport, LA 71101

P.O. Box 38252, (318) 222-8252

2010 Oak Grove Road, Building 4, Suite 1, Hattiesburg, MS 39402





DESIGN SOLVE ENHANCE

SPECIFICATION INDEX

Hattiesburg-Bobby L. Chain Municipal Airport Taxiway A Realignment and Improvements

EMA Job #5-179-1813-002



April, 2023

Item L-108	Underground Power Cable for Airports
Item L-110	Airport Underground Electrical Duct Banks and Conduits
Item L-125	Installation of Airport Lighting Systems
Item S-003	Demolition
Item S-005	Removal and Reinstallation of Existing Light Fixtures
Item S-009	Removal and Relocation of Existing Light Fixtures

SPECIFICATIONS AND CONTRACT DOCUMENTS

HATTIESBURG-BOBBY L. CHAIN
MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT
AND IMPROVEMENTS

AIP NO. 3-28-0031-0030-2023

CITY OF
HATTIESBURG

Prepared By

ARE Engineering Consultants

800 Spring Street, Suite 214, Shreveport, LA 71101

P.O. Box 38252, (318) 222-8252

2010 Oak Grove Road, Building 4, Suite 1, Hattiesburg, MS 39402



TABLE OF CONTENTS

CONTRACT DOCUMENTS.....	1
SECTION A: ADVERTISEMENT TO BIDDERS.....	1
SECTION B: INSTRUCTIONS FOR BIDDERS.....	3
SECTION C: MANDATORY CONTRACT PROVISIONS	7
SPECIAL INSTRUCTION TO BIDDERS REGARDING EEO.....	7
SPECIAL NOTICE TO BIDDERS	9
INSTRUCTIONS REGARDING CONTRACTOR'S INSURANCE.....	10
REQUIRED LANGUAGE IN PROPOSALS FOR AIP CONTRACT.....	11
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION.....	12
CERTIFICATION REGARDING FOREIGN TRADE RESTRICTIONS	13
BUY AMERICAN CERTIFICATION	14
CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT OPPORTUNITY.....	15
CERTIFICATION OF NONSEGREGATED FACILITIES.....	16
WAGE, LABOR, EEO, SAFETY AND GENERAL REQUIREMENTS	17
Part A: FEDERAL AVIATION ADMINISTRATION REQUIREMENTS	17
Part B: DAVIS-BACON ACT REQUIREMENTS	19
Part C: CONTRACT WORK HOURS AND SAFETY STANDARDS ACT REQUIREMENTS	26
Part D: EQUAL EMPLOYMENT OPPORTUNITY	28
Part E: CLEAN AIR AND WATER POLLUTION CONTROL REQUIREMENTS	30
Part F: STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY CONSTRUCTION.....	31
Part G: CONTRACTUAL REQUIREMENTS PURSUANT TO CIVIL RIGHTS ACT OF 1964, TITLE VI.....	36
Part H: TERMINATION OF CONTRACT	37
Part I: BUY AMERICAN: STEEL AND MANUFACTURED PRODUCTS FOR CONSTRUCTION CONTRACTS	38
DISADVANTAGED BUSINESS ENTERPRISE CONTRACT PROVISIONS	39
BIDDERS INSTRUCTIONS AND CHECKLIST	41
SECTION D: BID INFORMATION	
BID FORM	42
BID BOND	48
AFFIDAVIT	50
CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND VOLUNTARY EXCLUSION.....	51
ELIGIBILITY QUESTIONNAIRE.....	52
ACKNOWLEDGMENT OF CONTINUING OBLIGATION TO INFORM.....	55
SECTION E: CONTRACT	56
SECTION F: PERFORMANCE AND PAYMENT BOND.....	59
SECTION G: CERTIFICATE AND RELEASE	63

SECTION H: SPECIAL PROVISIONS	65
SECTION I: ADDITIONAL INSURANCE PREMIUM.....	I-3.2
ENGINEERING AND DESIGN SPECIFICATIONS	73
PART I: GENERAL PROVISIONS.....	74
SECTION 10: DEFINITION OF TERMS.....	74
MODIFICATIONS TO SECTION 20.....	81
SECTION 20: REQUIREMENTS AND CONDITIONS	82
SECTION 30: AWARD AND EXECUTION OF CONTRACT	86
SECTION 40: SCOPE OF WORK	88
SECTION 50: CONTROL OF WORK	92
SECTION 60: CONTROL OF MATERIALS	98
SECTION 70: LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC	101
SECTION 80: PROSECUTION AND PROGRESS.....	109
SECTION 90: MEASUREMENT AND PAYMENT.....	116
SECTION C-100: CONTRACTOR QUALITY CONTROL PROGRAM (CQCP)	C-100
DESIGN SPECIFICATIONS.....	131
PART II: EARTHWORK	
ITEM P-151: CLEARING AND DEMOLITION	P-151-1
ITEM P-152: EXCAVATION AND EMBANKMENT	P-152-1
PART III: FLEXIBLE BASE COURSES	
ITEM P-209: CRUSHED AGGREGATE BASE COURSE	P-209-1
PART IV: RIGID BASE COURSES	
Not Used	
PART V: FLEXIBLE SURFACE COURSES	
ITEM P-401: PLANT MIX BITUMINOUS PAVEMENTS	P-401-1
ITEM P-403: PLANT MIX BITUMINOUS PAVEMENTS (LEVELING COURSE).	P-403-1
PART VI: RIGID PAVEMENT	
ITEM P-501	P-501-1
PART VII: MISCELLANEOUS	
ITEM P-602: BITUMINOUS PRIME COAT	P-602-1
ITEM P-603: BITUMINOUS TACK COAT	P-603-1
ITEM P-620: CLARIFICATIONS TO SPECIFICATIONS ITEM P-620	P-620-M
ITEM P-620: RUNWAY AND TAXIWAY MARKING	P-620-1
PART VIII: FENCING	
Not Used	
PART IX: DRAINAGE	
ITEM D-701: PIPE FOR STORM DRAINS AND CULVERTS.	D-705-1

ITEM D-705: PIPE UNDERDRAINS FOR AIRPORTS	D-705-1
ITEM D-751: MANHOLES, CATCH BASIN, INLETS AND INSTECTION HOLES	D-751-1

PART XI: LIGHTING INSTALLATION

ITEM D-751: MODIFICATIONS TO MANHOLES, CATCH BASINS, INLETS AND INSPECTION HOLES	D-751-M
ITEM D-751: MANHOLES, CATCH BASINS, INLETS AND INSPECTION HOLES	D-751-1
ITEM L-108: UNDERGROUND POWER CABLE FOR AIRPORTS	L-108-1
ITEM L-110: AIRPORT UNDERGROUND ELECTRICAL DUCT BANKS AND CONDUITS	L-110-1
ITEM L-125: INSTALLATION OF AIRPORT LIGHTING SYSTEMS	L-125-1
ITEM T-901: CLARIFICATIONS TO ITEM T-901	T-901-M
ITEM T-901: SEEDING.	T-901-1

SPECIAL SECTIONS

S001: MOBILIZATION	S001-1
S002: PAVING FABRIC	S002-1
S003: DEMOLITION (ELECTRICAL)	S003-1
S004: COLD PLANNING ASPHALT PAVEMENT	S004-1
S005: REMOVAL AND REINSTALLATION OF EXISTING LIGHT FIXTURES	S005-1
S006: PAVEMENT MARKING REMOVAL	S006-1
S007: CONSTRUCTION LAYOUT	S007-1
S008: RESTORE CHANNEL DRAIN CATCH BASIN.	S008-1
S009: RELOCATE AND REINSTALL EXISTING TAXIWAY LIGHT	S009-1
S010: SEMIFULSH MARKER OF TAXIWAY CENTER LINE	S010-1

ITEM I-3.2 ADDITIONAL INSURANCE PREMIUM	I-3.2
---	-------

END OF TABLE OF CONTENTS

CONTRACT DOCUMENTS

SECTION A: ADVERTISEMENT FOR BIDDERS

Proof of Publication Required.

SEALED BIDS for construction of the following will be received by the City of Hattiesburg in the City Clerks Office, City Hall, Hattiesburg, MS 39401 until 10:00 a.m. Central Time on June 8, 2023 for Hattiesburg-Bobby L. Chain Runway Taxiway A Realignment And Improvements (A.I.P. Project No. 3-28-0031-0030-2023) for the City of Hattiesburg.

This project shall generally consist of work which includes: Demolition, Airfield Lighting, P.C. Concrete Paving, Asphaltic Concrete Paving, Asphaltic Paved Transition, Electrical, Pavement Marking, Drainage Restoration.

Bids will be publicly opened and read aloud. Any bid received after closing time will be returned unopened.

Plans and specifications are being made available via paper or digital copy at www.hattiesburgsbids.com. Plan Holders are required to log-in or register for an account to view and order bid documents. Bid documents obtained through the website are non-refundable. Questions regarding website registration and online orders, please contact Plan House at 601-336-6378. Also bid documents are available from ARE Engineering Consultants for a refundable deposit of \$100.00. For questions related to the contract documents contact ARE Engineering Consultants at (318)222-8252. No partial sets of drawings of project manuals will be issued.

Proposal shall be submitted on Bid Forms provided with the specifications. Bids may be submitted in person, or for those interested, bids can be electronically submitted at www.hattiesburgsbids.com. No oral, telegraphic, telephonic, or e-mail proposals will be considered. For sealed bids, the current Certificate of Responsibility Number of the bidder shall appear on the outside of each sealed envelope containing a proposal, said envelope being plainly marked as shown below. If submitting electronically, please include this information on a cover page with your bid submission.

Bobby L. Chain Airport
Taxiway A Realignment And Improvements
A.I.P Project No. 3-28-0031-0030-2023
for the City of Hattiesburg.

Each Bid must be accompanied by a bid bond/security deposit or certified check in an amount equal to 5% of the bid. In the event that an electronic bid is submitted, a copy of the bid bond must be included with the submission. If submitting electronically, a hard copy of all bid documents must be provided within 3 business days if requested after the bid opening.

Evidence that a Contractor holds a valid Mississippi Contractor's License must be presented prior to release of bidding documents and/or submittal of a bid proposal. The required classification is Highway, Street, and Bridge Construction. The DBE goal is 7.73 percent.

It is the policy of the Department of Transportation (DOT) that disadvantaged business enterprises as defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or part with Federal funds.

The proposed contract is subject to the Buy American provision under Section 9129 of the Aviation Safety and Capacity Expansion Act of 1990. Details of such requirements are contained in the specifications.

The following question will be asked of all bidders: "Has the bidder defaulted on a contract or ever been involved in litigation with a political subdivision of the State of Mississippi or any other state or country?" _____ YES
_____ NO If "YES," please supply full details.

The City of Hattiesburg reserves the right to reject any or all bids and to waive informalities.

The successful contractor is required to hold bid prices for up to 130 days after the bid opening to allow availability and placement of federal funding.

BID DATE: June 8, 2023 10:00 a.m. Central Time

A mandatory pre-bid conference is scheduled for 10:00 a.m. Thursday, May 25, 2023 in the Airport Conference Room, 29 Academy Drive, Hattiesburg Bobby L. Chain Airport, Hattiesburg, MS.

By: _____
City Clerk, City of Hattiesburg

Dates of Publication:

The Post

Thursday, May 4, 2023

Thursday, May 11, 2023

Clarion Ledger

Thursday, May 4, 2023

Thursday, May 11, 2023

SECTION B: INSTRUCTIONS FOR BIDDERS

1. DEFINED TERMS

Terms used in these Instructions to Bidders which are defined in the General Provisions of the Construction Specifications have the meanings assigned to them in the General Provisions.

2. QUALIFICATIONS OF BIDDERS

To demonstrate his qualifications for the Project, each Bidder must be prepared to submit within five days of Owner's request written evidence of the types set forth in the Special Provisions or General Provisions, such as financial data, previous experience and evidence of authority to conduct business in the jurisdiction where the Project is located.

3. EXAMINATION OF CONTRACT DOCUMENTS AND SITE

3.1 Before submitting his Bid, each Bidder must (a) examine the Contract Documents thoroughly, (b) visit the site to familiarize himself with local conditions that may in any manner affect performance of the Work, (c) familiarize himself with Federal, state, and local laws, ordinances, rules and regulations affecting performance of the Work; and (d) carefully correlate his observations with the requirements of the Contract Documents.

3.2 Reference is made to the General Provisions of the Specifications for the identification of those surveys and investigation reports of subsurface or latent physical conditions at the site or otherwise affecting performance of the Work which have been relied upon by Engineer in preparing the Drawings and Specifications. Owner will make copies of such surveys and reports available to any Bidder requesting them. Before submitting his bid, each Bidder will, at his own expense, make such additional surveys and investigations as he may deem necessary to determine his Bid price for performance of the Work within the terms of the Contract Documents.

3.3 The submission of a Bid will constitute an incontrovertible representation by the Bidder that he has complied with every requirement of this Article 3.

4. INTERPRETATIONS

All questions about the meaning or intent of the Contract Documents shall be submitted to Engineer in writing. Replies will be issued by Addenda mailed or delivered to all parties recorded by Engineer as having received the bidding documents. Questions received less than five days prior to the date for opening of Bids will not be answered. Only questions answered by formal written Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

5. BID SECURITY

The amount and type of Bid Security is stated in the Advertisement of Bids. The required security must be in the form of a certified or bank cashier's check made payable to Owner or a bid bond issued by a surety licensed to conduct business in the state where the Project is located and named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department or by a Mississippi domiciled insurance company with at least an A rating in the latest printing of A. M. Best's Key Rating Guide and in accordance with Mississippi law. The Bid Security of the successful Bidder will be retained until he has executed the Agreement and furnished the required Contract Security, whereupon it will be returned; if he fails to execute and deliver the Agreement and furnish the required Contract Security within 10 days of the Notice of Award, Owner may annul the Notice of Award and the Bid Security of that Bidder will be forfeited. The Bid Security of any Bidder whom the Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of the seventh day after the executed Agreement is delivered by Owner to Contractor and the required Contract Security is furnished or the sixty-first day after the Bid Opening. Bid Security of other Bidders will be returned within seven days of the Bid Opening.

6. CONTRACT TIME

The number of days for the completion of Work (the Contract Time) is set forth in the Contract Form. Any provisions for liquidated damages are set forth in the Contract Documents. The contract time is established in calendar days.

7. SUBCONTRACTORS, ETC.

7.1 If the Supplementary Conditions, Special Provisions, General Provisions or Specifications require the identity of certain Subcontractors and other persons and organizations to be submitted to Owner in advance of the Notice of Award, the apparent low Bidder, and any other Bidder so requested, will within seven days after the day of the Bid Opening submit to Owner a list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of materials and equipment) proposed for those portions of the Work as to which such identification is so required. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontractor, person and organization if requested by Owner. If Owner or Engineer after due investigation has reasonable objection to any proposed Subcontractor, other person or organization, he may before giving the Notice of Award request the apparent low Bidder to submit an acceptable substitute without an increase in his Bid price. If the apparent low Bidder declines to make any such substitution, he will not thereby sacrifice his Bid Security. Any Subcontractor, other person or organization so listed and to whom Owner or Engineer does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer.

7.2 In contracts where the Contract Price is on the basis of Cost of the Work Plus a Fee. Contractor, prior to the Notice of Award, must identify in writing to Owner those portions of the Work that he proposes to subcontract and after the Notice of Award may only subcontract other portions of the Work with Owner's written consent.

7.3 Contractor shall not be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.

8. BID FORM

8.1 The Bid Form is included in the Contract Documents; additional copies may be obtained from Engineer.

8.2 Bid Forms must be completed in ink or by typewriter. The Bid price of each item on the form must be stated in words and numerals; in case of a conflict, words will take precedence. In case of mathematical discrepancies, the unit price shall take precedence.

8.3 NOT USED

8.4 Bids by partnerships must be executed in the partnership name and signed by a partner, his title must appear under his signature and the official address of the partnership must be shown below the signature.

8.5 NOT USED

8.6 The Bid shall contain an acknowledgment of receipt of all Addenda (the numbers of which shall be filled in on the Bid Form).

8.7 NOT USED

9. SUBMISSION OF BIDS

Bids shall be submitted at the time and place indicated in the Invitation for Bid and shall be submitted in an opaque sealed envelope, marked with the Project title, name and address of the Bidder, Contractor's license number for state in which the work is to be done, and accompanied by the Bid Security and other required documents.

10. MODIFICATION AND WITHDRAWAL OF BIDS

Bids may be modified or withdrawn by an appropriate document duly executed (in the manner that a Bid must be executed) and delivered to the place where Bids are to be submitted at any time prior to the opening Bids.

11. OPENING OF BIDS

Bids will be opened as indicated in the Invitation to Bid

12. BIDS TO REMAIN OPEN

All Bids shall remain open for the period of time stated in the Bid Form after the day of the Bid Opening, but Owner may, in his sole discretion, release any Bid and return the Bid Security prior to the date.

13. AWARD OF CONTRACT

13.1 Owner reserves the right to reject any and all Bid Schedules and Total Bids waive any and all informalities, and the right to disregard all nonconforming or conditional Bids or counter proposals.

13.2 In evaluating Bids, Owner shall consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and alternates and unit prices if requested on the Bid forms. He may consider the qualifications and experience of Subcontractors and other persons and organizations (including those who are to furnish the principal items of materials and equipment) proposed for those portions of the Work as to which the identity of Subcontractors and other persons and organizations to do the Work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time. Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to Owner's satisfaction.

13.3 If a contract is to be awarded, it will be awarded to the lowest responsible Bidder, for Bid schedule selected, whose evaluation by Owner indicates to the Owner that the award will be in the best interests of the Project and the Owner.

13.4 If the contract is to be awarded, Owner will give the apparent successful Bidder a Notice of Award within the time period specified for the Bid to be binding in the Bid Form.

13.5 Simultaneously with delivery of the executed counterparts of the Agreement to Owner, Contractor shall deliver to Owner the required Contract Security.

SECTION C: MANDATORY CONTRACT PROVISIONS

SPECIAL INSTRUCTION TO BIDDERS REGARDING EEO

Notice of Requirement for Affirmative Action to
Ensure Equal Employment Opportunity
(Executive Order 11246, as amended)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the contractor's aggregate work force in each trade on all construction work in the covered area, are as follows:

Goals for minority participation in each trade	Goals for female participation in each trade
31.0%	6.9%

The goals are applicable to all the contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the contractor performs construction work in a geographical area located outside the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The contractor's compliance with the executive order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications Set forth in 41 CFR Part 60-4.3(a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from contractor to contractor or from project to project, for the sole purpose of meeting the contractor's goals, shall be a violation of the contract, the executive order, and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The contractor shall provide written notification to the Director, OFCCP, within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address, and telephone number of the subcontractor; employee identification

number; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this notice and in the contract resulting from this solicitation, the "covered area" is the State of Mississippi, Forrest County, City of Hattiesburg.

SPECIAL NOTICE TO BIDDERS

BUY AMERICAN - STEEL AND MANUFACTURED PRODUCTS FOR CONSTRUCTION CONTRACTS (Aviation Safety and Capacity Expansion Act of 1990)

(a) The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. The following terms apply:

1. Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs (b) (1) or (2) shall be treated as domestic.

2. Components. As used in this clause, components means those articles, materials, and supplies incorporated directly into steel and manufactured products.

3. Cost of Components. This means the cost for production of the components, exclusive of final assembly labor costs.

(b) The successful bidder will be required to assure that only domestic steel and manufactured products will be used by the Contractor, subcontractors material, men, and suppliers in the performance of this contract, except those

(1) that the U. S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;

(2) that the U. S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or

(3) that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

INSTRUCTIONS REGARDING CONTRACTOR'S INSURANCE

Contractor's Liability Insurance Requirements. The bidder shall provide with the Proposal a listing of both automobile and personal liability insurance coverage currently in force, along with a copy of a Certificate of Insurance as verification of that coverage. In addition, the bidder shall provide a statement of premium cost issued by the agent or insurance carrier for that coverage.

In the event the Owner determines that the low bidder's coverage in force is inadequate, the Owner may require the low bidder to procure additional coverage in amounts specified by the Owner. The cost premiums for such additional coverage shall be paid by the Owner in the form of a reimbursement under the contract.

In the event the low bidder is unable, after diligent effort, to procure such additional coverage as may be required by the Owner, the Owner shall provide such additional coverage, naming the contractor as insured or, at the option of the Owner, reduce the amount of additional coverage required or waive any requirement for additional coverage.

Third Party Coverage. In the event the bidding documents require the contractor to name the consultant and/or the Owner as additional insured, the bidder shall show the premium cost for the additional insured in the Proposal in the item for additional coverage. The amount shown in the bid item for additional premium above cost shall be that amount of additional premium the premium for the coverage shown in the Certificate of Insurance submitted with the bid. In the event additional coverage is required by the Owner, the additional premium cost for third party coverage above the amounts shown in the Certificate of Insurance shall be paid by the Owner in the form of a reimbursement under the contract.

REQUIRED LANGUAGE IN PROPOSALS FOR AIP CONTRACTS

Section 60-1.7(b) of the Regulations of the Secretary of Labor requires each bidder or prospective prime contractor and proposed subcontractor, where appropriate, to state in the bid or at the outset of negotiations for the contract whether it has participated in any previous contract or subcontract subject to the equal opportunity clause; and if so, whether it has filed with the Joint Reporting Committee, the director, an agency, or the former President's Committee on Equal Employment Opportunity all reports due under the applicable filing requirements. In any case in which a bidder or prospective prime contractor or proposed subcontractor which participated in a previous contract subject to Executive Order 10925, 11114, or 11246 has not filed a report due under the applicable filing documents, no contract or subcontract shall be awarded unless such contractor submits a report covering the delinquent period or such other period specified by the FAA or the Director, OFCCP.

Bid or Proposal Form. To effectuate the foregoing requirements, the sponsor is required to include in the bid or proposal form a statement substantially as follows:

The bidder (proposer) shall complete the following statement by checking the appropriate space.

The bidder (proposer) has ____ has not ____ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11114, or Executive Order 11246.

The bidder (proposer) has ____ has not ____ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the bidder (proposer) has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder (Proposer) shall submit a compliance report on Standard Form 100, "Employee Information Report EEO-1" prior to the award of contract.

Standard form 100 is normally furnished contractors annually, based on a mailing list currently maintained by the Joint Reporting Committee. In the event a contractor has not received the form, he may obtain it by writing to the following address:

Joint Reporting Committee
1800 G Street
Washington, DC 20506

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY
AND VOLUNTARY EXCLUSION
(49 CFR PART 29)**

The bidder (offeror) certifies, by submission of this proposal or acceptance of this contract, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency. It further agrees that by submitting this proposal that it will include this clause without modification in all lower tier transactions, solicitations, proposals, contracts, and subcontracts. Where the bidder/offeror/contractor or any lower tier participant is unable to certify to this statement, it shall attach an explanation to this solicitation/proposal.

CERTIFICATION REGARDING FOREIGN TRADE RESTRICTIONS (49 CFR PART 30)

The contractor or subcontractor, by submission of an offer and/or execution of a contract, certifies that it:

- a. is not owned or controlled by one or more citizens or nationals of a foreign country included in the list of countries that discriminate against U. S. firms published by the Office of the United States Trade Representative (USTR);
- b. has not knowingly entered into any contract or subcontract for this project with a contractor that is a citizen or national of a foreign country on said list, or is owned or controlled directly or indirectly by one or more citizens or nationals of a foreign country on said list.
- c. has not procured any product nor subcontracted for the supply of any product for use on the project that is produced in a foreign country on said list.

Unless the restrictions of this clause are waived by the Secretary of Transportation in accordance with 49 CFR 30.17, no contract shall be awarded to a contractor or subcontractor who is unable to certify to the above. If the contractor knowingly procures or subcontracts for the supply of any product or service of a foreign country on said list for use on the project, the Federal Aviation Administration may direct, through the sponsor, cancellation of the contract at no cost to the Government.

Further, the contractor agrees that, if awarded a contract resulting from this solicitation, it will incorporate this provision for certification without modification in each contract and in all lower tier subcontracts. The contractor may rely upon the certification of a prospective subcontractor unless it has knowledge that the certification is erroneous. The contractor shall provide immediate written notice to the sponsor if the contractor learns that its certification or that of a subcontractor was erroneous when submitted or has become erroneous by reason of changed circumstances. The subcontractor agrees to provide immediate written notice to the contractor, if at any time it learns that its certification was erroneous by reason of changed circumstances.

This certification is a material representation of fact upon which reliance was placed when making the award. If it is later determined that the contractor or subcontractor knowingly rendered an erroneous certification, the Federal Aviation Administration may direct, through the sponsor, cancellation of the contract or subcontract for default at no cost to the Government.

Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render, in good faith, the certification required by this provision. The knowledge and information of a contractor is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

This certification concerns a matter within the jurisdiction of an agency of the United States of America and the making of a false, fictitious, or fraudulent certification may render the maker subject to prosecution under Title 18, United States Code, Section 1001.

BUY AMERICAN CERTIFICATION
(Aviation Safety and Capacity Expansion Act of 1990)

By submitting a bid/proposal under this solicitation, except for those items listed by the offeror below or on a separate and clearly identified attachment to this bid/proposal, the offeror certifies that steel and each manufactured product, is produced in the United States (as defined in the clause Buy American - Steel and Manufactured Products for Construction Contracts) and that components of unknown origin are considered to have been produced or manufactured outside the United States.

Offerors may obtain from ARE Consultants, Inc. lists of articles, materials, and supplies excepted from this provision.

PRODUCT

COUNTRY OF ORIGIN

**CERTIFICATION OF BIDDER REGARDING EQUAL EMPLOYMENT
OPPORTUNITY**

GENERAL

BIDDER'S NAME

ADDRESS

INTERNAL REVENUE SERVICE EMPLOYER IDENTIFICATION NO.

NONSEGREGATED FACILITIES

**NOTICE TO PROSPECTIVE FEDERALLY ASSISTED
CONSTRUCTION CONTRACTORS
(41 CFR 60-1.8)**

- (1) A Certification of Nonsegregated Facilities must be submitted prior to the award of a federally assisted construction contract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.
- (2) Contractors receiving federally assisted construction contract awards exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of the following notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the equal opportunity clause.

NOTE: The penalty for making false statements in offers is prescribed in 18 U. S. C. 1001.

**NOTICE TO PROSPECTIVE SUBCONTRACTORS OF REQUIREMENTS FOR
CERTIFICATION OF NONSEGREGATED FACILITIES**

- (1) A Certification of Nonsegregated Facilities must be submitted prior to the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the equal opportunity clause.
- (2) Contractors receiving subcontract awards exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause will be required to provide for the forwarding of this notice to prospective subcontractors for supplies and construction contracts where the subcontracts exceed \$10,000 and are not exempt from the provisions of the equal opportunity clause.

NOTE: The penalty for making false statements in offers is prescribed in 18 U. S. C. 1001.

CERTIFICATION OF NONSEGREGATED FACILITIES

The federally assisted construction contractor certifies that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction certifies further that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and that he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The federally assisted construction contractor agrees that a breach of this certification is a violation of the equal opportunity clause in this contract. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, sex, or national origin, because of habit, local custom, or any other reason. The federally assisted construction agrees that (except where he has obtained identical certifications from proposed subcontractors for specific time periods) he will obtain identical certifications from proposed subcontractors prior to the award of subcontracts exceeding \$10,000 which are not exempt from the provisions of the equal opportunity clause, and that he will retain such certifications in his files.

NOTICE TO PROSPECTIVE CONTRACTORS OF REQUIREMENT FOR CERTIFICATION OF NONSEGREGATED FACILITIES

A Certification of Nonsegregated Facilities must be submitted prior to the award of a contract or subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Opportunity Clause.

Certification - The information above is true and complete to the best of my knowledge and belief.

Name and Title of Signer (Please Type)

Signature

Date

NOTE: The penalty for making false statements in offers is prescribed in 18 U. S. C. 1001.

WAGE, LABOR, EEO, SAFETY AND GENERAL REQUIREMENTS

Part A: FEDERAL AVIATION ADMINISTRATION REQUIREMENTS

A-1: Airport and Airway Improvement Program Project.

The work in this contract is included in Airport Improvement Project No. 3-28-0031-0030-2023 which is being undertaken and accomplished by the City of Hattiesburg(Sponsor) in accordance with the terms and conditions of a grant agreement between the Sponsor and the United States, under the Airport and Airway Improvement Act of 1982 (P. L. 97-248) as amended by the Airport and Airway Safety and Capacity Expansion Act of 1987 (P. L. 100-223) and Part 152 of the Federal Aviation Regulations (14 CFR Part 152), pursuant to which the United States has agreed to pay a certain percentage of the costs under those Acts. The United States is not a party to this contract and no reference in this contract to the FAA or any representative thereof, or the United States, by the contract, makes the United States a party to this contract.

A-2: Consent to Assignment.

The contractor shall obtain the prior written consent of the Sponsor to any proposed assignment of any interest in or part of this contract.

A-3: Convict Labor.

No convict labor may be employed under this contract.

A-4: Veterans Preference.

In the employment of labor (except in executive, administrative, and supervisory positions), preference shall be given to veterans of the Vietnam era and disabled veterans as defined in Section 515(c)(1) and (2) of the Act. However, this preference shall apply only where the individuals are available and qualified to perform the work to which the employment relates.

A-5: Withholding: Sponsor from Contractor.

Whether or not payments or advances to the City of Hattiesburg(Sponsor) are withheld or suspended by the FAA, the Sponsor may withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics employed by the contractor or any subcontractor on the work, the full amount of wages required by this contract.

A-6: Nonpayment of Wages.

If the contractor or subcontractor fails to pay any laborer or mechanic employed or working on the site of the work any of the wages required by this contract, the City of Hattiesburg(Sponsor) may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment or advance of funds until the violations cease.

A-7: FAA inspection and review.

The contractor shall allow any authorized representative of the FAA to inspect and review any work or materials used in the performance of this contract.

A-8: Subcontracts.

The contractor shall insert in each of his subcontracts the provisions contained in paragraphs A-1, A-3, A-4, A-5, A-6, and A-7 requiring the subcontractors to include these provisions in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

A-9: Contract termination.

Any violation or breach of the terms of this contract on the part of the contractor or subcontractor may result in the suspension or termination of this contract or such other action which may be necessary to enforce the rights of the parties of this agreement. (49 CFR Part 18).

A-10: Inspection of Records.

The contractor shall maintain an acceptable cost accounting system. The Sponsor, the FAA, and the Comptroller General of the United States shall have access to any books, documents, paper, and records of the contractor which are directly pertinent to the specific contract for the purposes of making an audit, examination, excerpts, and transcriptions. The contractor shall maintain all required records for three years after the Sponsor makes final payment and all other pending matters are closed. (49 CFR Part 18).

A-11: Rights to Inventions.

All rights to inventions and materials generated under this contract are subject to regulations issued by the FAA and the Sponsor of the Federal grant under which this contract is executed. Information regarding these rights is available from the FAA and the Sponsor. (49 CFR Part 18).

A-12: General Civil Rights Provisions.

The contractor assures that it will comply with pertinent statutes, Executive orders and such rules as are promulgated to assure that no person shall, on the grounds of race, creed, color, national origin, sex, age, or handicap be excluded from participating in any activity conducted with or benefiting from Federal assistance. This provision binds the contractor from the bid solicitation period through the completion of the contract. (Section 520, Airport and Airway Improvement Act of 1982).

**Part B: DAVIS-BACON ACT REQUIREMENTS
(29 CFR PART 5)**

B-1 Minimum Wages.

(a) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalent thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1 (b) (2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to laborers or mechanics, subject to the provisions of paragraph (B1) (d) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR Part 5.5(a) (4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under (B-1) (b) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can easily be seen by the workers.

(b) (1) The contracting officer shall require that any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (i) The work to be performed by the classification requested is not performed by a classification in the wage determinations; and
- (ii) The classification is utilized in the area by the construction industry; and
- (iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour

Division, Employment Standards Administration, U. S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140).

(3) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140).

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (B1) (b) (2) or (3) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(c) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(d) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided, that, the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140).

B-2 Withholding.

The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic,

including any apprentice, trainee, or helper, employed or working on the site of work, all or part of the wages required by the contract, the Federal Aviation Administration may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

B-3 Payrolls and Basic Records.

(a) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her current classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in 1(b) (2) (b) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a) (1) (iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1 (b) (2) (B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual costs incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs (29 CFR 5.5(a) (3) (i) (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017).

(b) (1) The contractor shall submit weekly, for each week in which any contract work is performed, a copy of all payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the Federal Aviation Administration. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under paragraph 5.5(a) (3) (i) above. This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal Stock Number 029-005-00014-1), U. S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149).

(2) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(i) That the payroll for the payroll period contains the information required to be maintained under paragraph B-3 (a) above and that such information is correct and complete;

(ii) That each laborer and mechanic (including each helper, apprentice and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations 29 CFR Part 3;

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(3) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph B-3 (b) (2) of this section.

(4) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(c) The contractor or subcontractor shall make the records required under paragraph B-3 (a) of this section available for inspection, copying or transcription by authorized representatives of the Sponsor, the Federal Aviation Administration or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

B-4 Apprentices and Trainees.

(a) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U. S. Department of Labor, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State Apprenticeship Agency recognized by the Bureau, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a

contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Bureau of Apprenticeship and Training, or the State Apprenticeship Agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(b) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U. S. Department of Labor, Employment Training Administration. The ratio of trainee to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainee's shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any training performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(c) Equal Employment Opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

B-5 Compliance with Copeland Act Requirements.

The Contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

B-6 Subcontracts.

The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR Part 5.5(a) (1) through (10) and such other clauses as the Federal Aviation Administration may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR Part 5.5.

B-7 Compliance with Davis-Bacon and Related Act Requirements.

All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

B-8 Disputes Concerning Labor Standards.

Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U. S. Department of Labor, or the employees or their representatives.

B-9 Certification of Eligibility.

(a) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a) (1).

(b) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3 (a) of the Davis-Bacon Act or 29 CFR 5.12(a) (1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U. S. C. 1001.

B-10 Contract Termination: Debarment.

A breach of the contract clauses in paragraph B-1 through B-9 of this section and paragraphs C-1 through C-5 of Section C may be grounds for termination of the contract, and for the debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

B-11: The following inserts include the wage determination for this project. The “Highway” determination shall priority for the project.

"General Decision Number: MS20230063 01/06/2023

Superseded General Decision Number: MS20220063

State: Mississippi

Construction Type: Heavy
HEAVY CONSTRUCTION PROJECTS

Counties: Forrest, Lamar and Perry Counties in Mississippi.

HEAVY CONSTRUCTION PROJECTS EXCLUDING FLOOD CONTROL

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	. Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$16.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2023.
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	. Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.15 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2023.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this

wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
0 01/06/2023

ELEC0903-007 01/01/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 29.20	6.68+1.5%+8%

SUMS2015-029 04/03/2017

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 16.77	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 17.75	0.00
IRONWORKER, REINFORCING.....	\$ 20.63	0.00
IRONWORKER, STRUCTURAL.....	\$ 19.00	0.00
LABORER: Common or General, Includes Water Sewer Lines.....	\$ 12.93 **	0.00
LABORER: Pipelayer, Includes Water Sewer Lines.....	\$ 14.04 **	1.92
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 17.39	0.86
OPERATOR: Bulldozer.....	\$ 18.85	1.18
OPERATOR: Crane.....	\$ 22.66	4.66
TRUCK DRIVER: Dump Truck, Includes Water Sewer Lines.....	\$ 16.03 **	0.95

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$16.20) or 13658 (\$12.15). Please see the Note at the top of the wage

determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year.

Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at

<https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on

- a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISIO"

**Part C: CONTRACT WORKHOURS AND SAFETY STANDARDS ACT
REQUIREMENTS
(29 CFR PART 5)**

C-1: Overtime Requirements.

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic, including watchmen and guards, in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborers or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

C-2: Violation; Liability for Unpaid Wages; Liquidated Damages.

In the event of any violation of the clause set forth in paragraph C-1 above, the contractor or any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph C-1 above, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph C-1 above.

C-3: Withholding for Unpaid Wages and Liquidated Damages.

The Federal Aviation Administration or the Sponsor shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph C-2 above.

C-4: Subcontractors.

The contractors or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs C-1 through C-4 and also a clause requiring the subcontractor to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs C-1 through C-4.

C-5: Working Conditions.

No contractor or subcontractor may require any laborer or mechanic employed in the performance of any contract to work in surroundings or under working conditions that are unsanitary, hazardous or dangerous to his health or safety as determined under construction safety and health standards (29 CFR Part 1926) issued by the Department of Labor.

Part D: EQUAL EMPLOYMENT OPPORTUNITY
(41 CFR PART 60-1.4(b))

During the performance of this contract, the contractor agrees as follows:

D-1: The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to the following:

Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

D-2: The contractor will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

D-3: The contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representatives of the contractor's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

D-4: The contractor will comply with all provisions of Executive Order 11246 of September 24, 1965, as amended, and of the rules, regulations, and relevant orders of the Secretary of Labor.

D-5: The contractor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

D-6: In the event of the contractor's noncompliance with the nondiscrimination clauses of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedure authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

D-7: The contractor will include the portion of the sentence immediately preceding paragraph D-1 and the provisions of paragraphs D-1 through D-7 in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provision, including sanctions for noncompliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency the contractor may request the United States to enter into such litigation to protect the interests of the United States.

Part E: CLEAN AIR AND WATER POLLUTION CONTROL REQUIREMENTS

E-1: Any other provision herein to the contrary notwithstanding, the contractor in carrying out work under this contract, shall at all times comply with all applicable state and federal air and water quality standards; with all pollution control laws; and with such rules, regulations, and directives as may be lawfully issued by a local, state, or federal agency having the area surrounding where work under this contract will be performed. In addition, the contractor shall comply with directives given by the Project Engineer in implementation of the letter and intent of FAA Advisory Circular 150/5370-10, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control. Copies of this Advisory Circular can be obtained from Department of Transportation, Distribution Unit, TAD-484.3, Washington, D.C. 20590.

E-2: Contractors and subcontractors agree:

- a. That any facility to be used in the performance of the contract or subcontract or to benefit from the contract is not listed on the Environmental Protection Agency (EPA) List of Violating Facilities;
- b. To comply with all the requirements of Section 114 of the Clean Air Act, as amended, 42 U.S.C. 1857 et seq. and Section 308 of the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq. relating to inspection, monitoring, entry, reports, and information, as well as all other requirements specified in Section 114 and Section 308 of the Acts, respectively, and all other regulations and guidelines issued thereunder;
- c. That, as a condition for the award of this contract, the contractor or subcontractor will notify the awarding official of the receipt of any communication from the EPA indicating that a facility to be used for the performance of or benefit from the contract is under consideration to be listed on the EPA List of Violating Facilities;
- d. To include or cause to be included in any construction contract or subcontract which exceeds \$100,000 the aforementioned criteria and requirements.

**Part F: STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION**

**CONTRACT SPECIFICATIONS
(41 CFR 60-4.3)**

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs (OFCCP), U.S. Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal social security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941;

d. "Minority" includes:

(1) Black (all) persons having origins in any of the Black African racial groups not of Hispanic origin);

(2) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin regardless of race);

(3) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(4) American Indian or Alaskan native (all persons having origins in any of the original tribal affiliations through membership and participation or community identification).

2. Whenever the contractor, or any subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications.

3. If the contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors shall be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each contractor or subcontractor participating in an approved plan is individually required to comply with its obligations under the EEO clause and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other contractors or subcontractors toward a goal in an approved Plan does not excuse any covered contractor's or subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The contractor shall implement the specific affirmative action standards provided in paragraphs 7a through 7p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered construction contractors performing construction work in a geographical area where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the contractor has a collective bargaining agreement to refer either minorities or women shall excuse the contractor's obligations under these specifications, Executive Order 11246 or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees shall be employed by the contractor during the training period and the contractor shall have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees shall be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the contractor, where possible, will assign two or more women to each construction project. The contractor shall specifically ensure that all foremen, superintendents, and other onsite supervisory personnel are aware of and carry out the contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses, and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a

recruitment source, or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the contractor by the union or, if referred, not employed by the contractor, this shall be documented in the file with the reason therefore along with whatever additional actions the contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the contractor has collective bargaining agreement has not referred to the contractor a minority person or female sent by the contractor, or when the contractor has other information that the union referral process has impeded the contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the contractor's employment needs, especially those programs funded or approved by the Department of Labor. The contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination, or other employment decisions including specific review of these items with onsite supervisory personnel such a superintendent, general foreman, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed and disposition of the subject matter.

h. Disseminate the contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the contractor's EEO policy with other contractors and subcontractors with whom the contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female, and community organizations, to schools with minority and female students; and to minority and female recruitment and training organizations serving the contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the contractor shall send written notification to organizations, such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable provide after school, summer, and vacation employment to minority and female youth both on the site and in other areas of a contractor's workforce.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel, for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments, and other personnel practices do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitation to minority and female contractor associations and other business associations.

Conduct a review, at least annually, of all supervisor's adherence to and performance under the contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor union, contractor community, or other similar groups of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the contractor. The obligation to comply, however, is the contractor's and failure of such a group to fulfill an obligation shall not be a defense for the contractor's noncompliance.

9. The contractor is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and nonminority. Consequently, if the particular group is employed in a substantially disparate manner (for example, even though the contractor has achieved its goals for women generally,) the contractor may be in violation of the Executive Order if a specific minority group of women is underutilized.

10. The contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, or national origin.

11. The contractor shall not enter into any subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination, and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government, and to keep records. Records shall at least include for each employee, the name, address, telephone number, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of change in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**Part G: CONTRACTUAL REQUIREMENTS PURSUANT TO CIVIL RIGHTS ACT
OF 1964, TITLE VI
(49 CFR PART 21)**

During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations.** The contractor shall comply with the Regulations relative to nondiscrimination in federally assisted programs of the Department of Transportation (hereinafter "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract.

2. **Nondiscrimination.** The contractor, with regard to the work performed by it during the contract, shall not discriminate on the ground of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment.

The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations.

3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment.** In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, or national origin.

4. **Information and Reports.** The contractor shall provide all information and reports required by the Regulations or directives issued pursuant thereto and shall permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the owner.

5. **Sanctions for Noncompliance.** In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the owner shall impose such contract sanctions as it may determine to be appropriate, including but not limited to:

- a. Withholding of payments to the contractor under the contract until the contractor complies, and/or
- b. Cancellation, termination, or suspension of the contract, in whole or in part.

6. **Incorporation of Provisions.** The contractor shall include the provisions of paragraphs 1 through 5 in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Regulations or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the owner may direct as a means of enforcing such provisions including sanctions for noncompliance.

Part H: TERMINATION OF CONTRACT
(49 CFR PART 18)

1. The owner may, by written notice, terminate this contract in whole or in part at any time, either for the owner's convenience or because of failure to fulfill the contract obligations. Upon receipt of such notice services shall be immediately discontinued (unless the notice directs otherwise) and all materials as may have been accumulated in performing this contract, whether completed or in progress, delivered to the owner.
2. If the termination is for the convenience of the owner, the equitable adjustment in the contract price shall be made, but no amount shall be allowed for anticipated profit on unperformed services.
3. If the termination is due to failure to fulfill the contractor's obligations, the owner may take over the work and prosecute the same to completion by contract or otherwise. In such case, the contractor shall be liable to the owner for any additional cost occasioned to the owner thereby.
4. If, after notice of termination for failure to fulfill contract obligations, it is determined that the contractor had not so failed, the termination shall be deemed to have been effected for the convenience of the owner. In such event, adjustment in the contract price shall be made as provided in paragraph 2 of this clause.
5. The right and remedies of the sponsor provided in this clause are in addition to any other rights and remedies provided by law or under this contract.

**Part I: BUY AMERICAN: STEEL AND MANUFACTURED PRODUCTS
FOR CONSTRUCTION CONTRACTS
(Aviation Safety and Capacity Expansion Act of 1990)**

(a) The Aviation Safety and Capacity Expansion Act of 1990 provides that preference be given to steel and manufactured products produced in the United States when funds are expended pursuant to a grant issued under the Airport Improvement Program. The following terms apply:

1. Steel and manufactured products. As used in this clause, steel and manufactured products include (1) steel produced in the United States or (2) a manufactured product produced in the United States, if the cost of its components mined, produced or manufactured in the United States exceeds 60 percent of the cost of all its components and final assembly has taken place in the United States. Components of foreign origin of the same class or kind as the products referred to in subparagraphs (b) (1) or (2) shall be treated as domestic.

2. Components. As used in this clause, components means those articles, materials, and supplies incorporated directly into steel and manufactured products.

3. Cost of Components. This means the cost for production of the components, exclusive of final assembly labor costs.

(b) The successful bidder will be required to assure that only domestic steel and manufactured products will be used by the Contractor, subcontractors material men, and suppliers in the performance of this contract, except those

(1) that the U. S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality;

(2) that the U. S. Department of Transportation has determined, under the Aviation Safety and Capacity Expansion Act of 1990, that domestic preference would be inconsistent with the public interest; or

(3) that inclusion of domestic material will increase the cost of the overall project contract by more than 25 percent.

DISADVANTAGED BUSINESS ENTERPRISE CONTRACT PROVISIONS (49 CFR PART 23)

PART A

Policy. It is the policy of the Department of Transportation (DOT) that disadvantaged business enterprises as defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds under this agreement. Consequently, the DBE requirements of 49 CFR Part 23 apply to this agreement.

DBE Obligation. The contractor agrees to ensure that disadvantaged business enterprises as defined in 49 CFR Part 23 have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement. In this regard all contractors shall take all necessary and reasonable steps in accordance with 49 CFR Part 23 to ensure that disadvantaged business enterprises have the maximum opportunity to compete for and perform contracts. Contractors shall not discriminate on the basis of race, color, national origin or sex in the award and performance of DOT-assisted contracts.

Compliance. All bidders, potential contractors or subcontractors for this DOT-assisted contract are hereby notified that failure to carry out the DOT policy and the DBE obligation, as set forth above, shall constitute a breach of contract which may result in termination of the contract or such other remedy as deemed appropriate by the owner.

Subcontract Clauses.

All bidders and potential contractors hereby assure that they will include the above clauses in all subcontracts which offers further subcontracting opportunities.

PART B

It is further understood and agreed:

The award procedure for this solicitation will include the selection criteria of 49 CFR Part 23 (I) to ensure that prime contracts are awarded to competitors that meet Disadvantaged Business Enterprise (DBE) goals.

Notification is hereby given that DBE goals are established for this prime contract. The goal for firms owned and controlled by socially and economically disadvantaged individuals is seven and seventy-three hundredths (7.73%) percent of the dollar value of this contract.

After opening bids, the apparent successful bidder will be required to submit the names and addresses of the DBE firms that will participate in the contract along with a description of the work to be performed by each named firm and the dollar value for each contract (subcontract). If the responses do not clearly show DBE participation will meet the goals above, the apparent

successful bidder must provide documentation clearly demonstrating, to the satisfaction of the airport sponsor, that it made good faith efforts in attempting to do so and that meeting said goals is not reasonably possible. A bid that fails to meet these requirements will be considered non-responsive.

Agreements between bidder/proposer and a DBE in which the DBE promises not to provide subcontracting quotations to other bidders/proposers are prohibited. All bidders and proposers shall make a good faith effort to replace a DBE subcontractor that is unable to perform successfully with another DBE subcontractor.

The bidder shall establish and maintain records and submit regular reports, as required, which will identify and assess progress in achieving DBE subcontract goals and other DBE affirmative action efforts.

BIDDERS INSTRUCTIONS AND CHECKLIST

1. Contract is being awarded on one of the following:
 - A. Base Bid
or
 - B. Base Bid minus Deductive Alternate No. 1
or
 - C. Base Bid minus Deductive Alternate No. 1 and Deductive Alternate No. 2

CHECKLIST

1. Bid forms.
2. Bid bond or bid security.
3. Acknowledge all addenda.
4. Contractor's name and license number on the outside of the envelope.
5. Proper labeling as bid for project on outside of the envelope.
6. Authorized signature of bidder on bid forms.
7. Bidder is advised to pay strict attention to bond requirements.

SECTION D: BID INFORMATION

BID FORM

DATE : _____, 2023

NAME OF BIDDER

MISSISSIPPI CONTRACTOR LICENSE NO.

City Clerk's Office
City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

Gentlemen:

The undersigned, being a qualified bidder in compliance with your Advertisement for Bids for the construction of:

HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT TAXIWAY A REALIGNMENT AND IMPROVEMENTS

AIP No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG

Having examined the plans and specifications with related documents, and having examined the sites of the proposed work, hereby proposes to construct the project in accordance with the Contract Documents, within the time set forth therein, and at the prices stated hereinafter. These prices are to cover all expenses incurred in performing the work required under the Contract Documents, of which this Bid is a part. This "unit price" Bid shall be invoiced based on completed installed quantities.

The undersigned Bidder agrees to fully complete the Project within one hundred seventy (170) calendar days from the date of the "Order to Proceed". The Bidder agrees to pay as liquidated damages, the sum of One Thousand Dollars (\$1,000.00) for each consecutive calendar day thereafter. The Bidder further agrees that this bid shall be good and may not be withdrawn for a period of one hundred thirty (130) calendar days after the scheduled closing time for receiving bids. In the event the Owner issues the Notice of Award during this period, the Bid accepted shall continue to remain binding until the successful Bidder delivers his executed Contract Documents to the Owner.

The Bidder acknowledges receipt of, and makes a part of this proposal the following addenda: _

The Bidder's attention is directed to the "Instructions to Bidders" contained in these contract documents. It shall be the Bidder's responsibility to review and comply with these instructions.

The bidder shall complete the following statements by checking the appropriate space.

The bidder has ____ has not ____ participated in a previous contract subject to the equal opportunity clause prescribed by Executive Order 10925, or Executive Order 11114, or Executive Order 11246.

The bidder has ____ has not ____ submitted all compliance reports in connection with any such contract due under the applicable filing requirements; and that representations indicating submission of required compliance reports signed by proposed subcontractors will be obtained prior to award of subcontracts.

If the bidder has participated in a previous contract subject to the equal opportunity clause and has not submitted compliance reports due under applicable filing requirements, the Bidder shall submit a compliance report on Standard Form 100, "Employee Information Report EEO-1" prior to the award of contract.

Bidder will execute the formal contract within ten (10) days after original date of Owner's Notice of Award and will deliver a Surety Bond or Bonds for the faithful performance of the Contract, per these drawings and specifications. A certificate of insurance shall also be delivered.

Bid Security is attached without endorsement, in the sum of five percent (5%) of

the Base Bid Schedule:

(\$ _____) dollars

Deductive Alternate No.1 Schedule (Leave out the partial demolition of the cross taxiway along with preserving existing cross Taxiway A3 lighting and marking per extents and notes in plans):

(\$ _____) dollars

Deductive Alternate No.2 Schedule (Leave out the temporary taxi lane as shown on drawings and notes):

(\$ _____) dollars

is to become the property of the Owner in the event the Contract and Bond are not executed within the time above set forth.

(SEAL) If bid is by a corporation

Respectfully submitted,

Bidder:

By:

Title

Address:

BID FORM
BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
P-151	Clearing and Demolition	1	LUMP SUM		Dollars Cents
P-152-4.1	Unclassified Excavation	5,773	C.Y.		Dollars Cents
P-152-4.2	Embankment in Place	1,525	C.Y.		Dollars Cents
P-209	Crushed Aggregate Base Course	1,659	C.Y.		Dollars Cents
P-401-8.1a	Bituminous Surface Course	2,746	TON		Dollars Cents
P-403-8.1a	Bituminous Leveling Course	50	TON		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM
BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
P-501-8.1a	Portland Cement Concrete Pavement (Reinforced) – 8 1/2" thick	2,615	S.Y.		Dollars Cents
P-501-8.1b	Portland Cement Concrete Pavement (Reinforced) – 7" thick (Non-Participating)	1,265	S.Y.		Dollars Cents
P-602	Bituminous Prime Coat	2,000	Gal.		Dollars Cents
P-603	Bituminous Tack Coat	800	Gal.		Dollars Cents
P-620-5.1a	Runway and Taxiway Painting	8,200	S.F.		Dollars Cents
D-701-5.1a	Pipe for Storm Drains and Culverts (12" R.C.P.)	24	L.F.		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM
BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
D-705-5.5b	6" Underdrain Complete (including granular backfill & filter fabric)	1,030	L.F.		Dollars Cents
D-751-5.2a	Rebuild Inlet No. 1	1	EA.		Dollars Cents
D-751-5.2b	Rebuild Inlet No. 2	1	EA.		Dollars Cents
L-108-5.2.a	Underground Cable No. 8 AWG, L-824C 5KV, installed in duct or conduit	1,240	L.F.		Dollars Cents
L-108-5.3	No. 6 AWG, Solid, Bare Counterpoise Wire, direct buried, Including Ground Rods, Exothermic welding and ground connectors	1,240	L.F.		Dollars Cents
L-108-5.4	Insulated No. 6 AWG safety ground with lighting circuit conductors in duct bank or conduit	1,240	L.F.		Dollars Cents

Contract time for base bid is eighty (140) calendar days.

Total Bid Schedule – Base Bid \$ _____

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM
BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements, & Signage
AIP No. 3-28-0031-0030-2023

42-F

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
L-110-5.1	Non-encased, Installed in Earth, Electrical Duck Bank, 2" PVC Schedule 40	1,240	L.F.		Dollars _____ Cents _____
L-110-5.2	Electrical Duct Bank 2" PVC Schedule 40,	100	L.F.		Dollars _____ Cents _____
L-125-5.1a	New Medium Intensity Elevated Base Mounted LED Runway Edge Light, All in Place	1	E.A.		Dollars _____ Cents _____
L-125-5.1b	New Medium Intensity Elevated Base Mounted LED Taxiway Edge Light, All in Place with Maintenance Pad	7	E.A		Dollars _____ Cents _____
L-125-5.3a	Directional Guidance Sign Replace Panel with Blank Panel	2	E.A		Dollars _____ Cents _____
T-901-5.1	Turfing (seed, fertilizer, & mulch)	0.9	ACRE		Dollars _____ Cents _____

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM

BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
S-001	Mobilization	1	Lump Sum		Dollars Cents
S002	Paving Fabric	7,550	S.Y.		Dollars Cents
S003-1.a	Electrical Demolition	1	Lump Sum		Dollars Cents
S004	Cold Planning Asphalt Pavement (Milling Max 2.5" Depth)	3,406	S.Y.		Dollars Cents
S005	Removal and Reinstallation of Existing Light Fixtures	1	Lump Sum		Dollars Cents
S006	Pavement Marking Removal	1050	S.Y.		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

Do not use BID FORM
BID SCHEDULE – BASE BID
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
S007	Construction Layout	1	Lump Sum		Dollars Cents
S008	Restore Channel Drain Catch Basin	1	Lump Sum		Dollars Cents
S009	Relocate Existing Taxiway Light (Removal and relocated of existing elevated Taxiway edge lights with new Transformer, Can, Base and Maintenance Pad	3	EA.		Dollars Cents
S010	Semiflush Marker for Taxiway Centerline Marker	18	EA.		Dollars Cents
I-3.2	Additional Insurance Premium	1	Lump Sum		Dollars Cents

Contract time for base bid is one hundred and seventy days (170) calendar days.

Total Bid Schedule – Base Bid \$ _____

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM

BID SCHEDULE – DEDUCTIVE BID ALTERNATE No. 1

Hattiesburg-Bobby L. Chain Municipal Airport

Taxiway A Realignment And Improvements

AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
P-151	Clearing and Demolition	1	LUMP SUM		Dollars Cents
P-152-4.1	Unclassified Excavation	300	C.Y.		Dollars Cents
P-152-4.2	Embankment in Place	250	C.Y.		Dollars Cents
D-705-5.5b	Runway and Taxiway Painting	2050	L.F.		Dollars Cents
L-108-5.2.a	Underground Cable No. 8 AWG, 5KV, L-824C Cable, installed in duct or conduit	1000	L.F.		Dollars Cents
L-108-5.3	No. 6 AWG, Solid, Bare Counterpoise Wire, direct buried, Including Ground Rods, Exothermic welding and ground connectors	1000	L.F.		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM**BID SCHEDULE – DEDUCTIVE BID ALTERNATE No. 1**
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
L-108-5.4	Insulated No. 6 AWG safety ground with lighting circuit conductors in duct bank or conduit	1,000	L.F.		Dollars Cents
L-110-5.1	Non-encased, Installed in Earth, Electrical Duck Bank, 2" PVC Schedule 40	1,000	L.F.		Dollars Cents
L-125-5.1a	New Medium Intensity Elevated Base Mounted LED Runway Edge Light, All in Place	1	E.A.		Dollars Cents
L-125-5.1.b	New Medium Intensity Elevated Base Mounted LED Taxiway Edge Light, All in Place with Maintenance Pad	3	E.A		Dollars Cents
L-125-5.3a	Directional Guidance Sign Replace Panel with Blank Panel	2	E.A		Dollars Cents
T-901-5.1	Turfing (seed, fertilizer, & mulch)	0.1	ACRE		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM

BID SCHEDULE – DEDUCTIVE BID ALTERNATE No. 1
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
S003-1.b	Electrical Demolition	1	Lump Sum		Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____

Total Bid Schedule – Deductive Bid Alternate No. 1 \$ _____

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM

BID SCHEDULE – DEDUCTIVE BID ALTERNATE No. 2
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
P-151	Clearing and Demolition	1	LUMP SUM		Dollars Cents
P-152-4.1	Unclassified Excavation	520	C.Y.		Dollars Cents
P-152-4.2	Embankment in Place	810	C.Y.		Dollars Cents
P-620-5.1a	Runway and Taxiway Painting	3118	S.F.		Dollars Cents
T-901-5.1	Turfing (seed, fertilizer, & mulch)	0.3	ACRE		Dollars Cents
S002	Paving Fabric	1,335	S.Y.		Dollars Cents

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

BID FORM

BID SCHEDULE – DEDUCTIVE BID ALTERNATE No. 2
Hattiesburg-Bobby L. Chain Municipal Airport
Taxiway A Realignment And Improvements
AIP No. 3-28-0031-0030-2023

42-M

Bid Item Number	Description	Approximate Quantity	Unit of Measure	Unit Price in Numbers	Unit Price in Words (Ink or Typed)
S003-1.c	Electrical Demolition	1	Lump Sum		Dollars _____ Cents _____
S006	Pavement Marking Removal	196	S.F.		Dollars _____ Cents _____
S009	Relocate Existing Taxiway Light (removal and relocation of existing elevated taxiway edge lights with new Transformer, Can Base and Maintenance Pad)	1	E.A.		Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____
					Dollars _____ Cents _____

Total Bid Schedule – Deductive Bid Alternate No. 2 \$ _____

Contractor Note: Unit prices include all costs required to complete construction, ready for operation in accordance with contract documents, including "mobilization and demobilization" costs. The costs of work not designated to be paid for under a specific item, shall be prorated over applicable pay items. Separate measurements of work for payment will not be made unless designated herein.

SHEETS 43 thru 47 NOT USED

BID BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned,

_____ as Principal, and
as Surety, are hereby held and firmly bound unto

as OWNER in the penal sum of

for the payment of which, well and truly to be made, we hereby jointly and severally bind
ourselves, successors and assigns. Signed this _____ day of _____, _____. The

Condition of the above obligation is such that whereas the Principal has submitted to
a certain BID, attached hereto and hereby made a part hereof to enter into a contract in writing,
for the:

**HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**A.I.P Project No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG**

NOW, THEREFORE,

- a) If said BID shall be rejected, or
- b) If said BID shall be accepted and the Principal shall execute and deliver a contract in the Form of Contract attached hereto (properly completed in accordance with said BID) and shall furnish a BOND for his faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said BID, then this obligation shall be void, otherwise the same shall remain in force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall, in no event, exceed the penal amount of this obligation as herein stated.

The Surety, for value received hereby stipulates and agrees that the obligations of said Surety and its BOND shall be in no way impaired or affected by any extension of the time within which the OWNER may accept such BID; and said Surety does hereby waive notice of any such extension.

IN WITNESS WHEREOF, The Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, the day and year first set forth above.

Principal

Surety

By: _____

IMPORTANT NOTE: Surety bonds shall be procured according to Mississippi State Law. Any surety bond written for a public works project shall be written by a surety or insurance company currently on the U.S. Department of the Treasury Financial Management Service list of approved bonding companies which is published annually in the Federal Register, or by a Mississippi domiciled insurance company with at least an A-rating in the latest printing of the A.M. Best's Key Rating Guide to write individual bonds up to ten percent of policyholders' surplus as shown in the A.M. Best's Key Rating Guide or by an insurance company that is either domiciled in Mississippi or owned by Mississippi residents and is licensed to write surety bonds.

AFFIDAVIT

STATE OF MISSISSIPPI

COUNTY OF _____

BEFORE ME, the undersigned authority, personally came and appeared,

_____, who after first being sworn, deposes and says: that
he is _____ (a partner of the firm of, etc.) _____.

The party making the foregoing Proposal or bid; that such bid is genuine and not collusive or a sham; that said bidder has not colluded, conspired, connived, or agreed directly or indirectly, with any bidder or person to put in a sham bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement, or collusion, or communication or conference with any person to fix the bid price of affiant or any other bidder, or to fix any overhead profit or cost element of said bid price or that of any other bidder, or to secure any advantage against THE CITY OF HATTIESBURG, State of Mississippi, Owner, or any person interested in the proposed Contract; and that all statements contained in said proposal or bid, or the contents thereof, or divulged information or data relative hereto to any association or any member or agent thereof, are true.

SWORN TO AND SUBSCRIBED

BEFORE ME ON THIS _____ DAY OF _____, 2023.

(Notary Public)

My commission expires _____.

**CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY, AND
VOLUNTARY EXCLUSION -- LOWER TIER COVERED TRANSACTIONS**

This certificate is required by the regulations implementing Executive Order 12549, Debarment and Suspension, 49 CFR Part 29.

1. The prospective lower tier participant certifies, by submissions of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.
2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

Organization Name

Project Name

Authorized Representative

Title

Signature

Date

ELIGIBILITY QUESTIONNAIRE

NAME:

BUSINESS ADDRESS:

FEDERAL IDENTIFICATION NUMBER:

NAMES OF PRINCIPALS (Officers, Directors, Partners or Owners):

Has the corporation or any principal -

1. **Been convicted or had a civil judgment against it involving fraud or any criminal offense in connection with the obtaining or attempt to obtain a public or private contract? If so, please explain in detail.**

2. **Been convicted or had a civil judgment against it concerning the violation of any federal or state antitrust statute. If so, please explain in detail.**

3. **Been convicted or had a civil judgment against it concerning the commission of any embezzlement, theft, forgery, bribing, falsification or destruction of records, making false statements, receiving stolen property, making false claims, or obstruction of justice. If so, please explain in detail.**

4. Been convicted or had a civil judgment against it involving offenses indicating a lack of business integrity. If so, please explain in detail.
5. Has the corporation violated any public contract or transaction through:
 - a. Willful failure to perform;
 - b. Unsatisfactory performance;
 - c. Willful violation of any statute or regulation.If so, please explain in detail.
6. Has the corporation or any principal been debarred or suspended from transactions with any agency of the U.S. Government, state of Mississippi or any other state? If so, please explain in detail.
7. Has the corporation willfully done business with any person or corporation that it knows has been debarred or suspended from federal or state transactions. If so, please explain in detail.
8. Has the corporation failed to pay substantial debt to the United States or any of its agencies? If so, please explain in detail.
9. Has the corporation ever entered into a voluntary exclusion from transactions with the United States or its agencies? If so, please explain in detail.

The undersigned authorized corporate representative, partner, or owner avers that the information supplied herein is true and correct and that the assertions are of the essence of the acceptance of a bid. If any information is willfully withheld or answered falsely, the City of Hattiesburg may declare the contract breached.

_____, Mississippi this _____ day of _____, 2023

Authorized Representative

**ACKNOWLEDGMENT OF CONTINUING
OBLIGATION TO INFORM**

The undersigned authorized representative of the bidder acknowledges that he understands that the bidder has the continuing obligation to inform the City of Hattiesburg of any matters concerning its eligibility and specifically any matters set forth in the Eligibility Questionnaire. Failure to inform shall be the basis for the City to declare the contract breached.

_____, Mississippi this _____ day of _____, 2023

Authorized Representative

SECTION E: CONTRACT

THIS AGREEMENT, made this _____ day of _____, 2023,
State of Mississippi, hereinafter called "Owner" and
_____,
hereinafter called the "Contractor".

WITNESSETH THAT, the Owner and Contractor do mutually agree as follows:

1. In consideration of the price for the work herein specified in the bid proposal to be paid by the Owner to the Contractor at the time and in a manner hereinafter provided, the Contractor does hereby agree to construct complete in every detail as follows:

HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT TAXIWAY A REALIGNMENT AND IMPROVEMENTS

A.I.P Project No. 3-28-0031-0030-2023 for the CITY OF HATTIESBURG

in compliance with the advertisement of Bids, Proposal Form, Contract, Performance Bond, General Provisions, Specifications, Plans, and Addenda.

2. This price shall include the cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence, labor, insurance, transportation, and other accessories and services necessary to complete this project, in accordance with the Contract Documents.

3. The Contractor shall commence work under this Contract within ten (10) days from the date of the written "Order to Proceed" issued by the Owner. The Contractor shall complete all work under the Contract within one hundred seventy (170) calendar days from the date of the "Order to Proceed".

The Owner has determined, and the Contractor agrees, that the liquidated damages for a delay in completion of this Contract will be One Thousand Dollars (\$1,000.00) per working day in excess of the stated time of completion.

4. That upon satisfactory completion of the work and approval by the Engineer, the Owner will issue a written acceptance of the work to the Contractor, who will immediately thereafter file same with the Recorder of Mortgages in County.

5. A retainage of ten percent (10%) shall be withheld from each progress payment. Upon successful clearance of the lien, the Contractor shall submit a final invoice, with the clear lien certificate, for payment by the Owner in accordance with standard payment procedures established by the City of Hattiesburg.

6. The Owner agrees to pay the Contractor for the performance of the Contract as provided in the Specifications, and to make monthly payments on account thereof as provided in the General conditions. The contract amount, as presented in bid by Contractor is \$ _____ or _____ (in words).

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed in three (3) original counterparts on the day and year first herein above written.

WITNESSES:

Contractor

Signature

Title

WITNESSES:

Owner

Signature

Title

SECTION F: PERFORMANCE AND PAYMENT BOND

KNOW ALL MEN BY THESE PRESENTS: That we (1) *

and (2) * _____ hereinafter called "Principal" and (3) *

a Surety Company authorized to do and doing business in the State of Mississippi, hereinafter called "Surety" are held and firmly bound unto the City of Hattiesburg, hereinafter called

"Owner" in penal sums of _____ dollars (\$ _____)

Performance Bond and _____ dollars (\$ _____) Payment

Bond in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that, whereas, the Principal entered into a certain contract with the Owner dated the _____ day of _____, 20 _____, a copy of which is hereto attached and made a part hereof for the furnishing of:

HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT TAXIWAY A REALIGNMENT AND IMPROVEMENTS

A.I.P Project No. 3-28-0031-0030-2023

for the

CITY OF HATTIESBURG

NOW, THEREFORE, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions and agreements of said contract during the original term thereof which may be granted by the owner, with or without notice to the Surety, and if he shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the Owner from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any default, and shall promptly make payment to all persons, firms,

subcontractors, and corporations furnishing materials for or performing labor in the prosecution of the work provided for in such contract, and any authorized extension or modification thereof, including all amounts due for materials, lubricants, oil, gasoline, coal and coke, repairs on machinery, equipment, and tools, consumed or used in connection with the prosecution of such work, and all insurance premiums on said work whether by subcontractor or otherwise, then this obligation shall be void; otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said Surety, for value received hereby stipulates and agrees that no change, extension of time, alterations or addition to the terms of the contract or to the work to be performed there under or the specifications accompanying the same shall in anyway affect its obligation on this bond, and it does hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work of the Specifications.

PROVIDED, FURTHER, that no final settlement between the Owner and the Contractor shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in _____ counterparts each one of which shall be deemed an original, this the _____ day of _____, 20 _____.

ATTEST:

(Principal Secretary)

Principal

BY:

Witness as to Principal

Address

Address

ATTEST:

(SEAL)

(Surety) Secretary

Surety

Attorney-in-Fact

BY:
Witness as to Surety

Address

Address

NOTE: DATE OF BOND MUST NOT BE PRIOR TO DATE OF AGREEMENT.

- * 1. Correct name of Contractor.
- * 2. A Corporation, a Partnership, or an Individual, as case may be.
- * 3. Correct name of Surety.

NOTE: Contractor shall furnish performance and payment bonds as a security for the faithful performance and payment of all his obligations under the Contract Documents. These bonds shall be in amounts at least equal to the Contract Price, and (except as otherwise provided) in such form and with such sureties as are licensed to conduct business in the State where the Project is located and are named in the current list of "Surety Companies Acceptable on Federal Bonds" as published in the Federal Register by the Audit Staff Bureau of Accounts, U.S. Treasury Department, or by a Mississippi domiciled insurance company with at least an A rating in the latest printing of A.M. Best's Key Rating Guide and in accordance with Mississippi R.S. 38:2219.

SECTION G: CERTIFICATE AND RELEASE

FROM:

(Name of Contractor)

TO: City Council, City of Hattiesburg, Mississippi

RE: Contract entered into on the _____ day of _____, _____,

between the City of Hattiesburg, Mississippi and

(Name of Contractor)

of _____, _____
(City) (State)

**HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**A.I.P Project No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG**

KNOW ALL MEN BY THESE PRESENTS:

A. The undersigned hereby certified that there are no outstanding claims of laborers, material, men, subcontractors or others arising out of the performance of this Contract, which might be asserted against the City, represented by the Commission Council, and the undersigned will agree that in the event of the assertion of any such claims against the City represented by the Commission Council, the undersigned will indemnify and save harmless the City from any such claims.

B. That the undersigned hereby acknowledges receipt from the City of all sums payable to the undersigned by the City under or pursuant to the above mentioned contract, with the following exceptions:

(List all exceptions here. If none, state "none".)

C. The undersigned further certifies and acknowledges that the City has duly performed and fulfilled all the terms, provisions and conditions to be performed or fulfilled under or pursuant to said Contract (with the exceptions as noted above).

D. That the undersigned, except as regard items listed in paragraph "B" in consideration of the sum of \$1 paid to the undersigned, receipt whereof is hereby acknowledged, does hereby release the City from all claims arising under or by virtue of said Contract.

IN WITNESS WHEREOF, the undersigned has signed and sealant

this instrument this _____ day of _____, 20 _____.

_____ (*Seal*)

_____, being first duly sworn on oath, deposes and says first, that he is the _____ of (*Title*) _____, second, that he had read the

(*Name of Company*)

foregoing certificate by him subscribed as _____ of
(*Title*)

the _____.
(*Name of Company*)

The matters and things stated therein are, to the best of his knowledge and belief, true.

(*Name*)

Subscribed and sworn to before me this _____ day of _____, 20 _____.

SECTION H: SPECIAL PROVISIONS

H-01. NAME OF PROJECT. The project shall be known as

**HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**A.I.P Project No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG**

H-02. OWNER. The Owner is the City of Hattiesburg, Mississippi represented by its Mayor, domiciled in the City Hall of Hattiesburg, Mississippi.

H-03. LOCATION. The project is located approximately eight miles south east of downtown Hattiesburg, Mississippi.

H-04. SOURCE OF FUNDS. Owner's Funds for construction have been provided by proceeds from airport revenues.

H-05. ACCESSIBILITY. Access to the airport site may be gained by traveling south on US Highway 49, turn at its intersection with JM Tatum Industrial Drive and continue to Academy Drive.

H-06. DOCUMENTS FORMING THE CONTRACT. The documents forming the contract documents include Contract Documents and Specifications for HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT TAXIWAY A REALIGNMENT AND IMPROVEMENTS A.I.P Project No. 3-28-0031-0030-2023 for the CITY OF HATTIESBURG

H-07. SEEDING. The type of seed and rate of application shall be in accordance with the applicable portions of the current Specifications of Advisory Circular(AC) 150/5370-10A , Standards for Specifying Construction of Airports, Part X, as modified by the Field Engineer.

H-08. AIRPORT OPERATIONS. The Contractor shall coordinate his work so as to offer the least interference with airport operations and he shall cooperate with the airport management at all times in regards to safety regulations. When the location and nature of the construction process requires that the Contractor's vehicles be routed along or across active runways or taxiways, traffic movements will be coordinated with the airport manager or engineer. See REQUIREMENTS OF CONTRACTOR'S VEHICLES hereinafter. **Portable, lighted, barricades shall be furnished by the Contractor as required.**

Throughout the duration of the contract, **NO** equipment or objects projecting above ground will be permitted any closer than two hundred fifty of the centerline of the runway. Equipment may be parked near the work sites provided the above clearance requirements are maintained.

H-09. ACCESS. The Contractor's access route to staging areas and areas where work is to be performed is shown on the construction sequence plan. Maintenance of the route is required and shall include sweeping as required. Existing roads or pavements which are damaged by the Contractor's vehicles during construction shall be repaired at no additional cost to the Owner.

H-10. SCHEDULING WORK. The successful bidder shall furnish a proposed work schedule at the Pre-construction Conference. See paragraph H-18 for work phases.

During night operations the Contractor shall provide lighting as required for construction. Separate payment will not be made for lighting expenses.

H-11. OFFICE SPACE FOR INSPECTOR. Office space for the inspector will not be required.

H-12. LABORATORY TESTS. The Owner will employ the services of a Commercial Laboratory for the purpose of sampling and testing construction materials. The Contractor shall furnish materials for sampling at his expense.

Compaction and gradation tests which fail to comply with requirements of the plans and specifications shall be charged to the Contractor. The Engineer shall supervise all testing and tests performed without his knowledge or approval shall be paid for by the Contractor regardless of failing or passing.

H-13. RECORDING DOCUMENTS. The Contractor shall file on record at the Forrest County Courthouse, the construction contract and letter of acceptance of the final work. This will be considered as subsidiary obligation.

H-14. PROTECTION OF CABLES, CONTROLS, NAVAIDS & WEATHER BUREAU. The Contractor is hereby informed that there are installed on the airport FAA NAVAIDS: including, without limitation, electric cables and controls relating to such NAVAIDS and facilities, and other electric power cables serving other facilities. Such NAVAIDS, and other facilities, and electric cables must be fully protected during the entire construction time. Work under this contract can be accomplished in the vicinity of these facilities and cables only at approved periods of time. Approval is subject to withdrawal at any time because of changes in the weather, emergency conditions on the existing airfield areas, anticipation of emergency conditions, and for any other reason determined by the Engineers acting under the orders and instructions of the airport management and/or the designated FAA representative. Any instructions to this Contractor to clear any given area, at any time, by the Engineers or the airport management (by radio or other means) shall be immediately executed. Construction work will be commenced in the cleared area only when additional instructions are issued by the proper authorities.

The Contractor shall be responsible for the protection of all buried cables and utilities shown on the plans or subsequently located on the job site by the Engineers.

Power and control cables leading to and from any FAA NAVAIDS, Weather Bureau and other facilities, will be marked in the field by the Engineers for the information of the Contractor,

before any work in their general vicinity is started. Thereafter, through the entire time of this construction they shall be protected from any possible damage, including crossing with unauthorized equipment.

The Contractor shall immediately repair, with equivalent material by skilled workmen, any underground cables serving FAA NAVAIDS, Weather Bureau and other airport facilities, which are damaged by his workmen, equipment, or work. Prior approval of the FAA must be obtained for the materials, workmen, time of day or night, method of repairs, and for any temporary or permanent repairs the Contractor proposes to make to any FAA NAVAIDS and facilities damaged by the Contractor. Prior approval of the Engineer must be obtained for the materials, workmen, time of day or night, and for the method of repairs for any temporary or permanent repairs the Contractor proposes to make to any other airport facilities and cables damaged by this Contractor.

H-15. INSURANCE REQUIREMENTS.

1. The CONTRACTOR shall purchase and maintain such insurance as will protect it from claims set forth below which may arise out of, or result from, the CONTRACTOR'S execution of the WORK, whether such execution be by the CONTRACTOR, any SUBCONTRACTOR, or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:
 - a. Claims under workmen's compensation, disability benefit and other similar employee benefit acts;
 - b. Claims for damages because of bodily injury, occupational sickness or disease, or death of employees;
 - c. Claims for damages because of bodily injury, sickness or disease, or death of any person other than employees;
 - d. Claims for damages insured by usual personal injury liability coverage which are sustained (1) by any person as result of an offense directly or indirectly related to the employment of such person by the CONTRACTOR, or (2) by any other person; and
 - e. Claims for damages because of injury to or destruction of tangible property, including loss of use resulting there from.
2. Certificates of Insurance acceptable to the OWNER shall be filed with the OWNER prior to commencement of the WORK. These Certificates shall contain a provision that coverage afforded under the policies will not be canceled unless at least fifteen (15) days prior WRITTEN NOTICE has been given to the OWNER.

3. The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense, during the CONTRACT TIME, Liability insurance as hereinafter specified;
 - a. CONTRACTOR'S General Public Liability and Property Damage Insurance including vehicle coverage issued to the CONTRACTOR and protecting the CONTRACTOR from all claims for personal injury, including death, and all claims for destruction of or damage to property, arising out of or in connection with any operations under the CONTRACT DOCUMENTS, whether such operations be by the CONTRACTOR or by any SUBCONTRACTOR employed by the CONTRACTOR or anyone directly or indirectly employed by the CONTRACTOR or by a SUBCONTRACTOR employed by the CONTRACTOR.

Insurance Requirements

The Contractor shall furnish the following along with Bonds and Contract Documents sent to the City for execution:

Certificates of Insurance in companies doing business in Mississippi and acceptable to the County covering:

Statutory Worker's Compensation Insurance;

Comprehensive Liability Insurance covering all operations and automobiles:

Comprehensive General Liability: \$5,000,000 combined single limit per occurrence for bodily injury, personal injury, and property damage.

Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage.

Certificates of Insurance must be executed in accordance with the following provisions:

Certificates to contain policy number, policy limits and policy expiration dates of all policies issued in accordance with this Contract;

Certificates to contain the location and operations to which the insurance applies;

Certificates to contain Contractor's protective coverage for any Subcontractor's operations;

Certifications to contain Contractor's Contractual Insurance coverage;

Certificates are to be issued to:
Mayor and City Council
City of Hattiesburg
200 Forrest Street
Hattiesburg, MS 39401

The Contractor shall be wholly responsible for securing certificates of insurance coverage as set forth above from all Subcontractors who are engaged in this Work.

The Contractor agrees to carry statutory Workers' Compensation Insurance and to have all Subcontractors likewise carry statutory Workers' Compensation Insurance.

The City, its officials and staff shall be named as additional insureds with right of notice in the policy.

- a. The CONTRACTOR shall acquire and maintain, if applicable, Fire and Extended Coverage insurance upon the PROJECT to the full insurable value thereof for the benefit of the OWNER, the CONTRACTOR, and SUBCONTRACTORS as their interest may appear. This provision shall in no way release the CONTRACTOR or CONTRACTOR'S Surety from obligations under the CONTRACT DOCUMENTS to fully complete the PROJECT.
4. The CONTRACTOR shall procure and maintain, at the CONTRACTOR'S own expense during the CONTRACT TIME, in accordance with the provisions of the laws of the state in which the WORK is performed, Workmen's Compensation Insurance, including occupational disease provisions, for all of the CONTRACTOR'S employees at the site of the PROJECT and in case any WORK is sublet, the CONTRACTOR shall require such SUBCONTRACTOR similarly to provide Workmen's Compensation Insurance, including occupational disease provisions for all of the latter's employees unless such employees are covered by the protection afforded by the CONTRACTOR. In case any class of employees engaged in hazardous work under this contract at the site of the PROJECT is not protected under Workmen's Compensation statute, the CONTRACTOR shall provide, and shall cause each SUBCONTRACTOR to provide, adequate and suitable insurance for the protection of its employees not otherwise protected.
5. The CONTRACTOR shall secure, if applicable, "All Risk" type Builder's Risk Insurance for WORK to be performed. Unless specifically authorized by the OWNER, the amount of such insurance shall not be less than the CONTRACT PRICE totaled in the BID. The policy shall cover not less than the losses due to fire, explosion, hail, lightning, vandalism, malicious mischief, wind, collapse, riot, aircraft, and smoke during the CONTRACT TIME, and until the WORK is accepted by the OWNER. The policy shall name as the insured the CONTRACTOR, and the OWNER.

H-16. WEATHER DATA. The Contractor shall avail himself of weather bureau data regarding the anticipated temperatures and rainfall.

H-17. REQUIREMENTS OF CONTRACTOR'S VEHICLES.

1. For the purpose of this Section, the following definitions apply:
 - a. Vehicle - All conveyance, except aircraft, used on the ground to transport persons, materials, or equipment.
 - b. Aircraft Operation Areas - Those areas which encompass the runways, taxiways, and other areas of the airport utilized for taxiing, take-off, and landing of aircraft, including aprons and parking areas.
 - c. Airfield Service Vehicles - Those vehicles operated by Airport management or the Contractor and routinely used for service, maintenance, and construction on the aircraft movement area.
 - d. Aircraft Support Vehicles - Those vehicles routinely used on the aircraft aprons or parking areas in support of aircraft operations.
 - e. Service and Delivery Vehicles - Those vehicles operating on the air operation areas which pick up and deliver air cargo and airport and airline supplies.
2. No vehicles shall operate within the air operations areas unless it is required for delivery and pick up of Contractor's personnel, materials, air cargo, aircraft servicing, airport maintenance, or in emergency conditions.
3. No vehicle will be given authorization to operate on the air operations area unless it shall be in good mechanical order, with adequate lights, horn, brakes and clear vision from the driver's seat. Trailer and semi-trailers will not be permitted unless they are equipped with reflector lights and proper functional brakes so that when disengaged from the towing vehicle, neither aircraft blast nor wind will cause them to become free rolling. Positive locking couplings will be required for all towed equipment.
4. All vehicle operators are required, by the HATTIESBURG-BOBBY L. CHAIN AIRPORT, to have a valid operator's permit for a motor vehicle before operating a vehicle on the airport property. In addition, all vehicles to be operated on airport property are required to be registered by the State of Mississippi, except those not required by state statutes.
5. The HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT has established guidelines for operating within the air operations area:

a. General vehicle regulations:

- (1) No person shall operate a motor vehicle on the airport when such vehicle does not possess valid license tags issued by the appropriate authority.
- (2) The driver of any motor vehicle operated on the airport must at all times comply with a lawful order, signal or directive of an authorized representative of the airport.
- (3) No motor vehicle shall be operated on the airport if it is so constructed, equipped or loaded as to endanger persons or property.
- (4) No person shall park a motor vehicle on the airport other than in the area specifically established by the Airport Manager for the parking of the equipment.
- (5) All motor vehicles, except scooters, shall be equipped with two headlights and one or more red taillights; the headlights to be of sufficient brilliance to assure safety in driving at night, and all lights shall be kept lighted after sunset unless the vehicle is in a designated parking area.
- (6) All motor vehicles shall be equipped with two reflectors on the rear and two reflectors for each side (front and rear). A reflector will be considered adequate when it is so designed, located and maintained as to be visible for at least five hundred feet when facing an oncoming vehicle with ordinary headlights.
- (7) Emergency conditions existing on the airport will not mitigate or cancel any existing rule. During such conditions all drivers of every motor vehicle shall make certain that his vehicle does not move in any direction that could interfere with any or all authorized operations necessary for the effective control of the emergency.
- (8) Any equipment not needed immanently for repairs or construction of runway or taxiways shall not be parked within a safety area. Parking of equipment on the airport during hours when repairs or construction are not in progress shall not be closer than 250 feet from the edge of any active taxiway, runway, ramp, or apron. In any event, such equipment will be marked by flags not less than 3 feet square made of alternating 1 foot squares of white and international orange cloth; and during hours of darkness by obstruction lights when applicable.

- b. Right-of-Way between motor vehicles.
 - (1) Emergency vehicles shall have the right-of-way over all other motor vehicles operating on the airport.
 - (2) On the aprons, fuel tenders shall have the right-of way over other vehicles.
 - (3) On the aprons, motor vehicles operated in support of air carrier operations shall have the right-of-way over administrative and maintenance vehicles except as noted in 4.
 - (4) Maintenance and construction vehicles shall have the right-of-way when operating within routes specifically designated by the Airport Manager in each instance of repairs or construction requiring several movements within a short period of time or during any extensive construction.
- c. Right-of-way between motor vehicles and aircraft.
 - (1) All vehicles shall relinquish right-of-way to any aircraft moving under its own power.
 - (2) All vehicles shall pass on the pilot's side of an aircraft moving under its own power.
 - (3) When parking adjacent to a runway, all vehicles must park parallel to the runway and at least 200 feet to the outside of the runway lights.
- 6. The Airport Manager shall have the responsibility of control over the vehicular traffic operating on the air operations area. All vehicles are required to obtain clearance from the Airport Manager before entering any active area of the air operations area. All vehicles must obtain additional clearance from the Airport Manager before crossing an active runway.
- 7. THE HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT requires that all vehicles to be operated on the air operations area shall display the name of the owner or lessee thereon, by means of a name plate or lettering. Construction contractor's equipment and personnel vehicles will be identified by means of a 3-foot square flag as described in paragraph 5a (9) herein before.

H-18. WORK PHASES. Work phases are delineated on the drawings.

ENGINEERING AND DESIGN SPECIFICATIONS

**HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**A.I.P Project No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG**

ARE Consultants, Inc.
P.O. Box 38252
Shreveport, LA 71133
(318) 222-8252

General Provisions

SECTION 10 DEFINITION OF TERMS

When the following terms are used in these specifications, in the contract, or in any documents or other instruments pertaining to construction where these specifications govern, the intent and meaning shall be defined as follows:

Paragraph Number	Term	Definition
10-01	AASHTO	The American Association of State Highway and Transportation Officials.
10-02	Access Road	The right-of-way, the roadway and all improvements constructed thereon connecting the airport to a public roadway.
10-03	Advertisement	A public announcement, as required by local law, inviting bids for work to be performed and materials to be furnished.
10-04	Airport	Airport means an area of land or water which is used or intended to be used for the landing and takeoff of aircraft; an appurtenant area used or intended to be used for airport buildings or other airport facilities or rights of way; airport buildings and facilities located in any of these areas, and a heliport.
10-05	Airport Improvement Program (AIP)	A grant-in-aid program, administered by the Federal Aviation Administration (FAA).
10-06	Air Operations Area (AOA)	The term air operations area (AOA) shall mean any area of the airport used or intended to be used for the landing, takeoff, or surface maneuvering of aircraft. An air operation area shall include such paved or unpaved areas that are used or intended to be used for the unobstructed movement of aircraft in addition to its associated runway, taxiway, or apron.
10-07	Apron	Area where aircraft are parked, unloaded or loaded, fueled and/or serviced.
10-08	ASTM International (ASTM)	Formerly known as the American Society for Testing and Materials (ASTM).
10-09	Award	The Owner's notice to the successful bidder of the acceptance of the submitted bid.
10-10	Bidder	Any individual, partnership, firm, or corporation, acting directly or through a duly authorized representative, who submits a proposal for the work contemplated.

Paragraph Number	Term	Definition
10-11	Building Area	An area on the airport to be used, considered, or intended to be used for airport buildings or other airport facilities or rights-of-way together with all airport buildings and facilities located thereon.
10-12	Calendar Day	Every day shown on the calendar.
10-13	Certificate of Analysis (COA)	The COA is the manufacturer's Certificate of Compliance (COC) including all applicable test results required by the specifications.
10-14	Certificate of Compliance (COC)	The manufacturer's certification stating that materials or assemblies furnished fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer's authorized representative.
10-15	Change Order	A written order to the Contractor covering changes in the plans, specifications, or proposal quantities and establishing the basis of payment and contract time adjustment, if any, for work within the scope of the contract and necessary to complete the project.
10-16	Contract	A written agreement between the Owner and the Contractor that establishes the obligations of the parties including but not limited to performance of work, furnishing of labor, equipment and materials and the basis of payment. The awarded contract includes but may not be limited to: Advertisement, Contract form, Proposal, Performance bond, payment bond, General provisions, certifications and representations, Technical Specifications, Plans, Supplemental Provisions, standards incorporated by reference and issued addenda.
10-17	Contract Item (Pay Item)	A specific unit of work for which a price is provided in the contract.
10-18	Contract Time	The number of calendar days or working days, stated in the proposal, allowed for completion of the contract, including authorized time extensions. If a calendar date of completion is stated in the proposal, in lieu of a number of calendar or working days, the contract shall be completed by that date.
10-19	Contractor	The individual, partnership, firm, or corporation primarily liable for the acceptable performance of the work contracted and for the payment of all legal debts pertaining to the work who acts directly or through lawful agents or employees to complete the contract work.
10-20	Contractors Quality Control (QC) Facilities	The Contractor's QC facilities in accordance with the Contractor Quality Control Program (CQCP).
10-21	Contractor Quality Control Program (CQCP)	Details the methods and procedures that will be taken to assure that all materials and completed construction required by the

Paragraph Number	Term	Definition
		contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors.
10-22	Control Strip	A demonstration by the Contractor that the materials, equipment, and construction processes results in a product meeting the requirements of the specification.
10-23	Construction Safety and Phasing Plan (CSPP)	The overall plan for safety and phasing of a construction project developed by the airport operator, or developed by the airport operator's consultant and approved by the airport operator. It is included in the invitation for bids and becomes part of the project specifications.
10-24	Drainage System	The system of pipes, ditches, and structures by which surface or subsurface waters are collected and conducted from the airport area.
10-25	Engineer	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for engineering, inspection, and/or observation of the contract work and acting directly or through an authorized representative.
10-26	Equipment	All machinery, together with the necessary supplies for upkeep and maintenance; and all tools and apparatus necessary for the proper construction and acceptable completion of the work.
10-27	Extra Work	An item of work not provided for in the awarded contract as previously modified by change order or supplemental agreement, but which is found by the Owner's Engineer or Resident Project Representative (RPR) to be necessary to complete the work within the intended scope of the contract as previously modified.
10-28	FAA	The Federal Aviation Administration. When used to designate a person, FAA shall mean the Administrator or their duly authorized representative.
10-29	Federal Specifications	The federal specifications and standards, commercial item descriptions, and supplements, amendments, and indices prepared and issued by the General Services Administration.
10-30	Force Account	a. Contract Force Account - A method of payment that addresses extra work performed by the Contractor on a time and material basis. b. Owner Force Account - Work performed for the project by the Owner's employees.
10-31	Intention of Terms	Whenever, in these specifications or on the plans, the words "directed," "required," "permitted," "ordered," "designated," "prescribed," or words of like import are used, it shall be understood that the direction, requirement, permission, order, designation, or prescription of the Engineer and/or Resident

Paragraph Number	Term	Definition
		Project Representative (RPR) is intended; and similarly, the words "approved," "acceptable," "satisfactory," or words of like import, shall mean approved by, or acceptable to, or satisfactory to the Engineer and/or RPR, subject in each case to the final determination of the Owner. Any reference to a specific requirement of a numbered paragraph of the contract specifications or a cited standard shall be interpreted to include all general requirements of the entire section, specification item, or cited standard that may be pertinent to such specific reference.
10-32	Lighting	A system of fixtures providing or controlling the light sources used on or near the airport or within the airport buildings. The field lighting includes all luminous signals, markers, floodlights, and illuminating devices used on or near the airport or to aid in the operation of aircraft landing at, taking off from, or taxiing on the airport surface.
10-33	Major and Minor Contract Items	A major contract item shall be any item that is listed in the proposal, the total cost of which is equal to or greater than 20% of the total amount of the award contract. All other items shall be considered minor contract items.
10-34	Materials	Any substance specified for use in the construction of the contract work.
10-35	Modification of Standards (MOS)	Any deviation from standard specifications applicable to material and construction methods in accordance with FAA Order 5300.1.
10-36	Notice to Proceed (NTP)	A written notice to the Contractor to begin the actual contract work on a previously agreed to date. If applicable, the Notice to Proceed shall state the date on which the contract time begins.
10-37	Owner	The term "Owner" shall mean the party of the first part or the contracting agency signatory to the contract. Where the term "Owner" is capitalized in this document, it shall mean airport Sponsor only. The Owner for this project is the City of Hattiesburg, Mississippi.
10-38	Passenger Facility Charge (PFC)	Per 14 Code of Federal Regulations (CFR) Part 158 and 49 United States Code (USC) § 40117, a PFC is a charge imposed by a public agency on passengers enplaned at a commercial service airport it controls.
10-39	Pavement Structure	The combined surface course, base course(s), and subbase course(s), if any, considered as a single unit.
10-40	Payment bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will pay in full

Paragraph Number	Term	Definition
		all bills and accounts for materials and labor used in the construction of the work.
10-41	Performance bond	The approved form of security furnished by the Contractor and their own surety as a guaranty that the Contractor will complete the work in accordance with the terms of the contract.
10-42	Plans	The official drawings or exact reproductions which show the location, character, dimensions and details of the airport and the work to be done and which are to be considered as a part of the contract, supplementary to the specifications. Plans may also be referred to as 'contract drawings.'
10-43	Project	The agreed scope of work for accomplishing specific airport development with respect to a particular airport.
10-44	Proposal	The written offer of the bidder (when submitted on the approved proposal form) to perform the contemplated work and furnish the necessary materials in accordance with the provisions of the plans and specifications.
10-45	Proposal guaranty	The security furnished with a proposal to guarantee that the bidder will enter into a contract if their own proposal is accepted by the Owner.
10-46	Quality Assurance (QA)	Owner's responsibility to assure that construction work completed complies with specifications for payment.
10-47	Quality Control (QC)	Contractor's responsibility to control material(s) and construction processes to complete construction in accordance with project specifications.
10-48	Quality Assurance (QA) Inspector	An authorized representative of the Engineer and/or Resident Project Representative (RPR) assigned to make all necessary inspections, observations, tests, and/or observation of tests of the work performed or being performed, or of the materials furnished or being furnished by the Contractor.
10-49	Quality Assurance (QA) Laboratory	The official quality assurance testing laboratories of the Owner or such other laboratories as may be designated by the Engineer or RPR. May also be referred to as Engineer's, Owner's, or QA Laboratory.
10-50	Resident Project Representative (RPR)	The individual, partnership, firm, or corporation duly authorized by the Owner to be responsible for all necessary inspections, observations, tests, and/or observations of tests of the contract work performed or being performed, or of the materials furnished or being furnished by the Contractor, and acting directly or through an authorized representative.
10-51	Runway	The area on the airport prepared for the landing and takeoff of aircraft.

Paragraph Number	Term	Definition
10-52	Runway Safety Area (RSA)	A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to aircraft. See the construction safety and phasing plan (CSPP) for limits of the RSA.
10-53	Safety Plan Compliance Document (SPCD)	Details how the Contractor will comply with the CSPP.
10-54	Specifications	A part of the contract containing the written directions and requirements for completing the contract work. Standards for specifying materials or testing which are cited in the contract specifications by reference shall have the same force and effect as if included in the contract physically.
10-55	Sponsor	A Sponsor is defined in 49 USC § 47102(24) as a public agency that submits to the FAA for an AIP grant; or a private Owner of a public-use airport that submits to the FAA an application for an AIP grant for the airport.
10-56	Structures	Airport facilities such as bridges; culverts; catch basins, inlets, retaining walls, cribbing; storm and sanitary sewer lines; water lines; underdrains; electrical ducts, manholes, handholes, lighting fixtures and bases; transformers; navigational aids; buildings; vaults; and, other manmade features of the airport that may be encountered in the work and not otherwise classified herein.
10-57	Subgrade	The soil that forms the pavement foundation.
10-58	Superintendent	The Contractor's executive representative who is present on the work during progress, authorized to receive and fulfill instructions from the RPR, and who shall supervise and direct the construction.
10-59	Supplemental Agreement	A written agreement between the Contractor and the Owner that establishes the basis of payment and contract time adjustment, if any, for the work affected by the supplemental agreement. A supplemental agreement is required if: (1) in scope work would increase or decrease the total amount of the awarded contract by more than 25%; (2) in scope work would increase or decrease the total of any major contract item by more than 25%; (3) work that is not within the scope of the originally awarded contract; or (4) adding or deleting of a major contract item.
10-60	Surety	The corporation, partnership, or individual, other than the Contractor, executing payment or performance bonds that are furnished to the Owner by the Contractor.
10-61	Taxilane	A taxiway designed for low speed movement of aircraft between aircraft parking areas and terminal areas.
10-62	Taxiway	The portion of the air operations area of an airport that has been designated by competent airport authority for movement of

Paragraph Number	Term	Definition
		aircraft to and from the airport's runways, aircraft parking areas, and terminal areas.
10-63	Taxiway/Taxilane Safety Area (TSA)	A defined surface alongside the taxiway prepared or suitable for reducing the risk of damage to an aircraft. See the construction safety and phasing plan (CSPP) for limits of the TSA.
10-64	Work	The furnishing of all labor, materials, tools, equipment, and incidentals necessary or convenient to the Contractor's performance of all duties and obligations imposed by the contract, plans, and specifications.
10-65	Working day	A working day shall be any day other than a legal holiday, Saturday, or Sunday on which the normal working forces of the Contractor may proceed with regular work for at least six (6) hours toward completion of the contract. When work is suspended for causes beyond the Contractor's control, it will not be counted as a working day. Saturdays, Sundays and holidays on which the Contractor's forces engage in regular work will be considered as working days.
10-66	Owner Defined terms	None

END OF SECTION 10

CLARIFICATIONS TO SECTION 20

The provisions of this specification shall be applicable except as modified as follows:

All instances of "State Highway Division" change to read "Mississippi Department of Transportation and Development - Aviation Division."

SECTION 20: REQUIREMENTS AND CONDITIONS

20-01 ADVERTISEMENT (Notice to Bidders). See Section A.

20-02 PREQUALIFICATION OF BIDDERS. Each bidder shall furnish the owner satisfactory evidence of his/her competency to perform the proposed work. Such evidence of competency, unless otherwise specified, shall consist of statements covering the bidder's past experience on similar work, a list of equipment that would be available for the work, and a list of key personnel that would be available. In addition, each bidder shall furnish the owner satisfactory evidence of his/her financial responsibility. Such evidence of financial responsibility, unless otherwise specified, shall consist of a confidential statement or report of the bidder's financial resources and liabilities as of the last calendar year or the Contractor's last fiscal year. Such statements or reports shall be certified by a public accountant. At the time of submitting such financial statements or reports, the bidder shall further certify whether his/her financial responsibility is approximately the same as stated or reported by the public accountant. If the bidder's financial responsibility has changed, the bidder shall qualify the public accountant's statement or report to reflect his/her (bidder's) true financial condition at the time such qualified statement or report is submitted to the owner.

20-03 CONTENTS OF PROPOSAL FORMS. The owner shall furnish bidders with proposal forms. All papers bound with or attached to the proposal forms are necessary parts and must not be detached.

The plans specifications, and other documents designated in the proposal form shall be considered a part of the proposal whether attached or not.

20-04 ISSUANCE OF PROPOSAL FORMS. The owner reserves the right to refuse to issue a proposal form to a prospective bidder should such bidder be in default for any of the following reasons:

- a. Failure to comply with any pre-qualification regulations of the owner, if such regulations are cited, or otherwise included, in the proposal as a requirement for bidding.
- b. Failure to pay, or satisfactorily settle, all bills due for labor and materials on former contracts in force (with the owner) at the time the owner issues the proposal to a prospective bidder.
- c. Contractor default under previous contracts with the owner.
- d. Unsatisfactory work on previous contracts with the owner.

20-05 INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES. An estimate of quantities of work to be done and materials to be furnished under these specifications is given in the proposal. It is the result of careful calculations and is believed to be correct. It is given only

as a basis for comparison of proposals and the award of the contract. The owner does not expressly or by implication agree that the actual quantities involved will correspond exactly therewith; nor shall the bidder plead misunderstanding or deception because of such estimates of quantities, or of the character, location, or other conditions pertaining to the work. Payment to the Contractor will be made only for the actual quantities of work performed or materials furnished in accordance with the plans and specifications. It is understood that the quantities may be increased or decreased as hereinafter provided in the subsection titled **ALTERATION OF WORK AND QUANTITIES** of Section 40 without in any way invalidating the unit bid prices.

20-06 EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE. The bidder is expected to carefully examine the site of the proposed work, the proposal, plans, specifications, and contract forms. He shall satisfy himself as to the character, quality, and quantities of work to be performed, materials to be furnished, and as to the requirements of the proposed contract. The submission of a proposal shall be prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the proposed contract, plans, and specifications.

Boring logs and other records of subsurface investigations and tests are available for inspection of bidders. It is understood and agreed that such subsurface information, whether included in the plans, specifications, or otherwise made available to the bidder, was obtained and is intended for the owner's design and estimating purposes only. Such information has been made available for the convenience of all bidders. It is further understood and agreed that each bidder is solely responsible for all assumptions, deductions, or conclusions which he may make or obtain from his/her examination of the boring logs and other records of subsurface investigations and tests that are furnished by the owner.

20-07 PREPARATION OF PROPOSAL. The bidder shall submit his/her proposal on the forms furnished by the owner. All blank spaces in the proposal forms must be correctly filled in where indicated for each and every item for which a quantity is given. The bidder shall state the price (written in ink or typed) both in words and numerals for which he proposes to do each pay item furnished in the proposal. In case of conflict between words and numerals, the words, unless obviously incorrect, shall govern.

The bidder shall sign his/her proposal correctly and in ink. If the proposal is made by an individual, his/her name and post office address must be shown. If made by a partnership, the name and post office address of each member of the partnership must be shown. If made by a corporation, the person signing the proposal shall give the name of the state under the laws of which the corporation was chartered and the name, titles, and business address of the president, secretary, and the treasurer. Anyone signing a proposal as an agent shall file evidence of his/her authority to do so and that the signature is binding upon the firm or corporation.

20-08 IRREGULAR PROPOSALS. Proposals shall be considered irregular for the following reasons:

- a. If the proposal is on a form other than that furnished by the owner, or if the owner's form is altered, or if any part of the proposal form is detached.
- b. If there are unauthorized additions, conditional or alternate pay items, or irregularities of any kind which make the proposal incomplete, indefinite, or otherwise ambiguous.
- c. If the proposal does not contain a unit price for each pay item listed in the proposal, except in the case of authorized alternate pay items, for which the bidder is not required to furnish a unit price.
- d. If the proposal contains unit prices that are obviously unbalanced.
- e. If the proposal is not accompanied by the proposal guaranty specified by the owner.

The owner reserves the right to reject any irregular proposal and the right to waive technicalities if such waiver is in the best interest of the owner and conforms to local laws and ordinances pertaining to the letting of construction contracts.

20-09 BID GUARANTEE. Each separate proposal shall be accompanied by a certified check, or other specified acceptable collateral, in the amount specified in the proposal form. Such check, or collateral, shall be made payable to the owner.

20-10 DELIVERY OF PROPOSAL. Each proposal submitted shall be placed in a sealed envelope plainly marked with the project number, location of airport, and name and business address of the bidder on the outside. When sent by mail, preferably registered, the sealed proposal, marked as indicated above, should be enclosed in an additional envelope. No proposal will be considered unless received at the place specified in the advertisement before the time specified for opening all bids. Proposals received after the bid opening time shall be returned to the bidder unopened.

20-11 WITHDRAWAL OR REVISION OF PROPOSALS. A bidder may withdraw or revise (by withdrawal of one proposal and submission of another) a proposal provided that the bidder's request for withdrawal is received by the owner in writing or by telegram before the time specified for opening bids. Revised proposals must be received at the place specified in the advertisement before the time specified for opening all bids.

20-12 PUBLIC OPENING OF PROPOSALS. Proposals shall be opened, and read, publicly at the time and place specified in the advertisement. Bidders, their authorized agents, and other interested persons are invited to attend. Proposals that have been withdrawn (by written or telegraphic request) or received after the time specified for opening bids shall be returned to the bidder unopened.

20-13 DISQUALIFICATION OF BIDDERS. A bidder shall be considered disqualified for any of the following reasons:

- a. Submitting more than one proposal from the same partnership, firm, or corporation under the same or different name.
- b. Evidence of collusion among bidders. Bidders participating in such collusion shall be disqualified as bidders for any future work of the owner until any such participating bidder has been reinstated by the owner as a qualified bidder.
- c. If the bidder is considered to be in default for any reason specified in the subsection titled **ISSUANCE OF PROPOSAL FORMS** of this section.

END OF SECTION 20

SECTION 30: AWARD AND EXECUTION OF CONTRACT

30-01 CONSIDERATION OF PROPOSALS. After the proposals are publicly opened and read, they will be compared on the basis of the summation of the products obtained by multiplying the estimated quantities shown in the proposal by the unit bid prices. If a bidder's proposal contains a discrepancy between unit bid prices written in words and unit bid prices written in numbers, the unit price written in words shall govern.

Until the award of a contract is made, the owner reserves the right to reject a bidder's proposal for any of the following reasons:

- a. If the proposal is irregular as specified in the subsection titled **IRREGULAR PROPOSALS** of Section 20.
- b. If the bidder is disqualified for any of the reasons specified in the subsection titled **DISQUALIFICATION OF BIDDERS** of Section 20.

In addition, until the award of a contract is made, the owner reserves the right to reject any or all proposals, waive technicalities, if such waiver is in the best interest of the owner and is in conformance with applicable state and local laws or regulations pertaining to the letting of construction contracts; advertise for new proposals; or proceed with the work otherwise. All such actions shall promote the owner's best interests.

30-02 AWARD OF CONTRACT. The award of a contract, if it is to be awarded, shall be made within 30 calendar days of the date specified for publicly opening proposals, unless otherwise specified herein.

Award of the contract shall be made by the owner to the lowest, qualified bidder whose proposal conforms to the cited requirements of the owner.

30-03 CANCELLATION OF AWARD. The owner reserves the right to cancel the award without liability to the bidder, except return of proposal guaranty, at any time before a contract has been fully executed by all parties and is approved by the owner in accordance with the subsection titled **APPROVAL OF CONTRACT** of this section.

30-04 RETURN OF PROPOSAL GUARANTY. All proposal guaranties, except those of the two lowest bidders, will be returned immediately after the owner has made a comparison of bids as hereinbefore specified in the subsection titled **CONSIDERATION OF PROPOSALS** of this section. Proposal guaranties of the two lowest bidders will be retained by the owner until such time as an award is made, at which time, the unsuccessful bidder's proposal guaranty will be returned. The successful bidder's proposal guaranty will be returned as soon as the owner receives the contracts bonds as specified in the subsection titled **REQUIREMENTS OF CONTRACT BONDS** of this section.

30-05 REQUIREMENTS OF CONTRACT BONDS. At the time of the execution of the contract, the successful bidder shall furnish the owner a surety bond or bonds which have been

fully executed by the bidder and the surety guaranteeing the performance of the work and the payment of all legal debts that may be incurred by reason of the Contractor's performance of the work. The surety and the form of the bond or bonds shall be acceptable to the owner. Unless otherwise specified in this subsection, the surety bond or bonds shall be in a sum equal to the full amount of the contract.

30-06 EXECUTION OF CONTRACT. The successful bidder shall sign (execute) the necessary agreements for entering into the contract and return such signed contract to the owner, along with the fully executed surety bond or bonds specified in the subsection titled **REQUIREMENTS OF CONTRACT BONDS** of this section, within 15 calendar days from the date mailed or otherwise delivered to the successful bidder. If the contract is mailed, special handling is recommended.

30-07 APPROVAL OF CONTRACT. Upon receipt of the contract and contract bond or bonds that have been executed by the successful bidder, the owner shall complete the execution of the contract in accordance with local laws or ordinances, and return the fully executed contract to the Contractor. Delivery of the fully executed contract to the Contractor shall constitute the owner's approval to be bound by the successful bidder's proposal and the terms of the contract.

30-08 FAILURE TO EXECUTE CONTRACT. Failure of the successful bidder to execute the contract and furnish an acceptable surety bond or bonds within the 15 calendar day period specified in the subsection titled **REQUIREMENTS OF CONTRACT BONDS** of this section shall be just cause for cancellation of the award and forfeiture of the proposal guaranty, not as a penalty, but as liquidation of damages to the owner.

END OF SECTION 30

SECTION 40: SCOPE OF WORK

40-01 INTENT OF CONTRACT. The intent of the contract is to provide for construction and completion, in every detail, of the work described. It is further intended that the Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the work in accordance with the plans, specifications, and terms of the contract.

40-02 ALTERATION OF WORK AND QUANTITIES. The owner reserves and shall have the right to make such alterations in the work as may be necessary or desirable to complete the work originally intended in an acceptable manner. Unless otherwise specified herein, the Engineer shall be and is hereby authorized to make such alterations in the work as may increase or decrease the originally awarded contract quantities, provided that the aggregate of such alterations does not change the total contract cost or the total cost of any major contract item by more than 25 percent (total cost being based on the unit prices and estimated quantities in the awarded contract). Alterations which do not exceed the 25 percent limitation shall not invalidate the contract nor release the surety, and the Contractor agrees to accept payment for such alterations as if the altered work had been a part of the original contract. These alterations which are for work within the general scope of the contract shall be covered by "Change Orders" issued by the Engineer. Change orders for altered work shall include extensions of contract time where, in the Engineer's opinion, such extensions are commensurate with the amount and difficulty of added work.

Should the aggregate amount of altered work exceed the 25 percent limitation here-in-before specified, such excess altered work shall be covered by supplemental agreement. If the owner and the Contractor are unable to agree on a unit adjustment for any contract item that requires a supplemental agreement, the owner reserves the right to terminate the contract with respect to the item and make other arrangements for its completion.

40-03 OMITTED ITEMS. The Engineer may, in the owner's best interest, omit from the work any contract item, except major contract items. Major contract items may be omitted by a supplemental agreement. Such omission of contract items shall not invalidate any other contract provision or requirement.

Should a contract item be omitted or otherwise ordered to be non-performed, the Contractor shall be paid for all work performed toward completion of such item prior to the date of the order to omit such item. Payment for work performed shall be in accordance with the subsection titled **PAYMENT FOR OMITTED ITEMS** of Section 90.

40-04 EXTRA WORK. Should acceptable completion of the contract require the Contractor to perform an item of work for which no basis of payment has been provided in the original contract or previously issued change orders or supplemental agreements, the same shall be called Extra Work. Extra work that is within the general scope of the contract shall be covered by written change order. Change orders for such extra work shall contain agreed unit prices for performing the change order work in accordance with the requirements specified in the order, and shall contain any adjustment to the contract time that, in the Engineer's opinion, is necessary for completion of such extra work.

When determined by the Engineer to be in the owner's best interest, he may order the Contractor to proceed with extra work by force account as provided in the subsection titled **PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK** of Section 90.

Extra work that is necessary for acceptable completion of the project, but is not within the general scope of the work covered by the original contract shall be covered by a Supplemental Agreement as here-in-before defined in the subsection titled **SUPPLEMENTAL AGREEMENT** of Section 10.

Any claim for payment of extra work that is not covered by written agreement (change order or supplemental agreement) shall be rejected by the owner.

40-05 MAINTENANCE OF TRAFFIC. It is the explicit intention of the contract that the safety of aircraft, as well as the Contractor's equipment and personnel, is the most important consideration. It is understood and agreed that the Contractor shall provide for the free and unobstructed movement of aircraft in the air operations areas of the airport with respect to his/her own operations and the operations of all his/her subcontractors as specified in the subsection titled **LIMITATION OF OPERATIONS** of Section 80. It is further understood and agreed that the Contractor shall provide for the uninterrupted operation of visual and electronic signals (including power supplies thereto) used in the guidance of aircraft while operating to, from, and upon the airport as specified in the subsection titled **CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS** in Section 70.

With respect to his/her own operations and the operations of all his/her subcontractors, the Contractor shall provide marking, lighting, and other acceptable means of identifying: personnel; equipment; vehicles; storage areas; and any work area or condition that may be hazardous to the operation of aircraft, fire-rescue equipment, or maintenance vehicles at the airport.

When the contract requires the maintenance of vehicular traffic on an existing road, street, or highway during the Contractor's performance of work that is otherwise provided for in the contract, plans, and specifications, the Contractor shall keep such road, street, or highway open to all traffic and shall provide such maintenance as may be required to accommodate traffic. The Contractor shall furnish erect, and maintain barricades, warning signs, flagmen, and other traffic control devices in reasonable conformity with the manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office), unless otherwise specified herein. The Contractor shall also construct and maintain in a safe condition any temporary connections necessary for ingress to and egress from abutting property or intersecting roads, streets or highways. Unless otherwise specified herein, the Contractor will not be required to furnish snow removal for such existing road, street, or highway.

The Contractor shall make his/her own estimate of all labor, materials, equipment, and incidentals necessary for providing the maintenance of aircraft and vehicular traffic as specified in this subsection.

The cost of maintaining the aircraft and vehicular traffic specified in this subsection shall not be measured or paid for directly, but shall be included in the various contract items.

40-06 REMOVAL OF EXISTING STRUCTURES. All existing structures encountered within the established lines, grades, or grading sections shall be removed by the Contractor, unless such existing structures are otherwise specified to be relocated, adjusted up or down, salvaged, abandoned in place, reused in the work or to remain in place. The cost of removing such existing structures shall not be measured or paid for directly, but shall be included in the various contract items.

Should the Contractor encounter an existing structure (above or below ground) in the work for which the disposition is not indicated on the plans, the Engineer shall be notified prior to disturbing such structure. The disposition of existing structures so encountered shall be immediately determined by the Engineer in accordance with the provisions of the contract.

Except as provided in the subsection titled **RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK** of this section, it is intended that all existing materials or structures that may be encountered (within the lines, grades, or grading sections established for completion of the work) shall be utilized in the work as otherwise provided for in the contract and shall remain the property of the owner when so utilized in the work.

40-07 RIGHTS IN AND USE OF MATERIALS FOUND IN THE WORK. Should the Contractor encounter any material such as (but not restricted to) sand, stone, gravel, slag, or concrete slabs within the established lines, grades, or grading sections, the use of which is intended by the terms of the contract to be either embankment or waste, he may at his/her option either:

- a. Use such material in another contract item, providing such use is approved by the Engineer and is in conformance with the contract specifications applicable to such use; or,
- b. Remove such material from the site, upon written approval of the Engineer; or
- c. Use such material for his/her own temporary construction on site; or,
- d. Use such material as intended by the terms of the contract.

Should the Contractor wish to exercise option a., b., or c., he shall request the Engineer's approval in advance of such use.

Should the Engineer approve the Contractor's request to exercise option a., b., or c., the Contractor shall be paid for the excavation or removal of such material at the applicable contract price. The Contractor shall replace, at his/her own expense, such removed or excavated material with an agreed equal volume of material that is acceptable for use in constructing embankment, backfills, or otherwise to the extent that such replacement material is needed to complete the

contract work. The Contractor shall not be charged for his/her use of such material so used in the work or removed from the site.

Should the Engineer approve the Contractor's exercise of option a., the Contractor shall be paid, at the applicable contract price, for furnishing and installing such material in accordance with requirements of the contract item in which the material is used.

It is understood and agreed that the Contractor shall make no claim for delays by reason of his/her exercise of option a., b., or c.

The Contractor shall not excavate, remove, or otherwise disturb any material, structure, or part of a structure which is located outside the lines, grades, or grading sections established for the work, except where such excavation or removal is provided for in the contract, plans, or specifications.

40-09 FINAL CLEANING UP. Upon completion of the work and before acceptance and final payment will be made, the Contractor shall remove from the site all machinery, equipment, surplus and discarded materials, rubbish, temporary structures, and stumps or portions of trees. He shall cut all brush and woods within the limits indicated and shall leave the site in a neat and presentable condition. Material cleared from the site and deposited on adjacent property will not be considered as having been disposed of satisfactorily, unless the Contractor has obtained the written permission of such property owner.

END OF SECTION 40

SECTION 50: CONTROL OF WORK

50-01 AUTHORITY OF THE ENGINEER. The Engineer shall decide any and all questions which may arise as to the quality and acceptability of materials furnished, work performed, and as to the manner of performance and rate of progress of the work. He shall decide all questions which may arise as to the interpretation of the specifications or plans relating to the work, the fulfillment of the contract on the part of the Contractor, and the rights of different Contractors on the project. The Engineer shall determine the amount and quality of the several kinds of work performed and materials furnished which are to be paid for the under contract.

50-02 CONFORMITY WITH PLANS AND SPECIFICATIONS. All work and all materials furnished shall be in reasonably close conformity with the lines, grades, grading sections, cross sections, dimensions, material requirements, and testing requirements that are specified (including specified tolerances) in the contract, plans or specifications.

If the Engineer finds the materials furnished, work performed, or the finished product not within reasonably close conformity with the plans and specifications but that the portion of the work affected will, in his/her opinion, result in a finished product having a level of safety, economy, durability, and workmanship acceptable to the owner, he will advise the owner of his/her determination that the affected work be accepted and remain in place. In this event, the Engineer will document his/her determination and recommend to the owner a basis of acceptance which will provide for an adjustment in the contract price for the affected portion of the work. The Engineer's determination and recommended contract price adjustments will be based on good engineering judgment and such tests or retests of the affected work as are, in his/her opinion, needed. Changes in the contract price shall be covered by contract modifications (change order or supplemental agreement) as applicable.

If the Engineer finds the materials furnished, work performed, or the finished product are not in reasonably close conformity with the plans and specifications and have resulted in an unacceptable finished product, the affected work or materials shall be removed and replaced or otherwise corrected by and at the expense of the Contractor in accordance with the Engineer's written orders.

For the purpose of this subsection, the term "reasonably close conformity" shall not be construed as waiving the Contractor's responsibility to complete the work in accordance with the contract, plans, and specifications. The term shall not be construed as waiving the Engineer's right to insist on strict compliance with the requirements of the contract, plans, and specifications during the Contractor's prosecution of the work, when, in the Engineer's opinion, such compliance is essential to provide an acceptable finished portion of the work.

For the purpose of this subsection, the term "reasonably close conformity" is also intended to provide the Engineer with the authority to use good engineering judgment in his/her determinations as to acceptance of work that is not in strict conformity but will provide a finished product equal to or better than that intended by the requirements of the contract, plans and specifications.

50-03 COORDINATION OF CONTRACT, PLANS, AND SPECIFICATIONS. The contract, plans, specifications, and all referenced standards cited are essential parts of the contract requirements. A requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete work. In case of discrepancy, calculated dimensions will govern over scaled dimensions; contract technical specifications shall govern over contract general provisions, plans, cited standards for materials or testing, and cited FAA advisory circulars; contract general provisions shall govern over plans, cited standards for materials or testing, and cited FAA advisory circulars; plans shall govern over cited standards for materials or testing and cited FAA advisory circulars.

The Contractor shall not take advantage of any apparent error or omission on the plans or specifications. In the event the Contractor discovers any apparent error or discrepancy, he shall immediately call upon the Engineer for his/her interpretation and decision, and such decision shall be final.

50-04 COOPERATION OF CONTRACTOR. The Contractor will be supplied with two copies each of the plans and specifications. He shall have available on the work at all times one copy each of the plans and specifications. Additional copies of plans and specifications may be obtained by the Contractor for the cost of reproduction.

The Contractor shall give constant attention to the work to facilitate the progress thereof, and he shall cooperate with the Engineer and his/her inspectors and with other contractors in every way possible. The Engineer shall allocate the work and designate the sequence of construction in case of controversy between contractors. The Contractor shall have a competent superintendent on the work at all times who is fully authorized as his/her agent on the work. The superintendent shall be capable of reading and thoroughly understanding the plans and specifications and shall receive and fulfill instructions from the Engineer or his/her authorized representative.

50-05 COOPERATION BETWEEN CONTRACTORS. The owner reserves the right to contract for and perform other or additional work on or near the work covered by this contract.

When separate contracts are let within the limits of any one project, each Contractor shall conduct his/her work so as not to interfere with or hinder the progress of completion of the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other as directed.

Each Contractor involved shall assume all liability, financial or otherwise, in connection with his/her contract and shall protect and save harmless the owner from any and all damages or claims that may arise because of inconvenience, delays, or loss experienced by him because of the presence and operations of other Contractors working within the limits of the same project.

The Contractor shall arrange his/her work and shall place and dispose of the materials being used so as not to interfere with the operations of the other Contractors within the limits of the same project. He shall join his/her work with that of the others in an acceptable manner and shall perform it in proper sequence to that of the others.

50-06 CONSTRUCTION LAYOUT AND STAKES. The Engineer shall establish horizontal and vertical control only. The Contractor must establish all layout required for the construction of the work. Such stakes and markings as the Engineer may set for either his/her own or the Contractor's guidance shall be preserved by the Contractor. In case of negligence on the part of the Contractor, or his/her employees, resulting in the destruction of such stakes or markings, an amount equal to the cost of replacing the same may be deducted from subsequent estimates due the Contractor at the discretion of the Engineer.

50-07 AUTOMATICALLY CONTROLLED EQUIPMENT. Whenever batching or mixing plant equipment is required to be operated automatically under the contract and a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually or by other methods for a period 48 hours following the breakdown or malfunction, provided this method of operations will product results which conform to all other requirements of the contract.

50-08 AUTHORITY AND DUTIES OF INSPECTORS. Inspectors employed by the owner shall be authorized to inspect all work done and all material furnished. Such inspection may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used. Inspectors are not authorized to revoke, alter, or waive any provision of the contract. Inspectors are not authorized to issue instructions contrary to the plans and specifications or to act as foreman for the Contractor.

Inspectors employed by the owner are authorized to notify the Contractor or his/her representatives of any failure of the work or materials to conform to the requirements of the contract, plans, or specifications and to reject such nonconforming materials in question until such issues can be referred to the Engineer for his/her decision.

50-09 INSPECTION OF THE WORK. All materials and each part or detail of the work shall be subject to inspection by the Engineer. The Engineer shall be allowed access to all parts of the work and shall be furnished with such information and assistance by the Contractor as is required to make a complete and detailed inspection.

If the Engineer requests it, the Contractor, at any time before acceptance of the work, shall remove or uncover such portions of the finished work as may be directed. After examination, the Contractor shall restore said portions of the work to the standard required by the specifications. Should the work thus exposed or examined prove acceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be paid for as extra work; but should the work so exposed or examined prove unacceptable, the uncovering, or removing, and the replacing of the covering or making good of the parts removed will be at the Contractor's expense.

Any work done or materials used without supervision or inspection by an authorized representative of the owner may be ordered removed and replaced at the Contractor's expense unless the owner's representative failed to inspect after having been given reasonable notice in writing that the work was to be performed.

Should the contract work include relocation, adjustment, or any other modification to existing facilities, not the property of the (contract) owner, authorized representatives of the owners of such facilities shall have the right to inspect such work. Such inspection shall in no sense make any facility owner a party to the contract, and shall in no way interfere with the rights of the parties to this contract.

50-10 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK. All work which does not form to the requirements of the contract, plans, and specifications will be considered unacceptable, unless otherwise determined acceptable by the Engineer as provided in the subsection titled **CONFORMITY WITH PLANS AND SPECIFICATIONS** of this section.

Unacceptable work, whether the result of poor workmanship, use of defective materials, damage through carelessness, or any other cause found to exist prior to the final acceptance of the work, shall be removed immediately and replaced in an acceptable manner in accordance with the provisions of the subsection titled **CONTRACTOR'S RESPONSIBILITY FOR WORK** of Section 70.

Work done contrary to the instructions of the Engineer, work done beyond the lines shown on the plans or as given, except as herein specified, or any extra work done without authority, will be considered as unauthorized and will not be paid for under the provisions of the contract. Work so done may be ordered removed or replaced at the Contractor's expense.

Upon failure on the part of the Contractor to comply forthwith with any order of the Engineer made under the provisions of this subsection, the Engineer will have authority to cause unacceptable work to be remedied or removed and replaced and unauthorized work to be removed and to deduct the costs (incurred by the owner) from any monies due or to become due the Contractor.

50-11 LOAD RESTRICTIONS. The Contractor shall comply with all legal load restrictions in the hauling of materials on public roads beyond the limits of the work. A special permit will not relieve the Contractor of liability for damage which may result from the moving of material or equipment.

The operation of equipment of such weight or so loaded as to cause damage to structures or to any other type of construction will not be permitted. Hauling of materials over the base course or surface course under construction shall be limited as directed. No loads will be permitted on a concrete pavement, base, or structure before the expiration of the curing period. The Contractor shall be responsible for all damage done by his/her hauling equipment and shall correct such damage at his/her own expense.

50-12 MAINTENANCE DURING CONSTRUCTION. The Contractor shall maintain the work during construction and until the work is accepted. This maintenance shall constitute continuous and effective work prosecuted day by day, with adequate equipment and forces so that the work is maintained in satisfactory condition at all times.

In the case of a contract for the placing of a course upon a course or sub-grade previously constructed, the Contractor shall maintain the previous course or sub-grade during all construction operations.

All costs of maintenance work during construction and before the project is accepted shall be included in the unit prices bid on the various contract items, and the Contractor will not be paid an additional amount for such work.

50-13 FAILURE TO MAINTAIN THE WORK. Should the Contractor at any time fail to maintain the work as provided in the subsection titled **MAINTENANCE DURING CONSTRUCTION** of this section, the Engineer shall immediately notify the Contractor of such noncompliance. Such notification shall specify a reasonable time within which the Contractor shall be required to remedy such unsatisfactory maintenance condition. The time specified will give due consideration to the exigency that exists.

Should the Contractor fail to respond to the Engineer's notification, the Engineer may suspend any work necessary for the owner to correct such unsatisfactory maintenance condition, depending on the exigency that exists. Any maintenance cost incurred by the owner, shall be deducted from monies due or to become due the Contractor.

50-14 PARTIAL ACCEPTANCE. If at any time during the prosecution of the project the Contractor substantially completes a usable unit or portion of the work, the occupancy of which will benefit the owner, he may request the Engineer to make final inspection of that unit. If the Engineer finds upon inspection that the unit has been satisfactorily completed in compliance with the contract, he may accept it as being completed, and the Contractor may be relieved of further responsibility for that unit. Such partial acceptance and beneficial occupancy by the owner shall not void or alter any provision of the contract.

50-15 FINAL ACCEPTANCE. Upon due notice from the Contractor of presumptive completion of the entire project, the Engineer and owner will make an inspection. If all construction provided for and contemplated by the contract is found to be completed in accordance with the contract, plans, and specifications, such inspection shall constitute the final inspection. The Engineer shall notify the Contractor in writing of final acceptance as of the date of the final inspection.

If, however, the inspection discloses any work, in whole or in part, as being unsatisfactory, the Engineer will give the Contractor the necessary instructions for correction of same and the Contractor shall immediately comply with and execute such instructions. Upon correction of the work, another inspection will be made which shall constitute the final inspection, provided the work has been satisfactorily completed. In such event, the Engineer will make the final acceptance and notify the Contractor in writing of this acceptance as of the date of final inspection.

50-16 CLAIMS FOR ADJUSTMENT AND DISPUTES. If for any reason the Contractor deems that additional compensation is due him for work or materials not clearly provided for in the contract, plans, or specifications or previously authorized as extra work, he shall notify the

Engineer in writing of his/her intention to claim such additional compensation before he begins the work on which he bases the claim. If such notification is not given or the Engineer is not afforded proper opportunity by the Contractor for keeping strict account of actual cost as required, then the Contractor hereby agrees to waive any claim for such additional compensation. Such notice by the Contractor and the fact that the Engineer has kept account of the cost of the work shall not in any way be construed as proving or substantiating the validity of the claim. When the work on which the claim for additional compensation is based has been completed, the Contractor shall, within 10 calendar days, submit his/her written claim to the Engineer who will present it to the owner for consideration in accordance with local laws or ordinances.

Nothing in this subsection shall be construed as a waiver of the Contractor's right to dispute final payment based on differences in measurements or computations.

END OF SECTION 50

SECTION 60: CONTROL OF MATERIALS

60-01 SOURCE OF SUPPLY AND QUALITY REQUIREMENTS. The materials used on the work shall conform to the requirements of the contract, plans, and specifications. Unless otherwise specified, such materials that are manufactured or processed shall be new (as compared to used or reprocessed).

In order to expedite the inspection and testing of materials, the Contractor shall furnish complete statements to the Engineer as to the origin, composition, and manufacture of all materials to be used in the work. Such statements shall be furnished promptly after execution of the contract but, in all cases, prior to delivery of such materials.

At the Engineer's option, materials may be approved at the source of supply before delivery is stated. If it is found after trial that sources of supply for previously approved materials do not produce specified products, the Contractor shall furnish materials from other sources.

60-02 SAMPLES, TESTS, AND CITED SPECIFICATIONS. All materials used in the work shall be inspected, tested, and approved by the Engineer before incorporation in the work. Any work in which untested materials are used without approval or written permission of the Engineer shall be performed at the Contractor's risk. Materials found to be unacceptable and unauthorized will not be paid for and, if directed by the Engineer, shall be removed at the Contractor's expense. Unless otherwise designated, tests in accordance with the cited standard methods of AASHTO or ASTM which are current on the date of advertisement for bids will be made by and at the expense of the owner. Samples will be taken by a qualified representative of the owner. All materials being used are subject to inspection, test, or rejection at any time prior to or during incorporation into the work. Copies of all tests will be furnished to the Contractor's representative at his/her request.

60-03 CERTIFICATION OF COMPLIANCE. The Engineer may permit the use, prior to sampling and testing, of certain materials or assemblies when accompanied by manufacturer's certificates of compliance stating that such materials or assemblies fully comply with the requirements of the contract. The certificate shall be signed by the manufacturer. Each lot of such materials or assemblies delivered to the work must be accompanied by a certificate of compliance in which the lot is clearly identified.

Materials or assemblies used on the basis of certificates of compliance may be sampled and tested at any time and if found not to be in conformity with contract requirements will be subject to rejection whether in place or not.

The form and distribution of certificates of compliance shall be as approved by the Engineer.

When a material or assembly is specified by "brand name or equal" and the Contractor elects to furnish the specified "brand name," the Contractor shall be required to furnish the manufacturer's certificate of compliance for each lot of such material or assembly delivered to the work. Such certificate of compliance shall clearly identify each lot delivered and shall certify as to:

- a. Conformance to the specified performance, testing, quality or dimensional requirements; and,
- b. Suitability of the material or assembly for the use intended in the contract work.

Should the Contractor propose to furnish an "or equal" material or assembly, he shall furnish the manufacturer's certificates of compliance as hereinbefore described for the specified brand name material or assembly. However, the Engineer shall be the sole judge as to whether the proposed "or equal" is suitable for use in the work.

The Engineer reserves the right to refuse permission for use of materials or assemblies on the basis of certificates of compliance.

60-04 PLANT INSPECTION. The Engineer or his/her authorized representative may inspect, at its source, any specified material or assembly to be used in the work. Manufacturing plants may be inspected from time to time for the purpose of determining compliance with specified manufacturing methods or materials to be used in the work and to obtain samples required for his/her acceptance of the material or assembly.

Should the Engineer conduct plant inspections, the following conditions shall exist:

- a. The Engineer shall have the cooperation and assistance of the Contractor and the producer with whom he has contracted for materials.
- b. The Engineer shall have full entry at all reasonable times to such parts of the plant that concern the manufacture or production of the materials being furnished.
- c. If required by the Engineer, the Contractor shall arrange for adequate office or working space that may be reasonably needed for conducting plant inspections. Office or working space should be conveniently located with respect to the plant.

It is understood and agreed that the owner shall have the right to retest any material which has been tested and approved at the source of supply after it has been delivered to the site. The Engineer shall have the right to reject only material which, when retested, does not meet the requirements of the contract, plans, or specifications.

60-05 ENGINEER'S FIELD OFFICE AND LABORATORY. When specified and provided for as a contract item, the Contractor shall furnish a building for the exclusive use of the Engineer as a field office and field testing laboratory. The building shall be furnished and maintained by the Contractor as specified herein and shall become property of the Contractor when the contract work is completed.

60-06 STORAGE OF MATERIALS. Materials shall be so stored as to assure the preservation of their quality and fitness for the work. Stored materials, even though approved before storage, may again be inspected prior to their use in the work. Stored materials shall be located so as to

facilitate their prompt inspection. The Contractor shall coordinate the storage of all materials with the Engineer. Materials to be stored on airport property shall not create an obstruction to air navigation nor shall they interfere with the free and unobstructed movement of aircraft. Unless otherwise shown on the plans, the storage of materials and the location of the Contractor's plant and parked equipment or vehicles shall be as directed by the Engineer. Private property shall not be used for storage purposes without written permission of the owner or lessee of such property. The Contractor shall make all arrangements and bear all expenses for the storage of materials on private property. Upon request, the Contractor shall furnish the Engineer a copy of the property owner's permission.

All storage sites on private or airport property shall be restored to their original condition by the Contractor at his/her entire expense, except as otherwise agreed to (in writing) by the owner or lessee of the property.

60-07 UNACCEPTABLE MATERIALS. Any material or assembly that does not conform to the requirements of the contract, plans, or specifications shall be considered unacceptable and shall be rejected. The Contractor shall remove any rejected material or assembly from the site of the work, unless otherwise instructed by the Engineer.

No rejected material or assembly, the defects of which have been corrected by the Contractor, shall not be returned to the site of the work until such time as the Engineer has approved its use in the work.

60-08 OWNER FURNISHED MATERIALS. The Contractor shall furnish all materials required to complete the work, except those specified herein (if any) to be furnished by the owner. Owner-furnished materials shall be made available to the Contractor at the location specified herein.

All costs of handling, transportation from the specified location to the site of work, storage, and installing owner-furnished materials shall be included in the unit price bid for the contract item in which such owner-furnished material is used.

After any owner-furnished material has been delivered to the location specified, the Contractor shall be responsible for any demurrage, damage, loss, or other deficiencies which may occur during the Contractor's handling, storage, or use of such owner-furnished material. The owner will deduct from any monies due or to become due the Contractor any cost incurred by the owner in making good such loss due to the Contractor's handling, storage, or use of owner-furnished materials.

END OF SECTION 60

SECTION 70: LEGAL REGULATIONS AND RESPONSIBILITY TO PUBLIC

70-1 LAWS TO BE OBSERVED. The Contractor shall keep fully informed of all Federal and state laws, all local laws, ordinances, and regulations and all orders and decrees of bodies or tribunals having any jurisdiction or authority, which in any manner affect those engaged or employed on the work, or which in any way affect the conduct of the work. He shall at all times observe and comply with all such laws, ordinances, regulations, orders, and decrees; and shall protect and indemnify the owner and all his/her officers, agents, or servants against any claim or liability arising from or based on the violation of any such law, ordinance, regulation, order, or decree, whether by himself or his/her employees.

70-02 PERMITS, LICENSES, AND TAXES. The Contractor shall procure all permits and licenses, pay all charges, fees, and taxes, and give all notices necessary and incidental to the due and lawful prosecution of the work.

70-03 PATENTED DEVICES, MATERIALS, AND PROCESSES. If the Contractor is required or desires to use any design, device, material, or process covered by letters of patent or copyright, he shall provide for such use by suitable legal agreement with the patentee or owner. The Contractor and the surety shall indemnify and save harmless the owner, any third party, or political subdivision from any and all claims for infringement by reason of the use of any such patented design, device, material or process, or any trademark or copyright, and shall indemnify the owner for any costs, expenses, and damages which it may be obliged to pay by reason of an infringement, at any time during the prosecution or after the completion of the work.

70-04 RESTORATION OF SURFACES DISTURBED BY OTHERS. The owner reserves the right to authorize the construction, reconstruction, or maintenance of any public or private utility service, FAA or National Oceanic and Atmospheric Administration (NOAA) facility, or a utility service of another government agency at any time during the progress of the work. To the extent that such construction, reconstruction, or maintenance has been coordinated with the owner, such authorized work (by others) is indicated as follows:

N/A

Except as listed above, the Contractor shall not permit any individual, firm, or corporation to excavate or otherwise disturb such utility services or facilities located within the limits of the work without the written permission of the Engineer.

Should the owner of public or private utility service, FAA, or NOAA facility, or a utility service of another government agency be authorized to construct, reconstruct, or maintain such utility service or facility during the progress of the work, the Contractor shall cooperate with such owners by arranging and performing the work in this contract so as to facilitate such construction, reconstruction or maintenance by others whether or not such work by others is listed above. When ordered as extra work by the Engineer, the Contractor shall make all necessary repairs to the work which are due to such authorized work by others, unless otherwise provided for in the contract, plans, or specifications. It is understood and agreed that the

Contractor shall not be entitled to make any claim for damages due to such authorized work by others or for any delay to the work resulting from such authorized work.

70-05 FEDERAL AID PARTICIPATION. Not Applicable.

70-06 SANITARY, HEALTH, AND SAFETY PROVISIONS. The Contractor shall provide and maintain in a neat, sanitary condition such accommodations for the use of his/her employees as may be necessary to comply with the requirements of the state and local Board of Health, or of other bodies or tribunals having jurisdiction.

Attention is directed to Federal, state, and local laws, rules and regulations concerning construction safety and health standards. The Contractor shall not require any worker to work in surroundings or under conditions are unsanitary, hazardous, or dangerous to his/her health or safety.

70-07 PUBLIC CONVENIENCE AND SAFETY. The Contractor shall control his/her operations and those of his/her subcontractors and all suppliers, to assure the least inconvenience to the traveling public. Under all circumstances, safety shall be the most important consideration.

The Contractor shall maintain the free and unobstructed movement of aircraft and vehicular traffic with respect to his/her own operations and those of his/her subcontractors and all suppliers in accordance with the subsection titled **MAINTENANCE OF TRAFFIC** of Section 40 hereinbefore specified and shall limit such operations for the convenience and safety of the traveling public as specified in the subsection titled **LIMITATION OF OPERATIONS** of Section 80 hereinafter.

70-08 BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS. The Contractor shall furnish, erect, and maintain all barricades, warning signs, and markings for hazards necessary to protect the public and the work. When used during periods of darkness, such barricades, warning signs, and hazard markings shall be suitably illuminated.

For vehicular and pedestrian traffic, the Contractor shall furnish, erect, and maintain barricades, warning signs, lights and other traffic control devices in reasonable conformity with the Manual of Uniform Traffic Control Devices for Streets and Highways (published by the United States Government Printing Office).

When the work requires closing an air operations area of the airport or portion of such area, the Contractor shall furnish, erect, and maintain temporary markings and associated lighting conforming to the requirements of AC 150/5340-1, Marking of Paved Areas on Airports.

The Contractor shall furnish, erect, and maintain markings and associated lighting of open trenches, excavations, temporary stock piles, and his/her parked construction equipment that may be hazardous to the operation of emergency fire-rescue or maintenance vehicles on the airport in reasonable conformance to AC 150/5370-2, Operational Safety on Airports During Construction Activity.

The Contractor shall identify each motorized vehicle or piece of construction equipment in reasonable conformance to AC 150/5370-2.

The Contractor shall furnish and erect all barricades, warning signs, and markings for hazards prior to commencing work which requires such erection and shall maintain the barricades, warning signs, and markings for hazards until their dismantling is directed by the Engineer.

Open-flame type lights shall not be permitted within the air operations areas of the airport.

70-09 USE OF EXPLOSIVES. When the use of explosives is necessary for the prosecution of the work, the Contractor shall exercise the utmost care not to endanger life or property, including new work. The Contractor shall be responsible for all damage resulting from the use of explosives.

All explosives shall be stored in a secure manner in compliance with all laws and ordinances, and all such storage places shall be clearly marked. Where no local laws or ordinances apply, storage shall be provided satisfactory to the Engineer and, in general, not closer than 1,000 feet (300 m) from the work or from any building, road, or other place of human occupancy.

The Contractor shall notify each property owner and public utility company having structures or facilities in proximity to the site of the work of his/her intention to use explosives. Such notice shall be given sufficiently in advance to enable them to take such steps as they may deem necessary to protect their property from injury.

The use of electrical blasting caps shall not be permitted on or within 1,000 feet (300 m) of the airport property.

70-10 PROTECTION AND RESTORATION OF PROPERTY AND LANDSCAPE. The Contractor shall be responsible for the preservation of all public and private property, and shall protect carefully from disturbance or damage all land monuments and property markers until the Engineer has witnessed or otherwise referenced their location and shall not move them until directed.

The Contractor shall be responsible for all damage or injury to property of any character, during the prosecution of the work, resulting from any act, omission, neglect, or misconduct in his/her manner or method of executing the work, or at any time due to defective work or materials, and said responsibility will not be released until the project shall have been completed and accepted.

When or where any direct or indirect damage or injury is done to public or private property by or on account of any act, omission, neglect, or misconduct in the execution of the work, or in consequence of the non-execution thereof by the Contractor, he shall restore, at his/her own expense, such property to a condition similar or equal to that existing before such damage or injury was done, by repairing, or otherwise restoring as may be directed, or he shall make good such damage or injury in an acceptable manner.

70-11 RESPONSIBILITY FOR DAMAGE CLAIMS. The Contractor shall indemnify and save harmless the Engineer and the owner and their officers, and employees from all suits actions, or claims of any character brought because of any injuries or damage received or sustained by any person, persons, or property on account of the operations of the Contractor; or on account of or in consequence of any neglect in safeguarding the work; or through use of unacceptable materials in constructing the work; or because of any act or omission, neglect, or misconduct of said Contractor; or because of any claims or amounts recovered from any infringements of patent, trademark, or copyright; or from any claims or amounts arising or recovered under the "Workmen's Compensation Act," or any other law, ordinance, order, or decree. Money due the Contractor under and by virtue of his/her contract as may be considered necessary by the owner for such purpose may be retained for the use of the owner or, in case no money is due, his/her surety may be held until such suit or suits, action or actions, claim or claims for injuries or damages as aforesaid shall have been settled and suitable evidence to that effect furnished to the owner, except that money due the Contractor will not be withheld when the Contractor produces satisfactory evidence that he is adequately protected by public liability and property damage insurance.

70-12 THIRD PARTY BENEFICIARY CLAUSE. It is specifically agreed between the parties executing the contract that it is not intended by any of the provisions of any part of the contract to create the public or any member thereof a third party beneficiary or to authorize anyone not a party to the contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the contract.

70-13 OPENING SECTIONS OF THE WORK TO TRAFFIC. Should it be necessary for the Contractor to complete portions of the contract work for the beneficial occupancy of the owner prior to completion of the entire contract, such "phasing" of the work shall be specified herein and indicated on the plans. When so specified, the Contractor shall complete such portions of the work on or before the date specified or as otherwise specified. The Contractor shall make his/her own estimate of the difficulties involved in arranging his/her work to permit such beneficial occupancy by the owner as described below:

Open runway or taxiway rehabilitation after 30 calendar days from start of project.

Upon completion of any portion of the work listed above, such portion shall be accepted by the owner in accordance with the subsection titled **PARTIAL ACCEPTANCE** of Section 50.

No portion of the work may be opened by the Contractor for public use until ordered by the Engineer in writing. Should it become necessary to open a portion of the work to public traffic on a temporary or intermittent basis, such openings shall be made when, in the opinion of the Engineer, such portion of the work is in an acceptable condition to support the intended traffic. Temporary or intermittent openings are considered to be inherent in the work and shall not constitute either acceptance of the portion of the work so opened or a waiver of any provision of the contract. Any damage to the portion of the work so opened that is not attributable to traffic which is permitted by the owner shall be repaired by the Contractor at his/her expense.

The Contractor shall make his/her own estimate of the inherent difficulties involved in completing the work under the conditions herein described and shall not claim any added compensation by reason of delay or increased cost due to opening a portion of the contract work.

70-14 CONTRACTOR'S RESPONSIBILITY FOR WORK. Until the Engineer's final written acceptance of the entire completed work, excepting only those portions of the work accepted in accordance with the subsection titled **PARTIAL ACCEPTANCE** of Section 50, the Contractor shall have the charge and care thereof and shall take every precaution against injury or damage to any part due to the action of the elements or from any other cause, whether arising from the execution or from the non-execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work occasioned by any of the above causes before final acceptance and shall bear the expense thereof except damage to the work due to unforeseeable causes beyond the control of and without the fault or negligence of the Contractor, including but not restricted to acts of God such as earthquake, tidal wave, tornado, hurricane or other cataclysmic phenomenon of nature, or acts of the public enemy or of government authorities.

If the work is suspended for any cause whatever, the Contractor shall be responsible for the work and shall take such precautions necessary to prevent damage to the work. The Contractor shall provide for normal drainage and shall erect necessary temporary structures, signs, or other facilities at his/her expense. During such period of suspension of work, the Contractor shall properly and continuously maintain in an acceptable growing condition all living material in newly established planting, seedings, and soddings furnished under his/her contract, and shall take adequate precautions to protect new tree growth and other important vegetative growth against injury.

70-15 CONTRACTOR'S RESPONSIBILITY FOR UTILITY SERVICE AND FACILITIES OF OTHERS. As provided in the subsection titled **RESTORATION OF SURFACES DISTURBED BY OTHERS** of this section, the Contractor shall cooperate with the owner of any public or private utility service, FAA or NOAA, or a utility service of another government agency that may be authorized by the owner to construct, reconstruct or maintain such utility services or facilities during the progress of the work. In addition, the Contractor shall control his/her operations to prevent the unscheduled interruption of such utility services and facilities.

To the extent that such public or private utility services, FAA, or NOAA facilities, or utility services of another governmental agency are known to exist within the limits of the contract work, the approximate locations have been indicated on the plans and the owners are indicated as follows:

Willmut Gas Company
315 South Main Street; P.O. Box 1649
Hattiesburg, MS 39403
(601) 544-6001

It is understood and agreed that the owner does not guarantee the accuracy or the completeness of the location information relating to existing utility services, facilities, or structures that may be

shown on the plans or encountered in the work. Any inaccuracy or omission in such information shall not relieve the Contractor of his/her responsibility to protect such existing features from damage or unscheduled interruption of service.

It is further understood and agreed that the Contractor shall, upon execution of the contract, notify the owners of all utility services or other facilities of his/her plan of operations. Such notification shall be in writing addressed to **THE PERSON TO CONTACT** as provided hereinbefore in this subsection and the subsection titled **RESTORATION OF SURFACES DISTURBED BY OTHERS** of this section. A copy of each notification shall be given to the Engineer.

In addition to the general written notification hereinbefore provided, it shall be the responsibility of the Contractor to keep such individual owners advised of changes in his/her plan of operations that would affect such owners.

Prior to commencing the work in the general vicinity of an existing utility service or facility, the Contractor shall again notify each such owner of his/her plan of operation. If, in the Contractor's opinion, the owner's assistance is needed to locate the utility service or facility or the presence of a representative of the owner is desirable to observe the work, such advice should be included in the notification. Such notification shall be given by the most expeditious means to reach the utility owner's **PERSON TO CONTACT** no later than two normal business days prior to the Contractor's commencement of operations in such general vicinity. The Contractor shall furnish a written summary of the notification to the Engineer.

The Contractor's failure to give the two day's notice herein above provided shall be cause for the Engineer to suspend the Contractor's operations in the general vicinity of a utility service or facility.

Where the outside limits of an underground utility service have been located and staked on the ground, the Contractor shall be required to use excavation methods acceptable to the Engineer within 3 feet of such outside limits at such points as may be required to ensure protection from damage due to the Contractor's operations.

Should the Contractor damage or interrupt the operation of a utility service or facility by accident or otherwise, he shall immediately notify the proper authority and the Engineer and shall take all reasonable measures to prevent further damage or interruption of service. The Contractor, in such events, shall cooperate with the utility service or facility owner and the Engineer continuously until such damage has been repaired and service restored to the satisfaction of the utility or facility owner.

The Contractor shall bear all costs of damage and restoration of service to any utility service or facility due to his/her operations whether or not due to negligence or accident. The contract owner reserves the right to deduct such costs from any monies due or which may become due the Contractor, or his/her surety.

70-16 FURNISHING RIGHTS-OF-WAY. The owner will be responsible for furnishing all rights-of-way upon which the work is to be constructed in advance of the Contractor's operations.

70-17 PERSONAL LIABILITY OF PUBLIC OFFICIALS. In carrying out any of the contract provisions or in exercising any power or authority granted to him by this contract, there shall be no liability upon the Engineer, his/her authorized representatives, or any officials of the owner either personally or as an official of the owner. It is understood that in such matters they act solely as agents and representatives of the owner.

70-18 NO WAIVER OF LEGAL RIGHTS. Upon completion of the work, the owner will expeditiously make final inspection and notify the Contractor of final acceptance. Such final acceptance, however, shall not preclude or estop the owner from correcting any measurement, estimate, or certificate made before or after completion of the work, nor shall the owner be precluded or estopped from recovering from the Contractor or his/her surety, or both, such overpayment as may be sustained, or by failure on the part of the Contractor to fulfill his/her obligations under the contract. A waiver on the part of the owner of any breach of any part of the contract shall not be held to be a waiver of any other or subsequent breach.

The Contractor, without prejudice to the terms of the contract, shall be liable to the owner for latent defects, fraud, or such gross mistakes as may amount to fraud, or as regards the owner's rights under any warranty or guaranty.

70-19 ENVIRONMENTAL PROTECTION. The Contractor shall comply with all Federal, state, and local laws and regulations controlling pollution of the environment. He shall take necessary precautions to prevent pollution of streams, lakes, ponds, and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.

70-20 ARCHAEOLOGICAL AND HISTORICAL FINDINGS. Unless otherwise specified in this subsection, the Contractor is advised that the site of the work is not within any property, district, or site, and does not contain any building, structure, or object listed in the current National Register of Historic Places published by the United States Department of Interior.

Should the Contractor encounter, during his/her operations, any building, part of a building, structure, or object which is incongruous with its surroundings, he shall immediately cease operations in that location and notify the Engineer. The Engineer will immediately investigate the Contractor's finding and will direct the Contractor to either resume his/her operations or to suspend operations as directed.

Should the Engineer order suspension of the Contractor's operations in order to protect an archaeological or historical finding, or order the Contractor to perform extra work, such shall be covered by an appropriate contract modification (change order or supplemental agreement) as provided in the subsection titled **EXTRA WORK** of Section 40 and the subsection titled **PAYMENT FOR EXTRA WORK AND FORCE ACCOUNT WORK** of

Section 90. If appropriate, the contract modification shall include an extension of contract time in accordance with the subsection titled **DETERMINATION AND EXTENSION OF CONTRACT TIME** of Section 80.

END OF SECTION 70

SECTION 80: PROSECUTION AND PROGRESS

80-01 SUBLETTING OF CONTRACT. The owner will not recognize any subcontractor on the work. The Contractor shall at all times when work is in progress be represented either in person, by a qualified superintendent, or by other designated, qualified representative who is duly authorized to receive and execute orders of the Engineer.

Should the Contractor elect to assign his/her contract, said assignment shall be concurred in by the surety, shall be presented for the consideration and approval of the owner, and shall be consummated only on the written approval of the owner. In case of approval, the Contractor shall file copies of all subcontracts with the Engineer.

80-02 NOTICE TO PROCEED. The notice to proceed shall state the date on which it is expected the Contractor will begin the construction and from which date contract time will be charged. The Contractor shall begin the work to be performed under the contract within 10 days of the date set by the Engineer in the written notice to proceed, but in any event, the Contractor shall notify the Engineer at least 24 hours in advance of the time actual construction operations will begin.

80-03 PROSECUTION AND PROGRESS. Unless otherwise specified, the Contractor shall submit his/her progress schedule for the Engineer's approval within 10 days after the effective date of the notice to proceed. The Contractor's progress schedule, when approved by the Engineer, may be used to establish major construction operations and to check on the progress of the work. The Contractor shall provide sufficient materials, equipment, and labor to guarantee the completion of the project in accordance with the plans and specifications within the time set forth in the proposal.

If the Contractor falls significantly behind the submitted schedule, the Contractor shall, upon the Engineer's request, submit a revised schedule for completion of the work within the contract time and modify his/her operations to provide such additional materials, equipment, and labor necessary to meet the revised schedule. Should the prosecution of the work be discontinued for any reason, the Contractor shall notify the Engineer at least 24 hours in advance of resuming operations.

For AIP contracts, the Contractor shall not commence any actual construction prior to the date on which the notice to proceed is issued by the owner.

80-04 LIMITATION OF OPERATIONS. The Contractor shall control his/her operations and the operations of his/her subcontractors and all suppliers so as to provide for the free and unobstructed movement of aircraft in the AIR OPERATIONS AREAS of the airport.

When the work requires the Contractor to conduct his/her operations within an AIR OPERATIONS AREA of the airport, the work shall be coordinated with airport management (through the Engineer) at least 48 hours prior to commencement of such work. The Contractor shall not close an AIR OPERATIONS AREA until so authorized by the Engineer and until the

necessary temporary marking and associated lighting is in place as provided in the subsection titled **BARRICADES, WARNING SIGNS, AND HAZARD MARKINGS** of Section 70.

When the contract work requires the Contractor to work within an **AIR OPERATIONS AREA** of the airport on an intermittent basis (intermittent opening and closing of the **AIR OPERATIONS AREA**), the Contractor shall maintain constant communications as hereinafter specified; immediately obey all instructions to vacate the **AIR OPERATIONS AREA**; immediately obey all instructions to resume work in such **AIR OPERATIONS AREA**. Failure to maintain the specified communications or to obey instructions shall be cause for suspension of the Contractor's operations in the **AIR OPERATIONS AREA** until the satisfactory conditions are provided. The following **AIR OPERATIONS AREA (AOA)** cannot be closed to operating aircraft to permit the Contractor's operations on a continuous basis and will therefore be closed to aircraft operations intermittently as follows:

N/A

80-05 CHARACTER OF WORKERS, METHODS, AND EQUIPMENT. The Contractor shall, at all times, employ sufficient labor and equipment for prosecuting the work to full completion in the manner and time required by the contract, plans, and specifications.

All workers shall have sufficient skill and experience to perform properly the work assigned to them. Workers engaged in special work or skilled work shall have sufficient experience in such work and in the operation of the equipment required to perform the work satisfactorily.

All equipment which is proposed to be used on the work shall be of sufficient size and in such mechanical condition as to meet requirements of the work and to produce a satisfactory quality of work. Equipment used on any portion of the work shall be such that no injury to previously completed work, adjacent property, or existing airport facilities will result from its use.

When the methods and equipment to be used by the Contractor in accomplishing the work are not prescribed in the contract, the Contractor is free to use any methods or equipment that will accomplish the work in conformity with the requirements of the contract, plans, and specifications.

When the contract specifies the use of certain methods and equipment, such methods and equipment shall be used unless others are authorized by the Engineer. If the Contractor desires to use a method or type of equipment other than specified in the contract, he may request authority from the Engineer to do so. The request shall be in writing and shall include a full description of the methods and equipment proposed and of the reasons for desiring to make the change. If approval is given, it will be on the condition that the Contractor will be fully responsible for producing work in conformity with contract requirements. If, after trial use of the substituted methods or equipment, the Engineer determines that the work produced does not meet contract requirements, the Contractor shall discontinue the use of the substitute method or equipment and shall complete the remaining work with the specified methods and equipment. The Contractor shall remove any deficient work and replace it with work of specified quality, or take such other corrective action as the Engineer may direct. No change will be made in basis of

payment for the contract items involved nor in contract time as a result of authorizing a change in methods or equipment under this subsection.

80-06 TEMPORARY SUSPENSION OF THE WORK. The Engineer shall have the authority to suspend the work wholly, or in part, for such period or periods as he may deem necessary, due to unsuitable weather, or such other conditions as are considered unfavorable for the prosecution of the work, or for such time as is necessary due to the failure on the part of the Contractor to carry out orders given or perform any or all provisions of the contract.

In the event that the Contractor is ordered by the Engineer, in writing, to suspend work for some unforeseen cause not otherwise provided for in the contract and over which the Contractor has no control, the Contractor may be reimbursed for actual money expended on the work during the period of shutdown. No allowance will be made for anticipated profits. The period of shutdown shall be computed from the effective date of the Engineer's order to suspend work to the effective date of the Engineer's order to resume the work. Claims for such compensation shall be filed with the Engineer within the time period stated in the Engineer's order to resume work. The Contractor shall submit with his/her claim information substantiating the amount shown on the claim. The Engineer will forward the Contractor's claim to the owner for consideration in accordance with local laws or ordinances. No provision of this article shall be construed as entitling the Contractor to compensation for delays due to inclement weather, for suspensions made at the request of the Contractor, or for any other delay provided for in the contract, plans, or specifications.

If it should become necessary to suspend work for an indefinite period, the Contractor shall store all materials in such manner that they will not become an obstruction nor become damaged in any way. He shall take every precaution to prevent damage or deterioration of the work performed and provide for normal drainage of the work. The Contractor shall erect temporary structures where necessary to provide for traffic on, to, or from the airport.

80-07 DETERMINATION AND EXTENSION OF CONTRACT TIME. The number of calendar or working days allowed for completion of the work shall be stated in the proposal and contract and shall be known as the CONTRACT TIME.

Should the contract time require extension for reasons beyond the Contractor's control, it shall be adjusted as follows:

CONTRACT TIME based on CALENDAR DAYS shall be calculated weekly by the Engineer. The Engineer will furnish the Contractor a copy of his/her weekly statement of the number of working days charged against the contract time during the week and the number of working days currently specified for completion of the contract (the original contract time plus the number of working days, if any, that have been included in approved CHANGE ORDERS or SUPPLEMENTAL AGREEMENTS covering EXTRA WORK).

The Engineer shall base his/her weekly statement of contract time charged on the following considerations:

- (1) No time shall be charged for days on which the Contractor is unable to proceed with the principal item of work under construction at the time for at least 6 hours with the normal work force employed on such principal item. Should the normal work force be on a double-shift, 12 hours shall be used. Should the normal work force be on a triple-shift, 18 hours shall apply. Conditions beyond the Contractor's control such as strikes, lockouts, unusual delays in transportation, temporary suspension of the principal item of work under construction or temporary suspension of the entire work which have been ordered by the Engineer for reasons not the fault of the Contractor, shall not be charged against the contract time.
- (2) The Engineer will not make charges against the contract time prior to the effective date of the notice to proceed.
- (3) The Engineer will begin charges against the contract time on the first working day after the effective date of the notice to proceed.
- (4) The Engineer will not make charges against the contract time after the date of final acceptance as defined in the subsection titled **FINAL ACCEPTANCE** of Section 50.
- (5) The Contractor will be allowed 1 week in which to file a written protest setting forth his/her objections to the Engineer's weekly statement. If no objection is filed within such specified time, the weekly statement shall be considered as acceptable to the Contractor.

The contract time (stated in the proposal) is based on the originally estimated quantities as described in the subsection titled **INTERPRETATION OF ESTIMATED PROPOSAL QUANTITIES** of Section 20. Should the satisfactory completion of the contract require performance of work in greater quantities than those estimated in the proposal, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in contract time shall not consider either the cost of work or the extension of contract time that has been covered by change order or supplemental agreement and shall be made at the time of final payment.

b. **CONTRACT TIME** based on **CALENDAR DAYS** shall consist of the number of calendar days stated in the contract counting from the effective date of the notice to proceed and including all Saturdays, Sundays, holidays, and non-work days. All calendar days elapsing between the effective dates of the Engineer's orders to suspend and resume all work, due to causes not the fault of the Contractor, shall be excluded.

At the time of final payment, the contract time shall be increased in the same proportion as the cost of the actually completed quantities bears to the cost of the originally estimated quantities in the proposal. Such increase in the contract time shall not consider either cost of work or the extension of contract time that has been covered by a change order or supplemental agreement. Charges against the contract time will cease as of the date of final acceptance.

c. When the contract time is a specified completion date, it shall be the date on which all contract work shall be substantially completed.

If the Contractor finds it impossible for reasons beyond his/her control to complete the work within the contract time as specified, or as extended in accordance with the provisions of this subsection, he may, at any time prior to the expiration of the contract time as extended, make a written request to the Engineer for an extension of time setting forth the reasons which he believes will justify the granting of his/her request. The Contractor's plea that insufficient time was specified is not a valid reason for extension of time. If the Engineer finds that the work was delayed because of conditions beyond the control and without the fault of the Contractor, he may extend the time for completion in such amount as the conditions justify. The extended time for completion shall then be in full force and effect, the same as though it were the original time for completion.

80-08 FAILURE TO COMPLETE ON TIME. For each calendar day or working day, as specified in the contract, that any work remains uncompleted after the contract time (including all extensions and adjustments as provided in the subsection titled **DETERMINATION AND EXTENSION OF CONTRACT TIME** of this Section) the sum specified in the contract and proposal as liquidated damages will be deducted from any money due or to become due the Contractor or his/her surety. Such deducted sums shall not be deducted as a penalty but shall be considered as liquidation of a reasonable portion of damages that will be incurred by the owner should the Contractor fail to complete the work in the time provided in his/her contract.

Permitting the Contractor to continue and finish the work or any part of it after the time fixed for its completion, or after the date to which the time for completion may have been extended, will in no way operate as a waiver on the part of the owner of any of its rights under the contract.

80-09 DEFAULT AND TERMINATION OF CONTRACT. The Contractor shall be considered in default of his/her contract and such default will be considered as cause for the owner to terminate the contract for any of the following reasons if the Contractor:

- a. Fails to begin the work under the contract within the time specified in the Notice to Proceed.
- b. Fails to perform the work or fails to provide sufficient workers, equipment or materials to assure completion of work in accordance with the terms of the contract, or
- c. Performs the work unsuitably or neglects or refuses to remove materials or to perform anew such work as may be rejected as unacceptable and unsuitable, or
- d. Discontinues the prosecution of the work, or
- e. Fails to resume work which has been discontinued within a reasonable time after notice to do so, or

- f. Becomes insolvent or is declared bankrupt, or commits any act of bankruptcy or insolvency, or
- g. Allows any final judgment to stand against him unsatisfied for a period of 10 days, or
- h. Makes an assignment for the benefit of creditors, or
- i. For any other cause whatsoever, fails to carry on the work in an acceptable manner.

Should the Engineer consider the Contractor in default of the contract for any reason hereinbefore, he shall immediately give written notice to the Contractor and the Contractor's surety as to the reasons for considering the Contractor in default and the owner's intentions to terminate the contract.

If the Contractor or surety, within a period of 10 days after such notice, does not proceed in accordance therewith, then the owner will, upon written notification from the Engineer of the facts of such delay, neglect, or default and the Contractor's failure to comply with such notice, have full power and authority without violating the contract, to take the prosecution of the work out of the hands of the Contractor. The owner may appropriate or use any or all materials and equipment that have been mobilized for use in the work and are acceptable and may enter into an agreement for the completion of said contract according to the terms and provisions thereof, or use such other methods as in the opinion of the Engineer will be required for the completion of said contract in an acceptable manner.

All costs and charges incurred by the owner, together with the cost of completing the work under contract, will be deducted from any monies due or which may become due the Contractor. If such expense exceeds the sum which would have been payable under the contract, then the Contractor and the surety shall be liable and shall pay to the owner the amount of such excess.

80-10 TERMINATION FOR NATIONAL EMERGENCIES. The owner shall terminate the contract or portion thereof by written notice when the Contractor is prevented from proceeding with the construction contract as a direct result of an Executive Order of the President with respect to the prosecution of war or in the interest of national defense.

When the contract, or any portion thereof, is terminated before completion of all items of work in the contract, payment will be made for the actual number of units or items of work completed at the contract price or as mutually agreed for items of work partially completed or not started. **No claims or loss of anticipated profits shall be considered.**

Reimbursement for organization of the work, and other overhead expenses, (when not otherwise included in the contract) and moving equipment and materials to and from the job will be considered, the intent being that an equitable settlement will be made with the Contractor.

Acceptable materials, obtained or ordered by the Contractor for the work and that are not incorporated in the work shall, at the option of the Contractor, be purchased from the Contractor at actual cost as shown by receipted bills and actual cost records at such points of delivery as may be designated by the Engineer.

Termination of the contract or a portion thereof shall neither relieve the Contractor of his/her responsibilities for the completed work nor shall it relieve his/her surety of its obligation for and concerning any just claim arising out of the work performed.

END OF SECTION 80

SECTION 90: MEASUREMENT AND PAYMENT

90-01 MEASUREMENT OF QUANTITIES. All work completed under the contract will be measured by the Engineer, or his/her authorized representatives, using United States Customary Units of Measurement or the International System of Units.

The method of measurement and computations to be used in determination of quantities of material furnished and of work performed under the contract will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual fixtures (or leave-outs) having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing by the Engineer.

Structures will be measured according to neat lines shown on the plans or as altered to fit field conditions.

Unless otherwise specified, all contract items which are measured by the linear foot such as electrical ducts, conduits, pipe culverts, under drains, and similar items shall be measured parallel to the base or foundation upon which such items are placed.

In computing volumes of excavation the average end area method or other acceptable methods will be used.

The thickness of plates and galvanized sheet used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fraction of inches.

The term "ton" will mean the short ton consisting of 2,000 pounds (907 kilograms) avoirdupois. All materials which are measured or proportioned by weights shall be weighed on accurate, approved scales by competent, qualified personnel at locations designed by the Engineer. If material is shipped by rail, the car weight may be accepted provided that only the actual weight of material be paid for. However, car weights will not be acceptable for material to be passed through mixing plants. Trucks used to haul material being paid for by weight shall be weighed empty daily at such times as the Engineer directs, and each truck shall bear a plainly legible identification mark.

Materials to be measured by volume in the hauling vehicle shall be hauled in approved vehicles and measured therein at the point of delivery. Vehicles for this purpose may be of any size or type acceptable to the Engineer, provided that the body is of such shape that the actual contents may be readily and accurately determined. All vehicles shall be loaded to at least their water level capacity, and all loads shall be leveled when the vehicles arrive at the point of delivery.

When requested by the Contractor and approved by the Engineer in writing, material specified to be measured by the cubic yard may be weighed, and such weights will be converted to cubic yards for payment purposes. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and shall be agreed to by the Contractor before such method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon (liter) or ton (kilogram). When measured by volume, such volumes will be measured at 60 F (15 C) or will be corrected to the volume at 60 F (15 C) using ASTM D 1250 for asphalts or ASTM D 633 for tars.

Net certified scale weights or weights based on certified volumes in the case of rail shipments will be used as a basis of measurement, subject to correction when bituminous material has been lost from the car or the distributor, wasted, or otherwise not incorporated in the work.

When bituminous materials are shipped by truck or transport, net certified weights by volume, subject to correction for loss or foaming, may be used for computing quantities.

Cement will be measured by the ton (kilogram) or hundredweight (kilogram). Timber will be measured by the thousand feet board measure (M.F.B.M.) actually incorporated in the structure. Measurement will be based on nominal widths and thicknesses and the extreme length of each piece.

The term lump sum when used as an item of payment will mean complete payment for the work described in the contract.

Rental of equipment will be measured by time in hours of actual working time and necessary traveling time of the equipment within the limits of the work. Special equipment ordered by the Engineer in connection with force account work will be measured as agreed in the change order or supplemental agreement authorizing such force account work as provided in the subsection titled **PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK** of this section.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe conduit, etc., and these items are identified by gage, unit weight, section dimensions, etc., such identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Scales for weighing materials which are required to be proportioned or measured and paid for by weight shall be furnished, erected, and maintained by the Contractor, or be certified permanently installed commercial scales.

Scales shall be accurate within one-half percent of the correct weight throughout the range of use. The Contractor shall have the scales checked under the observation of the inspector before beginning work and at such other times as requested. The intervals shall be uniform in spacing throughout the graduated or marked length of the beam or dial and shall not exceed one-tenth of

1 percent of the nominal rated capacity of the scale, but not less than 1 pound (454 grams). The use of spring balances will not be permitted.

Beams, dials, platforms, and other scale equipment shall be so arranged that the operator and the inspector can safely and conveniently view them.

Scale installations shall have available ten standard 50-pound (2.3 kilogram) weights for testing the weighing equipment or suitable weights and devices for other approved equipment.

Scales must be tested for accuracy and serviced before use at a new site. Platform scales shall be installed and maintained with the platform level and rigid bulkheads at each end.

Scales "overweighing" (indicating more than correct weight) will not be permitted to operate, and all materials received subsequent to the last previous correct weighting-accuracy test will be reduced by the percentage of error in excess of one-half of 1 percent.

In the event inspection reveals the scales have been "under weighing" (indicating less than correct weight), they shall be adjusted, and no additional payment to the Contractor will be allowed for materials previously weighed and recorded.

All costs in connection with furnishing, installing, certifying, testing, and maintaining scales; for furnishing check weights and scale house; and for all other items specified in this subsection, for the weighing of materials for proportioning or payment, shall be included in the unit contract prices for the various items of the project.

When the estimated quantities for a specific portion of the work are designated as the pay quantities in the contract, they shall be the final quantities for which payment for such specific portion of the work will be made, unless the dimensions of said portions of the work shown on the plans are revised by the Engineer. If revised dimensions result in an increase or decrease in the quantities of such work, the final quantities for payment will be revised in the amount represented by the authorized changes in the dimensions.

90-02 SCOPE OF PAYMENT. The Contractor shall receive and accept compensation provided for in the contract as full payment for furnishing all materials, for performing all work under the contract in a complete and acceptable manner, and for all risk, loss, damage, or expense of whatever character arising out of the nature of the work or the prosecution thereof, subject to the provisions of the subsection titled **NO WAIVER OF LEGAL RIGHTS** of Section 70.

When the "basis of payment" subsection of a technical specification requires that the contract price (price bid) include compensation for certain work or material essential to the item, this same work or material will not also be measured for payment under any other contract item which may appear elsewhere in the contract, plans, or specifications.

90-03 COMPENSATION FOR ALTERED QUANTITIES. When the accepted quantities of work vary from the quantities in the proposal, the Contractor shall accept as payment in full, so

far as contract items are concerned, payment at the original contract price for the accepted quantities of work actually completed and accepted. No allowance, except as provided for in the subsection titled **ALTERATION OF WORK AND QUANTITIES** of Section 40 will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by the Contractor which results directly from such alterations or indirectly from his/her unbalanced allocation of overhead and profit among the contract items, or from any other cause.

90-04 PAYMENT FOR OMITTED ITEMS. As specified in the subsection titled **OMITTED ITEMS** of Section 40, the Engineer shall have the right to omit from the work (order nonperformance) any contract item, except major contract items, in the best interest of the owner.

Should the Engineer omit or order nonperformance of a contract item or portion of such item from the work, the Contractor shall accept payment in full at the contract prices for any work actually completed and acceptable prior to the Engineer's order to omit or non-perform such contract item.

Acceptable materials ordered by the Contractor or delivered on the work prior to the date of the Engineer's order will be paid for at the actual cost to the Contractor and shall thereupon become the property of the owner.

In addition to the reimbursement hereinbefore provided, the Contractor shall be reimbursed for all actual costs incurred for the purpose of performing the omitted contract item prior to the date of the Engineer's order. Such additional costs incurred by the Contractor must be directly related to the deleted contract item and shall be supported by certified statements by the Contractor as to the nature the amount of such costs.

90-05 PAYMENT FOR EXTRA AND FORCE ACCOUNT WORK. Extra work, performed in accordance with the subsection titled **EXTRA WORK** of Section 40, will be paid for at the contract prices or agreed prices specified in the change order or supplemental agreement authorizing the extra work. When the change order or supplemental agreement authorizing the extra work requires that it be done by force account, such force account shall be measured and paid for based on expended labor, equipment, and materials plus a negotiated and agreed upon allowance for overhead and profit.

- a. **Miscellaneous.** No additional allowance will be made for general superintendence, the use of small tools, or other costs for which no specific allowance is herein provided.
- b. **Comparison of Record.** The Contractor and the Engineer shall compare records of the cost of force account work at the end of each day. Agreement shall be indicated by signature of the Contractor and the Engineer or their duly authorized representatives.
- c. **Statement.** No payment will be made for work performed on a force account

basis until the Contractor has furnished the Engineer with duplicate itemized statements of the cost of such force account work detailed as follows:

- (1) Name, classification, date, daily hours, total hours, rate and extension for each laborer and foreman..
- (2) Designation, dates, daily hours, total hours, rental rate, and extension for each unit of machinery and equipment.
- (3) Quantities of materials, prices, and extensions.
- (4) Transportation of materials.
- (5) Cost of property damage, liability and workman's compensation insurance premiums, unemployment insurance contributions, and social security tax.

Statements shall be accompanied and supported by a receipted invoice for all materials used and transportation charges. However, if materials used on the force account work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices the Contractor shall furnish an affidavit certifying that such materials were taken from his/her stock, that the quantity claimed was actually used, and that the price and transportation claimed represent the actual cost to the Contractor.

90-06 PARTIAL PAYMENTS. Partial payments will be made at least once each month as the work progresses. Said payments will be based upon estimates prepared by the Engineer of the value of the work performed and materials complete in place in accordance with the contract, plans, and specifications. Such partial payments may also include the delivered actual cost of those materials stockpiled and stored in accordance with the subsection titled **PAYMENT FOR MATERIALS ON HAND** of this section.

No partial payment will be made when the amount due the Contractor since the last estimate amounts to less than five hundred dollars.

From the total of the amount determined to be payable on a partial payment, 10 percent of such total amount will be deducted and retained by the owner until the final payment is made, except as may be provided (at the Contractor's option) in the subsection titled **PAYMENT OF WITHHELD FUNDS** of this section. The balance (90 percent) of the amount payable, less all previous payments, shall be certified for payment. Should the Contractor exercise his/her option, as provided in the subsection titled **PAYMENT OF WITHHELD FUNDS** of this section, no such 10 percent retainage shall be deducted.

When not less than 95 percent of the work has been completed the Engineer may, at his/her discretion and with the consent of the surety, prepare an estimate from which will be retained an amount not less than twice the contract value or estimated cost, whichever is greater, of the work remaining to be done. The remainder, less all previous payments and deductions, will then be certified for payment to the Contractor.

It is understood and agreed that the Contractor shall not be entitled to demand or receive partial payment based on quantities of work in excess of those provided in the proposal or covered by approved change orders or supplemental agreements, except when such excess quantities have been determined by the Engineer to be a part of the final quantity for the item of work in question.

No partial payment shall bind the owner to the acceptance of any materials or work in place as to quality or quantity. All partial payments are subject to correction at the time of final payment as provided in the subsection titled **ACCEPTANCE AND FINAL PAYMENT** of this section.

90-07 PAYMENT FOR MATERIALS ON HAND. Partial payments may be made to the extent of the delivered cost of materials to be incorporated in the work, provided that such materials meet the requirements of the contract, plans, and specifications and are delivered to acceptable sites on the airport property or at other sites in the vicinity that are acceptable to the owner. Such delivered costs of stored or stockpiled materials may be included in the next partial payment after the following conditions are met:

- a. The material has been stored or stockpiled in a manner acceptable to the Engineer at or on an approved site.
- b. The Contractor has furnished the Engineer with acceptable evidence of the quantity and quality of such stored or stockpiled materials.
- c. The Contractor has furnished the Engineer with satisfactory evidence that the material and transportation costs have been paid.
- d. The Contractor has furnished the owner legal title (free of liens or encumbrances of any kind) to the material so stored or stockpiled.
- e. The Contractor has furnished the owner evidence that the material so stored or stockpiled is insured against loss by damage to or disappearance of such materials at anytime prior to use in the work.

It is understood and agreed that the transfer of title and the owner's payment for such stored or stockpiled materials shall in no way relieve the Contractor of his/her responsibility for furnishing and placing such materials in accordance with the requirements of the contract, plans, and specifications.

In no case will the amount of partial payments for materials on hand exceed the contract price for such materials or the contract price for the contract item in which the material is intended to be used.

No partial payment will be made for stored or stockpiled living or perishable plant materials. The Contractor shall bear all costs associated with the partial payment of stored or stockpiled materials in accordance with the provisions of this subsection.

90-08 PAYMENT OF WITHHELD FUNDS. At the Contractor's option, he/she may request that the owner accept (in lieu of the 10 percent retainage on partial payments described in the subsection titled **PARTIAL PAYMENTS** of this section) the Contractor's deposits in escrow under the following conditions.

- a. The Contractor shall bear all expenses of establishing and maintaining an escrow account and escrow agreement acceptable to the owner.
- b. The Contractor shall deposit to and maintain in such escrow only those securities or bank certificates of deposit as are acceptable to the owner and having a value not less than the 10 percent retainage that would otherwise be withheld from partial payment.
- c. The Contractor shall enter into an escrow agreement satisfactory to the owner.
- d. The Contractor shall obtain the written consent of the surety to such agreement.

90-09 ACCEPTANCE AND FINAL PAYMENT. When the contract work has been accepted in accordance with the requirements of the subsection titled **FINAL ACCEPTANCE** of Section 50, the Engineer will prepare the final estimate of the items of work actually performed. The Contractor shall approve the Engineer's final estimate or advise the Engineer of his/her objections to the final estimate which are based on disputes in measurements or computations of the final quantities to be paid under the contract as amended by change order or supplemental agreement. The Contractor and the Engineer shall resolve all disputes (if any) in the measurement and computation of final quantities to be paid within 30 calendar days of the Contractor's receipt of the Engineer's final estimate. If, after such 30-day period, a dispute still exists, the Contractor may approve the Engineer's estimate under protest of the quantities in dispute, and such disputed quantities shall be considered by the owner as a claim in accordance with the subsection titled **CLAIMS FOR ADJUSTMENT AND DISPUTES** of Section 50.

After the Contractor has approved, or approved under protest, the Engineer's final estimate, final payment will be processed based on the entire sum, or the undisputed sum in case of approval under protest, determined to be due the Contractor less all previous payments and all amounts to be deducted under the provisions of the contract. All prior partial estimates and payments shall be subject to correction in the final estimate and payment.

If the Contractor has filed a claim for additional compensation under the provisions of the subsection titled **CLAIMS FOR ADJUSTMENTS AND DISPUTES** of Section 50 or under the provisions of this subsection, such claims will be considered by the owner in accordance with local laws or ordinances. Upon final adjudication of such claims, any additional payment determined to be due the Contractor will be paid pursuant to a supplemental final estimate.

END OF SECTION 90

Item C-100 Contractor Quality Control Program (CQCP)

100-1 General. Quality is more than test results. Quality is the combination of proper materials, testing, workmanship, equipment, inspection, and documentation of the project. Establishing and maintaining a culture of quality is key to achieving a quality project. The Contractor shall establish, provide, and maintain an effective Contractor Quality Control Program (CQCP) that details the methods and procedures that will be taken to assure that all materials and completed construction required by this contract conform to contract plans, technical specifications and other requirements, whether manufactured by the Contractor, or procured from subcontractors or vendors. Although guidelines are established and certain minimum requirements are specified here and elsewhere in the contract technical specifications, the Contractor shall assume full responsibility for accomplishing the stated purpose.

The Contractor shall establish a CQCP that will:

- a. Provide qualified personnel to develop and implement the CQCP.
- b. Provide for the production of acceptable quality materials.
- c. Provide sufficient information to assure that the specification requirements can be met.
- d. Document the CQCP process.

The Contractor shall not begin any construction or production of materials to be incorporated into the completed work until the CQCP has been reviewed and approved by the Resident Project Representative (RPR). No partial payment will be made for materials subject to specific quality control (QC) requirements until the CQCP has been reviewed and approved.

The QC requirements contained in this section and elsewhere in the contract technical specifications are in addition to and separate from the quality assurance (QA) testing requirements. QA testing requirements are the responsibility of the RPR or Contractor as specified in the specifications.

A Quality Control (QC)/Quality Assurance (QA) workshop with the Engineer, Resident Project Representative (RPR), Contractor, subcontractors, testing laboratories, and Owner's representative must be held prior to start of construction. The QC/QA workshop will be facilitated by the Contractor. The Contractor shall coordinate with the Airport and the RPR on time and location of the QC/QA workshop. Items to be addressed, at a minimum, will include:

- a. Review of the CQCP including submittals, QC Testing, Action & Suspension Limits for Production, Corrective Action Plans, Distribution of QC reports, and Control Charts.
- b. Discussion of the QA program.
- c. Discussion of the QC and QA Organization and authority including coordination and information exchange between QC and QA.
- d. Establish regular meetings to discuss control of materials, methods and testing.
- e. Establishment of the overall QC culture.

100-2 Description of program.

a. General description. The Contractor shall establish a CQCP to perform QC inspection and testing of all items of work required by the technical specifications, including those performed by subcontractors. The CQCP shall ensure conformance to applicable specifications and plans with respect to materials, off-site fabrication, workmanship, construction, finish, and functional performance. The CQCP shall be effective for control of all construction work performed under this Contract and shall specifically include surveillance and tests required by the technical specifications, in addition to other requirements of this section and any other activities deemed necessary by the Contractor to establish an effective level of QC.

b. Contractor Quality Control Program (CQCP). The Contractor shall describe the CQCP in a written document that shall be reviewed and approved by the RPR prior to the start of any production, construction, or off-site fabrication. The written CQCP shall be submitted to the RPR for review and approval at least **ten (10)** calendar days before the CQCP Workshop. The Contractor's CQCP and QC testing laboratory must be approved in writing by the RPR prior to the Notice to Proceed (NTP).

The CQCP shall be organized to address, as a minimum, the following:

1. QC organization and resumes of key staff
2. Project progress schedule
3. Submittals schedule
4. Inspection requirements
5. QC testing plan
6. Documentation of QC activities and distribution of QC reports
7. Requirements for corrective action when QC and/or QA acceptance criteria are not met
8. Material quality and construction means and methods. Address all elements applicable to the project that affect the quality of the pavement structure including subgrade, subbase, base, and surface course. Some elements that must be addressed include, but is not limited to mix design, aggregate grading, stockpile management, mixing and transporting, placing and finishing, quality control testing and inspection, smoothness, laydown plan, equipment, and temperature management plan.

The Contractor must add any additional elements to the CQCP that is necessary to adequately control all production and/or construction processes required by this contract.

100-3 CQCP organization. The CQCP shall be implemented by the establishment of a QC organization. An organizational chart shall be developed to show all QC personnel, their authority, and how these personnel integrate with other management/production and construction functions and personnel.

The organizational chart shall identify all QC staff by name and function, and shall indicate the total staff required to implement all elements of the CQCP, including inspection and testing for each item of work. If necessary, different technicians can be used for specific inspection and testing functions for different items of work. If an outside organization or independent testing laboratory is used for implementation of all or part of the CQCP, the personnel assigned shall be subject to the qualification requirements of paragraphs 100-03a and 100-03b. The organizational chart shall indicate which personnel are Contractor employees and which are provided by an outside organization.

The QC organization shall, as a minimum, consist of the following personnel:

a. Program Administrator. The Contractor Quality Control Program Administrator (CQCPA) must be a full-time employee of the Contractor, or a consultant engaged by the Contractor. The CQCPA must have a minimum of five (5) years of experience in QC pavement construction with prior QC experience on a project of comparable size and scope as the contract.

Included in the five (5) years of paving/QC experience, the CQCPA must meet at least one of the following requirements:

- (1) Professional Engineer with one (1) year of airport paving experience.
- (2) Engineer-in-training with two (2) years of airport paving experience.
- (3) National Institute for Certification in Engineering Technologies (NICET) Civil Engineering Technology Level IV with three (3) years of airport paving experience.

(4) An individual with four (4) years of airport paving experience, with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.

The CQCPA must have full authority to institute any and all actions necessary for the successful implementation of the CQCP to ensure compliance with the contract plans and technical specifications. The CQCPA authority must include the ability to immediately stop production until materials and/or processes are in compliance with contract specifications. The CQCPA must report directly to a principal officer of the construction firm. The CQCPA may supervise the Quality Control Program on more than one project provided that person can be at the job site within two (2) hours after being notified of a problem.

b. QC technicians. A sufficient number of QC technicians necessary to adequately implement the CQCP must be provided. These personnel must be either Engineers, engineering technicians, or experienced craftsman with qualifications in the appropriate field equivalent to NICET Level II in Civil Engineering Technology or higher, and shall have a minimum of two (2) years of experience in their area of expertise.

The QC technicians must report directly to the CQCPA and shall perform the following functions:

- (1) Inspection of all materials, construction, plant, and equipment for conformance to the technical specifications, and as required by paragraph 100-6.
- (2) Performance of all QC tests as required by the technical specifications and paragraph 100-8.
- (3) Performance of tests for the RPR when required by the technical specifications.

Certification at an equivalent level of qualification and experience by a state or nationally recognized organization will be acceptable in lieu of NICET certification.

c. Staffing levels. The Contractor shall provide sufficient qualified QC personnel to monitor each work activity at all times. Where material is being produced in a plant for incorporation into the work, separate plant and field technicians shall be provided at each plant and field placement location. The scheduling and coordinating of all inspection and testing must match the type and pace of work activity. The CQCP shall state where different technicians will be required for different work elements.

100-4 Project progress schedule. Critical QC activities must be shown on the project schedule as required by Section 80, paragraph 80-03, *Execution and Progress*.

100-5 Submittals schedule. The Contractor shall submit a detailed listing of all submittals (for example, mix designs, material certifications) and shop drawings required by the technical specifications. The listing can be developed in a spreadsheet format and shall include as a minimum:

- a. Specification item number
- b. Item description
- c. Description of submittal
- d. Specification paragraph requiring submittal
- e. Scheduled date of submittal

100-6 Inspection requirements. QC inspection functions shall be organized to provide inspections for all definable features of work, as detailed below. All inspections shall be documented by the Contractor as specified by paragraph 100-9.

Inspections shall be performed as needed to ensure continuing compliance with contract requirements until completion of the particular feature of work. Inspections shall include the following minimum requirements:

a. During plant operation for material production, QC test results and periodic inspections shall be used to ensure the quality of aggregates and other mix components, and to adjust and control mix proportioning to meet the approved mix design and other requirements of the technical specifications. All equipment used in proportioning and mixing shall be inspected to ensure its proper operating condition. The CQCP shall detail how these and other QC functions will be accomplished and used.

b. During field operations, QC test results and periodic inspections shall be used to ensure the quality of all materials and workmanship. All equipment used in placing, finishing, and compacting shall be inspected to ensure its proper operating condition and to ensure that all such operations are in conformance to the technical specifications and are within the plan dimensions, lines, grades, and tolerances specified. The CQCP shall document how these and other QC functions will be accomplished and used.

100-7 Contractor QC testing facility.

a. For projects that include Item P-401, Item P-403, and Item P-404, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM D3666, *Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials*:

8.1.3 Equipment Calibration and Checks;

8.1.9 Equipment Calibration, Standardization, and Check Records;

8.1.12 Test Methods and Procedures

b. For projects that include P-501, the Contractor shall ensure facilities, including all necessary equipment, materials, and current reference standards, are provided that meet requirements in the following paragraphs of ASTM C1077, *Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation*:

7 Test Methods and Procedures

8 Facilities, Equipment, and Supplemental Procedures

100-8 QC testing plan. As a part of the overall CQCP, the Contractor shall implement a QC testing plan, as required by the technical specifications. The testing plan shall include the minimum tests and test frequencies required by each technical specification Item, as well as any additional QC tests that the Contractor deems necessary to adequately control production and/or construction processes.

The QC testing plan can be developed in a spreadsheet fashion and shall, as a minimum, include the following:

- a. Specification item number (e.g., P-401)
- b. Item description (e.g., Hot Mix Asphalt Pavements)
- c. Test type (e.g., gradation, grade, asphalt content)
- d. Test standard (e.g., ASTM or American Association of State Highway and Transportation Officials (AASHTO) test number, as applicable)
- e. Test frequency (e.g., as required by technical specifications or minimum frequency when requirements are not stated)
- f. Responsibility (e.g., plant technician)
- g. Control requirements (e.g., target, permissible deviations)

The QC testing plan shall contain a statistically-based procedure of random sampling for acquiring test samples in accordance with ASTM D3665. The RPR shall be provided the opportunity to witness QC sampling and testing.

All QC test results shall be documented by the Contractor as required by paragraph 100-9.

100-9 Documentation. The Contractor shall maintain current QC records of all inspections and tests performed. These records shall include factual evidence that the required QC inspections or tests have been performed, including type and number of inspections or tests involved; results of inspections or tests; nature of defects, deviations, causes for rejection, etc.; proposed remedial action; and corrective actions taken.

These records must cover both conforming and defective or deficient features, and must include a statement that all supplies and materials incorporated in the work are in full compliance with the terms of the contract. Legible copies of these records shall be furnished to the RPR daily. The records shall cover all work placed subsequent to the previously furnished records and shall be verified and signed by the CQCPA.

Contractor QC records required for the contract shall include, but are not necessarily limited to, the following records:

a. Daily inspection reports. Each Contractor QC technician shall maintain a daily log of all inspections performed for both Contractor and subcontractor operations. These technician's daily reports shall provide factual evidence that continuous QC inspections have been performed and shall, as a minimum, include the following:

- (1) Technical specification item number and description
- (2) Compliance with approved submittals
- (3) Proper storage of materials and equipment
- (4) Proper operation of all equipment
- (5) Adherence to plans and technical specifications
- (6) Summary of any necessary corrective actions
- (7) Safety inspection.

The daily inspection reports shall identify all QC inspections and QC tests conducted, results of inspections, location and nature of defects found, causes for rejection, and remedial or corrective actions taken or proposed.

The daily inspection reports shall be signed by the responsible QC technician and the CQCPA. The RPR shall be provided at least one copy of each daily inspection report on the work day following the day of record. When QC inspection and test results are recorded and transmitted electronically, the results must be archived.

b. Daily test reports. The Contractor shall be responsible for establishing a system that will record all QC test results. Daily test reports shall document the following information:

- (1) Technical specification item number and description
- (2) Test designation
- (3) Location
- (4) Date of test
- (5) Control requirements
- (6) Test results
- (7) Causes for rejection

(8) Recommended remedial actions

(9) Retests

Test results from each day's work period shall be submitted to the RPR prior to the start of the next day's work period. When required by the technical specifications, the Contractor shall maintain statistical QC charts. When QC daily test results are recorded and transmitted electronically, the results must be archived.

100-10 Corrective action requirements. The CQCP shall indicate the appropriate action to be taken when a process is deemed, or believed, to be out of control (out of tolerance) and detail what action will be taken to bring the process into control. The requirements for corrective action shall include both general requirements for operation of the CQCP as a whole, and for individual items of work contained in the technical specifications.

The CQCP shall detail how the results of QC inspections and tests will be used for determining the need for corrective action and shall contain clear rules to gauge when a process is out of control and the type of correction to be taken to regain process control.

When applicable or required by the technical specifications, the Contractor shall establish and use statistical QC charts for individual QC tests. The requirements for corrective action shall be linked to the control charts.

100-11 Inspection and/or observations by the RPR. All items of material and equipment are subject to inspection and/or observation by the RPR at the point of production, manufacture or shipment to determine if the Contractor, producer, manufacturer or shipper maintains an adequate QC system in conformance with the requirements detailed here and the applicable technical specifications and plans. In addition, all items of materials, equipment and work in place shall be subject to inspection and/or observation by the RPR at the site for the same purpose.

Inspection and/or observations by the RPR does not relieve the Contractor of performing QC inspections of either on-site or off-site Contractor's or subcontractor's work.

100-12 Noncompliance.

a. The Resident Project Representative (RPR) will provide written notice to the Contractor of any noncompliance with their CQCP. After receipt of such notice, the Contractor must take corrective action.

b. When QC activities do not comply with either the CQCP or the contract provisions or when the Contractor fails to properly operate and maintain an effective CQCP, and no effective corrective actions have been taken after notification of non-compliance, the RPR will recommend the Owner take the following actions:

(1) Order the Contractor to replace ineffective or unqualified QC personnel or subcontractors and/or

(2) Order the Contractor to stop operations until appropriate corrective actions are taken.

METHOD OF MEASUREMENT

100-13 Basis of measurement and payment. Not Used.

BASIS OF PAYMENT

100-14 Payment will be made under:

There will be no separate payment for Item C-100 Contractor Quality Control Program (CQCP).

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

National Institute for Certification in Engineering Technologies (NICET)

ASTM International (ASTM)

- | | |
|------------|--|
| ASTM C1077 | Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation |
| ASTM D3665 | Standard Practice for Random Sampling of Construction Materials |
| ASTM D3666 | Standard Specification for Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials |

END OF ITEM C-100

DESIGN SPECIFICATIONS

for

**HATTIESBURG-BOBBY L. CHAIN MUNICIPAL AIRPORT
TAXIWAY A REALIGNMENT AND IMPROVEMENTS**

**A.I.P Project No. 3-28-0031-0030-2023
for the
CITY OF HATTIESBURG**

ITEM P-151: CLEARING AND DEMOLITION

DESCRIPTION

151-1.1 This item shall consist of all clearing and demolition, including the disposal of materials, for all areas within the limits designated on the plans or as required by the Engineer. There is no separate payment for pavement and lighting removal or for milling.

Clearing and grubbing shall consist of clearing the surface of the ground of the designated areas of all heavy growth of grass or weeds, fences, structures, debris, and rubbish of any nature, natural obstructions or such material which in the opinion of the Engineer is unsuitable for the foundation of strips, pavements, or other required structures, including roots, matted roots, foundations, and the disposal from the project of all spoil materials resulting from clearing and grubbing by burning or otherwise.

CONSTRUCTION METHODS

151-2.1 GENERAL. The areas denoted on the plans to be cleared and grubbed shall be staked on the ground by the Engineer. The clearing and grubbing shall be done at a satisfactory distance in advance of the grading operations.

All spoil materials removed by clearing or by clearing and grubbing shall be disposed of by burning, when permitted by local laws, or by removal to approved disposal areas. When burning of material is permitted, it shall be burned under the constant care of competent watchmen so that the surrounding vegetation and other adjacent property will not be jeopardized. Burning shall be done in accordance with all applicable laws, ordinances, and regulations. Before starting any burning operations, the Contractor shall notify the agency having jurisdiction.

As far as practicable, waste concrete and masonry shall be placed on slopes of embankments or channels. When embankments are constructed of such material, this material shall be placed in accordance with requirements for formation of embankments. Any broken concrete or masonry which cannot be used in construction, and all other materials not considered suitable for use elsewhere, shall be disposed of by the Contractor. In no case shall any discarded materials be left in windrows or piles adjacent to or within the airport limits. The manner and location of disposal of materials shall be subject to the approval of the Engineer and shall not create an unsightly or objectionable view. When the Contractor is required to locate a disposal area outside the airport property limits at his/her own expense, he shall obtain and file with the Engineer, permission in writing from the property owner for the use of private property for this purpose.

If the plans or the specifications require the saving of merchantable timber, the Contractor shall trim the limbs and tops from designated trees, saw them into suitable lengths, and make the material available for removal by other agencies.

Any blasting necessary shall be done at the Contractor's responsibility, and the utmost care shall be taken not to endanger life or property.

The removal of existing structure and utilities required to permit orderly progress of work shall be accomplished by local agencies, unless otherwise shown on the plans. Whenever a telephone or telegraph pole, pipeline, conduit, sewer, roadway, or other utility is encountered and must be removed or relocated the Contractor shall advise the Engineer who will notify the proper local authority or owner and attempt to secure prompt action.

151-2.2 CLEARING AND GRUBBING. In areas designated to be cleared and grubbed, all stumps, roots, buried logs, brush, grass, and other unsatisfactory materials shall be removed, except where embankments exceeding 3-1/2 feet in depth are to be made outside of paved areas. In cases where such depth of embankments is to be made, all unsatisfactory materials shall be removed, but sound trees, stumps, and brush can be cut off within 6 inches above the ground and allowed to remain. Tap roots and other projections over 1-1/2 inches in diameter shall be grubbed out to a depth of at least 18 inches below the finished subgrade or slope elevation.

Any buildings and miscellaneous structures that are shown on the plans to be removed shall be demolished or removed, and all materials therefrom shall be disposed of either by burning or otherwise removed from the site. The remaining or existing foundations, wells, cesspools, and all like structures shall be destroyed by breaking out or breaking down the materials of which the foundations, wells, cesspools, etc., are built to a depth at least 2 feet below the existing surrounding ground. Any broken concrete, blocks, or other objectionable material which cannot be used in backfill shall be removed and disposed of. The holes or openings shall be backfilled with acceptable material and properly compacted.

All holes remaining after the grubbing operation in embankment areas shall have the sides broken down to flatten out the slopes, and shall be filled with acceptable material, moistened and properly compacted in layers to the density required in Item P-152. The same construction procedure shall be applied to all holes remaining after grubbing in excavation areas where the depth of holes exceeds the depth of the proposed excavation.

METHOD OF MEASUREMENT

151-3.1 The quantities of clearing or clearing and demolition will not be separately measured.

BASIS OF PAYMENT

151-4.1 Lump Sum - Payment shall be made as a lump sum payment.

END ITEM P-151

ITEM P-152: EXCAVATION AND EMBANKMENT

DESCRIPTION

152-1.1 This item covers excavation, disposal, placement, and compaction of all materials within the limits of the work required to construct safety areas, runways, taxiways, aprons, and intermediate as well as other areas for drainage, building construction, parking, or other purposes in accordance with these specifications and in conformity to the dimensions and typical section(s) shown on the plans.

152-1.2 CLASSIFICATION. All material excavated shall be classified as defined below:

- a. **Unclassified Excavation.** Unclassified excavation shall consist of the excavation and disposal of all material, regardless of its nature, which is not otherwise classified and paid for under the following items.
- b. **Rock Excavation.** Rock excavation shall include all solid rock in ledges, in bedded deposits, in unstratified masses, and conglomerate deposits which are so firmly cemented they cannot be removed without blasting or using rippers. All boulders containing a volume of more than cubic yard will be classified as rock excavation.
- c. **Muck Excavation.** Muck excavation shall consist of the removal and disposal of deposits or mixtures of soils and organic matter not suitable for foundation material. Muck shall include materials which will decay or produce subsidence in the embankment. It may be made up of decaying stumps, roots, logs, humus, or other material not satisfactory for incorporation in the embankment.
- d. **Drainage Excavation.** Drainage excavation shall consist of all excavation made for the primary purpose of drainage and includes drainage ditches, such as intercepting, inlet or outlet; temporary levee construction; or any other type as shown on the plans.
- e. **Borrow Excavation.** Borrow excavation shall consist of approved material required for the construction of embankment or for other portions of the work in excess of the quantity of usable material available from required excavations. Borrow material shall be obtained from areas outside the limits of the airport property. The material will be A-4 or better with a P.I. of not greater than 12.

152-1.3 Unsuitable Excavation. Any material containing vegetable or organic matter (muck, peat, organic silt, or sod) shall be considered unsuitable for use in embankment construction. Material, approved by the Engineer as suitable to support vegetation, may be used on the embankment slope.

CONSTRUCTION METHODS

152-2.1 General. Before beginning excavation, grading, and embankment operations in any area, the area shall be completely cleared.

The suitability of material to be placed in embankments shall be subject to approval by the Engineer. All unsuitable material shall be disposed of in waste areas shown on the plans. All waste areas shall be graded to allow positive drainage of the area and of adjacent areas. The surface elevation of waste areas shall not extend above the surface elevation of adjacent usable areas of the airport, unless specified on the plans or approved by the Engineer.

When the Contractor's excavating operations encounter artifacts of historical or archaeological significance, the operations shall be temporarily discontinued. At the direction of the Engineer, the Contractor shall excavate the site in such a manner as to preserve the artifacts encountered and allow for their removal. Such excavation will be paid for as extra work.

Those areas outside of the pavement areas in which the top layer of soil material has become compacted, by hauling or other activities of the Contractor shall be scarified and disced to a depth of 4 inches, in order to loosen and pulverize the soil.

If it is necessary to interrupt existing surface drainage, sewers or under-drainage, conduits, utilities, or similar underground structures, the Contractor shall be responsible for and shall take all necessary precautions to preserve them or provide temporary services. When such facilities are encountered, the Contractor shall notify the Engineer, who shall arrange for their removal if necessary. The Contractor shall, at his/her own expense, satisfactorily repair or pay the cost of all damage to such facilities or structures which may result from any of the Contractor's operations during the period of the contract.

152-2.2 EXCAVATION. No excavation shall be started until the work has been staked out by the Contractor and the Engineer has obtained elevations and measurements of the ground surface. All suitable excavated material shall be used in the formation of embankment, sub-grade, or for other purposes shown on the plans. All unsuitable material shall be disposed of as shown on the plans.

When the volume of the excavation exceeds that required to construct the embankments to the grades indicated, the excess shall be used to grade the areas of ultimate development or disposed of as directed. When the volume of excavation is not sufficient for constructing the fill to the grades indicated, the deficiency shall be obtained from borrow areas.

The grade shall be maintained so that the surface is well drained at all times. When necessary, temporary drains and drainage ditches shall be installed to intercept or divert surface water which may affect the work.

a. **Selective Grading.** When selective grading is indicated on the plans, the more suitable material as designated by the Engineer shall be used in constructing the embankment or in capping the pavement sub-grade. If, at the time of excavation, it is not possible to place this material in its final location, it shall be stockpiled in approved areas so that it can be measured for payment for re-handling as specified in paragraph 3.3.

b. **Undercutting.** Rock, shale, hardpan, loose rock, boulders, or other material unsatisfactory for safety areas, sub-grades, roads, shoulders, or any areas intended for turfing shall be excavated to a minimum depth of 12 inches, or to the depth specified by the Engineer, below the sub-grade. Muck, peat, matted roots, or other yielding material, unsatisfactory for sub-grade foundation, shall be removed to the depth specified. Unsuitable materials shall be

disposed of at locations shown on the plans. The excavated area shall be refilled with suitable material obtained from the grading operations or borrow areas and compacted to specified densities. The necessary refilling will constitute a part of the embankment. Where rock cuts are made and refilled with selected material, any pockets created in the rock surface shall be drained in accordance with the details shown on the plans.

c. **Overbreak.** Overbreak, including slides, is that portion of any material displaced or loosened beyond the finished work as planned or authorized by the Engineer. The Engineer shall determine if the displacement of such material was unavoidable and his/her decision shall be final. All overbreak shall be graded or removed by the Contractor and disposed of as directed; however, payment will not be made for the removal and disposal of overbreak which the Engineer determines as avoidable. Unavoidable overbreak will be classified as "Unclassified Excavation."

d. **Removal of Utilities.** The removal of existing structures and utilities required to permit the orderly progress of work will be accomplished by someone other than the Contractor, e.g., the utility unless otherwise shown on the plans. All existing foundations shall be excavated for at least 2 feet below the top of subgrade or as indicated on the plans, and the material disposed of as directed. All foundations thus excavated shall be backfilled with suitable material and compacted as specified herein.

e. **Compaction Requirements.** The sub-grade under areas to be paved shall be compacted to a depth of 6" and to a density of not less than 95 percent of the maximum density as determined by ASTM D 698.

The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2167. Stones or rock fragments larger than 4 inches in their greatest dimension will not be permitted in top 6 inches of the sub-grade. The finished grading operations, conforming to the typical cross section, shall be completed and maintained at least 1,000 feet (300 m) ahead of the paving operations or as directed by the Engineer.

In cuts, all loose or protruding rocks on the back slopes shall be barred loose or otherwise removed to line of finished grade of slope. All cut-and-fill slopes shall be uniformly dressed to the slope, cross section, and alignment shown on the plans or as directed by the Engineer. Blasting will be permitted only when proper precautions are taken for the safety of all persons, the work, and the property. All damage done to the work or property shall be repaired at the Contractor's expense. All operations of the Contractor in connection with the transportation, storage, and use of explosives shall conform to all state and local regulations and explosive manufacturers' instructions, with applicable approved permits reviewed by the Engineer. Any approval given, however, will not relieve the Contractor of his/her responsibility in blasting operations.

Where blasting is approved, the Contractor shall employ a vibration consultant, approved by the Engineer, to advise on explosive charge weights per delay and to analyze records from seismograph recordings. The seismograph shall be capable of producing a permanent record of the three components of the motion in terms of particle velocity, and in addition shall be capable of internal dynamic calibration.

In each distinct blasting area, where pertinent factors affecting blast vibrations and their effects in the area remain the same, the Contractor shall submit a blasting plan of the initial blasts to the Engineer for approval. This plan must consist of hole size, depth, spacing, burden, type of explosives, type of delay sequence, maximum amount of explosive on any one delay period, depth of rock, and depth of overburden if any. The maximum explosive charge weights per delay included in the plan shall not be increased without the approval of the engineering.

The Contractor shall keep a record of each blast fired - its date, time and location; the amount of explosives used, maximum explosive charge weight per delay period, and, where necessary, seismograph records identified by instrument number and location.

These records shall be made available to the Engineer on a monthly basis or in tabulated form at other times as required.

152-2.3 BORROW EXCAVATION. When borrow sources are outside the boundaries of the airport property, it shall be the Contractor's responsibility to locate and obtain the supply, subject to the approval of the Engineer. The Contractor shall notify the Engineer; at least 15 days prior to beginning the excavation, so necessary measurements and tests can be made. All unsuitable material shall be disposed of by the Contractor. All borrow pits shall be opened up to expose the vertical face of various strata of acceptable material to enable obtaining a uniform product. Borrow pits shall be excavated to regular lines to permit accurate measurements, and they shall be drained and left in a neat, presentable condition with all slopes dressed uniformly.

152-2.4 DRAINAGE EXCAVATION. Drainage excavation shall consist of excavating for drainage ditches such as intercepting; inlet or outlet, for temporary levee construction; or for any other type as designed or as shown on the plans. The work shall be performed in the proper sequence with the other construction. All satisfactory material shall be placed in fills; unsuitable material shall be placed in waste areas or as directed. Intercepting ditches shall be constructed prior to starting adjacent excavation operations. All necessary work shall be performed to secure a finish true to line, elevation, and cross section.

The Contractor shall maintain ditches constructed on the project to the required cross section and shall keep them free of debris or obstructions until the project is accepted.

152-2.5 PREPARATION OF EMBANKMENT AREA. Where an embankment is to be constructed to a height of 4 feet or less, all sod and vegetable matter shall be removed from the surface upon which the embankment is to be placed, and the cleared surface shall be completely broken up by plowing or scarifying to a minimum depth of 6 inches. This area shall then be compacted as indicated in paragraph 2.6. When the height of fill is greater than 4 feet, sod not required to be removed shall be thoroughly disced and re-compacted to the density of the surrounding ground before construction of embankment. Where embankments are to be placed on natural slopes steeper than 3 to 1, horizontal benches shall be constructed as shown on the plans.

No direct payment shall be made for the work performed under this section. The necessary clearing and grubbing and the quantity of excavation removed will be paid for under the respective items of work.

152-2.6 FORMATION OF EMBANKMENTS. Embankments shall be formed in successive horizontal layers of not more than 8 inches in loose depth for the full width of the cross section, unless otherwise approved by the Engineer.

The grading operations shall be conducted, and the various soil strata shall be placed, to produce a soil structure as shown on the typical cross section or as directed. Materials such as brush, hedge, roots, stumps, grass and other organic matter, shall not be incorporated or buried in the embankment.

Operations on earthwork shall be suspended at any time when satisfactory results cannot be obtained because of rain, freezing, or other unsatisfactory conditions of the field. The Contractor shall drag, blade, or slope the embankment to provide proper surface drainage.

The material in the layer shall be within ± 2 percent of optimum moisture content before rolling to obtain the prescribed compaction. In order to achieve a uniform moisture content throughout the layer, wetting or drying of the material and manipulation shall be required when necessary. Should the material be too wet to permit proper compaction or rolling, all work on all of the affected portions of the embankment shall be delayed until the material has dried to the required moisture content. Sprinkling of dry material to obtain the proper moisture content shall be done with approved equipment that will sufficiently distribute the water. Sufficient equipment to furnish the required water shall be available at all times. Based on these tests, the Contractor shall make the necessary corrections and adjustments in methods, materials or moisture content in order to achieve the correct embankment density.

Rolling operations shall be continued until the embankment is compacted to not less than 95 percent of maximum density for non-cohesive soils, and 90 percent of maximum density for cohesive soils as determined by ASTM 0698. Under all areas to be paved, the embankments shall be compacted to a depth of 6 inches and to a density of not less than 95 percent of the maximum density as determined by ASTM 698.

On all areas outside of the pavement areas, no compaction will be required on the top 4 inches.

The in-place field density shall be determined in accordance with ASTM D 1556 or ASTM D 2167.

Compaction areas shall be kept separate, and no layer shall be covered by another until the proper density is obtained.

During construction of the embankment, the Contractor shall route his/her equipment at all times, both when loaded and when empty, over the layers as they are placed and shall distribute the travel evenly over the entire width of the embankment. The equipment shall be operated in such a manner that hardpan, cemented gravel, clay, or other chunky soil material will be broken up into small particles and become incorporated with the other material in the layer.

In the construction of embankments, layer placement shall begin in the deepest portion of the fill; as placement progresses, layers shall be constructed approximately parallel to the finished pavement grade line.

When rock and other embankment material are excavated at approximately the same time, the rock shall be incorporated into the outer portion of the embankment and the other material shall be incorporated under the future paved areas. Stones or fragmentary rock larger than 4 inches in their greatest dimensions will not be allowed in the top 6 inches of the sub-grade. Rock fill shall be brought up in layers as specified or as directed and every effort shall be exerted to fill the voids with the finer material forming a dense, compact mass. Rock or boulders shall not be disposed of outside the excavation or embankment areas, except at places and in the manner designated by the Engineer.

When the excavated material consists predominantly of rock fragments of such size that the material cannot be placed in layers of the prescribed thickness without crushing, pulverizing or further breaking down the pieces, such material may be placed in the embankment as directed in layers not exceeding 2 feet in thickness. Each layer shall be leveled and smoothed with suitable leveling equipment and by distribution of spalls and finer fragments of rock. These type lifts shall not be constructed above an elevation 4 feet below the finished sub-grade. Density requirements will not apply to portions of embankments constructed of materials which cannot be tested in accordance with specified methods.

Frozen material shall not be placed in the embankment nor shall embankment be placed upon frozen material. There will be no separate measurement of payment for compacted embankment, and all costs incidental to placing in layers, compacting, discing, watering, mixing, sloping, and other necessary operations for construction of embankments will be included in the contract price for excavation, borrow, or other items.

152-2.7 FINISHING AND PROTECTION OF SUBGRADE. After the sub-grade has been substantially completed the full width shall be conditioned by removing any soft or other unstable material which will not compact properly. The resulting areas and all other low areas, holes or depressions shall be brought to grade with suitable select material. Scarifying, blading, rolling and other methods shall be performed to provide a thoroughly compacted sub-grade shaped to the lines and grades shown on the plans.

Grading of the sub-grade shall be performed so that it will drain readily. The Contractor shall take all precautions necessary to protect the sub-grade from damage. He/she shall limit hauling over the finished sub-grade to that which is essential for construction purposes.

All ruts or rough places that develop in a completed sub-grade shall be smoothed and re-compacted.

No sub-base, base, or surface course shall be placed on the sub-grade until the sub-grade has been approved by the Engineer.

152-2.8 HAUL. All hauling will be considered a necessary and incidental part of the work. Its cost shall be considered by the Contractor and included in the contract unit price for the pay of items of work involved. No payment will be made separately or directly for hauling on any part of the work.

152-2.9 TOLERANCES. In those areas upon which a sub-base or base course is to be placed, the top of the sub-grade shall be of such smoothness that, when tested with a 16-foot (4.8 m) straightedge applied parallel and at right angles to the centerline, it shall not show any deviation

in excess of 1/2-inch, or shall not be more than 0.05-foot (.015 m) from true grade as established by grade hubs or pins. Any deviation in excess of these amounts shall be corrected by loosening, adding, or removing materials; reshaping; and re-compacting by sprinkling and rolling.

On safety areas, intermediate and other designated areas, the surface shall be of such smoothness that it will not vary more than 0.10 foot (0.03 m) from true grade as established by grade hubs. Any deviation in excess of this amount shall be corrected by loosening, adding or removing materials, and reshaping.

152-2.10 TOPSOIL. When topsoil is specified or required as shown on the plans or under Item T-905, it shall be salvaged from stripping or other grading operations. The topsoil shall meet the requirements of Item T-905. If, at the time of excavation or stripping, the topsoil cannot be placed in its proper and final section of finished construction, the material shall be stockpiled at approved locations. Stockpiles shall not be placed within 250 feet of runway pavement or 125 feet of taxiway pavement and shall not be placed on areas which subsequently will require any excavation or embankment. If, in the judgment of the Engineer, it is practical to place the salvaged topsoil at the time of excavation or stripping, the material shall be placed in its final position without stockpiling or further re-handling.

Upon completion of grading operations, stockpiled topsoil shall be handled and placed as directed, or as required in Item T-905.

No direct payment will be made for topsoil as such under Item P-152. The quantity removed and placed directly or stockpiled shall be paid for at the contract unit price per cubic yard for Unclassified Excavation.

When stockpiling of topsoil and later re-handling of such material is directed by the Engineer, the material so re-handled shall be paid for at the contract unit price per cubic yard for Embankment in Place.

METHOD OF MEASUREMENT

152-3.1 The quantity of excavation to be paid for shall be the number of cubic yards measured in its original position. The quantity for excavation – pavement removal will be that which is represented in the plans.

Measurement shall not include the quantity of materials excavated without authorization beyond normal slope lines, or the quantity of material used for purposes other than those directed.

152-3.2 For payment specified by the cubic yard, measurement for all excavation or embankment shall be computed by the average end area method. The end area is that bound by the original ground line established by field cross sections and the final theoretical pay line established by excavation or embankment cross sections shown on the plans, subject to verification by the Engineer. After completion of all excavation or embankment operations and prior to the placing of base or subbase material, the final excavation or embankment shall be verified by the Engineer by means of field cross sections taken randomly at intervals not exceeding 500 linear feet.

BASIS OF PAYMENT

152-4.1 For ``Unclassified excavation" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

152-4.2 For ``Embankment in Place" payment shall be made at the contract unit price per cubic yard. This price shall be full compensation for furnishing all materials, labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-152-4.1	Unclassified Excavation—per cubic yard
Item P-152-4.2	Embankment in Place—per cubic yard

TESTING REQUIREMENTS

ASTM D 698	Test for Moisture Density Relations of Soils and Soil-Aggregate Mixtures, Using 5.5-pound Rammer and 12-inch Drop
ASTM D 1556	Test for Density of Soil in Place by the Sand-Cone Method
ASTM D 1557	Test for Moisture-Density Relations of Soils and Soil-Aggregate Mixtures, Using 10-pound Rammer and 18-inch Drop
ASTM D 2167	Test for Density and Unit Weight of Soil in Place by the Rubber Balloon Method

END ITEM P-152

ITEM P-209 CRUSHED AGGREGATE BASE COURSE

DESCRIPTION

209-1.1 This item consists of a base course composed of crushed aggregates constructed on a prepared course in accordance with these specifications and in conformity to the dimensions and typical cross sections shown on the plans.

MATERIALS

209-2.1 AGGREGATE. Aggregates shall consist of clean, sound, durable particles of crushed stone, crushed gravel, or crushed slag and shall be free from coatings of clay, silt, vegetable matter, and other objectionable materials and shall contain no clay balls. Fine aggregate passing the No. 4 (4.75 mm) sieve shall consist of fines from the operation of crushing the coarse aggregate. If necessary, fine aggregate may be added to produce the correct gradation. The fine aggregate shall be produced by crushing stone, gravel, or slag that meet the requirements for wear and soundness specified for coarse aggregate.

The crushed slag shall be an air-cooled, blast furnace slag and shall have a unit weight of not less than 70 pounds per cubic foot (1.12 Mg/cubic meter) when tested in accordance with ASTM C 29.

The crushed aggregate portion which is retained on the No. 4 (4.75 mm) sieve shall contain not more than 15 percent, by weight, of flat or elongated pieces as defined in ASTM D 693 and shall have at least 90 percent by weight of particles with at least two fractured faces and 100 percent with at least one fractured face. The area of each face shall be equal to at least 75 percent of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 to count as two fractured faces.

The percentage of wear shall not be greater than 45 percent when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 12 percent, after 5 cycles, when tested in accordance with ASTM C 88.

The fraction passing the No. 40 (0.42 mm) sieve shall have a liquid limit no greater than 25 and a plasticity index of not more than 4 when tested in accordance with ASTM D 4318. The fine aggregate shall have a minimum sand equivalent value of 35 when tested in accordance with ASTM D 2419.

a. **Sampling and Testing.** Aggregates for preliminary testing shall be furnished by the Contractor prior to the start of production. All tests for initial aggregate submittals necessary to determine compliance with the specification requirements will be made by the Engineer at no expense to the Contractor.

Samples of aggregates shall be furnished by the Contractor at the start of production and at intervals during production. The sampling points and intervals will be designated by the

Engineer. The samples will be the basis of approval of specific lots of aggregates from the standpoint of the quality requirements of this section.

In lieu of testing, the Engineer may accept certified state test results indicating that the aggregate meets specification requirements.

Samples of aggregates to check gradation shall be taken by the Engineer at least once daily. Sampling shall be in accordance with ASTM D 75, and testing shall be in accordance with ASTM C 136 and ASTM C 117.

b. Gradation Requirements. The gradation (job mix) of the final mixture shall fall within the design range indicated in Table 1, when tested in accordance with ASTM C 117 and ASTM C 136. The final gradation shall be continuously well graded from coarse to fine and shall not vary from the low limit on one sieve to the high limit on an adjacent sieve or vice versa.

TABLE 1. REQUIREMENTS FOR GRADATION OF AGGREGATE \1

Sieve Size	Design Range Percentage by Weight Passing Sieves	Job Mix Tolerances Percent
2 in (50.0 mm)	100	0
1-1/2 (37.0 mm)	95-100	+/- 5
1 in (25.0 mm)	70-95	+/- 8
3/4 in (19.0 mm)	55-85	+/- 8
No. 4 (4.75 mm)	30-60	+/- 8
No. 30 (0.60 mm)	12-30	+/- 5
No. 200 (0.075 mm)	0-8	+/- 3

\1\ Where environmental conditions (temperature and availability of free moisture) indicate potential damage due to frost action, the maximum percent of material, by weight, of particles smaller than 0.02 mm shall be 3 percent. It also may be necessary to have a lower percentage of material passing the No. 200 sieve to help control the percentage of particles smaller than 0.02 mm.

The job mix tolerances in Table 1 shall be applied to the job mix gradation to establish a job control grading band. The full tolerance still will apply if application of the tolerances results in a job control grading band outside the design range.

The fraction of the final mixture that passes the No. 200 (0.075 mm) sieve shall not exceed 60 percent of the fraction passing the No. 30 (0.60 mm) sieve.

CONSTRUCTION METHODS

209-3.1 PREPARING UNDERLYING COURSE. The underlying course shall be checked and accepted by the Engineer before placing and spreading operations are started. Any ruts or soft yielding places caused by improper drainage conditions, hauling, or any other cause shall be

corrected at the Contractor's expense before the base course is placed thereon. Material shall not be placed on frozen subgrade.

209-3.2 MIXING. The aggregate shall be uniformly blended during crushing operations or mixed in a plant. The plant shall blend and mix the materials to meet the specifications and to secure the proper moisture content for compaction.

209-3.3 PLACING. The crushed aggregate base material shall be placed on the moistened subgrade in layers of uniform thickness with a mechanical spreader.

The maximum depth of a compacted layer shall be 6 inches (150 mm). If the total depth of the compacted material is more than 6 inches (150 mm), it shall be constructed in two or more layers. In multi-layer construction, the base course shall be placed in approximately equal-depth layers.

The previously constructed layer should be cleaned of loose and foreign material prior to placing the next layer. The surface of the compacted material shall be kept moist until covered with the next layer.

209-3.4 COMPACTION. Immediately upon completion of the spreading operations, the crushed aggregate shall be thoroughly compacted. The number, type, and weight of rollers shall be sufficient to compact the material to the required density.

The moisture content of the material during placing operations shall not be below, nor more than 1-½ percentage points above, the optimum moisture content as determined by ASTM D 1557.

209-3.5 ACCEPTANCE SAMPLING AND TESTING FOR DENSITY. Aggregate base course shall be accepted for density on a lot basis. A lot will consist of one day's production where it is not expected to exceed 2400 square yards (2000 square meters). A lot will consist of one-half day's production where a day's production is expected to consist of between 2400 and 4800 square yards (2000 and 4000 square meters).

Each lot shall be divided into two equal sublots. One test shall be made for each subplot. Sampling locations will be determined by the Engineer on a random basis in accordance with statistical procedures contained in ASTM D 3665.

Each lot shall be divided into two equal sublots. One test shall be made for each subplot. Sampling locations will be determined by the Engineer on a random basis in accordance with statistical procedures contained in ASTM D 3665.

Each lot will be accepted for density when the field density is at least 100 percent of the maximum density of laboratory specimens prepared from samples of the base course material delivered to the job site. The specimens shall be compacted and tested in accordance with ASTM D 1557. The in-place field density shall be determined in accordance with ASTM D 1556 or D 2167. If the specified density is not attained, the entire lot shall be reworked and/or

recompacted and two additional random tests made. This procedure shall be followed until the specified density is reached.

In lieu of the core method of field density determination, acceptance testing may be accomplished using a nuclear gage in accordance with ASTM D 2922. The gage should be field calibrated in accordance with paragraph 4 of ASTM D 2922. Calibration tests shall be conducted on the first lot of material placed that meets the density requirements.

Use of ASTM D 2922 results in a wet unit weight, and when using this method, ASTM D 3017 shall be used to determine the moisture content of the material. The calibration curve furnished with the moisture gages shall be checked as described in paragraph 7 of ASTM D 3017. The calibration checks of both the density and moisture gages shall be made at the beginning of a job and at intervals as determined by the Engineer.

If a nuclear gage is used for density determination, two random readings shall be made for each subplot.

209-3.6 FINISHING. The surface of the aggregate base course shall be finished by blading or with automated equipment especially designed for this purpose.

In no case will the addition of thin layers of material be added to the top layer of base course to meet grade. If the elevation of the top layer is 1/2 inch (12 mm) or more below grade, the top layer of base shall be scarified to a depth of at least 3 inches (75 mm), new material added, and the layer shall be blended and recompacted to bring it to grade. If the finished surface is above plan grade, it shall be cut back to grade and rerolled.

209-3.7 SURFACE TOLERANCES. The finished surface shall not vary more than 3/8 inch (9 mm) when tested with a 16-foot (4.8 m) straightedge applied parallel with or at right angles to the centerline. Any deviation in excess of this amount shall be corrected by the Contractor at the Contractor's expense.

209-3.8 THICKNESS CONTROL. The completed thickness of the base course shall be within 1/2 inch (12 mm) of the design thickness. Four determinations of thickness shall be made for each lot of material placed. The lot size shall be consistent with that specified in paragraph 3.5. Each lot shall be divided into four equal sublots. One test shall be made for each subplot. Sampling locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. Where the thickness is deficient by more than 1/2 inch (12 mm), the Contractor shall correct such areas at no additional cost by excavating to the required depth and replacing with new material. Additional test holes may be required to identify the limits of deficient areas.

209-3.9 MAINTENANCE. The base course shall be maintained in a condition that will meet all specification requirements until the work is accepted. Equipment used in the construction of an adjoining section may be routed over completed portions of the base course, provided no damage results and provided that the equipment is routed over the full width of the base course to avoid rutting or uneven compaction.

METHOD OF MEASUREMENT

209-4.1. The quantity of crushed aggregate base course to be paid for will be determined by measurement of the number of cubic yards of material actually constructed and accepted by the Engineer as complying with the plans and specifications.

BASIS OF PAYMENT

209-5.1. Payment shall be made at the contract unit price per cubic yard for crushed aggregate base course. This price shall be full compensation for furnishing all materials, for preparing and placing these materials, and for all labor, equipment tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-209 Crushed Aggregate Base Course—per cubic yard.

TESTING REQUIREMENTS

ASTM C 29	Unit Weight of Aggregate
ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	Materials Finer than 75 μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 131	Resistance to Degradation of Small-Size Coarse Aggregate by abrasion and impact in the Los Angeles Machine
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM D 75	Sampling Aggregate
ASTM D 693	Crushed Aggregate for Macadam Pavements
ASTM D 698	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 5.5-lb (2.49-kg) Rammer and 12-in (305mm) Drop
ASTM D 1556	Density of Soil in Place by the Sand-Cone Method
ASTM D 1557	Moisture-Density Relations of Soils and Soil-Aggregate Mixtures Using 10-lb Rammer and 18 in Drop
ASTM D 2167	Density and Unit Weight of Soil in Place by the Rubber Balloon

	Method
ASTM D 2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2922	Density of Soil and Soil-Aggregate in Place by Nuclear Methods
ASTM D 3017	Water Content of Soil and Rock in Place by Nuclear Methods
ASTM D 3665	Random Sampling of Construction Materials
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils

END ITEM P-209

ITEM P-401: PLANT MIX BITUMINOUS PAVEMENTS

DESCRIPTION

401-1.1 This item shall consist of a surface course composed of mineral aggregate and bituminous material mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross sections shown on the plans. Each course shall be constructed to the depth, typical section, or elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

401-2.1 AGGREGATE. Aggregates shall consist of crushed stone, crushed gravel, or crushed slag with or without sand or other inert finely divided mineral aggregate. The portion of materials retained on the No. 8 sieve is coarse aggregate. The portion passing the No. 8 (2.36 mm) sieve and retained on the No. 200 (0.075 mm) sieve is fine aggregate, and the portion passing the No. 200 (0.075 mm) sieve is mineral filler.

a. Coarse Aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from adherent films of matter that would prevent thorough coating and bonding with the bituminous material and be free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40 percent when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 10 percent, or the magnesium sulfate soundness loss shall not exceed 13 percent, after five cycles, when tested in accordance with ASTM C 88.

Aggregate shall contain at least 50 percent by weight of individual pieces having two or more fractured faces and 65 percent by weight having at least one fractured face. The area of each face shall be equal to at least 75 percent of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be obtained by crushing.

The aggregate shall not contain more than a total of 8 percent, by weight, of flat or elongated pieces, when tested in accordance with ASTM D 4791.

Slag shall be air-cooled, blast furnace slag, and shall have a compacted weight of not less than 70 pounds per cubic foot (1.12 mg/cubic meter) when tested in accordance with ASTM C 29.

b. Fine Aggregate. Fine aggregate shall consist of clean, sound, durable, angular shaped particles produced by crushing stone, slag, or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.

Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this specification. The fine aggregate shall not contain more than 20 percent natural sand by weight of total aggregates.

The aggregate shall have sand equivalent values of 35 or greater when tested in accordance with ASTM D 2419.

c. Sampling. ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C 183 shall be used in sampling mineral filler.

401-2.2 MINERAL FILLER. If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D 242.

401-2.3 BITUMINOUS MATERIAL. Bituminous material shall conform to the following requirements: ASTM D 946, Penetration Grade 85-100.

The Contractor shall furnish vendor's certified test reports for each lot of bituminous material shipped to the project. The vendor's certified test report for the bituminous material can be used for acceptance or tested independently by the Engineer.

401-2.4 PRELIMINARY MATERIAL ACCEPTANCE. Prior to delivery of materials to the job site, the Contractor shall submit certified test reports to the Engineer for the following materials:

a. Coarse Aggregate.

- (1) Percent of wear.
- (2) Soundness.
- (3) Unit weight of slag.

b. Fine Aggregate.

- (1) Liquid limit.
- (2) Plasticity index.
- (3) Sand equivalent.

c. Mineral Filler.

d. Bituminous Material.

The certification(s) shall show the appropriate ASTM test(s) for each material, the test results, and a statement that the material meets the specification requirement.

The Engineer may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

COMPOSITION

401-3.1 COMPOSITION OF MIXTURE. The bituminous plant mix shall be composed of a mixture of well-graded aggregate, filler if required, and bituminous material. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

401-3.2 JOB MIX FORMULA. No bituminous mixture for payment shall be produced until a job mix formula has been approved by the Engineer. The bituminous mixture shall be designed using procedures contained in Chapter III, MARSHALL METHOD OF MIX DESIGN, of the Asphalt Institute's Manual Series No. 2 (MS-2), Mix Design Methods for Asphalt Concrete, and shall meet the requirements of Tables 1 and 2.

The design criteria in Table 1 are target values necessary to meet the acceptance requirements contained in paragraph 401-5.2b. The criteria is based on a production process which has a material variability with the following standard deviations:

Stability (lbs.) = 270

Flow (0.01 inch) = 1.5

Air Voids (%) = 0.65

If material variability exceeds the standard deviations indicated, the job mix formula and subsequent production targets should be based on a stability greater than shown in Table 1, and the flow and air voids should be targeted close to the mid-range of the criteria in order to meet the acceptance requirements.

If the Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867, is less than 75, the aggregates shall be rejected or the asphalt treated with an approved anti-stripping agent. The amount of anti-stripping agent added to the asphalt shall be sufficient to produce a TSR of not less than 75. If an antistrip agent is required, it will be provided by the Contractor at no additional cost.

The job mix formula shall be submitted in writing by the Contractor to the Engineer at least 30 days prior to the start of paving operations and shall include as a minimum:

- a. Percent passing each sieve size.
- b. Percent of asphalt cement.
- c. Asphalt viscosity or penetration grade.
- d. Number of blows of hammer compaction per side of molded specimen.
- e. Mixing temperature.

- f. Compaction temperature.
- g. Temperature of mix when discharged from the mixer.
- h. Temperature-viscosity relationship of the asphalt cement.
- i. Plot of the combined gradation on the Federal Highway Administration (FHWA) 45 power gradation curve.
- j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.
- k. Percent natural sand.
- l. Percent fractured faces.
- m. Percent elongated particles.
- n. Tensile Strength Ratio (TSR).
- o. Antistrip agent (if required).

The Contractor shall submit samples to the Engineer, upon request, for job mix formula verification testing.

The job mix formula for each mixture shall be in effect until modified in writing by the Engineer. Should a change in sources of materials be made, a new job mix formula must be approved by the Engineer before the new material is used.

TABLE 1. MARSHALL DESIGN CRITERIA

TEST PROPERTY	Gross Wgt. > 60,000 lbs Or Tire Pressure > 100 PSI
Number of blows	75
Stability, pounds (newtons) minimum	2150 (9555)
Flow, 0.01 in. (0.25 mm)	10-14
Air voids (percent)	2.8-4.2
Voids filled with asphalt (percent)	65-75
Percent voids in mineral aggregate, minimum	See Table 2

**TABLE 2. MINIMUM PERCENT
VOIDS IN MINERAL AGGREGATE**

Nominal Maximum Aggregate Size 1/		Minimum Voids in Mineral Aggregate, Percent Design Air Voids
in.	mm	Percent
1/2	12.5	13
3/4	19.5	12
1	25.0	11
1-1/4	31.25	10

1/ The nominal maximum aggregate size is the next larger sieve size than the sieve on which at least 10 percent of the total aggregate is retained.

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory screens, will conform to the gradation or gradations specified in Table 3 when tested in accordance with ASTM Standard C 136 and C 117.

The gradations in Table 3 represent the limits which shall determine the suitability of aggregate for use from the sources of supply. The aggregate, as selected (and used in the JMF), shall have a gradation within the limits designated in Table 3 and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa, but shall be well graded from coarse to fine.

Deviations from the final approved mix design for bitumen content and gradation of aggregates shall be within the action limits for individual measurements as specified in paragraph 401-6.5a. The limits still will apply if they fall outside the master grading band in Table 3.

The maximum size aggregate used shall not be more than one-half of the thickness of the course being constructed.

TABLE 3. AGGREGATE - BITUMINOUS PAVEMENTS

Sieve Size	Percentage by Weight Passing Sieves 1" max
1-1/4 in. (31.25 mm)	-
1 in. (25.0 mm)	100
3/4 in. (19.0 mm)	76-98
1/2 in. (12.5 mm)	66-86
3/8 in. (9.5 mm)	57-77
No. 4 (4.75 mm)	40-60
No. 8 (2.36 mm)	26-46
No. 16 (1.18 mm)	17-37
No. 30 (0.60 mm)	-
No. 50 (0.30 mm)	7-19

TABLE 3. AGGREGATE - BITUMINOUS PAVEMENTS

Sieve Size	Percentage by Weight Passing Sieves 1" max
No. 100 (0.15 mm)	6-16
No. 200 (0.075 mm)	3-6
Asphalt percent	
Stone or gravel	4.5-7.0

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute Manual Series No. 2 (MS-2), Appendix A.

401-3.3 RECYCLED ASPHALT CONCRETE. Recycled asphalt concrete shall consist of reclaimed asphalt pavement (RAP), coarse aggregate, fine aggregate, mineral filler, asphalt cement, and recycling agent, if necessary. Reclaimed asphalt pavement may be used for all courses.

The RAP shall be of a consistent gradation and asphalt content. The Contractor may obtain the RAP from the job site or existing source.

All new aggregates used in the recycled mix shall meet the requirements of paragraph 401-2.1. New bituminous material shall meet the requirements of paragraph 401-2.3. Recycling agents shall meet the requirements of ASTM D 4552.

The recycled asphalt concrete mix shall be designed using procedures contained in the Asphalt Institute's Manual Series Number 20 (MS-20), Asphalt Hot-Mix Recycling, in conjunction with MS-2 (MS-2). The job mix shall meet the requirements of paragraph 401-3.2. In addition to the requirements of paragraph 401-3.2, the job mix formula shall indicate the percent of reclaimed asphalt pavement, the percent and viscosity grade of new asphalt, the percent and grade of hot-mix recycling agent (if used), and the properties (including viscosity and penetration) of the asphalt blend.

The Contractor shall submit documentation to the Engineer, indicating that the mixing equipment proposed for use is adequate to mix the percent of RAP shown in the job mix formula and meet all local and national environmental regulations.

401-3.4 TEST SECTION. Prior to full production, the Contractor shall prepare and place a quantity of bituminous mixture according to the job mix formula. The amount of mixture should be sufficient to construct a test section 60 long and 20 wide, placed in two lanes, with a longitudinal cold joint, and shall be of the same depth specified for the construction of the course which it represents. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same type and weight to be used on the remainder of the course represented by the test section.

Three random samples shall be taken at the plant and tested for stability, flow, and air voids in accordance with paragraph 401-5.1a(2). Three randomly selected cores shall be taken from the finished pavement mat, and three from the longitudinal joint, and tested in accordance with paragraph 401-5.1b(4). Random sampling shall be in accordance with procedures contained in ASTM D 3665.

Stability, flow, and air voids shall be evaluated in accordance with paragraph 401-5.2b. Mat density shall be evaluated in accordance with paragraph 401-5.2c. Joint density shall be evaluated in accordance with paragraph 401-5.2d. The test section shall be considered acceptable if the percentage of material within limits (PWL) is 90 or more.

Two random samples of mixture shall be taken at the plant and tested for aggregate gradation and asphalt content in accordance with paragraphs 401-6.3a and 3b and evaluated in accordance with paragraphs 401-6.5a and 5b. The test section shall be considered acceptable if the gradation and asphalt content are within the limits specified in paragraphs 401-6.5a and 5b.

Voids in the mineral aggregate (VMA), for each plant sample, shall be computed in accordance with procedures contained in Chapter III, MARSHALL METHOD OF MIX DESIGN, of the Asphalt Institute's Manual Series No. 2 (MS-2), Mix Design for Asphalt Concrete.

Voids filled with asphalt, for each plant sample, shall be computed as follows:

- a. Determine asphalt content in percentage by volume using:

$$I = \frac{P_b \times G_{mb}}{G_b}$$

Where:

I = Percentage by volume of asphalt

P_b = Percentage by weight of asphalt

G_{mb} = Bulk specific gravity of compacted mixture

G_b = Specific gravity of asphalt

- b. Determine percent voids filled with asphalt as follows:

$$VF = \frac{I}{I + P_a} \times 100$$

Where:

VF = Percent voids filled with asphalt

I = Percentage by volume of asphalt

P_a = Percent air voids

The test section shall be considered acceptable if the voids in the mineral aggregate and the voids filled with asphalt are within the limits of Table 1.

If the test section should prove to be unsatisfactory, the necessary adjustments to the job mix formula, plant operation, placing procedures, and/or rolling procedures shall be made. A second test section shall then be placed. If the second test section also does not meet specification requirements, both sections shall be removed at the Contractor's expense. Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Any additional sections that do not conform to specification requirements shall be removed at the Contractor's expense. Full production shall not begin until a satisfactory section has been constructed and accepted by the Engineer. The initial test section and any subsequent section that meets specification requirements shall be paid for in accordance with paragraph 401-8.1.

Job mix control testing shall be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the job mix formula. It should be recognized that the aggregates produced by the plant may not satisfy the gradation requirements or produce a mix that exactly meets the JMF. In those instances, it will be necessary to reevaluate and redesign the mix using plant-produced aggregates. Specimens should be prepared and the optimum bitumen content determined in the same manner as for the original design tests.

401-3.5 TESTING LABORATORY. The laboratory used to develop the job mix formula shall meet the requirements of ASTM D 3666. A certification signed by the manager of the laboratory stating that it meets these requirements shall be submitted to the Engineer prior to the start of construction. The certification shall contain as a minimum:

- a. Qualifications of personnel; laboratory manager, supervising technician, and testing technicians.
- b. A listing of equipment to be used in developing the job mix.
- c. A copy of the laboratory's quality control system.
- d. Evidence of participation in the AASHTO Materials Reference Laboratory (AMRL) program.

CONSTRUCTION METHODS

401-4.1 WEATHER LIMITATIONS. The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the Engineer, if requested; however, all other requirements including compaction shall be met.

TABLE 4. BASE TEMPERATURE LIMITATIONS		
Mat Thickness	Base Temperature (Minimum)	
	Deg. F	Deg. C
3 in. (7.5 cm) or greater	40	4
Greater than 1 in. (2.5 cm) but less than 3 in. (7.5 cm)	45	7
1 in. (2.5 cm) or less	50	10

401-4.2 BITUMINOUS MIXING PLANT. Plants used for the preparation of bituminous mixtures shall conform to the requirements of ASTM D 995 with the following changes:

a. Requirements for All Plants.

(1) **Truck Scales.** The bituminous mixture shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed as often as the Engineer deems necessary to assure their accuracy. Scales shall conform to the requirements of the General Provisions, Section 90-01.

(2) **Testing Facilities.** The Contractor shall provide laboratory facilities at the plant for the use of the Engineer's acceptance testing and the Contractor's quality control testing, in accordance with paragraph 401-6.2d.

(3) **Inspection of Plant.** The Engineer, or Engineer's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant; verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

(4) **Storage Bins and Surge Bins.** Paragraph 3.9 of ASTM D 995 is deleted. Instead, the following applies. Use of surge and storage bins for temporary storage of hot bituminous mixtures will be permitted as follows:

- (a) The bituminous mixture may be stored in surge bins for period of time not to exceed 3 hours.
- (b) The bituminous mixture may be stored in insulated storage bins for a period of time not to exceed 24 hours.

The bins shall be such that mix drawn from them meets the same requirements as mix loaded directly into trucks.

If the Engineer determines that there is an excessive amount of heat loss, segregation, or oxidation of the mixture due to temporary storage, no overnight storage will be allowed.

401-4.3 HAULING EQUIPMENT. Trucks used for hauling bituminous mixtures shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of paraffin oil, lime solution, or other approved material. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

401-4.4 BITUMINOUS PAVERS. Bituminous pavers shall be self-propelled with an activated screed, heated as necessary, and shall be capable of spreading and finishing courses of bituminous plant mix material which will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

If an automatic grade control device is used, the paver shall be equipped with a control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices which will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent.

The controls shall be capable of working in conjunction with any of the following attachments:

- a. Ski-type device of not less than 30 feet (9.14 m) in length.
- b. Taut stringline (wire) set to grade.
- c. Short ski or shoe.
- d. Laser control.

401-4.5 ROLLERS. Rollers of the vibratory, steel wheel, and pneumatic-tired type shall be used. They shall be in good condition, capable of operating at slow speeds to avoid displacement of the bituminous mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition.

The use of equipment which causes excessive crushing of the aggregate will not be permitted.

401-4.6 PREPARATION OF BITUMINOUS MATERIAL. The bituminous material shall be heated in a manner that will avoid local overheating and provide a continuous supply of the

bituminous material to the mixer at a uniform temperature. The temperature of the bituminous material delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325 degrees F (160 degrees C).

401-4.7 PREPARATION OF MINERAL AGGREGATE. The aggregate for the mixture shall be heated and dried prior to introduction into the mixer. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350 degrees F (175 degrees C) when the asphalt is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

401-4.8 PREPARATION OF BITUMINOUS MIXTURE. The aggregates and the bituminous material shall be weighed or metered and introduced into the mixer in the amount specified by the job mix formula.

The combined materials shall be mixed until the aggregate obtains a uniform coating of bitumen and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D 2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95 percent of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all bituminous mix upon discharge shall not exceed 0.5 percent.

401-4.9 PREPARATION OF THE UNDERLYING SURFACE. Immediately before placing the bituminous mixture, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Item P-602 or P-603, if required by the contract specifications.

401-4.10 TRANSPORTING, PLACING, AND FINISHING. The bituminous mixture shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 401-4.3. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Adequate artificial lighting shall be provided night placements. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.

The mix shall be placed and compacted at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 250 degrees F (107 degrees C).

Upon arrival, the mixture shall be placed to the full width by a bituminous paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and conform to the grade and contour indicated. The speed of the paver shall

be regulated to eliminate pulling and tearing of the bituminous mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of [] feet except where edge lanes require less width to complete the area. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 foot (30 cm); however, the joint in the surface top course shall be at the centerline of the pavement. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course.

Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m).

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools.

401-4.11 COMPACTION OF MIXTURE. After placing, the mixture shall be thoroughly and uniformly compacted by rolling. The surface shall be compacted as soon as possible when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor.

The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained.

To prevent adhesion of the mixture to the roller, the wheels shall be kept properly moistened (and scrapers used), but excessive water will not be permitted.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with hand tampers.

Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

401-4.12 JOINTS. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade. The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent

lane. In both methods, all contact surfaces shall be given a tack coat of bituminous material before placing any fresh mixture against the joint.

Longitudinal joints which are irregular, damaged, uncompacted, or otherwise defective shall be cut back to expose a clean, sound surface for the full depth of the course. All contact surfaces shall be given a tack coat of bituminous material prior to placing any fresh mixture against the joint.

MATERIAL ACCEPTANCE

401-5.1 ACCEPTANCE SAMPLING AND TESTING. All acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the Engineer at no cost to the Contractor. Testing organizations performing these tests shall meet the requirements of ASTM D 3666. All equipment in Contractor furnished laboratories shall be calibrated by the testing organization prior to the start of operations.

a. Plant-Produced Material. Plant-produced material shall be tested for stability, flow, and air voids on a lot basis. Sampling shall be from material deposited into trucks at the plant or from trucks at the job site. A lot will consist of:

- one day's production not to exceed 2,000 tons (1 814 000 kg), or
- a half day's production where a day's production is expected to consist of between 2,000 and 4,000 tons (1 814 000 and 3 628 000 kg), or
- similar subdivisions for tonnages over 4,000 tons (3 628 000 kg).

Where more than one plant is simultaneously producing material for the job, the lot sizes shall apply separately for each plant.

(1) Sampling. Each lot will consist of four equal sublots. Sufficient material for preparation of test specimens will be sampled by the Engineer on a random basis, in accordance with the procedures contained in ASTM D 3665. One set of laboratory compacted specimens will be prepared for each subplot in accordance with ASTM D 1559, paragraph 4.5, at the number of blows required by paragraph 401-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test portions prepared from the same sample increment.

The sample of bituminous mixture may be put in a covered metal tin and placed in an oven for not less than 30 minutes nor more than 60 minutes to stabilize to compaction temperature. The compaction temperature of the specimens should be as specified in the job mix formula.

(2) Testing. Sample specimens shall be tested for stability and flow in accordance with ASTM D 1559, paragraph 5. Air voids will be determined by the Engineer in accordance with ASTM D 3203.

Prior to testing, the bulk specific gravity of each test specimen shall be measured by the Engineer in accordance with ASTM D 2726 using the procedure for laboratory-prepared thoroughly dry specimens, or ASTM D 1188, whichever is applicable, for use in computing air voids and pavement density.

For air voids determination, the theoretical maximum specific gravity of the mixture shall be measured for each subplot in accordance with ASTM D 2041, Type C, D or E container. The value used in the air voids computation for each subplot shall be based on the maximum specific gravity measurement for the subplot.

The stability and flow for each subplot shall be computed by averaging the results of all test specimens representing that subplot.

(3) **Acceptance.** Acceptance of plant produced material for stability, flow, and air voids shall be determined by the Engineer in accordance with the requirements of paragraph 401-5.2b.

b. Field Placed Material. Material placed in the field shall be tested for mat and joint density on a lot basis.

(1) **Mat Density.** The lot size shall be the same as that indicated in paragraph 401-5.1a and shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. Cores shall not be taken closer than one foot from a transverse or longitudinal joint.

(2) **Joint Density.** The lot size shall be the total length of longitudinal joints constructed by a lot of material as defined in paragraph 401-5.1a. The lot shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665.

(3) **Sampling.** Samples shall be neatly cut with a core drill or other approved equipment. The minimum diameter of the sample shall be three inches. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples and filling the cored pavement. Cored holes shall be filled in a manner acceptable to the Engineer and within one day after sampling.

(4) **Testing.** The bulk specific gravity of each cored sample will be measured by the Engineer in accordance with ASTM D 2726 or ASTM D 1188, whichever is applicable. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the average bulk specific gravity of all laboratory prepared specimens for the lot, as determined in paragraph 401-5.1a(2).

(5) **Acceptance.** Acceptance of field placed material for mat density will be determined by the Engineer in accordance with the requirements of paragraph 401-5.2c. Acceptance for joint density will be determined in accordance with the requirements of paragraph 401-5.2d.

c. Partial Lots — Plant-Produced Material. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and Engineer agree in writing to allow overages or other minor tonnage placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot.

The last batch produced where production is halted will be sampled, and its properties shall be considered as representative of the particular subplot from which it was taken. Where three sublots are produced, they shall constitute a lot. Where one or two sublots are produced, they shall be incorporated into the next lot, and the total number of sublots shall be used in the acceptance plan calculation, i.e., $n = 5$ or $n = 6$, for example.

d. Partial Lots — Field Placed Material. The lot size for field placed material shall correspond to that of the plant material, except that, in no cases, shall less than three (3) cored samples be obtained, i.e., $n = 3$.

401-5.2 ACCEPTANCE CRITERIA.

a. General. Acceptance will be based on the following characteristics of the bituminous mixture and completed pavement as well as the implementation of the Contractor Quality Control plan and test results:

- (1) Stability
- (2) Flow
- (3) Air voids
- (4) Mat density
- (5) Joint density
- (6) Thickness
- (7) Smoothness
- (8) Grade

Stability, flow, and air voids will be evaluated for acceptance in accordance with paragraph 401-5.2b. Mat density will be evaluated for acceptance in accordance with paragraph 401-5.2c. Joint density will be evaluated for acceptance in accordance with paragraph 401-5.2d.

Acceptance for mat density and air voids will be based on the criteria contained in paragraph 401-5.2f(1). Acceptance for stability and flow will be based on the criteria contained in paragraph 401-5.2f(2). Acceptance for joint density will be based on the criteria contained in paragraph 401-5.2f(3). Thickness will be evaluated by the Engineer for compliance in accordance with paragraph 401-5.2f(4). Acceptance for smoothness will be based on the criteria

contained in paragraph 401-5.2f(5). Acceptance for grade will be based on the criteria contained in paragraph 401-5.2f(6).

The Engineer may at any time, notwithstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of bituminous mixture which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix temperature. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the Engineer, and if it can be demonstrated in the laboratory, in the presence of the Engineer, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b. Stability, Flow, Air Voids. Evaluation for acceptance of each lot of plant-produced material for stability, flow, and air voids shall be based on PWL. The Contractor shall target production quality to achieve 90 PWL or higher.

c. Mat Density. Evaluation for acceptance of each lot of in-place pavement for mat density shall be based on PWL. The Contractor shall target production quality to achieve 90 PWL or higher.

d. Joint Density. Evaluation for acceptance of each lot of in-place pavement for joint density shall be based on PWL. The Contractor shall target production quality to achieve 90 PWL or higher.

e. Percentage of Material Within Specification Limits (PWL). The percentage of material within specification limits (PWL) shall be determined in accordance with procedures specified in Section 110 of the General Provisions. The specification tolerance limits (L) and (U) are contained in Table 5.

f. Acceptance Criteria.

(1) **Mat Density and Air Voids.** If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. Acceptance and payment for the lot shall be determined in accordance with paragraph 401-8.1.

(2) **Stability and Flow.** If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. If the PWL is less than 90 percent, the Contractor shall determine the reason and take corrective action. If the PWL is below 80 percent, the Contractor must stop production and make adjustments to the mix.

(3) **Joint Density.** If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. If the PWL is less than 90 percent, the Contractor shall evaluate the method of compacting joints. If the PWL is below 80 percent, the Contractor shall stop production until the reason for poor compaction has been determined.

(4) **Thickness.** Thickness shall be evaluated for compliance by the Engineer to the requirements shown on the plans. Measurements of thickness shall be made by the Engineer using the cores extracted for each subplot for density measurement.

(5) **Smoothness.** The finished surfaces of the pavement shall not vary more than $\frac{1}{4}$ inch for the surface course. Each lot shall be evaluated with a 12 foot (3.6 m) straightedge. The lot size shall be 2,000 square yards (1 650 square meters). Measurements will be made perpendicular and parallel to the centerline at distances not to exceed 50 feet (15.2 m). When more than 15 percent of all measurements within a lot exceed the specified tolerance, the Contractor shall remove the deficient area and replace with new material. Sufficient material shall be removed to allow at least one inch of asphalt concrete to be placed. Skin patching shall not be permitted. High point may be ground off.

(6) **Grade.** The finished surface of the pavement shall not vary from the gradeline elevations and cross sections shown on the plans by more than $\frac{1}{2}$ inch (12.70 mm). The finished grade of each lot will be determined by running levels at intervals of 50 feet (15.2 m) or less longitudinally and transversely to determine the elevation of the completed pavement. The lot size shall be 2,000 square yards (1 650 square meters). When more than 15 percent of all the measurements within a lot are outside the specified tolerance, the Contractor shall remove the deficient area and replace with new material. Sufficient material shall be removed to allow at least one inch of asphalt concrete to be placed. Skin patching for correcting low areas shall not be permitted. High points may be ground off.

g. **Outliers.** All individual tests for mat density and air voids shall be checked for outliers (test criterion) in accordance with ASTM E 178, at a significance level of 5 percent. Outliers shall be discarded, and the PWL shall be determined using the remaining test values.

TABLE 5. MARSHALL ACCEPTANCE LIMITS FOR STABILITY, FLOW, AIR VOIDS, DENSITY

TEST PROPERTY	Pavements Designed for Aircraft Gross Weights of 60,000 Lbs. or more or Tire Pressure Greater than 100 Psi	
	75	
Number of Blows	Specification Tolerance	
	L	U
Stability, minimum, pounds	1800	-
Flow, 0.01-inch	8	16
Air Voids Total Mix, percent	2.0	5.0
Density, percent	96.3	-

Joint density, percent	93.3	-
------------------------	------	---

TABLE 6. TABLE FOR ESTIMATING PERCENT OF LOT WITHIN LIMITS (PWL)

	Percent Within Limits' (PWL), P_L , and P_U					
	Positive Values of Q					
n=3	n=4	n=5	n=6	n=7	n=8	
99	1.1541	1.4700	1.6714	1.8008	1.8888	1.9520
98	1.1524	1.4400	1.6016	1.6982	1.7612	1.8053
97	1.1496	1.4100	1.5427	1.6181	1.6661	1.6993
96	1.1456	1.3800	1.4897	1.5497	1.5871	1.6127
95	1.1405	1.3500	1.4407	1.4887	1.5181	1.5381
94	1.1342	1.3200	1.3946	1.4329	1.4561	1.4716
93	1.1269	1.2900	1.3508	1.3810	1.3991	1.4112
92	1.1184	1.2600	1.3088	1.3323	1.3461	1.3554
91	1.1089	1.2300	1.2683	1.2860	1.2964	1.3032
90	1.0982	1.2000	1.2290	1.2419	1.2492	1.2541
89	1.0864	1.1700	1.1909	1.1995	1.2043	1.2075
88	1.0736	1.1400	1.1537	1.1587	1.1613	1.1630
87	1.0597	1.1100	1.1173	1.1191	1.1199	1.1204
86	1.0448	1.0800	1.0817	1.0808	1.0800	1.0794
85	1.0288	1.0500	1.0467	1.0435	1.0413	1.0399
84	1.0119	1.0200	1.0124	1.0071	1.0037	1.0015
83	0.9939	0.9900	0.9785	0.9715	0.9672	0.9643
82	0.9749	0.9600	0.9452	0.9367	0.9325	0.9281
81	0.9550	0.9300	0.9123	0.9025	0.8966	0.8928
80	0.9342	0.9000	0.8799	0.8690	0.8625	0.8583
79	0.9124	0.8700	0.8478	0.8360	0.8291	0.8245
78	0.8897	0.8400	0.8160	0.8036	0.7962	0.7915
77	0.8662	0.8100	0.7846	0.7716	0.7640	0.7590
76	0.8417	0.7800	0.7535	0.7401	0.7322	0.7271
75	0.8165	0.7500	0.7226	0.7089	0.7009	0.6958
74	0.7904	0.7200	0.6921	0.6781	0.6701	0.6649
73	0.7636	0.6900	0.6617	0.6477	0.6396	0.6344
72	0.7630	0.6600	0.6316	0.6176	0.6095	0.6044
71	0.7077	0.6300	0.6016	0.5878	0.5798	0.5747
70	0.6787	0.6000	0.5719	0.5583	0.5504	0.5454
69	0.6490	0.5700	0.5423	0.5290	0.5213	0.5164
68	0.6187	0.5400	0.5129	0.4999	0.4924	0.4877

67	0.5878	0.5100	0.4836	0.4710	0.4638	0.4592
66	0.5563	0.4800	0.4545	0.4424	0.4354	0.4310
65	0.5242	0.4500	0.4255	0.4139	0.4073	0.4031
64	0.4916	0.4200	0.3967	0.3856	0.3793	0.3753
63	0.4586	0.3900	0.3679	0.3575	0.3515	0.3477
62	0.4251	0.3600	0.3392	0.3295	0.3239	0.3203
61	0.3911	0.3300	0.3107	0.3016	0.2964	0.2931
60	0.3568	0.3000	0.2822	0.2738	0.2691	0.2660
59	0.3222	0.2700	0.2537	0.2461	0.2418	0.2391
58	0.2872	0.2400	0.2254	0.2186	0.2147	0.2122
57	0.2519	0.2100	0.1971	0.1911	0.1877	0.1855
56	0.2164	0.1800	0.1688	0.1636	0.1613	0.1592
55	0.1806	0.1500	0.1408	0.1363	0.1338	0.1322
54	0.1447	0.1200	0.1125	0.1090	0.1070	0.1057
53	0.1087	0.0900	0.0843	0.0817	0.0802	0.0792
52	0.0725	0.0600	0.0562	0.0544	0.0534	0.0528
51	0.0363	0.0300	0.0281	0.0272	0.0267	0.0264
50	0.0	0.0	0.0	0.0	0.0	0.0

A lot is the quantity of material to be controlled and may represent a specified tonnage or a specified number of truckloads. The lot size, to be determined by the Engineer, should, for the most part, depend on the operational capacity of the plant, but shall in no case exceed 2,000 tons (1 814 000 kg) in accordance with paragraph 401-5q.1.

401-5.3 RESAMPLING PAVEMENT.

a. General. Resampling of a lot of pavement for mat density will be allowed if the Contractor requests, in writing, within 48 hours after receiving the written test results from the Engineer. A retest will consist of all the sampling and testing procedures contained in paragraphs 401-5.1b and 401-5.2c. Only one resampling per lot will be permitted.

(1) A redefined PWL shall be calculated for the resampled lot. The number of tests used to calculate the redefined PWL shall include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for Resampled Lots. The redefined PWL for a resampled lot shall be used to calculate the payment for that lot in accordance with Table 7.

c. **Outliers.** If the test within a lot include a very large or a very small value which appears to be outside the normal limits of variation, check for an outlier in accordance with ASTM E 178, at a significance level of 5 percent, to determine if this value should be discarded when computing the PWL.

401-5.4 LEVELING COURSE. Any course used for truing and leveling shall meet the requirements of paragraph 401-3.2 and 5.2b, but shall not be subject to the density requirements of paragraph 401-5.2c and 5.2d. The leveling course shall be compacted with the same effort used to achieve density of the test section. The truing and leveling course shall not exceed a nominal thickness of 1-½ inches (37.5 mm).

CONTRACTOR QUALITY CONTROL

401-6.1 GENERAL. The Contractor shall establish, provide, and maintain a Quality Control System which will provide reasonable assurance that all materials and completed construction submitted for acceptance conform to contract requirements whether manufactured or processed by the Contractor or procured from sub-contractors or vendors. Although guidelines are established and certain requirements are specified, they are minimum and the Contractor shall assume full responsibility for meeting all requirements.

The Contractor shall be prepared to discuss and present, at the preconstruction conference, his/her understanding of the quality control responsibilities for specific items as included in these specifications.

The Contractor shall provide the Engineer a certification stating that all of the testing equipment to be used is properly calibrated and will meet the specifications applicable for the specified test procedures. As a part of the process for approving the Contractor's plan, the Engineer may require the Contractor's technician to perform testing of samples to demonstrate an acceptable level of performance.

The Contractor shall perform quality control sampling, testing, and inspection during all phases of the work and shall perform them at a rate sufficient to ensure that the work conforms to the contract requirements, and at minimum test frequencies required by paragraph 401.6.3.

401-6.2 QUALITY CONTROL PLAN. The Contractor shall provide and maintain a Quality Control Plan (Plan) along with all the personnel, equipment, supplies and facilities necessary to obtain samples, perform and document test, and otherwise ensure the quality of the product.

The Contractor shall describe the Plan in a written document which shall be approved by the Engineer prior to the start of any production or construction. The written Plan shall be submitted to the Engineer for approval at least 10 days prior to the start of the operations.

No partial payment will be made for materials which are subject to specific quality control requirements without an approved Plan.

The Plan may be operated wholly or in part by the Contractor or an independent organization; however, the Plan's administration, including compliance with the Plan and its modification, shall remain the responsibility of the Contractor.

a. Plan Contents. The Plan shall be organized to address the following minimum items:

1. Quality control organization chart.
2. Area of responsibility and authority of each individual.
3. Names and qualifications of personnel as required by paragraphs 401-6.2c(1) and (2).
4. A listing of any outside organizations such as testing laboratories that will be employed by the contractor and a description of the services they will provide.
5. A testing plan which list the test required to be performed by the Contractor, the frequency of testing, sampling locations, and the location of the testing facilities.
6. Procedures for ensuring that test are taken in accordance with the testing plan, that they are documented, and that proper corrective actions are taken when necessary.
7. Procedures for ensuring that testing equipment is available, complies with specified standards and has been calibrated against certified standards.
8. Procedures for verifying that tests are taken in accordance with the appropriate ASTM standards.
9. Procedures for submittal of test results to the Engineer on a daily basis.

b. Plan Elements. The Plan shall address all elements which affect the quality of the asphalt concrete including:

1. Mix Design
2. Aggregate Grading
3. Quality of Materials
4. Stockpile Management
5. Proportioning
6. Mixing
7. Placing and Finishing

8. Joints

9. Compaction

10. Surface smoothness

c. Quality Control Organization. The Plan shall be implemented by the establishment of a separate Quality Control Organization. An organization chart shall be developed to show all quality control personnel and how these personnel integrate with other management, production, and construction functions and personnel.

The organizational chart shall identify all quality control staff by name and function, and shall indicate the total staff required to implement all elements of the quality control program, including inspection and testing functions for different items of work.

If an outside organization or independent testing laboratory is used for implementation of all or part of the Plan, the personnel assigned shall be subject to the qualification requirements of this paragraph. The organization chart shall indicate which personnel are contractor employees and which are provided by an outside organization.

The Quality Control Organization shall consist of the following minimum personnel:

1. Plan Administrator. The Plan Administrator shall be an employee of the Contractor, or a consultant engaged by the Contractor. The Plan Administrator shall have prior quality control experience on a project of comparable size and scope.

In addition, the Plan Administrator shall meet one of the following requirements:

- a. Professional Engineer with one year of airport paving experience acceptable to the Engineer.
- b. Engineer-in-Training with two years of airport paving experience acceptable to the Engineer.
- c. An individual with three years of highway and/or airport paving experience acceptable to the Engineer and with a Bachelor of Science Degree in Civil Engineering, Civil Engineering Technology or Construction.
- d. Construction Materials Technician certified at Level III by the National Institute for Certification in Engineering Technologies (NICET).
- e. Highway Materials Technician certified at Level III by NICET.
- f. Highway Construction Technician certified at Level III by NICET.

- g. A NICET certified Engineering Technician in Civil Engineering Technology with 5 years of highway and/or airport paving experience acceptable to the Engineer.

Certification at an equivalent level, by a State or nationally recognized organization will be acceptable in lieu of NICET certification.

The Plan Administrator shall have full authority to institute any and all actions necessary for the successful operation of the Plan to ensure compliance with the specifications. The Plan Administrator shall report directly to a responsible officer in the Contractor's organization. The Administrator may supervise the Plan on more than one project provided that they can be at the job site within one hour after being notified of a problem.

2. **Quality Control Technicians.** The Contractor shall provide a sufficient number of Quality Control Technicians to adequately implement the Plan. These personnel shall be either engineers, engineering technicians, or experienced craftsmen with qualifications equivalent to NICET Level II or higher in their appropriate field and shall have a minimum of 2 years experience in their area of expertise.

The Quality Control Technicians shall report directly to the Plan Administrator and shall perform the following functions:

- a. Inspection of all plant equipment used in proportioning and mixing to ensure proper calibration and operating condition.
- b. Performance of quality control tests necessary to adjust and control mix proportioning in accordance with the job mix formula.
- c. Inspection of all equipment used in placing, finishing, and compacting material to ensure proper operation condition.
- d. Inspection during construction to ensure placing, joint construction, and compaction is in conformance with the specifications and will produce a finished product that meets specification requirements.
- e. Performance of all quality control testing as required by paragraph 401-6.3, including density monitoring.

The Plan shall detail the criteria to be utilized to correct unsatisfactory production processes and construction practices.

Certification at an equivalent level, by a State or nationally recognized organization will be acceptable in lieu of NICET certification.

d. Testing Laboratory. The Plan must provide for a fully equipped asphalt laboratory located at the plant or job site. It shall be available for joint use by the Contractor for quality

control testing and by the Engineer for acceptance testing and must have adequate equipment for the performance of the tests required by these specifications. The Engineer shall have priority in use of the equipment necessary for acceptance testing.

The effective working area of the laboratory shall be a minimum of 150 square feet (14 square meters) with a ceiling height of not less than 7.5 feet (2.3 meters). Lighting shall be adequate to illuminate all working areas. It shall be equipped with heating and air conditioning units to maintain a temperature of 70 degrees F + 5 degrees (21 degrees C + 2.3 degrees C).

Laboratory facilities shall be kept clean and all equipment shall be maintained in proper working condition. The Engineer shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The Engineer will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

e. Sampling. The plan shall contain a statistically based procedure of random sampling which provides that all materials being produced have an equal chance of being selected for sampling and testing. The Engineer shall be provided the opportunity to witness all sampling.

f. Noncompliance. In cases where quality control activities do not comply with either the Contractor's Quality Control Program or the contract provisions, or where the Contractor fails to properly operate and maintain an effective Quality Control Program, the Engineer may:

1. Order the Contractor to replace ineffective or unqualified quality control personnel.
2. Carry out the functions and operations of the Contractor's approved Quality Control Program. Cost incurred by the Owner to operate the Quality Control Program or to otherwise remedy the Contractor's non-compliance with quality related provisions of the Contract shall be deducted from the total amount due the Contractor.

401-6.3 QUALITY CONTROL TESTING. The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved Quality Control Plan. The testing program shall include, but not necessarily limited to, tested for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness. The Contractor shall employ random sampling procedures for obtaining test samples.

a. Asphalt Content. A minimum of two extraction tests shall be performed per lot in accordance with ASTM D 2172 for determination of asphalt content. The weight of ash portion of the extraction test, as described in ASTM D 2172, shall be determined as part of the first extraction test performed at the beginning of plant production; and as part of every tenth extraction test performed thereafter, for the duration of plant production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture.

The use of the nuclear method for determining asphalt content in accordance with ASTM D 4125 is permitted, provided that it is calibrated for the specific mix being used.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with AASHTO T 30 and ASTM C 136 (Dry Sieve). When asphalt content is determined by the nuclear method, aggregate gradation shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix or continuous mix plants, and tested in accordance with ASTM C 136 (dry sieve) using actual batch weights to determine the combined aggregate gradation of the mixture.

c. Moisture Content of Aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

d. Moisture Content of Mixture. The moisture content of the mixture shall be determined once per lot in accordance with ASTM D 1461.

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the bitumen in the storage tank, the mixture at the plant, and the mixture at the job site.

f. In-Place Density Monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D 2950.

g. Additional Testing. Any additional testing that the Contractor deems necessary to control the process may be performed at the Contractor's option.

h. Monitoring. The Engineer reserves the right to monitor any or all of the above testing.

401-6.4 SAMPLING. When directed by the Engineer, the Contractor shall sample and test any material which appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

401-6.5 CONTROL CHARTS. The Contractor shall maintain linear control charts both for individual measurements and range (i.e., difference between highest and lowest measurements) for aggregate gradation and asphalt content.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the

Contractor is not taking satisfactory corrective action, the Engineer may suspend production or acceptance of the material.

a. **Individual Measurements.** Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation and asphalt content. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

CONTROL CHART LIMITS FOR INDIVIDUAL MEASUREMENTS		
Sieve	Action Limit	Suspension Limit
¾ inch (19.0 mm)	0%	0%
½ inch (12.5 mm)	+/-6%	+/-9%
⅜ inch (9.5 mm)	+/-6%	+/-9%
No. 4 (4.75 mm)	+/-6%	+/-9%
No. 16 (1.18 mm)	+/-5%	+/-7.5%
No. 50 (0.30 mm)	+/-3%	+/-4.5%
No. 200 (0.075 mm)	+/-2%	+/-3%
Asphalt Content	+/-0.45%	+/-0.70%

b. **Range.** Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

CONTROL CHART LIMITS BASED ON RANGE (Based on $n = 2$)	
Sieve	Suspension Limit
½ inch (12.5 mm)	11 percent
⅜ inch (9.5 mm)	11 percent
No. 4 (4.75 mm)	11 percent
No. 16 (1.18 mm)	9 percent
No. 50 (0.30 mm)	6 percent
No. 200 (0.075 mm)	3.5 percent
Asphalt Content	0.8 percent

c. **Corrective Action.** The Quality Control Plan shall indicate that appropriate action shall be taken when the process is believed to be out of control. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

(1) One point falls outside the Suspension Limit line for individual measurements or range; or

(2) Two points in a row fall outside the Action Limit line for individual measurements.

401-6.6 QUALITY CONTROL REPORTS. The Contractor shall maintain records and shall submit reports of quality control activities daily, in accordance with the Contractor Quality Control Plan.

METHOD OF MEASUREMENT

401 7.1 MEASUREMENT. Plant mix bituminous concrete pavement shall be measured by the number of tons of bituminous mixture used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

401-8.1 PAYMENT. Payment for an accepted lot of bituminous concrete pavement shall be made at the contract unit price per ton for bituminous mixture adjusted according to paragraph 401-8.1a, subject to the limitation that:

The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

a. Basis of Adjusted Payment. The pay factor for each individual lot shall be calculated in accordance with Table 6. A pay factor shall be calculated for both mat density and air voids. The lot pay factor shall be the higher of the two values when calculations for both mat density and air voids are 100 percent or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either mat density or air voids is 100 percent or higher. The lot pay factor shall be the lower of the two values when calculations for both mat density and air voids are less than 100 percent.

TABLE 6. PRICE ADJUSTMENT SCHEDULE ¹

Percentage of Material Within Specification Limits (PWL)	Lot Pay Factor (Percent of Contract Unit Price)
96 – 100	106
90 – 95	PWL + 10
75 – 89	0.5 PWL + 55
55 – 74	1.4PWL – 12
Below 55	Reject ²

¹ ALTHOUGH IT IS THEORETICALLY POSSIBLE TO ACHIEVE A PAY FACTOR OF 106 PERCENT FOR EACH LOT, ACTUAL PAYMENT ABOVE 100 PERCENT SHALL BE SUBJECT TO THE TOTAL PROJECT PAYMENT LIMITATION SPECIFIED IN PARAGRAPH 401-8.1.

² The lot shall be removed and replaced. However, the Engineer may decide to allow the rejected lot to remain. In that case, if the Engineer and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50 percent of the contract unit price and the total project payment shall be reduced by the amount withheld for the rejected lot.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 401-8.1. Payment in excess of 100 percent for accepted lots of bituminous concrete pavement shall be used to offset payment for accepted lots of bituminous concrete pavement that achieve a lot pay factor less than 100 percent.

TABLE 6. PRICE ADJUSTMENT SCHEDULE ¹

Percentage of Material Within Specification Limits (PWL)	Lot Pay Factor (Percent of Contract Unit Price)
93 – 100	103
90 – 93	PWL + 10
70 – 89	0.125PWL + 88.75
40 – 69	0.75PWL + 45
Below 40	Reject ²

¹ ALTHOUGH IT IS THEORETICALLY POSSIBLE TO ACHIEVE A PAY FACTOR OF 103 PERCENT FOR EACH LOT, ACTUAL PAYMENT ABOVE 100 PERCENT SHALL BE SUBJECT TO THE TOTAL PROJECT PAYMENT LIMITATION SPECIFIED IN PARAGRAPH 401-8.1.

² The lot shall be removed and replaced. However, the Engineer may decide to allow the rejected lot to remain. In that case, if the Engineer and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50 percent of the contract unit price AND THE TOTAL PROJECT PAYMENT LIMITATION SHALL BE REDUCED BY THE AMOUNT WITHHELD FOR THE REJECTED LOT.

b. **Payment.** Payment will be made under:

Item P-401-8.1a Bituminous Surface Course—per ton

TESTING REQUIREMENTS

ASTM C 29	Unit Weight of Aggregate
ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	Test Method for Materials Finer than 75 μ m (No.200) Sieve in Mineral Aggregates by Washing
ASTM C 131	Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine
ASTM C 136	Sieve or Screen Analysis of Fine and Coarse Aggregates
ASTM C 183	Sampling of Hydraulic Cement
ASTM C 566	Total Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates
ASTM D 995	Requirements for Mixing Plants for Hot-Mixed Hot-Laid Bituminous Paving Mixtures
ASTM D 1188	Bulk Specific Gravity of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
ASTM D 1461	Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D 1559	Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2489	Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D 2726	Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface-Dry Specimens
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Methods

ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 3665	Random Sampling of Paving Materials
ASTM D 3666	Inspection and Testing Agencies for Bituminous Paving Materials
ASTM D 4125	Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4791	Flat or Elongated Particles in Coarse Aggregate
ASTM D 4867	Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM E 178	Practice for Dealing with Outlying Observations
AASHTO T 30	Mechanical Analysis of Extracted Aggregate
The Asphalt Institute's Manual No. 2 (MS-2)	Mix Design Methods for Asphalt Concrete
The Asphalt Institute's Manual No. 2 (MS-2)	Hot-Mix Recycling

MATERIAL REQUIREMENTS

ASTM D 242	Mineral Filler for Bituminous Paving Mixtures
ASTM D 946	Asphalt Cement for Use in Pavement Construction
ASTM D 3381	Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 4552	Classifying Hot-Mix Recycling Agents

END ITEM P-401

ITEM P-403 PLANT MIX BITUMINOUS PAVEMENTS (LEVELING COURSE)

DESCRIPTION

403-1.1 This item shall consist of a leveling course composed of mineral aggregate and bituminous material mixed in a central mixing plant and placed on a prepared course in accordance with these specifications and shall conform to the lines, grades, thicknesses, and typical cross sections shown on the plans. Each course shall be constructed to the depth, typical section, and elevation required by the plans and shall be rolled, finished, and approved before the placement of the next course.

MATERIALS

403-2.1 AGGREGATE. Aggregates shall consist of crushed stone or crushed gravel with other inert finely divided mineral aggregate maximum size aggregate 5/8". The portion of combined materials retained on the No. 4 (4.75 mm) sieve is coarse aggregate. The portion of combined materials passing the No. 4 (4.75 mm) sieve and retained on the No. 200 (0.075 mm) sieve is fine aggregate, and the portion passing the No. 200 (0.075 mm) sieve is mineral filler.

a. Coarse Aggregate. Coarse aggregate shall consist of sound, tough, durable particles, free from adherent films of matter that would prevent thorough coating and bonding with the bituminous material and be free from organic matter and other deleterious substances. The percentage of wear shall not be greater than 40 percent when tested in accordance with ASTM C 131. The sodium sulfate soundness loss shall not exceed 10 percent, or the magnesium sulfate soundness loss shall not exceed 13 percent, after five cycles, when tested in accordance with ASTM C 88.

Aggregate shall contain at least 70 percent by weight of individual pieces having two or more fractured faces and 85 percent by weight having at least one fractured face. The area of each face shall be equal to at least 75 percent of the smallest midsectional area of the piece. When two fractured faces are contiguous, the angle between the planes of fractures shall be at least 30 degrees to count as two fractured faces. Fractured faces shall be obtained by crushing.

The aggregate shall not contain more than a total of 8 percent, by weight, of flat particles, elongated particles, and flat and elongated particles, when tested in accordance with ASTM D 4791 with a value of 5:1.

Slag shall be air-cooled, blast furnace slag, and shall have a compacted weight of not less than 70 pounds per cubic foot (1.12 mg/cubic meter) when tested in accordance with ASTM C 29.

b. Fine Aggregate. Fine aggregate shall consist of clean, sound, durable, angular shaped particles produced by crushing stone, or gravel that meets the requirements for wear and soundness specified for coarse aggregate. The aggregate particles shall be free from coatings of clay, silt, or other objectionable matter and shall contain no clay balls. The fine aggregate, including any blended material for the fine aggregate, shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.

Natural (non-manufactured) sand may be used to obtain the gradation of the aggregate blend or to improve the workability of the mix. The amount of sand to be added will be adjusted to produce mixtures conforming to requirements of this specification. [The fine aggregate shall not contain more than 15 percent natural sand by weight of total aggregates.] If used, the natural sand shall meet the requirements of ASTM D 1073 and shall have a plasticity index of not more than 6 and a liquid limit of not more than 25 when tested in accordance with ASTM D 4318.

The aggregate shall have sand equivalent values of 45 or greater when tested in accordance with ASTM D 2419.

c. **Sampling.** ASTM D 75 shall be used in sampling coarse and fine aggregate, and ASTM C 183 shall be used in sampling mineral filler.

403-2.2 MINERAL FILLER. If filler, in addition to that naturally present in the aggregate, is necessary, it shall meet the requirements of ASTM D 242.

403-2.3 BITUMINOUS MATERIAL. Bituminous material shall conform to the requirements of P-401. The Contractor shall furnish vendor's certified test reports for each lot of bituminous material shipped to the project. The vendor's certified test report for the bituminous material can be used for acceptance or tested independently by the Engineer.

403-2.4 PRELIMINARY MATERIAL ACCEPTANCE. Prior to delivery of materials to the job site, the Contractor shall submit certified test reports to the Engineer for the following materials:

a. **Coarse Aggregate.**

- (1) Percent of wear.
- (2) Soundness.
- (3) Unit weight of slag.
- (4) Percent fractured faces

b. **Fine Aggregate.**

- (1) Liquid limit.
- (2) Plasticity index.
- (3) Sand equivalent.

c. **Mineral Filler.**

d. **Bituminous Material.** Test results for bituminous material shall include temperature/viscosity charts for mixing and compaction temperatures.

The certifications shall show the appropriate ASTM tests for each material, the test results, and a statement that the material meets the specification requirement.

The Engineer may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

403-2.5 ANTI-STRIPPING AGENT. Any anti-stripping agent or additive if required shall be heat stable, shall not change the asphalt cement viscosity beyond specifications, shall contain no harmful ingredients, shall be added in recommended proportion by approved method, and shall be a material approved by the Department of Transportation of the State in which the project is located.

COMPOSITION

403-3.1 COMPOSITION OF MIXTURE. The bituminous plant mix shall be composed of a mixture of well-graded aggregate, filler and anti-strip agent if required, and bituminous material. The several aggregate fractions shall be sized, handled in separate size groups, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula (JMF).

403-3.2 JOB MIX FORMULA. No bituminous mixture for payment shall be produced until a job mix formula has been approved in writing by the Engineer. The bituminous mixture shall be designed using procedures contained in Chapter 5, MARSHALL METHOD OF MIX DESIGN, of the Asphalt Institute's

Manual Series No. 2 (MS-2), Mix Design Methods for Asphalt Concrete, sixth edition, and shall meet the requirements of Tables 1, 2 and 3.

Tensile Strength Ratio (TSR) of the composite mixture, as determined by ASTM D 4867, shall not be less than 75. Anti-stripping agent shall be added to the asphalt, as necessary, to produce a TSR of not less than 75. If an anti-strip agent is required, it will be provided by the Contractor at no additional cost to the Owner.

The job mix formula shall be submitted in writing by the Contractor to the Engineer at least [] days prior to the start of paving operations and shall include as a minimum:

- a. Percent passing each sieve size for total combined gradation, individual gradation of all aggregate stockpiles and percent by weight of each stockpile used in the job mix formula.
- b. Percent of asphalt cement.
- c. Asphalt performance, viscosity or penetration grade, and type of modifier if used.
- d. Number of blows of hammer compaction per side of molded specimen.
- e. Mixing temperature.
- f. Compaction temperature.
- g. Temperature of mix when discharged from the mixer.
- h. Temperature-viscosity relationship of the asphalt cement.
- i. Plot of the combined gradation on the Federal Highway Administration (FHWA) 45 power gradation curve.
- j. Graphical plots of stability, flow, air voids, voids in the mineral aggregate, and unit weight versus asphalt content.
- k. Percent natural sand.
- l. Percent fractured faces.
- m. Percent by weight of flat particles, elongated particles, and flat and elongated particles (and criteria).
- n. Tensile Strength Ratio (TSR).
- o. Anti-strip agent (if required).

The Contractor shall submit to the Engineer the results of verification testing of three (3) asphalt samples prepared at the optimum asphalt content. The average of the results of this testing shall indicate conformance with the job mix formula requirements specified in Tables 1, 2 and 3.

When the project requires asphalt mixtures of differing aggregate gradations, a separate job mix formula and the results of job mix formula verification testing must be submitted for each mix.

Table 1. Marshall Design Criteria

Test Property	-
Number of blows	75
Stability, pounds minimum	1800
Flow, 0.01 in.	8-16
Air voids (percent)	2-5
Percent voids in mineral aggregate, minimum	See Table 2.

Table 2. Minimum Percent Voids In Mineral Aggregate

Maximum Particle Size		Minimum Voids in Mineral Aggregate, percent
in	mm	Percent
½	12.5	16

The mineral aggregate shall be of such size that the percentage composition by weight, as determined by laboratory sieves, will conform to the gradation or gradations specified in Table 3 when tested in accordance with ASTM C 136 and C 117.

The gradations in Table 3 represent the limits that shall determine the suitability of aggregate for use from the sources of supply. The aggregate, as selected (and used in the JMF), shall have a gradation within the limits designated in Table 3 and shall not vary from the low limit on one sieve to the high limit on the adjacent sieve, or vice versa, but shall be well graded from coarse to fine.

Deviations from the final approved mix design for bitumen content and gradation of aggregates shall be within the action limits for individual measurements as specified in paragraph 403-6.5a. The limits still will apply if they fall outside the master grading band in Table 3.

The maximum size aggregate used shall not be more than one-half of the thickness of the course being constructed except where otherwise shown on the plans or ordered by the Engineer.

Table 3. Aggregate - Bituminous Pavements	Sieve Size	Percentage by Weight Passing Sieve
1 ½ in. (37.50 mm)		--
1 in. (25.0 mm)		--
¾ in. (19.0 mm)		100
½ in. (12.5 mm)		79-99
⅜ in. (9.5 mm)		68-88
No. 4 (4.75 mm)		48-68
No. 8 (2.36 mm)		33-53
No. 16 (1.18 mm)		20-40
No. 30 (0.60 mm)		14-30
No. 50 (0.30 mm)		9-21
No. 100 (0.15 mm)		6-16
No. 200 (0.075 mm)		3-6
Asphalt Percent:		
Stone or gravel		5.0-7.5

The aggregate gradations shown are based on aggregates of uniform specific gravity. The percentages passing the various sieves shall be corrected when aggregates of varying specific gravities are used, as indicated in the Asphalt Institute Manual Series No. 2 (MS-2), Chapter 3.

403-3.3 RECYCLED ASPHALT CONCRETE.

NOT USED

403-3.4 TEST SECTION. Prior to full production, the Contractor shall prepare and place a quantity of bituminous mixture according to the job mix formula. The amount of mixture shall be sufficient to construct a test section 200' ft. long and 15' ft. wide, placed in two lanes, with a longitudinal cold joint, and shall be of the same depth specified for the construction of the course which it represents. A cold joint is an exposed construction joint at least 4 hours old or whose mat has cooled to less than 160 °F. The underlying grade or pavement structure upon which the test section is to be constructed shall be the same as the remainder of the course represented by the test section. The equipment used in construction of the test section shall be the same type and weight to be used on the remainder of the course represented by the test section.

The test section shall be evaluated for acceptance as a single lot in accordance with the acceptance criteria in paragraph 403-5.1 and 403-6.3. The test section shall be divided into equal sublots. As a minimum the test section shall consist of 3 sublots.

The test section shall be considered acceptable if the average mat density of the test section cores is greater than or equal to 98 percent and the average joint density of the test section cores is greater than or equal to 95 percent. If the initial test section should prove to be unacceptable, the necessary adjustments to the job mix formula, plant operation, placing procedures, and/or rolling procedures shall be made. A second test section shall then be placed. If the second test section also does not meet specification requirements, both sections shall be removed at the Contractor's expense. Additional test sections, as required, shall be constructed and evaluated for conformance to the specifications. Any additional sections that are not acceptable shall be removed at the Contractor's expense. Full production shall not begin until an acceptable section has been constructed and accepted in writing by the Engineer. Once an acceptable test section has been placed, payment for the initial test section and the section that meets specification requirements shall be made in accordance with paragraph 403-8.1.

Job mix control testing shall be performed by the Contractor at the start of plant production and in conjunction with the calibration of the plant for the job mix formula. If the aggregates produced by the plant do not satisfy the gradation requirements or produce a mix that meets the JMF, it will be necessary to reevaluate and redesign the mix using plant-produced aggregates. Specimens shall be prepared and the optimum bitumen content determined in the same manner as for the original design tests.

403-3.5 JOB MIX (JMF) FORMULA LABORATORY. The Contractor's laboratory used to develop the job mix formula (JMF) shall meet the requirements of ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for developing the JMF must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction.

CONSTRUCTION METHODS

403-4.1 WEATHER LIMITATIONS. The bituminous mixture shall not be placed upon a wet surface or when the surface temperature of the underlying course is less than specified in Table 4. The temperature requirements may be waived by the Engineer, if requested; however, all other requirements including compaction shall be met.

Table 4. Base Temperature Limitations

Mat Thickness	Base Temperature (Minimum)	
	Deg. F	Deg. C
3 in. (7.5 cm) or greater	40	4
Greater than 1 in. (2.5 cm) but less than 3 in. (7.5 cm)	45	7
1 in. (2.5 cm) or less	50	10

403-4.2 BITUMINOUS MIXING PLANT. Plants used for the preparation of bituminous mixtures shall conform to the requirements of ASTM D 995 with the following changes:

a. Requirements for all plants include:

(1) **Truck Scales.** The bituminous mixture shall be weighed on approved scales furnished by the Contractor, or on certified public scales at the Contractor's expense. Scales shall be inspected and sealed as often as the Engineer deems necessary to assure their accuracy. Scales shall conform to the requirements of the General Provisions, Section 90-01.

In lieu of scales, and as approved by the Engineer, asphalt mixture weights may be determined by the use of an electronic weighing system equipped with an automatic printer that weighs the total paving mixture. Contractor must furnish calibration certification of the weighing system prior to mix production and as often thereafter as requested by the Engineer.

(2) Testing Facilities. The Contractor shall provide laboratory facilities at the plant for the use of the Engineer's acceptance testing and the Contractor's quality control testing. The Engineer will always have priority in the use of the laboratory. The lab shall have sufficient space and equipment so that both testing representatives (Engineer's and Contractor's) can operate efficiently. The lab shall also meet the requirements of ASTM D 3666. The plant testing laboratory shall have a floor space area of not less than 150 sq ft, with a ceiling height of not less than 7-½ feet. The laboratory shall be weather tight, sufficiently heated in cold weather, air-conditioned in hot weather to maintain temperatures for testing purposes of 70 °F +/- 5 °F. The plant testing laboratory shall be located on the plant site to provide an unobstructed view, from one of its windows, of the trucks being loaded with the plant mix materials.

Laboratory facilities shall be kept clean, and all equipment shall be maintained in proper working condition. The Engineer shall be permitted unrestricted access to inspect the Contractor's laboratory facility and witness quality control activities. The Engineer will advise the Contractor in writing of any noted deficiencies concerning the laboratory facility, equipment, supplies, or testing personnel and procedures. When the deficiencies are serious enough to be adversely affecting the test results, the incorporation of the materials into the work shall be suspended immediately and will not be permitted to resume until the deficiencies are satisfactorily corrected.

As a minimum, the plant testing laboratory shall have:

- a. Adequate artificial lighting
- b. Electrical outlets sufficient in number and capacity for operating the required testing equipment and drying samples
- c. Fire extinguishers (2), Underwriter's Laboratories approved
- d. Work benches for testing, minimum 2-½ feet by 10 feet
- e. Desk with 2 chairs
- f. Sanitary facilities convenient to testing laboratory
- g. Exhaust fan to outside air, minimum 12 in blade diameter
- h. A direct telephone line and telephone including a FAX machine operating 24 hours per day, seven days per week
- i. File cabinet with lock for Engineer
- j. Sink with running water, attached drain board and drain capable of handling separate material
- k. Metal stand for holding washing sieves
- l. Two element hot plate or other comparable heating device, with dial type thermostatic controls for drying aggregates
- m. Mechanical shaker and appropriate sieves (listed in JMF, Table 3) meeting the requirements of ASTM E-11 for determining the gradation of coarse and fine aggregates in accordance with ASTM C 136
- n. Marshall testing equipment meeting ASTM D 6926, ASTM D 6927, or ASTM D 5581 as necessary, automatic compaction equipment capable of compacting three specimens at once and other apparatus as specified in ASTM C 127, D 2172, D 2726, and D 2041
- o. Oven, thermostatically controlled, inside minimum 1 cubic foot
- p. Two volumetric specific gravity flasks, 500 CC
- q. Other necessary hand tools required for sampling and testing
- r. Library containing contract specifications, latest ASTM volumes 4.01, 4.02, 4.03 and 4.09, AASHTO standard specification parts I and II, and Asphalt Institute Publication MS-2
- s. Equipment for Theoretical Specific Gravity testing including a 4,000 cc pycnometer, vacuum pump capable of maintaining 30 ml mercury pressure and a balance, 16-20 gm with accuracy of 0.5 grams

- t. Extraction equipment, centrifuge and reflux types and Rotoflex equipment
- u. A masonry saw with diamond blade for trimming pavement cores and samples
- v. Telephone

Approval of the plant and testing laboratory by the Engineer requires all facilities and equipment to be in good working order during production, sampling and testing. Failure to provide the specified facilities shall be sufficient cause for disapproving bituminous plant operations.

The Owner shall have access to the lab and at the plant whenever Contractor is producing asphalt for the project.

(3) Inspection of Plant. The Engineer, or Engineer's authorized representative, shall have access, at all times, to all areas of the plant for checking adequacy of equipment; inspecting operation of the plant; verifying weights, proportions, and material properties; and checking the temperatures maintained in the preparation of the mixtures.

(4) Storage Bins and Surge Bins. Use of surge bins or storage bins for temporary storage of hot bituminous mixtures will be permitted as follows:

- a. The bituminous mixture may be stored in surge bins for a period of time not to exceed 3 hours.
- b. The bituminous mixture may be stored in insulated storage bins for a period of time not to exceed 24 hours.

The bins shall be such that mix drawn from them meets the same requirements as mix loaded directly into trucks.

If the Engineer determines that there is an excessive amount of heat loss, segregation or oxidation of the mixture due to temporary storage, no temporary storage will be allowed.

403-4.3 HAULING EQUIPMENT. Trucks used for hauling bituminous mixtures shall have tight, clean, and smooth metal beds. To prevent the mixture from adhering to them, the truck beds shall be lightly coated with a minimum amount of an approved asphalt release agent. Petroleum products shall not be used for coating truck beds. Each truck shall have a suitable cover to protect the mixture from adverse weather. When necessary, to ensure that the mixture will be delivered to the site at the specified temperature, truck beds shall be insulated or heated and covers shall be securely fastened.

403-4.4 BITUMINOUS PAVERS. Bituminous pavers shall be self-propelled with an activated heated screed, capable of spreading and finishing courses of bituminous plant mix material that will meet the specified thickness, smoothness, and grade. The paver shall have sufficient power to propel itself and the hauling equipment without adversely affecting the finished surface.

The paver shall have a receiving hopper of sufficient capacity to permit a uniform spreading operation. The hopper shall be equipped with a distribution system to place the mixture uniformly in front of the screed without segregation. The screed shall effectively produce a finished surface of the required evenness and texture without tearing, shoving, or gouging the mixture.

The paver shall be equipped with a control system capable of automatically maintaining the specified screed elevation. The control system shall be automatically actuated from either a reference line and/or through a system of mechanical sensors or sensor-directed mechanisms or devices that will maintain the paver screed at a predetermined transverse slope and at the proper elevation to obtain the required surface. The transverse slope controller shall be capable of maintaining the screed at the desired slope within plus or minus 0.1 percent.

The controls shall be capable of working in conjunction with any of the following attachments:

- a. Ski-type device of not less than 30 feet (9.14 m) in length

b. Taut stringline (wire) set to grade

c. Short ski or shoe

d. Laser control

If, during construction, it is found that the spreading and finishing equipment in use leaves tracks or indented areas, or produces other blemishes in the pavement and/or base course that are not satisfactorily corrected by the scheduled operations, the use of such equipment shall be discontinued and satisfactory equipment shall be provided by the Contractor.

403-4.5 ROLLERS. Rollers of the vibratory, steel wheel, and pneumatic-tired type shall be used. They shall be in good condition, capable of operating at slow speeds to avoid displacement of the bituminous mixture. The number, type, and weight of rollers shall be sufficient to compact the mixture to the required density while it is still in a workable condition.

All rollers shall be specifically designed and suitable for compacting hot mix bituminous concrete and shall be properly used. Rollers that impair the stability of any layer of a pavement structure or underlying soils shall not be used. Depressions in pavement surfaces caused by rollers shall be repaired by the Contractor at its own expense.

The use of equipment that causes crushing of the aggregate will not be permitted.

a. Nuclear Densometer. The Contractor shall have on site a nuclear densometer during all paving operations in order to assist in the determination of the optimum rolling pattern, type of roller and frequencies, as well as to monitor the effect of the rolling operations during production paving. The Contractor shall also supply a qualified technician during all paving operations to calibrate the nuclear densometer and obtain accurate density readings for all new bituminous concrete. These densities shall be supplied to the Engineer upon request at any time during construction. No separate payment will be made for supplying the density gauge and technician.

403-4.6 PREPARATION OF BITUMINOUS MATERIAL. The bituminous material shall be heated in a manner that will avoid local overheating and provide a continuous supply of the bituminous material to the mixer at a uniform temperature. The temperature of the bituminous material delivered to the mixer shall be sufficient to provide a suitable viscosity for adequate coating of the aggregate particles, but shall not exceed 325 °F (160 °C), unless otherwise required by the manufacturer.

403-4.7 PREPARATION OF MINERAL AGGREGATE. The aggregate for the mixture shall be heated and dried prior to introduction into the mixer. The maximum temperature and rate of heating shall be such that no damage occurs to the aggregates. The temperature of the aggregate and mineral filler shall not exceed 350 °F (175 °C) when the asphalt is added. Particular care shall be taken that aggregates high in calcium or magnesium content are not damaged by overheating. The temperature shall not be lower than is required to obtain complete coating and uniform distribution on the aggregate particles and to provide a mixture of satisfactory workability.

403-4.8 PREPARATION OF BITUMINOUS MIXTURE. The aggregates and the bituminous material shall be weighed or metered and introduced into the mixer in the amount specified by the job mix formula.

The combined materials shall be mixed until the aggregate obtains a uniform coating of bitumen and is thoroughly distributed throughout the mixture. Wet mixing time shall be the shortest time that will produce a satisfactory mixture, but not less than 25 seconds for batch plants. The wet mixing time for all plants shall be established by the Contractor, based on the procedure for determining the percentage of coated particles described in ASTM D 2489, for each individual plant and for each type of aggregate used. The wet mixing time will be set to achieve 95 percent of coated particles. For continuous mix plants, the minimum mixing time shall be determined by dividing the weight of its contents at operating level by the weight of the mixture delivered per second by the mixer. The moisture content of all bituminous mixtures upon discharge shall not exceed 0.5 percent.

403-4.9 PREPARATION OF THE UNDERLYING SURFACE. Immediately before placing the bituminous mixture, the underlying course shall be cleaned of all dust and debris. A prime coat or tack coat shall be applied in accordance with Item P-602 or P-603, if shown on the plans.

403-4.10 LAYDOWN PLAN, TRANSPORTING, PLACING, AND FINISHING. Prior to the placement of the bituminous mixture, the Contractor shall prepare a laydown plan for approval by the Engineer. This is to minimize the number of cold joints in the pavement. The laydown plan shall include the sequence of paving laydown by stations, width of lanes, temporary ramp locations, and laydown temperature. The laydown plan shall also include estimated time of completion for each portion of the work (that is, milling, paving, rolling, cooling, etc.). Modifications to the laydown plan shall be approved by the Engineer.

The bituminous mixture shall be transported from the mixing plant to the site in vehicles conforming to the requirements of paragraph 403-4.3. Deliveries shall be scheduled so that placing and compacting of mixture is uniform with minimum stopping and starting of the paver. Hauling over freshly placed material shall not be permitted until the material has been compacted, as specified, and allowed to cool to atmospheric temperature.

Paving during nighttime construction shall require the following:

a. All paving machines, rollers, distribution trucks and other vehicles required by the Contractor for his operations shall be equipped with artificial illumination sufficient to safely complete the work.

b. Minimum illumination level shall be twenty (20) horizontal foot candles and maintained in the following areas:

(1) An area of 30 feet wide by 30 feet long immediately behind the paving machines during the operations of the machines.

(2) An area 15 feet wide by 30 feet long immediately in front and back of all rolling equipment, during operation of the equipment.

(3) An area 15 feet wide by 15 feet long at any point where an area is being tack coated prior to the placement of pavement.

c. As partial fulfillment of the above requirements, the Contractor shall furnish and use, complete artificial lighting units with a minimum capacity of 3,000 watt electric beam lights, affixed to all equipment in such a way to direct illumination on the area under construction.

d. In addition, the Contractor shall furnish portable floodlights.

The initial placement and compaction of the mixture shall occur at a temperature suitable for obtaining density, surface smoothness, and other specified requirements but not less than 250 °F (121 °C).

Edges of existing bituminous pavement abutting the new work shall be saw cut and carefully removed as shown on the drawings and painted with bituminous tack coat before new material is placed against it.

Upon arrival, the mixture shall be placed to the full width by a bituminous paver. It shall be struck off in a uniform layer of such depth that, when the work is completed, it shall have the required thickness and

conform to the grade and contour indicated. The speed of the paver shall be regulated to eliminate pulling and tearing of the bituminous mat. Unless otherwise permitted, placement of the mixture shall begin along the centerline of a crowned section or on the high side of areas with a one-way slope. The mixture shall be placed in consecutive adjacent strips having a minimum width of fifteen (15) ft. except where edge lanes require less width to complete the area. Additional screed sections shall not be attached to widen paver to meet the minimum lane width requirements specified above unless additional auger sections are added to match. The longitudinal joint in one course shall offset the longitudinal joint in the course immediately below by at least 1 ft (30 cm); however, the joint in the surface top course shall be at the centerline of crowned pavements. Transverse joints in one course shall be offset by at least 10 feet (3 m) from transverse joints in the previous course.

Transverse joints in adjacent lanes shall be offset a minimum of 10 feet (3 m).

On areas where irregularities or unavoidable obstacles make the use of mechanical spreading and finishing equipment impractical, the mixture may be spread and luted by hand tools. Areas of segregation in the course, as determined by the Engineer, shall be removed and replaced at the Contractor's expense. The area shall be removed by saw cutting and milling a minimum of 2 in deep. The area to be removed and replaced shall be a minimum width of the paver and a minimum of 10 feet long.

403-4.11 COMPACTION OF MIXTURE. After placing, the mixture shall be thoroughly and uniformly compacted by power rollers. The surface shall be compacted as soon as possible when the mixture has attained sufficient stability so that the rolling does not cause undue displacement, cracking or shoving. The sequence of rolling operations and the type of rollers used shall be at the discretion of the Contractor. The speed of the roller shall, at all times, be sufficiently slow to avoid displacement of the hot mixture and be effective in compaction. Any displacement occurring as a result of reversing the direction of the roller, or from any other cause, shall be corrected at once.

Sufficient rollers shall be furnished to handle the output of the plant. Rolling shall continue until the surface is of uniform texture, true to grade and cross section, and the required field density is obtained.

To prevent adhesion of the mixture to the roller, the wheels shall be equipped with a scraper and kept properly moistened using a water soluble asphalt release agent approved by the engineer.

In areas not accessible to the roller, the mixture shall be thoroughly compacted with approved power driven tampers. Tampers shall weigh not less than 275 pounds, have a tamping plate width not less than 15 in, be rated at not less than 4,200 vibrations per minute, and be suitably equipped with a standard tamping plate wetting device.

Any mixture that becomes loose and broken, mixed with dirt, contains check-cracking, or in any way defective shall be removed and replaced with fresh hot mixture and immediately compacted to conform to the surrounding area. This work shall be done at the Contractor's expense. Skin patching shall not be allowed.

403-4.12 JOINTS. The formation of all joints shall be made in such a manner as to ensure a continuous bond between the courses and obtain the required density. All joints shall have the same texture as other sections of the course and meet the requirements for smoothness and grade.

The roller shall not pass over the unprotected end of the freshly laid mixture except when necessary to form a transverse joint. When necessary to form a transverse joint, it shall be made by means of placing a bulkhead or by tapering the course. The tapered edge shall be cut back to its full depth and width on a straight line to expose a vertical face prior to placing the adjacent lane. In both methods, all contact surfaces shall be given a tack coat of bituminous material before placing any fresh mixture against the joint.

Longitudinal joints which are irregular, damaged, uncompacted, or otherwise defective [or which have been left exposed for more than 4 hours, or whose surface temperature has cooled to less than 160°F]

shall be cut back [specify cutback] to expose a clean, sound surface for the full depth of the course. All contact surfaces shall be cleaned and dry and given a tack coat of bituminous material prior to placing any fresh mixture against the joint. The cost of this work and tack coat shall be considered incidental to the cost of the bituminous course.

MATERIAL ACCEPTANCE

403-5.1 ACCEPTANCE SAMPLING AND TESTING. Unless otherwise specified, all acceptance sampling and testing necessary to determine conformance with the requirements specified in this section will be performed by the Engineer at no cost to the Contractor. Testing organizations performing these tests shall meet the requirements of ASTM D 3666. The laboratory accreditation must be current and listed on the accrediting authority's website. All test methods required for acceptance sampling and testing must be listed on the lab accreditation. A copy of the laboratory's current accreditation and accredited test methods shall be submitted to the Engineer prior to start of construction. All equipment in Contractor furnished laboratories shall be calibrated by an independent testing organization prior to the start of operations.

a. Field Placed Material. Material placed in the field shall be tested for mat and joint density on a lot basis. A lot will consist of:

- One day or shift's production not to exceed 2,000 tons (1,814 t), or
- A half day or shift's production where a day's production is expected to consist of between 2,000 and 4,000 tons (1,814 and 3,628 t), or similar subdivisions for tonnages over 4,000 tons (3,628 t).

Where more than one plant is simultaneously producing material for the job, the lot sizes shall apply separately for each plant.

(1) Mat Density. The lot shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. Cores shall not be taken closer than 1 ft from a transverse or longitudinal joint.

(2) Joint Density. The lot shall be divided into four equal sublots. One core of finished, compacted materials shall be taken by the Contractor from each subplot. Core locations will be determined by the Engineer on a random basis in accordance with procedures contained in ASTM D 3665. Edge of cores will be taken within 6 in of the joint of the same lot material but not directly on the joint.

(3) Sampling. Samples shall be neatly cut with a core drill. The cutting edge of the core drill bit shall be of hardened steel or other suitable material with diamond chips embedded in the metal cutting edge. The minimum diameter of the sample shall be 5 in. Samples that are clearly defective, as a result of sampling, shall be discarded and another sample taken. The Contractor shall furnish all tools, labor, and materials for cutting samples, cleaning, and filling the cored pavement. Cored pavement shall be cleaned and core holes shall be filled in a manner acceptable to the Engineer and within one day after sampling.

(4) Testing. The bulk specific gravity of each cored sample will be measured by the Engineer in accordance with ASTM D 2726 or ASTM D 1188, whichever is applicable. The percent compaction (density) of each sample will be determined by dividing the bulk specific gravity of each subplot sample by the average bulk specific gravity of all laboratory prepared specimens for the lot, as determined as follows:

(a) Sufficient material for preparation of test specimens for all testing will be sampled by the Engineer on a random basis, in accordance with the procedures contained in ASTM D 3665. One set of

laboratory compacted specimens will be prepared for each subplot in accordance with ASTM D 6926, at the number of blows required by paragraph 403-3.2, Table 1. Each set of laboratory compacted specimens will consist of three test portions prepared from the same sample increment. The sample of bituminous mixture may be put in a covered metal tin and placed in an oven for not less than 30 minutes or more than 60 minutes to stabilize to compaction temperature. The compaction temperature of the specimens shall be as specified in the job mix formula.

(b) The bulk specific gravity of each test specimen shall be measured by the Engineer in accordance with ASTM D 2726 using the procedure for laboratory-prepared thoroughly dry specimens, or ASTM D 1188, whichever is applicable, for use in computing pavement density.

(c) The bulk specific gravity used to determine the joint density at joints formed between different lots shall be the lowest of the bulk specific gravity values from the two different lots.

(5) Acceptance. Acceptance of field placed material for mat and joint density will be determined by the Engineer in accordance with the requirements of paragraph 403-5.2b.

d. Partial Lots - Field Placed Material. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and Engineer agree in writing to allow overages or other minor tonnage placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot.

The last batch produced where production is halted will be sampled, and its properties shall be considered as representative of the particular subplot from which it was taken. In addition, an agreed to minor placement will be sampled, and its properties shall be considered as representative of the particular subplot from which it was taken. Where three sublots are produced, they shall constitute a lot. Where one or two sublots are produced, they shall be incorporated into the next lot, and the total number of sublots shall be used in the acceptance plan calculation, that is, $n = 5$ or $n = 6$, for example. Partial lots at the end of asphalt production on the project shall be included with the previous lot.

403-5.2 ACCEPTANCE CRITERIA.

a. General. Acceptance will be based on the following characteristics of the bituminous mixture and completed pavement and test results:

- (1) Mat density
- (2) Joint density
- (3) Thickness
- (4) Smoothness
- (5) Grade

Mat density will be evaluated for acceptance in accordance with paragraph 403-5.2b(1). Joint density will be evaluated for acceptance in accordance with paragraph 403-5.2b(2).

Thickness will be evaluated by the Engineer for compliance in accordance with paragraph 403-5.2b(3). Acceptance for smoothness will be based on the criteria contained in paragraph 403-5.2b(4). Acceptance for grade will be based on the criteria contained in paragraph 403-5.2b(5).

The Engineer may at any time, notwithstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of bituminous mixture which is rendered unfit for use due to contamination, segregation, incomplete coating of aggregate, or improper mix temperature. Such rejection may be based on only visual inspection or temperature measurements. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the Engineer, and if it can be demonstrated in the laboratory, in the presence of the Engineer, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b. Acceptance Criteria.

(1) **Mat Density.** Acceptance of each lot of plant produced material for mat density shall be based on the average of all of the densities taken from the sublots. If the average mat density of the lot so established equals or exceeds 96 percent, the lot shall be acceptable. If the average mat density of the lot is below 96 percent, the lot shall be removed and replaced at the Contractor's expense.

(2) **Joint Density.** Acceptance of each lot of plant produced material for joint density shall be based on the average of all of the joint densities taken from the sublots. If the average joint density of the lot so established equals or exceeds 94 percent, the lot shall be acceptable. If the average joint density of the lot is less than 94 percent, the Contractor shall stop production and evaluate the method of compacting joints. Production may resume once the reason for poor compaction has been determined and appropriate measures have been taken to ensure proper compaction.

(3) **Thickness.** Thickness of each course shall be evaluated by the Engineer for compliance to the requirements shown on the plans. Measurements of thickness shall be made by the Engineer using the cores extracted for each subplot for density measurement. The maximum allowable deficiency at any point shall not be more than $\frac{1}{4}$ in less than the thickness indicated for the lift. Average thickness of lift, or combined lifts, shall not be less than the indicated thickness. Where thickness deficiency exceeds the specified tolerances, the lot or subplot shall be corrected by the Contractor at his expense by removing the deficient area and replacing with new pavement. The Contractor, at his expense, may take additional cores as approved by the Engineer to circumscribe the deficient area.

(4) **Smoothness.** The final surface shall be free from roller marks. The finished surfaces of each course of the pavement, except the finished surface of the final surface course, shall not vary more than $\frac{3}{8}$ in when evaluated with a 16 ft straightedge. The finished surface of the final surface course shall not vary more than $\frac{1}{4}$ in when evaluated with a 16 ft straightedge. The lot size shall be [] square yards (sq m). Smoothness measurements shall be made at 50 ft intervals and as determined by the Engineer. In the longitudinal direction, a smoothness reading shall be made at the center of each paving lane. In the transverse direction, smoothness readings shall be made continuously across the full width of the pavement. However, transverse smoothness readings shall not be made across designed grade changes. At warped transition areas, straightedge position shall be adjusted to measure surface smoothness and not design grade transitions. When more than 15 percent of all measurements within a lot exceed the specified tolerance, the Contractor shall remove the deficient area to the depth of the course of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off providing the course thickness complies with the thickness specified on the plans. High point grinding will be limited to 15 sq yd. Areas in excess of 15 sq yd will require removal and replacement of the course in accordance with the limitations noted above.

(5) **Grade.** The finished surface of the pavement shall not vary from the gradeline elevations and cross sections shown on the plans by more than $\frac{1}{2}$ in (12.70 mm). The finished grade of each lot will be determined by running levels at intervals of 50 feet (15.2 m) or less longitudinally and all breaks in grade transversely (not to exceed 50 feet) to determine the elevation of the completed pavement. The Contractor shall pay the cost of surveying of the level runs that shall be performed by a licensed surveyor. The documentation, stamped and signed by a licensed surveyor, shall be provided by the Contractor to the Engineer. The lot size shall be [] square yards (square meters). When more than 15 percent of all the measurements within a lot are outside the specified tolerance, or if any one shot within the lot deviates $\frac{3}{4}$ in or more from planned grade, the Contractor shall remove the deficient area to the depth of the final course of pavement and replace with new material. Skin patching shall not be permitted. Isolated high points may be ground off providing the course thickness complies with the thickness specified on the plans. High point grinding will be limited to 15 sq yd. The surface of the ground pavement shall have a texture consisting of grooves between 0.090 and 0.130 in wide. The peaks and ridges shall be approximately $\frac{1}{32}$ in higher than the bottom of the grooves. The pavement shall be left in a clean

condition. The removal of all of the slurry resulting from the grinding operation shall be continuous. The grinding operation should be controlled so the residue from the operation does not flow across other lanes of pavement. Areas in excess of 15 sq yd will require removal and replacement of the pavement in accordance with the limitations noted above.

c. Density Outliers. If the tests within a lot include a very large or a very small value that appears to be outside the normal limits of variation, check for an outlier in accordance with ASTM E 178, at a significance level of 5 percent, to determine if this value should be discarded.

403-5.3 RESAMPLING PAVEMENT FOR MAT DENSITY.

a. General. Resampling of a lot of pavement will only be allowed for mat density and then, only if the Contractor requests same in writing, within 48 hours after receiving the written test results from the Engineer. A retest will consist of all the sampling and testing procedures contained in paragraphs 403-5.1b(1). Only one resampling per lot will be permitted.

(1) A redefined mat density shall be calculated for the resampled lot. The number of tests used to calculate the redefined mat density shall include the initial tests made for that lot plus the retests.

(2) The cost for resampling and retesting shall be borne by the Contractor.

b. Payment for Resampled Lots. The redefined mat density for a resampled lot shall be used to evaluate the acceptance of that lot in accordance with Paragraph 403-5.2.

403-5.4 LEVELING COURSE. Any course used for truing and leveling shall meet the requirements of paragraph 403-3.2, but shall not be subject to the density requirements of paragraph 403-5.1. The leveling course shall be compacted with the same effort used to achieve density of the test section. The truing and leveling course shall not exceed a nominal thickness of 1-½ in (37.5 mm). The leveling course is the first variable thickness lift of an overlay placed prior to subsequent courses.]

CONTRACTOR QUALITY CONTROL

403-6.1 GENERAL. The Contractor shall perform quality control sampling, testing, and inspection during all phases of the work and shall perform them at a rate sufficient to ensure that the work conforms to the contract requirements, and at minimum test frequencies required by paragraph 403-6.3, including but not limited to:

- a. Mix Design
- b. Aggregate Grading
- c. Quality of Materials
- d. Stockpile Management
- e. Proportioning
- f. Mixing and Transportation
- g. Placing and Finishing
- h. Joints
- i. Compaction
- j. Surface smoothness

403-6.2 TESTING LABORATORY. The Contractor shall provide a fully equipped asphalt laboratory meeting the requirements of paragraph 403-3.5 and 403-4.2a(2) located at the plant or job site. The

Contractor shall provide the Engineer with certification stating that all of the testing equipment to be used is properly calibrated and will meet the specifications applicable for the specified test procedures.

403-6.3 QUALITY CONTROL TESTING. The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to these specifications and as set forth in the approved Quality Control Program. The testing program shall include, but not necessarily be limited to, tests for the control of asphalt content, aggregate gradation, temperatures, aggregate moisture, field compaction, and surface smoothness.

a. Asphalt Content. A minimum of two tests shall be performed per lot in accordance with ASTM D 2172 for determination of asphalt content. The weight of ash portion of the test, as described in ASTM D 2172, shall be determined as part of the first test performed at the beginning of plant production; and as part of every tenth test performed thereafter, for the duration of plant production. The last weight of ash value obtained shall be used in the calculation of the asphalt content for the mixture. The asphalt content for the lot will be determined by averaging the test results.

The use of the nuclear method for determining asphalt content in accordance with ASTM D 4125 is permitted, provided that it is calibrated for the specific mix being used.

b. Gradation. Aggregate gradations shall be determined a minimum of twice per lot from mechanical analysis of extracted aggregate in accordance with ASTM D 5444 and ASTM C 136 (dry sieve). When asphalt content is determined by the nuclear method, aggregate gradation shall be determined from hot bin samples on batch plants, or from the cold feed on drum mix or continuous mix plants, and tested in accordance with ASTM C 136 (dry sieve) using actual batch weights to determine the combined aggregate gradation of the mixture.

c. Moisture Content of Aggregate. The moisture content of aggregate used for production shall be determined a minimum of once per lot in accordance with ASTM C 566.

d. Moisture Content of Mixture. The moisture content of the mixture shall be determined once per lot in accordance with ASTM D 1461 [or AASHTO T 110].

e. Temperatures. Temperatures shall be checked, at least four times per lot, at necessary locations to determine the temperatures of the dryer, the bitumen in the storage tank, the mixture at the plant, and the mixture at the job site.

f. In-Place Density Monitoring. The Contractor shall conduct any necessary testing to ensure that the specified density is being achieved. A nuclear gauge may be used to monitor the pavement density in accordance with ASTM D 2950.

g. Additional Testing. Any additional testing that the Contractor deems necessary to control the process may be performed at the Contractor's option.

h. Monitoring. The Engineer reserves the right to monitor any or all of the above testing.

403-6.4 SAMPLING. When directed by the Engineer, the Contractor shall sample and test any material that appears inconsistent with similar material being sampled, unless such material is voluntarily removed and replaced or deficiencies corrected by the Contractor. All sampling shall be in accordance with standard procedures specified.

403-6.5 CONTROL CHARTS. The Contractor shall maintain linear control charts both for individual measurements and range (that is, difference between highest and lowest measurements) for aggregate gradation and asphalt content.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept current. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and Suspension Limits applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a problem and the Contractor is not taking satisfactory corrective action, the Engineer may suspend production or acceptance of the material.

a. Individual Measurements. Control charts for individual measurements shall be established to maintain process control within tolerance for aggregate gradation and asphalt content. The control charts shall use the job mix formula target values as indicators of central tendency for the following test parameters with associated Action and Suspension Limits:

Control Chart Limits For Individual Measurements		
Sieve	Action Limit	Suspension Limit
¾ in (19.0 mm)	0%	0%
½ in (12.5 mm)	+/-6%	+/-9%
⅜ in (9.5 mm)	+/-6%	+/-9%
No. 4 (4.75 mm)	+/-6%	+/-9%
No. 16 (1.18 mm)	+/-5%	+/-7.5%
No. 50 (0.30 mm)	+/-3%	+/-4.5%
No. 200 (0.075 mm)	+/-2%	+/-3%
Asphalt Content	+/-0.45%	+/-0.70%

b. Range. Control charts for range shall be established to control process variability for the test parameters and Suspension Limits listed below. The range shall be computed for each lot as the difference between the two test results for each control parameter. The Suspension Limits specified below are based on a sample size of $n = 2$. Should the Contractor elect to perform more than two tests per lot, the Suspension Limits shall be adjusted by multiplying the Suspension Limit by 1.18 for $n = 3$ and by 1.27 for $n = 4$.

Control Chart Limits Based On Range (Based On $n = 2$)	
Sieve	Suspension Limit
½ in (12.5 mm)	11 percent
⅜ in (9.5 mm)	11 percent
No. 4 (4.75 mm)	11 percent
No. 16 (1.18 mm)	9 percent
No. 50 (0.30 mm)	6 percent
No. 200 (0.075 mm)	3.5 percent
Asphalt Content	0.8 percent

c. Corrective Action. The Contractor Quality Control Program shall indicate that appropriate action shall be taken when the process is believed to be out of tolerance. The Plan shall contain sets of rules to gauge when a process is out of control and detail what action will be taken to bring the process into control. As a minimum, a process shall be deemed out of control and production stopped and corrective action taken, if:

- (1) One point falls outside the Suspension Limit line for individual measurements or range; or
- (2) Two points in a row fall outside the Action Limit line for individual measurements.

403-6.6 QUALITY CONTROL REPORTS. The Contractor shall maintain records and shall submit reports of quality control activities daily.

METHOD OF MEASUREMENT

403-7.1 MEASUREMENT. Plant mix bituminous concrete pavement shall be measured by the number of tons of bituminous mixture used in the accepted work. Recorded batch weights or truck scale weights will be used to determine the basis for the tonnage.

BASIS OF PAYMENT

403-8.1 PAYMENT. Payment for a lot of bituminous concrete pavement meeting all acceptance criteria as specified in paragraph 403-5.2 shall be made at the contract unit price per ton (kg) for bituminous mixture. The price shall be compensation for furnishing all materials, for all preparation, mixing, and placing of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-403-8.1a Bituminous Leveling Course - per ton

TESTING REQUIREMENTS

ASTM C 29	Bulk Density ("Unit Weight") and Voids in Aggregate
ASTM C 88	Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 117	Materials Finer than 75 μ m (No. 200) Sieve in Mineral Aggregates by Washing
ASTM C 127	Specific Gravity and Absorption of Coarse Aggregate
ASTM C 131	Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 183	Sampling and the Amount of Testing of Hydraulic Cement
ASTM C 566	Total Evaporable Moisture Content of Aggregate by Drying
ASTM D 75	Sampling Aggregates

ASTM D 979	Sampling Bituminous Paving Mixtures
ASTM D 995	Mixing Plants for Hot-Mixed Hot-Laid Bituminous Paving Mixtures
ASTM D 1073	Fine Aggregate for Bituminous Paving Mixtures
ASTM D 1074	Compressive Strength of Bituminous Mixtures
ASTM D 1188	Bulk Specific Gravity and Density of Compacted Bituminous Mixtures Using Paraffin-Coated Specimens
ASTM D 1461	Moisture or Volatile Distillates in Bituminous Paving Mixtures
ASTM D 2041	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
ASTM D 2172	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
ASTM D 2419	Sand Equivalent Value of Soils and Fine Aggregate
ASTM D 2489	Estimating Degree of Particle Coating of Bituminous-Aggregate Mixtures
ASTM D 2726	Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
ASTM D 2950	Density of Bituminous Concrete in Place by Nuclear Methods
ASTM D 3203	Percent Air Voids in Compacted Dense and Open Bituminous Paving Mixtures
ASTM D 3665	Random Sampling of Construction Materials
ASTM D 3666	Minimum Requirements for Agencies Testing and Inspecting Road and Paving Materials
ASTM D 4125	Asphalt Content of Bituminous Mixtures by the Nuclear Method
ASTM D 4318	Liquid Limit, Plastic Limit, and Plasticity Index of Soils
ASTM D 4791	Flat Particles, Elongated Particles, or Flat and Elongated Particles in Coarse Aggregate
ASTM D 4867	Effect of Moisture on Asphalt Concrete Paving Mixtures
ASTM D 5444	Mechanical Size Analysis of Extracted Aggregate
ASTM D 5581	Resistance to Plastic Flow of Bituminous Mixtures Using Marshall Apparatus (6" Diameter Specimen)
ASTM D 6926	Preparation of Bituminous Specimens Using MARSHALL Apparatus
ASTM D 6927	MARSHALL Stability and Flow of Bituminous Mixtures

ASTM E 11	Wire-Cloth Sieves for Testing Purposes
ASTM E 178	Dealing with Outlying Observations
AASHTO T 30	Mechanical Analysis of Extracted Aggregate
[AASHTO T 110	Moisture or Volatile Distillates in Bituminous Paving Mixtures]
The Asphalt Institute's Manual No. 2 (MS-2)	Mix Design Methods for Asphalt Concrete

MATERIAL REQUIREMENTS

ASTM D 242	Mineral Filler for Bituminous Paving Mixtures
ASTM D 946	Penetration Graded Asphalt Cement for Use in Pavement Construction
ASTM D 3381	Viscosity-Graded Asphalt Cement for Use in Pavement Construction
ASTM D 4552	Classifying Hot-Mix Recycling Agents
AASHTO MP1	Performance Graded Binder Designation

END OF ITEM P-403

PART VI – RIGID PAVEMENT

ITEM P-501 PORTLAND CEMENT CONCRETE PAVEMENT

DESCRIPTION

501-1.1 This work shall consist of pavement composed of Portland cement concrete, **with reinforcement** constructed on a prepared underlying surface in accordance with these specifications and shall conform to the lines, grades, thickness, and typical cross sections shown on the plans.

MATERIALS

501-2.1 AGGREGATES.

a. Reactivity. Aggregates shall be tested for deleterious reactivity with alkalis in the cement, which may cause excessive expansion of the concrete. Tests of coarse and fine aggregate shall be made in accordance with ASTM C 1260. If the expansion of the coarse or fine aggregate test specimens, tested in accordance with ASTM C 1260, does not exceed 0.10 % at 16 days from casting, the coarse or fine aggregates shall be accepted.

If the expansion at 16 days is greater than 0.10%, tests of combined materials shall be made in accordance with ASTM C 1260 or ASTM C 1567 using the aggregates, cementitious materials, and/or specific reactivity reducing chemicals in the proportions proposed for the mixture design. If the expansion of the proposed combined materials test specimens, tested in accordance with ASTM C 1260 or ASTM C 1567, does not exceed 0.10 % at 30 days from casting, the proposed combined materials will be accepted. If the expansion of the proposed combined materials test specimens is greater than 0.10% at 30 days, the aggregates will not be accepted unless adjustments to the combined materials mixture can reduce the expansion to less than 0.10 % at 30 days, or new aggregates shall be evaluated and tested.

b. Fine Aggregate. Fine aggregate shall conform to the requirements of ASTM C 33. Gradation shall meet the requirements of Table 1 when tested in accordance with ASTM C 136, except as may otherwise be qualified under Section 6 of ASTM C 33.

**TABLE 1. GRADATION FOR FINE AGGREGATE
(ASTM C 33)**

Sieve Designation (Square Openings)	Percentage by Weight Passing Sieves
3/8 in. (9.5 mm)	100
No. 4 (4.75 mm)	95-100
No. 8 (2.36 mm)	80-100
No. 16 (1.18 mm)	50-85
No. 30 (600 micro-m)	25-60
No. 50 (300 micro-m)	10-30
No. 100 (150 micro-m)	2-10

c. Coarse Aggregate. Coarse aggregate shall conform to the requirements of ASTM C 33. Gradation, within the separated size groups, shall meet the requirements of Table 2 when tested in accordance with ASTM C 136.

Aggregates delivered to the mixer shall consist of crushed stone, crushed or uncrushed gravel, air-cooled blast furnace slag, crushed recycled concrete pavement, or a combination thereof. The aggregate shall be composed of clean, hard, uncoated particles and shall meet the requirements for deleterious substances contained in ASTM C 33. Dust and other coating shall be removed from the aggregates by washing. The aggregate in any size group shall not contain more than 8 percent by weight of flat or elongated pieces when tested in accordance with ASTM D 4791. A flat or elongated particle is one having a ratio between the maximum and the minimum dimensions of a

circumscribing rectangular prism exceeding 5 to 1. The percentage of wear shall be no more than 40% when tested in accordance with ASTM C 131 or ASTM C 535.

TABLE 2. GRADATION FOR COARSE AGGREGATE		
ASTM C 33		
Sieve Designations (square openings)		Percentage by Weight Passing Sieves
in.	mm	
2-1/2	63	---
2	50.8	100
1-1/2	38.1	90-100
1	25.0	20-55
3/4	19.0	0-15
1/2	12.5	---
3/8	9.5	0-5
No. 4	4.75	---
No. 8	2.36	---

Aggregate susceptibility to Disintegration (D) Cracking. Aggregates that have a history of D-cracking shall not be used. Prior to approval of mixture design and production of Portland cement concrete the Contractor shall submit written certification that the aggregate does not have a history of D-Cracking and that the aggregate meets the specified State requirements.

(1) Other sources of crushed stone aggregate shall be approved if the durability factor as determined by ASTM C 666 is greater than or equal to 95 and all other quality test requirements within these specifications are fulfilled. The FAA will consider and reserves final approval of other State classification procedures.

(2) Crushed gravel and sand-gravel aggregates shall not be required to meet freeze-thaw durability ratings. These aggregates shall be approved for use in concrete by the state highway agency in the state from which the aggregate originates and the state in which they are to be used and shall meet all other criteria within these specifications.

501-2.2 CEMENT. Cement shall conform to the requirements of ASTM C150 Type 1, 1A or ASTM C150 Type 1P.

If for any reason, cement becomes partially set or contains lumps of caked cement, it shall be rejected. Cement salvaged from discarded or used bags shall not be used.

Only cements containing less than 0.6% equivalent alkali or cements that can demonstrate a positive reduction in the expansion created by alkali-silica reactions shall be used.

501-2.3 CEMENTITIOUS MATERIALS.

a. **Fly Ash or Natural Pozzolan.** Fly ash shall meet the requirements of ASTM C 618, Class C, F, or N with the exception of loss of ignition, where the maximum shall be less than 6 percent for Class F or N Fly ash such as is produced in furnace operations utilizing liming materials or soda ash (sodium carbonate) as an additive shall not be acceptable. The Contractor shall furnish vendor's certified test reports for each shipment of Fly Ash used in the project. The vendor's certified test report can be used for acceptance or the material may be tested independently by the Engineer.

b. Blast Furnace Slag (Slag Cement). Ground Granulated Blast Furnace (GGBF) slag shall conform to ASTM C 989, Grade 100 or 120. GGBF shall be used only at a rate between 25 and 55 percent of the total cementitious material by mass.

501-2.4 PREMOLDED JOINT FILLER. Premolded joint filler for expansion joints shall conform to the requirements of ASTM D 1751 and shall be punched to admit the dowels where called for on the plans. The filler for each joint shall be furnished in a single piece for the full depth and width required for the joint, unless otherwise specified by the Engineer. When the use of more than one piece is required for a joint, the abutting ends shall be fastened securely and held accurately to shape by stapling or other positive fastening means satisfactory to the Engineer.

501-2.5 JOINT SEALER. The joint sealer for the joints in the concrete pavement shall meet the requirements of Item P-605 and shall be of the type(s) specified in the plans.

501-2.6 STEEL REINFORCEMENT. Reinforcing shall consist of welded steel wire fabric conforming to the requirements of ASTM A 185. Welded wire fabric shall be furnished in flat sheets only.

501-2.7 DOWEL AND TIE BARS. Tie bars shall be deformed steel bars and conform to the requirements of ASTM A 615 or ASTM A 996, except that rail steel bars, Grade 50 or 60, shall not be used for tie bars that are to be bent or restraightened during construction. Tie bars designated as Grade 40 in ASTM A 615 can be used for construction requiring bent bars.

Dowel bars shall be plain steel bars conforming to ASTM A 615 or ASTM A 966 and shall be free from burring or other deformation restricting slippage in the concrete. High strength dowel bars shall conform to ASTM A 714, Class 2, Type S, Grade I, II or III, Bare Finish. Before delivery to the construction site each dowel bar shall be painted with one coat of paint conforming to MIL-DTL-24441/20A.SSPC Paint 5 or SSPC Paint 25. Metal or plastic collars shall be full circular device supporting the dowel until the epoxy hardens.

The sleeves for dowel bars used in expansion joints shall be metal or other type of an approved design to cover 2 to 3 inches (50 mm to 75 mm) of the dowel, with a closed end and with a suitable stop to hold the end of the bar at least 1 inch (25 mm) from the closed end of the sleeve. Sleeves shall be of such design that they will not collapse during construction.

501-2.8 WATER. Water used in mixing or curing shall be clean and free of oil, salt, acid, alkali, sugar, vegetable, or other substances injurious to the finished product. Water will be tested in accordance with the requirements of AASHTO T 26. Water known to be of potable quality may be used without testing.

501-2.9 COVER MATERIAL FOR CURING. Curing materials shall conform to one of the following specifications:

- a. Liquid membrane-forming compounds for curing concrete shall conform to the requirements of ASTM C 309, Type 2, Class B, or Class A if wax base only.
- b. White polyethylene film for curing concrete shall conform to the requirements of ASTM C 171.
- c. White burlap-polyethylene sheeting for curing concrete shall conform to the requirements of ASTM C 171.
- d. Waterproof paper for curing concrete shall conform to the requirements of ASTM C 171.

501-2.10 ADMIXTURES. The use of any material added to the concrete mix shall be approved by the Engineer. The Contractor shall submit certificates indicating that the material to be furnished meets all of the requirements indicated below. In addition, the Engineer may require the Contractor to submit complete test data from an approved laboratory showing that the material to be furnished meets all of the requirements of the cited specifications. Subsequent tests may be made of samples taken by the Engineer from the supply of the material being furnished or proposed for use on the work to determine whether the admixture is uniform in quality with that approved.

a. **Air-Entraining Admixtures.** Air-entraining admixtures shall meet the requirements of ASTM C 260 and shall consistently entrain the air content in the specified ranges under field conditions. The air-entrainment agent and any water reducer admixture shall be compatible.

b. **Chemical Admixtures.** Water-reducing, set retarding, and set-accelerating admixtures shall meet the requirements of ASTM C 494, including the flexural strength test.

501-2.11 EPOXY-RESIN. Epoxy-resin used to anchor dowels and tie bars in pavements shall conform to the requirements of ASTM C 881, Type I, Grade 3, Class C. Class A or B shall be used when the surface temperature of the hardened concrete is below 60 degrees F (16 degrees C).

501-2.12 MATERIAL ACCEPTANCE. Prior to use of materials, the Contractor shall submit certified test reports to the Engineer for those materials proposed for use during construction. The certification shall show the appropriate ASTM test(s) for each material, the test results, and a statement that the material passed or failed.

The Engineer may request samples for testing, prior to and during production, to verify the quality of the materials and to ensure conformance with the applicable specifications.

MIX DESIGN

501-3.1 PROPORTIONS. Concrete shall be designed to achieve a 28-day flexural strength that meets or exceeds the acceptance criteria contained in paragraph 501-5.2 for a flexural strength of 650 psi. The mix shall be designed using the procedures contained in Chapter 9 of the Portland Cement Association's manual, "Design and Control of Concrete Mixtures".

The Contractor shall note that to ensure that the concrete actually produced will meet or exceed the acceptance criteria for the specified strength, the mix design average strength must be higher than the specified strength. The amount of overdesign necessary to meet specification requirements depends on the producer's standard deviation of flexural test results and the accuracy that that value can be estimated from historic data for the same or similar materials.

The minimum cementitious material (cement plus fly ash, or GGBFS) shall be 564 pounds per cubic yard (227 kg per cubic meter). The ratio of water to cementitious material, including free surface moisture on the aggregates but not including moisture absorbed by the aggregates shall not be more than .45 by weight.

Prior to the start of paving operations and after approval of all material to be used in the concrete, the Contractor shall submit a mix design showing the proportions and flexural strength obtained from the concrete at 7 and 28 days. The mix design shall include copies of test reports, including test dates, and a complete list of materials including type, brand, source, and amount of cement, fly ash, ground slag, coarse aggregate, fine aggregate, water, and admixtures. The fineness modulus of the fine aggregate and the air content shall also be shown. The mix design shall be submitted to the Engineer at least 10 days prior to the start of operations. The submitted mix design shall not be more than 90 days old. Production shall not begin until the mix design is approved in writing by the Engineer.

Should a change in sources be made, or admixtures added or deleted from the mix, a new mix design must be submitted to the Engineer for approval.

Flexural strength test specimens shall be prepared in accordance with ASTM C 192 and tested in accordance with ASTM C 78. The mix determined shall be workable concrete having a slump for side-form concrete between 1 and 2 inches (25 mm and 50 mm) as determined by ASTM C 143. For vibrated slip-form concrete, the slump shall be between 1/2 inch (13 mm) and 1 1/2 inches (38 mm).

501-3.2 CEMENTITIOUS MATERIALS.

a. **Fly Ash.** Fly ash may be used in the mix design. When fly ash is used as a partial replacement for cement, the minimum cement content may be met by considering Portland cement plus fly ash as the total cementitious material. The replacement rate shall be determined from laboratory trial mixes, but shall be between 20 and 30 percent by weight of the total cementitious material. If fly ash is used in conjunction with ground granular blast furnace slag the maximum replacement rate shall not exceed 10 percent by weight of total cementitious material.

b. **Ground Slag.** Ground blast-furnace slag may be used in a mix design containing Type I or Type II cement. The slag, or slag plus fly ash if both are used, may constitute between 25 to 55 percent of the total cementitious material by weight. If the concrete is to be used for slipforming operations and the air temperature is expected to be lower than 55 degrees F (13 degrees C) the percent slag shall not exceed 30 percent by weight.

501-3.3 ADMIXTURES.

a. **Air-Entraining.** Air-entraining admixture shall be added in such a manner that will insure uniform distribution of the agent throughout the batch. The air content of freshly mix air-entrained concrete shall be based upon trial mixes with the materials to be used in the work adjusted to produce concrete of the required plasticity and workability. The percentage of air in the mix shall be 2.5 percent. Air content shall be determined by testing in accordance with ASTM C 231 for gravel and stone coarse aggregate and ASTM C 173 for slag and other highly porous coarse aggregate.

b. **Chemical.** Water-reducing, set-controlling, and other approved admixtures shall be added to the mix in the manner recommended by the manufacturer and in the amount necessary to comply with the specification requirements. Tests shall be conducted on trial mixes, with the materials to be used in the work, in accordance with ASTM C 494.

501-3.4 TESTING LABORATORY. The laboratory used to develop the mix design shall meet the requirements of ASTM C 1077. The laboratory accreditation will include ASTM C 78. A certification that it meets these requirements shall be submitted to the Engineer prior to the start of mix design. The certification shall include evidence that the laboratory is inspected/accredited for the test methods required herein by a nationally recognized laboratory inspection accreditation organization.

CONSTRUCTION METHODS

501-4.1 EQUIPMENT. Equipment necessary for handling materials and performing all parts of the work shall be approved by the engineer as to design, capacity, and mechanical conditions. The equipment shall be at the jobsite sufficiently ahead of the start of paving operations to be examined thoroughly and approved.

a. **Batch Plant and Equipment.** The batch plant and equipment shall conform to the requirements of ASTM C 94.

b. **Mixers and Transportation Equipment.**

(1) **General.** Concrete may be mixed at a central plant, or wholly or in part in truck mixers. Each mixer shall have attached in a prominent place a manufacturer's nameplate showing the capacity of the drum in terms of volume of mixed concrete and the speed of rotation of the mixing drum or blades.

(2) **Central plant mixer.** Central plant mixers shall conform to the requirements of ASTM C 94.

The mixer shall be examined daily for changes in condition due to accumulation of hard concrete or mortar or wear of blades. The pickup and throwover blades shall be replaced when they have worn down 3/4 inch (19 mm) or more. The Contractor shall have a copy of the manufacturer's design on hand showing dimensions and arrangement of blades in reference to original height and depth.

(3) **Truck mixers and truck agitators.** Truck mixers used for mixing and hauling concrete and truck agitators used for hauling central-mixed concrete shall conform to the requirements of ASTM C 94.

ASTM C 94. (4) **Nonagitator trucks.** Nonagitator hauling equipment shall conform to the requirements of

c. Finishing Equipment. The standard method of constructing concrete pavements on FAA projects shall be with an approved slip-form paving equipment designed to spread, consolidate, screed, and float-finish the freshly placed concrete in one complete pass of the machine so a dense and homogeneous pavement is achieved with a minimum of hand finishing. The paver-finisher shall be a heavy duty, self-propelled machine designed specifically for paving and finishing high quality concrete pavements. It shall weigh at least 2200 lbs. per foot of paving lane width and powered by an engine having at least 6.0 horsepower per foot of lane width.

On projects requiring less than 500 square yards of cement concrete pavement or requiring individual placement areas of less than 500 square yards, or irregular areas at locations inaccessible to slip-form paving equipment, cement concrete pavement may be placed with approved placement and finishing equipment utilizing stationary side forms. Hand screeding and float finishing may only be utilized on small irregular areas as allowed by the Engineer.

d. Vibrators. Vibrator shall be the internal type. Operating frequency for internal vibrators shall be between 8,000 and 12,000 vibrations per minute. Average amplitude for internal vibrators shall be 0.025-0.05 inches (0.06-0.13 cm).

The number, spacing, and frequency shall be as necessary to provide a dense and homogeneous pavement and meet the recommendations of ACI 309, Guide for Consolidation of Concrete. Adequate power to operate all vibrators shall be available on the paver. The vibrators shall be automatically controlled so that they shall be stopped as forward motion ceases. The contractor shall provide an electronic or mechanical means to monitor vibrator status. The checks on vibrator status shall occur a minimum of two times per day or when requested by the Engineer.

Hand held vibrators may be used in irregular areas only, but shall meet the recommendations of ACI 309, Guide for Consolidation of Concrete.

e. Concrete Saws. The Contractor shall provide sawing equipment adequate in number of units and power to complete the sawing to the required dimensions. The Contractor shall provide at least one standby saw in good working order and a supply of saw blades at the site of the work at all times during sawing operations.

f. Side Forms. Straight side forms shall be made of steel and shall be furnished in sections not less than 10 feet (3 m) in length. Forms shall have a depth equal to the pavement thickness at the edge, and a base width equal to or greater than the depth. Flexible or curved forms of proper radius shall be used for curves of 100-foot (31 m) radius or less. Forms shall be provided with adequate devices for secure settings so that when in place they will withstand, without visible spring or settlement, the impact and vibration of the consolidating and finishing equipment. Forms with battered top surfaces and bent, twisted or broken forms shall not be used. Built-up forms shall not be used, except as approved by the Engineer. The top face of the form shall not vary from a true plane more than 1/8 inch (3 mm) in 10 feet (3 m), and the upstanding leg shall not vary more than 1/4 inch (6 mm). The forms shall contain provisions for locking the ends of abutting sections together tightly for secure setting. Wood forms may be used under special conditions, when approved by the Engineer.

g. Pavers. The paver shall be fully energized, self-propelled, and designed for the specific purpose of placing, consolidating, and finishing the concrete pavement, true to grade, tolerances, and cross section. It shall be of sufficient weight and power to construct the maximum specified concrete paving lane width as shown in the plans, at adequate forward speed, without transverse, longitudinal or vertical instability or without displacement. The paver shall be equipped with electronic or hydraulic horizontal and vertical control devices.

501-4.2 FORM SETTING. Forms shall be set sufficiently in advance of the concrete placement to insure continuous paving operation. After the forms have been set to correct grade, the underlying surface shall be thoroughly tamped, either mechanically or by hand, at both the inside and outside edges of the base of the forms. Forms shall be staked into place sufficiently to maintain the form in position for the method of placement.

Form sections shall be tightly locked and shall be free from play or movement in any direction. The forms shall not deviate from true line by more than 1/8 inch (3 mm) at any joint. Forms shall be so set that they will withstand, without visible spring or settlement, the impact and vibration of the consolidating and finishing equipment. Forms shall be cleaned and oiled prior to the placing of concrete.

The alignment and grade elevations of the forms shall be checked and corrections made by the Contractor immediately before placing the concrete.

501-4.3 CONDITIONING OF UNDERLYING SURFACE. The compacted underlying surface on which the pavement will be placed shall be widened approximately 3 feet (1 m) to extend beyond the paving machine track to support the paver without any noticeable displacement. After the underlying surface has been placed and compacted to the required density, the areas that will support the paving machine and the area to be paved shall be trimmed or graded to the plan grade elevation and profile by means of a properly designed machine. The grade of the underlying surface shall be controlled by a positive grade control system using lasers, stringlines, or guide wires. If the density of the underlying surface is disturbed by the trimming operations, it shall be corrected by additional compaction and retested at the option of the Engineer before the concrete is placed except when stabilized subbases are being constructed. If damage occurs on a stabilized subbase, it shall be corrected full depth by the Contractor. If traffic is allowed to use the prepared grade, the grade shall be checked and corrected immediately before the placement of concrete. The prepared grade shall be moistened with water, without saturating, immediately ahead of concrete placement to prevent rapid loss of moisture from concrete. The underlying surface shall be protected so that it will be entirely free of frost when concrete is placed.

501-4.4 CONDITIONING OF UNDERLYING SURFACE, SIDE-FORM AND FILL-IN LANE CONSTRUCTION. The prepared underlying surface shall be moistened with water, without saturating, immediately ahead of concrete placement to prevent rapid loss of moisture from the concrete. Damage caused by hauling or usage of other equipment shall be corrected and retested at the option of the Engineers. If damage occurs to a stabilized subbase, it shall be corrected full depth by the Contractor. A template shall be provided and operated on the forms immediately in advance of the placing of all concrete. The template shall be propelled only by hand and not attached to a tractor or other power unit. Templates shall be adjustable so that they may be set and maintained at the correct contour of the underlying surface. The adjustment and operation of the templates shall be such as will provide an accurate retest of the grade before placing the concrete thereon. All excess material shall be removed and wasted. Low areas shall be filled and compacted to a condition similar to that of the surrounding grade. The underlying surface shall be protected so that it will be entirely free from frost when the concrete is placed. The use of chemicals to eliminate frost in the underlying surface shall not be permitted.

The template shall be maintained in accurate adjustment, at all times by the Contractor, and shall be checked daily.

501-4.5 HANDLING, MEASURING, AND BATCHING MATERIAL. The batch plant site, layout, equipment, and provisions for transporting material shall assure a continuous supply of material to the work. Stockpiles shall be constructed in such a manner that prevents segregation and intermixing of deleterious materials.

Aggregates that have become segregated or mixed with earth or foreign material shall not be used. All aggregates produced or handled by hydraulic methods, and washed aggregates, shall be stockpiled or binned for draining at least 12 hours before being batched. Rail shipments requiring more than 12 hours will be accepted as adequate binning only if the car bodies permit free drainage.

Batching plants shall be equipped to proportion aggregates and bulk cement, by weight, automatically using interlocked proportioning devices of an approved type. When bulk cement is used, the Contractor shall use a suitable method of handling the cement from weighing hopper to transporting container or into the batch itself for transportation to the mixer, such as a chute, boot, or other approved device, to prevent loss of cement. The device shall be arranged to provide positive assurance that the cement content specified is present in each batch.

501-4.6 MIXING CONCRETE. The concrete may be mixed at the work site, in a central mix plant or in truck mixers. The mixer shall be of an approved type and capacity. Mixing time shall be measured from the time all materials, except water, are emptied into the drum. All concrete shall be mixed and delivered to the site in accordance with the requirements of ASTM C 94.

Mixed concrete from the central mixing plant shall be transported in truck mixers, truck agitators, or nonagitating trucks. The elapsed time from the addition of cementitious material to the mix until the concrete is deposited in place at the work site shall not exceed 30 minutes when the concrete is hauled in nonagitating trucks, nor 90 minutes when the concrete is hauled in truck mixers or truck agitators. Retempering concrete by adding water or by other means will not be permitted. With transit mixers additional water may be added to the batch materials and additional mixing performed to increase the slump to meet the specified requirements provided the addition of water is performed within 45 minutes after the initial mixing operations and provided the water/cementitious ratio specified in the approved mix design is not exceeded, and approved by the Engineer.

501-4.7 LIMITATIONS ON MIXING AND PLACING. No concrete shall be mixed, placed, or finished when the natural light is insufficient, unless an adequate and approved artificial lighting system is operated.

a. Cold Weather. Unless authorized in writing by the Engineer, mixing and concreting operations shall be discontinued when a descending air temperature in the shade and away from artificial heat reaches 40 degrees F (4 degrees C) and shall not be resumed until an ascending air temperature in the shade and away from artificial heat reaches 35 degrees F (2 degrees C).

The aggregate shall be free of ice, snow, and frozen lumps before entering the mixer. The temperature of the mixed concrete shall not be less than 50 degrees F (10 degrees C) at the time of placement. Concrete shall not be placed on frozen material nor shall frozen aggregates be used in the concrete.

When concreting is authorized during cold weather, water and/or the aggregates may be heated to not more than 150 degrees F (66 degrees C). The apparatus used shall heat the mass uniformly and shall be arranged to preclude the possible occurrence of overheated areas which might be detrimental to the materials.

b. Hot Weather. During periods of hot weather when the maximum daily air temperature exceeds 85 degrees F (30 degrees C), the following precautions shall be taken.

The forms and/or the underlying surface shall be sprinkled with water immediately before placing the concrete. The concrete shall be placed at the coolest temperature practicable, and in no case shall the temperature of the concrete when placed exceed 90 degrees F (35 degrees C). The aggregates and/or mixing water shall be cooled as necessary to maintain the concrete temperature at or not more than the specified maximum.

The finished surfaces of the newly laid pavement shall be kept damp by applying a water-fog or mist with approved spraying equipment until the pavement is covered by the curing medium. If necessary, wind screens shall be provided to protect the concrete from an evaporation rate in excess of 0.2 psf per hour as determined in accordance with Figure 2.1.5 in ACI 305R, Hot Weather Concreting, which takes into consideration relative humidity, wind velocity, and air temperature.

When conditions are such that problems with plastic cracking can be expected, and particularly if any plastic cracking begins to occur, the Contractor shall immediately take such additional measures as necessary to protect the concrete surface. Such measures shall consist of wind screens, more effective fog sprays, and similar measures commencing immediately behind the paver. If these measures are not effective in preventing plastic cracking, paving operations shall be immediately stopped.

c. Temperature Management Program. Prior to the start of paving operation for each day of paving, the contractor shall provide the engineer with a Temperature Management Program for the concrete to be placed to assure that uncontrolled cracking is avoided. As a minimum the program shall address the following items:

(1) Anticipated tensile strains in the fresh concrete as related to heating and cooling of the concrete material.

(2) Anticipated weather conditions such as ambient temperatures, wind velocity, and relative humidity.

(3) Anticipated timing of initial sawing of joint.

501-4.8 PLACING CONCRETE. The Contractor has the option of placing the concrete with either side (fixed) forms or slip-forms. At any point in concrete conveyance, the free vertical drop of the concrete from one point to another or to the underlying surface shall not exceed 3 feet (1 m). Backhoes and Grading equipment shall not be used to distribute the concrete in front of the paver. Front end loaders will not be used unless the contractor demonstrates that they can be used without contaminating the concrete and base course and it is approved by the Engineer.

Hauling equipment or other mechanical equipment can be permitted on adjoining previously constructed pavement when the concrete strength reaches a flexural strength of 550 psi (3,792 kPa), based on the average of four field cured specimens per 2,000 cubic yards (1 530 cubic meters) of concrete placed. Also, subgrade and subbase planers, concrete pavers, and concrete finishing equipment may be permitted to ride upon the edges of previously constructed pavement when the concrete has attained a minimum flexural strength of 400 psi.

a. Slip-Form Construction. The concrete shall be distributed uniformly into final position by a self propelled slip-form paver without delay. The alignment and elevation of the paver shall be regulated from outside reference lines established for this purpose. The paver shall vibrate the concrete for the full width and depth of the strip of pavement being placed and the vibration shall be adequate to provide a consistency of concrete that will stand normal to the surface with sharp well defined edges. The sliding forms shall be rigidly held together laterally to prevent spreading of the forms.

The plastic concrete shall be effectively consolidated by internal vibration with transverse vibrating units for the full width of the pavement and/or a series of equally placed longitudinal vibrating units. The space from the outer edge of the pavement to longitudinal unit shall not exceed 9 inches. The spacing of internal units shall be uniform and shall not exceed 18 inches.

The term internal vibration means vibrating units located within the specified thickness of pavement section.

The rate of vibration of each vibrating unit shall be within 8000 to 12000 cycles per minute and the amplitude of vibration shall be sufficient to be perceptible on the surface of the concrete along the entire length of the vibrating unit and for a distance of at least one foot. The frequency of vibration or amplitude shall vary proportionately with the rate of travel to result in a uniform density and air content. The paving machine shall be equipped with a tachometer or other suitable device for measuring and indicating the actual frequency of vibrations.

The concrete shall be held at a uniform consistency. The slip-form paver shall be operated with as nearly a continuous forward movement as possible. And all operations of mixing, delivering, and spreading concrete shall be coordinated to provide uniform progress with stopping and starting of the paver held to a minimum. If for any reason, it is necessary to stop the forward movement of the paver, the vibratory and tamping elements shall also be stopped immediately. No tractive force shall be applied to the machine, except that which is controlled from the machine.

When concrete is being placed adjacent to an existing pavement, that part of the equipment which is supported on the existing pavement shall be equipped with protective pads on crawler tracks or rubber-tired wheels on which the bearing surface is offset to run a sufficient distance from the edge of the pavement to avoid breaking the pavement edge.

b. Side-Form Construction. Side form sections shall be straight, free from warps, bends, indentations, or other defects. Defective forms shall be removed from the work. Metal side forms shall be used except at end closures and transverse construction joints where straight forms of other suitable material may be used.

Side forms may be built up by rigidly attaching a section to either top or bottom of forms. If such build-up is attached to the top of metal forms, the build-up shall also be metal.

Width of the base of all forms shall be equal to at least 80 percent of the specified pavement thickness.

Side forms shall be of sufficient rigidity, both in the form and in the interlocking connection with adjoining forms, that springing will not occur under the weight of subgrading and paving equipment or from the pressure of the concrete. The Contractor shall provide sufficient forms so that there will be no delay in placing concrete due to lack of forms.

Before placing side forms, the underlying material shall be at the proper grade. Side forms shall have full bearing upon the foundation throughout their length and width of base and shall be placed to the required grade and alignment of the finished pavement. They shall be firmly supported during the entire operation of placing, compacting, and finishing the pavement.

Forms shall be drilled in advance of being placed to line and grade to accommodate tie bars where these are specified.

Immediately in advance of placing concrete and after all subbase operations are completed, side forms shall be trued and maintained to the required line and grade for a distance sufficient to prevent delay in placing.

Side forms shall remain in place at least 12 hours after the concrete has been placed, and in all cases until the edge of the pavement no longer requires the protection of the forms. Curing compound shall be applied to the concrete immediately after the forms have been removed.

Side forms shall be thoroughly cleaned and oiled each time they are used and before concrete is placed against them.

Concrete shall be spread, screeded, shaped and consolidated by one or more self-propelled machines. These machines shall uniformly distribute and consolidate concrete without segregation so that the completed pavement will conform to the required cross section with a minimum of handwork.

The number and capacity of machines furnished shall be adequate to perform the work required at a rate equal to that of concrete delivery.

Concrete for the full paving width shall be effectively consolidated by internal vibrators without causing segregation. Internal type vibrators' rate of vibration shall be not less than 7,000 cycles per minute. Amplitude of vibration shall be sufficient to be perceptible on the surface of the concrete more than one foot from the vibrating element. The Contractor shall furnish a tachometer or other suitable device for measuring and indicating frequency of vibration.

Power to vibrators shall be connected so that vibration ceases when forward or backward motion of the machine is stopped.

The provisions relating to the frequency and amplitude of internal vibration shall be considered the minimum requirements and are intended to ensure adequate density in the hardened concrete.

c. Consolidation Testing. The provisions relating to the frequency and amplitude of internal vibration shall be considered the minimum requirements and are intended to ensure adequate density in the hardened concrete. If a lack of consolidation of the concrete is suspected by the Engineer, additional referee testing may be required. Referee testing of hardened concrete will be performed by cutting cores from the finished pavement after a minimum of 24 hours curing. Density determinations will be made based on the water content of the core as taken. ASTM C 642 shall be used for the determination of core density in the saturated-surface dry condition. Referee cores will be taken at the minimum rate of one for each 500 cubic yards of pavement, or fraction thereof.

The average density of the cores shall be at least 97 percent of the original mix design density, with no cores having a density of less than 96 percent of the original mix design density.

Failure to meet the above requirements will be considered as evidence that the minimum requirements for vibration are inadequate for the job conditions, and additional vibrating units or other means of increasing the effect of vibration shall be employed so that the density of the hardened concrete as indicated by further referee testing shall conform to the above listed requirements.

501-4.9 STRIKE-OFF OF CONCRETE AND PLACEMENT OF REINFORCEMENT. Following the placing of the concrete, it shall be struck off to conform to the cross section shown on the plans and to an elevation such that when the concrete is properly consolidated and finished, the surface of the pavement shall be at the elevation shown on the plans. When reinforced concrete pavement is placed in two layers, the bottom layer shall be struck off to such length and depth that the sheet of reinforcing steel fabric or bar mat may be laid full length on the concrete in its final position without further manipulation. The reinforcement shall then be placed directly upon the concrete, after which the top layer of the concrete shall be placed, struck off, and screeded. If any portion of the bottom layer of concrete has been placed more than 30 minutes without being covered with the top layer or if initial set has taken place, it shall be removed and replaced with freshly mixed concrete at the Contractor's expense. When reinforced concrete is placed in one layer, the reinforcement may be positioned in advance of concrete placement or it may be placed in plastic concrete by mechanical or vibratory means after spreading.

Reinforcing steel, at the time concrete is placed, shall be free of mud, oil, or other organic matter that may adversely affect or reduce bond. Reinforcing steel with rust, mill scale or a combination of both will be considered satisfactory, provided the minimum dimensions, weight, and tensile properties of a hand wire-brushed test specimen are not less than the applicable ASTM specification requirements.

501-4.10 JOINTS. Joints shall be constructed as shown on the plans and in accordance with these requirements. All joints shall be constructed with their faces perpendicular to the surface of the pavement and finished or edged as shown on the plans. Joints shall not vary more than 1/2 inch (13 mm) from their designated position and shall be true to line with not more than 1/4-inch (6 mm) variation in 10 feet (3 m). The surface across the joints shall be tested with a 10-foot (3 m) straightedge as the joints are finished and any irregularities in excess of 1/4 inch (6 mm) shall be corrected before the concrete has hardened. All joints shall be so prepared, finished, or cut to provide a groove of uniform width and depth as shown on the plans.

a. Construction. Longitudinal construction joints shall be slip-formed or formed against side forms with or without keyways, as shown in the plans.

Transverse construction joints shall be installed at the end of each day's placing operations and at any other points within a paving lane when concrete placement is interrupted for more than 30 minutes or it appears that the concrete will obtain its initial set before fresh concrete arrives. The installation of the joint shall be located at a planned contraction or expansion joint. If placing of the concrete is stopped, the Contractor shall remove the excess concrete back to the previous planned joint.

b. Contraction. Contraction joints shall be installed at the locations and spacing as shown on the plans. Contraction joints shall be installed to the dimensions required by forming a groove or cleft in the top of the slab while the concrete is still plastic or by sawing a groove into the concrete surface after the concrete has hardened. When the groove is formed in plastic concrete the sides of the grooves shall be finished even and smooth with an edging tool. If an insert material is used, the installation and edge finish shall be according to the manufacturer's instructions. The groove shall be finished or cut clean so that spalling will be avoided at intersections with other joints. Grooving or sawing shall produce a slot at least 1/8 inch (3 mm) wide and to the depth shown on the plans.

c. Expansion. Expansion joints shall be installed as shown on the plans. The premolded filler of the thickness as shown on the plans, shall extend for the full depth and width of the slab at the joint, except for space for sealant at the top of the slab. The filler shall be securely staked or fastened into position perpendicular to the proposed finished surface. A cap shall be provided to protect the top edge of the filler and to permit the concrete to be placed and finished. After the concrete has been placed and struck off, the cap shall be carefully withdrawn leaving the space over the premolded filler. The edges of the joint shall be finished and tooled while the concrete is still plastic. Any concrete bridging the joint space shall be removed for the full width and depth of the joint.

d. Keyways. Keyways (only female keys permitted) shall be formed in the plastic concrete by means of side forms or the use of keyway liners that are inserted during the slip-form operations. The keyway shall be formed to a tolerance of 1/4 inch (6 mm) in any dimension and shall be of sufficient stiffness to support the upper keyway flange without distortion or slumping of the top of the flange. The dimensions of the keyway forms shall not vary more than plus or minus 1/4 inch (6 mm) from the mid-depth of the pavement. Liners that remain in place permanently

and become part of the keyed joint shall be made of galvanized, copper clad, or of similar rust-resistant material compatible with plastic and hardened concrete and shall not interfere with joint reservoir sawing and sealing.

e. Tie bars. Tie bars shall consist of deformed bars installed in joints as shown on the plans. Tie bars shall be placed at right angles to the centerline of the concrete slab and shall be spaced at intervals shown on the plans. They shall be held in position parallel to the pavement surface and in the middle of the slab depth. When tie bars extend into an unpaved lane, they may be bent against the form at longitudinal construction joints, unless threaded bolt or other assembled tie bars are specified. These bars shall not be painted, greased, or enclosed in sleeves. When slip-form operations call for tie bars, two-piece hook bolts can be installed in the female side of the keyed joint provided the installation is made without distorting the keyed dimensions or causing edge slump. If a bent tie bar installation is used, the tie bars shall be inserted through the keyway liner only on the female side of the joint. In no case shall a bent tie bar installation for male keyways be permitted.

f. Dowel bars. Dowel bars or other load-transfer units of an approved type shall be placed across joints in the manner as shown on the plans. They shall be of the dimensions and spacings as shown and held rigidly in the middle of the slab depth in the proper horizontal and vertical alignment by an approved assembly device to be left permanently in place. The dowel or load-transfer and joint devices shall be rigid enough to permit complete assembly as a unit ready to be lifted and placed into position. A metal, or other type, dowel expansion cap or sleeve shall be furnished for each dowel bar used with expansion joints. These caps shall be substantial enough to prevent collapse and shall be placed on the ends of the dowels as shown on the plans. The caps or sleeves shall fit the dowel bar tightly and the closed end shall be watertight. The portion of each dowel painted with rust preventative paint, as required under paragraph 501-2.7 and shown on the plans to receive a debonding lubricant, shall be thoroughly coated with asphalt MC-70, or an approved lubricant, to prevent the concrete from bonding to that portion of the dowel. If free-sliding plastic-coated or epoxy-coated steel dowels are used, a lubrication bond breaker shall be used except when approved pullout tests indicate it is not necessary. Where butt-type joints with dowels are designated, the exposed end of the dowel shall be oiled.

Dowel bars at contraction joints may be placed in the full thickness of pavement by a mechanical device approved by the Engineer. The device shall be capable of installing dowel bars within the maximum permissible alignment tolerances. Dowel bars at longitudinal construction joints shall be bonded in drilled holes.

g. Installation. All devices used for the installation of expansion joints shall be approved by the Engineer.

The top of an assembled joint device shall be set at the proper distance below the pavement surface and the elevation shall be checked. Such devices shall be set to the required position and line and shall be securely held in place by stakes or other means to the maximum permissible tolerances during the pouring and finishing of the concrete. The premolded joint material shall be placed and held in a vertical position; if constructed in sections, there shall be no offsets between adjacent units.

Dowel bars and assemblies shall be checked for position and alignment. The maximum permissible tolerances on dowel bar alignment shall be in accordance with paragraph 501-5.2e(6). During the concrete placement operation, it is advisable to place plastic concrete directly on dowel assemblies immediately prior to passage of the paver to help maintain dowel position and alignment within maximum permissible tolerances.

When concrete is placed using slip-form pavers, dowels and tie bars shall be placed in longitudinal construction joints by bonding the dowels or tie bars into holes drilled into the hardened concrete. Holes approximately 1/8-inch to 1/4-inch (3 to 6 mm) greater in diameter than the dowel or tie bar shall be drilled with rotary-type core drills that must be held securely in place to drill perpendicularly into the vertical face of the pavement slab. Rotary-type percussion drills may be used provided that spalling of concrete does not occur. Any damage of the concrete shall be repaired by the Contractor in a method approved by the Engineer. Dowels or tie bars shall be bonded in the drilled holes using an epoxy resin material. Installation procedures shall be adequate to insure that the area around dowels is completely filled with epoxy grout. Epoxy shall be injected into the back of the hole and displaced by the insertion of the dowel bar. Bars shall be completely inserted into the hole and shall not be withdrawn and reinserted creating air pockets in the epoxy around the bar. The Contractor shall furnish a template for checking the position and alignment of the dowels. Dowel bars shall not be less than 10 inches (25 cm) from a transverse joint and shall not interfere with dowels in the transverse direction.

h. Sawing of Joints. Joints shall be cut as shown on the plans. Equipment shall be as described in paragraph 501-4.1. The circular cutter shall be capable of cutting a groove in a straight line and shall produce a slot at least 1/8 inch (3 mm) wide and to the depth shown on the plans. The top portion of the slot shall be widened by sawing to provide adequate space for joint sealers as shown on the plans. Sawing shall commence as soon as the concrete has hardened sufficiently to permit cutting without chipping, spalling, or tearing and before uncontrolled shrinkage cracking of the pavement occurs. Sawing shall be carried on both during the day and night as required. The joints shall be sawed at the required spacing, consecutively in sequence of the concrete placement. Curing compound, if being used as the cure type, shall be reapplied in the initial sawcut and maintained for the remaining cure period. Curing compound shall not be applied, and used as the cure method, to any final concrete face that is to receive a sealant. All slurry and debris produced in the sawing of joints shall be removed by vacuuming and washing.

501-4.11 FINAL STRIKE-OFF, CONSOLIDATION, AND FINISHING.

a. Sequence. The sequence of operations shall be the strike-off, floating and removal of laitance, straightedging, and final surface finish. The addition of superficial water to the surface of the concrete to assist in finishing operations will not be permitted.

b. Finishing at Joints. The concrete adjacent to joints shall be compacted or firmly placed without voids or segregation against the joint material; it shall be firmly placed without voids or segregation under and around all load-transfer devices, joint assembly units, and other features designed to extend into the pavement. Concrete adjacent to joints shall be mechanically vibrated as required in paragraph 501-4.8.a. After the concrete has been placed and vibrated adjacent to the joints, the finishing machine shall be operated in a manner to avoid damage or misalignment of joints. If uninterrupted operations of the finishing machine, to, over, and beyond the joints, cause segregation of concrete, damage to, or misalignment of the joints, the finishing machine shall be stopped when the screed is approximately 8 inches (20 cm) from the joint. Segregated concrete shall be removed from the front of and off the joint; and the forward motion of the finishing machine shall be resumed. Thereafter, the finishing machine may be run over the joint without lifting the screed, provided there is no segregated concrete immediately between the joint and the screed or on top of the joint.

c. Machine Finishing. The concrete shall be spread as soon as it is placed, and it shall be struck off and screeded by a finishing machine. The machine shall go over each area as many times and at such intervals as necessary to give to proper consolidation and to leave a surface of uniform texture. Excessive operation over a given area shall be avoided. When side forms are used, the tops of the forms shall be kept clean by an effective device attached to the machine, and the travel of the machine on the forms shall be maintained true without lift, wobbling, or other variation tending to affect the precision finish. During the first pass of the finishing machine, a uniform ridge of concrete shall be maintained ahead of the front screed for its entire length. When in operation, the screed shall be moved forward with a combined longitudinal and transverse shearing motion, always moving in the direction in which the work is progressing, and so manipulated that neither end is raised from the side forms during the striking-off process. If necessary, this shall be repeated until the surface is of uniform texture, true to grade and cross section, and free from porous areas.

d. Hand Finishing. Hand finishing methods will not be permitted, except under the following conditions: in the event of breakdown of the mechanical equipment, hand methods may be used to finish the concrete already deposited on the grade; in areas of narrow widths or of irregular dimensions where operation of the mechanical equipment is impractical. Concrete, as soon as placed, shall be struck off and screeded. An approved portable screed shall be used. A second screed shall be provided for striking off the bottom layer of concrete when reinforcement is used.

The screed for the surface shall be at least 2 feet (0.6 m) longer than the maximum width of the slab to be struck off. It shall be of approved design, sufficiently rigid to retain its shape, and shall be constructed either of metal or of other suitable material covered with metal. Consolidation shall be attained by the use of suitable vibrators.

e. Floating. After the concrete has been struck off and consolidated, it shall be further smoothed and trued by means of a longitudinal float using one of the following methods:

(1) **Hand Method.** Long-handled floats shall not be less than 12 feet (3.6 m) in length and 6 inches (15 cm) in width, stiffened to prevent flexibility and warping. The float shall be operated from foot bridges spanning but not touching the concrete or from the edge of the pavement. Floating shall pass gradually from one side of the pavement to the other. Forward movement along the centerline of the pavement shall be in successive advances of not more than one-half the length of the float. Any excess water or laitance in excess of 1/8-inch (3 mm) thick shall be removed and wasted.

(2) **Mechanical method.** The Contractor may use a machine composed of a cutting and smoothing float(s), suspended from and guided by a rigid frame and constantly in contact with, the side forms or underlying surface. If necessary, long-handled floats having blades not less than 5 feet (1.5 m) in length and 6 inches (15 cm) in width may be used to smooth and fill in open-textured areas in the pavement. When the crown of the pavement will not permit the use of the mechanical float, the surface shall be floated transversely by means of a long-handled float. Care shall be taken not to work the crown out of the pavement during the operation. After floating, any excess water and laitance in excess of 1/8-inch (3 mm) thick shall be removed and wasted. Successive drags shall be lapped one-half the length of the blade.

f. Straight-edge Testing and Surface Correction. After the pavement has been struck off and while the concrete is still plastic, it shall be tested for trueness with a Contractor furnished 16-foot (5 m) straightedge swung from handles 3 feet (1 m) longer than one-half the width of the slab. The straightedge shall be held in contact with the surface in successive positions parallel to the centerline and the whole area gone over from one side of the slab to the other, as necessary. Advancing shall be in successive stages of not more than one-half the length of the straightedge. Any excess water and laitance in excess of 1/8-inch (3 mm) thick shall be removed from the surface of the pavement and wasted. Any depressions shall be immediately filled with freshly mixed concrete, struck off, consolidated, and refinished. High areas shall be cut down and refinished. Special attention shall be given to assure that the surface across joints meets the smoothness requirements of paragraph 501-5.2e(3). Straightedge testing and surface corrections shall continue until the entire surface is found to be free from observable departures from the straightedge and until the slab conforms to the required grade and cross section. The use of long-handled wood floats shall be confined to a minimum; they may be used only in emergencies and in areas not accessible to finishing equipment.

501-4.12 SURFACE TEXTURE. The surface of the pavement shall be finished with either a brush or broom, burlap drag, or artificial turf finish for all newly constructed concrete pavements. It is important that the texturing equipment not tear or unduly roughen the pavement surface during the operation. Any imperfections resulting from the texturing operation shall be corrected to the satisfaction of the Engineer.

a. Brush or Broom Finish. If the pavement surface texture is to be a type of brush or broom finish, it shall be applied when the water sheen has practically disappeared. The equipment shall operate transversely across the pavement surface, providing corrugations that are uniform in appearance and approximately 1/16 of an inch (2 mm) in depth.

Not Applicable

b. Burlap Drag Finish. If a burlap drag is used to texture the pavement surface, it shall be at least 15 ounces per square yard (555 grams per square meter). To obtain a textured surface, the transverse threads of the burlap shall be removed approximately 1 foot (0.3 m) from the trailing edge. A heavy buildup of grout on the burlap threads produces the desired wide sweeping longitudinal striations on the pavement surface. The corrugations shall be uniform in appearance and approximately 1/16 of an inch (2 mm) in depth.

c. Artificial Turf Finish. If artificial turf is used to texture the surface, it shall be applied by dragging the surface of the pavement in the direction of concrete placement with an approved full-width drag made with artificial turf. The leading transverse edge of the artificial turf drag will be securely fastened to a lightweight pole on a traveling bridge. At least 2 feet of the artificial turf shall be in contact with the concrete surface during dragging operations. A variety of different types of artificial turf are available and approval of any one type will be done only after it has been demonstrated by the Contractor to provide a satisfactory texture. One type that has provided satisfactory texture consists of 7,200 approximately 0.85-inches-long polyethylene turf blades per square foot. The corrugations shall be uniform in appearance and approximately 1/16 of an inch (2 mm) in depth.

SKID-RESISTANT SURFACESAW-CUT GROOVING. If shown on the plans, skid resistant surfaces for asphalt pavements shall be provided by construction of saw-cut grooves. Saw-cut grooves must meet the requirements of Item P-621.

501-4.14 CURING. Immediately after finishing operations are completed and marring of the concrete will not occur, the entire surface of the newly placed concrete shall be cured for a 7-day cure period in accordance with one of the methods below. Failure to provide sufficient cover material of whatever kind the Contractor may elect to use, or lack of water to adequately take care of both curing and other requirements, shall be cause for immediate suspension of concreting operations. The concrete shall not be left exposed for more than 1/2 hour during the curing period.

a. Impervious Membrane Method. The entire surface of the pavement shall be sprayed uniformly with white pigmented curing compound immediately after the finishing of the surface and before the set of the concrete has taken place. The curing compound shall not be applied during rainfall. Curing compound shall be applied by mechanical sprayers under pressure at the rate of 1 gallon (4 liters) to not more than 150 square feet (14 square meters). The spraying equipment shall be of the fully atomizing type equipped with a tank agitator. At the time of use, the compound shall be in a thoroughly mixed condition with the pigment uniformly dispersed throughout the vehicle. During application the compound shall be stirred continuously by mechanical means. Hand spraying of odd widths or shapes and concrete surfaces exposed by the removal of forms will be permitted. When hand spraying is approved by the Engineer, a double application rate shall be used to insure coverage. The curing compound shall be of such character that the film will harden within 30 minutes after application. Should the film become damaged from any cause, including sawing operations, within the required curing period, the damaged portions shall be repaired immediately with additional compound or other approved means. Upon removal of side forms, the sides of the exposed slabs shall be protected immediately to provide a curing treatment equal to that provided for the surface.

b. Polyethylene Films. The top surface and sides of the pavement shall be entirely covered with polyethylene sheeting. The units shall be lapped at least 18 inches (457 mm). The sheeting shall be placed and weighted to cause it to remain in contact with the surface and sides. The sheeting shall have dimensions that will extend at least twice the thickness of the pavement beyond the edges of the pavement. Unless otherwise specified, the sheeting shall be maintained in place for 7 days after the concrete has been placed.

c. Waterproof Paper. The top surface and sides of the pavement shall be entirely covered with waterproofed paper. The units shall be lapped at least 18 inches (457 mm). The paper shall be placed and weighted to cause it to remain in contact with the surface covered. The paper shall have dimensions that will extend at least twice the thickness of the pavement beyond the edges of the slab. The surface of the pavement shall be thoroughly saturated prior to placing of the paper. Unless otherwise specified, the paper shall be maintained in place for 7 days after the concrete has been placed.

d. White Burlap-Polyethylene Sheets. The surface of the pavement shall be entirely covered with the sheeting. The sheeting used shall be such length (or width) that it will extend at least twice the thickness of the pavement beyond the edges of the slab. The sheeting shall be placed so that the entire surface and both edges of the slab are completely covered. The sheeting shall be placed and weighted to remain in contact with the surface covered, and the covering shall be maintained fully saturated and in position for 7 days after the concrete has been placed.

(1) Curing in Cold Weather. The concrete shall be maintained at a temperature of at least 50 degrees F (10 degrees C) for a period of 72 hours after placing and at a temperature above freezing for the remainder of the curing time. The Contractor shall be responsible for the quality and strength of the concrete placed during cold weather, and any concrete injured by frost action shall be removed and replaced at the Contractor's expense.

e. Water Method. The entire area shall be covered with burlap or other water absorbing material. The material shall be of sufficient thickness to retain water for adequate curing without excessive runoff. The material shall be kept wet at all times and maintained for 7 days. When the forms are stripped, the vertical walls shall also

be kept moist. It shall be the responsibility of the Contractor to prevent ponding of the curing water on the subbase."

501-4.15 REMOVING FORMS. Unless otherwise specified, forms shall not be removed from freshly placed concrete until it has hardened sufficiently to permit removal without chipping, spalling, or tearing. After the forms have been removed, the sides of the slab shall be cured as outlined in one of the methods indicated in paragraph 501-4.14. Major honeycombed areas shall be considered as defective work and shall be removed and replaced in accordance with paragraph 501-5.2(f).

501-4.16 SEALING JOINTS. The joints in the pavement shall be sealed in accordance with Item P-605.

501-4.17 PROTECTION OF PAVEMENT. The Contractor shall protect the pavement and its appurtenances against both public traffic and traffic caused by the Contractor's employees and agents. This shall include watchmen to direct traffic and the erection and maintenance of warning signs, lights, pavement bridges, crossovers, and protection of unsealed joints from intrusion of foreign material, etc. Any damage to the pavement occurring prior to final acceptance shall be repaired or the pavement replaced at the Contractor's expense. The Contractor shall have available at all times, materials for the protection of the edges and surface of the unhardened concrete. Such protective materials shall consist of rolled polyethylene sheeting at least 4 mils (0.1 mm) thick of sufficient length and width to cover the plastic concrete slab and any edges. The sheeting may be mounted on either the paver or a separate movable bridge from which it can be unrolled without dragging over the plastic concrete surface. When rain appears imminent, all paving operations shall stop and all available personnel shall begin covering the surface of the unhardened concrete with the protective covering.

501-4.18 OPENING TO TRAFFIC. The pavement shall not be opened to traffic until test specimens molded and cured in accordance with ASTM C 31 have attained a flexural strength of 550 pounds per square inch (3,792 kPa) when tested in accordance with ASTM C 78. If such tests are not conducted, the pavement shall not be opened to traffic until 14 days after the concrete was placed. Prior to opening the pavement to construction traffic, all joints shall either be sealed or protected from damage to the joint edge and intrusion of foreign materials into the joint. As a minimum, backer rod or tape may be used to protect the joints from foreign matter intrusion. The pavement shall be cleaned before opening for normal operations.

501-4.19 REPAIR, REMOVAL, REPLACEMENT OF SLABS.

a. **General.** New pavement slabs that are broken or contain cracks shall be removed and replaced or repaired, as specified hereinafter at no cost to the owner. Spalls along joints shall be repaired as specified. Removal of partial slabs is not permitted. Removal and replacement shall be full depth, shall be full width of the slab, and the limit of removal shall be normal to the paving lane and to each original transverse joint. The engineer will determine whether cracks extend full depth of the pavement and may require cores to be drilled on the crack to determine depth of cracking. Such cores shall be 4-inch (100 mm) diameter, shall be drilled by the Contractor and shall be filled by the Contractor with a well consolidated concrete mixture bonded to the walls of the hole with epoxy resin, using approved procedures. Drilling of cores and refilling holes shall be at no expense to the owner. All epoxy resin used in this work shall conform to ASTM C 881, Type V.

b. **Shrinkage Cracks.** Shrinkage cracks, which do not exceed 4 inches in depth, shall be cleaned and then pressure injected with epoxy resin, Type IV, Grade 1, using procedures as approved. Care shall be taken to assure that the crack is not widened during epoxy resin injection. All epoxy resin injection shall take place in the presence of the Engineer. Shrinkage cracks, which exceed 4 inches in depth, shall be treated as full depth cracks in accordance with paragraphs 4.19b and 4.19c.

c. **Slabs With Cracks through Interior Areas.** Interior area is defined as that area more than 6 inches (600 mm) from either adjacent original transverse joint. The full slab shall be removed and replaced at no cost to the owner, when there are any full depth cracks, or cracks greater than 4" in depth, that extend into the interior area.

d. **Cracks Close To and Parallel To Joints.** All cracks essentially parallel to original joints, extending full depth of the slab, and lying wholly within 6 inches either side of the joint shall be treated as specified hereinafter.

Any crack extending more than 6 inches (600 mm) from the joint shall be treated as specified above in subparagraph "Slabs With Cracks Through Interior Area."

(1) Full Depth Cracks Present, Original Joint Not Opened. When the original uncracked joint has not opened, the crack shall be sawed and sealed, and the original joint filled with epoxy resin as specified below. The crack shall be sawed with equipment specially designed to follow random cracks. The reservoir for joint sealant in the crack shall be formed by sawing to a depth of 3/4 inch (19 mm), plus or minus 1/16 inch (1.6 mm), and to a width of 5/8 inch (16 mm), plus or minus 1/8 inch (3.2 mm). Any equipment or procedure which causes raveling or spalling along the crack shall be modified or replaced to prevent such raveling or spalling. The joint sealant shall be a liquid sealant as specified. Installation of joint seal shall be as specified for sealing joints or as directed. If the joint sealant reservoir has been sawed out, the reservoir and as much of the lower saw cut as possible shall be filled with epoxy resin, Type IV, Grade 2, thoroughly tooled into the void using approved procedures. If only the original narrow saw cut has been made, it shall be cleaned and pressure injected with epoxy resin, Type IV, Grade 1, using approved procedures. If filler type material has been used to form a weakened plane in the transverse joint, it shall be completely sawed out and the saw cut pressure injected with epoxy resin, Type IV, Grade 1, using approved procedures. Where a parallel crack goes part way across paving lane and then intersects and follows the original joint which is cracked only for the remainder of the width, it shall be treated as specified above for a parallel crack, and the cracked original joint shall be prepared and sealed as originally designed.

(2) Full Depth Cracks Present, Original Joint Also Cracked. At a joint, if there is any place in the lane width where a parallel crack and a cracked portion of the original joint overlap, the entire slab containing the crack shall be removed and replaced for the full lane width and length.

e. Removal and Replacement of Full Slabs. Where it is necessary to remove full slabs, unless there are keys or dowels present, all edges of the slab shall be cut full depth with a concrete saw. All saw cuts shall be perpendicular to the slab surface. If keys, dowels, or tie bars are present along any edges, these edges shall be sawed full depth 24 inches (150 mm) from the edge if only keys are present, or just beyond the end of the dowels or tie bars if they are present. These joints shall then be carefully sawed on the joint line to within 1 inch (25 mm) of the depth of the dowel or key.

The main slab shall be further divided by sawing full depth, at appropriate locations, and each piece lifted out and removed. Suitable equipment shall be used to provide a truly vertical lift, and approved safe lifting devices used for attachment to the slabs. The narrow strips along keyed or doweled edges shall be carefully broken up and removed using light, hand-held jackhammers, 30 LB (14 kg) or less, or other approved similar equipment.

Care shall be taken to prevent damage to the dowels, tie bars, or keys or to concrete to remain in place. The joint face below keys or dowels shall be suitably trimmed so that there is not abrupt offset in any direction greater than 1/2 inch (12 mm) and no gradual offset greater than 1 inch (25 mm) when tested in a horizontal direction with a 12-foot (3.6 m) straightedge.

No mechanical impact breakers, other than the above hand-held equipment shall be used for any removal of slabs. If underbreak between 1-1/2 and 4 inches (37 and 100 mm) deep occurs at any point along any edge, the area shall be repaired as directed before replacing the removed slab. Procedures directed will be similar to those specified for surface spalls, modified as necessary.

If underbreak over 4 inches (100 mm) deep occurs, the entire slab containing the underbreak shall be removed and replaced. Where there are no dowels, tie bars, or keys on an edge, or where they have been damaged, dowels of the size and spacing as specified for other joints in similar pavement shall be installed by epoxy grouting them into holes drilled into the existing concrete using procedures as specified. Original damaged dowels or tie bars shall be cut off flush with the joint face. Protruding portions of dowels shall be painted and lightly oiled. All 4 edges of the new slab shall thus contain dowels or original keys or original tie bars.

Placement of concrete shall be as specified for original construction. Prior to placement of new concrete, the underlying material (unless it is stabilized) shall be re-compacted and shaped as specified in the appropriate SECTION of these specifications. The surfaces of all four joint faces shall be cleaned of all loose material and contaminants and coated with a double application of membrane forming curing compound as bond breaker. Care

shall be taken to prevent any curing compound from contacting dowels or tie bars. The resulting joints around the new slab shall be prepared and sealed as specified for original construction.

f. Repairing Spalls Along Joints. Where directed, spalls along joints of new slabs, and along parallel cracks used as replacement joints, shall be repaired by first making a vertical saw cut at least 1 inch (25 mm) outside the spalled area and to a depth of at least 2 inches (50 mm). Saw cuts shall be straight lines forming rectangular areas. The concrete between the saw cut and the joint, or crack, shall be chipped out to remove all unsound concrete and at least 1/2 inch (12 mm) of visually sound concrete. The cavity thus formed shall be thoroughly cleaned with high-pressure water jets supplemented with compressed air to remove all loose material. Immediately before filling the cavity, a prime coat of epoxy resin, Type III, Grade I, shall be applied to the dry cleaned surface of all sides and bottom of the cavity, except any joint face. The prime coat shall be applied in a thin coating and scrubbed into the surface with a stiff-bristle brush. Pooling of epoxy resin shall be avoided. The cavity shall be filled with low slump Portland cement concrete or mortar or with epoxy resin concrete or mortar. Concrete shall be used for larger spalls, generally those more than 1/2 cu. ft. (0.014 m³) in size, and mortar SHALL BE USED FOR THE SMALLER ONES. ANY SPALL LESS THAN 0.1 CU. FT. (0.003 m³) shall be repaired only with epoxy resin mortar or a Grade III epoxy resin. Portland cement concrete and mortar mixtures shall be proportioned as directed and shall be mixed, placed, consolidated, and cured as directed. Epoxy resin mortars shall be made with Type III, Grade 1, epoxy resin, using proportions and mixing and placing procedures as recommended by the manufacturer and approved by the Engineer. The epoxy resin materials shall be placed in the cavity in layers not over 2 inches (50 mm) thick. The time interval between placement of additional layers shall be such that the temperature of the epoxy resin material does not exceed 140°F (60°C) at any time during hardening. Mechanical vibrators and hand tampers shall be used to consolidate the concrete or mortar. Any repair material on the surrounding surfaces of the existing concrete shall be removed before it hardens. Where the spalled area abuts a joint, an insert or other bond-breaking medium shall be used to prevent bond at the joint face. A reservoir for the joint sealant shall be sawed to the dimensions required for other joints, or as required to be routed for cracks. The reservoir shall be thoroughly cleaned and sealed with the sealer specified for the joints. If any spall penetrates half the depth of the slab or more, the entire slab shall be removed and replaced as previously specified.

501-4.20 EXISTING CONCRETE PAVEMENT REMOVAL AND REPAIR.

All operations shall be carefully controlled to prevent damage to the concrete pavement and to the underlying material to remain in place. All saw cuts shall be made perpendicular to the slab surface.

a. Removal of Existing Pavement Slab. Not applicable.

unable to produce such a joint face, or if underbreak or other distress occurs, the Contractor shall saw the dowels or keys flush with the joint. The Contractor shall then install new dowels, of the size and spacing used for other similar joints, by epoxy resin bonding them in holes drilled in the joint face as specified in paragraph "Placing dowels and Tie-bars. All this shall be at no additional cost to the Owner." [Dowels of the size and spacing indicated shall be installed as shown on the drawings by epoxy resin bonding them in holes drilled in the joint face as specified in paragraph "Placing Dowels and Tie Bars".] The joint face shall be sawed or otherwise trimmed so that there is no abrupt offset in any direction greater than 1/2-inch (12 mm) and no gradual offset greater than 1 inch (25 mm) when tested in a horizontal direction with a 12 ft. (3.6 m) straightedge.

b. Edge Repair. Not Applicable

MATERIAL ACCEPTANCE

501-5.1 ACCEPTANCE SAMPLING AND TESTING. All acceptance sampling and testing, with the exception of coring for thickness determination, necessary to determine conformance with the requirements specified in this section will be performed by the Engineer. Concrete shall be accepted for strength and thickness on a lot basis.

A lot shall consist of:

A day's production not to exceed 300 square yards.

Testing organizations performing these tests shall meet the requirements of ASTM C 1077, including accreditation. The accreditation will include ASTM C 78. The Contractor shall bear the cost of providing curing facilities for the strength specimens, per paragraph 501-5.1a(3), and coring and filling operations, per paragraph 501-5.1b(1).

a. Flexural Strength.

(1) **Sampling.** Each lot shall be divided into four equal sublots. One sample shall be taken for each subplot from the plastic concrete delivered to the job site. Sampling locations shall be determined by the Engineer in accordance with random sampling procedures contained in ASTM D 3665. The concrete shall be sampled in accordance with ASTM C 172.

(2) **Testing.** Two (2) specimens shall be made from each sample. Specimens shall be made in accordance with ASTM C 31 and the flexural strength of each specimen shall be determined in accordance with ASTM C 78. The flexural strength for each subplot shall be computed by averaging the results of the two test specimens representing that subplot.

Immediately prior to testing for flexural strength, the beam shall be weighed and measured for determination of a sample unit weight. Measurements shall be made for each dimension; height, depth, and length, at the mid-point of the specimen and reported to the nearest tenth of an inch. The weight of the specimen shall be reported to the nearest 0.1 pound. The sample unit weight shall be calculated by dividing the sample weight by the calculated volume of the sample. This information shall be reported as companion information to the measured flexural strength for each specimen.

The samples will be transported while in the molds. The curing, except for the initial cure period, will be accomplished using the immersion in saturated lime water method.

Slump, air content, and temperature tests will also be conducted by the quality assurance laboratory for each set of strength test samples, per ASTM C 31.

(3) **Curing.** The Contractor shall provide adequate facilities for the initial curing of beams. During the 24 hours after molding, the temperature immediately adjacent to the specimens must be maintained in the range of 60 to 80 degrees F (16 to 27 degrees C), and loss of moisture from the specimens must be prevented. The specimens may be stored in tightly constructed wooden boxes, damp sand pits, temporary buildings at construction sites, under wet burlap in favorable weather, or in heavyweight closed plastic bags, or using other suitable methods, provided the temperature and moisture loss requirements are met.

(4) **Acceptance.** Acceptance of pavement for flexural strength will be determined by the Engineer in accordance with paragraph 501-5.2b.

b. Pavement Thickness.

(1) **Sampling.** Each lot shall be divided into four equal sublots and one core shall be taken by the Contractor for each subplot. Sampling locations shall be determined by the Engineer in accordance with random sampling procedures contained in ASTM D 3665. Areas, such as thickened edges, with planned variable thickness, shall be excluded from sample locations.

Cores shall be neatly cut with a core drill. The Contractor shall furnish all tools, labor, and materials for cutting samples and filling the cored hole. Core holes shall be filled by the Contractor with a non-shrink grout approved by the Engineer within one day after sampling.

(2) **Testing.** The thickness of the cores shall be determined by the Engineer by the average caliper measurement in accordance with ASTM C 174.

(3) **Acceptance.** Acceptance of pavement for thickness shall be determined by the Engineer in accordance with paragraph 501-5.2c.

c. Partial Lots. When operational conditions cause a lot to be terminated before the specified number of tests have been made for the lot, or when the Contractor and Engineer agree in writing to allow overages or minor placements to be considered as partial lots, the following procedure will be used to adjust the lot size and the number of tests for the lot.

Where three sublots have been produced, they shall constitute a lot. Where one or two sublots have been produced, they shall be incorporated into the next lot or the previous lot and the total number of sublots shall be used in the acceptance criteria calculation, i.e., $n=5$ or $n=6$.

d. Outliers. All individual flexural strength tests within a lot shall be checked for an outlier (test criterion) in accordance with ASTM E 178, at a significance level of 5 percent. Outliers shall be discarded, and the PWL shall be determined using the remaining test values.

501-5.2 ACCEPTANCE CRITERIA.

a. General. Acceptance will be based on the following characteristics of the completed pavement:

- | | |
|-----------------------|-------------------------|
| (1) Flexural strength | (4) Grade |
| (2) Thickness | (5) Edge slump |
| (3) Smoothness | (6) Dowel bar alignment |

Flexural strength and thickness shall be evaluated for acceptance on a lot basis using the method of estimating percentage of material within specification limits (PWL). Acceptance using PWL considers the variability (standard deviation) of the material and the testing procedures, as well as the average (mean) value of the test results to calculate the percentage of material that is above the lower specification tolerance limit (L).

Acceptance for flexural strength will be based on the criteria contained in accordance with paragraph 501-5.2e(1). Acceptance for thickness will be based on the criteria contained in paragraph 501-5.2e(2). Acceptance for smoothness will be based on the criteria contained in paragraph 501-5.2e(3). Acceptance for grade will be based on the criteria contained in paragraph 501-5.2e(4).

The Engineer may at any time, notwithstanding previous plant acceptance, reject and require the Contractor to dispose of any batch of concrete mixture which is rendered unfit for use due to contamination, segregation, or improper slump. Such rejection may be based on only visual inspection. In the event of such rejection, the Contractor may take a representative sample of the rejected material in the presence of the Engineer, and if it can be demonstrated in the laboratory, in the presence of the Engineer, that such material was erroneously rejected, payment will be made for the material at the contract unit price.

b. Flexural Strength. Acceptance of each lot of in-place pavement for flexural strength shall be based on PWL. The Contractor shall target production quality to achieve 90 PWL or higher.

c. Pavement Thickness. Acceptance of each lot of in-place pavement shall be based on PWL. The Contractor shall target production quality to achieve 90 PWL or higher.

d. Percentage of Material Within Limits (PWL). The percentage of material within limits (PWL) shall be determined in accordance with procedures specified in Section 110 of the General Provisions.

The lower specification tolerance limit (L) for flexural strength and thickness shall be:

Lower Specification Tolerance Limit (L)

Flexural Strength	$0.93 \times$ strength specified in paragraph 501-3.1
Thickness	Lot Plan Thickness in inches - 0.50 inches

e. Acceptance Criteria.

(1) **Flexural Strength.** If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. Acceptance and payment for the lot shall be determined in accordance with paragraph 501-8.1.

(2) **Thickness.** If the PWL of the lot equals or exceeds 90 percent, the lot shall be acceptable. Acceptance and payment for the lot shall be determined in accordance with paragraph 501-8.1.

(3) **Smoothness.** As soon as the concrete has hardened sufficiently, the pavement surface shall be tested with a 16-foot (5 m) straightedge or other specified device. Surface smoothness deviations shall not exceed 1/4 inch (6 mm) from a 16-foot (5 m) straightedge placed in any direction, including placement along and spanning any pavement joint edge.

Areas in a slab showing high spots of more than 1/4 inch (6 mm) but not exceeding 1/2 inch (13 mm) in 16 feet (5 m) shall be marked and immediately ground down with an approved grinding machine to an elevation that will fall within the tolerance of 1/4 inch (6 mm) or less. Where the departure from correct cross section exceeds 1/2 inch (13 mm), the pavement shall be removed and replaced at the expense of the Contractor when so directed by the Engineer.

(4) **Grade.** An evaluation of the surface grade shall be made by the Engineer for compliance to the tolerances contained below. Records shall be maintained showing all grade measurements.

Lateral Deviation. Lateral deviation from established alignment of the pavement edge shall not exceed plus or minus 0.10 foot (30 mm) in any lane.

Vertical Deviation. Vertical deviation from established grade shall not exceed plus or minus 0.04 foot (12 mm) at any point.

(5) **Edge Slump.** When slip-form paving is used, not more than 15 percent of the total free edge of each 500 foot (150 m) segment of pavement, or fraction thereof, shall have an edge slump exceeding 1/4-inch (6 mm), and none of the free edge of the pavement shall have an edge slump exceeding 3/8-inch (10 mm). (The total free edge of 500 feet (150 m) of pavement will be considered the cumulative total linear measurement of pavement edge originally constructed as nonadjacent to any existing pavement; i.e., 500 feet (150 m) of paving lane originally constructed as a separate lane will have 1,000 feet (300 m) of free edge, 500 feet (150 m) of fill-in lane will have no free edge, etc.). The area affected by the downward movement of the concrete along the pavement edge shall be limited to not more than 18 inches (457 mm) from the edge. When excessive edge slump cannot be corrected before the concrete has hardened, the area with excessive edge slump shall be removed and replaced at the expense of the Contractor when so directed by the Engineer.

(6) **Dowel Bar Alignment.** Dowel bars and assemblies shall be checked for position and alignment. The maximum permissible tolerance on dowel bar alignment in each plane, horizontal and vertical, shall not exceed 2 percent or 1/4 inch per foot (20 mm per meter) of a dowel bar. Vertical alignment of dowels shall be measured parallel to the designed top surface of the pavement, except for those across the crown or other grade change joints. Dowels across crowns and other joints at grade changes, shall be measured to a level surface. Horizontal alignment shall be checked perpendicular to the joint edge.

f. **Removal and Replacement of Concrete.** Any area or section of concrete that is removed and replaced shall be removed and replaced back to planned joints. The Contractor shall replace damaged dowels and the requirements for doweled longitudinal construction joints in paragraph 501-4.10 shall apply to all contraction joints exposed by concrete removal. Removal and replacement shall be in accordance with paragraph 501-4.19 of this specification.

CONTRACTOR QUALITY CONTROL

501-6.1 QUALITY CONTROL PROGRAM. The Contractor shall develop a Quality Control Program in accordance with Section 100 of the General Provisions. The program shall address all elements that effect the quality of the pavement including but not limited to:

- | | | |
|-------------------------|------------------------------|-------------------------------------|
| a. Mix Design | e. Proportioning | i. Dowel Placement and Alignment |
| b. Aggregate Gradation | f. Mixing and Transportation | j. Flexural or Compressive Strength |
| c. Quality of Materials | g. Placing and Consolidation | k. Finishing and Curing |
| d. Stockpile Management | h. Joints | l. Surface Smoothness |

501-6.2 QUALITY CONTROL TESTING. The Contractor shall perform all quality control tests necessary to control the production and construction processes applicable to this specification and as set forth in the Quality Control Program. The testing program shall include, but not necessarily be limited to, tests for aggregate gradation, aggregate moisture content, slump, and air content.

A Quality Control Testing Plan shall be developed as part of the Quality Control Program.

a. Fine Aggregate.

(1) **Gradation.** A sieve analysis shall be made at least twice daily in accordance with ASTM C 136 from randomly sampled material taken from the discharge gate of storage bins or from the conveyor belt.

(2) **Moisture Content.** If an electric moisture meter is used, at least two direct measurements of moisture content shall be made per week to check the calibration. If direct measurements are made in lieu of using an electric meter, two tests shall be made per day. Tests shall be made in accordance with ASTM C 70 or ASTM C 566.

b. Coarse Aggregate.

(1) **Gradation.** A sieve analysis shall be made at least twice daily for each size of aggregate. Tests shall be made in accordance with ASTM C 136 from randomly sampled material taken from the discharge gate of storage bins or from the conveyor belt.

(2) **Moisture Content.** If an electric moisture meter is used, at least two direct measurements of moisture content shall be made per week to check the calibration. If direct measurements are made in lieu of using an electric meter, two tests shall be made per day. Tests shall be made in accordance with ASTM C 566.

c. Slump. Four slump tests shall be performed for each lot of material produced in accordance with the lot size defined in Section 501-5.1. One test shall be made for each subplot. Slump tests shall be performed in accordance with ASTM C 143 from material randomly sampled from material discharged from trucks at the paving site. Material samples shall be taken in accordance with ASTM C 172.

d. Air Content. Four air content tests, shall be performed for each lot of material produced in accordance with the lot size defined in Section 501-5.1. One test shall be made for each subplot. Air content tests shall be performed in accordance with ASTM C 231 for gravel and stone coarse aggregate and ASTM C 173 for slag or other porous coarse aggregate, from material randomly sampled from trucks at the paving site. Material samples shall be taken in accordance with ASTM C 172.

e. Four unit weight and yield tests shall be made in accordance with ASTM C 138. The samples shall be taken in accordance with ASTM C 172 and at the same time as the air content tests.

501-6.3 CONTROL CHARTS. The Contractor shall maintain linear control charts for fine and coarse aggregate gradation, slump, and air content.

Control charts shall be posted in a location satisfactory to the Engineer and shall be kept up to date at all times. As a minimum, the control charts shall identify the project number, the contract item number, the test number, each test parameter, the Action and suspension Limits, or Specification limits, applicable to each test parameter, and the Contractor's test results. The Contractor shall use the control charts as part of a process control system for identifying potential problems and assignable causes before they occur. If the Contractor's projected data during production indicates a potential problem and the Contractor is not taking satisfactory corrective action, the Engineer may halt production or acceptance of the material.

a. Fine and Coarse Aggregate Gradation. The Contractor shall record the running average of the last five gradation tests for each control sieve on linear control charts. Specification limits contained in Tables 1 and 2 shall be superimposed on the Control Chart for job control.

b. Slump and Air Content. The Contractor shall maintain linear control charts both for individual measurements and range (i.e. difference between highest and lowest measurements) for slump and air content in accordance with the following Action and Suspension Limits.

CONTROL CHART LIMITS			
Control Parameter	Individual Measurements		Range Suspension Limit
	Action Limit	Suspension Limit	
Slip Form:			
Slump	+0 to -1 inch (0-25mm)	+0.5 to -1.5 inch (13-38mm)	+/- 1.5 inch (38 mm)
Air Content	+/- 1.2%	+/- 1.8%	+/- 2.5%
Fixed Form			
Slump	+ 0.5 to -1 inch (13-25mm)	+1 to -1.5 inch (25-38mm)	+/- 1.5 inch (38mm)
Air Content	+/- 1.2%	+/- 1.8%	+/- 2.5%

The individual measurement control charts shall use the mix design target values as indicators of central tendency.

501-6.4 CORRECTIVE ACTION. The Contractor Quality Control Program shall indicate that appropriate action shall be taken when the process is believed to be out of control. The Contractor Quality Control Program shall detail what action will be taken to bring the process into control and shall contain sets of rules to gauge when a process is out of control. As a minimum, a process shall be deemed out of control and corrective action taken if any one of the following conditions exists.

a. Fine and Coarse Aggregate Gradation. When two consecutive averages of five tests are outside of the Tables 1 or 2 specification limits, immediate steps, including a halt to production, shall be taken to correct the grading.

b. Fine and Coarse Aggregate Moisture Content. Whenever the moisture content of the fine or coarse aggregate changes by more than 0.5 percent, the scale settings for the aggregate batcher(s) and water batcher shall be adjusted.

c. Slump. The Contractor shall halt production and make appropriate adjustments whenever:

- (1) one point falls outside the Suspension Limit line for individual measurements or range; or
- (2) two points in a row fall outside the Action Limit line for individual measurements.

d. Air Content. The Contractor shall halt production and adjust the amount of air-entraining admixture whenever:

- (1) one point falls outside the Suspension Limit line for individual measurements or range; or

(2) two points in a row fall outside the Action Limit line for individual measurements.

Whenever a point falls outside the Action Limits line, the air-entraining admixture dispenser shall be calibrated to ensure that it is operating correctly and with good reproducibility.

METHOD OF MEASUREMENT

501-8.1 PAYMENT. Payment for accepted concrete pavement shall be made at the contract unit price adjusted in accordance with paragraph 501-8.1a, subject to the limitation that:

The total project payment for concrete pavement shall not exceed 100 percent of the product of the contract unit price and the total number of concrete pavement used in the accepted work (See Note 2 under Table 3).

Payment shall be full compensation for all labor, materials, tools, equipment, and incidentals required to complete the work as specified herein and on the drawings.

a. Basis of Adjusted Payment. The pay factor for each individual lot shall be calculated in accordance with Table 3. A pay factor shall be calculated for both flexural strength and thickness. The lot pay factor shall be the higher of the two values when calculations for both flexural strength and thickness are 100 percent or higher. The lot pay factor shall be the product of the two values when only one of the calculations for either flexural strength or thickness is 100 percent or higher. The lot pay factor shall be the lower of the two values when calculations for both flexural strength and thickness are less than 100 percent.

TABLE 3. PRICE ADJUSTMENT SCHEDULE ¹

Percentage of Material Within Specification Limits (PWL)	Lot Pay Factor (Percent of Contract Unit Price)
96 – 100	106
90 – 95	PWL + 10
75 – 90	0.5PWL + 55
55 – 74	1.4PWL – 12
Below 55	Reject ²

¹ ALTHOUGH IT IS THEORETICALLY POSSIBLE TO ACHIEVE A PAY FACTOR OF 106 PERCENT FOR EACH LOT, ACTUAL PAYMENT IN EXCESS OF 100 PERCENT SHALL BE SUBJECT TO THE TOTAL PROJECT PAYMENT LIMITATION SPECIFIED IN PARAGRAPH 501-8.1.

² The lot shall be removed and replaced. However, the Engineer may decide to allow the rejected lot to remain. In that case, if the Engineer and Contractor agree in writing that the lot shall not be removed, it shall be paid for at 50 percent of the contract unit price AND THE TOTAL PROJECT PAYMENT LIMITATION SHALL BE REDUCED BY THE AMOUNT WITHHELD FOR THE REJECTED LOT.

For each lot accepted, the adjusted contract unit price shall be the product of the lot pay factor for the lot and the contract unit price. Payment shall be subject to the total project payment limitation specified in paragraph 501-8.1. Payment in excess of 100 percent for accepted lots of concrete pavement shall be used to offset payment for accepted lots of concrete pavement that achieve a lot pay factor less than 100 percent.

b. Payment. Payment shall be made under:

- Item P-501-8.1a Portland Cement Concrete Pavement (Reinforced) – 8 1/2" Thick—per square yard.
- Item P-501-8.1b Portland Cement Concrete Pavement (Reinforced) – 7" Thick—per square yard.

c. Basis of adjusted payment for Smoothness. Price adjustment for pavement smoothness will apply to the total area of concrete within a section of pavement and shall be applied in accordance the following equation and schedule:

$$(\text{Sq yds in section}) \times (\text{original unit price per sq yds}) \times \text{PFm} = \\ = \text{reduction in payment for area within section}$$

Average Profile Index (Inches per mile)			Contract Unit Price Adjustment PFm
pavement strength rating			
over 30,000 lb	30,000 lb or less	Short Sections	
0 - 7	0 - 10	0 - 15	0.00
7.1 - 9	10.1 - 11	15.1 - 16	0.02
9.1 - 11	11.1 - 12	16.1 - 17	0.04
11.1 - 13	12.1 - 13	17.1 - 18	0.06
13.1 - 14	13.1 - 14	18.1 - 20	0.08
14.1 - 15	14.1 - 15	20.1 - 22	0.10
15.1 & up	15.1 & up	22.1 & up	corrective work required

TESTING REQUIREMENTS

ASTM C 31	Making and Curing Concrete Test Specimens in the Field
ASTM C 39	Compressive Strength of Cylindrical Concrete Specimens
ASTM C 70	Surface Moisture in Fine Aggregate
ASTM C 78	Test for Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading)
ASTM C 88	Test for Soundness of Aggregates by Use of Sodium Sulfate or Magnesium Sulfate
ASTM C 131	Test for Resistance to Abrasion of Small Size Coarse Aggregate by Use of the Los Angeles Machine
ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM C 138	Test for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete
ASTM C 143	Test for Slump of Hydraulic Cement Concrete
ASTM C 172	Sampling Freshly Mixed Concrete
ASTM C 173	Test for Air Content of Freshly Mixed Concrete by the Volumetric Method
ASTM C 174	Measuring Thickness of Concrete Elements Using Drilled Concrete Cores
ASTM C 227	Potential Alkali Reactivity of Cement-Aggregate Combinations (Mortar-Bar Method)
ASTM C 231	Test for Air Content of Freshly Mixed Concrete by the Pressure Method
ASTM C 289	Potential Alkali-Silica Reactivity of Aggregates (Chemical Method)
ASTM C 295	Petrographic Examination of Aggregates for Concrete
ASTM C 114	Chemical Analysis of Hydraulic Cement

ASTM C 535	Test for Resistance to Degradation of Large-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
ASTM C 566	Total Evaporable Moisture Content of Aggregates by Drying
ASTM C 642	Test for Density, Absorption, and Voids in Hardened Concrete
ASTM C 666	Resistance of Concrete to Rapid Freezing and Thawing
ASTM C 1077	Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction And Criteria for Laboratory Evaluation
ASTM C 1260	Potential Alkali Reactivity of Aggregates (Mortar-Bar Method)
ASTM D 3665	Random Sampling of Paving Materials
ASTM D 4791	Test Method for Flat or Elongated Particles in Coarse Aggregate
ASTM E 178	Dealing With Outlying Observations
ASTM E 1274	Test for Measuring Pavement Roughness Using a Profilograph
AASHTO T 26	Quality of Water to be Used in Concrete

MATERIAL REQUIREMENTS

ASTM A 184	Specification for Fabricated Deformed Steel Bar Mats for Concrete Reinforcement
ASTM A 185	Specification for Steel Welded Wire Fabric, Plain, for Concrete Reinforcement
ASTM A 497	Specification for Steel Welded Wire Fabric, Deformed, for Concrete Reinforcement
ASTM A 615	Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
ASTM A 704	Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement
ASTM A 714	Specification for High-Strength Low-Alloy Welded and Seamless Steel Pipe
ASTM A 996	Specification for Rail-Steel and Axle Steel Deformed Bars for Concrete Reinforcement
ASTM C 33	Specification for Concrete Aggregates
ASTM C 94	Specification for Ready-Mixed Concrete
ASTM C 150	Specification for Portland Cement
ASTM C 171	Specification for Sheet Materials for Curing Concrete
ASTM C 260	Specification for Air-Entraining Admixtures for Concrete
ASTM C 309	Specification for Liquid Membrane-Forming Compounds for Curing Concrete
ASTM C 494	Specification for Chemical Admixtures for Concrete
ASTM C 595	Specification for Blended Hydraulic Cements

ASTM C 618	Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use as a Mineral Admixture in Concrete
ASTM C 881	Specification for Epoxy-Resin Base Bonding System for Concrete
ASTM C 989	Specification for Ground Granulated Blast-Furnace Slag for Use in Concrete and Mortars
ASTM D 1751	Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types)
ASTM D 1752	Specification for Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving And Structural Construction
ACI 305R	Hot Weather Concreting
ACI 306R	Cold Weather Concreting
ACI 309	Guide for Consolidation of Concrete

MIL-DTL-24441/20a (1999)_Paint, Epoxy-Polyamide, Green Primer, Formula 150, Type III
Department of Defense

END ITEM P-501

PART VII – MISCELLANEOUS

ITEM P-602 BITUMINOUS PRIME COAT

DESCRIPTION

602-1.1 This item shall consist of an application of bituminous material on the prepared base course in accordance with these specifications and in reasonably close conformity to the lines shown on the plans.

MATERIALS

602-2.1 BITUMINOUS MATERIAL. The types, grades, controlling specifications, and application temperatures for the bituminous materials are given in Table 1. The Engineer shall designate the specific material to be used.

TABLE 1. BITUMINOUS MATERIAL

Type and Grade	Specification	Application Temperatures 1\	
		Deg. F	Deg. C
Emulsified Asphalt			
SS-1, SS-1h	ASTM D 977	70-160	20-70
MS-2, HFMS-1	ASTM D 977	70-160	20-70
CSS-1, CSS-1h	ASTM D 2397	70-160	20-70
CMS-2	ASTM D 2397	70-160	20-70
Cutback Asphalt			
RC-30	ASTM D 2028	80+	30+
RC-70	ASTM D 2028	120+	50+
RC-250	ASTM D 2028	165+	75+

1\ The maximum temperature for cutback asphalt shall be that at which fogging occurs.

CONSTRUCTION METHODS

602-3.1 WEATHER LIMITATIONS. The prime coat shall be applied only when the existing surface is dry or contains sufficient moisture to get uniform distribution of the bituminous material, when the atmospheric temperature is above 60°F (15°C), and when the weather is not foggy or rainy. The temperature requirements may be waived, but only when so directed by the Engineer.

602-3.2 EQUIPMENT. The equipment used by the Contractor shall include a self-powered pressure bituminous material distributor and equipment for heating bituminous material.

The distributor shall be designed, equipped, maintained, and operated so that bituminous material at even heat may be applied uniformly on variable widths of surface at the specified rate. The allowable variation from the specified rate shall not exceed 10 percent. Distributor equipment shall include a tachometer, pressure gages, volume-measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. The distributor shall be self-powered and shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

If the distributor is not equipped with an operable quick shut off valve, the prime operations shall be started and stopped on building power. The Contractor shall remove blotting sand prior to asphalt concrete lay down operations at no additional expense to the owner.

A power broom and/or blower shall be provided for any required cleaning of the surface to be treated.

602-3.3 APPLICATION OF BITUMINOUS MATERIAL. Immediately before applying the prime coat, the full width of the surface to be primed shall be swept with a power broom to remove all loose dirt and other objectionable material.

The bituminous material including solvent shall be uniformly applied with a bituminous distributor at the rate of 0.25 to 0.50 gallons per square yard (1.20 to 2.40 liters per square meter) depending on the base course surface texture. The type of bituminous material and application rate shall be approved by the Engineer prior to application.

Following the application, the primed surface shall be allowed to dry not less than 48 hours without being disturbed or for such additional time as may be necessary to permit the drying out of the prime coat until it will not be picked up by traffic or equipment. This period shall be determined by the Engineer. The surface shall then be maintained by the Contractor until the surfacing has been placed. Suitable precautions shall be taken by the Contractor to protect the primed surface against damage during this interval, including supplying and spreading any sand necessary to blot up excess bituminous material.

602-3.4 BITUMINOUS MATERIAL CONTRACTOR'S RESPONSIBILITY. Samples of the bituminous materials that the Contractor proposes to use, together with a statement as to their source and character, must be submitted and approved before use of such material begins. The Contractor shall require the manufacturer or producer of the bituminous materials to furnish material subject to this and all other pertinent requirements of the contract. Only satisfactory materials, so demonstrated by service tests, shall be acceptable.

The Contractor shall furnish vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The test reports shall contain all the data required by the applicable specification. If the Contractor applies the prime material prior to receipt of the tests reports, payment for the material shall be withheld until they are received. If the material does not pass the specifications it shall be replaced at the contractor's expense. The report shall be delivered to the Engineer before permission is granted for use of the material. The furnishing of the vendor's certified test report for the bituminous material shall not be interpreted as basis

for final acceptance. All such test reports shall be subject to verification by testing samples of materials received for use on the project.

602-3.5 FREIGHT AND WEIGH BILLS. Before the final estimate is allowed, the Contractor shall file with the Engineer receipted bills when railroad shipments are made, and certified weigh bills when materials are received in any other manner, of the bituminous materials actually used in the construction covered by the contract. The Contractor shall not remove bituminous material from the tank car or storage tank until the initial outage and temperature measurements have been taken by the Engineer, nor shall the car or tank be released until the final outage has been taken by the Engineer.

Copies of freight bills and weigh bills shall be furnished to the Engineer during the progress of the work.

METHOD OF MEASUREMENT

602-4.1. The bituminous material for prime coat shall be measured by the gallon. Volume shall be corrected to the volume at 60°F (15°C) in accordance with ASTM D 1250 for cutback asphalt, and Table IV 3 of The Asphalt Institute's Manual MS 6 for emulsified asphalt.

BASIS OF PAYMENT

602-5.1 Payment shall be made at the contract unit price per gallon for bituminous prime coat. This price shall be full compensation for furnishing all materials and for all preparation, delivering, and applying the materials, and for all labor, equipment, tools, and incidentals necessary to complete this item.

Payment will be made under:

Item P-602	Bituminous Prime Coat—per gallon
------------	----------------------------------

MATERIAL REQUIREMENTS

ASTM D 977	Emulsified Asphalt
ASTM D 2028	Cutback Asphalt (Rapid Curing Type)
ASTM D 2397	Cationic Emulsified Asphalt

TESTING REQUIREMENTS

ASTM D 1250	Petroleum Measurement Tables
Asphalt Institute Manual MS-6 Table IV-3	Asphalt Pocketbook of Useful Information (Temperature- Volume Corrections for Emulsified Asphalts)

END ITEM P-602

ITEM P-603: BITUMINOUS TACK COAT

DESCRIPTION

603-101 This item shall consist of preparing and treating a bituminous or concrete surface with bituminous material in accordance with these specifications and in reasonably close conformity to the lines show on the plans.

MATERIALS

603-2.1 BITUMINOUS MATERIALS. The bituminous material shall be either cutback asphalt, emulsified asphalt, or tar and shall conform to the requirements of Table 1. The type, grade, controlling specification, and application temperature of bituminous material to be used shall be specified by the Engineer.

TABLE 1. BITUMINOUS MATERIAL

Type and Grade	Specification	Application Temperature	
		Deg. F	Deg. C
Emulsified Asphalt			
SS-1, SS-1h	ASTM D 977	75-130	25-55
CSS-1, CSS-1h	ASTM D 2397	75-130	25-55
Cutback Asphalt			
RC-70	ASTM D 2028	120-160	50-70
Tar			
RTCB 5, RTCB 6	AASHTO M 52	60-120	15-50

CONSTRUCTION METHODS

603-3.1 WEATHER LIMITATIONS. The tack coat shall be applied only when the existing surface is dry and the atmospheric temperature is above 60 F (15 C). The temperature requirements may be waived, but only when so directed by the Engineer.

603-3.2 EQUIPMENT. The Contractor shall provide equipment for heating and applying the bituminous material.

The distributor shall be designed, equipped, maintained, and operated so that bituminous material at even heat may be applied uniformly on variable widths of surface at the specified

rate. The allowable variation from the specified rate shall not exceed 10 percent. Distributor equipment shall include a tachometer, pressure gages, volume-measuring devices or a calibrated tank, and a thermometer for measuring temperatures of tank contents. The distributor shall be self-powered and shall be equipped with a power unit for the pump and full circulation spray bars adjustable laterally and vertically.

A power broom and/or blower shall be provided for any required cleaning of the surface to be treated.

603-3.3 APPLICATION OF BITUMINOUS MATERIAL. Immediately before applying the tack coat, the full width of surface to be treated shall be swept with a power broom and/or airblast to remove all loose dirt and other objectionable material.

Emulsified asphalt shall be diluted by the addition of water when directed by the Engineer and shall be applied a sufficient time in advance of the paver to ensure that all water has evaporated before any of the overlying mixture is placed on the tacked surface.

The bituminous material including vehicle or solvent shall be uniformly applied with a bituminous distributor at the rate of 0.05 to 0.15 gallons per square yard (0.24 to 0.72 liters per square meter) depending on the condition of the existing surface. The type of bituminous material and application rate shall be approved by the Engineer prior to application.

Following the application, the surface shall be allowed to cure without being disturbed for such period of time as may be necessary to permit drying out and setting of the tack coat. This period shall be determined by the Engineer. The surface shall then be maintained by the Contractor until the next course has been placed. Suitable precautions shall be taken by the Contractor to protect the surface against damage during this interval.

603-3.4 BITUMINOUS MATERIAL-CONTRACTOR'S RESPONSIBILITY. Samples of the bituminous material that the Contractor proposes to use, together with a statement as to its source and character, must be submitted and approved before use of such material begins. The Contractor shall require the manufacturer or producer of the bituminous material to furnish material subject to this and all other pertinent requirements of the contract. Only satisfactory materials so demonstrated by service tests, shall be acceptable.

The Contractor shall furnish the vendor's certified test reports for each carload, or equivalent, of bituminous material shipped to the project. The report shall be delivered to the Engineer before permission is granted for use of the material. The furnishing of the vendor's certified test report for the bituminous material shall not be interpreted as a basis for final acceptance. All such test reports shall be subject to verification by testing samples of material received for use on the project.

603-3.5 FREIGHT AND WEIGH BILLS. Before the final estimate is allowed, the Contractor shall file with the Engineer receipted bills when railroad shipments are made, and certified weight bills when materials are received in any other manner, of the bituminous materials actually used in the construction covered by the contract. The Contractor shall not remove

bituminous material from the tank car or storage tank until the initial outage and temperature measurements have been taken by the Engineer, nor shall the car or tank be released until the final outage has been taken by the Engineer. Copies of freight bills and weigh bills shall be furnished to the Engineer during the progress of the work.

METHOD OF MEASUREMENT

603-4.1 The bituminous material for tack coat shall be measured by the gallon. Volume shall be corrected to the volume at 60°F (15°C) in accordance with ASTM D 1250 for cutback asphalt, ASTM D 633 for tar, and Table

603-4.2 IV-3 of The Asphalt Institute's Manual MS-6 for emulsified asphalt. Water added to emulsified asphalt will not be measured for payment.

BASIS OF PAYMENT

603.5-1 Payment shall be made at the contract unit price per gallon of bituminous material. This price shall be full compensation for furnishing all materials, for all preparation, delivery, and application of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P-603	Bituminous Tack Coat—per gallon
------------	---------------------------------

MATERIAL REQUIREMENTS

ASTM D 633	Volume Correction Table for Road Tar
ASTM D 977	Emulsified Asphalt
ASTM D 1250	Petroleum Measurement Tables
ASTM D 2028	Liquid Asphalt (Rapid-Curing Type)
ASTM D 2397	Cationic Emulsified Asphalt
AASHTO M 52	Tar for Use in Road Construction
Asphalt Institute	Temperature-Volume Corrections for Emulsified Asphalts Manual MS-6 Table IV-3

END ITEM P-603

CLARIFICATIONS TO SPECIFICATIONS ITEM P-620

The provisions of this specification shall be applicable except as modified as follows:

620-1.1 This item shall consist of the painting of permanent numbers, markings, and stripes on the surface of runways and taxiways applied in accordance with these specifications and at the locations shown on the plans, or as directed by the engineer. Temporary markings including runway closure markers and marking the taxiway for a temporary runway use is not for direct compensation.

620-2.1 PAINT. Paint shall meet the requirements of Fed. Spec. TT-P-1952.

620-2.2 REFLECTIVE MEDIA. Reflective Media is required. See 620-2.2.

ITEM P-620: RUNWAY AND TAXIWAY PAINTING

DESCRIPTION

620-1.1 This item shall consist of the painting of numbers, markings, and stripes on the surface of runways and taxiways applied in accordance with these specifications and at the locations shown on the plans, or as directed by the engineer.

MATERIALS

620-2.1 PAINT. Paint shall meet the requirements of Fed. Spec. TT-P-1952.

620-2.2 REFLECTIVE MEDIA. Glass spheres shall meet the requirements of Fed. Spec. TT-B-1325, Type III, gradation A.

CONSTRUCTION METHODS

620-3.1 WEATHER LIMITATIONS. The painting shall be performed only when the surface is dry, when the atmospheric temperature is above 45 F (7 C), and when the weather is not foggy or windy.

620-3.2 EQUIPMENT. All equipment for the work shall be approved by the engineer and shall include the apparatus necessary to properly clean the existing surface, a mechanical marking machine, and such auxiliary hand-painting equipment as may be necessary to satisfactorily complete the job.

The mechanical marker shall be an atomizing spray-type marking machine suitable for application of traffic paint. It shall produce an even and uniform film thickness at the required coverage and shall be designed so as to apply markings of uniform cross sections and clear-cut edges without running or spattering.

620-3.3 PREPARATION OF SURFACE. Immediately before application of the paint, the surface shall be dry and free from dirt, grease, oil, laitance, or other foreign material which would reduce the bond between the paint and the pavement. The area to be painted shall be cleaned by seeping and blowing or by other methods as required to remove all dirt, laitance, and loose materials.

620-3.4 LAYOUT OF MARKINGS. On those sections of pavement where no previously applied markings are available to serve as a guide, the proposed markings shall be laid out in advance of the paint application.

620-3.5 APPLICATION. Markings shall be applied at the locations and to the dimensions and spacing shown on the plans. Paint shall not be applied until the layout and conditions of the surface have been approved by the engineer.

The paint shall be mixed in accordance with the manufacturer's instructions and applied to the pavement with a marking machine at the rate of 100 to 110 square feet (9 to 10 square meters) per gallon (liter). The addition of thinner will not be permitted. A period of 24 hours shall elapse between placement of a bituminous surface course or seal coat and application of the paint.

The edges of the markings shall not vary from a straight line more than ½ inch (12 mm) in 50 feet (15 m), and the dimensions shall be within a tolerance of plus or minus 5 percent. Glass spheres shall be distributed to the surface of the marked areas immediately after application of the paint. A dispenser shall be furnished which is properly designed for attachment to the marking machine and suitable for dispensing glass spheres. The spheres shall be applied at the rate of 10 pounds per gallon (1.2 kg per liter) of paint.

The contractor shall furnish certified test reports for the material shipped to the project. The reports shall not be interpreted as a basis for final acceptance. The contractor shall notify the engineer upon arrival of a shipment of paint to the job site. All emptied containers shall be returned to the paint storage area for checking by the engineer. The containers shall not be removed from the airport or destroyed until authorized by the engineer.

620-3.6 PROTECTION. After application of the paint, all markings shall be protected from damage until the paint is dry. All surfaces shall be protected from disfiguration by splatter, splashes, spillage, or drippings of paint.

METHOD OF MEASUREMENT

620-4.1 The quantity of runway and taxiway markings to be paid for shall be the number of square feet of painting and the number of square feet of preformed markings one complete item in place performed in accordance with the specifications and accepted by the Engineer.

BASIS OF PAYMENT

620-5.1 Payment shall be made at the respective contract price per square foot for runway and taxiway painting and price per square foot for preformed markings. This price shall be full compensation for furnishing all materials and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item P 620 5.1a Runway and Taxiway Painting per square foot

MATERIAL REQUIREMENTS

Fed. Spec. TT-P-85	Paint, Traffic, and Airfield Marking, Solvent Base
Fed. Spec. TT-P-1952 Emulsion Base	Paint, Traffic and Airfield Marking, Water
Fed. Spec. TT-P-110	Paint, Traffic Black (Nonreflectorized)
Fed. Spec. TT-B-1325	Beads (Glass Spheres) Retroreflective

END ITEM P-620

PART IX – DRAINAGE

ITEM D-701 PIPE FOR STORM DRAINS AND CULVERTS

DESCRIPTION

701-1.1 This item shall consist of the construction of pipe culverts and storm drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

701-2.1 Materials shall meet the requirements shown on the plans and specified below.

701-2.2 PIPE. The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements.

Reinforced Concrete Pipe	ASTM C 76
Reinforced Concrete Arch Pipe	ASTM C 506
Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter	ASTM F 794

701-2.3 CONCRETE. Concrete for pipe cradles shall have a minimum compressive strength of 2000 psi (13.8 MPa) at 28 days and conform to the requirements of ASTM C 94.

701-2.4 RUBBER GASKETS. Rubber gaskets for rigid pipe shall conform to the requirements of ASTM C 443. Rubber gaskets for PVC pipe and polyethylene pipe shall conform to the requirements of ASTM F 477. Rubber gaskets for zinc-coated steel pipe and precoated galvanized pipe shall conform to the requirements of ASTM D 1056, for the "RE" closed cell grades.

701-2.5 JOINT MORTAR. Pipe joint mortar shall consist of one part portland cement and two parts sand. The portland cement shall conform to the requirements of ASTM C 150, Type I. The sand shall conform to the requirements of ASTM C 144.

701-2.6 JOINT FILLERS. Poured filler for joints shall conform to the requirements of ASTM D 1190.

701-2.7 PLASTIC GASKETS. Plastic gaskets shall conform to the requirements of AASHTO M 198 (Type B).

CONSTRUCTION METHODS

701-3.1 EXCAVATION. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but it shall not be less than the external diameter of the pipe plus 6 inches (150 mm) on each side. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, the Contractor shall remove it from below the foundation grade for a depth of at least 12 inches (300 mm) or one-half inch (12 mm) for each foot of fill over the top of the pipe (whichever is greater) but for no more than three-quarters of the nominal diameter of the pipe. The width of the excavation shall be at least 1 foot (30 cm) greater than the horizontal outside diameter of the pipe. The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches (150 mm) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The Engineer shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

The excavation for pipes that are placed in embankment fill shall not be made until the embankment has been completed to a height above the top of the pipe as shown on the plans.

701-3.2 BEDDING. The pipe bedding shall conform to the class specified on the plans. When no bedding class is specified or detailed on the plans, the requirements for Class C bedding shall apply.

a. Rigid Pipe. Class A bedding shall consist of a continuous concrete cradle conforming to the plan details.

Class B bedding shall consist of a bed of granular material having a thickness of at least 6 inches (150 mm) below the bottom of the pipe and extending up around the pipe for a depth of not less than 30 percent of the pipe's vertical outside diameter. The layer of bedding material shall be shaped to fit the pipe for at least 10 percent of the pipe's vertical diameter and shall have recesses shaped to receive the bell of bell and spigot pipe. The bedding material shall be sand or selected sandy soil, all of which passes a 3/8 inch (9 mm) sieve and not more than 10 percent of which passes a No. 200 (0.075 mm) sieve.

Class C bedding shall consist of bedding the pipe in its natural foundation to a depth of not less than 10 percent of the pipe's vertical outside diameter. The bed shall be shaped to fit the pipe and shall have recesses shaped to receive the bell of bell and spigot pipe.

b. Flexible Pipe. For flexible pipe, the bed shall be roughly shaped to fit the pipe, and a bedding blanket of sand or fine granular material shall be provided as follows:

Pipe Corrugation Depth		Minimum Bedding Depth	
in.	mm	in.	mm
1/2	12.5	1	25.0
1	25.0	2	50.0
2	50.0	3	75.0
2-1/2	62.5	3-1/2	87.5

c. PVC and Polyethylene Pipe. For PVC and polyethylene pipe, the bedding material shall consist of coarse sands and gravels with a maximum particle size of 3/4-inch (13 mm). For pipes installed under paved areas, no more than 12 percent of the material shall pass the No. 200 (0.075 mm) sieve. For all other areas, no more than 50 percent of the material shall pass the No. 200 (0.075 mm) sieve. The bedding shall have a thickness of at least 6 inches (150 mm) below the bottom of the pipe and extend up around the pipe for a depth of not less than 50 percent of the pipe's vertical outside diameter.

701-3.3 LAYING PIPE. The pipe laying shall begin at the lowest point of the trench and proceed upgrade. The lower segment of the pipe shall be in contact with the bedding throughout its full length. Bell or groove ends of rigid pipes and outside circumferential laps of flexible pipes shall be placed facing upgrade.

Paved or partially lined pipe shall be placed so that the longitudinal center line of the paved segment coincides with the flow line.

Elliptical and elliptically reinforced pipes shall be placed with the manufacturer's top of pipe mark within five degrees of a vertical plane through the longitudinal axis of the pipe.

701-3.4 JOINING PIPE. Joints shall be made with (1) portland cement mortar, (2) portland cement grout, (3) rubber gaskets, (4) plastic gaskets, or (5) coupling bands.

Mortar joints shall be made with an excess of mortar to form a continuous bead around the outside of the pipe and shall be finished smooth on the inside. Molds or runners shall be used for grouted joints in order to retain the poured grout. Rubber ring gaskets shall be installed to form a flexible watertight seal.

a. Concrete Pipe. Concrete pipe may be either bell and spigot or tongue and groove. The method of joining pipe sections shall be such that the ends are fully entered and the inner surfaces are reasonably flush and even. Joints shall be thoroughly wetted before mortar or grout is applied.

b. PVC and Polyethylene Pipe. Joints for PVC and Polyethylene pipe shall conform to the requirements of ASTM D 3212 when water tight joints are required. Joints for PVC and Polyethylene pipe shall conform to the requirements of AASHTO M 304 when soil tight joints are required. Fittings for polyethylene pipe shall conform to the requirements of AASHTO M 252 or M 294M.

701-3.5 BACKFILLING. Pipes shall be inspected before any backfill is placed; any pipes found to be out of alignment, unduly settled, or damaged shall be removed and relaid or replaced at the Contractor's expense.

Material for backfill shall be fine, readily compatible soil, granular material selected from the excavation or a source of the Contractor's choosing. It shall not contain frozen lumps, stones that would be retained on a 2-inch (50.0 mm) sieve, chunks of highly plastic clay, or other objectionable material. No less than 95 percent of a granular backfill material shall pass through a 1/2 inch (12 mm) sieve, and no less than 95 percent of it shall be retained on a No. 4 (4.75 mm) sieve.

When the top of the pipe is even with or below the top of the trench, the backfill shall be compacted in layers not exceeding 6 inches (150 mm) on both sides of the pipe and shall be brought up one foot (30 cm) above the top of the pipe or to natural ground level, whichever is greater. Care shall be exercised to thoroughly compact the backfill material under the haunches of the pipe. Material shall be brought up evenly on both sides of the pipe.

When the top of the pipe is above the top of the trench, the backfill shall be compacted in layers not exceeding 6 inches (150 mm) and shall be brought up evenly on both sides of the pipe to 1 foot (30 cm) above the top of the pipe. The width of backfill on each side of the pipe for the portion above the top of the trench shall be equal to twice the pipe's diameter of 12 feet (3.5 m), whichever is less.

For PVC and polyethylene pipe, the backfill shall be placed in two stages; first to the top of the pipe and then at least 12 inches (300 mm) over the top of the pipe. The backfill material shall meet the requirements of paragraph 701-3.2c.

All backfill shall be compacted to the density required under Item P-152.

METHOD OF MEASUREMENT

701-4.1 The length of pipe shall be measured in linear feet of pipe in place, completed, and approved. It shall be measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types and size shall be measured separately. All fittings shall be included in the footage as typical pipe sections in the pipe being measured.

BASIS OF PAYMENT

701-5.1 Payment will be made at the contract unit price per linear foot for each kind of pipe of the type and size designated.

These prices shall fully compensate the Contractor for furnishing all materials and for all preparation, excavation, and installation of these materials; and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item 701-5.1	10" Corrugated PVC Smooth Interior per linear foot
Item 701-5.1a	12" R.C.P. per linear foot
Item 701-5.1b	18" R.C.P. per linear foot
Item 701-5.1c	24" R.C.P. per linear foot
Item 701 5.1d	36" R.C.P. per linear foot
Item 701 5.1e	48" R.C.P. per linear foot

MATERIAL REQUIREMENTS

ASTM C 14	Concrete Sewer, Storm Drain, and Culvert Pipe
ASTM C 76	Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe
ASTM C 94	Ready Mixed Concrete
ASTM C 144	Aggregate for Masonry Mortar
ASTM C 150	Portland Cement
ASTM C 443	Joints for Circular Concrete Sewer and Culvert Pipe, Using Rubber Gaskets
ASTM C 506	Reinforced Concrete Arch Culvert, Storm Drain, and Sewer Pipe
ASTM C 1433	Precast Reinforced Concrete Box Sections for Culverts, Storm Drains, and Sewers
ASTM D 3034	Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM D 3212	Joints for Drain and Sewer Plastic Pipes Using Flexible Elastomeric Seals

ASTM D 6690	Joint and Crack Sealants, Hot-Applied, for Concrete and Asphalt Pavements
ASTM F 477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 794	Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter
ASTM F 949	Poly (Vinyl Chloride) (PVC) Corrugated Sewer Pipe With a Smooth Interior and Fittings
AASHTO M 198	Joints for Circular Concrete Sewer and Culvert Pipe Using Flexible Watertight Gaskets
AASHTO M 304	Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter

END ITEM D-701

ITEM D-705 PIPE UNDERDRAINS FOR AIRPORTS

DESCRIPTION

705-1.1 This item shall consist of the construction of pipe drains in accordance with these specifications and in reasonably close conformity with the lines and grades shown on the plans.

MATERIALS

705-2.1 GENERAL. Materials shall meet the requirements shown on the plans and specified below.

705-2.2 PIPE. The pipe shall be of the type called for on the plans or in the proposal and shall be in accordance with the following appropriate requirements.

Smooth-Wall Perforated PVC Pipe	ASTM F 758
Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings	
Based on Controlled Inside Diameter	ASTM F 794

705-2.3 JOINT MORTAR. Pipe joint mortar shall consist of one part portland cement and two parts sand. The portland cement shall conform to the requirements of ASTM C 150, Type I. The sand shall conform to the requirements of ASTM C 144.

705-2.4 ELASTOMERIC SEALS. Elastomeric seals shall conform to the requirements of ASTM F 477.

705-2.5 POROUS BACKFILL. Porous backfill shall be free of clay, humus, or other objectionable matter, and shall conform to the gradation in Table 1 when tested in accordance with ASTM C 136.

TABLE 1. GRADATION OF POROUS BACKFILL

Sieve Designation (square openings)	Percentage by Weight Passing Sieves
	Porous Material No. 1
1-1/2 inch (38 mm)	
1 inch (25 mm)	
3/8 inch (9.5 mm)	100
No. 4 (4.75 mm)	95 – 100
No. 8 (2.36 mm)	
No. 16 (1.18 mm)	45 – 80
No. 50 (0.30 mm)	10 – 30
No. 100 (0.15 mm)	0 – 10

When two courses of porous backfill are specified in the plans, the finer of the materials shall conform to particle size tabulated herein for porous material No. 1. The coarser granular material shall meet the gradation given in the tabulation for porous material No. 2.

705-2.6. GRANULAR MATERIAL. Granular material used for backfilling shall conform to the requirements of ASTM D 2321 for Class IA, IB, or II materials, or shall meet the requirements of AASHTO Standard Specification for Highway Bridges Section 30.

705-2.7. FILTER FABRIC. The filter fabric shall conform to the requirements of AASHTO M 288-99, Class 2.

TABLE 2

Fabric Property	Test Method	Test Requirement
Grab Tensile Strength, lbs	ASTM D 4632	125 min
Grab Tensile Elongation %	ASTM D 4632	50 min
Burst Strength, psi	ASTM D 3785	125 min
Trapezoid Tear Strength, lbs	ASTM D 4533	55 min
Puncture Strength, lbs	ASTM D 4833	40 min
Abrasion, lbs	ASTM D 4886	15 max loss
Equivalent Opening Size	ASTM D 4751	70-100
Permittivity sec⁻¹	ASTM D 4491	0.80
Accelerated Weathering (UV Stability)	ASTM D 4355	70
(Strength Retained - %)	*(500 hrs exposure)	

705-2.8. CONTROLLED LOW STRENGTH MATERIAL (CLSM). Controlled low strength material shall conform to the requirements of Item P-153. When CLSM is used all joints shall have elastomeric seals.

CONSTRUCTION METHODS

705-3.1 EQUIPMENT. All equipment necessary and required for the proper construction of pipe underdrains shall be on the project, in first-class working condition, and approved by the Engineer before construction is permitted to start.

705-3.2 EXCAVATION. The width of the pipe trench shall be sufficient to permit satisfactory jointing of the pipe and thorough tamping of the bedding material under and around the pipe, but shall not be less than the external diameter of the pipe plus 6 inches (150 mm) on each side. The trench walls shall be approximately vertical.

Where rock, hardpan, or other unyielding material is encountered, it shall be removed below the foundation grade for a depth of at least 4 inches (100 mm). The excavation below grade shall be backfilled with selected fine compressible material, such as silty clay or loam, and lightly compacted in layers not over 6 inches (150 mm) in uncompacted depth to form a uniform but yielding foundation.

Where a firm foundation is not encountered at the grade established, due to soft, spongy, or other unstable soil, the unstable soil shall be removed and replaced with approved granular material for the full trench width. The Engineer shall determine the depth of removal necessary. The granular material shall be compacted to provide adequate support for the pipe.

Excavated material not required or acceptable for backfill shall be disposed of by the Contractor as directed by the Engineer. The excavation shall not be carried below the required depth; when this is done, the trench shall be backfilled at the Contractor's expense with material approved by the Engineer and compacted to the density of the surrounding earth material.

The bed for the pipe shall be so shaped that at least the lower quarter of the pipe shall be in continuous contact with the bottom of the trench. Spaces for the pipe bell shall be excavated accurately to size to clear the bell so that the barrel supports the entire weight of the pipe.

The Contractor shall do such trench bracing, sheathing, or shoring necessary to perform and protect the excavation as required for safety and conformance to governing laws. Unless otherwise provided, the bracing, sheathing, or shoring shall be removed by the Contractor after the completion of the backfill to at least 12 inches (300 mm) over the top of the pipe. The sheathing or shoring shall be pulled as the granular backfill is placed and compacted to avoid any unfilled spaces between the trench wall and the backfill material. The cost of bracing, sheathing, or shoring, and the removal of same, shall be included in the unit price bid per foot (meter) for the pipe.

705-3.3 LAYING AND INSTALLING PIPE.

a. PVC or Polyethylene Pipe. PVC or polyethylene pipe shall be installed in accordance with the requirements of ASTM D 2321 or AASHTO Standard Specification for Highway Bridges Section 30. Perforations shall meet the requirements of AASHTO M 252 or M 294 Class 2, unless otherwise indicated on the plans. The pipe shall be laid accurately to line and grade.

b. All Types of Pipe. The upgrade end of pipelines, not terminating in a structure, shall be plugged or capped as approved by the Engineer.

Unless otherwise shown on the plans, a 4-inch (100 mm) bed of granular backfill material shall be spread in the bottom of the trench throughout the entire length under all perforated pipe underdrains.

Pipe outlets for the underdrains shall be constructed when required or shown on the plans. The pipe shall be laid with tight-fitting joints. Porous backfill is not required around or over pipe

outlets for underdrains. All connections to other drainage pipes or structures shall be made as required and in a satisfactory manner. If connections are not made to other pipes or structures, the outlets shall be protected and constructed as shown on the plans.

c. Filter Fabric. The filter fabric shall be installed in accordance with the manufacturer's recommendations, or in accordance with AASHTO M 288-99 APPENDIX, unless otherwise shown on the plans.

705-3.4 MORTAR. The mortar shall be of the desired consistency for caulking and filling the joints of the pipe and for making connections to other pipes or to structures. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted.

705-3.5 JOINTS IN CONCRETE PIPE. When open or partly open joints are required or specified, they shall be constructed as indicated on the plans. The pipe shall be laid with the ends fitted together as designed. If bell and spigot pipe is used, mortar shall be placed along the inside bottom quarter of the bell to center the following section of pipe.

The open or partly open joints shall be surrounded with granular material meeting requirements of porous backfill No. 2 or as indicated on the plans. This backfill shall be placed so its thickness will be not less than 3 inches (75 mm) nor more than 6 inches (150 mm), unless otherwise shown on the plans.

When the original material excavated from the trench is impervious, commercial concrete sand or granular material meeting requirements of porous backfill No. 1 shall surround porous backfill No. 2, as shown on the plans or as directed by the Engineer.

When the original material excavated from the trench is pervious and suitable, it may be used as backfill in lieu of porous backfill No. 1, when indicated on the plans or as directed by the Engineer.

705-3.6 BACKFILLING.

a. Earth. All trenches and excavations shall be backfilled within a reasonable time after the pipes are installed, unless other protection of the pipe is directed. The backfill material shall be selected material from excavation or borrow; material which is placed within a nominal pipe diameter distance at the sides of the pipe and 1 foot (30 cm) over the top shall be material that can be readily compacted. It shall not contain stones retained on a 3-inch (75 mm) sieve, frozen lumps, chunks of highly plastic clay, or any other material that is objectionable to the Engineer. The material shall be moistened or dried, if necessary to be compacted by the method in use. Backfill material shall be approved by the Engineer. Special care shall be taken in placing the backfill. Great care shall be used to obtain thorough compaction under the haunches and along the sides to the top of the pipe.

The backfill shall be placed in loose layers not exceeding 6 inches (150 mm) in depth under and around the pipe, and not exceeding 8 inches (200 mm) over the pipe. Successive layers shall be

added and thoroughly compacted by hand and pneumatic tampers, approved by the Engineer, until the trench is completely filled and brought to the proper elevation. Backfilling shall be done in a manner to avoid injurious top or side pressures on the pipe.

In embankments and for other areas outside of pavements, the backfill shall be compacted to the density required for embankments in unpaved areas under Item P-152. Under paved areas, the subgrade and any backfill shall be compacted to the density required for embankments for paved areas under Item P-152.

b. Granular Material. When granular backfill is required, its placement in the trench and about the pipe shall be as shown on the plans. Special care shall be taken in placing the backfill. The granular backfill shall not contain a damaging amount of foreign matter, nor shall earth from the sides of the trench or from the windrow be allowed to filter into the backfill. When required by the Engineer, a template shall be used to properly place and keep separate the two sizes of backfill. The backfill shall be placed in loose layers not exceeding 6 inches (150 mm) in depth and compacted by hand and pneumatic tampers to the requirements as given for earth backfill. Backfilling shall be done in a manner to avoid injurious top or side pressure on the pipe. The granular backfill shall be made to the elevation of the trench, as shown on the plans.

When perforated pipe is specified, granular backfill material shall be placed along the full length of the pipe. The position of the granular material shall be as shown on the plans. If the original material excavated from the trench is pervious and suitable, it shall be used in lieu of porous backfill No. 1.

When porous backfill is to be placed in paved or adjacent areas prior to the completion of grading or subgrade operations, the backfill material shall be placed immediately after laying the pipe. The depth of this granular backfill shall be not less than 12 inches (300 mm), measured from the top of the underdrain. During subsequent construction operations, this minimum backfill of 12 inches (300 mm) of depth shall not be disturbed until such time as the underdrains are to be completed. When the underdrains are to be completed, the unsuitable material shall be removed until the porous backfill is exposed. That part of the porous backfill that contains objectionable material shall be removed and replaced with suitable material. The cost of removing and replacing any such unsuitable material shall be borne by the Contractor.

Whenever a granular subbase blanket course is to be used under pavements which extends several feet beyond the edge of paving to the outside edge of the underdrain trench, the granular backfill material over the underdrains shall be placed in the trench up to an elevation of 2 inches (50 mm) above the bottom surface of the granular subbase blanket course. Immediately prior to the placing of the granular subbase blanket course, the Contractor shall blade this excess trench backfill from the top of the trench onto the adjacent subgrade where it can be incorporated into the granular subbase blanket course. Any unsuitable material that remains over the underdrain trench shall be removed and replaced. The subbase material shall be placed to provide clean contact between the subbase material and the underdrain granular backfill material for the full width of the underdrain trench.

c. Controlled Low Strength Material (CLSM). Controlled low strength material shall conform to the requirements of Item P-153.

d. Deflection Testing. The Engineer may at any time, notwithstanding previous material acceptance, reject or require re-installation of pipe that exceeds 5 percent deflection when measured in accordance with ASTM D 2321, including Appendices.

705-3.7 CONNECTIONS. When the plans call for connections to existing or proposed pipe or structures, these connections shall be watertight and made so that a smooth uniform flow line will be obtained throughout the drainage system.

705-3.8 CLEANING AND RESTORATION OF SITE. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as ordered by the Engineer. Except for paved areas of the airport, the Contractor shall restore all disturbed areas to their original condition.

METHOD OF MEASUREMENT

705-4.1 The length of pipe to be paid for shall be the number of linear of pipe underdrains in place, completed, and approved; measured along the centerline of the pipe from end or inside face of structure to the end or inside face of structure, whichever is applicable. The several classes, types, and sizes shall be measured separately. All fittings shall be included in the footage as typical pipe sections in the pipeline being measured.

705-4.2 The quantity of porous backfill to be paid for shall be the number of cubic yards of porous backfill No. 1 and No. 2, complete in place and accepted, and shall be determined from the dimensions given on the plans by typical trench sections indicating the placement of porous backfill or dimensions ordered by the Engineer.

705-4.3 The quantity of filter fabric to be paid for shall be the number of square yards of filter fabric in place, completed, and approved; and shall be determined from the dimensions given on the plans by typical trench sections indicating the placement of filter fabric or dimensions ordered by the Engineer.

BASIS OF PAYMENT

705-5.1 Payment will be made at the contract unit price per linear foot for pipe underdrains of the type, class, and size designated; at the contract unit price. No separate payment for porous backfill or filter fabric. These prices shall be full compensation for furnishing all materials and for all preparation, excavation, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete the item.

Payment will be made under:

Item D-705-5.5b

6" inch pipe per linear foot COMPLETE (including porous backfill and filter fabric)

MATERIAL REQUIREMENTS

ASTM C 136	Sieve Analysis of Fine and Coarse Aggregates
ASTM D 3034	Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
ASTM F 477	Elastomeric Seals (Gaskets) for Joining Plastic Pipe
ASTM F 758	Smooth-Wall Poly(Vinyl Chloride) (PVC) Plastic Underdrain Systems for Highway, Airport, and Similar Drainage
ASTM F 794	Poly (Vinyl Chloride) Ribbed Drain Pipe & Fittings Based on Controlled Inside Diameter
ASTM F 949	Poly (Vinyl Chloride)(PVC) Corrugated Sewer Pipe with a Smooth Interior and Fittings
AASHTO M 288-99	Geotextile Specification for Highway Applications
AASHTO M 294M	Corrugated Polyethylene Pipe, 300 to 1200 mm Diameter
AASHTO M 304	Poly (Vinyl Chloride) (PVC) Profile Wall Drain Pipe and Fittings Based on Controlled Inside Diameter
AASHTO	Standard Specifications for Highway Bridges

END ITEM D-705

MODIFICATIONS TO SPECIFICATIONS ITEM D-751

The provisions of this specification shall be applicable except as modified as follows:

This project Item D-751 is for cast in place inlets. Only cast in place is allowed. No pre-cast structures allowed.

ITEM D-751 MANHOLES, CATCH BASINS, INLETS AND INSPECTION HOLES

DESCRIPTION

751-1.1 This item shall consist of construction of manholes, catch basins, inlets, and inspection holes, in accordance with these specifications, at the specified locations and conforming to the lines, grades, and dimensions shown on the plans or required by the Engineer.

MATERIALS

751-2.1 BRICK. The brick shall conform to the requirements of ASTM C 32, Grade SM.

751-2.2 MORTAR. Mortar shall consist of one part portland cement and two parts sand. The portland cement shall conform to the requirements of ASTM C 150, Type I. The sand shall conform to the requirements of ASTM C 144.

751-2.3 CONCRETE. Plain and reinforced concrete used in structures, connections of pipes with structures, and the support of structures or frames shall conform to the requirements of Item P-610.

751-2.4 PRECAST CONCRETE PIPE MANHOLE RINGS. Precast concrete pipe manhole rings shall conform to the requirements of ASTM C 478. Unless otherwise specified, the risers and offset cone sections shall have an inside diameter of not less than 36 inches (90 cm) nor more than 48 inches (120 cm).

751-2.5 CORRUGATED METAL. Corrugated metal shall conform to the requirements of AASHTO M 36.

751-2.6 FRAMES, COVERS, AND GRATES. The castings shall conform to one of the following requirements:

- a. Gray iron castings shall meet the requirements of ASTM A 48, Class 30B and 35B.
- b. Malleable iron castings shall meet the requirements of ASTM A 47.
- c. Steel castings shall meet the requirements of ASTM A 27.
- d. Structural steel for grates and frames shall conform to the requirements of ASTM A 283, Grade D.
- e. Ductile iron castings shall conform to the requirements of ASTM A 536.
- f. Austempered ductile iron castings shall conform to the requirements of ASTM A 897.

All castings or structural steel units shall conform to the dimensions shown on the plans and shall be designed to support the loadings, aircraft gear configuration and/or direct loading, specified.

Each frame and cover or grate unit shall be provided with fastening members to prevent it from being dislodged by traffic but which will allow easy removal for access to the structure.

All castings shall be thoroughly cleaned. After fabrication, structural steel units shall be galvanized to meet the requirements of ASTM A 123.

751-2.7 STEPS. The steps or ladder bars shall be gray or malleable cast iron or galvanized steel. The steps shall be the size, length, and shape shown on the plans and those steps that are not galvanized shall be given a coat of bituminous paint, when directed.

CONSTRUCTION METHODS

751-3.1 UNCLASSIFIED EXCAVATION.

a. The Contractor shall do all excavation for structures and structure footings to the lines and grades or elevations, shown on the plans, or as staked by the Engineer. The excavation shall be of sufficient size to permit the placing of the full width and length of the structure or structure footings shown. The elevations of the bottoms of footings, as shown on the plans, shall be considered as approximately only; and the Engineer may order, in writing, changes in dimensions or elevations of footings necessary to secure a satisfactory foundation.

b. Boulders, logs, or any other objectionable material encountered in excavation shall be removed. All rock or other hard foundation material shall be cleaned of all loose material and cut to a firm surface either level, stepped, or serrated, as directed by the Engineer. All seams or crevices shall be cleaned out and grouted. All loose and disintegrated rock and thin strata shall be removed. When concrete is to rest on a surface other than rock, special care shall be taken not to disturb the bottom of the excavation, and excavation to final grade shall not be made until just before the concrete or reinforcing is to be placed.

c. The Contractor shall do all bracing, sheathing, or shoring necessary to implement and protect the excavation and the structure as required for safety or conformance to governing laws. The cost of bracing, sheathing, or shoring shall be included in the unit price bid for the structure.

d. Unless otherwise provided, bracing, sheathing, or shoring involved in the construction of this item shall be removed by the Contractor after the completion of the structure. Removal shall be effected in a manner that will not disturb or mar finished masonry. The cost of removal shall be included in the unit price bid for the structure.

e. After each excavation is completed, the Contractor shall notify the Engineer to that effect; and concrete or reinforcing steel shall be placed after the Engineer has approved the depth of the excavation and the character of the foundation material.

751-3.2 BRICK STRUCTURES.

a. **Foundations.** A prepared foundation shall be placed for all brick structures after the foundation excavation is completed and accepted. Unless otherwise specified, the base shall consist of reinforced concrete mixed, prepared, and placed in accordance with the requirements of Item P-610.

b. **Laying Brick.** All brick shall be clean and thoroughly wet before laying so that they will

not absorb any appreciable amount of additional water at the time they are laid. All brick shall be laid in freshly made mortar. Mortar that is not used within 45 minutes after water has been added shall be discarded. Retempering of mortar shall not be permitted. An ample layer of mortar shall be spread on the beds and a shallow furrow shall be made in it that can be readily closed by the laying of the brick. All bed and head joints shall be filled solid with mortar. End joints of stretchers and side or cross joints of headers shall be fully buttered with mortar and a shoved joint made to squeeze out mortar at the top of the joint. Any bricks that may be loosened after the mortar has taken its set, shall be removed, cleaned, and relaid with fresh mortar. No broken or chipped brick shall be used in the face, and no spalls or bats shall be used except where necessary to shape around irregular openings or edges; in which case, full bricks shall be placed at ends or corners where possible, and the bats shall be used in the interior of the course. In making closures, no piece of brick shorter than the width of a whole brick shall be used; and wherever practicable, whole brick shall be used and laid as headers.

c. Joints. All joints shall be slushed with mortar at every course, but slushing alone will not be considered adequate for making an acceptable joint. Exterior faces shall be laid up in advance of backing. Exterior faces shall be back plastered or pargeted with a coat of mortar not less than 3/8-inch (9 mm) thick before the backing is laid up. Prior to pargeting, all joints on the back of face courses shall be cut flush. Unless otherwise noted, joints shall be not less than 1/4-inch (6 mm) nor more than 1/2-inch (12 mm) wide and whatever width is adopted shall be maintained uniform throughout the work.

d. Pointing. Face joints shall be neatly struck, using the weather joint. All joints shall be finished properly as the laying of the brick progresses. When nails or line pins are used the holes shall be immediately plugged with mortar and pointed when the nail or pin is removed.

e. Cleaning. Upon completion of the work all exterior surfaces shall be thoroughly cleaned by scrubbing and washing down with water and, if necessary to produce satisfactory results, cleaning shall be done with a 5% solution of muriatic acid which shall then be rinsed off with liberal quantities of clean fresh water.

f. Curing and Cold Weather Protection. In hot or dry weather, or when directed by the Engineer, the brick masonry shall be protected and kept moist for at least 48 hours after laying the brick. Brick masonry work or pointing shall not be done when there is frost in the brick or when the air temperature is below 50 F (10 C) unless the Contractor has on the project ready to use, suitable covering and artificial heating devices necessary to keep the atmosphere surrounding the masonry at a temperature of not less than 60 F (15 C) for the duration of the curing period.

751-3.3 CONCRETE STRUCTURES. Concrete structures shall be built on prepared foundations, conforming to the dimensions and form indicated on the plans. The construction shall conform to the requirements specified in Item P-610. Any reinforcement required shall be placed as indicated on the plans and shall be approved by the Engineer before the concrete is poured.

All invert channels shall be constructed and shaped accurately so as to be smooth, uniform, and cause minimum resistance to flowing water. The interior bottom shall be sloped downward toward the outlet.

751-3.4 PRECAST CONCRETE PIPE STRUCTURES. Precast concrete pipe structures shall be constructed on prepared or previously placed slab foundations and shall conform to the dimensions and locations shown on the plans. All precast concrete pipe sections necessary to build a completed structure shall be furnished. The different sections shall fit together readily, and all jointing and connections shall be cemented with mortar. The top of the upper precast concrete pipe member shall be suitably formed and dimensioned to receive the metal frame and cover or grate, or other cap, as required. Provision shall be made for any connections for lateral pipe, including drops and leads that may be installed in the structure. The flow lines shall be smooth, uniform, and cause minimum resistance to flow. The metal steps that are embedded or built into the side walls shall be aligned and placed at vertical intervals of 12 inches (300 mm). When a metal ladder replaces the steps, it shall be securely fastened into position.

751-3.5 CORRUGATED METAL STRUCTURES. Corrugated metal structures shall be constructed on prepared foundations, conforming to the dimensions and locations as shown on the plans. The structures shall be prefabricated. standard or special fittings shall be furnished to provide pipe connections or branches of correct dimensions. The connections or branches shall be of sufficient length to accommodate connecting bands. The fittings shall be welded in place to the metal structures. When indicated, the structures shall be placed on a reinforced concrete base. The top of the metal structure shall be designed so that either a concrete slab or metal collar may be attached to which can be fastened a standard metal frame and grate or cover. Steps or ladders shall be furnished as shown on the plans.

751-3.6 INLET AND OUTLET PIPES. Inlet and outlet pipes shall extend through the walls of the structures for a sufficient distance beyond the outside surface to allow for connections but shall be cut off flush with the wall on the inside surface, unless otherwise directed. For concrete or brick structures, the mortar shall be placed around these pipes so as to form a tight, neat connection.

751-3.7 PLACEMENT AND TREATMENT OF CASTINGS, FRAMES, AND FITTINGS. All castings, frames, and fittings shall be placed in the positions indicated on the plans or as directed by the Engineer, and shall be set true to line and to correct elevation. If frames or fittings are to be set in concrete or cement mortar, all anchors or bolts shall be in place and position before the concrete or mortar is placed. The unit shall not be disturbed until the mortar or concrete has set.

When frames or fittings are to be placed upon previously constructed masonry, the bearing surface or masonry shall be brought true to line and grade and shall present an even bearing surface in order that the entire face or back of the unit will come in contact with the masonry. The unit shall be set in mortar beds and anchored to the masonry as indicated on the plans or as directed and approved by the Engineer. All units shall set firm and secure.

After the frames or fittings have been set in final position and the concrete or mortar has been allowed to harden for 7 days, then the grates or covers shall be placed and fastened down.

751-3.8 INSTALLATION OF STEPS. The steps shall be installed as indicated on the plans or as directed by the Engineer. When the steps are to be set in concrete, they shall be placed and secured in position before the concrete is poured. When the steps are installed in brick masonry, they shall be placed as the masonry is being built. The steps shall not be disturbed or used until the concrete or mortar has hardened for at least 7 days. After this period has elapsed, the steps shall be cleaned and painted, unless they have been galvanized.

When steps are required with precast concrete pipe structures, they shall be cast into the sides of the pipe at the time the pipe sections are manufactured or set in place after the structure is erected by drilling holes in the concrete and cementing the steps in place.

When steps are required with corrugated metal structures, they shall be welded into aligned position at a vertical spacing of 12 inches (300 mm).

In lieu of steps, prefabricated ladders may be installed. In the case of brick or concrete structures, the ladder shall be held in place by grouting the supports in drilled holes. In the case of metal structures, the ladder shall be secured by welding the top support and grouting the bottom support into drilled holes in the foundation or as directed.

751-3.9 BACKFILLING.

a. After a structure has been completed, the area around it shall be filled with approved material, in horizontal layers not to exceed 8 inches (200 mm) in loose depth, and compacted to the density required in Item P-152. Each layer shall be deposited all around the structure to approximately the same elevation. The top of the fill shall meet the elevation shown on the plans or as directed by the Engineer.

b. Backfilling shall not be placed against any structure until permission is given by the Engineer. In the case of concrete, such permission shall not be given until the concrete has been in place 7 days, or until tests made by the laboratory under supervision of the Engineer establish that the concrete has attained sufficient strength to provide a factor of safety against damage or strain in withstanding any pressure created by the backfill or the methods used in placing it.

c. Backfill shall not be measured for direct payment. Performance of this work shall be considered on obligation of the Contractor covered under the contract unit price for the structure involved.

751-3.10 CLEANING AND RESTORATION OF SITE. After the backfill is completed, the Contractor shall dispose of all surplus material, dirt, and rubbish from the site. Surplus dirt may be deposited in embankments, shoulders, or as ordered by the Engineer. The Contractor shall restore all disturbed areas to their original condition.

After all work is completed, the Contractor shall remove all tools and equipment, leaving the entire site free, clear, and in good condition.

METHOD OF MEASUREMENT

751-4.1 Manholes, catch basins, inlets, and inspection holes shall be measured by the unit.

BASIS OF PAYMENT

751-5.1 The accepted quantities of manholes, catch basins, inlets, and inspection holes will be paid for at the contract unit price per each in place when completed. This price shall be full compensation for furnishing all materials and for all preparation, excavation, backfilling and placing of the materials; furnishing and installation of such specials and connections to pipes and other structures as may be required to complete the item as shown on the plans; and for all labor equipment, tools and incidentals necessary to complete the structure.

Payment will be made under:

- Item D-751-5.2 Inlet—per each
- Item D-751-5.2a Rebuilt Inlet No.1 —per each
- Item D-751-5.2b Rebuilt Inlet No.2 —per each

MATERIAL REQUIREMENT

- ASTM A 27 Steel Castings, Carbon, for General Application
- ASTM A 47 Ferritic Malleable Iron Castings
- ASTM A 48 Gray Iron Castings
- ASTM A 123 Zinc Coating (Hot-Dip) on Iron and Steel Hardware
- ASTM A 283 Low and Intermediate Tensile Strength Carbon Steel Plates, Shapes, and Bars
- ASTM A 536 Ductile Iron Castings
- ASTM A 897 Austempered Ductile Iron Castings
- ASTM C 32 Sewer and Manhole Brick (Made from Clay or Shale)
- ASTM C 144 Aggregate for Masonry Mortar

ASTM C 150	Portland Cement
ASTM C 478	Precast Reinforced Concrete Manhole Sections
AASHTO M 36	Zinc Coated (Galvanized) Corrugated Iron or Steel Culverts and Underdrains

END ITEM D-751

Item L-108 Underground Power Cable for Airports

DESCRIPTION

108-1.1 This item shall consist of furnishing ~~and installing power cables that are direct buried and~~ furnishing and/or installing power cables within conduit or duct banks per these specifications at the locations shown on the plans. ~~It includes excavation and backfill of trench for direct buried cables only.~~ Also included are the installation of counterpoise wires, ground wires, ground rods and connections, cable splicing, cable marking, cable testing, and all incidentals necessary to place the cable in operating condition as a completed unit to the satisfaction of the RPR. This item shall not include the installation of duct banks or conduit, trenching and backfilling for duct banks or conduit, or furnishing or installation of cable for FAA owned/operated facilities.

EQUIPMENT AND MATERIALS

108-2.1 General.

a. Airport lighting equipment and materials covered by advisory circulars (AC) shall be approved under the Airport Lighting Equipment Certification Program per AC 150/5345-53, current version.

b. All other equipment and materials covered by other referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification, when requested by the RPR.

c. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications. Materials supplied and/or installed that do not comply with these specifications shall be removed (when directed by the RPR) and replaced with materials that comply with these specifications at the Contractor's cost.

d. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete any non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment to which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in the project that may accrue directly or indirectly from late submissions or resubmissions of submittals.

e. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. ~~{ The Contractor's submittals shall be neatly bound in a properly sized 3-ring binder, tabbed by specification section. }~~ ~~{ electronically submitted in pdf format. }~~ The RPR reserves the right to reject any and all equipment, materials, or procedures that do not meet the system design and the standards and codes, specified in this document.

f. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for at least { twelve (12) months } from the date of final

acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner. The Contractor shall maintain a minimum insulation resistance in accordance with paragraph 108-3.10e with isolation transformers connected in new circuits and new segments of existing circuits through the end of the contract warranty period when tested in accordance with AC 150/5340-26, *Maintenance Airport Visual Aid Facilities*, paragraph 5.1.3.1, Insulation Resistance Test.

108-2.2 Cable. Underground cable for airfield lighting facilities (runway and taxiway lights and signs) shall conform to the requirements of AC 150/5345-7, Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits latest edition. Conductors for use on 6.6 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #8 American wire gauge (AWG), L-824 [Type B, Type C], 5,000 volts, non-shielded, with [ethylene propylene insulation, cross-linked polyethylene insulation]. Conductors for use on 20 ampere primary airfield lighting series circuits shall be single conductor, seven strand, #6 AWG, L-824 [Type B, Type C], 5,000 volts, non-shielded, with [ethylene propylene insulation, cross-linked polyethylene insulation]. L-824 conductors for use on the L-830 secondary of airfield lighting series circuits shall be sized in accordance with the manufacturer's recommendations. All other conductors shall comply with FAA and National Electric Code (NEC) requirements. Conductor sizes noted above shall not apply to leads furnished by manufacturers on airfield lighting transformers and fixtures.

Wire for electrical circuits up to 600 volts shall comply with Specification L-824 and/or Commercial Item Description A-A-59544A and shall be type THWN-2, 75°C for installation in conduit and RHW-2, 75°C for direct burial installations. Conductors for parallel (voltage) circuits shall be type and size and installed in accordance with NFPA-70, National Electrical Code.

Unless noted otherwise, all 600-volt and less non-airfield lighting conductor sizes are based on a 75°C, THWN-2, 600-volt insulation, copper conductors, not more than three single insulated conductors, in raceway, in free air. The conduit/duct sizes are based on the use of THWN-2, 600-volt insulated conductors. The Contractor shall make the necessary increase in conduit/duct sizes for other types of wire insulation. In no case shall the conduit/duct size be reduced. The minimum power circuit wire size shall be #12 AWG.

Conductor sizes may have been adjusted due to voltage drop or other engineering considerations. Equipment provided by the Contractor shall be capable of accepting the quantity and sizes of conductors shown in the Contract Documents. All conductors, pigtails, cable step-down adapters, cable step-up adapters, terminal blocks and splicing materials necessary to complete the cable termination/splice shall be considered incidental to the respective pay items provided.

Cable type, size, number of conductors, strand and service voltage shall be as specified in the Contract Document.

108-2.3 Bare copper wire (counterpoise, bare copper wire ground and ground rods). Wire for counterpoise or ground installations for airfield lighting systems shall be No. { 6 } ~~{ 4 }~~ ~~{ 2 }~~ AWG bare solid copper wire for counterpoise and/or No. { 6 } ~~{ 4 }~~ ~~{ 2 }~~ AWG insulated stranded for grounding bond wire per ASTM B3 and ASTM B8, and shall be { bare copper wire } ~~{ tinned copper wire per ASTM B33 }~~. For voltage powered circuits, the equipment grounding conductor shall comply with NEC Article 250.

Ground rods shall be ~~{ solid stainless steel }~~ { copper } or ~~{ copper clad steel }~~ { sectional copper-clad steel }. The ground rods shall be of the length and diameter specified on the plans, but in no case be less than ~~{ 8 feet (2.4 m) }~~ { 10 feet (2.54 m) } long and ~~{ 5/8 inch (16 mm) }~~ { 3/4 inch (19 mm) } in diameter.

108-2.4 Cable connections. In-line connections or splices of underground primary cables shall be of the type called for on the plans, and shall be one of the types listed below. No separate payment will be made for cable connections.

~~a. The cast splice. A cast splice, employing a plastic mold and using epoxy resin equivalent to that manufactured by 3MTM Company, "Scotchcast" Kit No. 82-B, or an approved equivalent, used for potting the splice is acceptable.~~

b. The field-attached plug-in splice. Field attached plug-in splices shall be installed as shown on the plans. The Contractor shall determine the outside diameter of the cable to be spliced and furnish appropriately sized connector kits and/or adapters. Tape or heat shrink tubing with integral sealant shall be in accordance with the manufacturer's requirements. Primary Connector Kits manufactured by Amerace, "Super Kit", Integro "Complete Kit", or approved equal is acceptable. *The heat shrinkable tubing for each L-823 connector shall consist of Raychem #ALK-L823 Airport Lighting Splice Kit (or approved equal). Splices permitted only at light fixtures, signs, or junction boxes.*

c. The factory-molded plug-in splice. Specification for L-823 Connectors, Factory-Molded to Individual Conductors, is acceptable. *The heat shrinkable tubing for each L-823 connector shall consist of Raychem #ALK-L823 Airport Lighting Splice Kit (or approved equal). Splices permitted only at light fixtures, signs, or junction boxes.*

d. The taped or heat-shrink splice. Taped splices employing field-applied rubber, or synthetic rubber tape covered with plastic tape is acceptable. The rubber tape should meet the requirements of ASTM D4388 and the plastic tape should comply with Military Specification MIL-I-24391 or Commercial Item Description A-A-55809. Heat shrinkable tubing shall be heavy-wall, self-sealing tubing rated for the voltage of the wire being spliced and suitable for direct-buried installations. The tubing shall be factory coated with a thermoplastic adhesive-sealant that will adhere to the insulation of the wire being spliced forming a moisture- and dirt-proof seal. Additionally, heat shrinkable tubing for multi-conductor cables, shielded cables, and armored cables shall be factory kits that are designed for the application. Heat shrinkable tubing and tubing kits shall be manufactured by Tyco Electronics/ Raychem Corporation, Energy Division, or approved equivalent.

In all the above cases, connections of cable conductors shall be made using crimp connectors using a crimping tool designed to make a complete crimp before the tool can be removed. All L-823/L-824 splices and terminations shall be made per the manufacturer's recommendations and listings.

All connections of counterpoise, grounding conductors and ground rods shall be made by the exothermic process or approved equivalent, except that a light base ground clamp connector shall be used for attachment to the light base. All exothermic connections shall be made per the manufacturer's recommendations and listings.

108-2.5 Splicer qualifications. Every airfield lighting cable splicer shall be qualified in making airport cable splices and terminations on cables rated at or above 5,000 volts AC. The Contractor shall submit to the RPR proof of the qualifications of each proposed cable splicer for the airport cable type and voltage level to be worked on. Cable splicing/terminating personnel shall have a minimum of three (3) years continuous experience in terminating/splicing medium voltage cable.

108-2.6 Concrete. { Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures. }

108-2.7 Flowable backfill. Flowable material used to backfill trenches for power cable trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

108-2.8 Cable identification tags. Cable identification tags shall be made from a non-corrosive material with the circuit identification stamped or etched onto the tag. The tags shall be of the type as detailed on the plans.

108-2.9 Tape. Electrical tapes shall be Scotch™ Electrical Tapes –Scotch™ 88 (1-1/2 inch (38 mm) wide) and Scotch™ 130C® linerless rubber splicing tape (2-inch (50 mm) wide), as manufactured by the Minnesota Mining and Manufacturing Company (3M™), or an approved equivalent.

108-2.10 Electrical coating. Electrical coating shall be Scotchkote™ as manufactured by 3M™, or an approved equivalent.

108-2.11 Existing circuits. Whenever the scope of work requires connection to an existing circuit, the existing circuit's insulation resistance shall be tested, in the presence of the RPR. The test shall be performed per this item and prior to any activity that will affect the respective circuit. The Contractor shall record the results on forms acceptable to the RPR. When the work affecting the circuit is complete, the circuit's insulation resistance shall be checked again, in the presence of the RPR. The Contractor shall record the results on forms acceptable to the RPR. The second reading shall be equal to or greater than the first reading or the Contractor shall make the necessary repairs to the existing circuit to bring the second reading above the first reading. All repair costs including a complete replacement of the L-823 connectors, L-830 transformers and L-824 cable, if necessary, shall be borne by the Contractor. All test results shall be submitted in the Operation and Maintenance (O&M) Manual. 

108-2.12 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) Red (electrical power lines, cables, conduit and lighting cable) with continuous legend tape shall be polyethylene film with a metalized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item. Detectable warning tape for communication cables shall be orange. Detectable warning tape color code shall comply with the APWA Uniform Color Code.

CONSTRUCTION METHODS

108-3.1 General. The Contractor shall install the specified cable at the approximate locations indicated on the plans. Unless otherwise shown on the plans, all cable required to cross under pavements expected to carry aircraft loads shall be installed in concrete encased duct banks. Cable shall be run without splices, from fixture to fixture.

Cable connections between lights will be permitted only at the light locations for connecting the underground cable to the primary leads of the individual isolation transformers. The Contractor shall be responsible for providing cable in continuous lengths for home runs or other long cable runs without connections unless otherwise authorized in writing by the RPR or shown on the plans.

In addition to connectors being installed at individual isolation transformers, L-823 cable connectors for maintenance and test points shall be installed at locations shown on the plans. Cable circuit identification markers shall be installed on both sides of the L-823 connectors installed and on both sides of slack loops where a future connector would be installed.

Provide not less than 3 feet (1 m) of cable slack on each side of all connections, isolation transformers, light units, and at points where cable is connected to field equipment. Where provisions must be made for testing or for future above grade connections, provide enough slack to allow the cable to be extended at least one foot (30 cm) vertically above the top of the access structure. This requirement also applies where primary cable passes through empty light bases, junction boxes, and access structures to allow for future connections, or as designated by the RPR.

Primary airfield lighting cables installed shall have cable circuit identification markers attached on both sides of each L-823 connector and on each airport lighting cable entering or leaving cable access points, such as manholes, hand holes, pull boxes, junction boxes, etc. Markers shall be of sufficient length for imprinting the cable circuit identification legend on one line, using letters not less than 1/4 inch (6 mm) in size. The cable circuit identification shall match the circuits noted on the construction plans.

108-3.2 Installation in duct banks or conduits. This item includes the installation of the cable in duct banks or conduit per the following paragraphs. The maximum number and voltage ratings of cables installed in each single duct or conduit, and the current-carrying capacity of each cable shall be per the latest version of the National Electric Code, or the code of the local agency or authority having jurisdiction.

The Contractor shall make no connections or splices of any kind in cables installed in conduits or duct banks.

Unless otherwise designated in the plans, where ducts are in tiers, use the lowest ducts to receive the cable first, with spare ducts left in the upper levels. Check duct routes prior to construction to obtain assurance that the shortest routes are selected and that any potential interference is avoided.

Duct banks or conduits shall be installed as a separate item per Item L-110, Airport Underground Electrical Duct Banks and Conduit. The Contractor shall run a mandrel through duct banks or conduit prior to installation of cable to ensure that the duct bank or conduit is open, continuous and clear of debris. The mandrel size shall be compatible with the conduit size. The Contractor shall swab out all conduits/ducts and clean light bases, manholes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed, the light bases and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, light bases, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be re-cleaned at the Contractor's expense. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

The cable shall be installed in a manner that prevents harmful stretching of the conductor, damage to the insulation, or damage to the outer protective covering. The ends of all cables shall be sealed with moisture-seal tape providing moisture-tight mechanical protection with minimum bulk, or alternately, heat shrinkable tubing before pulling into the conduit and it shall be left sealed until connections are made. Where more than one cable is to be installed in a conduit, all cable shall be pulled in the conduit at the same time. The pulling of a cable through duct banks or conduits may be accomplished by hand winch or power winch with the use of cable grips or pulling eyes. Maximum pulling tensions shall not exceed the cable manufacturer's recommendations. A non-hardening cable-pulling lubricant recommended for the type of cable being installed shall be used where required.

The Contractor shall submit the recommended pulling tension values to the RPR prior to any cable installation. If required by the RPR, pulling tension values for cable pulls shall be monitored by a dynamometer in the presence of the RPR. Cable pull tensions shall be recorded by the Contractor and reviewed by the RPR. Cables exceeding the maximum allowable pulling tension values shall be removed and replaced by the Contractor at the Contractor's expense.

The manufacturer's minimum bend radius or NEC requirements (whichever is more restrictive) shall apply. Cable installation, handling and storage shall be per manufacturer's recommendations. During cold weather, particular attention shall be paid to the manufacturer's minimum installation temperature. Cable shall not be installed when the temperature is at or below the manufacturer's minimum installation temperature. At the Contractor's option, the Contractor may submit a plan, for review by the RPR, for heated storage of the cable and maintenance of an acceptable cable temperature during installation when temperatures are below the manufacturer's minimum cable installation temperature.

Cable shall not be dragged across base can or manhole edges, pavement or earth. When cable must be coiled, lay cable out on a canvas tarp or use other appropriate means to prevent abrasion to the cable jacket.

108-3.3 Installation of direct-buried cable in trenches. Unless otherwise specified, the Contractor shall not use a cable plow for installing the cable. Cable shall be unreeled uniformly in place alongside or in the

trench and shall be carefully placed along the bottom of the trench. The cable shall not be unreeled and pulled into the trench from one end. Slack cable sufficient to provide strain relief shall be placed in the trench in a series of S curves. Sharp bends or kinks in the cable shall not be permitted.

Where cables must cross over each other, a minimum of 3 inches (75 mm) vertical displacement shall be provided with the topmost cable depth at or below the minimum required depth below finished grade.

a. Trenching. ~~Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored. Trenches for cables may be excavated manually or with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of surface is disturbed. Graders shall not be used to excavate the trench with their blades. The bottom surface of trenches shall be essentially smooth and free from coarse aggregate. Unless otherwise specified, cable~~ **and conduit** ~~trenches shall be excavated to a minimum depth of 18 24 inches (0.5 m) below finished grade per NEC Table 300.5, except as follows:~~

- When off the airport or crossing under a roadway or driveway, the minimum depth shall be ~~36-60 inches (91 cm) unless otherwise specified.~~
- Minimum cable **and conduit** depth when crossing under a railroad track, shall be ~~42 inches (1 m) unless otherwise specified~~ **60 inches unless a greater depth is otherwise specified.**
- **Minimum cable and conduit depth under a runway or taxiway, shall be 60 inches unless a greater depth is otherwise specified.**

~~The Contractor shall excavate all cable trenches to a width not less than 6 inches (150 mm). Unless otherwise specified on the plans, all cables in the same location and running in the same general direction shall be installed in the same trench.~~

~~When rock is encountered, the rock shall be removed to a depth of at least 3 inches (75 mm) below the required cable depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4 inch (6.3 mm) sieve. Flowable backfill material may alternatively be used.~~

~~Duct bank or conduit markers temporarily removed for trench excavations shall be replaced as required.~~

~~It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:~~

~~(1) Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.~~

~~(2) Trenching, etc., in cable areas shall then proceed, with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.~~

~~In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair or replacement.~~

b. Backfilling. ~~After the cable has been installed, the trench shall be backfilled. The first layer of backfill in the trench shall encompass all cables ; be 3 inches (75 mm) deep, loose measurement; and shall be either earth or sand containing no mineral aggregate particles that would be retained on a 1/4 inch (6.3 mm) sieve. This layer shall not be compacted. The second layer shall be 5 inches (125 mm) deep, loose measurement, and shall contain no particles that would be retained on a one inch (25.0 mm) sieve. The remaining third and subsequent layers of backfill shall not exceed 8 inches (20 cm) of loose measurement~~

and be excavated or imported material and shall not contain stone or aggregate larger than 4 inches (100 mm) maximum diameter.

The second and subsequent layers shall be thoroughly tamped and compacted to at least the density of the adjacent material. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be ~~[to a minimum of 100 percent of ASTM D1557] [backfill with controlled low strength material (CLSM) in accordance with P-153]~~.

Trenches shall not contain pools of water during backfilling operations. The trench shall be completely backfilled and tamped level with the adjacent surface, except that when turf is to be established over the trench, the backfilling shall be stopped at an appropriate depth consistent with the type of turfing operation to be accommodated. A proper allowance for settlement shall also be provided. Any excess excavated material shall be removed and disposed of per the plans and specifications.

Underground electrical warning (caution) tape shall be installed in the trench above all direct buried cable. Contractor shall submit a sample of the proposed warning tape for acceptance by the RPR. If not shown on the plans, the warning tape shall be located 6 inches (150 mm) above the direct buried cable or the counterpoise wire if present. A 3-6 inch (75-150 mm) wide polyethylene film detectable tape, with a metalized foil core, shall be installed above all direct buried cable or counterpoise. The tape shall be of the color and have a continuous legend as indicated on the plans. The tape shall be installed 8 inches (200 mm) minimum below finished grade.

e. Restoration. Following restoration of all trenching near airport movement surfaces, the Contractor shall visually inspect the area for foreign object debris (FOD) and remove any that is found. Where soil and sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by work shall be restored to its original condition. The restoration shall include the ~~[sodding] [topsoiling] [fertilizing] [liming] [seeding] [sprigging] [mulching]~~ as shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. When trenching is through paved areas, restoration shall be equal to existing conditions. If the cable is to be installed in locations or areas where other compaction requirements are specified (under pavements, embankments, etc.) the backfill compaction shall be ~~[to a minimum of 100 percent of ASTM D1557] [backfill with controlled low strength material (CLSM) in accordance with P-153]~~. Restoration shall be considered incidental to the pay item of which it is a component part.

108 3.4 Cable markers for direct buried cable. The location of direct buried circuits shall be marked by a concrete slab marker, 2 feet (60 cm) square and 4-6 inch (10-15 cm) thick, extending approximately one inch (25 mm) above the surface. Each cable run from a line of lights and signs to the equipment vault shall be marked at approximately every 200 feet (61 m) along the cable run, with an additional marker at each change of direction of cable run. All other direct buried cable shall be marked in the same manner. Cable markers shall be installed directly above the cable. The Contractor shall impress the word "CABLE" and directional arrows on each cable marking slab. The letters shall be approximately 4 inches (100 mm) high and 3 inches (75 mm) wide, with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep. Stencils shall be used for cable marker lettering; no hand lettering shall be permitted.

At the location of each underground cable connection/splice, except at lighting units, or isolation transformers, a concrete marker slab shall be installed to mark the location of the connection/splice. The Contractor shall impress the word "SPLICE" on each slab. The Contractor also shall impress additional circuit identification symbols on each slab as directed by the RPR. All cable markers and splice markers shall be painted international orange. Paint shall be specifically manufactured for uncured exterior concrete. After placement, all cable or splice markers shall be given one coat of high visibility aviation

~~orange paint as approved by the RPP. Furnishing and installation of cable markers is incidental to the respective cable pay item.~~

108-3.5 Splicing. Connections of the type shown on the plans shall be made by experienced personnel regularly engaged in this type of work and shall be made as follows:

~~a. **Cast splices.** These shall be made by using crimp connectors for jointing conductors. Molds shall be assembled, and the compound shall be mixed and poured per the manufacturer's instructions and to the satisfaction of the RPP.~~

b. Field-attached plug-in splices. These shall be assembled per the manufacturer's instructions. These splices shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches (38 mm) on each side of the joint or (3) On connector kits equipped with water seal flap; roll-over water seal flap to sealing position on mating connector. *The heat shrinkable tubing for each L-823 connector shall consist of Raychem #ALK-L823 Airport Lighting Splice Kit (or approved equal). Splices permitted only at light fixtures, signs, or junction boxes.*

c. Factory-molded plug-in splices. These shall be made by plugging directly into mating connectors. The joint where the connectors come together shall be finished by one of the following methods: (1) Wrapped with at least one layer of rubber or synthetic rubber tape and one layer of plastic tape, one-half lapped, extending at least 1-1/2 inches (38 mm) on each side of the joint. (2) Covered with heat shrinkable tubing with integral sealant extending at least 1-1/2 inches (38 mm) on each side of the joint. or (3) On connector kits so equipped with water seal flap; roll-over water seal flap to sealing position on mating connector. *The heat shrinkable tubing for each L-823 connector shall consist of Raychem #ALK-L823 Airport Lighting Splice Kit (or approved equal). Splices permitted only at light fixtures, signs, or junction boxes.*

d. ~~Taped or~~ heat-shrink splices. A ~~taped~~-splice shall be made in the following manner:

Contractor must use SKV heat shrink factory kits over taped splices if used on project.

Bring the cables to their final position and cut so that the conductors will butt. Remove insulation and jacket allowing for bare conductor of proper length to fit compression sleeve connector with 1/4 inch (6 mm) of bare conductor on each side of the connector. Prior to splicing, the two ends of the cable insulation shall be penciled using a tool designed specifically for this purpose and for cable size and type. Do not use emery paper on splicing operation since it contains metallic particles. The copper conductors shall be thoroughly cleaned. Join the conductors by inserting them equidistant into the compression connection sleeve. Crimp conductors firmly in place with crimping tool that requires a complete crimp before tool can be removed. Test the crimped connection by pulling on the cable. Scrape the insulation to assure that the entire surface over which the tape will be applied (plus 3 inches (75 mm) on each end) is clean. After scraping, wipe the entire area with a clean lint-free cloth. Do not use solvents.

Apply high-voltage rubber tape one-half lapped over bare conductor. This tape should be tensioned as recommended by the manufacturer. Voids in the connector area may be eliminated by highly elongating the tape, stretching it just short of its breaking point. The manufacturer's recommendation for stretching tape during splicing shall be followed. Always attempt to exactly half-lap to produce a uniform buildup. Continue buildup to 1-1/2 times cable diameter over the body of the splice with ends tapered a distance of approximately one inch (25 mm) over the original jacket. Cover rubber tape with two layers of vinyl pressure-sensitive tape one-half lapped. Do not use glyptol or lacquer over vinyl tape as they react as solvents to the tape. No further cable covering or splice boxes are required.

Heat shrinkable tubing shall be installed following manufacturer's instructions. Direct flame heating shall not be permitted unless recommended by the manufacturer. Cable surfaces within the limits of the heat-shrink application shall be clean and free of contaminants prior to application.

e. Assembly. Surfaces of equipment or conductors being terminated or connected shall be prepared in accordance with industry standard practice and manufacturer's recommendations. All surfaces to be connected shall be thoroughly cleaned to remove all dirt, grease, oxides, nonconductive films, or other foreign material. Paints and other nonconductive coatings shall be removed to expose base metal. Clean all surfaces at least 1/4 inch (6.4 mm) beyond all sides of the larger bonded area on all mating surfaces. Use a joint compound suitable for the materials used in the connection. Repair painted/coated surface to original condition after completing the connection.

108-3.6 Bare counterpoise wire installation for lightning protection and grounding. If shown on the plans or included in the job specifications, bare solid [#6 AWG] copper counterpoise wire shall be installed for lightning protection of the underground cables. The RPR shall select one of two methods of lightning protection for the airfield lighting circuit based upon sound engineering practice and lightning strike density.

a. Equipotential. [The counterpoise size is as shown on the plans. The equipotential method is applicable to all airfield lighting systems; i.e. runway, taxiway, apron – touchdown zone, centerline, edge, threshold and approach lighting systems. The equipotential method is also successfully applied to provide lightning protection for power, signal and communication systems. The light bases, counterpoise, etc – all components - are bonded together and bonded to the vault power system ground loop/electrode.

Counterpoise wire shall be installed in the same trench for the entire length of buried cable, conduits and duct banks that are installed to contain airfield cables. The counterpoise is centered over the cable/conduit/duct to be protected.

The counterpoise conductor shall be installed no less than 8 inches (200 mm) minimum or 12 inches (300 mm) maximum above the raceway or cable to be protected, except as permitted below:

(1) The minimum counterpoise conductor height above the raceway or cable to be protected shall be permitted to be adjusted subject to coordination with the airfield lighting and pavement designs.

(2) The counterpoise conductor height above the protected raceway(s) or cable(s) shall be calculated to ensure that the raceway or cable is within a 45-degree area of protection, (45 degrees on each side of vertical creating a 90 degree angle).

The counterpoise conductor shall be bonded to each metallic light base, mounting stake, and metallic airfield lighting component.

All metallic airfield lighting components in the field circuit on the output side of the constant current regulator (CCR) or other power source shall be bonded to the airfield lighting counterpoise system.

All components rise and fall at the same potential; with no potential difference, no damaging arcing and no damaging current flow.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Equipotential Method of lightning protection.

Reference FAA STD-019E, Lightning and Surge Protection, Grounding Bonding and Shielding Requirements for Facilities and Electronic Equipment, Part 4.1.1.7.[not used]

b. Isolation. [Counterpoise size is as shown on the plans. The isolation method is an alternate method for use only with edge lights installed in turf and stabilized soils and raceways installed parallel to and adjacent to the edge of the pavement. NFPA 780 uses 15 feet to define "adjacent to".

The counterpoise conductor shall be installed halfway between the pavement edge and the light base, mounting stake, raceway, or cable being protected.

The counterpoise conductor shall be installed 8 inches (203 mm) minimum below grade. The counterpoise is not connected to the light base or mounting stake. An additional grounding electrode is required at each light base or mounting stake. The grounding electrode is bonded to the light base or mounting stake with a 6 AWG solid copper conductor.

See AC 150/5340-30, Design and Installation Details for Airport Visual Aids and NFPA 780, Standard for the Installation of Lightning Protection Systems, Chapter 11, for a detailed description of the Isolation Method of lightning protection.][not used]

c. Common Installation requirements. { When a metallic light base is used, the grounding electrode shall be bonded to the metallic light base or mounting stake with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor.

When a nonmetallic light base is used, the grounding electrode shall be bonded to the metallic light fixture or metallic base plate with a No. 6 AWG bare, annealed or soft drawn, solid copper conductor. }

Grounding electrodes may be rods, ground dissipation plates, radials, or other electrodes listed in the NFPA 70 (NEC) or NFPA 780.

Where raceway is installed by the directional bore, jack and bore, or other drilling method, the counterpoise conductor shall be permitted to be installed concurrently with the directional bore, jack and bore, or other drilling method raceway, external to the raceway or sleeve.

The counterpoise wire shall also be exothermically welded to ground rods installed as shown on the plans but not more than 500 feet (150 m) apart around the entire circuit. The counterpoise system shall be continuous and terminate at the transformer vault or at the power source. It shall be securely attached to the vault or equipment external ground ring or other made electrode-grounding system. The connections shall be made as shown on the plans and in the specifications.

Where an existing airfield lighting system is being extended or modified, the new counterpoise conductors shall be interconnected to existing counterpoise conductors at each intersection of the new and existing airfield lighting counterpoise systems.

d. Parallel Voltage Systems. Provide grounding and bonding in accordance with NFPA 70, National Electrical Code.

108-3.7 Counterpoise installation above multiple conduits and duct banks. Counterpoise wires shall be installed above multiple conduits/duct banks for airfield lighting cables, with the intent being to provide a complete area of protection over the airfield lighting cables. When multiple conduits and/or duct banks for airfield cable are installed in the same trench, the number and location of counterpoise wires above the conduits shall be adequate to provide a complete area of protection measured 45 degrees each side of vertical.

Where duct banks pass under pavement to be constructed in the project, the counterpoise shall be placed above the duct bank. Reference details on the construction plans.

108-3.8 Counterpoise installation at existing duct banks. When airfield lighting cables are indicated on the plans to be routed through existing duct banks, the new counterpoise wiring shall be terminated at ground rods at each end of the existing duct bank where the cables being protected enter and exit the duct bank. The new counterpoise conductor shall be bonded to the existing counterpoise system.

108-3.9 Exothermic bonding. Bonding of counterpoise wire shall be by the exothermic welding process or equivalent method accepted by the RPR. Only personnel experienced in and regularly engaged in this type of work shall make these connections.

Contractor shall demonstrate to the satisfaction of the RPR, the welding kits, materials and procedures to be used for welded connections prior to any installations in the field. The installations shall comply with the manufacturer's recommendations and the following:

- a. All slag shall be removed from welds.
- b. Using an exothermic weld to bond the counterpoise to a lug on a galvanized light base is not recommended unless the base has been specially modified. Consult the manufacturer's installation directions for proper methods of bonding copper wire to the light base. See AC 150/5340-30 for galvanized light base exception.
- c. If called for in the plans, all buried copper and weld material at weld connections shall be thoroughly coated with 6 mm of 3M™ Scotchkote™, or approved equivalent, or coated with coal tar Bitumastic® material to prevent surface exposure to corrosive soil or moisture.

108-3.10 Testing. The Contractor shall furnish all necessary equipment and appliances for testing the airport electrical systems and underground cable circuits before and after installation. The Contractor shall perform all tests in the presence of the RPR. The Contractor shall demonstrate the electrical characteristics to the satisfaction of the RPR. All costs for testing are incidental to the respective item being tested. For phased projects, the tests must be completed by phase. The Contractor must maintain the test results throughout the entire project as well as during the warranty period that meet the following:

- a. Earth resistance testing methods shall be submitted to the RPR for approval. Earth resistance testing results shall be recorded on an approved form and testing shall be performed in the presence of the RPR. All such testing shall be at the sole expense of the Contractor.
- b. Should the counterpoise or ground grid conductors be damaged or suspected of being damaged by construction activities the Contractor shall test the conductors for continuity with a low resistance ohmmeter. The conductors shall be isolated such that no parallel path exists and tested for continuity. The RPR shall approve of the test method selected. All such testing shall be at the sole expense of the Contractor.

After installation, the Contractor shall test and demonstrate to the satisfaction of the RPR the following:

- c. That all affected lighting power and control circuits (existing and new) are continuous and free from short circuits.
- d. That all affected circuits (existing and new) are free from unspecified grounds.
- e. That the insulation resistance to ground of all new non-grounded high voltage series circuits or cable segments is not less than { 50 } megohms. Verify continuity of all series airfield lighting circuits prior to energization.
- f. That the insulation resistance to ground of all new non-grounded conductors of new multiple circuits or circuit segments is not less than 100 megohms.

- g. That all affected circuits (existing and new) are properly connected per applicable wiring diagrams.
 - h. That all affected circuits (existing and new) are operable. Tests shall be conducted that include operating each control not less than 10 times and the continuous operation of each lighting and power circuit for not less than 1/2 hour.
 - i. That the impedance to ground of each ground rod does not exceed { 25 } ohms prior to establishing connections to other ground electrodes. The fall-of-potential ground impedance test shall be used, as described by American National Standards Institute/Institute of Electrical and Electronic Engineers (ANSI/IEEE) Standard 81, to verify this requirement. As an alternate, clamp-on style ground impedance test meters may be used to satisfy the impedance testing requirement. Test equipment and its calibration sheets shall be submitted for review and approval by the RPR prior to performing the testing. Two copies of tabulated results of all cable tests performed shall be supplied by the Contractor to the RPR. Where connecting new cable to existing cable, insulation resistance tests shall be performed on the new cable prior to connection to the existing circuit.
- There are no approved "repair" procedures for items that have failed testing other than complete replacement.

METHOD OF MEASUREMENT

108-4.1 { Trenching shall be measured by the linear feet (meters) of trench, including the excavation, backfill, and restoration, completed, measured as excavated, and accepted as satisfactory. When specified, separate measurement shall be made for trenches of various specified widths. }

{ The cost of all excavation, backfill, dewatering and restoration regardless of the type of material encountered shall be included in the unit price bid for the work. }

108-4.2 Cable or counterpoise wire installed in trench, duct bank or conduit shall be measured by the number of linear feet (meters) installed and grounding connectors, and trench marking tape ready for operation, and accepted as satisfactory. Separate measurement shall be made for each cable or counterpoise wire installed in trench, duct bank or conduit. The measurement for this item [shall] [shall not] include additional quantities required for slack.

108-4.3 [No separate payment will be made for ground rods.][Ground rods shall be measured by each [8-foot] section installed complete.]

BASIS OF PAYMENT

108-5.1 Payment will be made at the contract unit price for trenching, cable and bare counterpoise wire installed in trench (direct-buried), or cable and equipment ground installed in duct bank or conduit, in place by the Contractor and accepted by the RPR. This price shall be full compensation for furnishing all materials and for all preparation and installation of these materials, and for all labor, equipment, tools, and incidentals, including ground rods and ground connectors and trench marking tape, necessary to complete this item.

Payment will be made under:

~~Item L-108-5.1~~ ~~Trenching for direct buried cable, 18 inch minimum depth per linear foot (meter)~~

Item L-108-5.2	[No. 8 AWG] [No. 6 AWG], [5 kV] [600V], L-824, [Type C] [Type B] Cable, Installed in Trench, Duct Bank or Conduit – per linear foot (meter)
Item L-108-5.2 a.	<i>Underground Cable #8 AWG L-824C 5KV, installed in duct or conduit – per linear foot.</i>
Item L-108-5.3	No. [6] [4] [2] AWG, Solid, Bare Copper Counterpoise Wire, <i>direct buried</i> [in Trench], [Above the Duct Bank or Conduit], Including <i>ground rods and ground connectors</i> Connections/Terminations – per linear foot (meter)
Item L-108-5.4	No. [6] [4] [2] AWG, [Bare] [Insulated], #6 <i>AWG safety</i> [bending] [Ground], Installed <i>with lighting conductors</i> in Duct Bank or Conduit – per linear foot (meter).

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

AC 150/5340-26	Maintenance of Airport Visual Aid Facilities
AC 150/5340-30	Design and Installation Details for Airport Visual Aids
AC 150/5345-7	Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits
AC 150/5345-26	Specification for L-823 Plug and Receptacle, Cable Connectors
AC 150/5345-53	Airport Lighting Equipment Certification Program

Commercial Item Description

A-A-59544A	Cable and Wire, Electrical (Power, Fixed Installation)
A-A-55809	Insulation Tape, Electrical, Pressure-Sensitive Adhesive, Plastic

ASTM International (ASTM)

ASTM B3	Standard Specification for Soft or Annealed Copper Wire
ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B33	Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes
ASTM D4388	Standard Specification for Nonmetallic Semi-Conducting and Electrically Insulating Rubber Tapes

Mil Spec

MIL-PRF-23586F	Performance Specification: Sealing Compound (with Accelerator), Silicone Rubber, Electrical
MIL-I-24391	Insulation Tape, Electrical, Plastic, Pressure Sensitive

National Fire Protection Association (NFPA)

NFPA-70 National Electrical Code (NEC)

NFPA-780 Standard for the Installation of Lightning Protection Systems

American National Standards Institute (ANSI)/Institute of Electrical and Electronics Engineers (IEEE)

ANSI/IEEE STD 81 IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and
Earth Surface Potentials of a Ground System

Federal Aviation Administration Standard

FAA STD-019E Lightning and Surge Protection, Grounding Bonding and Shielding
Requirements for Facilities and Electronic Equipment

END OF ITEM L-108

Item L-110 Airport Underground Electrical Duct Banks and Conduits

DESCRIPTION

110-1.1 This item shall consist of underground electrical conduits and duct banks (single or multiple conduits encased in concrete or buried in sand) installed per this specification at the locations and per the dimensions, designs, and details shown on the plans. This item shall include furnishing and installing of all underground electrical duct banks and individual and multiple underground conduits [and removal of existing duct banks]. It shall also include all turfing trenching, backfilling, removal, and restoration of any paved or turfed areas; concrete encasement, mandrelling, pulling lines, duct markers, plugging of conduits, and the testing of the installation as a completed system ready for installation of cables per the plans and specifications. This item shall also include furnishing and installing conduits and all incidentals for providing positive drainage of the system. Verification of existing ducts is incidental to the pay items provided in this specification.

EQUIPMENT AND MATERIALS

110-2.1 General.

a. All equipment and materials covered by referenced specifications shall be subject to acceptance through manufacturer's certification of compliance with the applicable specification when requested by the RPR.

b. Manufacturer's certifications shall not relieve the Contractor of the responsibility to provide materials per these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, that comply with these specifications, at the Contractor's cost.

c. All materials and equipment used to construct this item shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Submittal data shall be presented in a clear, precise and thorough manner. Original catalog sheets are preferred. Photocopies are acceptable provided they are as good a quality as the original. Clearly and boldly mark each copy to identify products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be made bold and clear with arrows or circles (highlighting is not acceptable). The Contractor is solely responsible for delays in project that accrue directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be ~~{ neatly bound in a properly sized 3-ring binder, tabbed by specification section. }~~
{ electronically submitted in pdf format, tabbed by specification section. } The RPR reserves the right to reject any and all equipment, materials or procedures that do not meet the system design and the standards and codes specified in this document.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least [twelve (12) months] from final

acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

110-2.2 Steel conduit. Rigid galvanized steel (RGS) conduit and fittings shall be hot dipped galvanized inside and out and conform to the requirements of Underwriters Laboratories Standards 6, 514B, and 1242. All RGS conduits or RGS elbows installed below grade, in concrete, permanently wet locations or other similar environments shall be painted with a 10-mil thick coat of asphaltum sealer or shall have a factory-bonded polyvinyl chloride (PVC) cover. Any exposed galvanizing or steel shall be coated with 10 mils of asphaltum sealer. When using PVC coated RGS conduit, care shall be exercised not to damage the factory PVC coating. Damaged PVC coating shall be repaired per the manufacturer's written instructions. In lieu of PVC coated RGS, corrosion wrap tape shall be permitted to be used where RGS is in contact with direct earth."

110-2.3 Plastic conduit. Plastic conduit and fittings shall conform to the following requirements:

- UL 514B covers W-C-1094-Conduit fittings all types, classes 1 thru 3 and 6 thru 10.
- UL 514C covers W-C-1094- all types, Class 5 junction box and cover in plastic (PVC).
- UL 651 covers W-C-1094-Rigid PVC Conduit, types I and II, Class 4.
- UL 651A covers W-C-1094-Rigid PVC Conduit and high-density polyethylene (HDPE) Conduit type III and Class 4.

Underwriters Laboratories Standards UL-651 and Article 352 of the current National Electrical Code shall be one of the following, as shown on the plans:

- a. Type I—Schedule 40 and Schedule 80 PVC suitable for underground use either direct-buried or encased in concrete.
- b. Type II—Schedule 40 PVC suitable for either above ground or underground use.
- c. Type III – Schedule 80 PVC suitable for either above ground or underground use either direct-buried or encased in concrete.
- d. Type III –HDPE pipe, minimum standard dimensional ratio (SDR) 11, suitable for placement with directional boring under pavement.

The type of solvent cement shall be as recommended by the conduit/fitting manufacturer.

110-2.4 Split conduit. Split conduit shall be pre-manufactured for the intended purpose and shall be made of steel or plastic.

110-2.5 Conduit spacers. Conduit spacers shall be prefabricated interlocking units manufactured for the intended purpose. They shall be of double wall construction made of high grade, high density polyethylene complete with interlocking cap and base pads. They shall be designed to accept No. 4 reinforcing bars installed vertically.

110-2.6 Concrete. { Concrete shall be proportioned, placed, and cured per Item P-610, Concrete for Miscellaneous Structures. }

110-2.7 Precast concrete structures. Precast concrete structures shall be furnished by a plant meeting National Precast Concrete Association Plant Certification Program or another RPR approved third party certification program. Precast concrete structures shall conform to ASTM C478.

110-2.8 Flowable backfill. Flowable material used to back fill conduit and duct bank trenches shall conform to the requirements of Item P-153, Controlled Low Strength Material.

110-2.9 Detectable warning tape. Plastic, detectable, American Public Works Association (APWA) red (electrical power lines, cables, conduit and lighting cable), orange (telephone/fiber optic cabling) with continuous legend magnetic tape shall be polyethylene film with a metallized foil core and shall be 3-6 inches (75-150 mm) wide. Detectable tape is incidental to the respective bid item.

CONSTRUCTION METHODS

110-3.1 General. The Contractor shall install underground duct banks and conduits at the approximate locations indicated on the plans. The RPR shall indicate specific locations as the work progresses, if required to differ from the plans. Duct banks and conduits shall be of the size, material, and type indicated on the plans or specifications. Where no size is indicated on the plans or in the specifications, conduits shall be not less than 2 inches (50 mm) inside diameter or comply with the National Electrical Code based on cable to be installed, whichever is larger. All duct bank and conduit lines shall be laid so as to grade toward access points and duct or conduit ends for drainage. Unless shown otherwise on the plans, grades shall be at least 3 inches (75 mm) per 100 feet (30 m). On runs where it is not practicable to maintain the grade all one way, the duct bank and conduit lines shall be graded from the center in both directions toward access points or conduit ends, with a drain into the storm drainage system. Pockets or traps where moisture may accumulate shall be avoided. Under pavement, the top of the duct bank shall not be less than 18 inches (0.5 m) below the subgrade; in other locations, the top of the duct bank or underground conduit shall be not less than 18 inches (0.5 m) below finished grade.

The Contractor shall mandrel each individual conduit whether the conduit is direct-buried or part of a duct bank. An iron-shod mandrel, not more than 1/4 inch (6 mm) smaller than the bore of the conduit shall be pulled or pushed through each conduit. The mandrel shall have a leather or rubber gasket slightly larger than the conduit hole.

The Contractor shall swab out all conduits/ducts and clean base can, manhole, pull boxes, etc., interiors immediately prior to pulling cable. Once cleaned and swabbed the light bases, manholes, pull boxes, etc., and all accessible points of entry to the duct/conduit system shall be kept closed except when installing cables. Cleaning of ducts, base cans, manholes, etc., is incidental to the pay item of the item being cleaned. All raceway systems left open, after initial cleaning, for any reason shall be recleaned at the Contractor's expense. All accessible points shall be kept closed when not installing cable. The Contractor shall verify existing ducts proposed for use in this project as clear and open. The Contractor shall notify the RPR of any blockage in the existing ducts.

For pulling the permanent wiring, each individual conduit, whether the conduit is direct-buried or part of a duct bank, shall be provided with a 200-pound (90 kg) test polypropylene pull rope. The ends shall be secured and sufficient length shall be left in access points to prevent it from slipping back into the conduit. Where spare conduits are installed, as indicated on the plans, the open ends shall be plugged with removable tapered plugs, designed for this purpose.

All conduits shall be securely fastened in place during construction and shall be plugged to prevent contaminants from entering the conduits. Any conduit section having a defective joint shall not be installed. Ducts shall be supported and spaced apart using approved spacers at intervals not to exceed 5 feet (1.5 m).

Unless otherwise shown on the plans, concrete encased duct banks shall be used when crossing under pavements expected to carry aircraft loads, such as runways, taxiways, taxilanes, ramps and aprons. When under paved shoulders and other paved areas, conduit and duct banks shall be encased using flowable fill for protection.

All conduits within concrete encasement of the duct banks shall terminate with female ends for ease in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Where turf is well established and the sod can be removed, it shall be carefully stripped and properly stored.

Trenches for conduits and duct banks may be excavated manually or with mechanical trenching equipment unless in pavement, in which case they shall be excavated with mechanical trenching equipment. Walls of trenches shall be essentially vertical so that a minimum of shoulder surface is disturbed. Blades of graders shall not be used to excavate the trench.

When rock is encountered, the rock shall be removed to a depth of at least 3 inches (75 mm) below the required conduit or duct bank depth and it shall be replaced with bedding material of earth or sand containing no mineral aggregate particles that would be retained on a 1/4-inch (6.3 mm) sieve. Flowable backfill may alternatively be used.

Underground electrical warning (Caution) tape shall be installed in the trench above all underground duct banks and conduits in unpaved areas. Contractor shall submit a sample of the proposed warning tape for approval by the RPR. If not shown on the plans, the warning tape shall be located 6 inches above the duct/conduit or the counterpoise wire if present.

Joints in plastic conduit shall be prepared per the manufacturer's recommendations for the particular type of conduit. Plastic conduit shall be prepared by application of a plastic cleaner and brushing a plastic solvent on the outside of the conduit ends and on the inside of the couplings. The conduit fitting shall then be slipped together with a quick one-quarter turn twist to set the joint tightly. Where more than one conduit is placed in a single trench, or in duct banks, joints in the conduit shall be staggered a minimum of 2 feet (60 cm).

Changes in direction of runs exceeding 10 degrees, either vertical or horizontal, shall be accomplished using manufactured sweep bends.

Whether or not specifically indicated on the drawings, where the soil encountered at established duct bank grade is an unsuitable material, as determined by the RPR, the unsuitable material shall be removed per Item P-152 and replaced with suitable material. Additional duct bank supports shall be installed, as approved by the RPR.

All excavation shall be unclassified and shall be considered incidental to Item L-110. Dewatering necessary for duct installation, and erosion per federal, state, and local requirements is incidental to Item L-110.

Unless otherwise specified, excavated materials that are deemed by the RPR to be unsuitable for use in backfill or embankments shall be removed and disposed of offsite.

Any excess excavation shall be filled with suitable material approved by the RPR and compacted per Item P-152.

It is the Contractor's responsibility to locate existing utilities within the work area prior to excavation. Where existing active cables cross proposed installations, the Contractor shall ensure that these cables are adequately protected. Where crossings are unavoidable, no splices will be allowed in the existing cables, except as specified on the plans. Installation of new cable where such crossings must occur shall proceed as follows:

- a. Existing cables shall be located manually. Unearthed cables shall be inspected to assure absolutely no damage has occurred.

- b. Trenching, etc., in cable areas shall then proceed with approval of the RPR, with care taken to minimize possible damage or disruption of existing cable, including careful backfilling in area of cable.

In the event that any previously identified cable is damaged during the course of construction, the Contractor shall be responsible for the complete repair.

110-3.2 Duct banks. Unless otherwise shown in the plans, duct banks shall be installed so that the top of the concrete envelope is not less than 18 inches (0.5 m) below the bottom of the base or stabilized base course layers where installed under runways, taxiways, aprons, or other paved areas, and not less than 18 inches (0.5 m) below finished grade where installed in unpaved areas.

Unless otherwise shown on the plans, duct banks under paved areas shall extend at least 3 feet (1 m) beyond the edges of the pavement or 3 feet (1 m) beyond any under drains that may be installed alongside the paved area. Trenches for duct banks shall be opened the complete length before concrete is placed so that if any obstructions are encountered, provisions can be made to avoid them. Unless otherwise shown on the plans, all duct banks shall be placed on a layer of concrete not less than 3 inches (75 mm) thick prior to its initial set. The Contractor shall space the conduits not less than 3 inches (75 mm) apart (measured from outside wall to outside wall). All such multiple conduits shall be placed using conduit spacers applicable to the type of conduit. As the conduit laying progresses, concrete shall be placed around and on top of the conduits not less than 3 inches (75 mm) thick unless otherwise shown on the plans. All conduits shall terminate with female ends for ease of access in current and future use. Install factory plugs in all unused ends. Do not cover the ends or plugs with concrete.

Conduits forming the duct bank shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches (150 mm) to anchor the assembly into the earth prior to placing the concrete encasement. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot (1.5-m) intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

When specified, the Contractor shall reinforce the bottom side and top of encasements with steel reinforcing mesh or fabric or other approved metal reinforcement. When directed, the Contractor shall supply additional supports where the ground is soft and boggy, where ducts cross under roadways, or where shown on the plans. Under such conditions, the complete duct structure shall be supported on reinforced concrete footings, piers, or piles located at approximately 5-foot (1.5-m) intervals.

All pavement surfaces that are to have ducts installed therein shall be neatly saw cut to form a vertical face. All excavation shall be included in the contract with price for the duct.

Install a plastic, detectable, color as noted, 3 to 6 inches (75 to 150 mm) wide tape, 8 inches (200 mm) minimum below grade above all underground conduit or duct lines not installed under pavement. Utilize the 3-inch (75-mm) wide tape only for single conduit runs. Utilize the 6-inch (150-mm) wide tape for multiple conduits and duct banks. For duct banks equal to or greater than 24 inches (600 mm) in width, utilize more than one tape for sufficient coverage and identification of the duct bank as required.

When existing cables are to be placed in split duct, encased in concrete, the cable shall be carefully located and exposed by hand tools. Prior to being placed in duct, the RPR shall be notified so that he may inspect the cable and determine that it is in good condition. Where required, split duct shall be installed as shown on the drawings or as required by the RPR.

110-3.3 Conduits without concrete encasement. Trenches for single-conduit lines shall be not less than 6 inches (150 mm) nor more than 12 inches (300 mm) wide. The trench for 2 or more conduits installed at the same level shall be proportionately wider. Trench bottoms for conduits without concrete encasement shall be made to conform accurately to grade so as to provide uniform support for the conduit along its entire length.

Unless otherwise shown on the plans, a layer of fine earth material, at least 4 inches (100 mm) thick (loose measurement) shall be placed in the bottom of the trench as bedding for the conduit. The bedding material shall consist of soft dirt, sand or other fine fill, and it shall contain no particles that would be retained on a 1/4-inch (6.3 mm) sieve. The bedding material shall be tamped until firm. Flowable backfill may alternatively be used.

Unless otherwise shown on plans, conduits shall be installed so that the tops of all conduits within the Airport's secured area where trespassing is prohibited are at least 18 inches (0.5 m) below the finished grade. Conduits outside the Airport's secured area shall be installed so that the tops of the conduits are at least 24 inches (60 cm) below the finished grade per National Electric Code (NEC), Table 300.5.

When two or more individual conduits intended to carry conductors of equivalent voltage insulation rating are installed in the same trench without concrete encasement, they shall be spaced not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches (150 mm) apart in a vertical direction. Where two or more individual conduits intended to carry conductors of differing voltage insulation rating are installed in the same trench without concrete encasement, they shall be placed not less than 3 inches (75 mm) apart (measured from outside wall to outside wall) in a horizontal direction and not less than 6 inches (150 mm) apart in a vertical direction.

Trenches shall be opened the complete length between normal termination points before conduit is installed so that if any unforeseen obstructions are encountered, proper provisions can be made to avoid them.

Conduits shall be installed using conduit spacers. No. 4 reinforcing bars shall be driven vertically into the soil a minimum of 6 inches (150 mm) to anchor the assembly into the earth while backfilling. For this purpose, the spacers shall be fastened down with locking collars attached to the vertical bars. Spacers shall be installed at 5-foot (1.5-m) intervals. Spacers shall be in the proper sizes and configurations to fit the conduits. Locking collars and spacers shall be submitted to the RPR for review prior to use.

110-3.4 Markers. The location of each end and of each change of direction of conduits and duct banks shall be marked by a concrete slab marker 2 feet (60 cm) square and 4 - 6 inches (100 - 150 mm) thick extending approximately one inch (25 mm) above the surface. The markers shall also be located directly above the ends of all conduits or duct banks, except where they terminate in a junction/access structure or building. Each cable or duct run from a line of lights and signs to the equipment vault must be marked at approximately every 200 feet (61 m) along the cable or duct run, with an additional marker at each change of direction of cable or duct run.

The Contractor shall impress the word "DUCT" or "CONDUIT" on each marker slab. Impression of letters shall be done in a manner, approved by the RPR, for a neat, professional appearance. All letters and words must be neatly stenciled. After placement, all markers shall be given one coat of high-visibility orange paint, as approved by the RPR. The Contractor shall also impress on the slab the number and size of conduits beneath the marker along with all other necessary information as determined by the RPR. The letters shall be 4 inches (100 mm) high and 3 inches (75 mm) wide with width of stroke 1/2 inch (12 mm) and 1/4 inch (6 mm) deep or as large as the available space permits. Furnishing and installation of duct markers is incidental to the respective duct pay item.

110-3.5 Backfilling for conduits. For conduits, 8 inches (200 mm) of sand, soft earth, or other fine fill (loose measurement) shall be placed around the conduits ducts and carefully tamped around and over them with hand tampers. The remaining trench shall then be backfilled and compacted per Item P-152 except that material used for back fill shall be select material not larger than 4 inches (100 mm) in diameter.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during back filling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.6 Backfilling for duct banks. After the concrete has cured, the remaining trench shall be backfilled and compacted per Item P-152 "Excavation and Embankment" except that the material used for backfill shall be select material not larger than 4 inches (100 mm) in diameter. In addition to the requirements of Item P-152, where duct banks are installed under pavement, one moisture/density test per lift shall be made for each 250 linear feet (76 m) of duct bank or one work period's construction, whichever is less.

Flowable backfill may alternatively be used.

Trenches shall not contain pools of water during backfilling operations.

The trench shall be completely backfilled and tamped level with the adjacent surface; except that, where sod is to be placed over the trench, the backfilling shall be stopped at a depth equal to the thickness of the sod to be used, with proper allowance for settlement.

Any excess excavated material shall be removed and disposed of per instructions issued by the RPR.

110-3.7 Restoration. Where sod has been removed, it shall be replaced as soon as possible after the backfilling is completed. All areas disturbed by the work shall be restored to its original condition. The restoration shall include { sodding } ~~{ topsoiling }~~ ~~{ fertilizing }~~ ~~{ liming }~~ ~~{ seeding }~~ ~~{ sprigging }~~ ~~{ mulching }~~ shown on the plans. The Contractor shall be held responsible for maintaining all disturbed surfaces and replacements until final acceptance. All restoration shall be considered incidental to the respective L-110 pay item. Following restoration of all trenching near airport movement surfaces, the Contractor shall thoroughly visually inspect the area for foreign object debris (FOD), and remove any such FOD that is found. This FOD inspection and removal shall be considered incidental to the pay item of which it is a component part.

METHOD OF MEASUREMENT

110-4.1 Underground conduits and duct banks shall be measured by the linear feet (~~meter~~) of conduits and duct banks installed, including encasement, locator tape, trenching and backfill with designated material, and restoration, and for drain lines, the termination at the drainage structure, all measured in place, completed, and accepted. Separate measurement shall be made for the various types and sizes.

BASIS OF PAYMENT

110-5.1 Payment will be made at the contract unit price per linear foot for each type and size of conduit and duct bank completed and accepted, including trench and backfill with the designated material, and, for drain lines, the termination at the drainage structure. This price shall be full compensation for removal and disposal of existing duct banks and conduits as shown on the plans, furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools, and incidentals necessary to complete this item per the provisions and intent of the plans and specifications.

Payment will be made under:

Item L-110-5.1	{ Concrete Encased } { Non-Encased } Electrical Duct Bank, { # and Size } - per linear foot (meter)
Item L-110-5.2	{ Concrete Encased } { Non-Encased } Electrical Conduit, { # and Size } - per linear foot (meter)

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circular (AC)

- | | |
|----------------|---|
| AC 150/5340-30 | Design and Installation Details for Airport Visual Aids |
| AC 150/5345-53 | Airport Lighting Equipment Certification Program |

ASTM International (ASTM)

- | | |
|-----------|--|
| ASTM A615 | Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement |
|-----------|--|

National Fire Protection Association (NFPA)

- | | |
|---------|--------------------------------|
| NFPA-70 | National Electrical Code (NEC) |
|---------|--------------------------------|

Underwriters Laboratories (UL)

- | | |
|------------------|---|
| UL Standard 6 | Electrical Rigid Metal Conduit - Steel |
| UL Standard 514B | Conduit, Tubing, and Cable Fittings |
| UL Standard 514C | Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers |
| UL Standard 1242 | Electrical Intermediate Metal Conduit Steel |
| UL Standard 651 | Schedule 40, 80, Type EB and A Rigid PVC Conduit and Fittings |
| UL Standard 651A | Type EB and A Rigid PVC Conduit and HDPE Conduit |

END OF ITEM L-110

Item L-125 Installation of Airport Lighting Systems

DESCRIPTION

125-1.1 This item shall consist of airport lighting systems furnished and installed in accordance with this specification, the referenced specifications, and the applicable advisory circulars (ACs). The systems shall be installed at the locations and in accordance with the dimensions, design, and details shown in the plans. This item shall include the furnishing of all equipment, materials, services, and incidentals necessary to place the systems in operation as completed units to the satisfaction of the RPR.

EQUIPMENT AND MATERIALS

125-2.1 General.

a. Airport lighting equipment and materials covered by Federal Aviation Administration (FAA) specifications shall be certified under the Airport Lighting Equipment Certification Program in accordance with AC 150/5345-53, current version. FAA certified airfield lighting shall be compatible with each other to perform in compliance with FAA criteria and the intended operation. If the Contractor provides equipment that does not perform as intended because of incompatibility with the system, the Contractor assumes all costs to correct the system for to operate properly.

b. Manufacturer's certifications shall not relieve the Contractor of their responsibility to provide materials in accordance with these specifications and acceptable to the RPR. Materials supplied and/or installed that do not comply with these specifications shall be removed, when directed by the RPR and replaced with materials, which do comply with these specifications, at the sole cost of the Contractor.

c. All materials and equipment used shall be submitted to the RPR for approval prior to ordering the equipment. Submittals consisting of marked catalog sheets or shop drawings shall be provided. Clearly mark each copy to identify pertinent products or models applicable to this project. Indicate all optional equipment and delete non-pertinent data. Submittals for components of electrical equipment and systems shall identify the equipment for which they apply on each submittal sheet. Markings shall be clearly made with arrows or circles (highlighting is not acceptable). The Contractor shall be responsible for delays in the project accruing directly or indirectly from late submissions or resubmissions of submittals.

d. The data submitted shall be sufficient, in the opinion of the RPR, to determine compliance with the plans and specifications. The Contractor's submittals shall be submitted in ~~{ a neatly bound, properly sized 3-ring binder, tabbed by specification section. }~~ { electronic PDF format, tabbed by specification section. } The RPR reserves the right to reject any or all equipment, materials or procedures, which, in the RPR's opinion, does not meet the system design and the standards and codes, specified herein.

e. All equipment and materials furnished and installed under this section shall be guaranteed against defects in materials and workmanship for a period of at least [twelve (12) months] from final acceptance by the Owner. The defective materials and/or equipment shall be repaired or replaced, at the Owner's discretion, with no additional cost to the Owner.

EQUIPMENT AND MATERIALS

125-2.2 Conduit/Duct. Conduit shall conform to Specification Item L-110 Airport Underground Electrical Duct Banks and Conduits.

125-2.3 Cable and Counterpoise. Cable and Counterpoise shall conform to Item L-108 Underground Power Cable for Airports.

125-2.4 Tape. Rubber and plastic electrical tapes shall be Scotch Electrical Tape Numbers 23 and 88 respectively, as manufactured by 3M Company or an approved equal.

125-2.5 Cable Connections. Cable Connections shall conform to Item L-108 Installation of Underground Cable for Airports.

125-2.6 Retroreflective Markers. { Retroreflective markers shall be type L-853 and shall conform to the requirements of AC 150/5345-39. } ~~{ Not required. }~~

125-2.7 Runway and Taxiway Lights. Runway and taxiway lights shall conform to the requirements of AC 150/5345-46. Lamps shall be of size and type indicated, or as required by fixture manufacturer for each lighting fixture required under this contract. Filters shall be of colors conforming to the specification for the light concerned or to the standard referenced.

Lights

Type	Class	Mode	Style	Option	Base	Filter	Transformer	Notes
[]	[]	[]	[]	[]	[]	[]	[]	[]

Indicate type of light, base and transformer including class, mode, style and option as appropriate for project. On elevated lights indicate height. Add rows to table as necessary to indicate all light types required for project. In Notes column indicate bulb type if that is an option as well as fixture height for edge lights.

See AC 150/5340-30 for design and spacing requirements of light system.

See AC 150/5345-46 for specific characteristics of each fixture type.

Indicate fixture height of elevated fixtures.

All text enclosed in brackets requires editing by the engineer.

See engineering FAA Engineering Brief No. 67 "Light Sources other than Incandescent and Xenon for Airport Lighting and Obstruction Lighting Fixtures for additional information on LED fixtures.

Installation details should be shown on the plans with fixtures shown in section view. See AC 150/5340-30 for examples of installation details.

125-2.8 Runway and Taxiway Signs. Runway and Taxiway Guidance Signs should conform to the requirements of AC 150/5345-44.

Signs

Type	Size	Style	Class	Mode	Notes
[]	[]	[]	[]	[]	[]

Indicate type, size, style class and mode of signs for project, adding rows as necessary.

See AC 150/5340-18 for guidance on sign legends and locations.

See AC 150/5345-44 for information about sign sizes, styles, class, and mode.

125-2.9 Runway End Identifier Light (REIL). [The REIL fixtures shall meet the requirements of AC 150/5345-51, Type [L-849V][L-849I], Style [A][B][C][D][E][F].]
[Not required.]

125-2.10 Precision Approach Path Indicator (PAPI). [The light units for the PAPI shall meet the requirements of AC 150/5345-28, Type [L-880][L-881], Style [A][B], Class [I][II].] [Not required.]

Plans should indicate details for location and installation of REILs and PAPIs. See AC 150/5340-30 for requirements for locating and installing REIL and PAPI equipment.

125-2.11 Circuit Selector Cabinet. The circuit selector cabinet shall meet the requirements of AC 150/5345-5, Type L-847, [one][two][three][four] circuit control [as indicated], Class [A, indoor][B, outdoor], Rating [1, for 6.6 amperes][2, for 20 amperes].

125-2.12 Light Base and Transformer Housings. Light Base and Transformer Housings should conform to the requirements of AC 150/5345-42. Light bases shall be Type [L-867][L-868], Class [1A][1B][2A][2B], Size [A][B][C] shall be provided as indicated or as required to accommodate the fixture or device installed thereon. Base plates, cover plates, and adapter plates shall be provided to accommodate various sizes of fixtures.

Use Type L-867 bases for applications not subject to aircraft or heavy vehicle loading. Use Type L-868 for applications subjected to aircraft or vehicle loading.

125-2.13 Isolation Transformers. Isolation Transformers shall be Type [L-830][L-831], size as required for each installation. Transformer shall conform to AC 150/5345-47.

INSTALLATION

Include construction and/or installation details on the plans. Include project installation requirement in the specifications from AC 150/5345-30.

125-3.1 Installation. The Contractor shall furnish, install, connect and test all equipment, accessories, conduit, cables, wires, buses, grounds and support items necessary to ensure a complete and operable airport lighting system as specified here and shown in the plans.

The equipment installation and mounting shall comply with the requirements of the National Electrical Code and state and local code agencies having jurisdiction.

The Contractor shall install the specified equipment in accordance with the applicable advisory circulars and the details shown on the plans.

[Insert project specific installation information from AC 150/5340-30 as required.]

125-3.2 Testing. All lights shall be fully tested by continuous operation for not less than 24 hours as a completed system prior to acceptance. The test shall include operating the constant current regulator in each step not less than 10 times at the beginning and end of the 24-hour test. The fixtures shall illuminate properly during each portion of the test.

125-3.3 Shipping and Storage. Equipment shall be shipped in suitable packing material to prevent damage during shipping. Store and maintain equipment and materials in areas protected from weather and physical damage. Any equipment and materials, in the opinion of the RPR, damaged during construction or storage shall be replaced by the Contractor at no additional cost to the owner. Painted or galvanized surfaces that are damaged shall be repaired in accordance with the manufacturer's recommendations.

125-3.4 Elevated and In-pavement Lights. Water, debris, and other foreign substances shall be removed prior to installing fixture base and light.

A jig or holding device shall be used when installing each light fixture to ensure positioning to the proper elevation, alignment, level control, and azimuth control. Light fixtures shall be oriented with the light beams parallel to the runway or taxiway centerline and facing in the required direction. The outermost edge of fixture shall be level with the surrounding pavement. Surplus sealant or flexible embedding material shall be removed. The holding device shall remain in place until sealant has reached its initial set.

METHOD OF MEASUREMENT

125-4.1 Reflective markers will be measured by the number installed as completed units in place, ready for operation, and accepted by the RPR. Runway and taxiway lights will be measured by the number of each type installed as completed units in place, ready for operation, and accepted by the RPR. Guidance signs will be measured by the number of each type and size installed as completed units, in place, ready for operation, and accepted by the RPR. Runway End Identifier Lights shall be measured by each system installed as a completed unit in place, ready for operation, and accepted by the RPR.

Precision Approach Path Indicator shall be measured by each system installed as a completed unit, in place, ready for operation, and accepted by the RPR. Abbreviated Precision Approach Path Indicator shall

be measured by each system installed as a completed unit, in place, ready for operation, and accepted by the RPR.

Delete non-applicable equipment types. Additional equipment types may be added with coordination with the FAA.

BASIS OF PAYMENT

125-5.1 Payment will be made at the Contract unit price for each complete runway or taxiway light, guidance sign, reflective marker, runway end identification light, precision approach path indicator, or abbreviated precision approach path indicator installed by the Contractor and accepted by the RPR. This payment will be full compensation for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

- L-125-5.1 New Medium Intensity Elevated Base Mounted LED Runway Edge Light, All in Place
- L-125-5.2 New Medium Intensity Elevated Base Mounted LED Taxiway Edge Light, All in Place
- L-125-5.3 Directional Guidance Sign Replace 1 Panel with Blank Panel

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Advisory Circulars (AC)

- | | |
|----------------|--|
| AC 150/5340-18 | Standards for Airport Sign Systems |
| AC 150/5340-26 | Maintenance of Airport Visual Aid Facilities |
| AC 150/5340-30 | Design and Installation Details for Airport Visual Aids |
| AC 150/5345-5 | Circuit Selector Switch |
| AC 150/5345-7 | Specification for L-824 Underground Electrical Cable for Airport Lighting Circuits |
| AC 150/5345-26 | Specification for L-823 Plug and Receptacle, Cable Connectors |
| AC 150/5345-28 | Precision Approach Path Indicator (PAPI) Systems |
| AC 150/5345-39 | Specification for L-853, Runway and Taxiway Retroreflective Markers |
| AC 150/5345-42 | Specification for Airport Light Bases, Transformer Housings, Junction Boxes, and Accessories |
| AC 150/5345-44 | Specification for Runway and Taxiway Signs |
| AC 150/5345-46 | Specification for Runway and Taxiway Light Fixtures |

AC 150/5345-47	Specification for Series to Series Isolation Transformers for Airport Lighting Systems
AC 150/5345-51	Specification for Discharge-Type Flashing Light Equipment
AC 150/5345-53	Airport Lighting Equipment Certification Program
Engineering Brief (EB)	
EB No. 67	Light Sources Other than Incandescent and Xenon for Airport and Obstruction Lighting Fixtures

END OF ITEM L-125

CLARIFICATIONS TO ITEM T-901: SEEDING

The provisions of this specification shall be applicable except as modified as follows:

901-2.1 SEED. Seeds shall be applied as follows:

Seed	Planting Dates	Minimum Seed Purity (%)	Minimum Seed Germination (%)	Rate of Application (lb. per acre)
Hulled Bermuda	March-Sept.	90	85	30
Unhulled Bermua Crimson Clover (1)	Sept.-Feb.	90	85	20 40

(1) Inoculated prior to planting with proper bacterial culture.

901-2.2 LIME. Lime will not be utilized on this project.

ITEM T-901: SEEDING

DESCRIPTION

901-1.1 This item shall consist of soil preparation, seeding, fertilizing and mulching the areas shown on the plans or as directed by the Engineer in accordance with these specifications.

MATERIALS

901-2.1 SEED The species and application rates of grass, legume, and cover-crop seed furnished shall be those stipulated herein. Seed shall conform to the requirements of Fed. Spec. JJJ-S-181.

Seed shall be furnished separately or in mixtures in standard containers with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed. The Contractor shall furnish the Engineer duplicate signed copies of a statement by the vendor certifying that each lot of seed has been tested by a recognized laboratory for seed testing within 6 months of date of delivery. This statement shall include: name and address of laboratory, date of test, lot number for each kind of seed, and the results of tests as to name, percentages of purity and of germination, and percentage of weed content for each kind of seed furnished, and, in case of a mixture, the proportions of each kind of seed.

Seeds shall be applied as follows:

Seed	Minimum Seed Purity (Percent)	Minimum Germination (Percent)	Rate of Application lb./acre (or lb./1,000 S.F.)
------	----------------------------------	----------------------------------	---

See Modification Sheet

Seeding shall be performed during the period between January and December inclusive, unless otherwise approved by the Engineer.

901-2.2 LIME. Lime shall be ground limestone containing not less than 85% of total carbonates, and shall be ground to such fineness that 90% will pass through a No. 20 mesh sieve and 50% will pass through a No. 100 mesh sieve. Coarser material will be acceptable, providing the rates of application are increased to provide not less than the minimum quantities and depth specified in the special provisions on the basis of the two sieve requirements above. Dolomitic lime or a high magnesium lime shall contain at least 10% of magnesium oxide. All liming materials shall conform to the requirements of ASTM C 602.

901-2.3 FERTILIZER. Fertilizer shall be standard commercial fertilizers supplied separately or in mixtures containing the percentages of total nitrogen, available phosphoric

acid, and water-soluble potash. They shall be applied at the rate and to the depth specified herein, and shall meet the requirements of Fed. Spec. O-F-241 and applicable state laws. They shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

The fertilizers may be supplied in one of the following forms:

- a. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader;
- b. A finely-ground fertilizer soluble in water, suitable for application by power sprayers;
or
- c. A granular or pellet form suitable for application by blower equipment

Fertilizers shall be 8-8-8 commercial fertilizer and shall be spread at the rate of 1000 per acre.

901-2.4 SOIL FOR REPAIRS. The soil for fill and top-soiling of areas to be repaired shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

CONSTRUCTION METHODS

901-3.1 ADVANCE PREPARATION AND CLEANUP. After grading of areas has been completed and before applying fertilizer and ground limestone, areas to be seeded shall be raked or otherwise cleared of stones larger than 2 inches (50 mm) in any diameter, sticks, stumps, and other debris which might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas. If any damage by erosion or other causes has occurred after the completion of grading and before beginning the application of fertilizer and ground limestone, the Contractor shall repair such damage. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

An area to be seeded shall be considered a satisfactory seedbed without additional treatment if it has been recently been thoroughly loosened and worked to a depth of not less than 5 inches (125 mm) as a result of grading operations and, if immediately prior to seeding, the top 3 inches (75 mm) of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and if shaped to the required grade.

However, when the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard, any grass and weeds shall first be cut or otherwise satisfactorily disposed of, and the soil then scarified or otherwise loosened to a depth not less than 5 inches (125 mm). Clods shall

be broken and the top 3 inches (75 mm) of soil shall be worked into a satisfactory seedbed by discing, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

901-3.2 DRY APPLICATION METHOD.

a. Liming. Lime shall be applied separately and prior to the application of any fertilizer or seed and only on seedbeds. Which have previously been prepared as described above. The lime shall then be worked into the top 3 inches (75 mm) of soil after which the seedbed shall again be properly graded and dressed to a smooth finish.

b. Fertilizing. Following advance preparations and cleanup fertilizer shall be uniformly spread at the rate which will provide not less than the minimum quantity stated in paragraph 901-2.3.

c. Seeding. Grass seed shall be sown at the rate specified in paragraph 901-2.1 immediately after fertilizing, and the fertilizer and seed shall be raked within the depth range stated in the special provisions. Seeds of legumes, either alone or in a mixture, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

d. Rolling. After the seed has been properly covered, the seedbed shall be immediately compacted by means of an approved lawn-roller, weighting 40-65 pounds per foot (60-97 kg per meter) of width for clay soil (or any soil having a tendency to pack), and weighting 150-200 pounds per foot (223 to 298 kg per meter) of width for sandy or light soils.

901-3.3 WET APPLICATION METHOD.

a. General. The Contractor may elect to apply seed and fertilizer (and lime, if required) by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using the methods and equipment described herein. The rates of application shall be as specified in the special provisions.

b. Spraying Equipment. The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons (190 liters) over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

The unit shall also be equipped with a pressure pump capable of delivering 100 gallons (380 liters) per minute at a pressure of 100 pounds per square inch (690 kPa). The pump shall be mounted in a line which will re-circulate the mixture through the tank whenever it is not

being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for 5/8 inch (15 mm) solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be an indicating pressure gauge connected and mounted immediately at the back of the nozzle.

The nozzle pipe shall be mounted on an elevated supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the re-circulating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 to 100 feet (6 to 30 m). One shall be a close-range ribbon nozzle, one a medium range ribbon nozzle, and one a long-range jet nozzle. For ease of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet (15 m) in length shall be provided to which the nozzles may be connected.

c. Mixtures. Lime, if required, shall be applied separately, in the quantity specified, prior to the fertilizing and seeding operations. Not more than 220 pounds (100 kg) of lime shall be added to and mixed with each 100 gallons (380 liters) of water. Seed and fertilizer shall be mixed together in the relative proportions specified, but not more than a total of 220 pounds (100 kg) of these combined solids shall be added to and mixed with each 100 gallons (380 liters) of water.

All water used shall be obtained from fresh water sources and shall be free from injurious chemicals and other toxic substances harmful to plant life. Brackish water shall not be used at any time. The Contractor shall identify to the Engineer all sources of water at least 2 weeks prior to use. The Engineer may take samples of the water at the source or from the tank at any time and have a laboratory test the samples for chemical and saline content. The Contractor shall not use any water from any source which is disapproved by the Engineer following such tests.

All mixtures shall be constantly agitated from the time they are mixed until they are finally applied to the seedbed. All such mixtures shall be used within 2 hours from the time they were mixed, or they shall be wasted and disposed of at locations acceptable to the Engineer.

d. Spraying. Lime, if required, shall be sprayed only upon previously prepared seedbeds. After the applied lime mixture has dried, the lime shall be worked into the top 3 inches (8 cm), after which the seedbed shall again be properly graded and dressed to a smooth finish.

Mixtures of seed and fertilizer shall only be sprayed upon previously prepared seedbeds on which the lime, if required, shall already have been worked in. The mixtures shall be applied by means of a high-pressure spray which shall always be directed upward into the air so that

the mixtures will fall to the ground like rain in a uniform spray. Nozzles or sprays shall never be directed toward the ground in such a manner as might produce erosion or runoff.

Particular care shall be exercised to ensure that the application is made uniformly and at the prescribed rate and to guard against misses and overlapped areas. Proper predetermined quantities of the mixture in accordance with specifications shall be used to cover specified sections of known area. Checks on the rate and uniformity of application may be made by observing the degree of wetting of the ground or by distributing test sheets of paper or pans over the area at intervals and observing the quantity of material deposited thereon.

Surfaces are to be mulched as indicated by the plans or directed by the Engineer. Seed and fertilizer applied by the spray method need not be raked into the soil or rolled. However, on surfaces on which mulch is not to be used, the raking and rolling operations will be required after the soil has dried.

901-3.4 MAINTENANCE OF SEEDED AREAS. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied, or otherwise damaged following seeding shall be repaired by re-grading and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

When either the dry or wet application method outlined above is used for work done out of season, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

METHOD OF MEASUREMENT

901-4.1 The quantity of seeding to be paid for shall be the number of square yards measured on the ground surface, completed and accepted.

BASIS OF PAYMENT

901-5.1 Payment shall be made at the contract unit price per acre or fraction thereof, which price and payment shall be full compensation for furnishing and placing all material and for all labor, equipment, tools, and incidentals necessary to complete the work prescribed in this item.

Payment will be made under:

Item T-901-5.1 Turfing (Seeding, Fertilizing and Mulching)—per square yards

MATERIAL REQUIREMENTS

ASTM D 977

Emulsified Asphalt

Fed. Spec. JJJ-S-181B

Agricultural Seeds

Fed. Spec. O-F-241D

Commercial Mixed Fertilizer

END ITEM T-901

Item S001 Mobilization

S001-1 Description. This item of work shall consist of, but is not limited to, work and operations necessary for the movement of personnel, equipment, material and supplies to and from the project site for work on the project except as provided in the contract as separate pay items.

S001-2 Mobilization limit. Mobilization shall be limited to **ten (10)** percent of the total project cost.

S001-3 Posted notices. Prior to commencement of construction activities, the Contractor must post the following documents in a prominent and accessible place where they may be easily viewed by all employees of the prime Contractor and by all employees of subcontractors engaged by the prime Contractor: Equal Employment Opportunity (EEO) Poster "Equal Employment Opportunity is the Law" in accordance with the Office of Federal Contract Compliance Programs Executive Order 11246, as amended; Davis Bacon Wage Poster (WH 1321) - DOL "Notice to All Employees" Poster; and Applicable Davis-Bacon Wage Rate Determination. These notices must remain posted until final acceptance of the work by the Owner.

S001-4 Engineer/RPR field office. An Engineer/RPR field office is not required.

METHOD OF MEASUREMENT

S001-5 Basis of measurement and payment. Based upon the contract lump sum price for "Mobilization" partial payments will be allowed as follows:

- a. With first pay request, 50%.
- b. With second pay request, the final 50%.

BASIS OF PAYMENT

S001-6 Payment will be made under:

Item No.	Pay Item	Pay Unit
S001	Mobilization	Lump Sum

REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

Office of Federal Contract Compliance Programs (OFCCP)

Executive Order 11246, as amended

EEOC-P/E-1 – Equal Employment Opportunity is the Law Poster

United States Department of Labor, Wage and Hour Division (WHD)

WH 1321 – Employee Rights under the Davis-Bacon Act Poster

END OF ITEM S001

ITEM S002 PAVING FABRIC

1019.01 GEOTEXTILE FABRIC.

(a) **General Requirements:** The geotextile fabric shall be composed of at least 85 percent by weight (mass) of polyolefins, polyesters, or polyamides. The geotextile fabric shall be resistant to chemical attack, rot and mildew and shall have no tears or defects which adversely alter its physical properties. When required, the geotextile fabric shall contain stabilizers and/or inhibitors added to the base material to make filaments resistant to deterioration due to ultraviolet and heat exposure. Edges of geotextile fabric shall be finished to prevent the outer yarn from pulling away from the fabric. Fibers of other composition may be woven into the geotextile fabric for reinforcing purposes. Durability of these fibers shall be equivalent to that of the geotextile fabric.

Geotextile fabric rolls shall be furnished with an opaque, waterproof wrapping for protection against moisture and extended ultraviolet exposure prior to placement. Each roll shall be labeled or tagged with the manufacturer's name, date of manufacture, batch number, name of product.

Unless otherwise specified on the plans or in the project specifications, the geotextile fabric shall be an approved product in QPL 61.

(b) **Detailed Requirements:** The geotextile fabric shall comply with the requirements in Table 1019-1 and shall be utilized as follows unless otherwise specified:

<u>Use</u>	<u>Classes</u>
(1) Drainage:	
Underdrains	A, B, C or D
Pipe and Precast Manhole Joints	A, B, C or D
Weep Holes	A, B, C or D
Bedding Fabric	B, C, or D
Approach Slabs	B, C, or D
Fabric for Geocomposite Drainage Systems ¹	B, C, or D
(2) Stabilization:	
Bulkheads	C or D
Flexible Revetments	C or D

Rip Rap	D
Railroad Crossings	D
Base Course	D
Subgrade Layer	D
Soil Stabilization	C, D, or S

(3) Paving Fabric²: B or C (modified)

(4) Silt Fencing:

Wire Supported	F
Self Supported	G

¹Refer to Subsection 1019.02 for additional requirements.

²Refer to Subsection 1019.03 for additional requirements.

**Table 1019-1
Geotextile Fabrics**

Property	Test Method	Requirements Classes						
		A	B	C	D	S	F	G
AOS, Metric Sieve, μm , Max.	ASTM D 4751	300	300	300	212	600	850	850
Grab Tensile, N, Min.	ASTM D 4632	330	400	580	800	800	400	400
% Elongation @ Failure, Min.	ASTM D 4632	---	---	50	50	---	---	---
% Elongation @ 200 N, Max.	ASTM D 4632	---	---	---	---	---	---	50
Burst Strength, N, Min.	ASTM D 3787	440	620	930	1290	1390	---	---
Puncture, N, Min.	ASTM D 4833	110	130	180	330	330	---	---
Trapezoid Tear Strength, N, Min.	ASTM D 4533	110	130	180	220	220	---	---
Permittivity, Sec^{-1} , Min.	ASTM D 4491	1.0	1.0	1.0	1.0	0.2	0.01	0.01
Grab Tensile Strength Retained after weathering 150 h, UVA lamps, %, Min	ASTM D 4632 ASTM G 154	70	70	70	70	70	---	---
Grab Tensile Strength Retained after weathering 500 h, UVA lamps, %, Min	ASTM D 4632 ASTM G 154	---	---	---	---	---	70	70

1019.02 GEOCOMPOSITE DRAINAGE SYSTEMS. The geocomposite fabric drain shall consist of a nonwoven geotextile fabric and a core as specified below with the geotextile completely enveloping the core. Fittings shall be as recommended by the manufacturer. The geotextile fabric shall be sufficiently secured to the core to prevent separation of the geotextile fabric and intrusion of the backfill material during installation. The geocomposite drainage system shall be an approved product listed in QPL 62.

(a) **Geotextile Fabric:** The fabric shall meet the requirements for Class B, C, or D geotextile fabric of Subsection 1019.01 with the following modifications:

<u>Property</u>	<u>Test Method</u>	<u>Requirements</u>
Elongation, %, Min.	ASTM D 4632	20
Sewn Seam Strength (Fabric to Fabric), kN/m width, Min.	ASTM D 4437	2600

1019.03 PAVING FABRIC. In addition to the specifications for Class B or C geotextile fabric of Subsection 1019.01, the paving fabric shall also comply with the following requirements:

<u>Property</u>	<u>Test Method</u>	<u>Requirements</u>
Asphalt Retention, L/sq m	AASHTO M 288	0.9
Change in Area at 135°C, %, Max.	AASHTO M 288	15.0

1019.04 MEASUREMENT. Measurement of paving fabric will be made by the square yard.

1019.05 PAYMENT. Payment for paving fabric will be made at the contract unit price per square yard.

Payment will be made under:

Item No.	Pay Item	Pay Unit
S002	Paving Fabric	Square Yard

END ITEM S002

Item S-003 Electrical Demolition

S-003.1 DESCRIPTION. This item includes the demolition of the existing lighting equipment, signs, sign faces, concrete/paving and conductors.

S-003.2 BASIS OF PAYMENT.

Payment will be made at the contract lump sum price for removal and relocation of the existing lighting, and removal of existing lighting, bases. This price shall be full compensation for saw cutting, materials removal and subsequent repair of pavement, for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item.

Payment will be made under:

ITEM NO.	PAY ITEM	PAY UNIT
S-003-1a	Electrical Demolition - Base Bid	Lump Sum
S-003-1b	Electrical Demolition - Deductive Alternate No. 1	Lump Sum
S-003-1c	Electrical Demolition - Deductive Alternate No. 2	Lump Sum

END OF SECTION S-003

ITEM S004 COLD PLANING ASPHALTIC PAVEMENT

S004-1 DESCRIPTION. This work consists of removing asphaltic concrete surfacing in accordance with these specifications and in conformity with the average depth, width, grade, cross-slope and typical sections shown on the plans or established.

S004-2 EQUIPMENT. Equipment for cold planing asphaltic surfacing shall be an approved, self-propelled planing machine or grinder. Equipment shall have sufficient power, traction and stability to remove the thickness of asphaltic concrete necessary to provide profile grade and cross slope uniformly across the surface. Cold planing equipment shall be capable of working from an erected stringline, shoe device or approved traveling reference plane that will accurately reflect the average grade of the surface on which it is to be operated and shall have an automatic system for controlling cross slope at a given rate. Adequate loading equipment shall be provided to immediately remove materials cut from the surface and discharge the cuttings into a truck or on the shoulder as specified or directed. Adequate personnel shall be provided to ensure that the millings are removed from the surface daily. The drum shall be round and true with sufficient number of teeth to yield a uniform and fine textured surface. The machine shall be equipped with means to control dust created by the cutting action and shall have a system providing for uniformly varying the depth of cut while the machine is in motion.

S004-3 CONSTRUCTION REQUIREMENTS.

(a) **General:** The maximum forward speed of the planing machine shall be 40 feet (12.0 m) per minute. The engineer may approve forward speeds greater than 40 feet (12.0 m) per minute provided the planed surface is uniform and fine textured and conforms to the surface tolerance requirements for a binder course. This speed may be reduced as directed to provide a planed surface of uniform and fine texture with the specified grade and cross slope. If ridges are excessive, the engineer may require additional milling, replacement of teeth, or other corrective action. The maximum depth of cold planing shall be 2 inches (50 mm) per pass.

The traveling reference plane will be used on the first pass of the cold planing machine. The shoe device may be used on adjacent passes. This is the minimum acceptable method and the contractor must meet or exceed current surface tolerance specifications.

Asphaltic concrete next to structures or in small irregular areas that cannot be removed by the planing machine shall be removed by other acceptable methods.

Pavement surfaces resulting from planing operations shall be of uniform texture, grade and cross-slope and free from loose material. Planed surfaces not meeting these requirements shall be replaned at no direct pay. No uneven, undulating surfaces will be accepted. The contractor shall provide drainage of planed areas where needed by cutting through the shoulder to the ditch on the same day that adjacent cold planing is performed.

The cold planing operation shall not precede the subsequent paving operation by more than

15 calendar days. This time may be extended by the engineer if extensive joint repairs, patching or shoulder stabilization is required.

DeSoto encourages reclamation and recycling of all materials obtained within the project limits. All reclaimed asphaltic pavement (RAP) material to be retained by DeSoto for its recycling program, or by other government entities, shall be hauled by the contractor to the storage facility indicated on the plans and stockpiled as directed. The contractor may also be required to retain a specified percentage or quantity of the RAP generated by the project. When so specified, the bidder shall indicate in his bid the value of the retained material that he used in calculating his bid.

Millings containing lightweight aggregate shall not be used as RAP in asphaltic concrete mixtures.

Required joint repairs shall be made after planing. Pavement patching shall be completed before planing, unless additional areas requiring patching are exposed by the cold planing.

(b) The surface tolerance requirements of the cold planed surface for single lift overlays shall meet the requirements for binder course in Section 502.

S004-4 MEASUREMENT. Measurement of cold planing will be made by the square yard of asphaltic concrete surfacing satisfactorily removed. No additional measurement will be made for multiple passes required to achieve total cold planing depth indicated in the plans. Measurement of contractor retained RAP will be by the cubic yard, theoretical in-place plan quantity, and will be credited to the Owner by treating it as a negative quantity in the Schedule of Pay Items.

S004-5 PAYMENT. Payment for cold planing of asphaltic pavement will be made at the contract unit price per square yard, which includes the costs for removing, hauling and stockpiling of RAP material. The value of the RAP material retained by the contractor will be credited to the Owner at the contract unit price for the retained material.

Drainage cuts placed through the shoulders and transitions at transverse joints will be at no additional pay.

Payment will be made under:

Item No.	Pay Item	Pay Unit
S004	Cold Planing Asphaltic Pavement (Milling Max 2 1/2" Depth)	Square Yard

END ITEM S004

ITEM S-005
Removal and Reinstallation of Existing Light Fixtures

S-005.1 DESCRIPTION. This item includes the removal and reinstallation of the existing elevated taxiway edge lights for a portion of Taxiway A3.

S-005.2 BASIS OF PAYMENT.

Payment will be made at the contract unit price for each complete light removed and reinstalled by the Contractor and accepted by the Engineer. This price shall be full compensation for saw cutting, core drilling, materials removal and subsequent repair of pavement, for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item. This price shall include replacement of existing cans, extension rings, bolts, and all other items as required for complete removal and reinstallation of the existing lights.

Payment will be made under:

ITEM NO.	PAY ITEM	PAY UNIT
S-005	Removal and reinstallation of existing elevated taxiway edge lights	Each

END OF SECTION S-005

ITEM S006 PAVEMENT MARKING REMOVAL

S006-1 DESCRIPTION. This section provides the standards for removal of surface markings used on paved airfield pavements (runways, taxiways, aprons) and paved airfield roadways.

S006-2 CONSTRUCTION REQUIREMENTS. Removal of Markings.

- (a) **General:** Pavement markings that are no longer needed are not to be painted over but instead are to be physically removed. Physical removal of markings is achieved by water blasting, shot blasting, sand blasting, chemical removal, or other acceptable means that do not harm the pavement. The physical removal shall be to the limits shown on the plans.

S006-3 MEASUREMENT.

The pavement marking removal will be measured by the square foot.

S006-4 PAYMENT.

Payment will be made at the contract unit price per square foot for the pavement marking removal.

Payment will be made under:

Item No.	Pay Item	Pay Unit
S006	Pavement Marking Removal	per square foot

END ITEM S006

ITEM S007 CONSTRUCTION LAYOUT

The Contractor will be responsible for establishing all lines and grades and staking out all work on this project, including establishing sufficient vertical and horizontal points for utility location. Owner shall provide engineering surveys to establish reference point for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the work. If the Contractor works from intermediate bench marks shown on the plans, he is cautioned against accepting the values shown without checking against the bench mark established by the owner for vertical control on this project.

The Contractor shall employ sufficient qualified engineering personnel experienced in layout to correctly establish and keep complete and comprehensive records of all lines and grades necessary from initial layout to final acceptance. The Contractor will be liable for the accuracy of the initial layout and all subsequent alignment and elevations and shall, at his own expense, rebuild, repair or make good any portion of the work found to be incorrectly position either horizontally or vertically at any time before final acceptance. The Contractor shall notify the Owner's Representative immediately of any apparent errors in the plans.

The Owner's Representative may, at his option, make either spot or complete checks on all construction alignment and grades to determine the correctness of the survey work; however, these checks will not relieve the Contractor of his responsibility for constructing the work in the positions and to the elevations shown on the plans or approved revisions thereto.

Payment will be made under:

Item No.	Pay Item	Pay Unit
S007	Construction Layout	Lump Sum

END ITEM S007

ITEM S008 RESTORE CHANNEL DRAIN CATCH BASIN

PART 1 - GENERAL

1.01 GENERAL

- A. All materials and equipment necessary to restore the existing end catch basin and storm drain to reconnect the existing incoming storm drain.
- B. Reference Drawings with photos Drain and nominal 12" Pre-sloped Channel Drain.

1.02 RELATED WORK

- A. Work specified in other sections includes but is not limited to: Excavation and backfill, concrete and salvaging, reinstalling existing grate.
- A. Shall be pre-cast polymer concrete one half meter (19.69") in length and include a trash bucket and removable grating.
 - 1. 901G (compatible K100)

PART 2 - EXECUTION

2.01 SITE PREPARATION

- A. Excavate the area for end inlet restoration wide enough and deep enough to accommodate construction.

2.02 INSTALLATION

- A. Re-construct per details provided.

PART 3 – MEASUREMENT AND PAYMENT

- A. Method Measurement:

Is for restored Channel Drain Catch Basin, complete.
- B. Payment will be made under:

Item No. S008 - Restore Channel Drain Catch Basin – Lump Sum

END OF SECTION

ITEM S-009
Relocate and Reinstall Existing Taxiway Light

S-009.1 DESCRIPTION. This item includes the removal and relocation of the existing elevated taxiway edge lights for a portion of Taxiway A.

S-009.2 BASIS OF PAYMENT.

Payment will be made at the contract unit price for each complete light removed and reinstalled by the Contractor and accepted by the Engineer. This price shall be full compensation for saw cutting, core drilling, materials removal and subsequent repair of pavement, for furnishing all materials and for all preparation, assembly, and installation of these materials, and for all labor, equipment, tools and incidentals necessary to complete this item. This price shall include replacement of existing cans, extension rings, bolts, and all other items as required for complete removal and reinstallation of the existing lights.

Payment will be made under:

ITEM NO.	PAY ITEM	PAY UNIT
S-009	Removal and relocation of existing elevated taxiway edge lights w/new Transformer, Can, Base and Maint. Pad	Each

END OF SECTION S-009

ITEM S010 SEMIFLUSH MARKER FOR TAXIWAY CENTERLINE MARKING

S010-1 DESCRIPTION. This section provides the standards for semiflush markers for taxiway centerline marking.

S010-2 REFERENCES. Refer to FAA Advisory Circular No. 150/5345-39D SPECIFICATION FOR L-853, RUNWAY AND TAXIWAY RETROREFLECTIVE MARKERS.

S010-3 MATERIAL REQUIREMENTS.

3.1 Type I Marker, Semiflush marker for Taxiway Centerline Marking.

3.1.1 Design

- a. Style I markers must withstand the impact of a snowplow blade without damage or must be configured so that the blade passes over the marker.
- b. The base must have adequate area to dissipate the loading specified in referenced advisory circular and provide for secure bonding to the pavement.
- c. The marker may be unidirectional or bi-directional, depending on the user's requirements.
- d. The design of the marker must minimize scratching and abrasion of the retroreflective material.

3.1.2 Dimensions.

- a. The Type I marker must not project more than 3/4 inch (20 mm) above the pavement surface.
- b. All corners and edges of the marker projecting above the pavement must be rounded to a minimum radius of 1/8 inch (3 mm).
- c. The minimum retroreflective area in each viewing direction must be 1.5 in² (9.7 cm²) for Style I markers.

3.1.3 Bonding.

- a. Type I, Style I markers bonded to the pavement surface must have a clean, flat, hard, rough-textured surface that will promote bonding.
- b. The bonding material must be specified or supplied by the manufacturer and must meet the requirements of referenced advisory circular.

S010-4 CONSTRUCTION REQUIREMENTS.

- (a) **General:** Clean and dry new asphaltic surface prior to installation. Install in accordance with manufacturers recommendations.

S010-5 MEASUREMENT.

The semiflush marker for taxiway centerline marking will be counted in place.

S010-6 PAYMENT.

Payment will be made at the contract unit price per each.

Payment will be made under:

Item No.	Pay Item	Pay Unit
S010	Semiflush Marker For Taxiway Centerline Marking	per Each

END ITEM S009

SECTION I: ADDITIONAL INSURANCE PREMIUM

I-1. DESCRIPTION. The City of Hattiesburg requires that the Contractor adhere to the Insurance Requirements in Paragraph H-15 of the Special Provisions. The required Contractor's insurance coverage may exceed the normal amount of coverage the Contractor carries. The intent of this Special Specification is to provide a bid item for the Contractor's additional cost associated with the requirement that the Owner and Engineer be included as additional insured parties.

I-2. REQUIREMENTS. The Contractor will be required to furnish documentation of the Contractor's normal insurance coverage and related costs and documentation of the additional costs for the Contractor to provide the required insurance coverage.

The length of the Contractor's insurance policy may not cover the entire construction period; therefore, the cost may have to be estimated for the project duration.

I-3. METHOD OF MEASUREMENT. Measurement of the Item "Insurance" as specified herein will be by the "Lump Sum" as the work progresses.

I-4. BASIS OF PAYMENT. The payment will be made at the lump sum bid for insurance upon receipt of documentation of amount paid by the Contractor for required insurance. Any amounts in the lump sum bid item in excess of actual payments for insurance shall be paid at substantial completion of project.

Payment will be made under:

ITEM NO.	PAY ITEM	PAY UNIT
I-3.2	Additional Insurance Premium	Lump Sum

CONTRACT DOCUMENTS

SECTION A: ADVERTISEMENT FOR BIDDERS

Proof of Publication Required.

SEALED BIDS for construction of the following will be received by the City of Hattiesburg in the City Clerks Office, City Hall, Hattiesburg, MS 39401 until 10:00 a.m. Central Time on June 8, 2023 for Hattiesburg-Bobby L. Chain Runway Taxiway A Realignment And Improvements (A.I.P. Project No. 3-28-0031-0030-2023) for the City of Hattiesburg.

This project shall generally consist of work which includes: Demolition, Airfield Lighting, P.C. Concrete Paving, Asphaltic Concrete Paving, Asphaltic Paved Transition, Electrical, Pavement Marking, Drainage Restoration.

Bids will be publicly opened and read aloud. Any bid received after closing time will be returned unopened.

Plans and specifications are being made available via paper or digital copy at www.hattiesburgsbids.com. Plan Holders are required to log-in or register for an account to view and order bid documents. Bid documents obtained through the website are non-refundable. Questions regarding website registration and online orders, please contact Plan House at 601-336-6378. Also bid documents are available from ARE Engineering Consultants for a refundable deposit of \$100.00. For questions related to the contract documents contact ARE Engineering Consultants at (318)222-8252. No partial sets of drawings of project manuals will be issued.

Proposal shall be submitted on Bid Forms provided with the specifications. Bids may be submitted in person, or for those interested, bids can be electronically submitted at www.hattiesburgsbids.com. No oral, telegraphic, telephonic, or e-mail proposals will be considered. For sealed bids, the current Certificate of Responsibility Number of the bidder shall appear on the outside of each sealed envelope containing a proposal, said envelope being plainly marked as shown below. If submitting electronically, please include this information on a cover page with your bid submission.

Bobby L. Chain Airport
Taxiway A Realignment And Improvements
A.I.P Project No. 3-28-0031-0030-2023
for the City of Hattiesburg.

Each Bid must be accompanied by a bid bond/security deposit or certified check in an amount equal to 5% of the bid. In the event that an electronic bid is submitted, a copy of the bid bond must be included with the submission. If submitting electronically, a hard copy of all bid documents must be provided within 3 business days if requested after the bid opening.

Evidence that a Contractor holds a valid Mississippi Contractor's License must be presented prior to release of bidding documents and/or submittal of a bid proposal. The required classification is Highway, Street, and Bridge Construction. The DBE goal is 7.73 percent.

It is the policy of the Department of Transportation (DOT) that disadvantaged business enterprises as defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or part with Federal funds.

The proposed contract is subject to the Buy American provision under Section 9129 of the Aviation Safety and Capacity Expansion Act of 1990. Details of such requirements are contained in the specifications.

The following question will be asked of all bidders: "Has the bidder defaulted on a contract or ever been involved in litigation with a political subdivision of the State of Mississippi or any other state or country?" _____YES
_____NO If "YES," please supply full details.

The City of Hattiesburg reserves the right to reject any or all bids and to waive informalities.

The successful contractor is required to hold bid prices for up to 130 days after the bid opening to allow availability and placement of federal funding.

BID DATE: June 8, 2023 10:00 a.m. Central Time

A mandatory pre-bid conference is scheduled for 10:00 a.m. Thursday, May 25, 2023 in the Airport Conference Room, 29 Academy Drive, Hattiesburg Bobby L. Chain Airport, Hattiesburg, MS.

By: _____
City Clerk, City of Hattiesburg

Dates of Publication:

The Post

Thursday, May 4, 2023

Thursday, May 11, 2023

Clarion Ledger

Thursday, May 4, 2023

Thursday, May 11, 2023

CONTRACT DOCUMENTS

SECTION A: ADVERTISEMENT FOR BIDDERS

Proof of Publication Required.

SEALED BIDS for construction of the following will be received by the City of Hattiesburg in the City Clerks Office, City Hall, Hattiesburg, MS 39401 until 10:00 a.m. Central Time on June 8, 2023 for Hattiesburg-Bobby L. Chain Runway Taxiway A Realignment And Improvements (A.I.P. Project No. 3-28-0031-0030-2023) for the City of Hattiesburg.

This project shall generally consist of work which includes: Demolition, Airfield Lighting, P.C. Concrete Paving, Asphaltic Concrete Paving, Asphaltic Paved Transition, Electrical, Pavement Marking, Drainage Restoration.

Bids will be publicly opened and read aloud. Any bid received after closing time will be returned unopened.

Plans and specifications are being made available via paper or digital copy at www.hattiesburgsbids.com. Plan Holders are required to log-in or register for an account to view and order bid documents. Bid documents obtained through the website are non-refundable. Questions regarding website registration and online orders, please contact Plan House at 601-336-6378. Also bid documents are available from ARE Engineering Consultants for a refundable deposit of \$100.00. For questions related to the contract documents contact ARE Engineering Consultants at (318)222-8252. No partial sets of drawings of project manuals will be issued.

Proposal shall be submitted on Bid Forms provided with the specifications. Bids may be submitted in person, or for those interested, bids can be electronically submitted at www.hattiesburgsbids.com. No oral, telegraphic, telephonic, or e-mail proposals will be considered. For sealed bids, the current Certificate of Responsibility Number of the bidder shall appear on the outside of each sealed envelope containing a proposal, said envelope being plainly marked as shown below. If submitting electronically, please include this information on a cover page with your bid submission.

Bobby L. Chain Airport
Taxiway A Realignment And Improvements
A.I.P Project No. 3-28-0031-0030-2023
for the City of Hattiesburg.

Each Bid must be accompanied by a bid bond/security deposit or certified check in an amount equal to 5% of the bid. In the event that an electronic bid is submitted, a copy of the bid bond must be included with the submission. If submitting electronically, a hard copy of all bid documents must be provided within 3 business days if requested after the bid opening.

Evidence that a Contractor holds a valid Mississippi Contractor's License must be presented prior to release of bidding documents and/or submittal of a bid proposal. The required classification is Highway, Street, and Bridge Construction. The DBE goal is 7.73 percent.

It is the policy of the Department of Transportation (DOT) that disadvantaged business enterprises as defined in 49 CFR Part 23 shall have the maximum opportunity to participate in the performance of contracts financed in whole or part with Federal funds.

The proposed contract is subject to the Buy American provision under Section 9129 of the Aviation Safety and Capacity Expansion Act of 1990. Details of such requirements are contained in the specifications.

The following question will be asked of all bidders: "Has the bidder defaulted on a contract or ever been involved in litigation with a political subdivision of the State of Mississippi or any other state or country?" _____ YES
_____ NO If "YES," please supply full details.

The City of Hattiesburg reserves the right to reject any or all bids and to waive informalities.

The successful contractor is required to hold bid prices for up to 130 days after the bid opening to allow availability and placement of federal funding.

BID DATE: June 8, 2023 10:00 a.m. Central Time

A mandatory pre-bid conference is scheduled for 10:00 a.m. Thursday, May 25, 2023 in the Airport Conference Room, 29 Academy Drive, Hattiesburg Bobby L. Chain Airport, Hattiesburg, MS.

By: _____
City Clerk, City of Hattiesburg

Dates of Publication:

The Post

Thursday, May 4, 2023

Thursday, May 11, 2023

Clarion Ledger

Thursday, May 4, 2023

Thursday, May 11, 2023



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Deborah Bourne
cc:
Date: Tuesday, May 2, 2023
Re: Approve the sale of grave spaces, per attached Memo's, Receipts, and Deeds.
File Number: 2023-266
Minute Book #

Summary

Approve the sale of grave spaces, per attached Memo's, Receipts, and Deeds.

Recommendation Statement

I am recommending approval of the sale of grave spaces.

Please place this on the May 2, 2023 City Council meeting for consideration.

To: CITY COUNCIL

From: Deborah Bourne, Division Manager of Cemeteries

William L. & Lisa C. Moore

(2) Spaces \$ 350.00

Southeast Quarter (SE $\frac{1}{4}$)

Lot 23, Section 39, Highland Cemetery

Tom J. White

(1) Space \$ 150.00

West Half (W $\frac{1}{2}$) of the Northeast Quarter (NE $\frac{1}{4}$)

Lot 99, Section 1, South Hill Cemetery

Margaret Cobbins

(1) Space \$ 175.00

0000000001

South Half (S $\frac{1}{2}$) of the Southeast Quarter (SE $\frac{1}{4}$)

Lot 15, Section 36, Highland Cemetery

Terry L. T. Barnes

(1) Space \$ 175.00

North Half (N $\frac{1}{2}$) of the Northwest Quarter (NW $\frac{1}{4}$)

Lot 33, Section 34, Highland Cemetery

Alford Rickey McGhee

(1) Space \$ 175.00

South Half (S $\frac{1}{2}$) of the Northeast Quarter (NE $\frac{1}{4}$)

Lot 78, Section 38, Highland Cemetery

Elias Lover, Jr

(1) Space \$ 175.00

North Half (N1/2) of the Northeast Quarter (NE ¼)

Lot 78, Section 38, Highland Cemetery

Clara Seals

(1) Space \$ 175.00

South Half (S ½) of the Northeast Quarter (NE ¼)

Lot 111, Section 39, Highland Cemetery

Loretta Hawthorne

(1) Space \$ 175.00

South Half (S ½) of the Northwest Quarter (NW ¼)

Lot 94, Section 39, Highland Cemetery

0000000001

Tyrone W. Shaw

(1) Space \$ 150.00

West Half (W ½) of the Southwest Quarter (SW ¼)

Lot 31, Section 1, South Hill Cemetery

Alberta Hayes

(1) Space \$ 150.00

East Half (E ½) of the Southeast Quarter (SE ¼)

Lot 138, Section 1, South Hill Cemetery

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04/18/2023

SOLD TO:

Mr. Mrs. Miss Clara Seals

ADDRESS 19 Colby Lane Petal, MS. 39465

desires to purchase the grave space described below, subject to Cemetery regulations.

S 1/2 NE 1/4 Lot No. 111 Section No. 39 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.00

Price Received \$ 175.00

Deb + card

CITY OF HATTIESBURG, MISSISSIPPI

By Deborah Burne
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-18-2023

SOLD TO:

Mr. Mrs. Miss Loretta Hawthorne

ADDRESS 787 East Alston Ave Memphis, TN 38126

desires to purchase the grave space described below, subject to Cemetery regulations.

S 1/2 NW 1/4 Lot No. 94 Section No. 39 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.00

Price Received \$ 175.00

card

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-18-2023

SOLD TO:

Mr. Mrs. Miss Tyrone W Shaw

ADDRESS 637 Phoenix Circle Hattiesburg MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

W 1/2 SW 1/4 Lot No. 31 Section No. 1 in South Hill Cemetery

Number of grave spaces 1 Price per grave space \$ 150.00

Price Received \$ 150.00

CITY OF HATTIESBURG, MISSISSIPPI

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 4-10- 2023

SOLD TO:

Mr. Mrs. Miss WILLIAM L. & LISA S. MOORE

ADDRESS 178 MONNELL CIR, HATTIESBURG, MS 39402

desires to purchase the grave space described below, subject to Cemetery regulations.

1/2 SE 1/4 Lot No. 23 Section No. 39 in HIGHLAND Cemetery

Number of grave spaces 2 Price per grave space \$ 175.00

Price Received \$ 350.00

PAY CR

CITY OF HATTIESBURG, MISSISSIPPI

By Andy Parker
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-10- 2023

SOLD TO:

Mr. Mrs. Miss Terry L.T. Barnes

ADDRESS 1002 East 6th St. Hattiesburg, MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

N 1/2 NW 1/4 Lot No. 33 Section No. 34 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.00

Price Received \$ 175.00

cash

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-10- 2023

SOLD TO:

Mr. Mrs. Miss Maragret Cobbins

ADDRESS 406 Yellow Pine Dr. Petal, MS 39465

desires to purchase the grave space described below, subject to Cemetery regulations.

S 1/2 SE 1/4 Lot No. 15 Section No. 36 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.00

Price Received \$ 175.00

av # 11142

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04/11 2023

SOLD TO:

Mr. Mrs. Miss Tom J. White

ADDRESS 718 Tatum Rd, Hattiesburg, ms. 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

W 1/2 NE 1/4 Lot No. 99 Section No. 1 in South Hill Cemetery

Number of grave spaces 1 Price per grave space \$ 150.⁰⁰

Price Received \$ 150.⁰⁰

CASH

CITY OF HATTIESBURG, MISSISSIPPI

By Deborah Bourne
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-17- 2023

SOLD TO:

Mr. Mrs. Miss Elias Lauer Jr.

ADDRESS 3418 Hardy St. Apt #13 Hattiesburg, ms 39402

desires to purchase the grave space described below, subject to Cemetery regulations.

N 1/2 NE 1/4 Lot No. 78 Section No. 38 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.⁰⁰

Price Received \$ 175.⁰⁰

COD

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 04-17- 2023

SOLD TO:

Mr. Mrs. Miss Alford Rickey McGhee

ADDRESS 3418 Hardy St. Hattiesburg, ms 39402

desires to purchase the grave space described below, subject to Cemetery regulations.

S 1/2 NE 1/4 Lot No. 78 Section No. 38 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.⁰⁰

Price Received \$ 175.⁰⁰

cash card

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 4-19- 2023

SOLD TO:

Mr. Mrs. Miss ALBERTA HAYLES

ADDRESS 104 TILMAN COURT, MCDONOUGH, GA 30253

desires to purchase the grave space described below, subject to Cemetery regulations.

E 1/2 SE 1/4 Lot No. 138 Section No. 1 in SOUTH HILL Cemetery

Number of grave spaces 1 Price per grave space \$ 150.00

Price Received \$ 150.00 PAID CARD CITY OF HATTIESBURG, MISSISSIPPI

By Chas. Parker
Supt. of City Cemeteries

0000000001

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

DEED TO CEMETERY LOT
HIGHLAND CEMETERY

For and in consideration of the sum of THREE HUNDRED FIFTY AND NO/100 Dollars (\$350.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto, William L. & Lisa C. Moore, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

Southeast Quarter (SE¼)

Lot Number 23 Section Number 39

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

Two Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

**DEED TO CEMETERY LOT
HIGHLAND CEMETERY**

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Margaret Cobbins subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

South Half (S½) of the Southeast Quarter (SE¼)

Lot 15

Section 36

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

DEED TO CEMETERY LOT
HIGHLAND CEMETERY

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Terry L. T. Barnes subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

North Half (N½) of the Northwest Quarter (NW¼)

Lot 33

Section 34

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

DEED TO CEMETERY LOT
SOUTH HILL CEMETERY

For and in consideration of the sum of ONE HUNDRED FIFTY AND NO/100 Dollars (\$150.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Tom J. White, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

West Half (W¹/₂) of the Northeast Quarter (NE¹/₄)

Lot Number: 99

Section Number: 1

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as South Hill Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

0000000001

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK
(S E A L)

MAYOR

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and Deputy City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

**DEED TO CEMETERY LOT
HIGHLAND CEMETERY**

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Elias Lover, Jr. subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

North Half (N½) of the Northeast Quarter (NE¼)

Lot 78

Section 38

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

**DEED TO CEMETERY LOT
HIGHLAND CEMETERY**

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Alford Rickey McGhee, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

South Half (S½) of the Northeast Quarter (NE¼)

Lot 78

Section 38

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

**DEED TO CEMETERY LOT
HIGHLAND CEMETERY**

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Loretta Hawthorne, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

South Half (S½) of the Northwest Quarter (NW¼)

Lot 94

Section 39

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR
CITY OF HATTIESBURG
HATTIESBURG, MS

**DEED TO CEMETERY LOT
HIGHLAND CEMETERY**

For and in consideration of the sum of ONE HUNDRED SEVENTY-FIVE AND NO/100 Dollars (\$175.00), cash in hand paid to the City of Hattiesburg, Mississippi, the City of Hattiesburg, Mississippi acting by and through its duly authorized Mayor and City Clerk does hereby bargain, sell and convey unto Clara Seals, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

South Half (S½) of the Northeast Quarter (NE¼)

Lot 111

Section 39

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

One (1) Grave space (s).

SAID Lot shall be used for burial purposes only and all graves therein must be checked and laid out by the Cemetery sexton before the same is dug and must be at least 4 feet deep and shall be, when completed, level with the ground. No shrubbery, vines or trees shall be planted in the Cemetery Lot and there shall be nothing left above the ground except markers which may be erected to meet all City regulations and requirements. All burials in the grave space(s) herein conveyed shall comply with applicable State and Federal laws governing human burial and with City rules and regulations pertaining thereto. If boxes or vaults are used they shall be at least 10 inches below the ground level.

GRANTEE herein shall not sell or convey this lot without a written permit from the Mayor and Council of the City of Hattiesburg, Mississippi.

WITNESS the signature and seal of the City of Hattiesburg, Mississippi, a Municipal Corporation, acting, by and through its duly authorized Mayor and City Clerk, on this, the 2nd day of May, 2023.

ATTEST:

CITY OF HATTIESBURG, MISSISSIPPI

CITY CLERK

MAYOR

(S E A L)

STATE OF MISSISSIPPI
COUNTY OF FORREST/LAMAR

Personally, appeared before me, the undersigned authority in and for said County and State, Toby Barker and Kermas Eaton, Mayor and City Clerk, respectively, of the City of Hattiesburg, Mississippi, a municipal corporation, each of whom acknowledged before me that they signed, executed and delivered the above and foregoing Cemetery Deed on the day and year therein mentioned as the act and deed of the City of Hattiesburg after having first been authorized so to do.

Given under my hand and official seal of office on this, the 2nd day of May, 2023.

My Commission Expires:

NOTARY PUBLIC



Memorandum

To: Mayor Toby Barker and Members of City Council
From:
cc:
Date: Tuesday, May 2, 2023
Re: Approve claims docket for the period ending April 28, 2023.
File Number: 2023-297
Minute Book #

Summary

Recommendation Statement

Please place this on the May 2, 2023 City Council meeting for consideration.

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001000 BALANCE SHEET										
001000 122000 DAMAGE DEPOSITS										
049833	LAURIE RIMES	LRIMES 3/18/23	0	2023	7	INV	P	600.00	042823	296546 REFUND SECURITY DEP
								600.00		
ACCOUNT TOTAL								600.00		
ORG 001000 TOTAL								600.00		
001001 REVENUES										
001001 287000 POLICE/FIRE-SPECIAL DUTY										
047581	PROTECTION AGENCY &	1618	0	2023	7	INV	P	150.00	042823	296583 SECURITY B JORDAN B
047581	PROTECTION AGENCY &	1619	0	2023	7	INV	P	112.50	042823	296584 SECURITY L RIMES WE
								262.50		
ACCOUNT TOTAL								262.50		
001001 332000 POLICE FINES										
004271	SOUTHERN FINANCIAL S	CMCHAT2 3/15-4/3/23	0	2023	7	INV	P	41.10	042823	296606 POLICE FINES COLLEC
004271	SOUTHERN FINANCIAL S	CMCHAT3 3/15-4/3/23	0	2023	7	INV	P	707.73	042823	296607 POLICE FINES COLLEC
								748.83		
ACCOUNT TOTAL								748.83		
ORG 001001 TOTAL								1,011.33		
001015 CITY COURT										
001015 501000 OTHER EXPENDABLE OFF.SPL										
003810	OFFICE PRODUCTS PLUS	1015277-1	2302752	2023	7	INV	P	76.11	042823	296566 COURT OFFICE SUPPLI
								76.11		
ACCOUNT TOTAL								76.11		
001015 604901 OTHER PROF-TECHNOLOGY										
004050	RICOH CORP	37964756	0	2023	7	INV	P	287.51	042823	296591 RICOH MONTHLY COPIE
004057	RJ YOUNG COMPANY	INV6294813	0	2023	7	INV	P	168.00	042823	296592 COURT RJ YOUNG COPI
								455.51		
ACCOUNT TOTAL								455.51		
001015 611800 TRVL-HHS SAMHSA GRANT										
003719	MUHAMMAD, KHADIJAH	97230T	0	2023	7	INV	P	1,671.58	042823	296558 GR# 1H79TI081923-01
003751	NATIONAL ASSOC OF DR	INV_50204	0	2023	7	INV	P	1,590.00	042823	296560 GR# 1H79TI081923-01
004575	WALMART STORES INC	333101517861411	2302738	2023	7	INV	P	990.00	042823	296638 BHDC GIFT CARDS
								4,251.58		
ACCOUNT TOTAL								4,251.58		
ORG 001015 TOTAL								4,783.20		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
MAYOR/ADMIN.									
001020	611000								
001020	BARKER, THOMAS	SAN ANTONIO TRAVEL	0	2023	7	INV P	112.00	042823	296461 TRAVEL EXPENSES MAY
002196									
ACCOUNT TOTAL							112.00		
ORG 001020 TOTAL							112.00		
MUNICIPAL CLERK									
001040	615000								
001040	HUB CITY SPOKES	101465	0	2023	7	INV P	1,027.48	042823	296521 INVOICE 101465- PUB
003141									
ACCOUNT TOTAL							1,027.48		
DUES AND MEMBERSHIPS									
001040	684000								
049654	MS MUNICIPAL CLERKS	4192023	0	2023	7	INV P	110.00	042823	296555 MS MUN CLRK&COLL AS
ACCOUNT TOTAL							110.00		
ORG 001040 TOTAL							1,137.48		
ACCOUNTING DIV.									
001042	501000								
001042	OFFICE PRODUCTS PLUS	1016731-0	2302949	2023	7	INV P	34.23	042823	296566 OFFICE SUPPLIES - A
003810									
ACCOUNT TOTAL							34.23		
OTHER PROFESSIONAL SERV.									
001042	604900								
002406	CANON FINANCIAL SERV	30304590	0	2023	7	INV P	179.26	042823	296474 CANON MB 2018-145 P
ACCOUNT TOTAL							179.26		
ORG 001042 TOTAL							213.49		
HUMAN RESOURCES									
001080	611000								
001080	DAVIS, MELVIN	9732	0	2023	7	INV P	1,437.96	042823	296493 TRV ADV/M DAVIS/MUN
049844									
ACCOUNT TOTAL							1,437.96		
OFFICE EQUIPMENT R&M									
001080	636500								
004050	RICOH CORP	37799317	0	2023	7	INV P	185.85	042823	296591 HR COPIER LEASE MAR
004050	RICOH CORP	37965684	0	2023	7	INV P	185.85	042823	296591 HR COPIER LEASE APR
004050	RICOH CORP	5067104429	0	2023	7	INV P	299.44	042823	296591 HR COPIER USAGE APR
							671.14		
ACCOUNT TOTAL							671.14		
ORG 001080 TOTAL							2,109.10		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001090				URBAN DEVELOPMT						
001090	570000				MTR	VEHICLE	REP.	PTS/SPL		
002166	AUTO ARMATURE	SERVIC	31023	2302895	2023	7	INV	P	189.95	042823 296458 1 BATTERY FOR UNIT
ACCOUNT TOTAL									189.95	
001090				OTHER PROFESSIONAL SERV.						
004482	TYLER TECHNOLGIES	IN	025-416626	2301651	2023	7	INV	P	4,596.00	042823 296629 WORKFORCE MOBILE FO
048727	ORION PLANNING		3574	0	2023	7	INV	P	2,433.75	042823 296567 MAY 22 SERVICES - P
ACCOUNT TOTAL									7,029.75	
001090				OFFICE EQUIPMENT RENT						
004050	RICOH CORP		37965413	0	2023	7	INV	P	232.90	042823 296591 RICOH APRIL LEASE C
ACCOUNT TOTAL									232.90	
ORG 001090 TOTAL									7,452.60	
001091				INFO TECHNOLOGY						
001091				COMPUTER SUPPLIES						
002383	C D W GOVERNMENT		J855467	2302849	2023	7	INV	P	526.88	042823 296471 BACK-UPS PRO - IT D
003583	METRIX SOLUTIONS		M90786	2302571	2023	7	INV	P	1,669.28	042823 296551 COMPUTER SUPPLIES -
ACCOUNT TOTAL									2,196.16	
001091				DATA PROCESSING						
003583	METRIX SOLUTIONS		M89572	0	2023	7	INV	P	1,503.84	042823 296551 CYLANCE QUARTERLY R
ACCOUNT TOTAL									1,503.84	
001091				OTHER PROFESSIONAL SERV.						
002158	AT&T		0591 4.8.23	0	2023	7	INV	P	47.00	042823 296454 INTERACT SUPPORT -
002158	AT&T		0598 4.8.23	0	2023	7	INV	P	6,790.00	042823 296454 INTERACT SUPPORT -
									6,837.00	
ACCOUNT TOTAL									6,837.00	
001091				NETWORK						
003912	PILEUM CORPORATION		P90956	0	2023	7	INV	P	5,896.25	042823 296573 BILLABLE TIME - IT
ACCOUNT TOTAL									5,896.25	
001091				OFFICE EQUIPMENT R&M						
002236	BENECOM TECHNOLOGIES		15657	0	2023	7	INV	P	3,996.00	042823 296462 MAINTENANCE ON AS40
003342	KRONOS INCORPORATED		12053966	229612	2023	7	INV	P	3,644.47	042823 296541 KRONOS RENEWAL - IT

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION
003583	METRIX SOLUTIONS	M89415		0	2023 7	INV	P	1,808.00	042823	296551	OFFICE 365 LICENSES
ACCOUNT TOTAL								9,448.47			
ORG 001091 TOTAL								25,881.72			
001092			GEN.GOV'T.BLDG								
001092 604900			OTHER PROFESSIONAL SERV.								
003185	INNOVATIVE SERVICE S	20230053		2302658	2023 7	INV	P	164.95	042823	296523	SEMI ANNUAL AED MAI
ACCOUNT TOTAL								164.95			
001092 630500			ELECTRICITY								
003700	MS POWER COMPANY	E2023 4.12.23		0	2023 7	INV	P	292.01	042823	296556	MS POWER VARIOUS DE
003700	MS POWER COMPANY	E2023 4.3.23		0	2023 7	INV	P	1,534.87	042823	296556	MS POWER VARIOUS DE
								1,826.88			
ACCOUNT TOTAL								1,826.88			
ORG 001092 TOTAL								1,991.83			
001093			INTERMODAL FAC O&M								
001093 639900			OTHER REPAIRS AND MAINT.								
003185	INNOVATIVE SERVICE S	20230053		2302658	2023 7	INV	P	164.95	042823	296523	SEMI ANNUAL AED MAI
ACCOUNT TOTAL								164.95			
001093 739900			OTHER EQUIPMENT								
003938	PLUM CREEK ENVIRONME	14135		2302304	2023 7	INV	P	3,945.00	042823	296576	PLUM REAR LOAD CONT
ACCOUNT TOTAL								3,945.00			
ORG 001093 TOTAL								4,109.95			
001095			G/G INS.OTH SER								
001095 602500			LEGAL								
002048	ADAMS AND REESE, LLP	1214719		0	2023 7	INV	P	2,574.50	042823	296445	TRAIN ISSUE/FILE NU
003944	POPE & POPE, PA	2324		0	2023 7	INV	P	1,350.00	042823	296577	ZONING MATTER, 1601
003944	POPE & POPE, PA	2325		0	2023 7	INV	P	750.00	042823	296577	CLAIMS DOCKET
003944	POPE & POPE, PA	2326		0	2023 7	INV	P	738.40	042823	296577	GENERAL OUT OF POCK
003944	POPE & POPE, PA	2327		0	2023 7	INV	P	850.00	042823	296577	HARDY STREET BAPTIS
003944	POPE & POPE, PA	2328		0	2023 7	INV	P	950.00	042823	296577	WARREN HOOD, BIKE S
003944	POPE & POPE, PA	2329		0	2023 7	INV	P	11,417.90	042823	296577	ANNEXATION CASE
003944	POPE & POPE, PA	2330		0	2023 7	INV	P	1,050.00	042823	296577	PINE CREEK TOWNHOME
								17,106.30			
ACCOUNT TOTAL								19,680.80			
001095 604900			OTHER PROFESSIONAL SERV.								

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		INVOICE		PO	YEAR/PR TYP S	WARRANT	CHECK	DESCRIPTION
002523	COMCAST CABLEVISION	4.11.23		0	2023 7 INV P	630.00 042823	296487	COMCAST CITY HALL
					ACCOUNT TOTAL	630.00		
001095	606000				TELEPHONE AND TELEGRAPH			
002158	AT&T	L2023 4.13.23		0	2023 7 INV P	72.95 042823	296454	AT&T BLUE LIGHTS 60
					ACCOUNT TOTAL	72.95		
					ORG 001095 TOTAL	20,383.75		
001100					POLICE/PUB.SFTY			
001100	501000				OTHER EXPENDABLE OFF.SPL			
003810	OFFICE PRODUCTS PLUS	1015031-1		2302732	2023 7 INV P	150.19 042823	296566	OFFICE SUPPLIES & P
					ACCOUNT TOTAL	150.19		
001100	510000				CLEANING/JANITORIAL SPLY			
003772	NEWELL PAPER COMPANY	4150251		2302815	2023 7 INV P	1,568.12 042823	296562	CLEANING SUPPLIES-H
					ACCOUNT TOTAL	1,568.12		
001100	511200				SUPPLIES-DOJ CORONA VIR			
003772	NEWELL PAPER COMPANY	4150251		2302815	2023 7 INV P	324.75 042823	296562	CLEANING SUPPLIES-H
					ACCOUNT TOTAL	324.75		
001100	525000				GAS AND OIL			
002869	FUELMAN OF MS	NP64235449		0	2023 7 INV P	63.44 042823	296510	ONSITE FUEL CHARGE
					ACCOUNT TOTAL	63.44		
001100	535500				WEARING APPAREL			
002769	EXPRESS PRESS	50762		2302294	2023 7 INV P	292.00 042823	296502	POLO'S FOR RECORDS-
003588	MID SOUTH UNIFORM &	638435		2301384	2023 7 INV P	11,220.00 042823	296552	VEST REPLACEMENT&CL
					ACCOUNT TOTAL	11,512.00		
001100	546000				MINOR EQUIPMENT			
002714	ECONOMY SUPPLY CO	097908		2302943	2023 7 INV P	34.70 042823	296497	SUPPLIES FOR REPAIR
004575	WALMART STORES INC	08310866102662		2302879	2023 7 INV P	206.51 042823	296638	FRIDGE FOR ADMIN OF
					ACCOUNT TOTAL	241.21		
001100	570000				MTR VEHICLE REP. PTS/SPL			
002060	ADVANCE AUTO PARTS	5604309672976		2302720	2023 7 INV P	126.33 042823	296447	REPAIR PARTS FOR UN
002060	ADVANCE AUTO PARTS	5604309672977		2302721	2023 7 INV P	257.44 042823	296447	REPAIR PARTS FOR SH
002060	ADVANCE AUTO PARTS	5604311473314		2302958	2023 7 INV P	2,311.97 042823	296447	REPAIR PARTS FOR SH
						2,695.74		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
					ACCOUNT TOTAL			2,695.74			
001100	604900				OTHER PROFESSIONAL SERV.						
002523	COMCAST	CABLEVISION	04.01.23-04.30.23	0	2023	7	INV P	114.62	042823	296487	COMCAST POLICE DEPT
002523	COMCAST	CABLEVISION	3.1.23-3.31.23	0	2023	7	INV P	119.62	042823	296487	COMCAST POLICE DEP
								234.24			
002610	D P S CRIME LAB		90130104	0	2023	7	INV P	180.00	042823	296492	ANALYTICAL FEES
047055	INTERPRETERS & TRANS		188352	0	2023	7	INV P	64.44	042823	296525	INTERPRETER SERVIC
049046	HENDERSON PAULA		002013	2301836	2023	7	INV P	3,650.00	042823	296519	CLEANING OF NEW BUI
					ACCOUNT TOTAL			4,128.68			
001100	604921				NOLA EXPENSE						
002672	DOLEAC	ELECTRIC CO I	H26977	2302349	2023	7	INV P	2,300.00	042823	296495	NOLA CAMERA INSTALL
					ACCOUNT TOTAL			2,300.00			
001100	606000				TELEPHONE AND TELEGRAPH						
002158	AT&T		0563149329001 4/15	0	2023	7	INV P	44.79	042823	296456	LONG DISTANCE POLIC
002158	AT&T		54549101030591 4/23	0	2023	7	INV P	190.40	042823	296455	POLICE DISPATCH 4/8
002158	AT&T		L2023 4.8.23	0	2023	7	INV P	228.00	042823	296454	AT&T POLICE
								463.19			
					ACCOUNT TOTAL			463.19			
001100	611000				TRAVEL EXPENSE						
003237	JARVIS, JASON		97240T JARVIS	0	2023	7	INV P	725.95	042823	296528	TRAVEL ADVANCE 6.4.
004574	WALLEY, RAY		97250T WALLEY	0	2023	7	INV P	725.95	042823	296637	TRAVEL ADVANCE 6.4.
047312	NOBLES MICAH		97260T NOBLES	0	2023	7	INV P	725.95	042823	296563	TRAVEL ADVANCE 6.
049841	CHRISTOPHER WILSON		97270T WILSON	0	2023	7	INV P	138.00	042823	296478	TRAVEL ADVANCE 2023
					ACCOUNT TOTAL			2,315.85			
001100	626500				AUTOMOBILE INSURANCE						
004134	SCOTT, CLYDE C	INSUR	47320	0	2023	7	INV P	18,251.00	042823	296598	MOTORCYCLE INSURANC
					ACCOUNT TOTAL			18,251.00			
001100	630500				ELECTRICITY						
003700	MS POWER COMPANY		E2023 4.12.23	0	2023	7	INV P	2,489.64	042823	296556	MS POWER VARIOUS DE
003700	MS POWER COMPANY		E2023 4.3.23	0	2023	7	INV P	2,959.55	042823	296556	MS POWER VARIOUS DE
								5,449.19			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
					ACCOUNT TOTAL			5,449.19			
001100	638400				MOTOR VEHICLE EQ. R&M						
002194	BARDING GENERATOR &	9111			2302755	2023	7	INV P	364.50	042823	296460 MOBILE COMAND REPAI
002469	CHUNKY RIVER HARLEY	45840			2301195	2023	7	INV P	5,662.41	042823	296479 TEAR DOWN &REPAIRS
003476	MAACO COLLISION REPA	27985			2302291	2023	7	INV P	586.50	042823	296548 REPAIRS TO UNIT#211
004466	TRUCKS PLUS AUTO ACC	45908			2302509	2023	7	INV P	649.00	042823	296628 BEDLINER FOR UNIT#1
					ACCOUNT TOTAL			7,262.41			
001100	641000				OFFICE EQUIPMENT RENT						
004057	RJ YOUNG COMPANY		INV6291536		0	2023	7	INV P	250.00	042823	296592 MB#2021-285 ADMIN C
004057	RJ YOUNG COMPANY		INV6295509		0	2023	7	INV P	533.10	042823	296592 MB#2020-678 DETECT
								783.10			
					ACCOUNT TOTAL			783.10			
001100	684500				REGISTRATION FEE/TUITION						
047259	S. T. O. R. M. INC	202307HPDA			0	2023	7	INV P	50.00	042823	296596 REGISTRATION FOR CH
					ACCOUNT TOTAL			50.00			
001100	739900				OTHER EQUIPMENT						
002791	FARO TECHNOLOGIES, I	91764140			2302053	2023	7	INV P	31,827.93	042823	296503 LASER SCANNER FOR C
002791	FARO TECHNOLOGIES, I	91764141			2302053	2023	7	INV P	16,076.73	042823	296503 LASER SCANNER FOR C
								47,904.66			
					ACCOUNT TOTAL			47,904.66			
					ORG 001100 TOTAL			105,463.53			
001131					JOINT P&F TRNG.						
001131	500300				PAPER						
003810	OFFICE PRODUCTS PLUS	1015623-0			2302790	2023	7	INV P	37.20	042823	296566 OFFICE SUPPLIES
					ACCOUNT TOTAL			37.20			
001131	501000				OTHER EXPENDABLE OFF.SPL						
003810	OFFICE PRODUCTS PLUS	1012595-6			2302421	2023	7	INV P	13.75	042823	296566 P/F TRAINING ACADEM
003810	OFFICE PRODUCTS PLUS	1015623-0			2302790	2023	7	INV P	86.29	042823	296566 OFFICE SUPPLIES
								100.04			
					ACCOUNT TOTAL			100.04			
001131	502000				MINOR OFFICE EQUIP/FURN.						

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
004057	RJ YOUNG COMPANY	INV6237964		0	2023	7	INV	P	237.51 042823	296592	P/F TRNG ACADEMY CO
ACCOUNT TOTAL									237.51		
001131	507000										
003270	JONES & BARTLETT PUB	671367		2301727	2023	7	INV	P	1,079.55 042823	296535	P/F TRAINING ACADEM
ACCOUNT TOTAL									1,079.55		
001131	510000										
002527	COMMERCIAL STATIONER	468061-0		2302790	2023	7	INV	P	399.82 042823	296488	OFFICE SUPPLIES
003810	OFFICE PRODUCTS PLUS	1012595-5		2302421	2023	7	INV	P	26.37 042823	296566	P/F TRAINING ACADEM
003810	OFFICE PRODUCTS PLUS	1012595-7		2302421	2023	7	INV	P	8.79 042823	296566	P/F TRAINING ACADEM
									35.16		
004495	ULINE	162316047		2302791	2023	7	INV	P	82.00 042823	296630	OFFICE SUPPLIES
ACCOUNT TOTAL									516.98		
001131	511500										
048488	S & S FOOD SERVICE,	6712		2302797	2023	7	INV	P	567.50 042823	296595	LUNCH FOR RETIRED O
ACCOUNT TOTAL									567.50		
001131	512000										
002527	COMMERCIAL STATIONER	468061-0		2302790	2023	7	INV	P	28.26 042823	296488	OFFICE SUPPLIES
003810	OFFICE PRODUCTS PLUS	1015623-2		2302790	2023	7	INV	P	7.41 042823	296566	OFFICE SUPPLIES
ACCOUNT TOTAL									35.67		
001131	535500										
004495	ULINE	162316047		2302791	2023	7	INV	P	96.00 042823	296630	OFFICE SUPPLIES
ACCOUNT TOTAL									96.00		
001131	612000										
003270	JONES & BARTLETT PUB	671367		2301727	2023	7	INV	P	44.16 042823	296535	P/F TRAINING ACADEM
004495	ULINE	162316047		2302791	2023	7	INV	P	31.00 042823	296630	OFFICE SUPPLIES
ACCOUNT TOTAL									75.16		
001131	630500										
003700	MS POWER COMPANY	E2023 4.12.23		0	2023	7	INV	P	1,142.95 042823	296556	MS POWER VARIOUS DE
ACCOUNT TOTAL									1,142.95		
001131	639900										
004256	SOLAR SUPPLY INC	3463784		2302899	2023	7	INV	P	115.44 042823	296605	AIR COIL CLEANING

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL									115.44		
001131	6845FR				REGISTRATION-FIRE						
002027	A A A	AMBULANCE SERV	255		0	2023	7	INV P	60.00	042823	296442 P/F TRAINING ACADEM
004331	STATE FIRE ACADEMY		30187		2302863	2023	7	INV P	300.00	042823	296616 P/F TRNG ACADEMY FI
ACCOUNT TOTAL									360.00		
ORG 001131 TOTAL									4,364.00		
FIRE DIVISION											
001160	501000				OTHER EXPENDABLE OFF.SPL						
003810	OFFICE PRODUCTS PLUS	1013725-1			2302516	2023	7	INV P	19.57	042823	296566 HFD ADMIN OFFICE SU
004328	STAPLES		8069822407		2302528	2023	7	INV P	38.82	042823	296615 HFD ADMIN OFFICE SU
004328	STAPLES		8069843430		2302528	2023	7	INV P	43.09	042823	296615 HFD ADMIN OFFICE SU
									81.91		
ACCOUNT TOTAL									101.48		
001160	510000				CLEANING/JANITORIAL SPLY						
002471	CINTAS CORPORATION #	4152607634			0	2023	7	INV P	27.89	042823	296481 HFD MECHANIC SHOP J
ACCOUNT TOTAL									27.89		
001160	535000				UNIFORMS, BADGES, ETC.						
004445	TOP NOTCH EMBROIDERY	1767			2300441	2023	7	INV P	4,620.00	042823	296626 HFD UNIFORMS FOR AL
004501	UNIFORM SURPLUS OF A	00019			2301772	2023	7	INV P	4,865.00	042823	296632 HFD UNIFORMS FOR AL
ACCOUNT TOTAL									9,485.00		
001160	553500				SFTY/FIRE P/MATL CONTRIB.						
002079	ALERT ALL CORPORATIO	223030037			2302236	2023	7	INV P	4,442.50	042823	296448 HFD PUBLIC EDUCATIO
ACCOUNT TOTAL									4,442.50		
001160	570000				MTR VEHICLE REP. PTS/SPL						
002733	EMERGENCY EQUIPMENT	481924			2302871	2023	7	INV P	131.96	042823	296498 HFD SHOP SUPPLIES F
003818	O'REILLY AUTO PARTS	0943-447391			2302869	2023	7	INV P	120.11	042823	296565 HFD STATION 4 AND S
003818	O'REILLY AUTO PARTS	0943-447754			2302936	2023	7	INV P	80.65	042823	296565 HFD 2005 DODGE RAM
									200.76		
004354	STRIBLING EQUIPMENT	CE006209129:01			2302894	2023	7	INV P	448.97	042823	296617 HFD LADDER 6 UNIT #
004368	SUNBELT FIRE INC	00001023			2302044	2023	7	INV P	267.20	042823	296619 HFD LADDER 1 UNIT #

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7				ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL											1,048.89		
001160	599000							OTHER REPAIR/MAINT. SPL.					
049731	QUALITY APPLIANCE	5141	2302733	2023	7	INV	P	28.80	042823	296586	HFD	STATION 1 DRYER	
ACCOUNT TOTAL											28.80		
001160	612000							FREIGHT					
002648	DELTA FOREMOST CHEMI	200578	2302727	2023	7	INV	P	31.00	042823	296494	HFD	RESCUE 1 UNIT #	
002733	EMERGENCY EQUIPMENT	481985	2302805	2023	7	INV	P	19.96	042823	296498	HFD	ENGINE 1 UNIT #	
004368	SUNBELT FIRE INC	00001023	2302044	2023	7	INV	P	25.36	042823	296619	HFD	LADDER 1 UNIT #	
ACCOUNT TOTAL											76.32		
001160	630000							GAS					
004321	SPIRE	G2023 4.11.23	0	2023	7	INV	P	144.45	042823	296613	SPIRE	VARIOUS DEPTS	
004321	SPIRE	G2023 4.21.23	0	2023	7	INV	P	864.37	042823	296613	SPIRE	FIRE STATION	
											1,008.82		
ACCOUNT TOTAL											1,008.82		
001160	630500							ELECTRICITY					
003700	MS POWER COMPANY	E2023 4.12.23	0	2023	7	INV	P	374.58	042823	296556	MS	POWER VARIOUS DE	
003700	MS POWER COMPANY	E2023 4.3.23	0	2023	7	INV	P	1,666.23	042823	296556	MS	POWER VARIOUS DE	
											2,040.81		
004282	SOUTHERN PINE ELECTR	E2023 4.5.23	0	2023	7	INV	P	1,161.90	042823	296608	SOUTHERN PINE	VARIO	
ACCOUNT TOTAL											3,202.71		
001160	635000							BUILDING R&M					
004256	SOLAR SUPPLY INC	3463552	2302672	2023	7	INV	P	461.76	042823	296605	HFD	A/C COIL CLEAN	
ACCOUNT TOTAL											461.76		
001160	637000							HOUSEHOLD EQUIPMENT R&M					
049731	QUALITY APPLIANCE	5129	2302734	2023	7	INV	P	163.60	042823	296586	HFD	STATION 8 DRYER	
049731	QUALITY APPLIANCE	5130	2302735	2023	7	INV	P	162.13	042823	296586	HFD	STATION 3 WASHE	
											325.73		
ACCOUNT TOTAL											325.73		
001160	638400							MOTOR VEHICLE EQ. R&M					
002648	DELTA FOREMOST CHEMI	200578	2302727	2023	7	INV	P	600.00	042823	296494	HFD	RESCUE 1 UNIT #	
002733	EMERGENCY EQUIPMENT	481985	2302805	2023	7	INV	P	232.00	042823	296498	HFD	ENGINE 1 UNIT #	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL							832.00		
001160	699900			SERVICES NOT SPECIFIED					
049731	QUALITY APPLIANCE	5141	2302733	2023	7	INV P	95.00	042823	296586 HFD STATION 1 DRYER
ACCOUNT TOTAL							95.00		
ORG 001160 TOTAL							21,136.90		
001180		LAND DEVEL.ADM.							
001180	601600			TITLE OPINIONS					
004076	ROGERS, KEVIN	TITLEOPINION 4.14.23	0	2023	7	INV P	3,000.00	042823	296594 TITLE OPINIONS APRI
ACCOUNT TOTAL							3,000.00		
001180	684000			DUES AND MEMBERSHIPS					
002279	BOAM	MARVIN JOHNSON 2023	0	2023	7	INV P	300.00	042823	296465 2023 BOAM MEMBERSHI
ACCOUNT TOTAL							300.00		
ORG 001180 TOTAL							3,300.00		
001190		P/S CONTRAC.SER							
001190	602700			MEDICAL					
002960	GULF GUARANTY EMPLOY	230224162441	0	2023	7	INV P	2,618.12	042823	296514 INMATES MEDICAL BIL
002960	GULF GUARANTY EMPLOY	230424142252	0	2023	7	INV P	1,663.39	042823	296514 INMATES MEDICAL BIL
							4,281.51		
ACCOUNT TOTAL							4,281.51		
ORG 001190 TOTAL							4,281.51		
001191		TRAFFIC MAINT.							
001191	535500			WEARING APPAREL					
003216	J M H GRAPHICS	37609	2302255	2023	7	INV P	632.00	042823	296526 APPAREL
ACCOUNT TOTAL							632.00		
001191	554000			TRAFFIC CONTROL EQ. SPLY.					
002113	AMERICAN SIGNS	109-23	2302722	2023	7	INV P	50.00	042823	296453 PARKING SIGN FOR TR
ACCOUNT TOTAL							50.00		
001191	555000			STREET MARKING SUPPLIES					
004205	SIGNS FIRST	h-84285	2302816	2023	7	INV P	121.42	042823	296603 PARKING SIGN
ACCOUNT TOTAL							121.42		
001191	559000			OTHER OPERATING MATL/SPLY					
002795	FASTENAL COMPANY	MSHAT237584	2302562	2023	7	INV P	254.89	042823	296504 OTHER OPERATIONAL I

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
					ACCOUNT TOTAL			254.89			
001191	560000				BUILDING MATERIALS & SPLY						
004504	UNITED FENCE COMPANY	303412	2302251	2023	7	INV	P	50.00	042823	296633	GATE REMOTE
					ACCOUNT TOTAL			50.00			
001191	570000				MTR VEHICLE REP. PTS/SPL						
004514	UNIVERSITY TIRE & SE	INV212229	2302354	2023	7	INV	P	592.00	042823	296634	TIRES UNIT # 18603
004514	UNIVERSITY TIRE & SE	INV212994	2302557	2023	7	INV	P	633.60	042823	296634	TIRES UNIT# 11428
								1,225.60			
048827	CARQUEST	14758-23550	2302505	2023	7	INV	P	112.88	042823	296475	VEHICLE REPAIR UNI
					ACCOUNT TOTAL			1,338.48			
001191	599000				OTHER REPAIR/MAINT. SPL.						
048827	CARQUEST	14758-23943	2302701	2023	7	INV	P	131.66	042823	296475	VEHICLE REPAIR UNIT
					ACCOUNT TOTAL			131.66			
001191	643000				UNIFORM RENT						
002471	CINTAS CORPORATION #	4152605213	0	2023	7	INV	P	25.00	042823	296481	TRAFFIC UNIFORM SC
002471	CINTAS CORPORATION #	4153310220	0	2023	7	INV	P	25.00	042823	296481	TRAFFIC UNIFORM S
								50.00			
					ACCOUNT TOTAL			50.00			
001191	643500				MOP-MAT-RAG RENT						
002471	CINTAS CORPORATION #	4152604859	0	2023	7	INV	P	7.70	042823	296482	TRAFFIC MATS UNIFOR
002471	CINTAS CORPORATION #	4153309916	0	2023	7	INV	P	7.70	042823	296482	TRAFFIC MATS SC/8
								15.40			
					ACCOUNT TOTAL			15.40			
					ORG 001191 TOTAL			2,643.85			
001201	STREET DIV.										
001201	511000				HOUSEHOLD SUPPLIES						
004634	WHEELER'S JANITORIAL	11261	2302482	2023	7	INV	P	40.30	042823	296642	PINE SOL LEMON PUBL
004634	WHEELER'S JANITORIAL	11390	2301932	2023	7	INV	P	397.00	042823	296642	BLACK CAN LINERS NP
								437.30			
					ACCOUNT TOTAL			437.30			
001201	546000				MINOR EQUIPMENT						
002739	EMPIRE TRUCK SALES	RE006037690:01	2302679	2023	7	INV	P	2,078.02	042823	296499	UNIT 19755 WIRING R

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7				ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL										2,078.02					
STREET MARKING SUPPLIES															
001201	555000														
002795	FASTENAL COMPANY		MSHAT237111	2302121	2023	7	INV	P	259.20	042823			296504	IC WB WHITE 17OZ MA	
002795	FASTENAL COMPANY		NSHAT237164	2302126	2023	7	INV	P	256.20	042823			296504	IC WB WHITE 17 OZ M	
									515.40						
ACCOUNT TOTAL										515.40					
MTR VEHICLE REP. PTS/SPL															
001201	570000														
002565	COURTESY MOTORS INC		108581	2302938	2023	7	INV	P	79.56	042823			296491	NEW TRUCKS FILTER A	
003335	KITTRELL INDUSTRIAL		2304-040875	2302893	2023	7	INV	P	41.94	042823			296540	UNIT 21691 1X12 GB	
ACCOUNT TOTAL										121.50					
OTHER PROFESSIONAL SERV.															
001201	604900														
048676	PROCARE LANDS		13	0	2023	7	INV	P	6,000.00	042823			296580	WEEKLY MAINTENANCE	
048917	MS CONCRETE PROF		0000065	2302823	2023	7	INV	P	2,480.52	042823			296553	REMOVE DAMAGED SIDE	
048917	MS CONCRETE PROF		000066	2302824	2023	7	INV	P	800.00	042823			296553	FORM/POUR/FINISH-LA	
									3,280.52						
ACCOUNT TOTAL										9,280.52					
LONG RANGE PAVING PLAN															
001201	636099														
048682	JOE AULTMAN		A701	2301610	2023	7	INV	P	4,800.00	042823			296531	STRIPING CROSSWALKS	
048682	JOE AULTMAN		A715	229000	2023	7	INV	P	3,800.00	042823			296531	STRIPING O'FERRAL S	
									8,600.00						
ACCOUNT TOTAL										8,600.00					
UNIFORM RENT															
001201	643000														
002471	CINTAS CORPORATION #	4152605028	0	2023	7	INV	P	47.93	042823			296481	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4152605047	0	2023	7	INV	P	44.38	042823			296481	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4152605081	0	2023	7	INV	P	92.38	042823			296480	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4152605234	0	2023	7	INV	P	18.56	042823			296481	UNIFORMS SC 2800044		
002471	CINTAS CORPORATION #	4152605336	0	2023	7	INV	P	63.52	042823			296480	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4153310119	0	2023	7	INV	P	44.38	042823			296481	UNIFORM SC 82000447		
002471	CINTAS CORPORATION #	4153310203	0	2023	7	INV	P	88.42	042823			296480	UNIFORM SC 82000447		
002471	CINTAS CORPORATION #	4153310217	0	2023	7	INV	P	92.38	042823			296480	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4153310280	0	2023	7	INV	P	18.56	042823			296481	UNIFORMS SC 8200044		
002471	CINTAS CORPORATION #	4153310444	0	2023	7	INV	P	68.26	042823			296480	UNIFORMS SC 8200044		
									578.77						
ACCOUNT TOTAL										578.77					
ORG 001201 TOTAL										21,611.51					

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7																
ACCOUNT/VENDOR				INVOICE		PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION				
001202 STREET LIGHTS																
001202 630500 ELECTRICITY																
003700	MS	POWER	COMPANY	E2023	4.10.23	0	2023	7	INV	P	54.33	042823	296556	MS	POWER	1801 E HAR
003700	MS	POWER	COMPANY	E2023	4.12.23	0	2023	7	INV	P	2,341.01	042823	296556	MS	POWER	VARIOUS DE
003700	MS	POWER	COMPANY	E2023	4.14.23	0	2023	7	INV	P	50.72	042823	296556	MS	POWER	2102 W PIN
003700	MS	POWER	COMPANY	E2023	4.21.23	0	2023	7	INV	P	101.39	042823	296556	MS	POWER	619 N 25TH
003700	MS	POWER	COMPANY	E2023	4.3.23	0	2023	7	INV	P	3,283.61	042823	296556	MS	POWER	VARIOUS DE
											5,831.06					
003873 PEARL RIVER VALLEY E 2023 4.10.23 0 2023 7 INV P 494.59 042823 296571 PRVEPA WSBY/LAKEWOO																
003873 PEARL RIVER VALLEY E 2023 4.20.23 0 2023 7 INV P 16.88 042823 296571 PRVEPA OAKWOOD DR &																
003873 PEARL RIVER VALLEY E 2023 4.6.23 0 2023 7 INV P 849.32 042823 296571 PRVEPA VARIOUS DEPT																
											1,360.79					
004282 SOUTHERN PINE ELECTR E2023 4.18.23 0 2023 7 INV P .93 042823 296608 SOUTHERN PINE VARIO																
ACCOUNT TOTAL											7,192.78					
ORG 001202 TOTAL											7,192.78					
001203 ENGR/PUBLIC SER																
001203 601500 ENGINEERING																
002850	FORREST	CTY	SOIL & W	2023	#1	0	2023	7	INV	P	22,500.00	042823	296507	MB	2008-5/567	2023
ACCOUNT TOTAL											22,500.00					
001203 611000 TRAVEL EXPENSE																
049845	HEMA	GOPALAN	ESRI	2023		0	2023	7	INV	P	2,884.85	042823	296518	ESRI	USER	CONFERENC
ACCOUNT TOTAL											2,884.85					
ORG 001203 TOTAL											25,384.85					
001204 SHOP DIVISION																
001204 630500 ELECTRICITY																
003700	MS	POWER	COMPANY	E2023	4.12.23	0	2023	7	INV	P	2,107.88	042823	296556	MS	POWER	VARIOUS DE
ACCOUNT TOTAL											2,107.88					
001204 643000 UNIFORM RENT																
002471	CINTAS	CORPORATION	#	4152605120		0	2023	7	INV	P	61.89	042823	296480	UNIFORM	RENTAL/PW	S
002471	CINTAS	CORPORATION	#	4153310343		0	2023	7	INV	P	61.89	042823	296480	UNIFORM	RENTAL/SC#	8
											123.78					
ACCOUNT TOTAL											123.78					
ORG 001204 TOTAL											2,231.66					

YEAR/PERIOD: 2023/7 TO 2023/7		INVOICE		PO	YEAR/PR TYP S		WARRANT	CHECK	DESCRIPTION		
001205				G O & F S DIV.							
001205	502000			MINOR OFFICE EQUIP/FURN.							
004327	STANDARD OFFICE SUPP	H16134-00		2302889	2023	7	INV P	206.04	042823	296614	FRAM, HANG, FOLDER
ACCOUNT TOTAL								206.04			
ORG 001205 TOTAL								206.04			
001206				DRAINAGE DIV.							
001206	636000			STREETS & STRUCTURES R&M							
004058	RJM MCQUEEN CONTRACT	2779		2302771	2023	7	INV P	4,909.00	042823	296593	SIDEWALK REPAIR - (
ACCOUNT TOTAL								4,909.00			
001206	729500			OTHER IMPROVEMENTS							
004197	SHOWS DEARMAN & WAIT	23370		0	2023	7	INV P	2,160.00	042823	296602	MB#2012-1/34 EAST S
004197	SHOWS DEARMAN & WAIT	23382		0	2023	7	INV P	4,720.00	042823	296602	2012-1/34 DRAINAGE
								6,880.00			
004300	SOUTHERN WATERWORKS	93219		2301688	2023	7	INV P	583.07	042823	296612	CORRUGATED DRAINAGE
ACCOUNT TOTAL								7,463.07			
ORG 001206 TOTAL								12,372.07			
001207				CONSTRUCTION							
001207	559000			OTHER OPERATING MATL/SPLY							
002714	ECONOMY SUPPLY CO	097273		2302801	2023	7	INV P	180.00	042823	296497	1/2 OSB
002714	ECONOMY SUPPLY CO	097354		2302885	2023	7	INV P	15.80	042823	296497	DOOR STOPPERS/CONST
002714	ECONOMY SUPPLY CO	097474		2302904	2023	7	INV P	163.80	042823	296497	DOOR LOCKS/EMPLOYEE
								359.60			
004176	SHERWIN-WILLIAMS COM	05652		2302950	2023	7	INV P	28.14	042823	296601	PRESSURE WASHER TIP
004499	UNDERWOOD OUTDOOR PO	121213		2302946	2023	7	INV P	92.80	042823	296631	PARTS FOR PRESSURE
049663	JOHN BENNETT INC	000045386		0	2023	7	INV P	319.85	042823	296532	RPR OF CRACKS IN FL
ACCOUNT TOTAL								800.39			
001207	560000			BUILDING MATERIALS & SPLY							
002714	ECONOMY SUPPLY CO	097910		2303001	2023	7	INV P	215.87	042823	296497	MATERIAL FOR BUILDI
ACCOUNT TOTAL								215.87			
001207	560500			ELECTRICAL SUPPLIES							
002901	GILKEY ELECTRIC SUPP	372876		2302841	2023	7	INV P	731.40	042823	296513	MATERIAL FOR METER
002901	GILKEY ELECTRIC SUPP	372906		2302848	2023	7	INV P	237.00	042823	296513	TOOLS FOR ELECTRIC

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
									968.40		
									ACCOUNT TOTAL	968.40	
001207	561000										
003543	MCELHANEY PLUMBING I	295940			2302800	2023	7	INV P	99.90	042823	296549 WATER SUPPLIES/HUBF
									ACCOUNT TOTAL	99.90	
001207	570000										
048827	CARQUEST	14758-24493			2302937	2023	7	INV P	118.99	042823	296475 AIR HOSE/PW SHOP
									ACCOUNT TOTAL	118.99	
001207	599000										
049663	JOHN BENNETT INC	000045014			2301942	2023	7	INV P	10,022.70	042823	296532 TWO QUOTE - FLOORI
									ACCOUNT TOTAL	10,022.70	
001207	604900										
003191	INTERFACE SECURITY S	20380870			0	2023	7	INV P	46.99	042823	296524 SECURITY SYSTEM/TWI
									ACCOUNT TOTAL	46.99	
001207	638400										
002035	AAMCO TRANSMISSION (	I145553			2302380	2023	7	INV P	1,658.05	042823	296443 REPAIRS FOR UNIT#13
002252	BIG IRON DIESEL REPA	B10091			2302828	2023	7	INV P	2,378.54	042823	296464 REPAIR ON UNIT#1417
									ACCOUNT TOTAL	4,036.59	
001207	643000										
002471	CINTAS CORPORATION #	4152605019			0	2023	7	INV P	51.60	042823	296480 UNIFORM RENTAL/CONS
002471	CINTAS CORPORATION #	4153310156			0	2023	7	INV P	51.60	042823	296480 UNIFORM RENTAL/SC#8
									103.20		
									ACCOUNT TOTAL	103.20	
									ORG 001207 TOTAL	16,413.03	
001220											
001220	501000										
002472	CINTAS FIRST AID J71	5153822423			2302831	2023	7	INV P	98.23	042823	296483 SAFETY GLASSES/PWDR
									ACCOUNT TOTAL	98.23	
001220	559100										
003216	J M H GRAPHICS	38158			2302878	2023	7	INV P	817.00	042823	296526 T-SHIRTS FOR EARTH
									ACCOUNT TOTAL	817.00	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001220	560000										
049676	GARY HAWKINS		0091965		2302972	2023	7	INV P	249.99	042823	296511 HAND DRILL FOR SANI
									249.99		
001220	560500										
004256	SOLAR SUPPLY INC		3463551		2302706	2023	7	INV P	38.48	042823	296605 COIL CLEANER
									38.48		
001220	570000										
002252	BIG IRON DIESEL REPA	BI0093			2300064	2023	7	INV P	14,246.22	042823	296464 TEAR DOWN & REPAIR
002739	EMPIRE TRUCK SALES	CE006206373:01			2301767	2023	7	INV P	206.02	042823	296499 UNIT 20089 PARK BRA
002739	EMPIRE TRUCK SALES	CE006208914:01			2302808	2023	7	INV P	1,662.91	042823	296499 UNIT 20069 SIDE LOA
002739	EMPIRE TRUCK SALES	CE006208957:01			2302809	2023	7	INV P	173.04	042823	296499 UNIT 20072 PARTS FA
									2,041.97		
003034	HATTIESBURG HYDRAULI	99639			2302810	2023	7	INV P	59.69	042823	296516 UNIT 20071 PARTS 6G
003335	KITTRELL INDUSTRIAL	2304-040902			2302939	2023	7	INV P	10.58	042823	296540 UNIT 20074 MISC BOL
004139	SCOTTS HYDRAULIC SER	54488			2302820	2023	7	INV P	2,585.00	042823	296599 HYDRAULIC PUMP/UNIT
048827	CARQUEST	14758-24373			2302882	2023	7	INV P	42.45	042823	296475 UNIT 14676 BRAKE RE
048827	CARQUEST	14758-24525			2302948	2023	7	INV P	148.44	042823	296475 UNIT 20596 BALL JOI
									190.89		
									19,134.35		
001220	604900										
002294	BOURNE BROTHERS PRIN	87843			2301894	2023	7	INV P	127.06	042823	296467 DECAL, LETTERING, &
									127.06		
001220	612000										
002739	EMPIRE TRUCK SALES	CE006208842:01			2302756	2023	7	INV P	14.79	042823	296499 UNIT 20071 BRAKE RE
004120	SANSOM EQUIPMENT CO	P04414			2302757	2023	7	INV P	49.00	042823	296597 UNIT 20074 HARNESS
004120	SANSOM EQUIPMENT CO	P04441			2302913	2023	7	INV P	39.70	042823	296597 UNITS 20089 & 20090
									88.70		
									103.49		
001220	630500										
003700	MS POWER COMPANY	E2023 4.12.23			0	2023	7	INV P	394.12	042823	296556 MS POWER VARIOUS DE
									394.12		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001220	638200							MINOR EQUIPMENT R&M			
002739	EMPIRE TRUCK SALES	CE006208005:01	2302459	2023	7	INV	P	73.39	042823	296499	UNIT 19755 VALVE/AI
ACCOUNT TOTAL									73.39		
001220	638400							MOTOR VEHICLE EQ. R&M			
002739	EMPIRE TRUCK SALES	CE006208451:01	2302633	2023	7	INV	P	55.60	042823	296499	UNIT 19887 REPAIR
002739	EMPIRE TRUCK SALES	CE006208842:01	2302756	2023	7	INV	P	855.49	042823	296499	UNIT 20071 BRAKE RE
									911.09		
003253	JOHNNY'S WRECKER SER	44888	0	2023	7	INV	P	375.00	042823	296534	UNIT 20073 TOW CONC
004120	SANSOM EQUIPMENT CO	P04414	2302757	2023	7	INV	P	1,190.18	042823	296597	UNIT 20074 HARNESS
004120	SANSOM EQUIPMENT CO	P04441	2302913	2023	7	INV	P	922.91	042823	296597	UNITS 20089 & 20090
									2,113.09		
004139	SCOTTS HYDRAULIC SER	54487	2302818	2023	7	INV	P	6,350.62	042823	296599	TEAR DOWN AND REPAI
004465	TRUCKPRO LLC	039-0714081	2302760	2023	7	INV	P	2,120.96	042823	296627	BRAKE KITS FOR SANI
047021	HINTON, ANTHONY	P02302461	2302461	2023	7	INV	P	331.81	042823	296520	UNIT 19755 ABS VALV
ACCOUNT TOTAL									12,202.57		
001220	639400							DISINFECT./EXTERMINATION			
003040	HAVARD PEST CONTROL	2087623	0	2023	7	INV	P	75.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096927	0	2023	7	INV	P	300.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096932	0	2023	7	INV	P	420.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096949	0	2023	7	INV	P	350.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096950	0	2023	7	INV	P	365.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096951	0	2023	7	INV	P	385.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096952	0	2023	7	INV	P	335.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096953	0	2023	7	INV	P	300.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096954	0	2023	7	INV	P	300.00	042823	296517	HAVARD PEST CONTROL
003040	HAVARD PEST CONTROL	2096955	0	2023	7	INV	P	300.00	042823	296517	HAVARD PEST CONTROL
									3,130.00		
ACCOUNT TOTAL									3,130.00		
001220	639800							TOW IN CHARGES			
003253	JOHNNY'S WRECKER SER	44891	0	2023	7	INV	P	375.00	042823	296534	UNIT 20072 TOW JAME
ACCOUNT TOTAL									375.00		
001220	643000							UNIFORM RENT			
002471	CINTAS CORPORATION #	4152605608	0	2023	7	INV	P	199.88	042823	296480	SC#8400044758-SANIT
002471	CINTAS CORPORATION #	4153310655	0	2023	7	INV	P	203.82	042823	296480	SC#8200044758 -SANI

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
									403.70		
ACCOUNT TOTAL									403.70		
001220	643500				MOP-MAT-RAG RENT						
002471	CINTAS CORPORATION # 4152604860	0	2023	7	INV	P		37.30	042823	296481	SC#8200044758 -SANI
002471	CINTAS CORPORATION # 4153310044	0	2023	7	INV	P		37.30	042823	296481	SC#8200044758 -SANI
									74.60		
ACCOUNT TOTAL									74.60		
001220	688000				TIPPING FEES						
004591	WASTE MANAGEMENT OF 6-95826-33003	0	2023	7	INV	P		2,389.56	042823	296640	MB#2003-5/484 -SANI
ACCOUNT TOTAL									2,389.56		
001220	746000				SANITATION TRUCKS						
004120	SANSOM EQUIPMENT CO E00346	226962	2023	7	INV	P		269,000.00	042823	296597	APPROVED PURCHASE 5
ACCOUNT TOTAL									269,000.00		
ORG 001220 TOTAL									308,611.54		
001250	HEALTH DIVISION										
001250	570000				MTR VEHICLE REP. PTS/SPL						
002166	AUTO ARMATURE SERVIC 30975	2302877	2023	7	INV	P		164.95	042823	296458	BATTERY MT51
003615	JOHN DEERE FINANCIAL P88390	2302742	2023	7	INV	P		453.96	042823	296533	AIR FILTER
048827	CARQUEST 14758-24300	2302840	2023	7	INV	P		72.52	042823	296475	UNIT 17875 SIDE VIE
048827	CARQUEST 14758-24390	2302890	2023	7	INV	P		82.86	042823	296475	UNIT 20373 THRD REP
									155.38		
ACCOUNT TOTAL									774.29		
ORG 001250 TOTAL									774.29		
001260	ANIMAL CONTROL										
001260	535500				WEARING APPAREL						
004501	UNIFORM SURPLUS OF A 00024	2302012	2023	7	INV	P		819.90	042823	296632	UNIFORM FOR ANIMAL
ACCOUNT TOTAL									819.90		
001260	603000				VETERINARIAN						
049837	SUMRALL BRENDA 506245	0	2023	7	INV	P		26.00	042823	296618	BOARDING OF STRAY
049837	SUMRALL BRENDA 512409	0	2023	7	INV	P		357.52	042823	296618	BOARDING
									383.52		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL									383.52		
001260	699900					SERVICES NOT SPECIFIED					
004283	SOUTHERN PINES ANIMA	05.2023		0	2023	7	INV	P	16,666.67	042823	296609 MB#2022-956 HOUSING
ACCOUNT TOTAL									16,666.67		
ORG 001260 TOTAL									17,870.09		
				ECONOMIC DEV.							
001402	604900					OTHER PROFESSIONAL SERV.					
003764	NEEL-SCHAFFER INC	1083608-PH 2	PARKING	0	2023	7	INV	P	4,800.00	042823	296561 MB#2021-400 JAYCEE
003764	NEEL-SCHAFFER INC	1084726		0	2023	7	INV	P	1,159.99	042823	296561 MB#2022-29 17TH AVE
									5,959.99		
004610	WEBSTER ELECTRIC COM	APPLICATION PAY# 4		0	2023	7	INV	P	340,923.15	042823	296641 MB#2021-322 HWY 49
049196	JW CHAIN CONTRACTORS	PAY APP# 2		0	2023	7	INV	P	37,613.79	042823	296536 MB#2022-73 JAYCEE P
ACCOUNT TOTAL									384,496.93		
001402	790100				MISCELANEOUS CAP PROJECTS						
049747	AUDIO VIDEO	17989		2302358	2023	7	INV	P	20,040.83	042823	296457 TWO QUOTE - AV SYST
ACCOUNT TOTAL									20,040.83		
ORG 001402 TOTAL									404,537.76		
				AIRPORT DIV.							
001551	630500				ELECTRICITY						
003700	MS POWER COMPANY	E2023 4.12.23		0	2023	7	INV	P	1,346.43	042823	296556 MS POWER VARIOUS DE
ACCOUNT TOTAL									1,346.43		
001551	639400				DISINFECT./EXTERMINATION						
003040	HAVARD PEST CONTROL	2096947		0	2023	7	INV	P	300.00	042823	296517 HAVARD PEST CONTROL
ACCOUNT TOTAL									300.00		
ORG 001551 TOTAL									1,646.43		
				CEMETERY DIV							
001553	544000				HORT./LANDSCAPING SPLY.						
003717	MS TURF	333874		2302864	2023	7	INV	P	260.00	042823	296557 PALLETS OF CENTIPED
ACCOUNT TOTAL									260.00		
001553	560000				BUILDING MATERIALS & SPLY						
004256	SOLAR SUPPLY INC	3463550		2302710	2023	7	INV	P	38.48	042823	296605 BUILDING MATERIALS
ACCOUNT TOTAL									38.48		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001553	570000										
		002166	AUTO ARMATURE SERVIC	31027	2303022	2023	7	INV P	164.95	042823	296458 NEW BATTERY FOR CEM
		048827	CARQUEST	14758-24173	2302786	2023	7	INV P	84.21	042823	296475 BRAKE PADS FOR UNIT
									249.16		
									ACCOUNT TOTAL		
001553	575500										
		004528	UWOOD CO INC	22808	2302843	2023	7	INV P	246.12	042823	296635 WHEEL BEARINGS FOR
		048827	CARQUEST	14758-24332	2302862	2023	7	INV P	113.12	042823	296475 AGRICLTRL PARTS & S
		048827	CARQUEST	14758-24489	2302920	2023	7	INV P	118.17	042823	296475 AGRICLTRL PARTS & S
		048827	CARQUEST	14758-24573	2302955	2023	7	INV P	41.84	042823	296475 HYDRAULIC FILTER FO
									273.13		
									ACCOUNT TOTAL	519.25	
001553	604900										
		002471	CINTAS CORPORATION #	5153822404	0	2023	7	INV P	17.06	042823	296482 MAINTANCE OF MEDICI
		003191	INTERFACE SECURITY S	20456071	0	2023	7	INV P	50.27	042823	296524 MB#2006-2/76-77 SEC
									67.33		
									ACCOUNT TOTAL		
001553	638400										
		002252	BIG IRON DIESEL REPA	B10092	2302844	2023	7	INV P	4,852.13	042823	296464 REPAIRS TO UNIT #14
									4,852.13		
									ACCOUNT TOTAL		
001553	638600										
		004297	SOUTHERN TIRE MART (	2520121360	2302945	2023	7	INV P	1,253.92	042823	296610 TIRES FOR #16010, K
									1,253.92		
									ACCOUNT TOTAL		
001553	639800										
		003253	JOHNNY'S WRECKER SER	44874	2302787	2023	7	INV P	375.00	042823	296534 TOWING CHARGE FOR U
									375.00		
									ACCOUNT TOTAL		
001553	643000										
		002471	CINTAS CORPORATION #	4151197248	0	2023	7	INV P	81.64	042823	296480 ST. CONT# 820004475
		002471	CINTAS CORPORATION #	4151934685	0	2023	7	INV P	41.30	042823	296481 ST. CONT# 820004475
		002471	CINTAS CORPORATION #	4152608374	0	2023	7	INV P	41.30	042823	296481 ST. CONT# 820004475
		002471	CINTAS CORPORATION #	4153313366	0	2023	7	INV P	38.13	042823	296481 ST. CONT# 820004475
									202.37		
									ACCOUNT TOTAL	202.37	
001553	643500										
									MOP-MAT-RAG RENT		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7														
ACCOUNT/VENDOR				INVOICE		PO	YEAR/PR TYP S			WARRANT		CHECK	DESCRIPTION	
002471	CINTAS	CORPORATION #	4151197267			0	2023	7	INV	P	30.03	042823	296481	ST. CONT# 820004475
002471	CINTAS	CORPORATION #	4151934694			0	2023	7	INV	P	30.03	042823	296481	ST. CONT# 820004475
002471	CINTAS	CORPORATION #	4152608330			0	2023	7	INV	P	30.03	042823	296481	ST. CONT# 820004475
002471	CINTAS	CORPORATION #	4153313432			0	2023	7	INV	P	30.03	042823	296481	ST. CONT# 820004475
											120.12			
ACCOUNT TOTAL											120.12			
ORG 001553 TOTAL											7,937.76			
FUND 001 REVENUES									TOTAL:		1,037,766.05			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
002001			PKS/REC	FUND	REVENUES					
002001	315100				PARKS-MISC	USE FEES				
049835	OWENS, KAREN	REFUND 82323	0	2023	7	INV P	75.00	042823	296568	REFUND CHAIN PARK R
						ACCOUNT TOTAL	75.00			
			ORG 002001			TOTAL	75.00			
002300			PKS/REC-RECREATION	MAINT. DIV.						
002300	510000				CLEANING/JANITORIAL	SPLY				
002471	CINTAS CORPORATION # 1903876306		2302850	2023	7	INV P	232.00	042823	296480	P&R GROUNDS MAINT-J
048909	BRADY COMPANIES, LLC 7963382		2302664	2023	7	INV P	99.95	042823	296469	P&R GROUNDS-GLOVES
						ACCOUNT TOTAL	331.95			
002300	513000				CHEMICALS					
049595	SITEONE LANDSCAPE 128561424-001		2302782	2023	7	INV P	893.68	042823	296604	P&R GROUNDS MAINT-C
						ACCOUNT TOTAL	893.68			
002300	525500				LUBRICANTS					
002304	BRACKMAN MOWER WAREH 37349		2302549	2023	7	INV P	426.76	042823	296468	P&R GROUNDS MAINT-L
002304	BRACKMAN MOWER WAREH 37350		2302873	2023	7	INV P	265.92	042823	296468	P&R GROUNDS-WEEDEAT
							692.68			
						ACCOUNT TOTAL	692.68			
002300	544000				HORT./LANDSCAPING	SPLY.				
004547	VESELY'S NURSERY 2302773		2302773	2023	7	INV P	2,175.00	042823	296636	P&R GROUNDS DOWNTOW
						ACCOUNT TOTAL	2,175.00			
002300	546000				MINOR EQUIPMENT					
002304	BRACKMAN MOWER WAREH 37350		2302873	2023	7	INV P	432.50	042823	296468	P&R GROUNDS-WEEDEAT
						ACCOUNT TOTAL	432.50			
002300	551000				RECREATIONAL	SUPPLIES				
002177	B S N SPORTS 920375084		2301557	2023	7	INV P	516.00	042823	296459	PR-9TH ST BASKETBAL
002492	CLEMTS HARDWARE 130481		2301582	2023	7	INV P	754.82	042823	296484	P&R GRNDS MAINT-BAL
002492	CLEMTS HARDWARE 130483		2301230	2023	7	INV P	41.97	042823	296484	P&R GRNDS MAINT-TAR
							796.79			
						ACCOUNT TOTAL	1,312.79			
002300	559000				OTHER OPERATING	MATL/SPLY				
002714	ECONOMY SUPPLY CO 097653		2302959	2023	7	INV P	31.50	042823	296497	P&R GROUNDS-HOOKS

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION
002795	FASTENAL	COMPANY	MSHAT237417	2302370	2023	7	INV	P	200.72	042823	296504 P&R HUBFEST-ORANGE
002795	FASTENAL	COMPANY	MSHAT237518	2302372	2023	7	INV	P	1,021.56	042823	296504 P&R TRUCK UNIT 1856
									1,222.28		
048827	CARQUEST		14758-24381	2302859	2023	7	INV	P	238.80	042823	296475 PR-GROUNDS MAINT SU
ACCOUNT TOTAL									1,492.58		
002300	560000	BUILDING MATERIALS & SPLV									
002714	ECONOMY	SUPPLY CO	096740	2302728	2023	7	INV	P	23.70	042823	296497 P&R GROUNDS-BLDG MA
002714	ECONOMY	SUPPLY CO	097482	2302902	2023	7	INV	P	1,884.93	042823	296497 P&R TATUM SOCCER PA
									1,908.63		
ACCOUNT TOTAL									1,908.63		
002300	560500	ELECTRICAL SUPPLIES									
004256	SOLAR SUPPLY INC		3463618	2302807	2023	7	INV	P	115.44	042823	296605 P&R ALL A/C UNITS-C
ACCOUNT TOTAL									115.44		
002300	561000	PLUMBING SUPPLIES									
003302	KEELING COMPANY (HAT	S4284984.001		2302149	2023	7	INV	P	596.59	042823	296538 P&R ALL BALLFIELDS-
ACCOUNT TOTAL									596.59		
002300	565000	PAINT AND PAINTING SPLV.									
049595	SITEONE LANDSCAPE		128386364-001	2302696	2023	7	INV	P	4,092.51	042823	296604 P&R ALL BALLFIELDS-
ACCOUNT TOTAL									4,092.51		
002300	570000	MTR VEHICLE REP. PTS/SPL									
003246	JERRY'S AUTOMOTIVE R	22352		2302884	2023	7	INV	P	373.85	042823	296530 P&R TRUCK UNIT 1121
004299	SOUTHERN TIRE MART L	2520119403		2302586	2023	7	INV	P	210.00	042823	296611 P&R TRUCK UNIT 9603
048827	CARQUEST		14758-18000	2300428	2023	7	INV	P	135.64	042823	296475 P&R TRK UNIT 21327-
048827	CARQUEST		14758-19666	2300995	2023	7	INV	P	113.94	042823	296475 P&R TRK UNIT 21327-
048827	CARQUEST		14758-24313	2302853	2023	7	INV	P	189.43	042823	296475 P&R TRUCK UNIT 2175
									439.01		
ACCOUNT TOTAL									1,022.86		
002300	575500	AGRICLTRL REPAIR PTS/SPL									
002304	BRACKMAN MOWER WAREH	36160		2302680	2023	7	INV	P	323.22	042823	296468 BELT, DECK
002304	BRACKMAN MOWER WAREH	37365		2301981	2023	7	INV	P	224.69	042823	296468 PR-MOWER UNIT 21096
002304	BRACKMAN MOWER WAREH	37366		2302079	2023	7	INV	P	475.37	042823	296468 PR-MOWER UNIT 20234
002304	BRACKMAN MOWER WAREH	37367		2302107	2023	7	INV	P	221.40	042823	296468 PR-MOWER UNIT 20822
002304	BRACKMAN MOWER WAREH	37368		2302103	2023	7	INV	P	255.88	042823	296468 PR-MOWER UNIT 20745

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7												
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
002304	BRACKMAN	MOWER	WAREH	37503	2302610	2023	7	INV	P	359.50	042823	296468 P&R MOWER UNIT 2109
002304	BRACKMAN	MOWER	WAREH	37504	2302707	2023	7	INV	P	712.15	042823	296468 P&R- MOWER UNIT 207
002304	BRACKMAN	MOWER	WAREH	37505	2302928	2023	7	INV	P	824.85	042823	296468 P&R- MOWER 21097 SE
002304	BRACKMAN	MOWER	WAREH	37506	2302926	2023	7	INV	P	167.79	042823	296468 P&R- MOWER 21324 SE
002304	BRACKMAN	MOWER	WAREH	37507	2302666	2023	7	INV	P	151.20	042823	296468 P&R MOWER 19464-SER
002304	BRACKMAN	MOWER	WAREH	37508	2302927	2023	7	INV	P	321.24	042823	296468 P&R- MOWER 20822 SE
002304	BRACKMAN	MOWER	WAREH	37509	2302931	2023	7	INV	P	106.81	042823	296468 P&R- MOWER 21597 SE
002304	BRACKMAN	MOWER	WAREH	37519	2302933	2023	7	INV	P	1,581.64	042823	296468 P&R- MOWER 20745 SE
									5,725.74			
002492	CLEMTS	HARDWARE		130482	2302555	2023	7	INV	P	161.94	042823	296484 P&R GRNDS MAINT SUP
003615	JOHN DEERE	FINANCIAL		P88522	2302244	2023	7	INV	P	223.56	042823	296533 P&R GROUNDS GATOR R
004299	SOUTHERN TIRE	MART	L	2520118896	2302497	2023	7	INV	P	95.00	042823	296611 P&R TRAILER 21755-T
004499	UNDERWOOD	OUTDOOR	PO	119106	2301923	2023	7	INV	P	21.07	042823	296631 P&R GRNDS MAINT PAI
ACCOUNT TOTAL									6,227.31			
002300	604900				OTHER PROFESSIONAL SERV.							
003185	INNOVATIVE SERVICE	S		20230059	2302537	2023	7	INV	P	2,847.00	042823	296523 P&R TATUM/DAHMER/JA
ACCOUNT TOTAL									2,847.00			
002300	612000				FREIGHT							
002795	FASTENAL	COMPANY		MSHAT237518	2302372	2023	7	INV	P	104.89	042823	296504 P&R TRUCK UNIT 1856
049595	SITEONE	LANDSCAPE		128386364-001	2302696	2023	7	INV	P	150.00	042823	296604 P&R ALL BALLFIELDS-
ACCOUNT TOTAL									254.89			
002300	630500				ELECTRICITY							
003700	MS POWER COMPANY		E2023	4.3.23	0	2023	7	INV	P	52.54	042823	296556 MS POWER VARIOUS DE
ACCOUNT TOTAL									52.54			
002300	635500				ELECTRICAL R&M							
002672	DOLEAC	ELECTRIC	CO I	H26917	0	2023	7	INV	P	825.00	042823	296495 P&R 9TH ST BALLPARK
002672	DOLEAC	ELECTRIC	CO I	H26948A	0	2023	7	INV	P	3,423.70	042823	296495 P&R TATUM PARK LABO
002672	DOLEAC	ELECTRIC	CO I	H26948B	0	2023	7	INV	P	2,547.28	042823	296495 P&R TATUM PARK-LABO
									6,795.98			
ACCOUNT TOTAL									6,795.98			
002300	638400				MOTOR VEHICLE EQ. R&M							
003246	JERRY'S	AUTOMOTIVE	R	22352	2302884	2023	7	INV	P	519.25	042823	296530 P&R TRUCK UNIT 1121
004299	SOUTHERN TIRE	MART	L	2520114411	2301563	2023	7	INV	P	19.95	042823	296611 PR TRK UNIT 21752-T
004299	SOUTHERN TIRE	MART	L	2520117717	2302498	2023	7	INV	P	166.92	042823	296611 P&R TRUCK UNIT 1856

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
004299	SOUTHERN TIRE MART L	2520119403	2302586	2023	7	INV	P		110.00	042823	296611 P&R TRUCK UNIT 9603
									296.87		
									ACCOUNT TOTAL	816.12	
002300	638700								AGRICULTURAL EQ. R&M		
002304	BRACKMAN MOWER WAREH	33462	2301495	2023	7	INV	P		47.55	042823	296468 PR GROUNDS MAINT-RE
002304	BRACKMAN MOWER WAREH	37365	2301981	2023	7	INV	P		187.00	042823	296468 PR-MOWER UNIT 21096
002304	BRACKMAN MOWER WAREH	37366	2302079	2023	7	INV	P		187.00	042823	296468 PR-MOWER UNIT 20234
002304	BRACKMAN MOWER WAREH	37367	2302107	2023	7	INV	P		98.08	042823	296468 PR-MOWER UNIT 20822
002304	BRACKMAN MOWER WAREH	37368	2302103	2023	7	INV	P		120.00	042823	296468 PR-MOWER UNIT 20745
002304	BRACKMAN MOWER WAREH	37503	2302610	2023	7	INV	P		140.00	042823	296468 P&R MOWER UNIT 2109
002304	BRACKMAN MOWER WAREH	37504	2302707	2023	7	INV	P		220.00	042823	296468 P&R- MOWER UNIT 207
002304	BRACKMAN MOWER WAREH	37505	2302928	2023	7	INV	P		220.00	042823	296468 P&R- MOWER 21097 SE
002304	BRACKMAN MOWER WAREH	37506	2302926	2023	7	INV	P		94.87	042823	296468 P&R- MOWER 21324 SE
002304	BRACKMAN MOWER WAREH	37507	2302666	2023	7	INV	P		115.07	042823	296468 P&R MOWER 19464-SER
002304	BRACKMAN MOWER WAREH	37508	2302927	2023	7	INV	P		40.00	042823	296468 P&R- MOWER 20822 SE
002304	BRACKMAN MOWER WAREH	37509	2302931	2023	7	INV	P		6.41	042823	296468 P&R- MOWER 21597 SE
002304	BRACKMAN MOWER WAREH	37514	2302929	2023	7	INV	P		42.40	042823	296468 P&R- MOWER 19465 WI
002304	BRACKMAN MOWER WAREH	37519	2302933	2023	7	INV	P		220.00	042823	296468 P&R- MOWER 20745 SE
									1,738.38		
002398	CAMPER CITY OF HATTI	2302833	2302833	2023	7	INV	P		320.00	042823	296473 P&R- UNIT 18560 TRA
002565	COURTESY MOTORS INC	321461	2301653	2023	7	INV	P		1,158.88	042823	296491 P&R TRK UNIT 21613-
003843	PARISH TRACTOR (HATT W03418		2302583	2023	7	INV	P		641.22	042823	296569 P&R TRACTOR 21785-W
004299	SOUTHERN TIRE MART L	2520118896	2302497	2023	7	INV	P		25.50	042823	296611 P&R TRAILER 21755-T
004466	TRUCKS PLUS AUTO ACC	4596	2302769	2023	7	INV	P		122.30	042823	296628 P&R TRAILER UNIT 21
									ACCOUNT TOTAL	4,006.28	
002300	643000								UNIFORM RENT		
002471	CINTAS CORPORATION #	4123050167	0	2023	7	INV	P		282.06	042823	296480 P&R GRNDS UNIFORM R
002471	CINTAS CORPORATION #	4151653733	0	2023	7	INV	P		216.42	042823	296480 P&R GROUNDS MAINT U
002471	CINTAS CORPORATION #	4152361302	0	2023	7	INV	P		216.42	042823	296480 P&R GROUNDS MAINT-U
									714.90		
									ACCOUNT TOTAL	714.90	
002300	644900								OTHER RENT		
002471	CINTAS CORPORATION #	4153049982	0	2023	7	INV	P		24.18	042823	296481 P&R GRNDS MAT RENTA
002472	CINTAS FIRST AID J71	5153822495	0	2023	7	INV	P		66.91	042823	296483 PR GROUNDS-FIRST AI
									ACCOUNT TOTAL	91.09	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7													
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR		TYP	S	WARRANT		CHECK	DESCRIPTION	
002300	699900						SERVICES NOT SPECIFIED						
047187	FOUR SEASONS LAWN	14925		0	2023	7	INV	P	530.00	042823	296508	PR 38TH AVE LAWN MA	
047187	FOUR SEASONS LAWN	14992		0	2023	7	INV	P	4,350.00	042823	296508	PR HARDY ST MEDIAN-	
047187	FOUR SEASONS LAWN	15107		0	2023	7	INV	P	2,282.50	042823	296508	P&R HARDY ST FLOWER	
									7,162.50				
ACCOUNT TOTAL									7,162.50				
002300	733500						AGRICULTURAL EQUIPMENT						
004499	UNDERWOOD OUTDOOR PO	121106		2302954	2023	7	INV	P	10,348.00	042823	296631	P&R RECREATION MAIN	
ACCOUNT TOTAL									10,348.00				
ORG 002300 TOTAL									54,383.82				
002315			PKS/REC-REC.ADMIN/COM.REL.										
002315	551000						RECREATIONAL SUPPLIES						
002107	AMERICAN GRAPHICS	16599		2302608	2023	7	INV	P	1,890.00	042823	296451	YOUTH PROGRAM TRACK	
003921	PINE BELT TROPHY	NET10		2302604	2023	7	INV	P	100.00	042823	296574	YOUTH TRACK PARTICI	
003937	PLAY IT AGAIN SPORTS	INV001363		2302897	2023	7	INV	P	150.00	042823	296575	ATHLETIC PROGRAMS S	
ACCOUNT TOTAL									2,140.00				
002315	603400						OFFICIALS						
003313	KETTLEY, ANNETTE	AK46419		0	2023	7	INV	P	120.00	042823	296539	ADULT BASKETBALL SC	
003313	KETTLEY, ANNETTE	ANNETTE242023		0	2023	7	INV	P	80.00	042823	296539	YOUTH BASKETBALL SU	
									200.00				
004432	THOMPSON, JESSE	JT46419		0	2023	7	INV	P	125.00	042823	296624	ADULT BASKETBALL OF	
047301	FREDERICK NICHOLAS P	NP412		0	2023	7	INV	P	50.00	042823	296509	ADULT BASKETBALL OF	
048262	THOMPSON MARQIEL O	MT46419		0	2023	7	INV	P	200.00	042823	296621	ADULT BASKETBALL OF	
049652	THOMPSON RAHMIL J	RAHM242023		0	2023	7	INV	P	80.00	042823	296622	YOUTH BASKETBALL SU	
049652	THOMPSON RAHMIL J	RT46419		0	2023	7	INV	P	125.00	042823	296622	ADULT BASKETBALL OF	
									205.00				
049653	THOMPSON RODERICK J	RT46419		0	2023	7	INV	P	100.00	042823	296623	ADULT BASKETBALL OF	
049820	JEFFERSON ERIC D	EJ46419		0	2023	7	INV	P	300.00	042823	296529	ADULT BASKETBALL OF	
ACCOUNT TOTAL									1,180.00				
002315	604900						OTHER PROFESSIONAL SERV.						
002540	CONNER, TOBARRA	TC46419		0	2023	7	INV	P	50.00	042823	296489	ADULT BASKETBALL CU	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
002965	GUTHRIE, JONI S	JG44416	0	2023	7	INV P	180.00 042823	296515	SENIOR EXERCISE AND	
003937	PLAY IT AGAIN SPORTS	INV001364	2302430	2023	7	INV P	972.00 042823	296575	LEAGUE SHIRTS ADULT	
003958	POWELL, RANDY	RPOW46419	0	2023	7	INV P	210.00 042823	296579	ADULT BASKETBALL LE	
003980	PROTECTION AGENCY &	1676	0	2023	7	INV P	250.00 042823	296581	2023 SECURITY ADULT	
004415	TERRELL, MICHAEL J	MICHT46419	0	2023	7	INV P	120.00 042823	296620	ADULT BASKETBALL CU	
047581	PROTECTION AGENCY &	INV1626	0	2023	7	INV P	400.00 042823	296582	SECURITY ADULT BASK	
047581	PROTECTION AGENCY &	INV1667	0	2023	7	INV P	250.00 042823	296582	SECURITY ADULT BASK	
							650.00			
048422	RAY NANCY REBEKAH	RAY410420	0	2023	7	INV P	125.00 042823	296590	LUNCH HOUR YOGA & P	
049586	PHILLIS LAUREN W	LP47420	0	2023	7	INV P	60.00 042823	296572	CAREGIVER&ME CLASS	
ACCOUNT TOTAL							2,617.00			
002315	604919	OTH PROF SERV-ART CENTER								
047117	ABIGAIL LENZ	AA43416	0	2023	7	INV P	250.00 042823	296444	APRIL 3-16 YOUTH AR	
047971	BRETT CUMMINS	BC43416	0	2023	7	INV P	100.00 042823	296470	APRIL 6, 13, 14 ADU	
ACCOUNT TOTAL							350.00			
002315	630500	ELECTRICITY								
003700	MS POWER COMPANY	E2023 4.12.23	0	2023	7	INV P	5,104.91 042823	296556	MS POWER VARIOUS DE	
003700	MS POWER COMPANY	E2023 4.3.23	0	2023	7	INV P	1,191.15 042823	296556	MS POWER VARIOUS DE	
							6,296.06			
ACCOUNT TOTAL							6,296.06			
ORG 002315 TOTAL							12,583.06			
FUND 002 PARKS & RECREATION FUND					TOTAL:		67,041.88			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
009660											
009660	570000										
003861	PATTERSON AUTO ELECT	81854			2302875	2023	7	INV P	194.45	042823	296570 REPAIR TO UNIT 2141
									194.45		
009660	604900										
003796	NORTH LAMAR WATER AS NL	041323			0	2023	7	INV P	148.00	042823	296564 SEWER READS FOR WAT
003861	PATTERSON AUTO ELECT	81854			2302875	2023	7	INV P	712.50	042823	296570 REPAIR TO UNIT 2141
004003	RAWLS SPRINGS UTILIT RS	042023			0	2023	7	INV P	525.00	042823	296589 SEWER READS FOR WAT
									1,385.50		
009660	607000										
047562	ENCO UTILITY	INV59108			0	2023	7	INV P	3,086.26	042823	296500 MB 2020-835 RT 1 BI
047562	ENCO UTILITY	INV59250			0	2023	7	INV P	1,606.42	042823	296500 MB 2020-835 RT 2 BI
									4,692.68		
									4,692.68		
009660	620000										
047562	ENCO UTILITY	INV59108			0	2023	7	INV P	1,138.07	042823	296500 MB 2020-835 RT 1 BI
047562	ENCO UTILITY	INV59250			0	2023	7	INV P	602.46	042823	296500 MB 2020-835 RT 2 BI
									1,740.53		
									1,740.53		
009660	630000										
004321	SPIRE	G2023 4.11.23			0	2023	7	INV P	99.79	042823	296613 SPIRE VARIOUS DEPTS
									99.79		
009660	630500										
003700	MS POWER COMPANY	E2023 4.12.23			0	2023	7	INV P	547.61	042823	296556 MS POWER VARIOUS DE
									547.61		
009660	643000										
002471	CINTAS CORPORATION #	4151933848			0	2023	7	INV P	39.13	042823	296481 STATE CONTRACT 8200
002471	CINTAS CORPORATION #	4152607434			0	2023	7	INV P	53.14	042823	296480 STATE CONTRACT 8200
002471	CINTAS CORPORATION #	4153312350			0	2023	7	INV P	39.13	042823	296481 STATE CONTRACT 8200
									131.40		
									131.40		
					ORG 009660			TOTAL	8,791.96		

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
009672				W&S O&M-WATER TRANSMISSION DIV						
009672	535500				WEARING APPAREL					
048909	BRADY COMPANIES, LLC	7666605	2300328	2023	7	INV	P	538.61	042823	296469 RUBBER KNEE HIGH ST
ACCOUNT TOTAL								538.61		
009672	540000				ASPHALT & ASPHALT PROD.					
004586	WARREN	PAVING INC	75529	2302566	2023	7	INV	P	244.56	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75639	2302566	2023	7	INV	P	296.65	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75660	2302566	2023	7	INV	P	169.52	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75685	2302566	2023	7	INV	P	185.41	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75760	2302566	2023	7	INV	P	311.67	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75831	2302566	2023	7	INV	P	318.73	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	75899	2302566	2023	7	INV	P	290.47	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	76008	2302566	2023	7	INV	P	641.87	042823 296639 HOT MIX ASPHALT FOR
004586	WARREN	PAVING INC	76016	2302566	2023	7	INV	P	308.13	042823 296639 HOT MIX ASPHALT FOR
								2,767.01		
ACCOUNT TOTAL								2,767.01		
009672	545000				HAND TOOLS					
003543	MCELHANEY PLUMBING I	296047	2302792	2023	7	INV	P	35.90	042823	296549 HAND TOOLS FOR WATE
048827	CARQUEST	14758-24144	2302778	2023	7	INV	P	51.37	042823	296475 HAND TOOLS FOR WATE
ACCOUNT TOTAL								87.27		
009672	559000				OTHER OPERATING MATL/SPLY					
003685	MS GRASS NURSERY	3254	2302775	2023	7	INV	P	300.00	042823	296554 CENTIPEDE SOD --- W
003987	PUCKETT RENTS	958846-0001	2302684	2023	7	INV	P	1,192.38	042823	296585 CHOPSAW BLADES -- W
ACCOUNT TOTAL								1,492.38		
009672	561000				PLUMBING SUPPLIES					
002559	CORE & MAIN (HD SUPP	S630534	2302688	2023	7	INV	P	1,224.00	042823	296490 METER BOXES FOR WAT
002559	CORE & MAIN (HD SUPP	S630553	2302681	2023	7	INV	P	909.92	042823	296490 WAREHOUSE STOCK FOR
								2,133.92		
004300	SOUTHERN WATERWORKS	94015	2302866	2023	7	INV	P	1,254.09	042823	296612 WAREHOUSE STOCK FOR
ACCOUNT TOTAL								3,388.01		
009672	570000				MTR VEHICLE REP. PTS/SPL					
048827	CARQUEST	14758-24145	2302779	2023	7	INV	P	32.76	042823	296475 REPAIR PARTS FOR #2
048827	CARQUEST	14758-24301	2302835	2023	7	INV	P	48.68	042823	296475 REPAIR PARTS FOR UN
								81.44		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
					ACCOUNT TOTAL			81.44			
009672	604900				OTHER PROFESSIONAL SERV.						
002288	BONNER ANALYTICAL TE	79677	0	2023	7	INV	P	28.91	042823	296466	COLIFORM TESTING, 1
003370	LAMAR COUNTY SCHOOL	868	0	2023	7	INV	P	5,490.00	042823	296543	16TH SEC. LEASE #
					ACCOUNT TOTAL			5,518.91			
009672	636000				STREETS & STRUCTURES R&M						
003649	C J MORGAN INC	2023018	0	2023	7	INV	P	124,149.36	042823	296472	MB2022-680, WATER R
003649	C J MORGAN INC	2023021	0	2023	7	INV	P	147,810.39	042823	296472	MB2022-680:WATER RE
								271,959.75			
					ACCOUNT TOTAL			271,959.75			
009672	638600				CONSTRUCTION EQUIP R&M						
002751	EQUIPMENT INC	154001737	0	2023	7	INV	P	1,193.23	042823	296501	REPAIRS TO BOBCAT E
					ACCOUNT TOTAL			1,193.23			
					ORG 009672 TOTAL			287,026.61			
009673	W&S O&M-WATER PLANT DIVISION										
009673	513000	CHEMICALS									
002094	ALLIED UNIVERSAL COR	I2852592	2302811	2023	7	INV	P	10,600.00	042823	296450	CHLORINE FOR WATER
002094	ALLIED UNIVERSAL COR	I2852593	2302811	2023	7	INV	P	7,950.00	042823	296450	CHLORINE FOR WATER
002094	ALLIED UNIVERSAL COR	I2853085	2302812	2023	7	INV	P	1,182.00	042823	296450	150# CHLORINE FOR F
002094	ALLIED UNIVERSAL COR	I2853086	2302812	2023	7	INV	P	1,576.00	042823	296450	150# CHLORINE FOR F
								21,308.00			
002443	CERTIFIED LABORATORI	8204565	2302744	2023	7	INV	P	20,482.00	042823	296476	EMERGE,DEOSECT,CHER
					ACCOUNT TOTAL			41,790.00			
009673	604900				OTHER PROFESSIONAL SERV.						
004143	SECURITY BLANKET	186363	0	2023	7	INV	P	80.00	042823	296600	SERVICE CALL-- 02/2
047062	COAST CHLORINATOR &	75703	0	2023	7	INV	P	950.00	042823	296485	SERVICE CONTRACT FO
					ACCOUNT TOTAL			1,030.00			
009673	630500				ELECTRICITY						
003700	MS POWER COMPANY	E2023 4.12.23	0	2023	7	INV	P	24,003.93	042823	296556	MS POWER VARIOUS DE
003700	MS POWER COMPANY	E2023 4.3.23	0	2023	7	INV	P	28,256.51	042823	296556	MS POWER VARIOUS DE
								52,260.44			
003873	PEARL RIVER VALLEY E	2023 4.6.23	0	2023	7	INV	P	116.94	042823	296571	PRVEPA VARIOUS DEPT

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7												
ACCOUNT/VENDOR				INVOICE		PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
						ACCOUNT TOTAL			52,377.38			
009673	638400					MOTOR VEHICLE EQ. R&M						
002700	EAGLE TIRE AND SERVI	INV072388	2302819	2023	7	INV	P	68.31	042823	296496	OIL CHANGE FOR UNIT	
						ACCOUNT TOTAL			68.31			
009673	643500					MOP-MAT-RAG RENT						
002471	CINTAS CORPORATION #	4152607528	0	2023	7	INV	P	72.04	042823	296480	SC#8200044758-MOPS	
						ACCOUNT TOTAL			72.04			
						ORG 009673 TOTAL			95,337.73			
009676						W&S O&M-SEWER DIVISION						
009676	544000					HORT./LANDSCAPING SPL.						
003685	MS GRASS NURSERY	3369	2302978	2023	7	INV	P	225.00	042823	296554	ST.AUGUSTINE SOD --	
						ACCOUNT TOTAL			225.00			
009676	545000					HAND TOOLS						
003543	MCELHANEY PLUMBING I	295739	2302834	2023	7	INV	P	228.35	042823	296549	HAND TOOLS FOR SEWE	
						ACCOUNT TOTAL			228.35			
009676	570000					MTR VEHICLE REP. PTS/SPL						
002700	EAGLE TIRE AND SERVI	INV072493	2302977	2023	7	INV	P	278.52	042823	296496	TIRES FOR UNIT # 20	
004120	SANSOM EQUIPMENT CO	P04442	2302917	2023	7	INV	P	193.42	042823	296597	CO2 CANISTERS FOR C	
048827	CARQUEST	14758-23887	2302651	2023	7	INV	P	11.99	042823	296475	TRAILER CONNECTOR F	
						ACCOUNT TOTAL			483.93			
009676	612000					FREIGHT						
004120	SANSOM EQUIPMENT CO	P04442	2302917	2023	7	INV	P	24.42	042823	296597	CO2 CANISTERS FOR C	
						ACCOUNT TOTAL			24.42			
009676	630500					ELECTRICITY						
003700	MS POWER COMPANY	E2023 4.12.23	0	2023	7	INV	P	4,012.43	042823	296556	MS POWER VARIOUS DE	
003700	MS POWER COMPANY	E2023 4.3.23	0	2023	7	INV	P	763.42	042823	296556	MS POWER VARIOUS DE	
									4,775.85			
004282	SOUTHERN PINE ELECTR	E2023 4.18.23	0	2023	7	INV	P	3.31	042823	296608	SOUTHERN PINE VARIO	
004282	SOUTHERN PINE ELECTR	E2023 4.5.23	0	2023	7	INV	P	120.00	042823	296608	SOUTHERN PINE VARIO	
004282	SOUTHERN PINE ELECTR	e2023 4.6.23	0	2023	7	INV	P	334.93	042823	296608	SOUTHERN PINE ELECT	
									458.24			
						ACCOUNT TOTAL			5,234.09			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7												
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION	
009676 636000					STREETS & STRUCTURES R&M							
004058	RJM	MCQUEEN	CONTRACT	2731	0	2023	7	INV	P	6,019.00	042823	296593 MB2022-680: SEWER R
004058	RJM	MCQUEEN	CONTRACT	2756	0	2023	7	INV	P	3,475.00	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2757	0	2023	7	INV	P	23,242.75	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2760	0	2023	7	INV	P	6,234.00	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2774	0	2023	7	INV	P	10,689.00	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2777	0	2023	7	INV	P	6,732.00	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2778	0	2023	7	INV	P	8,097.24	042823	296593 MB2022-680:SEWER RE
004058	RJM	MCQUEEN	CONTRACT	2781	0	2023	7	INV	P	228,873.79	042823	296593 MB2022-680:SEWER RE
										293,362.78		
ACCOUNT TOTAL										293,362.78		
009676 638400					MOTOR VEHICLE EQ. R&M							
002700	EAGLE TIRE AND SERVI	INV072493			2302977	2023	7	INV	P	40.00	042823	296496 TIRES FOR UNIT # 20
ACCOUNT TOTAL										40.00		
009676 638600					CONSTRUCTION EQUIP R&M							
002083	ALLBRITTON	CHAIN SAW	15257		2302974	2023	7	INV	P	35.60	042823	296449 REPAIRS TO CHOPSAW
002083	ALLBRITTON	CHAIN SAW	15292		2302838	2023	7	INV	P	511.15	042823	296449 REPAIR,KUBOTA Z327P
002083	ALLBRITTON	CHAIN SAW	15294		2302763	2023	7	INV	P	240.92	042823	296449 MOWER REPAIRS -- SE
002083	ALLBRITTON	CHAIN SAW	15307		2302838	2023	7	INV	P	153.41	042823	296449 REPAIR,KUBOTA Z327P
002083	ALLBRITTON	CHAIN SAW	15338		2302763	2023	7	INV	P	81.59	042823	296449 MOWER REPAIRS -- SE
002083	ALLBRITTON	CHAIN SAW	96500		2302777	2023	7	INV	P	135.43	042823	296449 TRIMMER LINE & TWO
										1,158.10		
ACCOUNT TOTAL										1,158.10		
009676 643000					UNIFORM RENT							
002471	CINTAS	CORPORATION #	4152607918		0	2023	7	INV	P	231.45	042823	296480 SC#8200044758- UNIF
002471	CINTAS	CORPORATION #	4153312935		0	2023	7	INV	P	231.45	042823	296480 SC#8200044758-- UNI
										462.90		
ACCOUNT TOTAL										462.90		
ORG 009676 TOTAL										301,219.57		
009677					W&S O&M-SEWER LAGOON DIV.							
009677 630500					ELECTRICITY							
003700	MS	POWER COMPANY	E2023 4.12.23		0	2023	7	INV	P	38,305.44	042823	296556 MS POWER VARIOUS DE
003700	MS	POWER COMPANY	E2023 4.3.23		0	2023	7	INV	P	14,933.09	042823	296556 MS POWER VARIOUS DE
										53,238.53		
003873	PEARL RIVER VALLEY E	2023 4.20.23			0	2023	7	INV	P	50.00	042823	296571 PRVEPA OAKWOOD DR &
003873	PEARL RIVER VALLEY E	2023 4.6.23			0	2023	7	INV	P	115.76	042823	296571 PRVEPA VARIOUS DEPT

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7									
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR	TYP S	WARRANT	CHECK	DESCRIPTION
							165.76		
ACCOUNT TOTAL							53,404.29		
009677	638000				FIXED EQUIPMENT R&M				
003348	L & A CONTRACTING CO	483-238	0	2023	7	INV P	42,525.00	042823	296542 MB2016-64:LAGOONS A
ACCOUNT TOTAL							42,525.00		
ORG 009677 TOTAL							95,929.29		
FUND 009 WATER & SEWER OPERATION/MAINT.							TOTAL:	788,305.16	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7												
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION		
011000		WATER & SEWER		BALANCE SHEET								
011000		115000		COLLECTION FEES								
002058 ADELA INC		040201490000	3/23	0	2023	7	INV	P	442.55	042823	296446	WATER COLLECTION FE
ACCOUNT TOTAL									442.55			
ORG 011000 TOTAL									442.55			
FUND 011 WATER & SEWER FUND									TOTAL:			
									442.55			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7										
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
072201		MUN.ROAD&BRIDGE-STREET DIV								
072201 601502		ENGINEERING-MIDTOWN								
003764	NEEL-SCHAFFER INC	1084281-1084712	0	2023	7	INV P	15,022.41	042823	296561	MB#2021-359 MIDTOWN
003764	NEEL-SCHAFFER INC	1084283-1084715	0	2023	7	INV P	12,847.90	042823	296561	MB#2021-359 MIDTOWN
							27,870.31			
ACCOUNT TOTAL							27,870.31			
072201 602500		LEGAL								
003228	JACKSON, TULLOS & RO	9082	0	2023	7	INV P	450.00	042823	296527	MB#2022-17 MIDTOWN
003228	JACKSON, TULLOS & RO	9083	0	2023	7	INV P	385.50	042823	296527	CITY OF HATTIESBURG
							835.50			
ACCOUNT TOTAL							835.50			
ORG 072201				TOTAL		28,705.81				
FUND 072 MUNICIPAL ROAD & BRIDGE				TOTAL:		28,705.81				

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
073570				MASS TRANSIT-TRANSPORTATION							
073570	630500			ELECTRICITY							
003700	MS POWER COMPANY	E2023	4.12.23	0	2023	7	INV	P	1,398.55	042823	296556 MS POWER VARIOUS DE
				ACCOUNT TOTAL					1,398.55		
073570	710024			BUS SHELTERS							
004058	RJM MCQUEEN CONTRACT 2770	2302986	2023	7	INV	P			11,640.00	042823	296593 2-QUOTE FOR BUS SHE
004058	RJM MCQUEEN CONTRACT PAY APP# 4	0	2023	7	INV	P			129,774.88	042823	296593 MB#2021-569 KAMPERP
				ACCOUNT TOTAL					141,414.88		
073570	729553			BUS SHELTER INFRAS-533							
004058	RJM MCQUEEN CONTRACT PAY APP# 4	0	2023	7	INV	P			198,308.54	042823	296593 MB#2021-569 KAMPERP
				ACCOUNT TOTAL					198,308.54		
				ORG 073570			TOTAL		341,121.97		
				FUND 073			MASS TRANSIT FUND		TOTAL:		341,121.97

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7												
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION			
077000			COMMUNITY CTR	BALANCE SHEET								
077000	122000			DAMAGE DEPOSITS								
049829	FELICIA SPANN	FSPANN 7/15/23	0	2023	7	INV P	250.00	042823	296506	REFUND	SECURITY DEP	
049830	TONYA RIVERS	TRIVERS 3/18/23	0	2023	7	INV P	250.00	042823	296625	REFUND	SECURITY DEP	
049831	BESSIE JORDAN	BJORDAN 3/18/23	0	2023	7	INV P	100.00	042823	296463	REFUND	SECURITY DEP	
ACCOUNT TOTAL							600.00					
ORG 077000 TOTAL							600.00					
077001			COMMUNITY CTR	REVENUES								
077001	314600			CULTURAL CTR USE FEE								
049832	IDECIA CHAPMAN	ICHAPMAN 9/9/23	0	2023	7	INV P	250.00	042823	296522	REFUND	SECURITY DEP	
ACCOUNT TOTAL							250.00					
ORG 077001 TOTAL							250.00					
077650			COMMUNITY CTR-ADMIN/GENERAL									
077650	510000			CLEANING/JANITORIAL SPLY								
003772	NEWELL PAPER COMPANY	4150031	2302746	2023	7	INV P	442.00	042823	296562	JANITORIAL	SUPPLIES	
004634	WHEELER'S JANITORIAL	11359	2302762	2023	7	INV P	389.00	042823	296642	JANITORIAL	SUPPLIES	
ACCOUNT TOTAL							831.00					
077650	546000		MINOR EQUIPMENT									
002714	ECONOMY SUPPLY CO	097400	2302868	2023	7	INV P	17.90	042823	296497	MATERIAL TO	REPAIR	
ACCOUNT TOTAL							17.90					
077650	560500		ELECTRICAL SUPPLIES									
004256	SOLAR SUPPLY INC	3463587	2302743	2023	7	INV P	59.50	042823	296605	MATERIAL TO	REPAIR	
004256	SOLAR SUPPLY INC	3463622	2302813	2023	7	INV P	538.72	042823	296605	P&R ALL	COMM CENTER	
							598.22					
ACCOUNT TOTAL							598.22					
077650	604900		OTHER PROFESSIONAL SERV.									
003185	INNOVATIVE SERVICE S	20230052	2302654	2023	7	INV P	884.70	042823	296523	SEMI-ANNUAL	AED MAI	
003570	MCQUAGGE PRODUCTIONS	185	2302854	2023	7	INV P	125.00	042823	296550	SERVICE CALL	TO CHE	
ACCOUNT TOTAL							1,009.70					
077650	630000		GAS									
004321	SPIRE	G2023 4.11.23	0	2023	7	INV P	636.28	042823	296613	SPIRE	VARIOUS DEPTS	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR				INVOICE		PO	YEAR/PR TYP S		WARRANT	CHECK	DESCRIPTION
						ACCOUNT TOTAL		636.28			
077650	630500						ELECTRICITY				
003700	MS POWER COMPANY			E2023	4.3.23	0	2023	7 INV P	3,367.23	042823	296556 MS POWER VARIOUS DE
						ACCOUNT TOTAL		3,367.23			
077650	639400						DISINFECT./EXTERMINATION				
003040	HAVARD PEST CONTROL			2096948		0	2023	7 INV P	360.00	042823	296517 HAVARD PEST CONTROL
						ACCOUNT TOTAL		360.00			
						ORG 077650	TOTAL		6,820.33		
FUND 077 COMMUNITY CENTERS' FUND						TOTAL:		7,670.33			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7													
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION		
082285				CDBG-ENTITLEMENTS									
082285 501000						OTHER EXPENDABLE OFF.SPL							
004328 STAPLES				8069980251	2302861	2023	7	INV P	46.76	042823	296615	OFFICE SUPPLIES FRO	
ACCOUNT TOTAL									46.76				
082285 611000						TRAVEL EXPENSE							
049677 KASSY MCMILLIN				9669A	0	2023	7	INV P	92.50	042823	296537	MILEAGE FOR NFIP CO	
ACCOUNT TOTAL									92.50				
082285 641000						OFFICE EQUIPMENT RENT							
004057 RJ YOUNG COMPANY				INV6287458	0	2023	7	INV P	206.37	042823	296592	MCMB#2021-89, FEES	
ACCOUNT TOTAL									206.37				
ORG 082285 TOTAL									345.63				
FUND 082 COMMUNITY DEVELOP. BLOCK GRANT									TOTAL:	345.63			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
086300				SPEC SALES TAX/RECREATION MAIN							
086300	7295PR			CAPITAL PROJECTS							
002796	FASTSIGNS OF HATTIES	2153-10519	2302858	2023	7	INV	P		501.59	042823	296505 YARD SIGNS WITH STA
002796	FASTSIGNS OF HATTIES	2153-9856	2300881	2023	7	INV	P		4,568.03	042823	296505 JOOK MUSIC PARK TRA
									5,069.62		
003372	LAMAR CTY SUPERVISOR	41923	0	2023	7	INV	P		600,000.00	042823	296544 MB#2021-372 1 CENT
003385	LANDRY LEWIS GERMANY	CN 22-3922-005	0	2023	7	INV	P		683.96	042823	296545 MB 2021-454 JAYCEE
003385	LANDRY LEWIS GERMANY	CN 22-3922-006	0	2023	7	INV	P		1,541.71	042823	296545 MB 2021-454 JAYCEE
									2,225.67		
003764	NEEL-SCHAFFER INC	1083608 PH 5 FIELD	0	2023	7	INV	P		19,000.00	042823	296561 MB#2021-400 JAYCEE
003764	NEEL-SCHAFFER INC	1084310-1084770	0	2023	7	INV	P		2,309.80	042823	296561 MB#2011-4/307 KAMPE
									21,309.80		
047043	PORTABLE TOILETS	100721	2302697	2023	7	INV	P		1,200.00	042823	296578 3-STALL RESTROOM TR
049245	CHAIN CONSTRUCTION	123	2302467	2023	7	INV	P		4,995.00	042823	296477 PARK SURVEILLANCE C
049245	CHAIN CONSTRUCTION	124	2302630	2023	7	INV	P		3,275.00	042823	296477 INSTALL (2) NOLA CA
									8,270.00		
049763	GEORGIA EXPO	0276690	2302465	2023	7	INV	P		2,997.02	042823	296512 FENCE DRAPING MATER
049811	LOCAL DUMPSTER RENTA	807373	2302652	2023	7	INV	P		2,945.00	042823	296547 PORTA POTTY RENTAL
049816	AMERICAN MONUMENT	41123	2302629	2023	7	INV	P		284.00	042823	296452 BRICKS & GRANITE PI
				ACCOUNT TOTAL					644,301.11		
			ORG 086300	TOTAL					644,301.11		
FUND 086 SPEC SALES TAX P&R/UNIV IMPROV									TOTAL:	644,301.11	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7											
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION		
088603			PUBLIC SAFETY/REC CONSTRUCTION								
088603 729501			HALL AVENUE OVERPASS								
002515	COLONY CONSTRUCTION	EST. PAY# 4	0	2023	7	INV P	140,465.83	042823	296486	MB#2021-480	HALL AV
003228	JACKSON, TULLOS & RO	9080	0	2023	7	INV P	1,320.00	042823	296527	MB#2021-229	HALL AV
048667	R & J CONSTRUCTION	APPLICATION PAY# 13	0	2023	7	INV P	996,603.38	042823	296588	MB#2021-325	HALL AV
048667	R & J CONSTRUCTION	ESTIMATE PAY# 1	0	2023	7	INV P	877,061.44	042823	296588	MB#2022-74	HALL AVE
							1,873,664.82				
ACCOUNT TOTAL							2,015,450.65				
ORG 088603 TOTAL							2,015,450.65				
FUND 088		PUBLIC SAFETY/REC CONSTRUCTION				TOTAL:	2,015,450.65				

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2023/7 TO 2023/7									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP S	WARRANT	CHECK	DESCRIPTION	
097201			INFRA IMPROVE-INTRNT	SALES TAX					
097201	721006			N 28TH AVE BRIDGE					
004197	SHOWS DEARMAN & WAIT	23375	0	2023	7 INV P	2,407.50	042823	296602	MB 2021-267 N. 28TH
				ACCOUNT TOTAL		2,407.50			
097201	723099			OTHER STREET IMPR.					
049466	MYERS UNDERGROUND	PAY APP# 4	0	2023	7 INV P	31,926.74	042823	296559	MB#2021-549 MIDTOWN
				ACCOUNT TOTAL		31,926.74			
			ORG 097201	TOTAL		34,334.24			
FUND 097 INFRA IMPROVE-INTRNT SALES TAX TOTAL:						34,334.24			

** END OF REPORT - Generated by Jacqueline Thorne **

CITY OF HATTIESBURG, MS
A/P CASH DISBURSEMENTS

JOURNAL ENTRIES TO BE CREATED

lapcshdsb 36

DUE TO

DUE FR

001	General Fund
002	PARKS & RECREATION FUND
009	WATER & SEWER OPERATION/MAINT.
011	WATER & SEWER FUND
012	MUNICIPAL ROAD & BRIDGE
073	MASS TRANSIT FUND
077	COMMUNITY CENTERS' FUND
082	COMMUNITY DEVELOP. BLOCK GRANT
086	SPEC SALES TAX-P&R/UNIV IMPROV
088	PUBLIC SAFETY/REC CONSTRUCTION
097	INFRA IMPROVE-INTRNT SALES TAX
801	CLAIMS FUND

TOTAL

4,968,533.57

4,968,533.57

4,968,533.57

END OF REPORT - Generated by Jacqueline Thorne

$$\begin{array}{r} -1,040,814.24 \\ 67,041.88 \\ \hline 1,031,766.05 \end{array}$$