



Tuesday, September 6, 2022
4:00 PM

City Council
Tuesday Meeting Agenda

Council Chambers
200 Forrest Street

Call to Order

Call to Prayer and Pledge of Allegiance

Public Hearing

1. **2022-627** Hold Public Hearing to determine if certain properties are in such a state of uncleanliness 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.
 Attachments:
 1. PH 09 06 2022 Request to Set Public Hearing Memo
 2. 1. 57 Golf Course Road Case History FINAL
 3. 2. 102 Ellis Drive Case History FINAL
 4. 3. 103 Plantation Place Drive Case History FINAL
 5. 4. 105 Plantation Place Drive Case History FINAL
 6. 5. 112 B Ellis Drive Case History FINAL
 7. 6. 114 Ellis Drive Case History FINAL
 8. 7. 118 Ellis Drive Case History FINAL
 9. 8. 120 Ellis Drive Case History FINAL
 10. 9. 6574 Hwy 49 Case History FINAL
 11. 10. Hwy 49 North Case History FINAL

2. **2022-629** Hold Public Hearing to hear public comment on the proposed Motor Vehicle Assessment Schedule for the City of Hattiesburg for the Fiscal year beginning October 1 , 2022 and ending September 30, 2023, pursuant to order adopted on August 2,2022 at file 2022-554.

Citizen's Forum

Presentation Agenda

Agenda Adjustments

- **After public hearing on the proposed budget, Add Adopt a Resolution levying ad valorem taxes on all taxable properties within the City of Hattiesburg for the purpose of raising revenue for said**

City for the fiscal year beginning October 1, 2022 and ending September 30, 2023.

POLICY AGENDA

1. **2022-640** Approve the minutes for the August 15 & 16, 2022 meetings of the City Council.
2. **2022-637** Adopt a Resolution for final approval of the Motor Vehicle Assessment Schedule for Fiscal year 2022-2023; authorize publication of same.
3. **2022-628** Adopt Resolutions condemning the following properties as unclean and a menace to the health and safety of the community.
4. **2022-643** Adopt a Resolution setting Public Hearing on Monday, October 3rd, 2022 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 uncleanliness 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.
5. **2022-634** Adopt a Resolution finding and determining that the Resolution adopted on August 2, 2022, declaring the intention of the Mayor and the City Council of the City of Hattiesburg to issue general obligation bonds of the City, was duly published as required by law; that no sufficient protest described in said Resolution has been filed by the qualified electors; and for related purposes; and authorize execution of said Resolution.
6. **2022-667** Adopt a Resolution determining (I) the necessity and invoking the authority granted with respect to Tax Increment Financing as set forth in section 21-45-1 *ET SEQ.*, of the Mississippi Code of 1972, as amended; (II) amending the Tax Increment Financing Plan, Midtown Hattiesburg Project, City of Hattiesburg, Mississippi, February 2014, as amended for the Elam Arms Development, February 2016, as amended June 2016, and as amended and restated for the Midtown Montevista Project August 2022; (III) and that a public hearing be conducted on September 19, 2022, at 4:00 pm in the City Council Chambers located at City Hall in connection with the TIF Plan; and for related purposes.
7. **2022-636** Adopt a Resolution de-obligating a portion of funds received from the U.S. Department of Treasury under the American Rescue Act's State and Local Fiscal Recovery Fund, previously allocated for the purchase of sanitation trucks, adopted at Minute Book # 2021-358 on February 8, 2022, Resolution # 2202-5.
8. **2022-608** Adopt a Resolution declaring certain vehicles & equipment as surplus(per attached memo) and authorize sale of said vehicles & equipment at auction and remove them from the City's inventory of the Parks and Recreation Department (Community Centers Division).

9. **2022-657** Adopt the September 6, 2022 Amendments to the Budget for the City of Hattiesburg for the fiscal year ending September 30, 2022 and Adopt Resolution authorizing publication of amendments for funds in excess of 10% of the original appropriation fund balance.
10. **2022-639** Adopt a Resolution authorizing submittal of application to the Mississippi Arts Commission for the Building Fund for the Arts program, and approve commitment of local matching funds.
11. **2022-662** Adopt a Resolution authorizing the submittal of applications to the Mississippi Municipal and County Water Infrastructure ("MCWI") Grant Program and designating its authorized representatives to execute the application.
12. **2022-648** Adopt a Resolution authorizing the submittal of an application to the Bridge Investment Program and designating its authorized representative to execute the application.
13. **2022-671** Approve Interlocal Agreement with University of Southern Mississippi, City of Hattiesburg and Forrest County for the provision of law enforcement services.
14. **2022-668** Approve Contract between the City of Hattiesburg and NEVLO, LLC, to provide entertainment, recreational and food services at Gordon's Creek Commons.
15. **2022-669** Approve Lease Purchase Option between City of Hattiesburg and Marlow, LLC, for parcel # 2-029J-10-159.02, PPIN # 46335 as per attached agreement.
16. **2022-631** Approve Lighting Agreement with Mississippi Power Company for additional lighting on McInnis Loop (SW Hattiesburg) for a monthly cost savings of \$8.10; authorize the Mayor to execute the same.
17. **2022-630** Approve Lighting Agreement with Mississippi Power Company for additional lighting from S 25th to S 21st Avenues at a monthly savings of \$27.84. Authorize the Mayor to execute the same.
18. **2022-638** Approve Lighting Agreement with Mississippi Power Company for additional lighting on Westover Drive for a monthly cost savings of \$17.40; authorize Mayor to execute the same.
19. **2022-632** Approve Lighting Agreement with Mississippi Power Company for additional lighting on Broad, San Antonio, Xavier, West Cooper and Capitol Streets for a monthly cost savings of \$37.44; authorize Mayor to execute the same.

20. **2022-651** Approve Lighting Agreement with Mississippi Power Company for additional lighting on Fernway Drive, Ashley Circle and next street to West for a monthly increase of \$75.90; authorize Mayor to execute the same.

21. **2022-650** Approve Lighting Agreement with Mississippi Power Company for additional lighting on Duane Street, Myrtle Street and Hutchinson Avenue for a monthly savings of \$7.55; authorize Mayor to execute the same.

22. **2022-645** Approve Lighting Agreement with Mississippi Power Company for additional lighting at 49 Forrest Hills Drive for a monthly cost of \$8.43; authorize Mayor to execute the same.

23. **2022-653** Approve Agreement with Neel-Schaffer, Inc. for engineering services related to the design phase of the 4th Street Pathway Project (Thornhill Drive to 38th Avenue) and authorize the Mayor to execute in duplicate.

24. **2022-654** Approve Agreement with Neel-Schaffer, Inc. for engineering services related to the design phase of the 4th Street Pathway Project (38th Avenue to 34th Avenue) and authorize the Mayor to execute in duplicate.

25. **2022-649** Approve Contract with Shows, Dearman and Waits, Inc. for engineering services related to the Annie Christie Fire Lines Project and authorize the Mayor to execute in duplicate.

26. **2022-604** Approve the State holiday schedule as the City's holidays for the fiscal year 2022-2023 in accordance with MS Code 3-3-7, per attached list.

27. **2022-647** Approve Amended Subrecipient Agreement with Breakthrough Community Services to provide Emergency Repairs in connection with the City's CDBG/HOME Housing Rehabilitation/Reconstruction and Repair Grant Program and authorize the Mayor to execute the same

28. **2022-666** Approval of amended budget for the Hattiesburg Convention Commission for FY2022.

29. **2022-652** Approve submission of a grant application to Mississippi Department of Environmental Quality (MDEQ) for the Solid Waste Assistance Grant in the amount of \$75,000.00 to fund a Household Hazardous Waste "Right Way to Throw Away Day;" and authorize the Mayor to execute the same in duplicate. The grant requires the city to provide \$25,000.00 in matching funds.

30. **2022-660** Acknowledge receipt of a grant offer from the Mississippi Department of Transportation Aeronautics Division in the amount of \$8,334.00 for the Bobby L. Chain Airport Taxiway Realignment and Signage Design project (AIP Project No. 3-28-0031-032-2022); Authorize the Mayor to accept the offer and execute the agreement in triplicate.
31. **2022-661** Acknowledge bids received July 28, 2022 for the Water Plant #1 Rehabilitation-Phase II project and accept the bid from Hemphill Construction Company, Inc. for the amount of \$1,605,000.00; Authorize the Mayor to execute contracts upon preparation.
32. **2022-659** Acknowledge bids received August 25, 2022 for the Midtown Green Park Drainage Improvements project and accept the bid from Myers Underground Utilities in the amount of \$266,127.00; Authorize the Mayor to execute contracts upon preparation.
33. **2022-665** Acknowledge receipt of and approve the 2023 budget of the Hattiesburg Convention Commission.
34. **2022-655** Acknowledge receipt of a Court Order from the Special Court of Eminent Domain, Forrest County, granting City of Hattiesburg immediate title and possession to a certain property, more fully described in the order, required for the 28th Avenue North Bridge Replacement Project; Authorize issuance of a manual check to the court in payment of compensation and damages.
35. **2022-635** Ratify and confirm the Mayor's appointment of James T. Tisdale to the Pinebelt Regional solid Waste Authority to fill the unexpired term of Terrell Tisdale, for a term beginning September 6, 2022 and ending June 30, 2023.
36. **2022-670** Ratify and confirm the Mayor's appointment of Kate Howard to the Civil Service Commission to fill the unexpired term of Leigh Ann Underwood, for a term beginning September 6, 2022 and ending January 1, 2023.
37. **2022-672** Adopt a Resolution appointing Wiley Quinn as the Director of the Urban Development Department.

ROUTINE AGENDA

1. **2022-633** Acknowledge receipt of fiscal year 2021 audit and fiscal year 2023 Budget from AAA Ambulance Service.
2. **2022-607** Acknowledge receipt of the 2021 Mobile Street Festival expenditure report.

3. **2022-642** Approve revised Housing Rehabilitation and Housing Repair Grants Program Guidelines manual (CDBG) (Dated August 2022) {Entitlement}
4. **2022-609** Approve and authorize issuance of manual checks for CDBG/HOME Program Claims per attached Memorandum. {CDBG Entitlement/HOME}
5. **2022-656** Approve plans and specifications for the Hall Avenue West Phase II - Roadway project (FBLD-8769-00(001)LPA/108639-802000) and authorize advertisement for bids contingent upon MDOT approval to advertise.
6. **2022-606** Approve specifications and authorize publication of an advertisement for one (1) or more newer buses for Mass Transit.
7. **2022-644** Approve and authorize publication of Notice for Request for Qualifications for Qualified Eligible Contractors for the City of Hattiesburg's CDBG/HOME Programs {Entitlement}
8. **2022-641** Approve the sale of grave spaces, per attached Memo's, Receipts and deeds.
9. **2022-605** Approve claims docket for the period ending August 31, 2022.

Work Session

1. **2022-673** FOG (Fat, Oils, Grease) Program, presented by City Engineer, Lamar Rutland and Shae McNeese of Shows, Dearman & Waits, Inc.

5:30 p.m. - Public Hearing on the proposed budget and tax levies for fiscal year ending September 30, 2023

1. **2022-674** Adopt A Resolution levying ad valorem taxes on all of the taxable property within the City of Hattiesburg, Mississippi, for the purpose of raising revenue for said city for the fiscal year beginning October 1, 2022, and ending September 30, 2023.

Request for closed session to determine executive session on a litigation matter.

In Memoriam:

- Mr. Dennis “Denny” Behm
- Mr. Steve Seale
- Mrs. Ontanell Molette
- Retired Colonel Joseph D. Young
- Mr. Howard Lee Gilbert, Sr.
- Mrs. Vaughnceil Bourne Woods
- Mr. Vernon “Skip” Matthews
- Retired Assistant Fire Chief Otis Rowell
- Mr. Herbert V. Kohler, Jr.
- Mr. Bobby Ray James

Meeting Adjourn



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Ann Jones, Chief Administrative Officer
cc:
Date: Tuesday, September 6, 2022
Re: Adopt a Resolution appointing Wiley Quinn as the Director of the Urban Development Department.
File Number: 2022-672
Minute Book #

Summary

Adopt a Resolution appointing Wiley Quinn as the Director of the Urban Development Department.

Recommendation Statement

I recommend this item be added to the Council agenda for consideration.

Please place this on the September 6, 2022 City Council meeting for consideration.

RESOLUTION

RESOLUTION FOR APPOINTING DIRECTOR OF URBAN DEVELOPMENT FOR CITY OF HATTIESBURG

WHEREAS, Section 21-8-23 of the Mississippi Code of 1972, as annotated and amended, provides that a department director shall be appointed by the Mayor of the City of Hattiesburg, Mississippi, and confirmed by an affirmative vote of a majority of the City Council present and voting: and

WHEREAS, Wiley Quinn is appointed by the Mayor and is recognized by the Council as a qualified and proper person to fulfill the duties of the Director of Urban Development:

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

Section 1. That Wiley Quinn be and is hereby confirmed to serve as Director of Urban Development to fulfill the duties as defined by Section 21-8-23 of the Mississippi Code of 1972 as annotated and amended.

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

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 6th day of September, A.D., 2022.

(SEAL)

ATTEST:

ADOPTED:

CLERK OF COUNCIL

PRESIDENT

The above and foregoing Resolution having been submitted to and approved by the Mayor, this the 6th day of September, A.D., 2022.

ATTEST:

APPROVED:

CITY CLERK

MAYOR



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Ann Jones, Chief Administrative Officer
cc:
Date: Tuesday, September 6, 2022
Re: Acknowledge receipt of fiscal year 2021 audit and fiscal year 2023 Budget from AAA Ambulance Service.
File Number: 2022-633
Minute Book #

Summary

Acknowledge receipt of fiscal year 2021 audit and fiscal year 2023 Budget from AAA Ambulance Service.

Recommendation Statement

I recommend this item be placed on the Council agenda for consideration.

Please place this on the September 6, 2022 City Council meeting for consideration.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Independent Auditor's Report and Financial Statements
September 30, 2021 and 2020

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
September 30, 2021 and 2020

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Independent Auditor's Report

Board of Directors
AAA Ambulance Service, Inc.
Hattiesburg, Mississippi

We have audited the accompanying financial statements of AAA Ambulance Service, Inc. (AAA), a component unit of Forrest County General Hospital, as of and for the years ended September 30, 2021 and 2020, and the related notes to the financial statements, which collectively comprise AAA'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 financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America. 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 opinion.

Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of AAA as of September 30, 2021 and 2020, and the changes in its financial position and its cash flows 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 that the management's discussion and analysis, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not 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.

BKD, LLP

Jackson, Mississippi
December 15, 2021

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Management's Discussion and Analysis
September 30, 2021 and 2020

Introduction

This section of AAA Ambulance Service, Inc.'s (AAA) financial statements presents management's discussion and analysis of AAA's financial activities for the fiscal years ended September 30, 2021 and 2020. It should be read in conjunction with the accompanying financial statements of AAA.

Financial Highlights

- Cash and cash equivalents increased in 2021 by approximately \$412,000, or 9%, and in 2020 by approximately \$2,594,000, or 119%. The increase in 2021 was primarily due to capital grants received of \$630,000, which was offset by an increase in expenses in 2021. The increase in 2020 was primarily due to the removal of the internal designation on the money market accounts.
- Total operating revenues increased in 2021 by approximately \$491,000, or 3%, and decreased in 2020 by approximately \$780,000, or 4%. The increase in 2021 was primarily due to the increase in patient activity. The decrease in 2020 was primarily due to lower patient activity caused by the COVID-19 pandemic (*Note 13*).
- Operating expenses increased in 2021 by approximately \$919,000, or 5%, and a decrease in 2020 by approximately \$422,000, or 2%. The increase in 2021 was due primarily to higher salary, wages and employee benefits expenses. The decrease in 2020 was due primarily to lower patient activity caused by the COVID-19 pandemic (*Note 13*).

Using This Annual Report

AAA's financial statements consist of three statements - a balance sheet; a statement of revenues, expenses and changes in net position; and a statement of cash flows. These statements provide information about the activities of AAA, including resources held by AAA but restricted for specific purposes by creditors, contributors, grantors or enabling legislation. AAA is accounted for as a business-type activity and presents its financial statements using the economic resources measurement focus and the accrual basis of accounting.

The Balance Sheet and Statement of Revenues, Expenses and Changes in Net Position

One of the most important questions asked about AAA's finances is "Is AAA as a whole better or worse off as a result of the year's activities?" The balance sheet and the statement of revenues, expenses and changes in net position report information about AAA's resources and its activities in a way that helps answer this question. These statements include all restricted and unrestricted assets and all liabilities using the accrual basis of accounting. Using the accrual basis of accounting means that all of the current year's revenues and expenses are taken into account regardless of when cash is received or paid.

AAA Ambulance Service, Inc. (A Component Unit of Forrest County General Hospital)

Management's Discussion and Analysis

September 30, 2021 and 2020

These two statements report AAA's net position and changes in it. AAA's total net position - the difference between assets and liabilities - is one measure of AAA's financial health or financial position. Over time, increases or decreases in AAA's net position are an indicator of whether its financial health is improving or deteriorating. Other nonfinancial factors, such as changes in AAA's patient base, changes in legislation and regulations, measures of the quantity and quality of services provided to its patients and local economic factors should also be considered to assess the overall financial health of AAA.

The Statement of Cash Flows

The statement of cash flows reports cash receipts, cash payments and net changes in cash and cash equivalents resulting from four defined types of activities. It provides answers to such questions as where did cash come from, what was cash used for and what was the change in cash and cash equivalents during the reporting period.

Net Position

AAA's net position is the difference between its assets and liabilities reported in the balance sheets. AAA's net position increased by approximately \$1,079,000 (9%) in 2021 over 2020, and decreased by approximately \$63,000 (0%) in 2020 over 2019, as shown in Table A-1.

Operating Results and Changes in AAA's Net Position

The increase in AAA's net position is made up of several different components, as shown in Table A-2.

**Table A-1
Condensed Balance Sheets**

	2021	2020	2019	2021 Percentage Change
Assets				
Cash and other current assets	\$ 5,828,996	\$ 5,922,077	\$ 2,830,248	-1.6%
Patient accounts receivable, net	<u>1,799,340</u>	<u>1,833,237</u>	<u>1,809,222</u>	-1.8%
Total current assets	7,628,336	7,755,314	4,639,470	-1.6%
Noncurrent investments	2,277,014	2,273,022	4,400,047	0.2%
Capital assets, net	<u>6,126,048</u>	<u>5,675,681</u>	<u>5,823,944</u>	7.9%
Total assets	<u><u>\$ 16,031,398</u></u>	<u><u>\$ 15,704,017</u></u>	<u><u>\$ 14,863,461</u></u>	2.1%

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Management's Discussion and Analysis
September 30, 2021 and 2020

Table A-1
Condensed Balance Sheets (Continued)

	2021	2020	2019	2021 Percentage Change
Liabilities				
Current liabilities	\$ 1,627,178	\$ 2,128,708	\$ 1,416,985	-23.6%
Notes payable	<u>794,989</u>	<u>1,044,640</u>	<u>853,116</u>	-23.9%
Total liabilities	<u>2,422,167</u>	<u>3,173,348</u>	<u>2,270,101</u>	-23.7%
Net Position				
Net investment in capital assets	5,081,352	4,822,565	4,560,065	5.4%
Unrestricted	<u>8,527,879</u>	<u>7,708,104</u>	<u>8,033,295</u>	10.6%
Total net position	<u>13,609,231</u>	<u>12,530,669</u>	<u>12,593,360</u>	8.6%
Total liabilities and net position	<u>\$ 16,031,398</u>	<u>\$ 15,704,017</u>	<u>\$ 14,863,461</u>	2.1%

As shown in Table A-1, total assets increased by approximately \$327,000 from 2020 to 2021 and increased by approximately \$841,000 from 2019 to 2020. Current assets decreased in 2021 by approximately \$127,000, due to lower patient accounts receivable, and increased in 2020 by approximately \$3,116,000, due primarily to AAA investing excess cash into a money market accounts.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Management's Discussion and Analysis
September 30, 2021 and 2020

Table A-2
Condensed Statements of Revenues, Expenses and
Changes in Net Position

	2021	2020	2019	2021 Percentage Change
Operating Revenues				
Net patient service revenue	\$ 15,342,073	\$ 14,968,340	\$ 15,496,439	2.5%
Other	<u>2,035,544</u>	<u>1,917,950</u>	<u>2,169,929</u>	6.1%
Total operating revenues	<u>17,377,617</u>	<u>16,886,290</u>	<u>17,666,368</u>	2.9%
Operating Expenses				
Salaries, wages and employee benefits	12,410,267	11,727,386	12,008,469	5.8%
Supplies and other expenses	4,571,320	4,345,988	4,547,962	5.2%
Depreciation and amortization	<u>960,284</u>	<u>949,995</u>	<u>889,262</u>	1.1%
Total operating expenses	<u>17,941,871</u>	<u>17,023,369</u>	<u>17,445,693</u>	5.4%
Operating Income (Loss)	(564,254)	(137,079)	220,675	311.6%
Nonoperating Revenues (Expenses), Net	1,012,816	74,388	106,102	1261.5%
Capital Grants and Gifts	<u>630,000</u>	<u>-</u>	<u>-</u>	100.0%
Increase (Decrease) in Net Position	1,078,562	(62,691)	326,777	-1820.4%
Net Position, Beginning of Year	<u>12,530,669</u>	<u>12,593,360</u>	<u>12,266,583</u>	-0.5%
Net Position, End of Year	<u>\$ 13,609,231</u>	<u>\$ 12,530,669</u>	<u>\$ 12,593,360</u>	8.6%

Table A-2 above shows operating revenues increased from 2020 to 2021 by approximately \$491,000, or 3%. The increase was primarily due to higher patient activity compared to the prior year. Total trips increased to 37,355 in 2021 from 35,678 in 2020. Operating revenues decreased from 2019 to 2020 by approximately \$780,000, or 4%. The decrease was primarily due to lower patient activity caused by the COVID-19 pandemic (*Note 13*). Total trips decreased to 35,678 in 2020 from 37,740 in 2019.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Management's Discussion and Analysis
September 30, 2021 and 2020

Salaries, wages and employee benefits increased by approximately \$683,000, or 6%, from 2020 to 2021. This was due primarily to higher patient activity caused by the COVID-19 pandemic and a corresponding increase in hours worked due to short staff on hand, as well as the hazard payment to employees in the amount of approximately \$283,000.

Depreciation and amortization expense increased by approximately \$10,000, or 1%, from 2020 to 2021. Supplies and other expenses increased by approximately \$225,000, or 5%, from 2020 to 2021. This was primarily due to an increase in fuel costs of \$46,000 due to increased trips, and an increase in supplies of \$130,000 due to the increase in cost and demand caused by the COVID-19 pandemic.

In 2020, salaries, wages and employee benefits decreased by approximately \$281,000, or 2%, from 2019 to 2020. This was due primarily to lower patient activity caused by the COVID-19 pandemic (*Note 13*) and a corresponding decrease in hours worked due to short staff on hand.

Depreciation and amortization expense increased by approximately \$61,000, or 7%, from 2019 to 2020. Supplies and other expenses decreased by approximately \$202,000, or 4%. This was primarily due to a decrease in fuel costs of \$129,000 due to decreased trips, and a decrease in professional services of \$67,000 due to lower patient activity caused by the COVID-19 pandemic (*Note 13*).

Nonoperating revenues (expenses), net increased in 2021 by approximately \$938,000, or 1,262% from 2020, which is primarily attributed by AAA recognizing the Health and Human Services and CARES Act funds in the amount of \$524,000 and \$194,000, respectively, and the hazard pay provided by Forrest County General Hospital in the amount of \$283,000. In 2021, AAA also received \$630,000 of capital grants and gifts toward the purchase of new ambulances. Nonoperating revenues (expenses) decreased in 2020 by approximately \$32,000, or 30% from 2019, which is primarily attributed by a decrease in net investment income of approximately \$39,000 compared to 2019.

AAA's Cash Flows

Changes in AAA's cash flows were consistent with changes in operating losses and nonoperating revenues and expenses for 2021, 2020 and 2019 discussed earlier.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Management's Discussion and Analysis
September 30, 2021 and 2020

Capital Assets and Debt Financing

Capital Assets

AAA's investment in a variety of net capital assets as of September 30 is shown in Table A-3 below:

Table A-3
Capital Assets

	2021	2020
Land	\$ 397,000	\$ 397,000
Buildings and leasehold improvements	4,726,271	4,092,967
Furniture, fixtures and equipment	8,720,634	8,168,816
Total capital assets	13,843,905	12,658,783
Accumulated depreciation and amortization	(7,717,857)	(7,000,991)
Construction in progress	-	17,889
Capital assets, net	<u>\$ 6,126,048</u>	<u>\$ 5,675,681</u>

Debt Financing

During 2021, there were no new debt issuances. In 2020, AAA paid off an existing note payable with a new debt issuance obtaining additional funds for certain capital projects.

Next Year's Operating Plan

AAA's Board of Directors adopted the fiscal year 2022 operating plan in July 2021. The operating plan for 2022 includes the purchase of four ambulances, various operations and IT equipment, and a pay scale adjustment.

Contacting AAA's Financial Management

This financial report is designed to provide our patients, suppliers, taxpayers and creditors with a general overview of AAA's finances and to show AAA's accountability for the money it receives. Questions about this report and requests for additional financial information should be directed to the Chief Financial Officer by telephoning 601.264.3581.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Balance Sheets

September 30, 2021 and 2020

Assets

	2021	2020
Current Assets		
Cash and cash equivalents	\$ 5,191,242	\$ 4,778,984
Patient accounts receivable, net of allowance for doubtful accounts; 2021 - \$3,057,445; 2020 - \$2,505,074	1,799,340	1,833,237
Other receivables	186,096	177,364
Supplies	148,083	134,266
Prepaid expenses and other	303,575	831,463
Total current assets	7,628,336	7,755,314
Noncurrent Investments		
Funds designated by the Board for discretionary purposes	2,277,014	2,273,022
Capital Assets, Net	6,126,048	5,675,681
Total assets	\$ 16,031,398	\$ 15,704,017

See Notes to Financial Statements

Liabilities and Net Position

	2021	2020
Current Liabilities		
Current installments of notes payable	\$ 249,707	\$ 428,364
Accounts payable	134,431	129,730
Salaries and wages payable	802,028	704,069
Payroll taxes and withholdings	121,646	111,944
Other accrued expenses	281,866	206,141
Unearned revenue	37,500	548,460
Total current liabilities	1,627,178	2,128,708
Notes payable, long term	794,989	1,044,640
Total liabilities	2,422,167	3,173,348
Net Position		
Net investment in capital assets	5,081,352	4,822,565
Unrestricted	8,527,879	7,708,104
Total net position	13,609,231	12,530,669
Total liabilities and net position	\$ 16,031,398	\$ 15,704,017

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Statements of Revenues, Expenses and Changes in Net Position
Years Ended September 30, 2021 and 2020

	<u>2021</u>	<u>2020</u>
Operating Revenues		
Net patient service revenue, net of provision for uncollectible accounts; 2021 - \$6,451,000; 2020 - \$4,775,000	\$ 15,342,073	\$ 14,968,340
Other	<u>2,035,544</u>	<u>1,917,950</u>
Total operating revenues	<u>17,377,617</u>	<u>16,886,290</u>
Operating Expenses		
Salaries, wages and employee benefits	12,410,267	11,727,386
Supplies	552,645	422,365
Contractual services	433,678	405,563
Repairs, maintenance and other	2,540,099	2,496,898
Insurance	830,045	819,527
Lease and rentals	214,853	201,635
Depreciation and amortization	<u>960,284</u>	<u>949,995</u>
Total operating expenses	<u>17,941,871</u>	<u>17,023,369</u>
Operating Loss	<u>(564,254)</u>	<u>(137,079)</u>
Nonoperating Revenues (Expenses)		
Net investment income	18,694	127,579
Government grants	1,033,666	-
Interest expense	<u>(39,544)</u>	<u>(53,191)</u>
Total nonoperating revenues (expenses)	<u>1,012,816</u>	<u>74,388</u>
Income (Loss) Before Capital Grants and Gifts, Capital Appropriations, Special Item, Extraordinary Item and Transfers	448,562	(62,691)
Capital Grants and Gifts, Capital Appropriations, Special Item, Extraordinary Item and Transfers		
Capital grants and gifts	<u>630,000</u>	<u>-</u>
Increase (Decrease) in Net Position	1,078,562	(62,691)
Net Position, Beginning of Year	<u>12,530,669</u>	<u>12,593,360</u>
Net Position, End of Year	<u><u>\$ 13,609,231</u></u>	<u><u>\$ 12,530,669</u></u>

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Statements of Cash Flows
Years Ended September 30, 2021 and 2020

	2021	2020
Operating Activities		
Receipts from and on behalf of patients	\$ 15,451,695	\$ 15,073,362
Other cash received	2,011,422	1,989,888
Cash paid to suppliers and others	(4,052,548)	(5,010,727)
Cash paid to or on behalf of employees	(12,302,606)	(11,666,795)
Net cash provided by operating activities	<u>1,107,963</u>	<u>385,728</u>
Noncapital Financing Activities		
Noncapital grants and gifts received	<u>522,706</u>	<u>548,460</u>
Net cash provided by noncapital financing activities	<u>522,706</u>	<u>548,460</u>
Capital and Related Financing Activities		
Principal paid on notes payable	(428,308)	(410,763)
Proceeds from long-term debt	-	619,888
Interest paid	(39,544)	(53,191)
Purchase of capital assets	(1,410,651)	(801,732)
Proceeds from disposal of capital assets	15,390	50,728
Capital grants and gifts	<u>630,000</u>	<u>-</u>
Net cash used in capital and related financing activities	<u>(1,233,113)</u>	<u>(595,070)</u>
Investing Activities		
Interest and dividends on investments	60,656	83,618
Proceeds from sale of investments	33,121	-
Purchases of investments	<u>-</u>	<u>(29,553)</u>
Net cash provided by investing activities	<u>93,777</u>	<u>54,065</u>
Increase in Cash and Cash Equivalents	491,333	393,183
Cash and Cash Equivalents, Beginning of Year	<u>4,821,370</u>	<u>4,428,187</u>
Cash and Cash Equivalents, End of Year	<u><u>\$ 5,312,703</u></u>	<u><u>\$ 4,821,370</u></u>

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Statements of Cash Flows (Continued)
Years Ended September 30, 2021 and 2020

	<u>2021</u>	<u>2020</u>
Reconciliation of Operating Loss to Net Cash		
Provided by Operating Activities		
Operating loss	\$ (564,254)	\$ (137,079)
Items not requiring cash		
Depreciation and amortization	960,284	949,995
Provision for doubtful accounts	6,450,871	4,775,202
Changes in		
Patient accounts receivable	(6,416,974)	(4,799,217)
Accounts payable and accrued liabilities	188,087	145,662
Other assets and liabilities	<u>489,949</u>	<u>(548,835)</u>
Net cash provided by operating activities	<u>\$ 1,107,963</u>	<u>\$ 385,728</u>
Reconciliation of Cash and Cash Equivalents to the Balance Sheets		
Cash and cash equivalents in current assets	\$ 5,191,242	\$ 4,778,984
Cash and cash equivalents in funds designated by the Board		
for discretionary purposes	<u>121,461</u>	<u>42,386</u>
Total cash and cash equivalents	<u>\$ 5,312,703</u>	<u>\$ 4,821,370</u>

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements
September 30, 2021 and 2020

Note 1: Nature of Operations and Summary of Significant Accounting Policies

Nature of Operations and Reporting Entity

AAA Ambulance Service, Inc. (AAA) was formed in 1967 by Forrest County General Hospital (the Hospital) to provide ambulance service to the Hattiesburg and Forrest County communities. AAA is classified as a nonprofit corporation under Section 501(c)(3) of the Internal Revenue Code. AAA is a component unit of the Hospital. A six-member board of directors that is appointed by the Hospital, the City of Hattiesburg and Forrest County governs AAA.

Basis of Accounting and Presentation

The financial statements of AAA have been prepared on the accrual basis of accounting using the economic resources measurement focus. Revenues, expenses, gains, losses, assets and liabilities from exchange and exchange-like transactions are recognized when the exchange transaction takes place, while those from government-mandated nonexchange transactions are recognized when all applicable eligibility requirements are met. Operating revenues and expenses include exchange transactions and program-specific, government-mandated nonexchange transactions. Government-mandated nonexchange transactions that are not program-specific, investment income and interest on capital assets-related debt are included in nonoperating revenues and expenses. AAA first applies restricted net position when an expense or outlay is incurred for purposes for which both restricted and unrestricted net position are available.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, funds held in interest and noninterest-bearing checking accounts and all highly liquid investments with maturities at the time of purchase of three months or less. At September 30, 2021 and 2020, cash equivalents consisted primarily of money market accounts with a financial institution.

Supplies

Supply inventories are stated at the lower of cost determined using the first-in, first-out method, or market.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements
September 30, 2021 and 2020

Risk Management

AAA is exposed to various risks of loss from torts; theft of, damage to and destruction of assets; business interruption; errors and omissions; employee injuries and illnesses; natural disasters; and employee health, dental and accident benefits. Commercial insurance coverage is purchased for claims arising from such matters. Settled claims have not exceeded this commercial coverage in any of the three preceding years.

Patient Accounts Receivable

AAA reports patient accounts receivable for services rendered at net realizable amounts from third-party payers, patients and others. AAA provides an allowance for uncollectible accounts based upon a review of outstanding receivables, historical collection information and existing economic conditions.

Capital Assets

Capital assets are recorded at cost, if purchased or, if donated, at acquisition value at the date of receipt. Depreciation is provided over the estimated useful life of each class of depreciable asset using the straight-line method. Major renewals and betterments are capitalized. Costs for repairs and maintenance are expensed when incurred. When assets are retired or otherwise disposed of, the cost and accumulated depreciation are removed from the accounts and the gain or loss, if any, is included in nonoperating revenues (expenses) in the statements of revenues, expenses and changes in net position.

All capital assets other than land are depreciated or amortized (in case of capital leases) using these asset lives:

Premises owned	20 – 39 years
Ambulances	3 – 5 years
Ambulance equipment	3 – 8 years
Radio equipment	3 – 8 years
Furniture and fixtures	5 – 7 years
Leasehold improvements	10 years
Technology/computer equipment	3 – 7 years

Capital Assets Impairment

AAA recognizes the impairment of capital assets when events or changes in circumstances suggest that the service utility of the capital asset may have significantly and unexpectedly declined. If such assets are no longer used, they are reported at the lower of carrying value, or fair value. If such assets will continue to be used, the impairment loss is measured using the method that best

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements

September 30, 2021 and 2020

reflects the diminished utility of the capital assets. The restoration or replacement of an impaired capital asset is reported as a separate transaction from any associated insurance recovery. The impairment loss is reported net of the associated realized or realizable insurance recovery when the recovery and loss occur in the same year. In 2021 and 2020, there were no insurance recoveries resulting from damaged assets and no asset impairment recognized.

Compensated Absences

AAA's employees accumulate vacation, holiday and sick leave at varying rates depending upon their years of continuous service and their payroll classification, subject to maximum limitations. Upon termination of employment, employees will be paid for unused vacation time that has been earned through their most recent anniversary date. Such payment is conditioned upon an employee providing at least two weeks' notice and working through his/her notice period. Unused sick leave benefits will not be paid to employees while they are employed or upon termination of employment except in the instance of retirement from AAA after 25 years or more of service. Since the employees' vacation, holiday and sick leave all accumulate and vest, an accrual for this liability is included in salaries and wages payable in the accompanying balance sheets.

Net Patient Service Revenue

AAA has agreements with third-party payers that provide for payments to AAA at amounts different from its established rates. Net patient service revenue is reported at estimated net realizable amounts from patients, third-party payers and others for services rendered and includes a provision for uncollectible accounts.

Charity Care

AAA provides care without charge or at amounts less than its established rates to patients meeting certain criteria under its charity care policy. AAA maintains records to identify and monitor the level of charity care it provides. These records include the amount of charges forgone for services and supplies furnished under its charity care policy, the estimated cost of those services and supplies and equivalent service statistics. The estimated cost to provide charity care was approximately \$193,000 and \$262,000 for 2021 and 2020, respectively. The estimated cost to provide charity care is based on a ratio of overall operating expenses to gross patient service revenue applied to charges foregone under established rates.

Net Position

AAA's net position is classified into the components as shown below:

- Net investment in capital assets consists of capital assets net of accumulated depreciation and reduced by outstanding balances of any borrowing used to finance the purchase or construction of those assets and any unpaid capital asset related invoices.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements

September 30, 2021 and 2020

- Unrestricted net position is remaining net position that does not meet the definition of invested in capital assets net of related debt or restricted.

AAA had no restricted net position at September 30, 2021 or 2020.

Income Taxes

AAA is a tax-exempt organization under Section 501(a) of the Internal Revenue Code as organizations described in Section 501(c)(3), whereby only unrelated business income is taxable.

Revisions

Certain immaterial revisions have been made to the 2020 financial statements for the disclosure surrounding the types of investments held as designated funds. These revisions did not have any impact on the financial statement line items affected.

Note 2: Deposits, Investments and Investment Income

Custodial Credit Risk

Custodial credit risk is the risk that in the event of a bank failure, a government's deposits may not be returned to it.

AAA places no limit on the amount that may be invested in any one issuer. Collateral for uninsured deposits consists of a sweep repurchase account held by a financial institution in the name of AAA.

At September 30, 2021 and 2020, \$2,960,187 and \$2,564,174 of AAA's bank balances of \$3,038,610 and \$2,611,481, respectively, were exposed to custodial credit risk as follows:

	2021	2020
Collateralized by a sweep repurchase account held by pledging financial institution	<u>\$ 2,960,187</u>	<u>\$ 2,564,174</u>

This excludes money market accounts of \$2,258,775 and \$2,246,993 in 2021 and 2020, respectively, that are not subject to Federal Deposit Insurance Corporation insurance.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements

September 30, 2021 and 2020

Deposits and Investments

AAA's deposits and investments are summarized below as of September 30, 2021 and 2020.

	2021	2020
Cash and cash equivalents	\$ 5,191,242	\$ 4,778,984
Designated funds		
Cash and cash equivalents	121,461	42,386
Certificates of deposit	-	433,212
U.S. government securities	32,006	212,548
Municipal bonds	109,207	112,982
Corporate debt securities	2,014,340	1,471,894
	<u>\$ 7,468,256</u>	<u>\$ 7,052,006</u>

Credit Risk

Credit risk is the risk that the issuer or other counterparty to an investment will not fulfill its obligations. It is AAA's policy to limit its investments in corporate bonds to the top two ratings issued by nationally recognized statistical rating organizations (NRSROs). AAA's investment policy, which conforms to Mississippi state law, does not specifically limit investment in securities based on an NRSRO credit rating, but the policy does designate authorized investments by type. These authorized investments, within established guidelines, are limited to securities of the U.S. government or its agencies, U.S. government obligations, U.S. and Mississippi municipal bonds, interest-bearing accounts and certificates of deposits of financial institutions, open-end or closed-end management type investment company or investment trust.

AAA Ambulance Service, Inc.

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Notes to Financial Statements

September 30, 2021 and 2020

Unless there is information to the contrary, obligations of the U.S. government are not considered to have credit risk and do not require disclosure of credit quality. A summary of investments is as follows:

September 30, 2021	Fair Value	Percentage	Credit Rating
Cash and cash equivalents, operating funds	\$ 5,191,242	69.51%	Exempt from disclosure
Cash and cash equivalents, designated funds	121,461	1.63%	Exempt from disclosure
U.S. government securities	32,006	0.43%	Exempt from disclosure
Municipal bonds	109,207	1.46%	Exempt from disclosure
Corporate debt securities	<u>2,014,340</u>	26.97%	Aa2 - A3
Total cash and investments	<u><u>\$ 7,468,256</u></u>		

September 30, 2020	Fair Value	Percentage	Credit Rating
Cash and cash equivalents, operating funds	\$ 4,778,984	67.77%	Exempt from disclosure
Cash and cash equivalents, designated funds	42,386	0.60%	Exempt from disclosure
Certificates of deposit	433,212	6.14%	Exempt from disclosure
U.S. government securities	212,548	3.02%	Exempt from disclosure
Municipal bonds	112,982	1.60%	Exempt from disclosure
Corporate debt securities	<u>1,471,894</u>	20.87%	Aa2 - A3
Total cash and investments	<u><u>\$ 7,052,006</u></u>		

Concentration of Credit Risk

AAA's investment policy, in accordance with state statute, restricts investments in U.S. agencies to 50% of total investments. Investments in open-end and closed-end management type investment companies and investment trusts are limited to 20% of total investments.

Concentration of credit risk is defined as the risk of loss attributed to the magnitude of a government's investment in a single issuer (an investment that represents more than 5% of the market value of the total investment portfolio). At September 30, 2021 and 2020, AAA had no investments requiring concentration of credit risk disclosure.

AAA Ambulance Service, Inc.
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Notes to Financial Statements

September 30, 2021 and 2020

Interest Rate Risk

Interest rate risk is the risk that changes in market interest rates will adversely affect the fair value of an investment. Generally, the longer the maturity of an investment, the greater the sensitivity of its fair value to changes in market interest rates.

Interest rate risk inherent in the portfolio is measured by monitoring the segmented time distribution of the investments. The following is a summary of AAA's segmented time distribution investment maturities in years by investment type as of September 30, 2021 and 2020.

September 30, 2021	Fair Value	Years			
		< 1	1 – 5	6 – 10	>10
U.S. government securities	\$ 32,006	\$ -	\$ 32,006	\$ -	\$ -
Municipal bonds	109,207	-	35,972	73,235	-
Corporate debt securities	<u>2,014,340</u>	<u>301,576</u>	<u>1,174,854</u>	<u>537,910</u>	<u>-</u>
	<u>\$ 2,155,553</u>	<u>\$ 301,576</u>	<u>\$ 1,242,832</u>	<u>\$ 611,145</u>	<u>\$ -</u>

September 30, 2020	Fair Value	Years			
		< 1	1 – 5	6-10	>10
U.S. government securities	\$ 212,548	\$ -	\$ 101,751	\$ 110,797	\$ -
Municipal bonds	112,982	-	36,771	76,211	-
Certificates of deposit	433,212	-	433,212	-	-
Corporate debt securities	<u>1,471,894</u>	<u>-</u>	<u>1,163,108</u>	<u>308,786</u>	<u>-</u>
	<u>\$ 2,230,636</u>	<u>\$ -</u>	<u>\$ 1,734,842</u>	<u>\$ 495,794</u>	<u>\$ -</u>

Investment Income

Investment income for the years ended September 30, 2021 and 2020 consisted of:

	2021	2020
Interest and dividend income	\$ 60,656	\$ 83,618
Net unrealized gain (loss) on investments	<u>(41,962)</u>	<u>43,961</u>
	<u>\$ 18,694</u>	<u>\$ 127,579</u>

AAA Ambulance Service, Inc. (A Component Unit of Forrest County General Hospital)

Notes to Financial Statements

September 30, 2021 and 2020

Note 3: Net Patient Service Revenue

AAA has agreements with governmental and other third-party payers that provide for reimbursement to AAA at amounts different from its established rates. Contractual adjustments under third-party reimbursement programs represent the difference between AAA's gross charges for services and amounts reimbursed by third-party payers. A summary of the basis for reimbursement with major third-party payers follows.

- **Medicare** – Services rendered to Medicare program beneficiaries are paid based on a fee schedule. Revenue from the Medicare program accounted for approximately 32% and 37% of AAA's net patient service revenue for the years ended September 30, 2021 and 2020, respectively.
- **Medicaid** – Services rendered to Medicaid program beneficiaries are paid based on a fee schedule. Revenue from the Medicaid program accounted for approximately 21% and 18% of AAA's net patient service revenue for the years ended September 30, 2021 and 2020, respectively.

The composition of net patient service revenue for the years ended September 30, 2021 and 2020, was as follows:

	2021	2020
Gross patient service revenue	\$ 44,489,886	\$ 38,852,731
Less provisions for		
Contractual, charity and other adjustments	(22,696,942)	(19,109,189)
Bad debts	<u>(6,450,871)</u>	<u>(4,775,202)</u>
Net patient service revenue	<u>\$ 15,342,073</u>	<u>\$ 14,968,340</u>

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements

September 30, 2021 and 2020

Note 4: Patient Accounts Receivable

AAA grants credit to patients, substantially all of whom are AAA service area residents. AAA does not require collateral or other security in extending credit to patients; however, it routinely obtains assignment of (or is otherwise entitled to receive) patients' benefits payable under their health insurance programs, plans or policies (e.g., Medicare, Medicaid, Blue Cross and commercial insurance policies). The mix of receivables from patients and third-party payers as of each fiscal year-end follows.

	<u>2021</u>	<u>2020</u>
Medicare	\$ 369,699	\$ 391,569
Medicaid	322,204	237,288
Other third-party payers	953,849	1,090,954
Patients	<u>3,211,033</u>	<u>2,618,500</u>
	4,856,785	4,338,311
Less allowance for uncollectible accounts	<u>(3,057,445)</u>	<u>(2,505,074)</u>
	<u><u>\$ 1,799,340</u></u>	<u><u>\$ 1,833,237</u></u>

Note 5: Notes from Direct Borrowing and Direct Placement

In March 2016, AAA entered into a financing agreement with Zoll Medical Corporation in order to finance upgrades to existing medical and ambulance equipment in the amount of \$1,133,681. Principal is payable in annual installments of \$206,736 through November 2021, with a 4.86% interest rate. The note is secured by certain medical and ambulance equipment. The note was paid off on October 16, 2020.

On May 30, 2018, AAA refinanced its existing line of credit with The First, A National Banking Association in order to finance the new business operations building in the amount of \$1,159,138. Principal is payable in monthly installments of \$21,393 through June 2023, with a 4.00% interest rate. The note is secured by real property. This note was paid off with the issuance of a new note payable with Trustmark National Bank in September 2020.

On September 17, 2020, AAA entered into a financing agreement with Trustmark National Bank in order to retire the existing note payable with The First, A National Banking Association in the amount of \$1,286,864. Principal is payable in monthly installments of \$23,176 through September 2025, with a 3.05% interest rate. The note is secured by real property.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements
September 30, 2021 and 2020

Debt service requirements associated with these notes are as follows:

Years Ending September 30	Principal	Interest	Total
Trustmark National Bank			
2022	\$ 249,707	\$ 28,795	\$ 278,502
2023	257,135	20,975	278,110
2024	265,200	12,909	278,109
2025	272,654	4,591	277,245
	<u>\$ 1,044,696</u>	<u>\$ 67,270</u>	<u>\$ 1,111,966</u>

A schedule of changes in AAA's note payable balances for 2021 and 2020 are as follows:

2021				
Beginning Balance	Additions	Retired	Ending Balance	Due Within One Year
\$ 1,473,004	\$ -	\$ (428,308)	\$ 1,044,696	\$ 249,707
2020				
Beginning Balance	Additions	Retired	Ending Balance	Due Within One Year
\$ 1,263,879	\$ 1,286,864	\$ (1,077,739)	\$ 1,473,004	\$ 428,364

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)

Notes to Financial Statements
September 30, 2021 and 2020

Note 6: Capital Assets

Capital assets and related activity for the year ended September 30, 2021, consist of the items shown below.

	Balance, October 1, 2020	Transfers in and Additions	Transfers out and Retirements	Balance, September 30, 2021
Capital assets not being depreciated				
Land	\$ 397,000	\$ -	\$ -	\$ 397,000
Construction in progress	17,889	600,384	(618,273)	-
Total book value of capital assets not being depreciated	414,889	600,384	(618,273)	397,000
Capital assets being depreciated				
Premises owned	4,010,644	633,304	-	4,643,948
Ambulances	3,596,861	650,836	(205,273)	4,042,424
Ambulance equipment	1,835,423	76,925	(38,146)	1,874,202
Radio equipment	363,750	-	-	363,750
Furniture and fixtures	138,824	-	-	138,824
Leasehold improvements	82,323	-	-	82,323
Technology/computer equipment	2,233,958	67,476	-	2,301,434
Total book value of capital assets being depreciated	12,261,783	1,428,541	(243,419)	13,446,905
Less accumulated depreciation for				
Premises owned	762,936	138,541	-	901,477
Ambulances	2,320,824	478,442	(205,273)	2,593,993
Ambulance equipment	1,604,765	176,813	(38,146)	1,743,432
Radio equipment	342,235	8,992	-	351,227
Furniture and fixtures	77,433	11,633	-	89,066
Leasehold improvements	71,384	6,147	-	77,531
Technology/computer equipment	1,821,414	139,717	-	1,961,131
Total accumulated depreciation	7,000,991	960,285	(243,419)	7,717,857
Capital assets, being depreciated, net	5,260,792	468,256	-	5,729,048
Capital assets, net	\$ 5,675,681	\$ 1,068,640	\$ (618,273)	\$ 6,126,048

AAA Ambulance Service, Inc.
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Notes to Financial Statements
September 30, 2021 and 2020

Capital assets and related activity for the year ended September 30, 2020, consist of the items shown below:

	Balance, October 1, 2019	Transfers in and Additions	Transfers out and Retirements	Balance, September 30, 2020
Capital assets not being depreciated				
Land	\$ 397,000	\$ -	\$ -	\$ 397,000
Construction in progress	17,889	-	-	17,889
Total book value of capital assets not being depreciated	414,889	-	-	414,889
Capital assets being depreciated				
Premises owned	4,010,644	-	-	4,010,644
Ambulances	3,175,171	728,771	(307,081)	3,596,861
Ambulance equipment	1,821,878	13,545	-	1,835,423
Radio equipment	363,750	-	-	363,750
Furniture and fixtures	138,824	-	-	138,824
Leasehold improvements	82,323	-	-	82,323
Technology/computer equipment	2,174,542	59,416	-	2,233,958
Total book value of capital assets being depreciated	11,767,132	801,732	(307,081)	12,261,783
Less accumulated depreciation for				
Premises owned	630,938	131,998	-	762,936
Ambulances	2,283,346	344,559	(307,081)	2,320,824
Ambulance equipment	1,342,941	261,824	-	1,604,765
Radio equipment	332,798	9,437	-	342,235
Furniture and fixtures	65,769	11,664	-	77,433
Leasehold improvements	63,990	7,394	-	71,384
Technology/computer equipment	1,638,295	183,119	-	1,821,414
Total accumulated depreciation	6,358,077	949,995	(307,081)	7,000,991
Capital assets, being depreciated, net	5,409,055	(148,263)	-	5,260,792
Capital assets, net	\$ 5,823,944	\$ (148,263)	\$ -	\$ 5,675,681

Note 7: Medical Malpractice Claims

AAA purchases medical malpractice insurance under a claims-made policy on a fixed premium basis. GAAP requires a health care provider to accrue the expense of its share of malpractice claim costs, if any, for any reported and unreported incidents of potential improper professional service occurring during the year by estimating the probable ultimate costs of the incidents. Based upon AAA's claims' experience, no such accrual has been made. It is possible that this estimate could change materially in the near term.

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Notes to Financial Statements
September 30, 2021 and 2020

Note 8: Operating Leases

AAA, as a lessee, leases certain property from outside parties under long-term operating leases, all of which have cancelable lease terms.

Rent expense under all operating leases was approximately \$215,000 and \$202,000 in 2021 and 2020, respectively. Management expects most lease agreements will be replaced as they expire with similar agreements.

Note 9: Related Party Transactions

AAA has entered into several agreements with the Hospital. AAA entered into an agreement with the Hospital in 2007 to provide management services. AAA paid \$212,037 and \$265,969 to the Hospital for management service fees in 2021 and 2020, respectively, with \$0 and \$24,179 payable to the Hospital at September 30, 2021 and 2020, respectively.

AAA has entered into agreements with the Hospital to provide wheelchair van transportation services and inter-facility and neonatal transport services. During 2021 and 2020, the Hospital paid AAA approximately \$0 and \$116,500, respectively, for these services. AAA has also entered into an agreement with the Hospital to provide transportation of inpatients to the Cancer Center. The Hospital reimburses AAA at the current Medicare allowable rate. During 2021 and 2020, the Hospital made payments of approximately \$159,000 and \$131,000, respectively, for this service. The Hospital paid AAA \$159,200 and \$247,160 for all transportation services in 2021 and 2020, respectively, included in other operating revenues. The Hospital also provided AAA with a hazard payment grant in October, November and December 2020 in the amount of approximately \$284,000, which was paid to AAA employees during the COVID-19 period.

Note 10: Pension Plan

AAA participates in a defined contribution pension plan sponsored and administered by the Hospital covering substantially all employees. Pension expense is recorded for the amount of AAA's discretionary contributions determined in accordance with the terms of the plan and approved annually by the board of directors. The plan provides retirement and death benefits to the plan members and their beneficiaries. Benefit provisions are contained in the plan documents and were established and can be amended by action of the Hospital's board of trustees. Contributions made by AAA aggregated approximately \$68,000 and \$74,000 in 2021 and 2020, respectively. Employee contributions were approximately \$150,000 and \$141,000 in 2021 and 2020, respectively.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Notes to Financial Statements
September 30, 2021 and 2020

Note 11: Disclosures About Fair Value of Assets and Liabilities

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value measurements must maximize the use of observable inputs and minimize the use of unobservable inputs. There is a hierarchy of three levels of inputs that may be used to measure fair value:

- Level 1** Quoted prices in active markets for identical assets or liabilities
- Level 2** Observable inputs other than Level 1 prices, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities
- Level 3** Unobservable inputs supported by little or no market activity and are significant to the fair value of the assets or liabilities

The following table presents the fair value measurements of assets and liabilities recognized in the accompanying financial statements measured at fair value on a recurring basis and the level within the fair value hierarchy in which the fair value measurements fall as of September 30, 2021 and 2020.

		Fair Value Measurements Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	Fair Value			
September 30, 2021				
U.S. government securities	\$ 32,006	\$ -	\$ 32,006	\$ -
Municipal bonds	109,207	-	109,207	-
Corporate debt securities	2,014,340	147,717	1,866,623	-
	<u>\$ 2,155,553</u>	<u>\$ 147,717</u>	<u>\$ 2,007,836</u>	<u>\$ -</u>
September 30, 2020				
U.S. government securities	\$ 212,548	\$ 101,751	\$ 110,797	\$ -
Municipal bonds	112,982	-	112,982	-
Certificates of deposit	433,212	-	433,212	-
Corporate debt securities	1,471,894	101,190	1,370,704	-
	<u>\$ 2,230,636</u>	<u>\$ 202,941</u>	<u>\$ 2,027,695</u>	<u>\$ -</u>

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Notes to Financial Statements
September 30, 2021 and 2020

Investments

Where quoted market prices are available in an active market, securities are classified within Level 1 of the valuation hierarchy. If quoted market prices are not available, then fair values are estimated by using quoted prices of securities with similar characteristics or independent asset pricing services and pricing models, the inputs of which are market-based or independently sourced market parameters, including, but not limited to, yield curves, interest rates, volatilities, prepayments, defaults, cumulative loss projections and cash flows. Such securities are classified in Level 2 of the valuation hierarchy. In certain cases where Level 1 or Level 2 inputs are not available, securities are classified within Level 3 of the hierarchy. AAA holds no Level 3 investments.

Note 12: Contingencies and Current Economic Conditions

Litigation

In the normal course of business, AAA is, from time to time, subject to allegations that may or do result in litigation. Some of these allegations are in areas not covered by commercial insurance; for example, allegations regarding employment practices or performance of contracts. AAA evaluates such allegations by conducting investigations to determine the validity of each potential claim. Based upon the advice of legal counsel, management records an estimate of the amount of ultimate expected loss, if any, for each. Events could occur that would cause the estimate of ultimate loss to differ materially in the near term.

Unemployment Claims

AAA has elected to be a reimbursing employer with respect to unemployment compensation claims under the state's Division of Employment Security program rather than pay unemployment taxes on a quarterly basis. Under this election, AAA is generally required to reimburse the state Division of Employment Security for any claims paid on behalf of AAA. AAA management knows of no material outstanding unemployment claims as of September 30, 2021; thus, no provision has been made.

Geographic Concentration

AAA has service contracts with various counties to provide ambulance service. Patients from three counties account for 77% and 78% of AAA's gross patient service revenue for 2021 and 2020, respectively.

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Notes to Financial Statements
September 30, 2021 and 2020

Risks and Uncertainties

As a result of the spread of the SARS-CoV-2 virus and the incidence of COVID-19, economic uncertainties have arisen which may negatively affect the financial position, results of operations and cash flows of AAA. The duration of these uncertainties and the ultimate financial effects cannot be reasonably estimated at this time.

Investments Risks & Uncertainties

AAA invests in various investment securities. Investment securities are exposed to various risks such as interest rate, market and credit risks. Due to the level of risk associated with certain investment securities, it is at least reasonably possible that changes in the values of investment securities will occur in the near term, and that such changes could materially affect the amounts reported in the accompanying balance sheets.

Note 13: COVID-19 Pandemic and CARES Act Funding

On March 11, 2020, the World Health Organization designated the SARS-CoV-2 virus and the incidence of COVID-19 (COVID-19) as a global pandemic.

The extent of the COVID-19 pandemic's adverse effect on AAA's operating results and financial condition has been and will continue to be driven by many factors, most of which are beyond AAA's control and ability to forecast.

Because of these and other uncertainties, AAA cannot estimate the length or severity of the effect of the pandemic on AAA's business. Decreases in cash flows and results of operations may have an effect on the inputs and assumptions used in significant accounting estimates, including estimated bad debts and contractual adjustments related to uninsured and other patient accounts.

Provider Relief Fund

During the year ended September 30, 2020, AAA received approximately \$524,000 of distributions from the CARES Act Provider Relief Fund. These distributions from the Provider Relief Fund are not subject to repayment, provided AAA is able to attest to and comply with the terms and conditions of the funding, including demonstrating that the distributions received have been used for qualifying expenses or lost revenue attributable to COVID-19, as defined by the Department of Health and Human Services (HHS).

AAA is accounting for such payments as conditional contributions. Payments are recognized as contribution revenue once the applicable terms and conditions required to retain the funds have been met. Based on an analysis of the compliance and reporting requirements of the Provider Relief Fund and the effect of the pandemic on AAA's operating revenues and expenses through

AAA Ambulance Service, Inc.
(A Component Unit of Forrest County General Hospital)
Notes to Financial Statements
September 30, 2021 and 2020

September 30, 2021, AAA recognized approximately \$524,000 of revenue related to the Provider Relief Fund, and approximately \$194,000 under a similar program from the State of Mississippi. These payments are recorded as nonoperating revenues - government grants in the accompanying statements of revenues, expenses and changes in net position. At September 30, 2020, AAA recorded these funds as unearned revenue in the accompanying balance sheets.

Guidance for reporting use of Provider Relief Fund payments received has changed significantly since distributions were authorized through the CARES Act in March 2020. AAA has evaluated the "Post-Payment Notice of Reporting Requirements" (Notice) and the Frequently Asked Questions (FAQ) issued by HHS subsequent to September 30, 2021, in accordance with Governmental Accounting Standards Board (GASB) codification Section 2250 and has concluded that any impact of the September 30, 2021 FAQs would be recognized.

AAA has recognized revenue from the Provider Relief Fund based on guidance issued by HHS as of September 30, 2021, and any clarifications issued by HHS subsequent to year-end, including any referenced above, as recognized subsequent events. AAA will continue to monitor compliance with the terms and conditions of the Provider Relief Fund and the effect of the pandemic on AAA's revenues and expenses. The terms and conditions governing the Provider Relief Fund are complex and subject to interpretation and change. If AAA is unable to attest to or comply with current or future terms and conditions, AAA's ability to retain some or all of the distributions received may be affected. Provider Relief Fund payments are subject to government oversight, including potential audits.

Note 14: Future Change in Accounting Principle

With the issuance of GASB Statement No. 87, *Leases*, GASB amended its standard related to accounting for leases. Under the new standard, lessees will now be required to recognize substantially all leases on the balance sheet as both an intangible asset and a liability. GASB 87 removed the classification of leases between two categories, and all leases will now be recorded the same on the statements of revenues, expenses and changes in net position. GASB 87 also contains amended guidance regarding the identification of lease and non-lease components in an arrangement. GASB 87 is expected to have a material impact on the financial statements due to the recognition of additional assets and liabilities for operating leases.

AAA Ambulance Service
Budgeted Statement of Activities
FY 2023

	Actual 9/30/2021	June 2022 Annualized	Budget FY 2023	Increase / (Decrease)	
Revenue					
Patient Fees	\$ 44,489,886	\$ 45,182,180	\$ 52,999,144	\$ 7,816,964	17.3%
Contractual Adjustments	(22,202,156)	(20,822,896)	(25,367,350)	(4,544,454)	21.8%
Provision for Bad Debts	(6,657,347)	(7,896,413)	(10,606,244)	(2,709,831)	34.3%
Charity Care Write-Offs	(494,785)	(518,353)	(768,353)	(250,000)	48.2%
Net Patient Revenue	15,135,598	15,944,517	16,257,196	312,679	2.0%
Recoveries of Charge-Offs	206,478	146,471	168,441	21,971	15.0%
Contract Fee Revenue	1,606,150	1,653,353	1,653,353	-	0.0%
Other Income	414,004	419,709	419,709	-	0.0%
Net Operating Revenue	17,362,230	18,164,051	18,498,700	334,650	1.8%
Expenses					
Salaries and Wages	10,523,962	10,528,144	11,094,296	566,152	5.4%
Payroll Taxes and Other Employee Benefits	1,886,305	2,086,093	2,129,403	43,310	2.1%
Management Fees	212,037	186,000	186,000	-	0.0%
Board Expense	1,200	1,000	1,000	-	0.0%
Dues and Subscriptions	41,294	48,964	48,964	-	0.0%
Collection Costs	41,298	35,705	35,705	-	0.0%
Community Relations	33,208	36,680	36,680	-	0.0%
Fuel	528,354	740,240	930,240	190,000	25.7%
Insurance	830,044	964,196	964,196	-	0.0%
Maintenance	479,749	486,876	486,876	-	0.0%
Medical Equipment and Supplies	532,834	462,725	462,725	-	0.0%
Occupancy	334,655	337,092	337,092	-	0.0%
Office / Training Supplies	19,809	15,285	15,285	-	0.0%
Office Information Systems	441,704	468,999	468,999	-	0.0%
Oxygen Supplies / Rental	83,715	86,221	86,221	-	0.0%
Postage	13,332	10,595	10,595	-	0.0%
Professional Services	433,677	388,956	388,956	-	0.0%
Equipment Rental	14,777	28,463	28,463	-	0.0%
Taxes & License	171,546	182,835	182,835	-	0.0%
Telephone	262,754	232,331	232,331	-	0.0%
Training	51,272	36,065	36,065	-	0.0%
Travel	14,328	10,872	10,872	-	0.0%
Miscellaneous	29,738	34,945	34,945	-	0.0%
Total Operating Expenses	16,981,592	17,409,282	18,208,744	799,462	4.6%
Income (Loss) without Depreciation	380,638	754,769	289,956	(464,812)	-61.6%
Depreciation	960,285	883,475	1,035,475	152,000	17.2%
Income (Loss) From Operations	(579,647)	(128,706)	(745,518)	(616,812)	479.2%
Number of Trips	37,355	38,039	38,039	-	0.0%
Operating Margin	2.19%	4.16%	1.57%		



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, September 6, 2022

Re: Acknowledge receipt of the 2021 Mobile Street Festival expenditure report.
File Number: 2022-607
Minute Book #

Summary

Recommendation Statement

Please place this on the September 6, 2022 City Council meeting for consideration.

2021 CONTRIBUTIONS			Notes
Name	Amount		
HATTIESBURG CONVENTION CENTER	\$ 3,000.00	Gold	
MARJACK	\$ 700.00	Bronze	
CITY OF HATTIESBURG	\$ 8,000.00	Gold	
FORREST CO BOS	\$ 5,000.00	Gold	
CHAD & CATHERINE EDMONSON	\$ 200.00	Bronze	
TROY LEE (T L CONSTRUCTION)	\$ 800.00	Silver	
Total Sponsorships	\$ 17,700.00		
Vendor Booths	\$ 890.00		
Art Booths	\$ -		
Total Festival Income Activities	\$ 890.00		
SALES TAXES COLLECTED FROM VENDOR)	\$ 371.00		
Total Income	\$18,961.00		

2021 EXPENSES*

Available Balance	\$ 4,434.55
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Memorandum

To: Mayor Toby Barker and Members of City Council
From: Wiley Quinn, Code Enforcement Division Manager
cc: Kermas Eaton, City Clerk
Date: Tuesday, September 6, 2022
Re: Approve revised Housing Rehabilitation and Housing Repair Grants Program Guidelines manual (CDBG) (Dated August 2022) {Entitlement}
File Number: 2022-642
Minute Book #

Summary

Recommendation Statement

I recommend approval of this item.

Please place this on the September 6, 2022 City Council meeting for consideration.



**DEPARTMENT OF
URBAN DEVELOPMENT**

Community Development
Division

**HOUSING
REHABILITATION and
HOUSING REPAIR
GRANTS
PROGRAM GUIDELINES
(CDBG)
August 2004**

AMENDED

October 2008

May 2010

September 2010

March 2011

February 2014

April 2015

April 2022

August 2022

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CITY OF HATTIESBURG
HOUSING REHABILITATION and HOUSING REPAIR GRANTS
PROGRAM GUIDELINES
DEPARTMENT OF URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT DIVISION
(CDBG/HOME)

I. PURPOSE

The intent of these guidelines is to establish a uniform system to be used in the implementation of the Housing Rehabilitation and Housing Repair Grants Program administered by the City of Hattiesburg Department of Urban Development and is not intended to supersede any federal or state regulations pertaining to housing. Federal and/or state rule shall prevail in the event of conflict relating to the guidelines contained within.

II. APPROVED AREAS

- A. Housing Rehabilitation or Repair activities are dependent upon the household being income-eligible according to HUD guidelines and not necessarily upon the location of the home in an eligible Census Tract. Housing Rehabilitation or Repair activities can take place in any geographic area within the City given approval under all other program criteria. However, it is possible for the City or its Sub-recipients to designate certain areas as target areas, revitalization areas, or redevelopment areas in an effort to focus investment in particular geographic areas.
- B. Based on a need's assessment, the City may identify target areas for the Housing Rehabilitation and Housing Repair Grants Program. The City may establish the program's priorities based on its available land use data, the most recent housing condition survey, and/or recent Census information on the number of substandard structures in an eligible area, or on the number of low-income households in an area.

III. GRANT PROGRAMS AND DEFINITIONS

The City's Housing Rehabilitation Grants Program provides rehabilitation and repair grants to eligible homeowners to bring substandard housing into compliance with housing and related codes with the exception of functional systems which do not create a safety or health hazard as determined by the Program's inspection team. Depending upon the severity of substandard housing conditions, a housing rehabilitation grant will fall into one of two categories: Substantial Rehabilitation and Emergency Repair. With these grants, proposed work and work performed is subject to code compliance and review.

- A. Substantial Rehabilitation refers to improvements and repairs that are vital to the health, safety and comfort of occupant(s), as well as improvements and repairs that are needed to bring substandard property up to housing codes. Improving or repairing the major housing systems is a priority. Major housing system improvements and repairs can include plumbing, electric, heating, structural, roofing and certain cosmetic improvements to address blighting conditions. Improvements and repairs must comply with the 2018 International Residential

Code requirements (or whichever code version or adaptation has been most recently adopted by the City of Hattiesburg) and Housing Quality Standards. Cosmetic improvements to address blighting conditions may be included at the discretion of the Community Development Manager and if the budget permits.

- B. Emergency Repair Grants provide assistance to address serious disrepair condition(s) which pose(s) an immediate threat to the health, safety and welfare of the occupants and are available to Homeowners on a citywide basis. These grants are to repair only life threatening issues and safety code violations that exist in an eligible home. In this instance, it is not the intent of the Program or the City to bring a home into complete code compliance but only to eliminate an immediate hazardous condition(s). For the purposes of this program grant, only the repair work performed is subject to code compliance and review.

IV. APPLICATIONS/ELIGIBILITY

- A. When available applications for housing rehabilitation and housing repair grants assistance may be solicited through various public media and public forums including communication at neighborhood meetings. When the Program has determined that it is near completion of current eligible applications; notifications will be made that the Program has resumed the acceptance of applications. However, due to lack of funding to honor all request for assistance, NO applications are currently being accepted.
- B. Applicants will be selected using objective criteria that incorporate established HUD guidelines as well as any identified criteria set forth in the *City of Hattiesburg's Consolidated Plan*. Applications will be accepted during a designated time period.
- C. Proof of ownership (i.e., Warranty Deed, Quit Claim Deed, 99-Year Leasehold) of the property to be rehabilitated or otherwise repaired will be required. Income verification will be obtained. Title opinions and appraisals may be secured at the discretion of the Program. Proof of homeowner's insurance and flood insurance and, where applicable, is required. Federal Emergency Management Agency (FEMA) Document Number 186 dated July 13, 1989, as amended, currently stipulates that "agencies are prohibited from providing financial assistance unless the property to which that financial assistance is applicable is protected by flood insurance and must therefore require the purchase of flood insurance as a condition of making such financial assistance available." Current city and county tax receipts will also be required.
- D. Submission of an application does not guarantee a grant award or that rehabilitation or other repair work will take place. The Homeowner will be required to attend housing maintenance and/or financial counseling after application acceptance.

Elected officials of the City of Hattiesburg and employees for the administration, management and oversight of the program (Community Development Division staff) and their immediate families are **NOT ELIGIBLE** to participate or to benefit from the Housing Rehabilitation and Housing Repair Grants Program. The immediate family is defined as:

- | | |
|---------------|-----------------|
| a. Spouse | f. Stepbrothers |
| b. Parent | g. Stepsisters |
| c. Stepparent | h. Child |

- d. Brothers
- i. Stepchild
- e. Sisters

- E. All properties being considered for a housing rehabilitation or repair grant will be inspected by the City of Hattiesburg's Land Code Division based on the requirements of the *Land Development Code, Code of Ordinances, and International Property Maintenance Code*. These inspections relate to the general maintenance of the property and are intended to eliminate trash and litter, abandoned vehicles, overgrown lots, and unsanitary conditions. A complete inspection for a housing rehabilitation or repair grant will not be done until outstanding Property Maintenance Code Violations have been resolved. Property Maintenance Code Inspections not corrected within ten (10) days of receiving a notice to correct violations will result in the applicant being ineligible for the Program. Action will be taken as provided by applicable City Ordinance when a Homeowner chooses not to correct code violations. The Housing Coordinator will forward the name or a list of potential grant recipients to the City Building Official. Property maintenance code inspections will be scheduled. Code officers will perform the inspections on potential projects of this Program in the usual manner. However, a copy of the property maintenance inspection report will be forwarded to the Program's Housing Coordinator for placement in the permanent project file.
- F. Applications will routinely be processed in the order of date received; however, if conditions exist in a home that pose an immediate threat to the health, safety, and welfare of the occupants, the Community Development Manager will have the authority to assign priority status and move an applicant up on the list. The Manager shall review written documentation prior to approving moving any applicant up on the list. This documentation shall be placed in the project file.

V. INSPECTIONS

- A. After an application for assistance is processed and eligibility, feasibility have been established and the property has met all property maintenance code requirements, a work-write up inspection will be scheduled. **The scheduling of all inspections for projects funded with Community Development funds will be coordinated through the Community Development Division.** When repair work requires a rough-in, finished work or final inspection, contractors will contact the Community Development Division office. The program Inspector or the Housing Coordinator will contact the Land Code Office to coordinate a date and time for the requested inspection with the schedules of the Code Technical Inspectors. The inspection date and time is entered in a scheduling log, to inform the Housing Coordinator and update the appropriate inspection schedules. The Office Manager or designee of the Land Code Division will take the necessary steps to have the inspections properly noted in that Division's records and to ensure that the Technical Inspectors are aware of the date and time of a scheduled inspection. When contacted for scheduling an inspection, the Homeowner shall be informed that all parts of the home must be accessible to inspectors so that a thorough inspection can be made. Inspectors will not be required to move boxes, furniture, and other household items in order to perform inspections. A member of the team will make the Homeowner aware that the team has arrived and the inspection is about to begin. If it is the general consensus of the inspection team that a home or parts thereof are determined to be inaccessible, other than attics or crawlspaces, to the extent that a thorough inspection cannot be performed, the inspection team will immediately terminate the inspection process,

take pictures and make applicable notes to document and support the determination. The homeowner will be informed that the inspection cannot be completed until the situation has been resolved. Resolution must be completed within 5 business days of being notified. Upon written notification from the homeowner and a subsequent review by program staff to determine that the matter has been adequately resolved, the inspection will be rescheduled.

During Inspections, an inspection report will be completed to determine the extent to which rehabilitation or repair is needed, whether or not life or safety threatening code violations exist and the cost estimate associated with correction. This will be completed and signed or initialed as indicated on the applicable document and dated by all members of the inspection team. A rough floor plan of the home will be made, and pictures of the interior and exterior structure(s) and all areas inspected shall be taken during the inspection process. Pictures serve as supporting documentation of needed repair work, confirmation that work has been done and become a part of the permanent file. The inspection report shall be signed and dated by members of the inspection team, then permanently placed in the respective homeowner's project file. Where applicable, the report will subsequently be used to develop the work write-up specifications and cost estimate.

- B. Other than property maintenance code inspections and routine work site review progress inspections, all inspections will be performed by an inspection team consisting of a minimum of one Housing Program Inspector, one Code Technical Inspector when applicable, or one other housing staff person when code review is not required. Rough in, finish work or other repair items routinely reviewed by the Land Code Division will require a Technical Inspector. Only a City Building Official or if absent, a designee, can assign a Technical Inspector or propose an alternative route to meet this requirement, if the need arises and, on a case, by case basis for the purposes of this Program. At any time, the Housing Coordinator or other Housing Staff may also be present during any inspection. Inspections will be based upon the requirements of the: International Residential Code for One and Two-Family Dwellings. During inspections, the inspection team members will confer as needed on technical issues. In an effort to eliminate confusion among contractors and homeowners and to ensure that the process set forth in this manual is not circumvented or unduly compromised, all final directives regarding work performed or to be performed in relation to the Program (Housing Rehabilitation and Housing Repair Grants Program) shall be communicated to said parties by the Housing Program Inspector. The Technical Inspector and Housing Program Inspector should conduct sidebar discussions as needed to resolve issues requiring further repair or review. Discussions requiring resolution of differences of opinion between the Technical Inspectors and Housing Program Inspector on code issues will be presented to the City Building Official who is the ultimate authority on matters of the code. Programmatic related issues or issues other than those surrounding disputes between Technical Inspectors and the Housing Program Inspector will be resolved in a manner to be determined by the Director of Urban Development or the Community Development Manager in accordance with the guidelines of this program as specified in this manual or with consultation and solicitation of expert opinion via internal or external sources and with guidance from the U.S. Department of Housing and Urban Development (HUD) when necessary. Prior to the final inspection of a project that requires an attending Technical Inspector, the Housing Program inspection team consisting of the Housing Program Inspector and Housing Coordinator or applicable designee at a minimum, will conduct a preliminary final inspection(s) with the Contractor to verify that the project is truly at the point of completion, ready for review by the final inspection team.

The scheduling of these inspections, as with all others for projects funded with Community Development funds, will be coordinated through the Community Development Division and handled by the scheduler as previously described in this manual.

- C. Lead Based Paint Hazards shall be evaluated and the proper course of action taken based on the latest HUD guidelines in effect at the time of the inspection. Asbestos Hazards shall be evaluated and the proper course of action taken based on the latest U.S. Department of Environmental Protection Agency (EPA) and the Mississippi Department of Environmental Quality (MDEQ) guidelines in effect at the time of the inspection.
- D. If the inspection reveals that no substandard conditions of a hazardous code violation or of a health or safety threatening nature exist, the Homeowner will be notified in writing and the master file will be closed. A written inspection, complete with pictures, shall be placed in the Homeowner's file to serve as evidence of the conditions found at the time of the inspection. The inspection shall be dated and signed by the inspectors making the inspection. When prepared, the homeowner will verify and sign the work write up. All documents will be forwarded for placement in the housing program project file. A copy of these documents may be made and retained by the Housing Program Inspectors. The originals of all documents will be placed in the permanent files.
- E. If the inspection reveals substandard conditions of a hazardous code violation or of a health or safety threatening nature, a work write-up and a cost estimate will be prepared by the Housing Program Inspector and reviewed by the Housing Coordinator, Community Development Manager and a Code Technical Inspector. A written inspection report complete with rough floor plan and pictures shall be placed in the Homeowner's file to serve as evidence of the conditions found at the time of the inspection. All documents will be placed in the housing repair project file. A working copy of these documents will be made and retained by the Housing Program Inspector for use in preparing the work write-up and cost estimate. Upon completion, the inspection report(s) will be signed and dated by the inspection team members. When prepared, the Homeowner will verify and sign the Work Write Up. Originals of these documents will be placed in the permanent file.
- F. The work write-up and cost estimate are prepared:
 - 1. The Owner will be consulted on the proposed work write-up, given an opportunity to discuss the work noted therein and request such changes that are within the boundaries of the applicable program. The consultation will also include obtaining the Homeowner's permission to solicit proposals or cost quotations from contractors. Prior to soliciting proposals or cost quotations, the completed work write-up must be approved and justified by the Homeowner, Housing Coordinator, Housing Program Inspector, Technical Inspector or City Building Official and the Community Development Manager.
 - 2. The Homeowner will be provided a final work write-up and consulted on work to be performed after the lowest, best bidder has been selected that is not more than 10% higher nor 10% less than the program staff cost estimate, or after assignment of a project to a sub-recipient as previously noted and prior to awarding a contractor agreement.
 - 3. If an inspection reveals that a structure needs to be demolished, the City Building Official will be informed and enforcement will be carried out through the standard procedures of

the City as prescribed by State statutes. In addition, the City Anti-Displacement Policy will be adhered to along with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (URA)

VI. FEASIBILITY

- A. A structure can be deemed feasible for a Housing Rehabilitation or Housing Repair Grant if the cost of its rehabilitation or repairs does not exceed the maximum costs allowed by the City's program of **\$75,000 for a Substantial Housing Rehabilitation Grant, and \$15,000 for an Emergency Repair Grant**. Homeowners must meet the program income and other eligibility criteria in accordance with the program guidelines.
- B. A determination that a structure is not feasible for rehabilitation or repair will be based on the work write-up and cost estimates, review of photographs and any other supporting documentation, where applicable, and review of the homeowner's application and file. If and when CDBG and or HOME funds are available for other programs enacted by an Action Plan, properties infeasible for Substantial Rehabilitation may be considered for those other programs. Note: For any unit that is funded through the HOME Program, the rehabilitation scope of work must address and satisfy all code violations.

The City under any of the following circumstances will deem a project infeasible for repair or rehabilitation.

- 1) If the estimated cost for rehabilitation exceeds the maximum of \$75,000;
- 2) If the estimated cost for repairs exceeds the maximum of \$15,000;
- 3) If the Homeowner rejects the Program's repair or rehabilitation plans;
- 4) If the Homeowner fails to meet the eligibility criteria for participation in the Program; or
- 5) If the Homeowner otherwise does not comply with program requirements.

The Housing Program Inspector will complete a feasibility inspection and attach it to the work write-up and cost estimate and forward all documents to the Housing Coordinator.

- C. Any structure deemed not feasible for repair or rehabilitation under the above guidelines will be so documented by the Housing Coordinator and attached to the other documents for further forwarding and review. All documents will then be forwarded for review to the Community Development Manager who will verify the determination of infeasibility. The Manager will review, verify, and return the documents to the Housing Coordinator who will then send written notification of the determination of infeasibility to the Homeowner.

VII. APPEALS

If a Homeowner disagrees with staff decisions on any or all of the qualifying criteria, he or she may appeal the decision to the Director of the Department of Urban Development. The Homeowner should submit a written request for review of the decision within ten (10) working days of notice of the decision to the:

**Department of Urban Development
Attention: Director
Post Office Box 1898
Hattiesburg, MS 39403-1898**

The Director shall respond to the Homeowner within ten (10) working days. An appeal of the decision of the Director should be made to the **CDBG/HOME Board of Appeals** in writing within ten (10) working days of notice of the decision to the:

**Department of Urban Development
C/O: Director
Attention: CDBG/HOME Board of Appeals
Post Office Box 1898
Hattiesburg MS 39403-1898**

The Board is a committee made up of three members appointed by the Mayor. The members shall be employed by the City of Hattiesburg and shall not be employees of the Department of Urban Development. The CDBG/HOME Board of Appeals will meet as needed, if and when an appeal is made regarding or based on a decision of the Director. Any further appeals will be made to a court with appropriate jurisdiction.

VIII. HOUSING REHABILITATION AND REPAIR GRANTS

A. Application Process:

1. The Homeowner must have lived in and possess clear title to the home to be rehabilitated or repaired for a period of at least one (1) year prior to applying for assistance.
2. To be considered for a Housing Rehabilitation Assistance Grant, a property must present major substandard housing conditions of a non-aesthetic nature, and household income may not exceed eighty percent (80%) of the median income according to family size. Median income will be the most recent figures published by the Department of Housing and Urban Development and provided to the Department of Urban Development for the City of Hattiesburg, Mississippi.
3. To be considered for a Housing Repair Grant, household income may not exceed eighty percent (80%) of the median income according to family size. The housing repair need(s) must present an immediate threat to life, health or safety. In recognition of the fact that such repairs likely pose a high risk to the health and safety of the occupants, time is of the essence; therefore, the Program, on a case-by-case basis may perform an inspection of a Homeowner's property upon approval by the Director of Urban Development.
4. Potential applicants will be counseled by the Housing Coordinator who will explain the parameters of the repair grant assistance and determine the nature of the repair needs and the immediacy of the life, health or safety threat when applicable. If it appears that the potential applicant will qualify and the housing conditions appear to meet the necessary criteria, the applicant will be assisted in completing an application. For

Housing Repair Grants, a statement of the nature of the immediate threat condition(s) shall be noted in the application. A finding that immediate threat conditions exist will be attached to the application based upon findings of the City's housing inspection team using the feasibility certification/checklist. The inspection process will include team members as previously described in Section V contained herein. Prior to the start of any repair work, an application and all required documentation for a housing grant must be submitted.

- B. All applicants will undergo a Third-Party verification process to verify eligibility for a housing grant. The applicant shall furnish proof of ownership status, one (1) year residency, homeowner's insurance and flood insurance as applicable, and current paid City and County tax receipts.
- C. The maximum grant limits for housing rehabilitation grants are: \$75,000 for a Substantial Rehabilitation Grant. The maximum for an Emergency Repair Grant is \$15,000. Maximums are based on the cost for contract work excluding possible discovery items, environmental review costs, temporary relocation stipends, or other project delivery costs that may be associated. Allowable costs are those reasonable and necessary to bring substandard housing condition into compliance with housing and related codes with the exception of functional systems which do not create a safety and health hazard in the case of Housing Rehabilitation Grants, or to eliminate immediate threat(s) to life, health or safety in the case of Housing Repair Grants. Due to the competitive bidding process and depending on nature of the work required, it is possible that a total grant to any one Homeowner could be less than the stated maximums. Due to discovery, environmental review, and other related project costs, it is also possible that the total grant and project costs is higher than the stated maximum. However, in no event shall the amount of the additional assistance exceed ten percent (10%) of the maximum grant amount nor ten percent (10%) of the initial proposal price. This applies to both the Basic and Substantial Rehabilitation Grants. In the event that the total of additional assistance exceeds the maximum ten percent (10%), the homeowner will be required to select which cosmetic or non-code item which will be removed from the work write-up in order to remain at or under the maximum grant award limits. In special circumstances the Director of Urban Development may at his/her discretion may allow an exception.
- D. With the exception of homeowners who have received an Emergency Housing Rehabilitation Grant, homeowners will not be eligible for additional repair assistance excluding warranty repair items for not less than the applicable affordability period. A waiver of this requirement must be approved by the Director of Urban Development for homeowners that previously have received Emergency Repair Grant assistance.

General Affordability Periods are as follows:

1. **Three (3) years for Emergency Repair Grants** where improvement of substandard housing conditions requires repairs at an estimated cost not to exceed \$15,000 excluding discovery items.
2. **Five (5) years for Substantial Rehabilitation Grants** where improvement of substandard housing conditions requires substantial repairs including repairs to, or rebuilding and/or replacing some or all major building systems within an existing sound housing structure,

and where the estimated total cost of repairs excluding discovery items is determined not to exceed the \$75,000 maximum.

3. Twenty (20) years for Reconstruction Grants when triggered.

- E. Homeowners who provide false information concerning income, residency or other information required to prove eligibility will be required to repay in full all grant funds awarded for the rehabilitation work performed to the residence and associated legal and other costs incurred as a result of any required collection actions taken.
- F. After selection of a Contractor but prior to the execution of the Work Agreement, the Homeowner must execute the appropriate Grant Agreement.
- G. Affordability Periods are time periods in which beneficiaries are expected to (1) continue to utilize the home as their personal residence, and (2) are restricted from selling or otherwise transferring the title to any other party. Transfers of property during an active affordability period will result in a recapture of a prorated share of the federal funds invested in the project. In the instance of a transfer of title (sale or otherwise) as a result of the death of the homeowner/beneficiary, the affordability period may be canceled. In the event that City staff is made aware of the death of a beneficiary (where there is no spouse or other joint applicant to carry on ownership), the City may cancel the Deed of Trust (affordability period) even before any transfer of title takes place.

RECONSTRUCTION

NOTE: Reconstruction is a limited activity. Reconstruction becomes an option if a proposed rehab project is unsafe, not livable, and financially infeasible per rehabilitation program guidelines.

The City of Hattiesburg's Homeowner Reconstruction Program Guidelines exist to effectively implement homeowner reconstruction activities in communities throughout the city.

II. Audience

The City of Hattiesburg receives funds to engage in and manage reconstruction activities. In some instance the City of Hattiesburg may elect to delegate the implementation of a portion of the city's reconstruction program to local sub-recipients (i.e. non-profits). Accordingly, this manual has been prepared for City of Hattiesburg staff and its sub-grantees for the effective administration of the city's Homeowner Reconstruction Program.

III. Key Program Participants

A number of participants play key roles in the City of Hattiesburg Homeowner Reconstruction Program. They include:

U.S. Department of Housing and Urban Development (HUD)

HUD is the federal government agency that administers the CDBG and HOME Programs. HUD allocates program funds to grantees, develops and issues program regulations, notices and memoranda, monitors program performance and otherwise reviews State and local government productivity and performance.

The City of Hattiesburg

The City of Hattiesburg is an Entitlement Grantee of the HOME and CDBG programs. These program funds are intended to improve communities in the city within guidelines set by HUD as well as the City of Hattiesburg in its Housing Rehabilitation/Reconstruction and Housing Repair Grants Program Manual.

Program Administrators

The City of Hattiesburg may select contractors to carry out homeowner reconstruction activities in accordance with the Grant Agreement (Exhibit F) executed between the City of Hattiesburg and the contractors. The City may also elect to allocate federal funds to organizations acting as sub-recipients of the Homeowner Reconstruction Program.

Program Requirements

Low-income residents of the City of Hattiesburg, who own and occupy their home, may qualify to participate in the Homeowner Reconstruction Program. The latest Income Limits published by HUD will be used to determine whether or not a household meets the income requirements of the program (i.e. generally has an income of less than 80% of the median income level for the area). Additionally, a property will only be considered for the Reconstruction Program when the Work Write Up performed by the Housing Program Inspector indicates that the cost of rehabilitating the property will exceed the limits imposed on the Rehab/Repair program.

IV. Meeting Program Requirements

All HUD regulations apply to homeowner reconstruction. At times, this document may not differentiate between HOME, CDBG, HUD, or City of Hattiesburg regulations. Rather, it may refer to requirements more generally as "Homeowner Reconstruction" requirements.

Eligible projects will be approved annually through the Action Plan. Homeowners who receive assistance must have a clear understanding of these requirements.

Eligible Properties

All properties reconstructed with Homeowner Reconstruction Program funds must meet the following requirements:

- Single-family property (1-4 units), including condominiums
- Owner occupies the property as a principal residence
- Owner has occupied the property for at least one year prior to program acceptance
- Property meets Section 8 Housing Quality Standards and local building codes once the reconstruction is complete
- After-reconstruction value estimate cannot exceed the Maximum After-Rehab (or reconstruction) Value Limits established by HUD, or otherwise established, for a particular area where a project is to be considered.

Eligible Households

Any household that is low-income (i.e. earns less than 80% of the median income of the county) at the time assistance is provided may be eligible to participate in the Homeowner Reconstruction Program. For the purpose of determining income eligibility, the City of Hattiesburg has adopted the IRS definition of Adjusted Gross Income.

The Homeowner Reconstruction Program does not require long term monitoring for income compliance and property standards. Once a property is completed, a homeowner's income may increase above 80% of a median income and/or the property may fall into despair. The City of Hattiesburg is not required to monitor these issues for any period of affordability.

Amount of Assistance

Assistance will be based on an after-reconstruction value not to exceed the maximum appraised value for the area.

Terms of Assistance

The City of Hattiesburg will provide deferred payment, forgivable loans of Housing Reconstruction Program funds to individual recipients. Projects are to be fully administered by the City of Hattiesburg or its sub-recipients, with no funds paid directly to the homeowner other than may be allowed by this program manual for temporary relocation assistance. All project costs will be taken into consideration when determining the total deferred loan amount. These deferred payment, forgivable loans are subject to recapture should the property be sold or otherwise transferred during the prescribed affordability period.

Property Standards

All units funded by HOME or CDBG funds must meet or exceed the federal Section 8 Housing Quality Standards (HQS) upon completion. Projects must also comply with the City of Hattiesburg reconstruction standards and the International Residential Code for One and Two-Family Dwellings. The HQS's are detailed in Part II of the Reference Manual.

Ineligible Properties

Homeowner reconstruction funds cannot be used for assistance on any of the following types of properties:

- Cooperatives
- Manufactured housing that will not meet the building codes for "stick-build" new construction
- Property occupied by renters
- Property or individuals previously assisted with homeowner rehabilitation funds, which are still within the prescribed affordability period.
- Projects that reduce the number of units in the building.

Relocation Costs

The City of Hattiesburg does not allow the permanent displacement of any resident of homeowner reconstruction-assisted properties. Temporary relocation will be necessary in certain

instances. See the Temporary Relocation Policy for more details (Exhibit K)

Fair Housing, Equal Opportunity and Section 3

No person can be denied the benefits of, or be subjected to, discrimination under any activity funded by the Homeowner Reconstruction Program, on the grounds of race, color, national origin, religion, sex, age, or handicap.

Contracts for work performed in connection with homeowner reconstruction projects should be awarded to business concerns located in the same area as a project to the greatest extent possible as long as they are fully licensed and eligible according to HUD and City guidelines. Contractors, to the greatest extent possible, must strive to include minority business enterprises, women business enterprises, and Section 3 enterprises in work that they may sub-contract related to homeowner reconstruction.

IV. Homeowner Reconstruction Process Flow

1. Application Processing
2. Property Evaluation and Assessment
3. Project Selection
4. Determining Amount of Assistance
5. Council Approval
6. Contractor Selection
7. Pre-Construction Conference
8. Construction Management

APPLICATION PROCESSING

A. Verify Income Eligibility

The Homeowner Reconstruction Program requires that all homeowners be low- income (80% of area median income or less) at the time the assistance is provided. Income verification must occur within the six-month period prior to the start of the reconstruction. Delays in the process may require re-verification that the owner's income still meets the program requirements.

1. Determining Household Income

The City of Hattiesburg now uses the IRS definition of adjusted gross income. Income must be verified by either a review of source documentation or third-party verification.

a) Third-Party Verification

Under this method, a third party-employer, social security administration, or public assistance agency is contacted to provide information. Although written requests and responses are generally preferred, conversations with a third party are acceptable if documented through a memorandum to the file that notes the contact person and date of call.

b) Review of Source Documents

Documents provided by the applicant, such as pay stubs and IRS returns, may often

be the most accurate form of verification for certain types of income. These can be easier and less expensive to obtain than third party verification, however, they do not always provide full disclosure on such information as the average number of hours worked, overtime, tips, and bonuses. Copies of all documents should be retained in project files.

- c) Household income must be projected for the coming year, using past earnings, as well as recent or anticipated income changes, as a basis for projecting expected income in the coming 12 months.

2. Determining Income Limits

The HUD Income Limits for the Hattiesburg MSA as published and periodically updated by HUD will be used to determine the applicable income limit for the Housing Reconstruction Program

3. Comparing Household Income to Income Limits

Using the information provided in the homeowner's application, source documentation and/or third-party verifications, the Income Certification form will be completed to determine the applicant's anticipated annual income and eligibility.

B. Determine the Appraised Value

Owner-occupied housing qualifies as affordable housing only if the value of the property, after reconstruction, does not exceed the HUD established appraised value limits for the housing type for the area. An analysis must be completed before any work on the property begins to ensure that the after-reconstruction value estimate will not exceed HUD's maximum appraised value limitations. If the after-reconstruction estimate exceeds the limit, the project may be infeasible.

C. Ensure Adequate Insurance Coverage

The program must verify that all homeowners maintain adequate homeowner's insurance. Proof of insurance covering the amount of funds invested must be documented by obtaining a copy of the insurance binder. The insurance must cover the amount of the grant for the duration of the affordability period at a minimum. Homeowners insurance is mandatory for this program. Homeowners will be required to provide periodic verification of homeowner's insurance throughout the affordability period. The City of Hattiesburg may pay for the first year's insurance premium for whom obtaining it would impose financial difficulties.

All houses located in a 100-year flood plain must additionally have flood insurance equal to the amount of HOME or CBDG funds invested, and the property must be covered for the duration of the affordability period at a minimum. Homeowners will be required to provide periodic verification of flood insurance throughout the affordability period. The City of Hattiesburg may pay for the first year's flood insurance premium for whom obtaining it would impose financial difficulties.

If the house is located in the 100-year flood plain, and if the community in which the house is located does not participate in the National Flood Insurance Program, then the house cannot be reconstructed under this program.

D. Verify Ownership

The City of Hattiesburg must verify that the applicant owns the property through a review of the current tax records, deed of trust, and title opinion. The City of Hattiesburg's review of the tax records must be evidenced in writing and included as part of the project file.

Properties with existing liens exceeding five thousand dollars (\$5,000) will be deemed ineligible. The City may, at its discretion, provide loans with available HOME funds in order to pay down an existing mortgage or lien, not to exceed \$5,000 when: 1) that mortgage or lien otherwise prohibits the city from moving forward with the project; and 2) when the homeowner paying off the mortgage or lien in order to move the project forward would create an unbearable financial hardship. Loans made in this manner will be included in the total grant amount and will, likewise, be subject to the same affordability period.

Liens or Deeds of Trust attributable to primary mortgages on a property will not, as a single circumstance, disqualify a project as long as the mortgage is current and the homeowner is determined to have an ability to keep the mortgage current for the foreseeable future. The City will not pay any amount on a primary mortgage unless it meets the threshold and terms stated above and there is determined to be such a need. The City may require the homeowner's assistance in contacting primary or secondary mortgage holders to gather information and/or to get approval from primary mortgage holders for demolition/reconstruction. Community Development Division staff will make reasonable efforts to gain such approvals when necessary, but at the Director's discretion, efforts may be halted and a project file closed when attempts to achieve primary mortgage holder's approvals (if necessary) are unsuccessful.

CONSTRUCTION MANAGEMENT

A. Inspect Construction

During construction, the Housing Inspector is responsible for conducting three types of inspections as follows:

- Progress Inspections- To ensure the quality of the construction, the Housing Inspector should perform regular on-site inspections of the property. To the extent practical, each reconstruction project should be inspected twice per week. Regular progress inspections help owners identify potential problems early and enable them to act to prevent larger problems later in the project. Inspection Reports signed and dated by the inspector must be kept in project files.
- Draw Inspections- Inspections must always be performed prior to approving contractor payment requests. Payments can only be made for work that has been completed and is "in-place" (i.e. stored materials must be installed before payment can be made). The inspection reports in project files should confirm that a full inspection of the contractor's progress was performed before each payment request was processed. More detail on draw inspections is outlined in the following action.
- Technical Inspection with Code Inspectors – To ensure the quality of work is performed to the Codes: building, electrical, mechanical, and plumbing.

B. Payment of Contractors

Payment procedures will follow the same guidance as other housing programs.

C. Issue Change Orders

Due to the fact that reconstruction implies the construction of a new unit in place of a

demolished unit, change orders for contracts should be extremely uncommon. However, in the instance that a change order is determined necessary, procedures should follow the same guidance as other housing programs.

Since a change order becomes a binding part of the contract, the owner and contractor must sign it with prior written approval of the City of Hattiesburg. All change orders to the construction contract must be approved by the program administrator and attached to the Reconstruction Contract before the work changes are undertaken.

D. Perform Inspection

After completion of all repairs in the work write-ups and change orders, a final property inspection is conducted. In addition to the process outlined previously in the "payment of contractors" section, the inspector should check whether the property conforms to Section 8 HQS and City of Hattiesburg Reconstruction Standards. The owner and the contractor should be present for the inspection.

If additional work, clean up, or corrections need to be accomplished, a written punch list should be created. This punch list is a detailed list of all items remaining to be completed. Provide this list in writing to the contractor with instructions that upon completion of all items and inspection of the same, final payment will be made. Immediately after completion of all punch list items, a Certificate of Final Inspection is prepared and signed by all appropriate parties (Exhibit I-1). This form indicates that all work is complete in accordance with the contract and change orders and further indicates willingness to initiate closeout procedures.

E. Contract Close-out and Final Payment of Contractors

Upon completion of the final inspection, all of the following documentation should be verified as complete and in the permanent file:

- Lien Waiver from the general contractor
- Contractor's Final Request for Payment
- Certification of Final Inspection
- Copies of all warranties
- Certificate of Occupancy from the Department of Urban Development

Review all of the documents for accuracy and completeness. Supply the owner with a copy of these documents.

F. Take After-Reconstruction Pictures

Document the work by taking pictures of the completed reconstruction. Always try to take the after-reconstruction pictures from the same spot pictures were taken before reconstruction.

IX. INCLUSIVE GRANT COSTS – if applicable

A. Cost of correcting building code violations

- B. Testing and/or assessment of asbestos and lead-based paint hazards with a possible abatement, if necessary
- C. One-Year Premium for Flood Insurance when applicable
- D. Legal and other professional fees, if necessary
- E. Up to ten percent (10%) of the cost of repairs for change orders, unless otherwise approved by the Community Development Manager, if necessary
- F. Title Opinions and Appraisals, as deemed necessary
- G. Termite or other Pest inspection and treatment, if necessary
- H. Necessary Public Notices, if necessary
- I. Environmental Review costs
- J. Project Delivery costs

X. CONTRACTS AND CONTRACTORS

- A. A list of Qualified Eligible Contractors (QEC list) will be maintained in the City of Hattiesburg Department of Urban Development-Community Development Division. Contractors may be added to the list annually; however, no Contractor shall be allowed to submit a proposal or cost quotation if not a Qualified Eligible Contractor and has not obtained a **Data Universal Numbering System number (DUNS)**.

1. Qualified Eligible Contractors (QECs) must:

Furnish the following required documentation for consideration:

- Three (3) subcontractors;
- Two (2) suppliers;
- One (1) bank;
- Three (3) prior jobs, carried out by the contractor in order to assess quality of work and evaluate the workmanship;
- A copy of current license from the Mississippi State Board of Contractors and City of Hattiesburg Privilege Tax License; and
- A copy of current liability insurance and Workmen's Compensation.

These requirements are not in any way intended to exclude any qualified Contractor, but are intended to verify a proven track record of established business. The Department of Urban Development and the Selection Committee will review all submissions for consideration.

Sign a work agreement for each contract undertaken, which included the agreement to abide all local codes and ordinances as well as the City's Housing Programs Manuals in all work performed.

4. Proposals will be requested from all eligible contractors. The Homeowner will review the Qualified Eligible Contractors list and have the option of identifying up to two (2) Contractors that the owner would prefer not to contract with in the rehabilitation or repair of his/her home. Although there must be enough remaining contractors willing to make a proposal so as to satisfy City, State, and Federal procurement requirements.
3. A Contractor's license from the City of Hattiesburg may be revoked for good cause in accordance with the codes and ordinances of the City. Also, contractors may be removed and disbarred from the Qualified Eligible Contractor list based on the following:
 - a. When a project's construction time exceeds, without justifiable cause, the construction period reflected in the contract. Once advised of the failure to meet contract deadlines, the contractor shall complete work within five (5) working days. If work exceeds the extended deadline, without justifiable cause, the contractor will be fined \$100 per day until the work is completed or until the contract is terminated at the discretion of the Program and any additional relocation costs incurred. In the event that the contractor neglects to complete contracted work, the associated Work Agreement may be terminated and the Housing Coordinator will arrange to have another contractor from the Qualified Eligible Contractors list complete the work. The Housing Program Inspector or designee will determine the extent of work not completed. In some instances, it may be necessary to estimate a percentage of work completed. The cost of work line items not completed or the percentage of work not completed, whichever is applicable, will be deducted from the total contracted amount in addition to the deduction for the penalty for incompleteness and excessive relocation costs. These funds will be used to defray the cost for the unfinished work. Any remaining payment due the Contractor will not be made until all work is complete and the penalty for incompleteness will be deducted at that time.
 - b. When a contractor's construction performance is unacceptable as documented by the City of Hattiesburg Housing Program Inspector, Technical Inspectors, and Housing Coordinator.
 - c. When a contractor violates the terms, conditions, and contents of the Work Agreement.
 - d. When a contractor violates the Housing Rehabilitation and Housing Repair Grants Program Guidelines.
 - e. When a contractor does not pay labor and material costs relating to the job, which could result in a lien against the property.
 - f. When a contractor fails to start work within ten (10) working days of issuance of the Notice to Proceed without justifiable cause, the contractor shall submit a letter to the attention of the Housing Coordinator explaining the reason(s) for the work delay, prior to the end of the ten (10) day working period, for approval. Contractors

exceeding the ten (10) working days start date may be terminated from the Work Agreement with the Homeowner. (If contracted as the result of a proposal, the next lowest best proposer will be contracted with the homeowner to perform work originally contracted with the lowest best proposal Contractor.) In the event additional proposals were not received, the project will accept new proposals. The Contractor that exceeded the ten (10) working day period to start work will not be eligible to re-submit a proposal on the project. If contracted as the result of assignment to an eligible Sub-recipient to do housing rehabilitation or housing repair, the project will be reassigned to another eligible Sub-recipient.

- g. When one or a combination of causes in (a) through (f) above or any other reasonable documented causes exists.
- 4. The Division Manager shall notify all contractors that have been removed or disbarred from the Qualified Eligible Contractors list in writing setting forth the cause and the term of disbarment.
- 5. The U. S. Department of Housing and Urban Development (HUD) will be notified of Contractors violating federal law or exhibiting unethical behavior and recommended for disbarment from federal programs.
- 6. The Qualified Eligible Contractors list may not in any manner be used as a means for discrimination or exclusion on the basis of race, national origin, sex, or age.
- 7. Contractors may request reinstatement in writing to the Director when disbarment did not result from violation of federal, state or local law.
- 8. Appeals regarding the Qualified Eligible Contractors Selection Process

If a Contractor disagrees with selection committee decisions on any or all of the qualifying criteria, he or she may appeal the decision to the CDBG/HOME Board of Appeals. The Contractor should submit a written request for review of the decision within ten (10) working days of notice of the decision to the:

**Department of Urban Development
C/O: Director
Attention: CDBG/HOME Board of Appeals
Post Office Box 1898
Hattiesburg MS 39403-1898**

Response time by the board will depend on the nature of the appeal, but will be as timely as possible. The Board is made up of three members appointed by the Mayor. The members shall be employed by the City of Hattiesburg and shall not be employees of the Department of Urban Development. The CDBG/HOME Board of Appeals will meet as needed, if and when an appeal is made. Any further appeals will be made to a court with appropriate jurisdiction.

B. Work Proposal

- 1. Eligible Contractors will be furnished proposal packages a minimum of ten (10) working days prior to bid closing.

2. Contractors must attend a pre-proposal conference to include an onsite walk through review of the project and the proposed work several days prior to proposal closing.
3. According to RFP bid packet instructions, proposals must include a total cost for each line item and a grand total of the contractor's proposal written in ink or typed. When proposals are reviewed, the line items will be totaled, and that sum shall become the official grand total even if the contractor made an error in addition. The same form is to be used when any eligible entity submits cost quotations for assigned projects or for determination of assignment of projects.
4. Proposals and cost quotations must be submitted in a sealed envelope marked with the Contractor's name and address, as well as the project address, to the City of Hattiesburg City Clerk's office either hand delivered or mailed. Contractors may mail proposals at their own risk; proposals not in the possession of the City Clerk's office by the deadline stated cannot be considered.

Mail:

**City of Hattiesburg
City Clerk
P.O. Box 1898
Hattiesburg, MS 39403-1898**

Physical:

**City of Hattiesburg
City Clerk
200 Forrest Street, 2nd Floor
Hattiesburg, MS 39401**

5. Contract price shall not be 10% higher nor be less than 10% below the program staff cost estimate. If the proposals or quotations are not within these limits, the Housing Coordinator and Community Development Division Manager may negotiate the costs with the Contractor having the lowest best proposal who is nearest to meeting the limitations.
6. Proposals from contractors not on the Qualified Eligible Contractors list and proposals from contractors with whom the homeowner indicated they would not enter into a *Work Agreement*, will be rejected.
7. The successful contractor will be notified in writing within five to ten (5 to 10) working days after a review by the selection committee identifies the selected contractor. All other contractors that made proposals will be notified in writing within fifteen (15) working days of the selection of the successful contractor.
8. All proposals shall be firm for a period of thirty (30) calendar days from the date of bid closing. If a contract is not executed, nor a *Notice to Proceed* issued within thirty (30) calendar days from proposal opening, the contractor may withdraw his/her proposal, thereby terminating and releasing both parties from any further obligation and liabilities.
9. The City reserves the right to accept or reject any or all proposals or to waive any formality in the proposal process.
10. The Housing Coordinator and the Housing Program Inspector shall weigh the capacity of contractors to complete work in accordance with the standards of the City during the

proposal process. Caution will be exercised to ensure that contractors do not get overloaded to the extent that they cannot perform work in a timely manner. At least until a track record is established for each contractor, the Housing Program Inspector will have the authority to recommend that a contractor(s) may not submit proposals on new work until he/she is nearing completion or has completed on-going work in the City's program.

NOTE: A contractor will have no more than two (2) active projects at a time. A waiver of this policy must be approved by the Director of Urban Development.

C. Document

1. The homeowner and contractor shall execute the contract document supplied by the Department of Urban Development titled Work Agreement. After execution of the agreements, an onsite pre-construction conference, a Notice To Proceed will be issued to the contractor. Prior to commencement of work, the contractor shall obtain the appropriate building and related permits from the Land Code Development Division.

2. Amendments

As with any construction work involving remodeling or renovation of an existing structure, change orders may be necessary as the result of discovery when completing work items such as replacing deteriorated roofing, siding, flooring, and other items previously specified in the work write-up for a project. The scope of work for any proposed change order will be determined by the primary Housing Program Inspector or, when necessary, a designee Inspector who will immediately inform the Housing Coordinator of the need for the change order, the proposed scope of work required and any other pertinent details surrounding the pending circumstances. The Housing Program Inspector will write the work specifications and estimate costs for the additional work to be included in the file. A copy of the work specifications will be given to the contractor who will quote a price for the additional work. The contractor's proposed price is compared to the Housing Program Inspector's estimate and is automatically approved if within 10% above or below the program's estimate. If the Contractor's price is outside the 10% parameters previously noted, then the Housing Program Inspector, Contractor and Housing Coordinator at a minimum will negotiate the cost to a mutually agreeable price that is deemed reasonable and necessary. The Director at his/her discretion will participate and or designate other staff to participate in negotiations. After settling on an agreed upon price, a formal Change Order form is prepared and circulated to the Housing Program Inspector, Housing Coordinator, Code Enforcement Technical Inspector and Community Development Manager for signatures. The homeowner and contractor will also sign the change order to review evidence, understanding and agreement of associated work details and costs. The Housing Coordinator is responsible for tracking this form through the signature process in a manner to affect an expedient turnaround time. The Program will strive whenever possible to affect no more than a two-day turnaround for internal signatures for change orders. Additionally, on a case-by-case basis, to deter lengthy delays in dire circumstances where the homeowner would be severely inconvenienced by even short delays in construction efforts (such as open roofs, walls and floors, non-functioning bath and toilet facilities due to a discovery repair item) a change order can be priority-routed through the process in which the Housing Program Inspector calls in to the office and follows through the initial steps of the change order process via telephone or radio

communication. A change order can be prepared on site and a copy given or left at the site for the contractor's estimating as soon as possible. If necessary, the Housing Program Inspector can complete the cost estimate on the spot, call in and relay all of the information to the Housing Coordinator who will follow the proper line of communications to receive expedient approval for going forward with the change order work request, then relay approval to proceed to the Housing Program Inspector.

a. Change Orders must be approved as outlined above and must be documented as follows:

- 1) Item number on work write-up and description of work to be changed must include a total cost for each line item and a grand total of the contractor's requested change order.
- 2) Reason for change.
- 3) Related code violation, if applicable.
- 4) Increase or decrease in cost resulting from change order.
- 5) Other related information needed to render a decision.

All changes to the contract must be documented using a change order form. Additionally, a written explanation of the reason for each change order repair item should be noted on the *Work Detail /Cost Estimate* and the document signed by the designated Housing Program Inspector or designee Inspector. This form must accompany each change order request to be reviewed for processing and still applies in the case of priority routing. However, in no event shall the amount of the additional assistance exceed ten percent (10%) of the maximum grant amount nor ten percent (10%) of the initial proposal price. This applies to both the Substantial Rehabilitation and Emergency Repair Grants. In the event that the total of additional assistance exceeds the maximum ten percent (10%), the homeowner will be required to select which cosmetic or non-code item which will be removed from the work write-up in order to remain at or under the maximum grant award limits. In special circumstances the Director of Urban Development may at his/her discretion allow an exception.

b. Nothing in this section shall be construed to prohibit the Director of Urban Development from overruling the final approval or disapproval of any change order, except that in such instances a factual basis for the ruling must be established, documented and made a part of the permanent case file

D. Inspections/Monitoring:

1. The Housing Coordinator and the Housing Program Inspector will maintain close supervision over all work. The Housing Program Inspector and/or appropriate Code Inspector (Enforcement Officer or Technical Inspector as applicable) will conduct the following inspections from application through construction completion (see Part I — Section V):

a. Property Maintenance Code Inspection

- b. Work write-up inspection/ Identification of code violations and immediate repair items.
- c. Pre-construction conference to include a walk-through of work to be performed with all potential Contractors at job site.
- d. Progress Inspections — to ensure the quality of the construction, onsite visits to review work in progress will be conducted at least weekly by the Housing Program Inspector in addition to the rough-in and finished work inspections outlined below that will also require review by a Technical Inspector:
 - 1) Electrical- inspection of electrical work performed will be conducted at the rough-in stage before work is covered up with sheetrock, etc.
 - 2) Plumbing- inspection of plumbing work performed will be conducted at the rough-in stage before work is covered up with sheetrock, etc.
 - 3) Mechanical- inspection of mechanical functions will be conducted at the rough-in stage before work is covered up with sheetrock, etc.
 - 4) Building- inspection of the building will be conducted at the rough-in stage before work is covered up with sheetrock, etc.

The Hattiesburg Land Code Division will perform mechanical, plumbing, electrical, and building inspections in keeping with standard procedures of the Land Code Division. Housing Program Inspectors and Technical Inspectors shall insist upon quality construction with high quality new materials within reasonable constraints of the funds available. In no event shall the Housing Program Inspector or Technical Inspector sign off on any inspection of which he/she has knowledge of inferior or defective construction or materials or which percentage of completion is less than that noted on the inspection form.

- 2. Preliminary Final Inspection(s) — The Housing Programs Inspector and Housing Coordinator will inspect to verify that there is no incomplete work remaining from the work write-ups including any change orders (where applicable) prior to the review by the final inspection teams. Punch lists will be prepared at this point for any incomplete items. After all work is confirmed complete, a true final inspection will be scheduled.
- 3. Final Inspection: After completion of all repairs in the work write-up and change orders, a final inspection will be conducted by the Housing Program Inspector, Technical Inspector and Housing Coordinator or designee to ensure that all work is completed satisfactorily and in accordance with the contract. The inspection should be made together with the homeowner and the Contractor. If all work has been completed satisfactorily, a final inspection shall be completed and signed by all appropriate persons.
- 4. Inspection Reports: A copy of all inspection reports including code, property, and technical inspection reports should be signed, dated, and filed in the permanent project file in the Community Development Division-Housing Programs Unit.
- 5.

E. 180 Day/300 Day Inspections:

1. The Housing Program Inspector shall make a site visit to the home rehabilitated or otherwise repaired after one hundred eighty (180) days or six (6) months, and three hundred (300) days after the *Certificate of Final Inspection* has been issued, to review work performed. The Housing Program Inspector and Homeowner shall note any defects revealed during the inspection, and the Contractor will be provided a punch list of the same. If defects arise during the one-year warranty period, it is the responsibility of the Homeowner to inform the City.
2. Once advised of warranty items, the Contractor shall perform corrections within ten (10) working days, weather conditions and other factors permitting. In the event that the Contractor neglects to correct the noted items, the Housing Coordinator will initiate procedures to seek revocation of license and/or disbarment of the Contractor from the QEC list.
3. Neither the City nor the Contractor is responsible for defects or discovery of needed repairs that were not a part of the original work write up or included as a change order during the course of the contract.
4. The City may, at the discretion of the Director, with evidence provided by the Homeowner, Contractor, Housing Program Inspector, or Housing Coordinator, approve of a change order after the completion of the original project if/when the following conditions are met:
 - a. the project is still within its warranty period, or the needed work was discovered and reported within the project's general warranty period,
 - b. the needed work is not the result of incidents that are (or should be) covered by the homeowner's insurance,
 - c. the needed work is not the result of negligence or intentional damage to work previously performed by the program,
 - d. the needed work is verifiably an oversight of the original scope of work, which would have otherwise addressed a major housing system or element (and not attributable to wear, tear, or deterioration since the course of the contract), and
 - e. failure to address the additional needed work would result in damage or deterioration of the investment already made by the program, and/or would result in deterioration that would lead to health or safety threats in the foreseeable future.

F. Payments

1. All payments will be made to the Contractor within ten (10) working days from approval of invoice by the Mayor and City Council. Payment requests will be forwarded for Mayor and Council review only after the Department of Urban Development receives the following:
 - a. Building certificates of final inspection

- b. Certificate of occupancy (if applicable)
- c. Invoice for work performed
- d. Lien waiver by the Contractor
- e. Release of liens by the Contractor's subcontractors and material suppliers
- f. Final inspection and acceptance of all work by the City of Hattiesburg Housing Program Inspector, Housing Coordinator, Community Development Manager, and City Building Official.

The homeowner's signature of acceptance of work is preferred and will be requested, but will not be required for payment to the Contractor for work performed and completed to the satisfaction of the Program. Additionally, all warranties and certifications relating to equipment, supplies and service products must be turned over to the Housing Coordinator prior to payment. Copies of all warranties and certifications shall be placed in the Homeowner's file to be retained by the City, and the originals shall be given to the Homeowner.

2. Payments to contractors must reconcile against work performed and in place. **Contractors must submit invoices documenting the work completed and the amount of the contract attributable to the work completed in justifying partial draws. Payments may be made only for work and/or materials installed, constructed, or in place; no payment may be requested or made for supplies purchased, inventoried, and/or on site not installed.** The Housing Program Inspector will verify work against that claimed on all invoices and determine whether or not the amount requested and the work items claimed are completed satisfactorily and are representative of the amount quoted. Although not required, the City reserves the right to retain up to five percent (5%) of the total cost of a project through the end of the one-year warranty period. This amount would be deducted from the payment made upon 100% completion of the work, and will be forwarded to the contractor at the end of one year unless extenuating circumstances with the property require that the City need access those funds during the warranty period.
3. Homeowner Signatures: With the exception of projects assigned to Sub-recipients, the Housing Coordinator has the primary responsibility of communicating with and securing the homeowner's signature on all documents, which they must execute during the course of any processes associated with this housing rehabilitation or repair procedure. Only in the instance of projects assigned to Subrecipients shall it be the responsibility of the Subrecipient to obtain the homeowner's signature on any document, otherwise IN NO EVENT shall it be the responsibility of the Contractor to obtain the homeowner's signature on any document.

G. Contractor Certification

Contractor will sign a certification stating he or she understands that all rehabilitation and repair work will be accomplished in accordance with locally adopted codes and that the City will enforce those codes.

H. Disputes

All questions and disputes of decisions between the Contractor and the Homeowner regarding rehabilitation and repair work or methods will be settled by the City of Hattiesburg's Housing Program Inspectors. In case of an un-resolvable difference of opinion between the Housing Program Inspector and Technical Inspectors regarding code issues, the City Building Official shall have final authority. Any code or construction issues not resolved by the City Building Official may be appealed to the Hattiesburg Contractors Board. All questions, disputes or decisions regarding financial or program issues will be resolved by the Housing Coordinator in conjunction with and subject to the review and approval of the Director or his/her designee. Further appeals may be made to the City of Hattiesburg CDBG/HOME Board of Appeals for a final decision.

XI. GENERAL

No person who is an employee, agent, consultant, officer, elected official or appointed official who exercises or has exercised any functions or responsibility with respect to CDBG or HOME activities who is in a position to participate in a decision making process or gain inside information with regard to CDBG or HOME activities, may obtain a personal or financial interest or benefit from a CDBG or HOME assisted activity, or have an interest in any contract, subcontract or agreement with respect thereto or the proceeds there under, either for themselves or those with whom they have family or business ties, during their tenure or for one (1) year thereafter.

XII. RESPONSIBILITY AND AUTHORITY

The Community Development Manager, under the direction of the Director of Urban Development, has delegated authority and responsibility to administer the *Housing Rehabilitation and Housing Repair Grants Program* in accordance with the guidelines set forth above and subject to the restriction of applicable local, state, and federal laws, and the dictates of sound business judgment, prudence, and ethical conduct.

City of Hattiesburg MS
Department of Federal and State Programs
Single-Family Housing Rehabilitation Standard

	Section Title
1	Health & Safety
2	Site
3	Exterior Building Surfaces
4	Foundations and Structure
5	Windows & Doors
6	Roofing
7	Insulation and Ventilation
8	Interior Standards
9	Electric
10	Plumbing Systems
11	HVAC
12	Appliances

Mission and Housing Values

In our example specs, the developer's mission is "to eliminate neighborhood blight through renovation and demolition while providing low -income families with safe, secure and affordable homes."

The ranking of primary considerations from the program's mission is as follows:

1. Health and Safety
2. Performance and durability
3. Life cycle cost
4. Affordable operating cost
5. Balanced initial cost
6. Environmental impact
7. Historically sensitive exterior

Applicable Laws and Regulations

The developer intends to construct and maintain homes in full compliance with the following statutory and regulatory requirements:

- HUD Environmental Review
- Building Code: International Residential Code
- Housing Code: The local housing code
- Federal Housing Code: Housing Quality Standards
- Life Safety Code: Life Safety Code

- HAZMAT: HUD requirements for specific programs

The developer will seek guidance and strive to conform to the following codes if financial resources are available for a specific project:

- Accessibility: ANSI standards for accessibility by disabled residents
- HAZMAT: HUD Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing
- Building Code: IRCC (version accepted by the local Building Codes Department)
- Exceptions: On a case-by-case basis, deviations from the minimum requirements of this standard will be permitted with approval of the appropriate local agency

1 Health & Safety

Contaminants	
Repair Standard	Minimum Life 5 yrs.
NA	
Replacement Standard	
All materials installed will meet the following standards to minimize the presence of Volatile Organic Compounds (VOC) and Formaldehyde: • All paints and primers must meet the most recent Green Seal G-11 Environmental Standard. Http://www.greenseal.org/certification/standards/paints_and_coatings.pdf • Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. http://www.aqmd.gov/rules/reg/reg11/r1168.pdf • All caulks and sealants, including floor finishes, must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District. • All particleboard components will meet ANSI A208.1 for formaldehyde emission limits, or all exposed particleboard edges will be sealed with a low-VOC sealant or have a factory-applied, low-VOC sealant prior to installation. All MDF edges will meet ANSI A208.2 for formaldehyde emission limits, or all exposed MDF edges will be sealed with a low-VOC sealant or have a factory-applied, low-VOC sealant prior to installation.	

Lead Based Paint (LBP)	
Repair Standard	Minimum Life 5 yrs.
For all houses constructed prior to 1978 - four (4) floors, two (2) window sills and two (2) window troughs (all randomly selected) plus a blank sample must be submitted to an EPA-accredited lead analytical laboratory and the dust samples must pass a dust wipe test for lead content as per the protocol in the HUD Guidelines. Lead-safe work practices must be followed, and only certified abatement contractors used to perform the work. See: http://www.hud.gov/offices/lead/lbp/hudguidelines/	

Replacement Standard	Minimum Life 20 yrs.
When stabilization of surfaces containing LBP is impractical, the most affordable solution for abatement of the component will be chosen. Walls containing LBP may be covered with drywall or gutted and replaced with drywall. Trim and other wood or metal components containing LBP may be removed and replaced with similar materials. Lead-safe work practices must be followed, and only certified abatement contractors used to perform the work.	

Asbestos	
Repair Standard	Minimum Life NA
Non-friable intact Asbestos materials that are not creating a hazard such as cementitious exterior wall shingles may be left intact and painted if appropriate. Asbestos-resilient floor tiles may be labeled as such and covered with underlayment and new resilient flooring.	
Replacement Standard	Minimum Life NA
Friable asbestos components, badly deteriorated cementitious shingles or deteriorated flooring will be removed and, if necessary, replaced with non-hazardous materials.	

Mold	
Repair Standard	Minimum Life NA
Any presence of mold is unacceptable and must be addressed per the National Center for Healthy Housing protocol "Creating a Healthy Home." http://www.nchh.org/Portals/0/Contents/FloodCleanupGuide_screen_.pdf	
Replacement Standard	Minimum Life NA
All carpeting, drywall or other gypsum-based wall coverings or any other non-structural components with mold present will be removed and replaced. The National Center for Healthy Housing protocol "Creating a Healthy Home" will be followed for remediation of structural components.	

Fire Safety - Egress	
Repair Standard	Minimum Life NA
NA	
Replacement Standard	Minimum Life NA
Egress windows are required in all new sleeping and living areas unless other secondary means of escape requirements are met. The minimum dimensions for egress window clear openings are 20" wide by 24" tall, with a clear opening of 5.7 square feet. No bedrooms should be created in attics or basements unless Life Safety Code egress requirements are met.	

Fire Alarms	
Repair Standard	Minimum Life 5 years
Existing fire and smoke, and security systems that meet code will be repaired to operating condition.	
Replacement Standard	
Directly wired smoke detectors are required in hallways adjacent to sleeping areas and in all bedrooms.	

Carbon Monoxide (CO) Alarms	
Repair Standard	Minimum Life 5 years
Existing carbon monoxide detectors that meet code will be repaired to operating condition.	
Replacement Standard	
When atmospherically vented gas burning appliances, such as furnaces and water heaters, are present inside the dwelling, CO detectors are required in sleeping areas and immediately adjacent to fuel-burning appliances. CO detectors will be installed at a height defined in the manufacturer's instructions.	

2 - Site

Grading	
Repair Standard	Minimum Life 5 yrs.
When moisture problems exist that are the result of poor storm water drainage away from the building, the property will be re-graded for a distance of at least 10 feet away from the building will slope away from the structure at a pitch of at least 1 inch per foot.	
Replacement Standard	
Same as Repair Standard.	

Outbuildings	
Repair Standard	Minimum Life 5 yrs.
Unsafe and blighted structures, including outbuildings, will be removed if it is not financially feasible to complete the repairs required to make them structurally sound, leak-free, with lead hazards stabilized. Detached garages should have operable and lockable doors and windows.	
Replacement Standard	
No outbuilding replacement is permitted in this program.	

Fencing	
Repair Standard	Minimum Life 3 yrs.
If repairs are needed, replacing sections or limited components in kind is permissible if the budget permits.	
Replacement Standard	
Wholesale replacement of deteriorated fencing is not permitted.	

Paving and Walks	
Repair Standard	Minimum Life 5 yrs.
Essential paving, such as front sidewalks and driveways with minor defects, will be repaired to match. Tripping hazards greater than ¾" must be addressed. Non-essential, highly deteriorated paving, such as sidewalks that are unnecessary, will be removed and appropriately landscaped.	
Replacement Standard	
Un-repairable essential walks will be replaced per City Ordinance. Wood-framed, handicapped-accessible ramps are an eligible expense.	

Trees and Shrubbery	
Repair Standard	Minimum Life 5 yrs
Trees that are dead, dying, or hazardous will be removed. Removal will include cutting close to the ground, and grinding of the stump to 12 inches below the finished grade is permissible if the root system is interfering with the foundation.	
Replacement Standard	
Landscaping with trees and shrubbery is not an eligible expense.	

Lawn	
Repair Standard	Minimum Life 1 yrs.
Reseeding or installation of sod is not an eligible expense.	
Replacement Standard	
Reseeding or installation of sod is not an eligible expense.	

3 - Exterior Building Surfaces

Exterior Cladding	
Repair Standard	Minimum Life 10 years
Siding and trim will be intact and weatherproof. All exterior wood components will have a minimum of one continuous coat of primer and two continuous coats of finish paint, and no exterior painted surface will have any deteriorated paint. Buildings designated as historic will	

have existing wood siding repaired in kind. New exterior wood will blend with existing and will be spot-primed and top-coated in a lead-safe manner.
Replacement Standard
Buildings not designated as historic may have siding replaced with vinyl siding or cement board siding to match the existing configuration. If replaced, soffit material will be replaced to match or with vented/perforated vinyl. Adequate soffit ventilation shall be installed or maintained.

Exterior Porches	
Repair Standard	Minimum Life 5 years
Deteriorated concrete porches will be repaired when possible. Unsafe wood porch components will be repaired with readily available materials to conform closely to historically accurate porches in the neighborhood. Porch repairs will be structurally sound, with smooth and even decking surfaces. Deteriorated wood structural components will be replaced with preservative-treated wood.	
Replacement Standard	
Porches on building designated as historic will be rebuilt to conform closely to historically accurate porches in the neighborhood. Decks on non-historic porches will be replaced with 5/4" preservative-treated decking. Replaced railings will meet code. Replaced wood structural components will be preservative-treated.	

Exterior Railings	
Repair Standard	Minimum Life 5 years
Existing handrails will be structurally sound. Guard rails are required on any accessible area with a walking surface over 30" above the adjacent ground level. Sound railings may be repaired if it is possible to maintain the existing style. On historic structures railing repairs will be historically sensitive.	
Replacement Standard	
Handrails will be present on one side of all interior and exterior steps or stairways with more than two risers and around porches or platforms over 30" above the adjacent ground level, and will meet local codes. Handrails and guard rails will conform to the style of similar components in the neighborhood. On historic structures new railings will be historically sensitive.	

Exterior Steps and Decks	
Repair Standard	Minimum Life 5 years
Steps, stairways, and porch decks will be structurally sound, reasonably level, with smooth and even surfaces. Repairs will match existing materials,	

Replacement Standard	
In non-historic structures wood decking may be replaced with 5/4" X 6" preservative-treated material and new steps will be constructed from nominal 2" preservative-treated wood.	

Exterior House Numbers and Mailboxes	
Repair & Replacement Standard	Minimum Life 5 years
All houses will have house numbers (clearly visible from the street, a minimum of 4" in height, and of a contrasting color clearly displayed near the front door), and a standard size mailbox, preferably wall-hung at the entrance.	

4 - Foundations & Structure

Firewalls	
Repair Standard	Minimum Life 5 years
Walls adjoining attached garages will be maintained without cracks and holes, with code required fire separation.	
Replacement Standard	
Same as above.	

Foundations	
Repair Standard	Minimum Life 15 years
Foundations will be repaired to be sound, reasonably level, and free from movement.	
Replacement Standard	
Complete foundation replacements are beyond the scope of the program.	

Structural Walls	
Repair Standard	Minimum Life 15 years
Structural framing and masonry will be free from visible deterioration, rot, or serious termite damage, and be adequately sized for current loads. Prior to rehab, all sagging floor joists or rafters will be visually inspected, and significant structural damage and its cause will be corrected.	
Replacement Standard	
New structural walls will be minimum 2" x 4", 16" OC. All exterior walls that are part of the building envelope (the air barrier and thermal barrier separating the conditioned space from the non-conditioned space) will be insulated with a minimum R-13 insulation and sheathed to code.	

Additions	
Repair Standard	Minimum Life NA
NA	
Replacement Standard	Minimum Life 60 years
New additions are acceptable only when – for health and safety and/or livability reasons – it is necessary to add additional space. Stamped plans must be submitted to the City Building Official for review and approval prior to bidding. All standards for Exterior Building Surfaces, Roofing, Windows and Doors, Insulation and Ventilation, Plumbing, Electrical, HVAC apply.	

5 - Windows and Doors

Interior Doors	
Repair Standard	Minimum Life 5 years
Baths and occupied bedrooms will have operating doors and lock sets.	
Replacement Standard	
Hollow-core, pressed-wood product consistent with the style of existing doors including a brass-plated bedroom lock set.	

Exterior Doors	
Repair Standard	Minimum Life 5 years
Exterior doors will be solid, weather-stripped and will operate smoothly. They will include a peep site, a dead bolt, and an entrance lock set.	
Replacement Standard	
Replacement doors at the front of the property for historically significant buildings will be historically sensitive. Steel, six-panel doors may be installed at entrances not visible from the front street and on the front of the property for buildings that are not historically significant. Dead bolt locks will be installed on all exterior doors keyed to match. All new doors will be weather-stripped to be air tight.	

Windows	
Repair Standard	Minimum Life NA
All windows will operate, remain in an open position when placed there, lock when closed and the open section will be covered with a screen.	
Replacement Standard	
Windows that are not repairable may be replaced and will meet the ENERGY STAR standard for this geographic region. http://www.energystar.gov/index.cfm?c=windows_doors.pr_anat_window Windows on key façades of historically sensitive properties will be wood of the style original	

to the building. New windows on other properties may be vinyl or aluminum and double-glazed.

6 - Roofing

Flat and Low-Slope Roofing	
Repair Standard	Minimum Life 2 years
Built-up roofing that is leak-free will be re-coated and flashing and accessories repaired if their minimum life is questionable.	
Replacement Standard	
Modified Bitumen is an approved roofing material for low sloped roofs.	

Pitched Roofs	
Repair Standard	Minimum Life 5 years
Missing and leaking shingles and flashing will be repaired on otherwise functional roofs. Slate, metal and tile roofs will be repaired when possible.	
Replacement Standard	
No more than 1 layer of roofing is permitted when a roof is replaced. Fiberglass, asphalt, 3-tab, class A shingles with a prorated 25-year warranty over 15-lb. felt with new drip edge on all edges.	

Gutters and Downspouts	
Repair Standard	Minimum Life 5 years
Gutters and downspouts must be in good repair, leak free and collect storm water from all lower roof edges. Concrete splash blocks will be installed to move water away from the foundation. The system must move all storm water away from the building and prevent water from entering the structure. In addition to positive drainage away from the building, outlets will be a minimum of 3 feet away from the foundation whenever there is a history of water problems.	
Replacement Standard	
Gutters and downspouts will be installed and collect storm water from all lower roof edges. Concrete splash blocks will be installed to move water away from the foundation. The system must move all storm water away from the building and prevent water from entering the structure. In addition to positive drainage away from the building, outlets will be a minimum of 3 feet away from the foundation whenever there is a history of water problems.	

7 - Insulation and Ventilation

Bath Ventilation	
Repair Standard	Minimum Life NA
Smooth metal ductwork to the outside may be installed or repaired on existing bathroom fans that are operational but not properly ducted. Delay timer switches (set to an additional 20 minutes of run-time) for bathroom fans are an allowable expense.	
Replacement Standard	Minimum Life 10 years
Bathroom fans ducted to the outside using smooth metal ductwork and rated at a minimum of 80 CFM are highly recommended, as is a delay timer switch.	

Kitchen Ventilation	
Repair Standard	Minimum Life 2 years
Whenever possible, kitchens must have functional mechanical ventilation operating at a minimum 120 CFM. All ductwork will be heavy gauge galvanized metal, air tight with sealed seams. The installation of soffit to conceal ductwork is an allowable expense.	
Replacement Standard	
Same as the repair standard.	

Roof Ventilation	
Repair Standard	Minimum Life 5 years
1 square foot of free venting must be supplied for every 300 SF of area directly under the roof. The ventilation path must be free from obstructions and protected against access by rain, snow or pests. Ventilation shall be balanced between high and low vents to provide natural convective flow of air currents.	
Replacement Standard	
The venting requirement is the same as with the Repair Standard above with a strong preference for a combination of ridge vents, soffit vents.	

8 - Interior Standards

Interior Walls and Ceilings	
Repair Standard	Minimum Life 3 years
Holes, cracks and deteriorated and un-keyed plaster will be repaired to match the surrounding surfaces. All visual surfaces will be stabilized to minimize lead paint hazards using water-based paint.	
Replacement Standard	
When necessary plaster will be replaced by ½" gypsum board. Fire-rated assemblies will be specified on a project-by-project basis as required by local codes.	

Flooring	
Repair Standard	Minimum Life 3 years
Bathroom, kitchen and other water-susceptible floor areas will be covered with water-resistant flooring that is free from tears or tripping hazards. Damaged wood floor will be repaired. When existing deteriorated carpet is present over hardwood floors, the hardwood will be refinished whenever possible.	
Replacement Standard	
Baths will receive resilient sheet goods over plywood underlayment, and kitchens will receive resilient sheet goods. Whenever possible rooms other than kitchens and baths with existing wood flooring will be maintained as wood floors and refinished when appropriate. Rooms other than kitchens or baths without usable wood floors may be finished with carpet.	

Closets	
Repair Standard	Minimum Life 5 years
Existing closets with a minimum depth of 2 feet will be maintained in good repair and have a shelf and clothes rod.	
Replacement Standard	
New closets may be created if there is a significant lack of storage space and the budget permits. New closets will have a depth of 2 feet and include a shelf and clothes rod.	

Kitchen Cabinets and Countertop	
Repair Standard	Minimum Life 3 years
Kitchens will have a minimum of 10 feet of countertop with base and wall cabinets (or dishwasher) to match. Existing cabinets with hardwood doors and face frames may be repaired if in good condition. All cabinets will be sound and cleanable.	
Replacement Standard	
New kitchen cabinets will have plywood boxes. Cabinets will have hardwood doors and face frames. There will be a minimum of 10 lineal feet of post-formed countertop with corresponding base cabinets and wall cabinets. Corners in countertop designs are permitted if factory assembled. A drawer base (12" or 15") will be included in new cabinetry. A plastic laminate panel to match the countertop or a stainless-steel panel will be installed as a base cabinet to wall cabinet backsplash behind the range and extending 6 inches past the range on both sides, or if the range is in a corner along the side wall and trimmed with chrome metal edging.	

9 - Electric

Ground Fault Interrupter Circuits	
Repair Standard	Minimum Life 5 years
Non-functioning GFCIs will be replaced. Kitchen counter, bath and laundry receptacles within will be replaced with a GFCI-protected receptacle or protected by a GFCI device to meet the IRC requirements adopted by Hattiesburg.	
Replacement Standard	
Kitchen counter, bath and laundry receptacles will be replaced with a GFCI-protected receptacle or protected by a GFCI device to meet the IRC requirements adopted by Hattiesburg.	

Passage Lighting	
Repair Standard	Minimum Life 7 years
All lights and switches in hallways, stairs and other passages will be operable and safe.	
Replacement Standard	
All halls, stairs and rooms necessary to cross to other rooms and stairways must be well lit and controlled by a 3-way switch using concealed wiring. Attics must have utility light fixtures.	

Kitchen Electric Distribution	
Repair Standard	Minimum Life 5 years
Existing receptacles, fixtures and switches will be safe and grounded.	
Replacement Standard	
Permanently installed or proposed stoves, refrigerators, freezers, dishwashers and disposals, washers and dryers will have separate circuits sized to N.E.C. Two separate 20-amp counter circuits are required with each kitchen area.	

Interior Electric Distribution	
Repair Standard	Minimum Life 7 years
Exposed knob and tube will be replaced. Every room will have a minimum of one duplex receptacles, placed on each wall and one light fixture or receptacle switched at each room entrance. Where the source wiring circuit is accessible (e.g. first floor above crawl spaces, in gutted rooms, etc.), receptacles will be grounded. All switch, receptacle, and junction boxes will have appropriate cover plates. Wiring will be free from hazard, and all circuits will be properly protected at the panel. Exposed conduit is allowed. Bedrooms receptacles will be protected by an Arc Fault breaker. There must be one electrical receptacle at the service panel.	
Replacement Standard	
When a room's wall finishes are removed, it will be rewired to the latest version of the National Electric Code.	

Service and Panel	
Repair Standard	Minimum Life 10 years
Distribution panels will have a main disconnect, at least 10 circuit-breaker-protected circuits, a 100-amp minimum capacity and be adequate to safely supply existing and proposed devices.	
Replacement Standard	
200-amp service with a main disconnect panel containing at least 30 circuit breaker positions.	

10 - Plumbing System

Drain, Waste, Vent Lines	
Repair Standard	Minimum Life 1 year
Waste and vent lines must function without losing the trap seal.	
Replacement Standard	
When walls are removed exposing vent and waste lines those lines will be reworked to the current IRC.	

Plumbing Fixtures	
Repair Standard	Minimum Life 3 years
All fixtures and faucets will have working, drip-free components. Toilets with greater than a 1.6 GPF rating will be replaced with a maximum 1.28 GPF model.	
Replacement Standard	
Single lever, metal faucets and shower diverters with 15-year, drip-free warranty and maximum 2.0 GPM flow. White ceramic low-flow toilets (1.28 Gal), double bowl stainless steel sinks, and fiberglass tubs with surrounds.	

Plumbing Minimum Equipment	
Repair Standard	Minimum Life 3 years
Existing equipment will be repaired to conform to the Housing Quality Standards.	
Replacement Standard	
Every dwelling unit will have a minimum of one single bowl sink with hot and cold running water in the kitchen and at least one bathroom containing a vanity with a sink, and a shower/tub unit, both with hot and cold running water, and a toilet.	

Water Heaters	
Repair Standard	Minimum Life 7 years
Each housing unit will have a working water heater less than 3 years old with a minimum capacity of 40 gallons if it is gas-fired or electric. Gas water heaters more than 3 years old may be repaired if it is clear that a repair will make it operable.	
Replacement Standard	
All units will have a minimum 40-gallon, gas-fired or electric water heater with a 5-year warranty installed to the IRC.	

Water Supply	
Repair Standard	Minimum Life 10 years
The main shut off valve must be operable and completely stop the flow of water to the house. All fixtures must be leak-free and deliver sufficient cold water and, where applicable, hot water.	
Replacement Standard	
The main shut off valve must be operable and completely stop the flow of water to the house, and should be replaced if it does not. Lead and galvanized pipe that is part of the water service or the distribution system will be replaced with copper. All fixtures will have brass shut off valves. A minimum of one freeze-protected exterior hose bib is required.	

11 - HVAC

Air Conditioning	
Repair Standard	Minimum Life - NA
Non-functioning, non-repairable air conditioners will be removed and drained of all CFCs. Existing central air conditioning will be inspected, serviced and refurbished to operate safely.	
Replacement Standard	Minimum Life 20 years
New HVAC systems will have air conditioning ($\geq$ 14 SEER)	

Chimney Repair	
Repair Standard	Minimum Life NA
Unused chimneys will be removed to below the roof line wherever roofing is replaced unless	

the house is in a Historic District or on the National Register. Unsound chimneys will be repaired or removed unless the house is in a Historic District or on the National Register. When chimneys must be used for combustion ventilation, they will be repaired.	
Replacement Standard	Minimum Life NA
The creation of new flues is not recommended in this program. The use of high efficiency closed combustion appliances is recommended to avoid the need for new flues. Replacement furnace flues, when required, will be metal double- or triple-walled as recommended by the furnace manufacturer.	

Distribution System	
Repair Standard	Minimum Life 5 years
Duct work will be well supported, insulated in unconditioned space and adequate to maintain 68°F measured 36" off the floor when the outside temperature is the average yearly minimum, in all habitable and essential rooms. All duct work will be insulated to R-7, sealed at all seams.	
Replacement Standard	Minimum Life 25 years
All duct work will be insulated to R-7, sealed at all seams.	

Heating System	
Repair Standard	Minimum Life 5 years
Workable existing heating systems will be inspected and serviced to operate in a safe manner.	
Replacement Standard	Minimum Life 25 years
Gas-fired heating plants will be rated at $\geq 92\%$ AFUE or better. Heat pumps will be rated at ≥ 14 SEER.	

12 – Appliances

Kitchen Appliances	
Repair Standard	Minimum Life 3 years
All units will have a working and cleanable range. If there is an existing dishwasher in working and cleanable condition, it may be retained with minor repairs.	
Replacement Standard	Minimum Life 15 years
All redesigned kitchens will have ENERGY STAR-labeled appliances.	

CONTRACTOR'S SPECIFICATIONS LISTING**CITY OF HATTIESBURG – URBAN DEVELOPMENT/COMMUNITY DEVELOPMENT DIVISION****Site Work (4)**

906	FLATWORK – SIDEWALK, REMOVE, HAUL AND REPLACE: Remove concrete slab and haul away from site. Compact are for placement of concrete. Form and pour reinforced concrete slab. Concrete shall be 4' thick, 2,500 PSI. Smooth surface, brush finish, edge trowel at form, expansion joints and control joints @ 10' center. Include 6'x6'x 10# wire mesh and dowels at existing flatwork.	SF
965	DRIVEWAY COMPLETE- CONCRETE: Excavate, level and compact to 85% subgrade. Form, pour and broom finish a 4-inch, 3000 psi, concrete driveway and apron. Provide #10 welded wire mesh, expansion joints at 10' intervals, and a broom finish surface that directs water away from the building. Remove all forms, re-grade and spot seed.	SF
9754.1	REGRADE AT FOUNDATION AND SEED: Mow yard 4' out from structure with a bagging mower as low as possible. Install 5" of top soil at foundation graded out 4' from foundation to 1 ". Tack, straw, fertilize and seed area. Install 3' high barricade of string on 1" x 1" stakes to establish lawn.	SF
9763.1	BARE SOIL-SOIL REPLACEMENT - SOD AREA: Dampen dry bare soil. Remove and dispose of the top 4" of soil in the areas indicated on the plan or noted otherwise. Disposal of removed soil must be in accordance with state and EPA guidelines. Spread 1" of peat and manure and till into 4" depth. Bring In clean topsoil and spread evenly to replace all removed soil. Fertilize and sod area. Install a 3' high barrier of marking tape or string on 1' x 1' stakes to establish lawn.	EA

Demolition & Disposal (5)

707	DEMO CABINETS: Remove kitchen or bathroom cabinets by withdrawing fasteners to minimize wall damage. Remove debris from site and haul to a legal landfill. Vacuum wall and floor surfaces.	LF
710	DEMO NON-BEARING PARTITION: Remove partition including plaster/drywall, lath, framing members, fixtures, wiring, and mechanical runs. Dispose of in code legal dump.	LF
735	DEMO, INTERIOR DRYWALL, PLUMBING, ELECTRIC, FLOOR FINISHES & HAULING: Remove all Interior plumbing and electrical fixtures, rough-ins, cabinets, and wall finishes to studs including all floor finishes. Remove all insulation. Debris to be removed from site. Building to be left broom clean.	SF
745	DEMO, CHIMNEY, INCLUDE NEW FRAMING: Demo chimney to below first floor line. Frame existing chimney opening with rafters to match existing and sheathing to match existing thickness. Install 30# felt paper over sheathing to prevent water intrusion. Frame opening at ceiling Joist with joist to match existing size using joist hangers where necessary. Frame existing chimney opening at floor joist with joist to match existing using Joist hangers where necessary. Patch flooring by tooting existing flooring and Install flooring to match existing with no joints within 6" of another. Haul all debris from job site.	EA

Demolition & Disposal (5) - continued

750	DEMO· OUT BUILDING OR SHED: Demolish and remove from the site, to an approved disposal area, all elements of the structure from roof to foundation to a level 4" below finished grade. The contractor shall protect and secure from damage all other structure, sidewalks, paved areas, shrubbery, lawn areas and other property of the homeowner. Damage to such property of the homeowner and neighboring properties shall be repaired or replaced to the satisfaction of owner without additional expense. Install 4" of topsoil, grade and seed to eliminate all evidence of the demolition work.	SF
786	DEMO/DISPOSAL OF ATTACHED STRUCTURE: Demolish and remove from the site, to an approved disposal area, all elements of the structure from roof to foundation to a level 4" below finished grade. The contractor shall protect and secure from damage all other structure, sidewalks, paved areas, shrubbery, lawn areas and other property of the homeowner. Damage to such property of the homeowner and neighboring properties shall be repaired or replaced to the satisfaction of owner without additional expense. Install 4" of topsoil, grade and seed to eliminate all evidence of the demolition work.	SF
793	DEMO· TRASH HAULING· DEBRIS REMOVAL: Haul all trash/debris from jobsite on a routine basis. No trash will be allowed to accumulate in building or around the exterior of the building and stand for long periods of time. Trash should be dumped at an approved dump site licensed for construction debris. Building should be kept broom clean at all times and free of work hazards. Dumpsters are permitted, but should be clear of all public access. Foundations, Concrete & Paving (6)	AL

Foundations, Concrete & Paving (6)

896	FOUNDATION, HOUSE, STRAIGHTEN WITH FOOTINGS, PIERS AND SILLS: Shore and straighten structure as close as possible. Replace defective piers, footers and sills. Piers to be 8" x 8" x 16" CMU with mortar joints set on 24" x 24" x 12" deep reinforced concrete footings matching existing height. Sills to be treated 6" x 6" with notched joints occurring at piers. Approx. LF of sill and approx. # of piers:	LF
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Masonry (7)

1106	MASONRY· PARGETTING AND BOND WALL: Prepare surface by: cleaning with brush, removing all loose and deteriorated mortar; resetting loose foundation components and filling voids with masonry cement. Trowel a continuous 3/8" coat of fiberglass reinforced surface bonding mortar per manufacturer's specifications.	SF
1115	MASONRY· PIER -REPAIR TO MATCH EXISTING: Repair pier with matching materials to match as close as possible. CMU, brick or other (as approved by owner) shall be laid on existing sound concrete or brick footings. Pier should fit firmly under existing sill/beam.	EA
1121	MASONRY· PIER· CMU BLOCK PIER· REPLACE: Shore and straighten structure as close as possible. Replace defective piers, footers. Piers to be 8" x 8" x 16" CMU with mortar joints set on 24" x 24" x 12" reinforced concrete footings.	EA

	Piers should be firmly under existing sill/beam using solid shims as necessary (wooden shims not allowed).	
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Masonry (7) - continued

1170	MASONRY· BLOCK WALL REPAIR· MATCH EXISTING: Remove damaged block and patch wall by toothing damaged block and mortar. Install new CMU to match existing with match mortar joints at all sides of new block. Fill new CMU cells with mortar if possible. Clean patched area and paint area to match adjacent areas. Clean and remove all debris from job site.	SF
1230	MASONRY· REPOINT: Tuck point masonry. AU masonry joints found to be loose, weak, cracked or structurally defective to cut out to a minimum of 5/8" or until sound surface is reached. Flush all joints clean with water or compressed air and repaint using a prepared cement base mortar, matching existing mortar as color and joint as close as possible. Clean all surfaces of masonry mortar stains when finished.	SF
1235	BRICK WALL REPAIR: Remove damaged brick and tooth replacement brick into wall. Match brick and tooling as closely as possible.	SF
1330	CHIMNEY--REPOINT: Repair chimney above roof area by cutting out mortar at least 1/2", removing all loose material. and repainting using portland cement mortar. Saturate joints with water before applying mortar. Match color as closely as possible. Replace all missing and defective materials with matching materials. Clean mortar and other debris from adjoining surfaces and gutter.	SF

Framing (8)

2210	FRAMING· BEAM--DOUBLE 2"x10": Shore location as necessary to remove any existing beam and framing. Install a double 2"x10" beam, level, crown up and all necessary framing to secure beam. Use S4S SYP lumber to create beam. Nail each end of beam with three 16D nails and stagger nails at 16" on center through remainder of beam. Beam to sit firmly against supporting members. Nail beam to all remaining and new framing.	LF
2232	FRAMING - BEAM, WOOD, LOAD-BEARING 6" X 6" TREATED SILL: Install new load-bearing 6" X 6" treated wooden beam. Beam to be sized and Installed according load and code requirements. Anchor beam to supporting Framing members bearing on sound pier/fooling foundation. Any Joints in sill must fall on new or existing piers to match existing. Re-nail all joists to new beam or use joist hangers when necessary.	LF
2457	FRAMING-REPAIR/REPLACE -DETERIORATED STUDS: Repair or replace deteriorated studs. Stud size to match existing studs. Sister (scab) new studs next to damaged studs by staggering nail pattern using 16d common nails every 16". New studs to sit firmly against top and bottom plates with nail at three sides. Replace any damaged or rotten top and bottom plates or door and window headers. All headers to meet code requirements.	LF
2463	FRAMING, WALL, BEARING - EXTERIOR 2x2 – 12 FT CEILINGS: Frame bearing wall with 2"x4' #2 SYP studs at 16" O.C. with double 2"x4" full width top plates and single 2"x4" bottom plate. Secure wall to walls, floor and ceiling using 3" nails or screws into framing, and tie downs for 130 mph wind zone. Where openings under 36" are to be included, install header constructed of 2-2"x8" with 1/2" ply woods sandwiched between. Use cripple jacks from bottom plate to header and from header to top plate. Where openings exceed 36",	LF

	use minimum of double 2"x10" stock with 1/2"x91/2" plywood sandwiched between for header. Use cripple jacks from bottom plate to header and from header to top plate.	
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Framing (8) - continued

2464	FRAMING-WALL, BEARING - EXTERIOR 2" 6": Frame bearing wall with 2" x 6" #2 SYP studs at 16" O.C. with double 2" x 6" full width top plates and single 2" x 6" bottom plate. Secure wall to walls, floor and ceiling using 3" nails or screws into framing, and tie downs for 130 mph wind zone. Where openings under 36" are to be included, install header constructed of 2 -2"x 8" with 2"x 6" on top and bottom of header nailed into each header piece. Use cripple jacks from header to bottom plate and header to top plate. Where openings exceed 36", use minimum of double 2"x10" stock with 2" x 10" lumber on top and bottom of header nailed into each header piece. Use cripple jacks above header to top plate and cripple jacks from bottom plate to under header.	LF
2466	FRAMING, WALL, 2" " 6": Frame new wall with 2" x 6" #2 (standard or better) studs at 16" O.C. with double 2" x 6" full width top and 2" x 6" bottom plate. Secure new wall to existing walls, floor, and ceiling using 3" nails or screws into existing framing or newly installed nailers. Where openings under 36" are to be included, install header constructed of (2) 2" x 6" with 1/2" x 5-1/2" plywood sandwiched between or 4x or per code. Use cripple jacks from header to bottom plate and from header to ceiling plate. Where openings exceed 36", use minimum of (2) 2" x 8" with 1/2" x 7-1/2" plywood sandwiched between or 4" x 6" stock for header. Include all necessary tie downs and strapping per code.	LF
4403	ROOF RAFTERS, BRACE (SCAB), FULL LENGTH, MATCH SIZE: Install rafters to brace roofing structure (scabs). Extend new rafter member the full length of defective/damaged rafter. New rafters to match existing size. Nail to existing rafter at each end using three 16d nails and every 32" O.C. staggering nails. All new members to run full length without joint where abutting headers, use joist hangers. Installation to be per code.	LF
4425	RAFTER-REPLACE RAFTER TO MATCH EXISTING: LF Dispose of roofing and defective rafter. Install a pine rafter, sized to match existing roof rafter, crown up, from ridge board to fascia. Re-nail sheathing to new rafter with nails long enough to penetrate rafter at least 2".	LF
4430	RAFTER TAIL -REPAIR: Remove damaged rafter tail and dispose. Install a new matching rafter tail into existing overhang area and fasten to roof sheathing and existing rafter. Cut damaged rafter into attic area if necessary. Repair any damage caused during installation. Prime and paint to match existing with high grade exterior latex paint.	EA
4439	ROOF - REFRAME WITH PITCH, INCLUDING SHINGLES: SF Remove all roofing and roof framing down to wall plates if necessary. Haul all debris from site. Install new pitched gable roof (match existing pitch). Rafters, joists, framing, and tie downs to be per code. Install 1/2" plywood CDX sheathing or 7/16" QSB. 151b saturated felt, style "A" roof edging at entire perimeter, all flashing to any vertical surfaces, galvanized flashing at valleys and 30-year self-sealing shingles. Overhang to be a minimum of 1'-0" or match existing, same style as house. Replace all removed attachments. Provide a minimum 1-year contractor warranty and furnish manufacturer warranty.	SF

Framing (8) - continued

4756	SOFFIT & FASCIA, WOODEN, REPAIR, REPLACE TO MATCH EXISTING: Replace all broken, deteriorated soffit & fascia with treated lumber to match existing. All soffit to be exterior grade (B,C or better) plywood to match existing thickness or 1x lumber to match existing. All new fascia to be S4S pine to match existing size and thickness. Include replacing any deteriorated framing (lookouts, wall band, rafter tails, etc.) using lumber to match existing. Bottom edge to be straight line matching existing. All nails to be galvanized.	LF
2875	WINDOWS- WOOD SASH • SINGLE GLAZED: Remove existing stops, windows and sash balances. Prepare frame and install new single glazed wood sash into existing frame. Install new sash weights and cords or new sash balances, all wooden trim, stops, guides and weather stripping, ready for paint. Locations:	EA
2880	WINDOWS- REPLACE, WOOD, DOUBLE HUNG, MATCH EXISTING: Remove stops, windows and sash balances. Prepare frame, provide and install new glazed wooden sash into existing frame, new spring sash weights or balances, all wood trim, stops, parting strips, guides and weather stripping, ready for paint. Paint inside and outside of the new sash with two coats of high grade exterior latex paint. Color to match as close as possible to existing.	EA
2915	WINDOWS- REWORK/REPAIR EXISTING- MODIFY FRAME: Remove existing wooden window frame and sash. Rework/repair existing frame to shorten frame height. Configure new frame height to allow approximately 2" from window frame apron and interior finish (counter top, cultured marble, ceramic tile, etc.) in kitchen or bath. Install reworked frame into existing opening. Install necessary framing below frame and tooth in exterior siding to match existing siding and adjacent finishes. Toothed joints in siding to be no less than 16" apart. Rework wooden sash and install into frame with all stops, pulleys, sash balances and parting strips. Install salvaged interior casing or new casing to match existing including apron and stool. Repair all interior damage during installation to match adjacent area.	EA
2930	WINDOWS-ALUM SGL HNG/DBL GLZ •LOWE- REPLACE: Replace windows with aluminum single hung double glazed, low-e, windows. In siding Installation, cut straight cuts around old window to remove. Install self-adhesive modified bitumen flashing around each opening extending from inside wall surface to a minimum of 2" under exterior finish. Siding cut for Installation must be toothed so joints are staggered. Stucco finishes should be blended to match existing. Caulk all junctions of window and siding. Repair all interior and exterior finishes affected by window change to match adjacent finishes, and paint all new material to match existing. Remove debris and glass from site immediately.	EA
2932	WINDOWS- LOWE • ALUMINUM REPLACEMENT, INTO EXISTING FRAMES: Remove existing window sash, hardware, parting strips and stops. Replace windows with new divided lite aluminum. Low - E, single hung double-glazed replacement windows into the existing wooden frames. Color tone to be determined by owner. Caulk all Junctions of window and Install any stops necessary for proper installation. Contractor to measure and verify all sizes and color before ordering windows. Repair all interior and exterior finishes affected by window change to match adjacent finishes and paint all new materials to match existing. Remove debris and glass from site immediately.	EA

Framing (8) - continued

2933	WINDOWS - LOWE • VINYL REPLACEMENT INTO EXISTING FRAMES: Remove existing window sash hardware, parting strips and stops. Replace windows with new divided lite vinyl, Low - E, single hung double-glazed replacement windows into the existing wooden frames. Color tone to be determined by owner. Caulk all junctions of window and install any stops necessary for proper installation, Contractor to measure and verify all sizes and color before ordering windows. Repair all interior and exterior finishes affected by window change to match adjacent finishes and paint all new materials to match existing. Remove debris and glass from site immediately.	EA
2968	WINDOWS- MATCHING, INSTALL IN EXTERIOR WALL: Install new window unit into exterior bearing wall. Window to match existing window units in type, size and color including aluminum, vinyl and wooden units. Cut opening and install header and all framing. All headers to be 2" x 10" with 1/2" x 9-1/2" sandwiched between members. Windows are to be properly flashed into existing exterior wall. All trim surfaces inside and outside to match existing. Repair all surfaces inside and out to match existing. All siding must be toothed in and no joint within 16" of another. Prime, caulk and paint to match existing.	EA
2980	WINDOW- VINYL SGL HNG DBL GLZ • LOWE: Replace windows with new vinyl, single hung, double glaze, low e, color tone windows of the same sizes of existing. In siding installation, cut around window to remove old window. Install 4 mil visqueen or impregnated felt wrap around each opening extending from inside wall surface to a minimum of 2" under existing finish. If structure has exterior siding finish, any siding cut for installation must be "toothed" back in with siding so joints are staggered. Stucco finishes should be blended to match existing. Caulk all junctions of window and any new material added. Contractor to measure and verify all sizes and color before ordering windows. Repair all interior and exterior finishes affected by window change to match adjacent finishes, and paint all new material to match existing. Remove debris and glass from site immediately.	EA
3186	DOOR - EXT. - PRE-HUNG STEEL- 6 PANEL W/LOCKS • NEW: Install a new 3'-0" x 6'-8" x 1-3/4" exterior, six panel steel clad door unit complete with integral jamb, interior and exterior trim, magnetic weather stripping, keyed entry lockset and single cylinder dead bolt lock, sill, threshold, peep hole and 3 pair of butt hinges. Unit to be installed plumb with minimum 1/2" clearance between jamb and trimmer for adjustment and insulation.	EA
3188	DOOR • EXT. - PRE-HUNG STEEL W/ SUNBURST LITE WITH LOCKS: Install 3'-0" x 6'-8" x 1-3/4" exterior steel-clad door with star burst lite at top. Unit should be complete with integral jamb, interior and exterior trim, magnetic weather stripping, keyed entry lockset and single cylinder dead bolt lock, sill, threshold, and 3 pair of butt hinges. Unit to be installed plumb with minimum 1/2" clearance between jamb and trimmer for adjustment and insulation.	EA
3210	DOOR - STORM DOOR--ALUMINUM: Install a new aluminum combination storm and screen door with white baked enamel aluminum finish and closer. Door to be hung into existing door frame.	EA

Framing (8) - continued

3250	DOOR • INSTALL IN EXTERIOR WALL: Install exterior door unit in exterior bearing wall. Cut opening and install header and all framing. Headers in exterior walls to be double 2" x 10" SYP lumber with 1/2" x 9-1/4" plywood sandwiched between supported by 2x opening studs on each end of header. Install a new 3'-0" x 6'-8" x 1-3/4" exterior steel-clad door unit complete with Integral jamb, Interior and exterior trim, magnetic weather stripping, keyed entry lockset and single cylinder dead bolt lock, sill, threshold and 3 pair of butt hinges. Unit to be installed plumb with minimum 1/2" clearance between jamb and trimmer for adjustment and insulation. Repair all surfaces in and out to match existing. Repair any damage caused during installation to match existing.	EA
9522.1	EXTERIOR DOOR-STABILIZE & ADJUST: After establishing any required floor containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Plane exterior door edges and adjust hasp and strike plate to minimize door/jamb friction. Wet scrape door jams and trim. Clean and de-gloss with detergent solution. Rinse to neutral and allow to dry. HEPA vacuum any paint chips, dust and debris. Spot prime and top coat with premium acrylic latex.	EA
9532.1	EXTERIOR DOOR--REPLACE WITH METAL PREHUNG • LEAD PROTOCOL: After establishing any required floor containment with polyethylene sheeting, wet mist, remove wrap in polyethylene sheeting and dispose of door, frame and casing. Install a pre-hung, insulated, 4-panel, metal skinned door including magnetic weather stripping, interlocking threshold, wide angle peep site, dead bolt and entrance locksets. Re-trim opening with 1" x 6" casing and brick molding. Prime and prep all wood with premium acrylic latex.	EA

Siding & Stucco (11)

2566	SIDING -1/2" X 8" HARDI-PLANK WITH SHEATHING: SF Prepare surface by removing, existing siding if necessary, nails, repairing or removing sheathing. Install 1/2" x 8" factory primed smooth fiber cement siding on entire body of structure over newly installed 1/2" CDX sheathing as per code, including 2x preservative treated or solid Hardi corner boards and trim, with double dipped galvanized or stainless-steel fasteners. Install TYVEK or equal to sheathing before installing siding. Multiple small pieces not permitted. Caulk end joints. Hardi-plank butting wood should be gapped 1/8-inch and caulked, Hardi-plank butting cementitious trim should be gapped 1/8-Inch and caulked. Repair and prime all scraped and damaged areas using factory recommended primer. All Installation to follow manufacturer's specifications. Siding lap to match any existing siding or lap to be no more than 6'.	SF
1040	PORCH• PORCH STEP. PRECAST CONCRETE WITH LANDING & RAILING: Install a 4' wide, entrance stairway with a 4' deep platform on a reinforced 4" concrete slab/footing including railing. Rise and run and railing shall be installed to code.	EA
3460	PORCH • DECK JOIST - 2"X 8" PTP: Install 2"x 8" pressure treated pine joist, at existing height, crown up. Joist to sit on treated load bearing beam and nailed. Use joist hangers as necessary for support at existing structure or as necessary.	LF

Siding & Stucco (11) - continued

3465	PORCH • DECK - TONGUE AND GROOVE - REMOVE AND REPLACE: Shore porch roof framing to allow floor removal. Remove damaged/deteriorated porch deck flooring. Install 5/4" x 4" treated pine tongue and groove decking to existing joists with, concealed galvanized nails. Install metal wall flashing under siding to prevent water intrusion at wall intersections. Prime new decking on all sides prior to installation with high quality oil-based primer. Paint deck with two coats of high-grade porch and deck enamel. Touch up all affected surfaces to match existing. Owner to select color of deck paint.	SF
3466	PAINT- PREP & PAINT WOOD FLOOR: Scrape and rough sand with 80 grit paper and a sanding stick, entire floor/porch deck. Vacuum and tack rag surface. Prime floor and apply two coats owner's choice of premixed pigmented polyurethane floor finish, per manufacturer's recommendations.	SF
3466.1	PAINT- PREP & PAINT WOOD FLOOR. LEAD PROTOCOL: After establishing any required ground containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Wet scrape all loose paint with curved and flat draw scrapers. Wash with detergent solution, rinse, allow to dry and HEPA vacuum and tack rag surface for paint chips, dust and debris. Spot prime and caulk with a 25-year siliconized acrylic caulk. Prime floor and apply two coats owner's choice of Elastomeric Latex pigmented floor and deck finish, per manufacturer's recommendations.	SF
3486	PORCH, POSTS, REPLACE WIWRAPPED POSTS: Shore up porch and replace deteriorated porch posts. Replace with new posts as follows: Posts are to be square and of a dimension to coincide with the soffit overhead. Use 4"x4" rough posts encased on four sides with clear treated pine or C and better pine. Top and bottom of all columns to have 1x treated base mitered at all corners. All joints and perimeter edges to be sanded smooth and all galvanized nail heads are to be set, filled, and sanded. Prime and paint new posts with two coats paint. Seal all knots with Kilz before painting.	EA
3505	PORCH CEILING- T&G: Dispose of damaged/deteriorated tongue and groove ceiling material. Secure any loose elements and provide backing for new installation of new sections. Install matching material as closes as possible to existing in width and thickness. Lock tongue of new boards securely into existing grooves. Face nailing permitted only where original ceiling is race nailed. Set and fill all visible nail heads. Finish new wood to match existing.	SF
3515	PORCH - RAIL REPAIR- WOOD: Replace missing or defective handrail to match existing. Use clear treated lumber, treated balusters to match existing, treated support posts and treated railing with same size stock. Nail all new railing with galvanized nails or deck screws for use in treated lumber.	LF
3525	PORCH – HANDRAIL/GUARD RAIL--WOOD, REPLACE: Remove existing rail and dispose off-site. Install new railings as follows: Top rail to be 2 x 4 with top beveled from center to edges for water shed. Bottom rail is to be 2 x 3 with the top edge chamfered. Spindles are to be 1 1/8" x 2" x 36", spaced so that a 4" diameter sphere will not pass through the opening, attached to a 1 x 2 wood strip for anchorage to the top and bottom rails. Guard railing height to be at least 36" above finished floor. All materials are to be pressure treated. All joints and perimeter edges to be sanded smooth and all galvanized nail heads to be set, filled and sanded. Seal all knots with before painting.	LF

Siding & Stucco (11) - continued

3531	PORCH • HANDRAIL/GUARDRAIL • WROUGHT IRON • EXTERIOR: Dispose of any existing rafting. Install a black, wrought iron handrails and guardrails of bar stock wrought steel with solid 1/2" x 1/2" balusters. Guard rail height to be a minimum of 36-inches above finish floor and handrails to be 34" to 38" above nose of stairs. Pickets will be spaced so that a 4-inch diameter sphere will not pass through the opening. Bolt securely in wall and door with lead shielded lag bolts and caulk all penetrations. Embed in concrete in ground when servicing steps. Touch up paint.	LF
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Insulation & Conservation (16)

4905	INSULATION, BATTS, R-13 • 2x4 WALLS & AIR SEAL: Install 3-1/2" fiberglass bait insulation to all exterior walls to roof line. All spaces within framing to be filled with insulation, e.g. corners, outlets, switches, partition leads, around windows etc. Seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal all top plate and bottom plate penetrations. Seal all penetrations created by plumbing, gas lines electrical boxes and outlets. Seal large accessible gaps around windows between house framing and window frame - use special care on large sliding-glass doors and vinyl-framed windows: do not use expansive foam on these areas. Take care to seal all joints without excess sealant.	SF
4926	INSULATION, WALLS, EXISTING, DRILL & PLUG METHOD Insulate all walls exposed to outside and walls adjacent to unheated spaces. The single or double opening method of installation may be used. The installation is to be made by drilling holes necessary to properly Insulate all areas. Plug holes in siding when installation is complete. All damaged materials repaired or plugged shall match existing as close as possible. Materials used shall have a Resistance Value of R-13 minimum, approved Owens-Coming or equal. Approximate square feet and location(s):	SF
4927	INSULATION· ATTIC-R30 CELLULOSE· BLOWN-IN & AIR SEAL: Prepare attic space by covering personal items and installing fire slop baffles at all lights, chimneys, and vent baffles at soffits. Blow a cellulose product that minimizes dust and inhalable fibers to create a uniform R-30 coverage. Provide R-value certification to construction specialist. At ceiling area seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if> 1/4"). Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with Fire rated caulk. Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation.	SF

4928	INSULATION- ATTIC - R-30 FIBERGLASS BLOWN N & AIR SEAL: Prepare attic space by covering personal items and installing fire stop baffles at all lights, chimneys, and vent baffles at soffits. Blow a fiberglass product that minimizes dust and inhalable fibers to create a uniform R-30 coverage. Provide R-value certificate to construction specialist. At ceiling area seal all accessible cracks, gaps and holes in the building envelope (the barrier between the Indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with fire rated caulk. Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation.	SF
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Insulation & Conservation (16) - continued

4935	ATTIC R-30 CELLULOSE: After Air Sealing (Spec# 16-4903) Install blow in borax treated (no ammonium sulfate permitted), cellulose Insulation per manufacturer's specifications to R30. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase Insulate stairs to attic, landing & interior stairwell walls as part of this item dense-packing the cellulose into closed floor, stair and wall cavities to a minimum density of 3.5 lbs. per Cubic Foot. If access is via a hatch insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.	SF
502	ROOF- REPLACE TORCH DOWN: Remove roof down to sheathing and replace all defective sheathing with equivalent material. Install a new "torch down" type roof with all necessary flashings. Application to be in accordance with manufacturer's specifications and to comply with applicable building codes. Replace all drip edge flashing, wall flashing and vent collars with accepted flashings made of galvanized steel or aluminum. Remove all debris from roof and yard. Provide a manufacturer warranty to homeowner.	SQ
4564	ROOF, PITCHED W/SHEATHING AND 30 YEAR SHINGLES: Remove all layers of shingles down to spaced 1x. Inspect rafters for deterioration and notify owner of condition. Install new 1/2" CDX plywood or 7/16" OSB sheathing on entire roof. Ridge, edges and valley lines to be straight with no sag. Apply drip edging at entire perimeter and install flashing at any vertical surfaces. Replace all items removed for installation and touchup all surfaces. All valleys to have galvanized flashing. Install one layer of 15lb saturated felt and Class "A" type fiberglass 30-year self-sealing shingles. Approximate square feet of area to be roofed:	SQ
4580	ROOF • REPLACE SHINGLES WITH 30 YEAR SHINGLES: Remove all roofing down to sheathing. Notify owner of any defective sheathing. Install new flashing at all valleys and vertical Intersections with walls or masonry. Install 15 LB saturated felt and 30-year, self-sealing shingles with 6-nails per shingle and drip edge at entire perimeter. Replace all roof jacks at pipes extending through roof. Replace any attachments that were removed such as vents and flashing. Provide manufacturer's warranty and remove debris from site.	SQ

4581	ROOF, VENTS, WIND TURBINE: Install roof venting wind forced Turbine type (jacks) to provide attic ventilation per code requirements. Vent jacks to be placed in straight line parallel to ridge within top one third portion of roof/ridge area. All holes to be cut accurately and vents to be flashed and sealed properly according to manufacturer/trade procedures. Protect roof from all damage during installation.	EA
4591	ROOF, REPAIR SHINGLES, PITCHED: Repair roof. Remove all damaged/deteriorated shingles and replace with new to match existing as close as possible. Notify owner of any problems with base. Install new felt into damaged area lapping at all sides. Remove all debris from job site.	SF

Insulation & Conservation (16) - continued

4594	ROOF· REPLACE RIDGE TILE - MATCH EXISTING Remove all deteriorated/damaged ridge tile and dispose. Replace all missing or damaged roof ridge tile with tile to match existing. Fasten ridge tile with galvanized nails long enough to penetrate ridge board a minimum of 1-1/2" without damage or cracking replacement tiles.	EA
4602	GUTTERS, 4.5", PRE-FINISHED ALUMINUM WITH DOWNSPOUTS – NEW Remove gutters and downspouts from structure and the site. Install new 4.5", seamless, prefinished aluminum "K" minimum .027 Gage, or vinyl gutters and downspouts with all required ells, miters, hangers and other accessories to insure proper anchorage and proper drainage of all roof surfaces. Slope gutters to downspouts 1/16" per foot minimum with at least one downspout every 30' and provide basket strainers to top of all downspouts.	LF
4605	DOWNSPOUT- REPLACE TO MATCH EXISTING: Replace damaged downspout with new downspout of same type. Secure to structure every 6'-0" using galvanized straps and approved fasteners or screws of sufficient length to penetrate wood for 2/3 length of screw. Secure to outlet with metal screws. Apply treatment to galvanized metal to remove oxide so metal type primer will adhere. Prime and paint downspout to match existing if required.	LF
4606	GUTTERS & DOWNSPOUTS, SECURE TO STRUCTURE Secure loose gutters and downspouts to structure. All joints in gutters to be sealed using non-hardening sealer. Hang gutters tight against fascia area and fastened with galvanized gutter spikes at 30" O.C. Downspouts to be fastened to gutter outlets with corrosion resistant screws and fastened to structure at 6'-0" intervals with straps and screws. All gutters to slope to downspouts. Maximum gutter length per downspout no more than 30'-0". Any surface affected by installation to be repaired to match adjacent, including roof.	
5743.1	PAINT· EXTERIOR TRIM Prepare, prime and paint all exterior trim which shall be described as all exterior painted surfaces, sheet metal, wood, concrete, masonry, other than body of dwelling (Siding, Stucco). Secure any loose trim. Scrape and sand all surfaces to remove all loose/flaking paint and to feather out all old paint edges. Old paint will not be completely. Caulk/patch cracks, holes and small splits. Remove all unused attachments (screws, nails, etc.). Remove all removable exterior attachments such as downspouts (unless welded), shutters, house numbers, etc., so items may be back-painted and structure prepped and painted behind same and reinstall. Remove all loose	SF

	deteriorated window putty and re-putty. Seat all cracks with putty. Use oil base glazing putty for all glass (spackle not permitted). Do not allow paint on sliding window track areas. Use linseed oil on any bare wood track surfaces. Service all double hung lower windows to open, close and lock. All upper windows still operating shall be left operable. Notify owner of any non-working locks. Prime with appropriate exterior wood primer and apply high quality exterior finish coating of owner's choice of up to two standard colors.	
5744	PAINT--EXTERIOR SIDING AND TRIM Prepare, prime and paint all exterior trim and siding which shall be described as all exterior painted surfaces, sheet metal, wood, concrete, masonry. Secure any loose trim and replace any damaged siding boards to match existing. Scrape and sand all surfaces to remove all loose, flaking paint and to feather out all old paint edges. Old paint will not be completely. Caulk/patch cracks, holes and small splits. Remove all unused attachments (screws, nails, etc.). Remove all removable exterior attachments such as downspouts (unless welded), shutters house numbers and etc., so items may be back-painted and structure prepped and painted behind same, reinstall. Remove all loose deteriorated window putty and re-putty. Seal all cracks with putty. Use oil base glazing putty for all glass (spackle not permitted). Do not allow paint on sliding window track areas. Use linseed oil on any bare wood track surfaces. Service all double hung lower windows to open, close and lock. All upper windows still operating shall be left operable. Notify owner of any non-working locks. Prime with appropriate wood primer and apply quality finish coating of owner's choice of up to two standard colors.	SF
5744.1	PAINT-EXTERIOR SIDING AND TRIM. ELASTOMERIC PAINT. LEAD PROTOCOL Prepare, prime and paint all exterior trim and siding which shall be described as all exterior painted surfaces, sheet metal, wood, concrete, masonry. After establishing any required ground containment with polyethylene sheeting, moist defective paint area with water to the point of saturation. Aggressively wet scrape all loose paint, caulking and glazing with curved and flat draw scrapers. Feather edges with a wet 100-grit sponge sanding block. Wash with detergent solution, rinse, allow to dry and HEPA vacuum all paint chips, dust and debris. Prime, caulk with 25-year siliconized acrylic and top coat with premium elastomeric acrylic latex. Secure any loose trim and replace any damaged siding boards to match existing. Scrape and sand all surfaces to remove all loose/flaking paint' and to feather out all old paint edges. Caulk/patch cracks, holes and small splits. Remove all unused attachments (screws, nails, etc.). Remove all removable exterior attachments such as downspouts (unless welded), shutters house numbers and etc., so items may be back-painted and structure prepped and painted behind same. reinstall. Remove all loose deteriorated window putty and re-putty. Seat all cracks with putty. Use oil base glazing putty for all glass (spackle not permitted). Do not allow paint on sliding window track areas. Use linseed oil on any bare wood track surfaces. Service all double hung lower windows to open, close and lock. All upper windows still operating shall be left operable. Notify owner of any non-working locks. Prime with appropriate wood primer and apply quality finish coating of owner's choice of up to two standard colors.	SF
4926	INSULATION, WALLS, EXISTING, DRILL & PLUG METHOD Insulate all walls exposed to outside and walls adjacent to unheated spaces. The single or double opening method of installation may be used. The installation is to be made by drilling holes necessary to properly Insulate all areas. Plug holes in siding when installation is complete. All damaged materials repaired or plugged shall match existing as close as possible. Materials used shall have a Resistance Value of R-13 minimum, approved Owens-Coming or equal. Approximate square feet and location(s):	SF
4926	INSULATION- ATTIC-R30 CELLULOSE- BLOWN-IN & AIR SEAL Prepare attic space by covering personal items and installing fire stop baffles at all lights, chimneys, and vent baffles at soffits. Blow a cellulose product that minimizes dust and inhalable	SF

	fibers to create a uniform R-30 coverage. Provide R-value certification to construction specialist. At ceiling area seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with Fire rated caulk. Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation.	
4928	INSULATION- ATTIC - R-30 FIBERGLASS. BLOWN IN & AIR SEAL Prepare attic space by covering personal items and installing fire stop baffles at all lights, chimneys, and vent baffles at soffits. Blow a fiberglass product that minimizes dust and inhalable fibers to create a uniform R-30 coverage. Provide R-value certificate to construction specialist. At ceiling area seal all accessible cracks, gaps and holes in the building envelope (the barrier between the indoor conditioned space and the outside) with low VOC caulk (if <1/4") or expanding foam (if > 1/4"). Seal any gaps in the building envelope adjacent to flues with carefully cut to fit sheet metal that is securely fastened to framing sealing all seams and gaps with fire rated caulk. Seal recessed light fixtures in ceilings that are part of the building envelope and are not rated for insulation contact with an airtight box made of drywall sealed to the ceiling and seal IC rated recessed fixtures with caulk. Seal any entries to attic space using weather stripping on attic doors or hatches. Air sealing must be done prior to the installation of insulation.	SF
4935	ATTIC R-30 CELLULOSE After Air Sealing (Spec# 16-4903) Install blow in borax treated (no ammonium sulfate permitted), cellulose Insulation per manufacturer's specifications to R30. Maintain ventilation routes from soffit and other vents with baffles. Replace all material removed or cut to gain access to match existing materials. NOTE: If access to attic is via a fixed staircase Insulate stairs to attic, landing & interior stairwell walls as part of this item dense-packing the cellulose into closed floor, stair and wall cavities to a minimum density of 3.5 Lbs. per Cubic Foot. If access is via a hatch insulate the hatch with 3" of reflective foil faced polyisocyanurate foam and seal edges with compatible foil tape. If access is via a fold down stair insulate the stair with an airtight 2" thick reflective foil faced polyisocyanurate foam box with seams and seal the edges with a compatible foil tape.	SF

Drywall & Plaster (17)

UoM

5210	DRYWALL, PATCH Remove damaged drywall to expose one half stud on each side of the damaged area. Scab any necessary blocking to existing studs. Fit drywall into area using glue, nails or screws to fasten to framing. Apply tape and 3 coats of compound floated at least 8" for a smooth appearance. Wet sponge or sand and apply texture to match existing wall area and paint. Approximate SF to be patched:	SF
5211	DRYWALL/PLASTER- CEILING - REPAIR & TEXTURE Remove loose ceiling plaster areas and repair with plaster or 1/2" drywall, taping all cracks with fiberglass tape, and apply smooth coat finish. Add medium texture finish to ceiling area or match existing texture. Prime and paint.	SF

5212	DRYWALL, LAMINATE WITH 3/8" Install 3/8" gypsum over existing plaster surface with screws sufficient to penetrate framing minimum 1" at 8" on center and bead of construction adhesive 20" on center. Butt drywall to door and window casing and Oat tape. Tape joints, spot nails and apply 3-coat finish. Corners to have metal corner bead. Location and sq. ft:	SF
3357	DOOR · CASED OPENING Trim interior opening using 1x pine for all jambs and standard stock casing or casing to match existing. Install level and plumb into opening. Set all nails below the surface of the molding, sand, putty and caulk ready for paint. Molding must be tight to wall upon completion.	EA
3386	DOOR, BIPASS, (MIRRORED) Provide and install new mirrored bypass doors. Include casing, jambs and trim for two sides and top. Include all necessary hardware, guides and pulls. Doors to be STANLEY -White Bottom Roll Interior Mirror Sliding Door@ Lowe's Item # 162782 for 4' doors and matching for 6' doors.	EA
3420	ATTIC ACCESS Cut and frame an attic access hatch of 3/8" plywood at least 48"x24". Trim with casing to match room, prime, topcoat, and weather strip with closed cell foam and insulate with 1" closed cell polystyrene.	EA
9495.1	INTERIOR DOOR AND FRAME· STABILIZE, PLANE & ADJUST After establishing any required floor containment with polyethylene sheeting, remove door hinge pins and carry to a fully contained lead work room. Place pins in plastic bag on jamb for safekeeping. Plane door edges and adjust the hasp and strike plate to minimize door/jamb friction and contact. Mist deteriorated paint with water to the point of saturation. Replace stop molding. Clean and de-gloss door with detergent wash, rinse, dry and HEPA vacuum any paint chips, dust and debris. Spot prime and top coat with premium acrylic latex. Re-Install door on hinges.	EA
9508.1	INTERIOR DOOR - REPLACE WITH 6 PANEL· LEAD PROTOCOL After establishing any required floor containment with polyethylene sheeting, wet mist, remove, wrap in polyethylene sheeting and dispose of door unit, stop molding and hardware. Wet scrape jamb and trim. Wash with detergent solution, rinse, allow to dry and HEPA vacuum any paint chips, dust and debris. Install a pine or fir 6 panel 1-3/8" door on two 3" x 3" butt hinges. Provide bedroom lockset. Spot prime bare wood and top coat entire assembly with acrylic latex.	EA

Trim (19) UoM

2404	BASEBOARD - MOLDED • 5 1/4" x 9/16" W/SHOE Install pre-primed finger jointed or (MDF) pre-primed 9/16" x 5-1/4" molded base (molding # 5163). Provide pre-primed pine stone molding at all hard surface areas. Fasteners to be finish nails or tee headed brads. All fasteners to be counter sunk. Joints to be 45-degreemiters and corners to be cope sawn.	LF
2405	BASEBOARD· MOLDED· 3 1/2" x 9/16" W/SHOE Install pre-primed finger jointed or MDF 9/16" x 3-1/4" standard stock molded base. Provide shoe molding at all hard surface areas. Fasteners to be finish nails or tee headed brads. All fasteners to be counter sunk. Joints to be 45-degree miters and corners to be cope sawn.	LF

2409	BASEBOARD--1x WITI-1 BASE CAP Install a 2-piece baseboard system using 1x pine as baseboard with a traditional style base cap molding. Use finish nails of sufficient length to penetrate framing 1". Miter all lap joints, and break all joints over framing. Baseboard and cap to match existing as close as possible.	LF
2419	BASEBOARD- SHOE MOLDING/QUARTER ROUND Install pine shoe molding/quarter round to match existing nailed to create the tightest possible seal between the baseboard and floor using finish nails or tee headed braces.	LF
2435	BASEBOARD - MATCH EXISTING Install matching baseboard and shoe molding around perimeter of room. Provide base shoe at all hard surface areas. Moldings to be coped on inside corners and mitered on outside corners. Set all nails below the surface of the molding and fill holes with wood filler. Molding must be light to wall upon completion.	LF
2836	WINDOWS- TRIM- MATCH EXISTING: Install matching type molding around window including aprons and stools. Moldings must be mitered and glued on outside corners. Set all nails below the surface of the molding and fill holes with wood filler. Fill any existing gaps with wood filler. Molding must be tight to wall upon completion.	EA
2840	WINDOW TRIM · APRON & STOOL Use 3/4" stock lumber shaped for stools and casing for aprons. Scribe stool to allow tight fit to window sash. Stools to extend beyond opening 1" from the edge of the window casing. Aprons to be cut even with opening with a 90 degree return miter at each end.	EA
2355	FLOORING- FLOOR REPAIR - TONGUE AND GROOVE – FINISH Chisel out damaged flooring and stagger end joints at least 6". Blind nail where possible using tongue and groove wood flooring to match original as closely as possible. Sand and apply 3 coats of low VOC floor varnish to patched area.	SF

2396	FLOORING - LAMINATE: FLOORING, PRE-FINISHED, NEW Remove any flooring and dispose. Install new pre-finished laminate flooring like Pergo, Swiftlock or approved equal, not less than 6" wide and not less than 7mm or 3/8" thick. Use manufacturer recommended padding and underlayment. Clean surface before installing and install floor with tight joints. Layout so cut pieces at walls are the same at each end at main walls. Allow for expansion and contraction as recommended by manufacturer. Install quarter round molding to match flooring at room perimeter unless indicated otherwise. Allow \$1.25/SF for flooring only.	SF
2397	FLOORING- OAK, Z 1/4" INSTALL, SAND AND FINISH Install new oak floor. Properly secure existing floor. Oak to be T&G end-matched, select 25/32" x 21/4". Floor to be laid over red rosin paper or approved equal. Lay straight with tight joints, using all pieces with mismatched end for starters or end piece. Floor to extend within 1/4" of finished walls and under all attachments such as radiators. Sand and fill new flooring to a smooth finish. Vacuum and tack rag entire floor area. Apply a coat of Miniwax Water Based Polyurethane Base Coat followed by 3 coats of Miniwax Water-Based Polyurethane for Floors, or a floor finish that complies with regulation 8, rule 51. of the Bay Area Air Quality Management District and	SF

	may not exceed 250 grams of VOC per liter of coating as thinned to the manufacturer's maximum recommendation, excluding the volume of any water, exempt compounds, or colorant added to the tint bases.	
5404	FLOORING - CERAMIC TILE - (OVER TILE BACKER BOARD); Install new ceramic tile using standard available size (pattern and color selected by owner). Install per manufacturer's recommendations over 1/2" cement fabricated fiberglass backer board such as Hardie or approved equal. Cement boards are to be installed staggered and secured with minimum 1-1/2" screws recommended by manufacturer for wet installations every 8" on center. Fill edge joints with mortar and apply fiberglass mesh tape over seams and smooth out. Grout to be neat and uniform with grout color selected by owner. All cutting to be straight and true. Visible cracks or cut marks are not acceptable. Lay out tile to run parallel with adjacent walls. Outer edges should not have pieces smaller than 1/2 inch.	SF
5426	FLOORING- CERAMIC TILE - (OVER SLAB WITH THIN SET): Remove flooring down to slab and prep slab for proper adhesion. Install ceramic tile flooring using standard glazed floor tiles with standard available site (pattern and color selected by owner). Install per manufacturer's recommendations with thin set. Grout to be neat and uniform with owner-selected grout color. All culling to be straight and true, any visible cracks or cut marks are not acceptable. Lay out tile to run parallel with adjacent walls. Outer edges should not have pieces smaller than 1/2 inch.	SF
5925	FLOORING • VINYL SHEET FLOORING W UNDERLAY Nail all loose/squeaky areas of floor and shim/raise any uneven areas. Roughen old floor covering and install 3/8" underlayment grade plywood secured with construction adhesive at 16" O.C. and at all edges. Nail with ring shank or screw light nails @ 6" O.C. at edges and 6" in field over joists. Coat and sand all joints and nail dents. New floor to be installed under any water heater or appliance (cut-outs not acceptable) . Adhesive to be LOW VOC waterproof. Allow \$18.00 Per square yard for sheet goods (material only plus labor, underlayment. etc.).	SF
6626	PLUMBING- WATER LINES - "PEX" - INTERIOR, INCLUDE COPPER STAND PIPE: Replace all interior and exterior hot and cold-water lines with new PEX Type water lines above ground and PEX below ground from meter to a copper stand pipe with a main cut off valve and hose bib at the water entrance to the house. Joints in PEX piping above ground shall be formed with manufacturer's approved stainless-steel crimped clamps with no joints in piping below ground or encased in concrete. All piping shall run parallel to building construction and be neat and workmanlike. All pipes shall be concealed; piping in walls, below flooring and above the ceiling shall be properly supported. Hot and cold-water lines shall be at least 6" apart when parallel. No new pipes shall be exposed on the exterior of the building. Include water connections for ice maker and washing machine.	LF
6646	PLUMBING, SUPPLY SHUT OFF: Install supply shut off at wall between supply and fixture. Include new supply lines. Valve must comply with IRC.	EA
6698	PLUMBING -WATER LINES - COPPER: Install all hot and cold-water lines inside the structure with Type L or M copper above ground and Type K copper below ground. Joints in the copper piping above ground shall be formed with approved sweated solder fittings; there shall be no joints in the copper piping below ground or encased in concrete. All new piping shall run parallel to the building construction and be neat and workmanlike. Pipes shall be concealed in walls, below the floor or above the ceiling. All new piping shall be properly supported and be level without pockets. Hot and cold-water lines shall	SF

	be at least 6" apart when parallel. No new pipes shall be exposed on the exterior of the building. All work to be strictly per code.	
6738	PLUMBING, SEWER LINE, PVC, REPLACE: Remove sewer service line and haul away from site. Provide and install new PVC plastic sewer line from the city stub out to the main building connection. Include all excavation, backfill, and compaction. Include all fittings and connections. Work to be done in accordance to the IRC. Return all surfaces affected by this work to original condition.	LF
6751	WASTE - INTERNAL WASTE - REPAIR: Repair or replace internal waste piping (not to include buried branches or main sewer line). All new DWV piping is to be run at uniform grade of at least 1/4" per foot. Runs to be as short and straight as possible. Complete installation to be per IRC.	EA
6755	PLUMBING • WASTE & VENT LINE, REPLACE, TO UNDERGROUND CONNECTION Remove any existing waste lines and dispose from site. Replace all waste and vent pipe line(s) using schedule 40 PVC. All soil, waste, vent, and drainage piping to be run at uniform grade of at least 1/4" per foot. Run (s) to be as short and straight as possible. Laundry area should include washer drain and supply box. Run all new waste lines to sewer tie in at city connection including all underground connections. Complete installation to be per code.	LF
6756	DRAINS - ROTO CLEAN Clear all drain lines from all fixtures and cleanouts to city main using approved power auger equipment to clean roots and settled debris. Furnish receipt to owner for proof of cleaning record.	EA
6757	WASTE - REPLACE - INTERIOR INTO EXISTING SEWER: Replace all waste pipe line(s). All soil, waste, vent, and drainage piping to be run at uniform grade of at least 1/4" per foot. Run(s) to be as short and straight as possible. Laundry should include washer box. Run all new waste line to sewer line tie in. Not to include main line under structure or buried line. Complete installation to be per IRC.	LF
6763	GAS LINE - PRESSURE TEST: Cap all gas lines prior to filling the distribution system with 20 lbs. of compressed air. Maintain pressure for 24 hours. Locate and seal any leaks in the system. Provide proof of inspection by city inspector to owner as per city code.	EA
6764	PLUMBING, GAS OUTLET(S), CAP: Remove all old unused gas outlet lines and cap off at source per code. Repair remaining holes and affected surfaces to match existing surfaces as close as possible. Location:	EA

6890	PLUMBING- LAVATORY--WALL HUNG, NEW, COMPLETE Install a new American Standard enameled steel 18"x15" wall hung lavatory with metal bodied, water saving, 15-year drip-free, single lever faucet with pop-up, trap, chrome legs, supply and shut-off valves. Repair any affected surfaces.	EA
6892	PLUMBING- PEDISTAL LAV WITH FAUCET - NEW: Install a new American Standard or approved equal pedestal lavatory, including single	EA

	handle/lever faucet with maximum flow rate of 2.0 GPM and pop-up drain attachment. Replace all plumbing within three feet of lavatory installation, including 1/4-turn ball valve, angle stop, and trap. Lavatory to be set on finished flooring and fastened to the wall according to manufacturer's recommendations. Repair all damaged areas during installation to match existing.	
6900	VANITY - 24" COMPLETE: Remove lavatory and replace with new 24" factory made and finished oak frame vanity with panel type door complete with manmade marble integral top/lavatory including two-handled faucet by Moen, Chateau builder model with pop -up or Housing Rehabilitation approved equals. Install new, 1/4 turn hot and cold water shut-off valves at rear inside of cabinet. Scribe to fit wall. Caulk top neatly with paintable latex caulking.	EA
6902	VANITY· DOUBLE VANITY - 60" COMPLETE: Install factory-made double vanity, complete with cultured marble integral top/lav including splashes, 2 bowls, including (2) two-hand lead faucet by Moen, Chateau builder model with pop-up or Owner approved equals, PVC drain fillings, PEX or copper supply piping, and 1/4 turn shut-off valves. Vanities to be set plumb and level and fastened to wall studs with pre-drilled cabinet screws to avoid splitting. Face frames, drawer fronts and door frames to be solid oak. Exposed ends, top, sides and door panels to be oak veneer over plywood. Shelves to be adjustable and may be vinyl covered particle board or plywood. Vanities to be factory finished inside and out.	EA
6920	PLUMBING, FAUCET TUB/SHOWER DIVERTER VALVE: Remove tub/shower faucet valve without damage to surrounding areas. Provide and install a new tub/shower faucet, diverter valve, spout and shower head connected to new or existing hot and cold supply lines. All wall surfaces affected to be returned to a smooth, flush paint ready condition. Standard is chrome finished Della or approved equal. All work to be in full compliance with applicable building codes.	AL
6921	PLUMBING, TUB SPOUT & SHOWER OIVERTER, "CHICAGO- STYLE CLAWFOOT TUB: Remove tub spout from site. Provide and install new tub spout with shower diverter to replace existing, inclusive of new chromed steel shower riser with a "Chicago" style full surround shower curtain rod and water efficient shower head. Shower riser to be secured lo tub surround at not less than 12" from top of shower spout. All work to comply with the IRC.	EA
6925	SHOWER DIVERTER--DUAL CONTROL: Install a dual control, metal shower diverter and a Delta 6122 water saving shower head with a 1- year drip-free warranty.	EA
6936	SHOWER HEAD - 2 GPM: Install a chrome plated brass shower head with a maximum 2.0 gallons per minute flow rate. Include arm where required. Note: any low flow showerhead should be controlled by a valve that has been designed, tested, and verified to function safely at the reduced flow rate.	EA
6946	PLUMBING· TUB· STEEL W/CULTURE MARBLE SURROUND Provide and install a new 60" x 30" x 15 1/4" American Standard steel bathtub with a Delta metal. Single-lever shower diverter valve and shower head with a maximum 2.0 GPM flow rate or approved equal. Tub shall have a slip resistant surface, be connected to existing or new supply and drain lines, and include associated hardware and finishes. Damaged walls to be finished to match adjacent, ready for paint. Install a new standard cultured marble tub surround/alcove including soap dish (owner to choose from standard line of colors). Apply mildew resistant white silicone caulk at all seams.	EA

6947	PLUMBING- TUB SURROUND/ALCOVE - MAN MAO MARBLE Remove existing tub surround/alcove and haul from site. Install a standard cultured (man-made) marble tub surround/alcove with soap dish. Install new surround over water resistant green board sheetrock fastened to existing studs. Repair all damaged areas to match existing. Damaged walls to be finished to match adjacent, ready for paint. All work to be in full compliance with IRC.	EA
7012	TOILET--REPLACE--1.3 GPF-- ELONGATED BOWL, NEW. 2008 Install a new 1.3 GPF close coupled, white, vitreous china commode such as an American Standard FloWise Compact Cadet 3 EL 2403.128, or any commode tested through the latest "Maximum Performance" (MaP) testing sponsored by Canadian Water and Wastewater Association (CWWA), the California Urban Water Conservation Council (CUWCC), the U.S.- Canadian Alliance for Water Efficiency (AWE) and Veritec Consulting Inc. that has shown to score 800 or better on the Map Flush Performance test (grams of solid waste removed in a single flush). See the following link for the January 2008 report. http://fwww.cwwa.ca/pdffiles/Map%2011th%20Edition%20Full%20Report1.pdf Include a manufacturer's approved plastic or pressed wood white seat. all plumbing within 3' of fixture, supply pipe, shut off valve and wax seal.	EA
7015	TOILET ADA COMPLIANT: Replace toilet with new ADA compliant American Standard handicap Cadet Water Saver vitreous china close-coupled siphon jet action toilet with plastic white seat or approved equal. Include all plumbing within three feet of fixture, including 1/4-turn ball valve angle stop. If floor is not noted on specification to be replaced, repair affected surfaces to match existing as close as possible.	EA
7060	WATER HEATER -TPR VALVE Install temperature and pressure relief valve and discharge tube on water heater. Discharge tube to run within 6" of floor or to outside of structure.	EA
7070	WATER HEATER-40 GALLON GAS- NEW: Install a new 40-gallon, glass lined, high recovery, insulated to R-7, gas water heater with TPR valve, double wall type B vent with vent cap and flashing thimble, and gas piping from shut-off valve to fixture and 10-year warranty. TPR valve discharge shall be piped to exterior within 6"-24" above grade. If installed in the attic, provide drain pan with separate drain line from TPR valve to the exterior (TPR discharge line and drain pan discharge line must be run separately).	EA
7072	WATER HEATER-TANKLESS Replace existing water heater with a gas fired, closed combustion, tankless water heater with a minimum 7 gallon per minute flow rate. Include pressure & temperature relief valve, discharge tube to within 6" off floor, owner's manual & all venting piping. Provide separate electrical circuit & gas inlet and water inlet and outlet shut-off valves. If It Is located on an upper floor or If there is no floor drain, install a catch pan drained to the exterior. Recycle the existing water heater.	EA
7085	WATER HEATER • 40 GAL. ELECTRIC, NEW: Dispose of water heater in legal dump. Install a new 40 gallon, high or low profile, high recovery, glass lined, Insulated to R-7, double element, electric water heater with a 10- year warranty. Include TPR valve, discharge tube to within 6" of floor or to outside of structure, shutoff valve and electric supply. TPR valve discharge shall be piped to exterior within 6"-24" above grade. If	EA

	installed in the attic, provide drain pan with separate drain line from TPR valve to the exterior (TPR discharge line and drain pan discharge line must be run separately).	
7097	WATER HEATER· MOVE TO EXTERIOR• INCLUDE PLATFORM Move water heater to exterior on raised pressure treated wood platform to be set at least 3' above surrounding grade or higher for flood plain requirements. Provide factory made galvanized metal enclosure. Include venting, T&P valve and discharge piping. Conceal piping with all valves and insulating wrap per code. Strap water heater to framing. All water piping to be copper at exterior of the house. Prepare all holes and surfaces affected and seal exterior pipes as they pass the exterior wall and cap all unused lines at source (per code).	EA
7103	BATHTUB· POP-UP DRAIN· REPLACE: Replace drain with new pop-up drain and overflow, chrome plated, as manufactured by Universal Rundle, Elger, or equal.	EA
7120	WASHER· DRIPLESS CENTER· WASHER HOOK UP: Install PVC stand pipe, hot and cold hose bibs, and 20-amp GFCI outlet to service a washing machine.	EA
7554	ELECTRICAL OUTLETS, TEST AND SERVICE ALL: Service all outlets, fixture connections, and switches by installing new wire nuts, testing all devices/fixtures and inspecting condition of wiring.	SF
7555	ELECTRIC· COVER PLATE: Install receptacle, switch, or blank cover plate to cover existing electrical box. Color to match existing	EA
7560	ELECTRIC • OUTLET REPLACE: Remove electrical receptacle and dispose of off-site. Install new grounded receptacle. Installation to include all fasteners and new cover. Receptacle to be secure and cover to be even with adjacent surfaces and straight. All work to be done according to local electrical code. Color of receptacles and cover to match existing.	EA
7576	CIRCUIT· 20 AMP CIRCUIT· RECEPTICLE • NEW Install a new 20 amp, 120v electrical outlet on a new circuit, at least 15 inches above floor. Installation to include flush mounted outlet box, appropriately sized branch wiring, circuit breaker, all fasteners, grounding and cover plate. All work to be in full compliance with applicable building codes. All areas affected by work shall be returned to smooth paint ready surface.	EA
7581	ELECTRIC · DISCONNECT. 220V NEW: Install a new 220v line and disconnect box, bearing UL label, for A/C condensing unit to be located at exterior of house. Installation to be per code. Repair all affected surfaces. Wiring to be concealed or run under house.	EA
7583	RECEPTICLE. GFCI. REPLACE· USE EXISTING WIRING: Replace outlet with GFI outlet per code. Non GFI outlets within 6 feet of water supply not permitted. Old outlet box within 6 feet of water supply, if not used for GFI, to be covered with blank wall plate to prevent use.	EA
7590	ELECTRIC • GFCI OUTLET· 20 AMP-NEW: Install a new 20 Amp., 120v electrical GFCI outlet at all countertops. To be located within 12"	EA

	above kitchen counter top, utility or bathroom sink. Installation to include flush mounted outlet box, appropriately sized branch wiring, grounding and cover. All areas affected by this work shall be returned to a smooth paint ready finish. All work to be in full compliance with electrical codes. Install receptacles at countertops no more than 42" above floor.	
7600	CIRCUIT- KITCHEN GFCI • 20 AMP CIRCUIT Install a flush mounted, ground fault circuit interrupted, ivory, duplex receptacle and ivory cover plate using copper NM cable, controlled by a 20-amp circuit breaker, no more than 42" above floor. Fish wire and repair all tear out.	EA
7601	RECEPTACLE • GFCI-REPLACE Remove electrical device and dispose. Provide and install a new 20 Amp., 120v GFCI receptacle at all countertops. Install into existing box connected to existing wiring, grounding and cover. New outlet and cover to match existing color. All work to be in full compliance with electrical codes.	EA
7610	CIRCUIT- WATER HEATER CIRCUIT: Install a new, 220v electrical outlet on a new circuit. Installation to include flush mounted outlet box, appropriately sized branch wiring, circuit breaker, all fasteners, grounding and cover plate. All work to be in full compliance with applicable building codes. All areas affected by work shall be returned to smooth paint ready surface.	EA
7615	CIRCUIT- WASHER CIRCUIT 110/120 AMP: Install a flush or surface mounted single outlet for a washing machine on a separate 20- amp circuit. Include new wiring and any necessary conduit. Repair any damage during installation.	EA
7620	CIRCUIT • DRYER CIRCUIT- 30 AMP: Install a new 220-volt, 30-amp, surface mounted receptacle on an individual circuit. Installation to include flush mounted outlet box, appropriately sized branch wiring, any necessary conduit, circuit breaker, all fasteners, grounding and cover plate. All work to be in full compliance with applicable building codes, all areas affected by work shall be returned to smooth paint ready surface.	EA
7630	CIRCUIT- RANGE CIRCUIT- 40 AMP - NEW: Install a new 40-amp electrical outlet on a new circuit. Installation to include a flush mounted outlet box, appropriately sized branch wiring, circuit breaker, all fasteners, grounding and cover plate. All work to be in full compliance with local building code. All areas affected by this work shall be returned to a smooth paint ready surface. All wiring to be concealed.	EA
8137	ELECTRIC. UPDATE EXISTING ELECTRIC -BATHROOM--2008 Update the electrical fixtures in the bathroom Including: One 20A GFCI receptacle located near sink with a 20 AMP circuit. An Energy Star approved, ceiling mounted Fan/Light fixture w/ an exterior ducted vent fan capable of min. 80 CFM operating at 1/3 hp or less and vented w/ damper to exterior such as NuTone QTREN080FLT. Switch fan & light using a single switch with a time delay for the fan such as the EFI Fan/Light Time Delay Switch part# 5100.505 (in Ivory) (set for a 20-minute delay). http://www.energyfederation.org/consumer/default.asp?cPath/39_766_134 or equipped with a humidistat sensor. Install metal duct and vent to the exterior Ideally through a wall or gable end. All duct seams shall be sealed with duct mastic. Insulate the ductwork with vinyl or foil faced R 6 minimum duct insulation. Repair any damage to the ceiling from Installation and air seal fan/light assembly to the ceiling with low VOC caulk. One wall mounted vanity light fixture such as the Good Earth Lighting 2-Light Brushed Nickel	RM

	Contemporary Item #: 121104 Model: G1132-BN-1 Fixture above the sink.	
8710	SMOKE DETECTOR WITH BATTERY BACKUP • NEW: Install new 110-volt smoke detector with battery back-up per code. Include all wiring and install properly to avoid overload of any existing circuit. Detector to be UL listed and shall be of such quality to operate properly without false alarms under ordinary living conditions with exception of excessive smoke caused by cooking. Repair and touch up all affected surfaces.	EA

HVAC (24)

UoM

6004	HVAC, HEATING, GAS - FORCED AIR & AIR CONDITIONING: Install gas. 90% AFUE forced air furnace and a 13 SEER air conditioning system sized per Manual J. Contractor to furnish duct layout, per Manual D, with calculations from licensed heating company prior to starting any work. Installation to be complete including registers, returns, setback wall thermostat in central area, insulated ducts, electrical, plumbing, exterior vented double-wall type B vent with vent cap and flashing, filter, permits and removal of debris. Repair all surfaces to match existing as close as possible. Contractor to provide access to furnace per code. All work and venting to be complete with furnace operating. All manufacturer instruction books and warranties to be provided to owner. Provide platform for ale condenser so condenser is at least 3' above finished grade or higher to meet BFE requirements.	SF
6008	HEATING, OXYGEN DEPLETION UNITS: Remove space heaters and dispose off-site. Install new oxygen depletion type units in existing locations. Supply new shutoff valves and all necessary piping for complete installation to meet all code requirements.	EA
6015	HVAC ·SERVICE: Clean, inspect, oil and adjust heating equipment and controls and replace filter. Report any recommended part replacement to owner.	EA
6160	A/C- CONOENSOR ·REPLACE Install a new condensing unit compatible with the Indoor unit according to the manufacturer's recommendations. Support unit on a concrete pad or raised platform a minimum 3' above the current base flood elevation (BFE). Platform to be all treated lumber with 4" x 4" posts set in concrete no less than 18" into ground area. Joists and deck to be 2" x 6" treated lumber fastened with galvanized nails or screws. Joists to be 16" O.C. Unit to have a minimum of 3' clearance around coil. Reinsulate all refrigerant lines. Test unit for proper operation and provide owner with manufacturer's written warranty.	EA
6330	HVAC - REGISTER· REPLACE; Replace missing or damaged register with an adjustable metal register to match existing.	EA
6331	HVAC • AIR RETURN GRILLE· REPLACE: Remove damaged return air grille. Replace air return grille using a white or mill finished aluminum frame to match existing size including a new filter. Repair any damage during installation to match adjacent area.	
6377	HVAC - THERMOSTAT· REPLACE: Remove existing thermostat and dispose properly. Install a new thermostat compatible to	AL

	existing heating/cooling system. Mount thermostat at existing location and secure to wall using approved fastener. Calibrate and ensure proper operation of unit.	
5520.1	PAINT- PREP & PAINT CABINETS (LOW VOC): http://www.greensea.org/certification/standards/paints.cfm. Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.	LF
5530.1	PAINT- PREP/PAINT WINDOWS & TRIM-INT (LOW VOC): Scrape loose, peeling, cracked and blistered paint from interior side of window sash, casing, stops, stool and apron. Feather edges and dull gloss with sandpaper. Tack rag surfaces. Fill holes and cracks. Prime all surfaces with low VOC acrylic latex primer. Apply owner's choice of premixed top coat of low VOC acrylic latex enamel. Razor blade all new and old paint from interior side of glass. All paints and primers must meet the Green Seal G-11 Environmental Standard http://www.greenseal.org/certification/standards/paints.cfm. Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.	EA
5535.1	PAINT - PREP & PAINT INTERIOR DOOR (LOW VOC) http://www.greenseal.org/certification/standards/paint.scfm Adhesives must comply with Rule 1168 of the South Coast Air Quality Management District. All caulks and sealants must comply with regulation 8, rule 51, of the Bay Area Air Quality Management District.	EA
9160.1	STABILIZATION-LIMITED SURFACE: After establishing any required floor containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Aggressively scrape all loose paint, wallpaper and plaster with a draw scraper. Feather edges with a wet, 100 grit, sponge sanding block. Detergent wash, rinse and allow to dry. HEPA vacuum all visible paint chips, dust and debris. Spot prime and apply a premium acrylic latex top coat per manufacturer's instructions.	SF
9161.1	STABILIZE WALL AND TRIM: After establishing any required floor containment with polyethylene sheeting, mist defective paint area with water to the point of saturation. Aggressively scrape all loose paint, wallpaper and plaster with a draw scraper. Feather edges with a wet, 100-grit, sponge sanding block. Detergent wash, rinse, allow to dry, and HEPA vacuum all visible chips. Spot prime, caulk seams and top coat with premium acrylic latex per manufacturer's instructions.	SF
9163.1	STABILIZE CEILING: After establishing any required floor containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Aggressively scrape all loose paint, wall paper and plaster with a draw scraper. Feather edges with a wet, 100-grit, sponge sanding block. Detergent wash, rinse, allow to dry and HEPA vacuum all visible chips. Spot prime caulk seams and top coat with premium acrylic latex per manufacturer's instructions.	SF
9178.1	ELASTOMERIC ENCAPSULANT: After establishing any required floor containment with polyethylene sheeting, prepare surface by degreasing and de-glossing. Apply any recommended primer and roll out a water-based, liquid, polymer, elastomeric encapsulant to create a continuous seal over the surface in accordance with manufacturer's specifications. Use the required number of coats and coverage rate of elastomeric to guarantee a minimum 20-year manufacturer's warranty.	SF

Cabinets & Countertops (26)		UoM
3704	CABINETS, DRAWER UNIT, MATCH EXISTING: Install a new drawer base cabinet. Cabinet to be builder grade, factory made and finished to match existing. Unit to be screwed tight to floor and adjoining surfaces. Drawers to open and close smoothly with spacing equal and straight on all sides. Location and number of units:	LF
3127	HARDWARE, BATH ACCESSORIES, SHOWER ROD & GRAB BARS: Remove bathroom accessories and dispose of off-site. Prepare to receive new materials. Provide and install new wall mount soap dish, 24" towel bar, a toilet tissue holder and a 1" diameter shower stainless steel curtain rod (plastic is not acceptable). Install grab bars in bath in tub area and toilet area. Install as per manufacturers recommendations.	EA
3825	MEDICINE CABINET - SURF MOUNT-"TRI-VIEW": Install a 30", surface mounted "Tri-View" medicine cabinet with plate glass mirror, plumb and level, securely screwed to wall studs.	EA
3832	BATH, MIRROR, NEW: Install a new plate glass mirror with sanded edges on wall sized at the width of the vanity top by 36" high. Use standard mirror mastic to fasten mirror to wall. Rosettes are not acceptable. Use mirror clips as necessary. Mirror to be set properly so image is not distorted.	SF
3846	BATHROOM ACCESSORIES COMPLETE W TRI VIEW MEO. CABINET: Install hardware In bathroom including chrome toilet paper holder, 24" and 18" chrome towel bars, shower curtain rod and surface mounted 'Tri- View" medicine cabinet. Mount to walls using approved fasteners into studs/wood or toggle bolts or nylon type screw fasteners where there is no wood backing.	EA
3935	HARDWARE, TUB/SHOWER GRAB BAR, 24 • OR 36": Install new 1-1/4" diameter stainless steel grab bar(s) Including anchor plates. Install 2"x backing at screw locations or locate studs and anchor bars to wall with stainless steel screws for proper installation and to manufacturers specifications. Approximate size and locations:	EA

Appliances (28)		UoM
7840	RANGE HOOD- RECIRCULATING: Install a 30", recirculating, enameled metal range hood with light, charcoal filter, and washable grease filter.	EA
8491	DISHWASHER--2 CYCLE••Energy Star Provide and install a 24" white, 2 cycle, built- in Energy Star® labeled dishwasher including all alterations and connections to plumbing and electric system. Whirlpool#: 267844 Model: DU811SWPU - or - GE Model GSD1300NWW, or Housing Rehabilitation Specialist approved equal.	EA

Handrails & Stairs (32)**UoM**

2505	HANDRAIL/GUARDRAIL· WOOD REPAIR: Tighten loose balusters and replace damaged or deteriorated balusters to match existing. Screw or nail top and bottom rails and posts to prevent movement. Match new stair/handrail parts with replacements as closely as possible.	LF
2510	STAIRS· TREAD REPLACEMENT--INTERIOR: Remove damaged tread. Install nailers on each stringer before installing new tread if necessary using screws and glue as to not damage stringer. Tread to match existing stepping stock in thickness and length. Install tread using construction type adhesive and trim screws. Repair any damage during removal and installation. Paint or stain new tread to match existing step.	EA
2515	HANDRAIL GUARDRAIL BRACKET Install brass handrail bracket screwed directly to stud and handrail using brass screws that penetrate stud no less than 2". Touch up all affected areas.	EA
9160	STABILIZATION-LIMITED SURFACE: After establishing any required floor containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Aggressively scrape all loose paint, wallpaper and plaster with a draw scraper. Feather edges with a wet, 100 grit, sponge sanding block. Detergent wash, rinse and allow to dry. HEPA vacuum all visible paint chips, dust and debris. Spot prime and apply a premium acrylic latex top coat per manufacturer's instructions.	SF
9161	STABILIZE WALL AND TRIM: After establishing any required floor containment with polyethylene sheeting, mist defective paint area with water to the point of saturation. Aggressively scrape all loose paint, wallpaper and plaster with a draw scraper. Feather edges with a wet, 100-grit, sponge sanding block. Detergent wash, rinse, allow to dry, and HEPA vacuum all visible chips. Spot prime, caulk seams and top coat with premium acrylic latex per manufacturer's instructions.	SF
9163	STABILIZE CEILING; After establishing any required floor containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Aggressively scrape all loose paint, wall paper and plaster with a draw scraper. Feather edges with a wet, 100-grit sponge sanding block. Detergent wash, rinse, allow to dry, and HEPA vacuum all visible chips. Spot prime, caulk seams and top coat with premium acrylic latex per manufacturer's instructions.	SF
9178	ELASTOMERIC ENCAPSULANT: After establishing any required floor containment with polyethylene sheeting, prepare surface by degreasing and de-glossing. Apply any recommended primer and roll out a water -based, liquid, polymer, elastomeric encapsulant to create a continuous seal over the surface in accordance with manufacturer's specifications. Use the required number of coats and coverage rate of elastomeric to guarantee a minimum 20-year manufacturer's warranty.	SF
9199	LAMINATE WITH 1/2" GYPSUM: After establishing any required floor containment with polyethylene sheeting, wet mist, remove, wrap in polyethylene sheeting and dispose of lead-painted ranch or ogee base molding. Mark "Lead Paint" at 4' intervals. Hang, tape and three coat finish 1/2" gypsum over surface using screws 8" on center and adhesive beads 16" on center. Run gypsum horizontally. Caulk all penetrations and butt seams at casing and base molding with siliconized acrylic. Install 3/8" ogee at baseboard. Prime with gypsum primer and apply a premium acrylic latex top coat.	SF

	H.EPA vacuum any visible paint chips, dust and debris.	
9649	EXTERIOR--STABILIZE TRIM After establishing any required ground containment with polyethylene sheeting, mist defective paint with water to the point of saturation. Wet scrape all defective paint areas and feather edges with a wet, 100-grit sponge sanding block. Wash with detergent solution and de-gloss remainder with mesh pad. HEPA vacuum all paint chips, dust and debris. Spot prime bare substrate caulk with siliconized latex compound and apply single top coat of premium acrylic latex to entire surface.	LF
8721	CARBON MONOXIDE DETECTOR--UL LABEL Install at each sleeping area, minimum of one per floor a UL approved, hard wired or plug-in carbon monoxide detector with audible alarm. battery back-up and with a digital display capable of showing both peak CO level recorded by the alarm since it was last reset or unplugged, and the present level of carbon monoxide the unit is sensing.	EA
8722	CARBON MONOXIDE DETECTOR--DIGITAL DISPLAY Install at each sleeping area, minimum of one per floor, a hard wired or plug-in carbon monoxide detector with audible alarm, battery backup and with a digital display capable of showing both peak CO level recorded by the alarm since it was last reset or unplugged, and the present level of carbon monoxide the unit is sensing such as the Kidde Nighthawk Model # KN-COEG-3 or Housing Rehabilitation Specialist approved equal.	EA

General Requirements

24	MANUFACTURER'S SPECS PREVAIL All materials shall be installed in full accordance with the manufacturer's specifications for working conditions, surface preparation, methods, protection and testing.
32	SUBSTITUTION APPROVAL PROCESS Any requests by the contractor for approval to substitute products specified in the scope of work with another product that performs equally and meets the requirements of the specifications must accompany the contractor's bid submission. The request must include the following Information for the product proposed: the manufacturer's specifications; full installation instructions and warranties. The Owner will notify the contractor of decision to approve or deny the substitution at contract award.
33	CONSTRUCTION DEFINITIONS-INSTALLATION REQUIREMENTS/WARRANTY "Install " means to purchase, set up, test and warrant a new component. "Replace" means to remove and dispose of original material in a code legal manner and ideally to recycle whatever portion is possible, purchase new material, deliver, install, test and warranty. "Repair" means to return a building component to like new condition through replacement, adjustment and recoating of parts. "Reinstall" means to remove, clean, store and install a component. All new materials will be installed to the manufacturer's most recent specifications. All components will be installed to meet the current Code Requirements of the City of Hattiesburg MS and all applicable building permits will be obtained by the contractor. All materials specified to be installed or replaced are to be new, of first quality and without defects, unless stated otherwise or pre-approved by Owner and Construction Specialist. The contractor shall remedy any defect due to faulty material or workmanship and pay for all damage to other work resulting therefrom, which appear within one year from final payment. Further, contractor shall furnish owner with all manufacturers' and suppliers' written warranties covering items furnished under this contract prior to release of the final payment.
35	VERIFY QUANTITIES/MEASUREMENTS All Quantities stated in the attached specifications for this address using Units of Measure other than Each (EA), Room (RM) or Dwelling Unit (DU) are estimates of the finished product for the contractor's convenience and

	must be verified by the contractor at a mandatory site inspection prior to bid submission. All quantities slated in the Units of Measure Each (EA), Room (RM) or Dwelling Unit (DU) are as stated. Discrepancies in Quantities found by the contractor must be communicated to the Housing Rehabilitation Specialist prior to the submission of a bid. Claims for additional Funds due to discrepancies in Quantities shall not be honored if submitted after the bid submission.
36	ALL BUILDING DEPARTMENT PERMITS REQUIRED The contractor is responsible for submitting the specifications to the building department, applying for, paying for and receiving all Building Department permits required by the City of Hattiesburg MS for the scope of work described herein, prior to starting any work.
55	WORK TIMES Contractors and their Subcontractors shall schedule working hours between 8:00am and 6:00pm Monday through Friday. Requests to work on weekends and before or after these hours must be approved by the Housing Rehabilitation Specialist.
115	CLEANING AND DEBRIS REMOVAL The contractor shall clean construction debris from the dwelling and site to a dumpster or legal landfill at least daily, and leave the property in broom clean condition at the end of each work day. Additionally, for dwellings occupied during construction, all occupied spaces shall be vacuumed at the end of each work day, and the work areas will either be safe for occupant entry or secured to prohibit access. Prohibition of access to any work area must be approved by the project manager and the occupants must be notified. EPA and HUD requirements regarding Lead Safe Work Practices shall be met, including clearance requirements for occupancy.
9003	LEAD-SPECIFIC LAWS, RULES, REGULATIONS & GUIDELINES The execution of this work shall comply with all applicable federal, state and local laws, rules, regulations and guidelines for lead dust environments, including but not limited to: 29 CFR 1926.62 - Lead Construction Standard; 29 CFR 1910.1200 - Hazard Communication Standard; 40 CFR Part 745 - Lead-Based Paint Poisoning Prevention in Certain Residential Structures (EPA Regulations); 24 CFR Part 35 - HUD's Lead Safe Housing Rule.

CHANGE HISTORY LOG	
April 2022	Removed “Basic Rehabilitation”; increased maximum budget from \$60,000 to \$75,000 for Substantial Rehabilitation; removed outdated exhibits; revised Contractor’s Specifications; add Reconstruction as an activity; added Change History Log
August 2022	Added “Reconstruction” section as a limited eligible activity



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Wiley Quinn, Code Enforcement Division Manager
cc: Kermas Eaton, City Clerk
Date: Tuesday, September 6, 2022
Re: Approve and authorize issuance of manual checks for CDBG/HOME Program Claims per attached Memorandum. {CDBG Entitlement/HOME}
File Number: 2022-609
Minute Book #

Summary

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

Recommendation Statement

I recommend approval of this item.

Please place this on the September 6, 2022 City Council meeting for consideration.

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: September 6, 2022

The following request for payment is being submitted for approval during the City Council's September 6, 2022 meeting. Please authorize and approve issuance of a manual check for the claims listed below:

Recipient: Bradley Construction Co, LLC
Activity: Substantial Rehabilitation
Program: CDBG
Project Site: 515 Columbia Street
Amount Requested: \$12,100.00
Purpose of Request: Reimbursement

Recipient: Lisa Means
Activity: Substantial Rehabilitation
Program: CDBG
Project Site: 515 Columbia Street
Amount Requested: \$609.68
Purpose of Request: Relocation (7/28/22-8/17/22)

**CITY OF HATTIESBURG
COMMUNITY DEVELOPMENT
PROJECT SETUP/DRAW DOWN REQUEST FORM**

Accountant Budget Review/Approval/Date ☐ IDIS Verification or ☒ N/A ☐ MUNIS Verification	Project/HUD # 1503	Council Date: <u>09/06/2022</u> ☐ Agreement/Grant Approval ☒ Draw Request # <u>29</u> ☐ Draw Month/Year <u>09/2022</u>
Signature & Date:		Cost Center #: 082285.7254.01
		Revenue: 082082.2391.FR
Name & Title of Authorized Signatory Petra Wingo, Manager Community Development Division		Grant Fund Charged: ☐ ADDI Grant ☒ CDBG Entitlement ☐ CDBG-CV Entitlement ☐ HOME Entitlement
Program: Substantial rehab		Budget Charged: B17-MC-28-0006
PROJECT SITE: 515 Columbia Street		AMOUNT
Reimbursement		12,100.00
Total IDIS Draw Amount		\$ 12,100.00
Environmental Reviewer Initial/ Date		
Hud #		Batch #
IDIS Draw Down Requestor Initial/ Date	IDIS Voucher #	Voucher Approver Initial/Date
Director Signature/Date: _____		
Requestor Initial/Date	Document #	Check #
Make Check Payable: Bradley Construction Co. LLC		File ID # (Payment Approval)

Original to Project File

to Accounting

Forwarded

Copy to Accounting Division Manager
Copy to DUD Accountant

SIGNATURE & DATE



Memorandum

To: Mayor Toby Barker and Members of City Council

From: Lamar Rutland

cc:

Date: Tuesday, September 6, 2022

Re: Approve plans and specifications for the Hall Avenue West Phase II - Roadway project (FBLD-8769-00(001)LPA/108639-802000) and authorize advertisement for bids contingent upon MDOT approval to advertise.
File Number: 2022-656
Minute Book #

Summary

Approve plans and specifications for the Hall Avenue West Phase II - Roadway project (FBLD-8769-00(001)LPA/108639-802000) and authorize advertisement for bids contingent upon MDOT approval to advertise.

Recommendation Statement

I recommend approval of this item.

Please place this on the September 6, 2022 City Council meeting for consideration.

SECTION 901 - ADVERTISEMENT FOR BIDS

CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI

NOTICE TO CONTRACTORS

HALL AVENUE WEST PHASE II - ROADWAY FEDERAL-AID PROJECT NO. FBLD-8769-00(001) LPA / 108639-802000

Sealed bids will be received by the City of Hattiesburg, at the City Clerk's office, Mississippi, hereafter referred to as Owner, located at 200 Forrest Street, Hattiesburg, Mississippi, 39401, until 10:00 A.M., Local Time, Thursday, **DATE**, 2022 for supplying all labor, equipment, and materials (as specified) necessary for the construction of the above referenced project. When bids are submitted electronically, the same requirements for submitting sealed bids shall apply. Electronic bids shall be submitted online at www.hattiesburgsbids.com and shall include a document representing the cover of the envelope containing the aforementioned criteria.

The work shall consist essentially of the following items:

Construction of Hall Avenue from West Pine Street to Court Street that includes asphalt pavement, sidewalk, drainage improvements, striping, landscaping, lighting and a bridge over the Norfolk Southern Railroad. All other related items of work required to complete the project as shown and specified in the Contract Documents.

The above general outline of features of the work does not in any way limit the responsibility of the contractor to perform all work and furnish all plant, labor, equipment and materials required by the specifications and the drawings referred to therein.

Contract Drawings, Contract Specifications, Instructions to Bidders and Bidders Proposal forms are on file and open to public inspection in the office of the City Clerk, City of Hattiesburg, 200 Forest Street, Hattiesburg Mississippi 39401. Bid documents are being made available via paper copy or pdf. All interested bidders are required to log-in or register for an account at www.hattiesburgsbids.com to view and order Bid Documents. All plan holders are required to have a valid email address for registration. Bid documents are non-refundable and must be purchased through this website. Questions regarding website registration and online orders should be directed to our web support line at (662) 407-0193.

The attention of bidders is directed to the Special Provisions governing selection and employment of labor.

Minimum wage rates for Federal-Aid projects have been predetermined by the Secretary of Labor and are subject to Public Law 87-581 Work Hours Act of 1962, as set forth in the Contract Provisions.

The City of Hattiesburg hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged and women's business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

The award of this contract will be contingent upon the Contractor satisfying the DBE/WBE requirements.

The *2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction*, adopted by the Mississippi Department of Transportation, as referred to herein, may be purchased from the Mississippi Department of Transportation.

Each bid shall be accompanied by a Certified Check on a solvent bank or a Bidder's Bond issued by a Surety Company licensed to operate in the State of Mississippi, in the amount of five percent (5%) of the total bid price, payable to the City of Hattiesburg as bid security. Bidders shall also submit a current financial statement, if requested by the City. The successful bidder will be required to furnish a performance and payment bond in the amount of one hundred percent (100%) of the contract amount. Both bonds shall be signed or countersigned by a Mississippi Resident Agent.

The proposal and contract documents in its entirety shall be submitted in a sealed envelope and deposited with the City Clerk, 200 Forrest Street, Hattiesburg, Mississippi prior to the hour and date above designated.

The City of Hattiesburg reserves the right to reject any or all proposals, to waive technicalities or irregularities, or to advertise for new proposals, and the decision of the City of Hattiesburg to reject any bid or proposal shall not be cause for any liability or damages against the City of Hattiesburg, any officers or employees.

The bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within the Contract Time. The bidder must also agree to pay as liquidated damages the sum specified in the Standard Specifications per day for each calendar day of overrun in Contract Time that work is not completed.

Work to be performed shall be in accordance with the "Mississippi State Highway Standard Specifications for Road and Bridge Construction, 2017", together with all amendments and/or special provisions and/or addenda to the standards duly approved and adopted, unless otherwise noted in these specifications.

The attention of Bidders is directed to the provisions of Subsection 102.07 pertaining to irregular proposals and rejection of bids.

City Clerk
City of Hattiesburg, Mississippi

Dates of Publication:

DATE, 2022
DATE, 2022

*SPECIAL PROVISIONS, PROPOSAL AND CONTRACT DOCUMENTS
FOR*

THE CONSTRUCTION

FEDERAL AID PROJECT NUMBER

FBLD-8769-00(001) LPA/108639-802000

***HALL AVENUE WEST PHASE II - ROADWAY
FOR THE***

**CITY OF HATTIESBURG
HATTIESBURG, MISSISSIPPI
FORREST COUNTY**



2022

PREPARED BY



**BIDDER CHECK LIST
(FOR INFORMATION ONLY)**

- _____ All unit prices and item totals have been entered in accordance with Subsection 102.06 of the Mississippi Standard Specifications for Road and Bridge Construction.
- _____ First sheet of SECTION 905--PROPOSAL has been completed.
- _____ Second sheet of SECTION 905--PROPOSAL has been completed and signed.
- _____ Addenda, if any, have been acknowledged. Second sheet of Section 905 listing the addendum number has been substituted for the original second sheet of Section 905. Substituted second sheet of Section 905 has been properly completed, signed, and added to the proposal.
- _____ DBE/WBE percentage, when required by contract, has been entered on last sheet of the bid sheets of SECTION 905--PROPOSAL.
- _____ Form OCR-485-LPA has been completed and signed.
- _____ The last sheet of the bid sheets of SECTION 905--PROPOSAL has been signed.
- _____ Equal Opportunity Clause Certification, when included in contract, has been completed and signed.
- _____ The Certification regarding Non-Collusion, Debarment and Suspension, etc. has been executed in duplicate.
- _____ A certified check, cashier's check or bid bond payable to the Local Public Agency in the principle amount of 5% of the bid has been included with project number identified on same. Bid bond has been signed by the bidder and has also been signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent for the Surety with Power of Attorney attached.
- _____ A completed Notice to Bidders regarding DUNS Requirements must be completed prior to award of the contract.

Return the proposal and contract documents in its entirety in a sealed envelope. DO NOT remove any part of the contract documents; exception – an addendum requires substitution of second sheet of Section 905. A stripped proposal is considered as an irregular bid and will be rejected.

Failure to complete any or all of the applicable requirements will be cause for the proposal to be considered irregular.

CONTENTS

PROJECT: HALL AVENUE WEST PHASE II - ROADWAY
PROJECT NO. FBLD-8769-00(001) LPA / 108639-802000
CITY OF HATTIESBURG
FORREST COUNTY, MISSISSIPPI

Bidder's Checklist

Section 901 - Advertisement for Bids

Section 904 - Notice to Bidders

#1:	Governing Specifications
#1A:	Designating Owner & Engineer
#2:	Status of Right-of-Way with Attachments
#3:	Final Cleanup
#9:	Federal Bridge Formula
#14:	Railway-Highway Provision with Supplement
#15:	Non-use of Precast Drainage Units
#20:	Temporary Steel Bracing
#21:	Intermediate Diaphragms
#113:	Tack Coat
#247:	Norfolk Southern Insurance Requirements
#445:	Mississippi Agent or Qualified Nonresident Agent
#446LPA:	Traffic on Milled Surfaces
#516:	Errata and Modifications to 2017 Specs
#757:	Additional Erosion Control Requirements
#1225:	Early Notice to Proceed
#1226:	Material Storage Under Bridges
#1241:	Fuel and Material Adjustments
#1434:	Erosion Control Plan
#1595:	Vibratory Roller
#1878:	Storm Water Discharge Associated with Construction Activities with Supplement
#2172:	App for Storm Water Reports
#2206:	MASH Compliant Devices
#2273:	Mississippi Special Fuel Tax Law
#2611:	Disadvantaged Business Enterprise with Supplement
#2689LPA:	Asphalt Smoothness Requirement
#2954:	Reflective Sheeting for Signs
#3676:	Asphalt Gyratory Compactor Internal Angle Calibration
#3875:	General ITS Requirements
#3963:	Super Silt Fence
#4113:	Unique Entity ID (SAM) Requirements for Federal Funded Projects
#5865 LPA:	Sampling and Testing of Concrete on Small LPA Projects
#5866 LPA:	Payroll Requirements
#6000 LPA:	Requirements for Traffic Control Personnel

#7011:	Contract Time
#7200:	Specialty Items
#7300:	Placement of Fill Material in Federally Regulated Areas
#7400:	Cooperation Between Contractors
#7800:	Gold Sheet Commitment
#7900:	Prestressed Beams Fillet Concrete
#8500:	Non-roadway Density Requirements

Section 906 - County Wage Rates
Supplement to Form FHWA-1273

Section 907 -

907-102-4 LPA:	Bidding Requirements and Conditions
907-105-1:	Authority of the Engineer
907-107-2:	Contractor's Erosion Control Plan
907-108-4:	Subletting of Contract
907-109-4:	Measurement and Payment
907-234-1:	Silt Fence
907-417-1:	Polymer Cement Surface System
907-262-1LPA :	Water Mains and Appurtenances
907-616-2:	Colored and Imprinted Concrete Median and Island Pavement
907-631-1:	Traffic Signal Systems - General
907-632-1:	Traffic Signal Cabinet Assemblies
907-634-4:	Traffic Signal and ITS Equipment Poles
907-636-3:	Electric Cable
907-637-3:	Traffic Signal Conduit and Pull Boxes
907-639-2:	Traffic Signal Preemption Systems
907-643-3:	Video Vehicle Detection
907-645-1:	Pedestrian Detection Assemblies
907-653-1:	Traffic and Street Name Signs
907-701-3:	Hydraulic Cement
907-702-4:	Bituminous Material
907-703-1:	Gradation
907-705-1:	Stone Riprap
907-707-3:	Joint Materials
907-708-4:	Concrete Pipe
907-711-2:	Plain Steel Wire
907-712-1:	Fence and Guardrail
907-714-3:	Miscellaneous Materials
907-718-1:	Timber and Dimension Lumber
907-720-2:	Acceptance Procedure for Glass Beads
907-721-4:	Materials for Signing
907-722-1:	Materials for Traffic Signal Installation
907-804-11:	Concrete Bridges and Structures
907-809-2:	Retaining Wall Systems
907-899-1:	Railway-Highway Provisions

Construction Progress Schedule

Section 905 - Proposal

- Instructions to Bidders
- Bid Schedule
- Certification with regard to the Performance of Previous Contracts or Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports
- Affidavit Regarding Non-Collusion, Debarment and Suspension (2 copies)

Section 902 - Contract Form

Section 903 - Contract Bond Forms

Executive Compensation Certification

Guidance for Federal Spending Transparency

Pile Driving Form

OCR-481-LPA – Disadvantaged Business Enterprise List (3 copies)

OCR-485-LPA – List of Firms Submitting Quotes (3 copies)

SAM.GOV Registration and Unique Entity ID

(Revisions to the Above Will Be Indicated on the Second Sheet of Section 905 as Addenda)

SECTION 901 - ADVERTISEMENT FOR BIDS

CITY OF HATTIESBURG FORREST COUNTY, MISSISSIPPI

NOTICE TO CONTRACTORS

HALL AVENUE WEST PHASE II - ROADWAY FEDERAL-AID PROJECT NO. FBLD-8769-00(001) LPA / 108639-802000

Sealed bids will be received by the City of Hattiesburg, at the City Clerk's office, Mississippi, hereafter referred to as Owner, located at 200 Forrest Street, Hattiesburg, Mississippi, 39401, until 10:00 A.M., Local Time, Thursday, **DATE**, 2022 for supplying all labor, equipment, and materials (as specified) necessary for the construction of the above referenced project. When bids are submitted electronically, the same requirements for submitting sealed bids shall apply. Electronic bids shall be submitted online at www.hattiesburgsbids.com and shall include a document representing the cover of the envelope containing the aforementioned criteria.

The work shall consist essentially of the following items:

Construction of Hall Avenue from West Pine Street to Court Street that includes asphalt pavement, sidewalk, drainage improvements, striping, landscaping, lighting and a bridge over the Norfolk Southern Railroad. All other related items of work required to complete the project as shown and specified in the Contract Documents.

The above general outline of features of the work does not in any way limit the responsibility of the contractor to perform all work and furnish all plant, labor, equipment and materials required by the specifications and the drawings referred to therein.

Contract Drawings, Contract Specifications, Instructions to Bidders and Bidders Proposal forms are on file and open to public inspection in the office of the City Clerk, City of Hattiesburg, 200 Forest Street, Hattiesburg Mississippi 39401. Bid documents are being made available via paper copy or pdf. All interested bidders are required to log-in or register for an account at www.hattiesburgsbids.com to view and order Bid Documents. All plan holders are required to have a valid email address for registration. Bid documents are non-refundable and must be purchased through this website. Questions regarding website registration and online orders should be directed to our web support line at (662) 407-0193.

The attention of bidders is directed to the Special Provisions governing selection and employment of labor.

Minimum wage rates for Federal-Aid projects have been predetermined by the Secretary of Labor and are subject to Public Law 87-581 Work Hours Act of 1962, as set forth in the Contract Provisions.

The City of Hattiesburg hereby notifies all bidders that it will affirmatively insure that in any contract entered into pursuant to this advertisement, disadvantaged and women's business enterprises will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, or national origin in consideration for an award.

The award of this contract will be contingent upon the Contractor satisfying the DBE/WBE requirements.

The *2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction*, adopted by the Mississippi Department of Transportation, as referred to herein, may be purchased from the Mississippi Department of Transportation.

Each bid shall be accompanied by a Certified Check on a solvent bank or a Bidder's Bond issued by a Surety Company licensed to operate in the State of Mississippi, in the amount of five percent (5%) of the total bid price, payable to the City of Hattiesburg as bid security. Bidders shall also submit a current financial statement, if requested by the City. The successful bidder will be required to furnish a performance and payment bond in the amount of one hundred percent (100%) of the contract amount. Both bonds shall be signed or countersigned by a Mississippi Resident Agent.

The proposal and contract documents in its entirety shall be submitted in a sealed envelope and deposited with the City Clerk, 200 Forrest Street, Hattiesburg, Mississippi prior to the hour and date above designated.

The City of Hattiesburg reserves the right to reject any or all proposals, to waive technicalities or irregularities, or to advertise for new proposals, and the decision of the City of Hattiesburg to reject any bid or proposal shall not be cause for any liability or damages against the City of Hattiesburg, any officers or employees.

The bidder must agree to commence work on or before a date to be specified in a written "Notice to Proceed" of the Owner and to fully complete the project within the Contract Time. The bidder must also agree to pay as liquidated damages the sum specified in the Standard Specifications per day for each calendar day of overrun in Contract Time that work is not completed.

Work to be performed shall be in accordance with the "Mississippi State Highway Standard Specifications for Road and Bridge Construction, 2017", together with all amendments and/or special provisions and/or addenda to the standards duly approved and adopted, unless otherwise noted in these specifications.

The attention of Bidders is directed to the provisions of Subsection 102.07 pertaining to irregular proposals and rejection of bids.

City Clerk
City of Hattiesburg, Mississippi

Dates of Publication:

DATE, 2022
DATE, 2022

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO NOTICE TO BIDDERS NO. 1

DATE: 06/08/2021

SUBJECT: Governing Specifications

Change the web address at the end of the first paragraph to the following.

<https://shop.mdot.ms.gov/default.aspx?StoreIndex=1>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1

CODE: (IS)

DATE: 03/01/2017

SUBJECT: Governing Specifications

The current (2017) Edition of the Standard Specifications for Road and Bridge Construction adopted by the Mississippi Transportation Commission is made a part hereof fully and completely as if it were attached hereto, except where superseded by special provisions, or amended by revisions of the Specifications contained within this proposal. Copies of the specification book may be purchased from the MDOT Construction Division, or online at shopmdot/default.aspx?StoreIndex=1.

A reference in any contract document to controlling requirements in another portion of the contract documents shall be understood to apply equally to any revision or amendment thereof included in the contract.

In the event the plans or proposal contain references to the 2004 Edition of the Standard Specifications for Road and Bridge Construction, it is to be understood that such references shall mean the comparable provisions of the 2017 Edition of the Standard Specifications.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904- NOTICE TO BIDDERS NO. 1A LPA

CODE: (SP)

DATE: 01/10/2022

SUBJECT: Designated Owner and Engineer

PROJECT: FBLD-8769-00(001)LPA/108639-802000

Any reference in the Contract Documents to the State of Mississippi, Mississippi Department of Transportation, Mississippi Transportation Commission, or any official thereof, it shall be interpreted to mean the (City of Hattiesburg, Missississippi), the "Owner".

Any reference in the Standard Specifications to the Project Engineer, District Engineer, Chief Engineer, or Engineer it shall be interpreted to mean the (Project Engineer for the City of Hattiesburg, Mississippi, Neel-Schaffer, Inc.).

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2

CODE: (IS)

DATE: 03/01/2017

SUBJECT: Status of Right-of-Way

Although it is desirable to have acquired all rights-of-way and completed all railroad agreements, utility adjustments and work to be performed by others prior to receiving bids, sometimes it is not considered to be in the public interest to wait until each and every such clearance has been obtained. The bidder is hereby advised of possible unacquired rights-of-way, relocates, railroad agreements and utilities adjustments which have not been completed.

The status of right-of-way acquisition, utility adjustments, encroachments, potentially contaminated sites, railroad facilities, improvements, and asbestos contamination are set forth in the following attachments.

In the event right of entry is not available to ALL parcels of right-of-way and/or all work that is to be accomplished by others on the date set forth in the contract for the Notice to Proceed is not complete, the Department will issue a restricted Notice to Proceed.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Final Clean-Up

Immediately prior to final inspection for release of maintenance, the Contractor shall pick up, load, transport and properly dispose of all litter from the entire highway right-of-way that is within the termini of the project.

Litter shall include, but not be limited to, solid wastes such as glass, paper products, tires, wood products, metal, synthetic materials and other miscellaneous debris.

Litter removal is considered incidental to other items of work and will not be measured for separate payment.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 9

CODE: (IS)

DATE: 03/01/2017

SUBJECT: Federal Bridge Formula

Bidders are hereby advised that the latest revision of Federal Highway Administration Publication No. FHWA-HOP-06-105, **BRIDGE FORMULA WEIGHTS**, dated August 2006, is made a part of this contract when applicable.

Prior to the preconstruction conference, the Contractor shall advise the Engineer, in writing, what materials, if any, will be delivered to the jobsite via Interstate route(s).

Copies of the **BRIDGE FORMULA WEIGHTS** publication may be obtained by contacting:

Federal Highway Administration
400 7th Street, SW
Washington, DC 20590
(202) 366-2212

or

http://www.ops.fhwa.dot.gov/Freight/publications/brdg_frm_wghts/bridge_formula_all_rev.pdf

An on line **BRIDGE FORMULA WEIGHTS CALCULATOR** is available at

http://ops.fhwa.dot.gov/freight/sw/brdgcalc/calc_page.htm

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO NOTICE TO BIDDERS NO. 14

DATE: 06/30/2022

PROJECT: FBLD-8769-00(001)LPA/108639-802000
Hall Avenue West Phase II-Roadway

After the second paragraph on page 1, add the following:

Name Insured: Norfolk Railroad

Description and Designation: Hall Avenue, near Hattiesburg, MS

Mile Post: 86.26

After the fourth paragraph on page 1, add the following:

Norfolk Railroad

Jake Watson

650 W. Peachtree St

Atlanta, GA 30308

470-463-6778 (Office)

404-859-9597

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 14

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Railway-Highway Provisions

Prior to bidding, the Contractor shall contact the Railroad concerning insurance coverage required for this project. In case the railroad requires coverage over and above that required by the Standard Specifications, the railroad requirements shall be met.

The name insured, description of the work and designation of the job site to be shown on the Policy are as follows:

Notice of starting to work, completion of any required forms, and correspondence pertaining to railroad liability insurance shall be directed to the person below.

The Contractor shall not commence, or carry on, any work for installation, maintenance, repair, changing or renewal of any FACILITY, under, over or on RAILROAD property at any location without giving at least ten (10) working days prior notice to the RAILROAD authorized representative at the RAILROAD's office(s) below.

If in the opinion of the RAILROAD, the presence of an authorized representative of the RAILROAD is required to supervise the same, the RAILROAD shall render bills to the Contractor for all expenses incurred by it for such supervision. This includes all labor costs for flagmen or cable locate supplied by the RAILROAD to protect RAILROAD operation, and for the full cost of furnishing, installation and later removal of any temporary supports for said tracks, as the RAILROAD's Chief Engineer's Office may deem necessary.

It will be the Contractor's responsibility to pay all bills associated with railroad flagging and cable locating. Generally, the flagging rate is \$700.00 per day (1 to 8 hours) plus overtime at \$125.00 per hour, however, the Contractor shall contact the RAILROAD to verify all rates.

A flagman is required anytime a Contractor does any work on or near RAILROAD property within twenty-five (25) feet horizontally of the centerline or any work over any railroad track. The RAILROAD, however, also reserves the right to require a flagman for work on RAILROAD property, which is more than twenty-five (25) feet from the centerline of a railroad track when there are other conditions or considerations that would dictate the need for a flagman to safeguard the RAILROAD's operations, property and safety of working personnel.

A cable locate of RAILROAD owned facilities may be required to identify and protect Signal & Communication cables that have been installed to provide power, signal control, wayside communications. These cables are vital to a safe and reliable railway operation. The cable locate will be performed by a qualified RAILROAD employee.

Outside Contractors are prohibited from driving on, along, or across any track that does not have a RAILROAD installed crossing. They may utilize an existing public crossing. The practice of allowing rubber tired equipment to operate over track with no crossing has been banned.

Exceptions to this rule will require the express approval from the RAILROAD Engineers.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 15

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Non-Use of Precast Drainage Units

Bidders are hereby advised that the use of precast inlets and junction boxes will **NOT** be allowed on this project. Subsection 601.02.3 states that "the Contractor may request approval from the Engineer to furnish and install precast units in lieu of cast-in-place units". Should the Contractor make this request, the request will be denied.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 20

CODE: (SP)

DATE: 03/01/2017

SUBJECT: Temporary Steel Bracing

Bidders are advised that temporary steel bracing will be required when beams are to be placed over railroads and roadways. The attached detail sheet shall be used for temporary beam bracing on this project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 21

CODE: (SP)

DATE: 03/01/2017

SUBJECT: Intermediate Concrete Diaphragms

Bidders are advised that the bridge plans for this project indicates that intermediate concrete diaphragms are required between the beams. If the bridge is designed using Load and Resistance Factor Design (LRFD), the intermediate concrete diaphragms may be eliminated at the Contractor's option. If the Contractor desires to make this change, a written request shall be sent to the Project Engineer who will forward it to the Bridge Division for concurrence. If eliminated, any concrete and reinforcement shown on the plans for intermediate diaphragms will not be included in the measurement and payment of concrete and reinforcement.

If the intermediate concrete diaphragms are eliminated, the Contractor shall temporarily brace the beams in accordance with the attached detail sheet.

This bracing shall be addressed in the Contractor's written request to eliminated intermediate diaphragms.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 113

CODE: (SP)

DATE: 04/18/2017

SUBJECT: Tack Coat

Bidders are advised that in addition to the products listed on the Department's APL as referenced in Subsection 401.03.1.2 on page 256, the Contractor may use one of the following as a tack coat.

- CSS-1
- CSS-1h
- SS-1
- SS-1h

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 247

CODE: (SP)

DATE: 06/27/2017

SUBJECT: Norfolk Southern Insurance Requirements

Bidder's attention is brought to the following special insurance requirements regarding Norfolk Southern Railroads.

- A. In addition to any other forms of insurance or bonds required under the terms of the contract and specifications, the Prime Contractor will be required to carry insurance of the following kinds and amounts:
1. a. Commercial General Liability Insurance having a combined single limit of not less than \$2,000,000 per occurrence for all loss, damage, cost and expense, including attorneys' fees, arising out of bodily injury liability and property damage liability during the policy period. Said policy shall include explosion, collapse, and underground hazard (XCU) coverage, shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured, and shall include a severability of interests provision.
 - b. Automobile Liability Insurance with a combined single limit of not less than \$1,000,000 each occurrence for injury to or death of persons and damage to or loss or destruction of property. Said policy or policies shall be endorsed to name Railroad specified in item A.2.c. below both as the certificate holder and as an additional insured and shall include a severability of interests provision;
 2. Railroad Protective Liability Insurance having a combined single limit of not less than \$2,000,000 each occurrence and \$6,000,000 in the aggregate applying separately to each annual period. If the project involves track over which passenger trains operate, the insurance limits required are not less than a combined single limit of \$5,000,000 each occurrence and \$10,000,000 in the aggregate applying separately to each annual period. Said policy shall provide coverage for all loss, damage or expense arising from bodily injury and property damage liability, and physical damage to property attributed to acts or omissions at the job site.

The standards for the Railroad Protective Liability Insurance are as follows:

- a. The insurer must be rated A- or better by A.M. Best Company, Inc.
NOTE: Norfolk Southern (NS) does not accept from insurers Chartis (AIG or Affiliated Company including Lexington Insurance Company), Hudson Group or Liberty or Affiliated Company.
- b. The policy must be written using one of the following combinations of Insurance Services Office ("ISO") Railroad Protective Liability Insurance Form Numbers:
 - (1) CG 00 35 01 96 and CG 28 31 10 93; or
 - (2) CG 00 35 07 98 and CG 28 31 07 98; or
 - (3) CG 00 35 10 01; or
 - (4) CG 00 35 12 04; or
 - (5) CG 00 35 12 07; or
 - (6) CG 00 35 04 13.

- c. The named insured shall read:
 - Norfolk Southern Corporation and its subsidiaries
 - Three Commercial Place
 - Norfolk, Virginia 23510-2191
 - Attn: S. W. Dickerson Risk Management(NOTE: NS does not share coverage on RRPL with any other entity on this policy)
 - d. The description of operations must appear on the Declarations, must match the project description in this agreement, and must include the appropriate Department project and contract identification numbers.
 - e. The job location must appear on the Declarations and must include the city, state, and appropriate highway name/number. NOTE: Do not include any references to milepost, valuation station, or mile marker on the insurance policy.
 - f. The name and address of the prime contractor must appear on the Declarations.
 - g. The name and address of the Department must be identified on the Declarations as the "Involved Governmental Authority or Other Contracting Party."
 - h. Endorsements/forms that are **required** are:
 - (1) Physical Damage to Property Amendment
 - (2) Terrorism Risk Insurance Act (TRIA) coverage must be included
 - i. Other endorsements/forms that will be accepted are:
 - (1) Broad Form Nuclear Exclusion — Form IL 00 21
 - (2) 30-day Advance Notice of Non-renewal or cancellation
 - (3) Required State Cancellation Endorsement
 - (4) Quick Reference or Index Form CL/IL 240
 - j. Endorsements/forms that are **NOT** acceptable are:
 - (1) Any Pollution Exclusion Endorsement except CG 28 31
 - (2) Any Punitive or Exemplary Damages Exclusion
 - (3) Known injury or Damage Exclusion form CG 00 59
 - (4) Any Common Policy Conditions form
 - (5) An Endorsement that limits or excludes Professional Liability coverage
 - (6) A Non-Cumulation of Liability or Pyramiding of Limits Endorsement
 - (7) An Endorsement that excludes TRIA coverage
 - (8) A Sole Agent Endorsement
 - (9) Any type of deductible endorsement or amendment
 - (10) Any other endorsement/form not specifically authorized in item no. 2.h above.
- B. If any part of the work is sublet, similar insurance, and evidence thereof as specified in A. 1 above, shall be provided by or on behalf of the subcontractor to cover its operations on Railroad's right of way.
- C. All insurance required under the preceding subsection A shall be underwritten by insurers and be of such form and content, as may be acceptable to the Company. Prior to entry on Railroad right-of-way, the original Railroad Protective Liability Insurance Policy shall be submitted by the Prime Contractor to the Department at the address below, [with copies to the Project Engineer](#). MDOT will be responsible for its review and transmittal to the Railroad. In addition, certificates of insurance evidencing the Prime Contractor's and any subcontractors' Commercial General Liability Insurance shall be issued to the Railroad and the Department at the addresses below, and forwarded to the Department for its review and transmittal to the Railroad. The certificates of insurance shall state that the insurance coverage will not be suspended, voided, canceled, or reduced in coverage or limits without (30) days advance written notice to Railroad and the Department. No work will be permitted by Railroad on its right-of-way until it has reviewed and approved the evidence of insurance required

herein.

DEPARTMENT:

Mississippi Department of Transportation
Bridge Division
P.O. Box 1850
Jackson, MS 39215-1850

RAILROAD:

Risk Management
Norfolk Southern Corporation and its subsidiaries
Three Commercial Place
Norfolk, Virginia 23510-2191

- D. The insurance required herein shall in no way serve to limit the liability of Department or its Contractors under the terms of this agreement.
- E. Insurance Submission Procedures
1. Railroad will only accept initial insurance submissions via US Mail or Overnight carrier to the address noted in C above. Railroad will NOT accept initial insurance submissions via email or faxes.
 2. Railroad requires the following two (2) forms of insurance in the initial insurance submission to be submitted under a cover letter providing details of the project and contact information:
 - a. The full original or certified true countersigned copy of the railroad protective liability insurance policy in its entirety inclusive of all declarations, schedule of forms and endorsements along with the policy forms and endorsements.
 - b. The Contractor's commercial general, automobile, and workers' compensation liability insurance certificate of liability insurance evidencing a combined single limit of a minimum of \$2M per occurrence of general and \$1M per occurrence of automobile liability insurance naming Norfolk Southern Railway Company, Three Commercial Place, Norfolk, VA 23510 as the certificate holder and as an additional insured on both the general and automobile liability insurance policy.
 3. It should be noted that the Railroad does not accept notation of Railroad Protective insurance on a certificate of liability insurance form or Binders as Railroad must have the full original countersigned policy. Further, please note that mere receipt of the policy is not the only issue but review for compliance. Due to the number of projects system-wide, it typically takes a minimum of 30 - 45 days for the Railroad to review.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 445

CODE: (SP)

DATE: 10/10/2017

SUBJECT: Mississippi Agent or Qualified Nonresident Agent

Bidders are hereby advised of the requirements of Subsections 102.08, 103.05.2, and 107.14.2.1 of the *2017 Standard Specifications for Road and Bridge Construction* as it refers to bonding agents. Proposal guaranties, bonds, and liability insurance policies must be signed by a **Mississippi Agent or Qualified Nonresident Agent.**

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 446 LPA

CODE: (SP)

DATE: 11/1/2017

SUBJECT: Traffic on Milled Surface

Bidders are hereby advised that when the main lanes of a roadway are fine milled, traffic will be allowed to run on a milled surfaces for up to five (5) calendar days. The Contractor will be assessed a penalty of **\$5,000 per calendar day** afterwards until the milled surfaces are covered with the next lift of asphalt. It shall be the Contractor's responsibility to ensure that the milling operations do not commence until such time as forecasted weather conditions are suitable enough to allow the placement of the asphalt pavement after the milling operations.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 516

CODE: (IS)

DATE: 11/28/2017

SUBJECT: Errata and Modifications to the 2017 Standard Specifications

<u>Page</u>	<u>Subsection</u>	<u>Change</u>
16	102.06	In the seventh full paragraph, change “Engineer” to “Director.”
33	105.05.1	In the sixth sentence, change “Contract Administration Engineer” to “Contract Administration Director.”
34	105.05.2.1	In subparagraph 2, change “SWPPP, ECP” to “SWPPP and the ECP”
35	105.05.2.2	In subparagraphs 2, add “ and” to the end of the sentence. In subparagraph 3, remove “, and” and add “.”.
90	109.04.2	In the last paragraph of subparagraph (a), place a period “.” at the end of the sentence.
93	109.04.2	In the last paragraph of subparagraph (g), place a period “.” at the end of the sentence. Also, in the first paragraph of subparagraph (h), place a period “.” at the end of the sentence.
97	109.07	Under ADJUSTMENT CODE, subparagraph (A1), change “HMA mixture” to “Asphalt mixtures.”
98	109.11	In the third sentence, change “Engineer” to “Director.”
219	308.04	In the last sentence of the last paragraph, change “Contractor’s decision” to “Engineer’s decision.”
300	405.02.5.9	In the first sentence of the second paragraph, change “Hot Mix Asphalt” to “Asphalt Mixtures.”
502	630.01.1	In the first paragraph, change “ <u>AASHTO</u> ” to “AASHTO’s <u>LRFD</u> ”.
636	646.05	Change “each” to “per each” for the pay item units of payment.
640	656.02.6.2	In item 7), change “down stream” to “downstream”.
688	630.03.2	Change the subsection number from “630.03.2” to “680.03.2.”

- | | | |
|-----|---------------|---|
| 725 | 702.08.3 | In the second sentence of the first paragraph, change “hot-mix” to “asphalt.” |
| 954 | 804.02.13.1.6 | In the definition for “M” in the % Reduction formulas, change “paragraph 7.3” to “paragraph 5.3.” |

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 757

CODE: (SP)

DATE: 03/20/2018

SUBJECT: Additional Erosion Control Requirements

Bidders are hereby advised of the following requirements that relate to erosion control activities on the project.

THE MAXIMUM TOTAL ACREAGE THAT CAN BE DISTURBED, AT ONE TIME, ON THE PROJECT IS NINETEEN (19) ACRES. THE CONTRACTOR SHALL BE REQUIRED TO STABILIZE DISTURBED AREAS PRIOR TO OPENING UP ADDITIONAL SECTIONS OF THE PROJECT. STABILIZED SHALL BE WHEN THE DISTURBED AREA MEETS ONE OF THE FOLLOWING CRITERIA:

- **THE AREA HAS BEEN SEEDED, EITHER TEMPORARY OR PERMANENT, AND MULCHED ACCORDING TO THE SPECIFICATIONS, OR**
- **A CRUSHED STONE COURSE OR A LIFT OF ASPHALT PAVEMENT HAS BEEN PLACED, OR**
- **THE AREA HAS BEEN CHEMICALLY TREATED USING PORTLAND CEMENT OR LIME-FLY ASH, AND SEALED.**

DISTURBED AREAS INCLUDE THE ROADBED, SLOPES AND REMAINING AREA OUT TO THE ROW LINE.

Clearing and Grubbing: Prior to beginning any clearing and grubbing operations on the project, controls shall be in place to address areas such as drainage structures, wetlands, streams, steep slopes and any other sensitive areas in accordance with the approved Erosion Control Plan or as directed by the Engineer. Clearing and grubbing should be limited to the minimum area necessary to construct the project. Grubbing operations should be minimized in areas outside the construction limits and stumps should be cut off flush with the existing ground elevations. A buffer area of at least fifteen (15) feet or as shown in the Plans shall be in place adjacent to the right-of-way line. The buffer area can either be the existing vegetation that is left undisturbed or re-established by planting new vegetation if clearing and grubbing was required. [As applicable, see the Riparian Buffer Erosion Control sheet\(s\) in the Plans for clearing and grubbing limits adjacent to stream banks.](#)

Unclassified Excavation: Cut sections shall be graded in accordance with the typical sections and plan grades. Permanent erosion control BMP's should be placed as soon as possible after the cut material has been moved. Fill sections that are completed shall have permanent erosion control BMP's placed. Fill sections that are not completed shall be either permanently or temporarily seeded until additional material is made available to complete these sections. All unclassified excavation on the project is required to be moved prior to incorporating any borrow excavation. The Contractor may have to stockpile unclassified excavation in order to comply with the nineteen (19) acre requirement. No additional compensation will be made for stockpiling operations.

Disturbed areas that remain inactive for a period of more than fourteen (14) days shall be temporary grassed and mulched. Temporary grassing and mulching shall only be paid one time for a given area.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1225

CODE: (SP)

DATE: 11/13/2018

SUBJECT: Early Notice to Proceed

Bidders are advised that if an early notice to proceed is allowed by the Department and the Contractor experiences problems or delays between the early notice to proceed date and the original notice to proceed date, this shall not be justification for any monetary compensation or an extension of contract time.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1226

CODE: (IS)

DATE: 11/16/2018

SUBJECT: Material Storage Under Bridges

Bidders are advised that Subsection 106.08 of the Standard Specifications allows the Contractor to store materials and equipment on portions of the right-of-way. However, the Contractor will not be allowed to store or stockpile materials under bridges without written permission from the Project Engineer. The Contractor shall submit a detailed request of all proposed materials to be stored under bridges to the Engineer a minimum of 14 calendar days prior to anticipated storage. This detail shall include, but not limited to, bridge location, material type, material quantity, and duration of storage. The Project Engineer and any other needed Division will review this information and determine whether to grant approval. The Contractor shall not store any material under any bridge without written approval from the Project Engineer.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1241

CODE: (IS)

DATE: 11/27/2018

SUBJECT: Fuel and Material Adjustments

Bidder's attention is brought to the last paragraph of Subsection 109.07 of the Standard Specifications which states that no fuel or material adjustment will be made after the completion of contract time. Any fuels consumed or materials incorporated into the work during the monthly estimate period falling wholly after the expiration of contract time will not be subject a fuel or material adjustment.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1434

CODE: (IS)

DATE: 03/06/2019

SUBJECT: Erosion Control Plan

Bidders are advised that the Best Management Practices (BMPs) shown at sensitive areas on the Erosion Control Sheets in the Plans shall be shown on the Contractor's Erosion Control Plan and shall be used in the field as indicated on the original plans sheets. Should the installation of these BMPs produce an unsatisfactory result, the Contractor shall submit to the Engineer alternate BMPs for approval. Once approved, the Contractor shall revise the Contractor's Erosion Control Plan to include these changes.

NTB 1878 Supplement
PRIME CONTRACTOR CERTIFICATION

(File prior to the Issuance of Notice to Proceed)

PRIME CONTRACTOR'S MAILING ADDRESS AND TELEPHONE NUMBER:

NAME: _____

NUMBER AND STREET (P. O. BOX): _____

CITY: _____ STATE: _____ ZIP: _____

TELEPHONE NUMBER (INCLUDING AREA CODE): _____

NAME OF OWNER: _____

STORM WATER GENERAL NPDES PERMIT NUMBER: MSR 15

PROJECT NAME: _____

PROJECT LOCATION: _____ County (ies)

PERMIT COVERAGE FOR MATERIAL PITS MAY BE NEEDED AND MUST BE APPLIED FOR BY THE CONTRACTOR SEPARATELY.

I CERTIFY THAT I AM THE PRIME CONTRACTOR OF THIS PROJECT, HAVE THE PRIMARY RESPONSIBILITY TO FULLY COMPLY WITH ALL OF THE REQUIREMENTS OF THE ABOVE REFERENCED GENERAL NPDES PERMIT, AND ACCEPT FULL LIABILITY FOR NOT COMPLYING WITH THESE REQUIREMENTS.

SIGNATURE

DATE SIGNED

PRINTED NAME

TITLE

**THIS DOCUMENT SHALL BE SIGNED ACCORDING TO THE GENERAL PERMIT, CONDITION NO. T-4,
PAGE 19 OF 26.**

CITY OF HATTIESBURG

SECTION 904 - NOTICE TO BIDDERS NO. 1595

CODE: (SP)

DATE: 08/12/2022

SUBJECT: Vibratory Roller

PROJECT: FBLD-8769-00(001)LPA /108639-802000

Bidders are advised that the use of vibratory rollers **will not** be allowed and the lot density required in sections 401.02.6.4.1 and 401.03.1.4 of the 2017 Edition of the Mississippi Standard Specification for Road and Bridge Construction shall be reduced by **one percent**.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 1878

CODE: (SP)

DATE: 08/27/2019

**SUBJECT: Storm Water Discharge Associated with Construction Activity
(≥ 1 and < 5 Acres)**

Construction Storm Water General NPDES Permit MSR 15 to discharge storm water associated with construction activity is required. This project is granted permission to discharge treated storm water into State waters. Copies of said permit and Storm Water Pollution Prevention Plan (SWPPP) are on file with the Department.

Prior to the execution of the contract, the successful bidder shall execute and deliver to the Executive Director an original signed copy of the completed Prime Contractor Certification (Form No. 1).

Failure of the bidder to execute and file the completed Prime Contractor Certification (Form No. 1) shall be just cause for the cancellation of the award.

The executed Prime Contractor Certification (Form No. 1) shall be prima facie evidence that the bidder has examined the permit, is satisfied as to the terms and conditions contained therein, and that the bidder has the primary responsibility for meeting all permit terms and conditions including, but not limited to, the inspection and reporting requirements of [the permit](#). For this project, the Contractor shall furnish, set up and read, as needed, an on-site rain gauge.

The Contractor must furnish the Project Engineer a completed copy of the Small Construction Notice of Intent (SCNOI) along with the Contractor's Erosion Control Plan.

The Contractor shall make inspections in accordance with condition No. S-4, Page [20](#), and shall furnish the Project Engineer with the results of each weekly inspection as soon as possible following the date of inspection. The weekly inspections must be documented monthly on the Inspection and Certification Form, a copy of which is provided. The Contractor's representative and the Project Engineer shall jointly review and discuss the results of the inspections so that corrective action can be taken. The Project Engineer shall retain copies of the inspection reports.

The Engineer will have the authority to suspend all work and/or withhold payments for failure of the Contractor to carry out provisions of MDEQ's Storm Water Construction General Permit, the erosion control plan, updates to the erosion control plan, and /or proper maintenance of the BMPs.

Securing a permit (s) for storm water discharge associated with the Contractor's activity on any other regulated area the Contractor occupies, shall be the responsibility of the Contractor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2172

CODE: (SP)

DATE: 01/06/2020

SUBJECT: App for Storm Water Reports

Bidders are advised that the Department has created a smart phone App for completing and submitting storm water reports required on this project. The Contractor who monitors storm water activities and completes storm water reports will be required to download and use this App when completing and submitting storm water reports. The reports will then be readily available to all persons who need access to the forms. The App is free and is available for downloading at the following location.

<https://extacctmgmt.mdot.state.ms.us/>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2206

CODE: (IS)

DATE: 01/14/2020

SUBJECT: MASH Compliant Devices

Bidders are hereby advised that compliance associated with the requirements of meeting either the National Cooperative Highway Research Program (NCHRP) Report 350 or the Manual for Assessing Safety Hardware (MASH) for installations of certain traffic control devices and permanent safety hardware devices (guardrails, guardrail terminals, permanent portable barriers, cast-in-place barriers, all other permanent longitudinal barriers, crash cushions, cable barriers, cable barrier terminals, bridge rails, bridge rail transitions, all other terminals, sign supports, and all other breakaway hardware) as listed throughout the Standard Specifications and/or the Standard Drawings, or both, is now replaced with the requirements of meeting the 2016 version of MASH after December 31, 2019. This change applies to new permanent installations and to full replacements of existing installations.

At the preconstruction conference or prior to starting any work on the project, the Contractor shall submit a letter stating that the traffic control devices and permanent safety hardware devices as outlined within the paragraph above that are to be used on the project are certified to meet MASH 2016.

When a MASH 2016-compliant device does not exist for the new permanent installations and/or full replacement installations of permanent safety hardware devices, as listed above, a MASH 2009-compliant or a NCHRP 350-compliant device may be proposed by the Contractor for the project. A written request for such instances must be submitted by the Contractor either at the preconstruction conference or prior to starting any work on the project. The Contractor shall submit the following items to the Project Engineer: (1) a detailed list of the proposed devices and locations thereof; and (2) certification letters indicating that the proposed devices are compliant with either MASH 2009 or NCHRP 350.

When a MASH 2016-compliant device does not exist for the temporary work zone traffic control devices (Category 1, Category 2, and Category 3 devices), a MASH 2009-compliant or a NCHRP 350-compliant device may be proposed by the Contractor for the project. Temporary work zone traffic control devices (Category 1, Category 2, and Category 3 devices) that are MASH 2009-compliant or NCHRP 350-compliant that have been in use prior to December 31, 2019, and that have a remaining service life may be proposed for use throughout their normal service life on the project by the Contractor. For either of these scenarios for temporary work zone traffic control devices, a written request must be submitted by the Contractor either at the preconstruction conference or prior to starting any work on the project. The Contractor shall submit the following items to the Project Engineer: (1) a detailed list of the proposed devices and locations thereof; and (2) certification letters indicating that the proposed devices are compliant with either MASH 2009 or NCHRP 350.

Work will only be allowed to proceed after the Department has granted written concurrence(s) with the proposed request(s) as listed above.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2273

CODE: (SP)

DATE: 02/12/2020

SUBJECT: Mississippi Special Fuel Tax Law

Bidder's attention is brought to the second paragraph of Subsection 107.02 of the Standard Specifications which states that all Contractors and Subcontractors must comply with all requirements contained in the Mississippi Special Fuel Tax Law, Section 27-55-501, *et seq.* Attached are two Fact Sheets provided by the Mississippi Department of Revenue (MDOR) with additional information.

Gasoline and Dyed Diesel Used for Non-Highway Purposes

Mississippi provides a reduced rate for gasoline and dyed diesel used for non-highway purposes. The reduced rates are 6.44 cents per gallon and 5.75 cents per gallon of gasoline or dyed diesel. These fuels are generally taxed at 18 cents per gallon if for on road use.

Gasoline Used for Non-Highway Purposes

You may be entitled to a refund of 11.56 cents per gallon (making this an equivalent to a tax rate of 6.44 cents per gallon) if you desire to purchase gasoline to be used off road. The gasoline must be used for agricultural, maritime, industrial, manufacturing, domestic or non-highway purposes only.

Examples of non-highway include gasoline used in boats, golf carts, machinery used for manufacturing or farm equipment used exclusively in plowing, planting or harvesting farm products.

Refund Gasoline User

The refund is based on the amount of gallons used. Before a refund is issued, you are required to...

1. Obtain a refund gasoline user's permit and a certificate for refund booklet from the Department of Revenue;
2. Have a storage tank marked "REFUND GASOLINE"; and,
3. Purchase the gasoline from someone who holds a refund gasoline dealer's permit.

No refund will be allowed for gasoline used in motor vehicles owned or operated by a government entity or used in Mississippi government contracts.

Refund Gasoline Dealer

You must obtain a refund gasoline dealer's permit from the Department of Revenue before selling refund gasoline. At no time should the gasoline be delivered to a tank that is not properly marked. The gasoline must be dyed a distinctive mahogany color at the time of delivery.

The Department of Revenue may waive the dye requirement if the dye may cause damage to the equipment. The refund gasoline user is required to obtain the waiver from the Department of Revenue.

Dyed Diesel Used for Non-Highway Purposes

Unlike gasoline, you are not required to apply for a refund if you desire to purchase dyed diesel to be used off road. Mississippi provides a reduced rate of 5.75 cents per gallon on dyed diesel used off road. Diesel used on road is subjected to 18 cents per gallon. Dyed diesel used in motor vehicles owned or operated by a government entity or used in Mississippi government contracts will be subjected to 18 cents per gallon.

Dyed Diesel Used on the Highway

Any person who purchases, receives, acquires or uses dyed diesel for highway use will be liable to pay 18 cents per gallon and subject to a penalty in the amount of \$1000.

Identifying Dyed Diesel

Storage facilities for dyed diesel must be plainly marked "NONHIGHWAY DIESEL FUEL" or "NONHIGHWAY KEROSENE". Retailers are also required to mark all pumps or dispensing equipment.



Special Fuel Used on Government Contracts

State and Local Government Contracts

Special fuel purchased, acquired or used in performing contracts with the State of Mississippi, counties, municipalities or any political subdivision is taxed at a rate of 18 cents per gallon. Special fuel includes but is not limited to the following:

- Dyed diesel fuel;
- Kerosene;
- Undyed diesel fuel; and,
- Fuel oil.

State and local government contracts include construction, reconstruction and maintenance or repairs of projects such as roads, bridges, water systems, sewer systems, buildings, drainage canals and recreational facilities. The Department of Revenue may require contractors to remit the excise tax directly to the state in lieu of paying the tax to a distributor.

Special Fuel Direct Pay Permit

Contractors that remit the excise tax to the state will be issued a Special Fuel Direct Pay Permit. This permit relieves the distributor from collecting the tax and requires the contractor to file a monthly special fuel return. The distributor should include the contractor's permit number on all invoices that are related to tax-free sales.

The contractor is required to furnish a surety or cash bond guaranteeing the payment of the excise tax prior to receiving the Special Fuel Direct Pay Permit. The Department of Revenue may accept a contractors tax bond if the bond covers the excise tax levied on special fuel.

Special Fuel Distributors

If the contractor does not have a Special Fuel Direct Pay Permit, distributors are required to collect the 18 cents excise tax and remit the tax to the Department of Revenue. The additional 12.25 cents levied on special fuel (excluding undyed diesel) should be reported on schedules 5F and 5G of the special fuel return.

Environmental Protection Fee

Special fuel distributors are required to collect the environmental protection fee even if the contractor has a Special Fuel Direct Pay Permit. The fee is levied at 4/10^{ths} of a cent per gallon. The fee is suspended or reinstated when the trust fund has exceeded or fallen below the obligatory balance.

Penalties

Any person who knowingly and willfully purchases untaxed fuel for use in equipment utilized on a road or highway construction site in this state is guilty of a misdemeanor and, upon conviction, shall be fined not less than \$1,000 or more than \$100,000, or imprisoned in the county jail for not more than one year, or both.



MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO NOTICE TO BIDDERS NO. 2611 LPA

DATE: 06/25/2020

The goal is _____ percent for the Disadvantaged Business Enterprise. All Bidders are required to submit Form OCR-481 for all DBEs.

LPA Projects: Delete entire Pre-Bid Meeting Section on page 5.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2611 LPA

CODE: (IS)

DATE: 06/25/2020

SUBJECT: Disadvantaged Business Enterprises In Federal-Aid Highway Construction

This contract is subject to the "Moving Ahead for Progress in the 21st Century Act (MAP-21)" and applicable requirements of "Title 49, Code of Federal Regulations, [Part 26](#)." Portions of the Act are set forth in this Notice as applicable to compliance by the Contractor and all of the Act, and the MDOT DBE Program, is incorporated by reference herein.

The Department has developed a Disadvantaged Business Enterprise Program that is applicable to this contract and is made a part thereof by reference.

Copies of the program may be obtained from:

Office of Civil Rights
Mississippi Department of Transportation
P. O. Box 1850
Jackson, Mississippi 39215-1850

POLICY

It is the policy of the Mississippi Department of Transportation to provide a level playing field, to foster equal opportunity in all federally assisted contracts, to improve the flexibility of the DBE Program, to reduce the burdens on small businesses, and to achieve that amount of participation that would be obtained in a non-discriminatory market place. In doing so, it is the policy of MDOT that there will be no discrimination in the award and performance of federally assisted contracts on the basis of race, color, sex, [or](#) national origin.

ASSURANCES THAT CONTRACTORS MUST TAKE

MDOT will require that each contract which MDOT signs with a sub-recipient or a Contractor, and each subcontract the Prime Contractor signs with a Subcontractor, includes the following assurances:

“The Contractor, sub-recipient or Subcontractor shall not discriminate on the basis of race, color, [sex](#), [or](#) national origin in the performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of federally assisted contracts. Failure by the Contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as MDOT deems appropriate.”

DEFINITIONS

For purposes of this provision the following definitions will apply:

"Disadvantaged Business" means a small business concern: (a) which is at least 51 percent owned by one or more socially and economically disadvantaged individual(s) or in the case of any publicly owned business, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individual(s); and (b) whose management and daily business operations are controlled by one or more of the socially and economically disadvantaged individual(s) who own it. It is important to note that the business owners themselves must control the operations of the business. Absentee ownership or title ownership by an individual who does not take an active role in controlling the business is not consistent with eligibility as a DBE under 49 CFR Part 26.71.

CONTRACTOR'S OBLIGATION

The Contractor and all Subcontractors shall take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of a portion of the work in this contract and shall not discriminate on the basis of race, color, sex, or national origin. Failure on the part of the Contractor to carry out the DBE requirements of this contract constitutes a breach of contract and after proper notification the Department may terminate the contract or take other appropriate action as determined by the Department.

When a contract has a zero percent (0%) DBE goal, the Contractor still has the responsibility to take all necessary and reasonable steps to ensure that DBE firms can compete for and participate in the performance of the work in the contract. In this case, all work performed by a certified DBE firm is considered to be a "race neutral" measure and the Department will receive DBE credit towards the overall State goals when the DBE firm is paid for their work. If the Prime Contractor is a certified DBE firm, the Department can receive DBE credit only for the work performed by the Prime Contractor's work force or any work subcontracted to another DBE firm. Work performance by a non-DBE Subcontractor is not eligible for DBE credit.

CONTRACT GOAL

The goal for participation by DBEs is established for this contract in the attached Supplement. The Contractor shall exercise all necessary and reasonable steps to ensure that participation is equal to or exceeds the contract goal.

If the percentage of the contract that is proposed for DBEs is 1% or greater, the Contractor shall agree to meet or exceed the contract goal on the last bid sheet of the proposal.

All Bidders shall submit to the Office of Civil Rights Form OCR-481, signed by the Prime Contractor and the DBE Subcontractors, no later than the 3rd business day after opening of the bids.

Form OCR-481 is available on the MDOT website at www.mdot.ms.gov under the Civil Rights tab, or by calling 601-359-7466.

The OCR-481 Form must contain the following information:

The name and address of each certified DBE Contractor / Supplier;

The Reference Number, percent of work to be completed by the DBE subcontractor and the dollar amount of each item. If a portion of an item is subcontracted, a breakdown of that item including quantities and unit price must be attached, detailing what part of the item the DBE firm is to perform and who will perform the remainder of the item.

If the DBE Commitment shown on the last bid sheet of the proposal, does not equal or exceed the contract goal, the bidder must submit, to MDOT Contract Administration Division prior to bid opening, information to satisfy the Department that adequate good faith efforts have been made to meet the contract goal.

Failure of the lowest bidder to furnish acceptable proof of good faith efforts, submitted to MDOT Contract Administration Division prior to bid opening, shall be just cause for rejection of the proposal. Award may then be made to the next lowest responsive bidder or the project may be re-advertised.

GOOD FAITH EFFORTS

The following factors are illustrative of matters the Department will consider in judging whether or not the bidder has made adequate good faith effort to satisfy the contract goal.

- (1) Whether the bidder attended the pre-bid meeting that was scheduled by the Department to inform DBEs of subcontracting opportunities;
- (2) Whether the bidder advertised in general circulation, trade association, and minority-focus media concerning the subcontracting opportunities;
- (3) Whether the bidder provided written notice to a reasonable number of specific DBEs that their interest in the contract is being solicited;
- (4) Whether the bidder followed up initial solicitations of interest by contacting DBEs to determine with certainty whether they were interested;
- (5) Whether the bidder selected portions of the work to be performed by DBEs in order to increase the likelihood of meeting the contract goal;
- (6) Whether the bidder provided interested DBEs with adequate information about the plans, specifications and requirements of the contract;

- (7) Whether the bidder negotiated in good faith with interested DBEs and did not reject them as unqualified without sound reasons based on a thorough investigation of their capabilities; and
- (8) Whether the bidder made efforts to assist interested DBEs in obtaining any required bonding or insurance.
- (9) Whether the bidder has written notification to certified DBE Contractors soliciting subcontracting for items of work in the contract.
- (10) Whether the bidder has a statement of why an agreement was not reached.
- (11) Proof of written notification to certified DBE Contractors by certified mail that their interest is solicited in subcontracting the work defaulted by the previous DBE or in subcontracting other items of work in the contract.

The bidder's execution of the signature portion of the proposal shall constitute execution of the following assurance:

The bidder hereby gives assurance pursuant to the applicable requirements of "Moving Ahead for Progress in the 21st Century Act (MAP-21)" and applicable requirements of "Title 49, Code of Federal Regulations, Part 26" that the bidder has made a good faith effort to meet the contract goal for DBE participation for which this proposal is submitted.

DIRECTORY

A list of "Certified DBE Contractors" which have been certified as such by the Mississippi Department of Transportation and other Unified Certification Partners (UPC) can be found on the Mississippi Department of Transportation website at www.mdot.ms.gov. The list is in the top left corner of the current Letting Calendar under Contracts & Letting. The DBE firm must be certified at the time the project is let and approved by MDOT to count towards meeting the DBE goal.

REPLACEMENT

If a DBE Subcontractor cannot perform satisfactorily, and this causes the OCR-481 commitment to fall below the contract goal, the Contractor shall take all necessary reasonable steps to replace the DBE with another certified DBE Subcontractor or submit information to satisfy the Mississippi Department of Transportation that adequate good faith efforts have been made to replace the DBE. The good faith efforts outlined previously in this document still apply. The replacement DBE must be a DBE who was on the Department's list of "Certified DBE Contractors" when the job was let, and who is still active. All DBE replacements must be approved by the Department.

Under no circumstances shall the Prime or any Subcontractor perform the DBE's work (as shown on the OCR-481) without prior written approval from the Department. See "Sanctions" at the end of this document for penalties for performing DBE's work.

When a Contractor proposes to substitute/replace/terminate a DBE that was originally named on the OCR-481, the Contractor must obtain a release, in writing, from the named DBE explaining why the DBE Subcontractor cannot perform the work. A copy of the original DBE's release must be attached to the Contractor's written request to substitute/replace/terminate along with appropriate Subcontract Forms for the substitute/replacement/terminated Subcontractor, all of which must be submitted to the DBE Coordinator and approved, in advance, by MDOT.

PRE-BID MEETING

A pre-bid meeting will be held in the Commission Room on the 1st Floor of the MDOT Administration Building in Jackson, at 2:00 P.M. on the day preceding the date of the bid opening.

This meeting is to inform DBE firms of subcontracting and material supply opportunities. Attendance at this meeting is considered of prime importance in demonstrating good faith effort to meet the contract goal.

PARTICIPATION / DBE CREDIT

Participation shall be counted toward meeting the goal in this contract as follows:

- (1) If the Prime Contractor is a certified DBE firm, only the value of the work actually performed by the DBE Prime can be counted towards the project goal, along with any work subcontracted to a certified DBE firm.
- (2) If the Contractor is not a DBE, the work subcontracted to a certified DBE Contractor will be counted toward the goal.
- (3) The Contractor may count toward the goal a portion of the total dollar value of a contract with a joint venture eligible under the standards of this provision equal to the percentage of the DBE partner in the joint venture.
- (4) Expenditures to DBEs that perform a commercially useful function may be counted toward the goal. A business is considered to perform a commercially useful function when it is responsible for the execution of a distinct element of the work and carries out its responsibilities by actually performing, managing, and supervising the work involved.
- (5) The Contractor may count 100% of the expenditures for materials and supplies obtained from certified DBE suppliers and manufacturers that produce goods from raw materials or substantially alters them for resale provided the suppliers and manufacturers assume the actual and contractual responsibility for the provision of the materials and supplies. The Contractor may count sixty percent (60%) of the expenditures to suppliers that are not

manufacturers, provided the supplier performs a commercially useful function in the supply process. Within 30 days after receipt of the materials, the Contractor shall furnish to the DBE Coordinator invoices from the certified supplier to verify the DBE goal.

- (6) Any work that a certified DBE firm subcontracts or sub-subcontracts to a non-DBE firm will not count towards the DBE goal.
- (7) Only the dollars actually paid to the DBE firm may be counted towards the DBE goal. The participation of a DBE Firm cannot be counted towards the Prime Contractor's DBE goal until the amount being counted towards the goal has been paid to the DBE.

AWARD

Award of this contract to the low bidder will be contingent upon the following conditions:

- (1) Concurrence from Federal Highway Administration, when applicable.
- (2) **All Bidders** must submit to the Office of Civil Rights for approval, Form OCR-481 (DBE Commitment) no later than the 3rd business day after opening of the bids to satisfy the Department and that adequate good faith efforts have been made to meet the contract goal. For answers to questions regarding Form OCR-481, contact the MDOT Office of Civil Rights at (601) 359-7466.
- (3) Bidder must include OCR-485 information with their bid proposal listing all firms that submitted quotes for material supplies or items to be subcontracted. OCR-485 information must be **signed and** included with the bid proposal. If the OCR-485 information is not included as part of bid proposal, your bid will be deemed irregular.

Prior to the start of any work, the bidder must notify the Project Engineer, in writing, of the name of the designated "DBE Liaison Officer" for this project. This notification must be posted on the bulletin board at the project site.

DEFAULT

If the contract goal established by MDOT in this proposal is 1% or greater, it must be met to fulfill the terms of the contract. The Contractor may list DBE Subcontractors and items that exceed MDOT's contract goal, but should unforeseen problems arise that would prevent a DBE from completing its total commitment percentage, the Contractor will meet the terms of the contract as long as it meets or exceeds MDOT's Contract Goal. For additional information, refer to "Replacement" section of this Notice.

DBE REPORTS

- (1) OCR-481: Refer to "CONTRACT GOAL" section of this Notice to Bidders for information regarding this form.

- (2) OCR-482: At the conclusion of the project, before the final estimate is paid and the project is closed out, the Prime Contractor will submit to the Project Engineer for verification of quantities and further handling Form OCR-482 whereby the Contractor certifies to the amounts of payments made to all Contractors / Suppliers over the life of the contract. The Project Engineer shall submit the completed Form OCR-482 to the DBE Coordinator (Office of Civil Rights). Final acceptance of the project is dependent upon Contract Administration Division's receipt of completed Form OCR-482 which they will receive from the Office of Civil Rights.
- (3) OCR-483: The Project Engineer/Inspector will complete Form OCR-483, the Commercially Useful Function (CUF) Performance Report, in accordance with MDOT S.O.P. No. OCR-03-05-02-483. Evaluations reported on this form are used to determine whether or not the DBE firm is performing a CUF. The Prime Contractor should take corrective action when the report contains any negative evaluations. DBE credit may be disallowed and/or other sanctions imposed if it is determined the DBE firm is not performing a CUF. This form should also be completed and returned to the DBE Coordinator (Office of Civil Rights).
- (4) OCR-484: Each month, the Prime Contractor will submit to the Project Engineer OCR-484 that certifies payments to all Subcontractors and shows all firms even if the Prime Contractor has paid no monies to the firm during that estimate period (negative report). The Project Engineer will attach the form to the monthly estimate before forwarding to the Contract Administration Division for further processing. Failure of the Contractor to submit the OCR-484 will result in the estimate not being processed and paid.
- (5) OCR-485: ALL BIDDERS must submit signed form with bid proposal of all firms that submitted quotes for material supplies or items to be subcontracted. If the OCR-485 information is not included as part of bid proposal, the bid will be deemed irregular.
- (6) OCR-487: Only used by Prime Contractors that are certified DBE firms. This form is used in determining the exact percentage of DBE credit for the specified project. The low Bidder should return this form to MDOT with the OCR-481 form, or can also be returned with the Permission to Subcontract Forms (RPS-1, NRAA-1 and SCC-1).

DBE Forms, can be obtained from the Office of Civil Rights Division, MDOT Administration Building, 401 North West Street, Jackson, MS, or at www.mdot.ms.gov under the Civil Rights tab.

SANCTIONS

The Department has the option to enforce any of the following penalties for failure of the Prime Contractor to fulfill the DBE goal as stated on the OCR-481 form or any violations of the DBE program guidelines:

- (1) Disallow credit towards the DBE goal

(2) Withhold progress estimate payments

(3) Deduct from the final estimate or recover an amount equal to the unmet portion of the DBE goal which may include additional monetary penalties as outlined below based on the number of offenses and the severity of the violation as determined by MDOT.

1 st Offense	10% of unmet portion of goal	or	\$5,000 lump sum payment	or	Both
2 nd Offense	20% of unmet portion of goal	or	\$10,000 lump sum payment	or	Both
3 rd Offense	40% of unmet portion of goal	or	\$20,000 lump sum payment	or	\$20,000 lump sum payment and debarment

(4) Debar the Contractor involved from bidding on MDOT federally funded projects for a period of up to 12 months after notification by certified email.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2689 LPA

CODE: (SP)

DATE: 06/15/2017

SUBJECT: Asphalt Smoothness Requirement

Bidders are advised that Subsection 403.03.2.1—Smoothness Tolerances for Mean Roughness Index (MRI) is removed from this project. Any incentive or disincentive for asphalt smoothness associated with (MRI) is also hereby eliminated from this project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 2954

CODE: (SP)

DATE: 12/01/2020

SUBJECT: Reflective Sheeting for Signs

Bidders are hereby advised that the retroreflective sign sheeting used for signs on this project shall be as listed below and shall meet the requirements of Subsection 721.06.

Temporary Construction Signs

Temporary traffic control (orange) sign sheeting shall be a minimum Type IX Fluorescent Orange sheeting as shown in Special Provision 907-721.

Permanent Signs

Permanent signs, except signs on traffic signal poles/mast arms, shall be as follows:

- Brown background sheeting on guide signs shall be a minimum Type VIII sheeting,
- Green and blue background sheeting on guide signs shall be a minimum Type IX sheeting, and
- All white, yellow, red, fluorescent yellow, and fluorescent yellow/green sheeting shall be Type XI sheeting.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3676

CODE: (SP)

DATE: 09/21/2021

SUBJECT: Asphalt Gyratory Compactor Internal Angle Calibration

Bidders are advised that by March 1, 2022, all asphalt gyratory compactors shall be calibrated to an internal angle of $1.16^{\circ} \pm 0.02^{\circ}$. This requirement will be reflected in updates made to MT-78, MT-80, and MT-83. This calibration requirement also extends to all QC/QA testing.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3875

CODE: (SP)

DATE: 12/15/2021

SUBJECT: ITS General Requirements

For this Notice to Bidders, the “Engineer” shall mean the Project Engineer and/or their designee(s) throughout the rest of this NTB, unless stated otherwise.

Submittals

All submittals covered under this section shall be made electronically to the Project Engineer and to the ITS Engineer, shall clearly state the project name and project number, and should be in as few separate submittals as possible.

All products selected for use on this project shall be in compliance with 2 CFR 200.216, in addition to all other contract requirements as outlined throughout the specifications, special provisions and plans. No telecommunication and video surveillance equipment or services shall be manufactured by the following companies: Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, Dahua Technology Company, and any subsidiary or affiliate of these entities.

Product Data. Manufacturers’ product data including specifications/cut-sheets, design guides, installation manuals, operating manuals, and maintenance/service manuals shall be submitted by the Contractor for each component of the ITS system, including but not limited to cabinets, controllers, sensors, conduit, pull boxes, hardware, and all other parts of the system selected for installation.

The complete information for the original product data submittal shall be contained in as few submittals as possible and be in an organized fashion.

The product data submittal shall be accompanied by a specification checklist. At a minimum, this checklist shall clearly state the following:

- 1) The project name and project number
- 2) The date of the submittal
- 3) The pay item number and description
- 4) The part and/or model number, matching the cut-sheet
- 5) The manufacturer
- 6) A Certification Statement that the referenced product is not manufactured by any of the following: Huawei Technologies Company, ZTE Corporation, Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, Dahua Technology Company, and any subsidiary or affiliate of these entities. (as per 2 CFR 200.216)
- 7) Every material requirement as stated in in this Notice to Bidders and as outlined elsewhere within this contract.

- 8) A statement of whether the product complies with the requirements set forth in the specifications, special provisions, plans and NTB. If product is not compliant, an explanation of non-compliance shall be provided.

All subsections of a particular section may be omitted if the section heading is included, is indicated to be not applicable, and that it is evident that all subsections being omitted are also not applicable.

It shall be the responsibility of the Contractor to guarantee the accuracy of the checklist.

Other Submittals. The following submittals shall be required:

- 1) Shop Drawings
- 2) Cabinet wiring diagrams with system labeling schedule.
- 3) Site wiring/connection drawings.
- 4) Rack diagrams showing rack mounted equipment.
- 5) All documentation as described in the Project Testing Plan Requirements section below.
- 6) Project Record Drawings:
 - a. The purpose of Project Record Drawings is to provide factual information regarding all aspects of the Work, to enable future service, modifications, and additions to the Work.
 - b. Project Record Drawings are an important element of this Work. Contractor shall accurately maintain Project Record Drawings throughout the course of this project.
 - c. Project Record Drawings shall include documentation of all Work, including the conduit locations, pull box locations, equipment locations, foundation details, setup parameters and wiring and block diagrams.
 - d. Project Record Drawings shall accurately show the physical placement of the following:
 - i. Cabinets, sensors, pull boxes, and other materials installed at each site.
 - ii. Conduit runs and splicing information.
 - e. Project Record Drawings shall show the physical placement of each system component installed during the project at each site. Where the plan details do not depict actual field conditions, the Contractor shall amend the construction plan as required.
- 7) Upon completion of Work, and prior to Final Acceptance, the Contractor shall prepare and submit the final record set of Project Record Drawings. This set shall reflect the installed Work.
- 8) Closeout Submittals - A set of Project Record Drawings shall be provided to the Project Engineer and ITS Engineer for any items that changed or were not previously submitted, including:
 - a. Project Record Drawings
 - b. Product Data
 - c. Installation Manuals
 - d. Operating Manuals
 - e. Maintenance/Service Manuals

As-Built Plans. The Contractor shall provide GPS locations of all pull boxes, splices,

termination equipment cabinets, ITS field locations and all pole locations. The Contractor shall record and submit the sequential footage markers from the fiber optic trunk and drop cables for each GPS location. The Contractor shall provide scanned PDF files of all plan sheets with pen and ink markups. The Contractor shall provide a site location inventory of ITS devices to include manufacturer model, serial numbers, MAC addresses, and IP addresses (as applicable) for all installed devices. All documentation will be due to the Department a minimum of thirty (30) calendar days after the installation.

Additional Quality Assurance Measures

The project shall be constructed in such a manner as to comply with environmental regulations and erosion control as specified in the plans and elsewhere in MDOT standard specifications.

At the completion of the Work, the site shall be cleaned, restored, grassed and otherwise stabilized to a condition consistent with conditions before work began. This work shall be paid for under other items of work.

All disturbed signs, guardrail, markers, fencing, and other roadway appurtenances shall be restored. Disturbed roadway appurtenances that require complete removal and replacement will be identified within the contract and will have separate pay items and quantities set forth for such work.

The Contractor shall clean-up debris caused by Contractor's activities on a daily basis as the work progresses. This work shall be paid for under other items of work.

All work-related accidents shall be reported immediately to the Project Engineer or his/her representative.

Maintenance and Technical Support. The supplier must provide and have a parts support system capable of providing parts for the length of the warranty period.

Project Testing Plan Requirements

The Contractor shall conduct a Project Testing Plan as required below in addition to all other project testing and acceptance procedures required elsewhere in the specifications and Plans. Some specifications contain details regarding the testing for individual device types or attributes, but this section outlines the overall testing plans for the entire project as a whole. The Project Testing Plan shall include a series of tests on all project materials occurring at various stages in the project. All costs associated with the Project Testing Plan shall be absorbed in contract pay items; no separate payment will be made for any testing.

General Requirements. The Contractor is responsible for planning, coordinating, conducting and documenting all aspects of the Project Testing Plan as detailed below and providing all required equipment for the tests. The Engineer reserves the right to attend and observe all tests.

Each test shall be an individual and separate event for each type of test and for each type of equipment as defined elsewhere within this NTB. The Contractor shall follow the testing sequence as described in this NTB and shall perform the required tests on all applicable

devices and infrastructure.

Test procedures shall be submitted and approved for each test as part of the project submittals programs. Test procedures shall include every action necessary to fully demonstrate that the material under test is clearly and definitively in full compliance with all project requirements. Test procedure actions shall cross-reference to the specifications or Plans requirement that is the subject of the test action. Test procedure actions shall cross-reference the applicable sections of the final approved Project Submittal Compliance Form and the submittal materials for the subject of the test action. Test procedures shall contain test setup and block/wiring diagrams showing all materials being tested and all test and measurement equipment, with calibration documentation, and shall contain documentation regarding the equipment configurations and programming. Test procedures shall include checkoff blanks for each project requirement included in that test and shall include forms for the documentation of all measured test results.

No testing shall be scheduled until approval of all project submittals for all materials covered under a given test and approval of the test procedures for the given test has been granted.

Unless otherwise required herein, the Contractor shall request in writing the Engineer's approval for each test occurrence a minimum of 14 days prior to the requested test date. Test requests shall include the test to be performed and the material to be tested. The Engineer reserves the right to reschedule tests if needed.

For any series of tests on different installations of a given material (e.g., different sections of cable), the Contractor shall request in writing the Engineer's approval for the first test occurrence of the series a minimum of 14 days prior to the requested test date, regardless of the notification requirements for subsequent test occurrences.

The Contractor shall provide all ancillary equipment, materials, diagnostic and test software, and computers as required in the approved test procedures.

All test results shall be documented in writing by the Contractor in accordance with the test procedure and submitted to the Engineer within seven (7) days of the completion of the test. Any given test session is considered incomplete until the Engineer has approved the documentation for that test session.

The Contractor shall provide test results documentation in electronic format and printed format (3 copies). Electronic formats shall be provided in both PDF and Microsoft Excel or other approved application. Printed copies shall be bound and organized by test, equipment type, and individual unit.

- Two sets are for the Traffic Engineering ITS Department
- One set is for the Engineer

All test results shall be provided in English units of measure.

All test results deemed by the Engineer to be unsatisfactorily completed shall be repeated by the Contractor, following all test requirements as defined elsewhere in this NTB and contract specifications. This shall include a request in writing for the Engineer's approval for the repeated test a minimum of 14 days prior to the requested test date, unless this requirement is waived by the Engineer. In the written request for each test occurrence that is a repeat of a previous test, the Contractor shall summarize the diagnosis and correction of each aspect of the previous test that was deemed unsatisfactory. Any revisions to the test procedures for a repeated test occurrence shall meet all requirements for the original test procedures, including review and approval by the Engineer.

The satisfactory completion of any test shall not relieve the Contractor of his responsibility to provide a completely acceptable and operating system that meets all requirements of this project.

It is possible for the Contractor to schedule multiple test dates and revise the actual test being performed on a particular day if; 1) the Engineer approves of the change, 2) all test scheduling requirements above have still been met for the actual test to be performed on the date, and 3) there is not an unreasonable change of location, time, duration, or requirement of the Engineer.

Factory Acceptance Test (FAT). FATs shall be conducted at the Manufacturer or Contractor's facility or at a facility acceptable to all parties prior to shipping from the factory. The goal of the FAT is to verify that the equipment meets the requirements of the specifications. All equipment to be utilized for this project shall be subject to tests that demonstrate the suitability of the design and manufacturing procedures and compliance with the contract requirements, unless an exception for a specific equipment item is granted by the Engineer. The tests shall be performed on production units identified to be delivered under this Contract. As a minimum, a FAT is required for each of the following project materials:

- Dynamic Message Signs

The FAT testing procedures and results for specifically identified materials shall demonstrate that all testing requirements as outlined within the contract (standard specifications, plans, special provisions, and notice to bidders) are met, including, but not limited to: functional/system performance requirements, electrical requirements, data transmission/communication requirements, safety/password requirements, environmental requirements, and interface requirements with other components of the project system.

The Engineer reserves the right to waive FATs which are deemed to be unnecessary and reserves the right to witness all FATs that are determined to be critical to the project. At the Engineer's discretion, the Engineer may be in attendance at the FAT for any units tested. The FAT for the first three (3) units shall be conducted during the same time period and shall be completed before additional units are produced.

The Engineer shall be notified a minimum of 45 calendar days in advance of such tests. Salary and travel expenses of the Engineer and his/her representatives will be the responsibility of the Department. In case of equipment or other failures that make a retest necessary, travel expenses associated with retests for the Engineer and his/her representatives shall be the responsibility of

the Contractor. The travel expenses shall include all costs associated with having a two-person Engineer review team on site, including but not limited to airfare, automobile rental, lodging, and per diem. These costs, excluding airfare, shall not exceed \$500.00 per representative, per day. These costs shall be deducted from the payments due or charged to the withholding account of the Contractor when the project is terminated.

The vendor must complete the FAT on all remaining units on their own and submit documentation to the Engineer that the FATs were completed. The Engineer reserves the right to randomly attend those FAT tests.

No equipment for which a FAT is required shall be shipped to the project site without successful completion of factory acceptance testing as approved by the Engineer and the Engineer's approval to ship.

Bench Test Components (BTC). The Contractor shall perform a complete BTC on the lesser of the full contract quantity of units of equipment and materials or the number of units required as specified in this subsection below. The quantity listed in the subsection below is a "minimum" quantity and the Engineer reserves the right to require testing of additional quantities if the initial testing is not deemed adequate. The Contractor shall provide the testing location and facility, which shall be in Mississippi and within a 25-mile radius of the project limits. The test location must be approved by the Engineer as part of the BTC test procedure submittal.

The BTC shall demonstrate that all equipment and materials are in full compliance with all project requirements and works "out of the box" by visual inspection, setup and operation "on the bench", functional testing of the component including manufacturer's recommended startup diagnostics, and testing prior to any field installation of that equipment or material. Test results documentation shall be provided for each equipment item and material in the full contract quantity; test results documentation shall include the manufacturer's serial number and the project location ID for each item.

As a minimum, a BTC is required for each of the following project materials for quantities as shown.

- Closed Circuit Television Equipment, 4 PTZ units & 6 fixed units
- Dynamic Message Sign, 2 complete units of each type
- Travel Time Signs, 2 compete units
- Network Switches Type A, 4 units
- Network Switches Type B & F, 2 units each
- Network Switches, Type C, D, & E, 1 unit each
- ITS Radar Vehicle Detection Sensors, 6 units
- Highway Advisory Radios, 2 units
- Radio Interconnect System, 4 units of each type
- Bluetooth Detection System, 6 units
- DSRC devices, 6 units
- Roadway Weather Information System, 2 complete units
- Traveler Information Video Kiosk, 2 complete units

- Smart Work Zone System
 - Portable CCTV station, 2 complete units
 - Non-Intrusive Vehicle Detection Devices / Portable Traffic Sensors, 4 complete units
 - Highway Advisory Radio, 2 complete units
 - Portable Changeable Message Signs, 2 complete units
 - Portable Traffic Signal, 2 complete units
- Off-the-shelf and Vendor Software, all necessary
- Equipment Cabinet (Type A), 2 cabinets
- Equipment Cabinet (Type B), 4 cabinets
- Equipment Cabinet (Type C), 2 cabinets

Pre-Installation Tests (PIT). The Contractor shall perform Pre-Installation Tests (PIT) on all device quantities that are not included in the BTC. The Contractor shall provide the testing location and facility, which shall be within a 25-mile radius of the project limits or as approved by the Engineer. The test location must be approved by the Engineer as part of the PIT test procedure submittal. The PIT shall be a shortened version of the BTC to ensure the equipment will power up, operate, and was not damaged during shipment. The Engineer reserves the right to attend any PIT as desired; however, the contractor shall submit documentation of the PITs whether the Engineer is present or not. In addition to these requirements, see the DMS, TTS, and Fiber Optic Cable Special Provisions for more details.

Stand Alone Site Tests (SAT). The Contractor shall perform a complete SAT on all equipment and materials associated with the field device site, including but not limited to electrical service, conduit, pull boxes, communication links infrastructure (fiber, leased copper, wireless), cable, poles, camera lowering devices, device communication cables, cabinet apparatus, etc. The goal of the SAT is to verify that the equipment has been properly installed and commissioned according to the manufacturer requirements. A SAT shall be conducted at every field device site including communications hubs. A SAT shall be conducted for a fully installed and completed control center in the TMC as described in the TMC modification NTB. A SAT shall be conducted for all fiber optic infrastructure.

The SAT shall demonstrate that all equipment and materials are in full compliance with all project requirements, are fully functional as installed, and are in their final configuration. As part of this demonstration, SATs shall include but are not limited to the following:

- A visual inspection of the cabinet and all construction elements at the site to ensure they are compliant with the Specifications and have no physical damage or deformities.
- The inspection of the cabinet at each site shall include the functional test of all cabinet equipment, including circuit breaker, receptacles, fan and thermostat, lights, and door switches.
- Verify that manufacturer documentation for each device is present.
- A measurement of the DC power supply shall be made at the cabinet when it is operating under full load.
- Verify that all equipment has proper power, surge protector, and grounding connections.
- Inspect the integrity of all cable connections and terminations and verify that the cables are

connected and terminated as specified in the Plans.

The SATs for each site type shall include but are not limited to the following:

- *CCTV Stand Alone Site Test:* Shall be conducted at the CCTV Cabinet and shall demonstrate the complete operation of the CCTV, Network Switch, and the link(s) to any devices that are connected to the Power Supply in the CCTV Cabinet. The SAT shall include a 5-minute recording of each PTZ and Fixed camera showing the field of view and video quality. Two copies of the recording shall be provided to the Engineer on USB flash drives. The recording will start at the preset default position(s) and will demonstrate the full zoom capabilities of the cameras, as well as the full range of the pan and tilt functions of PTZ cameras. This recording shall be in a format playable with Windows Media Player or pre-approved by the Engineer.
- *ITS Communications HUT Stand Alone Site Test:* Shall be conducted at the HUT and shall demonstrate the complete operation of all equipment inside the HUT including Network Switches. This also includes visual inspection of the Site elements associated with the HUT.
- *ITS Termination Cabinet Stand Alone Site Test:* Shall be conducted at the termination cabinet and shall demonstrate the complete operation of all equipment inside the cabinet including Network Switches. This also includes visual inspection of the Site elements associated with the termination cabinet.
- *Radio Interconnect System Stand Alone Site Test:* Shall be conducted from the cabinets at both ends of the communications link (even if one end consists of existing equipment) and shall demonstrate that the radios, the antennas, the entire link, the Network Switch, and the transmission of video and/or data are fully operational. See Radio Interconnect Special Provision for more details.
- *Highway Advisory Radio Site Test:* Shall be conducted at the HAR cabinet, antenna, and advisory signs and shall demonstrate complete operation of recordings, transmissions, and remote flashing beacon unit(s). See HAR Special Provision for more details.
- *Fiber Optic Cable Stand Alone Site Test:* Shall be conducted at each Cabinet and at each HUB and shall include both power meter tests and OTDR tests. See Fiber Optic Special Provision for more details.
- *Conduit Detection Wire Stand Alone Site Test:* Shall be conducted at each pull box and shall demonstrate that a continuous run of conduit detection wire was installed between pull boxes, vaults, cabinets, and structures as required.
- *ITS Radar Vehicle Detection Stand Alone Site Test:* Shall be conducted at the IRVD Cabinet and shall demonstrate the complete operation, proper configuration, and verification of detection for each lane of traffic or zone of the IRVD unit(s).
- *BDS Stand Alone Site Test:* Shall be conducted at the Device Cabinet and shall demonstrate the complete operation and proper configuration of the unit(s), verify network connection to the BDS through ping and telnet sessions from a remote PC, and confirm that the system is fully functional by detecting Bluetooth devices at a sample rate approved by the Engineer.
- *RWIS Stand Alone Site Test:* Shall be conducted at the RWIS Cabinet and shall demonstrate the complete operation and proper configuration of the RWIS and shall verify that the remote flashing beacon unit(s) on the warning signs are activated properly as

specified and will de-activate automatically without renewal at preset intervals.

- *SWZ Stand Alone Site Test:* Shall be conducted at each device at its initial location and shall demonstrate the complete operation and proper configuration of the device as described in the Smart Work Zone Special Provision and NTB. At any subsequent locations, at a minimum, a document verifying that the device is configured for the new location shall be submitted to the Engineer.
- *Kiosk Stand Alone Site Test:* Shall be conducted at the device, verify all required video layouts and displays, demonstrate all required software features, and demonstrate the complete operation of the device and Network Switch. Refer to the Traveler Information Video Kiosk specification for more details.

DMS & TTS Stand Alone Site Test: Shall be conducted at the Device Cabinet, verify that all pixels are operational, verify that the sign can be controlled locally through both the serial and Ethernet ports, and demonstrate the complete operation of the device and Network Switch. The signs shall be delivered with and tested using default fonts and sizes that are provided by the MDOT ATMS drivers.

The Contractor shall request in writing the Engineer's approval for each test occurrence a minimum of 14 days prior to the requested test date. The Contractor shall arrange, at no additional expense to the State, the attendance of a qualified technical representative of the equipment manufacturer to attend each test until a minimum of two (2) sites of that type are approved.

Sub-System Test (SST). The Contractor shall perform an SST on each DMS and TTS to verify and document that all remote TTS and DMS functions and alarms are operational from the TMC.

An SST is required for at least ten percent (10%) of each of the following devices being placed for the project, taken by a random sampling: BDS, Network Switch, IRVD, HAR, Radio, CCTV, Video Vehicle Detection, and RWIS including beacons. The SST will require the Contractor to demonstrate and document that all functions and alarms are operational from the TMC.

An SST is required for each Traveler Information Kiosk in the project and will require the Contractor to demonstrate and document the features demonstrated in the Kiosk SAT using remote access from the TMC.

An SST is required for each Smart Work Zone device in the project and will require the Contractor to demonstrate and document the connection between the device and the central data/video collection site. Once a Smart Work Zone device has been verified to be properly configured, working, and communicating at its current location, the device can be utilized without further testing. The Conditional System Acceptance Test, Burn-in period, Final Inspection, or Final System Acceptance is not required for a device being solely utilized as part of the temporary Smart Work Zone System. Devices moved to a new location do require verification that they are still working as intended in the new location.

The Contractor shall coordinate the SST to be performed with the Project Engineer or designee present. The Contractor shall provide an SST plan to the Project Engineer for review and approval a minimum of two weeks in advance of tests being performed.

Conditional System Acceptance Test. The Contractor shall perform a complete conditional system acceptance test on all equipment and materials in the project. The Contractor shall not request the conditional system acceptance test until the SATs have been satisfactorily completed, all as-built documentation has been submitted and approved, and all other project work has been completed to the satisfaction of the Engineer. Prior to a Conditional System Acceptance Test, the Contractor shall provide advance notice of and written test results documenting that the Contractor has performed a dry-run of the conditional system acceptance test. The Engineer reserves the right to attend a dry-run test session.

The Contractor shall coordinate the CSAT with the Engineer. The Contractor shall provide a CSAT plan to the Engineer and be approved a minimum of fourteen (14) calendar days in advance of tests being performed. The CSAT plan shall be inclusive of steps and procedures to be performed and scheduled times to perform test procedures.

The Contractor shall test all project systems simultaneously from the State TMC in a manner equivalent to the normal day-to-day operation of the system. The Conditional System Acceptance Test shall demonstrate that all equipment and materials in the network are in full compliance with all project requirements and fully functional as installed and in final configuration, communicating with and being controlled through the control center at the State TMC. If pre-processing systems (e.g., edge computing) or post-processing systems (e.g., video image processing and analytics, detection in one device triggering an alarm or event in another device, etc.) are present, these shall be tested, verified, and documented as working as intended during the CSAT. Edge computing is where data-handling activities, such as analysis and event-triggering, takes place near the physical location that the data is collected.

The Engineer reserves the right to require, at no additional expense to the State, the attendance of a qualified technical representative of the equipment and/or software manufacturers to attend any given Conditional System Acceptance Test.

Upon completion and full approval of the Conditional System Acceptance Test for all equipment in all phases, Conditional System Acceptance will be given and the Burn-in Period will begin.

Burn-In Period. Following the Engineer's written notice of successful completion of the Conditional System Acceptance Test, the entire newly installed system must operate successfully for a **thirty (30) day** burn-in period. The Contractor shall be responsible for the full maintenance of the newly installed equipment during the burn-in period. This maintenance includes all troubleshooting and repairs as well as providing preventive maintenance that meets the equipment manufacturer's recommendations. However, no separate payment will be made during the burn-in period. Successful completion of the burn-in period will occur at the end of **thirty (30) complete days** of operation without a system failure attributable to hardware, software or communications components. Each system failure during the burn-in period will require an additional **thirty (30) days** of successful operation prior to being eligible for Final Acceptance (i.e., if the initial burn-in period is **thirty (30) days** and there are two (2) system failures during this time, the burn-in period would be increased to **ninety (90) days**).

Burn-In General Requirements:

- Determination of a system failure shall be at the sole discretion of the Engineer.
- System failure is defined as a condition under which the system is unable to function as a whole or in significant part to provide the services as designed. While a single component failure will not constitute a system failure, chronic failure of that component or component type may be sufficient to be considered a system failure. Chronic failure of a component or component type is defined as three (3) or more failures for the same component during the burn-in period.
- Components are defined as contract items or major material elements in a contract item. For electrical and electronic contract items, components are defined as the complete assembly of materials that makes up the contract item.
- Specifically exempted as system failures are failures caused by accident, acts of God, or other external forces that are beyond the control of the Contractor. However, failure of the contractor to respond to the repair request for that failure within 24 hours may be considered a system failure.
- The Department will advise the Contractor in writing when it considers that a system failure has occurred or chronic failure exists.
- If multiple system and/or chronic failures continue to occur throughout the burn-in period due to a single component type, the Contractor may be required to replace all units of that component type with a different model or manufacturer.
- The Contractor shall document all failures and subsequent diagnosis and repair. The repair documentation shall include as a minimum:
 - Description of the problem
 - Troubleshooting and diagnosis steps
 - Repairs made
 - List of all equipment and materials changed including serial numbers.
 - Update of the equipment inventory where needed.
 - The Contractor shall provide the repair documentation to the Engineer within two (2) days of completing the repair; failure to provide acceptable documentation as required shall be reason to not approve the repair as complete. The Engineer will provide acceptance or rejection of the repair and documentation within seven (7) days of receiving the repair documentation.
 - The Engineer reserves the right to require, at no additional expense to the State, the presence of a qualified technical representative of the equipment and/or software manufacturers as related to the diagnosis and/or repair of any system failure.
- During the burn-in period, the Contractor shall perform incidental work such as touching up, cleaning of exposed surfaces, leveling and repair of sites, sodding/grassing and other maintenance work as may be deemed necessary by the Engineer to ensure the effectiveness and neat appearance of the work sites.
- During the burn-in period, the Engineer shall maintain a "burn-in period punch list" that contains required Contractor actions but that the Engineer does not define as a system failure. Each burn-in period punch list action item shall be completed by the Contractor to the Engineer's satisfaction within seven (7) days of Contractor notification of the action item.
- During the burn-in period, the Contractor is required to meet the following response times

once notified there is a problem. A response is defined as being on-site to begin diagnosing the problem.

- o Monday thru Friday: The Contractor shall respond no later than 9:00 a.m. the following morning after being notified.
 - o Weekends: If the Contractor is notified on Friday afternoon or during the weekend, the Contractor shall respond by 9:00 a.m. on Monday morning.
- During the burn-in period, the Contractor shall provide all labor, materials, equipment and replacement parts to completely maintain, troubleshoot and repair all items installed under this contract. No separate payment will be made for any labor, materials, equipment, or replacement parts needed during the burn-in period.
- The overall burn-in period will be considered complete upon the successful completion of the burn-in time periods, the Engineer's acceptance of all repairs and repair documentation, completion of all burn-in period punch list actions, and a final inspection as described below.

Contract time will not cease during the burn-in period(s). Contract time for the burn-in period was considered when determining the original contract time.

Final Inspection. Upon successful completion of the burn-in period, the entire project shall be eligible for Final Inspection. The Final Inspection will be conducted provided the burn-in period has demonstrated the entire system is operating successfully. The Final Inspection shall include but is not limited to:

1. monitoring of all system functions at the State TMC to demonstrate the overall system is operational
2. a field visit to each site to ensure all field components are in their correct final configuration
3. verification that all burn-in punch list items have been completed
4. verification that all final cleanup requirements have been completed
5. approval of final as-built documentation

Prior to conducting the Final Inspection, the burn-in period shall demonstrate that all requirements defined in the specifications have been met, including, but not limited to: functional/system performance requirements, electrical requirements, data transmission/communication requirements, safety/password requirements, environmental requirements, and interface requirements with other components of the system.

The Contractor shall request in writing the Engineer's approval to start the Final Inspection a minimum of 14 days prior to the requested start date. The Engineer reserves the right to reschedule the start date if needed. The start date for the Final Inspection cannot be prior to the successful completion of the overall burn-in period.

An unsuccessful or incomplete Final Inspection shall require a new Final Inspection after the Contractor has made the necessary corrections. Up to 14 days shall be allowed for the Engineer to conduct a Final Inspection. The presence of the MDOT ITS Engineer or his/her designee is required during the final inspection.

The Engineer reserves the right to require, at no additional expense to the State, the attendance of a qualified technical representative of the equipment and/or software manufacturers to attend a portion of a Final Inspection.

The Contractor shall be responsible for the full maintenance of all project equipment and materials during the entire time period from the successful completion of the burn-in period until Final System Acceptance is granted.

Final System Acceptance. Upon successful completion of the Final Inspection and all other items of work on the project, the Engineer will grant Final System Acceptance in accordance with Subsection 105.20 of the Standard Specifications.

Beneficial Use of Dynamic Message Signs During Construction. Each DMS shall be roadside controllable (by sign vendor software) within 30 days of attachment to structures (visible to motorists). The Contractor's construction schedule shall clearly identify when installation of the signs over the roadway shall occur, and when roadside control shall be established for each sign. The Contractor shall not install a DMS over the roadway until all ancillary and infrastructure elements, including cabinets, controllers, conduits, cabling, etc. necessary to operate the sign are in place and functional. Once roadside controllable, the Contractor shall display emergency, special event, construction, safety or traveler information messages approved by MDOT, only when requested by MDOT, at no additional cost to MDOT. Normal diagnostic messaging for the purpose of installation and testing shall be determined by the Contractor but shall not be allowed to the extent that excessive power consumption or distraction to motorists occurs as determined by the Engineer. Any beneficial use of the signs to MDOT and the public prior to Final Acceptance does not constitute MDOT acceptance or waive any Contractor testing requirements. The cost that may be incurred by the Contractor to display messages as described above during this construction contract shall be considered incidental and included in the cost of other items.

Warranties

The following components of the Project shall be warranted against manufacturing defects and workmanship for a period of at least one (1) year:

- Radio interconnect system components as listed under SP 907-662-2
- Layer 2, Type A; Layer 3, Type C, Type C4, Type E1, and Type E2 Network Switches; and Network Terminal Server & Network Cellular Modem as listed under SP 907-663-5
- Communication Node Hut & Hut Modifications under SP 907-664-4
- Video Communication Equipment components under SP 907-665-1
- Bluetooth Detection System components under SP 907-666-3
- Roadway Weather Information System & Warning Signs with Flashing Beacon under SP 907-670-3
- Kiosk Monitoring Camera under SP 907-671-1
- Travel Time Sign under SP 907-674-1
- ITS Radar Vehicle Detector under SP 907-641-2
- On Street Video Equipment under SP 907-650-4;
- Highway Advisory System components under SP 907-655-2;
- Dynamic Message Signs under SP 907-656-1.

The following components of the Project shall be warranted against manufacturing defects and workmanship for a period as listed below for each respective item from the date of Final Maintenance Release.

- *Fiber Optic Cable*: Ten (10) year warranty on materials and workmanship
- *Traveler Information Video Kiosk*: Two (2) year extended warranty on materials/hardware
- *TMC Modification*: Two (2) year warranty on hardware and one (1) year warranty on software
- *Type C1, C2, & C3 Network Switches*: Five (5) year warranty on hardware
- *Type D, E, & F Network Switches*: Five (5) year warranty on hardware

The Contractor shall supply the warranties in writing with the Final Maintenance Release date documented on them. These warranties shall cover complete replacement at no charge for the equipment. The Contractor will be responsible for all labor, shipping, insurance and other charges until Final System Acceptance. Equipment covered by the manufacturers' warranties shall have the registration of that component placed in the Department's name prior to Final Inspection. The Contractor is responsible for ensuring that the vendors or manufacturers supplying the components and providing the equipment warranties recognize MDOT as the original purchaser and owner/end user of the components from new.

During the warranty period, the supplier shall repair or replace with new material of equal or greater kind and quality and meeting all of the applicable specifications herein, at no additional cost to the State, any product containing a warranty defect, provided the product is returned postage-paid by the Department to the supplier's factory or authorized warranty site. Products repaired or replaced under warranty by the supplier shall be returned prepaid by the supplier. During the warranty period, technical support shall be available from the Contractor via telephone within four (4) hours of the time a call is made by the Department. If it is deemed necessary by the Engineer, technical support shall be available from factory certified personnel of the supplier via telephone within eight (8) hours of the time of the initial call made by the Department. During the warranty period, updates, patches, performance improvements, and corrections to all software and firmware used during the project shall be made available to the Department by the supplier at no additional cost.

Training

After the Stand Alone Site Tests have been conducted but prior to Conditional System Acceptance, the Contractor shall provide separate training sessions for each subsystem training pay item included in the project. The training sessions may require multiple classes as noted below) and shall accommodate from six (6) to twelve (12) personnel per class. Additional sessions for additional personnel may be required if the make and model of the subject component is not currently in the MDOT system.

The training must include formal classroom and "hands-on" operations training with a complete demonstration of the configuration, operation, and capabilities of each component in the system. The training should also consist of a hands-on demonstration of all software configuration and functionality where applicable. Each training day shall include a mixture of classroom style

training in equipment operations, hands-on operator training using the same models of equipment furnished for the project, and question and answer sessions.

During the burn-in period, the Contractor shall also provide two (2) identical non-consecutive training sessions on the maintenance of the overall system. The training shall be provided for at least ten (10) personnel with individual copies of all training materials provided to each participant. The training must include both classroom style training and hands-on training in the field of the maintenance and troubleshooting procedures required for each component. Additional sessions for additional personnel may be required if the make and model of certain components are not currently in the MDOT system.

Prior to scheduling the training, the Contractor shall submit resume and references of the training instructor(s) to the Engineer for approval. The qualifications of the trainers must meet, at a minimum, the recommended qualifications of the equipment manufacturer with a minimum of four years of experience in training personnel. If qualified personnel are not on the Contractor's staff, a representative of the manufacturer shall provide the training.

The training shall be provided at an agreed upon location. If training requires travel on the part of training instructors, then the cost of travel shall be included.

The Contractor shall provide individual copies of documentation, training, and maintenance materials for each participant. These materials shall include detailed specifications and information pertaining to each device in the system. The documentation shall include details of the technical and operational aspects of the completed system. This shall include operational and maintenance manuals, system diagrams, cabling diagrams and mounting/positioning details. The Contractor shall supply emergency contact information and necessary procedures for obtaining vital replacement parts within a designated, agreed upon time frame.

The Contractor shall submit a detailed Training Plan including course agendas, detailed description of functions to be demonstrated, and a general schedule to the Engineer for approval within 90 days of Contract Notice-to-Proceed. The exact date of the training shall be submitted to the Engineer for approval at least four (4) weeks ahead of the date.

Grounding

The Contractor shall provide a grounding and lightning protection system to protect from electrical power surges caused by lightning or disruptions in the power supply system. Ground rods, ground conductor, lightning collectors and appurtenances shall be as detailed on the plans and as required by these specifications.

General. All non-current carrying metal parts of the site shall be grounded according to NEC specifications. In addition, all non-current carrying metal parts shall have a voltage potential of zero relative to reference ground. This reference ground shall be achieved via the equipment-grounding conductor.

Support cable, metallic cable sheaths, conduit, metal poles, pedestals, and communication building shall be made mechanically and electrically secure and grounded. Bonding and grounding jumpers

shall be properly sized according to the NEC and in no case shall they be smaller than a #6 AWG copper wire. Ground pole-mounted accessories to the pole. Equipment on wood poles shall be grounded.

Permanently ground the poles by bonding the No. 6 AWG solid copper wire to a separate ground rod.

Metal raceways, metal enclosures of electrical devices, lighting fixtures, panelboards, and other non-current carrying metallic parts of equipment shall be securely grounded.

Ground rods shall be installed according to plan details. A length of copper conductor shall be attached to the ground rod, utilizing the specified grounding methods, and connected to the grounding system. Do not ground to a permanent water system instead of the driven ground rod. Ensure that grounding devices conform to the requirements of the NEC and NEMA.

Cabinet Grounding. A single-point grounding system shall be constructed.

All grounds for the cabinet shall be installed on the side of the building that utilities, communication cables, and fiber enter. All earth grounds shall be connected to this point, including the grounding system for Surge Protection Devices (SPD). All connections to SPDs shall be made according to the manufacturer's recommendations.

A single ground bus bar shall be mounted on the side of the cabinet wall adjacent to the power panel for the connection of AC neutral wires and chassis ground wires.

The Contractor shall ensure that communication cables, AC power, emergency generator, and equipment frames are connected by the shortest practical route to the grounding system. The lead lengths from each device to the SPD shall be protected. Electrical continuity of all connections shall be verified. All non-conducting surface coatings shall be removed before each connection is made. Ground conductors shall be downward coursing, vertical, and as short and straight as possible. Sharp bends and multiple bends shall be avoided in grounding conductors.

Surge Suppressor

Surge protection device (SPD) shall be provided to protect electronics from lightning, transient voltage surges, and induced current. All SPDs shall be installed at the top and bottom of each pole to provide reliable lightning protection. SPDs shall be installed on all power, data, video and any other conductive circuit.

SPD for 120 Volt or 120/240 Volt Power. A SPD shall be installed at the utility disconnect to the cabinet. The SPD at the utility disconnect shall include L-N, L-G, and N-G protection. The SPD shall meet the requirements of UL 1449, Third Edition and be listed by a NRTL.

A SPD shall be provided where the supply circuit enters the cabinet. The SPD shall be located on the load side of the main disconnect and ahead of any and all electronic devices and connected in parallel with the AC supply. The SPD in the cabinet shall include L-N, L-G, and N-G protection. The SPD shall meet the requirements of UL 1449, Third Edition and be listed by a NRTL.

The SPD shall have a visual indication system that monitors the weakest link in each mode and shows normal operation or failure status and also provides one set of normally open (NO)/normally closed (NC) Form C contacts for remote alarm monitoring. The enclosure for a SPD shall have a NEMA 4 rating

SPDs for Low-Voltage Power, Control, Data and Signal Systems. A specialized SPD shall be installed on all conductive circuits including, but not limited to, data communication cables, coaxial video cables, and low-voltage power cables. These devices shall comply with recommendations from the device manufacturer.

SPD at Point of Use. A SPD shall be installed at the point the ITS devices receive 120 volt power and connected in series with the circuits. SPDs shall be selected and installed according to recommendation from the device manufacturer. The units shall be rated at 15 or 20 amps load and configured with receptacles. These units shall have internal fuse protection and provide common mode (L+N-G) protection.

SPDs shall meet the requirements of UL 497B or UL 497C, as applicable, and are listed by a NRTL.

Solar Power Systems

The Contractor shall provide a solar power system meeting the following requirements:

1. The supplier shall provide documentation specifying approximate daily power generation, power consumption, storage capacity, and charge rates representing an optimal power source to the satisfaction and approval of the Project Engineer.
2. Shall include a solar controller with automatic battery temperature compensation and automatic charging circuitry to prevent overcharging.
3. The battery back-up system chargers shall meet all specified requirements while operating between -40 °C to +74 °C (-40 °F to +165 °F), and 95% relative humidity.
4. Shall include metering for voltage and charging current.
5. Solar panels shall be Jet Propulsion Laboratory Block-5 tested and approved.
6. Solar panels shall be compliant with IEC 61215 and IEEE 1262.
7. Solar panels shall be break-resistant and sealed.
8. Battery shall be maintenance-free, sealed, gel-cell.
9. The Contractor shall test the battery for faulty irregularities and provide documentation to the Project Engineer stating the battery's voltage, and resistance. The battery voltage and resistance shall meet the manufacturer's specifications.

The Solar Power Systems for each site type shall include but are not limited to the following:

- *HAR Flashing Beacons:*
 1. A performance design study shall be conducted and submitted for approval for the proposed solar power system. The solar power system shall be designed on the performance design study.
 2. The solar system shall, at a minimum, operate the flashing beacons continuously at

- full power for at least three (3) days with no sunlight. This must be accomplished without an auxiliary generator or AC power connection.
3. Solar panels shall have a power rating of 80-watts.
 4. The Solar power system shall include a separate aluminum NEMA 3R enclosure to house the battery. This enclosure shall be designed to provide protection from rain, sleet, snow and corrosion.
 - a. The enclosure shall be constructed from 0.125" thick aluminum alloy type 5052- H32.
 - b. The enclosure shall be lockable.
 - c. The enclosure door shall include a EDPM rubber or equivalent closed-cell gasket
- *Type A BDS:*
 1. All solar panels shall be in accordance with UL1703, or equivalent.
 2. The solar cell shall have a minimum power capacity of 30 watts.
 3. The battery shall provide sufficient power for all BDS component operation for a minimum of 168 hours (7 days).
 4. Should solar power be specified with the Type A BDS, the NEMA 4 enclosure shall be sized appropriately for the solar power components.

Performance Design Study. A performance design study shall be conducted where required before the installation of a Solar Power System. The performance design study shall include, but is not limited to:

1. The daily Solar Insulation data averaged on a monthly basis.
2. The correct Tilt Angle for the solar array.
3. The daily Array Output, in Amp-Hours, averaged on a monthly basis.
4. The total Daily Load requirement, in Amp Hours, averaged on a monthly basis.
5. A monthly Loss of Load Probability (LOLP) of the designed power supply.
6. The number of Battery Reserve Days, averaged on a monthly basis.
7. The monthly Average Battery State of Charge.
8. The statistical Interval to Loss of Load, in years.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 3963

CODE: (SP)

DATE: 01/19/2022

SUBJECT: Super Silt Fence

Bidders are hereby advised that Kengro Siltron SIL-M-36 may be used as a substitute material for pay item 907-234-C001, Super Silt Fence, in accordance with Subsection 234.03.1.2 of the Standard Specifications. In the event that the material fails to perform, the Department reserves the right to require Super Silt Fence be installed as per the Standard Drawing at no additional cost to the Department.

<https://www.kengro.com/products/siltron>

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 4113

CODE: (SP)

DATE: 03/23/2022

SUBJECT: Unique Entity ID (SAM) Requirement for Federal Funded Projects

Bidders are advised that the Prime Contractor must register and maintain a current registration in the System for Award Management (<http://sam.gov>) at all times during this project. Upon registration, the Contractor will be assigned a SAM Unique Entity ID.

Bidders are also advised that prior to the award of this contract, they MUST be registered, active, and have no active exclusions in the System for Award Management.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 5865 LPA

CODE: (SP)

DATE: 11/30/2015

SUBJECT: Sampling and Testing of Concrete on Small LPA Projects

Bidders are advised that the following concrete items will be tested at a reduced amount and will not be accepted based on the Quality Control / Quality Assurance (QC/QA) requirements of Section 804 of the specifications.

<u>Section</u>	<u>Description</u>
221	Paved Ditches
601	Minor Structures - manholes, inlets, catch basins, junction boxes, pipe headwalls, and pipe collars.
605	Edge Drain and Underdrain Outlet Pads
606	Guardrail Anchors
607	Fence Post Footings
608	Sidewalks
609	Curb and Gutter
614	Driveways
616	Median and Island Pavement
630	Sign Footings, except Overhead Sign Supports

The material requirements for the above pay items are as follows:

1. Cement and aggregates for concrete items shall be from approved sources. Concrete shall be produced from a concrete batch plant which has a current plant calibration. The Project Engineer shall furnish plant inspection as deemed necessary for control. The producer shall furnish with each load of concrete a delivery ticket containing the following information:
 - a. Project Number
 - b. Class Concrete
 - c. Weight of Cement
 - d. Free Water in Aggregate (gallons)
 - e. Weight of Fine Aggregate
 - f. Weight of Coarse Aggregate
 - g. Water in Mix (gallons)
 - h. Number of Revolutions Mixed
 - i. Time of Batching
2. The Contractor is required to submit mix designs to accomplish this work in accordance with Section 804.
3. A set of three cylinders, slump test, and air test will be performed on the first day of production for each mix design. The compressive strength test shall be the average of three cylinders.
4. An additional set of cylinders, slump test, and air test will be performed at a minimum of rate of one per 100 cubic yards of mix produced.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

| SECTION 904 - NOTICE TO BIDDERS NO. 5866 LPA

CODE: (SP)

| DATE: 10/28/2015

SUBJECT: Payroll Requirements

Bidders are hereby advised that the Contractor and Subcontractor(s) are required to submit payroll information to the Project Engineers on a weekly basis.

On Federal-Aid Projects, LPA-880, LPA-881 and certified payroll submissions are required each week the Contractor or a Subcontractor performs work on the project. This is addressed in Section IV of Form FHWA-1273.

On State-Funded Projects, LPA-880 is required each week the Contractor or a Subcontractor performs work on the project.

| When no work is performed on either Federal-Aid or State-Funded Projects, the Contractor should only submit LPA-880 showing no work activities.

The Contractor shall make all efforts necessary to submit this information to the Project Engineer in a weekly manner. The Engineer will have the authority to suspend the work wholly or in part and to withhold payments because of the Contractor's failure to submit the required information. Submission of forms and payrolls shall be current through the first full week of the month for the estimate period in order for the Project Engineer to process an estimate.

Bidders are advised to review the requirements regarding payroll submissions in Section 110 of the Standard Specifications.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904- NOTICE TO BIDDERS NO. 6000 LPA

CODE: (SP)

DATE: July 15, 2019

SUBJECT: Traffic Control Personnel Requirements

Bidders are hereby advised that the Contractor's Traffic Control Supervisor, and the LPA's person (LPA staff, or CE&I Consultant) in responsible charge of the traffic control on the project submit to the training requirements set forth in section **618.01.2** of the Mississippi Standard Specifications for Road and Bridge Construction, 2017 edition.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 7011

CODE: (SP)

DATE: 5/14/2021

SUBJECT: Contract Time

PROJECT: FBLD-8769-00(001)LPA/108639-802000

The completion of work to be performed by the Contractor for this project will not be a specified date but shall be when all allowable working days are assessed, or any extension thereto as provided in Subsection 108.06.

The Notice of Award will be issued within 60 days of the bid opening date and the effective date of the Notice to Proceed / Beginning of Contract Time Date will be within One months following the Date of the Notice of Execution of Contract Letter. Should the Notice to Proceed / Beginning of Contract Time Date fall within the winter months of December, January, or February the Notice to Proceed/Beginning of Contract time will be March 1st.

The Contractor shall request a Notice to Proceed/Beginning of Contract Time date in writing after receiving the Notice of Execution of Contract Letter and the date requested should be within the One month period following the Date of the Notice of Execution of Contract Letter. The Contractor's written request for Notice to proceed Date should be given a minimum of seven (7) calendar days in advance of the Notice to Proceed requested. Should the Contractor request a Notice to Proceed earlier than stipulated above, and it is agreeable with the LPA for an early Notice to Proceed, the requested date will become the new Notice to Proceed date. Regardless of whether or not an early Notice to Proceed is granted, contract time will start at the original Notice to Proceed date.

370 Working Days have been allowed for the completion of work for the base phase of on this project.

A Preconstruction Conference as required by Subsection 108.03.2 should be held prior to commencement of any field work by the Contractor.

Any fabrication of needed materials can begin after the contract has been executed and submittals are approved.

Bidders are advised that if add options are present on the Progress Schedule provided within the Contract Documents, that careful consideration be given to the time associated with each add option. If any add options are selected by the LPA to be part of this project the time associated with the add option will be added to the project's contract time. The Contractor will be notified in writing the total Contract time at the time of the project award.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904- NOTICE TO BIDDERS NO. 7200

DATE: 10/20/2017

SUBJECT: Specialty Items

PROJECT: FBLD-8769-00(001)LPA / 108639-802000 -- Forrest County

Pursuant to the provisions of Section 108, the following work items are hereby designated as "Specialty Items" for this contract. Bidders are reminded that these items must be subcontracted in order to be considered as specialty items.

Category: Construction Staking

<u>Pay Item</u>	<u>Description</u>
699-A001	Roadway Construction Stakes
699-B001	Bridge Construction Stakes

Category: Electrical

<u>Pay Item</u>	<u>Description</u>
907-259-F001	Weatherproof GFCI Receptacle
682-F001	Secondary Power Controller
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 30-1-3-100 Bridge Mounted
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 32.5-1-3-100 Bridge Mounted
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 14-1-0-100
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 25-1-0-100

Category: Concrete

<u>Pay Item</u>	<u>Description</u>
907-417-A001	Polymer Cement Surface System
907-616-C001	Colored and Imprinted Concrete Median and Island Pavement, 10-inch Thickness

Category: Miscellaneous

<u>Pay Item</u>	<u>Description</u>
907-242-A002	Installation of Chain Link Fence, Per Plans
907-242-A002	Installation of Wood Privacy Fence, Per Plans
907-258-K001	Bollard Removable
907-607-PP001	Safety Fence
907-899-A001	Railway-Highway Provisions

Category: Bridge and Retaining Wall

<u>Pay Item</u>	<u>Description</u>
803-K004	Drilled Shaft, 36" Diameter
803-K006	Drilled Shaft, 48" Diameter
803-L002	Test Shaft, 48" Diameter
803-M005	Trial Shaft, 48" Diameter
803-N001	Exploration
803-O005	Permanent Casing, 36" Diameter
803-O018	Temporary Casing, 48" Diameter
809-A003	Retaining Wall System, Mechanically Stabilized
813-B001	Concrete-Steel Railing

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 7300

CODE (SP)

DATE:

SUBJECT: Placement of Fill Material in Federally Regulated Areas

PROJECT: FBLD-8769-00(001)LPA/108639-802000

A Permit (404, General, Nationwide, etc.) for placing fill material federally regulated sites is required.

The Department has acquired the following permits for permanently filling at regulated sites that are identified during project development:

Nationwide Permit (Waters of the US) -- All sites with area less than 0.10 acre.

Copies of said permit(s) are on file with the Department.

Securing a permit(s) for the filling of any other regulated site, the purpose of which is temporary construction for the convenience of the Contractor, shall be the responsibility of the Contractor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 7400

CODE: (SP)

DATE: 01/10/2022

SUBJECT: Cooperation Between Contractors

PROJECT: FBLD-8769-00(001)LPA/108639-802000

The Bidder's attention is hereby called to Subsection 105.07, Cooperation between Contractors, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction.

The Bidder is advised that an adjacent section of Hall Avenue is currently under construction at the East end of this project.

The Contractor shall cooperate in all respects and shall coordinate construction of all phases of work at the East end of this project with the Contractor of the adjacent project.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 7800

CODE: (SP)

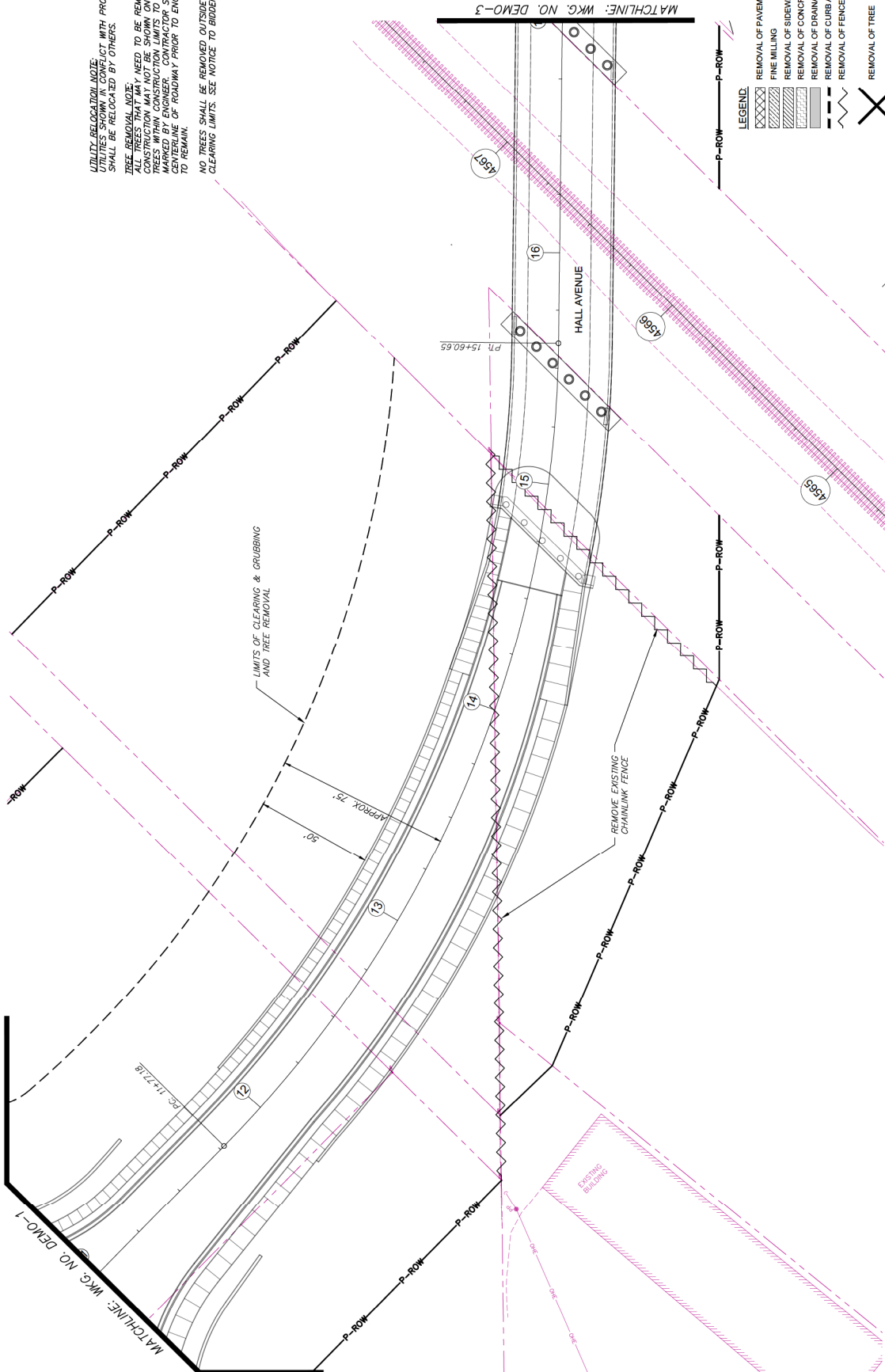
DATE: 07/05/2022

SUBJECT: Historical & Archeological Preservation

PROJECT: FBLD-8769-00(001) LPA/108639-802000 – Forrest County

Bidders are hereby advised that this project contains Historic and Archeological Sites.

During the life of this project, the Contractor shall take measures necessary to protect Historic and Archeological Sites as identified in the attached map.



UTILITY RELOCATION NOTE:
ALL UTILITIES SHALL BE RELOCATED WITH PROPOSED IMPROVEMENTS
SHALL BE RELOCATED BY OTHERS.

TREE REMOVAL NOTE:
ALL TREES THAT MAY NEED TO BE REMOVED TO FACILITATE
CONSTRUCTION MAY NOT BE SHOWN ON PLANS.
TREES WITHIN CONSTRUCTION LIMITS TO REMAIN SHALL BE
MAINTAINED THROUGHOUT THE PROJECT. THE ENGINEER SHALL
CENTERLINE OF ROADWAY PRIOR TO ENGINEER-MARKING TREES
TO REMAIN.

NO TREES SHALL BE REMOVED OUTSIDE THE INDICATED
CLEARING LIMITS. SEE NOTICE TO BIDDERS #7800.

LEGEND

- REMOVAL OF PAVEMENT
- FINE MILLING
- REMOVAL OF SIDEWALK
- REMOVAL OF CONCRETE DRIVEWAY
- REMOVAL OF DRAINAGE STRUCTURE
- REMOVAL OF CURB AND GUTTER
- REMOVAL OF FENCE OR TRAFFIC SIGNAL
- REMOVAL OF TREE

GRAPHIC SCALE
1 inch = 20 feet

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC. HEREBY REFERS TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR THE PROJECT DESCRIBED HEREIN. THIS DRAWING SHALL NOT BE USED FOR ANY OTHER PROJECT OR FOR ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN CONSENT OF NEEL-SCHAFFER, INC. SHALL BE AT THE USER'S SOLE RISK AND THE USER 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 NO. DATE BY DESCRIPTION		DRAWING INFORMATION N-S PROJECT NO. NS1624.000 FILENAME: NS1624.000.dwg SCALE: 1" = 20' SURVEYED BY: CLEARPOINT DESIGN: GPC DATE: 04/2022 DRAWN: JPF DATE: 04/2022 C.D.R. DATE: 04/2022	
DEMOLITION PLAN HALL AVENUE STA. 11+00 TO STA. 17+00		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001) LPA/108639-802000 CITY OF HATTIESBURG, MISSISSIPPI		NEEL-SCHAFFER Solutions you can build upon	
WORKING NUMBER: DEMO-2				DRAWING NUMBER: DEMO-2	

SECTION 904 – NOTICE TO BIDDERS NO. 7900

CODE: (SP)

DATE: 08/12/2022

SUBJECT: Prestressed Beams Fillet Concrete

Bidders are advised that the concrete fillets over the prestressed beams are much deeper and heavier than typical projects. Forming the bridge deck will require special attention and may require temporary forms in lieu of stay-in-place forms. The Contractor shall submit detailed shop drawings showing how the beam fillets will be formed.

Due to the extra weight of the fillets and the length of the spans, temporary steel bracing in accordance with Notice to Bidders No. 20 and notes on the plans are required on all spans.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 8500 LPA

CODE: (SP)

DATE: 12/18/2020

SUBJECT: Allowable Density Deviations on Non-Roadway Facilities

Bidders are advised that the Engineer may, at his discretion, allow minor deviations in density requirements, not more than five percent (5%), from the specified test values per the following equation:

$$\text{Minimum allowable density} = \text{specified minimum density} - \text{allowable deviation}$$

As an example, a new asphalt bike trail with a specified minimum asphalt density of 93% of maximum density and an allowed deviation of 5%, the in-place density at full pay could be 88% of maximum density.

This deviation shall only be allowed for items of work characterized as pedestrian facilities, such as Pedestrian Pathways, Bike Trails, and Multi-use Pathways, which are not part of the roadway structure.

Before allowable deviations are accepted, the Contractor shall have demonstrated during performance of the work and documented prior to payment of each monthly estimate for the work, good faith efforts to meet the original contract requirements. This documentation shall be presented in a manner acceptable to the Engineer. Any such acceptance will not relieve the Contractor from responsibility for maintenance of the work, until the release of maintenance.

If the deviation in density from the specified test values for the work exceeds five percent (5%), the work shall be removed and replaced by the Contractor at no expense to the LPA, their Consultant, MDOT, or FHWA.

"General Decision Number: MS20220131 02/25/2022

Superseded General Decision Number: MS20210131

State: Mississippi

Construction Type: Highway

County: Forrest County in Mississippi.

HIGHWAY CONSTRUCTION PROJECTS

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 \$15.00 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 2022.
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 \$11.25 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 2022.

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 <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	02/18/2022
2	02/25/2022

ELEC0903-006 01/01/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 29.20	6.68+1.5%+8%

* SUMS2010-054 08/04/2014		

	Rates	Fringes
CARPENTER (Form Work Only).....	\$ 12.00 **	0.00
CEMENT MASON/CONCRETE FINISHER...	\$ 11.54 **	1.63
HIGHWAY/PARKING LOT STRIPING: Truck Driver (Line Striping Truck).....	\$ 14.55 **	0.00
INSTALLER - SIGN.....	\$ 12.19 **	0.00
INSTALLER: Guardrail.....	\$ 12.39 **	0.00
IRONWORKER, REINFORCING.....	\$ 16.44	0.00
LABORER: Common or General, Including Asphalt Raking, Shoveling, Spreading.....	\$ 10.34 **	0.00
LABORER: Flagger.....	\$ 11.42 **	0.00
LABORER: Grade Checker.....	\$ 14.82 **	0.00
LABORER: Luteman.....	\$ 12.88 **	0.00
LABORER: Mason Tender - Cement/Concrete.....	\$ 10.57 **	0.00
LABORER: Pipelayer.....	\$ 14.50 **	0.00
LABORER: Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....	\$ 12.17 **	0.00
OPERATOR: Asphalt Spreader.....	\$ 14.71 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 14.20 **	0.00
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 11.86 **	0.00
OPERATOR: Broom/Sweeper.....	\$ 10.94 **	0.00
OPERATOR: Bulldozer.....	\$ 13.99 **	0.00
OPERATOR: Concrete Saw.....	\$ 13.93 **	0.00
OPERATOR: Crane.....	\$ 14.80 **	0.00
OPERATOR: Distributor.....	\$ 11.46 **	0.00
OPERATOR: Grader/Blade.....	\$ 16.09	0.00
OPERATOR: Loader.....	\$ 13.99 **	0.00

OPERATOR: Mechanic.....	\$ 13.00 **	0.00
OPERATOR: Milling Machine.....	\$ 16.96	0.00
OPERATOR: Oiler.....	\$ 12.22 **	0.00
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 11.56 **	0.00
OPERATOR: Roller (All Types)....	\$ 12.17 **	0.00
OPERATOR: Scraper.....	\$ 14.00 **	0.00
OPERATOR: Tractor.....	\$ 12.00 **	0.00
SURVEYOR (Staking, Marking and Brush Clearing).....	\$ 11.56 **	0.00
TRUCK DRIVER: Flatbed Truck.....	\$ 14.72 **	0.00
TRUCK DRIVER: Lowboy Truck.....	\$ 14.18 **	0.00
TRUCK DRIVER: Mechanic.....	\$ 12.31 **	0.00
TRUCK DRIVER: Water Truck.....	\$ 17.08	0.00
TRUCK DRIVER: Dump Truck (All Types).....	\$ 11.58 **	0.00
TRUCK DRIVER: Semi/Trailer Truck.....	\$ 14.36 **	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). 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.

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END OF GENERAL DECISIO"

SUPPLEMENT TO FORM FHWA-1273

DATE: 08/05/2022

SUBJECT: Federal Contract Provisions for Subcontracts

Federal Contract Provisions for Subcontracts

All subcontracts shall be in writing and contain all pertinent provisions and requirements of the prime contract.

Each “Request for Permission to Subcontract” (Mississippi Department of Transportation LPA Form RSP-1) shall include a copy of the subcontract. The federal contract provisions (FHWA-1273, SUPPLEMENT TO FORM FHWA-1273, NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246), DAVIS-BACON AND RELATED ACT PROVISIONS (WAGE RATES)) must be physically incorporated as part of the subcontract. A completed Mississippi Department of Transportation LPA Form NRAA-1 and LPA Form SCC-1 must be attached to the LPA Form RSP-1.

REQUIRED CONTRACT PROVISIONS FEDERAL-AID CONSTRUCTION CONTRACTS

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: 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, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants /

Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:

The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

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 regulations issued 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 equivalents 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 such laborers or mechanics, subject to the provisions of paragraph 1.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 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 paragraph 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 be easily seen by the workers.

b.(1) The contracting officer shall require that any class of laborers or mechanics, including helpers, 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 determination; 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, U.S. Department of Labor, Washington, DC 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.

(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.

(4) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs 1.b.(2) or 1.b.(3) of this section, 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.

2. Withholding (29 CFR 5.5)

The contracting agency 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 the work, all or part of the wages required by the contract, the contracting agency may, after written notice to the contractor, 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.

3. Payrolls and basic records (29 CFR 5.5)

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 correct 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 section 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 is financially responsible, and 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 cost 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.

b.(1) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the contracting agency. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the contracting agency for transmission to the State DOT, the FHWA or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the contracting agency.

(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 provided under 29 CFR 5.5(a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

(ii) That each laborer or 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 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 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 18 U.S.C. 1001 and 31 U.S.C. 231.

c. The contractor or subcontractor shall make the records required under paragraph 3.a. of this section available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, 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 FHWA may, after written notice to the contractor, the contracting agency or the State DOT, 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.

4. Apprentices and trainees (29 CFR 5.5)

a. Apprentices (programs of the USDOL).

Apprentices will be permitted to work at less than the predetermined rate for the work they performed 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, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, 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 Office of Apprenticeship Training, Employer and Labor Services 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 at 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 Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, 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 (programs of the USDOL).

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 and Training Administration.

The ratio of trainees 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. Trainees 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 trainee 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.

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.

d. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

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 as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor shall insert Form FHWA-1273 in any subcontracts and also require the subcontractors to include Form FHWA-1273 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 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. 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 as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, 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.

10. Certification of eligibility (29 CFR 5.5)

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.

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

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 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 laborer 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. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1 of this section, the contractor and any subcontractor responsible therefor 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 1 of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* 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 1 of this section. 29 CFR 5.5.

* \$27 as of January 23, 2019 (See 84 FR 213-01, 218) as may be adjusted annually by the Department of Labor; pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990).

3. Withholding for unpaid wages and liquidated damages.

The FHWA or the contracting agency 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 moneys 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 2 of this section. 29 CFR 5.5.

4. Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraphs 1 through 4 of this section and also a clause requiring the subcontractors 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 1 through 4 of this section. 29 CFR 5.5.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;
- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or

equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance

with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.326.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders

or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.326.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.

d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant

who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

* * * * *

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is

submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contractor). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. 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 clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(a) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(b) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(c) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier

subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.
2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)

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 goal for female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work, is 6.9%.

Until further notice	Goals for minority participation for each trade (percent)
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SHSA Cities:

Pascagoula - Moss Point -----	16.9
Biloxi - Gulfport -----	19.2
Jackson -----	30.3

SMSA Counties:

Desoto -----	32.3
Hancock, Harrison, Stone-----	19.2
Hinds, Rankin-----	30.3
Jackson -----	16.9

Non-SMSA Counties:

George, Greene-----	26.4
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Alcorn, Benton, Bolivar, Calhoun, Carroll, Chickasaw, Clay, Coahoma, Grenada, Itawamba, Lafayette, Lee, Leflore, Marshall, Monroe, Montgomery, Panola, Pontotoc, Prentiss, Quitman, Sunflower, Tallahatchie, Tate, Tippah, Tishomingo, Tunica, Union, Washington, Webster, Yalobusha -----	26.5
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Attala, Choctaw, Claiborne, Clarke, Copiah, Covington, Franklin, Holmes, Humphreys, Issaquena, Jasper, Jefferson, Jefferson Davis, Jones Kemper, Lauderdale, Lawrence, Leake, Lincoln, Lowndes, Madison, Neshoba, Newton, Noxubee, Oktibbeha, Scott, Sharkey, Simpson, Smith, Warren, Wayne, Winston, Yazoo-----	32.0
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Forrest, Lamar, Marion, Pearl River, Perry, Pike, Walthall-----	27.7
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Adams, Amite, Wilkinson -----	30.4
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These 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 of 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 nonfederally 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 60-4.3(a), and its efforts to meet the goals. 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 60-4.2(d). Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs 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, employer identification number of the subcontractor, estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed.

4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is to the county and city (if any), stated in the advertisement.

5. The notification required in Paragraph 3 shall be addressed to the following:

Contract Compliance Officer
Mississippi Department of Transportation
P.O. Box 1850
Jackson, Mississippi 39215-1850

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-102-4 LPA

CODE: (SP)

DATE: 06/30/2017

SUBJECT: Bidding Requirements and Conditions

Subsection 102.06--Preparation of Proposal. Delete the first, second, third and fourth paragraphs of Subsection 102.06 on page 15 and substitute the following:

The bidder's complete original proposal shall be submitted upon the forms furnished by the Department and shall enter in a unit price and extension in the appropriate columns for each bid item exclusive of those items for which a fixed contract unit price and the extension are shown. Lump sum bid items are to be bid as an item total only since a unit price is not required. The bidder shall also enter where indicated the subtotal amount for each of the various divisions and the total amount of the proposal which shall also include the extensions of the items with a fixed contract unit price. In case of discrepancy between a unit price and the extension, the unit price will govern and the extension along with the total amount of the proposal will be corrected. All figures shall be in ink or typed.

Delete the first sentence of the ninth paragraph and add the following:

The bidder's proposal must be signed with ink by the individual, by one or more members of the partnership, by one or more members or officers of each firm representing a joint venture, or by one or more officers of a corporation; or by an agent of the Contractor legally qualified to bind the Contractor and acceptable to the State.

Subsection 102.08--Proposal Guaranty. Delete the two paragraphs in Subsection 102.08 on page 17 and substitute the following:

No proposal will be considered unless accompanied by certified check, cashier's check or bid bond, made payable to the LPA listed in the contract, in an amount of not less than five percent (5%) of the total amount of the proposal offered. The guaranty shall be evidence of good faith that, if awarded the contract, the bidder will execute the contract and give performance and payment contract bond(s) as stipulated in Subsection 103.05.1, 103.05.2, and as required by law.

If a bid bond is offered as guaranty, the bond must be on a form approved by the Chief LPA Official, made by a Surety acceptable to the Chief LPA Official and signed or countersigned by a Mississippi Agent or Qualified Nonresident Agent and the Bidder. Such bid bond shall also conform to the requirements and conditions stipulated in Subsection 103.05.2 as applicable.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-105-1

CODE: (SP)

DATE: 05/07/2021

SUBJECT: Authority of the Engineer

Section 105, Control of Work, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-105.1--Authority of the Engineer. Delete the first sentence of the second paragraph of Subsection 105.01 on page 31, and substitute the following.

The Engineer has the right to suspend the work wholly or in part and to withhold payments because of the Contractor's failure to correct conditions unsafe for workmen or the general public, for failure to carry out provisions of the Contract, or for failure to carry out orders.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-107-2

CODE: (SP)

DATE: 01/31/2018

SUBJECT: Contractor's Erosion Control Plan

Section 107, Legal Relations and Responsibility to Public, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-107.22--Environmental Protection.

907-107.22.1--Contractor's Erosion Control Plan (ECP). After the first sentence of the first paragraph of Subsection 107.22.1 on page 63, add the following.

The ECP shall be submitted electronically to the Project Engineer who will forward it to the appropriate MDOT Divisions.

Delete the example Narrative in Subsection 107.22.1 on page 65, and substitute the following.

EXAMPLE
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
Storm Water Pollution Prevention Plan (SWPPP)
Narrative

General Permit Coverage No: MSR_____

Project Number: _____

County: _____

Route: _____

SITE INFORMATION

This project consists of grading and installing drainage structures necessary to construct approximately 6 miles of parallel lanes on SR 31 between the Hinds County Line and the Rankin County Line.

SEDIMENT AND EROSION CONTROLS

- a) **Vegetative Controls:** Clearing and grubbing areas will be minimized to comply with the buffer zones (minimum of 15 feet along the ROW lines and 5 feet along creeks) as per the contract documents. A combination of temporary and permanent grassing will be used to protect slopes as construction progresses. **Should a disturbed area be left undisturbed for 14 days or more, placement of temporary BMPs (seeding & mulching, silt fences, basins, ditch checks, slope drains, etc.) or permanent erosion control measures (seeding & mulching, riprap, paved ditch, flumes, etc.) will be initiated by the next working day after the land disturbing activities have stopped.**
- b) **Structural Controls:** Gravel construction entrance/exit will be installed near Stations 145+50, 159+50, 164+50 & 172+50. Riprap ditch checks will be constructed at Stations 144+50, 151+75, 162+00 & 166+25. The Concrete washout area will be at Stations 140+25, 152+00 & 168+50.
- c) **Housekeeping Practices:** Structural BMPs will be cleaned out when sediment reaches 1/3 to 1/2 of the height of the BMP. Maintenance and repair of equipment will be performed off-site, material wash out will occur either off-site or within designated wash out areas.
- d) **Post-Construction Control Measures:** As construction is completed, permanent vegetative growth will be established on disturbed soils to improve soil stability and provide a buffer zone for loose material. Paved ditches and flumes will be placed as specified in the ECP to reduce erosion in concentrated flow areas and rip rap will be placed as specified to dissipate flow energy and reduce flow velocity.

IMPLEMENTATION SEQUENCE

Perimeter controls will be installed first. Clearing and grubbing will be performed in 19-acre sections beginning at the BOP and temporary grassing will be installed as needed. Temporary erosion control BMPs will be installed at the drainage structures prior/during construction of the drainage structures. Grading activities will commence at the BOP and proceed towards the EOP, fill slopes will be permanently grassed in stages for fill heights that exceed 5 feet. Base materials will be installed on completed grading sections with the paving to follow.

MAINTENANCE PLAN

All erosion and sediment control practices will be checked for stability and operation following every rainfall but in no case less than once every week. Any needed repairs will be made immediately to maintain all practices as designed. Sediment basins will be cleaned out when the level of sediment reaches 2.0 feet below the top of the riser. Sediment will be removed from the front/upstream end of the BMPs when it becomes about 1/3 to 1/2 height of BMP.

Prime Contractor's Signature

Date

Printed Name

Title

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-108-4

CODE: (SP)

DATE: 10/07/2020

SUBJECT: Subletting of Contract

Section 108, Prosecution and Progress, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-108.01--Subletting of Contract.

907-108.01.1--General. Delete the third sentence of the tenth paragraph of Subsection 108.01.1 on the bottom of page 72.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-109-4

CODE: (IS)

DATE: 04/19/2021

SUBJECT: Measurement and Payment

Section 109, Measurement and Payment, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-109.01--Measurement of Quantities. Delete the sixth full paragraph of Subsection 109.01 on page 88, and substitute the following.

If appropriate based on the specific circumstances of the project, the Contractor may request that material specified to be measured by the cubic yard or ton be converted to the other measure. The Contractor must submit this request to the Engineer. The Engineer will provide an approval or denial in writing. The decision is in the sole discretion of the Engineer. If approved, factors for this conversion will be determined by the District Materials Engineer and agreed to by the Contractor. The conversion of the materials along with the conversion factor will be incorporated into the Contract by supplemental agreement. The supplemental agreement must be executed before such method of measurement is used.

907-109.04--Extra Work.

907-109.04.1--Supplemental Agreement. Delete the second paragraph of Subsection 109.04.1 on page 90.

907-109.06--Partial Payment.

907-109.06.2--Advancement on Materials.

Delete the next to last paragraph of Subsection 109.06.2 on page 95, and substitute the following.

Materials for which an advanced payment has been allowed must be paid for by the Contractor within 30 days of the estimate on which the advanced payment was first allowed and proof of said payment must be verified by the supplier. If proof of payment is not furnished within the allowable 30 days, the advanced payment will be deducted on subsequent current estimates until such time that proof of payment is furnished.

907-109.07--Changes in Material Costs. After the fifth paragraph of Subsection 109.07 on page 96, change the web address to the following.

https://mdot.ms.gov/portal/current_letting

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-234-1

CODE: (SP)

DATE: 10/13/2021

SUBJECT: Silt Fence

Section 234, Silt Fence, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-234.02--Materials. Delete the first paragraph of Subsection 234.02 on page 181, and substitute the following.

Materials used in silt fence and super silt fence may be accepted by certification per Subsection 700.05.1. Geotextile fabric, posts, staples and woven wire backing, when required, shall meet the requirements of Subsection 714.13.

907-234.05--Basis of Payment. Add the “907” prefix to the pay items listed on page 183.

CITY OF HATTIESBURG

SPECIAL PROVISION NO. 907-262-1LPA

CODE: (SP)

DATE: 12/01/08

SECTION 262 - WATER MAINS AND APPURTENANCES

262.01 - Description. The work covered by this section consists of furnishing all labor, equipment and materials and performing all operations in connection with the installation of potable water lines, as indicated on the drawings and as specified herein. The work includes clearing, grubbing, trenching, bedding, pipe laying, backfilling, pipe fittings, valves, hydrants, and all incidental items including testing and disinfection of the completed water lines, which are necessary for installation of the mains and connections to hydrants and existing mains and meters.

262.02 - Materials.

262.02.1 – Bedding/Backfill Material. Class 6, Group C Granular Material for bedding shall be in accordance with Section 703.07 of the *Mississippi Standard Specifications for Road and Bridge Construction, 2004 Edition*. Class 9, Group C Granular Material for select backfill shall be in accordance with Section 703.07 of the *Mississippi Standard Specifications for Road and Bridge Construction, 2004 Edition*.

262.02.2 - Concrete. Concrete shall be MDOT Standard Class B concrete.

262.02.3 - Polyvinyl Chloride (PVC) Pipe. PVC water lines shall be "Blue Brute" (blue in color), or equal, Class 150, DR 18 polyvinyl chloride pipe manufactured in accordance with AWWA C-900 (latest edition) and shall be U.L. listed. Pipe shall be furnished in standard lengths (minimum 20 feet) with integrally cast bells or couplings using elastomeric gaskets that meet the requirements of ASTM D 1869 and F-477. All necessary adapters for connection to fittings shall be provided.

262.02.4 - Ductile Iron Pipe. Ductile iron pipe shall be designed in accordance with AWWA Specification C150 and manufactured in accordance with AWWA Specification C151. Joints shall conform with AWWA Specification C111 or C115 as applicable and shall be of the push on or mechanical type except where flanged joints are indicated on the plans. Where designated on the plans, pipe joints shall be restrained with mechanical restraint devices. Pipe interior shall be cement mortar lined per ANSI A21.4 (AWWA C104). Ductile iron pipe 4" and less in diameter shall be of thickness Class 51. Ductile iron pipe 6" and greater in diameter shall be of thickness Class 50, except pipe with threaded flanges shall be Class 53.

262.02.5 - Fire Hydrants. Hydrants shall be three-way M & H Model 129, Mueller Super Centurion 250, or American Flow Control B-84-B-5, with four and one-half inch (4 1/2") valve opening. The length of the lower barrel on each hydrant shall be appropriate for the depth of the water main. The color shall be chosen by the City conforming to the requirements of AWWA C-502.

262.02.6 - Water Valves. Water valves shall be "resilient seat" or "resilient wedge" type gate valves complying with the requirements of AWWA C509 or AWWA C515. Valves shall be epoxy coated inside and outside in conformance with the requirements of AWWA C550. Valves shall be rated for zero leakage to 200 psi and 400 psi hydrostatic test pressure. Valves shall be furnished with a non-rising stem and shall open by turning a 2 inch square operating nut counterclockwise. Gates shall be encapsulated in rubber where exposed to line velocity and shall be field replaceable. Valve ends shall be flanged or mechanical joint, as appropriate for the connection. Mechanical joints shall be recommended by the manufacturer for use with AWWA C-900 PVC or ductile iron pipe and shall be furnished with MJ retainer glands.

Insertion valves shall be installed in the location determined by the Engineer. Insertion valves shall be opened in the open position under pressure and flow conditions without interruption of water service. Final assembly shall provide for the complete shutoff of the flow of water. Sleeve shall be capable of installation on cast iron, ductile iron, asbestos cement and C900 PVC pipe. Sleeve shall be fabricated in two pieces and shall provide a 360 degree seal around the pipe under all working pressures of the system.

262.02.7 - Valve Boxes. Valve boxes shall be of cast or ductile iron as manufactured by Mueller, Kennedy, M & H or equal. Covers shall be cast or ductile iron with a designation of "WATER" embossed on the topside and shall be of the screw down type. Valve boxes shall be the three-piece type, adjustable in length and suitable for installation in roadway surfaces. Stack pipe for valve box adjustment shall be class 150 DR 18 manufactured in accordance with AWWA C-900 PVC or ductile iron pipe. Adjustment risers shall be cast iron and approved prior to use by the Engineer or his authorized representative.

262.02.8 - Fittings. Fittings for water mains of four inch (4") diameter and larger shall be seal coated cast iron or ductile iron with flanged or mechanical joint ends, as appropriate for each connection. All fittings shall be cement mortar lined per ANSI A21.4 (AWWA C104). Mechanical joints shall be recommended by the manufacturer for use with AWWA C-900 PVC or ductile iron pipe and shall be furnished with MJ retainer glands. Fittings shall be manufactured in accordance with AWWA C110. Fittings for use with ductile iron pipe may be of the push-on type. Fittings for connections between new main and existing mains and pipes shall be specifically designed for interconnection of the lines being joined and will be subject to the approval of the City's Engineer or his authorized representative.

262.02.9 – Water Service Tubing. Water service tubing shall be polyethylene "PE" tubing having copper tube O.D. sizes and complying with ASTM D2737, NSF approved, dimensions to fit standard CTS fittings, SDR 9, 200 psi.

262.02.10 – Water Service Appurtenances. Corporation stops, curb stops, wye fittings, and other required service fittings shall conform to AWWA C800. All connections to service tubing shall be by approved compression type fitting, with stainless steel tubing inserts as recommended by the fitting manufacturer.

Curb valves shall employ a one-piece integral plug with full-opening port and tee head, turning on a plastic thrust washer at the top and sealed by an "O"-ring. Typically, curb valves shall have a CTS x FIP connection for non-metered services. For any existing, metered connection, Contractor shall supply a curb valve having the appropriate fitting to reconnect to the existing meter. Existing meters shall be kept in service until after short/long service connection is complete. See plans for typical installation of water services. The valve body shall be a one-piece brass casting with closed bottom. The inlet and/or outlet port shall be sealed by a second "O"-ring. The design shall include a locking ring designed to permit locking the valve in the closed position, using a standard padlock.

Service saddles are required for all service line connections and shall be ductile iron or brass with double stainless steel bands. Saddles shall be specifically recommended for use with the type of pipe being connected to.

262.02.11 – Water Meter Boxes. Service valve boxes shall be plastic structural foam boxes with plastic lid with hinged reader lid. Box shall measure not less than 10" x 16" (at the top) by 12" deep. Where meters boxes must be located in paved areas (concrete or asphalt), provide cast iron meter boxes similar to Vulcan model V-8402.

262.02.12 – Water Meters. Existing water meter to be relocated unless damaged. Water meters that need replacing to be provided by the City of Hattiesburg.

262.02.13 – Filter Fabric. Geotextile fabric shall be non-woven, needle punched, and weigh a minimum of four ounces (4 oz.) per square yard.

262.02.14 – Mechanical Joint Retainer Glands. MJ retainer glands shall be used for all connections of pipe to fittings, valves, or fire hydrants, and shall be made with a suitable restrained joint system, meeting any one of the following specifications:

1. For Ductile or PVC Pipe, a suitable ductile iron retainer gland, designed and recommended by the gland manufacturer, for the type of pipe used. Gland shall be manufactured entirely of 60-42-10 ductile iron conforming to ASTM A536-80. Glands shall attach to the pipe barrel through a plurality of individually activated gripping surfaces (wedges).
2. For PVC Pipe, a heavy ductile iron or fused epoxy coated structural steel (ASTM A36) clamp which employs serrations on its inside surface to firmly grip the outside of the PVC pipe barrel. Clamp shall be specifically designed and recommended for use with the size and thickness class of pipe used. All hardware shall be ductile iron.
3. For Ductile Pipe only, a ductile iron mechanical joint retainer gland employing cupped-end threaded set screws which conform with the pipe manufacturer's guidelines as to number of set screws and torque to be applied to properly restrain the joint to a rating of not less than 250 p.s.i.

262.02.15 – Pipe Joint Restraints. Pipe Joint Restraints shall be installed where applicable as designated on the Drawings, in all pipe encasements, and for pipe joints within specified distances from fittings per the schedule in Drawings. Use two glands similar in design and materials to the joint retainer glands previously specified, one immediately behind the joint bell and one on the pipe spigot, connected by two or more ductile iron rods spanning across the pipe joint. For ductile iron pipe, it is also permissible to use mechanical joint pipe with restrained retainer gland, or special "lock-ring" pipe joints.

262.02.16 – Locator Wire & Utility Marker Tape. Locator wire for attachment to all non-detectable pipe materials shall be a No. 12 coated solid copper wire.

Underground utility marker tape for burial with all types of pipe shall be a minimum of 5 mils thick and 3 inches in width. Minimum tensile strength shall be 35 pounds and tape shall elongate not less than 80 percent before breaking. Tape shall be permanently imprinted with an appropriate legend to identify the contents of the pipe (e.g. "Water Main Below".)

262.02.17 – Tapping Sleeves & Valves. Tapping sleeves shall be fabricated from heavy Type 304 stainless steel, with a full circumferential seal to the run pipe provided by a rubber gasket resistant to water, salt solutions, mild acids, gases, and sewage. Multiple stainless steel bolts shall ensure uniform sealing. Outlet flange shall conform with ANSI 150 pound drilling, recessed for tapping valve per MSS-SP 60. A 3/4 inch NPT test plug shall be provided. O.D. range of body must match the actual measured O.D. of the pipe being tapped.

Tapping valves shall conform with the requirements for Gate Valves and Valve Boxes on Water Mains, except that the inlet shall be Class 125 Flange and the outlet, Mechanical Joint. The valve opening shall be oversized to permit a cutter head to pass which is 1/2" smaller than the nominal branch pipe size. Valves shall be furnished complete with cast iron sectional valve box, as is specified under "Gate Valves & Valve Boxes" in these Specifications. A retainer gland as is specified under "Water Pipe & Fittings" is required for the connection of the new pipe to the tapping valve.

262.02.18 – Line Stopping. Line stopping shall include all components of the type and size required to plug the existing water main to be tapped. This will be done to facilitate the tap without losing pressure along the existing water main that is to remain in place.

The line stop fitting shall be split mechanical bolt-on type, fabricated from ASTM A-36 carbon steel, epoxy coated with 18-8 type 304 stainless steel nuts, bolts, and washers, and be complete with equalization fittings, blind flange with gaskets, nuts and bolts. Flanges are AWWA 207 Class D, ANSI 150# drilling. Gaskets are compounded for use with water, salt solutions, and mild acids.

262.03 - Construction Requirements.

262.03.1 – Excavation – General. Excavation shall include the clearing of the site of the work, the loosening, loading, removing, transporting and disposing of all pavements, obstructions, and any other materials, wet or dry, above or below ground necessary to be removed to construct all pipes included in this contract to the lines, grades and locations shown on the Drawings. No burying or burning of trees, stumps, roots, or other debris will be allowed.

It is intended that areas designated as “Easement” be cleared only as necessary to allow construction of the facilities. Any trees or shrubs designated on the plans or directed by the Engineer to remain shall be protected from damage.

Low hanging and unsound or unsightly branches on trees or shrubs designated to remain shall be removed as directed. All trimming shall be done by skilled workman and in accordance with good tree surgery practices. An approved asphaltum base paint prepared specifically for tree surgery shall be furnished and applied by Contractor to cut or scarred surfaces on trees or shrubs selected to remain.

Where required, the Contractor shall remove with care all shrubbery, plants, flower planters, flower bed borders, set aside, watered, and kept alive and reset as before construction work. The Contractor shall furnish and install replacement plants which die as a result of construction operations.

In areas where water main will be installed in close proximity to trees designated to remain or any Live Oak trees, the major root systems and the limbs of the trees shall be protected from damage. Where necessary, contractor shall install water main by tunneling or boring underneath the tree roots, with no additional compensation for materials, labor, or otherwise. If, in the opinion of the Engineer, any damage to the tree does occur, Contractor shall, at his own expense, obtain the services of a certified tree surgeon to perform any and all actions necessary to mitigate or repair the damage.

The Contractor shall, at his own expense, furnish and install all temporary sheeting, timbering and bracing required to maintain the excavation in a condition to furnish safe working conditions and to permit the safe and efficient installation of all items of contract work. The Contractor shall further, at his own expense, shore up or otherwise protect all fences, buildings, walls, walks, curbs, or other property adjacent to any excavation which might be disturbed during the progress of the work, except for such facilities which are within the allowable trench limits and are designated for removal and restoration.

Temporary supports must be removed by the Contractor at his own expense after or concurrently with the completion of the permanent facility.

The Contractor shall do all ditching, pumping, well pointing and bailing, build all drains, and do all other work necessary to keep the excavation clear of ground water, sewage or storm water during the progress of the work and until the finished work is safe from injury. Where the excavation is wet sand, and suitable construction conditions cannot be obtained by other methods, the Contractor shall install and operate, at his own expense, a pumping system connected with well points, so as to drain the same effectually. All well point holes shall be backfilled with sand after removal. No masonry or pipe shall be laid in water, and water shall not be allowed to rise over masonry until concrete or masonry has set at least 48 hours. All water pumped or drained from the work shall be disposed of in a manner that will not damage adjacent property or other work under construction. Necessary precautions shall be taken to protect all construction against flooding.

Whenever the excavation is carried beyond the lines and grades shown on the drawings, the Contractor shall, at this own expense, refill all such excavated space with such material and in such manner as may be directed.

Unsuitable and surplus excavated material not incorporated in the work shall be disposed of by the Contractor at his own expense.

In the event that any existing gas pipe, water pipes, conduits, sewers, storm drains or poles are blocked or interfered with by the excavation required on this project, the Contractor shall maintain them in

continuous operation, and restore them to the same condition as they were prior to the start of construction of this project. Gas pipes or electrical power distribution facilities or any other utilities which are disturbed in any way shall be inspected and repaired (if necessary) by the utility owner, all at no additional compensation from the Owner.

Any culvert pipe joint exposed by excavation shall be wrapped with an approved geotextile filter fabric, three feet in width, before backfilling, at no additional compensation.

262.03.2 – Trench Excavation. The ground shall be excavated in open trenches, of sufficient width and depth to provide ample room within the limits of the excavation, or lines of sheeting and bracing, for the proper construction of the water main.

Mechanical excavation of trenches shall be stopped above the final invert grade elevation so that the pipe may be laid on a firm, undisturbed native earth bed.

The width of the trench at the top of the pipe shall not exceed the outside diameter of the pipe plus two feet. The maximum allowable trench width at the ground surface shall not exceed the outside diameter of the pipe, plus twice the depth of cut. Restoration of disturbed facilities as a pay item will only be allowed within these limits. Facilities disturbed outside the allowable restoration limits shall be restored as detailed in “Restoration of Disturbed Facilities” in these Specifications, but at Contractor’s expense.

The minimum depth of excavation shall be as required for a cover over the completed water main of not less than 30 inches on city and county roads and 36 inches on MDOT rights-of-way. Where water pipes cross under existing drainageways, provide not less than 30 inches under ditches or 18” clearance between the top of the pipe and the bottom of existing storm drain pipes or structures.

262.03.3 – Bedding. Trenches shall be dry when the trench bottom is prepared. A continuous trough shall be pared or excavated to receive the bottom quadrant of the pipe barrel. In addition, bell holes shall be excavated so that after placement, only the barrel of the pipe receives bearing pressure from the trench bottom.

Preparation of the trench bottom and placement of the pipe shall be carefully made so that when in final position, the pipe is true to line and grade.

262.03.4 – Laying Pipe. All nonmetallic pipes shall be installed with a No. 12 coated solid copper wire attached to the top of the pipe. The locator wire shall be permanently secured to the pipe at six foot increments. The locator wire shall be continuous along the length of each pipe segment between access points and be accessible at every valve box, including valves for fire hydrants. Splices shall be made with waterproof connectors. Locator wire assemblies shall also be installed at the locations shown on the plans to provide a maximum spacing of not more than 500 feet between access points to the locator wire. Upon completion of all piping, locator wire, assemblies, and other access points, the Contractor shall coordinate with the Owner for testing. The Owner’s representative will use his locator to test the locator wiring system.

Pipe shall be protected during handling against impact shocks and free fall. Pipe shall be clean at all times, and no pipe shall be used in the work that does not conform to the appropriate specifications.

Pipe shall be laid accurately, to the line and grades with fittings and valves at the required locations as designated in the Drawings. Preparatory to making pipe joints all surfaces of the portions of the pipe to be jointed or of the factory-made jointing material shall be clean and dry. Lubricants, primers, adhesives, etc., shall be used as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory fabricated joints shall then be placed, fitted, joined, and adjusted in such a workmanlike manner as to obtain the degree of water-tightness required.

If dirt enters the pipe, it shall be removed and the interior pipe surface swabbed with a 1 percent hypochlorite disinfecting solution.

Trenches shall be kept water-free and as dry as possible during bedding, laying, and jointing and for as long a period as required. As soon as possible after the joint is made, sufficient backfill material shall be placed along each side of the pipe to offset conditions that might tend to move the pipe off line and grade.

If pipe and fittings are not kept dry during installation, Contractor shall ensure that any water entering the pipe contains an available-chlorine concentration of approximately 25 mg/l by adding calcium hypochlorite granules or tablets to each length of pipe.

Wherever necessary to deflect pipe from a straight line, either in the horizontal or vertical plane, the degree of deflection shall not exceed maximum permissible deflections as recommended by pipe manufacturer.

262.03.5 – Backfilling. All trenches and excavation shall be backfilled as soon as the work has developed sufficient strength to resist backfilling loads and forces and the work shall be prosecuted expeditiously after it has commenced.

No pipe shall be backfilled above the top of the pipe until the pipe elevations, alignment and the pipe joints have been checked, inspected, and approved by the Engineer.

All pipes as soon as laid shall have the space between the pipe and the bottom and the sides of the trench backfilled to the spring line of the pipe with a select material. This material shall be thoroughly compacted by hand or mechanical means.

Backfill shall then proceed with the placement of select material in 6 inch layers to one foot above the top of the pipe. This backfill shall be compacted by mechanical compactor to not less than 95 percent Standard Proctor Maximum Dry Density.

If pipe trench is under or immediately adjacent to existing or proposed road or drive surfaces, the remainder of the trench shall be backfilled with select material in 8 inch layers to not less than 95 percent Standard Proctor Maximum Dry Density, using a mechanical compactor.

Where the native excavated is not considered suitable by the Engineer, the Engineer may authorize the replacement for such unsuitable material with contractor-furnished select backfill, and shall not be measured for a separate payment. All surplus or unsuitable material not used in backfilling shall be disposed of offsite by Contractor at his own expense.

262.03.6 – Utility Marking. All pipe installations require that utility marker tape (in addition to locator wire attached to nonconductive pipe) be buried in the backfill approximately 12 inches above the top of the pipe. Tape shall be permanently imprinted with an appropriate legend to identify the contents of the pipe (e.g. "Water Main Below".)

262.03.7 – General Requirements. All connections between pipe and fittings shall be made with an approved restrained joint system. In addition, all pipe joints within a distance which is tabulated in the Drawings from a fitting must also employ an approved restrained joint system. The assembly and installation of each restrained joint system shall be in strict accordance with the manufacturer's printed instructions and in the presence of a representative of the Engineer.

For all pipe sizes and types, install only full lengths of pipe adjacent to fittings, except in unusual circumstances.

Contractor must use care to prevent the entry of ground water or other contaminants into the water pipe, fittings, valves and appurtenances, either before, during, or after construction. Pipe delivered for construction shall be stored so as to minimize the entrance of foreign materials. All openings in the pipeline shall be closed with watertight plugs when pipe laying is stopped.

Connections to existing distribution system shall be made in a manner approved by the Engineer and shall be scheduled during times with the least inconvenience to customers and shall be accomplished in a timely manner with a minimum interruption of service. Contractor will be required to provide a minimum of 24 hours advance notification to customers where service will be interrupted. Contractor shall also provide advance notification to the Owner's water department and fire department.

Contractor shall verify size and type of existing water mains prior to connection of the new system. Necessary adapter fittings, glands, or special gaskets shall be furnished as needed to properly connect to the type of existing pipe or fitting encountered.

Where the project requires connection, removal, or any type of contact with existing asbestos cement pipe, Contractor shall comply with all local, state, and federal requirements for the cutting, handling, and disposal of asbestos cement pipe.

Contractor must coordinate the use of domestic water with the Owner. The Owner may allow Contractor to utilize water from the distribution system for the filling of the new water mains and a reasonable amount of water for wellpointing and initial flushing, without compensation. If, in the opinion of the Engineer and Owner, the Contractor did not take proper precautions in preventing debris and contaminants from entering the new system during construction or does not follow proper disinfection procedures as described in the latest revision of AWWA C651, the Owner reserves the right to assess charges to the Contractor for any excessive use of domestic water.

The new water mains shall be kept isolated from the active distribution system until satisfactory bacteriological testing has been completed and the disinfected water flushed out. All valves which separate existing in-service water mains from new water mains constructed under this contract shall remain closed at all times except when opened to fill or flush the new mains. A water-proof plastic tag shall be placed in each separation valve box, with the notice "Keep Closed at All Times." When valves are opened for filling or flushing, only one valve shall be opened at any one time, and only after a suitable flush point has been opened in the new system to relieve pressure and positively prevent the backflow of water from the new mains into the in-service mains.

Contractor shall be responsible for the proper handling and disposal of water discharged during flushing operations. All water discharged from the water system shall be disposed of in a manner that will not damage adjacent property, other work under construction, or adversely affect traffic or the general public. No water shall be discharged to the sanitary sewer collection system. Contractor shall advise and coordinate flushing of water mains with the Owner's water department and fire department and shall be performed in a manner that will not result in less than acceptable water pressure in the existing system. In case of fire or emergency, Contractor shall temporarily cease flushing operations.

262.03.8 – Hydrostatic Testing. Pressure and leakage testing shall be conducted on all pipe and appurtenances, including hydrants and water services, by the Contractor at his expense and in the presence of the Engineer or his representative. The hydrostatic test procedure used shall conform with the requirements of AWWA C-600, Section 4. The test shall be conducted by filling the pipe with clean water under a minimum pressure of 100 p.s.i. There shall be no visible leakage, nor shall the leakage exceed 9.5 gallons per 24 hours per inch diameter per mile as measured over a period of two hours. The Engineer reserves the right to select the line segments to be tested together as a unit, and may choose to separately test small segments if the test result for a larger segment is marginal.

262.03.9 – Disinfection. After completion of the construction and pressure testing of water distribution lines, hydrants, and water services, they shall be flushed and disinfected using at least a 50 mg/l free chlorine solution for 24 hours or as described in the latest revision of AWWA C651, Standard for Disinfecting Water Mains, and in a manner acceptable to the Mississippi State Department of Health. Disposal of heavily chlorinated water may require the Contractor to obtain a permit from the Department of Environmental Quality/Office of Pollution Control.

After final flushing and before the new water mains are connected to the distribution system, the Contractor shall arrange for microbiological water samples to be collected by a Certified Operator of the system, a representative of the Mississippi State Department of Health, or a certified technician of a laboratory certified by the Mississippi State Department of Health. At least one sample shall be collected from every 1200 feet of looped lines and from every dead-end line. No hose or fire hydrant shall be used in the collection of samples.

Water being collected for testing shall not have a chlorine residual higher than is normally maintained in other parts of the distribution system. No chlorine, which is a result of line disinfection, shall be present. A sample showing "No Coliform Present" shall constitute a satisfactory sample when analyzed by the Mississippi State Department of Health environmental laboratory or a laboratory certified by the Mississippi State Department of Health. The costs for all bacteriological sampling and testing shall be the responsibility of the Contractor.

If trench water has entered the new mains during construction or, if in the opinion of the Engineer, excessive quantities of dirt or debris have entered the new mains, bacteriological samples shall be taken at intervals of approximately 200 feet. Samples shall be taken of water that has stood in the new mains for at least 16 hours after final flushing has been completed.

If the initial disinfection fails to produce satisfactory bacteriological results, the new mains shall be reflushed and resampled. If check samples also fail to produce acceptable results, the mains shall be rechlorinated by the continuous-feed or slug method of chlorination as described in the latest revision of AWWA C651 until satisfactory results are obtained.

262.03.10 – Wastewater Disposal Method. The construction contractor shall submit for review and approval the method proposed for disposal of wastewater from hydrostatic tests and disinfection, prior to performing hydrostatic tests. Hydrostatic test and disinfection wastewater discharged to the storm sewer, sanitary sewer, or natural water stream shall not have a chlorine residual greater than 0.01mg/L.

262.03.11 – Separation of Water and Sewer Mains. Water mains should be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line should be at least 18" above the top of the sewer line. Water and sewer lines shall be constructed in separate trenches with adequate space for maintenance.

Where adequate horizontal separation cannot be maintained, the water main should be constructed of ductile iron with joints located at the maximum distance possible from sewer line joints.

Where the horizontal and vertical separation cannot be maintained, then the sewer main must be constructed to water main standards, in addition to the use of ductile iron for the water main.

Where water lines cross over sewer lines, the above requirements will be waived if pipe segments are centered to provide maximum spacing of the joints of both the water and sewer lines and the 18 inch vertical separation (water over sewer) is provided.

262.03.12 – Water Main Removal and Disposal Method. Contractor shall submit for review and approval a proposed schedule and method for the removal of sections or subsections of the existing water system. Also, Contractor shall submit for review and approval a proposed method of documenting the removal and disposal of existing mains in accordance with all applicable laws. Contractor shall maintain records and submit said records prior to any payment for removal of water mains.

262.03.13 – Gate Valves. Gate Valves shall be installed as detailed in the Drawings and in strict accordance with manufacturer's recommendations, along with restrained joint retainer glands and thrust blocking as indicated in the Drawings.

Where any gate valve shall be installed at a depth equal to or greater than 3.5 feet below finished grade, Contractor shall supply and install a valve key extension on the valve. The extension shall be securely

bolted or otherwise attached to the gate valve key per the recommendations of the manufacturer and as approved by the Engineer. Valve key extensions shall be installed plumb in the valve box and at a normal depth to allow easy operation of deep valves with a standard valve key.

262.03.14 – Fire Hydrants. Hydrants shall be installed as shown in the detailed drawings and in a manner that will provide complete accessibility and will prevent damage from vehicles. All hydrants shall stand plumb and shall have their pumper connections at right angles to the centerline of the road. Thrust block backings shall be constructed in strict accordance with manufacturer's recommendations.

Crushed stone or gravel shall be placed at the base of the hydrant to provide drainage.

After installation and prior to final acceptance the fire hydrants shall be painted above the ground line in accordance with AWWA Standard C-502. Color shall match existing hydrants in the project area, or as directed by the City's Engineer or his authorized representative. Multiple coats may be required to achieve uniform appearance if the hydrants are supplied by the manufacturer in a different color than desired.

It should be anticipated that some hydrants designed for bury depths greater than the standard 36 inches will be required, due to existing utility lines and/or ditch flowline elevations. Contractor may choose to utilize manufactured hydrant barrel extensions for some or all of the long-barrel hydrants.

262.03.15 – Water Services.

Where an existing residence or business is currently being serviced by an existing water service, it is Contractor's responsibility to physically locate the point where the existing service pipe crosses the property line (approximate location only - no surveys required). The existing water meter shall then be installed to this point. All work to locate the existing service and to make the final connection to it is included in "Long Service Connection"/"Short Service Connection".

Installation of all service line components (service saddle, corporation stop, tubing, and curb valve) shall be in strict accordance with manufacturer's recommendations. Service lines shall be laid deep enough to prevent damage from freezing, or during routine road or street maintenance, but not so deep as to require installing the line at an excessive angle in the meter box.

Service location reports will be furnished by the Engineer. Forms will be completed and submitted to Engineer by Contractor prior to any progress payments for water services.

It shall be Contractor's responsibility to keep active water service to any and all parcels which are in use or may be in use. Expenses associated with keeping the water service active at necessary lots shall be absorbed by Contractor. Damages to the newly constructed water services by the removal of the existing water mains shall be repaired at Contractor's expense.

262.03.16 – Line Stop Procedure. The contractor shall clean the exterior of the main to remove debris, corrosion deposits and other surface irregularities that might interfere with proper seating and sealing of the line stop fitting against the main.

Line stop fittings installed on slip joints or mechanical joint pipe require at least three standard lengths of pipe remain buried from the point of the line stop to where the line will be cut open. An alternate method is to anchor the line stop fitting in concrete. Line stop fittings shall be installed and pressure tested at 150 psi for 15-30 minutes prior to tapping the main.

Concrete support/anchor shall be installed after pressure test. Concrete support should extend to the "BEAM POINT or CENTER LINE" of the pipe main. This method should prevent movement laterally where the line is isolated and cut open.

Temporary line stop valve shall be installed into the line stop fittings (flanged tee may be mounted to the valve for temporary bypass). Drilling machine shall then be mounted to line stop valve, and the wet tap should be performed.

Once the coupon from the tap is retracted into the machine, the stop valve can be closed and the drilling machine can be de-pressurized and removed. Coupon shall be measured to verify pipe I.D. for sizing adjustments of the folding head stop sealing element.

Line stop machine shall then be mounted on stopping valve and line stop assembly, valve opened, and assembly entered into the pipe and the line stop performed.

Once the pipe main is de-pressurized, alterations can begin.

After alterations are completed, and the new line shall be sanitized. The line stop shall be re-pressurized, and the stopper head removed from the line stop and the valve closed.

Drilling machine with closure plug is mounted to stop valve. Valve is opened and the assembly is installed and locked into position inside the neck of the stop fitting.

The drilling machine shall then be removed, and blind flange shall be installed to the line stop fitting for completion of the job.

262.03.17 – Connection to Existing Water Mains. It is the intent of this contract that the new segments of water mains be constructed and pressure tested prior to connecting them to existing pipes. Temporary plugs and water service-type connections will be required to allow this.

Tapping Sleeves and Valves:

1. Installation of tapping sleeves shall fully conform with manufacturer's recommendations. The pipe barrel to be tapped shall be fully and carefully cleaned. Asbestos cement pipe shall be smoothed with a wire brush to ensure a tight seal of the gaskets against the pipe.
2. Before each sleeve is installed, the pipe barrel to be tapped shall be measured and the actual measured pipe O.D. shall be within the range recommended for the sleeve used.
3. The actual size of the hole cut in the pipe barrel shall be not more than 1/2 inch smaller than the nominal size of the branch connection (e.g., not less than 5 1/2 inches for a 6 inch tap). The drilling machine and shell cutter head used shall be specifically recommended for the type of pipe being tapped.
4. After the tap is complete and the tapping valve closed, the sleeve shall be bled of air and then visually checked for leakage before backfilling.

Connections made to existing water mains (other than those connections made with a tapping sleeve and valve), fittings, or stubs shall be made according to all the requirements in these Specifications. Necessary adapter fittings, glands, or special gaskets shall be furnished as needed to properly connect to the type of existing pipe or fitting encountered. Any cast or ductile iron fittings so used will be measured for separate payment as "Ductile Iron Fittings".

The Owner will assist Contractor by locating existing valves necessary to turn off the water pressure for a short period necessary to make the connection. Contractor shall provide at least 48 hours notice to the Owner for any outages. The Contractor may be requested to schedule some connections for a specific time of day or night, to reduce inconvenience to customers. The Owner and the Engineer do not guarantee that any specific sections of the water system can be isolated by closing existing valves.

After the new water main system is in service and all service connections are transferred, then the existing water mains replaced as a part of this Work shall be physically removed and disposed of in accordance with these Specifications.

Notice is given that some connections to and between the existing water mains which are to be abandoned may exist other than as shown in the Drawings. It is Contractor's obligation to find and disconnect all points of connection between the water mains to be removed and water mains which are to remain, whether shown in the Drawings or not.

The plans indicate certain existing fire hydrants and water valves which are to be removed. Fire hydrants so designated shall be removed in their entirety, including base elbow and bolted-on shut-off valve if so equipped. Valves may be "removed" by removing the 2" operating nut from the top of the valve and removing the valve box -- the entire valve need not be completely removed, unless this is needed to disconnect the water main. All materials removed shall remain the property of the Owner. They shall be delivered in good condition and unloaded at a location determined by the owner.

Where insertion valves or tapping valves are installed deeper than 3.5 feet below finished grade, Contractor shall supply and install valve key extensions in accordance with the requirements of "Gate Valves & Valve Boxes" in these Specifications.

262.03.17 – Separation of Water and Sewer Mains. Water mains should be laid at least 10 feet horizontally and 18 inches vertically from any sanitary sewer or manhole. The bottom of the water line should be at least 18" above the top of the sewer line. Water and sewer lines shall be constructed in separate trenches with adequate space for maintenance.

1. Where adequate horizontal separation cannot be maintained, the water main should be constructed of ductile iron with joints located at the maximum distance possible from sewer line joints.
2. Where the horizontal and vertical separation cannot be maintained, then the sewer main must be constructed to water main standards, in addition to the use of ductile iron for the water main.
3. Where water lines cross over sewer lines, the above requirements will be waived if pipe segments are centered to provide maximum spacing of the joints of both the water and sewer lines and the 18 inch vertical separation (water over sewer) is provided.

262.04 - Method of Measurement. Water distribution pipe, regardless of material type, will be measured as the number of linear feet of pipe in place, field measure, including locator wire and marker tape, regardless of depth, select bedding, select and general backfill, structure excavation, cleaning and disinfection, pumping, and testing. Contractor shall restore trenches and disturbed areas, dispose of unsuitable materials and perform grading and cleanup operations during the course of construction. Areas which are not properly cleaned up and maintained will not be approved for payment.

Where ductile iron pipe is required by the Drawings or directed by the Engineer, payment will also be measured as the number of linear feet of ductile iron pipe installed, field measure, including any necessary locator wire and marker tape, regardless of depth, select bedding, select and general backfill, structure excavation, cleaning and disinfection, pumping, and testing. Contractor shall restore trenches and disturbed areas, dispose of unsuitable materials and perform grading and cleanup operations during the course of construction. Areas which are not properly cleaned up and maintained will not be approved for payment.

Restrained pipe joints will not be measured separately for payment. Carrier pipe in pipe encasements shall be ductile iron, restrained joint pipe.

Removal of all water items shall be included in "Removal of Obstructions".

Distribution pipe fittings will be measured by the pound of fittings in place, including glands, bolts, and gaskets computed upon unit weights listed in AWWA C-110. This applies even if the fittings used are compact ductile iron fittings conforming to AWWA C-153.

Gate Valves will be measured per each. Valves used as fire hydrant isolation valves will not be measured under this item. Payment made for gate valves will be inclusive of all associated costs, including any

required valve key extensions. Where required, valve key extensions will not be measured for separate payment.

Adjustment of Water Meters shall be measured per each, for each respective diameter, as the number of actual services connected, regardless of the main's size. Service connections shall include all labor and materials necessary to result in a fully functioning water service, including but not limited to location and connection to existing water service, location and connection to existing/proposed water main, water service tubing, excavation, bedding and backfill, service saddles, corporation stops, curb stops, relocation of water meter, purchase of water meter due to damage by contractor, meter boxes, structure excavation, select bedding, and select or general backfill.

Location of and connection to existing water services will not be measured separately for payment.

Where directed by Engineer and in accordance with these Specifications, Contractor shall wash, bore, or jack water services under existing or proposed improvements. Such work shall be considered incidental to the installation of the new water services and shall not be measured for separate payment.

Fire hydrants shall be measured as the number of units in place, per each, including but not limited to mainline tee, excavation, bedding, concrete and reinforcement, saddle, sleeve, joint restraints, 6-inch gate valve and all appurtenances. No separate payment will be made for hot tapping.

Insertion valve shall be measured per each and shall include furnishing and installing valve and sleeve components, and all equipment, tools, labor, and incidentals necessary to complete the work.

Line stop valve shall be measured per each and include furnishing and installing all fittings, nuts, bolts, washers, blind flange, gasket, tapping sleeve, plugging after completion of the work and all equipment, tools, labor, and incidentals necessary to complete the work.

262.05 - Basis of Payment. This work will be paid for at the contract unit prices per unit specified, complete in place, which shall be full compensation for completing the work. Materials or work for which a pay item is not included and are necessary to complete the work under this section shall be furnished or performed and shall be considered incidental to the completed construction.

Payment will be made under:

907-262-A: 6" Ductile Iron Water Main	-per linear foot
907-262-A: Ductile Iron Fittings	- per pound
907-262-A: 6" Insertion Valve	- per each
613-D: Adjustment of Water Meter	- per each
613-D: Adjustment of Fire Hydrant	- per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-417-1

CODE: (SP)

DATE: 06/26/2019

SUBJECT: Polymer Cement Surface System

Section 907-417, Polymer Cement Surface System, is hereby added to and made a part of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows:

SECTION 907-417-POLYMER CEMENT SURFACE SYSTEM

907-417.01--Description. This work consists of furnishing labor, materials, and equipment required for the application of a polymer cement surface system (PCSS) on a prepared concrete surface. The polymer cement surface system shall provide skid and abrasion resistance, and the resulting surface may be patterned and/or monolithic as specified in the plans, or as directed by the Engineer.

907-417.02--Materials. Material for the PCSS shall meet the following requirements.

<u>Properties</u>	<u>Test Value</u>	<u>Test Method</u>
Compressive Strength, (28 days), psi, minimum	3,100	ASTM C 109
Tensile Strength, psi, minimum	700	AASHTO T 132
Bond Strength, psi, minimum	250	ASTM C 1583
Friction Number, minimum	45	AASHTO T 242
Length Change, percent, maximum	0.024	ASTM C 157

The Contractor shall furnish the Engineer with certified test reports showing that the material meets the requirements of the Specification.

When not installed by the Manufacturer, the Contractor performing the work shall be authorized by the Manufacturer to install the product. When someone other than the Manufacturer installs the product, the Contractor shall furnish the Engineer with an Authorized Applicator Certification or other documentation from the Manufacturer stating that the Contractor is certified to install the product.

A textured finished surface shall be required for the PCSS and shall be achieved with aggregate. Aggregate shall be selected such that it will produce a friction number of at least 45 in accordance with AASHTO: T 242 using a tire meeting the requirements of AASHTO: M 261. The Department will conduct a friction test within 30 days after installation to verify that the material meets a friction number of 45.

The color of the PCSS shall be similar to the color of the surface which it is to be applied and shall be approved by the Engineer prior to use. Any chemical admixtures and/or color pigments used, the dosage rates, and the conditions for use in the PCSS shall be approved by the Manufacturer.

The material shall be delivered to site in weatherproof containers and stored in a covered and ventilated location.

907-417.03--Construction Requirements.

907-417.03.1--Weather Limitations. The PCSS shall not be placed during periods of fog or rain. Should a rain event occur during installation, all operations shall cease and work shall not be resumed until dry conditions are present. Authorization to continue placement after a rain event shall be approved by the Engineer.

907-417.03.1.1--Cold Weather Limitations. The PCSS shall only be installed when the temperature of the concrete surface is at or above 50°F and expected to remain above 50°F for six (6) hours. There shall be no forecast ambient temperatures below 35°F within 24 hours from the time of placement. When the ambient temperature is below 50°F, but will remain above 40°F during PCSS installation, the PCSS can be placed only when Manufacturer approved accelerators are added to the mix and approval of the Engineer is obtained.

907-417.03.1.2--Hot Weather Limitations. The PCSS shall only be installed when the temperature of the concrete surface is at or below 130°F. When the ambient temperature exceeds 90°F, the use of cold water or ice should be considered for the blending operation at a rate approved by the Manufacturer. If the use of cold water or ice is not possible, then the use of a Manufacturer approved retarder may be permitted.

907-417.03.2--Surface Preparation. For proper adhesion, the concrete shall be dry, clean, and sound. Any spalls or failures in the concrete shall be repaired to the satisfaction of the Engineer and the Manufacturer. Cost of concrete repairs shall be included in the costs of the PCSS. The existing concrete shall be cleaned to a SSPC-SP13/NACE 6, Surface Preparation of Concrete, or better. The prepared surface shall be tested in accordance with ASTM C 1583 to assure proper adhesion. The minimum near-surface tensile strength of the substrate shall be 250 psi or failure in the substrate. If the test is being run on a concrete overlay that is to receive the PCSS instead of directly on the substrate, the failure mode shall also be 250 psi or failure in the substrate. Tests shall be conducted by the Contractor/Manufacturer in the presence of the Engineer. Upon successful completion of testing, the Contractor shall continue with mixing and placement as soon as possible to avoid contamination of the surface that may affect bonding of the PCSS to the concrete surface.

907-417.03.3--Mixing. The measuring and mixing operation shall be capable of producing a consistent homogeneous mix sufficient to maintain the production levels required for the work. The water and dry blend shall be charged into the mixer and blended to the desired consistency while maintaining effective temperatures to prevent flashing of the mix. Hand mixing in pails is not permissible.

907-417.03.4--Placing. The PCSS shall be uniformly deposited on the substrate by a device approved by the Manufacturer and Project Engineer, and have the capability of mixing the materials at a rate to ensure continuous application.

907-417.03.5--Base Coat. A base coat shall be applied to the prepared concrete surface at a rate recommended by the Manufacturer. Curing shall be required as recommended by the

Manufacturer prior to placing of the top coat. Once curing is complete, installation of the top coat shall begin immediately. There shall be no time differential between curing of the base coat and installation of the top coat.

907-417.03.6--Top Coat. A top coat shall be applied over the base coat. When a pattern is required, the pattern shall be specified in the plans. The combined cured thickness of the base coat and top coat should be between 1/8" and 3/16". The completed PCSS shall be tested to ensure proper bond strength with the substrate using ASTM C 1583, and the value obtained shall be a minimum of 250 psi or failure in the substrate.

907-417.03.7--Curing and Release to Traffic. Care shall be taken by the Contractor to protect the PCSS from traffic until the area is sufficiently cured. Curing time will vary depending on ambient and surface temperatures. At 70°F, curing time is approximately two (2) hours, with an increase in curing time as the ambient temperature decreases. The PCSS shall not be opened to traffic until it has reached a sufficient compressive strength such that the surface will not be damaged by vehicular traffic. A Manufacturer Representative, Certified Applicator, or the Engineer shall provide the final approval for release to traffic.

907-417.03.8--Equipment. Equipment used when installing the PCSS shall be designed for installing the material applied and suitable for use by the Manufacturer and Project Engineer.

907-417.03.9--Protection. Areas that are not to receive the PCSS shall be masked to protect the surfaces prior to application. The Contractor should also take the necessary precautions to protect other structures and the traveling public from any unwanted application.

907-417.03.10--Acceptance. The Contractor shall furnish a Manufacturer's certification stating that the material used is one acceptable for the product and the product has been installed in accordance with the Manufacturer's recommendations.

The Contractor shall furnish the Engineer with a test report verifying the results of ASTM C 1583 as addressed in Subsections 907-417.03.2 and 907-417.03.6.

When a component material, as indicated by a test result or poor performance, or the finished product indicate an inferior, unsatisfactory or unacceptable product, the work or materials shall be removed and replaced or otherwise corrected by the Contractor at no additional cost to the State in a manner satisfactory to the Engineer.

907-417.04--Method of Measurement. Polymer cement surface system will be measured by the square yard.

907-417.05--Basis of Payment. Polymer cement surface system, measured as prescribed above, will be paid for at the contract unit price per square yard, which price shall be full payment for all materials, tools, labor, testing, protection, and all incidentals necessary for completing the work.

Payment will be made under:

907-417-A: Polymer Cement Surface System

- per square yard

CITY OF HATTIESBURG

SPECIAL PROVISION NO. 907-616-2

CODE: (SP)

DATE: 08/25/2009

SUBJECT: Colored and Imprinted Concrete Median and Island Pavement

Section 616, Median and Island Pavement, of the 2004 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as amended by this special provision is applicable to Colored And Imprinted Concrete only.

907-616.01--Description. This work consists of furnishing all labor, materials, tools, tests, royalties, services and other incidentals as may be required for the good and proper completion of the colored and imprinted concrete island and median pavement.

The locations for colored and imprinted concrete island and median pavement are shown on the plans, but generally are limited to all proposed concrete islands and concrete median end noses.

The Contractor is advised of additional notes on the plans which call attention to particular requirements or conditions regarding colored and imprinted concrete island and median pavement.

Quality Assurance. Installation shall be performed by an installer with at least one year experience in the placement of colored and imprinted concrete paving systems.

907-616.02--Materials. Colored concrete materials and imprinting tool release agents shall meet the following requirements.

- A. Coloring Agents: Contractor may elect to color the concrete integrally, or may apply dry-shake to the surface of the freshly poured concrete. Whichever method is used, the coloring agent shall be a mineral oxide pigment approved by the Engineer.

Colors for colored and imprinted concrete shall be selected by the Engineer from Standard or Designer color charts, or an approved manufacturer's color charts.

- B. Curing and Finishing Material: Contractor shall utilize a color-matched curing and finishing material recommended by the manufacturer. Curing materials or methods for uncolored concrete shall not be used with Colored and Imprinted Concrete.
- C. Release Agent: Contractor shall utilize a dry-shake powder to facilitate the release of the concrete imprinting tools. The color of the release agent shall match the selected main coloring agent chosen by the Engineer for the concrete.
- D. Imprinting Tools: Tools shall be of high quality and shall provide uniform control of joint depth.

- E. Imprint Tool Pattern: The imprint pattern to be used for all concrete imprinting shall be a 4" x 8" brick herringbone pattern, with a 4" x 8" matching soldier course border used along the perimeter of all proposed concrete islands and median end noses. The Contractor shall reference the plans for pattern layout and orientation of the imprint patterns.

Once the color, method of coloring, and the imprinting tools have received approval from the Engineer, the Contractor shall provide a 4-foot square test panel, separate from proposed island and median end nose areas, to be reviewed and approved by the Engineer. Engineer will evaluate color as compared to color chart and texture of broom finish.

Subsequent test panels may be required, if the finish, imprint quality, or color is unacceptable to the Engineer. The Contractor shall remove unaccepted test panels immediately from site. Accepted panel shall remain until all colored concrete islands and median end noses have been completed by the Contractor, at which time the Contractor shall then remove the acceptable test panel from the site.

907-616.03.4--Handling, Measuring, Proportioning, and Mixing Materials. Should an integral coloring method be selected by the Contractor, the Contractor shall mix coloring agent in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

Should a dry-shake applied coloring method be selected by the Contractor, the Contractor shall measure and apply coloring agent in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

907-616.03.4--Protection and Curing. Protection and curing materials and methods of application for colored and imprinted concrete shall be in strict accordance with the approved manufacturer's written instructions. Copies of the manufacturer's written instructions shall be furnished to the Engineer prior to manufacture and placement of colored concrete.

907-616.04--Method of Measurement. Colored and imprinted concrete median and island pavement, completed and accepted, will be measured by the square foot or square yard. Test panels will not be measured for separate payment.

907-616.05--Basis of Payment. Colored and imprinted concrete median and island pavement, measured as prescribed above, will be paid for at the contract unit price per square foot or square yard, which price shall be full compensation for all labor, tools, materials, equipment, test panels, placement of concrete, imprinting the concrete, and all incidental necessary to complete the work.

Payment will be made under:

907-616-C: Colored and Imprinted Concrete Median and
Island Pavement, Thickness

- per square foot or
square yard

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-631-1

CODE: (IS)

DATE: 11/15/2017

SUBJECT: Traffic Signal Systems - General

Section 631, Traffic Signal Systems - General, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-631.02--Materials.

907-631.02.4--Operations. Delete the second paragraph in Subsection 631.02.4 on page 513 and substitute the following.

The Contractor shall conduct the work at all times in such a manner as to ensure the least possible inconvenience to the traveling public, and to property owners on the streets, alleys, and other public places where the construction will take place.

907-631.02.5--Electrical Service. Delete the first paragraph in Subsection 631.02.5 on page 515 and substitute the following.

It shall be the Contractor's responsibility to make the necessary arrangements with the local power company to provide the electrical service for any new installation. The Contractor shall pay for, at no cost to the Department, all deposits, hook-up charges, or other service fees required by the power company for the establishment of new service. The cost of all such fees shall be considered incidental and absorbed within existing pay items. The Department or the local agency will be responsible for payment of the monthly service bill for the new power service installation. It shall be the responsibility of the Contractor to swap the electrical service account over to the Department or local agency.

907-631.03--Construction Requirements.

907-631.03.2--Electrical Service Equipment. Delete the paragraphs of Subsection 631.03.2 on pages 515 and 516, and substitute the following.

The power supply assembly shall consist of all equipment mounted in a Power Service Pedestal as described in Subsection 722.13 or as otherwise shown in the plans. The configuration and installation of the equipment mounted on the assembly shall meet the safety requirements and approval of the utility company or municipality furnishing power for operation.

When required, service poles shall be provided by the Contractor and consist of wood poles with required pole line hardware, conduit, ground rods, guy wires and anchors and all other accessories and appurtenances mounted on the pole, except those items furnished by the utility company or

municipality, or as specified separately in the contract or plans. Costs of service poles shall be included in other items bids.

Main disconnect switches shall be separately housed on the power supply assembly. Circuit breaker cabinets and meters shall not be installed on the street or walk side of the pole or pedestal.

907-631.03.3--Performance Tests. Delete the second sentence of Subsection 631.03.3 on page 516.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-632-1

CODE: (IS)

DATE: 11/15/2017

SUBJECT: Traffic Signal Cabinet Assemblies

Section 632, Traffic Signal Cabinet Assemblies, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete Section 632 on pages 517 thru 538, and substitute the following.

SECTION 907-632 - TRAFFIC SIGNAL CABINET ASSEMBLIES

907-632.01--Description. This work consists of furnishing, assembling, configuring and installing all component materials and software required to form completed traffic signal controller assemblies, closed loop master controller assemblies and signal system installation of the types specified, in conformity with these specifications, to ensure fully operational traffic signal installations as shown on the plans.

907-632.02--Materials.

907-632.02.1--Cabinet Assembly. Cabinet Assemblies shall meet the NEMA 3R requirements and be constructed principally of 0.125-inch thick, 5052-H32 aluminum. The aluminum shall have a mill finish per NEMA TS 2 7.7.3. Intermittent welds may be used for construction and any unwelded cabinet seams shall be sealed with clear RTV silicone. All external fasteners shall be stainless steel and no holes will be allowed in top of cabinet.

The door handles shall be stainless steel or cast aluminum. Door hinges shall be of the continuous type with a stainless steel hinge pin. Rivets are not be used to attach the hinge. The main door stop rod shall be constructed using stainless steel. The door stop mechanism shall be adjustable and capable of being securely latched in multiple opened positions including 90 degrees and a maximum of 120 degrees. The brackets attaching the stop rod to the door and cabinet shall be aluminum and welded in place. The main door cylinder lock shall be a #2 key type lock. Two (2) traffic industry standard No. 2 keys shall be provided with each cabinet and shall be made using heavy duty key blanks.

Extruded aluminum channels permanently attached to the right and left cabinet sides shall be provided for attaching adjustable shelving and mounting of other component panels. The cabinet shall have two (2) shelves installed. Both shelves shall be provided with the front edge pre-drilled with 0.25-inch holes located twelve (12) inches apart.

907-632.02.2--Physical Features.

907-632.02.2.1--Pull Out Drawer. A pull out drawer shall be installed and centered under the

bottom shelf. The drawer shall be made of 0.080-inch thick, 5052-H32 aluminum and come out on full extension drawer slides. The pull out drawer shall provide an approximate 16-inch x 14-inch working area and have the ability to bear a constant 25 pound burden. There shall be a compartment for document storage. The lid shall be hinged at the rear, to gain access to the storage area. The drawer will be used to store documents as well as support a notebook computer. The drawer slides shall be of the full extension ball bearing type. Dimensions of the drawer shall be large enough to support a notebook computer and a drawer of sufficient size to hold at least two (2) copies of the cabinet drawings and other related cabinet documentation. The surface of the lid shall have a non-slip surface.

907-632.02.2.2--Cabinet Lighting. Cabinets shall be provided with a minimum of two (2) white light LED modules. One (1) lighting module shall be installed along the front top section of the cabinet and the second lighting module shall be installed underneath the bottom cabinet shelf in such a location as to provide direct lighting of the load bay area of the cabinet but must not interfere with the cabinet drawer operation.

Both LED lighting modules shall be controlled by a NEMA rated, commercial quality, pushbutton door switch. The cabinet lighting shall turn on when the cabinet main door is opened and shall turn off when the main door is closed or an ON/OFF NEMA rated, commercial quality, toggle switch mounted on the inside cabinet door service panel shall be provided to turn both LED lighting modules on or off.

907-632.02.2.3--Police Panel Switches. Police panel switches shall be provided with all controller cabinets. All switches shall be hard wired and labeled as to their function.

NORMAL-FLASH: When this switch is in the FLASH position, all signal indications shall transfer to the flashing mode. AC power shall be removed from the load switches when the signal indications transfer to the flashing mode.

The controller unit shall operate in accordance with appropriate specifications during the flashing mode. When the switch is placed in the NORMAL position, transfer from the flash mode to normal operation shall be made in accordance with uniform code flash requirements.

SIGNAL ON-OFF: AC power shall be removed from the signal heads and the intersection will become dark when this switch is in the OFF position.

MANUAL CONTROL ON-OFF: When this switch is in the ON position, a logic ground shall be applied to the manual control enable input of the controller unit.

INTERVAL ADVANCE INPUT JACK: A manual jack shall be installed on the police panel. The jack shall inter-mate with a 3-circuit, 1/4-inch diameter phone plug. The tip and ring (middle) circuits of the jack shall be connected to the logic ground and the interval advance inputs of the controller unit. When the manual hand cord is plugged into the jack and the pushbutton is pressed, logic ground shall be connected to the interval advance input of the controller unit.

When specified in the contract documents, an interval advance cord shall be provided. The cord

shall have a minimum length of three (3) feet. It shall have a ¼-inch diameter, three circuit plug connected to one end and a manual pushbutton enclosed in a hand-held enclosure at the other end. A complete cycle (push-release) of the manual pushbutton shall terminate the controller unit interval which is active except the vehicular yellow and red clearance intervals. Cycling the pushbutton during the vehicular yellow or all red clearance intervals shall not terminate the timing of those intervals.

907-632.02.2.4--Service Panel Switches. Service panel switches shall be hard wired and clearly labeled to identify as to their functions. Service panel switches shall be mounted on the service panel located on the inside of the main cabinet door. Alternate switch locations may be described in the plans or contract documents but final switch design and location shall be approved by the Engineer prior to cabinet fabrication.

NORMAL-FLASH: When this switch is in the FLASH position, all signal indications shall transfer to the flashing mode. AC power shall be removed from the load switches when the signal indications transfer to the flashing mode.

The controller unit shall operate in accordance with appropriate specifications during the flashing mode. When the switch is placed in the NORMAL position transfer from the flash mode to normal operation shall be made in accordance with uniform code flash requirements.

CONTROLLER ON-OFF: When this switch is in the OFF position, AC power shall be removed from the controller. When this switch is returned to the ON position, the controller unit shall perform normal start up functions and resume normal operation in accordance with the applicable specification.

STOP TIME-RUN-NORMAL: A 3-position manual switch shall be provided which places the controller into Stop Time mode manually or through remote input.

VEHICLE DETECTORS: A 3-position switch shall be provided for each vehicle and pedestrian detector circuit. All switches shall be located on a panel mounted on the inside of the main cabinet door. The switch panel shall be labeled CALL SWITCH. Labeling of phase number and intended function (vehicles or pedestrian calls) shall be provided for each switch.

The vehicle detector switch functions are defined as follows:

Locked Call	Call is continually placed into the controller unit.
Off (center)	Vehicle detector is connected to the controller unit vehicle detector input, i.e. normal detector operation.
Momentary Call	Call is continuous as long as the switch is manually held in this position.

907-632.02.2.5--Police and Service Panel Locations. The police and service panels shall be constructed of 5052-H32 0.125-inch thick aluminum.

The police panel shall be located behind the police door which is enclosed within the main door.

The police door shall be hinged and provided with a neoprene gasket seal. Access to any portion or equipment contained behind the main cabinet door shall not be accessible through any part of the police panel. The police panel shall be of appropriate dimensions to accommodate all switch or devices described within this specification, the plans or contract document. The police door shall be provided with a treasury #2 key type lock and two (2) keys for the police door lock shall be provided with each cabinet.

The service panel shall be mounted on the inside portion of the main cabinet door, adjacent to the back side of the police panel or on the left hand side of the cabinet.

907-632.02.2.6--Cabinet Ventilation. Cabinets shall be vented to allow dissipation of the heat generated by the equipment contained within. All cabinets shall have a thermostatically controlled exhaust fan located at the top of the cabinet that is capable of 100 cubic feet per minute air displacement. The thermostat shall be mounted on the inside top of the cabinet and shall have a nominal temperature range from 80°F to 170°F.

The intake vent shall be louvered or equivalent design to prevent rain infiltration. The vent area will be located along the bottom portion of the cabinet door. A 16-inch x 12-inch x 1-inch disposable pleated air filter shall be provided on the inside portion of the cabinet and shall fully cover the vent area.

907-632.02.2.7--Air Filter Assembly. Air filters shall be one piece and shall be held firmly in place against the cabinet door in order to prevent dust from bypassing the perimeter of the filter and shall fully cover the vent area. Wing nuts or thumbscrews are preferred. Air filter shall be a 16-inch x 12-inch x 1-inch disposable pleated filter.

907-632.02.2.8--Cabinet Sizes.

907-632.02.2.8.1--Type I Cabinet. A Type I cabinet, 51"H x 30"W x 18"D, may be used for both pole and base mounted cabinets that require a maximum eight (8) position load bay. Pole mounted cabinets do not require rear access.

907-632.02.2.8.2--Type II Cabinet. A Type II cabinet, 51"H x 36"W x 18"D, may be used for both pole and base mounted cabinets that require a maximum twelve (12) position load bay. Pole mounted cabinets do not require rear access.

907-632.02.2.8.3--Type III Cabinet. A Type III cabinet, 56"H x 44"W x 27"D, shall be used for base mount installations and shall require a sixteen (16) position load bay and rear access door.

907-632.02.2.8.4--Type IV Cabinet. A Type IV dual chamber cabinet, 56"H x 57"W x 29"D, shall be used for base mount installations and shall require a sixteen (16) position load bay, rear access door, and external generator plug. When called for in the plans, a UPS shall be housed inside this cabinet.

907-632.02.2.8.5--Type V Cabinet. A Type V cabinet, 77"H x 44"W x 27"D, shall be used for base mount installations and shall require a sixteen (16) position load bay and rear access door.

907-632.02.3--Power Distribution Panel. The power panel shall be wired to provide the necessary power to all equipment. It shall be manufactured from 0.125-inch thick, 5052- H32 aluminum. The power panel shall house the following components: Main Breaker, Auxiliary Breakers, and Terminal Block. The panel shall be of such design so as to allow a technician to easily access the main and auxiliary breakers.

A 3-position terminal block with a removable insulated cover accepting up to AWG #4 stranded wire shall be supplied for accepting only the incoming power lines. This terminal block shall be in advance of and supply only the 30-amp main breaker, 10-amp and 5-amp Auxiliary breakers, AC neutral buss and earth ground buss.

907-632.02.3.1--Ground and Neutral Busbars. Cabinet grounding shall meet the requirements set forth in Subsection 722.09 for grounding and ground rods. A solid copper ground busbar shall be mounted on the side of the cabinet wall adjacent to the power panel for the connection of chassis ground wires. If more than one (1) ground busbar is used in a cabinet, a minimum of an AWG #6 copper wire shall be used to bond them.

The copper ground busbar shall have a minimum of thirteen (13) connector points, each capable of securing at least one (1) AWG #6 conductor.

A solid copper neutral busbar shall be mounted on the side of the cabinet wall adjacent to the power panel for the connection of AC neutral wires.

The copper neutral busbar shall have a minimum of thirteen (13) connector points, each capable of securing at least one (1) AWG #6 conductor.

907-632.02.3.2--Terminal Strips. Conductors shall be terminated on terminal strips with insulated terminal lugs. When two (2) or more conductors are terminated on field wiring terminal strip screws, a terminal ring lug shall be used for termination of those conductors. The voltage and current rating of terminal strips shall be greater than the voltage and current rating of the wire which is terminated on the terminal strip.

907-632.02.3.3--Cabinet Receptacles. A 3-wire 115 Volt AC (15A) Ground Fault Circuit Interrupt (GFCI) duplex receptacle shall be provided in the cabinet for maintenance use. It shall be securely mounted near the bottom right side of the cabinet and easily accessible.

Two (2) 3-wire 115 Volt AC (15A) non-GFCI protected outlets shall be installed, one on each side of the cabinet. These two (2) outlets are used for communication or other auxiliary equipment.

907-632.02.3.4--Operating Line Voltage. All equipment shall be designed to operate from a 120 volt, 60 cycle AC supply. Operation shall be satisfactory at voltages from 105 volts to 130 volts. All operating voltages into and out of the controller shall be NEMA level DC voltages except for the controller AC power source (Connector A, Pin p – AC-Control and Pin U – AC Common).

907-632.02.3.5--Circuit Breakers. Circuit breakers shall meet the requirements set forth in

Subsection 722.07. A 30-amp main breaker, with a minimum of 10,000 amp interrupting capacity, shall be provided for all cabinets to supply power to the controller, MMU, signals, and rack power supply.

Two (2) auxiliary breakers shall be provided. The first breaker, 10-amp, shall supply power to the fan, light, GFCI utility receptacle and two (2) auxiliary standard receptacles. The second breaker, 5-amp, shall be installed to supply power for the Controller Unit and MMU2. The above circuit breakers line side shall be jumpered together and will be fed from an external main circuit. A third 5-amp breaker shall be required if an ITS camera panel is called for in the plans.

907-632.02.3.6--Main Line Arrestors. Surge protection shall be provided that meets the requirements set forth in Subsection 722.12. A main line arrestor shall be provided to reduce the effects of voltage transients on the AC power line. It shall be installed after the circuit breaker. The main line arrestor shall be sufficient to protect all equipment and devices as per the plans and the following minimum specifications.

- Multi-stage Hybrid Design
- Series induction filtering
- Thermally protected Metal Oxide Varistors (TMOV's)
- Operating Voltage: 120 VAC
- Clamping Voltage: 395 VAC
- Operating Current: 15 A
- Peak Surge Current: 50 kA/Mode, 100 kA/Phase
- Operating Frequency: 47-63Hz
- EMI Attenuation: 40 dB Typ
- SPD Technology: TMOV's w/ W-C Filter
- Modes of Protection: L-N, L-G, N-G
- Status Indication: Power On & TMOV's Functional
- Connection Type: ¼-20 Stainless Steel Stud
- Operating Temperature: -40°F to +185°F

907-632.02.3.7--Solid State Main Line Relay (SSR). A normally-open, 75-amp, hybrid SSR shall be provided on the power distribution panel. The relay shall include a LED indicator to verify circuit power.

907-632.02.4--Terminal Facilities Board. The Terminal Facility shall be a hardwired load bay for NEMA TS 2 Type 1 actuated controllers. The load bay shall include either eight (8), twelve (12) or sixteen (16) load switch positions, as specified by the plans, and shall be centered along the back of the cabinet below the bottom shelf.

All wires terminated behind the backboard, as well as any additional panels, shall be soldered. No pressure or solderless connectors shall be used, unless they are soldered to the wire and tab after connection.

907-632.02.4.1--Load Switches and Flashers. Solid State Load Switches, compatible with low

wattage LED signals, shall be provided for the sequence called for on the plans. The load switch sockets shall be wired for triple-signal load switches conforming to NEMA TS 1-1994 and NEMA TS 2-2003 requirements.

The flasher socket shall be wired for and provided with a Type 3, two (2) circuit Solid State Flasher conforming to NEMA TS 1-1994 and NEMA TS 2-2003 requirements. It shall be possible to flash either the amber or red indication on any load switch outputs. It shall be possible to easily change the flash indication from the front side of the panel using readily available tools such as a screwdriver. A nominal flash rate of 50 to 60 FPM shall be provided. Flash rate shall be stable when used with generators or inverters.

Support(s) shall be provided to support the Flasher and Load Switches at some point approximately half of the total length from the panel surface. Sufficient area beneath the Load Switch or Flasher shall be clear in order to allow for free flow of air across the Load Switches or Flasher. Load Switches and Flashers must be provided with LED indicator lights on the side facing the cabinet door.

907-632.02.4.2--Flash Transfer Relay. All flash transfer relays, as a minimum, shall meet NEMA TS 1 requirements. The number of relays that shall be supplied with each cabinet shall accommodate the number of signal phases as indicated in the project plans. The coil of the flash transfer relay must be de-energized for flash operation.

907-632.02.5--Cabinet Wiring. Controller cabinets shall be wired in accordance with the signal phasing plans. If phases are indicated as omitted for future use, or if phases are not shown to be used in the plans, the cabinet shall be wired for use of the phases shown as future or unused. Load Switches shall not be provided for future or unused phases.

Wiring in the cabinets shall conform to the requirements of the National Electrical Code (NEC) and all of these specifications. All conductors in the cabinet shall be stranded copper. All wiring shall be laced. All wiring shall be in accordance as specified by Section 636 and Subsection 722.03 for Electric Cable and IMSA Specification 19 and/or 20 for Signal Wiring.

Connector harnesses for controller, conflict monitor, vehicle detectors, and accessory equipment (including NEMA defined Card Rack with power supply and pre-wired optical detection slots) shall be provided and wired into the cabinet circuitry. Connecting cables for controller and conflict monitor harnesses shall be sleeved in a braided mesh. All wires shall be securely terminated on terminal strips. The lay of the interconnect cable between the components must be such that when the door is closed, it does not press against the cables or force the cables against the various components inside the cabinets.

All communication wiring shall be bundled and routed independently of all other wiring. All live conductors shall be covered with suitable insulating material. All equipment grounds shall run directly and independently to the grounding bus.

All wires shall be cut and terminated as close as possible to the proper length before assembly. Consideration of equipment location adjustments must be made when determining appropriate

wire lengths. Excessive lengths of wire or cable shall not be allowed. All line voltage conductors used in controller cabinet shall conform to the following color code:

AC Neutral: White
AC Hot: Black
Safety Ground: Green

907-632.02.5.1--Signal Terminal Arrestor Grounding Bar. A field terminal arrestor grounding bar shall be provided along the back portion of the cabinet for the installation of signal arrestors. This bar shall be attached using an AWG #10 stranded copper to the earth ground circuitry.

907-632.02.5.2--Signal Terminal Arrestors. The field terminal arrestor shall be a three (3) circuit protective device intended for use on traffic control load relay outputs. The arrestor shall be furnished with three (3) leads and a grounding stud which will be used to attach the arrestor to the grounding bar. The field terminal arrestor shall meet the following minimum specifications:

- Operating Voltage: 120 VAC
- Clamping Voltage: 475 VAC
- Peak Surge Current: 10 kA
- Operating Frequency: 47 – 63 Hz
- SPD Technology: MOV's
- Connection Type: Wire Leads
- Lead Wire: 14 AWG 12" Length
- Ground Stud: 10 x 32 5/8" Length
- Operating Temperature: -40°F to +185°F

907-632.02.6--Accessory Components.

907-632.02.6.1--Traffic Actuated Controller Unit. The fully actuated controller unit shall, at a minimum, meet the requirements of both NEMA TS 1–1989 and NEMA TS 2-2003 requirements for actuated controller units. The controller shall be of the TS 2 Type 2 configuration. The controller shall be provided with the multiple communication interface devices or properties as defined below.

- 10 Base-T Ethernet with front panel RJ-45 connector
- IEEE defined MAC address
- EIA-232 port
- External Serial Fiber options for both single and multi-mode (optional as per plans)
- External FSK 1200 bps modem (optional as per plans)
- D connector with 37 pin configuration for TS 1 compatibility
- USB port for signal controller database upload/download to the controller flash
- Controller
- ECOMM Compatible

The controller unit must have an alphanumeric backlit LCD display with a minimum of sixteen

(16) lines at 40 characters per line. The controller must be air-cooled with sufficient ventilation openings and capable of operating between -30°F and 165°F. The controller unit must be provided with a time-of-day clock, automatic daylight savings time adjustment and a power supply for maintaining SRAM during a power outage. The controller unit shall be capable of being used in a Closed-Loop System and must be capable of operating in the role of master controller in a Closed Loop System. The controller unit firmware shall be fully compatible with the Department's existing Traffic Signal Management Software. The Contractor shall ensure all controller firmware versions are compatible with the existing Traffic Signal Management Software that the Regional Department staff currently utilizes prior to submitting the controller for approval. The Contractor shall notify the Department if any special controller configuration or firmware is needed prior to submitting the controller for approval based on project requirements.

Where Flashing Yellow Arrow (FYA) operations are being used, all traffic signal controller firmware shall be capable of delaying the onset of the flashing yellow arrow.

All operator entered data shall be stored and backed up on to a flash memory device provided with the controller unit at no cost. This flash memory device shall require no battery to support value storage. No internal components of circuitry shall require battery support. The database shall be able to be backed up to a USB drive via the USB drive on the controller.

Traffic Actuated Controllers shall be of the Type shown on the plans. Type 1 Controllers shall have a Linux based processor and a minimum of one (1) USB port. Type 2 Controllers shall have the same features as Type 1 Controllers with the addition of an ATC backplane.

Type 3 Controllers shall have all features of the Type 2 Controller with the addition of the ATC module. All three (3) types of actuated controllers shall have Master controller capability, and if required shall be designated with 'M' in the plans.

907-632.02.6.2--Closed Loop Master Controller Unit. When called for in the plans, this work also consists of furnishing, installing and configuring the equipment, software and accessories necessary to connect one (1) traffic Closed-Loop Master Controller to its corresponding central or portable PC-based Traffic Computer Facility Control System via a communications connection. The communications or network connection device will be either existing or provided by the Contractor.

907-632.02.6.2.1--General. The Master shall monitor intersections in the system, display status and operational state and provide traffic flow data from intersection vehicle detectors. The Master shall include all communications equipment and software necessary to provide reporting to a remote terminal as well as upload/download of all local intersection data and provide timing synchronization. Communications to local controllers from the Master and from the Master to the central-office computer facility shall be by FSK, 900 MHz Radio, Broadband Radio, Serial Fiber, Ethernet, Fiber, Cell Modem or Leased Line, as indicated in the plans. The Master shall be able to run on the same controller simultaneously operating the intersection, with the local signal control software, on any given controller unit.

907-632.02.6.2.2--System Configuration. The system architecture shall be designed to minimize

the effect of equipment failures on system operation and performance. The system consists of four (4) principal elements:

- Local System Intersection Controllers
- Communication (Telemetry Links)
- On-Street Master(s)
- Central-Office Computer Software

907-632.02.6.2.3--Local System Intersection Controller. The local system intersection controllers connected to the Master controller unit shall be capable of controlling a fully actuated two (2) to sixteen (16) phase intersection and shall meet or exceed NEMA TS 1-1989 and TS 2-2003 standards for fully actuated traffic control units. The local controller shall have internal communication capability with direct access to the data memory. The local system controller shall be capable of processing controller and detector data and provide all necessary intersection control functions. The local system intersection controller shall meet the requirements of the Traffic Actuated Controller Unit.

907-632.02.6.2.4--Communications (Telemetry) Links. The communications links for the "Closed-Loop" System shall perform the following functions:

- Provide the medium (radio/fiber/hardwire/etc.) for two-way communications between the On-Street Master and the local intersection controllers.
- Provide the medium for two-way communication between the On-Street Master and the central-office computer facility.
- Error checking shall be included in both mediums to assure transmission and reception of valid data.

907-632.02.6.2.5--On-Street Master. The On-Street Master may be located at an intersection and connected via the communication network to at least 32 local intersection controllers. The Master shall be capable of implementing Traffic Responsive Control, Time Base Control, Manual Control or Remote Control modes of operation.

Analysis of sampling sensor data from at least 64 system detectors and corresponding selection of the best Traffic Responsive timing pattern shall be provided by the On-Street Master during the Traffic Responsive mode of operation.

Automatic and continuous monitoring of system activity shall be provided by the On-Street Master to include both Master and intersection alarm conditions.

System parameter entry shall be provided via the On-Street Master including all Master and local intersection assignment and group parameters. Master parameters shall include:

- System coordination setup and pattern data entry by group
- System time base event scheduler
- System traffic responsive computational and pattern selection setup by group
- Intersection system group and detector assignments

The On-Street Master shall provide comprehensive system report generation including, as a minimum: system, intersection, detector and failure status and history reports in addition to system performance reporting.

A RS-232C interface shall be provided on the On-Street Master to allow for printing of reports or for interconnecting to a remote central site.

To enhance overall system operation and increase system management flexibility, the On- Street Master shall also support two-way dial-up communications to a central office computer for control, monitoring, data collection and for timing pattern updating purposes, all from a remote central office location. Continuous, seven (7) days/week - 24 hours/day, system monitoring shall be enhanced by the On-Street Master's capability to automatically dial-up the central office computer upon detection of user defined critical alarm conditions.

907-632.02.6.2.6--System Functional Requirements.

907-632.02.6.2.6.1--Operator Interface. In order to provide ease in programming and operation, the system shall provide a simplified user-friendly menu format at each local, master and central office facility. No special programming skills shall be required for the user to fully access and operate this control and monitoring system at any level.

All programming, both of the local intersection controllers and the On-Street Master(s) shall be via a front panel keyboard and display, driven by English Language menus. All data change entries will be automatically verified against established ranges prior to acceptance to prevent programming data errors. Data access shall be controlled by user- definable access controls.

907-632.02.6.2.6.2--System Traffic Control. The system shall have the capability of controlling a minimum of sixteen (16) vehicle phases and eight (8) pedestrian phases. The system shall have the capability of implementing a minimum of four (4) timing rings, fifteen (15) alternate sequences, and sixteen (16) offsets.

The system shall provide the capability of selecting any of the following operational modes on a group basis:

- Traffic Responsive
- Time Base (Time-of-Day/Day-of-Week)
- Remote (External Command)
- Manual (Operator Entry)

The system shall be capable of implementing system FLASH and system FREE operation. The system shall have the capability to command, on/off based on time, up to eight (8) independent special functions.

907-632.02.6.2.6.3--Detectors. The system shall have the capability of accepting and processing data from at least 632 system detectors for Traffic Responsive program selection.

907-632.02.6.2.6.4--Pattern Selection. In addition to providing Manual and Remote program selection capability, the Master shall provide for Traffic Responsive and Time Base modes of operation for timing pattern selection.

907-632.02.6.2.6.4.1--Traffic Responsive Mode. Traffic plan selection in the Traffic Responsive mode shall be user-enabled and supplied with the controller, per the plans and specifications. The pattern selection shall be based on sampling detector volume and occupancy analysis by the On-Street Master.

907-632.02.6.2.6.4.2--Time Base Mode. The system shall provide the capability of implementing time-of-day, day-of-week and week-of-year control for each of the two (2) groups using an internal time clock referenced to the 60-Hz AC power line frequency for its time base. The Time Base mode shall contain automatic adjustment for leap year and daylight savings time changes.

The system Time Base mode shall provide, as a minimum, 100 events each capable of requesting any of the 48 traffic control patterns along with Traffic Responsive override enable or auxiliary events consisting of enable/disable any of up to four (4) system-wide special functions and setting sample and log interval time periods.

907-632.02.6.2.6.5--System Control Priority. The system coordination control (program-in-effect) for each group shall be selected on a priority basis. The priority from highest to lowest shall be as follows:

- Manual Control Entry
- External Control (Remote Command)
- Time Base Control (Time-of-Day/Day-of-Week) (Traffic Responsive control will prevail whenever Traffic Responsive Override Enable is active and the selected cycle length is greater than that being commanded by Time Base)
- Traffic Responsive Control

907-632.02.6.2.6.6--Measures of Effectiveness. The system shall have the capability to report selected Measures of Effectiveness (MOE's) on an intersection basis. MOE calculations shall be made on all phases by the local system intersection controller and as a minimum shall include measures such as: volume, number of stops, delays and green utilization. These measures shall be calculated on the basis of the active timing plan. Alternate ways of reporting MOE'S may be approved on a case-by-case review.

907-632.02.6.2.6.7--Uploading and Downloading. The system shall provide, for any selected local system intersection controller, the capability of uploading and downloading any or all, new or modified local intersection parameters from the central-office computer and the Department Central Traffic Signal Management Software, and shall include, as a minimum, all: Phase Timing and Unit Data; Coordination Data, Time Base Data; Preemption Data, System Communication Parameters, System Traffic Responsive Data, and any other System Data residing at the intersection such as Detector Diagnostic Values, Report Parameters and Speed Parameters.

During either uploading or downloading operations, normal traffic control operations shall not be suspended. All data shall be continually accessible and may be displayed at the On- Street Master or the central office computer.

907-632.02.6.2.6.8--System Monitoring and Diagnostics. The system shall automatically and continually monitor system activity and log/report occurrences of Master and intersection alarm conditions. All alarm condition events shall include at the intersection, (Master and central-office computer) an alpha-numeric description of the event as well as the time and date of occurrence.

As a minimum, monitored master alarms conditions shall include:

- Insufficient or Improper Data
- Failed Computational Channels
- Failed System Detectors
- Intersection Communication Failure
- Failed Controllers
- Minimum of six (6) special user defined alarms for user application flexibility
- Monitored intersection alarms conditions shall include as a minimum:
 - Cycle Faults and Failures
 - Coordination Failures
 - Voltage Monitor
 - Conflict, Local and Remote Flash Conditions
 - Preempt
 - Local Free
- Minimum of six (6) special user defined alarms for additional user flexibility.

When the Master detects a critical alarm condition, as defined by the user, it shall automatically dial-up the central office computer and report the condition. On a BUSY or NO ANSWER, the system may be programmed, at user option, to alert a secondary computer.

The system shall also automatically and continually monitor, verify and attempt to correct Sync Pulse, Time Base Clock and Pattern-In-Effect. The system shall provide capabilities to perform diagnostics on system and local detectors, communications and intersection operations. When a fault has been detected, an indication shall be provided. It shall be possible to isolate the fault to the failed unit from controls and indicators available on the Master unit. Auxiliary equipment such as a data terminal or CRT shall not be required to identify the failure.

907-632.02.6.2.6.9--Real Time Display. The Master shall provide for any selected local system intersection controller, real-time status information on its front panel. Real-time intersection status information shall include simultaneous display of: vehicle and pedestrian signal and detector status by phase, overlap signal status and cars waiting count by phase. Real-time controller status information shall include simultaneous display of: two (2) Ring Active timers, On/Next, Call/Recall and Hold/Omit Status by phase, Coordination, Preempt and Stop Time Status.

907-632.02.6.2.6.10--System Management. The system, without hardware changes but with its

ability to directly modify Master and intersection parameters, shall provide the user system configuration and operational controls of the following functions: add/delete controllers and system detectors, enable Traffic Responsive mode, assign intersections to groups, assign system detectors to computational channels and channels to pattern select routines, and assign special and/or standard detectors as system detectors for use with computational channels or to track activity.

907-632.02.6.2.6.11--System Logging and Reports. The system shall automatically and continually process system data and log/report on occurrence of changes in intersection status, system detector status, communications status, controller status and local detector status in addition to system program changes, Traffic Responsive computations, measures of effectiveness and performance.

907-632.02.6.2.6.12--Security. The On-Street Master shall provide for a user-specified security code entry before any data may be altered. In order to view any parameter, security code entry shall not be required. Security access shall be automatically rescinded approximately ten (10) minutes after either access was gained or the last parameter change was entered. The Master and local controller shall have the ability via keyboard to disable security code requirements, allowing for perpetual access without requiring hardware changes.

907-632.02.6.2.7--Design Characteristics. The On-Street Master shall be designed to operate in either an office or field environment and shall be suitably housed in a separate enclosure or in a local intersection cabinet. The Master shall be designed to meet the following electrical and mechanical requirements:

907-632.02.6.2.7.1--Programming and Security. Operator programmable data entry shall be accomplished through panel keyboard(s). The Master shall prevent the alteration of keyboard set variables prior to the user having entered a specific access code through the keyboard. The Master shall maintain user-programmable variables in non-volatile memory with a battery-backed RAM to assure continued efficient system operation.

907-632.02.6.2.7.2--Test and Repair. To enhance maintenance and trouble-shooting activities, On-Street Masters shall include resident diagnostics as a standard. No extender- cards, special tools or PROMs shall be necessary to fully maintain these components. The Master unit design shall ensure that all printed circuit boards be readily accessible for maintenance testing purposes. All fuses, connectors and controls shall be accessible from the front of the Master unit.

907-632.02.6.2.8--Traffic Signal System Software. All Traffic Signal System Software shall be compatible with the latest version of the Department's existing Master and local controllers and existing Traffic Signal Management Software for the Department region.

907-632.02.6.2.8.1--Traffic Signal Closed Loop Software. The Traffic Signal Closed-Loop Software shall provide the ability to manage Master and local controller databases including the uploading and downloading of data parameters. The software shall provide status information and provide reporting capabilities for Master and local controller data, alarms and logs.

907-632.02.6.2.8.2--Traffic Signal System Workstation Software. The Traffic Signal System Workstation shall provide the ability to manage Master and local controller databases including the uploading and downloading of data parameters. The software shall provide status information and provide reporting capabilities for Master and local controller data, alarms and logs.

The Traffic Signal System Workstation Software shall also be capable of operating as a network-connected user workstation to existing centralized signal systems and their associated databases.

When disconnected from the centralized signal system, the software shall be capable of running as a standalone system similar to the Closed-Loop Software. Under this mode, the software shall provide management, report and status functions for Master and local controllers. Under Standalone Mode of operation the software shall allow for its own database(s) for data management without the need for connecting to a centralized signal system database.

907-632.02.6.2.9--Services. Technical services shall be provided, as required, to assist in installation and initial setup of the Closed-Loop Master System and its sub-components. Technical assistance with database migration and/or setup, as well as the development of graphics (such as master maps and local intersection depictions) and the assignment of associated attributes such as detectors, phasing, signals, etc., shall be provided as required. Additionally, training shall be provided on a basic or advanced target user level, as required.

907-632.02.6.3--Malfunction Management Unit (MMU2). The Malfunction Management Unit (MMU2) shall be a shelf-mountable, sixteen (16) channel, solid-state, IP addressable MMU. The MMU2 shall accomplish the detection of, and response to, improper and conflicting signals and improper operating voltages in a traffic signal controller assembly, including support for four (4) section Flashing Yellow Arrow (FYA) left turn displays. The MMU2 shall be capable of running a minimum of twelve (12) different modes of FYA operation.

The MMU2 shall meet or exceed Section 4 requirements of the NEMA Standards Publication No. TS 2-2003 including NEMA TS 2 Amendment #4-2012 and provide downward compatibility to NEMA Standards Publication No. TS 1-1989: Type 12 Operation, in addition to those specifications set forth in this document.

The MMU2 shall include a graphics based Liquid Crystal Display (LCD) to view the current monitor status and navigate the unit's menus. An RJ-45 Ethernet Port shall be provided for communications.

A built-in Diagnostic Wizard shall be provided that displays detailed diagnostic information regarding the fault being analyzed. This mode shall provide a concise view of the signal states involved in the fault, pinpoint faulty signal inputs and provide guidance on how the technician should isolate the cause of the malfunction. The Diagnostic Wizard shall be automatically invoked when the MMU2 is in the fault mode and the HELP button is pressed. It shall also be automatically invoked when the MMU2 is in the Previous Fail (PF) event log display and the HELP button is pressed.

A built-in Setup Mode shall be provided that automatically configures the Dual Indication Enable, Field Check Enable, Red Fail Enable and Minimum Yellow Plus Red Clearance Enable parameters from user input consisting only of channel assignment and class (vehicle, ped, pp-turn, FYA, etc.) responses.

The MMU2 shall be capable of operating in the Type 12 mode with SDLC communications enabled on Port 1. The Channel Status display shall operate in the Type 12 configuration and provide the Field Check function for up to four (4) Pedestrian Walk inputs.

In the interest of reliability and repair ability, printed circuit board mounted MS connectors shall not be acceptable. Internal MS harness wire shall be a minimum of nineteen (19) strand AWG 22 wire.

907-632.02.6.4--NEMA defined Card Rack and Power Supply. A minimum of one (1) NEMA compliant detector card rack with five (5) slot positions (first slot for power supply and four (4) available slots) shall be provided in each cabinet. The detector rack shall be installed on the bottom shelf of the cabinet. The power supply for the NEMA defined card slots shall be provided as a 175W minimum with four (4) independent regulated channels of 24 VDC each rated at 0.75 amps over the full NEMA operating temperature range of -30°F to +165°F. The output should be regulated to 24 VDC +/- 15%. Each of the four (4) outputs shall be independently fused, each with a separate LED for displaying output and fuse status for each of the four (4) outputs. Each of the four (4) outputs shall be protected against voltage transients by a minimum 1500 watt suppressor. All card racks shall be wired for the type detection shown in the plan sheets.

Card Guides shall be provided on the top and bottom of the card rack for each connector position.

907-632.02.6.5--In-Cabinet Network.

907-632.02.6.5.1--Communications Arrestor. The Controller Cabinet network shall consist of an SDLC connection between the Controller Unit and MMU2. Surge suppression for this network shall meet the requirements set forth in Subsection 722.12 and the following minimum requirements below:

- Operating Voltage: 5 VDC
- Clamping Voltage: 8 VDC
- Operating Current: 1.5 A
- Peak Surge Current: 47 A (10x1000 μ s)
- Frequency Range: 0 to 20 MHz
- Insertion Loss: < 0.1 dB at 20 MHz
- SPD Technology: SAD
- Connection Type: DB-15
- Operating Temperature: -40°F to +185°F

907-632.02.6.6--System Communications.

907-632.02.6.6.1--Traffic Signal Ethernet Switch. When specified in the plans or contract

documents, a traffic signal Ethernet switch shall be installed in the cabinet assembly. It shall meet the requirements for the type specified in Section 907-663. Ethernet patch cables of sufficient length shall be provided for all supplied Ethernet ready cabinet components. The switch and all components shall be connected and configured.

907-632.02.6.6.2--Fiber Optic Patch Panel. When specified in the plans or contract documents, fiber optic attenuator patch cords shall be installed in the cabinet assembly as specified in Section 907-661.

907-632.02.6.6.3--Wireless Communications. When specified in the plans or contract documents, wireless communication components shall be installed in the cabinet assembly and shall be as specified in Section 907-662.

907-632.02.6.6.4--Serial Port Server or Terminal Server. When specified in the plans or contract documents, serial port servers shall be installed in the cabinet assembly and shall be as specified in Subsection 907-663.02.2.

907-632.02.6.6.5--GPS Clock. This work includes furnishing a Global Positioning System (GPS) Synchronization clock that can be used to sync the internal clocks in traffic signal controllers when coordination is desired, but communication is not necessary. The GPS Clock System shall provide GPS based time and date synchronization to provide coordination of traffic controllers to a common time base. The system shall process GPS Time data using a tamper/vandal resistant GPS antenna and correct for Time Zone, Daylight Savings Time, Leap Years, and GPS Leap Seconds. The processed time information shall be sent to the traffic controller in the native format for the respective controller. A contact closure synchronization pulse with variable pulse width shall be available for a once per day update. If the GPS antenna is blocked for up to one (1) hour prior to scheduled time of synchronization, the system shall synchronize the traffic controllers with less than 0.4 seconds variance from the accuracy provided under normal operation with GPS satellites in view.

- The GPS Clock shall also meet the following minimum specifications:
- Input Voltage: 9-24 VDC
- Current Draw: 150 mA (max) at 12 VDC: 125 mA (max) at 24 VDC
- Contact Closure: 750 mA at 30 VDC
- Temperature Rating: -29.4°F to +167°F

GPS unit shall be mounted to the traffic signal controller cabinet as per the manufacturer's recommendation. Any and all holes created in the cabinet for the purpose of mounting the GPS unit shall be sealed to the satisfaction of the Engineer at no direct pay.

907-632.02.6.6.6--Power-Over-Ethernet Arrestor. Surge suppression that meets the requirements set forth in Subsection 722.12 shall be provided. In addition, the following minimum specifications shall be supplied for loads that require Power-Over-Ethernet with isolated shielded or non-shielded cable:

- Operating Voltage: 48 VDC
- Clamping Voltage: 68 VDC
- Operating Current: 0.75 A per Pin Continuous
- Peak Surge Current: 10 kA
- Insertion Loss: < 0.1 dB
- SPD Technology: GDT, SAD, with series PTC
- Modes of Protection: All Lines (1-8) Protected (L-L) and (L-G): Signal High- Low; High-Ground; Low-Ground
- Transmission Speeds: 10BaseT; 100BaseT; 1000BaseT
- Connection Type: RJ-45
- Operating Temperature: -40°F to +185°F

907-632.02.7--Detector Panel. A vehicle detector harness shall be provided to connect the detector panel to the card rack. The detector panel shall accept the connection of sixteen (16) field loop inputs and four (4) pedestrian detector inputs.

907-632.02.7.1--Detector Input Arrestors. Field Loop and Pedestrian input arrestors shall meet the requirements set forth in Subsection 722.12. Field loop arrestors shall have differential and common mode protection and be provided with the following minimum specifications:

- Operating Voltage: 75 VDC
- Clamping Voltage: 130 VDC
- Peak Surge Current: 250 A
- SPD Technology: Silicon Break-Over
- Operating Temperature: -40°F to +185°F

Pedestrian input arrestors shall be a four (4) circuit device provided with the following minimum specifications:

- Operating Voltage: 30 VDC
- Clamping Voltage: 36 VDC
- Operating Current: 0.15 A
- Peak Surge Current: 10 kA (8 x 20 μ s)
- Frequency Range: 0 to 20 MHz
- Insertion Loss: < 0.1 dB at 20 MHz
- SPD Technology: GDT, SAD, with Series PTC
- Connection Type: Terminal Block with compression lugs; Terminals accept up to 10 AWG
- Operating Temperature: -40°F to +185°F

907-632.02.8--System Detectors. The controller shall have the ability to receive input data from up to eight (8) special system detectors in addition to the normal actuated controller unit phase detectors. The user shall have the option to assign any of the phase detectors as “system detectors”.

907-632.02.9--Preemption. The cabinet shall be completely wired to accept and service calls from preemption phase selector modules, associated optical detector units and GPS units. Optical detector units and GPS unit cabinet components shall be as specified in Section 639. Provision for two (2) standard card modules shall be accommodated in a separate card rack for preemption. The preemption card rack shall provide a minimum of eight (8) channels.

Provisions shall also be made in the cabinet to accommodate Railroad Preemption when specified in the plans or contract documents. Railroad Preemption shall meet the requirements set forth in Section 639. While it is not necessary that a Railroad Preemption interface board be provided with the cabinet, the cabinet and back panel shall be designed so that a Railroad Preemption interface panel that uses a relay to isolate the track switch from the controller cabinet circuitry can be installed. Preempt 1 and 2, in the case of gate down preemption, shall be reserved for Railroad Preemptions; all subsequent preemptions shall be reserved for Emergency Vehicle, Fire Station, or Police Preemption.

907-632.02.10--Uninterruptable Power Supply. When specified in the plans or contract documents an Uninterruptable Power Supply (UPS) System shall be installed in the cabinet assembly. The UPS shall be installed in the cabinet and meet the requirements set forth in Section 633.

907-632.02.11--Power Service Pedestal. A Power Service Pedestal shall be provided as described in Section 631.03.2.

907-632.03--Construction Requirements.

907-632.03.1--Mounting. Traffic Signal Cabinet Assemblies shall be wall or pole mounted, base mounted on a concrete cabinet pad, or base mounted using a composite enclosure as specified below and as shown in the plans.

Power Service Pedestal shall be base mounted on a concrete cabinet pad or on a composite enclosure as specified below and as shown in the plans.

907-632.03.1.1--Wall or Pole Mounted. Wall or pole mount hardware shall be provided for mounting cabinets in specific installations as indicated in the design plans. Wall or pole mounted cabinets shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet to the wall or pole support. Rigid attachment devices must allow for field alignment of cabinet to the wall or pole support.

907-632.03.1.2--Concrete Cabinet Pad. Concrete foundations shall be constructed of Class B concrete in specific installations as indicated in the design plans.

Cabinets for installation on a concrete base shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet bottom to its flat support structure. Rigid attachment devices must allow for field alignment of cabinet with the support base. Concrete base construction details shall be provided in the design plan drawings.

907-632.03.1.3--Composite Enclosure. Cabinets for installation on a composite enclosure base shall be manufactured with rigid tabs, rigid brackets or other acceptable configuration for attachment of the cabinet bottom to its' flat support structure. Rigid attachment devices must allow for field alignment of cabinet with the composite enclosure. Composite enclosure attachment details shall be provided as shown in the plans.

907-632.03.2--Documentation. Documentation packages shall be delivered for each unit at the same time as the equipment to which it pertains.

A minimum of two (2) sets of complete schematic drawings and equipment documentation shall be supplied with each cabinet. The first copy shall be placed in a clear re-sealable print pouch of sufficient size to accommodate one (1) complete set of folded cabinet prints and placed in the pull-out drawer of the cabinet and the second copy shall be provided to the Department. Comprehensive controller data shall be included as part of the cabinet documentation package and shall be placed in the cabinet drawer pouch. Digital copies of all cabinet documentation shall be provided to the Department before final acceptance.

The documentation packages shall contain a schematic wiring diagram of the controller cabinet assembly and all auxiliary equipment. The schematic wiring diagram, including a symbols legend, shall show in detail all integrated circuits, transistors, resistors, capacitors, inductors as well as switches and indicators. All parts shown shall be easily identified on both in the cabinet and on the schematic diagram. Model numbers shall be used on schematic diagram when available.

A complete physical description of the signal cabinet assembly shall be provided to include at least the physical dimensions of the unit, weight, temperature ratings, voltage requirements, power requirements, material of construction, and complete performance specifications.

A complete set of operation guides, user manuals, and performance specifications shall be provided.

Detailed programming instructions, preventative maintenance requirements, and troubleshooting procedures shall also be provided for the controllers. These documents shall fully cover all programming procedures and programmable options capable of being made to the controllers and associated traffic control equipment. Instructions for modifications within the range of the capabilities of the unit such as changes in phases or sequences and programming matrix boards shall be included.

An intersection diagram shall be provided on the cabinet door showing geometric configuration, lane use assignments, controller cabinet and signal pole locations, vehicle and pedestrian signal head locations, vehicle and pedestrian detector zone locations, ring-barrier phasing diagram, and detector channel assignments. The intersection diagram shall be labeled with, at a minimum, a North Arrow, main street name(s), side street name(s), signal pole numbers, vehicle and pedestrian head type(s), detector zone designations, volume density and phase recall requirements, flash sequence. All field wires within the cabinet shall be labeled to coincide with those shown on the intersection diagram.

907-632.04--Method of Measurement. Traffic Signal Cabinet Assembly will be measured as a unit per each.

Remove and Replace Existing Traffic Signal Cabinet Assembly will be measured as unit per each.

Modify Existing Traffic Signal Cabinet will be measured as a unit per each.

Solid State Traffic Actuated Controller, of the type specified in the project plans, will be measured as a unit per each.

Signal Software License, of the type specified in the project plans, will be measured as a unit per each.

Malfunction Management Unit, of the type specified in the project plans, will be measured as a unit per each.

Card Rack, of the type specified in the project plans, will be measured as a unit per each.

GPS Clock, as specified in the project plans, will be measured as a unit per each.

Power Service Pedestal, as specified in the project plans, will be measured as a unit per each.

All pay items shall be inclusive of all materials, work, system integration, testing and incidentals necessary for a complete and operable unit in place and accepted. All removal, turn on, and acceptance of equipment, devices, traffic signals, and traffic signal assemblies shall follow Section 631 - Traffic Signal Systems-General prior to payment.

907-632.05--Basis of Payment. Traffic Signal Cabinet Assembly, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, and mounting foundation construction, cabinets, relays, terminals, circuit breakers, modules, coordination and time base control programs, connectors wiring, overlap equipment, load switches, power cables, power supplies, controller mechanism and housing, MMU2, mounting material, all other materials, and all equipment, labor, tools, and incidentals necessary to complete the work.

Remove and Replace Existing Traffic Signal Cabinet Assembly, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, cabinets, relays, terminals, circuit breakers, modules, coordination and time base control programs, connectors wiring, overlap equipment, load switches, power cables, power supplies, controller mechanism and housing, MMU2, mounting material, all other materials, removal, disposal, transfer, storage, and/or resetting of components that are existing, all other components included in the traffic signal cabinet, and all equipment, labor, tools, and incidentals necessary to complete the work.

Modify Existing Traffic Signal Cabinet, measured as prescribed above, will be paid for at the

contract unit price per each, which price shall be full compensation for furnishing, installing, configuring, and mounting all components, wiring, and devices; rewiring, reconfiguring, removal, disposal, transfer, storage, and/or resetting of existing components and devices, installing or changing coordination and time base control programs in the traffic signal cabinet assemblies, testing, final cleanup, all equipment, labor, tools, and incidentals necessary to complete the work.

Solid State Traffic Actuated Controller, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of the controller mechanism(s) and housing(s), all power cables, power supplies, wiring, factory and manufacturing inspection, attachment hardware, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional traffic controller ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the traffic controller.

Signal Software Licenses, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Signal Software, all power cables, power supplies, wiring, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, appurtenances, and all incidentals necessary to provide fully functional Signal Software ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Signal Software.

Malfunction Management Unit, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Malfunction Management Unit (MMU2), all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional Malfunction Management Unit (MMU2) ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Malfunction Management Unit (MMU2).

Card Rack, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Card Rack, all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all work, equipment, and appurtenances, and all incidentals necessary to provide a fully functional Card Rack ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the Card Rack.

GPS Clock, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for all labor, equipment, tools, materials inclusive of furnishing, installing and configuring the Global

Positioning System (GPS) Clock(s), all power cables, power supplies, wiring, attachment hardware, factory and manufacturing inspection, testing, storage, packaging, shipping, warranty, and all incidentals necessary to provide a fully functional GPS Clock ready for use. It shall also include all documentation including operations and maintenance manuals and other material necessary to document the operation of the GPS Clock.

Power Service Pedestal, measured as prescribed above, will be paid for at the contract unit price per each for each type(s) specified in the contract, which price shall be full compensation for furnishing, installing, configuring, wiring, testing, and mounting foundation construction, cabinets, circuit breakers, connectors wiring, mounting material, all other materials, and all equipment, labor, tools, and incidentals necessary to complete the work.

Payment will be made under:

907-632-A: Solid State Traffic Signal Cabinet Assembly, Type __ Cabinet, Type __ Controller	- per each
907-632-B: Remove and Replace Existing Traffic Signal Cabinet Assembly, Type __ Cabinet, Type __ Controller	- per each
907-632-C: Modify Existing Traffic Signal Cabinet Assembly	- per each
907-632-D: Solid State Traffic Actuated Controller, Type ____	- per each
907-632-E: Single-user Workstation Signal Software License	- per each
907-632-F: Single-user Server Signal Software License	- per each
907-632-G: Malfunction Management Unit	- per each
907-632-H: Card Rack, ____ Position	- per each
907-632-I: GPS Clock	- per each
907-632-J: Power Service Pedestal	- per each

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-634-4

CODE: (IS)

DATE: 05/25/2021

SUBJECT: Traffic Signal and ITS Equipment Poles

Section 634, Traffic Signal and ITS Equipment Poles, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-634.02--Materials.

907-634.02.1--Poles. Delete the bullet for Type X poles in Subsection 634.02.1 on page 542 and substitute the following.

- Type X -- Aluminum Pole for Detectors

After Type XI poles in Subsection 634.02.1 on page 542, add the following.

- Type XII -- ITS Extension Poles

907-634.02.1.1--Traffic Signal Poles. Delete the first, third, fourth, and fifth bullets in Subsection 634.02.1.1 on pages 542 and 543, and substitute the following.

- Self-supporting straight or upswept mast arm(s), in accordance with Plan details. Where possible, the mast arms shall match the adjacent signal poles in the area unless otherwise stated;
- Tag installed on shaft side opposite the mainline highway and located approximately 48 inches above the top of the Baseplate;
- Minimum nominal size of four (4) inches wide by 26 inches tall reinforced hand-hole with included terminal block(s);
- A ½-inch coarse thread grounding stud shall be located on the interior side of the pole hand-hole opening;

907-634.02.1.2--Galvanized Steel Poles for Cameras. Delete the second paragraph of Subsection 634.02.1.2 on page 543, and substitute the following.

Unless specified otherwise in the plans, poles shall be designed in accordance with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals*, as specified in the plans, including all interims and updates. Design life shall be 50 years for all poles. The design wind speed for all parts of the structure shall meet the wind requirements set forth in the latest edition of the AASHTO Wind Map, as stated in Subsection 722.02.3. The pole shall meet the design wind loading with all equipment installed.

In the fifth sentence of the fifth paragraph of Subsection 634.02.1.2 on page 544, change “butt welded” to butt-welded” and change “radio graphically” to radio-graphically.”

Delete the second bullet in Subsection 634.02.1.2 on page 544, and substitute the following.

- Consideration shall be given for all possible loading combinations including ice and wind loads.

After the fourth bullet in Subsection 634.02.1.2 on page 544, add the following.

- Top of pole deflection shall not exceed one (1) inch deflection from center due to 30 mph (non-gust) winds or the maximum deflection allowed by Subsection 722.02.3, whichever is more restrictive, for 80-foot poles.

In the first bullet in Subsection 634.02.1.2 at the bottom of page 544, change “cross sectional” to “cross-sectional.”

In the second paragraph of Subsection 634.02.1.2.4 on page 545, change “butt weld” to “butt-weld.”

907-634.02.1.3--Galvanized Steel Poles for Detectors. In the first paragraph of Subsection 634.02.1.3 on page 546, change “ground mounted” to “ground-mounted.”

Delete the second paragraph of Subsection 634.02.1.3 on page 546, and substitute the following.

Unless specified otherwise in the plans, poles shall be designed in accordance with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals*, as specified in the plans, including all interims and updates. Design life shall be 50 years for all poles. The design wind speed for all parts of the structure shall meet the wind requirements set forth in the latest edition of the AASHTO Wind Map, as stated in Subsection 722.02.3.

Delete the last two sentences of the fifth paragraph of Subsection 634.02.1.3 on page 546, and substitute the following.

Design wind loading shall be as indicated in Subsection 722.02.3 unless otherwise noted in the plans. The pole shall meet design wind loading with all equipment installed.

907-634.02.1.4--Aluminum Poles for Detectors. Delete the second paragraph of Subsection 634.02.1.4 on page 547, and substitute the following.

Unless specified otherwise in the plans, poles shall be designed in accordance with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals*, as specified in the plans, including all interims and updates. Design life shall be 50 years for all poles. The design wind speed for all parts of the structure shall meet the wind requirements set forth in the latest edition of the AASHTO Wind Map, as stated in Subsection 722.02.3. The pole shall meet design wind loading with detector(s) installed.

907-634.02.1.5--Structure-Mounted ITS Equipment Poles. Delete the second paragraph of Subsection 634.02.1.5 on page 548, and substitute the following.

Unless specified otherwise in the plans, poles shall be designed in accordance with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals*, as specified in the plans, including all interims and updates. Design life shall be 50 years for all poles. The design wind speed for all parts of the structure shall meet the wind requirements set forth in the latest edition of the AASHTO Wind Map, as stated in Subsection 722.02.3. For projects that are in areas with higher wind standards, the higher standard is required. The pole shall meet design wind loading with all equipment installed.

In the fifth sentence of the fifth paragraph of Subsection 634.02.1.5 on page 548, change “butt welded” to butt-welded” and change “radio graphically” to radio-graphically.”

Delete the second bullet in Subsection 634.02.1.5 on page 548, and substitute the following.

- Consideration shall be given for all possible loading combinations including ice and wind loads, as stated in Subsection 722.02.

In the first bullet in Subsection 634.02.1.5 at the top of page 549, change “cross sectional” to “cross-sectional.”

After Subsection 634.02.1.8 on page 549, add the following.

907-634.02.1.9--ITS Extension Poles. ITS extension poles are used to provide ITS devices a mounting location with a vertical or horizontal clearance away from an existing pole or structure to which they are to be attached. As such, extension poles and the mounting and attachment hardware shall be of a material that will not cause galvanic corrosion with existing or proposed equipment. If possible, the extension poles shall be similar in color to the base pole or structure, unless otherwise directed. They shall meet the requirements of the base pole, the plans, and Subsection 722.02. Design considerations shall be given to the additional loading being subjected to the base pole or structure.

907-634.02.2--Camera Lowering Device. The lowering device system shall be designed to support, raise, and lower a standard CCTV camera, lens, housing, PTZ mechanism, cabling, connectors, and other supporting field components. The camera connector box shall be cast ZA-12 (12% Al and 88% Zn) and have a minimum weight that ensures stability of the camera during raising and lowering operation. The camera connector box shall have fully gasketed doors to prevent water intrusion. The bottom of the camera connector box shall be equipped with a condensation/moisture exit system. The camera connector block shall be molded in thermoset, weather-resistant, synthetic rubber designed to handle harsh environments.

Electrical contacts must also be designed to handle harsh environments. There shall be a locking mechanism between the fixed and movable components. For the movable components, a latching mechanism shall be provided to hold the device in place (when latched all weight shall be removed

from the lowering cable) and to raise or lower the assembly using the lowering tool and lowering cable. The suspension contact unit housing shall be weatherproof with a gasket to isolate the interior from dust and moisture.

All pulleys shall have sealed, self-lubricated bearings, oil tight bronze bearings, or sintered bronze bushings. The lowering cable shall be a minimum 1/8-inch diameter stainless steel aircraft cable. Internal wireways shall prevent the stainless steel lifting cable from contacting power or video cabling. The only cable permitted to move is the lifting cable, all other cables must remain stable and secure during lowering and raising operations.

The lowering tool shall consist of a lightweight metal frame and winch assembly, a quick release cable connector, an adjustable safety clutch, and a variable speed industrial duty electric drill motor. This tool shall be able to access the lifting cable through a pole hand hole, shall support itself and the load during lowering, and shall provide a means to prevent freewheeling when loaded. This tool shall have a reduction gear to reduce the manual effort required during lifting operations. In addition, this tool shall be provided with an adapter for operating the lowering device with a portable drill using a clutch mechanism. The portable lowering tool shall be included as part of the installed system. The lowering device shall include customized adapter brackets to install cylindrical type PTZ CCTV cameras that have a mounting base below the camera assembly and is require to be installed in an upright position.

907-634.03--Construction Requirements.

907-634.03.1--Foundations. Delete the last sentence of the fourth paragraph of Subsection 632.03.1 on page 550, and substitute the following.

Where foundations are constructed in areas where the pavement edge elevation and shoulder edge elevation differ more than twelve (12) inches, taller foundations may be used but must be approved by the Engineer.

After Subsection 634.03.3 on page 552, add the following.

907-634.03.4--Submittals. The submittal requirements defined in the Notice to Bidders entitled “ITS General Requirements”, along with the requirements in this specification, shall be met for all ITS components. All costs associated with submittals shall be included in the overall contract price; no separate payment will be made for any documenting and submitting.

907-634.03.5--Quality Assurance. The quality assurance requirements defined in the Notice to Bidders entitled “ITS General Requirements” shall be met for all ITS components. All costs associated with the quality assurance requirements shall be included in the overall contract price.

907-634.04--Method of Measurement. After the last sentence of the fourth paragraph of Subsection 634.04 on page 552, add the following.

Field conditions may require taller foundations than specified in the plans. In which case, the addition concrete will be paid for at the contract bid price per cubic yard for pole foundations.

After the sixth paragraph of Subsection 634.04 on page 553, add the following.

ITS extension poles of the type specified will be measured as a unit quantity per each.

Delete the last paragraph in Subsection 634.04 on page 553 and substitute the following.

Wooden poles will be measured as a unit quantity per each.

Camera lowering device will be measured as a unit quantity per each.

907-634.05--Basis of Payment. Delete the fourth paragraph of Subsection 634.05 on page 553, and substitute the following.

Camera pole with foundation and detector pole with foundation, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, all documentation and submittals, for excavating, backfilling, replacing sod, and for all constructing, placing, curing, erecting, installing, connecting and testing; for foundations, poles, pole bases, conduit inside foundation as indicated on the plans, connections to support structures, caps, covers, ground wire, ground rods, hardware and for all equipment, tools, labor and incidentals necessary to complete the work and quality assurance, including remote and local control of the camera site complete in place and ready for use.

Camera lowering device and camera lowering tool, as described above, shall be paid for at the contract unit price per each. This price shall be full compensation for all materials, design, installation, equipment, tools, labor and incidentals associated with providing and installing the camera lowering device and the camera lowering tool.

Delete the sixth paragraph of Subsection 634.05 on page 553, and substitute the following.

Structure-mounted equipment pole, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, all documentation and submittals, for all constructing, placing, erecting, installing, connecting and testing, for poles, conduit between structure attachment location as indicated in the plans; wiring between pole-mounted devices and field cabinet; all structure-mounting hardware indicated in the plans, caps, covers, ground wire, ground rods, hardware and for all equipment, tools, labor and incidentals necessary to complete the work and quality assurance, including remote and local control of the camera site complete in place and ready for use.

ITS extension poles, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials, all documentation and submittals, for installing the extension pole, mounting attachments as necessary, adjusting the pole to meet specific project needs, and for all equipment, tools, labor, and incidentals necessary to complete the work and quality assurance.

After the last paragraph of Subsection 634.05 on page 554, add the following.

Sizing poles and their appurtenances to field conditions is the Contractor's responsibility. No separate payment will be made for designing to meet project specifications and field conditions.

Delete the pay items listed on page 554, and substitute the following.

907-634-A: Traffic Signal Equipment Pole, Type __, __' Shaft, __' Arm *	- per each
907-634-B: Traffic Signal Equipment Pole Shaft Extension, ____' **	- per each
907-634-C: Pole Foundations, Class ____ Concrete	- per cubic yard
907-634-D: Slip Casing, ____" Diameter	- per linear foot
907-634-E: Camera Pole with Foundation, __' Pole	- per each
907-634-F: Detector Pole with Foundation, ____' Pole	- per each
907-634-G: Traffic Signal Equipment Pole Mast Arm Extension, ____' **	- per each
907-634-H: ITS Equipment Pole, Structure Mounted, ____' Pole	- per each
907-634-I: Wood Pole, Class ____ Height ____'	- per each
907-634-J ITS Extension Pole, _____' **	- per each
907-634-K: Camera Lowering Device	- per each

- * Multiple Arms may be indicated
- ** Additional information may be indicated

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-636-3

CODE: (IS)

DATE: 05/25/2021

SUBJECT: Electrical Cable

Section 636, Electrical Cable, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-636.01--Description. Delete the last sentence of the last paragraph in Subsection 636.01 on page 555 and substitute the following.

It shall include excavating, laying, placing tracer cable or tape, backfilling, replacing sod, aerial supports and/or pull-through conduits, as applicable; and transformer enclosures and/or terminal boxes when not placed under other items of the contract.

907-636.02--Materials. After the paragraph of Subsection 636.02 on page 555, add the following.

907-636.02.1--ITS Ground Mounted Meter Enclosure.

907-636.02.1.1--Meter Base. Meter bases shall be NEMA Type 3R with a minimum rating of 100 amps and shall meet the requirements of the local utility. The meter base shall be provided with ampere rating of meter sockets based on sockets being wired with insulated wire rated at least 167°F. The meter base shall be designed for underground service.

Meter bases shall be 4-terminal, 600 volt, single phase, 3-wire furnished with the following:

- (a) Line, load and neutral terminals accepting #8 to 2/0 AWG copper/aluminum wire,
- (b) Ringed or ringless type, with or without bypass,
- (c) Made of galvanized steel,
- (d) Listed as meeting UL Standard UL-414, and
- (e) Underground service entrance as specified.

The meter bases shall have electrostatically applied dry powder paint finish, light gray in color, with a minimum thickness of 2.4 mils.

A 1-inch watertight hub for threaded rigid conduit shall be furnished with meter base.

907-636.02.1.2--Disconnect. External electrical service disconnects shall be furnished with a single pole 50-amp inverse time circuit breaker with at least 10,000 RMS symmetrical amperes short circuit current rating in a lockable in open or closed position in accordance with National Electric Code (NEC) and be a NEMA 3R Type enclosure. The disconnect shall be listed as meeting UL Standard UL-489 and marked as being suitable for use as service equipment.

The disconnect enclosure shall be fabricated from galvanized steel and electrostatically apply dry powder paint finish, light gray in color, to yield a minimum thickness of 2.4 mils. Ground bus and neutral bus shall be provided with at least four terminals with minimum wire capacity range of number 14 through number 4.

For 480V service, a local utility approved, lockable, non-fused disconnect switch on the supply side of the meter base shall be furnished, installed, and labeled as "Utility Disconnect". A separate load side disconnect with overcurrent protection shall be provided within two feet (2') of the meter.

907-636.02.1.3--Ground Mounted – Pedestal – Service Panel. The pedestal shall be of NEMA Type 3R rainproof construction and shall be UL Listed as "Enclosed Industrial Control Equipment" (UL 508A). External construction shall comply with UL50 requirements and shall be of G90 galvanized steel with light green #14672 Federal Specification 595 polyurethane industrial grade powder paint.

Hinges shall be stainless steel and of the continuous piano hinge type.

The pedestal mounting bolts shall not be externally accessible. The pedestal shall be able to be embedded in concrete or use anchor bolts for mounting on concrete base. Either pedestal mounting base or anchor bolt kit shall be used for installation.

The service pedestal should have three separate isolated sections for metering equipment, utility termination and customer equipment.

The metering section shall be pad-lockable and sealable and have a hinged swing hood with an integral hinged polycarbonate sealable window for access to demand meters. Meter socket type shall meet the requirements of the serving utility.

The utility termination section shall be pad-lockable and sealable and shall have a stainless steel handle provided on a lift-off cover. Sufficient clearance shall be provided for a 4-inch diameter conduit for utility cables entrance. Utility landing lugs shall be UL listed and shall accommodate conductor sizes between AWG #6 – 350 kcmil.

The customer compartment door shall be hinged on the left hand side. A stainless pad-lockable hasp shall be provided to secure customer compartment. A door keeper shall be provided to keep the door in an open position. A print pocket shall be provided on the inside of the door in a weatherproof sleeve. Required UL labeling shall be located on the inside of the customer door. Distribution and control equipment shall be behind an internal dead-front door with a quarter-turn securing latch and be hinged to open more than 90 degrees. The dead-front door shall be hinged on the same side as the customer section door. All distribution and control equipment shall be factory wired using 600-volt wire sized to NEC and UL requirements.

The service pedestal shall be rated for operation at 10K minimum amps interrupting capacity (AIC). The provided documentation shall list circuit breaker combinations and those to be used for de-rated operation for series ratings. Circuit breakers shall be permanently labeled with engraved name plates.

The serving utility shall be contacted for necessary requirements before ordering or installing equipment.

907-636.02.2--ITS Ground Mounted Transformer Enclosure.

907-636.02.2.1--Disconnect. The disconnect shall meet the requirements of Subsection 907-636.02.1.2.

907-636.02.2.2--Ground Mounted - Pedestal – Service Panel. The ground mounted - pedestal – service panel shall meet the requirements of Subsection 907-636.02.1.3. In addition, the transformer shall be rated to match the requirement of the primary service and the types of load served as specified in the plans. The transformer unit shall be installed inside the enclosure and meet all applicable codes. Each transformer shall be furnished as one complete unit and wiring of multiple transformers to meet the required ratings at each enclosure location is not allowed. Step-up and Step-down transformers shall be designed specifically for each application. Reverse feeding of step-up and step-down transformers is not allowed. All transformers shall be designed for outdoor installation and rated 600 VAC and below.

907-636.03--Construction Requirements.

907-636.03.1--Direct Buried Cable. After the fourth sentence of Subsection 636.03.1 on page 555, add the following.

Direct buried electric cable shall not be placed in the same trench as fiber optic cables.

907-636.04--Method of Measurement. Delete the first paragraph of Subsection 636.04 on page 557, and substitute the following.

Electric cable of the type specified, constructed as specified on the plans, will be measured by the linear foot. Measurement will be computed horizontally along the conduit, messenger cable or mast arm and vertically along the pole. Measurement in underground conduit is only in the horizontal plane and no additional quantity shall be added for conduit depth or change in elevation of the conduit. No extra length will be allowed for cable inside signal heads, drip loops, or sag in aerial supported cable. Tracer tape, when required in the plans, used with tracer cable will not be measured for separate payment but shall be included in the contract price for Tracer Cable. The terminals for the measurements of lengths will be considered specifically as the center of the pull boxes, poles, signal heads or controller cabinets.

After the first paragraph of Subsection 636.04 on page 557, add the following.

ITS Ground Mounted Enclosures, complete in place and accepted, will be measured as a unit quantity per each for a complete and operable unit in accordance with the contract provisions.

907-636.05--Basis of Payment. After the first paragraph of Subsection 636.05 on page 557, add the following.

ITS Ground mounted enclosures, measured as prescribed above, will be required wherever ground mounted meter enclosures or step-up or step-down transformers are noted as required in the plans. The enclosures shall be paid for at the contract unit price bid per each; which price shall be full compensation for any transformers (as described in the plans), foundation construction, cabinets, pedestals, meter bases, disconnects, relays, terminals, circuit breakers, sockets, hubs, buses, connectors, mounting material, all other materials for constructing, installing, connecting, testing and final cleanup; and for all equipment, labor, tools and incidentals necessary to complete the work in accordance with the contract documents.

In the first sentence of the second paragraph of Subsection 636.05 on page 557, change “relaid” to “re-laid”.

Delete the list of pay items on pages 557 and 558, and substitute the following.

907-636-A: Electric Cable, Direct Burial, <u>Type</u> , AWG ___, ___ Conductor	- per linear foot
907-636-B: Electric Cable, Underground in Conduit, <u>Type</u> , AWG ___, ___ Conductor	- per linear foot
907-636-C: Electric Cable, Aerial Supported, <u>Type</u> , AWG ___, ___ Conductor	- per linear foot
907-636-D: Electric Cable, Aerial Supported in Conduit, <u>Type</u> , AWG ___, ___ Conductor	- per linear foot
907-636-E: Electric Cable, Underground in Conduit, Tracer Cable	- per linear foot
907-636-F: Electric Cable, Repair	- per linear foot
907-636-G: Underground Cable and Conduit, Removed	- per linear foot
907-636-H: Underground Cable and Conduit, Removed and Re-laid	- per linear foot
907-636-I: ITS Ground Mounted * Enclosure	- per each

* Indicate Meter or Transformer

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-637-3

CODE: (IS)

DATE: 05/25/2021

SUBJECT: Traffic Signal Conduit and Pull Boxes

Section 637, Traffic Signal Conduit and Pull Boxes, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-637.02--Materials.

907-637.02.1--Pull Box / Enclosures. Delete the first sentence of the second paragraph of Subsection 637.02.1 on page 558, and substitute the following.

For grade level pull boxes and enclosures only, Tier 22 (22,500-pound design load, 33,750-pound test load) enclosures with minimum size dimensions as shown in the detail drawings on the plans shall be installed for use in traffic signal construction. Enclosure boxes shall be open bottom.

Delete the fourth sentence of the second paragraph of Subsection 637.02.1 on page 558.

907-637.03--Construction Requirements.

907-637.03.1--Pull box/Enclosures. Delete the sixth sentence of the first paragraph of Subsection 637.03.1 on page 559, and substitute the following.

Enclosures located in soil or sodded areas shall be installed with a supporting poured concrete collar or approved composite collar assembly, as shown by details on the plans.

907-637.03.2.1--Conduit Duct Bank. Delete the first sentence of subparagraph a) under Bored or drilled conduit in Subsection 637.03.2.1 on page 560, and substitute the following.

All conduits under railroad tracks shall be horizontal directional bored or drilled at a minimum of ten (10) feet below the railroad bed, or as required by the Railroad Company.

Delete Subsections 637.03.2.4 and 637.03.2.5 on pages 561 & 562, and substitute the following.

907-637.03.2.4--Blank.

907-637.03.2.5--Blank.

After Subsection 637.03.2.7 on page 563, add the following.

907-637.03.3--Submittals. The submittal requirements defined in the Notice to Bidders entitled “ITS General Requirements” shall be met if the NTB is included as part of the Project Proposal

and Contract Documents. In all cases, submittals shall be thorough and timely. All costs associated with submittals shall be included in the overall contract price; no separate payment will be made for any documenting and submitting.

907-637.03.4--Quality Assurance. The quality assurance requirements defined in the Notice to Bidders entitled "ITS General Requirements" shall be met if the NTB is included as part of the Project Proposal and Contract Documents. In all cases, the Contractor shall conduct, maintain, and leave the worksite in a professional and organized manner. All costs associated with the quality assurance requirements shall be included in the overall contract price.

907-637.04--Method of Measurement. Delete subparagraphs a) and b) in Subsection 637.04 on page 563, and substitute the following.

- a) From center to center of pull box and/or foundation.
- b) Any above ground vertical conduit runs, as indicated in the plans. Measurement in underground conduit is only in the horizontal plane and no additional quantity shall be added for conduit depth or change in elevation of the conduit.

907-637.05--Basis of Payment. Delete the first, second, third, fourth and fifth paragraphs of Subsection 637.05 on page 564, and substitute the following.

Pull Box Enclosures, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing all materials including the cover, installing, crushed gravel underlayment, poured concrete collars, replacement of sod or existing grassing, final clean-up and for all equipment, all documentation and submittals, tools, labor and incidentals necessary to complete the work and quality assurance.

Conduit / Duct Bank, measured as prescribed above, will be paid for per linear feet, which price shall be full compensation for all materials, equipment, labor, trenching, installing, backfilling trench, plowing, directional boring, restoration, marking tape, pull tape, duct plugs, fittings, testing, bore logs, all documentation and submittals, and all other incidentals necessary for the installation and quality assurance of the conduit system.

Rigid Galvanized Steel, measured as prescribed above, will be paid for per linear feet, which price shall be full compensation for all materials, equipment, labor, all documentation and submittals, all related materials including but not limited to couplings, mounting straps, bonding to ground, etc., that is installed on sign structures, poles or between the pull boxes, and all other incidentals necessary for the installation and quality assurance of the conduit system.

Duct Plugs and Sealant will be included in the cost of the conduit and will not be measured separately.

Delete the pay items listed on page 564 and substitute the following.

907-637-A: Pull Box Enclosure, Type

- per each

907-637-B:	Pull Box Enclosure, Structure Mounted, <u>Type</u>	- per each
907-637-C:	Traffic Signal Conduit, Underground, <u>Type</u> , <u>Size</u>	- per linear foot
907-637-D:	Traffic Signal Conduit, Underground Drilled or Jacked, <u>Type</u> , <u>Size</u>	- per linear foot
907-637-E:	Traffic Signal Conduit, Structural Conduit, <u>Type</u> , <u>Size</u>	- per linear foot
907-637-F:	Traffic Signal Conduit, Aerial Supported, <u>Type</u> , <u>No.</u> , <u>Size</u>	- per linear foot
907-637-G:	Traffic Signal Conduit, Underground Encased in Concrete, <u>Type</u> , <u>Size</u>	- per linear foot
907-637-H:	Traffic Signal Conduit Bank, Underground, <u>Type</u> , <u>No.</u> , <u>Size</u>	- per linear foot
907-637-I:	Traffic Signal Conduit Bank, Underground Drilled or Jacked, <u>Type</u> , <u>No.</u> , <u>Size</u>	- per linear foot
907-637-J:	Traffic Signal Conduit Bank, Structural Conduit, <u>Type</u> , <u>No.</u> , <u>Size</u>	- per linear foot
907-637-K:	Traffic Signal Conduit Bank, Aerial Supported, <u>Type</u> , <u>Size and Number</u>	- per linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-639-3

CODE: (SP)

DATE: 03/10/2020

SUBJECT: Traffic Signal Preemption Systems

Section 639, Traffic Signal Preemption Systems, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete Section 639 on pages 566 thru 578, and substitute the following.

SECTION 907-639 - TRAFFIC SIGNAL PREEMPTION SYSTEMS

907-639.01--Description. This item consists of providing Railroad Signal Preemption, Type 1, Type 2, and Type 3 Emergency Vehicle Preemption for the traffic signal controller in accordance with Plan details, the Standard Specifications, these specifications, and as directed by the Engineer.

The Type 1 Emergency Vehicle Preemption for the traffic signal controller shall use optical communication to identify the presence of designated priority vehicles and cause the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available.

The Type 2 Emergency Vehicle Preemption for the traffic signal controller shall utilize Radio/GPS to identify the presence of designated priority vehicles and cause the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available.

The Type 3 Emergency Vehicle Preemption with Remote Cabinet Monitoring for the traffic signal controller shall utilize Radio/GPS to identify the presence of designated priority vehicles and cause the traffic signal controller to advance to and/or hold a desired traffic signal display selected from phases normally available. The system also allows remote monitoring capabilities of Traffic Signals using either Ethernet communications via fiber or Cellular communications.

A confirmation lights and rotating beacons shall be utilized to indicate the activation of preemption call. The system shall initiate beacons indicating a priority call has been received. The system shall initiate a confirming steady white light to the approach direction from which the vehicle is approaching once the desired priority display has been received. The beacon and confirming white light shall remain energized until the preemption call is dropped.

907-639.02--Materials. All connections and equipment shall be new and constructed using the highest quality, commercially available components and techniques to assure high reliability and minimum maintenance of the emergency vehicle and railroad signal preemption systems.

The requirements for the emergency preemption vehicle equipment in Subsection 907-639.02.2.1 are to be furnished and installed by the local maintaining agencies and not the responsibility of the

Contractor. However, it is the responsibility of the Contractor to provide the intersection preemption equipment required in Subsections 907-639.02.2.2 and 907-639.03 that is compatible with the equipment listed in Subsection 907-639.02.2.1.

907-639.02.1--Railroad Preemption. The Railroad Signal Preemption shall consist of the minimum following components:

- Coordination
- Flagger (as required)
- Application Submittals (as required)
- Connections to hardware (as required)

907-639.02.2--Type 1 Emergency Vehicle Preemption. Emergency Vehicle Preemption Systems shall consist of the following principal Intersection Equipment components: Detectors/Receivers, Multimode Phase Selectors, and Auxiliary Interface Panel. The function intended for use with this system includes Emergency Vehicle Preemption to the traffic signal.

907-639.02.2.1--Vehicle Equipment.

907-639.02.2.1.1--Emitter. The emitter shall include a multi-purpose communication port compliant with the SAE J1708 communication standard. This port shall enable unit configuration to be set into the emitter and read from the emitter. It also shall allow real- time communication between the vehicle and the emitter.

An ON/OFF switch (available for each emitter) shall be equipped with an indicator light providing internal diagnostics to assist in troubleshooting.

While operating, the emitter shall conduct self-diagnostics designed to monitor data transmission integrity by checking for missing pulses. Any failures of the self-diagnostic tests shall be displayed by flashing of the ON/OFF switch indicator light.

The emitter shall be equipped with a disabling input that, when activated, will cause the emitter to stop flashing. This input shall eliminate the possibility of inadvertent signal transmission after the priority vehicle has arrived at its destination. The disable input shall be programmable to operate in either a latching or non-latching mode. Operation of the disable input shall be programmable using software.

The emitter shall provide operating modes that allow it to be powered on with the strobe/LEDs for activation of the preempt.

The emitter shall be powered by the DC voltage supplied from the battery of the vehicle, 10 to 32 volts DC.

The unit shall be equipped with a weatherproof in-line fuse holder and a weatherproof quick-disconnect plug.

The emitter shall contain visible light LEDs which may be user configured as follows:

- Flash at emitter flash rate during normal operation.
- Flash at diagnostic rate when unit has failed or is in disable mode.
- Off during normal operation, flash at diagnostic rate when unit has failed or is in
- Disable mode. The visible LEDs will be Off during normal operation.
- Flash once per second for ten (10) seconds at power up.
- Always Off: The visible LEDs will remain Off at all times.

The Emitter shall be supplied complete with a two (2) foot installation cable.

The flash sequence generated by the emitter shall carry three (3) types of information:

- The first type shall be one (1) of three (3) distinctly different base frequencies of:
 - o 10Hz for a low priority emitter;
 - o 14Hz for a high priority emitter; or
 - o 12Hz for Probe frequency.
- The second type of information generated by the emitter shall be a vehicle classification and identification code that is interwoven into the base frequency flashes. Setting the vehicle classification and identification code shall be accomplished through Emitter Programming Software.
- The third type of information generated by the emitter shall be reserved for setting the intersection detection range. A specially equipped emitter control module with a range setting command switch will enable the Engineer to activate the range code from the vehicle.

The emitters shall use infrared LEDs with an angle of half intensity of ± 10 degrees to provide precise directionality control. The emitter shall operate over a temperature range of -30°F to +165°F. The emitter shall operate over a relative humidity range of 5% to 95%. Windows™ based software shall be available at no charge for programming the emitter through its SAE J1708 compatible multi-purpose port.

907-639.02.2.2--Intersection Equipment.

907-639.02.2.2.1--Multimode Phase Selector. The multimode phase selector recognizes inputs from both infrared and Radio/GPS activation methods at the intersection and supplies coordinated inputs to the controller.

The multimode phase selector shall be designed to be installed in the traffic controller cabinet and is intended for use directly with numerous controllers. These include Type 170/2070 controllers with compatible software, NEMA controllers, or other controllers along with the system card rack and suitable interface equipment and controller software.

The multimode phase selector shall include the ability to directly sense the green traffic controller signal indications through the use of dedicated sensing circuits and wires connected directly to field wire termination points in the traffic controller cabinet. This connection shall be made using the Auxiliary Interface Panel.

The multimode phase selector will be a plug-in, 4-channel, multiple-priority, multi-modal device intended to be installed directly into a card rack located within the controller cabinet. The multimode phase selector shall be capable of using existing infrared or Radio/GPS system card racks. The multimode phase selector shall be powered from either +24 VDC or 120 VAC.

The multimode phase selector shall support front-panel RS-232, USB and Ethernet interfaces to allow management by on-site interface software and central software. An RS-232 port shall be provided on the unit. Additional RS-232 communication ports shall be available using the Auxiliary Interface Panel.

The multimode phase selector shall have the capability of storing a minimum of 10,000 priority control calls. When the log is full, the phase selector shall drop the oldest entry to accommodate the new entry. The multimode phase selector shall store each call record in non-volatile memory and shall retain the record if power terminates.

The multimode phase selector shall support a minimum of 5,000 code pairs (agency ID, vehicle ID) for each of the priority levels, high and low, providing unique vehicle identification and system security implementation at the vehicle level.

The multimode phase selector shall include several programmable control timers that will limit or modify the duration of a priority control condition, by channel. The control timers will be as follows:

- Max call time
- Off approach call hold time
- Lost signal call hold time
- Call delay time

The multimode phase selector shall have the ability to enable or disable all calls of all priority levels. This shall be independently settable by channel.

A unique intersection name, which shall be broadcast, shall be settable for each Multimode Phase Selector.

Up to 25 different radio channels shall be available to be assigned to the multimode phase selector.

The multimode phase selector shall operate in a mode that shall vary the output based on the status of the approaching vehicle's turn signal. Additional outputs available on an auxiliary interface panel may be needed. Settings shall be available for this mode as follows:

- Output mappings for each channel.
- Separate setting for high and low priority levels.
- Separate settings for each left turn, right turn or straight signal status for each of the four (4) channels and priority levels.

The multimode phase selector's default values shall be programmable by the operator on- site or at a remote location.

The multimode phase selector shall be capable of three (3) levels of signal discrimination, as follows:

- Verification of the presence of the signal of either high priority or low priority.
- Verification that the vehicle is approaching the intersection within a prescribed
- Estimated Time of Arrival (ETA).
- Determination of when the vehicle is within the prescribed range, either by intensity level or distance from the intersection.

The multimode phase selector shall include one (1) opto-isolated NPN, or sinking, output per channel that provides the following electrical signal to the appropriate pin on the card edge connector:

- 6.25Hz $\pm$ 0.1Hz 50% on/duty square wave in response to a low priority call.
- A steady ON in response to a high priority call.
- The multimode phase selector will also have the option of providing separate outputs for High and Low priority calls for controllers that do not recognize a 6.25 Hz pulsed
- low priority request.
- Additional outputs or output modes shall also be available on the Auxiliary Interface
- Panel in case of need for additional modes of operation.

The multimode phase selector shall accommodate the following three (3) methods for setting range thresholds for High and Low priority signals.

- Based on the approaching vehicle's Estimated Time of Arrival (ETA). This shall be settable between zero (0) and 255 seconds in one (1) second increments.
- Based on the approaching vehicle's distance from the intersection. This shall be settable in one (1) foot increments.
- Based on emitter intensity the system shall accommodate setting a separate range from 200 feet to 2,500 feet with range set points for both High and Low priority signals.

The multimode phase selector will have the following indicators:

- A status indicator that illuminates steadily to indicate proper operation.
- A link indicator on the multimode phase selector illuminates if other radios are within range.
- A radio indicator that indicates the status of the communication between the vehicle control unit and the Radio/GPS unit. The indicator illuminates to indicate that there is communication between the vehicle control unit and the Radio/GPS unit. The indicator illuminates to indicate that a GPS signal has been acquired and the 2.4 GHz radio is on the air.
- LED indicators (one (1) for high priority, one (1) for low priority) for each channel display

active calls as steady ON and pulse to indicate pending preemption requests.

The multimode phase selector shall have a test switch for each channel to test proper operation of High or Low Priority.

The multimode phase selector shall utilize the time obtained from the GPS satellites to time stamp the activity logs. The user will set the local time zone (offset from GPS time) via the interface software.

The interface software shall have the capability to set the multimode phase selector to automatically adjust the GPS time offset for changes in daylight savings time.

An auxiliary interface panel shall be available to facilitate interconnections between the multimode phase selector and traffic cabinet wiring as well as provide additional outputs.

A multimode phase selector port may be configured to output GPS data at a user selectable baud rate in the NMEA 0183format. It will output the following messages depending on the baud rate:

- GGA - Global Positioning System Fix Data (2400 baud and higher)
- GSA - GPS DOP and active satellites (2400 baud and higher)
- GSV - Satellites in view (4800 baud and higher)
- RMC - Recommended Minimum Navigation Information (1200 baud and higher)

The following diagnostic tests are incorporated in the multimode phase selector:

- Power up built in test
- Communications port tests
- Preemption output test call
- Detector response test

The multimode phase selector shall be capable of call bridging.

When used with a GPS radio unit, the multimode phase selector shall relay a priority request to the next adjacent intersection based on the direction indicated by the vehicle's turn signals.

The multimode phase selector shall support evacuation mode for Low priority calls. The multimode phase selector shall allow relative priority.

907-639.02.2.2.1.1--Card Rack. The required card rack shall provide simplified installation of a multimode phase selector into controller cabinets that do not already have a suitable card rack.

The card rack shall be factory wired with one (1) connector, located behind the card slot, and one (1) connector on the front of the card rack.

The card rack connector on the front shall provide for connections to the traffic controller.

The Contractor shall verify card rack requirements with the Engineer prior to submitting this equipment.

One (1) version of the card rack shall contain a 24 VDC power supply to power the phase selector. The power supply shall be capable of being powered by 100-240 VAC 50-60 Hz.

Another version of the card rack shall pass 120 VAC through to the rear card rack connector. This version shall provide labeled terminal blocks for connecting the primary infrared detectors to a phase selector.

Additionally, there shall be an optional card rack with a built-in Electromechanical Relay for use in switching high current loads such as flashers and gate operators. The relay shall be capable of switching the following loads.

Resistive: 10 A, 240 VAC
10 A, 30 VDC

General Use: 7.5 A, 120 VAC
7.5 A, 240 VAC
7 A, 30 VDC
1/6 hp, 120 VAC
1/3 hp, 240 VAC

907-639.02.2.2.2--Optical Detector.

907-639.02.2.2.2.1--General. The optical detector shall be a light-weight, weather proof device capable of sensing and transforming pulsed optical energy into electrical signals for use by the traffic signal phase selection equipment.

907-639.02.2.2.2.2--Functional Requirements. The optical detector unit shall perform the following functions and meet the requirements listed below.

- a) The unit shall be high-impact polycarbonate construction with stainless steel and/or brass hardware. The unit shall be designed for easy mounting at or near an intersection on mast arm, pedestal, pole, or intersection span wire.
- b) The unit shall accept optical signals from one (1) or two (2) directions and provide a single electrical output signal, as specified in the plans. The unit shall include a design feature to allow aiming of the two optical sensing inputs for hills, skewed approaches or slight curves.
- c) The unit shall have built-in terminal strip to simplify wiring connections. The unit shall receive power from the traffic signal phase selector equipment and have internal voltage regulation to be operational from 16 to 40 volts AC.
- d) The unit shall be responsive to the optical emitter at a distance of 1,800 feet. The unit shall deliver the necessary electrical signal to the traffic signal phase selector equipment via up to 1,000 feet of optical detector cable.
- e) The unit shall employ replacement circuit board assembly and photocells to facilitate repair.

907-639.02.2.2.3--Optical Detector Cable. The optical detector cable shall meet the requirements listed below.

- a) The cable shall guarantee delivery of the necessary quality signal from the optical detector to the traffic signal phase selector equipment over non-spliced distance of 1,000 feet. The cable shall guarantee sufficient power to the optical detector over a non-spliced distance of 1,000 feet.
- b) The cable shall be of durable construction for installation by direct burial, in conduit or mast arm, or exposed overhead supported by messenger wire. The weight of the cable shall have a minimum insulation rating of 600 volts and a temperature rating of 80°C.
- c) The cable shall have three (3) conductors of AWG 20 stranded, individually tinned copper color coded as follows.
 1. Orange for delivery of optical detector power (+)
 2. Blue for optical detector power return (-)
 3. Yellow for optical detector signal

The conductors will be shielded with aluminized polyester and have an AWG #20 stranded and individually tinned drain wire to provide signal integrity and transient protection. The shield wrapping shall have 20% overlap to ensure integrity following conduit and mast arm pulls.

907-639.02.2.2.4--Electrical and Environmental Requirements. All equipment supplied as part of the priority control system intended for use in the controller cabinet shall meet the following electrical and environmental specifications spelled out in the NEMA Standards Publication TS 2-2003, Part 2: v02.06:

- Line voltage variations per NEMA TS 2-2003, Paragraph 2.1.2.
- Power source frequency per NEMA TS 2-2003, Paragraph 2.1.3.
- Power source noise transients per NEMA TS 2-2003, Paragraph 2.1.6
- Temperature range per NEMA TS 2-2003, Paragraph 2.1.5
- Humidity per NEMA TS 2-2003, Paragraph 2.1.5
- Shock test per NEMA TS 2-2003, Paragraph 2.2.9.
- Vibration per NEMA TS 2-2003, Paragraph 2.2.8
- Non-Destructive Transient immunity NEMA TS 2-2003, Paragraph 2.1.8.
- Input-output terminals NEMA TS 2-2003, Paragraph 2.1.7.
- FCC Part 15 Subpart B Class A EMC Standard
- Canada ICES-003, Issue 4:2004 Class A EMC Standard
- EN50293: 2000 Electromagnetic Compatibility--Road Traffic Signal Systems -- Product Standard.
- EN 61326-1:2006 EMC Standard.
- EN 55011:2007 +A2:2007 EMC Standard.

907-639.02.3--Type 2 Emergency Vehicle Preemption. Emergency Vehicle Preemption Systems shall consist of the following principal Intersection Equipment components: Detectors/Receivers, Multimode Phase Selectors, and Auxiliary Interface Panel. The function intended for use with this system includes Emergency Vehicle Preemption to the traffic signal.

907-639.02.3.1--Vehicle Equipment.

907-639.02.3.1.1--Vehicle Control Unit. The vehicle control unit shall provide the interface between the vehicle and the priority control system. The vehicle control unit shall also interface with the Radio/GPS module. The vehicle control unit shall monitor the status of the vehicle turn signal via an interface cable that will connect between the vehicle control unit and the left and right turn signal lines in the vehicle. The vehicle control unit shall also monitor the disable input line as well as the remote activation input. Power to the vehicle equipment shall be provided through the vehicle control unit.

The vehicle shall transmit the following information when within range of an equipped intersection:

- The priority level of the vehicle equipment. This shall be either high priority or low priority. The priority level shall be factory set. Each vehicle control unit shall be capable of setting 254 different agency IDs and 15 different vehicle type classifications with 9,999 different identification numbers per class.
- The location, speed and heading of the vehicle.
- The status of the vehicle's turn signal.
- The radio channel as assigned by the intersection and the serial number of the Vehicle Control Unit.

The vehicle shall be capable of being wired so that the GPS data is available either while the equipment is requesting priority or when not requesting priority. The vehicle control unit shall be equipped with an ON/OFF switch to activate the system and request priority. The switch shall be depressed to activate the system. In addition, a remote activation line shall be provided to interface with other vehicle equipment. This line shall have +12 VDC applied to request priority. The equipment shall be configured to activate with the light bar/remote activation line or via the ON/OFF switch.

The vehicle equipment shall be supplied complete with a 20-foot minimum installation cable as well as a 15-foot minimum vehicle interface cable.

The vehicle control unit shall include multi-purpose communication ports compliant with the RS-232 communication standard. These ports shall enable unit configuration to be set into the vehicle control unit and read from vehicle control unit. It also shall allow real-time communication between the vehicle control unit and the interface computer as well as interfacing with other devices. One of the ports shall be configured to output GPS data at a user selectable baud rate in the NMEA format while the vehicle control unit is turned On. It shall output the following messages (depending on the baud rate):

- GGA Global Positioning System Fix Data (2400 baud and higher)
- GSA GPS DOP and active satellites (2400 baud and higher)
- GSV Satellites in view (4800 baud and higher)
- RMC Recommended Minimum Navigation Information (1200 baud and higher)

The vehicle control unit shall also have a series of indicator lights that will operate as follows:

- A power indicator as well as an indicator light in the switch will indicate that the equipment is powered On.
- A GPS indicator will indicate the status of GPS reception.
- An indicator will indicate the status of the communication between the vehicle control unit and the Radio/GPS unit.
- A disable indicator will indicate if the vehicle equipment is in a Disable mode. The disable indicator and the indicator in the power switch will flash green or any other color as approved by the Engineer.
- The indicators shall be capable of being programmed to provide feedback for the following:
 - Phase selector has received preemption request.
 - Another vehicle approaching the intersection has received the preemption request.
 - Phase selector has received preemption request and another equipped vehicle is approaching the intersection from another direction.

The vehicle control unit shall be equipped with a disable input that, when activated, will cause the radio to transmit that the vehicle is in Disable mode, thereby eliminating the possibility of the priority request continuing after the priority vehicle has arrived at its destination. The disable input shall be programmable to operate in either a latching or non- latching mode. The disable input shall be programmed so that the input may be activated by applying ground or by applying +12 VDC. Operation of the disable input shall be programmable using software. Additional inputs shall be included to temporarily switch the vehicle control unit to low priority and to Probe Mode. The vehicle equipment shall operate over a temperature range of -30°F to 165°F and a relative humidity range of 5% to 95%. Windows™ based software shall be available for programming the vehicle control unit through its RS-232 compatible multi-purpose port.

907-639.02.3.1.1.1--Antenna. A GPS receiver and antenna shall obtain the vehicle position, speed and heading from the GPS satellite system operated by the Department of Defense (DOD). The time information from the GPS satellites shall also be used to synchronize the frequency hopping of the 2.4 GHz radio.

The Radio/GPS antenna cables shall consist of a pair of 25-foot coax cables with factory terminated SMA connectors. One of these connectors shall have a pin and the other shall have a socket.

907-639.02.3.1.1.2--Radio. The Radio shall operate in the reserved Industrial, Scientific and Medical (ISM) communications band, requiring no license. A 2.4 GHz spread spectrum/frequency hopping radio shall provide the communications from the vehicle to the intersection when within range of a Radio/GPS equipped intersection. The radio shall have a transmit power of not more than one (1) watt. The radio shall have an unobstructed range of at least 2,500 feet. The radio shall meet FCC Part 15 rules. Radio link association and coordination among intersections and vehicles shall be automatic.

907-639.02.3.2--Intersection Equipment.

907-639.02.3.2.1--Multimode Phase Selector. The multimode phase selector recognizes inputs from both infrared and Radio/GPS activation methods at the intersection and supplies coordinated

inputs to the controller.

The multimode phase selector shall be designed to be installed in the traffic controller cabinet and is intended for use directly with numerous controllers. These include Type 170/2070 controllers with compatible software, NEMA controllers, or other controllers along with the system card rack and suitable interface equipment and controller software.

The multimode phase selector shall include the ability to directly sense the green traffic controller signal indications through the use of dedicated sensing circuits and wires connected directly to field wire termination points in the traffic controller cabinet. This connection shall be made using the Auxiliary Interface Panel.

The multimode phase selector will be a plug-in, 4-channel, multiple-priority, multi-modal device intended to be installed directly into a card rack located within the controller cabinet. The multimode phase selector shall be capable of using existing infrared or Radio/GPS system card racks. The multimode phase selector shall be powered from either +24 VDC or 120 VAC.

The multimode phase selector shall support front-panel RS-232, USB and Ethernet interfaces to allow management by on-site interface software and central software. An RS-232 port shall be provided on the unit. Additional RS-232 communication ports shall be available using the Auxiliary Interface Panel.

The multimode phase selector shall have the capability of storing a minimum of 10,000 priority control calls. When the log is full, the phase selector shall drop the oldest entry to accommodate the new entry. The multimode phase selector shall store each call record in non-volatile memory and shall retain the record if power terminates.

The multimode phase selector shall support a minimum of 5,000 code pairs (agency ID, vehicle ID) for each of the priority levels, high and low, providing unique vehicle identification and system security implementation at the vehicle level.

The multimode phase selector shall include several programmable control timers that will limit or modify the duration of a priority control condition, by channel. The control timers will be as follows:

- Max call time
- Off approach call hold time
- Lost signal call hold time
- Call delay time

The multimode phase selector shall have the ability to enable or disable all calls of all priority levels. This shall be independently settable by channel.

A unique intersection name, which shall be broadcast, shall be settable for each Multimode Phase Selector.

Up to 25 different radio channels shall be available to be assigned to the multimode phase selector.

The multimode phase selector shall operate in a mode that shall vary the output based on the status of the approaching vehicle's turn signal. Additional outputs available on an auxiliary interface panel may be needed. Settings shall be available for this mode as follows:

- Output mappings for each channel.
- Separate setting for high and low priority levels.
- Separate settings for each left turn, right turn or straight signal status for each of the four (4) channels and priority levels.

The multimode phase selector's default values shall be programmable by the operator on- site or at a remote location.

The multimode phase selector shall be capable of three (3) levels of signal discrimination, as follows:

- Verification of the presence of the signal of either high priority or low priority.
- Verification that the vehicle is approaching the intersection within a prescribed Estimated Time of Arrival (ETA).
- Determination of when the vehicle is within the prescribed range, either by intensity level or distance from the intersection.

The multimode phase selector shall include one (1) opto-isolated NPN, or sinking, output per channel that provides the following electrical signal to the appropriate pin on the card edge connector:

- 6.25Hz $\pm$ 0.1Hz 50% on/duty square wave in response to a low priority call.
- A steady ON in response to a high priority call.
- The multimode phase selector will also have the option of providing separate outputs for High and Low priority calls for controllers that do not recognize a 6.25 Hz pulsed low priority request.
- Additional outputs or output modes shall also be available on the Auxiliary Interface Panel in case of need for additional modes of operation.

The multimode phase selector shall accommodate the following three (3) methods for setting range thresholds for High and Low priority signals.

- Based on the approaching vehicle's Estimated Time of Arrival (ETA). This shall be settable between zero (0) and 255 seconds in one (1) second increments.
- Based on the approaching vehicle's distance from the intersection. This shall be settable in one (1) foot increments.
- Based on emitter intensity the system shall accommodate setting a separate range from 200 feet to 2,500 feet with range set points for both High and Low priority signals.

The multimode phase selector will have the following indicators:

- A status indicator that illuminates steadily to indicate proper operation.
- A link indicator on the multimode phase selector illuminates if other radios are within range.
- A radio indicator that indicates the status of the communication between the vehicle control unit and the Radio/GPS unit. The indicator illuminates to indicate that there is communication between the vehicle control unit and the Radio/GPS unit. The indicator illuminates to indicate that a GPS signal has been acquired and the 2.4 GHz radio is on the air.
- LED indicators (one (1) for high priority, one (1) for low priority) for each channel display active calls as steady ON and pulse to indicate pending preemption requests.

The multimode phase selector shall have a test switch for each channel to test proper operation of High or Low Priority.

The multimode phase selector shall utilize the time obtained from the GPS satellites to time stamp the activity logs. The user will set the local time zone (offset from GPS time) via the interface software.

The interface software shall have the capability to set the multimode phase selector to automatically adjust the GPS time offset for changes in daylight savings time.

An auxiliary interface panel shall be available to facilitate interconnections between the multimode phase selector and traffic cabinet wiring as well as provide additional outputs.

A multimode phase selector port may be configured to output GPS data at a user selectable baud rate in the NMEA 0183format. It will output the following messages depending on the baud rate:

- GGA - Global Positioning System Fix Data (2400 baud and higher)
- GSA - GPS DOP and active satellites (2400 baud and higher)
- GSV - Satellites in view (4800 baud and higher)
- RMC - Recommended Minimum Navigation Information (1200 baud and higher)

The following diagnostic tests are incorporated in the multimode phase selector:

- Power up built in test
- Communications port tests
- Preemption output test call
- Detector response test

The multimode phase selector shall be capable of call bridging.

When used with a GPS radio unit, the multimode phase selector shall relay a priority request to the next adjacent intersection based on the direction indicated by the vehicle's turn signals.

The multimode phase selector shall support evacuation mode for Low priority calls. The

multimode phase selector shall allow relative priority.

907-639.02.3.2.1.1--Card Rack. The required card rack shall provide simplified installation of a multimode phase selector into controller cabinets that do not already have a suitable card rack.

The card rack shall be factory wired with one (1) connector, located behind the card slot, and one (1) connector on the front of the card rack.

The card rack connector on the front shall provide for connections to the traffic controller. The Contractor shall verify card rack requirements with the Engineer prior to submitting this equipment.

One (1) version of the card rack shall contain a 24 VDC power supply to power the phase selector. The power supply shall be capable of being powered by 100-240 VAC 50-60 Hz.

Another version of the card rack shall pass 120 VAC through to the rear card rack connector. This version shall provide labeled terminal blocks for connecting the primary infrared detectors to a phase selector.

Additionally, there shall be an optional card rack with a built-in Electromechanical Relay for use in switching high current loads such as flashers and gate operators. The relay shall be capable of switching the following loads.

Resistive: 10 A, 240 VAC
10 A, 30 VDC

General Use: 7.5 A, 120 VAC
7.5 A, 240 VAC
7 A, 30 VDC
1/6 hp, 120 VAC
1/3 hp, 240 VAC

907-639.02.3.2.2--Blank.

907-639.02.3.2.3--Intersection Radio/GPS Module. A GPS receiver and antenna shall obtain the intersection position from the GPS satellite system operated by the DOD. The time information from the GPS satellites shall be used to synchronize the frequency hopping of the 2.4 GHz radio and to time stamp the activity log. The GPS receiver and the GPS antenna shall reside inside of the Radio/GPS module.

A 2.4 GHz spread spectrum/frequency hopping radio shall provide the communications from the intersection to the vehicle as well as from intersection to intersection, or as shown in the plans.

As an alternate, the following Radio/GPS unit and Radio GPS antenna may be used in the intersection.

The Radio/GPS antenna shall be a hemispherical dome with a pair of 15-foot coax cables with factory terminated SMA connectors. One (1) of these connectors shall have a pin and the other will have a socket. This antenna shall include one (1) element for receiving the GPS signal and

one (1) element for transmitting and receiving the radio signal. This antenna, along with the radio/GPS module, may also be used in the intersection.

The radio shall have a maximum transmit power of not more than one (1) watt. The radio shall have an unobstructed range of at least 2,500 feet. The radio will meet FCC Part 15 rules. The radio and the radio antenna shall reside inside of the Radio/GPS module.

The Radio/GPS module shall be housed in an impact resistant polycarbonate housing that will include a water resistant wire entry point. It shall contain a water resistant access cover to facilitate cable termination.

The Radio/GPS module shall be designed for mounting at or near an intersection on mast arms and span wire poles. Additional hardware may be needed.

The Radio/GPS module shall communicate to the multimode phase selector via a Radio/GPS cable up to 250 feet in length.

907-639.02.3.2.4--Radio/GPS Cable. The Radio/GPS cable shall deliver sufficient power from the multimode phase selector to the Radio/GPS module and will deliver the necessary quality signal from the Radio/GPS module to the multimode phase selector over a non-spliced distance of 250 feet.

Coaxial cable will not be permitted for this cable.

The Radio/GPS cable shall deliver sufficient power from the vehicle control unit to the Radio/GPS module and will deliver the necessary quality signal from the Radio/GPS module to the vehicle control unit over a non-spliced distance of 50 feet.

The cable shall be of durable construction to satisfy the following installations:

- Direct burial.
- Conduit and mast arm.
- Exposed overhead (supported by messenger wire)

The outside diameter of the cable shall not exceed 0.4 inches. The insulation rating of the cable shall be 300 volts minimum.

The temperature rating of the detector cable will be -40°F to +194°F.

The conductors shall be AWG #20 (7x28) stranded and individually tinned. The cable shall be shielded and have a drain wire to provide signal integrity and transient protection.

When the aluminum enclosure version of the Radio/GPS module is used, the Radio/GPS cable assembly shall use a 15-pin connector that will mate with the connector on the Radio/GPS module.

907-639.02.3.2.5--Electrical and Environmental Requirements. All equipment supplied as part

of the priority control system intended for use in the controller cabinet shall meet the following electrical and environmental specifications spelled out in the NEMA Standards Publication TS 2-2003, Part 2: v02.06:

- Line voltage variations per NEMA TS 2-2003, Paragraph 2.1.2.
- Power source frequency per NEMA TS 2-2003, Paragraph 2.1.3.
- Power source noise transients per NEMA TS 2-2003, Paragraph 2.1.6
- Temperature range per NEMA TS 2-2003, Paragraph 2.1.5
- Humidity per NEMA TS 2-2003, Paragraph 2.1.5
- Shock test per NEMA TS 2-2003, Paragraph 2.2.9.
- Vibration per NEMA TS 2-2003, Paragraph 2.2.8
- Non-Destructive Transient immunity NEMA TS 2-2003, Paragraph 2.1.8.
- Input-output terminals NEMA TS 2-2003, Paragraph 2.1.7.
- FCC Part 15 Subpart B Class A EMC Standard
- Canada ICES-003, Issue 4:2004 Class A EMC Standard
- EN50293: 2000 Electromagnetic Compatibility--Road Traffic Signal Systems – Product Standard.
- EN 61326-1:2006 EMC Standard.
- EN 55011:2007 +A2:2007 EMC Standard.

907-639.02.4--Type 3 Emergency Vehicle Preemption with Remote Cabinet Monitoring.

907-639.02.4.1--Vehicle Equipment. The Vehicle Device shall conform to the following requirements:

- The device shall function correctly between -34°C and +74°C.
- The device shall be capable of being mounted inside a vehicle either under a seat or strapped under the dashboard. The unit will come with all wiring needed to connect the system to the vehicle.
- The device shall interface to a non-invasive road sensor for environmental measurements via either RS485 or Bluetooth connection.
- The device shall be provided with appropriately rated and keyed connectors that allows the device to be exchanged by unplugging connectors, without tools.
- The device shall incorporate an integrated GPS and/or cell modem.
- The configuration of the device shall be accomplished by accessing the internal web server with a browser. It shall be possible to configure the device without any special software.
- The device shall incorporate an integrated GPS which will allow the device to geo-locate itself on the map, without configuration.
- The device shall operate without requiring static IP address. The only configuration required at the device is to enter the URL of where the TSPRMS central software is hosted.
- In the event that the cell service is interrupted or is not available, the device shall store any events that occur in internal memory, and forward these events automatically to the cabinet monitoring system when the cell service is restored. In this way, a complete record of events at the device can be maintained even if cell service is interrupted for a period.
- The device shall utilize HTTP and HTTPS protocols, and XML data structures, for

communications with the cabinet monitoring system. In this way the data will be open for future expansion and competition. The use of secret proprietary protocols is not permitted.

- The device shall support Ethernet, cellular and license free radio communication.
- The device shall have the option of being supplied with an enhanced GPS, which provides GPS coordinates based on dead-reckoning even when the GPS signal is shielded from the vehicle such as under an overpass; in a tunnel or in between tall buildings in a city. The dead reckoning system shall include accelerometers, gyroscopes and a distance measure that will provide accuracy of better than 20 feet in 1000 feet, when there is no information from the GPS satellites. The enhanced GPS shall optionally be connected to the vehicle OBD-II port; the J1939 ECU port (for heavy vehicles) or a wheel tick sensor as the project requires. The enhanced GPS shall self-calibrate the wheel tick input.

907-639.02.4.2--Intersection Equipment. It is a requirement that the Emergency Vehicle Preemption with Remote Cabinet Monitoring system operate independent of the brand/type of intersection controller deployed at the intersection. The Contractor shall install a small field device into each intersection cabinet which connects to the terminal strip in the cabinet (via a provided wiring harness) and makes the system function independent of controller operation. A 19" Rack Mounted option shall be available if required in the plans.

The system Field Device shall conform to the following requirements:

- The Device shall function correctly between -34°C and +74°C.
- The nominal size of the Device shall be 19" x 7.455" by 1.719", and shall be suitable for placing in Traffic Signal Cabinets specified in Section 632 of the attached specification.
- The Device shall be provided with appropriately rated connectors that allow the Device to be exchanged by unplugging connectors, without tools.
- The Device shall incorporate an integrated GPS and cell modem (when required).
- The configuration of the Device shall be accomplished by accessing the internal web server with a browser. It shall be possible to configure the Device without any special software.
- The Device shall be powered via a standard 120V input power.
- The Device shall allow for the routing of the controller configuration packets to and from the controller (either by Ethernet or serial communications) for the three types of controller that are utilized by the Department. In this way it shall be possible to configure the controller, and utilize the controller specific software to interrogate the controller, and the system shall provide the communications pipe which allows this to be accomplished.
- The Device shall utilize field initiated communications. This allows for a low cost cellular data plans to be used, with infrequent polling. However, when an abnormal event occurs and is detected by the Device, then the Device will immediately initiate the transfer of a data packet to the system to enable real-time alerting of response personnel to take place.
- The Device shall, within the size limitations above, include a battery and battery charging/monitoring circuit, to allow the system to function correctly even when all power to the intersection has failed. The battery shall continue to power the Device for a minimum of five (5) hours after all power has failed to the intersection.
- The Device shall incorporate an integrated GPS which will allow the Device to geo-locate itself on the map, without configuration.

- The Device shall operate without requiring a static IP address. The only configuration required at the Device is to enter the URL of where the system central software is hosted.
- In the event that the cell service is interrupted or is not available, the Device shall store any events that occur in internal memory, and forward these events automatically to the system when the cell service is restored. In this way, a complete record of events at the device can be maintained even if cell service is interrupted for a period.
- The Device shall utilize HTTP and HTTPS protocols, and XML data structures, for communications with the system. In this way the data will be open for future expansion and competition. The use of secret proprietary protocols is not permitted.

907-639.02.4.3--Client User Interface. The user interface software shall provide, at a minimum, features to meet the following requirements:

907-639.02.4.3.1--General. The user interface shall be web based and able to be viewed using a browser. Internet Explorer, Chrome and Firefox browsers shall be supported, as well as Safari on an iPad. Systems that use remote desktop or similar to view a thick-client user interface will not be acceptable. The user interface shall require a user name and password to log on.

907-639.02.4.3.2--Map Display. The system shall include a scrollable, zoomable map display, with the intersections and emergency vehicles shown as representative icons on the map.

The alarm status of the intersection shall be clearly indicated on the icon on the map, so that the user can see at a glance which intersections are in alarm.

The map display shall also include a list of intersections, with the number and priority of alarms indicated on the list. Intersections in high priority alarm shall be moved to the top of the list, followed by medium priority, low priority and then finally by intersections not in alarm.

The icons shall change to be able to clearly indicate if an intersection is offline.

Clicking on the icon on the map shall expose a box with the current parameters of the intersection shown.

The default map display position and zoom shall be configurable by user, so that the user's view will default to show the intersections that the user is responsible for managing.

The map view shall have the ability to show traffic overlays on the map.

The map view shall be able to show vehicle trails when the vehicles have been in an emergency or not active.

907-639.02.4.3.3--Regional Intersection and Vehicle Grouping. The System shall provide for intersections and vehicles to be logically grouped into regional groupings (for example, north; south; Fire 1; Fire 2)

The System user logon shall be configurable so that if a maintenance or operational person is responsible for, say, the north intersections and emergency vehicles then when that user logs on, the user has visible only the intersections that belong to the group that the user is authorized to view.

907-639.02.4.3.4--Intersection Detail Display. Intersection detail display shall be possible to drill down, either from the map icon or from the list, to a device level detail for the intersection, which as a minimum shall display the following parameters:

- The alarm status, with priority indicated, and a text description of the alarm (if an alarm is present for this device).
- The time since the last communication with the device
- The following parameters (real time now values, minimum for the day values, maximum for the day values, and average for the day values)
 - The AC mains voltage (value)
 - The battery back-up voltage (value)
 - The cabinet temperature (value)
 - The cabinet humidity (value)
 - The presence of AC power (OK or Fail)
 - The flashing status of the intersection (OK or Flashing)
 - Stop Time status (OK or Stop Time Active)
 - The cabinet door status (Open or Closed)
 - The intersection fan status (Fan On or Fan off)
- It shall be possible to view graphs of each of the value parameters in graphical form, over the recent two week period. This includes at a minimum real time graphs of:
 - The AC mains voltage
 - The battery back-up voltage
 - The cabinet temperature
 - The cabinet humidity

907-639.02.4.3.5--Diagnostics and Log Display. From the device level detail, it shall be possible to further drill down to get the raw data; the error logs; and the communications logs to allow a technician to fault-find problems on the System.

It shall also be possible to:

- filter the logs by Device; by Device Type and/or by Group as well as between dates.
- print these selected logs to a local printer or a PDF file.
- export these logs to Excel on the local computer for further analysis.

907-639.02.4.3.6--Alarms. The System shall have a comprehensive alarm generation capability.

It shall be possible to configure alarms to be generated on any parameter becoming out of tolerance, including analog values, digital values and enumerated values.

Alarms shall be configurable to be of Low, High or Critical Priority.

The alarm priority shall be displayed throughout the System, on all displays, using color codes such as red-critical; yellow – high; and amber-low to indicate the priority of the alarm.

The current active alarms shall be accessible for view via an expandable window, to see which alarms are active and when the alarm occurred. The highest priority alarms shall rise to the top of the list.

907-639.02.4.3.7--Alerts. The System shall have comprehensive alerting capability, to enable the response personnel to be notified when an abnormal situation has occurred.

It shall be possible to configure alerts to one or more personnel for each alarm. This will cause, as selected, an SMS and/or an email to be sent to the person when an alarm occurs.

The alert shall be configurable to optionally send via email and/or via SMS a message when an alarm clears.

The intention is that the System provides the alerts to the user in near real time. The SMS and email shall be issued within 30 seconds of the occurrence of event which results in an alert being issued.

907-639.02.4.3.8--Reports. It shall be possible to view reports on the screen, in the browser of the System, and if desired print the report to a printer or a PDF file.

Alarm Activity Report. The System shall include a report which shows the alarms activity for a period. The Alarm Report shall indicate the time the alarm occurred; by color the priority of the alarm; whether it is still active; and if not active then the time that the alarm cleared. It shall be possible to filter the alarms by Device Type; by Device and/or by Device Group as well as by date time to be able drill down into a large alarm list to be able to view, for example, the alarm activity for a particular intersection or controller type over a three month period.

User Activity Report. The System shall include a report which shows user activity for a given period, to enable an audit of a user's response to an alarm to be made. The report shall show which screens the user viewed; when the screen was viewed, and the IP address of the computer from which the screen was viewed.

Preempt System Operational Availability Report. The System shall include a report which shows the overall operational availability of the Department intersections. The intersection is available when not in an alarm condition such as flashing or power fail. The availability report shall be detailed for each intersection for the period (say 1 month) and summarized by group (region) and for each controller type. Using this report it shall be possible to determine if system availability is trending up or down for the overall intersection system; by region and/or by controller type. It shall also be possible to compare the system availability by region; and also to compare system availability by controller type.

Fault Occurrence By Controller Type Report. The System shall include a report which shows the number and type of faults that have occurred in each intersection, which can be summarized by

region and/or by controller type. This report will allow the user to compare the frequency of faults by region and by controller type.

Response Time for Fault Repair Report. The System shall include a report which shows the response time to clear faults, for a given time frame (say 1 month). This report will allow the user to determine the number of faults, and the total and average time to clear the fault. This report will allow the response times by region to be compared.

Vehicle Trip Report. The System shall include a report which shows all the emergency vehicle trips and include information on start time, end time, total travel time, average speed and destination point. The report shall provide the user the ability to select a start date and end date. This report will show response times to emergency call outs and how quickly the vehicle arrived.

907-639.02.4.3.9--Vehicle Trails. The maps display shall show live information of the preempt status of the emergency vehicles on the system.

The user shall have the option to select which class of emergency vehicles to display on the map via the information overlay menu.

The information overlay will provide the option to select the number of hours of live data the operator would like to see. This ranges from 1 hour to 24 hours. The user shall have the ability to select that the trails will fade away as the data becomes older.

The information overlay shall provide the ability for user to display the device names on the map, for easy identification of both intersections and emergency vehicles.

Operators will have the ability to display legends that explain the emergency vehicle trails color codes, including idle, preempt service requested, left turn indicator, and right turn indicator so that it is easy to see the behavior of the emergency vehicle.

907-639.02.4.3.10--Vehicle Playback. The System shall include the ability to playback the activity of the emergency vehicles, so that retrospective fault finding of the preempt system can be carried out.

Playback shall support the same controls for panning and zooming the map, as well as using the information overlay to select the type of data being displayed on the playback menu.

Users shall have the additional functionality of controlling which devices are displayed by selecting the checkboxes on a selection panel on the left of the map.

The playback screen should provide the user with the option to select a date range via a drop down date selector menu. The menu will provide a full calendar and the option to select the exact start time and end time for the playback.

The bottom section of the map screen shall display the timestamp based on the location within playback.

The user shall have controls that allow one click access to start from the beginning, rewind, play, fast-forward, and scroll to end.

The user shall have the option to use a slider that is operated by click and drag to the time of interest in the playback.

907-639.02.4.3.11--Remote Power Cycle. The System shall include the ability to remotely cycle power to the outlets on the back of the field device. In this way it shall be possible to cycle power to ancillary connected equipment such as network switches, cameras and similar equipment.

The user interface shall display the status of the outlets, and provide confirmation via an associated input whether the sockets are energized or not.

907-639.02.4.4--Electrical and Environmental Requirements. All equipment supplied as part of the priority control system intended for use in the controller cabinet shall meet the following electrical and environmental specifications spelled out in the NEMA Standards Publication TS 2-2003, Part 2: v02.06:

- Line voltage variations per NEMA TS 2-2003, Paragraph 2.1.2.
- Power source frequency per NEMA TS 2-2003, Paragraph 2.1.3.
- Power source noise transients per NEMA TS 2-2003, Paragraph 2.1.6
- Temperature range per NEMA TS 2-2003, Paragraph 2.1.5
- Humidity per NEMA TS 2-2003, Paragraph 2.1.5
- Shock test per NEMA TS 2-2003, Paragraph 2.2.9.
- Vibration per NEMA TS 2-2003, Paragraph 2.2.8
- Non-Destructive Transient immunity NEMA TS 2-2003, Paragraph 2.1.8.
- Input-output terminals NEMA TS 2-2003, Paragraph 2.1.7.
- FCC Part 15 Subpart B Class A EMC Standard
- Canada ICES-003, Issue 4:2004 Class A EMC Standard
- EN50293: 2000 Electromagnetic Compatibility--Road Traffic Signal Systems -- Product Standard.
- EN 61326-1:2006 EMC Standard.
- EN 55011:2007 +A2:2007 EMC Standard.

907-639.02.5--Confirmation Light. This indication is intended for use at traffic signal installations that employ Emergency Vehicle Preemption (EVP) systems which utilize confirmation lights to notify the emergency vehicle operators that the designated preemption display is active and from which approach direction the call activating the display was received. The indication shall be an incandescent, tungsten-halogen or light emitting diode (LED) lamp. The confirmation light lamp shall be rated for outdoor use and shall have the illumination equivalent of a 95W incandescent lamp.

907-639.02.5.1--Confirmation Light Lamp Holder. The confirmation light lamp holder shall meet the following.

- (a) Be precision die-cast aluminum with heat sinks and ribbing to maximize heat dissipation.
- (b) Be a medium base lamp holder that accepts PAR38 lamps up to 250W incandescent or Tungsten-Halogen, and will also accept LED style lamps.
- (c) Have a premium porcelain socket with double reinforced screw shell and spring loaded center contact.
- (d) Be suitable for wet locations.
- (e) Have a gasket that consists of a thick silicone rubber seal backed up by a durable heat barrier and anchored in place with a metal lock ring to ensure unit stays weather tight in any position, above or below horizontal.
- (f) Have a nominal ½-inch NPT threaded adjustable arm, locknut preinstalled, and pre-lubed to facilitate mounting.
- (g) Have cast-in quadrants with serrated teeth to lock unit in place once aimed.
- (h) Have extra-long wire pigtails for easy splicing.
- (i) Shall be UL Listed.

907-639.02.5.2--Confirmation Light Mounting. The confirmation light may be mounted as an assembly with the appropriate optical detector, utilizing conventional conduit and fittings in accordance with Section 722 of the Standard Specifications. When mast arm mounted, all wiring shall be routed internally to the mounting assembly.

907-639.02.6--Rotating Beacon. The rotating beacon indication is intended for use in traffic signal systems that employ EVP systems that utilize rotating beacons to notify the emergency vehicle operators that a preemption call has been received.

907-639.02.6.1--General Construction. The rotating beacon shall be constructed with a non-corroding polycarbonate base with combination mount with a flat base and 1-inch pipe mounting. The lens shall have an elliptical dome shape and shall provide a high light transmission and light output. The outer surface shall be smooth to minimize the accumulation of dust and dirt. A gasket seal shall be provided between the dome lens and the base. The rotating beacon assembly shall be nominally six and one-half inches (6½") tall and five and one-half inches (5½") wide at its maximum width. The rotating beacon shall have a single light source and shall provide the rotating effect by a rotating refractor within the assembly. The dome lens shall be BLUE in color.

907-639.02.6.2--Rotating Beacon Mounting. The rotating beacon shall be mounted at locations and at heights above the pole bases as shown on the plans. The rotating beacon shall be mounted in a vertical position, employing a single traffic signal bracket in accordance with Section 722, of the Standard Specifications on the bottom of the rotating beacon. When mounted on a steel pole with internal wiring, all wiring shall be internal to the bracket and the pole.

907-639.03--Construction Requirements.

907-639.03.1--Railroad Preemption. The Contractor shall secure all items that are required to complete the installation. The Contractor shall coordinate with the railroad company for the connection of the Railroad Signal Preemption to the railroad controller's contact closure termination point as indicated in the Plans. The Contractor shall contact the railroad company

prior to starting any construction to obtain any requirements for the connection.

During construction, the Contractor shall meet all railroad requirements to provide the connection including:

- Boring, Jacking, or Trenching of casing pipe, conduit, roll pipe, or any other required materials.
- Conduit connections into cabinet.
- Contact closure cable connections on termination blocks.

When required by the railroad company and any agreements, the Contractor shall furnish a Flagger to accommodate work within the railroad right of way. The Contractor shall schedule all work to minimize time within the right of way.

907-639.03.2--Type 1, Type 2, and Type 3 Emergency Vehicle Preemption.

907-639.03.2.1--Vehicle Equipment. Equipment shall be the responsibility of the local maintaining agency for all necessary equipment and installation.

907-639.03.2.2--Intersection Equipment. The Contractor shall install, configure, and demonstrate a fully functional Emergency Vehicle Preemption System as shown in the Plans. The Contractor shall install all equipment according to the manufacturer's recommendations. The Type 1 intersection equipment including, the multimode phase selector, intersection optical detector, associated optical detector cabling, and card rack shall be installed per the manufacturer's recommendations or as outlined in the plans and/or contract documents. The Type 2 and Type 3 intersection equipment including, the multimode phase selector, intersection Radio/GPS module, associated Radio/GPS cabling, card rack and Remote Monitoring Field Device shall be installed per the manufacturer's recommendations or as outlined in the plans and/or contract documents. All installation requirements of the equipment manufacturer shall be followed unless otherwise directed by the Engineer. All necessary equipment shall be mounted in the cabinet and configured according to the Plans, Contract Documents, and manufacturer's recommendations. The completed installation shall present a neat and positive appearance and shall not in any way interfere with the proper operation of the traffic signal system installation of which it is part.

907-639.04--Method of Measurement. Railroad Signal Preemption, Type 1 Optical Detector, Multimode Phase Selector, Type 2 Radio/GPS Module, and Type 3 Intersection Device will be measured per each. Type 1 Optical Detector Cable and Type 2 Radio/GPS Cable will be measured by the linear foot, which measurement will be computed horizontally and vertically along the pole, conduit or messenger cable which the electric cable is placed, from center to center of the several installations comprising the circuits. No extra length will be allowed within conduit for vertical changes in elevation of the conduit. No extra length will be allowed for cable inside signal heads, drip loops, or sag in aerial supported cable. The terminals for the measurements of lengths will be considered specifically as the center of the pull boxes, poles, signal heads or controller cabinets.

Confirmations Light and Rotating Beacon will be measured per each.

907-639.05--Basis of Payment. Railroad Signal Preemption, Type 1 Optical Detector, Multimode Phase Selector, Type 2 Radio/GPS Module, [Type 3 Intersection Device](#), Type 1 Optical Detector Cable, and Type 2 Radio/GPS Cable, measured as prescribed above, will be paid for at the contract price per each or linear foot, which price shall be full compensation for coordinating and accommodating railroad requirements, providing hardware, sealing; testing, cabling, connections, documentation, configuration, flagger, training, materials, labor, tools, equipment, and all other incidentals necessary to complete the work and provide a fully functional preemption system.

Confirmations Light and Rotating Beacon, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for furnishing, installing, connection and testing all materials; for pulling through conduit, mast arms and poles for attaching to messenger cable; for final cleanup; and for all labor, equipment, tools and incidentals necessary to complete the work.

Payment will be made under:

907-639-A: Railroad Signal Preemption	- per each
907-639-B: Type 1 Optical Detector	- per each
907-639-C: Type 1 Optical Detector Cable	- per linear foot
907-639-D: Multimode Phase Selector	- per each
907-639-E: Type 2 Radio/GPS Module	- per each
907-639-F: Type 2 Radio/GPS Cable	- per linear foot
907-639-G: Confirmation Light	- per each
907-639-H: Rotating Beacon	- per each
907-639-J: Type 3 Intersection Device	- per each

CITY OF HATTIESBURG, MISSISSIPPI

SPECIAL PROVISION NO. 907-643-3

CODE: (IS)

DATE: 09/20/2021

SUBJECT: Video Vehicle Detection

Section 643, Video Vehicle Detection System, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete Section 643 on pages 601 thru 628 and substitute the following.

SECTION 907-643 - VIDEO VEHICLE DETECTION

907-643.01--Description. This section specifies the minimum requirements for Video Vehicle Detection (VVD) and Multi-Sensor Vehicle Detection (MSVD) furnished and installed in accordance with the design(s) for the location(s) designated on the project plans, in any related notice to bidders, or as directed. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, test, and operate VVD and/or MSVD. The video vehicle detection system shall at a minimum use one or more cameras recommended by the manufacturer or an integrated thermal sensor and video analytics hardware and software to detect vehicle presence, provide a detection output, and generate volume, occupancy, and speed data.

Type 1 Video Vehicle Detection will provide presence or pulse detection of vehicles, bicycles, and pedestrians for Traffic Signal Controller inputs. There are two variations of Type 1 Video Vehicle Detection: Type 1A – camera with independent video detection processor, Type 1B – a single integrated camera with video detection processor. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, and test the Video Vehicle Detection equipment, complete and ready for service.

Type 2 Video Vehicle Detection will provide presence or pulse detection of vehicles, bicycles, and pedestrians for Traffic Signal Controller inputs. Type 2 Video Vehicle Detection shall be designed to be span wire mounted. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, and test the Video Vehicle Detection equipment, complete and ready for service.

Type 3 Video Vehicle Detection will provide presence or pulse detection and tracking of vehicles, bicycles, and pedestrians for Traffic Signal Controller inputs. Type 3 Video Vehicle Detection shall be a single fish-eye lens camera, designed to be mounted on signal pole or mast arm. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, and test the Video Vehicle Detection equipment, complete and ready for service.

The Multi-Sensor Vehicle Detection (MSVD) will provide detection of vehicles on a roadway using a Multi-Sensor Detection for Traffic Signal Controller inputs. The Multi-Sensor shall utilize two (2) different sensors of different technologies, video imaging and radar, to detect and track vehicles. The module shall process information from both video imaging and radar sensors simultaneously in real-time. The work shall consist of providing all labor, materials, equipment, and incidentals necessary to furnish, install, and test the Multi-Sensor Vehicle Detection equipment, complete and ready for service.

907-643.02--Materials.

907-643.02.1--Materials Type 1 Video Vehicle Detection. The Type 1 Video Vehicle Detection shall consist of power supply, video camera, mounting brackets, and lightning protection as recommended by the manufacturer, video detection processors/extension modules capable of processing the number of camera and phase combination video sources shown on the project plans or in the purchase order. In addition, Type 1B Video Vehicle Detector shall consist of a single integrated camera with video detection processor, a cabinet interface which mounts in a standard detector rack or as a standalone shelf mount unit.

907-643.02.1.1--Functional Requirements for Type 1 Video Vehicle Detection. The Type 1 Video Vehicle Detection configuration shall utilize video processors with one or more video inputs and one (1) video output, responding to specific site applications, camera locations and detection zones shown on the project plans. Video processors or interface modules shall be provided which plug directly into NEMA TS 1 and TS 2 detector racks without adapters. Extension modules which allow detection zones from one camera to be routed to other card slots shall also be provided if required. The system shall be Ethernet compatible with an RJ45 port. The Type 1 Video Vehicle Detection shall be able to detect vehicles and bicycles in multiple lanes using only the video image.

907-643.02.1.2--Interface Type 1 Video Vehicle Detection. The following interfaces shall be provided:

- 1) Video inputs that accept RS 170 (NTSC) signals from an external video source. A BNC type interface connector shall be provided and located on the front of the video processing unit.
- 2) A LED indicator to indicate the presence of the video signal. The LED shall illuminate upon valid video synchronization and turn off when the presence of a valid video signal is removed.
- 3) One (1) video output per processor module. The video output shall be RS 170 compliant and shall pass through the input video signal. The video output shall have the capability to show text and graphical overlays to aid in system setup. The overlays shall display real-time actuation of detection zones upon vehicle detection or presence. Control of the overlays and video switching shall also be provided through the serial communications port. The video output interface connector shall be BNC or RCA type. If RCA connector is used, an RCA to BNC adapter shall be provided.
- 4) A serial communications port on the front panel. The serial port shall be compliant with RS-232 or RS-422 electrical interfaces and shall use a DB9 or RJ45 type connector. The serial communications interface shall allow the user to remotely configure the system and/or to extract calculated vehicle/roadway information.
- 5) Interface software. The interface protocol shall support multi-drop or point-to-multipoint communications. Each video detection sensor shall have the capability to be individually IP addressable either built in or with third party video server units.
- 6) Open collector contact closure outputs meeting NEMA TS-2 requirements. The open collector output will be used for vehicle detection indicators as well as discrete outputs for alarm conditions.
- 7) LED status indicators on the front panel. The LED's shall illuminate when a contact closure

- output occurs. Provide one output LED for each contact closure output.
- 8) A mouse compatible port (PS-2 or USB) on the front panel of the video processing unit. The mouse port shall be used as part of the system setup and configuration.
 - 9) A Cabinet Interface shall be provided that is specifically designed to mount in a standard NEMA TS 1 and TS 2 detector rack without adapters or rewiring, or as a stand-alone shelf mount unit. The Interface shall operate in a temperature range from -31°F to +165°F and a humidity range from 0% to 95% relative humidity. The Cabinet Interface shall be powered by 100v to 240v AC, 50 or 60Hz. The front of the Interface shall include LED detection indications for each channel of detection. One BNC video output and detector test switches that allow the user to place calls on each channel

907-643.02.1.3--Functionality Type 1 Video Vehicle Detection. Detection zones shall be programmed via an on-board menu displayed on a video monitor and a pointing device connected to the video detection processor. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters. The video detection processor shall detect vehicles, bicycles, and pedestrians in real time as they travel across each detection zone. The video detection processor shall have an RS-232 (DB9 or RJ45) port for communications with an external computer. The video detection processor port shall be multi-drop capable.

It shall be possible to upload and save all configuration data including loop placement and save the file on a computer. It shall be possible to download a configuration file from a computer to the detection device.

The video detection processor shall accept new detection patterns from an external computer through the RS-232 port when the external computer uses the correct communications protocol for downloading detection patterns.

A WindowsTM based software designed for local and remote connection shall be provided for video capture, real-time detection indication and detection zone modification capability. The video detection processor shall send its detection patterns to an external computer through the RS-232 port.

The video detection processor shall default to a safe condition, such as minimum recall, fixed recall or a constant call on each active detection channel, in the event of unacceptable interference with the video signal, low visibility conditions, or power failure.

The system shall be capable of automatically detecting a low-visibility condition such as fog and respond by placing all defined detection zones in a constant call mode. The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists.

907-643.02.1.4--Detection. Type 1A shall have a minimum of 24 detection zones per camera input and each detection zone shall be capable of being sized to suit the site and the desired vehicle detection area. Type 1B shall have a minimum of 8 detection zones per camera input and each detection zone shall be capable of being sized to suit the site and the desired vehicle detection area.

A single detection zone shall be able to replace multiple inductive loops and the detection zones

shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

Placement of detection zones shall be done by using only a pointing device, and a Graphical Interface built into the video detection processor and displayed on a video monitor, to draw the detection zones on the video image from each video camera. Detection zones created in this manner shall be compatible with the PC-based software provided with the system.

The video detection processor shall support bicycle type zones where the zone can differentiate between motorized vehicles and bicycles, producing a call for one but not the other. Bicycle zones shall only output when a bicycle is detected. The video detection processor shall provide the ability to assign a separate output channel for bicycle zones to allow traffic controllers to implement special bicycle timing for applications where the traffic controller has separate bicycledetection inputs. Bicycle zones shall have the ability to have extensions assigned to individual bicycle zones for applications where the traffic controller does not have bicycle specific detectioninputs.

For Type 1A, six (6) additional count zones for bicycles shall be provided to accumulate bicycle counts at user specified intervals.

The video detection processor's memory shall be non-volatile to prevent data loss during power outages.

When a vehicle is detected crossing a detection zone, the corners or entire zone of the detection zone shall flash/change color on the video overlay display to confirm the detection of the vehicle. It shall be possible to record the operation of the unit in real time with the detection zones operating.

Detection shall be at least 98% accurate in all weather conditions, with slight degradation acceptable under adverse weather conditions (e.g. rain, snow, or fog) which reduce visibility.

The video detection processor shall maintain normal operation of existing detection zones when one (1) zone is being added or modified.

The video detection processor shall output a constant call on any detector channel corresponding to a zone being modified and shall resume normal operation upon completion.

Detection zones shall be directional to reduce false detections from objects traveling in directions other than the desired direction of travel in the detection area.

The video detection processor shall process the video input from each camera using a microprocessor at 30 frames per second at one volt, peak to peak, 75 ohms, or EIA 170 NTSC video standard.

The video detection processor shall output minimum recall, fixed recall or constant call for each enabled detector output channel if a loss of video signal occurs. The recall behavior shall be user selectable for each output. The video detection processor shall output a constant call during the

background "learning" period.

Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds in increments of 0.1 seconds.

Type 1A shall have up to six (6) detection zones per camera view that have the capability to count the number of vehicles detected, measure classification, **occupancy**, and speed. The data values shall be internally stored within the processor module for later retrieval through the RS-232 port. The data collection interval shall be user definable in periods of 5, 15, 30, or 60 minutes or by intersection cycle. Real-time data shall be retrieved from the PC-based software provided with the system.

~~907-643.02.1.5~~---Camera. Type 1A cameras shall be completely compatible with the video detection processor and shall be certified by the manufacturer to ensure proper system operation.

Type 1B shall be a single integrated camera with built in video detection processor.

The Video Vehicle Detection shall produce accurate detector outputs under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 0.009 to 930 foot-candles.

The camera shall use a color CCD sensing element with resolution of not less than 470 lines horizontal and 400 lines vertical.

The camera shall include mechanisms to compensate for changing of lighting by using an electronic shutter and/or auto-iris lens.

The camera shall include a variable focal length lens with factory preset focus that requires no field adjustment. Zooming of the camera lens to suit the site geometry by means of a portable interface device designed for that purpose. The horizontal field of view shall be adjustable. Camera configuration shall be customized for each approach based on field site conditions and the project plans.

The camera electronics shall include automatic gain control (AGC) to produce a satisfactory image at night.

The camera shall be housed in a weather-tight sealed enclosure. The housing shall be field rotatable to allow proper alignment between the camera and the traveled road surface.

The camera enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view.

The camera enclosure shall include a thermostatically controlled heater to assure proper operation of the lens shutter at low temperatures and prevent moisture condensation on the optical faceplate

of the enclosure. The heater shall directly heat the glass lens and require less than five (5) watts over the temperature range.

Power consumption of the camera shall be 15 watts or less under all conditions.

The camera enclosure shall be equipped with separate, weather-tight connections for power and setup video cables at the rear of the enclosure. These connections shall allow diagnostic testing and viewing of video at the camera while the camera is installed on a mast arm or pole using a lens adjustment module furnished under this bid item.

The video signal output by the camera shall in accordance with NTSC standards.

All necessary mounting brackets shall be mounted to pole shafts, mast arms, or other structures to mount cameras as indicated on the project plans. Mounting brackets shall result in a fixed- position mounting. Mounting Brackets shall be included at no additional cost.

907-643.02.1.6--Video Cable. The cable provided shall be as recommended by the manufacturer for optimal video detection performance. The power and video cable may be installed under the same outer jacket. The cable and installation tools shall be approved by the supplier and manufacturer's instructions must be followed to ensure proper connection.

907-643.02.1.7--Power Cable. The cable provided shall be as recommended by the manufacturer for optimal video detection performance.

Camera power cable shall be suitable for installation in conduit and in exposed sunlight environment, and UL listed.

The power and video cable may be installed under the same outer jacket. The cable and installation tools shall be approved by the supplier and manufacturer's instructions must be followed to ensure proper connection.

907-643.02.1.8--Surge Protection. Surge protection devices shall be provided for all new or added video detection devices as recommended by the manufacturer. A surge protection device (SPD) shall be installed at the point the video detection devices receive 120 volt power and connected in series with the circuits. SPDs shall be selected and installed according to recommendation from the device manufacturer. The units shall be configured with receptacles. The units shall have an internal fuse protection and shall provide common mode (L+N-G) protection.

Video and/or Power cable shall be protected with an inline surge suppressor as recommended by the manufacturer or a panel mounted surge suppressor as recommended by the manufacturer or approved equal, installed and grounded per manufacturer's recommendations.

907-643.02.1.9--Physical and Environmental Specifications. Physical and Environmental Specifications shall be as follows.

Video Vehicle Detection Processor: The video vehicle detection processor shall operate reliably in a typical roadside traffic cabinet environment. Internal cabinet equipment and a videovehicle detection processor shall be provided that meets the environmental requirements of NEMATS-2-2003 Section 2. If the processor is located in the sensor, it shall meet the same requirements.

Video Camera Sensor: The operating ambient temperature range shall be -30°F to 140°F. Additionally, a heater shall be included to prevent the formation of ice and condensation in cold weather. The heater shall not interfere with the operation of the video camera sensor electronics, or cause interference with the video signal.

Vibration: Vibrations shall meet the requirements of NEMA TS 2-2003 Section 2.1.9. Shock: Shock shall meet the requirements of NEMA TS 2-2003 Section 2.1.10.

Acoustic Noise: A video camera sensor and enclosure shall be provided that can withstand 150 dB for 30 minutes continuously, with no reduction in function or accuracy.

907-643.02.2--Materials Type 2 Video Vehicle Detection. The Type 2 Video Vehicle Detection shall be span wire mounted and consist of power supply, video camera, mounting brackets, and lightning protection as recommended by the manufacturer, video detection processors/extension modules capable of processing the number of camera and phase combination video sources shown on the project plans or in the purchase order

907-643.02.2.1--Functional Requirements for Type 2 Video Vehicle Detection. The Type 2 Video Vehicle Detection configuration shall utilize video processors with one or more video inputs and one (1) video output, responding to specific site applications, camera locations and detection zones shown on the project plans. Video processors or interface modules shall be provided which plug directly into NEMA TS 1 and TS 2 detector racks without adapters. Extension modules which allow detection zones from one camera to be routed to other card slots shall also be provided if required. The system shall be Ethernet compatible with an RJ45 port. The Type 2 Video Vehicle Detection shall be able to detect vehicles and bicycles in multiple lanes using only the video image.

907-643.02.2.2--Interface Type 2 Video Vehicle Detection. The following interfaces shall be provided:

- 1) Video inputs that accept RS 170 (NTSC) signals from an external video source. A BNC type interface connector shall be provided and located on the front of the video processing unit.
- 2) A LED indicator to indicate the presence of the video signal. The LED shall illuminate upon valid video synchronization and turn off when the presence of a valid video signal is removed.
- 3) One (1) video output per processor module. The video output shall be RS 170 compliant and shall pass through the input video signal. The video output shall have the capability to show text and graphical overlays to aid in system setup. The overlays shall display real-time actuation of detection zones upon vehicle detection or presence. Control of the overlays and video switching shall also be provided through the serial communications port. The video output interface connector shall be BNC or RCA type. If RCA connector is used,

- an RCA to BNC adapter shall be provided.
- 4) A serial communications port on the front panel. The serial port shall be compliant with RS-232 or RS-422 electrical interfaces and shall use a DB9 or RJ45 type connector. The serial communications interface shall allow the user to remotely configure the system and/or to extract calculated vehicle/roadway information.
 - 5) Interface software. The interface protocol shall support multi-drop or point-to-multipoint communications. Each video detection sensor shall have the capability to be individually IP addressable either built in or with third party video server units.
 - 6) Open collector contact closure outputs meeting NEMA TS 2 requirements. The open collector output will be used for vehicle detection indicators as well as discrete outputs for alarm conditions.
 - 7) LED status indicators on the front panel. The LED's shall illuminate when a contact closure output occurs. Provide one output LED for each contact closure output.
 - 8) A mouse compatible port (PS-2 or USB) on the front panel of the video processing unit. The mouse port shall be used as part of the system setup and configuration.
 - 9) A Cabinet Interface shall be provided that is specifically designed to mount in a standard NEMA TS 1 and TS 2 detector rack without adapters or rewiring, or as a stand-alone shelf mount unit. The Interface shall operate in a temperature range from -31°F to +165°F and a humidity range from 0% to 95% relative humidity. The Cabinet Interface shall be powered by 100v to 240v AC, 50 or 60Hz. The front of the Interface shall include LED detection indications for each channel of detection. One BNC video output and detector test switches that allow the user to place calls on each channel

907-643.02.2.3--Functionality Type 2 Video Vehicle Detection. Detection zones shall be programmed via an on-board menu displayed on a video monitor and a pointing device connected to the video detection processor. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters. The video detection processor shall detect vehicles, bicycles, and pedestrians in real time as they travel across each detection zone. The video detection processor shall have an RS-232 (DB9 or RJ45) port for communications with an external computer. The video detection processor port shall be multi-drop capable.

It shall be possible to upload and save all configuration data including loop placement and save the file on a computer. It shall be possible to download a configuration file from a computer to the detection device.

The video detection processor shall accept new detection patterns from an external computer through the RS-232 port when the external computer uses the correct communications protocol for downloading detection patterns.

A Windows™ based software designed for local and remote connection shall be provided for video capture, real-time detection indication and detection zone modification capability. The video detection processor shall send its detection patterns to an external computer through the RS-232 port.

The video detection processor shall default to a safe condition, such as minimum recall, fixed recall or a constant call on each active detection channel, in the event of unacceptable interference with

the video signal, low visibility conditions, or power failure.

The system shall be capable of automatically detecting a low-visibility condition such as fog and respond by placing all defined detection zones in a constant call mode. The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists.

907-643.02.2.3.1--Functionality for Type 2 Video Vehicle Detection. The Video Detection Processor (VDP) for the Type 2 Video Vehicle Detection shall employ Dynamic Zone Stabilization to provide motion tracking and compensation for swaying camera sensors mounted on dual or single span wires. The VDP shall include software that discriminately detects the presence of vehicles and bicycles in single or multiple lanes using only the video image. The VDP shall compensate for swaying motions by tracking the position of the stop bar for the approaching vehicle or bicycle movement. The VDP shall compensate for low frequency (cable sag) motion due to temperature changes during the day. The VDP shall compensate for moderate frequency motion induced by winds. The VDP shall compensate for up to ± 5 degrees of tilt from vertical without any adverse detection false calls or dropped calls.

907-643.02.2.4--Detection. Type 2 shall have a minimum of 24 detection zones per camera input shall be possible, and each detection zone shall be capable of being sized to suit the site and the desired vehicle detection area. .

A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single phase of traffic movement.

Placement of detection zones shall be done by using only a pointing device, and a Graphical Interface built into the video detection processor and displayed on a video monitor, to draw the detection zones on the video image from each video camera. Detection zones created in this manner shall be compatible with the PC-based software provided with the system.

The video detection processor shall support bicycle type zones where the zone can differentiate between motorized vehicles and bicycles, producing a call for one but not the other. Bicycle zones shall only output when a bicycle is detected. The video detection processor shall provide the ability to assign a separate output channel for bicycle zones to allow traffic controllers to implement special bicycle timing for applications where the traffic controller has separate bicycledetection inputs. Bicycle zones shall have the ability to have extensions assigned to individual bicycle ones for applications where the traffic controller does not have bicycle specific detection inputs.

Six (6) additional count zones for bicycles shall be provided to accumulate bicycle counts at user specified intervals.

The video detection processor's memory shall be non-volatile to prevent data loss during power outages.

When a vehicle is detected crossing a detection zone, the corners or entire zone of the detection

zone shall flash/change color on the video overlay display to confirm the detection of the vehicle. It shall be possible to record the operation of the unit in real time with the detection zones operating.

Detection shall be at least 98% accurate in all weather conditions, with slight degradation acceptable under adverse weather conditions (e.g. rain, snow, or fog) which reduce visibility.

The video detection processor shall maintain normal operation of existing detection zones when one (1) zone is being added or modified.

The video detection processor shall output a constant call on any detector channel corresponding to a zone being modified and shall resume normal operation upon completion.

Detection zones shall be directional to reduce false detections from objects traveling in directions other than the desired direction of travel in the detection area.

The video detection processor shall process the video input from each camera using a microprocessor at 30 frames per second at one volt, peak to peak, 75 ohms, or EIA 170 NTSC video standard.

The video detection processor shall output minimum recall, fixed recall or constant call for each enabled detector output channel if a loss of video signal occurs. The recall behavior shall be user selectable for each output. The video detection processor shall output a constant call during the background "learning" period.

Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds in increments of 0.1 seconds.

The processor shall have up to six (6) detection zones per camera view shall have the capability to count the number of vehicles detected, measure classification and speed. The data values shall be internally stored within the processor module for later retrieval through the RS-232 port. The data collection interval shall be user definable in periods of 5, 15, 30, or 60 minutes or by intersection cycle. Real-time data shall be retrieved from the PC-based software provided with the system.

907-643.02.2.5--Camera. Type 2 cameras shall be completely compatible with the video detection processor and shall be certified by the manufacturer to ensure proper system operation.

The Video Vehicle Detection shall produce accurate detector outputs under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 0.009 to 930 foot-candles.

The camera shall use a color CCD sensing element with resolution of not less than 470 lines horizontal and 400 lines vertical.

The camera shall include mechanisms to compensate for changing of lighting by using an

electronic shutter and/or auto-iris lens.

The camera shall include a variable focal length lens with factory preset focus that requires no field adjustment. Zooming of the camera lens to suit the site geometry by means of a portable interface device designed for that purpose. The horizontal field of view shall be adjustable. Camera configuration shall be customized for each approach based on field site conditions and the project plans.

The camera electronics shall include automatic gain control (AGC) to produce a satisfactory image at night.

The camera shall be housed in a weather-tight sealed enclosure. The housing shall be field rotatable to allow proper alignment between the camera and the traveled road surface.

The camera enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view.

The camera enclosure shall include a thermostatically controlled heater to assure proper operation of the lens shutter at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure. The heater shall directly heat the glass lens and require less than five (5) watts over the temperature range.

Power consumption of the camera shall be 15 watts or less under all conditions.

The camera enclosure shall be equipped with separate, weather-tight connections for power and setup video cables at the rear of the enclosure. These connections shall allow diagnostic testing and viewing of video at the camera while the camera is installed on a mast arm or pole using a lens adjustment module furnished under this bid item.

The video signal output by the camera shall in accordance with NTSC standards.

All necessary mounting brackets shall be mounted to pole shafts, mast arms, or other structures to mount cameras as indicated on the project plans. Mounting brackets shall result in a fixed- position mounting. Mounting Brackets shall be included at no additional cost.

907-643.02.2.6--Video Cable. The cable provided shall be as recommended by the manufacturer for optimal video detection performance. The power and video cable may be installed under the same outer jacket. The cable and installation tools shall be approved by the supplier and manufacturer's instructions must be followed to ensure proper connection.

907-643.02.2.7--Power Cable. The cable provided shall be as recommended by the manufacturer for optimal video detection performance.

Camera power cable shall be suitable for installation in conduit and in exposed sunlight environment, and UL listed.

The power and video cable may be installed under the same outer jacket. The cable and installation tools shall be approved by the supplier and manufacturer's instructions must be followed to ensure proper connection.

907-643.02.2.8--Surge Protection. Surge protection devices shall be provided for all new or added video detection devices as recommended by the manufacturer.

Video and/or Power cable shall be protected with an inline surge suppressor as recommended by the manufacturer or a panel mounted surge suppressor as recommended by the manufacturer or approved equal, installed and grounded per manufacturer's recommendations.

907-643.02.2.9--Physical and Environmental Specifications. Physical and Environmental Specifications shall be as follows.

Video Vehicle Detection Processor: The video vehicle detection processor shall operate reliably in a typical roadside traffic cabinet environment. Internal cabinet equipment and a video vehicle detection processor shall be provided that meets the environmental requirements of NEMA TS 2-2003 Section 2. If the processor is located in the sensor, it shall meet the same requirements.

Video Camera Sensor: The operating ambient temperature range shall be -30°F to 140°F. Additionally, a heater shall be included to prevent the formation of ice and condensation in cold weather. Do not allow the heater to interfere with the operation of the video camera sensor electronics, or cause interference with the video signal.

Vibration: Vibrations shall meet the requirements of NEMA TS 2-2003 section 2.1.9. Shock: Shock shall meet the requirements of NEMA TS 2-2003 section 2.1 .10.

Acoustic Noise: A video camera sensor and enclosure shall be provided that can withstand 150 dB for 30 minutes continuously, with no reduction in function or accuracy.

907-643.02.3--Materials Type 3 Video Vehicle Detection and Tracking System. The Type 3 Video Vehicle Detection and Tracking System (VIVTDS) shall consist of the following:

- One VIVTDS processor capable of connecting with 1 to 8 sensors
- One or more VIVTDS sensors, with at least one sensor having a fisheye lens for omnidirectional viewing of the roadway or intersection.
- One surge protector junction unit, per each advanced/stopline sensor
- One mounting pole and bracket (90° pole per each fisheye sensor; or straight, vertical pole per each advanced/stopline sensor). Pole should be assembled in two (2) pieces (3' x 3' plus 7' straight, vertical base)
- One ball-swivel, bracket, and surge protector junction unit, per each fisheye sensor
- One Ethernet Protection Module (surge protector located in the traffic cabinet), per each VIVTDS sensor
- VIVTDS interface cables to the traffic signal controller based on model/type.
- Optional portable field computer to configure and monitor system operations
- Optional computer to configure and monitor system operations at the TOC or other remote location
- Optional Ethernet Repeater to extend VIVTDS sensors beyond 300 feet

- Optional Fiber interconnect to extend VIVTDS sensors up to 2000 feet
- Optional POE Powered Switch for use with more than two sensors

907-643.02.3.1--Functional Requirements for Type 3 Video Vehicle Detection. The Type 3 Video Vehicle Detection configuration shall be for a system that views, captures, and derives data based on the objects that pass within the sensor field of view along a highway, road, ramp, or other commonly used transit pathway via processing video images. The detection of objects by a VIVTDS can be accessed and used by and for many applications, including:

- Vehicle detection and actuation at intersections
- Pedestrian Actuation
- Pedestrian Counting
- In the Box bicycle discrimination and clearance extension
- Bicycle Counting
- Highway flow monitoring
- Ramp metering
- Advanced detection
- Pedestrian crossing extensions
- Temporary construction zone detection
- Situational awareness of location area, including an intersection center
- Automated alerts and reports of potentially unsafe conditions, incidents, malfunctions, or signal timing inefficiencies
- Collecting and archiving traffic data on the Cloud for future analysis to improve performance by optimizing timing plans at intersections
- Non-recurring charges for Cloud Data access
- Occupancy-based vehicle actuation
- Signal Performance Metrics
- User-defined zone output pulses
- Onboard video recording and playback
- Open API for data access

The system shall have a modular electrical design and use Ethernet to connect and network with the different system components. Streaming video images, alerts, and data shall be transmitted from the field back to a Traffic Operations Center (TOC) via the systems client software and to the VIVTDS's cloud by using any or combination of the following:

- Fiber optic
- Wireless Radios
- WAN
- TCP/IP
- Optional Internal modem
- Any other means of commonly used communication practices and standards for digital content and information.

The VIVTDS client software shall provide graphical user interfaces between the administrator(s) and permissioned users of the system and the VIVTDS sensor(s) itself. The software shall allow the user to configure sites, conduct maintenance, monitor information relayed from the sensor(s), and provide access to real-time data, system and user defined alerts, and access to historical data collected by the sensor(s). The client software should be installed on a single personal computer or across a network of computers. One or more users will be able to access VIVTDS simultaneously.

907-643.02.3.2—Processor Hardware.

The VIVTDS processor shall support 1 or 2 fisheye sensors, or if equipped with 1 fisheye sensor the VIVTDS processor should, at a minimum, be capable of simultaneously supporting up to four (4) additional VIVTDS sensors for special requirements such as advance detection or underpass detection.

The VIVTDS processor shall comply with NEMA standards, TS1, TS2 Type 1 and Type 2; 170/2070; and ITS. The VIVTDS processor shall provide the following inputs and outputs:

Type	Inputs	Outputs
TS1	24	24
TS2	16	64
170/2070	8	24
ITS	16	64

The VIVTDS processor will have at a minimum four (4) USB 3.0 ports for expansion flexibility and have an optional, built-in modem.

The VIVTDS processor shall be no more than 1U high with dimensions, excluding connectors, not to exceed 8.5" x 11.5" x 1.75" and weigh no more than 5.2 lbs. The unit shall have flexible mounting options including the ability to lie flat on a cabinet shelf, be mounted in a standard traffic cabinet rack with optional mounting ears or be installed vertically with optional base. The outer enclosure shall be a powdered coated aluminum.

907-643.02.3.3-- Type 3 Video Vehicle Detection System Software.

Each VIVTDS system shall include software for up to six (6) sensors for detecting and counting the vehicle's entrance and exit of the intersection. The VIVTDS system will also include software for communicating with the traffic controllers and other electronic devices.

Client software shall be included free of charge with each VIVTDS system and should be downloaded and run on any personal computer with a Windows 7 or newer operating system. The client software at minimum should include management tools to perform the following:

- View, diagnose, configure, and reset individual sensor outputs
- View the status of inputs to enable setup and troubleshooting in the field
- Configure and view calls and phases
- The ability to create and define, as well as edit, vehicle zones, road masks, object masks, and pedestrian zones by drawing arbitrary shaped polygons using a computer
- The ability to detect and track vehicles, motorcycles, bicycles, and pedestrians through the entire 360-degree field of view
- Distinguish between bicycles and vehicles in the center of the intersection (The Box) and provide distinct detector calls to the traffic controller for each object type
- Provide system calls based on zone occupancy
- View the site's configuration history
- Publish and revert back to previous configuration
- View real-time image streaming from the sensor(s) within the software's Client interface
- Optionally access and use an API that is documented online and uses HTTP
- Enterprise security with user-based roles

- Ability to utilize LDAP for user access
- Provide System Alerts for diagnostic and administrative events

The VIVTDS system shall support optional performance data packages for purchase that provide count data, access to real time data, and system and user defined alerts. The performance data shall be accessible directly from the processor or from a remote computer with a network connection, or via a Cloud storage platform. The performance data shall include the following types of reports and alerts:

- Turning movement counts, including U-turns
- Length based vehicle classifications
- Incident reporting
- Volume
- 7 Day Volume
- Occupancy on Green
- Occupancy on Red
- Percentage of Arrivals on Green
- Percentage of Arrivals on Red
- Speed
- Pedestrian Counts
- Bicycle Turning Movements
- Bicycle Counts
- RTSP (H.264) streaming capability
- Wrong way vehicle detection
- Loss of visibility event
- Volume Exceeded

Reports should be exportable and downloadable in the following formats:

- PDF
- Excel
- Synchro Export – Turning Movement Counts

907-643.02.3.4--Detection. VIVTDS system shall provide real time vehicle detection (within 500 milliseconds (ms) of vehicle arrival). The system should detect the presence of vehicles for up to 64 detection zones per VIVTDS sensor. The detection zones shall be sensitive to the direction a vehicle travels and the direction to be detected by each detection zone shall be programmable by a client software user.

The VIVTDS system should provide a flexible detection zone placement anywhere within one hundred (150) feet of the VIVTDS sensors. Preferred presence detector configurations shall be arbitrarily shaped polygons, including simple boxes, drawn across lanes of traffic or placed in line with lanes of traffic. A single VIVTDS sensor should replace one or more conventional detectors. Advanced detection zones may be placed up to three hundred (300) feet from a Fisheye sensor when mounted at least forty (40) feet high.

Placement of detection zones will be done by means of a graphical interface using the MJPEG image of the roadway. The client software displays images of the detection zones overlaid on the video image of traffic while the VIVTDS processor is running. The detection zones, when

operating, shall display outlined or filled, with a visible change indicating activation.

A laptop should be used to draw detection zones. Alternatively, a mouse, keyboard, and monitor may be connected directly to the processor to configure a site. The detection zones should be capable of being sized and shaped to provide optimal road coverage and detection. It should be possible to upload detector configurations to the VIVTDS processor and to retrieve the sensor configuration that is currently running in the VIVTDS processor through the client software. The configuration should also be retrievable from the VIVTDS system's cloud if properly backed up.

The user will be able to edit previously defined detector configurations in order to fine tune the detection zone placement size and shape. Once a detection configuration has been created, the system will provide a graphic display of the new configuration on its monitor. While this fine-tuning is being done, the sensor will be required to continue to operate from the sensor configuration, currently in place. A user should be able to use a system command to revert to previous configurations stored in the client software or on the VIVTDS system's cloud if properly backed up.

When a vehicle occupies a detection zone, the detection zone on the live video will indicate the presence of a vehicle, thereby verifying proper operation of the system.

The presence of the vehicle as well as the signal states will be indicated via colored LED lights on the front panel of VIVTDS processor. With the absence of images, the VIVTDS processor's display shall indicate proper operation of the detection zones.

Detection zones shall be sensitive to the direction of vehicle travel. The direction will be capable of being detected by each detection zone and will be programmable by the user. The vehicle detection zones will not activate if a vehicle is traveling in any direction other than the one specified for detection in the zone. Cross-street and wrong way traffic shall not cause a false detection.

Detection zones will be capable of an optional user defined call to detect a side entrance (90° or less angled entrance).

The VIVTDS system will be able to reliably detect vehicle presence in the design field of view. The design field of view shall be defined as the sensor view when the image sensor is mounted thirty-five (35) feet (10.5 meters) or higher above the roadway, when the sensor is in front of all stop lines, no more than seventy-five (75) feet from the intersection center, and the beginning of the detection area is not greater than one hundred and fifty (150) feet from the image sensor. Within this design field of view, the VIVTDS processor should be capable of setting up detection zones for point detection (equivalent to the operation of a 6' x 6' inductive loop). A VIVTDS sensor, placed at the proper mounting height, is able to monitor up to and including five (5) traffic lanes per approach simultaneously. A single fisheye sensor, placed at the proper mounting height, should be able to monitor detection zones in an intersection of five (5) approaches, at a minimum. Fisheye sensors mounted no less than forty (40) feet should be capable of advanced vehicle detection of up to three hundred (300) feet.

Detection accuracy of the VIVTDS system shall be comparable to properly operating inductive loops. Detection accuracy should include the presence of any vehicle in the defined detection zone regardless of the lane the vehicle is occupying. Occlusion produced by vehicles in the same or adjacent lanes shall not be considered a failure of the VIVTDS processor, but a limitation of the VIVTDS sensor placement.

Detection shall be 98% accurate with slight degradation possible under adverse weather or road conditions (i.e. rain, snow, fog). Detection will be expected for the entire design field of view on a lane by lane or by approach basis.

Equipment failure, either sensor or VIVTDS processor, shall result in constant vehicle detection on affected detection zones. The VIVTDS system will be required to have the ability to place a constant call to a specific zone, if said zone loses visibility, while simultaneously making calls in the traditional manner in the remaining zones.

907-643.02.3.5--Camera. The VIVTDS should have at least one downward-facing fisheye sensor capable of seeing the center of the intersection and have an omnidirectional line of site to track vehicles entering and exiting the intersection. Other required features shall include the following:

- Color images outputted into digital format as MJPEG images
- Camera lens shall not require adjustment and is always in focus
- A thermostatically controlled heater residing inside the enclosure to reduce the effects of ice and condensation
- Any plastics used in the enclosure shall have ultraviolet inhibitors
- A waterproof and dust tight aluminum enclosure

The sensor dimensions excluding connectors shall not exceed 9.9" x 7.9" (height x diameter). The weight of the sensor including the enclosure shall not exceed eight pounds. The VIVTDS sensor manufacturer shall provide a lifetime "always in focus" guarantee on the iconic bell-shaped fisheye camera. The sensor's mounting bracket shall utilize a two (2) piece, ten (10) foot 90° mounting pole. The sensor junction box should mount at the base of the vertical pole and allow for the installer to adjust the sensor's horizontal position with one hand and tighten the bracket without having to support the sensor simultaneously.

907-643.02.3.5.1—Optional VIVTDS sensors.

Certain projects will have special requirements or needs, such as advanced detection beyond three hundred (300) feet and/or stopline detection. In these instances, an additional VIVTDS sensor with a field of view of either 30° - 50° for stopline detection or a field of view of 9° - 18° for advanced detection should be used. The sensor dimensions excluding connectors and mounting bracket shall not exceed 8" x 15" x 3.5" and the weight should not exceed eight pounds. Other required features are the following:

- Color images outputted into digital format as MJPEG images
- A 5 – 50 mm varifocal lens set for the specific application
- A thermostatically controlled heater residing inside the enclosure to reduce the effects of ice and condensation
- A sun shield to minimize lens exposure to the sun
- A waterproof and dust tight powdered coated aluminum housing

The VIVTDS should support thermal imaging sensors for use in specific situations.

907-643.02.3.6—Power.

The VIVTDS sensor(s) will use five (5) watts nominally and a maximum of fifty (50) watts with active heaters. The sensor(s) will be Power Over Ethernet (POE) and will only require a single shielded, burial grade, gel-filled CAT5e cable for both power and data or composite fiber cable.

Each VIVTDS sensor shall have its own surge protector junction unit and EPM surge protection unit in the traffic cabinet.

The VIVTDS processor shall operate within a range of 89 to 240 VAC, 60Hz single phase. Power to the VIVTDS processor is from the transient protected side of the AC power distribution system in the traffic control cabinet where the VIVTDS processor is installed.

907-643.02.3.6—CAT5E Cable. CAT5E cabling shall be a high performance shielded direct burial data cable capable of 350MHz bandwidth for data applications. The cabling shall consist of a 24 AWG solid core copper wire with 8 solid conductors in a gel-filled jacket. The jacket shall consist of linear low-density polyethylene (LLDPE) that is UV resistant and have a cable diameter of no more than 6.5 mm. The cable shall have easily identifiable striped pairs as follows:

- Orange-White, Orange
- Green-White, Green
- Blue-White, Blue
- Brown-White, Brown

The cable shall be rated at a minimum for 60 V.

The surge protector junction unit for the VIVTDS sensor shall provide protection against a transient pulse with a pulse shape of 8/20 μ s and a max current of 75A. The unit shall weigh no more than two (2) lbs.

The EPM, surge protection unit for the VIVTDS sensor, shall have at most a max impulse discharge current of 40 KA and an impedance of at least 100 ohms. The unit should have at least Line-Line and Line-Ground protection options, and the POE current should not exceed 1.8A.

907-643.02.3.7—Composite Fiber. Composite Fiber cable shall meet the following requirements:

- Multimode, OM3, Indoor-Outdoor rated
- Meet ICEA-S-83-597 Standard
- Four Fiber Strands and Two 16 AWG Copper Power Conductors

Fiber cable shall be terminated with FASTconnect LC connectors and maintain a signal strength between -20 dBm and -24 dBm.

The Fiber cable shall connect the Fisheye Sensor and/or other Optional Sensors using PoE Media Converters.

PoE Media Converters shall meet the following requirements:

- Material: UV Stabilized, Polycarbonate/ASA Blend
- Environmental: -29° F - 165° F (-34° C - 74° C)
- IP66

907-643.02.3.8—Physical and Environmental Specifications. The VIVTDS processor will meet or exceed the NEMA TS-2 standard of -29° F - 165° F (-34° C - 74° C) and meet or exceed a 5-30Hz vibration test as well as a 10G shock test.

The VIVTDS processor shall operate properly in an environment with 0% to 95% relative humidity, non-condensing. The VIVTDS sensor(s) shall operate properly in an environment with 0% to 100% relative humidity.

907-643.02.3.9—System Software Operation. The VIVTDS must transmit and receive all information needed for sensor setup, to monitor vehicle detection, to view vehicle traffic flow, and to interpret stored data. The remote communications link between the VIVTDS processor shall not interfere with the on-street detection of the VIVTDS processor.

The user should be able to view the detection area in a horizon to horizon fisheye view or in a configurable four (4) pane flattened view on the same screen. Each view should be able to be customized by the user, with the ability to digitally pan-tilt-zoom.

907-643.02.3.10—Installation and Training. The supplier of the VIVTDS system shall supervise the installation and testing of the sensors, processor, and other sensor components.

System installers will be required to be certified by the system manufacturer. A manufacturer's instructional guide will not be considered an adequate substitute for practical, classroom training and formal certification by an approved agency.

However, the manufacturer shall provide an online user guide and an electronic copy of the user guide within the client software and on board the VIVTDS processor for reference.

Formal levels of factory authorized training are required for installers, contractors and system operators. All training must be certified by the VIVTDS system manufacturer.

907-643.02.3.10—Warranty, Maintenance and Support. The video detection system must be warranted to be free of defects in material and workmanship for a period of 3 years from date of shipment from the manufacturer's facility. During the warranty period, the system manufacturer will be required to repair with new or refurbished materials, or replace at no charge, any product containing a warranty defect provided the product is returned FOB to the supplier's factory or authorized repair site. Return product, product for repair, or product to be replaced under warranty by the supplier shall have prepaid transportation. This warranty does not apply to any products damaged by accident, improperly operated, abused, serviced by unauthorized personnel or unauthorized modification.

Ongoing software support by the manufacturer includes updates of the VIVTDS processor's engine and updates to the client software shall be provided free of charge for the life of the system.

907-643.02.4--Materials Multi-Sensor Vehicle Detection.

907-643.02.4.1--General. The Multi-Sensor Vehicle Detector shall utilize two (2) different sensors of different technologies, video imaging and radar, to detect and track licensed and unlicensed vehicles at distances up to 600 feet. The detector shall fuse vehicle information from the two sensors to provide highly accurate and precise detection for special or advanced applications.

The Multi-Sensor Vehicle Detector shall use a primary detector rack mounted processor to interface with the traffic control cabinet. The module shall process information from both video imaging and radar sensors simultaneously in real-time.

907-643.02.4.2--Detector Configuration. The proposed MSVD shall be available in various configurations to allow maximum deployment flexibility. Each configuration shall have an identical user interface for system setup and configuration. The communications protocol to each

configuration shall be identical and shall be hardware platform independent.

The detector shall include software that detects vehicles in multiple lanes. Video imaging detection zones shall be defined using only an on-board video menu and a pointing device to place the zones on a video image. Up to 24 video detection zones per camera view shall be available. Two (2) additional trigger zones for the radar sensor shall be available and be configurable by using the same system setup menu on the DP. A separate computer shall not be required to program the detection zones. A pre-programmed setup tool is required to align and input radar information and set the camera field of view (zoom and focus).

907-643.02.4.3--Multi-Sensor Vehicle Detection Hardware. The MSVD hardware shall consist of the following four (4) elements:

- 1) Video Imaging Camera Sensor
- 2) Radar Sensor
- 3) Sensor Data Combiner
- 4) Detection Processor

907-643.02.4.3.1--Video Imaging Camera Sensor. The video imaging camera sensor shall meet the following minimum requirements:

- To accommodate deployment flexibility, the MSVD camera sensor shall be compatible with the Data Processor platforms. The MSVD camera sensor shall be supplied by the MSVD manufacturer.
- The advanced camera enclosure shall utilize technology for the heating element of the front glass. The transparent coating shall not impact the visual acuity and shall be close to optically clear.
- Cable terminations at the data combiner for video and power shall not require crimping or special tools.
- The camera sensor shall allow the user to set the focus and field of view via Wi-Fi connectivity.
- The camera shall produce a useable video image of vehicles under all roadway lighting conditions, regardless of time of day. The minimum range of scene luminance over which the camera shall produce a useable video image shall be the minimum range from nighttime to daytime, but not less than the range 1.0 lux to 10,000 lux.
- The camera electronics shall include automatic gain control (AGC) to produce a satisfactory image at night.
- The imager luminance signal to noise ratio (S/N) shall be more than 50 dB with the automatic gain control (AGC) disabled.
- The imager shall employ three (3) dimensional dynamic noise reduction (3D-DNR) to remove unwanted image noise.
- The camera image shall employ wide dynamic range (WDR) technology to compensate for wide dynamic outdoor lighting conditions. The dynamic range shall be greater than 100 dB.
- The camera shall be digital signal processor (DSP) based and shall use a CCD sensing element and shall output color video with resolution of not less than 550 TV lines.
- The camera sensor shall include an electronic shutter control based upon average scene

luminance and shall be equipped with an auto-iris lens that operates in tandem with the electronic shutter. The electronic shutter shall operate between the range of 1/1 to 1/10,000th second.

- The camera sensor shall utilize automatic white balance.
- The camera sensor shall include a variable focal length lens with variable focus that can be adjusted, without opening up the camera housing, to suit the site geometry by means of a portable interface device designed for that purpose and manufactured by the detection system supplier.
- The horizontal field of view shall be adjustable. This camera configuration may be used for the majority of detection approaches in order to minimize the setup time and spares required by the user. The lens shall be a minimum 10X zoom lens with a variable focal length.
- The lens shall also have an auto-focus feature with a manual override to facilitate ease of setup.
- The camera shall incorporate the use of preset positioning that store zoom and focus positioning information. The camera shall have the capability to recall the previously stored preset upon application of power.
- The camera shall be housed in a weather-tight sealed enclosure conforming to IP-67 specifications. The housing shall allow the camera to be rotated to allow proper alignment between the camera and the traveled road surface.
- The camera enclosure shall be equipped with a sunshield. The sunshield shall include a provision for water diversion to prevent water from flowing in the camera's field of view.
- The camera enclosure shall be designed so that the pan, tilt and rotation of the camera assembly can be accomplished independently without affecting the other settings.
- The camera enclosure shall include a proportionally controlled heater design that maximizes heat transfer to the lens. The output power of the heater shall vary with temperature, to assure proper operation of the lens functions at low temperatures and prevent moisture condensation on the optical faceplate of the enclosure.
- The glass face on the front of the enclosure shall have an anti-reflective coating to minimize light and image reflections.
- When mounted outdoors in the enclosure, the camera shall operate in a temperature range from -29°F to +165°F and a humidity range from 0% RH to 100% RH.
- Measurement of satisfactory video shall be based upon DP system operation.
- The camera sensor shall acquire its power from the sensor data combiner.
- Recommended camera placement height shall be 18 to 33 feet above the roadway, and over the traveled way on which vehicles are to be detected. For optimum detection the camera should be centered above the traveled roadway. The camera shall view approaching vehicles at a distance not to exceed 350 feet for reliable detection (height to distance ratio of 10:100). Camera placement and field of view (FOV) shall be unobstructed and as noted in the installation documentation provided by the supplier.
- The video signal shall be fully isolated from the camera enclosure and power cabling.
- A weather-proof protective cover shall be provided to protect all terminations at the camera.

907-643.02.4.3.2--Radar Sensor. The radar sensor shall meet the following minimum requirements:

- The radar sensor shall operate in the 24 GHz frequency band.
- The radar detection range shall be 600 feet minimum, $\pm 5\%$.
- The radar sensor shall be able to track up to 20 independent objects simultaneously.
- Object speed detection shall be within a range of zero (0) to 150 mph ± 1.0 mph.
- The radar sensor shall be able to detect vehicles in one (1) to four (4) traffic lanes.
- The radar sensor shall be housed in a weather-tight sealed enclosure conforming to IP-67 specifications. The housing shall allow the radar to be adjusted to allow proper alignment between the sensor and the traveled road surface.
- When mounted outdoors in the enclosure, the radar shall operate in a temperature range from -29°F to $+165^{\circ}\text{F}$ and a humidity range from 0% RH to 100% RH.
- The radar sensor shall communicate with the sensor data combiner.
- The radar sensor shall acquire its power from the sensor data combiner.
- Data and power cables between the radar sensor and sensor data combiner shall be fully isolated from the sensor enclosure.

907-643.02.4.3.3--Multi-Sensor Vehicle Detection Assembly. Multi-Sensor Vehicle Detection Assembly shall meet the following requirements:

- Both camera and radar sensors shall be housed in an overall, single enclosure assembly.
- The maximum power consumption for the Multi-Sensor Vehicle Detection Assembly shall be less than ten (10) watts typical, 20 watts peak.

907-643.02.4.3.4--Sensor Data Combiner. The sensor data combiner (if required) shall meet the following minimum requirements:

- A sensor data combiner that combines sensor information from both video and radar sensors shall be employed.
- Sensor data combiner shall supply primary power to each sensor unit.
- Sensor data combiner shall facilitate digital communications between the sensor data combiner and each of the sensor units.
- Sensor data combiner shall get its primary power from an AC power source using industry standard 3-conductor cabling.
- Sensor data combiner shall communicate with the detection processor using a single coax cable. Both video imaging and radar data shall use the single coax cable.
- The sensor data combiner shall also employ industry standard Wi-Fi connectivity for remote sensor system setup using a mobile programming device such as a netbook or tablet computer. Video camera and radar sensor shall be able to be configured independently.
- Sensor data signal shall be fully isolated from the mechanical enclosure and power cabling.
- Cable terminations at the sensor data combiner shall not require crimping tools.
- The Sensor Data Combiner shall be housed in a weather-tight sealed enclosure conforming to IP-67 specifications.

907-643.02.4.3.5--Detection Processor. The detection processor shall meet the following minimum requirements:

- Each sensor input shall accept RS170 (NTSC) or CCIR (PAL) signals from an external video source. The interface connector shall be BNC type and shall be located on the front of the processing unit. The sensor input shall have the capability to be terminated into 75- ohms or high impedance (Hi-Z) using dip switches or software control from the user menu. The sensor input shall also facilitate the data from the radar sensor.
- A LED indicator shall be provided to indicate the presence of the sensor signal. The LED shall illuminate upon valid sensor synchronization and turn off when the presence of a valid sensor signal is removed.
- One (1) video output shall be provided. The video output shall be RS170 or CCIR compliant and shall pass through the input video signal. For multi-channel video input configurations, a momentary push-button shall be provided on the front panel to cycle through each input video channel. In the absence of a valid sensor signal, the channel shall be skipped and the next valid sensor signal shall be switched. The real time video output shall have the capability to show text and graphical overlays to aid in system setup. The video output interface connector shall be positive locking BNC type. Friction type (e.g. RCA type) connectors shall not be allowed.
- A communications port shall be provided on the front panel. The communications interface shall allow the user to remotely configure the system and/or to extract calculated vehicle/roadway information. The interface protocol shall be documented or interface software shall be provided. Each MSVD shall have the capability to be addressable. The DP shall support data rates of 1200 bps to 230,400 bps, inclusive.
- Open collector (contact closure) outputs shall be provided. Four (4) open collector outputs shall be provided for the single or dual channel rack-mount configuration. Additionally, the DP shall allow the use of extension modules to provide up to 24 open collector contact closures per camera input. Each open collector output shall be capable of sinking 30 mA at 24 VDC. Open collector outputs will be used for vehicle detection indicators as well as discrete outputs for alarm conditions. The DP outputs shall be compatible with industry standard detector racks assignments.
- Logic inputs such as delay/extend or delay inhibit shall be supported through the appropriate detector rack connector pin or front panel connector in the case of the I/O module. For DPs and extension modules, four (4) inputs shall be supported via detector rack interface. The I/O module shall accommodate eight (8) inputs through a 15-pin "D" connector.
- Detection status LEDs shall be provided on the front panel. The LEDs shall illuminate when a contact closure output occurs. The front panel of the DP shall have detector test switches to allow the user to manually place calls on each DP output channel. The test switch shall be able to place either a constant call or a momentary call depending on the position of the switch.
- A USB mouse port shall be provided on the front panel of the rack mount detection processing unit. The mouse port shall not require special mouse software drivers. The mouse port shall be used as part of system setup and configuration.
- Extension modules (if required) shall be connected to the DP by an 8-wire twisted- pair cable with modular RJ45 connectors. DP and EM communications shall be accommodated by methods using differential signals to reject electrically coupled noise.
- Extension modules (EM) shall be available to eliminate the need of rewiring the detector

rack, by enabling the user to plug an extension module into the appropriate slot in the detector rack to provide additional open collector outputs. The extension module shall be available in both two (2) and four (4)-channel configurations. The DP and EM shall be specifically designed to mount in a standard detector rack, using the edge connector to obtain power, provide contact closure outputs and accept logic inputs (e.g. delay/extend). No adapters shall be required to mount the DP or EM in a standard detector rack. Detector rack rewiring shall not be required.

- The DP shall utilize non-volatile memory technology to store on-board firmware and operational data.
- The DP shall enable the loading of modified or enhanced software through the EIA232 or USB port (using a USB thumb drive) and without modifying the DP hardware.
- The DP and EM shall be powered by 12 or 24 volts DC. DP and EM modules shall automatically compensate for either 12 or 24 VDC operation. DP power consumption shall not exceed 7.5 watts. The EM power consumption shall not exceed three (3) watts.
- The DP shall operate satisfactorily in a temperature range from -40°F to +165°F and a humidity range from zero (0) %RH to 95 %RH, non-condensing as set forth in NEMA specifications.
- A video surge suppresser shall be provided for each sensor input. The surge suppresser shall be appropriately grounded to the cabinet ground rod using AWG 14 minimum.

907-643.02.4.4--Detection Software. The detection software shall meet the following general system functions:

- Detection zones shall be programmed via an on board menu displayed on a video monitor and a pointing device connected to the DP. The menu shall facilitate placement of detection zones and setting of zone parameters or to view system parameters. A separate computer shall not be required for programming detection zones or to view system operation.
- The DP shall store up to three (3) different detection zone patterns in non-volatile memory. The DP can switch to any one of the three (3) different detection patterns within one (1) second of user request via menu selection with the pointing device. Each configuration shall be uniquely labeled and able to be edited by the user for identification. The currently active configuration indicator shall be displayed on the monitor.
- The DP shall detect vehicles in real time as they travel across each detection zone.
- The DP shall accept new detection patterns from an external computer through a communications port when the external computer uses the correct communications protocol for downloading detection patterns. A Windows™ based software designed for local or remote connection and providing video capture, real-time detection indication and detection zone modification capability shall be provided with the system.
- The DP system shall have the capability to automatically switch to any one of the stored configurations based on the time of day which shall be programmable by the user.
- The DP shall send its detection patterns to an external computer through the communications port when requested when the external computer uses the appropriate communications protocol for uploading detection patterns.
- The DP shall default to a safe condition, such as a constant call on each active detection channel, in the event of unacceptable interference or loss of the sensor signal.
- The system shall be capable of automatically detecting a low-visibility condition such as

fog and respond by placing all effected detection zones in a constant call mode. A user-selected alarm output shall be active during the low-visibility condition that can be used to modify the controller operation if connected to the appropriate controller input modifier(s). The system shall automatically revert to normal detection mode when the low-visibility condition no longer exists.

- Up to 24 detection zones per camera input shall be supported and each detection zone can be sized to suit the site and the desired vehicle detection region.
- The DP shall support two (2) independent trigger points for radar outputs for dilemma zone applications.
- The DP shall provide up to 24 open collector output channels per sensor input using one or more extension modules.
- A single detection zone shall be able to replace multiple inductive loops and the detection zones shall be OR'ed as the default or may be AND'ed together to indicate vehicle presence on a single approach of traffic movement.
- Placement of detection zones shall be done by using only a pointing device, and a graphical interface built into the DP and displayed on a video monitor or laptop computer to draw the detection zones on the video image from each video camera.
- When a vehicle is detected within a detection zone, a visual indication of the detection shall activate on the video overlay display to confirm the detection of the vehicle for the zone.
- Detection shall be at least 98% accurate in good weather conditions, with slight degradation possible under adverse weather conditions (e.g. rain, snow, or fog) which reduce visibility. Detection accuracy is dependent upon site geometry, camera placement, camera quality and detection zone location, and these accuracy levels do not include allowances for occlusion or poor video due to camera location or quality.
- The DP shall provide dynamic zone reconfiguration (DZR). DZR enables normal operation of existing detection zones when one zone is being added or modified during the setup process. The new zone configuration shall not go into effect until the configuration is saved by the operator.
- Detection zone setup shall not require site specific information such as latitude and longitude to be entered into the system.
- The DP shall process the video input from each camera at 30 frames per second. Multiple camera processors shall process all video inputs simultaneously.
- The DP shall output a constant call during the background learning period of no more than three (3) minutes.
- Detection zone outputs shall be configurable to allow the selection of presence, pulse, extend, and delay outputs. Timing parameters of pulse, extend, and delay outputs shall be user definable between 0.1 to 25.0 seconds.
- Up to six (6) video detection zones per sensor input shall have the capability to count the number of vehicles detected. The count value shall be internally stored for later retrieval through the communications port.
- In addition to the count type zone, the DP shall be able to calculate and/or acquire average speed and lane occupancy using both video and radar sensors. These values shall be stored in non-volatile memory for later retrieval.
- The DP shall have an "advance" zone type where detection outputs to the traffic controller

are compensated for angular occlusion and distance.

- The user shall have the ability to enable or disable the display of the phase information on the video output.
- The DP shall have the capability to change the characteristics of a detection zone based on external inputs such as signal phase. Each detection zone shall be able to switch from one zone type (i.e. presence, extension, pulse, etc.) to another zone type based on the signal state. For example, a zone may be a “count” zone when the phase is green but change to a “presence” zone type when the phase is not green. Another application would be zone type of “extension” when the signal phase is green and then “delay” when red.
- The DP shall aid the user in drawing additional detection zones by automatically drawing and placing zones at appropriate locations with only a single click of the mouse. When the user wishes to modify the location of a zone, the DP shall allow the user move a single zone, multiple zones or all zones simultaneously.
- On-screen zone identifiers shall be modifiable by the user. The user shall be allowed to select channel output assignments, zone type, input status, zone labels or zone numbers to be the identifier.
- For multiple camera input DPs, the user shall have the ability to enable automatic video output switching. The dwell time for each sensor input shall be user programmable.
- For the radar sensor zones the output can be triggered by presence of a vehicle only or by presence of a vehicle above a speed defined by the user.

907-643.02.4.5--Multi-Sensor Cable. The cable to be used between the Multi-Sensor Vehicle Detection Assembly and the DP in the traffic cabinet shall be per manufacturer’s specifications. This cable shall be suitable for installation in conduit or overhead with appropriate span wire. BNC plug connectors shall be used where applicable. The cable, BNC connector, and crimping tool shall be approved by the supplier of the MSVD, and the manufacturer's instructions must be followed to ensure proper connection.

907-643.02.4.6--Power Cable. The power cabling shall be per manufacturer’s specifications. The cabling shall comply with the National Electric Code, as well as local electrical codes.

907-643.05--Construction Requirements. The Construction and testing requirements for Type 1, Type 2, and Multi-Sensor Vehicle Detection are the same.

907-643.05.1--General Requirements. The Contractor shall perform the following:

- 1) Install all sensors, system processors and associated enclosures and equipment at the locations specified in the plans, in any related notice to bidders, per manufacturer’s recommendations, or as directed.
- 2) Install all cabinet-mounted equipment in the intersection equipment cabinet or as specified in the plans.
- 3) Cabling from all sensors shall be installed in accordance with the manufacturer's recommendations.
- 4) Make all necessary adjustments and modifications to the total VVD/MSVD prior to requesting inspection for system/device acceptance.
- 5) Mount the sensors as per manufacturer’s recommendations or as shown in the plans.

- 6) Mount the sensors so as to view approaching traffic unless otherwise directed.
- 7) Optimize the sensors location and zone of detection as directed by the Engineer, or authorized designee.
- 8) Adjust the sensor zoom lens to match the width of the road/detection area, and minimize lane vehicle occlusion.
- 9) Fasten all other cabinet components, with hex-head or Phillips-head machine screws insulated with nuts (with locking washer or insert) or into tapped and threaded holes. Do not use self-tapping or self-threading fasteners.
- 10) Provide electrical cables for video, communications signaling and power supply between the cabinet and the VVD/MSVD image sensor cameras as recommended by the manufacturer, and as required for a fully functional System.

907-643.05.2--Contractor Training. Installation of the Video Vehicle Detection shall be as recommended by the manufacturer and performed by a Contractor trained and certified by the supplier. Where time does not reasonably permit training of the installing Contractor, a supplier factory representative shall supervise and assist a Contractor during installation of the Video Vehicle Detection.

Installation of the Multi-Sensor Vehicle Detection shall be as recommended by the supplier and performed by a Contractor with factory-certified installers and documented in installation materials provided by the supplier. Proof of factory certification shall be provided.

907-643.05.3--Testing. All equipment associated with the Video Vehicle Detection System site shall undergo testing to verify conformance to requirements of the plans and these special provisions. All costs associated with testing shall be included in the overall contract price; no separate payment will be made for any testing.

907-643.05.3.1--Standalone Acceptance Test (SAT). The SAT shall include videos of the approach with detection zones overlaid showing detector activations.

- 1) One (1) hour videos shall be made of each approach and compared to actual detection calls.
- 2) 30-minute videos shall be made starting 15 minutes prior to sunrise and sunset for each approach and compared to actual detection calls.
- 3) All videos shall be date and time stamped.
- 4) Provide all videos to the Engineer with a summary of the results included total calls, missed calls and false calls.
- 5) All test results must meet a 98% accuracy requirement.

The Contractor must demonstrate the accuracy requirements specified in Subsection 907-643.02.1.7 at selected intersections after a sixty (60) day burn in period for Type 1 and a thirty (30) day burn in period for Type 2 and MSDS. The intersections to be tested will be randomly selected by the Project Engineer.

907-643.05.4--Warranty. The Video Vehicle Detection shall be warranted to be free of manufacturer defects in materials and workmanship for a period of three (3) years from the date of final acceptance. Equipment covered by the manufacturer's warranties shall have the

registration of that component placed in the Department's name prior to final inspection. The Contractor is responsible for ensuring that the vendors and/or manufacturers supplying the components and providing the equipment warranties recognize the Department as the original purchaser and owner/end user of the components from new. During the warranty period, the supplier shall repair or replace with new or refurbished material, at no additional cost to the State, any product containing a warranty defect, provided the product is returned postage-paid by the Department to the supplier's factory or authorized warranty site. Products repaired or replaced under warranty by the supplier shall be returned prepaid by the supplier.

The Multi-Sensor Vehicle Detector shall be warranted to be free of manufacturer defects in materials and workmanship for a period of three years (3) from the date of final acceptance.

During the warranty period, technical support shall be available from the supplier via telephone within four (4) hours of the time a call is made by the Department, and this support shall be available from factory certified personnel. During the warranty period, updates and corrections to Control Unit Software shall be made available to the Department by the supplier at no additional cost.

907-643.05.5--Training. When called for in the Plans, the Contractor shall submit to the Project Engineer for approval a detailed Training Plan including course agendas, detailed description of functions to be demonstrated and a schedule. The Contractor must also submit the Trainer's qualifications to the Project Engineer for approval prior to scheduling any training. The training must include both classroom style training and hands-on training in the field of the maintenance and troubleshooting procedures required for each component. The training should also consist of a hands-on demonstration of all software configuration and functionality where applicable.

The supplier of the detection system shall, at a minimum, provide a 16-hour operations and maintenance training class with suitable documentation for up to eight (8) persons selected by the Department. The operations and maintenance class shall be scheduled at a mutually acceptable time and location.

907-643.05.6--Maintenance and Technical Support. The supplier shall maintain an adequate inventory of parts to support maintenance and repair of the detection system. Spare parts shall be available for delivery within 30 days of placement of an acceptable order at the supplier's then current pricing and terms of sale of said spare parts.

The suppliers shall maintain an ongoing program of technical support for the detection system. This technical support shall be available via telephone or via personnel sent to the installation site upon placement of an acceptable order at the supplier's then current pricing and terms of sale of said technical support services.

The installation or training support shall be provided by a factory-authorized representative and shall be a minimum IMSA-Level II Certified Traffic Signal Technician.

All product documentation shall be written in the English language.

907-643.06--Method of Measurement. Video Vehicle Detection Sensor of the type specified will be measured as a unit per each.

Video Vehicle Detection Cable and/or Power Cable will be measured by the linear foot, measured horizontally along the conduit, messenger cable or mast arm and vertically along the pole.

Video Vehicle Detection Training will be measured as a lump sum after the completion of all training.

Multi-Sensor Vehicle Detection of the type specified will be measured as a unit per each.

Multi-Sensor Detection Cable and/or Power Cable will be measured by the linear foot, measured horizontally along the conduit, messenger cable or mast arm and vertically along the pole.

907-643.07--Basis of Payment. Video Vehicle Detection Sensor, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for installation, system integration, documentation, system software, and testing of a complete video detection sensor site including video camera sensor/processor, the sensor environmental enclosure, attachment hardware and brackets, completion of all testing requirements, [warranties](#) and all work, equipment and appurtenances as required to provide and install a complete video detection system. The price bid shall also include all system documentation including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams and other materials necessary to document the operation of the Video Vehicle Detection Sensor. This price shall be full compensation for all labor, tools, materials, equipment and incidentals necessary to complete the work [and quality assurance](#).

Video Vehicle Detection Cable and/or Power Cable will be paid at the contract unit price per linear foot, which price shall be full compensation for all labor, materials, equipment tools, furnishing, installing, system integration, connections, testing, and all incidentals necessary to complete the work.

Video Vehicle Detection Training, measured as prescribed above, will be paid for at the contract unit lump sum price, which price shall be full compensation for all training costs [including all coordination, materials, labor, training location costs, and all incidentals required to complete the training](#).

Multi-Sensor Vehicle Detection Sensor, measured as prescribed above, will be paid for at the contract unit price per each, which price shall be full compensation for installation, system integration, documentation, and testing of a complete Multi-Sensor Vehicle Detection Sensor site including video imaging camera sensor, radar sensor, sensor data combiner, detection processor, system software, the sensor environment enclosure, attachment hardware and brackets, completion of all testing requirements and all work, equipment and appurtenances as required to provide and install a complete Multi-Sensor Vehicle Detection Sensor. The price bid shall also include all system documentation including: shop drawings, operations and maintenance manuals, wiring diagrams, block diagrams and other materials necessary to document the operation of the multi-sensor detection system. This price shall be full compensation for all labor, tools, materials,

equipment and incidentals necessary to complete the work.

Multi-Sensor Detection Cable and/or Power Cable will be paid at the contract unit price per linear foot, which price shall be full compensation for all labor, materials, equipment tools, furnishing, installing, system integration, connections, testing, and all incidentals necessary to complete the work.

Payment will be made under:

907-643-A: Video Vehicle Detection Sensor, Type ____	- per each
907-643-B: Video Vehicle Detection Cable	- linear foot
907-643-C: Video Vehicle Detection Power Cable	- linear foot
907-643-D: Video Vehicle Detection Training	- lump sum
907-643-E: Multi-Sensor Vehicle Detection Sensor	- per each
907-643-F: Multi-Sensor Vehicle Detection Cable	- linear foot
907-643-G: Multi-Sensor Vehicle Detection Power Cable	- linear foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-645-1

CODE: (IS)

DATE: 11/15/2017

SUBJECT: Pedestrian Detection Assemblies

Section 645, Pedestrian Detection Assemblies, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-645.02--Materials.

907-645.02.1--Standard Pedestrian Pushbutton Detector. Before the first sentence of the paragraph in Subsection 645.02.1 on page 629, add the following.

The Standard Pedestrian Pushbutton Detector shall meet the latest ADA Compliant Specifications.

907-645.02.1.2--Pushbutton. Delete the second sentence of the paragraph in Subsection 645.02.1.2 on page 629, and substitute the following.

The switch, when activated, shall give an audible (i.e., click) and visual indication of actuation. The visual indication shall remain illuminated until the pedestrian's WALK indication is displayed.

907-645.02.5--Environmental. Delete the paragraph in Subsection 645.02.5 on page 631, and substitute the following.

Ensure equipment performs all required functions during and after being subjected to the environmental testing procedures described in NEMA TS 2, Sections 2.2.7, 2.2.8, and 2.2.9.

907-645.05--Basis of Payment. Add the "907" prefix to the list of pay items on page 631.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-653-1

CODE: (IS)

DATE: 11/15/2017

SUBJECT: Traffic and Street Name Signs

Section 653, Traffic and Street Name Signs, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-653.02--Materials.

907-653.02.1--Reflective Sheeting. Delete the paragraph in Subsection 653.02.1 on page 637, and substitute the following.

Reflective sheeting for traffic and street name signs shall be Type XI retroreflective and of the color as specified in the plans.

907-653.04--Method of Measurement. Delete the sentence in the paragraph of Subsection 653.04 on page 638, and substitute the following.

Traffic sign and street name sign will be measured by the square foot, which measurement being inclusive of aluminum sign blank, applied reflective sheeting, mounting brackets and banding materials and begin inclusive of all materials, work and services necessary for a properly constructed sign.

907-653.05--Basis of Payment. Delete the pay items listed on page 638, and substitute the following.

907-653-A: Traffic Sign - per square foot

907-653-B: Street Name Sign - per square foot

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-701-3

CODE: (SP)

DATE: 05/04/2021

SUBJECT: Hydraulic Cement

Section 701, Hydraulic Cement, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-701.01--General. In the first sentence of the second paragraph of Subsection 701.01 on page 718, change “mills” to “plants.”

In the second sentence of the sixth paragraph of Subsection 701.01 on pages 718 and 719, change “shall” to “will.”

907-701.02--Portland Cement.

907-701.02.1-General.

907-701.02.1.2--Alkali Content. Delete the sentence in Subsection 701.02.1.2 on page 719, and substitute the following.

When used in portland cement concrete, the total alkali contribution from all cement types in this Subsection shall not exceed 4.0 lb. per cubic yard of concrete calculated as follows:

$$\text{lb alkali per cu Yd} = \frac{(\text{lb cement per cu Yd}) \times (\% \text{Na}_2\text{O equivalent in cement})}{100}$$

In the above calculation, the maximum cement alkali content reported on the cement mill certificate shall be used. An example calculation can be found in the Department’s *Concrete Field Manual*.

907-701.02.2--Replacement by Other Cementitious Materials. Delete the paragraph in Subsection 701.02.2 on page 719, and substitute the following.

The maximum replacement of cement by weight is 25% for fly ash or 50% for ground granulated blast furnace slag (GGBFS). Replacement contents below 20% for fly ash or 45% for GGBFS may be used, but will not be given any special considerations, such as the maximum acceptance temperature for portland cement concrete containing pozzolans in Subsection 804.02.13.1.5. Special considerations shall only apply for replacement of cement by fly ash or GGBFS.

Delete Subsection 701.02.2.1 on pages 719 and 720, and substitute the following.

907-701.02.2.1--Portland Cement Concrete Exposed to Soluble Sulfate Conditions or Seawater.

When portland cement concrete is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall be as follows in Table 1. Class C fly ash shall not be used as a replacement for cement in any of the sulfate exposure conditions listed in Table 1.

Table 1- Cementitious Materials for Soluble Sulfate Conditions or Seawater

Sulfate Exposure	Water-soluble sulfate (SO ₄) in soil, % by mass	Sulfate (SO ₄) in water, ppm	Cementitious material required
Moderate and Seawater	0.10 - 0.20	150 - 1,500	Type I cement with one of the following replacements of cement by weight: 24.5 - 25.0% Class F fly ash, or 49.5 - 50.0% GGBFS or Type II ^{*,**} cement
Severe	0.20 - 2.00	1,500 - 10,000	Type I cement with a replacement by weight of 49.5 - 50.0% GGBFS, or Type II [*] cement with one of the following replacements of cement by weight: 24.5 - 25.0% Class F fly ash, or 49.5 - 50.0% GGBFS

* Type III cement conforming to AASHTO M85 with a maximum 8% tricalcium aluminate (C₃A) may be used in lieu of Type II cement as allowed in Subsection 701.02.1; this cement is given the designation "Type III(MS)."

** Class F fly ash or GGBFS may be added as a replacement for cement as allowed in Subsection 907-701.02.2.

Delete Subsection 701.02.2.2 on page 720, and substitute the following.

907-701.02.2.2--Portland Cement for Soil Stabilization Exposed to Soluble Sulfate Conditions or Seawater. When portland cement for use in soil stabilization is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall meet the requirements of Subsection 701.02.2.1.

907-701.04--Blended Hydraulic Cement.

907-701.04.1--General. Delete Subsection 701.04.1.1 on page 720, and substitute the following.

907-701.04.1.1--Types of Blended Hydraulic Cement. Blended hydraulic cements (blended cements) shall be of the following types and conform to AASHTO M 240:

Type IL – Portland-limestone cement
Type IP – Portland-pozzolan cement
Type IS – Portland blast-furnace slag cement

Blended cement Types IL, IP, and IS meeting the “MS” sulfate resistance requirement listed in AASHTO M 240, Table 3 shall have the “(MS)” suffix added to the type designation.

907-701.04.1.2--Alkali Content. Delete the sentence in Subsection 701.04.1.2 on page 720, and substitute the following.

All blended cement types shall be made with clinker that would result in cement meeting the requirements of Subsection 701.02.1.2 when used in the production of AASHTO M 85, Type I or Type II cement.

The blended cement manufacturer shall include the percent equivalent alkalis as Na₂O on their cement mill reports.

When calculating the total alkali contribution with blended cements, use the equivalent alkali content of the base portland cement. An example calculation for cases where blended cements are used can be found in the Department’s *Concrete Field Manual*.

907-701.04.2--Replacement by Other Cementitious Materials. Delete the paragraph in Subsection 701.04.2 on page 720, and substitute the following.

The maximum replacement of blended cement Type IL by weight is 35% for fly ash or 50% for GGBFS. Replacement contents below 20% for fly ash or 45% for GGBFS may be used, but will not be given any special considerations, such as the maximum acceptance temperature for blended cement concrete containing pozzolans in Subsection 804.02.13.1.5. Special considerations shall only apply for replacement of blended cement by fly ash or GGBFS.

No additional cementitious materials, such as portland cement, blended cement, fly ash, GGBFS, or others, shall be added to or as a replacement for blended cement Types IP and IS.

Delete Subsection 701.04.2.1 on pages 720 and 721, and substitute the following.

907-701.04.2.1--Blended Cement Concrete Exposed to Soluble Sulfate Conditions or Seawater. When blended cement concrete is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall be as follows in Table 2. Class C fly ash shall not be used as a replacement for cement in any of the sulfate exposure conditions listed in Table 2.

Table 2- Cementitious Materials for Soluble Sulfate Conditions or Seawater

Sulfate Exposure	Water-soluble sulfate (SO ₄) in soil, % by mass	Sulfate (SO ₄) in water, ppm	Cementitious material required
Moderate and Seawater	0.10 - 0.20	150 - 1,500	Type IL (MS)* cement, Type IL cement with one of the following replacements of cement by weight: 24.5 - 35.0% Class F fly ash, or 49.5 - 50.0% GGBFS, Type IP (MS) cement, or Type IS (MS) cement
Severe	0.20 - 2.00	1,500 - 10,000	Type IL cement with a replacement of cement by weight of 49.5 - 50.0% GGBFS, or Type IL (MS) cement with one of following replacements of cement by weight: 24.5 - 35.0% Class F fly ash, or 49.5 - 50.0% GGBFS

* Class F fly ash or GGBFS may be added as a replacement for cement as allowed in Subsection 907-701.04.2.

Delete Subsection 701.04.2.2 on page 721, and substitute the following.

907-701.04.2.2--Blended Cement for Soil Stabilization Exposed to Soluble Sulfate Conditions or Seawater. When blended cement for use in soil stabilization is exposed to moderate or severe soluble sulfate conditions, or to seawater, cement types and replacement of cement by Class F fly ash or GGBFS shall meet the requirements of Subsection 701.04.2.1.

Delete Subsection 701.04.3 on page 721.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-702-4

CODE: (IS)

DATE: 09/11/2018

SUBJECT: Bituminous Materials

Section 702, Bituminous Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-702.04--Sampling. Delete the sentence in Subsection 702.04 on page 722, and substitute the following.

Sampling of bituminous materials shall be as set out in AASHTO R 66.

907-702.07--Emulsified Asphalt. Delete the last sentence in Subsection 702.07 on page 724, and substitute the following.

Asphalt for fog seal shall conform to the requirements of Subsection 907-702.12, Table V.

907-702.12--Tables. Delete Table V in Subsection 702.12 on page 729, and substitute the following.

**TABLE V
SPECIFICATION FOR FOG SEAL**

Test Requirements	LD-7		CHPF-1		Test Method
	Min.	Max.	Min.	Max.	
Viscosity, Saybolt Furol, @ 25°C, Sec.	10	100	-	100	AASHTO T 72
Storage Stability Test, 24 hr, %	-	1	-	1	AASHTO T 59
Settlement, 5 day, %	-	5	-	-	AASHTO T 59
Oil Distillate, %	-	1	-	-	AASHTO T 59
Sieve Test, % *	-	0.3	-	0.1	AASHTO T 59
Residue by Distillation, %	40	-	40	-	AASHTO T 59
Test on Residue from Distillation					
Penetration @ 25°C, 100g, 5 sec	-	20	40	90	AASHTO T 49
Softening Point, °C	65	-	-	-	ASTM D 36
Solubility in trichloroethylene, %	97.5	-	-	-	AASHTO T 44
Elastic Recovery @ 25°C, %	-	-	40	-	AASHTO T 301
Original DSR @ 82° (G*/Sinδ, 10 rad/sec)	1	-	-	-	AASHTO T 111

* The Sieve Test result is tested for reporting purposes only and may be waived if no application problems are present in the field.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-703-1

CODE: (IS)

DATE: 06/13/2018

SUBJECT: Gradation

Section 703, Aggregates, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-703.03--Course Aggregates for Hydraulic Cement Concrete.

907-703.03.2--Detail Requirements.

907-703.03.2.4--Gradation. In the table in Subsection 703.03.2.4 on page 734, add 100 for the percent passing by weight on the 1½-inch sieve for Size No. 67 aggregates.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-705-1

CODE: (IS)

DATE: 06/13/2018

SUBJECT: Stone Riprap

Section 705, Stone Blanket Protection and Filter Blanket Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-705.04--Stone Riprap. Delete the last sentence of the first paragraph of Subsection 705.04 on page 750, and substitute the following.

Quality requirements for rock to be furnished under these specifications will come from a pre-approved source and be visually approved prior to use.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-707-3

CODE: (SP)

DATE: 10/27/2021

SUBJECT: Joint Materials

Section 707, Joint Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-707.02--Joint Filler.

907-707.02.2--Preformed Sponge, Rubber, Cork and Closed-Cell Polypropylene Foam Joint Fillers for concrete Paving and Structural Constructions. Delete the two paragraphs of Subsection 707.02.2 on page 755, and substitute the following.

Preformed joint filler shall conform to AASHTO M 153 for sponge, rubber, and cork and tested according to ASTM D545. The type required will be indicated on the plans.

Closed-cell polypropylene foam shall conform to the requirements in ASTM D8139 and tested in accordance with ASTM D545.

907-707.02.3--Wood. Delete paragraph (b) of Subsection 707.02.3 on page 755, and substitute the following:

- (b) Dimensions shall be as shown on the plans. Dimensions shown on the plans are “dressed” sizes in accordance with Table 3 of the American Softwood Lumber Standard, SP-20. At the discretion of the Engineer, a 3/4-inch dressed board may be used in lieu of a 1-inch dressed board. A tolerance of plus or minus 1/16 inch thickness and plus or minus 1/8 inch width will be permitted. For slip-form paving a tolerance of minus 1/4 inch on each end in length will be permitted.

907-707.06--Flexible Plastic Gasket for Joining Conduit. Delete the third paragraph of Subsection 707.06 on page 756, and substitute the following.

The Department may require the performance test described in ASTM C 990.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-708-4

CODE: (SP)

DATE: 09/21/2021

SUBJECT: Concrete Pipe

Section 708, Non-Metal Structures and Cattlepasses, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-708.02--Concrete Pipe.

907-708.02.1--Materials for Use in Concrete Pipe.

907-708.02.1.2--Fly Ash. Delete Subsection 708.02.1.2 on page 758, and substitute the following.

Fly ash conforming to the requirements of Subsection 714.05 may be used to replace hydraulic cement on a one to one replacement rate. If a type IL cement conforming to the requirements of Subsection 701.04 is used, the fly ash replacement shall not exceed 35% by weight of the cement. For all other Types of cement, the fly ash replacement rate shall not exceed 25% by weight of hydraulic cement.

907-708.02.3--Exceptions to AASHTO Standard Specifications. After Subsection 708.02.3.7 on page 760, add the following.

907-708.02.3.8--Lifting Device. In lieu of lift holes, the producer may cast an approved lifting device in the pipe during the manufacturing process. Should a lifting device be included with the pipe, the Contractor shall cut off or grind down the lifting device flush with the pipe surface after placement of the pipe. The area around the lifting device shall be coated with a sealer approved by the Engineer.

907-708.02.5--Reinforced Concrete Pipe. Delete the second paragraph in Subsection 708.02.5 on page 760, and substitute the following.

907-708.02.5.1--Class V Pipe With Diameter 54 Inches and Greater. Class V pipe with diameters of 54 inches and larger shall meet the requirements of AASHTO M 170 or M 242 as modified by Subsection 708.02 and herein.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-711-2

CODE: (IS)

DATE: 09/11/2018

SUBJECT: Plain Steel Wire

Section 711, Reinforcement and Wire Rope, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-711.02--Deformed and Plain Carbon-Steel Bars for Concrete Reinforcing.

907-711.02.3--Steel Welded and Non-Welded Wire Reinforcement, Plain and Deformed, for Concrete.

907-711.02.3.1--Plain Steel Wire. Delete the sentence in Subsection 711.02.3.1 on pages 780 and 781, and substitute the following.

Plain steel wire and plain steel welded wire shall conform to the requirements of AASHTO M 336.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-712-1

CODE: (SP)

DATE: 12/07/2021

SUBJECT: Fence and Guardrail

Section 712, Fence and Guardrail, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-712.01--General. After the sentence in Subsection 712.01 on page 785, add the following.

All materials' inspection, testing, and certification will be performed in accordance with the requirements of the current version of the Department's *Materials Division Inspection, Testing, and Certification Manual*.

Delete Subsections 712.02 and 712.03 on page 785, and substitute the following.

907-712.02--Barbed Wire. Barbed wire shall conform to the requirements of AASHTO M 280. In the coastal counties of Hancock, Harrison, and Jackson, either Coating Type Z Class 3 or Coating Type A shall be furnished. In all other areas of the State, either Coating Type Z Class 1, Coating Type Z Class 3, Coating Type ZA Class 60, or Coating Type A shall be furnished.

907-712.03--Metallic-Coated, Steel Woven Wire Fence Fabric. Woven wire fencing (i.e., "hog wire") shall conform to the requirements of AASHTO M 279. In the coastal counties of Hancock, Harrison, and Jackson, either Coating Type Z Class 3 or Coating Type A shall be furnished. In all other areas of the State, either Coating Type Z Class 1, Coating Type Z Class 3, Coating Type ZA Class 60, or Coating Type A shall be furnished.

907-712.04--Chain Link Fence. Delete Subsections 712.04.1 thru 712.04.7 on pages 785 & 786, and substitute the following.

907-712.04.1--Fabric. In the coastal counties of Hancock, Harrison, and Jackson, either Type I Class D, Type II, Type III, or Type IV fabrics shall be furnished. In all other areas of the State, either Type I Class C, Type I Class D, Type II, Type III, or Type IV fabrics shall be furnished.

907-712.04.2--Tie Wire. Tie wire shall be of the same material as the fencing wire being used, shall be of good commercial quality, and shall meet the requirements of AASHTO M 181. Either Type I, Type II, Type III, or Type IV tie wire shall be furnished.

907-712.04.3--Tension Wire. Tension wire shall be of the same material as the fencing wire being used, shall be of good commercial quality, and shall meet the requirements of AASHTO M 181. In the coastal counties of Hancock, Harrison, and Jackson, either Type I Class 3, Type II, Type III, or Type IV tension shall be furnished. In all other areas of the State, either Type II, Type III, Type IV, or Type I Classes 1, 2, or 3 tension wires shall be furnished.

907-712.04.4--Posts Rails, Gate Frames, and Expansion Sleeves. Posts, rails, gate frames, and expansion sleeves shall conform to the requirements for posts in Subsection 712.05.2, unless otherwise designated in the contract.

907-712.04.5--Miscellaneous Fittings and Hardware. Miscellaneous fittings and hardware shall conform to the requirements of Subsection 712.16.

907-712.05--Fence Posts and Braces.

907-712.05.1--Treated Timber Posts and Braces.

907-712.05.1.1--General. Delete the third, fourth, fifth, and sixth paragraphs of Subsection 712.05.1.1 on page 787, and substitute the following.

All wood posts and braces shall be treated in accordance with Subsections 718.03 and 718.04.

907-712.05.1.2--Round Posts. Delete the last sentence of the last paragraph of Subsection 712.05.1.2 on page 788.

907-712.05.1.3--Sawed Posts. Delete the last sentence of the paragraph of Subsection 712.05.1.3 on page 788.

907-712.05.1.4--Sawed Braces. Delete the last sentence of the paragraph of Subsection 712.05.1.4 on page 788.

Delete Subsection 712.05.2 on page 788, and substitute the following.

907-712.05.2--Metal Posts.

907-712.05.2.1--Round Steel Pipe. Round steel pipe shall meet the requirements of AASHTO M 181, either Grade 1 (i.e., meeting the requirements in ASTM F 1083) or Grade 2 (i.e., meeting the requirements of ASTM F 1043).

Round steel pipe shall be sized in accordance with NPS (nominal pipe size) designations as shown on Plans, and not according to the outer or inner pipe diameter.

907-712.05.2.2--Steel Fence Post and Assemblies, Hot-Wrought. Steel posts with the following section shapes, Tee, channel or U, and Y-Bar shall meet the requirements of AASHTO M 281, galvanized in accordance with the requirements of AASHTO M 111, unless otherwise specified in the contract. Acceptance of these steel posts shall be by certification from the manufacturer, producer, supplier, or fabricator, as applicable.

907-712.05.2.3--Blank.

907-712.05.2.4--Steel H-Beam Posts. Steel H-Beam posts shall be produced from structural quality weldable steel having a minimum yield strength of 45,000 psi and shall be galvanized in accordance with ASTM A 123. Steel H-Beam line posts shall be 2.250 inches by 1.625 inches and shall weigh 3.43 pounds per foot. A tolerance of plus or minus 5.0 percent is allowed for

weight per foot. A tolerance of plus or minus 1.0 percent is allowed for dimensions.

907-712.05.2.5--Aluminum-Alloy Posts and Assemblies. Round aluminum-alloy posts shall meet the requirements of ASTM B 241, Alloy 6061, T6. Aluminum-Alloy H-Beam posts shall meet the requirements of ASTM B 221, Alloy 6061, T6.

907-712.05.2.6--Formed Steel Section Posts. Formed steel section posts, "C" sections, shall be formed from sheet steel conforming to ASTM A 1011, Grade 45, and shall be galvanized in accordance with ASTM A 123.

907-712.06--Guard and Guardrail Posts.

907-712.06.2--Treated Wood Posts.

907-712.06.2.1--Square Posts. Delete the paragraph in Subsection 712.06.2.1 on page 789, and substitute the following.

All square posts shall be inspected for conformance with Section 712.05, except that the posts may be rough and shall be within $\pm 3/8$ " of the dimensions shown on the plans.

907-712.06.2.2--Round Posts. Delete the paragraph in Subsection 712.06.2.2 on page 789, and substitute the following.

All round posts shall be inspected for conformance with Section 712.05, except that the posts shall be of the shape and dimensions shown on the plans.

907-712.06.5--Treated Wood Blocks for Use with Metal Guardrail Posts. Delete the paragraphs of Subsection 712.06.5 on pages 789 & 790, and substitute the following.

Treated wood blocks for use with metal guardrail posts shall be within $\pm 3/8$ " of the size and dimensions shown on the plans, except that a minus tolerance shall not be allowed for the slotted width in which the metal post must fit.

Delete Subsection 712.16 on page 791, and substitute the following.

907-712.16--Hardware. All ferrous metal hardware for fencing such as bolts, nuts, washers, and metal straps shall be as specified on the plans and galvanizing shall not be less than 1.0 ounce per square foot of uncoated area. Aluminum coated hardware shall be coated with aluminum meeting the requirements of AASHTO M 181 for aluminum coating and at the rate of not less than 0.4 ounces per square foot of uncoated area.

Aluminum alloy hardware shall conform to the requirements of ASTM B 221 for extruded aluminum alloy 6063, T6. The finished members shall be of uniform quality.

Aluminum-zinc coated hardware shall be coated with an aluminum-zinc alloy meeting the chemical requirements and weight of coating specified for aluminum-zinc alloy coated metal gates.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-714-3

CODE: (SP)

DATE: 08/31/2021

SUBJECT: Miscellaneous Materials

Section 714, Miscellaneous Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-714.01--Water.

907-714.01.1--General. Delete the last sentence of the second paragraph in Subsection 714.01.1 on page 794.

907-714.01.2--Water for Use in Concrete. Delete Subsection 714.01.2 on page 794, and substitute the following:

Water from municipal sources is permitted be used as mixing water in concrete, mortar, and grout without Department testing. Water from non-municipal water sources used in mixing of concrete, mortar, and grout which does not meet the requirements in Subsection 714.01.1 shall be tested for conformance as required in AASHTO M157, Table 1 and Table 2.

907-714.01.3--Water for Use in Chemically Stabilized Based. Delete the first sentence of first paragraph in Subsection 714.01.3 on page 794, and substitute the following:

Water used in the construction of bases that contain cement, lime, or other chemical additive shall be as set out in Subsection 714.01.1. Water from municipal sources is permitted to be used without testing for conformance to the requirements below. If water is not from a municipal source, it shall not contain impurities in excess of the following limits:

Delete Subsection 714.01.6 on page 795, and substitute the following.

907-714.01.6--Blank.

907-714.05--Fly Ash.

907-714.05.1--General. Delete the first sentence of the fifth paragraph in Subsection 714.05.1 on page 797.

907-714.13--Geotextiles.

907-714.13.11--Tables. Delete Table 1 in Subsection 714.13.11 on page 813, and substitute the following.

Table 1 - Geotextiles									
Type Designation	I¹ Sediment Control	II¹ Drainage	III Drainage	IV Paving	V Separation & Drainage	VI Separation, Stabilization & Reinforcement		VII High Strength	IX High Strength
						Woven	Non- Woven	Non- Woven	
Physical Property²									Test Method
Grab Strength (lb)	50	90	110	90	200	280	180	280	ASTM D 4632
Elongation (%)	----	50% max @ 45 lb	20% min	50% min @ break	50% min	50% max	50% min	50% min	ASTM D 4632
Seam Strength (lb)	----	----	70	----	180	240	160	240	ASTM D 4632
Puncture Strength (lb)	----	----	40	----	80	110	75	115	ASTM D 6241
Trapezoidal Tear (lb)	----	----	40	----	80	100	70	150	ASTM D 4533
Asphalt Retention (gal/yd ²)	----	----	----	0.2	----	----	----	----	ASTM D 6140
Permittivity (sec ⁻¹) min	0.05	0.05	0.5	----	0.2	0.2	0.2	0.2	ASTM D 4491
AOS Woven (mm) max	0.60	0.60	0.6	----	0.6	0.43	----	----	ASTM D 4751
AOS Non-Woven (mm) max	0.84	0.84	0.43	----	0.43	----	0.43	0.43	----
Tensile Strength after UV (%) Retained	70% @ 500 hr	70% @ 500 hr	50% @ 500 hr	----	50% @ 500 hr	50% @ 500 hr	50% @ 500 hr	50% @ 500 hr	ASTM D 4355
Melting Point °(F)	----	----	----	325	----	----	----	----	ASTM D 276
Minimum Ultimate Tensile Strength ³ (lb/in)	----	----	----	----	----	----	----	660	ASTM D 4595

Notes: 1 - All property values, with the exception of apparent opening size (AOS), represent minimum average roll values in the weakest principal direction. Values for AOS represent the maximum average roll values, 2 - Values not identified in this table should meet manufacturer certification for the use and application, 3 - Machine direction

Delete Subsection 714.15 on pages 816 and 817 and substitute the following.

907-714.15--Geogrids.

907-714.15.1--General. A geogrid is defined as a geosynthetic formed by a regular network of connected elements with apertures greater than 0.25 inch to allow interlocking with surrounding soil, rock, and other surrounding materials to function primarily as reinforcement.

Geogrid shall be manufactured from an expanded strain hardened monolithic polymer sheet composed of one or more synthetic polymers and shall be mildew resistant and inert to biological degradation and naturally encountered chemicals, alkalis and acids. The geogrid shall contain stabilizers and/or inhibitors, or a resistance finish or covering to make it resistant to deterioration from direct sunlight, ultraviolet rays, and heat.

Geogrid manufacturers shall participate in and be in compliance with the American Association of State Highway Transportation Officials (AASHTO) National Transportation Product Evaluation Program's (NTPEP) Geosynthetics audit program. Geogrid shall meet the requirements of Table II for the application and type shown on the plans and shall be selected from the Department's Approved Lists.

907-714.15.1.1--Geogrid for Retaining Walls and Reinforced Soil Slopes. Geogrid for retaining walls and reinforced soil slopes shall be creep tested in accordance with AASHTO R69 and meet Long Term Design Load, Minimum Ultimate Tensile Strength, and open area criteria listed in Table II. Manufacturers shall perform at least one long-term creep test for no less than 10,000 hours in accordance to ASTM D 5262 for each polymer or composition of polymers from which the geogrid is produced. The long-term design load that shall be reported for design use, shall be that load at which no more than 10% strain occurs over a 100-year design life of the geogrid, as calculated in accordance with AASHTO R69. Long-term design loads shall be reported unfactored, and the AASHTO strength reduction factors (Durability and Installation, and safety factors) will be considered by the Department's Geotechnical Branch on a site specific design basis.

907-714.15.1.2--Geogrid for Subgrade Stabilization. Geogrid for subgrade stabilization shall meet Minimum Ultimate Tensile Strength and open area criteria listed in Table II.

907-714.15.2--Marking, Shipment, and Storage. Each roll or container of geogrid shall be visibly labeled with the name of the manufacturer, trade name of the product, lot number, and quantity of material. In addition, each roll or container shall be clearly tagged to show the type designation that corresponds to that required by the plans. During shipment and storage the geogrid shall be protected from direct sunlight, and temperatures above 120°F or below 0°F. The geogrid shall either be wrapped and maintained in a heavy duty protective covering or stored in a safe enclosed area to protect from damage during prolonged storage.

907-714.15.3--Manufacturer Certification. The Contractor shall furnish the Engineer three copies of the manufacturer's certified test reports indicating that the geogrid furnished conforms to the requirements of the specifications and is of the same composition as the originally approved

by the Department.

907-714.15.4--Acceptance Sampling and Testing. Final acceptance of each shipment will be based upon results of tests performed by the Department on verification samples submitted from the project, as compared to the manufacturer's certified test reports. The Engineer will select one roll or container at random from each shipment for sampling. As sample extending full width of the randomly selected roll or container and being at least five (5) square yards in area will be obtained and submitted by the Engineer. All material samples shall be provided at no cost to the State.

**TABLE II
GEOGRIDS**

Physical Properties	Type Designation						Test Method
	I	II	III	IV	V	VI	
Long Term Design Load ¹ , pounds per foot, Machine Direction	250	500	750	1500	2500	3500	AASHTO R69, ASTM D5262
Minimum Ultimate Tensile Strength ² , pounds per foot, Machine Direction	500	1000	1500	3000	5000	7000	ASTM D6637
Open Area, percent	70	70	50	50	50	50	Direct Measurement

¹ Minimum design criteria requirement.

² Minimum Average Roll Value (MARV).

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-718-1

CODE: (SP)

DATE: 12/07/2021

SUBJECT: Timber and Dimension Lumber

Section 718, Timber and Dimension Lumber, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

Delete the Subsections in Section 718 on pages 836 thru 838, and substitute the following.

907-718.01--General. All timber and dimension lumber shall be Southern pine and shall conform in all respects to applicable requirements of AASHTO M 168. The Department reserves the right to sample and to test all materials at any time; all inspection, testing, and certification of materials will be performed in accordance with the requirements of the current version of the Department's *Materials Division Inspection, Testing, and Certification Manual*.

Timber and dimension lumber shall be furnished in the sizes shown on the plans or as specified. Unless otherwise specified, timber and dimension lumber shall be No. 1, or better, graded according to the latest American Lumber Standards.

Only one type of preservative shall be used for the treatment of materials for any one class of construction on a project, unless otherwise specified.

Where treated timber and dimensional lumber is to be used in non-highway construction or use, such as decking, handrails in walking trails, or in any manner where general public exposure by touch is possible, the treatment requirements will be as per project plans and/or approved by the State Materials Engineer.

907-718.02--Untreated Timber and Dimension Lumber. Untreated timber and dimension lumber shall conform to the requirements of AASHTO M 168.

907-718.03--Treated Timber and Dimension Lumber. Timber and dimension lumber to be treated shall meet the requirements herein specified and shall be treated as specified. Treated timber or dimensional lumber will not be accepted for use unless it has been inspected by an authorized representative of the Department and found to be satisfactory after treatment.

907-718.03.1--Blank.

907-718.03.2--Treatment.

907-718.03.2.1--General. All materials shall be treated in accordance with AASHTO M 133 unless otherwise directed by the Environmental Protection Agency (EPA).

907-718.03.2.2--Blank.

907-718.03.2.3--Inspection. Treated timber and dimension lumber shall be inspected by an authorized representative of the Department before being incorporated into the work. Treatment reports shall be provided to the Department for each lot of material supplied.

907-718.03.3--Blank.

907-718.03.4--Storage of Treated Material. All material treated for stock shall be stacked as compactly as possible on a well-drained surface. Material shall be supported on sills spaced as necessary, not to exceed 10 foot intervals and shall have at least one foot of air space beneath the stacks.

All materials treated with preservatives for use in buildings and applications where painting is required shall be dried after treatment. The treated wood shall be dried in accordance with American Lumber Standards.

907-718.04--Preservative. Preservatives shall be as specified in AASHTO M 133 unless otherwise directed by the Environmental Protection Agency (EPA).

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-720-2

CODE: (IS)

DATE: 09/11/2018

SUBJECT: Acceptance Procedure for Glass Beads

Section 720, Pavement Marking Materials, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-720.01--Glass Beads.

907-720.01.4--Acceptance Procedures. Delete the last sentence of the paragraph in Subsection 720.01.4 on page 841, and substitute the following.

Acceptance sampling and testing of glass beads will be in accordance with Subsection 2.9.2 of the Department's Materials Division Inspection, Testing, and Certification Manual.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-721-4

CODE: (IS)

DATE: 04/19/2022

SUBJECT: Materials for Signing

Section 721, Materials for Signing, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-721.06--Reflective Sheeting.

907-721.06.2--Performance Requirements. Delete Table 4 and Table 5 in Subsection 721.06.2 on pages 860 & 861, and substitute the following.

MINIMUM COEFFICIENTS OF RETROREFLECTION Candela per foot candle per square foot (cd/fc/ft²) Per ASTM Designation D4956

TABLE 4
Type IX Sheeting

Observation Angle	Entrance Angle	White	Yellow	Green	Red	Blue	Fluorescent Yellow/Green	Fluorescent Yellow	Fluorescent Orange
0.2°	-4.0°	380	285	38	76	17	300	230	115
0.2°	+30.0°	215	162	22	43	10	170	130	65
0.5°	-4.0°	240	180	24	48	11	190	145	72
0.5°	+30.0°	135	100	14	27	6.0	110	81	41
1.0°	-4.0°	80	60	8.0	16	3.6	64	48	24
1.0°	+30.0°	45	34	4.5	9.0	2.0	36	27	14

TABLE 5
Type XI Sheeting

Observation Angle	Entrance Angle	White	Yellow	Green	Red	Blue	Brown	Fluorescent Yellow/Green	Fluorescent Yellow	Fluorescent Orange
0.2°	-4.0°	580	435	58	87	26	17	460	350	175
0.2°	+30.0°	220	165	22	33	10	7.0	180	130	66
0.5°	-4.0°	420	315	42	63	19	13	340	250	125
0.5°	+30.0°	150	110	15	23	7.0	5.0	120	90	45
1.0°	-4.0°	120	90	12	18	5.0	4.0	96	72	36
1.0°	+30.0°	45	34	5.0	7.0	2.0	1.0	36	27	14

After Subsection 721.10 on page 864, add the following.

907-721.11--Digital Applied Printing. The following addresses the requirements for digitally printed finished retroreflective traffic control signs on flat sheet aluminum and digitally printed traffic sign faces intended to be applied to a sign substrate.

907-721.11.1--Digitally Printed Ink Systems. Traffic signs must be produced using components, and processes that comply with the retroreflective sheeting manufacturer's recommendations.

Digital printed ink systems used to print traffic signs must meet and comply with daytime and nighttime chromaticity (color standards) as recognized in ASTM D4956 “Standard Specification for Retroreflective Sheeting for Traffic Control.”

Digital printed ink systems must meet 70% of the initial retroreflectivity specifications of each respective reflective film color as found in ASTM D4956 “Standard Specification for Retroreflective Sheeting for Traffic Control.”

Prior to fabrication and preferably at the preconstruction meeting, the Contractor shall advise the Project Engineer in writing as to which signs on the project will be digitally printed and which ones will be screen printed. The Contractor shall submit to the Project Engineer certifications for all digitally printed signs, which will be forwarded to the State Traffic Engineer for review.

907-721.11.2--Protective Overlay Film. Permanent traffic signs printed with digital ink systems will be fabricated with a full sign protective overlay film designed to provide a smooth surface needed for retroreflectivity, and to protect the sign from fading and UV degradation. The overlamine shall comply with the retroreflective sheeting manufacturer’s recommendations to ensure proper adhesion and transparency and will also meet the reflective film durability as identified in Table 1.

Table 1
Retroreflective Film Minimum Durability Requirements

ASTM D4956 Type	Full Sign Replacement Term (years)	Sheeting Replacement Term (years)
IV	7	10
VIII	7	10
IX	7	12
XI	7	12

Temporary signs used in work zones printed with black ink only will not require a protective overlay film as long as the finished sign is warranted for a minimum outdoor durability of three years by the sheeting manufacturer.

907-721.11.3--Inspection. During fabrication, the Contractor shall provide sufficient testing and quality control throughout fabrication to insure good workmanship. Once the material has been received, it may be subject to random testing to ensure compliance with all requirements. If any test samples do not conform to the requirements, the entire order may be returned at the vendor’s expense.

907-721.11.4--Traffic Sign Performance Warranty Provisions. Based on the ASTM Type of sheeting specified, traffic control signs shall be warranted for the duration shown in Table 1. The Contractor shall supply a copy of the warranty document with complete details of terms and conditions upon request of the Department.

907-721.11.5--Certified Digital Sign Fabricator. Sign fabricators using digital imaging methods to produce regulated traffic signs must be certified by the reflective sheeting manufacturer whose materials are used to produce the delivered signs.

Certified sign fabricators must undergo an audit process by the sheeting manufacturer to ensure they have the proper equipment, manufacturing capabilities, manufacturing application processes and the materials required to fulfill the sheeting manufacturer's warranty obligations. Sign fabricators must recertify annually with reflective sheeting manufacturers or utilize a 3rd party certifier approved by the reflective sheeting manufacturer.

The Contractor shall submit proof of Sign Fabricator Certification as issued by the retroreflective sign sheeting manufacturer to the Project Engineer upon delivery of the signs, or with the Shop Drawings.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-722-1

CODE: (IS)

DATE: 11/15/2017

SUBJECT: Materials for Traffic Signal Installation

Section 722, Materials for Traffic Signal Installation, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follow.

907-722.02.3--Design Strength Requirements. Delete Subsection 722.02.3 on pages 864 thru 866, and substitute the following.

Unless specified otherwise in the plans, poles shall meet the requirements of the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, as specified in the plans with all interim supplements. All components of the assemblies shall be designed to the following:

- Importance Factor: 1.0; 50 year mean recurrence interval
- Basic Wind Speed (3 second gust): As shown on the project plans
- Minimum Gust Effect Factor: 1.14
- Fatigue Category: II
- Ice Loading: As shown on the project plans
- Natural Wind Gust Pressure Loads: Included
- Truck Induced Gust Pressure Loads: Not included
- Galloping: Not included

907-722.02.5--Mast Arms for Traffic Signal and Equipment Poles. Delete the first four sentences of the third paragraph of Subsection 722.02.5 on page 867, and substitute the following.

Anchor base plates must meet the minimum requirements of ASTM A36 or ASTM A709 Grade 36 or ASTM A572 Grade 50 and must be welded to the shaft by either telescoped with two continuous arc welds or by back up ring using full penetration welds.. Flange plate shall telescope the large end of the arm and be welded by either two (2) continuous arc welds, one (1) being on the outside of the plate, adjacent to the shaft, and the other one (1) on the inside at the end of the tubular cross section or by back up ring using full penetration welds. The thru-bolt flange plate or tapped flange plate supporting the mast arm shall be welded to the pole near the top and supported side plate tangent to the pole and gusset plates both top and bottom. The thru-bolt or tapped flange plate must be sufficient to develop the full capacity of the connecting bolts.

907-722.03--Electric Cable. Delete the paragraphs for Loop Detector Wire and Loop Detector Lead-in Cable in Subsection 722.03 on page 869.

Delete the first sentence of “Communication Cable” in Subsection 722.03 on page 870, and substitute the following.

Communication cables shall be as per the manufacturer's recommendation.

907-722.05.4--Type III or Type IV Rigid Non-Metallic Conduit. After the last sentence of Subsection 722.05.4 on page 871, add the following.

Schedule 40 conduit shall be used unless otherwise noted in the plans.

Delete the title of Subsection 722.13.3 on page 876, and substitute the following.

907-722.13.3--Power Service Pedestal.

Delete the first paragraph of Subsection 722.13.3 on page 876, and substitute the following.

The pedestal shall be of NEMA Type 3R rainproof construction and shall be UL Listed as "Enclosed Industrial Control Equipment" (UL 508A). External construction shall comply with UL50 requirements and shall be unpainted aluminum.

Nominal size of the pedestal shall be 48"H x 16"W x 16"D.

Pedestal shall have a voltage rating or 120v/240v single phase with an Amperage rating of 800A.

After the first sentence of the seventh paragraph of Subsection 722.13.3 on page 876, add the following.

An outdoor rated heavy duty combination lock shall be provided to lock the customer compartment door.

907-722.14.1.3--Optical System. Delete the sixteenth paragraph of Subsection 722.14.1.3 on page 879, and substitute the following.

The signal module on-board circuitry shall include voltage surge protection to withstand high-repetition noise transients and low-repetition high-energy transients as stated in Section 2.1.6, NEMA Standard TS 2, 1992.

Delete the last sentence of the seventeenth paragraph of Subsection 722.14.1.3 on page 879, and substitute the following.

Load switches shall be compatible with NEMA TS 1 or later, or Model 170-1989 or later.

Delete Subsection 722.14.5 on page 882, and substitute the following.

907-722.14.5--Blank.

Delete Subsections 722.14.7 and 722.14.8 on page 882.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-804-11

CODE: (SP)

DATE: 05/05/2021

SUBJECT: Concrete Bridges and Structures

Section 804, Concrete Bridges and Structures, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-804.02--Materials.

907-804.02.3--Non-Quality Control / Quality Assurance Concrete.

Delete the third sentence of the first paragraph on page 936 and substitute the following.

The Contractor is required to submit mixture designs to accomplish this work in accordance with Section 804 and perform normal Quality Control functions in accordance with Table 4, Contractor's Minimum Requirements for Quality Control, Items A and B.

Add the following to the list of concrete items on page 937 that are not accepted based on the Quality Control / Quality Assurance (QC/QA) requirements.

<u>Section</u>	<u>Description</u>
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610	High Tension Cable Barrier
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907-804.02.6--Classification and Uses of Concrete. After the last class of concrete listed in Section 804.02.6 on page 938, add the following.

10) Class BDX - Concrete for bridge decks (4,500 psi)

907-804.02.10--Hydraulic Cement Concrete Mixture Design. Add the following to Table 3 in Subsection 804.02.10 on page 941.

BDX	Bridge Deck ¹	57 or 67	0.42-0.45	4500	5 [-2.5]	4.5±1.5 6.5±1.5	N/A
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Delete footnote 1 of Table 3 in Subsection 804.02.10 on pages 941 & 942 and substitute the following.

¹ An approved synthetic structural fiber meeting the requirements of Subsection 711.04 shall be incorporated into the mixture at 1.25 times the approved dosage rate. For each additional pound of fibers per cubic yard added in excess of the requirement stated above, an additional inch of slump will be allowed up to a maximum permitted slump of eight (8) inches.

For Class BD, the maximum cementitious material content shall be 550 pounds per cubic yard

For Class BDX, the maximum cementitious material content shall be 564 pounds per cubic yard.

Delete footnote 3 of Table 3 in Subsection 804.02.10 on page 942 and substitute the following:

- ³ The design slump selected by the Contractor for the mixture design approval is the maximum slump permitted.

Delete the last sentence of the first paragraph on page 942 and substitute the following.

Other hydraulic cements may be used in accordance with the specifications listed in Section 701. Other small coarse aggregate sizes meeting the requirements of Subsection 703.03.2.4 may be used in conjunction with the coarse aggregate sizes listed in Table 3.

907-804.02.12--Contractor's Quality Control. Delete Table 4 in Subsection 804.02.12.5 on page 950, and substitute the following.

Table 4
CONTRACTOR'S MINIMUM REQUIREMENTS FOR QUALITY CONTROL

Hydraulic Cement Concrete		
Control Requirement	Frequency	AASHTO/ASTM
A. PLANT AND TRUCKS 1. Mixer Blades 2. Scales a. Tared b. Calibrate c. Check Calibration 3. Gauges & Meters - Plant & Truck a. Calibrate b. Check Calibration 4. Admixture Dispenser a. Calibrate b. Check Operation & Calibration	Monthly Daily Every 6 months Weekly Every 6 months Weekly Every 6 months Daily	
B. AGGREGATES 1. Sampling 2. Fine Aggregate a. Gradation / FM b. Moisture c. Specific Gravity / Absorption 3. Coarse Aggregates a. Gradation b. Moisture c. Specific Gravity / Absorption	250 yd ³ concrete Check meter against test results weekly 2500 yd ³ concrete 250 yd ³ concrete Minimum of once daily or more as needed to control production. Check meter against test results weekly. 250 yd ³ Concrete if the coarse aggregate oven dry specific gravity is less than 2.450, or 2500 yd ³ Concrete if the coarse aggregate oven dry specific gravity is greater than or equal to 2.450	T 2 T 27 T 255 T 84 T 27 T 255 T 85
C. PLASTIC CONCRETE 1. Sampling 2. Air Content 3. Slump 4. Density (Unit Weight) 5. Compressive Strength 6. Yield 7. Temperature	First load then one per 50 yd ³ First load then one per 50 yd ³ 100 yd ³ or when cylinders are made A minimum of one set (three cylinders) for each 100 yd ³ inclusive and one set for each additional 100 yd ³ or fraction thereof for each class concrete delivered and placed on a calendar day from a single supplier. A test shall be the average of three cylinders. Each 400 yd ³ Concrete With each sample	R 60 T 152 or T 196 T 119 T 121 T 22, T 23, T 231 T 121 T 309

907-804.02.13--Quality Assurance Sampling and Testing. Delete Table 5 in Subsection 804.02.13 on pages 951 and 952, and substitute the following.

TABLE 5
DEPARTMENT'S MINIMUM REQUIREMENTS
FOR QUALITY ASSURANCE

Quality Assurance Tests	Frequency	AASHTO/ASTM
A. AGGREGATES		
1. Sampling		T 2
2. Fine Aggregate Gradation and FM	250 yd ³ concrete	T 27
3. Coarse Aggregates Gradation	250 yd ³ concrete	T 27
4. Coarse Aggregate a. Specific gravity / Absorption	250 yd ³ Concrete if the coarse aggregate oven dry specific gravity is less than 2.450, or 2500 yd ³ Concrete if the coarse aggregate oven dry specific gravity is greater than or equal to 2.450	
B. PLASTIC CONCRETE		
1. Sampling		R 60
2. Air Content	Every 100 yd ³	T 152 or T 196
3. Slump	Every 100 yd ³	T 119
4. Density (Unit Weight)	100 yd ³ or when cylinders are made	T 121
5. Compressive Strength	One set (three cylinders) for every 100 yd ³ inclusive. A test shall be the average of three cylinders.	T 22, T 23, T 231
6. Temperature	With each sample	T 309

907-804.02.13.1.4--Yield. Delete the first sentence of Subsection 804.02.13.1.4 on page 953 and substitute the following.

If the yield of the concrete mixture is more than plus or minus three percent ($\pm 3\%$) of the design volume, the mixture design shall be adjusted by a Class III Certified Technician representing the Contractor to yield the correct volume, plus or minus three percent ($\pm 3\%$).

907.804.02.13.1.7--Static Segregation. Delete the second sentence of Subsection 804.02.13.1.7 on page 954 and substitute the following.

If the static segregation of the concrete mixture design exceeds this requirement, the mixture design shall be adjusted by a Class III Certified Technician representing the Contractor to ensure a static segregation in conformance with the requirement in Table 3.

907-804.03--Construction Requirements. Delete Subsection 804.03.16.1 on pages 970 & 971, and substitute the following.

907-804.03.16.1--Cold Weather Concreting.

907-804.03.16.1.1--Mixture Acceptance Temperature. For the purpose of job site acceptance temperature in accordance with Subsection 804.02.13.1.5, in cold weather, the acceptance temperature of the concrete when delivered to the job site shall conform to the temperature limitations of "Temperature Limitations on Concrete when Delivered to Job Site" listed in Table 8 below. For the purpose of mixture acceptance temperature, cold weather is defined as three consecutive days when there is a probability that the daily average of the highest and lowest

ambient temperatures is expected to be less than 40°F. This three-day forecast shall be based on the latest information available from the National Weather Service.

TABLE 8
COLD WEATHER TEMPERATURE LIMITATIONS ON CONCRETE
WHEN DELIVERED TO JOB SITE

Section thickness in the least dimension inches	Jobsite Acceptance Temperature Range °F
Less than 12	55 to 75
12 to 36	50 to 70
36 to 72	45 to 65
Greater than 72	40 to 60

907-804.03.16.1.2--Structure Concrete Protection. The Contractor shall assume all risk and added cost connected with the placing and protecting of concrete during cold weather. For the purpose of structure protection, cold weather is defined as periods where there are indications of temperatures less than 40°F during the first four days after placement. Permission given by the Engineer to place concrete during such time will in no way relieve the Contractor of responsibility for satisfactory results. Protection of the concrete shall be accomplished in accordance with the requirements in Subsection 907-804.03.16.1.2.1. If approved by the Engineer, the protection of the concrete may be accomplished in accordance with the requirements in Subsection 907-804.03.16.1.2.2. In either case, should it be determined at any time that the concrete placed under such conditions is unsatisfactory, it shall be removed and replaced with satisfactory concrete by the Contractor without extra compensation.

Before placing concrete, all ice or frost shall be removed from the forms and reinforcement.

In the case of concrete placed directly on or in the ground, such as for footings or bottom slabs, protection and curing during cold weather may be provided as set for concrete pavement under Subsection 501.03.20.3.

907-804.03.16.1.2.1--Enclosure Method. The Contractor shall have available on the project the approved facilities necessary to enclose uncured concrete and to keep the temperature of the air inside the enclosure between 50°F and 100°F for the duration of the cold weather period. The Contractor shall use such heating equipment such as stoves, salamanders, or steam equipment as deemed necessary to protect the concrete. When dry heat is used, means of maintaining atmospheric moisture shall be provided.

The Contractor shall install the temperature sensors and other appurtenances to measure and record the temperature history of the air inside the enclosure. The Contractor shall be able to determine the temperature history of air inside the enclosure while remaining outside the enclosure

In the event that the Contractor's enclosure method does not successfully maintain the air temperature within the required range, the Contractor shall suspend additional concrete placements until either 1) such time that changes in the enclosure method are demonstrated to successfully

maintain the required temperatures during other periods of cold weather, or 2) such time that concrete placements are not conducted during periods of cold weather.

If the air temperature inside the enclosure at the end of the protection period is more than 20°F greater than the ambient temperature, the Contractor shall 1) stop using heating equipment, 2) leave the enclosure undisturbed, and 3) allow the air temperature inside the enclosure to decrease to within 20°F of the ambient temperature before disturbing or removing the enclosure.

907-804.03.16.1.2.2--Insulating Blanketing Method. At the option of the Contractor with the approval of the Engineer, an approved insulating blanketing material capable of maintaining the temperature of the concrete at or above 40°F may be used to protect the work. The insulating blanketing material shall remain in place until both 1) the required concrete strength in Table 6 is achieved as determined using the Maturity Method in accordance with Subsection 804.03.15, and 2) the temperature differential between the ambient temperature and the internal concrete temperature determined by the maturity meter does not exceed 20°F.

In the event the Engineer does not approve of using the Insulating Blanketing Method, the Contractor shall use the Enclosure Method per Subsection 907-804.03.16.1.2.1.

907-804.03.16.1.2.3--Batching Considerations. One or more of the aggregates and/or mixing water may be heated. The aggregates may be heated by steam, dry heat, or by placing in the mixing water that has been heated. Frozen aggregates shall not be used. When either aggregates or water are heated above 100°F, the aggregates and water shall be combined first in the mixer before the cement is added to avoid flash set. Cement shall not be mixed with water or with a mixture of water and aggregate having a temperature greater than 100°F.

The use of salt or other chemical admixtures in lieu of heating will not be permitted.

907-804.03.17--Curing Concrete.

907-804.03.17.1--Water with Waterproof Cover. In the second sentence of the fourth paragraph of Subsection 804.03.17.1 on page 973, delete the word “due”.

Delete the first sentence of the fifth paragraph of Subsection 804.03.17.1 on page 973, and substitute the following.

The Contractor shall maintain the burlap in a fully wet condition using powered fogging equipment, such as a commercially available pressure washer, which is capable of producing a fog spray of atomized droplets of water (i.e., producing a very fine and gentle mist that looks like a foggy morning) until the concrete has gained sufficient strength to allow foot traffic without the foot traffic marring the surface of the concrete.

Delete the seventh paragraph of Subsection 804.03.17.1 on page 973, and substitute the following.

If there is an unanticipated delay in the placement of the first layer of saturated burlap outside the time limit which is due to unforeseen events which are not a part of the Contractor's curing operations for meeting the requirements of this Subsection and which are outside the direct control

of the Contractor, the struck-off and finished concrete shall be kept wet by use of the powered fogging equipment used to keep the burlap wet as described previously in the Subsection.

In the second sentence of the eighth paragraph of Subsection 804.03.17.1 on page 973, replace the word “like” with “such as”.

907-804.03.17.1.2--Liquid Membrane. In the first sentence of the first paragraph of Subsection 804.03.17.1 on page 973, replace “polyethylene sheets” with “white polyethylene sheets.”

907-804.03.19.7--Finishing Bridge Decks.

907-804.03.19.7.1--General. Delete the second paragraph of Subsection 804.03.19.7.1 on page 985, and substitute the following.

In the event a method is not designated on the plans, the Contractor may use either the Longitudinal Method in accordance with Subsection 907-804.03.19.7.2 or the Transverse Method in accordance with Subsection 907-804.03.19.7.3.

907-804.03.19.7.2--Longitudinal Method. Delete the first sentence of the first paragraph of Subsection 804.03.19.7.2 on page 985, and substitute the following.

The longitudinal method may only be used for repairs to bridge decks or bridge widening projects.

907-804.03.19.7.3--Transverse Method. Before the first sentence of the first paragraph of Subsection 804.03.19.7.3 on page 986, add the following.

The transverse method shall be used for construction of new bridge decks and may be used for bridge deck repair or bridge widening.

907-804.05--Basis of Payment. Delete the first and second pay items listed on page 999, and substitute the following.

907-804-A: Bridge Concrete, Class _____ - per cubic yard

907-804-B: Box Bridge Concrete, Class _____ - per cubic yard

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-809-2

CODE: (SP)

DATE: 8/10/2022

SUBJECT: Retaining Wall Systems

Section 809, Retaining Wall Systems, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-809—Retaining Wall Systems. Delete the entire sections on pages 1009 thru 1021 and substitute the following.

SECTION 32 32 16 PRECAST MODULAR BLOCK RETAINING WALL

PART 1 – GENERAL

1.01 SUMMARY

- A. This Section includes furnishing all materials and labor required for the construction of a precast concrete modular block (PMB) retaining wall with geosynthetic reinforcement. Precast modular block retaining wall blocks under this section shall be cast utilizing a wet-cast concrete mix and exhibit a final handling weight in excess of 1,000 pounds (450 kg) per unit.
- B. Scope of Work: The work shall consist of furnishing shop drawings, materials, labor, equipment and supervision for the construction of a precast modular block (PMB) retaining wall structure in accordance with the requirements of this section and in acceptable conformity with the lines, grades, design and dimensions shown in the project site plans.
- C. Drawings and General Provisions of the Contract apply to this Section.

1.02 PRICE AND PAYMENT PROCEDURES

- A. Allowances. No allowance shall be made in the price of the retaining wall for excavation beyond the limits required for retaining wall construction as shown on the project plans. The cost of excavation for the purposes of site access shall be the responsibility of the General Contractor. Removal of unsuitable soils and replacement with select fill shall be as directed and approved in writing by the Owner or Owner's representative and shall be paid under separate pay items.
- B. Unit Prices. In addition to the scope of work described in Part 1.01 of this Section, the General Contractor shall provide a unit price per square foot of vertical wall face that shall be the basis of compensation for the overall scope of the retaining wall work.
- C. Measurement and Payment.

1. The unit of measurement for furnishing the precast modular block retaining wall system shall be the vertical area of the wall face surface as measured from the top of the leveling pad to the top of the wall including concrete leveling fill but excluding coping. The final measured quantity shall include construction of the retaining wall system, all excavation, reinforced select backfill, retained select backfill, leveling pad, undercut, all materials for the wall drainage system, facing material, soil reinforcement, equipment, labor, and incidentals necessary to complete the work.
2. The final accepted quantities of the precast modular block retaining wall system will be compensated per the vertical face area as described above. The quantities of the precast modular block retaining wall as shown on the plans and as approved by the Owner shall be the basis for determination of the final payment quantity. Payment shall be made per square foot of vertical wall face.

Payment will be made under:

907-809-A003: Retaining Wall System * - per square foot

* Type of wall may be specified

1.03 REFERENCES

- A. Where the specification and reference documents conflict, the Owner's designated representative will make the final determination of the applicable document.
- B. Definitions:
 1. Precast Modular Block (PMB) Unit – machine-placed, “wet cast” concrete modular block retaining wall facing unit.
 2. Geotextile – a geosynthetic fabric manufactured for use as a separation and filtration medium between dissimilar soil materials.
 3. Geogrid – a geosynthetic material comprised of a regular network of tensile elements manufactured in a mesh-like configuration of consistent aperture openings. When connected to the PMB facing units and placed in horizontal layers in compacted fill, the geogrid prevents lateral deformation of the retaining wall face and provides effective tensile reinforcement to the contiguous reinforced fill material.
 4. Drainage Aggregate – clean, crushed stone placed within and immediately behind the precast modular block units to facilitate drainage and reduce compaction requirements immediately adjacent to and behind the precast modular block units.
 5. Unit Core Fill – clean, crushed stone placed within the hollow vertical core of a precast modular block unit. Typically, the same material used for drainage aggregate as defined above.
 6. Foundation Zone – soil zone immediately beneath the leveling pad and the reinforced zone.
 7. Retained Zone – the soil zone immediately behind the reinforced zone.
 8. Reinforced Zone – structural fill zone within which successive horizontal layers of geogrid soil reinforcement have been placed to provide stability for the retaining wall face. The reinforced zone exists only for retaining wall sections that utilize geosynthetic soil reinforcement for stability.
 9. Reinforced Fill – structural fill placed within the reinforced zone.
 10. Leveling Pad – cast-in-place concrete upon which the bottom course of precast modular blocks is placed.
- C. Reference Standards

1. Design
 - a. AASHTO LRFD Bridge Design Specifications, 8th Edition, 2017.
 - b. Minimum Design Loads for Buildings and Other Structures – ASCE/SEI 7-10.
 - c. International Building Code, 2012 Edition.
 - d. FHWA-NHI-10-024 Volume I and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.
 - e. FHWA-NHI-10-025 Volume II and GEC 11 Design of Mechanically Stabilized Earth Walls and Reinforced Soil Slopes.
2. Precast Modular Block Units
 - a. ACI 201 – Guide to Durable Concrete
 - b. ACI 318 – Building Code Requirements for Structural Concrete
 - c. ASTM C33 – Standard Specification for Concrete Aggregates
 - d. ASTM C39 – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens
 - e. ASTM C94 – Standard Specification for Ready-Mixed Concrete.
 - f. ASTM C136 – Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates.
 - g. ASTM C143 – Standard Test Method for Slump of Hydraulic-Cement Concrete.
 - h. ASTM C150 – Standard Specification for Portland Cement
 - i. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete by the Pressure Method.
 - j. ASTM C260 – Standard Specification for Air-Entraining Admixtures for Concrete.
 - k. ASTM C494 – Standard Specification for Chemical Admixtures for Concrete.
 - l. ASTM C595 - Standard Specification for Blended Hydraulic Cements.
 - m. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 - n. ASTM C666 – Standard Test Method for Concrete Resistance to Rapid Freezing and Thawing.
 - o. ASTM C845 - Standard Specification for Expansive Hydraulic Cement.
 - p. ASTM C920 – Standard Specification for Elastomeric Joint Sealants.
 - q. ASTM C989 - Standard Specification for Slag Cement for Use in Concrete and Mortars.
 - r. ASTM C1116 – Standard Specification for Fiber-Reinforced Concrete.
 - s. ASTM C1157 - Standard Performance Specification for Hydraulic Cement.
 - t. ASTM C1218 - Standard Test Method for Water-Soluble Chloride in Mortar and Concrete.
 - u. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures.
 - v. ASTM C1611 – Standard Test Method for Slump Flow of Self-Consolidating Concrete.
 - w. ASTM C1776 – Standard Specification for Wet-Cast Precast Modular Retaining Wall Units.
 - x. ASTM D6638 – Standard Test Method for Determining Connection Strength Between Geosynthetic Reinforcement and Segmental Concrete Units (Modular Concrete Blocks).
 - y. ASTM D6916 – Standard Test Method for Determining Shear Strength Between Segmental Concrete Units (Modular Concrete Blocks).
3. Geosynthetics
 - a. AASHTO M 288 – Geotextile Specification for Highway Applications.
 - b. ASTM D3786 – Standard Test Method for Bursting Strength of Textile Fabrics Diaphragm Bursting Strength Tester Method.
 - c. ASTM D4354 – Standard Practice for Sampling of Geosynthetics for Testing.
 - d. ASTM D4355 – Standard Test Method for Deterioration of Geotextiles
 - e. ASTM D4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
 - f. ASTM D4533 – Standard Test Method for Trapezoid Tearing Strength of Geotextiles.

- g. ASTM D4595 – Standard Test Method for Tensile Properties of Geotextiles by the Wide-Width Strip Method.
 - h. ASTM D4632 – Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
 - i. ASTM D4751 – Standard Test Method for Determining Apparent Opening Size of a Geotextile.
 - j. ASTM D4759 – Standard Practice for Determining Specification Conformance of Geosynthetics.
 - k. ASTM D4833 – Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products.
 - l. ASTM D4873 – Standard Guide for Identification, Storage, and Handling of Geosynthetic Rolls and Samples.
 - m. ASTM D5262 – Standard Test Method for Evaluating the Unconfined Tension Creep and Creep Rupture Behavior of Geosynthetics.
 - n. ASTM D5321 – Standard Test Method for Determining the Coefficient of Soil and Geosynthetic or Geosynthetic and Geosynthetic Friction by the Direct Shear Method.
 - o. ASTM D5818 – Standard Practice for Exposure and Retrieval of Samples to Evaluate Installation Damage of Geosynthetics.
 - p. ASTM D6241 – Standard Test Method for the Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe.
 - q. ASTM D6637 – Standard Test Method for Determining Tensile Properties of Geogrids by the Single or Multi-Rib Tensile Method.
 - r. ASTM D6706 – Standard Test Method for Measuring Geosynthetic Pullout Resistance in Soil.
 - s. ASTM D6992 – Standard Test Method for Accelerated Tensile Creep and Creep-Rupture of Geosynthetic Materials Based on Time-Temperature Superposition Using the Stepped Isothermal Method.
4. Soils
- a. AASHTO M 145 – AASHTO Soil Classification System.
 - b. AASHTO T 104 – Standard Method of Test for Soundness of Aggregate by Use of Sodium Sulfate or Magnesium Sulfate.
 - c. AASHTO T 267 – Standard Method of Test for Determination of Organic Content in Soils by Loss of Ignition.
 - d. ASTM C33 – Standard Specification for Concrete Aggregates.
 - e. ASTM D422 – Standard Test Method for Particle-Size Analysis of Soils.
 - f. ASTM D448 – Standard Classification for Sizes of Aggregates for Road and Bridge Construction.
 - g. ASTM D698 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort. (12,400 ft-lbf/ft (2,700 kN-m/m)).
 - h. ASTM D1241 – Standard Specification for Materials for Soil-Aggregate Subbase, Base and Surface Courses.
 - i. ASTM D1556 – Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method.
 - j. ASTM D1557 – Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort. (56,000 ft-lbf/ft (2,700 kN-m/m)).
 - k. ASTM D2487 – Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System).
 - l. ASTM D2488 – Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

- m. ASTM D3080 – Standard Test Method for Direct Shear Test of Soils Under Consolidated Drained Conditions.
 - n. ASTM D4254 – Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
 - o. ASTM D4318 – Standard Test Method for Liquid Limit, Plastic Limit, and Plasticity Index of Soils.
 - p. ASTM D4767- Test Method for Consolidated-Undrained Triaxial Compression Test for Cohesive Soils.
 - q. ASTM D4972 – Standard Test Method for pH of Soils.
 - r. ASTM D6938 – Standard Test Method for In-Place Density and Water Content of Soil and Aggregate by Nuclear Methods (Shallow Depth).
 - s. ASTM G51 – Standard Test Method for Measuring pH of Soil for Use in Corrosion Testing.
 - t. ASTM G57 – Standard Test Method for Field Measurement of Soil Resistivity Using the Wenner Four-Electrode Method.
5. Drainage Pipe
- a. ASTM D3034 – Standard Specification for Type PSM Poly (Vinyl Chloride) (PVC) Sewer Pipe and Fittings.
 - b. ASTM F2648 – Standard Specification for 2 to 60 inch [50 to 1500 mm] Annular Corrugated Profile Wall Polyethylene (PE) Pipe and Fittings for Land Drainage Applications.

1.04 ADMINISTRATIVE REQUIREMENTS

- A. Preconstruction Meeting. As directed by the Owner, the General Contractor shall schedule a preconstruction meeting at the project site prior to commencement of retaining wall construction. Participation in the preconstruction meeting shall be required of the General Contractor, Retaining Wall Design Engineer, Retaining Wall Installation Contractor, Grading Contractor and Inspection Engineer. The General Contractor shall provide notification to all parties at least 10 calendar days prior to the meeting.
1. Preconstruction Meeting Agenda:
- a. The Retaining Wall Installation Contractor shall explain any measures required for coordination of the installation of utilities or other obstructions in the reinforced or retained fill zones of the retaining wall.
 - b. The Retaining Wall Installation Contractor shall explain all excavation needs, site access and material staging area requirements to the General Contractor and Grading Contractor.

1.05 SUBMITTALS

- A. Product Data. At least 14 days prior to construction, the General Contractor shall submit an electronic portable document file of the retaining wall product submittal package to the Owner's Representative for review and approval. The submittal package shall include technical specifications and product data from the manufacturer for the following:
- 1. Precast Modular Block System brochure
 - 2. Precast Modular Block concrete test results specified in paragraph 2.01, subparagraph B of this section as follows:
 - a. 28-day compressive strength
 - b. Air content
 - c. Slump or Slump Flow (as applicable)
 - 3. Drainage Pipe

4. Geotextile
 5. Geosynthetic Soil Reinforcement. The contractor shall provide certified manufacturer test reports for the geosynthetic soil reinforcement material in the manufactured roll width specified. The test report shall list the individual roll numbers for which the certified material properties are valid.
- B. Installer Qualification Data. At least 14 days prior to construction, the General Contractor shall submit the qualifications of the business entity responsible for installation of the retaining wall, the Retaining Wall Installation Contractor, per paragraph 1.07, subparagraph A of this section.
- C. Retaining Wall Construction Shop Drawings. At least 14 days prior to construction, the General Contractor shall furnish an electronic portable document file of construction shop drawings and structural calculation report to the Owner for review and approval. This submittal shall include the following:
1. Signed, sealed and dated drawings and engineering calculations prepared in accordance with these specifications by an Engineer licensed in the state of Mississippi.
 2. Qualifications Statement of Experience of the Retaining Wall Design Engineer as specified in paragraph 1.07, subparagraph B of this section.
 3. Certificate of Insurance of the Retaining Wall Design Engineer as specified in paragraph 1.06, subparagraph B of this section.

1.06 CONSTRUCTION SHOP DRAWING PREPARATION

- A. The Retaining Wall Installation Contractor shall coordinate the retaining wall construction shop drawing preparation with the Project Engineer, Project Geotechnical Engineer, and Owner's Representatives.

1.07 QUALITY ASSURANCE

- A. Retaining Wall Installation Contractor Qualifications. In order to demonstrate basic competence in the construction of precast modular block walls, it is preferred that the Retaining Wall Installation Contractor shall document compliance with the following:
1. Experience.
 - a. Construction experience with a minimum of 30,000 square feet (2,800 square meters) of the proposed precast modular block retaining wall system.
 - b. Construction of at least five (5) precast modular block retaining wall structures within the past three (3) years.
 - c. Construction of at least 50,000 square feet (4,650 square meters) of precast modular block retaining walls within the past three (3) years.
 2. Retaining Wall Installation Contractor experience documentation for each qualifying project shall include:
 - a. Project name and location
 - b. Date (month and year) of construction completion
 - c. Contact information of Owner or General Contractor
 - d. Type (trade name) of precast modular block system built
 - e. Maximum height of the wall constructed
 - f. Face area of the wall constructed
 3. In lieu of the requirements set forth in items 1 and 2 above, the Retaining Wall Installation Contractor must be a certified Precast Modular Block Retaining Wall Installation Contractor as

demonstrated by satisfactory completion of a certified precast modular block retaining wall installation training program administered by the precast modular block manufacturer.

1.08 QUALITY CONTROL

- A. The Owner's Representative shall review all submittals for materials, design, Retaining Wall Design Engineer qualifications and the Retaining Wall Installation Contractor qualifications.
- B. The Owner shall retain the services of an Inspection Engineer who is experienced with the construction of precast modular block retaining wall structures to perform inspection and testing. The cost of inspection shall be the responsibility of the Owner. Inspection shall be continuous throughout the construction of the retaining walls.
- C. The Inspection Engineer shall perform the following duties:
 - 1. Inspect the construction of the precast modular block structure for conformance with construction shop drawings and the requirements of this specification.
 - 2. Verify that soil or aggregate fill placed and compacted in the reinforced, retained and foundation zones of the retaining wall conforms with paragraphs 2.04 and 2.05 of this section and exhibits the shear strength parameters specified by the Retaining Wall Design Engineer.
 - 3. Verify that the shear strength of the in-situ soil assumed by the Retaining Wall Design Engineer is appropriate.
 - 4. Inspect and document soil compaction in accordance with these specifications:
 - a. Required dry unit weight
 - b. Actual dry unit weight
 - c. Allowable moisture content
 - d. Actual moisture content
 - e. Pass/fail assessment
 - f. Test location – wall station number
 - g. Test elevation
 - h. Distance of test location behind the wall face
 - 5. Verify that all excavated slopes in the vicinity of the retaining wall are bench-cut as directed by the project Geotechnical Engineer.
 - 6. Notify the Retaining Wall Installation Contractor of any deficiencies in the retaining wall construction and provide the Retaining Wall Installation Contractor a reasonable opportunity to correct the deficiency.
 - 7. Notify the General Contractor, Owner and Retaining Wall Design Engineer of any construction deficiencies that have not been corrected timely.
 - 8. Document all inspection results.
 - 9. Test compacted density and moisture content of the retained backfill with the following frequency:
 - a. At least once every 1,000 square feet (90 square meters) (in plan) per 9-inch (230 mm) vertical lift, and
 - b. At least once per every 18 inches (460 mm) of vertical wall construction.
- D. The General Contractor's engagement of the Inspection Engineer does not relieve the Retaining Wall Installation Contractor of responsibility to construct the proposed retaining wall in accordance with the approved construction shop drawings and these specifications.

- E. The Retaining Wall Installation Contractor shall inspect the on-site grades and excavations prior to construction and notify the Retaining Wall Design Engineer and General Contractor if on-site conditions differ from the elevations and grading conditions depicted in the retaining wall construction shop drawings.

1.09 DELIVERY, STORAGE AND HANDLING

- A. The Retaining Wall Installation Contractor shall inspect the materials upon delivery to ensure that the proper type, grade, and color of materials have been delivered.
- B. The Retaining Wall Installation Contractor shall store and handle all materials in accordance with the manufacturer's recommendations as specified herein and in a manner that prevents deterioration or damage due to moisture, temperature changes, contaminants, corrosion, breaking, chipping, UV exposure or other causes. Damaged materials shall not be incorporated into the work.
- C. Geosynthetics
 - 1. All geosynthetic materials shall be handled in accordance with ASTM D4873. The materials should be stored off the ground and protected from precipitation, sunlight, dirt and physical damage.
- D. Precast Modular Blocks
 - 1. Precast modular blocks shall be stored in an area with positive drainage away from the blocks. Be careful to protect the block from mud and excessive chipping and breakage. Precast modular blocks shall not be stacked more than three (3) units high in the storage area.
- E. Drainage Aggregate and Backfill Stockpiles
 - 1. Drainage aggregate or backfill material shall not be piled over unstable slopes or areas of the project site with buried utilities.
 - 2. Drainage aggregate and/or reinforced fill material shall not be staged where it may become mixed with or contaminated by poor draining fine-grained soils such as clay or silt.

PART 2 – MATERIALS

2.01 PRECAST MODULAR BLOCK RETAINING WALL UNITS

- A. All units shall be wet-cast precast modular retaining wall units conforming to ASTM C1776. The wall shall be fabricated from Redi-Rock block units as manufactured by Dunn Utility Products, Inc.
- B. All units for the project shall be obtained from the same manufacturer. The manufacturer shall be licensed and authorized to produce the retaining wall units by the precast modular block system patent holder/licensor and shall document compliance with the published quality control standards of the proprietary precast modular block system licensor for the previous three (3) years or the total time the manufacturer has been licensed, whichever is less.
- C. Concrete used in the production of the precast modular block units shall be first-purpose, fresh concrete. It shall not consist of returned, reconstituted, surplus or waste concrete. It shall be an

original production mix meeting the requirements of ASTM C94 and exhibit the properties as shown in the following table:

Concrete Mix Properties

Freeze Thaw Exposure Class ⁽¹⁾	Minimum 28-Day Compressive Strength ⁽²⁾	Maximum Water Cement Ratio	Nominal Maximum Aggregate Size	Aggregate Class Designation ⁽³⁾	Air Content ⁽⁴⁾
Moderate	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3M	4.5% +/- 1.5%
Severe	4,000 psi (27.6 MPa)	0.45	1 inch (25 mm)	3S	6.0% +/- 1.5%
Very Severe	4,500 psi (30.0 MPa)	0.40	1 inch (25 mm)	4S	6.0% +/- 1.5%
Maximum Water-Soluble Chloride Ion (Cl⁻) Content in Concrete, Percent by Weight of Cement^(5,6)					0.15
Maximum Chloride as Cl⁻ Concentration in Mixing Water, Parts Per Million					1000
Maximum Percentage of Total Cementitious Materials By Weight ^(7,9) (Very Severe Exposure Class Only):					
Fly Ash or Other Pozzolans Conforming to ASTM C618					25
Slag Conforming to ASTM C989					50
Silica Fume Conforming to ASTM C1240					10
Total of Fly Ash or Other Pozzolans, Slag, and Silica Fume ⁽⁸⁾					50
Total of Fly Ash or Other Pozzolans and Silica Fume ⁽⁸⁾					35
Alkali-Aggregate Reactivity Mitigation per ACI 201					
Slump (Conventional Concrete) per ASTM C143⁽¹⁰⁾			5 inches +/- 1½ inches (125 mm +/- 40 mm)		
Slump Flow (Self-Consolidating Concrete) per ASTM C1611			18 inches – 32 inches (450 mm – 800 mm)		

⁽¹⁾Exposure class is as described in ACI 318. "Moderate" describes concrete that is exposed to freezing and thawing cycles and occasional exposure to moisture. "Severe" describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture. "Very Severe" describes concrete that is exposed to freezing and thawing cycles and in continuous contact with moisture and exposed to deicing chemicals. Exposure class should be specified by owner/purchaser prior to order placement.

⁽²⁾Test method ASTM C39.

⁽³⁾Defined in ASTM C33 Table 3 *Limits for Deleterious Substances and Physical Property Requirements of Coarse Aggregates for Concrete*.

⁽⁴⁾Test method ASTM C231.

⁽⁵⁾Test method ASTM C1218 at age between 28 and 42 days.

⁽⁶⁾Where used in high sulfate environments or where alkali-silica reactivity is an issue, water soluble chloride shall be limited to no more than trace amounts (from impurities in concrete-making components, not intended constituents.)

⁽⁷⁾The total cementitious material also includes ASTM C150, C595, C845, C1157 cement. The maximum percentages shall include:

(a) Fly ash or other pozzolans in type IP, blended cement, ASTM C595, or ASTM C1157.

(b) Slag used in the manufacture of an IS blended cement, ASTM C595, or ASTM C1157.

(c) Silica fume, ASTM C1240, present in a blended cement.

⁽⁸⁾Fly ash or other pozzolans and silica fume shall constitute no more than 25 and 10 percent, respectively, of the total weight of the cementitious materials.

⁽⁹⁾Prescriptive limits shown may be waived for concrete mixes that demonstrate excellent freeze/thaw durability in a detailed and current testing program.

⁽¹⁰⁾Slump may be increased by a high-range water-reducing admixture.

D. Each concrete block shall be cast in a single continuous pour without cold joints. With the exception of half-block units, corner units and other special application units, the precast modular block units shall conform to the nominal dimensions listed in the table below and be produced to the dimensional tolerances shown.

Block Type	Dimension	Nominal Value	Tolerance
28" (710 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	28" (710 mm)	+/- 1/2" (13 mm)
41" (1030 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	40-1/2" (1030 mm)	+/- 1/2" (13 mm)
60" (1520 mm) Block	Height	18" (457 mm)	+/- 3/16" (5 mm)
	Length	46-1/8" (1172 mm)	+/- 1/2" (13 mm)
	Width*	60" (1520 mm)	+/- 1/2" (13 mm)

* Block tolerance measurements shall exclude variable face texture

- E. Individual block units shall have a nominal height of 18 inches (457 mm).
- F. With the exception of half-block units, corner units and other special application units, the precast modular block units shall have two (2), circular dome shear knobs that are 10 inches (254 mm), 7.5 inches (190 mm), or 6.75 inches (171 mm) in diameter and 4 inches (102 mm) or 2 inches (51 mm) in height. The shear knobs shall fully index into a continuous semi-cylindrical shear channel in the bottom of the block course above. The Peak interlock shear between any two (2) vertically stacked precast modular block units, with 10 inch (254 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 6,500 lb/ft (95 kN/m) at a minimum normal load of 500 lb/ft (7kN/m). as well as an ultimate peak interface shear capacity in excess of 11,000 lb/ft (160 kN/m). The peak interlock shear between any two (2) vertically stacked precast modular block units, with 7.5 inch (190 mm) or 6.75 inch (171 mm) diameter shear knobs, measured in accordance with ASTM D6916 shall exceed 1,850 lb/ft (27 kN/m) at a minimum normal load of 500 lb/ft (7kN/m) as well as an ultimate peak interface shear capacity in excess of 10,000 lb/ft (146 kN/m). Test specimen blocks tested under ASTM D6916 shall be actual, full-scale production blocks of known compressive strength. The interface shear capacity reported shall be corrected for a 4,000 psi (27.6 MPa) concrete compressive strength. Regardless of precast modular block configuration, interface shear testing shall be completed without the inclusion of unit core infill aggregate.
- G. The 28" (710 mm) and 41" (1030 mm) precast modular block units shall be cast with a 13" (330 mm) wide, continuous vertical core slot that will permit the insertion of a 12" (305 mm) inch wide strip of geogrid reinforcement to pass completely through the block. When installed in this manner, the geogrid reinforcement shall form a non-normal load dependent, positive connection between the block unit and the reinforcement strip. The use of steel for the purposes of creating the geogrid to block connection is not acceptable.
- H. Without field cutting or special modification, the precast modular block units shall be capable of achieving a minimum radius of 14 ft 6 in (4.42 m).
- I. The precast modular block units shall be manufactured with an integrally cast shear knobs that establishes a standard horizontal set-back for subsequent block courses. The precast modular block system shall be available in the four (4) standard horizontal set-back facing batter options listed below:

<u>Horizontal Set-Back/Blk. Course</u>	<u>Max. Facing Batter</u>
3/8" (10 mm)	1.2°
1-5/8" (41 mm)	5.2°
9-3/8" (238 mm)	27.5°
16-5/8" (422 mm)	42.7°

The precast modular block units shall be furnished with the required shear knobs that provide the facing batter required in the construction shop drawings.

- J. The precast modular block unit face texture shall be selected by the owner from the available range of textures available from the precast modular block manufacturer. Each textured block facing unit shall be a minimum of 5.76 square feet (0.54 square meters) with a unique texture pattern that repeats with a maximum frequency of once in any 15 square feet (1.4 square meters) of wall face.
- K. The block color shall be selected by the owner from the available range of colors available from the precast modular block manufacturer.
- L. All precast modular block units shall be sound and free of cracks or other defects that would interfere with the proper installation of the unit, impair the strength or performance of the constructed wall. PMB units to be used in exposed wall construction shall not exhibit chips or cracks in the exposed face or faces of the unit that are not otherwise permitted. Chips smaller than 1.5" (38 mm) in its largest dimension and cracks not wider than 0.012" (0.3 mm) and not longer than 25% of the nominal height of the PMB unit shall be permitted. PMB units with bug holes in the exposed architectural face smaller than 0.75" (19 mm) in its largest dimension shall be permitted. Bug holes, water marks, and color variation on non-architectural faces are acceptable. PMB units that exhibit cracks that are continuous through any solid element of the PMB unit shall not be incorporated in the work regardless of the width or length of the crack.
- M. Substitutions. Technical information demonstrating conformance with the requirements of this specification for an alternative precast modular block retaining wall system must be submitted for preapproval at least 14 calendar days prior to the bid date. Acceptable alternative PMB retaining wall systems, otherwise found to be in conformance with this specification, shall be approved in writing by the owner 7 days prior to the bid date. The Owner's Representative reserves the right to provide no response to submissions made out of the time requirements of this section or to submissions of block retaining wall systems that are determined to be unacceptable to the owner.
- N. Value Engineering Alternatives. The owner may evaluate and accept systems that meet the requirements of this specification after the bid date that provide a minimum cost savings of 20% to the Owner. Construction expediency will not be considered as a contributing portion of the cost savings total.

2.02 GEOGRID REINFORCEMENT

- A. Geogrid reinforcement shall be a geosynthetic formed by a regular network of integrally connected elements with apertures greater than 0.25 inch to allow interlocking with surrounding soil, rock, earth, and other surrounding materials to function primarily as reinforcement. The geogrid shall be mildew resistant and inert to biological degradation and naturally encountered chemicals, alkalis

and acids. The geogrid shall contain stabilizers and/or inhibitors, or a resistance finish or covering to make it resistant to deterioration from direct sunlight, ultraviolet rays, and heat. The geogrid shall be furnished in prefabricated roll widths of certified tensile strength by the manufacturer.

- B. The ultimate tensile strength (T_{ult}) of the geogrid reinforcement shall be measured in accordance with ASTM D6637.
- C. Geogrid – Soil Friction Properties
 - 1. Friction factor, F^* , shall be equal to $2/3 \tan \phi$, where ϕ is the effective angle of internal friction of the reinforced fill soil.
 - 2. Linear Scale Correction Factor, α , shall equal 0.8.
- D. Long-Term Tensile Strength (T_{al}) of the geogrid reinforcement shall be calculated in accordance with Section 3.5.2 of FHWA-NHI-10-024 and as provided in this specification.
 - 1. The creep reduction factor (RF_{CR}) shall be determined in accordance with Appendix D of FHWA-NHI-10-025 for a minimum 75 year design life.
 - 2. Minimum installation damage reduction factor (RF_{ID}) shall be 1.25. The value of RF_{ID} shall be based upon documented full-scale tests in a soil that is comparable to the material proposed for use as reinforced backfill in accordance with ASTM D5818.
 - 3. Minimum durability reduction factor (RF_D) shall be 1.3 for a soil pH range of 3 to 9.
- E. Connection between the PMB retaining wall unit and the geogrid reinforcement shall be determined from short-term testing per the requirements of FHWA NHI-10-025, Appendix B.4 for a minimum 75-year design life.
- F. The minimum value of T_{al} for geogrid used in design of a reinforced precast modular block retaining wall shall be 2,000 lb/ft (29 kN/m) or greater.
- G. The minimum length of geogrid reinforcement shall be lengths shown on the construction plans and shall be the greater of the following:
 - 1. 0.7 times the wall design height, H .
 - 2. 6 feet (1.83 m).
 - 3. The length required by design to meet internal and global stability requirements, soil bearing pressure requirements and constructability requirements.
- H. Constructability Requirements. Geogrid design embedment length shall be measured from the back of the precast modular block facing unit and shall be consistent for the entire height of a given retaining wall section.
- I. Geogrid shall be positively connected to every precast modular block unit. Design coverage ratio, R_c , as calculated in accordance with AASHTO LRFD Bridge Design Specifications Figure 11.10.6.4.1-2 shall not exceed 1.0. ($R_c = 1$ for full coverage reinforcement).

2.03 GEOTEXTILE

- A. Nonwoven geotextile fabric shall be placed as indicated on the retaining wall construction shop drawings. Additionally, the nonwoven geotextile fabric shall be placed in the v-shaped joint between adjacent block units on the same course. The nonwoven geotextile fabric shall meet the requirements Class 3 construction survivability in accordance with AASHTO M 288.

B. Preapproved Nonwoven Geotextile Products

1. Mirafi 140N
2. Propex Geotex 451
3. Skaps GT-142
4. Thrace-Linq 140EX
5. Carthage Mills FX-40HS
6. Stratatex ST 142

2.04 DRAINAGE AGGREGATE

- A. Drainage aggregate shall be a durable crushed stone conforming to No. 57 size per ASTM C33 with the following particle-size distribution requirements per ASTM D422:

U.S. Standard <u>Sieve Size</u>	<u>% Passing</u>
1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No. 8 (2.38 mm)	0-5

2.05 REINFORCED FILL

- A. Material used as reinforced backfill material in the reinforced zone shall be a granular fill material. If offsite backfill material is used, it shall meet the requirements of USCS soil type GW, GP, SW or SP per ASTM D2487. The backfill shall exhibit a minimum effective internal angle of friction (ϕ) of 34 degrees at a maximum 2% shear strain and meet the following particle-size distribution requirements per ASTM D422.

U.S. Standard <u>Sieve Size</u>	<u>% Passing</u>
¾" (19 mm)	100
No. 4 (4.76 mm)	0-100
No. 40 (0.42 mm)	0-60
No. 100 (0.15 mm)	0-10
No. 200 (0.07 mm)	0-5

Onsite material used as reinforced backfill material in the reinforced zone shall be a granular fill material that meets the requirements of USCS soil type SP per ASTM D2487. The backfill shall exhibit a minimum effective internal angle of friction (ϕ) of 28 degrees at a maximum 2% shear strain and meet the following particle-size distribution requirements per ASTM D422.

U.S. Standard <u>Sieve Size</u>	<u>% Passing</u>
¾" (19 mm)	100
No. 4 (4.76 mm)	0-100
No. 40 (0.42 mm)	0-60
No. 100 (0.15 mm)	0-10
No. 200 (0.07 mm)	0-5

Where indicated on the plans, reinforced fill shall be a durable crushed stone conforming to No. 57 size per ASTM C33 with the following particle-size distribution requirements per ASTM D422:

U.S. Standard <u>Sieve Size</u>	<u>% Passing</u>
1-½" (38 mm)	100
1" (25 mm)	95-100
½" (13 mm)	25-60
No. 4 (4.76 mm)	0-10
No. 8 (2.38 mm)	0-5

- B. The reinforced backfill material shall be free of sod, peat, roots or other organic or deleterious matter including, but not limited to, ice, snow or frozen soils. Materials passing the No. 40 (0.42 mm) sieve shall have a plasticity index less than 6 per ASTM D4318. Organic content in the backfill material shall be less than 1% per AASHTO T-267, and the pH of the backfill material shall be between 5 and 8.
- C. Soundness. The reinforced backfill material coarser than No. 4 sieve shall exhibit a magnesium sulfate soundness loss of less than 30% after four (4) cycles, or sodium sulfate soundness loss of less than 15% after five (5) cycles as measured in accordance with AASHTO T-104.
- D. Reinforced backfill shall not be comprised of crushed or recycled concrete, recycled asphalt, bottom ash, shale or any other material that may degrade, creep or experience a loss in shear strength or a change in pH over time.
- E. Prior to placement, test reinforced fill from onsite or offsite as follows:
 - 1. pH, organic content, gradation of particles greater than No. 200 sieve, and Atterberg limits: Minimum sampling and testing frequency of once every 2,500 cubic yards with at least one of each test type completed prior to beginning wall construction.
 - 2. Stockpiled onsite soil shall be evaluated by at least one determination of percent passing No. 200 sieve for every 1,000 cubic yards.
 - 3. Friction angle: Minimum sampling and testing frequency of once every 10,000 cubic yards with at least one test completed prior to beginning wall construction.
 - 4. Magnesium sulfate soundness loss (offsite source only): Minimum sampling and testing frequency of once every 10,000 cubic yards if material is comprised of more than 20% gravel.
 - 5. Planned reinforced fill with marginal test results may be allowed based upon discretion of the project Geotechnical Engineer and Retaining Wall Design Engineer.
 - 6. At the discretion of Inspection Engineer or Owner, variation in testing frequency may be required if a variance in material gradation or composition is suspected.
 - 7. Contractor shall ensure that stockpile contamination does not occur after verification testing has been performed.

2.06 LEVELING PAD

- A. The precast modular block units shall be placed on a leveling pad constructed from concrete. The leveling pad shall be constructed to the dimensions and limits shown on the retaining wall design drawings prepared by the Retaining Wall Design Engineer.
- B. Concrete used for construction of concrete leveling pad shall satisfy the criteria for AASHTO Class B. The concrete should be cured a minimum of 12 hours prior to placement of the precast modular

block wall retaining units and exhibit a minimum 28-day compressive strength of 2,500 psi (17.2 MPa).

2.07 DRAINAGE

A. Drainage Pipe

1. Drainage collection pipe shall be a 6" (100 mm) diameter, 3-hole perforated, HDPE pipe with a minimum pipe stiffness of 22 psi (152 kPa) per ASTM D2412.
2. The drainage pipe shall be manufactured in accordance with ASTM D1248 for HDPE pipe and fittings.

B. Preapproved Drainage Pipe Products

1. ADS 3000 Triple Wall pipe as manufactured by Advanced Drainage Systems.

PART 3 – EXECUTION

3.01 GENERAL

- A. All work shall be performed in accordance with OSHA safety standards, state and local building codes and manufacturer's requirements.
- B. The General Contractor is responsible for the location and protection of all existing underground utilities. Any new utilities proposed for installation in the vicinity of the retaining wall, shall be installed concurrent with retaining wall construction. The General Contractor shall coordinate the work of subcontractors affected by this requirement.
- C. New utilities installed below the retaining wall shall be backfilled and compacted to a minimum of 98% maximum dry density per ASTM D698 standard proctor.
- D. The General Contractor is responsible to ensure that safe excavations and embankments are maintained throughout the course of the project.
- E. All work shall be inspected by the Inspection Engineer as directed by the Owner.

3.02 EXAMINATION

- A. Prior to construction, the General Contractor, Grading Contractor, Retaining Wall Installation Contractor, and Inspection Engineer shall examine the areas in which the retaining wall will be constructed to evaluate compliance with the requirements for installation tolerances, worker safety and any site conditions affecting performance of the completed structure. Installation shall proceed only after unsatisfactory conditions have been corrected.

3.03 PREPARATION

A. Fill Soil.

1. The Inspection Engineer shall verify that reinforced backfill placed in the reinforced soil zone satisfies the criteria of this section.

2. The Inspection Engineer shall verify that any fill soil installed in the foundation and retained soil zones of the retaining wall satisfies the specification of the Retaining Wall Design Engineer as shown on the construction drawings.

B. Excavation.

1. The Grading Contractor shall excavate to the lines and grades required for construction of the precast modular block retaining wall as shown on the construction drawings. The Grading Contractor shall minimize over-excavation. Excavation support, if required, shall be the responsibility of the Grading Contractor.
2. Over-excavated soil shall be replaced with compacted fill in conformance with the specifications of the Retaining Wall Design Engineer and "Division 31, Section 31 20 00 – Earthmoving" of these project specifications.
3. Embankment excavations shall be bench cut as directed by the project Geotechnical Engineer and inspected by the Inspection Engineer for compliance.

C. Foundation Preparation.

1. Prior to construction of the precast modular block retaining wall, the leveling pad area and undercut zone (if applicable) shall be cleared and grubbed. However, final excavation to wall bearing elevation shall be performed no more than three (3) days prior to construction of the concrete level pad and is confirmed as satisfactory to Inspection Engineer and Owner. All topsoil, brush, frozen soil and organic material shall be removed. Additional foundation soils found to be unsatisfactory beyond the specified undercut limits shall be undercut and replaced with approved fill as directed by the project Geotechnical Engineer. The Inspection Engineer shall ensure that the undercut limits are consistent with the requirements of the project Geotechnical Engineer and that all soil fill material is properly compacted according to project specifications. The Inspection Engineer shall document the volume of undercut and replacement.
2. Following excavation for the leveling pad and undercut zone (if applicable), the Inspection Engineer shall evaluate the in-situ soil in the foundation and retained soil zones.
 - a. The Inspection Engineer shall verify that the shear strength of the in-situ soil assumed by the Retaining Wall Design Engineer is appropriate. The Inspection Engineer shall immediately stop work and notify the Owner if the in-situ shear strength is found to be inconsistent with the retaining wall design assumptions.
 - b. The Inspection Engineer shall verify that the foundation soil exhibits sufficient ultimate bearing capacity to satisfy the requirements indicated on the retaining wall construction shop drawings per paragraph 1.06 I of this section.

D. Leveling Pad.

1. The leveling pad shall be constructed to provide a level, hard surface on which to place the first course of precast modular block units. The leveling pad shall be placed in the dimensions shown on the retaining wall construction drawings and extend to the limits indicated.
2. Concrete Leveling Pad. The concrete shall be placed in the same dimensions as those required for the crushed stone leveling pad. The Retaining Wall Installation Contractor shall erect proper forms as required to ensure the accurate placement of the concrete leveling pad according to the retaining wall construction drawings. Please Revised it. I think that the specs do not allow crushed stone leveling pad. Please confirm. Typically, Redi-Rock like aggregate layer below level pad.

3.04 PRECAST MODULAR BLOCK WALL SYSTEM INSTALLATION

- A. The precast modular block structure shall be constructed in accordance with the construction drawings, these specifications, and the recommendations of the retaining wall system component manufacturers. Where conflicts exist between the manufacturer's recommendations and these specifications, these specifications shall prevail.
- B. Drainage components. Pipe, geotextile and drainage aggregate shall be installed as shown on the construction shop drawings.
- C. Precast Modular Block Installation
 - 1. The first course of block units shall be placed with the front face edges tightly abutted together on the prepared leveling pad at the locations and elevations shown on the construction drawings. The Retaining Wall Installation Contractor shall take special care to ensure that the bottom course of block units are in full contact with the leveling pad, are set level and true and are properly aligned according to the locations shown on the construction drawings.
 - 2. Backfill shall be placed in front of the bottom course of blocks prior to placement of subsequent block courses. Nonwoven geotextile fabric shall be placed in the V-shaped joints between adjacent blocks. Drainage aggregate shall be placed in the V-shaped joints between adjacent blocks to a minimum distance of 12" (300 mm) behind the block unit.
 - 3. Drainage aggregate shall be placed in 9-inch maximum lifts and compacted by a minimum of three (3) passes of a vibratory plate compactor capable exerting a minimum of 2,000 lb (8.9 kN) of centrifugal force.
 - 4. Unit core fill shall consist of drainage aggregate and be placed in the precast modular block unit vertical core slot. The core fill shall completely fill the slot to the level of the top of the block unit. The top of the block unit shall be broom-cleaned prior to placement of subsequent block courses. No additional courses of precast modular blocks may be stacked before the unit core fill is installed in the blocks on the course below.
 - 5. Base course blocks for gravity wall designs (without geosynthetic soil reinforcement) may be furnished without vertical core slots. If so, disregard item 4 above, for the base course blocks in this application.
 - 6. Nonwoven geotextile fabric shall be placed between the drainage aggregate and the reinforced fill as required on the retaining wall construction drawings.
 - 7. Subsequent courses of block units shall be installed with a running bond (half block horizontal course-to-course offset). With the exception of 90-degree corner units, the shear channel of the upper block shall be fully engaged with the shear knobs of the block course below. The upper block course shall be pushed forward to fully engage the interface shear key between the blocks and to ensure consistent face batter and wall alignment. Geogrid, drainage aggregate, unit core fill, geotextile and properly compacted backfill shall be complete and in-place for each course of block units before the next course of blocks is stacked.
 - 8. The elevation of retained soil fill shall not be less than 1 block course (18" (457 mm)) below the elevation of the reinforced backfill throughout the construction of the retaining wall.
 - 9. If included as part of the precast modular block wall design, cap units shall be secured with an adhesive in accordance with the precast modular block manufacturer's recommendation.
- D. Geogrid Reinforcement Installation
 - 1. Geogrid reinforcement shall be installed at the locations and elevations shown on the construction drawings on level fill compacted to the requirements of this specification, except as required to install the sheet drain with a downslope towards the front face of the wall.

2. Reinforcement length (L) of the geogrid reinforcement is measured from the back of the precast modular block unit. The cut length (L_c) is two times the reinforcement length plus additional length through the block facing unit. The cut length is calculated as follows:

$$L_c = 2*L + 3 \text{ ft } (2*L + 0.9 \text{ m}) \text{ (28" (710 mm) block unit)}$$

$$L_c = 2*L + 5 \text{ ft } (2*L + 1.5 \text{ m}) \text{ (41" (1030 mm) block unit)}$$

3. The geogrid strip shall be continuous throughout its entire length and may not be spliced. The geogrid shall be furnished in nominal, prefabricated roll widths of 12" (300 mm) +/- 1/2" (13 mm). No field modification of the geogrid roll width shall be permitted.
 4. Neither rubber tire nor track vehicles may operate directly on the geogrid. Construction vehicle traffic in the reinforced zone shall be limited to speeds of less than 5 mph (8 km/hr) once a minimum of 9 inches (230 mm) of compacted fill has been placed over the geogrid reinforcement. Sudden braking and turning of construction vehicles in the reinforced zone shall be avoided.
- E. Construction Tolerance. Allowable construction tolerance of the retaining wall shall be as follows:
1. Deviation from the design batter and horizontal alignment, when measured along a 10' (3 m) straight wall section, shall not exceed 3/4" (19 mm).
 2. Deviation from the overall design batter shall not exceed 1/2" (13 mm) per 10' (3 m) of wall height.
 3. The maximum allowable offset (horizontal bulge) of the face in any precast modular block joint shall be 1/2" (13 mm).
 4. The base of the precast modular block wall excavation shall be within 2" (50 mm) of the staked elevations, unless otherwise approved by the Inspection Engineer.
 5. Differential vertical settlement of the face shall not exceed 1' (300 mm) along any 200' (61 m) of wall length.
 6. The maximum allowable vertical displacement of the face in any precast modular block joint shall be 1/2" (13 mm).
 7. The wall face shall be placed within 2" (50 mm) of the horizontal location staked.

3.05 REINFORCED BACKFILL PLACEMENT

- A. Backfill material placed immediately behind the drainage aggregate shall be compacted as follows:
1. 95% of maximum dry density at $\pm 3\%$ optimum moisture content per ASTM D698 standard proctor or 80% relative density per ASTM D4254.
- B. Compactive effort within 3' (0.9 m) of the back of the precast modular blocks should be accomplished with walk-behind compactors. Compaction in this zone shall be within 95% of maximum dry density at $\pm 3\%$ optimum moisture content per ASTM D698 standard proctor or 80% relative density per ASTM D4254. Heavy equipment should not be operated within 3' (0.9 m) of the back of the precast modular blocks.
- C. Backfill material shall be installed in loose lifts that do not exceed a thickness of 6" (155 mm) within 3 ft of the back of PMB block units and not exceeding 9 in (230 mm) within the retained and reinforced zones.

- D. At the end of each work day, the Retaining Wall Installation Contractor shall grade the surface of the last lift of the reinforced fill to a $3\% \pm 1\%$ slope away from the precast modular block wall face and compact it.
- E. The General Contractor shall direct the Grading Contractor to protect the precast modular block wall structure against surface water runoff at all times through the use of berms, diversion ditches, silt fence, temporary drains and/or any other necessary measures to prevent soil staining of the wall face, scour of the retaining wall foundation or erosion of the reinforced backfill or wall infill.

3.06 OBSTRUCTIONS IN THE REINFORCED FILL ZONE

- A. The Retaining Wall Installation Contractor shall make all required allowances for obstructions behind and through the wall face in accordance with the approved construction shop drawings.
- B. Should unplanned obstructions become apparent for which the approved construction shop drawings do not account, the affected portion of the wall shall not be constructed until the Retaining Wall Design Engineer can appropriately address the required procedures for construction of the wall section in question.

3.07 COMPLETION

- A. For walls supporting unpaved areas, a minimum of 24" (600 mm) of compacted, low-permeability fill shall be placed over the granular reinforced fill zone of the precast modular block retaining wall structure. The adjacent retained soil shall be graded to prevent ponding of water behind the completed retaining wall.
- B. For retaining walls with crest slopes of 5H:1V or steeper, silt fence shall be installed along the wall crest immediately following construction. The silt fence shall be located 3' to 4' (0.9 m to 1.2 m) behind the uppermost precast modular block unit. The crest slope above the wall shall be immediately seeded to establish vegetation. The General Contractor shall ensure that the seeded slope receives adequate irrigation and erosion protection to support germination and growth.
- C. The General Contractor shall confirm that the as-built precast modular block wall geometries conform to the requirements of this section. The General Contractor shall notify the Owner of any deviations.

END OF SECTION 32 32 16

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-899-1

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Railway-Highway Provisions

Section 907-899, Railway-Highway Provisions, is hereby added to and made a part of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows:

SECTION 907-899--RAILWAY-HIGHWAY PROVISIONS

907-899.01--Description. This special provision addresses the Contractor's involvement with railroad flagging, Contractor Safety Orientation, Contractor Background Investigation, Contractor Roadway Worker on Track Safety Program and Safety Action Plan, and any other requirements set forth by the Railroad and any attached Exhibits.

Prior to bidding, the Contractor shall read and comply with the requirements of the Railroad and any attached Exhibits. The Contractor shall contact the Railroad concerning insurance coverage requirements, Railroad flagging costs, Contractor Safety Orientation, Contractor Background Investigation, Contractor Roadway Worker on Track Safety Program and Safety Action Plan, and any other requirements set forth by the Railroad and any attached Exhibits. In case the railroad requires coverage over and above that required by the Standard Specifications, the railroad requirements shall be met.

If in the opinion of the RAILROAD, the presence of an authorized representative of the RAILROAD is required to supervise the same, the RAILROAD shall render bills to the Contractor for all expenses incurred by it for such supervision. This includes all labor costs for flagmen or cable locate supplied by the RAILROAD to protect RAILROAD operation, and for the full cost of furnishing, installation and later removal of any temporary supports for said tracks, as the RAILROAD's Chief Engineer's Office may deem necessary.

It will be the Contractor's responsibility to pay all bills associated with the Railroad requirements and any attached Exhibits.

A cable locate of RAILROAD owned facilities may be required to identify and protect Signal & Communication cables that have been installed to provide power, signal control, wayside communications. These cables are vital to a safe and reliable railway operation. The cable locate will be performed by a qualified RAILROAD employee.

Outside Contractors are prohibited from driving on, along, or across any track that does not have a RAILROAD installed crossing. They may utilize an existing public crossing. The practice of allowing rubber tired equipment to operate over track with no crossing has been banned.

The Contractor shall complete and process any required forms addressed by the Railroad or any attached Exhibits. The Contractor shall not commence or carry on any form of work on, under, above or within the designated distance from the Railroad track prior to getting approval from the Railroad.

907-899.02--Blank.

907-899.03--Construction Requirements. The Contractor shall read and comply with the requirements of the Railroad and any attached Exhibits.

907-899.04--Method of Measurement. Railway-highway provisions will be measured as a unit lump sum quantity. Measurement for payment will be in accordance with the following schedule:

- a) On the first estimate, twenty five percent (25%) of the amount bid for Railway Highway Provision will be paid.
- b) When twenty five percent (25%) of the original contract amount is earned from all direct pay items, fifty percent (50%) of the amount bid for Railway Highway Provision will be paid.
- c) When fifty percent (50%) of the original contract amount is earned from all direct pay items, one hundred percent (100%) of the amount bid for Railway Highway Provision will be paid.

907-899.05--Basis of Payment. Railway-highway provisions, measured as prescribed above, will be paid for at the contract lump sum price, which price shall be payment in full for all insurance coverage requirements, railroad flagging costs, Contractor safety orientation, Contractor background investigation, Contractor safety programs and plans, and any other requirements set forth by the Railroad and any attached Exhibits, and other incidentals necessary to complete the requirements of this work.

Payment will be made under:

907-899-A: Railway-Highway Provisions

- lump sum

NOTE: THE ANTICIPATED WORKING DAYS SHOWN ON THIS SCHEDULE ARE INFORMATIONAL PURPOSES ONLY. THE ACTUAL WORKING DAY TOTAL AS ASSESSED BY THE PROJECT ENGINEER ON FORM CSD-765 SHALL GOVERN.

SECTION 905 - PROPOSAL

Last Edited 6/12/2018

Date _____

TO: _____

Sirs: The following proposal is made on behalf of _____
_____ of _____

for constructing the following designated project(s) within the time(s) hereinafter specified.

The plans are composed of drawings and blue prints on file in the offices of _____
_____, Mississippi.

The Specifications are the current Standard Specifications of the Mississippi Department of Transportation approved by the Federal Highway Administration, except where superseded or amended by the plans, Special Provisions and Notice(s) to Bidders attached hereto and made a part thereof.

I (We) certify that I (we) possess a copy of said Standard and any Supplemental Specifications.

Evidence of my (our) authority to submit the Proposal is hereby furnished. The proposal is made without collusion on the part of any person, firm or corporation. I (We) certify that I (we) have carefully examined the Plans, the Specifications, including the Special Provisions and Notice(s) to Bidders, herein, and have personally examined the site of the work. On the basis of the Specifications, Special Provisions, Notice(s) to Bidders, and Plans, I (we) propose to furnish all necessary machinery, tools, apparatus and other means of construction and do all the work and furnish all the materials in the manner specified. I (We) understand that the quantities mentioned herein are approximate only and are subject to either increase or decrease, and hereby propose to perform any increased or decreased quantities of work at the unit prices bid, in accordance with the above.

I (We) acknowledge that this proposal will be found irregular and/or non-responsive unless a certified check, cashier's check, or Proposal Guaranty Bond in the amount as required in the Advertisement (or, by law) is submitted electronically with the proposal or is delivered to the office of _____ located at _____ prior to the bid opening time specified in the advertisement.

INSTRUCTION TO BIDDERS: Alternate and Optional Items on Bid Schedule.

1. Two or more items entered opposite a single unit quantity WITHOUT DEFINITE DESIGNATION AS "ALTERNATE ITEMS" are considered as "OPTIONAL ITEMS". Bidders may or may not indicate on bids the Optional Item proposed to be furnished or performed WITHOUT PREJUDICE IN REGARD TO IRREGULARITY OF BIDS.
2. Items classified on the bid schedule as "ALTERNATE ITEMS" and/or "ALTERNATE TYPES OF CONSTRUCTION" must be preselected and indicated on bids. However, "Alternate Types of Construction" may include Optional Items to be treated as set out in Paragraph 1, above.
3. Optional items not preselected and indicated on the bid schedule MUST be designated in accordance with Subsection 102.06 prior to or at the time of execution of the contract.
4. Optional and Alternate items designated must be used throughout the project.

I (We) further propose to perform all "force account or extra work" that may be required of me (us) on the basis provided in the Specifications and to give such work my (our) personal attention in order to see that it is economically performed.

I (We) further propose to execute the attached contract agreement (Section 902) as soon as the work is awarded to me (us), and to begin and complete the work within the time limit(s) provided for in the Specifications and Advertisement. I (We) also propose to execute the attached contract bond (Section 903) in an amount not less than one hundred (100) percent of the total of my (our) part, but also to guarantee the excellence of both workmanship and materials until the work is finally accepted.

SECTION 905 - PROPOSAL (CONTINUED)

I (We) shall submit electronically with our proposal or deliver prior to the bid opening time a certified check, cashier's check or bid bond for **five percent (5%) of total bid** and hereby agree that in case of my (our) failure to execute the contract and furnish bond within Ten (10) days after notice of award, the amount of this check (bid bond) will be forfeited to the State of Mississippi as liquidated damages arising out of my (our) failure to execute the contract as proposed. It is understood that in case I am (we are) not awarded the work, the check will be returned as provided in the Specifications.

I (We) hereby certify by conventional signature below of a paper bid submission, or by digital signature of an electronic submission via any authorized electronic submittal software, of the Section 905 proposal below, that all certifications, disclosures and affidavits incorporated herein are deemed to be duly executed in the aggregate, fully enforceable and binding upon delivery of the bid proposal. I (We) further acknowledge that this certification shall not extend to the bid bond or alternate security which must be separately executed for the benefit of the _____. This signature does not cure deficiencies in any required certifications, disclosures and/or affidavits. I (We) also acknowledge the right of the _____ to require full and final execution on any certification, disclosure or affidavit contained in the proposal at the _____ election upon award. Failure to so execute at the request within the time allowed in the Standard Specifications for execution of all contract documents will result in forfeiture of the bid bond or alternate security.

Bidder acknowledges receipt of and has added to and made a part of the proposal and contract documents the following addendum (addenda):

ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATED _____
 ADDENDUM NO. _____ DATED _____ ADDENDUM NO. _____ DATED _____

TOTAL ADDENDA: _____

(Must agree with total addenda issued prior to opening of bids)

Respectfully submitted,

DATE: _____

 Contractor

BY: _____

TITLE: _____

ADDRESS: _____

CITY: _____

PHONE: _____

FAX: _____

EMAIL: _____

Bid Schedule

Project Number FBLD-8769-00(001) / 108639 - 802000

County FORREST

Project Description Federal Build Project - Phase II - Hall Avenue West - Inters

I (We) agree to complete the entire project within the specified contract time.

*****SPECIAL NOTICE TO BIDDERS*****

BIDS WILL NOT BE CONSIDERED UNLESS BOTH UNIT PRICES AND ITEM TOTALS ARE ENTERED.

BIDS WILL NOT BE CONSIDERED UNLESS THE BID CERTIFICATE LOCATED AT THE END OF THE BID SHEET IS SIGNED.

Line No.	Pay Item No.	Plan Quantity	Unit	Description	Unit Price	Item Total
10	201-A001	1	LS	Clearing and Grubbing	XXXXX	
20	202-B019	15	LF	Removal of Box Culvert		
30	202-B023	1	EA	Removal of Bridge		
40	202-B052	1,235	SY	Removal of Concrete Driveways, All Depths		
50	202-B063	346	SY	Removal of Concrete Paved Ditch		
60	202-B080	1,165	SY	Removal of Concrete Sidewalk		
70	202-B092	8,582	LF	Removal of Curb, All Types		
80	202-B126	1,967	LF	Removal of Fence, All Types		
90	202-B163	1	EA	Removal of Inlet Tops		
100	202-B164	27	EA	Removal of Inlet and Junction Box, All Types & Sizes		
110	202-B188	11,271	SY	Removal of Pavement, All Types and Depths		
120	202-B191	1,558	LF	Removal of Pipe, 8" And Above		
130	202-B219	33	EA	Removal of Sign, Ground Mounted with Posts		
140	202-B244	37	EA	Removal of Trees		
150	203-A001	2,500	CY	Unclassified Excavation, FM, AH		
160	203-EX012	3,900	CY	Borrow Excavation, AH, FME, Class B3		
170	203-EX020	4,100	CY	Borrow Excavation, AH, FME, Class B9		
180	203-G001	8,000	CY	Excess Excavation, FM, AH		
190	206-A001	3,300	CY	Structure Excavation		
200	206-B001	250	CY	Select Material for Undercuts, Contractor Furnished, FM		
210	209-A005	16,250	SY	Geotextile Stabilization, Type V, Non-Woven		

220	211-A001	1,000	SY	Topsoil for Slope Treatment, From Right-of-Way		
230	211-B001	2,500	CY	Topsoil for Slope Treatment, Contractor Furnished		
240	211-C001	385	CY	Topsoil for Plant Holes, Contractor Furnished		
250	216-B002	19,500	SY	Solid Sodding, Centipede		
260	219-A001	390	KGAL	Watering	20.00	\$7,800.00
270	220-A001	4	ACRE	Insect Pest Control	30.00	\$120.00
280	223-A001	16	ACRE	Mowing	50.00	\$800.00
290	226-A001	1	ACRE	Temporary Grassing		
300	227-A001	1	ACRE	Hydroseeding		
310	230-A042	5	EA	Shrub Planting, Dwarf Yaupon Holly		
320	230-A051	500	EA	Shrub Planting, Giant Liriope		
330	230-A055	30	EA	Shrub Planting, Goldstrum Black Eyed Susan		
340	230-A100	770	EA	Shrub Planting, Parsons Juniper		
350	230-B027	93	EA	Tree Planting, Crape Mytle 'Watermelon Red'		
360	230-B032	22	EA	Tree Planting, Drake Chinese Elm		
370	230-B050	9	EA	Tree Planting, Live Oak		
380	230-D001	5,600	SF	Bed Preparation		
390	232-A003	3	K	Fertilizer for Woody Plant Material, Tablet, 21 gram		
400	233-A003	18	CY	Tree Bark Mulch, Type III		
410	233-A004	18	CY	Tree Bark Mulch, Type IV		
420	907-234-A001	5,500	LF	Temporary Silt Fence		
430	237-A002	1,200	LF	Wattles, 20"		
440	907-242-A002	325	LF	Installation of Chain Link Fence, Per Plans		
450	907-242-A002	235	LF	Installation of Wood Privacy Fence, Per Plans		
460	907-242-A003	3	EA	Installation of Spread Footing, Lighting Foundation		
470	246-B002	1,000	LF	Rockbags		
480	907-258-K001	2	EA	Bollard Removable		
490	907-259-F001	10	EA	Weatherproof GFCI Receptacle		
500	907-262-A005	2	EA	Utility Work - Water, 6" Insertion Valve		
510	907-262-A006	200	LF	Utility Work - Water, 6" Ductile Iron Water Main		
520	304-G001	3,500	CY	Size 3/4" and Down Crushed Stone Base, AEA		
				OR		
530	304-G002	3,500	CY	Size 610 Crushed Stone Base, AEA		
				OR		
540	304-G003	3,500	CY	Size 825B Crushed Stone Base, AEA		
550	308-A001	50	TON	Cement		

560	308-B002	4,000	SY	Soil-Cement-Water Mixing, Optional Mixers, Base		
570	403-A002	1,700	TON	12.5-mm, MT, Asphalt Pavement		
580	403-A005	2,550	TON	19-mm, MT, Asphalt Pavement		
590	403-A014	6,000	TON	9.5-mm, MT, Asphalt Pavement		
600	403-B011	800	TON	9.5-mm, MT, Asphalt Pavement, Leveling		
610	406-D001	6,975	SY	Fine Milling of Bituminous Pavement, All Depths		
620	407-A001	3,500	GAL	Asphalt for Tack Coat		
630	413-D003	3,000	LF	Cleaning and Filling Joints in PCC Pavement		
640	907-417-A001	480	SY	Polymer Cement Surface System		
650	501-K001	1,456	SY	Transverse Grooving		
660	502-A001	113	SY	Reinforced Cement Concrete Bridge End Pavement		
670	601-A001	380	CY	Class "B" Structural Concrete		
680	601-B001	149	CY	Class "B" Structural Concrete, Minor Structures		
690	602-A001	76,285	LBS	Reinforcing Steel		
700	603-CA001	32	LF	12" Reinforced Concrete Pipe, Class III		
710	603-CA004	24	LF	15" Reinforced Concrete Pipe, Class III, Rubber Type Gaskets		
720	603-CA072	80	LF	42" Reinforced Concrete Pipe, Class V		
730	603-CB002	2	EA	15" Reinforced Concrete End Section		
740	603-CE001	1,688	LF	18" x 11" Concrete Arch Pipe, Class A III		
750	603-CE003	848	LF	22" x 13" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets		
760	603-CE009	256	LF	29" x 18" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets		
770	603-CE014	1,256	LF	36" x 23" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets		
780	603-CE019	88	LF	44" x 27" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets		
790	603-PE009	10	LF	8" Corrugated Polyethylene Pipe		
800	603-SB023	3	EA	22" x 13" Branch Connections, Stub into Box Culvert		
810	603-SB032	3	EA	29" x 18" Branch Connections, Stub into Box Culvert		
820	604-A001	30,907	LBS	Castings		
830	604-B001	17,634	LBS	Gratings		
840	907-607-PP001	290	LF	Safety Fence		
850	608-A001	5,084	SY	Concrete Sidewalk, Without Reinforcement		
860	609-B002	30	LF	Concrete Curb, Header		
870	609-D004	306	LF	Combination Concrete Curb and Gutter Type 2 Modified		
880	609-D009	3,398	LF	Combination Concrete Curb and Gutter Type 3A Mod1		

890	609-D010	8,932	LF	Combination Concrete Curb and Gutter Type 3A Mod2		
900	612-B001	50	CY	Flowable Fill, Non-Excavatable		
910	613-D005	12	EA	Adjustment of Manhole		
920	613-D009	5	EA	Adjustment of Utility Appurtenance Fire Hydrant		
930	613-D010	28	EA	Adjustment of Water Meter		
940	613-D011	13	EA	Adjustment of Water Valve		
950	614-B003	1,741	SY	Concrete Driveway, With Reinforcement, 6-inch Thickness		
960	907-616-C001	1,005	SF	Colored and Imprinted Concrete Median and Island Pavement, 10-inch Thickness		
970	618-A001	1	LS	Maintenance of Traffic	XXXXX	
980	619-A2003	2,951	LF	Temporary Traffic Stripe, Continuous Yellow, Paint		
990	619-A3004	1,440	LF	Temporary Traffic Stripe, Skip White, Paint		
1000	619-A5002	2,986	LF	Temporary Traffic Stripe, Detail, Paint		
1010	619-A6003	88	SF	Temporary Traffic Stripe, Legend, Paint		
1020	619-A6004	1,693	LF	Temporary Traffic Stripe, Legend, Paint		
1030	619-D1001	353	SF	Standard Roadside Construction Signs, Less than 10 Square Feet		
1040	619-D2001	103	SF	Standard Roadside Construction Signs, 10 Square Feet or More		
1050	619-G4001	18	LF	Barricades, Type III, Double Faced		
1060	619-G4005	240	LF	Barricades, Type III, Single Faced		
1070	619-G5001	141	EA	Free Standing Plastic Drums		
1080	619-G7001	4	EA	Warning Lights, Type "B"		
1090	620-A001	1	LS	Mobilization	XXXXX	
1100	626-A003	1,440	LF	6" Thermoplastic Traffic Stripe, Skip White		
1110	626-E003	6,266	LF	6" Thermoplastic Traffic Stripe, Continuous Yellow		
1120	626-G002	1,758	LF	Thermoplastic Detail Stripe, White		
1130	626-G003	1,704	LF	Thermoplastic Detail Stripe, Yellow		
1140	626-H004	804	SF	Thermoplastic Legend, White		
1150	626-H005	2,782	LF	Thermoplastic Legend, White		
1160	627-J001	12	EA	Two-Way Clear Reflective High Performance Raised Markers		
1170	627-K001	103	EA	Red-Clear Reflective High Performance Raised Markers		
1180	627-L001	296	EA	Two-Way Yellow Reflective High Performance Raised Markers		
1190	630-A001	48	SF	Standard Roadside Signs, Sheet Aluminum, 0.080" Thickness		
1200	630-A005	255	SF	Standard Roadside Signs, Sheet Aluminum, 0.1" Thickness		

1210	630-C003	518	LF	Steel U-Section Posts, 3.0 lb/ft		
1220	907-632-A007	1	EA	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller		
1480	907-634-A230	1	EA	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 30' & 40' Arm		
1490	907-634-A254	1	EA	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 40' & 40' Arm		
1500	907-634-A545	1	EA	Traffic Signal Equipment Pole, Type VI, 8' Shaft		
1510	907-634-C001	9	CY	Pole Foundations, Class "B" Concrete		
1520	635-A059	8	EA	Traffic Signal Head, Type 1		
1530	635-A065	2	EA	Traffic Signal Head, Type 2 FYA		
1540	635-A076	4	EA	Traffic Signal Head, Type 6		
1550	907-636-B003	165	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 10, 2 Conductor		
1560	907-636-B014	415	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor		
1570	907-636-B016	315	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor		
1580	907-636-B028	10	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor		
1590	907-636-D001	80	LF	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 10, 2 Conductor		
1600	907-636-D006	40	LF	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor		
1610	907-636-D008	205	LF	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor		
1620	907-637-A002	2	EA	Pullbox Enclosure, Type 2		
1630	907-637-A003	1	EA	Pullbox Enclosure, Type 3		
1640	907-637-C028	35	LF	Traffic Signal Conduit, Underground, Type 4, 2"		
1650	907-637-C030	30	LF	Traffic Signal Conduit, Underground, Type 4, 3"		
1660	907-637-D003	130	LF	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"		
1670	907-639-B001	3	EA	Type 1 Optical Detector		
1680	907-639-C001	455	LF	Type 1 Optical Detector Cable		
1690	907-639-D001	1	EA	Multimode Phase Selector		
1700	907-643-A003	1	EA	Video Vehicle Detection Sensor, Type 3		
1710	907-643-B001	60	LF	Video Vehicle Detection Cable		
1720	907-645-B001	4	EA	Accessible Pedestrian Detection Assembly		
1730	647-A001	1	LS	Removal of Existing Traffic Signal Equipment	XXXXX	
1740	907-653-B001	24	SF	Street Name Sign		
1750	907-663-A001	1	EA	Network Switch, Type A		

1760	682-A010	5,630	LF	Underground Branch Circuit, AWG 10, 3 Conductor		
1770	682-A018	1,145	LF	Underground Branch Circuit, AWG 2, 3 Conductor		
1780	682-A034	3,115	LF	Underground Branch Circuit, AWG 6, 3 Conductor		
1790	682-A039	1,060	LF	Underground Branch Circuit, AWG 8, 3 Conductor		
1800	682-B010	275	LF	Underground Branch Circuit, Jacked or Bored, AWG 10, 3 Conductor		
1810	682-B016	175	LF	Underground Branch Circuit, Jacked or Bored, AWG 2, 3 Conductor		
1820	682-B032	121	LF	Underground Branch Circuit, Jacked or Bored, AWG 6, 3 Conductor		
1830	682-B037	60	LF	Underground Branch Circuit, Jacked or Bored, AWG 8, 3 Conductor		
1840	682-C015	1,165	LF	Structure Mounted Branch Circuit, AWG 2, 3 Conductor		
1850	682-C028	25	LF	Structure Mounted Branch Circuit, AWG 6, 3 Conductor		
1860	682-D002	24	EA	Structure Mounted Pull Box		
1870	682-F001	3	EA	Secondary Power Controller		
1880	684-A004	82	CY	Pole Foundation, 30" Diameter		
1890	699-A001	1	LS	Roadway Construction Stakes	XXXXX	
1900	699-B001	1	LS	Bridge Construction Stakes	XXXXX	
1910	803-K004	675	LF	Drilled Shaft, 36" Diameter		
1920	803-K006	1,425	LF	Drilled Shaft, 48" Diameter		
1930	803-L002	1	EA	Test Shaft, 48" Diameter		
1940	803-M005	80	LF	Trial Shaft, 48" Diameter		
1950	803-N001	300	LF	Exploration		
1960	803-O005	220	LF	Permanent Casing, 36" Diameter		
1970	803-O018	200	LF	Temporary Casing, 48" Diameter		
1980	907-804-A002	1,072	CY	Bridge Concrete, Class AA		
1990	907-804-A004	1,101	CY	Bridge Concrete, Class BD		
2000	804-C184	898	LF	150' Prestressed Concrete Beam, Type FIB-72		
2010	804-C236	1,048	LF	105' Prestressed Concrete Beam, Type FIB-45		
2020	804-C260	373	LF	75' Prestressed Concrete Beam, Type FIB-45		
2030	804-C261	674	LF	135' Prestressed Concrete Beam, Type FIB-72		
2040	805-A001	366,644	LBS	Reinforcement		
2050	907-809-A002	5,300	SF	Retaining Wall System, Gravity Type		
2060	907-809-A003	19,494	SF	Retaining Wall System, Mechanically Stabilized		
2070	813-B001	2,253	LF	Concrete-Steel Railing		
2080	815-D001	229	CY	Concrete Slope Paving		
2090	907-899-A001	1	LS	Railway-Highway Provisions	XXXXX	

2100	L00011 - 230-B500	45	EA	Tree Planting, Teddy Bear Magnolia		
2110	L00016 - 683-B500	4	EA	Lighting Assembly, Low Mast, LED, Type 30-1-3-100, Bridge Mounted		
2120	L00016 - 683-B500	6	EA	Lighting Assembly, Low Mast, LED, Type 32.5-1-3-100, Bridge Mounted		
2130	L00016 - 683-B500	11	EA	Lighting Assembly, Low Mast, LED, Type 14-1-0-100		
2140	L00016 - 683-B500	55	EA	Lighting Assembly, Low Mast, LED, Type 25-1-0-100		
2150	L00052 - 907-262-A504	2,400	LBS	Ductile Iron Fittings		
2160	L00076 - 230-A500	300	EA	Shrub Planting, Drift Rose "Peach"		
Total Bid Amount (Participating)						

Non-Participating						
Line No.	Pay Item No.	Plan Quantity	Unit	Description	Unit Price	Item Total
1230	907-632-A007	1	EA	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller		
1240	907-634-A365	1	EA	Traffic Signal Equipment Pole, Type III, 17' Shaft, 30' & 40' Arms		
1250	907-634-A374	1	EA	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 40' Arms		
1260	907-634-A545	2	EA	Traffic Signal Equipment Pole, Type VI, 8' Shaft		
1270	907-634-C001	9	CY	Pole Foundations, Class "B" Concrete		
1280	635-A059	8	EA	Traffic Signal Head, Type 1		
1290	635-A065	1	EA	Traffic Signal Head, Type 2 FYA		
1300	635-A076	8	EA	Traffic Signal Head, Type 6		
1310	907-636-B014	410	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor		
1320	907-636-B016	300	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor		
1330	907-636-B028	15	LF	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor		
1340	907-636-D006	72	LF	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor		
1350	907-636-D008	197	LF	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor		
1360	907-637-A002	3	EA	Pullbox Enclosure, Type 2		
1370	907-637-A003	1	EA	Pullbox Enclosure, Type 3		
1380	907-637-C028	65	LF	Traffic Signal Conduit, Underground, Type 4, 2"		
1390	907-637-C030	40	LF	Traffic Signal Conduit, Underground, Type 4, 3"		
1400	907-637-D003	200	LF	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"		

1410	907-639-B001	4	EA	Type 1 Optical Detector		
1420	907-639-C001	480	LF	Type 1 Optical Detector Cable		
1430	907-639-D001	1	EA	Multimode Phase Selector		
1440	907-643-A003	1	EA	Video Vehicle Detection Sensor, Type 3		
1450	907-643-B001	110	LF	Video Vehicle Detection Cable		
1460	907-645-B001	8	EA	Accessible Pedestrian Detection Assembly		
1470	907-653-B001	23	SF	Street Name Sign		
					Total Bid Amount (Non-Participating)	

Total Bid (Participating) _____

Total Bid (Non-Participating) _____

Total Bid _____

1. I/We agree that no less than _____ percent shall be expended with small business concerns owned and controlled by socially and economically disadvantaged individuals (DBE and WBE).

2. Classification of Bidder: Small Business (DBE) _____ Small Business(WBE) _____

3. A joint venture with a Small Business (DBE/WBE): YES _____

***** SIGNATURE STATEMENT *****

BIDDER ACKNOWLEDGES THAT HE/SHE HAS CHECKED ALL ITEMS IN THIS PROPOSAL FOR ACCURACY AND CERTIFY THAT THE FIGURES SHOWN THEREIN CONSTITUTE THEIR OFFICIAL BID.

BIDDER'S SIGNATURE

**Certification with regard to the Performance of Previous
Contracts or Subcontracts subject to the Equal Opportunity
Clause and the filing of Required Reports**

The Bidder _____, proposed Subcontractor _____, hereby certifies that he has _____, has not _____, participated in a previous contract or subcontract subject to the Equal Opportunity Clause, as required by Executive Orders 10925, 11114, or 11246, and that he has _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

(COMPANY)

BY _____

(TITLE)

DATE: _____

NOTE: The above certification is required by the Equal Employment Opportunity Regulations of the Secretary of Labor (41 CFR 60-1.7 (b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the Equal Opportunity Clause. Contracts and Subcontracts which are exempt from the Equal Opportunity Clause are set forth in 41 CFR 60-1.5. (Generally only contracts or subcontracts of \$10,000 or under are exempt.)

Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime Contractors and Subcontractors who have participated in a previous contract or subcontract subject to the Executive orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such Contractors submit a report covering the delinquent period or such other period specified by the Federal Highway Administration or by the Director, Office of Federal Contract Compliance, U. S. Department of Labor.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION**NON-COLLUSION AFFIDAVIT**
(Execute in duplicate)

I, _____,
(Name of person signing affidavit)

individually, and in my capacity as _____ of
(Title)

_____ do hereby certify under
(Name of Firm, Partnership, or Corporation)

penalty of perjury under the laws of the United States and the State of Mississippi that _____

_____, Bidder
(Name of Firm, Partnership, or Corporation)

on Project No. _____,

in _____ County(ies), Mississippi, has not either

directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (b) above; and
- d) Have not within a three-year period preceding this application/ proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

Note: Exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility. Providing false information may result in criminal prosecution or administrative sanctions.

The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement small purchase threshold fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently \$25,000) which are excluded from the certification requirements.

The bidder further certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000. The bidder shall include the language of the certification in all subcontracts exceeding \$100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____

Signature

MISSISSIPPI DEPARTMENT OF TRANSPORTATION**NON-COLLUSION AFFIDAVIT**
(Execute in duplicate)

I, _____,
(Name of person signing affidavit)

individually, and in my capacity as _____ of
(Title)

_____ do hereby certify under
(Name of Firm, Partnership, or Corporation)

penalty of perjury under the laws of the United States and the State of Mississippi that _____

_____, Bidder
(Name of Firm, Partnership, or Corporation)

on Project No. _____,

in _____ County(ies), Mississippi, has not either

directly or indirectly entered into any agreement, participated in any collusion; or otherwise taken any action in restraint of free competitive bidding in connection with this contract; nor have any of its corporate officers or principal owners.

Except as noted hereafter, it is further certified that said legal entity and its corporate officers, principal owners, managers, auditors and others in a position of administering federal funds:

- a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in (b) above; and
- d) Have not within a three-year period preceding this application/ proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

Initial here "_____" if exceptions are attached and made a part thereof. Any exceptions shall address to whom it applies, initiating agency and dates of such action.

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The bidder further certifies that the certification requirements contained in Section XI of Form FHWA 1273, will be or have been included in all subcontracts, material supply agreements, purchase orders, etc. except those procurement contracts for goods or services that are expected to be less than the Federal procurement small purchase threshold fixed at 10 U.S.C. 2304(g) and 41 U.S.C. 253(g) (currently \$25,000) which are excluded from the certification requirements.

The bidder further certifies, to the best of his or her knowledge and belief, that:

- 1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
- 2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this contract, Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions will be completed and submitted.

The certification contained in (1) and (2) above is a material representation of fact upon which reliance is placed and a prerequisite imposed by Section 1352, Title 31, U.S. Code prior to entering into this contract. Failure to comply shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000. The bidder shall include the language of the certification in all subcontracts exceeding \$100,000 and all subcontractors shall certify and disclose accordingly.

All of the foregoing and attachments (when indicated) is true and correct.

Executed on _____

Signature

LOCAL PUBLIC AGENCY (LPA)

SECTION 902

CONTRACT FOR _____
LOCATED IN THE COUNTY OF _____
STATE OF MISSISSIPPI,

This contract entered into by and between the Local Public Agency _____
_____ (hereinafter "LPA") on one hand, and the undersigned contractor, on the other witnesseth;

That, in consideration of the payment by the LPA of the prices set out in the proposal hereto attached, to the undersigned contractor, such payment to be made in the manner and at the time of times specified in the specifications and the special provisions, if any, the undersigned contractor hereby agrees to accept the prices stated in the proposal in full compensation for the furnishing of all materials and equipment and the executing of all the work contemplated in this contract.

It is understood and agreed that the advertising according to law, the Advertisement, the instructions to bidders, the proposal for the contract, the specifications, the revisions of the specifications, the special provisions, and also the plans for the work herein contemplated, said plans showing more particularly the details of the work to be done, shall be held to be, and are hereby made a part of this contract by specific reference thereto and with like effect as if each and all of said instruments had been set out fully herein in words and figures.

It is further agreed that for the same consideration the undersigned contractor shall be responsible for all loss or damage arising out of the nature of the work aforesaid; or from the action of the elements and unforeseen obstructions or difficulties which may be encountered in the prosecution of the same and for all risks of every description connected with the work, exceptions being those specifically set out in the contract; and for faithfully completing the whole work in good and workmanlike manner according to the approved Plans, Specifications, Special Provisions, Notice(s) to Bidders and requirements of the LPA.

It is further agreed that the work shall be done under the direct supervision and to the complete satisfaction of the LPA or their authorized representatives, and when Federal Funds are involved subject to inspection at all times and approval by the Mississippi Department of Transportation or Federal Highway Administration, or its agents as the case may be, or the agents of any other Agency whose funds are involved in accordance with those Acts of the Legislature of the State of Mississippi approved by the Governor and such rules and regulations issued pursuant thereto by the Mississippi Transportation Commission and the authorized Federal Agencies.

The Contractor agrees that all labor as outlined in the Special Provisions may be secured from list furnished by

Manager, WIN Job Center nearest the project

It is agreed and understood that each and every provision of law and clause required by law to be inserted in this contract shall be deemed to be inserted herein and this contract shall be read and enforced as though it were included herein, and, if through mere mistake or otherwise any such provision is not inserted, then upon the application of either party hereto, the contract shall forthwith be physically amended to make such insertion.

The Contractor agrees that he has read each and every clause of this Contract, and fully understands the meaning of same and that he will comply with all the terms, covenants and agreements therein set forth.

Witness our signatures this the ____ day of _____, 20 ____.

Contractor(s)

By _____

Title _____

Signed and sealed in the presence of:
(Names and address of witnesses)

By _____

LPA Official

LPA Clerk

Award authorized by the LPA in session on the ____ day of _____, 20 ____, as recorded _____

LOCAL PUBLIC AGENCY (LPA)

S E C T I O N 9 0 3
PERFORMANCE AND PAYMENT BOND

CONTRACT BOND FOR _____

LOCATED IN THE COUNTY OF _____

STATE OF MISSISSIPPI,

Know all men by these presents: that we, _____
(Contractor)

(hereinafter "Principal"), a _____

residing at _____ in the State of _____

and _____
(Surety)

residing at _____ in the State of _____

authorized to do business in the State of Mississippi, under the laws thereof, as surety, are held and firmly bound

unto the Local Public Agency _____, (hereinafter

"LPA"), in the sum of _____

(\$ _____) Dollars, lawful money of the United States of America, to be

paid to it for which payment well and truly to be made, we bind ourselves, our heirs, administrators, successors, or

assigns jointly and severally by these presents.

The conditions of this bond are such, that whereas the said Principal, has (have) entered into a contract with the

LPA, bearing the date of _____ day of _____ A.D. _____ hereto annexed, for the

construction of certain project(s) in the State of Mississippi as mentioned in said contract in accordance with the

Contract Documents therefor, on file in the offices of the LPA.

Now therefore, if the above bounden Principal in all things shall stand to and abide by and well and truly observe, do keep and perform all and singular the terms, covenants, conditions, guarantees and agreements in said contract, contained on his (their) part to be observed, done, kept and performed and each of them, at the time and in the manner and form and furnish all of the material and equipment specified in said contract in strict accordance with the terms of said contract which said plans, specifications and special provisions are included in and form a part of said contract and shall maintain the said work contemplated until its final completion and acceptance as specified in Subsection 109.11 of the approved specifications, and save harmless said LPA from any loss or damage arising out of or occasioned by the negligence, wrongful or criminal act, overcharge, fraud, or any other loss or damage whatsoever, on the part of said principal (s), his (their) agents, servants, or employees in the performance of said work or in any manner connected therewith, and shall be liable and responsible in a civil action instituted by the LPA at the instance of any officer of the LPA authorized in such cases, for double any amount in money or property, the LPA may lose or be overcharged or otherwise defrauded of, by reason of wrongful or criminal act, if any, of the

LOCAL PUBLIC AGENCY (LPA)

Contractor(s), his (their) agents or employees, and shall promptly pay the said agents, servants and employees and all persons furnishing labor, material, equipment or supplies therefor, including premiums incurred, for Surety Bonds, Liability Insurance, and Workmen's Compensation Insurance; with the additional obligation that such Contractor shall promptly make payment of all taxes, licenses, assessments, contributions, damages, any liquidated damages which may arise prior to any termination of said principal's contract, any liquidated damages which may arise after termination of the said principal's contract due to default on the part of said principal, penalties and interest thereon, when and as the same may be due this state, or any county, municipality, board, department, commission or political subdivision: in the course of the performance of said work and in accordance with Sections 31-5-51 et seq. Mississippi Code of 1972, and other State statutes applicable thereto, and shall carry out to the letter and to the satisfaction of the LPA Official, all, each and every one of the stipulations, obligations, conditions, covenants and agreements and terms of said contract in accordance with the terms thereof and all of the expense and cost and attorney's fee that may be incurred in the enforcement of the performance of said contract, or in the enforcement of the conditions and obligations of this bond, then this obligation shall be null and void, otherwise to be and remain in full force and virtue.

_____	_____
(Contractors) Principal	Surety
By _____	By _____
	(Signature) Attorney in Fact
	Address: _____

Title _____	_____
(Contractor's Seal)	(Printed) Mississippi Agent

	(Signature) Mississippi Agent
	Address: _____

	(Surety Seal)

	Mississippi Insurance ID Number

**MDOT Certification Form for Sub-Awards
Executive Compensation Reporting for Transparency Act**

On behalf of the entity named below, I certify that I have personally read and reviewed the executive compensation reporting requirements of the Federal Funding Accountability and Transparency Act of 2006, as amended by Section 6202 of the Government Funding Transparency Act of 2008 [FFATA], and certify under penalty of perjury pursuant to Section 97-9-61, Mississippi Code of 1972, as amended, the following:

Local Entity Name: City of Hattiesburg, MS

Unique Entity Identifier (UEI) Number : N4XZJLJ9AVM1 (required)

 x The local entity listed below receiving federal funds from MDOT **is not** required to report executive compensation under the Federal Funding Accountability and Transparency Act of 2006, as amended by Section 6202 of the Government Funding Transparency Act of 2008 [FFATA].

_____ The local entity listed below receiving federal funds from MDOT is **required** to report executive compensation under the Federal Funding Accountability and Transparency Act of 2006, as amended by Section 6202 of the Government Funding Transparency Act of 2008 [FFATA], listed below are the names and total annual compensation of the five most highly compensated officers of the entity:

NAME	TOTAL ANNUAL COMPENSATION
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

The entity acknowledges that a false statement in this certification may be subject to criminal prosecution, including under 18 U.S.C. §§ 1001 (false statements) and 1621 (perjury), and 28 U.S.C. §1746 (declarations under penalty of perjury). The entity also acknowledges that said projects, including certifications provided in connection with such projects and grants are subject to review by the Mississippi Department of Transportation, the Mississippi State Auditor, and the Mississippi Office of Attorney General.

Entity Chief Official

6-13-22

Date

**Guidance for Federal Spending Transparency:
Subaward and Executive Compensation Data
Reporting Requirements for FFATA Implementation**

Summary

1. Prime awardees and sub awardees of Federal financial assistance must report executive compensation data if they meet the statutory reporting thresholds. For the Federal-aid Highway Program, this means that the State, and any subawardees of Federal-aid funds through the State, is subject to the executive compensation reporting requirement.

- names and total compensation of the five most highly compensated officers of the entity if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. See FFATA § 2(b)(1).

Background

Beginning October 1, 2010, guidance directs compliance with the Transparency Act to report prime and first-tier subaward data. Federal agencies and prime awardees will report to ensure disclosure of Federal contract and grant subaward and executive compensation data.

The Transparency Act requires information disclosure concerning entities receiving Federal financial assistance through Federal awards such as Federal contracts, sub-contracts, grants, and sub-grants.

Specifically, the Transparency Act's section 2(b)(1) requires the Office of Management and Budget ("OMB") to ensure the establishment of a publicly available website that contains the following information about each Federal award:

- name of the entity receiving the award;
- amount of the award;
- information on the award including transaction type, funding agency, the North American Industry Classification System code or Catalog of Federal Domestic Assistance number, program source, award title descriptive of the purpose of each funding action;

- location of the entity receiving the award and primary location of performance under the award, including city, State, congressional district, and country;
- unique identifier of the entity receiving the award and the parent entity of the recipient, should the entity be owned by another entity; and
- names and total compensation of the five most highly compensated officers of the entity if the entity in the preceding fiscal year received 80 percent or more of its annual gross revenues in Federal awards; and \$25,000,000 or more in annual gross revenues from Federal awards; and the public does not have access to this information about the compensation of the senior executives of the entity through periodic reports filed under section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. §§ 78m(a), 78o(d)) or section 6104 of the Internal Revenue Code of 1986. See FFATA § 2(b)(1).

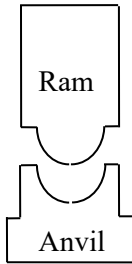
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

PILE AND DRIVING EQUIPMENT DATA FORM

Project No.: _____ Bridge No.: _____

Termini: _____ Pile Driving Contractor: _____

County: _____

**Hammer**

Manufacture: _____ Model No.: _____

Hammer Type: _____ Serial No.: _____

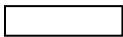
Manufacturers Maximum Rated Energy: _____ (Kip-ft.)

Stroke at Maximum Rated Energy: _____ (ft.)

Range in Operating Energy: _____ to _____ (Kip-ft.)

Range in Operating Stroke: _____ to _____ (ft.)

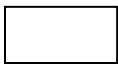
Modifications: _____

**Striker**

Weight: _____ (N) Diameter: _____ (in.)

Plate

Thickness: _____ (mm)

**Hammer****Cushion**Material #1

Name: _____

Area: _____ (in.²)

Thickness/Plate: _____ (in.)

No. of Plates: _____

Total Thickness of Hammer Cushion: _____ (in.)

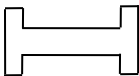
Material #2

Name: _____

Area: _____ (in.²)

Thickness/Plate: _____ (in.)

No. of Plates: _____

**Helmet
(Drive Head)**

Weight: _____ (lbs.)

**Pile****Cushion**

Material: _____

Area: _____ (in.²)

Total Thickness: _____ (in.)

**Pile****Submitted By:** _____ **Date:** _____**Telephone No.:** _____

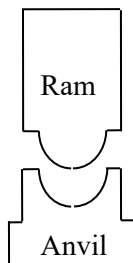
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

PILE AND DRIVING EQUIPMENT DATA FORM

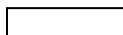
Project No.: _____ Bridge No.: _____

Termini: _____ Pile Driving Contractor: _____

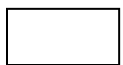
County: _____



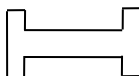
Manufacture: _____ Model No.: _____
 Hammer Type: _____ Serial No.: _____
 Manufacturers Maximum Rated Energy: _____ (Joules)
Hammer Stroke at Maximum Rated Energy: _____ (m)
 Range in Operating Energy: _____ to _____ (Joules)
 Range in Operating Stroke: _____ to _____ (m)
 Modifications: _____



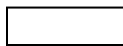
Striker Weight: _____ (N) Diameter: _____ (mm)
Plate Thickness: _____ (mm)



	<u>Material #1</u>	<u>Material #2</u>
	Name: _____	Name: _____
Hammer	Area: _____ (mm ²)	Area: _____ (mm ²)
Cushion	Thickness/Plate: _____ (mm)	Thickness/Plate: _____ (mm)
	No. of Plates: _____	No. of Plates: _____
	Total Thickness of Hammer Cushion: _____ (mm)	



Helmet
(Drive Head) Weight: _____ (kN)



Pile Material: _____
Cushion Area: _____ (mm²) Total Thickness: _____ (mm)



Pile

Submitted By: _____ **Date:** _____
Telephone No.: _____

LPA PROJECT

DISADVANTAGED BUSINESS ENTERPRISE LIST

PROJECT NUMBER :

NAME OF DBE FIRM:

☐ RACE CONSCIOUS ☐ RACE NEUTRAL

COUNTY:

CITY :

A	B	C
REFERENCE NUMBER OF ITEMS	PERCENT WORK SUBCONTRACTED , (SEE NOTE 4 & 5 BELOW)	VALUE OF ITEM (SUBCONTRACTED , MANUFACTURED OR SUPPLIED)
TOTAL		
PER CENT OF TOTAL BID		

*** I ACKNOWLEDGE AND COMMIT TO THE ITEMS AND PRICES STATED ABOVE. ***

SIGNATURE OF DBE

SIGNATURE OF PRIME

DATE

APPROVED:

Prime Contractor Firm Name

APPROVED BY:

LPA Project Director Name (Printed)

Submitted By Name

LPA Project Director (Signature)

TITLE

I AGREE TO SUBCONTRACT OR PURCHASE MATERIAL FROM THE DBE FIRM LISTED ABOVE AND I MAKE THIS COMMITMENT WITH THE UNDERSTANDING THAT IF I FAIL FOR GOOD REASON TO FULFILL THIS COMMITMENT I HAVE LISTED I WILL FULFILL THE TERMS OF MY CONTRACT AS LONG AS I REACH OR EXCEED THE CONTRACT GOAL OF %.

INSTRUCTIONS :

1. SUBMIT THIS FORM TO THE **LPA Project Director** ***FOR THEIR SIGNATURE*** NO LATER THAN THE THIRD (3) BUSINESS DAY AFTER THE OPENING OF THE BIDS.
2. 60 % CREDIT IS ALLOWED TOWARD THE DBE GOAL FOR SUPPLIERS.
3. THE ACTUAL SUBCONTRACT AGREEMENT MUST EQUAL OR EXCEED THE DOLLAR AMOUNT SHOWN IN COLUMN " C ".
4. IF THE DBE FIRM PERFORMS " ALL OF THE WORK " PERTAINING TO A SUBCONTRACTED ITEM ENTER 100 % IN COLUMN " B ".
5. IF THE DBE FIRM PERFORMS " A PORTION OF THE WORK " PERTAINING TO A SUBCONTRACTED ITEM THE PERCENTAGE IS CALCULATED BASED ON THE TOTAL VALUE OF THE ITEM AND ENTERED IN COLUMN " B ". A BREAKDOWN OF THE COST MUST ACCOMPANY THIS SITUATION.

LPA PROJECT

DISADVANTAGED BUSINESS ENTERPRISE LIST

PROJECT NUMBER :

NAME OF DBE FIRM:

☐ RACE CONSCIOUS ☐ RACE NEUTRAL

COUNTY:

CITY :

A	B	C
REFERENCE NUMBER OF ITEMS	PERCENT WORK SUBCONTRACTED , (SEE NOTE 4 & 5 BELOW)	VALUE OF ITEM (SUBCONTRACTED , MANUFACTURED OR SUPPLIED)
TOTAL		
PER CENT OF TOTAL BID		

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SIGNATURE OF DBE

SIGNATURE OF PRIME

DATE

APPROVED:

Prime Contractor Firm Name

APPROVED BY:

LPA Project Director Name (Printed)

Submitted By Name

LPA Project Director (Signature)

TITLE

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LPA PROJECT

DISADVANTAGED BUSINESS ENTERPRISE LIST

PROJECT NUMBER :

NAME OF DBE FIRM:

☐ RACE CONSCIOUS ☐ RACE NEUTRAL

COUNTY:

CITY :

A	B	C
REFERENCE NUMBER OF ITEMS	PERCENT WORK SUBCONTRACTED , (SEE NOTE 4 & 5 BELOW)	VALUE OF ITEM (SUBCONTRACTED , MANUFACTURED OR SUPPLIED)
TOTAL		
PER CENT OF TOTAL BID		

*** I ACKNOWLEDGE AND COMMIT TO THE ITEMS AND PRICES STATED ABOVE. ***

SIGNATURE OF DBE

SIGNATURE OF PRIME

DATE

APPROVED:

Prime Contractor Firm Name

APPROVED BY:

LPA Project Director Name (Printed)

Submitted By Name

LPA Project Director (Signature)

TITLE

I AGREE TO SUBCONTRACT OR PURCHASE MATERIAL FROM THE DBE FIRM LISTED ABOVE AND I MAKE THIS COMMITMENT WITH THE UNDERSTANDING THAT IF I FAIL FOR GOOD REASON TO FULFILL THIS COMMITMENT I HAVE LISTED I WILL FULFILL THE TERMS OF MY CONTRACT AS LONG AS I REACH OR EXCEED THE CONTRACT GOAL OF %.

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5. IF THE DBE FIRM PERFORMS " A PORTION OF THE WORK " PERTAINING TO A SUBCONTRACTED ITEM THE PERCENTAGE IS CALCULATED BASED ON THE TOTAL VALUE OF THE ITEM AND ENTERED IN COLUMN " B ". A BREAKDOWN OF THE COST MUST ACCOMPANY THIS SITUATION.

LPA PROJECT

LIST OF FIRMS SUBMITTING QUOTES

I/we received quotes from the following firms on Project No: _____
County: _____

Disadvantaged Business Enterprise (DBE) Regulations as stated in 49 CFR 26.11 require the Mississippi Department of Transportation (MDOT) to create and maintain a comprehensive list of all firms quoting/bidding subcontracts on prime contracts and quoting/bidding subcontracts on federally-funded transportation projects. For every firm, we require the following information:

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
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Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

SUBMITTED BY (Signature)

FIRM NAME

Submit this form to the **LPA as a part of your bid package**. If this form is not **signed** and included as part of the bid packet, your bid will be deemed irregular. For further information about this form, call Mississippi DOT's Office of Civil Rights at (601) 359-7466; FAX (601) 576-4504.

Please make copies of this form when needed and also add those copies to the bid package.

LPA PROJECT

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Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

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Firm Mailing Address _____
Phone Number: _____
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Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

Firm Name: _____
Contact Name/Title: _____
Firm Mailing Address _____
Phone Number: _____
_____ DBE Firm _____ Non-DBE Firm

SUBMITTED BY (Signature)

FIRM NAME

Submit this form to the **LPA as a part of your bid package**. If this form is not **signed** and included as part of the bid packet, your bid will be deemed irregular. For further information about this form, call Mississippi DOT's Office of Civil Rights at (601) 359-7466; FAX (601) 576-4504.

Please make copies of this form when needed and also add those copies to the bid package.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SAM.GOV Registration and Unique Entity ID

Bidders are advised that the Prime Contractor must register and maintain a current registration in the **System for Award Management** (<http://sam.gov>) at all times during the project. Upon registration, the Contractor will be assigned a SAM Unique Entity ID.

Bidders are advised that prior to the award of this contract, they **MUST** be registered in the System for Award Management.

I (We) acknowledge that this contract cannot be awarded if I (We) are not registered in the System for Award Management prior to the award of this contract. _____ (Yes / No)

I (We) have a SAM Unique Entity ID. _____ (Yes / No)

SAM Unique Entity ID: _____

Company Name: _____

Company e-mail address: _____

8/11/2022 1:06 PM c:\16200\Hattiesburg\16214_half_coversheet\west\pavement\roadway\16214_index.dwg -- roadway\pavement\roadway\16214_half_coversheet\west\pavement\roadway\16214_index.dwg

DESCRIPTION OF SHEET				WKG. NO.	SHT. NO.	DESCRIPTION OF SHEET	WKG. NO.	SHT. NO.					
TITLE SHEET (1)					1	FORM GRADES SHEETS (6)							
DETAILED INDEX & GENERAL NOTES (4)						FORM GRADES – WEST PINE STREET – STA. 747+00 TO 754+00	FG–1	56					
DETAILED INDEX				DI–1	2	FORM GRADES – HALL AVENUE – STA. 11+00 TO STA. 17+00	FG–2	57					
DETAILED INDEX				DI–2	3	FORM GRADES – MARTIN LUTHER KING BLVD. – STA. 100+00 TO STA. 106+24.50	FG–3	58					
GENERAL NOTES				GN–1	4	FORM GRADES – HALL AVENUE – STA. 19+00 TO STA. 25+50	FG–4	59					
GENERAL NOTES				GN–2	5	FORM GRADES – HALL AVENUE – STA. 25+50 TO STA. 38+50	FG–5	60					
						FORM GRADES – HALL AVENUE – STA. 38+50 TO E.O.P.	FG–6	61					
TYPICAL SECTION SHEETS (5)						SPECIAL DESIGN SHEETS (15)							
TYPICAL SECTIONS				TS–1	6	CURB INLET – SINGLE UNIT	CI–1	62					
TYPICAL SECTIONS				TS–2	7	CURB INLET – DOUBLE UNIT	CI–2	63					
TYPICAL SECTIONS				TS–3	8	CURB INLET – TRIPLE UNIT	CI–3	64					
TYPICAL SECTIONS				TS–4	9	MISCELLANEOUS DETAILS – PAVED ISLANDS & SIDEWALK	DET–1	65					
TYPICAL SECTIONS				TS–5	10	MISCELLANEOUS DETAILS – BOLLARDS, CROSSWALK STRIPING, DITCH WALL PATCH & FENCE	DET–2	66					
						MISCELLANEOUS DETAILS – DETECTABLE WARNING AND RAMPS	DET–3	67					
						MISCELLANEOUS DETAILS – BRIDGE END PAVING	DET–4	68					
						PRECAST BRIDGE & CONCRETE DITCH REMOVAL DETAILS	DET–5	69					
						CONCRETE DITCH CONSTRUCTION DETAILS	DET–6	70					
						BOX CULVERT DRAWING – BARREL JOINT LOCATIONS – NORMAL AND SKEWED CULVERTS	SD–IBJL–1	71					
						BOX CULVERT DRAWING – SINGLE CELL – HEIGHT 3FT. – TOTAL SPAN 3–9FT.	SD–BS–3	72					
						BASIC CULVERT DRAWING – DOUBLE CELL – HEIGHT 4FT. – TOTAL SPAN 8–24FT.	SD–IBD–4–2W	73					
						BOX CULVERT DRAWING – 30° SKEW DETAILS – WINGS WITH 3:1 SLOPE SINGLE & DOUBLE CELL CULVERTS	SD–ISK–30–3W	74					
						GRAVITY RETAINING WALL DETAILS (SMALL BLOCK WALL)	RTW–1	75					
						GRAVITY RETAINING WALL DETAILS (LARGE BLOCK WALL)	RTW–2	76					
						UTILITY DRAWINGS (9)							
						UTILITY PLAN – WEST PINE STREET – STA. 747+00 TO STA. 754+00	UP–1	77					
						UTILITY PLAN – HALL AVENUE – STA. 11+00 TO STA. 19+00	UP–2	78					
						UTILITY PLAN – MARTIN LUTHER KING BLVD. – STA. 100+00 TO STA. 107+50	UP–3	79					
						UTILITY PLAN – HALL AVENUE – STA. 19+00 TO STA. 25+50	UP–4	80					
						UTILITY PLAN – HALL AVENUE – STA. 25+50 TO STA. 38+50	UP–5	81					
						UTILITY PLAN – HALL AVENUE – STA. 38+50 TO E.O.P.	UP–6	82					
						MISCELLANEOUS UTILITY DETAILS	UTD–1	83					
						MISCELLANEOUS UTILITY DETAILS	UTD–2	84					
						MISCELLANEOUS UTILITY DETAILS	UTD–3	85					
						TRAFFIC CONTROL SHEETS (12)							
						TRAFFIC CONTROL DETAILS – CONSTRUCTION SIGNING	CS–1	86					
						TRAFFIC CONTROL DETAILS – DETOUR ROUTE – PHASE 1	CS–2	87					
						TRAFFIC CONTROL DETAILS – DETOUR ROUTE – PHASE 2	CS–3	88					
						TRAFFIC CONTROL DETAILS – DETOUR ROUTE – PHASE 3	CS–4	89					
						TRAFFIC CONTROL PLAN – PHASE 1 (WEST PINE STREET) – STA. 746+00 TO STA. 754+00	TC–1	90					
						TRAFFIC CONTROL PLAN – PHASE 1 (HALL AVENUE) – STA. 11+00 TO STA. 18+00	TC–2	91					
						TRAFFIC CONTROL PLAN – PHASE 1 (HALL AVENUE) – STA. 18+00 TO STA. 24+00	TC–3	92					
						TRAFFIC CONTROL PLAN – PHASE 1 (HALL AVENUE) – STA. 24+00 TO STA. 28+50	TC–4	93					
						TRAFFIC CONTROL PLAN – PHASE 2 – STA. 28+50 TO STA. 41+00	TC–5	94					
						TRAFFIC CONTROL PLAN – PHASE 2 – STA. 41+00 TO E.O.P.	TC–6	95					
						TRAFFIC CONTROL PLAN – PHASE 3 (MARTIN LUTHER KING BLVD.) – STA. 100+00 TO STA. 107+00	TC–7	96					
						TRAFFIC CONTROL PLAN – PHASE 4 (WEST PINE STREET) – STA. 747+00 TO STA. 754+00	TC–8	97					
						EROSION & SEDIMENT CONTROL PLANS (7)							
						EROSION & SEDIMENT CONTROL PLAN – LEGEND AND NOTES	ECP–1	98					
						EROSION & SEDIMENT CONTROL PLAN – WEST PINE ST. – STA. 747+00 TO 754+00	ECP–2	99					
						EROSION & SEDIMENT CONTROL PLAN – HALL AVE. – STA. 10+00 TO STA. 16+50	ECP–3	100					
						EROSION & SEDIMENT CONTROL PLAN – HALL AVE. – STA. 16+50 TO STA. 29+25	ECP–4	101					
						EROSION & SEDIMENT CONTROL PLAN – HALL AVE. – STA. 29+25 TO STA. 42+75	ECP–5	102					
						EROSION & SEDIMENT CONTROL PLAN – HALL AVE. – STA. 42+75 TO E.O.P. / ALLEY STA. 1+00 TO STA. 3+00	ECP–6	103					
						EROSION & SEDIMENT CONTROL PLAN – MARTIN LUTHER KING BLVD. – STA. 100+00 TO STA. 107+00	ECP–7	104					
						PAVEMENT MARKING AND ROADWAY DETAILS (6)							
						PAVEMENT MARKING DETAILS – WEST PINE STREET – STA. 747+00 TO STA. 754+00	PM–1	105					
						PAVEMENT MARKING DETAILS – HALL AVENUE – STA. 11+00 TO STA. 19+00	PM–2	106					
						PAVEMENT MARKING DETAILS – MARTIN LUTHER KING BLVD. – STA. 100+00 TO STA. 107+50	PM–3	107					
						PAVEMENT MARKING DETAILS – HALL AVENUE – STA. 19+00 TO STA. 25+50	PM–4	108					
						PAVEMENT MARKING DETAILS – HALL AVENUE – STA. 25+50 TO STA. 38+50	PM–5	109					
						PAVEMENT MARKING DETAILS – HALL AVENUE – STA. 38+50 TO E.O.P.	PM–6	110					
						PERMANENT SIGNING PLANS (6)							
						PERMANENT SIGNING PLAN – WEST PINE STREET – STA. 747+00 TO STA. 754+00	PSP–1	1001					
						PERMANENT SIGNING PLAN – HALL AVENUE – STA. 11+00 TO STA. 19+00	PSP–2	1002					
						PERMANENT SIGNING PLAN – MARTIN LUTHER KING BLVD. – STA. 100+00 TO STA. 107+50	PSP–3	1003					
						PERMANENT SIGNING PLAN – HALL AVENUE – STA. 19+00 TO STA. 25+50	PSP–4	1004					
						PERMANENT SIGNING PLAN – HALL AVENUE – STA. 25+50 TO STA. 38+50	PSP–5	1005					
						PERMANENT SIGNING PLAN – HALL AVENUE – STA. 38+50 TO E.O.P.	PSP–6	1006					
NOTICE TO DRAWING HOLDER				NO. REVISIONS		DRAWING INFORMATION		DRAWING INDEX					
NEEL–SCHAFFER, 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.				DATE	BY	DESCRIPTION	N–S PROJECT NO.: NS.16214.000						
							FILENAME: 16214_Index.dwg						
							SCALE: NO SCALE						
							SURVEYED BY:						
							DSGN: GPC						
							DATE: 06/2022						
							DRWN: JPF						
							DATE: 06/2022						
							CHKD: GPC						
							DATE: 08/2022						
			QA/QC: MWE										
			DATE: 08/2022										
HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI										WORKING NUMBER: DI-1		DRAWING NUMBER: 2	

DESCRIPTION OF SHEET

WKG.
NO.

SHT.
NO.

TRAFFIC SIGNAL DESIGN SHEETS AND DETAILS (17)

TRAFFIC SIGNAL ESTIMATED QUANTITIES AND NOTES

TRAFFIC SIGNAL INSTALLATION, WEST PINE STREET / HALL AVENUE

TRAFFIC SIGNAL WIRING & CONDUIT SCHEMATIC, WEST PINE STREET / HALL AVENUE

TRAFFIC SIGNAL DEMOLITION, WEST PINE STREET / 6TH AVENUE

TRAFFIC SIGNAL INSTALLATION, HALL AVENUE / WALNUT STREET

TRAFFIC SIGNAL WIRING & CONDUIT SCHEMATIC, HALL AVENUE / WALNUT STREET

TRAFFIC SIGNAL GENERAL NOTES

TRAFFIC SIGNAL HEADS, TRAFFIC SIGNAL SIGNS AND WIND SPEEDS

CURVED MAST ARM AND PEDESTAL POLE DETAILS

SIGNAL POLE AND PEDESTAL POLE FOUNDATION DETAILS

TRAFFIC SIGNAL GROUNDING DETAILS

CONTROLLER CABINET AND POWER SERVICE DETAILS

POWER SERVICE PEDESTAL

PULL BOX AND CONDUIT TRENCHING DETAILS

DETECTION INSTALLATION FOR TRAFFIC SIGNALS

STREET NAME SIGN DETAILS

TRAFFIC CONTROL PLAN (TYPICAL SIGNAL INSTALLATION)

TSI-EQ

TSI-1

TSI-2

TSI-3

TSI-4

TSI-5

TSD-1

TSD-2

TSD-3C

TSD-4

TSD-5

TSD-6

TSD-7

TSD-8

TSD-9GS

TSD-10

TSD-11

2001

2002

2003

2004

2005

2006

2007

2008

2009

2010

2011

2012

2013

2014

2015

2016

2017

LN-1

LP-1

LP-2

LP-3

LP-4

LP-5

LP-6

LD-1

LD-2

LD-3

LD-4

LD-5

LD-6

LEQ-1

LEQ-2

4001

4002

4003

4004

4005

4006

4007

4008

4009

4010

4011

4012

4013

4014

4015

LS-1

LS-2

LS-3

LS-4

LS-5

LS-6

LS-7

5001

5002

5003

5004

5005

5006

5007

LANDSCAPING PLAN AND DETAILS (7)

LANDSCAPE PLAN - WEST PINE STREET - B.O.P. TO E.O.P.

LANDSCAPE PLAN - HALL AVENUE - STA. 11+00 TO STA. 19+00

LANDSCAPE PLAN - MARTIN LUTHER KING BLVD. - STA. 100+00 TO STA. 106+24.58

LANDSCAPE PLAN - HALL AVENUE - STA. 19+00 TO STA. 25+50

LANDSCAPE PLAN - HALL AVENUE - STA. 25+50 TO STA. 38+50

LANDSCAPE PLAN - HALL AVENUE - STA. 38+50 TO E.O.P.

VEGETATION SCHEDULE

DESCRIPTION OF SHEET

WKG.
NO.

SHT.
NO.

MDOT STANDARD DRAWINGS (33)

CONCRETE ISLAND PAVEMENT DETAILS

PAVEMENT MARKING DETAILS FOR 2-LANE & 4-LANE ROADWAYS

PAVEMENT MARKING DETAILS FOR 3-LANE, 4-LANE, & 5-LANE UNDIVIDED ROADWAYS

PAVEMENT MARKING LEGEND DETAILS

TYPICAL PLACEMENT OF WARNING SIGNS & MARKINGS AT RAILROAD HIGHWAY GRADE CROSSINGS

TYPICAL TEMPORARY EROSION/SEDIMENT CONTROL APPLICATIONS

DETAILS OF SEDIMENT BARRIER APPLICATIONS

DETAILS OF SILT FENCE INSTALLATION

DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS

DETAILS OF EROSION CONTROL WATTLE DITCH CHECK

TYPICAL APPLICATIONS AND DETAILS FOR INLET CONSTRUCTION

INLET PROTECTION DETAILS OF WATTLES

INLET PROTECTION DETAILS OF SANDBAGS

STABILIZED CONSTRUCTION ENTRANCE

STANDARD ROADSIDE SIGNS

STANDARD ROADSIDE SIGNS

STANDARD ROADSIDE SIGN ASSEMBLY AND INSTALLATION

STANDARD ROADSIDE SIGN ASSEMBLY AND INSTALLATION

TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)

SHORT DURATION CLOSING OF TWO-LANE TWO-WAY HIGHWAYS

HIGHWAY SIGN BARRICADE DETAILS FOR CONSTRUCTION PROJECTS

DRIVEWAYS, CURB & GUTTER & SIDEWALK

CURB RAMPS - RAMP DESIGN ELEMENTS

CURB RAMPS - PLACEMENT DETAILS

CURB RAMPS - PLACEMENT DETAILS

CURB RAMPS - DETECTABLE WARNING DETAILS

CONCRETE PIPE COLLAR

JUNCTION BOX FOR PIPE CULVERTS

JUNCTION BOX TYPE 2 FOR TRAFFIC LOAD (MAXIMUM "W" = 9'-3")

BRANCH CONNECTIONS

STORM SEWER INLET - TYPE SS-2

DROP INLET AND GRATE DETAILS FOR PIPE AND BOX CULVERTS

FLARED END SECTION FOR CONCRETE PIPE

CIP-1

PM-1

PM-2

PM-6

PM-7

ECD-1

ECD-2

ECD-3

ECD-4

ECD-6

ECD-11

ECD-13

ECD-15

ECD-16

SN-3A

SN-3B

SN-4

SN-4A

TCP-1

TCP-6

TCP-8

SD-1

CR-1

CR-2

CR-3

CR-4

PC-1

JB-1

JB-2

BC-1

SS-2

B-9

FE-1

6011

6051

6052

6056

6057

6101

6102

6103

6104

6106

6111

6113

6115

6116

6304

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6358

6419

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6503

6504

6506

6507

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6527

6530

BOX CULVERT STANDARD DRAWINGS (9)

CULVERT DRAWING EXTENSION DETAILS FOR LENGTHENING EXISTING BOX CULVERTS

BASIC BARREL DETAILS FOR SINGLE CELL BOX CULVERT

BASIC BARREL DETAILS FOR SINGLE CELL BOX CULVERT

BASIC BARREL DETAILS FOR SINGLE CELL BOX CULVERT

WINGS WITH 3:1 SLOPE FOR BASIC CULVERT DRAWING - SINGLE CELL - 45° SKEW DETAILS

WINGS WITH 3:1 SLOPE FOR BASIC CULVERT DRAWING - SINGLE CELL - 45° SKEW DETAILS

WINGS WITH 3:1 SLOPE FOR BASIC CULVERT DRAWING - SINGLE CELL - 45° SKEW DETAILS

WINGS WITH 3:1 SLOPE FOR BASIC CULVERT DRAWING - SINGLE CELL - 45° SKEW DETAILS

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WINGS WITH 3:1 SLOPE FOR BASIC CULVERT DRAWING - SINGLE CELL - 45° SKEW DETAILS

ICX-1

IBS-6

IBS-6

IBS-6

IWS-3W-45

IWS-3W-45

IWS-6-3W-45

IWS-6-3W-45

IWS-6-3W-45

IWS-6-3W-45

7010

7011

7012

7013

7100

7101

7102

7103

7104

SPECIAL DESIGN BRIDGE SHEETS (61)

(SEE BRIDGE & RETAINING WALL SHEET BEGINNING ON 8001)

8001-8061

TOTAL NUMBER OF SHEETS (258)

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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

NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION

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FILENAME: 16214_index.dwg	
SCALE: NO SCALE	
SURVEYED BY:	
DSGN: GPC	DATE: 06/2022
DRWN: JPF	DATE: 06/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

SECRET PAUL CHOPIN
16904
STATE OF MISSISSIPPI
08/12/2022

NEEL-SCHAFFER
Solutions you can build upon

DRAWING INDEX

WORKING NUMBER:
DI-2

DRAWING NUMBER:
3

GENERAL NOTES

1. THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2013 EDITION, AS AMENDED, SHALL BE THE STANDARD SPECIFICATIONS FOR THE CONSTRUCTION OF THIS PROJECT UNLESS OTHERWISE INDICATED OR AMENDED IN THE SPECIAL PROVISIONS, PROPOSAL AND CONTRACT DOCUMENTS.
 2. EXISTING UNDERGROUND UTILITY LINES ARE SHOWN ON THE DRAWINGS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE ENGINEER CANNOT AND DOES NOT WARRANT THAT THIS INFORMATION IS COMPLETE OR ACCURATE. THE CONTRACTOR MUST COORDINATE DIRECTLY WITH THE INVOLVED UTILITY OWNERS TO HAVE UNDERGROUND UTILITY LINES FIELD LOCATED IN ADVANCE OF CONSTRUCTION.
 3. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING GRADES AND MAKING ADJUSTMENTS AS NECESSARY WITH THE APPROVAL OF THE PROJECT ENGINEER.
 4. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROTECT EXISTING STRUCTURES SUCH AS PIPES, INLETS, APRONS, BRIDGES, ETC. FROM DAMAGE WHICH MIGHT OCCUR DURING CONSTRUCTION. EXTREME CARE SHOULD BE EXERCISED IN UNDERCUT AREAS AND THE UNDERCUT DEPTH MAY BE ADJUSTED AT CROSS DRAINS, AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL REPLACE OR REPAIR, AS DIRECTED BY THE ENGINEER, ANY STRUCTURES DAMAGED DURING THE LIFE OF THE CONTRACT. NO PAYMENT WILL BE MADE FOR REPLACEMENT OR REPAIR OF DAMAGED ITEMS.
 5. WORK ON STRUCTURES 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. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PLACE 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 PRICE BID FOR CONTRACT ITEMS.
 6. ANY WELL POINTS, COFFERDAMS, OR OTHER ACCEPTABLE METHODS FOR DEWATERING REQUIRED TO PERMIT CONSTRUCTION OF STRUCTURES OR PIPE CULVERTS UNDER DRY CONDITIONS SHALL BE COST ABSORBED IN OTHER BID ITEMS.
 7. REMOVAL OF RAISED PAVEMENT MARKERS IS NOT CONSIDERED A SEPARATE PAY ITEM.
 8. REMOVAL OF OBJECT MARKERS IS NOT CONSIDERED A SEPARATE PAY ITEM.
 9. VOIDS CREATED BY THE REMOVAL OF POSTS, CONCRETE ANCHORS, FOOTINGS, ETC., SHALL BE BACKFILLED AND TAMPED IN ACCORDANCE WITH SECTION 203 OF THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
 10. ALL SIZES OF FLARED END SECTIONS MAY BE FURNISHED WITH EITHER BELL AND SPIGOT OR TONGUE AND GROOVE JOINTS.
 11. TOE WALLS ARE REQUIRED AT ALL UPSTREAM AND DOWNSTREAM FLARED END SECTIONS.
 12. ALL STORM DRAINAGE STRUCTURES SHALL BE CAST-IN-PLACE.
 13. ALL PIPE JOINTS ARE TO BE WRAPPED IN 24-INCH WIDE TYPE V GEOTEXTILE FABRIC. ALL PICKUP HOLES SHALL BE PLUGGED AND COVERED WITH TYPE V GEOTEXTILE FABRIC, THE COST OF WHICH SHALL BE ABSORBED IN OTHER BID ITEMS.
 14. FLUORESCENT ORANGE SHEETING SHALL BE USED ON ALL CONSTRUCTION AND TRAFFIC CONTROL SIGNS EXCEPT FOR THOSE DESIGNATED IN PLANS TO BE BLACK LEGEND AND BORDER ON WHITE BACKGROUND.
 15. THE CONTRACTOR IS TO REMOVE AND RESET ANY SIGNS WHICH CONFLICT WITH CONSTRUCTION (NOT A SEPARATE PAY ITEM).
 16. THE LOCATION AND SPACING OF BOTH TEMPORARY AND PERMANENT SIGNS, SHOWN IN THE PLANS, ARE APPROXIMATE AND MAY BE ADJUSTED AS NECESSARY TO FIT FIELD CONDITIONS. CONTRACTOR SHALL STAKE LOCATIONS FOR APPROVAL BY ENGINEER.
 17. ALL POST LENGTHS FOR SIGNS SHALL BE VERIFIED IN THE FIELD PRIOR TO FABRICATION.
 18. THE CONTRACTOR SHALL COVER ANY TEMPORARY TRAFFIC CONTROL SIGNS SHOWN IN THE TRAFFIC CONTROL PLAN THAT DO NOT APPLY TO THE CURRENT PHASE.
 19. WHERE MILLING IS REQUIRED, THE CONTRACTOR SHALL PROVIDE OUTLETS IN THE EXISTING SHOULDERS AT SUFFICIENT INTERVALS TO PREVENT POOLING OR STANDING WATER ON THE MILLED SURFACE, THE COST OF WHICH SHALL BE ABSORBED IN OTHER ITEMS BID.
 20. PRIOR TO EARTHWORK OPERATIONS, THE EXISTING TOP 4" TOPSOIL IS TO BE STRIPPED AND STOCKPILED. AFTER THE GRADING OPERATIONS ARE COMPLETED, SAID TOPSOIL SHALL BE PLACED ON ALL AREAS THAT ARE NOT TO BE PAVED OR OTHERWISE PROTECTED. ALL COSTS ASSOCIATED WITH STRIPPING, HAULING, STOCKPILING, AND PLACEMENT OF THE EXISTING TOPSOIL WILL BE PAID UNDER PAY ITEM 211-A, TOPSOIL FOR SLOPE TREATMENT FROM ROW. ANY ADDITIONAL TOPSOIL REQUIRED FOR SLOPE TREATMENT TO BE PAID FOR UNDER PAY ITEM 211-B, TOPSOIL FOR SLOPE TREATMENT, CONTRACTOR FURNISHED.

***NO BURNING WILL BE ALLOWED ON SITE.

***NO WORK WILL BE ALLOWED ON SUNDAYS DURING THE LIFE OF THE CONTRACT.

 21. THE EROSION CONTROL DEVICES REFERENCED IN THESE PLANS ARE A MINIMUM REQUIREMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SILT DOES NOT LEAVE THE RIGHT OF WAY OR CONTAMINATE WATERS OF THE U.S. DURING CONSTRUCTION. THE CONTRACTOR SHALL SUBMIT AN EROSION CONTROL PLAN PRIOR TO COMMENCEMENT OF WORK AND MAINTAIN THE PLAN DURING CONSTRUCTION. ANY SILT BASINS NOT SHOWN IN THE PLANS SHALL BE INCLUDED IN THE CONTRACTOR'S EROSION CONTROL PLAN PRIOR TO SUBMITTING FOR APPROVAL.
 22. TEMPORARY STRIPING SHALL CONFORM TO FINISHED STRIPE SPECIFICATIONS FOR ALIGNMENT, NEATNESS, AND STRAIGHTNESS.
 23. ALL ITEMS OF WORK ASSOCIATED WITH THE INSTALLATION OF A CONSTRUCTION ENTRANCE SHALL BE ABSORBED IN OTHER ITEMS OF WORK.
 24. ALL SIGNS, SIGNALS, PAVEMENT MARKINGS AND TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (CURRENT EDITION).
 25. ALL RAISED OBJECTS SHALL BE PLACED A MINIMUM OF 2 FEET BEHIND THE FACE OF CURB.
 26. CONTRACTOR SHALL MAKE THE APPLICATION FOR POWER SERVICE AND COORDINATE WITH CITY OFFICIALS IN ADVANCE OF REQUIRING THE ELECTRICAL SERVICE.
 27. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THROUGH AND LOCAL TRAFFIC IN ACCORDANCE WITH THE TRAFFIC CONTROL PLAN AND THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
 28. THE CONTRACTOR SHALL PROVIDE ACCESS (INGRESS AND EGRESS) TO LOCAL BUSINESSES AND HOMEOWNERS AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS REQUIRED TO NOTIFY BUSINESSES AND HOMEOWNERS 48 HOURS IN ADVANCE OF ACCESS RESTRICTIONS.
 29. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE VERIFICATION, PROTECTION, AND RELOCATION OF CONTROL BENCHMARKS DURING CONSTRUCTION. NO ADDITIONAL PAYMENT WILL BE MADE FOR RELOCATION OF BENCHMARKS.
 30. SEE BELOW FOR A LIST OF PUBLIC UTILITIES CONTACT INFORMATION:

CITY OF HATTIESBURG	
(WATER & SEWER)	- (601)545-4530
AT&T	- (601)310-0704
MS POWER COMPANY	- (601)426-4800
XFINITY (COMCAST)	- (601)874-1213
SPIRE GAS	- (601)549-9071
CSPIRE	- (601)624-4026
 31. THE CONTRACTOR SHALL PROHIBIT THE FOLLOWING ACTIVITIES WITHIN THE TREE PROTECTION ZONE (AREA BETWEEN THE TRUNK AND DRIPLINE) INCLUDE:
 - a. PARKING VEHICLES OR EQUIPMENT, STORAGE OF BUILDING MATERIALS, REFUSE, OR EXCAVATED SOILS, OR DUMPING POISONOUS MATERIAL ON OR AROUND TREES AND ROOTS. POISONOUS MATERIALS INCLUDE, BUT ARE NOT LIMITED TO PAINT, PETROLEUM PRODUCTS, CONCRETE, STUCCO MIX, DIRTY WATER OR ANY MATERIAL THAT MAY BE HARMFUL TO TREE HEALTH.
 - b. THE USE OF TREE TRUNKS AS A BACKSTOP, WINCH SUPPORT, ANCHORAGE, AS A TEMPORARY POWER POLE, SIGNPOST OR OTHER SIMILAR FUNCTION.
 - c. CUTTING OF TREE ROOTS BY UTILITY TRENCHING, FOUNDATION DIGGING, PLACEMENT OF CURBS AND TRENCHES, OR OTHER MISCELLANEOUS EXCAVATIONS WITHOUT PRIOR APPROVAL OF THE ENGINEER.
 - d. SOIL DISTURBANCE OR GRADE CHANGE
 - e. DRAINAGE CHANGES
 32. IN GENERAL, ALL TREES SHALL BE REMOVED FROM RIGHT-OF-WAY. ANY TREES TO REMAIN WITHIN RIGHT-OF-WAY SHALL BE MARKED BY THE ENGINEER. REMOVAL OF TREES LARGER THAN 12" DIAMETER WILL BE MEASURED AND PAID UNDER 202-B085, REMOVAL OF TREES. REMOVAL OF TREES LESS THAN 12" DIAMETER SHALL BE PAID UNDER 201-A001, CLEARING AND GRUBBING.
 33. SAWCUTS REQUIRED SHALL NOT BE MEASURED FOR SEPARATE PAYMENT. COST FOR SAWCUTS SHALL BE ABSORBED IN OTHER ITEMS.
 34. ALL CORRUGATED PLASTIC PIPE SHALL BE PERFORATED AND SOCK-WRAPPED (COST ABSORBED).
 35. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS, INSURANCE AND PERMISSIONS TO PERFORM WORK AND STORE MATERIALS AND EQUIPMENT WITHIN RAILROAD RIGHT-OF-WAY.
 36. COLORS USED ON THE PLAN/PROFILE SHEETS AND OTHER PLAN SHEETS ARE INTENDED TO VISUALLY EASE THE LOCATION OF ELEMENTS FOR USERS OF THESE DRAWINGS. ALTHOUGH THE INTENT IS TO CATEGORIZE EVERYTHING AS EITHER EXISTING OR PROPOSED, IT IS THE END USER'S RESPONSIBILITY TO ENSURE ALL ELEMENTS ARE INTERPRETED CORRECTLY REGARDLESS OF COLOR.
 37. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING AND RELOCATING MAIL BOXES AS NECESSARY TO MAINTAIN CONTINUOUS MAIL SERVICE THROUGHOUT THE LIFE OF THE PROJECT, THE COST OF WHICH SHALL BE ABSORBED IN OTHER BID ITEMS.

GOLD SHEET REQUIREMENTS:
A LARGE PORTION OF THE EXISTING STAND OF TREES LOCATED SOUTH AND WEST OF 1002 WEST PINE STREET MUST BE RETAINED TO SERVE AS A VISUAL SCREEN IN ORDER TO DIMINISH THE VISUAL PRESENCE OF THE BRIDGE.
SEE DEMOLITION SHEETS AND PLAN/PROFILE SHEETS FOR CLEARING LIMITS.

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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				
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					DRWN: JPF	DATE: 01/2022			
					CHKD: GPC	DATE: 08/2022			
					QA/QC: MWE	DATE: 08/2022			
HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI						 NEEL-SCHAFFER <i>Solutions you can build upon</i>		GENERAL NOTES	
				WORKING NUMBER: GN-1		DRAWING NUMBER: 4			

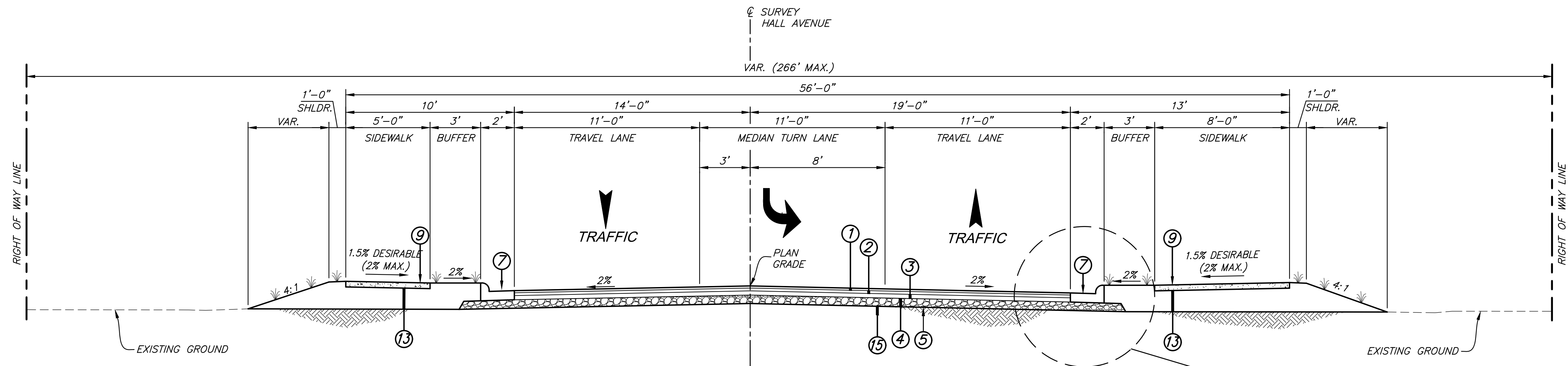
GENERAL NOTES

RAILROAD

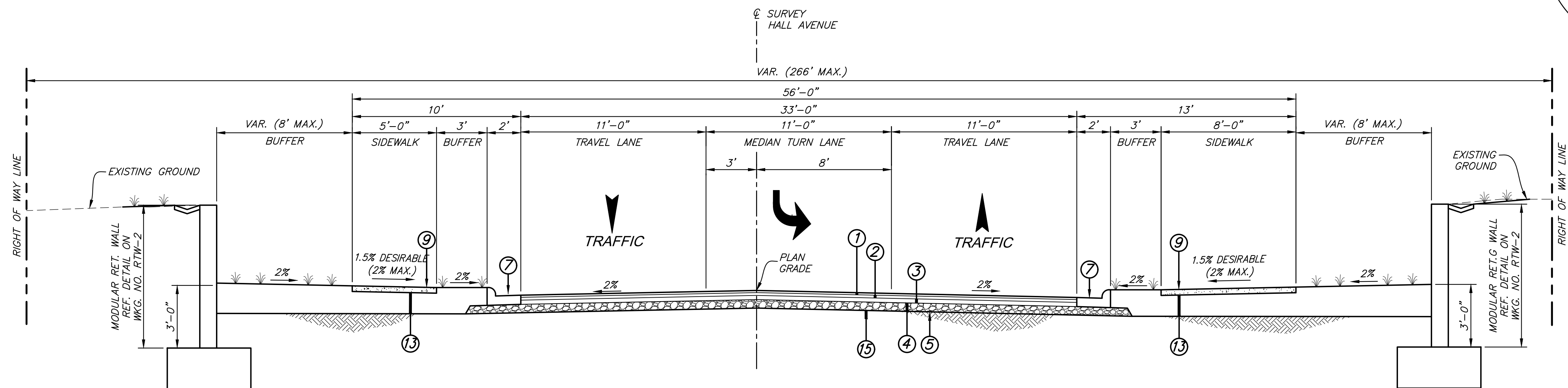
36. "ONE CALL" SERVICES DO NOT LOCATE BURIED RAILROAD SIGNAL AND COMMUNICATIONS LINES. THE CONTRACTOR SHALL CONTACT THE RAILROAD'S REPRESENTATIVE TWO (2) DAYS IN ADVANCE OF THOSE PLACES WHERE EXCAVATION, PILE DRIVING, OR HEAVY LOADS MAY DAMAGE RAILROAD UNDERGROUND LINES ON RAILROAD PROPERTY. UPON REQUEST FROM THE CONTRACTOR OR AGENCY, RAILROAD SIGNAL FORCES WILL LOCATE AND PAINT MARK OR FLAG RAILROAD UNDERGROUND SIGNAL, COMMUNICATION, AND POWER LINES IN THE AREA TO BE DISTURBED FOR THE CONTRACTOR. THE CONTRACTOR SHALL AVOID EXCAVATION OR OTHER DISTURBANCE OF THESE LINES WHICH ARE CRITICAL TO THE SAFETY OF THE RAILROAD AND THE PUBLIC. IF DISTURBANCE OR EXCAVATION IS REQUIRED NEAR A BURIED RAILROAD SIGNAL, COMMUNICATION, OR POWER LINE, THE LINE SHALL BE POTHOLED MANUALLY WITH CAREFUL HAND EXCAVATION BY THE CONTRACTOR AND PROTECTED BY THE CONTRACTOR DURING THE COURSE OF THE DISTURBANCE UNDER THE SUPERVISION AND DIRECTION OF A RAILROAD SIGNAL REPRESENTATIVE.
37. ALL WORK ON, OVER, UNDER, OR ADJACENT TO NORFOLK SOUTHERN RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE NORFOLK SOUTHERN "SPECIAL PROVISIONS FOR THE PROTECTION OF RAILWAY INTERESTS" DATED MARCH 11, 2021" (NS SPECIAL PROVISIONS)." THESE SPECIAL PROVISIONS MAY BE FOUND IN THE CURRENT EDITION OF THE NS "PUBLIC PROJECTS MANUAL" AT THE LINK BELOW:
([HTTP://NSCORP.COM/CONTENT/NSCORP/EN/TRANSPORTATION-TERMS/OTHER-REQUIREMENTS/PUBLIC-PROJECT-GUIDELINES.HTML](http://nscorp.com/content/nscorp/en/transportation-terms/other-requirements/public-project-guidelines.html))
38. FINAL GRADES OF THIS PROJECT WILL NOT CHANGE THE QUANTITY OR CHARACTER OF DRAINAGE FLOW IN THE RAILROAD RIGHT-OF-WAY OR IN THE DITCHES AND DRAINAGE STRUCTURES LOCATED THEREIN.
39. CONTRACTOR SHALL PROVIDE THE FLAGMAN A SMALL WORK AREA WITH A DESK/COUNTER AND CHAIR WITHIN THE FIELD/SITE TRAILER, INCLUDING THE USE OF BATHROOM FACILITIES, WHERE THE FLAGMAN CAN CHECK IN/OUT WITH THE PROJECT, AS WELL AS TO THE FLAGMAN'S HOME TERMINAL. THE WORK AREA SHOULD PROVIDE ACCESS TO TWO (2) ELECTRICAL OUTLETS FOR RECHARGING RADIO(S), AND A LAPTOP COMPUTER; AND HAVE THE ABILITY TO PRINT OFF NEEDED DOCUMENTATION AND ORDERS AS NEEDED AT THE FIELD/SITE TRAILER. THIS SHOULD AID IN MAXIMIZING THE FLAGMAN'S TIME AND EFFICIENCY ON THE PROJECT.
40. CONTRACTOR SHALL PROVIDE AS-BUILT DRAWINGS TO NORFOLK-SOUTHERN RAILROAD, SHOWING THE ACTUAL CLEARANCES AS CONSTRUCTED. DEPTH, SIZE, AND LOCATION OF ALL FOUNDATION COMPONENTS SHALL BE SHOWN ON THE DRAWINGS.

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		 NEEL-SCHAFFER <i>Solutions you can build upon</i>	GENERAL NOTES RAILROAD			
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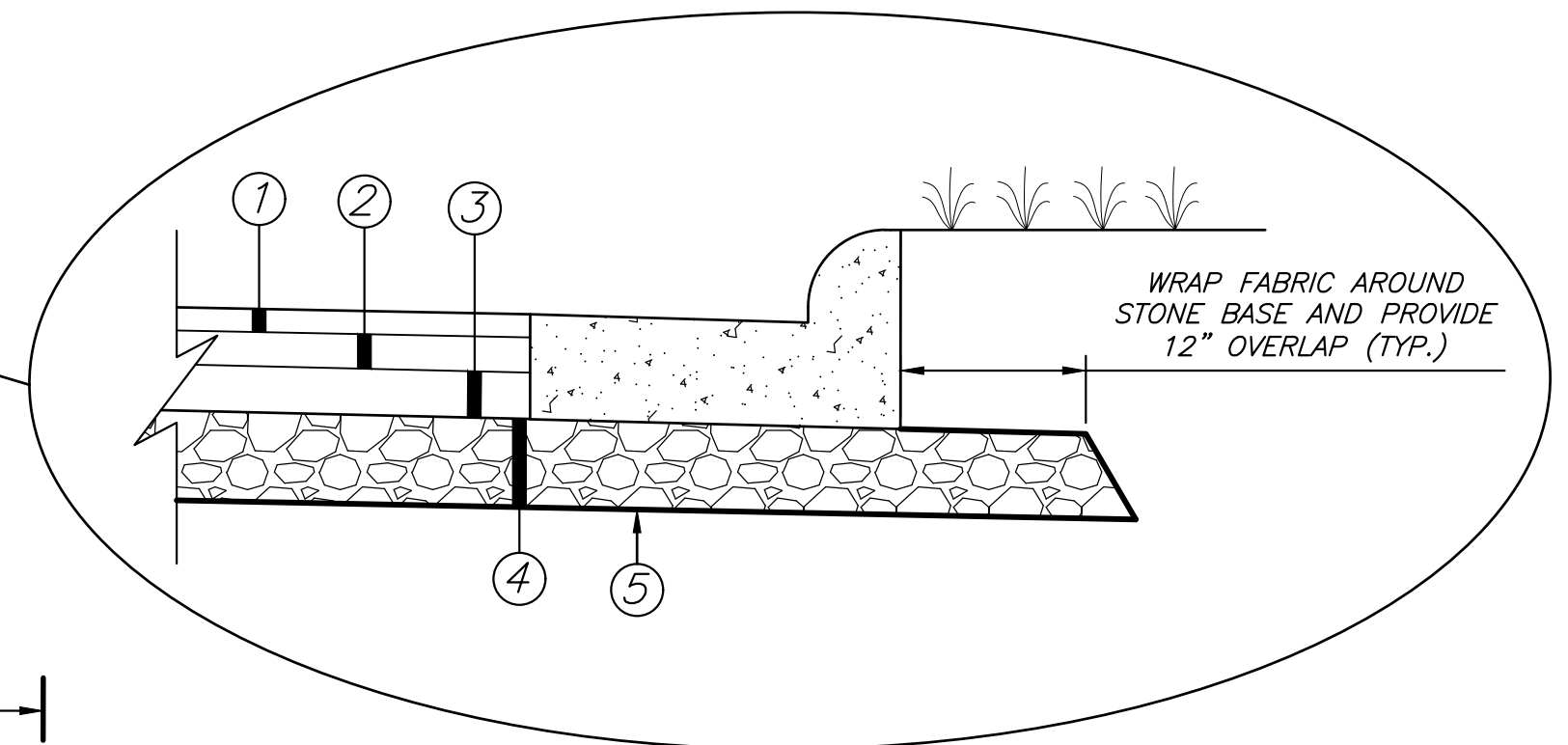
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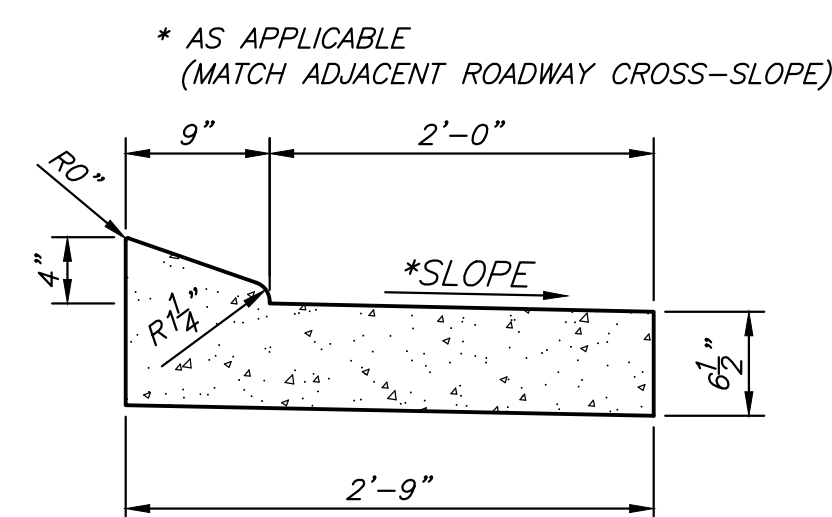
TYPICAL SECTION - HALL AVENUE
STA. 11+50 TO STA. 12+00



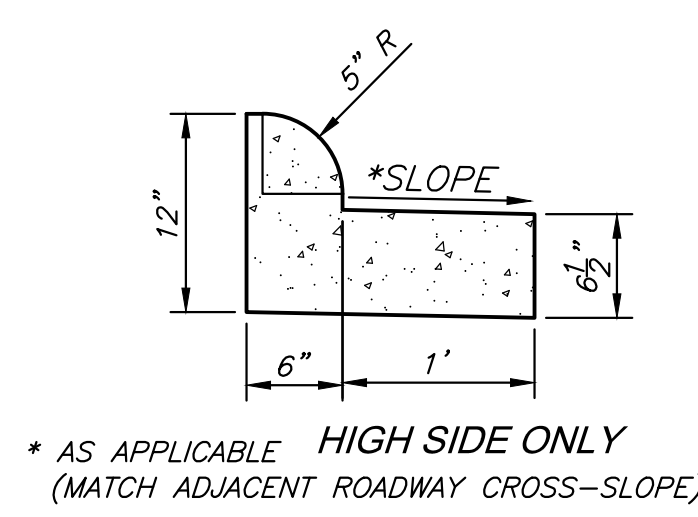
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STA. 10+68 TO STA. 11+50



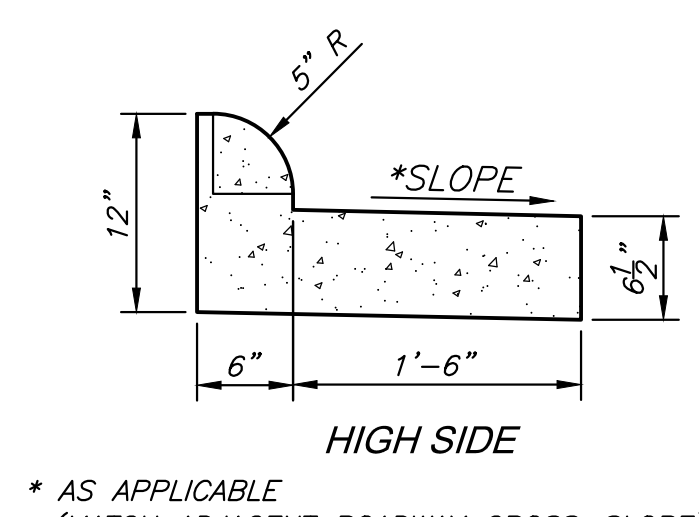
- Ⓐ EXISTING ROADWAY PAVEMENT
- ① 1.5" ASPHALT PAVEMENT, MT (9.5mm MIXTURE) (1@1.5") REQ'D.
- ② 2" ASPHALT PAVEMENT, MT (12.5mm MIXTURE) (1@2") REQ'D.
- ③ 3" ASPHALT PAVEMENT, MT (19.0mm MIXTURE) (1@3") REQ'D.
- ④ 6" CRUSHED STONE BASE
- ⑤ GEOTEXTILE FABRIC - TYPE V (NON-WOVEN)
- ⑥ TYPE "2" MODIFIED CONCRETE CURB AND GUTTER
- ⑦ TYPE "3A" MODIFIED "2" CONCRETE CURB AND GUTTER
- ⑧ CONCRETE HEADER CURB
- ⑨ CONCRETE SIDEWALK - 5" THICKNESS
- ⑩ 10" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT
- ⑪ VAR. DEPTH ASPHALT PAVEMENT, MT (9.5mm) LEVELING REQ'D.
- ⑫ VAR. DEPTH FINE MILLING OF ASPHALT PAVEMENT
- ⑬ VAR. DEPTH BORROW B9
- ⑭ VAR. DEPTH BORROW B3
- ⑮ 6" SOIL-CEMENT TREATED COURSE (AS REQ'D. BY ENGINEER)
- 🌿 AREA TO BE TREATED IN ACCORDANCE WITH LANDSCAPE PLANS



TYPE "2" MODIFIED
DETAIL OF COMBINATION CURB & GUTTER
NOT TO SCALE



TYPE "3A" MODIFIED "1"
DETAIL OF COMBINATION CURB & GUTTER
NOT TO SCALE



TYPE "3A" MODIFIED "2"
DETAIL OF COMBINATION CURB & GUTTER
NOT TO SCALE

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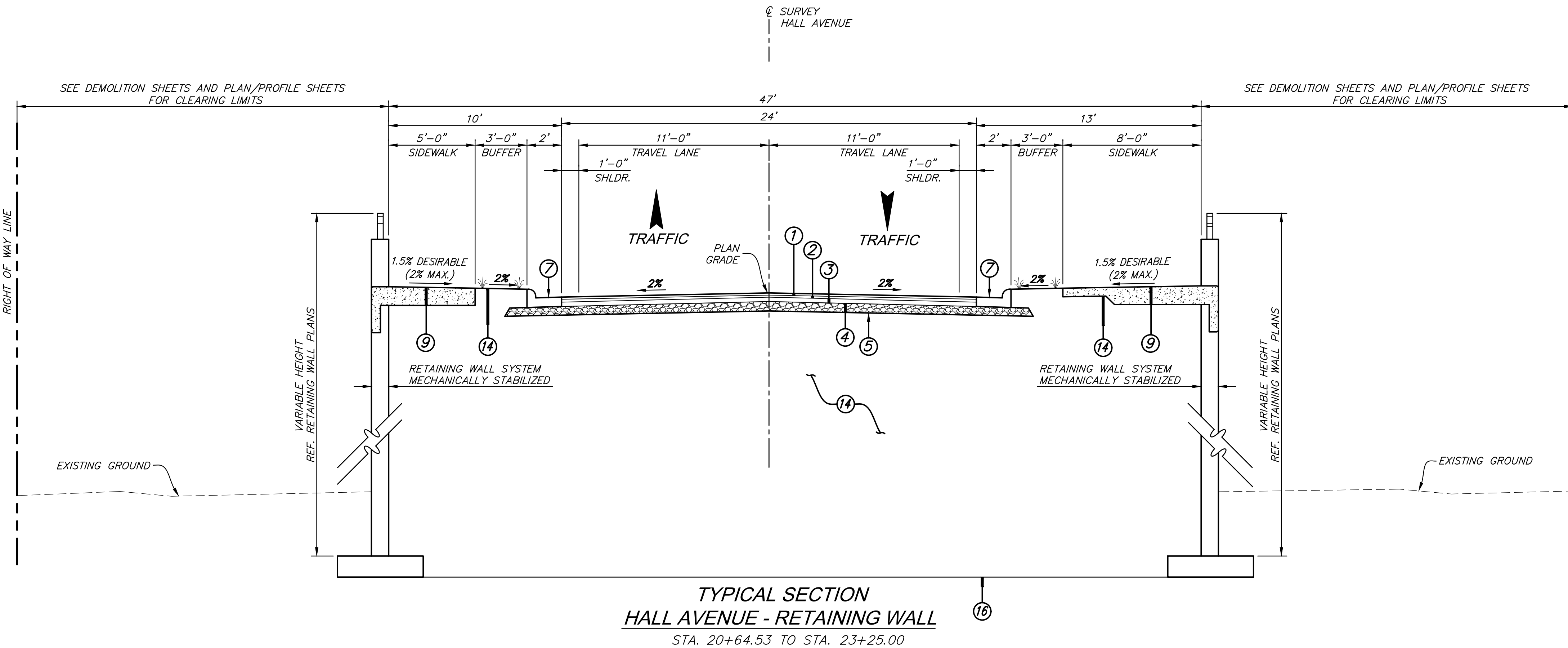
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

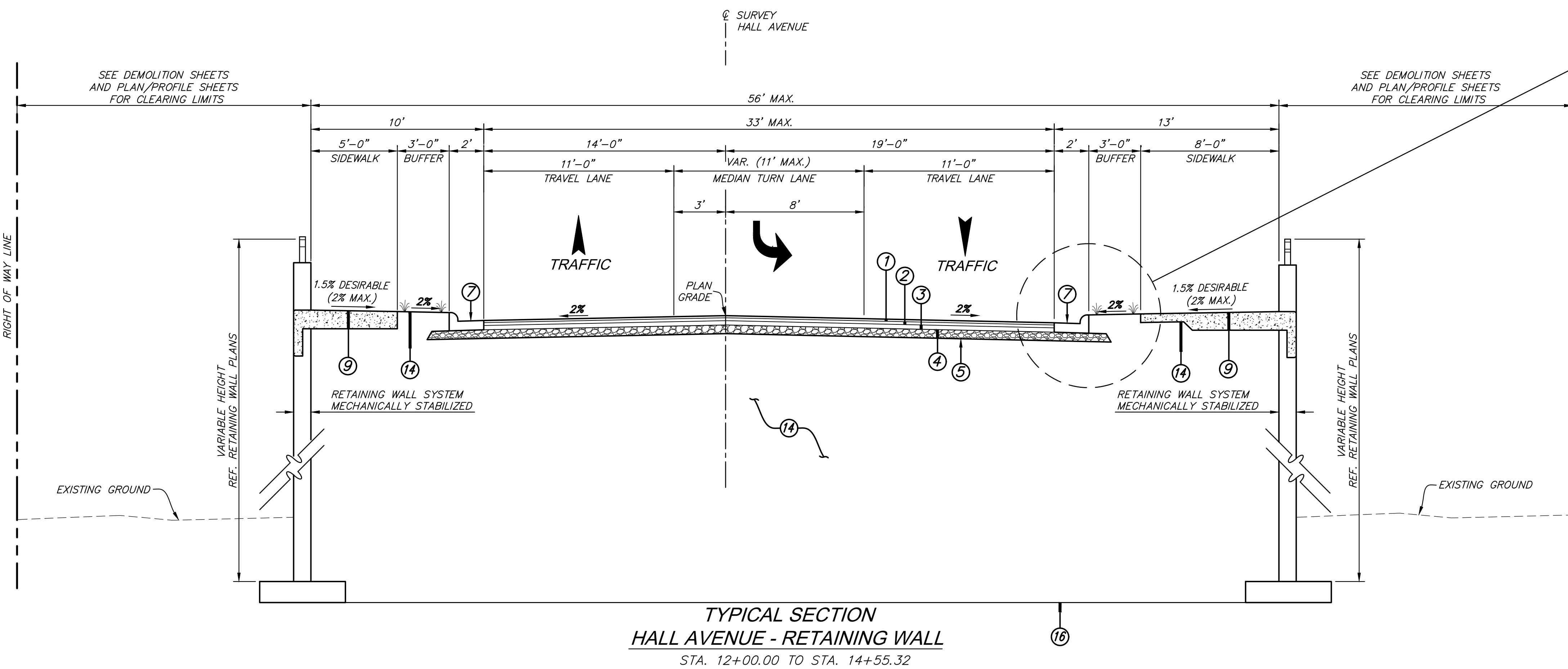
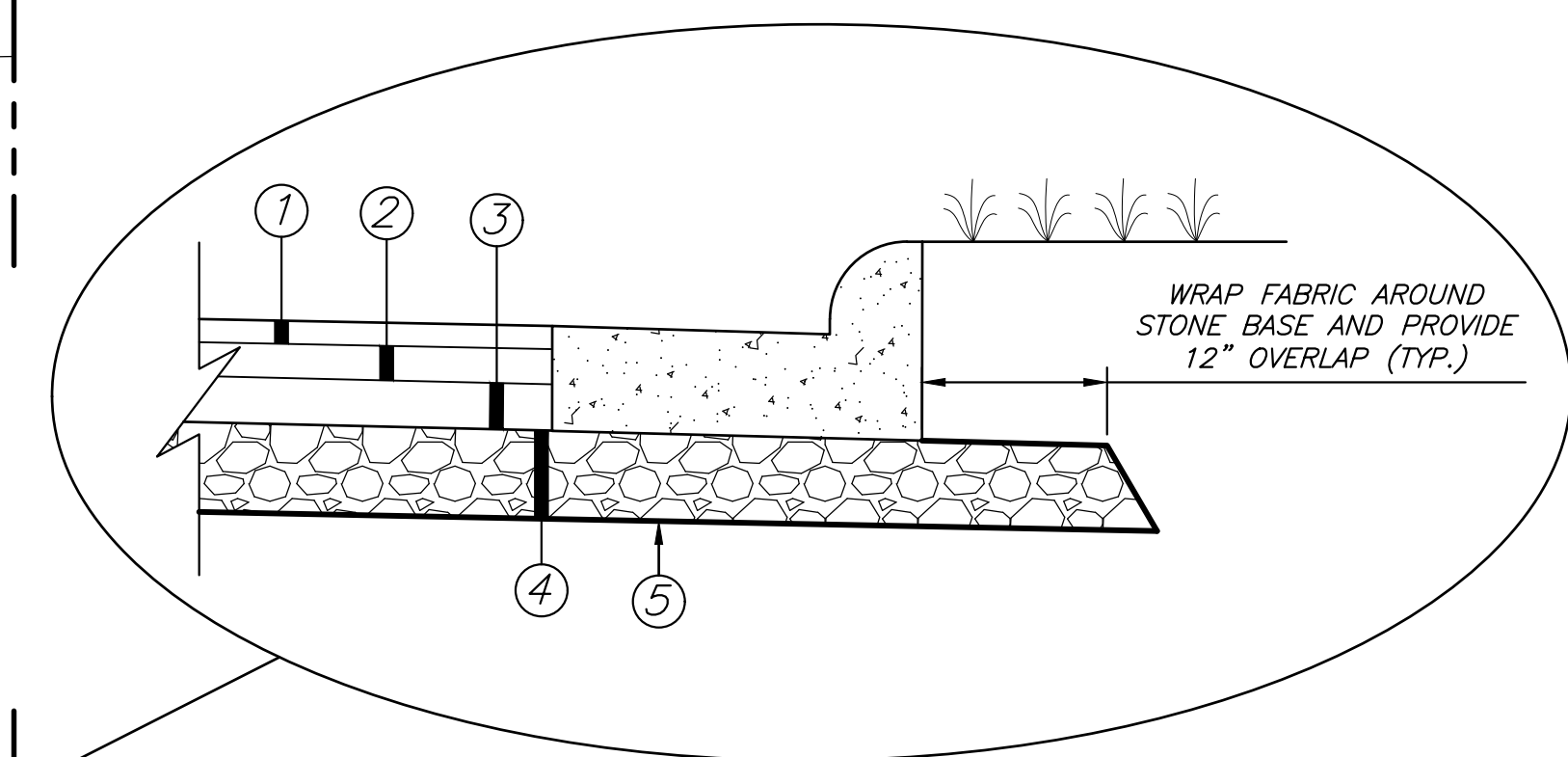


TYPICAL SECTIONS

WORKING NUMBER:	DRAWING NUMBER:
TS-2	7



NOTES:
ANY REQUIRED ADDITIONAL UNDERCUT SHALL BE MEASURED FROM THE BOTTOM OF RETAINING WALL FOOTING.



- ④ EXISTING ROADWAY PAVEMENT
- ① 1.5" ASPHALT PAVEMENT, MT (9.5mm MIXTURE) (1@1.5") REQ'D.
- ② 2" ASPHALT PAVEMENT, MT (12.5mm MIXTURE) (1@2") REQ'D.
- ③ 3" ASPHALT PAVEMENT, MT (19.0mm MIXTURE) (1@3") REQ'D.
- ④ 6" CRUSHED STONE BASE
- ⑤ GEOTEXTILE FABRIC - TYPE V (NON-WOVEN)
- ⑥ TYPE "2" MODIFIED CONCRETE CURB AND GUTTER
- ⑦ TYPE "3A" MODIFIED "2" CONCRETE CURB AND GUTTER
- ⑧ CONCRETE HEADER CURB
- ⑨ WALL COPING & SIDEWALK (PAID SEPARATELY AS CONCRETE AND REINFORCEMENT FOR RETAINING WALL COPING)
- ⑩ 10" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT
- ⑪ VAR. DEPTH ASPHALT PAVEMENT, MT (9.5mm) LEVELING REQ'D.
- ⑫ VAR. DEPTH FINE MILLING OF ASPHALT PAVEMENT
- ⑬ VAR. DEPTH BORROW B9
- ⑭ VAR. DEPTH BORROW B3 REINFORCED FILL (NOT A SEPARATE PAY ITEM)
- ⑮ 6" SOIL-CEMENT TREATED COURSE (AS REQ'D. BY ENGINEER)
- ⑯ ADDITIONAL UNDERCUT MAY BE REQ'D. - SEE RETAINING WALL DWGS.
- 🌿 AREA TO BE TREATED IN ACCORDANCE WITH LANDSCAPE PLANS

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.

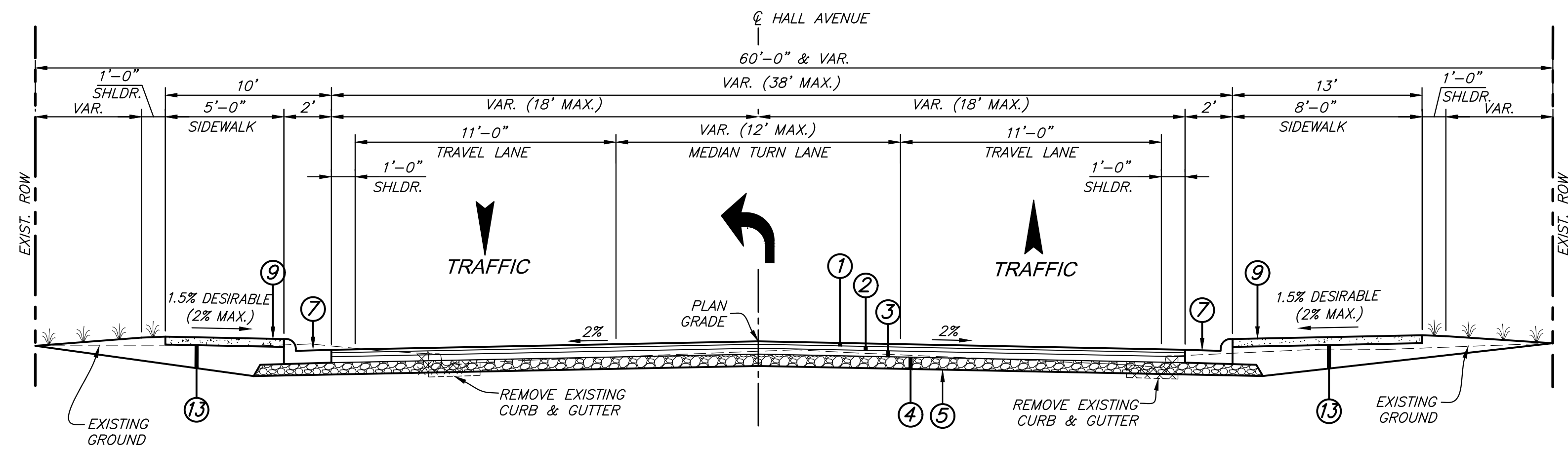
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				SURVEYED BY:	
				DSGN: GPC	DATE: 01/2022
				DRWN: JPF	DATE: 01/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

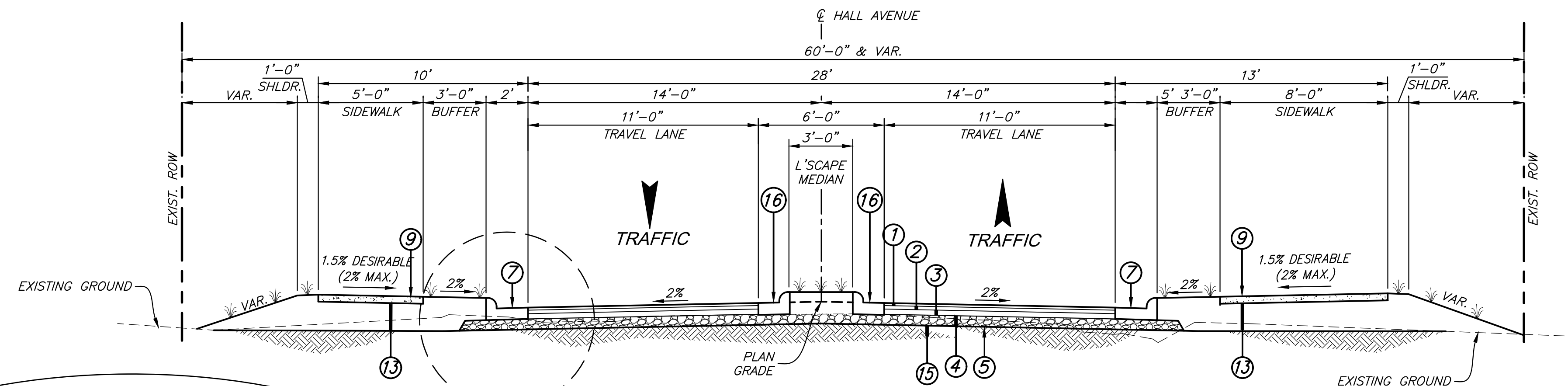


TYPICAL SECTIONS

WORKING NUMBER:	DRAWING NUMBER:
TS-3	8



TYPICAL SECTION - HALL AVENUE
STA. 41+94.36 TO STA. 46+13.45

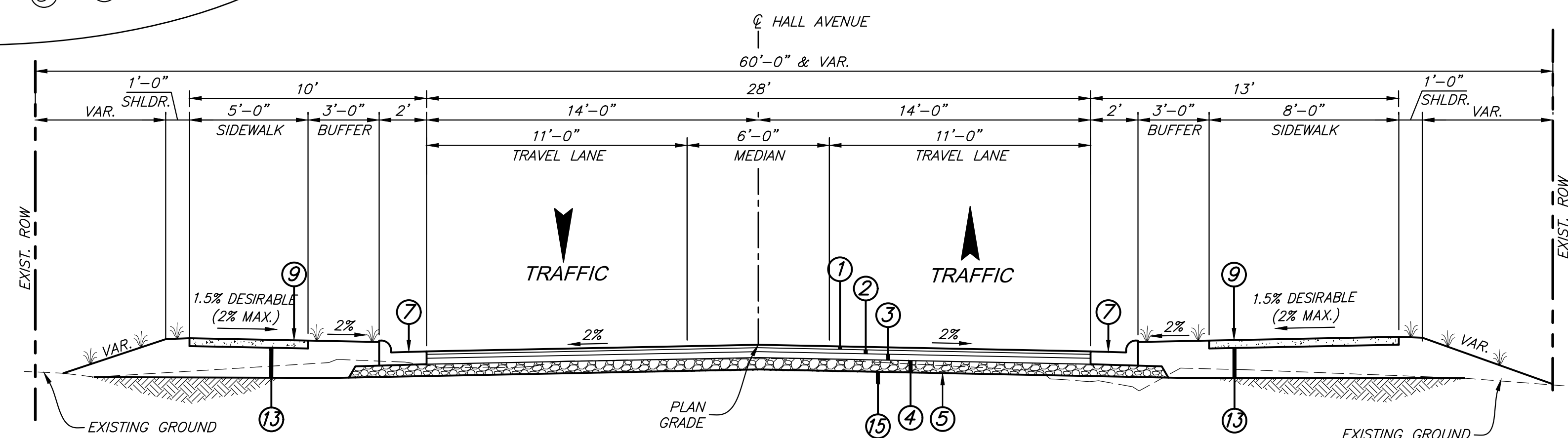


TYPICAL SECTION - HALL AVENUE
STA. 24+21.69 TO STA. 27+78.85
STA. 29+04.89 TO STA. 32+52.73
STA. 33+78.73 TO STA. 37+40.09
STA. 38+64.62 TO STA. 41+94.36

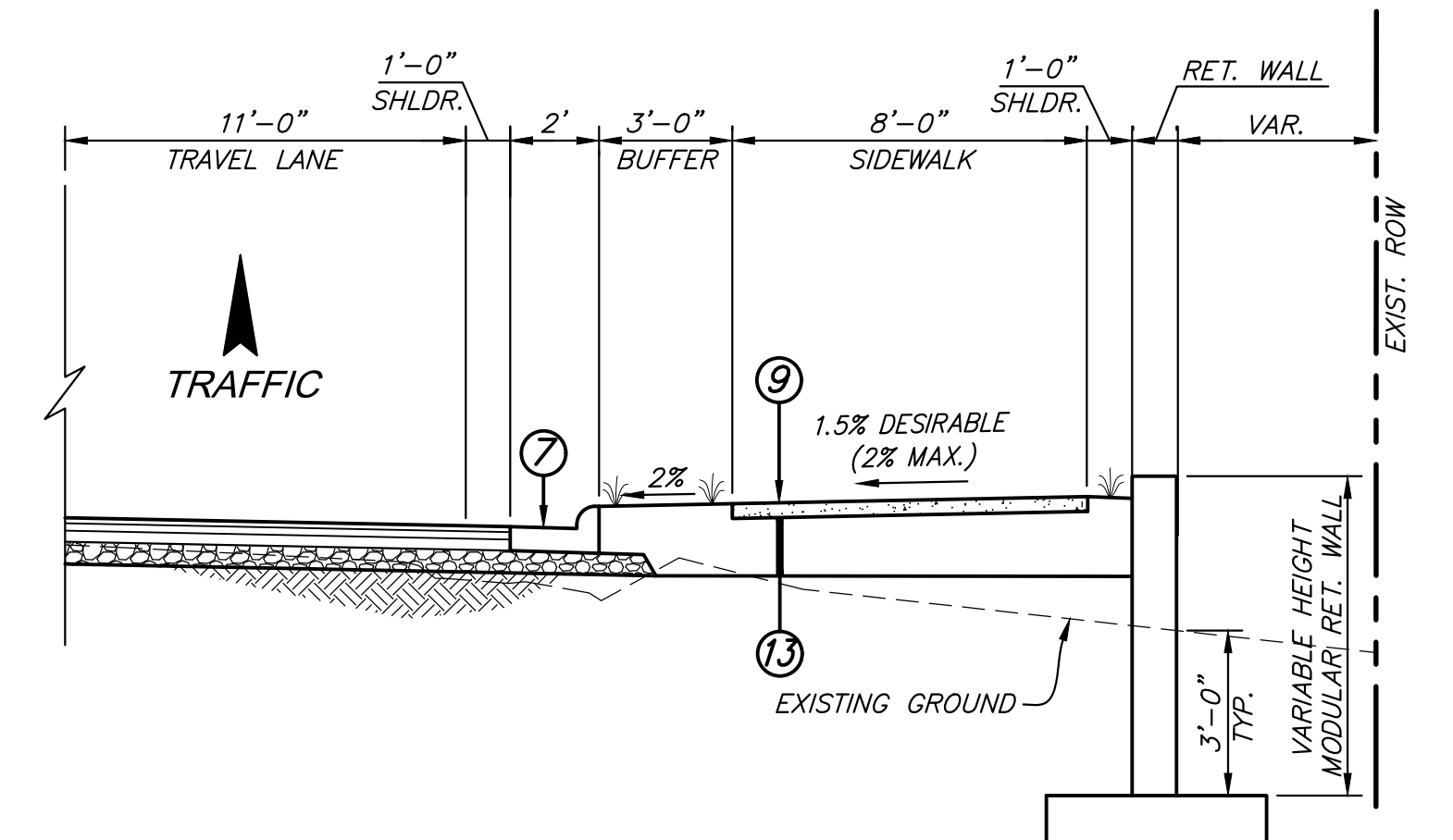
NOTES:
QUANTITIES FOR CHEMICAL TREATMENT OF SUBGRADE MATERIAL
SHALL BE BASED ON SOIL CEMENT (5%).

ADDITIONAL AREAS MAY REQUIRE TREATMENT IF UNSUITABLE SOILS
ARE ENCOUNTERED OR AS DIRECTED BY THE ENGINEER.

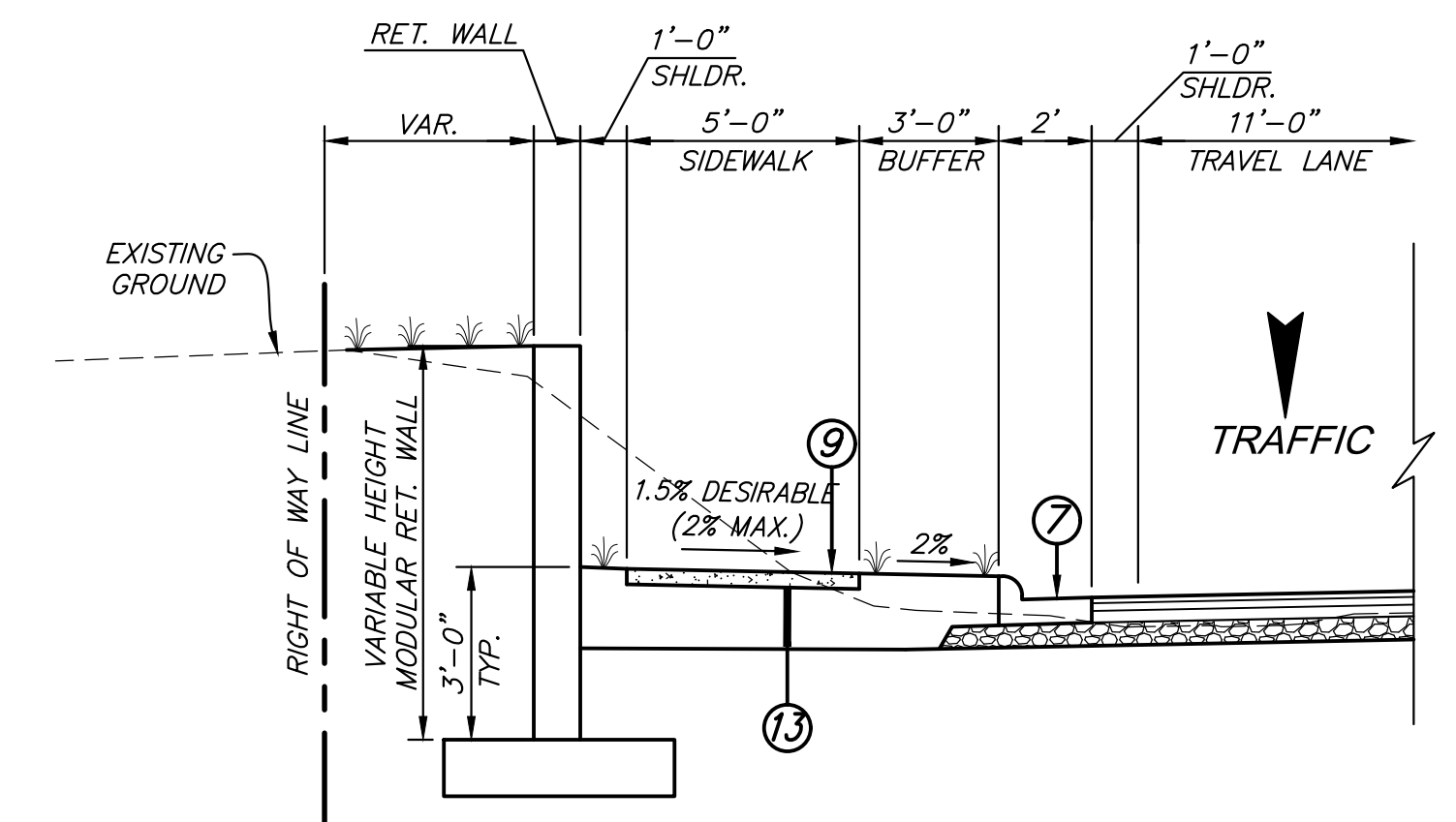
REF. WKG. NO. RTW-1 FOR MODULAR RETAINING WALL DETAILS.



TYPICAL SECTION - HALL AVENUE
STA. 23+25.00 TO STA. 24+21.69
STA. 27+78.85 TO STA. 29+04.89
STA. 32+52.73 TO STA. 33+38.73
STA. 37+40.09 TO STA. 38+64.62



PARTIAL SECTION
SMALL BLOCK FILL MODULAR WALL LOCATIONS
STA. 27+16.87 TO STA. 28+14.07



PARTIAL SECTION
SMALL BLOCK CUT MODULAR WALL LOCATIONS
STA. 26+03.52 TO STA. 28+18.46
STA. 35+90.97 TO STA. 37+75.04

- ④ EXISTING ROADWAY PAVEMENT
- ① 1.5" ASPHALT PAVEMENT, MT (9.5mm MIXTURE) (1@1.5") REQ'D.
- ② 2" ASPHALT PAVEMENT, MT (12.5mm MIXTURE) (1@2") REQ'D.
- ③ 3" ASPHALT PAVEMENT, MT (19.0mm MIXTURE) (1@3") REQ'D.
- ④ 6" CRUSHED STONE BASE
- ⑤ GEOTEXTILE FABRIC - TYPE V (NON-WOVEN)
- ⑥ TYPE "2" MODIFIED CONCRETE CURB AND GUTTER
- ⑦ TYPE "3A" MODIFIED "2" CONCRETE CURB AND GUTTER
- ⑧ CONCRETE HEADER CURB
- ⑨ CONCRETE SIDEWALK - 5" THICKNESS
- ⑩ 10" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT
- ⑪ VAR. DEPTH ASPHALT PAVEMENT, MT (9.5mm) LEVELING REQ'D.
- ⑫ VAR. DEPTH FINE MILLING OF ASPHALT PAVEMENT
- ⑬ VAR. DEPTH BORROW B9
- ⑭ VAR. DEPTH BORROW B3
- ⑮ 6" SOIL-CEMENT TREATED COURSE (AS REQ'D. BY ENGINEER)
- ⑯ TYPE "3A" MODIFIED "1" CONCRETE CURB AND GUTTER
- ☛ AREA TO BE TREATED IN ACCORDANCE WITH LANDSCAPE PLANS

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_Typicals.dwg	
				SCALE: NO SCALE	
				SURVEYED BY:	
				DSGN: GPC	DATE: 01/2022
				DRWN: JPF	DATE: 01/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

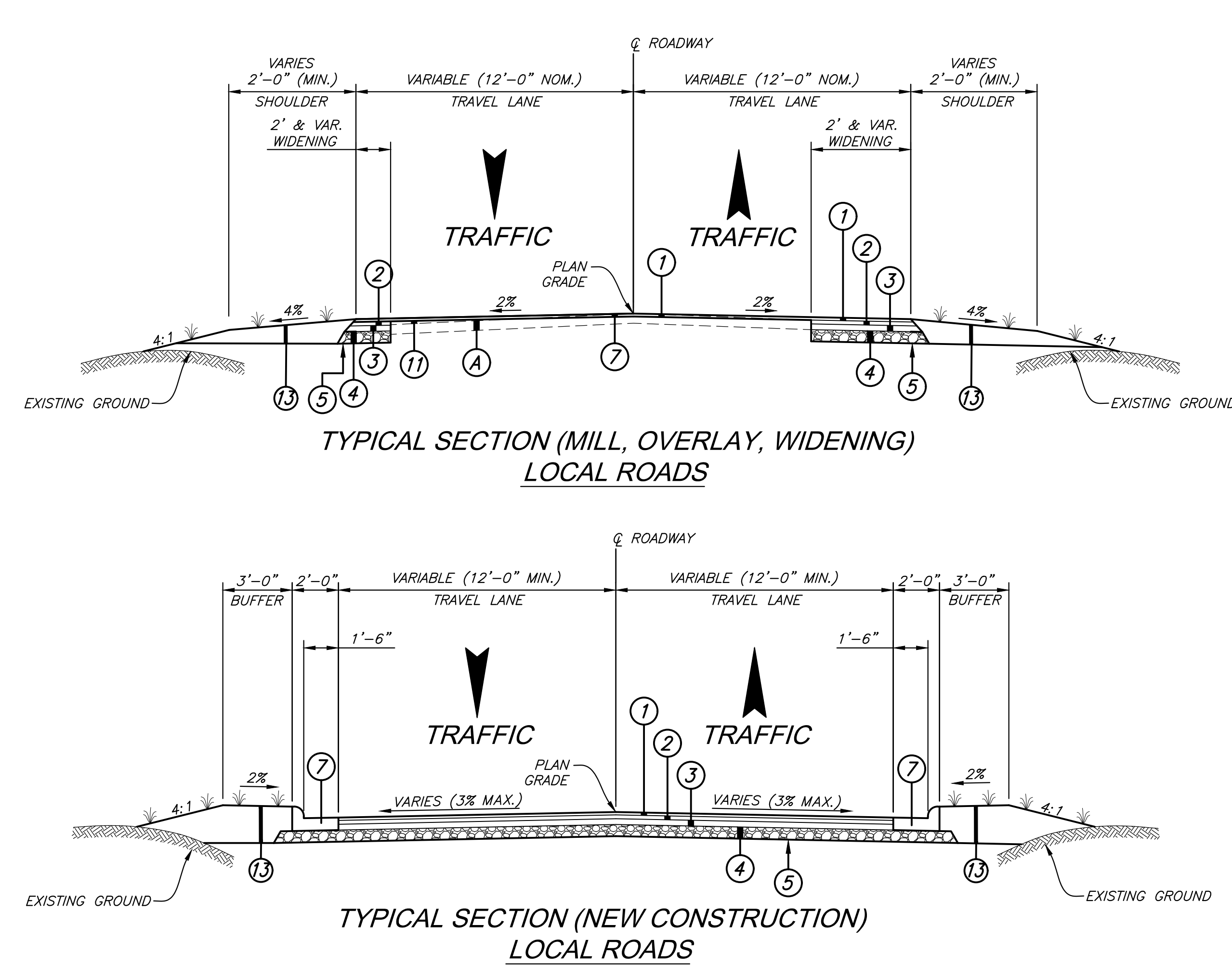
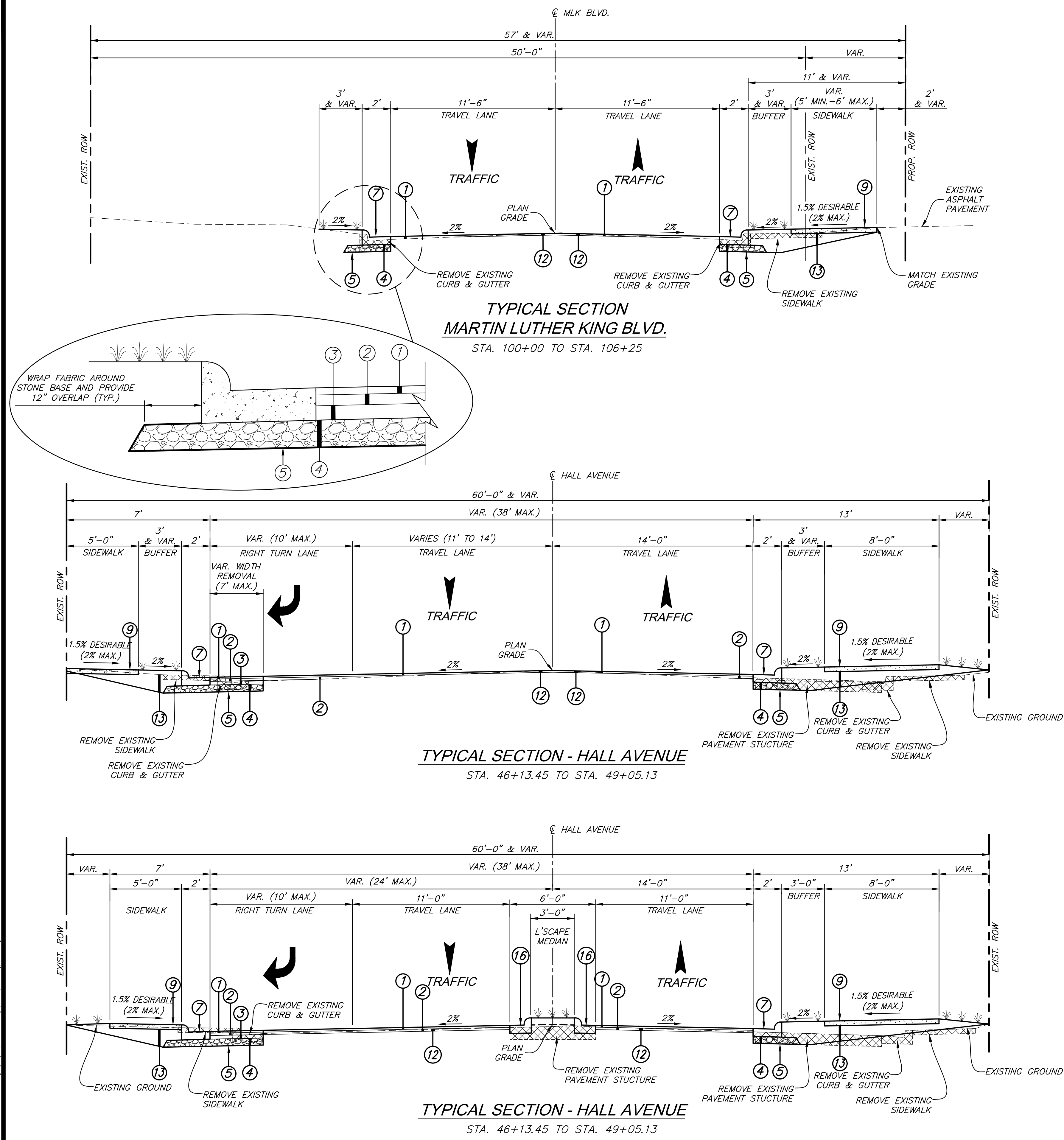


TYPICAL SECTIONS

WORKING NUMBER:
TS-4

DRAWING NUMBER:
9

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- ④ EXISTING ROADWAY PAVEMENT
- ① 1.5" ASPHALT PAVEMENT, MT (9.5mm MIXTURE) (1 @ 1.5") REQ'D.
- ② 2" ASPHALT PAVEMENT, MT (12.5mm MIXTURE) (1 @ 2") REQ'D.
- ③ 3" ASPHALT PAVEMENT, MT (19.0mm MIXTURE) (1 @ 3") REQ'D.
- ④ 6" CRUSHED STONE BASE
- ⑤ GEOTEXTILE FABRIC - TYPE V (NON-WOVEN)
- ⑥ TYPE "2" MODIFIED CONCRETE CURB AND GUTTER
- ⑦ TYPE "3A" MODIFIED "2" CONCRETE CURB AND GUTTER
- ⑧ CONCRETE HEADER CURB
- ⑨ CONCRETE SIDEWALK - 5" THICKNESS
- ⑩ 10" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT
- ⑪ VARIABLE DEPTH ASPHALT PAVEMENT, MT (9.5mm) LEVELING REQ'D.
- ⑫ VARIABLE DEPTH FINE MILLING OF ASPHALT PAVEMENT
- ⑬ 6" & VARIABLE DEPTH BORROW B9
- ⑭ VARIABLE DEPTH BORROW B3
- ⑮ 6" SOIL-CEMENT TREATED COURSE (AS REQ'D. BY ENGINEER)
- ⑯ TYPE "3A" MODIFIED "1" CONCRETE CURB AND GUTTER
- 🌳 AREA TO BE TREATED IN ACCORDANCE WITH LANDSCAPE PLANS

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	NEEL-SCHAFFER <i>Solutions you can build upon</i>	TYPICAL SECTIONS	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000					
					FILENAME: 16214_Typicals.dwg					
					SCALE: NO SCALE					
					SURVEYED BY:					
					DSGN: GPC	DATE: 01/2022				
					DRWN: JPF	DATE: 01/2022				
					CHKD: GPC	DATE: 08/2022				
					QA/QC: MWE	DATE: 08/2022				
										WORKING NUMBER:
							TS-5	10		

		STATE	PROJECT NO.	
		MISS	FBLD-8769-00(001)	

SUMMARY OF QUANTITIES (SHEET 1)					
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000		
			Prelim	Final	
201-A001	Clearing and Grubbing	LS	1		④
202-B019	Removal of Box Culvert	LF	15		①
202-B023	Removal of Bridge	EA	1		①
202-B052	Removal of Concrete Driveways, All Depths	SY	1,235		①
202-B063	Removal of Concrete Paved Ditch	SY	346		①
202-B080	Removal of Concrete Sidewalk	SY	1,165		①
202-B092	Removal of Curb, All Types	LF	8,582		①
202-B126	Removal of Fence, All Types	LF	1,967		②
202-B163	Removal of Inlet Tops	EA	1		①
202-B164	Removal of Inlet and Junction Box, All Types & Sizes	EA	27		
202-B188	Removal of Pavement, All Types and Depths	SY	11,271		
202-B191	Removal of Pipe, 8" And Above	LF	1,558		
202-B219	Removal of Sign, Ground Mounted with Posts	EA	33		
202-B244	Removal of Trees	EA	37		③
203-A001	Unclassified Excavation, FM, AH	CY	2,500		⑥
203-EX012	Borrow Excavation, AH, FME, Class B3	CY	3,900		
203-EX020	Borrow Excavation, AH, FME, Class B9	CY	4,100		
203-G001	Excess Excavation, FM, AH	CY	8,000		⑨
206-A001	Structure Excavation	CY	3,300		
206-B001	Select Material for Undercuts, Contractor Furnished, FM	CY	250		
209-A005	Geotextile Stabilization, Type V, Non-Woven	SY	16,250		
211-A001	Topsoil for Slope Treatment, From Right-of-Way	SY	1,000		
211-B001	Topsoil for Slope Treatment, Contractor Furnished	CY	2,500		⑤
211-C001	Topsoil for Plant Holes, Contractor Furnished	CY	385		⑦
216-B002	Solid Sodding, Centipede	SY	19,500		
219-A001	Watering	KGAL	390		
220-A001	Insect Pest Control	ACRE	4		
223-A001	Mowing	ACRE	16		
226-A001	Temporary Grassing	ACRE	1		
227-A001	Hydroseeding	ACRE	1		
230-A042	Shrub Planting, Dwarf Yaupon Holly	EA	5		
230-A051	Shrub Planting, Giant Liriope	EA	500		
230-A055	Shrub Planting, Goldstrum Black Eyed Susan	EA	30		
230-A100	Shrub Planting, Parsons Juniper	EA	770		
230-B027	Tree Planting, Crape Mytle 'Watermelon Red'	EA	93		
230-B032	Tree Planting, Drake Chinese Elm	EA	22		
230-B050	Tree Planting, Live Oak	EA	9		
230-D001	Bed Preparation	SF	5,600		
232-A003	Fertilizer for Woody Plant Material, Tablet, 21 gram	K	3		⑦
233-A003	Tree Bark Mulch, Type III	CY	18		
233-A004	Tree Bark Mulch, Type IV	CY	18		⑦
907-234-A001	Temporary Silt Fence	LF	5,500		⑧
237-A002	Wattles, 20"	LF	1,200		
907-242-A002	Installation of Chain Link Fence, Per Plans	LF	325		

① Includes Saw Cutting

② Includes posts, footings, and gates

③ Includes Stump Removal. For Trees Greater than 6".

④ Includes Trees and Shrubs 6" and Below

⑤ To be used once pay item 211-A001 has been depleted

⑥ Used for additional undercut material for retaining wall if required by the Engineer beyond the undercut requirements shown in the plans.

⑦ Used for Trees and Shrubs outside of bed area

⑧ Includes fence, posts, gates, mounting hardware, and footings

⑨ Size 57 Washed Gravel if required for storm drainage pipe.

	By	SUMMARY OF QUANTITIES	
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST FILENAME: SQS	NOT FOR CONSTRUCTION
Date	Revision		Working Number SQ-1
		Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Sheet Number 11

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 2)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-242-A002	Installation of Wood Privacy Fence, Per Plans	LF	235	③
907-242-A003	Installation of Spread Footing, Lighting Foundation	EA	3	
246-B002	Rockbags	LF	1,000	
907-258-K001	Bollard Removable	EA	2	
907-259-F001	Weatherproof GFCI Receptacle	EA	10	
907-262-A005	Utility Work - Water, 6" Insertion Valve	EA	2	
907-262-A006	Utility Work - Water, 6" Ductile Iron Water Main	LF	200	
304-G001	Size 3/4" and Down Crushed Stone Base, AEA	CY	3,500	
	OR			
304-G002	Size 610 Crushed Stone Base, AEA	CY	3,500	
	OR			
304-G003	Size 825B Crushed Stone Base, AEA	CY	3,500	
308-A001	Cement	TON	50	
308-B002	Soil-Cement-Water Mixing, Optional Mixers, Base	SY	4,000	
403-A002	12.5-mm, MT, Asphalt Pavement	TON	1,700	
403-A005	19-mm, MT, Asphalt Pavement	TON	2,550	
403-A014	9.5-mm, MT, Asphalt Pavement	TON	6,000	
403-B011	9.5-mm, MT, Asphalt Pavement, Leveling	TON	800	
406-D001	Fine Milling of Bituminous Pavement, All Depths	SY	6,975	
407-A001	Asphalt for Tack Coat	GAL	3,500	
413-D003	Cleaning and Filling Joints in PCC Pavement	LF	3,000	
907-417-A001	Polymer Cement Surface System	SY	480	
501-K001	Transverse Grooving	SY	1,456	
502-A001	Reinforced Cement Concrete Bridge End Pavement	SY	113	
601-A001	Class "B" Structural Concrete	CY	380	
601-B001	Class "B" Structural Concrete, Minor Structures	CY	149	②
602-A001	Reinforcing Steel	LBS	76,285	
603-CA001	12" Reinforced Concrete Pipe, Class III	LF	32	①
603-CA004	15" Reinforced Concrete Pipe, Class III, Rubber Type Gaskets	LF	24	①
603-CA072	42" Reinforced Concrete Pipe, Class V	LF	80	①
603-CB002	15" Reinforced Concrete End Section	EA	2	①
603-CE001	18" x 11" Concrete Arch Pipe, Class A III	LF	1,688	①
603-CE003	22" x 13" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	848	①
603-CE009	29" x 18" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	256	①
603-CE014	36" x 23" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	1,256	①
603-CE019	44" x 27" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	88	
603-PE009	8" Corrugated Polyethylene Pipe	LF	10	①
603-SB023	22" x 13" Branch Connections, Stub into Box Culvert	EA	3	
603-SB032	29" x 18" Branch Connections, Stub into Box Culvert	EA	3	
604-A001	Castings	LBS	30,907	
604-B001	Gratings	LBS	17,634	
907-607-PP001	Safety Fence	LF	290	
608-A001	Concrete Sidewalk, Without Reinforcement	SY	5,084	
608-B001	Concrete Sidewalk, With Reinforcement	SY	75	④

- ① Includes Select Bedding and Backfill
- ② Includes Manhole Ring, Cover, Riser Rings, and Steps for Junction Box Access
- ③ Includes fence, posts, gates, mounting hardware, and footings
- ④ 8" Reinforced Concrete Sidewalk as shown on Working No. ID-9

	By	SUMMARY OF QUANTITIES	
	Revision		NOT FOR CONSTRUCTION
	Date	PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	Working Number SQ-2
		FILENAME: SQS Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Sheet Number 12

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 3)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
609-B002	Concrete Curb, Header	LF	30	
609-D004	Combination Concrete Curb and Gutter Type 2 Modified	LF	306	
609-D009	Combination Concrete Curb and Gutter Type 3A Mod1	LF	3,398	
609-D010	Combination Concrete Curb and Gutter Type 3A Mod2	LF	8,932	
612-B001	Flowable Fill, Non-Excavatable	CY	50	
613-D005	Adjustment of Manhole	EA	12	
613-D009	Adjustment of Utility Appurtenance Fire Hydrant	EA	5	
613-D010	Adjustment of Water Meter	EA	28	
613-D011	Adjustment of Water Valve	EA	13	
614-B003	Concrete Driveway, With Reinforcement, 6-inch Thickness	SY	1,741	
907-616-C001	Colored and Imprinted Concrete Median and Island Pavement, 10-inch Thickness	SF	1,005	
618-A001	Maintenance of Traffic	LS	1	
619-A2003	Temporary Traffic Stripe, Continuous Yellow, Paint	LF	2,951	
619-A3004	Temporary Traffic Stripe, Skip White, Paint	LF	1,440	
619-A5002	Temporary Traffic Stripe, Detail, Paint	LF	2,986	
619-A6003	Temporary Traffic Stripe, Legend, Paint	SF	88	
619-A6004	Temporary Traffic Stripe, Legend, Paint	LF	1,693	
619-D1001	Standard Roadside Construction Signs, Less than 10 Square Feet	SF	353	
619-D2001	Standard Roadside Construction Signs, 10 Square Feet or More	SF	103	
619-G4001	Barricades, Type III, Double Faced	LF	18	
619-G4005	Barricades, Type III, Single Faced	LF	240	
619-G5001	Free Standing Plastic Drums	EA	141	
619-G7001	Warning Lights, Type "B"	EA	4	
620-A001	Mobilization	LS	1	
626-A003	6" Thermoplastic Traffic Stripe, Skip White	LF	1,440	
626-E003	6" Thermoplastic Traffic Stripe, Continuous Yellow	LF	6,266	
626-G002	Thermoplastic Detail Stripe, White	LF	1,758	
626-G003	Thermoplastic Detail Stripe, Yellow	LF	1,704	
626-H004	Thermoplastic Legend, White	SF	804	
626-H005	Thermoplastic Legend, White	LF	2,782	
627-J001	Two-Way Clear Reflective High Performance Raised Markers	EA	12	
627-K001	Red-Clear Reflective High Performance Raised Markers	EA	103	
627-L001	Two-Way Yellow Reflective High Performance Raised Markers	EA	296	
630-A001	Standard Roadside Signs, Sheet Aluminum, 0.080" Thickness	SF	48	
630-A005	Standard Roadside Signs, Sheet Aluminum, 0.1" Thickness	SF	255	
630-C003	Steel U-Section Posts, 3.0 lb/ft	LF	518	
907-632-A007	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller	EA	1	
907-634-A230	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 30' & 40' Arm	EA	1	
907-634-A254	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 40' & 40' Arm	EA	1	
907-634-A545	Traffic Signal Equipment Pole, Type VI, 8' Shaft	EA	1	
907-634-C001	Pole Foundations, Class "B" Concrete	CY	9	
635-A059	Traffic Signal Head, Type 1	EA	8	
635-A065	Traffic Signal Head, Type 2 FYA	EA	2	
635-A076	Traffic Signal Head, Type 6	EA	4	

- ① Includes pedestrian safety fencing.
- ② Includes Reinforced Concrete Pad

	By	SUMMARY OF QUANTITIES	
	Revision	PROJ NO: FBLD-8769-00(001) COUNTY: FORREST FILENAME: SQS	NOT FOR CONSTRUCTION Working Number SQ-3 Sheet Number 13
Date	Design Team	Neel-Schaffer, Inc.	Checked Date 08/12/2022

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 4)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-636-B003	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	165	
907-636-B014	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	415	
907-636-B016	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	315	
907-636-B028	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor	LF	10	
907-636-D001	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	80	
907-636-D006	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	40	
907-636-D008	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	205	
907-637-A002	Pullbox Enclosure, Type 2	EA	2	
907-637-A003	Pullbox Enclosure, Type 3	EA	1	
907-637-C028	Traffic Signal Conduit, Underground, Type 4, 2"	LF	35	
907-637-C030	Traffic Signal Conduit, Underground, Type 4, 3"	LF	30	
907-637-D003	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"	LF	130	
907-639-B001	Type 1 Optical Detector	EA	3	
907-639-C001	Type 1 Optical Detector Cable	LF	455	
907-639-D001	Multimode Phase Selector	EA	1	
907-643-A003	Video Vehicle Detection Sensor, Type 3	EA	1	
907-643-B001	Video Vehicle Detection Cable	LF	60	
907-645-B001	Accessible Pedestrian Detection Assembly	EA	4	
647-A001	Removal of Existing Traffic Signal Equipment	LS	1	
907-653-B001	Street Name Sign	SF	24	
907-663-A001	Network Switch, Type A	EA	1	
682-A010	Underground Branch Circuit, AWG 10, 3 Conductor	LF	5,630	
682-A018	Underground Branch Circuit, AWG 2, 3 Conductor	LF	1,145	
682-A034	Underground Branch Circuit, AWG 6, 3 Conductor	LF	3,115	
682-A039	Underground Branch Circuit, AWG 8, 3 Conductor	LF	1,060	
682-B010	Underground Branch Circuit, Jacked or Bored, AWG 10, 3 Conductor	LF	275	
682-B016	Underground Branch Circuit, Jacked or Bored, AWG 2, 3 Conductor	LF	175	
682-B032	Underground Branch Circuit, Jacked or Bored, AWG 6, 3 Conductor	LF	121	
682-B037	Underground Branch Circuit, Jacked or Bored, AWG 8, 3 Conductor	LF	60	
682-C015	Structure Mounted Branch Circuit, AWG 2, 3 Conductor	LF	1,165	
682-C028	Structure Mounted Branch Circuit, AWG 6, 3 Conductor	LF	25	
682-D002	Structure Mounted Pull Box	EA	24	
682-F001	Secondary Power Controller	EA	3	
684-A004	Pole Foundation, 30" Diameter	CY	82	
699-A001	Roadway Construction Stakes	LS	1	
699-B001	Bridge Construction Stakes	LS	1	
803-K004	Drilled Shaft, 36" Diameter	LF	675	
803-K006	Drilled Shaft, 48" Diameter	LF	1,425	
803-L002	Test Shaft, 48" Diameter	EA	1	
803-M005	Trial Shaft, 48" Diameter	LF	80	
803-N001	Exploration	LF	300	
803-O005	Permanent Casing, 36" Diameter	LF	220	
803-O018	Temporary Casing, 48" Diameter	LF	200	
907-804-A002	Bridge Concrete, Class AA	CY	1,072	

- ① Paid as dimension shown in the plans.
No additional payment for bores
extending beyond the lines shown in the
plans.
- ② Includes Hydroexcavation if Required
- ③ See Working No. TSI-3 in the Plans for
Demolition and Salvage Notes.

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	By	SUMMARY OF QUANTITIES	
	Revision		
	Date	PROJ NO: FBLD-8769-00(001) COUNTY: FORREST FILENAME: SQS	NOT FOR CONSTRUCTION
		Design Team <u>Neel-Schaffer, Inc.</u> Checked Date 08/12/2022	Working Number SQ-4 Sheet Number 14

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 5)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-804-A004	Bridge Concrete, Class BD	CY	1,101	
804-C184	150' Prestressed Concrete Beam, Type FIB-72	LF	898	
804-C236	105' Prestressed Concrete Beam, Type FIB-45	LF	1,048	
804-C260	75' Prestressed Concrete Beam, Type FIB-45	LF	373	
804-C261	135' Prestressed Concrete Beam, Type FIB-72	LF	674	
805-A001	Reinforcement	LBS	366,644	
907-809-A002	Retaining Wall System, Gravity Type	SF	5,300	
907-809-A003	Retaining Wall System, Mechanically Stabilized	SF	19,494	
813-B001	Concrete-Steel Railing	LF	2,253	
815-D001	Concrete Slope Paving	CY	229	
907-899-A001	Railway-Highway Provisions	LS	1	
L00011: 230-B500	Tree Planting, Teddy Bear Magnolia	EA	45	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 30-1-3-100, Bridge Mounted	EA	4	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 32.5-1-3-100, Bridge Mounted	EA	6	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 14-1-0-100	EA	11	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 25-1-0-100	EA	55	
L00018: 907-258-PP502	Handrail, Per Plans	LF	35	
L00052: 907-262-A504	Ductile Iron Fittings	LBS	2,400	
L00076: 230-A500	Shrub Planting, Drift Rose "Peach"	EA	300	
	Non-Participating			
907-632-A007	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller	EA	1	
907-634-A365	Traffic Signal Equipment Pole, Type III, 17' Shaft, 30' & 40' Arms	EA	1	
907-634-A374	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 40' Arms	EA	1	
907-634-A545	Traffic Signal Equipment Pole, Type VI, 8' Shaft	EA	2	
907-634-C001	Pole Foundations, Class "B" Concrete	CY	9	
635-A059	Traffic Signal Head, Type 1	EA	8	
635-A065	Traffic Signal Head, Type 2 FYA	EA	1	
635-A076	Traffic Signal Head, Type 6	EA	8	
907-636-B014	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	410	
907-636-B016	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	300	
907-636-B028	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor	LF	15	
907-636-D006	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	72	
907-636-D008	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	197	
907-637-A002	Pullbox Enclosure, Type 2	EA	3	
907-637-A003	Pullbox Enclosure, Type 3	EA	1	
907-637-C028	Traffic Signal Conduit, Underground, Type 4, 2"	LF	65	
907-637-C030	Traffic Signal Conduit, Underground, Type 4, 3"	LF	40	
907-637-D003	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"	LF	200	
907-639-B001	Type 1 Optical Detector	EA	4	
907-639-C001	Type 1 Optical Detector Cable	LF	480	
907-639-D001	Multimode Phase Selector	EA	1	
907-643-A003	Video Vehicle Detection Sensor, Type 3	EA	1	
907-643-B001	Video Vehicle Detection Cable	LF	110	

- ① 135' Prestressed Concrete Beam, Type FIB-135
- ② 150' Prestressed Concrete Beam, Type FIB-150

	By	SUMMARY OF QUANTITIES	
	Revision		
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION
		FILENAME: SQS	Working Number SQ-5
Date		Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Sheet Number 15

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 6)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-645-B001	Accessible Pedestrian Detection Assembly	EA	8	
907-653-B001	Street Name Sign	SF	23	

	By	SUMMARY OF QUANTITIES	
	Revision		
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION
			Working Number SQ-6
Date		FILENAME: SQS Design Team <u>Neel-Schaffer, Inc.</u> Checked Date <u>08/12/2022</u>	Sheet Number 16

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REMOVAL ITEMS																	
WK. SH. NO.	STATION TO STATION		FINE MILLING OF ASPHALT PAVEMENT	PAVEMENT (ALL TYPES & DEPTHS)	CONCRETE DRIVEWAYS (ALL DEPTHS)	CONCRETE SIDEWALK	CURB & GUTTER (ALL TYPES)	PIPE 8" & ABOVE	FENCE (ALL TYPES)	CONCRETE PAVED DITCH	BOX CULVERT	BRIDGE (PRECAST DECK & TIMBER PILING)	INLETS & JUNCTION BOXES	INLET TOPS	TRAFFIC SIGNAL	TREES (SEE NOTE #1)	REMARKS
DEMO-1	747+00	754+00	1,659	133	664	299	813	51					2	1	1	8	WEST PINE STREET
DEMO-2	11+00	17+00							452							(SEE NOTE #2)	HALL AVENUE
DEMO-3	100+00	106+25	1,802	1,088	31	237	1,558	82	155				2			6	MARTIN LUTHER KING BLVD.
DEMO-4	19+00	25+50	1,170	2,169	127	46	1,369	252	569	66			4			3	HALL AVENUE
DEMO-5	25+50	38+50	300	5,043	126	96	2,567	612	264				9			10	HALL AVENUE
DEMO-6	38+50	E.O.P.	2,044	2,838	287	487	2,275	561	527	280	15	1	10			10	HALL AVENUE
UNITS			SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. YDS.	LIN. FT.	LIN. FT.	LIN. FT.	SQ. YDS.	LIN. FT.	EACH	EACH	EACH	EACH	EACH	
TOTALS THIS BLOCK			6975	11271	1235	1165	8582	1558	1967	346	15	1	27	1	1	37	

NOTE #1: CONTRACTOR SHALL REMOVE ALL TREES AND STUMPS WITHIN R.O.W. (THAT CONFLICT WITH NEW CONSTRUCTION) AS PER SECTION 201.03.1.2 OF THE MDOT STANDARD SPECIFICATIONS.
REMOVAL OF TREE STUMPS SHALL BE INCLUDED IN COST FOR REMOVAL OF TREES AND PAID UNDER PAY ITEM 202-B085, REMOVAL OF TREES. REFER TO NOTE #32 ON WKG. NO. GN-1.
ALL OTHER VEGETATIVE MATERIAL REQUIRED TO BE REMOVED WILL NOT BE MEASURED FOR SEPARATE PAYMENT BUT SHALL BE ABSORBED IN THE COST OF PAY ITEM 201-A001, CLEARING AND GRUBBING.

NOTE #2: ALL TREES REQUIRED TO BE REMOVED DUE TO CONFLICT WITH NEW CONSTRUCTION MAY NOT BE SHOWN ON PLANS. REFER TO NOTE #32 ON WKG. NO. GN-1.

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		ESTIMATED QUANTITIES REMOVAL ITEMS		
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			WORKING NUMBER: EQ-1	DRAWING NUMBER: 16	
					FILENAME: 16214_E0.dwg					
					SCALE: NO SCALE					
					SURVEYED BY:					
					DSGN: GPC					DATE: 06/2022
					DRWN: JPF					DATE: 06/2022
					CHKD: GPC					DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022					

PIPE CULVERT DRAINAGE STRUCTURES

WK. SH. NO.	STATION	SIDE	ID NO.	TYPE	CLASS III - CONCRETE PIPE CULVERTS						CLASS V - CONCRETE PIPE CULVERTS		END SECTIONS	SIZE			OPENINGS	DRAWINGS REQ'D	CLASS "B" CONC.	REINF. STEEL	GRATING	CASTING	STRUCTURE EXCAVATION		REMARKS	
					12"	15"	18"X11"	22"X13"	29"X18"	36"X23"	44"X27"	42"		15"	L	W							H	CU. YD. EXCAV.		EST. DEPTH
3	747+18.19	LT	CI-1	SS-2										10.0	4.00	4.75	2 @ 24"	SS-2	3.638	444		79			W. PINE STREET	
3	747+16.92	RT	CI-2	SS-2					48					10.0	3.583	5.00	1 @ 29"X18	SS-2	3.981	453		79	15.36	4	W. PINE STREET	
3	748+75.72	LT	CI-3	SS-2						56				10.0	4.17	6.60	1@36"X23, 1@18"X11" 1 @ 30"	SS-2	3.376	464		79	53.2	5	W. PINE STREET	
3	748+75.72	RT	CI-4	SS-2				16						10.0	2.50	1.65		SS-2	2.302	375		79	8.96	4	W. PINE STREET, MODIFIED	
3	750.57.34	LT	CI-5	SS-2			176							10.0	2.50	3.80	1 @ 18"X11"	SS-2	2.926	410		79	49.28	2	W. PINE STREET	
3	750+68.90	RT	CI-6	SS-2				112						10.0	2.83	4.42	1 @ 22"X13"	SS-2	3.121	416		79	54.88	3.5	W. PINE STREET	
5	11+54.54	RT	CI-7	CI-1			112							4.00	3.67	4.625	3 @ 18"X11"	CI-1	1.187	92	180	306	15.68	1		
5	11+51.33	LT	CI-8	CI-1			40							4.00	1.75	3.835	1 @ 18"X11"	CI-1	1.084	84	180	306	5.6	1		
5	12+81.15	RT	CI-9	CI-1			128							4.00	3.67	6.625	3 @ 18"X11"	CI-1	1.632	112	180	306	17.92	1		
5	12+81.80	LT	CI-10	CI-1			40							4.00	1.75	6.035	1 @ 18"X11"	CI-1	1.573	106	180	306	5.6	1		
6	14+06.10	RT	CI-11	CI-2			128							7.00	3.67	7.625	2 @ 18"X11"	CI-2	3.058	230	360	631	17.92	1		
6	14+06.76	LT	CI-12	CI-2			32							7.00	1.75	7.035	1 @ 18"X11"	CI-2	2.898	217	360	631	4.48	1		
6	18+86.69	LT	CI-13	CI-2						168				7.00	5.33	6.145	1@36"X23, 1@18"X11"	CI-2	3.288	224	360	631	127.68	4	DRIVEWAY RT. SIDE	
6	18+86.69	LT	CI-14	CI-2			24							7.00	1.75	5.925	1 @ 18"X11"	CI-2	2.399	192	360	631	8.4	2.5	DRIVEWAY LT. SIDE	
7	20+48.88	LT	DI-1	B-9	24									3.25	3.50	2.70	1 @ 12"	B-9	0.553	44	119		7.2	2.5	DRIVEWAY RT. SIDE	
7	20+87.13	LT	CI-15	CI-2			8							7.00	1.75	4.99	1 @ 18"X11"	CI-2	2.216	172	360	631	2.8	2.5	DRIVEWAY RT. SIDE	
7	20+87.13	LT	CI-16	CI-2	8					240		80		7.00	5.33	5.57	1@36"X23, 1@12"	CI-2	3.097	212	360	631	159.6	3.5	DRIVEWAY LT. SIDE	
7	21+19.77	RT	CI-17	CI-1			200							4.00	3.67	5.625	2 @ 18"X11"	CI-1	1.445	102	180	306	28	1		
7	21+19.96	LT	CI-18	CI-1			32							4.00	1.75	5.365	1 @ 18"X11"	CI-1	1.424	99	180	306	4.48	1		
7	23+19.32	RT	CI-19	CI-2				32						7.00	3.67	6.705	2@18"X11, 1@22"X13"	CI-2	2.826	212	360	631	4.48	1		
7	23+31.85	LT	CI-20	CI-2				16						7.00	4.00	6.205	2 @ 22"X13"	CI-2	2.679	201	360	631	2.24	1		
7	24+36.78	RT	CI-21	CI-3			112							10.00	3.67	3.705	2 @ 18"X11"	CI-3	2.317	200	540	1006	39.2	2.5		
7	24+36.78	LT	CI-22	CI-3			32							10.00	1.75	3.405	1 @ 18"X11"	CI-3	2.220	190	540	1006	4.48	1		
8	26+80.55	RT	CI-23	CI-2			32							7.00	3.67	4.625	2 @ 18"X11"	CI-2	2.059	164	360	631	4.48	1		
8	26+80.55	LT	CI-24	CI-2			184							7.00	1.75	4.325	1 @ 18"X11"	CI-2	2.012	158	360	631	25.76	1	INCL. PIPE FROM JB-6	
8	28+92.83	RT	CI-25	CI-2						200				7.00	3.67	5.625	1@36"X23, 1@18"X11"	CI-2	3.116	213	360	631	76	2		
8	28+92.83	LT	CI-26	CI-2			32							7.00	1.75	5.275	1 @ 18"X11"	CI-2	2.311	178	360	631	4.48	1		
8	30+93.01	RT	CI-27	CI-2						184				7.00	5.33	4.625	2@36"X23, 1@22"X13"	CI-2	2.637	191	360	631	69.92	2		
8	30+93.01	LT	CI-28	CI-2				32						7.00	1.75	4.325	2 @ 22"X13"	CI-2	2.053	160	360	631	4.48	1		
8	30+93.01	LT	DI-3	B-9				8						3.583	3.50	4.00	1 @ 22"X13"	B-9	0.961	66	119		1.12	1		
9	32+80.43	RT	CI-29	CI-3				16						10.00	4.00	3.525	1@36"X23, 2@22"X13"	CI-3	3.281	230	540	1006	2.24	1		
9	32+80.43	LT	CI-30	CI-3				32						10.00	4.00	3.225	2 @ 22"X13"	CI-3	2.359	187	540	1006	4.48	1		
9	32+92.36	LT	DI-4	B-9				16						3.583	3.50	2.80	1 @ 22"X13"	B-9	0.691	49	119		2.24	1		
9	34+30.41	RT	CI-31	CI-2		24	88			120		2		7.00	3.67	4.225	1 @ 18"X11"	CI-2	1.962	155	360	631	24.64	2	INCL. PIPE FROM JB-9 & JB-10	
9	34+30.41	LT	CI-32	CI-2			32							7.00	1.75	3.925	2 @ 18"X11"	CI-2	1.826	148	360	631	4.48	1		
9	37+64.54	RT	CI-33	CI-3							32			10.00	1.75	4.325	1 @ 44"X27"	CI-3	4.250	262	540	1006	26.88	4		
9	37+64.54	LT	CI-34	CI-3						56				10.00	6.00	5.00	2 @ 44"X27"	CI-3	4.365	283	540	1006	47.04	4		
10	38+46.37	RT	CI-35	CI-2			224							7.00	3.67	3.455	2 @ 18"X11"	CI-2	1.669	138	360	631	47.04	1.5		
10	38+46.37	LT	CI-36	CI-2			32							7.00	1.75	3.075	1 @ 18"X11"	CI-2	1.579	130	360	631	4.48	1		
10	40+74.81	RT	CI-37	CI-3				56						10.00	3.67	3.075	1@18"X11, 2@22"X13"	CI-3	2.257	182	540	1006	15.68	2		
10	40+74.81	LT	CI-38	CI-3				16						10.00	4.00	2.825	2 @ 22"X13"	CI-3	2.182	174	540	1006	2.24	1		
10	40+95.10	RT	DI-5	B-9					112					4.25	3.45	2.80	1@36"X23, 1@22"X13"	B-9	0.701	58	119		38.4	1		
10	43+33.73	RT	CI-39	CI-3					96					10.00	4.67	3.125	1@29"X18, 1@22"X13"	CI-3	2.717	207	540	1006	89.6	2		
10	43+33.73	LT	CI-40	CI-3				64						10.00	4.00	2.925	2 @ 22"X13"	CI-3	2.226	178	540	1006	8.96	1		
11	46+53.45	RT	CI-41	CI-3						80				10.00	1.75	4.065	2 @ 36"X23	CI-3	3.497	248	540	1006	30.4	2		
11	46+53.45	LT	CI-42	CI-3				160		40			</													

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NOTICE TO DRAWING HOLDER				REVISIONS				DRAWING INFORMATION			
NEEL-SCHAFFER, 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.				NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			
								FILENAME: 16214_EQ.dwg			
								SCALE: NO SCALE			
								SURVEYED BY:			
								DSGN: GPC	DATE: 06/2022		
								DRWN: JPF	DATE: 06/2022		
				CHKD: GPC	DATE: 08/2022						
				QA/QC: MWE	DATE: 08/2022						

JUNCTION BOX, BOX CULVERT & BOX BRIDGE DRAINAGE STRUCTURES

JB-1 - JUNCTION BOXES REQUIRED																								
WK. SH. NO.	STATION	SIDE 1		SIDE 2		SIDE 3		SIDE 4		SIDE W1-3 (FT.)	SIDE W2-4 (FT.)	INLET HEIGHT	CLASS B CONC.	REINF. STEEL	BAR LIST								REMARKS	
		SIZE	SKEW	SIZE	SKEW	SIZE	SKEW	SIZE	SKEW						A1	A2	A3	A4	B	C	D	E		F
															2 @ 37	2 @ 29	2 @ 37	0 @ 0	2 @ 58	2 @ 42	4 @ 29	16 @ 44	12 @ 60	
WK7	20+71.28	12	0	18	30	36x23	0	0	0	5.33	3.96	2.92	1.318	111.88	2 @ 37	2 @ 29	2 @ 37	0 @ 0	2 @ 58	2 @ 42	4 @ 29	16 @ 44	12 @ 60	
WK7	20+71.28	30	0	18	0	42	0	12	0	6.00	3.67	4.67	1.816	127.43	2 @ 41	2 @ 28	2 @ 41	2 @ 28	2 @ 66	2 @ 38	4 @ 50	18 @ 40	12 @ 68	
WK7	20+77.00	30	0	12	30	30	0	0	0	4.83	2.90	3.58	1.070	85.58	2 @ 34	2 @ 24	2 @ 34	0 @ 0	2 @ 52	2 @ 29	4 @ 37	14 @ 31	10 @ 54	
WK7	23+30.78	36x23	0	0	0	0	0	22x13	0	5.33	4.00	2.92	1.469	108.25	2 @ 37	0 @ 0	0 @ 0	2 @ 30	2 @ 58	2 @ 42	4 @ 29	16 @ 44	12 @ 60	
WK8	28+31.39	22x13	30	0	0	18	5	0	0	4.35	2.50	2.08	0.659	64.74	2 @ 31	0 @ 0	2 @ 31	0 @ 0	2 @ 46	2 @ 24	4 @ 19	14 @ 26	8 @ 48	
WK9	33+41.39	36x23	5	36x23	15	15	0	18	5	5.35	5.46	2.91	1.824	148.46	2 @ 37	2 @ 37	2 @ 37	2 @ 37	2 @ 58	2 @ 60	4 @ 29	16 @ 62	16 @ 60	
WK9	22+39.05	15	0	0	0	15	0	15	0	3.00	3.00	2.25	0.641	59.14	2 @ 24	0 @ 0	2 @ 24	2 @ 24	2 @ 30	2 @ 30	4 @ 21	10 @ 32	10 @ 32	
WK9	37+05.49	10	0	44x27	0	0	0	0	0	2.58	6.08	3.33	1.166	86.64	2 @ 22	2 @ 41	0 @ 0	0 @ 0	2 @ 25	2 @ 67	4 @ 34	8 @ 69	18 @ 27	
WK10	40+95.10	22x13	0	12	0	0	0	0	0	4.00	2.75	2.08	0.713	65.64	2 @ 30	2 @ 23	0 @ 0	0 @ 0	2 @ 42	2 @ 27	4 @ 19	12 @ 29	10 @ 44	
WK10	42+67.00	29x18	30	12	0	29x18	30	12	0	5.12	2.75	2.83	0.985	90.28	2 @ 36	2 @ 23	2 @ 36	2 @ 23	2 @ 55	2 @ 27	4 @ 28	16 @ 29	10 @ 57	CONFLICT BOX
WK10	43+08.69	22x13	15	0	0	0	0	12	0	4.08	2.75	2.08	0.727	66.32	2 @ 30	0 @ 0	0 @ 0	2 @ 23	2 @ 43	2 @ 27	4 @ 19	12 @ 29	10 @ 45	
WK11	46+53.45	36x23	0	36x23	0	12	0	0	0	5.33	5.33	3.26	1.956	143.45	2 @ 37	2 @ 37	2 @ 37	0 @ 0	2 @ 58	2 @ 58	4 @ 33	16 @ 60	16 @ 60	CONFLICT BOX
WK11	48+11.96	22x13	0	18	0	22x13	0	0	0	4.00	3.67	4.29	1.360	88.81	2 @ 30	2 @ 28	2 @ 30	0 @ 0	2 @ 42	2 @ 38	4 @ 45	12 @ 40	12 @ 44	
													UNITS	CU. YDS.	LBS.									
													TOTALS	15.703	1246.62									

JB-2 - JUNCTION BOXES REQUIRED																									
WK. SH. NO.	STATION	SIDE 1		SIDE 2		SIDE 3		SIDE 4		SIDE W1-3 (FT.)	SIDE W2-4 (FT.)	INLET HEIGHT	CLASS B CONC.	REINF. STEEL	BAR LIST										REMARKS
		SIZE	SKEW	SIZE	SKEW	SIZE	SKEW	SIZE	SKEW						A1	A2	A3	A4	B	C	D	E	F		
WK3	748+79.73	36x23	0	0	0	22x13	0	0	0	5.33	2.50	3.25	1.180	292.07	2 @ 37	0 @ 0	2 @ 37	0 @ 0	5 @ 60	6 @ 26	12 @ 39	24 @ 26	12 @ 60	WEST PINE STREET	
WK8	28+50.45	22x13	30	18	0	22x13	30	0	0	4.68	4.00	2.06	1.367	215.94	2 @ 33	2 @ 30	2 @ 33	0 @ 0	2 @ 50	2 @ 42	4 @ 19	14 @ 44	12 @ 52		
WK9	32+97.68	36x23	15	0	0	22x13	0	0	0	5.79	2.50	2.91	1.376	184.27	2 @ 39	0 @ 0	2 @ 39	0 @ 0	2 @ 64	2 @ 24	4 @ 29	18 @ 26	8 @ 66		
WK11	45+68.18	36x23	0	0	0	0	0	36x23	0	5.33	5.33	3.00	1.862	138.66	2 @ 37	0 @ 0	0 @ 0	2 @ 37	2 @ 58	2 @ 58	4 @ 30	16 @ 60	16 @ 60		
WK11	48+53.45	22x13	0	24	0	22x13	0	0	0	4.00	4.25	3.08	1.177	96.28	2 @ 30	2 @ 31	2 @ 30	0 @ 0	2 @ 42	2 @ 45	4 @ 31	12 @ 47	14 @ 44		
UNITS													CU. YDS.	LBS.											
SUBTOTALS THIS SHEET													6.962	927.21											

BOX CULVERTS REQUIRED											
WORK NO.	STATION	SIZE	LENGTH	DRAWINGS REQUIRED	CLASS "B" CONCRETE	REINF. STEEL	STRUC. EXCAV.		COVER	SELECT MAT'L.	REMARKS
							EST. DEPTH	CUBIC YARDS			
3	748+00 TO 749+43	9X3.5	192	ICX-1, SD-BS-3	158.663	27217	3.0	259.200	1.0	37.956	W. PINE STREET: NO WINGS - CLOSED ENDS
9	36+94.28	10X6	14	ICX-1, IBS-6, IWS-3W-45, IWS-6-3W-45	15.110	3390	2.5	18.375	2.5	12.227	45° LT. FWD. EXTENSION, NO WINGS
UNITS					CU. YDS.	LBS	CU. YDS.		CU. YDS.		
TOTALS					173.773	30607	277.575		50.183		

BEDDING FOR BOX CULVERTS SHALL BE 12"—57 WASHED GRAVEL (COST ABSORBED)

BOX BRIDGES REQUIRED											
WORK NO.	STATION	SIZE	LENGTH	DRAWINGS REQUIRED	BOX BRIDGE CONCRETE CLASS "B"	BOX BRIDGE REINF. STEEL	STRUC. EXCAV.		COVER	SELECT MAT'L.	REMARKS
							EST. DEPTH	CUBIC YARDS			
10	42+00	DBL 12X6	102	SD-IBJL-1, SD-IBD-4-2W, SD-ISK-30-3W	205.010	33082	2.0	298.950	1.0	149.250	35° RT. FWD SKEW, NO WINGS
UNITS					CU. YDS.	LBS		CU. YDS.		CU. YDS.	
TOTALS					205.010	33082		298.950		149.250	

BEDDING FOR BOX CULVERTS SHALL BE 12"—57 WASHED GRAVEL (COST ABSORBED)

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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI			ESTIMATED QUANTITIES DRAINAGE STRUCTURES	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000				WORKING NUMBER:	DRAWING NUMBER:
					FILENAME: 16214_E0.dwg				EQ-3	18
					SCALE: NO SCALE					
					SURVEYED BY:					
					DSGN: GPC	DATE: 06/2022				
					DRWN: JPF	DATE: 06/2022				
					CHKD: GPC	DATE: 08/2022				
					QA/QC: MWE	DATE: 08/2022				

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DRIVEWAYS REQUIRED												
WK. NO.	STATION	SIDE	WIDTH	PAVED AREA (SQ. YDS.)	EXTRA AREA (SQ. YDS.)	CONCRETE (SQ. YDS.)	ASPHALT 1.5", MT 9.5 MM (TONS)	ASPHALT 2", MT 12.5 MM (TONS)	ASPHALT 3", MT 19.0 MM (TONS)	CRUSHED STONE (CU. YDS.)	REMARKS	
3	747+52.16	LT	33	80.7		80.7					WEST PINE ST.	
3	748+10.84	LT	16	37.5		37.5					WEST PINE ST.	
3	748+51.84	LT	16	35.5		35.5					WEST PINE ST.	
3	749+18.84	LT	50	89.2		89.2					WEST PINE ST.	
3	750+18.84	LT	50	89.4		89.4					WEST PINE ST.	
3	750+99.92	LT	50	88.8		88.8					WEST PINE ST.	
3	751+44.46	LT	16	36.9		36.9					WEST PINE ST.	
3	751+66.05	LT	12	27.7		27.7					WEST PINE ST.	
3	752+68.14	LT	16	36.0		36.0					WEST PINE ST.	
6	19+40.91	LT	62	121.9		121.9					DRIVE OFF MLK BLVD.	
7	20+34.35	LT	75	143.8		143.8					DRIVE OFF MLK BLVD.	
7	21+15.08	LT	14	33.0		33.0					DRIVE OFF MLK BLVD.	
7	25+22.50	LT	14	24.4		24.4					HALL AVE.	
7	25+96.32	LT	12	23.2		23.2					HALL AVE.	
8	29+53.70	RT	11	22.6		22.6					HALL AVE.	
8	30+07.96	LT	18	36.5		36.5					HALL AVE.	
8	30+10.57	RT	12	24.2		24.2					HALL AVE.	
8	30+69.87	RT	16	30.8		30.8					HALL AVE.	
8	31+05.12	LT	9	20.3		20.3					HALL AVE.	
8	31+50.30	RT	10	20.1		20.1					HALL AVE.	
8	31+91.58	RT	14	26.6		26.6					HALL AVE.	
8	31+97.13	LT	12	26.5		26.5					HALL AVE.	
8	0+59.34	RT	40	89.3			7.5				N. JOHN ST.	
8	0+79.10	LT	50	99.2			8.4				S. JOHN ST.	
9	36+03.85	RT	12	27.0		27.0					HALL AVE.	
10	39+64.39	LT	18	31.0		31.0					HALL AVE.	
10	40+40.06	RT	16	36.2		36.2					HALL AVE.	
10	42+08.86	RT	14	67.8		67.8					HALL AVE.	
10	42+40.86	LT	14	19.0		19.0					HALL AVE.	
10	42+99.41	LT	10	10.7		10.7					HALL AVE.	
10	43+16.87	LT	10	12.8		12.8					HALL AVE.	
10	43+58.45	LT	10	13.3		13.3					HALL AVE.	
11	46+45.61	RT	15	30.2		30.2					HALL AVE.	
11	46+71.04	LT	11	13.3		13.3					HALL AVE.	
11	47+20.62	RT	13	25.6		25.6					HALL AVE.	
11	47+45.26	RT	20	39.3		39.3					HALL AVE.	
11	48+03.41	LT	13	14.0		14.0					HALL AVE.	
11	48+64.82	RT	9	16.9		16.9					HALL AVE.	
11	48+65.51	LT	11	11.2		11.2					HALL AVE.	
11	48+87.50	LT	15	14.3		14.3					HALL AVE.	
12	50+00.44	RT	9	19.3		19.3					HALL AVE.	
12	50+30.73	RT	22	41.6		41.6					HALL AVE.	
12	50+83.19	RT	23	42.2		42.2					HALL AVE.	
13	100+14.72	RT	18	22.4		22.4					MARTIN LUTHER KING BLVD.	
13	101+02.04	LT	16	31.8		31.8					MARTIN LUTHER KING BLVD.	
13	102+75.66	RT	24	33.5		33.5					MARTIN LUTHER KING BLVD.	
13	104+21.58	RT	20	676.0	158.2		70.4	94.0	140.8	417.1	MARTIN LUTHER KING BLVD.	
13	104+89.34	RT	21	70.6			6.0	8.0	11.9	35.3	MARTIN LUTHER KING BLVD.	
14	10+76.68	RT	9	16.5		16.5					EASTSIDE DRIVE	
15	0+87.51	RT	20	41.7		41.7					CHARLES ST.	
16	0+68.24	RT	10	15.1		15.1					WALNUT STREET	
16	1+18.71	RT	9	17.9		17.9					WALNUT STREET	
UNITS				SQ. YDS.	SQ. YDS.	SQ. YDS.	TONS	TONS	TONS	CU. YDS.		
AREA TOTALS				2675.3	158.2							
PROJECT TOTAL						1740.2	92.3	102.0	152.7	452.4		

COMBINATION CONCRETE CURB AND GUTTER REQUIRED								
WK. NO.	STATION TO STATION		TYPE "2" MODIFIED	TYPE "3A" MODIFIED "1"	TYPE "3A" MODIFIED "2"	CONCRETE HEADER CURB	SPECIAL DESIGN CONCRETE HEADER CURB	REMARKS
WK3	747+00	753+00	195		512			WEST PINE STREET
WK4	753+00	754+00						WEST PINE STREET
WK5	10+00	14+00			815			HALL AVENUE
WK6	14+00	20+00			329			HALL AVENUE
WK7	20+00	26+00		359	1222	3		HALL AVENUE
WK8	26+00	32+00		952	1145	6		HALL AVENUE
WK9	32+00	38+00		835	1195	9		HALL AVENUE
WK10	38+00	44+00		664	1058	6		HALL AVENUE
WK11	44+00	50+00		588	1069	6		HALL AVENUE
WK12	50+00	51+00			86			HALL AVENUE
WK13	100+00	106+25	111		1066			MARTIN LUTHER KING BLVD.
WK14	0+83	3+00			435			ALLEY
UNITS			L. F.	L. F.	L. F.	L. F.	L. F.	
TOTALS			306	3398	8932	30	0	

CONCRETE SIDEWALK, ISLAND PAVEMENT AND CROSSWALK REQUIRED								
WK. NO.	STATION TO STATION		CONCRETE SIDEWALK	CONC. MEDIAN AND ISLAND PAV'T. (4" THICK.)	CONC. MEDIAN AND ISLAND PAV'T. (10" THICK.)	COLORED AND IMPRINTED CONC. PAV'T. (10" THICK.)	POLYMER CEMENT SURFACE SYSTEM (CROSSWALKS)	REMARKS
WK3	747+00	753+00	408			295	131	WEST PINE STREET
WK4	753+00	754+00						WEST PINE STREET
WK5	10+00	14+00	147					HALL AVENUE
WK6	14+00	20+00	259					HALL AVENUE
WK7	20+00	26+00	841			19	50	HALL AVENUE
WK8	26+00	32+00	750			37	55	HALL AVENUE
WK9	32+00	38+00	769			56	77	HALL AVENUE
WK10	38+00	44+00	776			37	34	HALL AVENUE
WK11	44+00	50+00	725			37	115	HALL AVENUE
WK12	50+00	54+00	61					HALL AVENUE
WK13	100+00	107+00	348			522	18	MARTIN LUTHER KING BLVD.
WK14	0+85	3+00						ALLEY
UNITS			SQ. YDS.	SQ. YDS.	SQ. YDS.	SQ. FT.	SQ. YDS.	
TOTALS			5084	0	0	1003	480	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



ESTIMATED QUANTITIES
CURB & GUTTER, SIDEWALK
DRIVEWAYS, ISLAND PAVING
AND CROSSWALKS

WORKING NUMBER:
EQ-4

DRAWING NUMBER:
19

NOTICE TO DRAWING HOLDER

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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_E0.dwg	
				SCALE: NO SCALE	
				SURVEYED BY:	
				DSGN: GPC	DATE: 06/2022
				DRWN: JPF	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

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SIGNS REQUIRED						
	SIGN NO.	SIZE	UNIT AREA SQ.FT.	QUAN. REQ'D.	TOTAL SIGN AREA SQ.FT.	REMARKS
	G20 - 1	36" X 18"	4.50	3	13.50	ROAD WORK NEXT X X MILES
	G20 - 2	36" X 18"	4.50	3	13.50	END ROAD WORK
	G20 - 4	36" X 18"	4.50			PILOT CAR FOLLOW ME
1	M1 - 1	24" X 24"	4.00			1 OR 2 DIGIT
1	M1 - 1	30" X 24"	5.00			3 DIGIT
2	M1 - 4	24" X 24"	4.00			1 OR 2 DIGIT
2	M1 - 4	30" X 24"	5.00			3 DIGIT
3	M1 - 5	24" X 24"	4.00			1 OR 2 DIGIT
3	M1 - 5	30" X 24"	5.00			3 DIGIT
4	M3 - 1	24" X 12"	2.00			NORTH- 1 OR 2 DIGIT RTE. MARKER
4	M3 - 1	30" X 15"	3.13			NORTH- 3 DIGIT RTE. MARKER
4	M3 - 2	24" X 12"	2.00			EAST- 1 OR 2 DIGIT RTE. MARKER
4	M3 - 2	30" X 15"	3.13			EAST- 3 DIGIT RTE. MARKER
4	M3 - 3	24" X 12"	2.00			SOUTH- 1 OR 2 DIGIT RTE. MARKER
4	M3 - 3	30" X 15"	3.13			SOUTH- 3 DIGIT RTE. MARKER
4	M3 - 4	24" X 12"	2.00			WEST- 1 OR 2 DIGIT RTE. MARKER
4	M3 - 4	30" X 15"	3.13			WEST- 3 DIGIT RTE. MARKER
	M4 - 8	24" X 12"	2.00			DETOUR- 1 OR 2 DIGIT RTE. MARKER
	M4 - 8	30" X 15"	3.13			DETOUR- 3 DIGIT RTE. MARKER
	M4 - 8a	24" X 18"	3.00	2	6.00	END DETOUR
	M4 - 9	30" X 24"	5.00	3	15.00	DETOUR ↑
	M4 - 9L	30" X 24"	5.00	3	15.00	DETOUR ←
	M4 - 9BL	30" X 24"	5.00			DETOUR ↙
	M4 - 9SL	30" X 24"	5.00			DETOUR ↘
	M4 - 9BSL	30" X 24"	5.00			DETOUR ↗
	M4 - 9R	30" X 24"	5.00	4	20.00	DETOUR →
	M4 - 9BR	30" X 24"	5.00			DETOUR ↘
	M4 - 9SR	30" X 24"	5.00			DETOUR ↗
	M4 - 9BSR	30" X 24"	5.00			DETOUR ↙
	M4 - 10L	48" X 18"	6.00	3	18.00	← DETOUR
	M4 - 10R	48" X 18"	6.00	3	18.00	DETOUR →
4	M4 - 5	24" X 12"	2.00			TO
4	M5 - 1L	21" X 15"	2.19			↙
4	M5 - 1R	21" X 15"	2.19			↘
4	M5 - 2L	21" X 15"	2.19			↖
4	M5 - 2R	21" X 15"	2.19			↗
4	M6 - 1L	21" X 15"	2.19			←
4	M6 - 1R	21" X 15"	2.19			→
4	M6 - 2L	21" X 15"	2.19			↖
4	M6 - 2R	21" X 15"	2.19			↗
4	M6 - 3	21" X 15"	2.19			↑
	R1 - 1	36" OCTAGON	9.00			STOP
	R1 - 1	48" OCTAGON	16.00 ♦			
	R1 - 2	36" X 36" X 36"	3.90			YIELD
	R1 - 2	60" X 60" X 60"	10.83 ♦			

SIGNS REQUIRED (CONT'D)					
SIGN NO.	SIZE	UNIT AREA SQ.FT.	QUAN. REQ'D.	TOTAL SIGN AREA SQ.FT.	REMARKS
R1 - 3	18" X 9"	1.13			3-WAY, 4 WAY ETC.
R1 - 3	24" X 12"	2.00			
R2 - 1	24" X 30"	5.00			
R2 - 1	36" X 48"	12.00			SPEED LIMIT
R2 - 1	48" X 60"	20.00			
R3 - 1	36" X 36"	9.00			
R3 - 1	48" X 48"	16.00			
R3 - 2	36" X 36"	9.00			
R3 - 2	48" X 48"	16.00			
R3 - 4	36" X 36"	9.00			
R3 - 4	48" X 48"	16.00			
R3 - 5L	30" X 36"	7.50			ONLY
R3 - 5R	30" X 36"	7.50			ONLY
R3 - 6L	30" X 36"	7.50			
R3 - 6R	30" X 36"	7.50			
R3 - 7L	30" X 30"	6.25			LEFT LANE MUST TURN LEFT
R3 - 7R	30" X 30"	6.25			RIGHT LANE MUST TURN RIGHT
R4 - 1	24" X 30"	5.00			DO NOT PASS
	48" X 60"	20.00			
R4 - 2	24" X 30"	5.00			PASS WITH CARE
	48" X 60"	20.00			
R4 - 7	48" X 60"	20.00			
R4 - 8	48" X 60"	20.00			
R5 - 1	36" X 36"	9.00			DO NOT ENTER
R5 - 1a	42" X 30"	8.75			WRONG WAY
R6 - 1L	36" X 12"	3.00			ONE WAY
R6 - 1R	36" X 12"	3.00			ONE WAY
R6 - 2L	24" X 30"	5.00			ONE WAY
R6 - 2R	24" X 30"	5.00			ONE WAY
R7-1	12" X 18"	1.50			NO PARKING
R8-13	36" X 36"	9.00			BRIDGE ICES BEFORE ROAD
R11 - 2	48" X 30"	10.00	11	110.00	ROAD CLOSED
R11 - 3a	60" X 30"	12.50			ROAD CLOSED XX MILES AHEAD
R11 - 3b	60" X 30"	12.50			BRIDGE OUT XX MILES AHEAD
R11 - 4	60" X 30"	12.50	5	62.50	ROAD CLOSED TO THRU TRAFFIC
R12 - 1	36" X 48"	12.00			WEIGHT LIMIT XX TONS
					WHEN WORKERS ARE PRESENT SPEEDING FINES DOUBLED
R16- 3	36" X 48"	12.00			
	48" X 60"	20.00			
W1 - 1L	30" X 30"	6.25			
W1 - 1R	30" X 30"	6.25			
W1 - 2L	36" X 36"	9.00			
W1 - 2R	36" X 36"	9.00			
W1 - 3L	48" X 48"	16.00			
W1 - 3R	48" X 48"	16.00			
W1 - 4aL	48" X 48"	16.00			
W1 - 4aR	48" X 48"	16.00			
W1 - 5L	48" X 48"	16.00			
W1 - 5R	48" X 48"	16.00			
W1 - 6L	48" X 24"	8.00			
W1 - 6L	60" X 30"	12.50			
W1 - 6R	48" X 24"	8.00			
W1 - 6R	60" X 30"	12.50			
W1 - 7	48" X 24"	8.00			

SIGNS REQUIRED (CONT'D)					
SIGN NO.	SIZE	UNIT AREA SQ.FT.	QUAN. REQ'D.	TOTAL SIGN AREA SQ.FT.	REMARKS
W1 - 7	60" X 30"	12.50			
W1 - 8L	18" X 24"	3.00			
W1 - 8L	36" X 48"	12.00			
W1 - 8R	18" X 24"	3.00			
W1 - 8R	36" X 48"	12.00			
W1 - 9L	48" X 48"	16.00			
W1 - 9R	48" X 48"	16.00			
W3 - 1	36" X 36"	9.00			
W3 - 1a	48" X 48"	16.00			
W3 - 2a	48" X 48"	16.00			
W3 - 3	36" X 36"	9.00			
W3 - 5	48" X 48"	16.00			SPEED REDUCTION
W4 - 1L	48" X 48"	16.00			
W4 - 1R	48" X 48"	16.00			
W4 - 2L	36" X 36"	9.00			
W4 - 2R	36" X 36"	9.00			
W5 - 1a	48" X 48"	16.00			PAVEMENT NARROWS
W6 - 1	48" X 48"	16.00			
W6 - 2	48" X 48"	16.00			
W6 - 3	36" X 36"	9.00			
W8 - 1	48" X 48"	16.00			BUMP
W8 - 4	48" X 48"	16.00			SOFT SHOULDER
W8 - 6	48" X 48"	16.00			TRUCK CROSSING
W8 - 9	36" X 36"	9.00			LOW SHOULDER
W8 - 11	36" X 36"	9.00			UNEVEN LANES
W10 - 1	36" DIA.	7.07			
W10 - 1	48" DIA.	12.56			
W13 - 1	24" X 24"	4.00			XX MPH
	36"X48"X48"	5.56			NO PASSING ZONE
W14 - 3	48"X64"X64"	9.89			
W16-2	24" X 18"	3.00			XXX FEET
W16-9p	24" X 12"	2.00			AHEAD
W19 - 2	48" X 48"	16.00			BRIDGE MAY ICE IN COLD WEATHER
W20 - 1	48" X 48"	16.00			
W20 - 1	36" X 36"	9.00	19	171.00	ADVANCE ROAD WORK
W20 - 2	36" X 36"	9.00	4	36.00	ADVANCE DETOUR
W20 - 3	36" X 36"	9.00	1	9.00	ADVANCE ROAD CLOSED
W20 - 4	48" X 48"	16.00			ADVANCE ONE-LN. RD.
W20 - 4B	48" X 48"	16.00			ADVANCE ONE-LN. BR.
W20 - 5L	36" X 36"	9.00			ADVANCE LT. LN. CLOSED
W20 - 5R	36" X 36"	9.00			ADVANCE RT. LN. CLOSED
W20 - 7a	48" X 48"	16.00			
W21 - 1	36" X 36"	9.00			WORKERS
W21 - 1a	36" X 36"	9.00			

SIGNS REQUIRED (CONT'D)					
SIGN NO.	SIZE	UNIT AREA SQ.FT.	QUAN. REQ'D.	TOTAL SIGN AREA SQ.FT.	REMARKS
W21 – 2	36" X 36"	9.00			FRESH OIL (TAR)
W21 – 3	48" X 48"	16.00 ♦			ADVANCE ROAD MACHINERY
W21 – 5	48" X 48"	16.00 ♦			SHOULDER WORK
W21 – 6	36" X 36"	9.00			SURVEY CREW
S1-1	36" X 36"	6.75			
D3-1	30" X 12"	2.50	7	17.50	STREET NAME
VP – IL	12" X 36"	3.00			
VP – IR	12" X 36"	3.00			
OM – 3L	12" X 36"	3.00			
OM – 3R	12" X 36"	3.00			
TOTAL SIGN AREA				LESS THAN 10 SQ. FT.	352.50 SQ. FT.
TOTAL SIGN AREA				10 SQ. FT. OR MORE ♦	102.50 SQ. FT.
① STANDARD					
② SPECIAL (USE WHERE WARRANTED)					

NOTES

- 1 INTERSTATE ROUTE MARKER
- 2 UNITED STATES ROUTE MARKER
- 3 STATE ROUTE MARKER
- 4 COLORS OF CARDINAL DIRECTION MARKERS AND DIRECTIONAL ARROWS SHALL BE APPROPRIATE TO MATCH ACCOMPANYING ROUTE MARKERS.
- 5 BLACK STRIPES ON YELLOW BACKGROUND
- 6 INTERSTATE USE ONLY
- 7 TOP OF SIGN - BLACK LETTERING ON ORANGE BACKGROUND, BOTTOM OF SIGN - BLACK LETTERING ON WHITE BACKGROUND

THE BACKGROUND OF ALL WARNING SIGNS ("W" SERIES) EXCEPT W10-1 SHALL BE ORANGE. THE W10-1 BACKGROUND SHALL BE YELLOW IN ALL CASES.

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	
NO.	DATE	BY	DESCRIPTION	

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

NEEL-SCHAFER

Solutions you can build upon

ESTIMATED QUANTITIES

TRAFFIC CONTROL SIGNS

WORKING NUMBER:

EQ-5

DRAWING NUMBER:

20

8/11/2022 3:58 PM o:\16000\hottlesburg\16214 hdl avenue west\design\project\2 - roadway\plans\16214_eq.dwg

8/11/2022 3:58 PM o:\16000\hottlesburg\16214 hdl avenue west\design\project\2 - roadway\plans\16214_eq.dwg

8/17/2022 10:06 AM C:\6000\Hattiesburg\16214 Hall Avenue West\asph\project\2 - roadway\plans\16214.asdwg

STANDARD ROADSIDE SIGN ASSEMBLIES REQUIRED								
SHEET NUMBER	CODE LETTER THIS SHEET	STANDARD ROADSIDE SIGNS TO BE MOUNTED	STANDARD PIPE		U-SECTION POST		STRUCTURAL BARS	FOOTING CLASS "B" CONCRETE
			3"	4	2-P	3-P	7/16" x 2-1/2"	
PSP-1	A	W3-3				14'-6"		
	B	R1-2				13'-0"		
	C	R1-2				13'-0"		
	D	R7-1				12'-0"		
	E	R7-1				12'-0"		
	F	W3-3				14'-6"		
	G	R1-1				13'-6"		
	H	W3-1				13'-6"		
	I	R1-1				13'-6"		
PSP-1	J	W3-1				13'-6"		
PSP-2	A	W8-13				10'-0"		
PSP-2	B	W3-3				14'-6"		
PSP-3	A	R1-1				13'-6"		
	B	R5-1, R1-2				13'-0"		
	C	W10-1				12'-6"		
	D	R1-1				13'-6"		
PSP-3	E	W10-1				12'-6"		
PSP-4	A	W8-13				10'-0"		
	B	R1-1				13'-6"		
	C	W1-1L				13'-6"		
	D	W1-1R				13'-6"		
	E	R1-1				13'-6"		
	F	R1-1				13'-6"		
	G	R2-1				12'-6"		
PSP-4	H	R2-1				12'-6"		
PSP-5	A	R1-1				13'-6"		
	B	R1-1				13'-6"		
	C	R1-1				13'-6"		
	D	R1-1				13'-6"		
	E	R1-1				13'-6"		
PSP-5	F	R1-1				13'-6"		
TOTAL THIS BLOCK			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT. POUNDS	CU. YDS.
						406'-0"		0

STANDARD ROADSIDE SIGN ASSEMBLIES REQUIRED								
SHEET NUMBER	CODE LETTER THIS SHEET	STANDARD ROADSIDE SIGNS TO BE MOUNTED	STANDARD PIPE		U-SECTION POST		STRUCTURAL BARS	FOOTING CLASS "B" CONCRETE
			3"	4	2-P	3-P	7/16" x 2-1/2"	
PSP-6	A	R2-1				12'-6"		
	B	W3-3				14'-6"		
	C	S1-1, W16-9p				14'-0"		
	D	R16-1, AR-709				13'-0"		
	E	R1-1				13'-6"		
	F	W3-3				14'-6"		
		W3-3				14'-6"		
		W3-3				14'-6"		
TOTAL THIS BLOCK			LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT.	LIN. FT. POUNDS	CU. YDS.
						112'-0"		0
TOTAL FIRST BLOCK						406'-0"		0
PROJECT TOTAL						518'-0"		0

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	NEEL-SCHAFFER Solutions you can build upon	ESTIMATED QUANTITIES STANDARD ROADSIDE SIGN ASSEMBLIES	
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					DRWN: JPF	DATE: 06/2022				
					CHKD: GPC	DATE: 08/2022				
					QA/QC: MWE	DATE: 08/2022				
	WORKING NUMBER:		DRAWING NUMBER:							
EQ-7		22								

STANDARD ROADSIDE SIGNS					
SHEET ALUMINUM - 0.080" THICKNESS					
SIGN NUMBER	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	REMARKS
R1-2	36" TRIANGLE	3.90	3	11.70	"YIELD"
R2-1	30 " x 24 "	5.00	3	15.00	"SPEED LIMIT"
R7-1	18 " x 12 "	1.50	2	3.00	"NO PARKING"
AR-115	18 " x 12 "	1.50	1	1.50	"NO DUMPING"
AR-709	18 " x 12 "	1.50	1	1.50	"DO NOT BLOCK DRIVEWAY"
W1-1L	30 " x 30 "	6.25	1	6.25	"LEFT TURN"
W1-1R	30 " x 30 "	6.25	1	6.25	"RIGHT TURN"
W16-9p	24 " x 12 "	2.00	1	2.00	"AHEAD"
TOTAL (0.080" THICKNESS)			13	47.20	

STANDARD ROADSIDE SIGNS					
SHEET ALUMINUM - 0.100" THICKNESS					
SIGN NUMBER	SIZE	UNIT AREA (SQ. FT.)	QUANTITY REQUIRED	TOTAL SIGN AREA (SQ. FT.)	REMARKS
R1-1	36" OCTAGON	9.00	14	126.00	"STOP"
W3-1	36 " x 36 "	9.00	2	18.00	"STOP AHEAD"
W3-3	36 " x 36 "	9.00	7	63.00	"SIGNAL AHEAD"
R5-1	36 " x 36 "	9.00	1	9.00	"DO NOT ENTER"
R8-13	36 " x 36 "	9.00	2	18.00	"BRIDGE ICES BEFORE ROAD"
W10-1	36" CIRCLE	7.07	2	14.14	"RAILROAD"
S1-1	36 " x 36 "	9.00	1	6.75	"SCHOOL ZONE"
TOTAL (0.100" THICKNESS)			29	254.89	

SUMMARY OF PAVEMENT MARKINGS														
WK. SH. NO.	STATION TO STATION		THERMOPLASTIC								MARKERS			REMARKS
			CONTINUOUS		DETAIL		SKIP		LEGEND		RED- CLEAR	CLEAR 2 WAY	YELLOW 2 WAY	
			WHITE	YELLOW	WHITE	YELLOW	WHITE	YELLOW	WHITE (LF)	WHITE (SF)				
PM-1	747+00	754+00		1986	827		1440		677	225.35	61	12	64	WEST PINE STREET
PM-2	11+00	19+00		1608	240					153.6	10		58	HALL AVENUE
PM-3	100+00	107+50		1124	178	312			508	134	5		44	MARTIN LUTHER KING BLVD.
PM-4	19+00	25+50		842		798			297				58	HALL AVENUE
PM-5	25+50	38+50				374			568				24	HALL AVENUE
PM-6	38+50	E.O.P.		706	513	220			732	290.8	27		48	HALL AVENUE
UNITS			L. F.	L. F.	L. F.	L. F.	L.F.	L. F.	L.F.	SQ. FT.	EACH	EACH	EACH	
TOTALS			0	6266	1758	1704	1440	0	2782	803.75	103	12	296	

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NOTICE TO DRAWING HOLDER				REVISIONS			DRAWING INFORMATION		
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								QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



ESTIMATED QUANTITIES
STANDARD ROADSIDE SIGNS
AND PAVEMENT MARKINGS

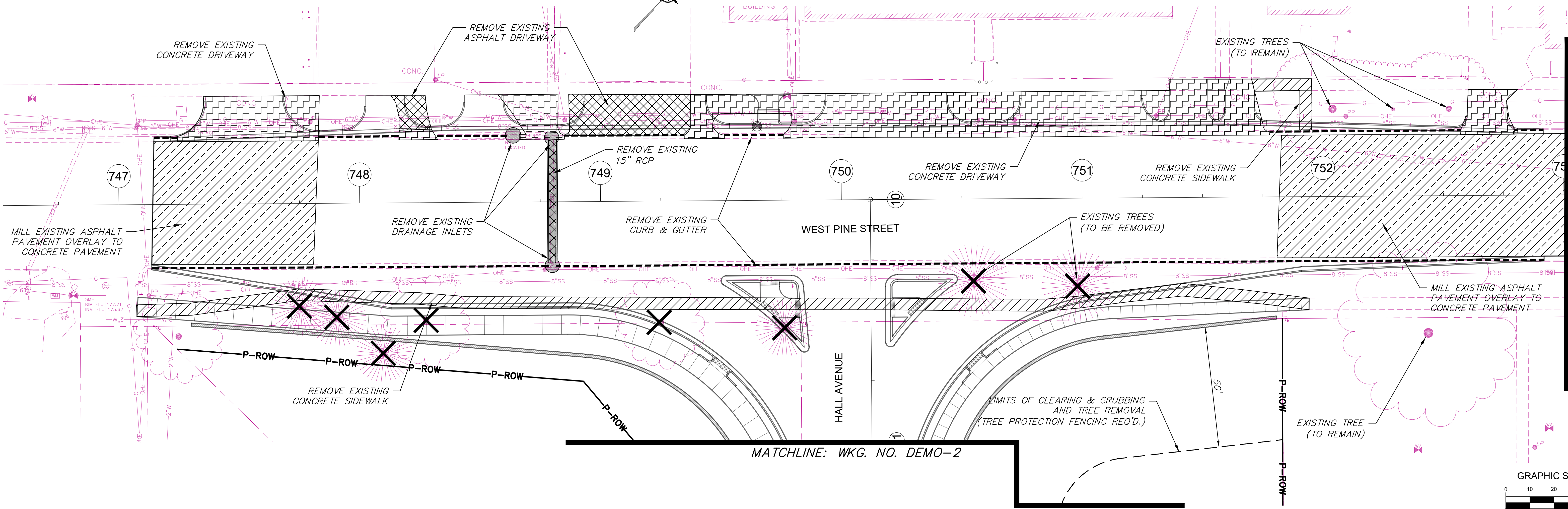
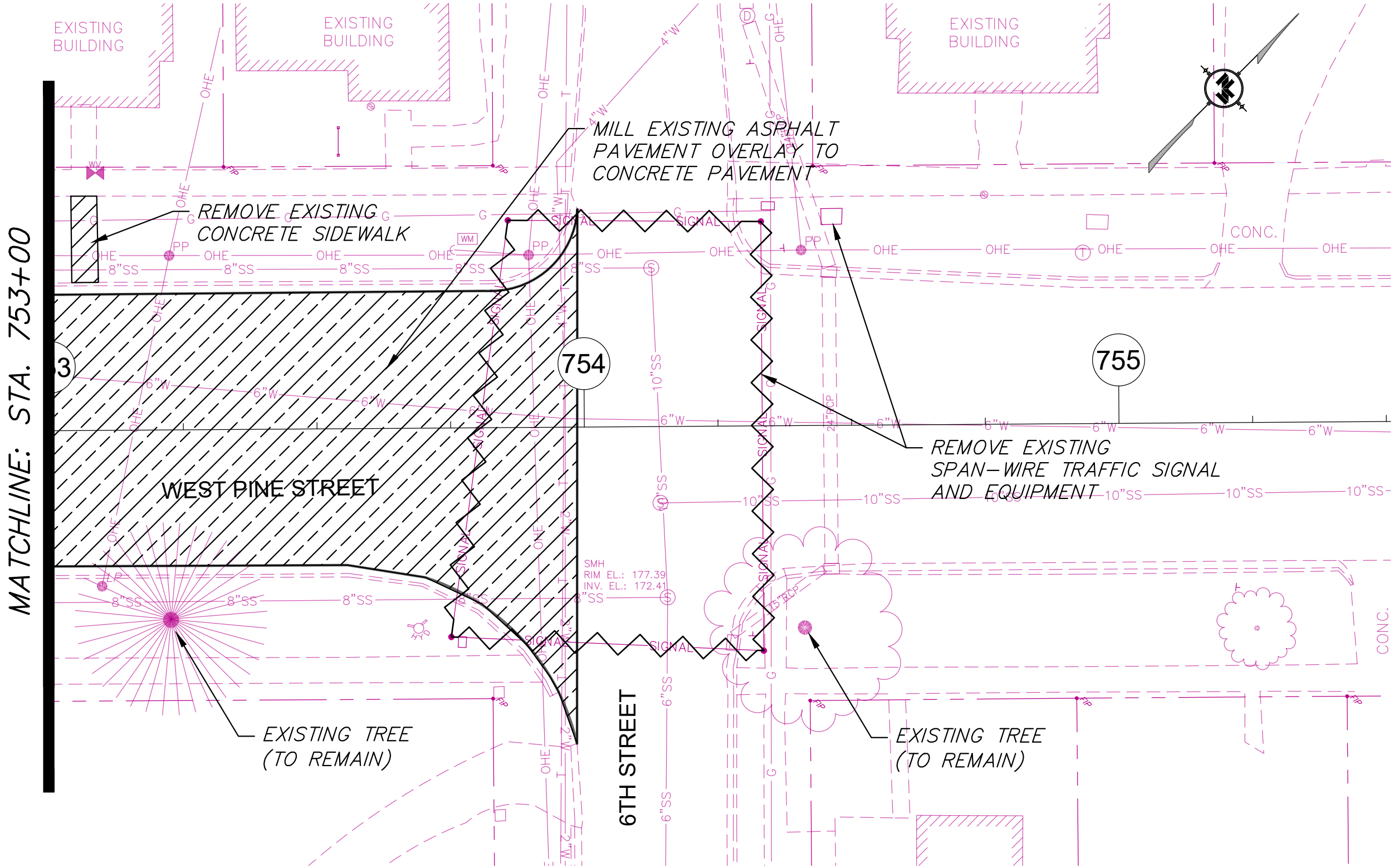
WORKING NUMBER:	DRAWING NUMBER:
EQ-8	23

PUBLIC UTILITIES
CITY OF HATTIESBURG
(WATER & SEWER) - (601)545-4530
AT&T - (601)310-0704
MS POWER COMPANY - (601)426-4800
XFINITY (COMCAST) - (601)874-1213
SPIRE GAS - (601)549-9071
CSPIRE - (601)624-4026

TREE REMOVAL NOTE:
ALL TREES THAT MAY NEED TO BE REMOVED TO FACILITATE
CONSTRUCTION MAY NOT BE SHOWN ON PLANS.
TREES WITHIN CONSTRUCTION LIMITS TO REMAIN SHALL BE
MARKED BY ENGINEER. ALL OTHER TREES SHALL BE REMOVED.

LEGEND:

- REMOVAL OF PAVEMENT
- FINE MILLING
- REMOVAL OF SIDEWALK
- REMOVAL OF CONCRETE DRIVEWAY
- REMOVAL OF DRAINAGE STRUCTURE
- REMOVAL OF CURB AND GUTTER
- REMOVAL OF FENCE OR TRAFFIC SIGNAL
- REMOVAL OF TREE



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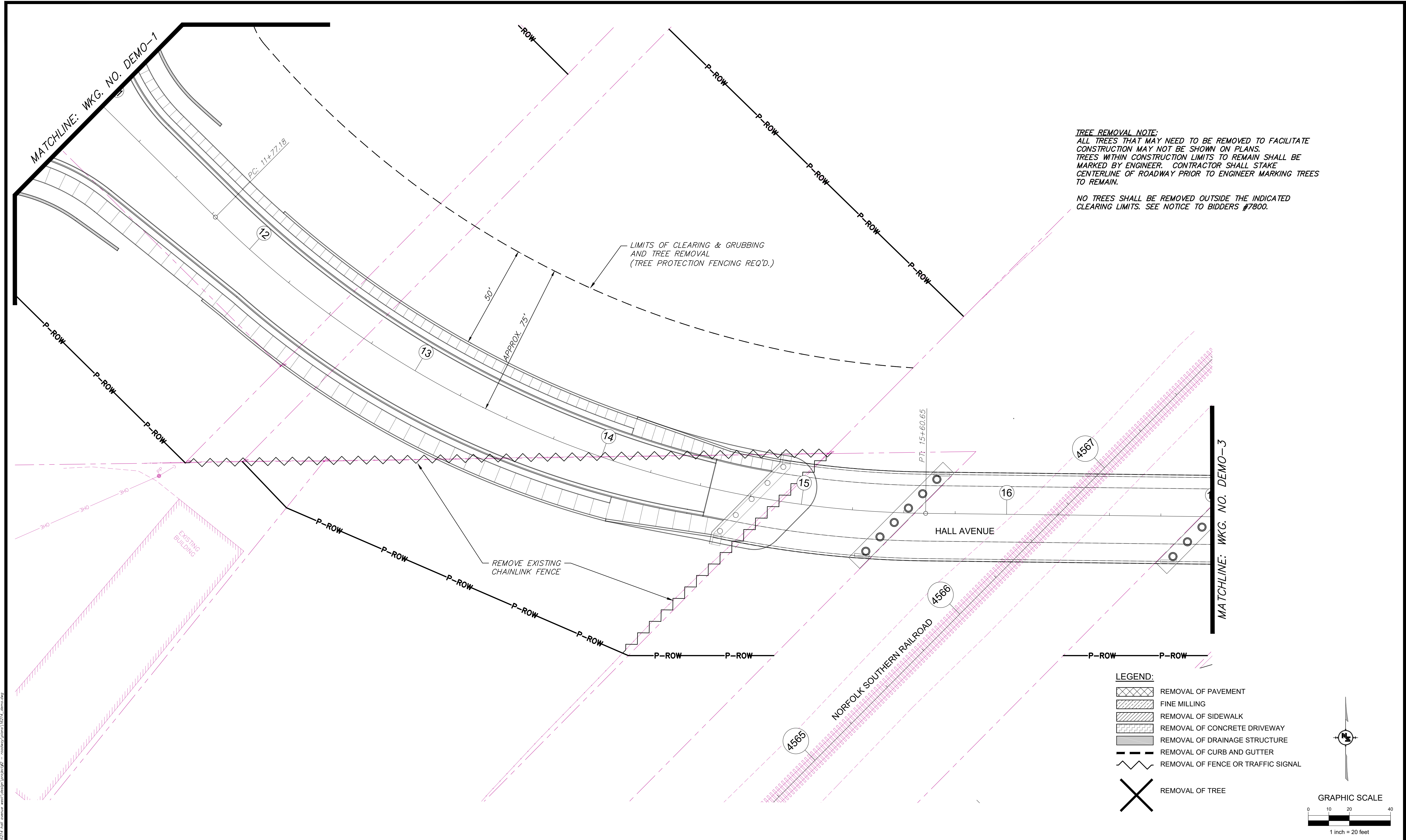
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



DEMOLITION PLAN
WEST PINE STREET
STA. 747+00 TO STA. 754+00

WORKING NUMBER:
DEMO-1

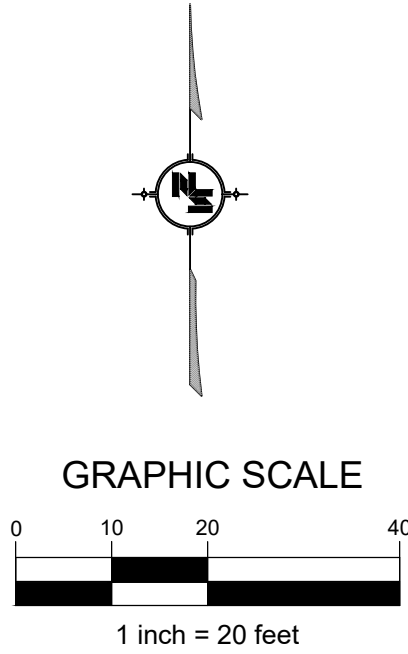
DRAWING NUMBER:
24



TREE REMOVAL NOTE:
ALL TREES THAT MAY NEED TO BE REMOVED TO FACILITATE CONSTRUCTION MAY NOT BE SHOWN ON PLANS. TREES WITHIN CONSTRUCTION LIMITS TO REMAIN SHALL BE MARKED BY ENGINEER. CONTRACTOR SHALL STAKE CENTERLINE OF ROADWAY PRIOR TO ENGINEER MARKING TREES TO REMAIN.

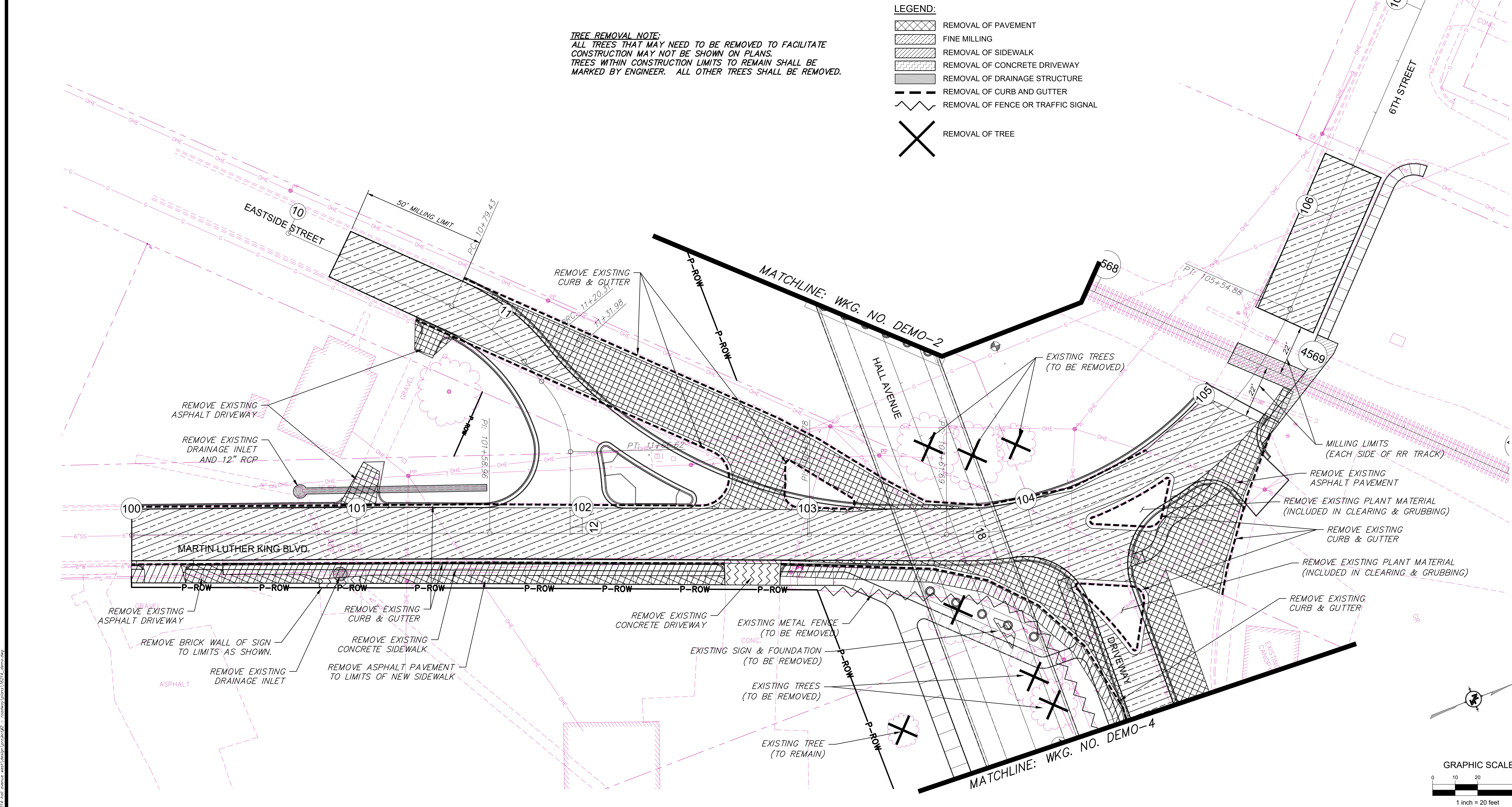
NO TREES SHALL BE REMOVED OUTSIDE THE INDICATED CLEARING LIMITS. SEE NOTICE TO BIDDERS #7800.

- LEGEND:**
- REMOVAL OF PAVEMENT
 - FINE MILLING
 - REMOVAL OF SIDEWALK
 - REMOVAL OF CONCRETE DRIVEWAY
 - REMOVAL OF DRAINAGE STRUCTURE
 - REMOVAL OF CURB AND GUTTER
 - REMOVAL OF FENCE OR TRAFFIC SIGNAL
 - REMOVAL OF TREE



NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		DEMOLITION PLAN HALL AVENUE STA. 11+00 TO STA. 17+00	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000				
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					CHKD: GPC	DATE: 08/2022			
					QA/QC: MWE	DATE: 08/2022		DEMO-2	25

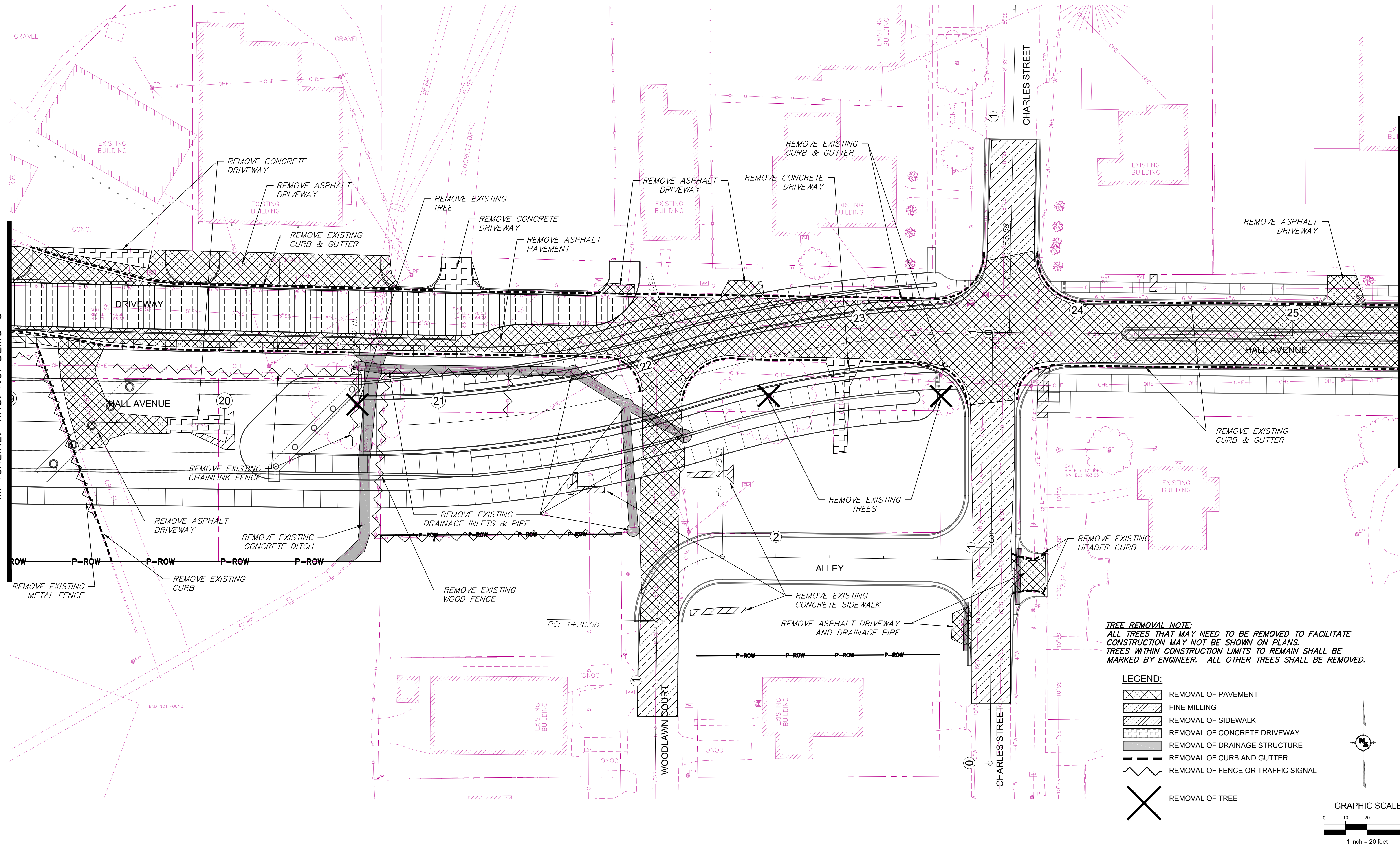
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MATCHLINE: WKG. NO. DEMO-3

MATCHLINE: WKG. NO. DEMO-5



NOTICE TO DRAWING HOLDER

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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



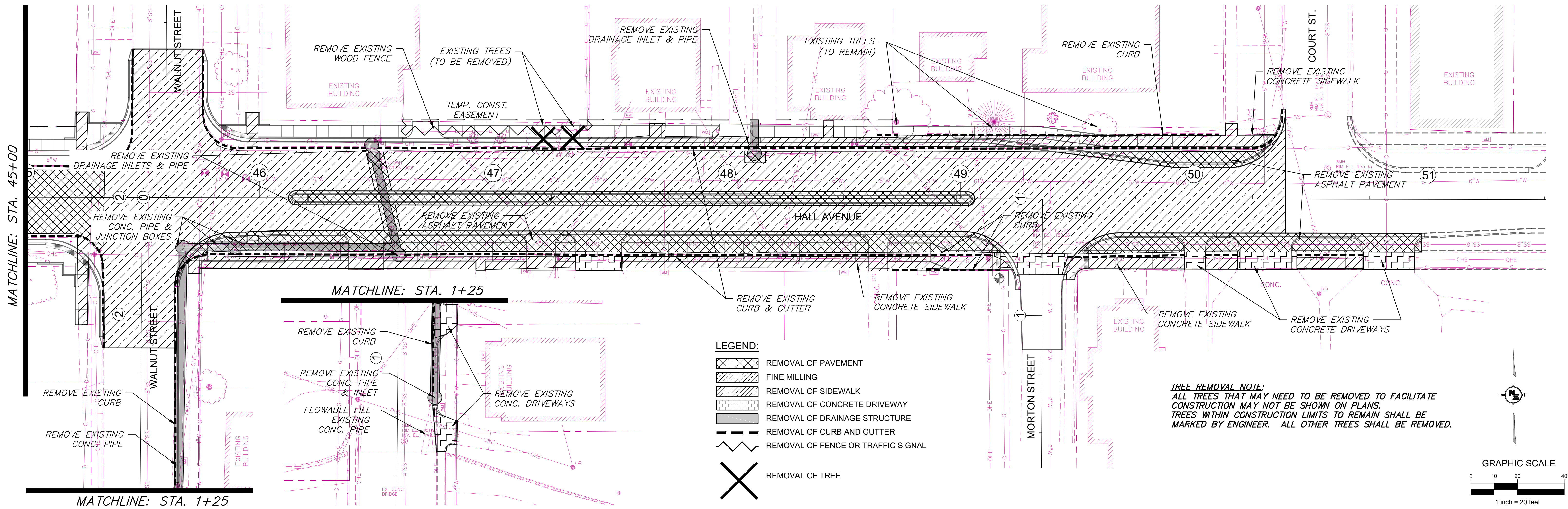
DEMOLITION PLAN
HALL AVENUE
STA. 19+00 TO STA. 25+50

WORKING NUMBER:
DEMO-4

DRAWING NUMBER:
27

MATCHLINE: WKG. NO. DEMO-5

MATCHLINE: STA. 45+00



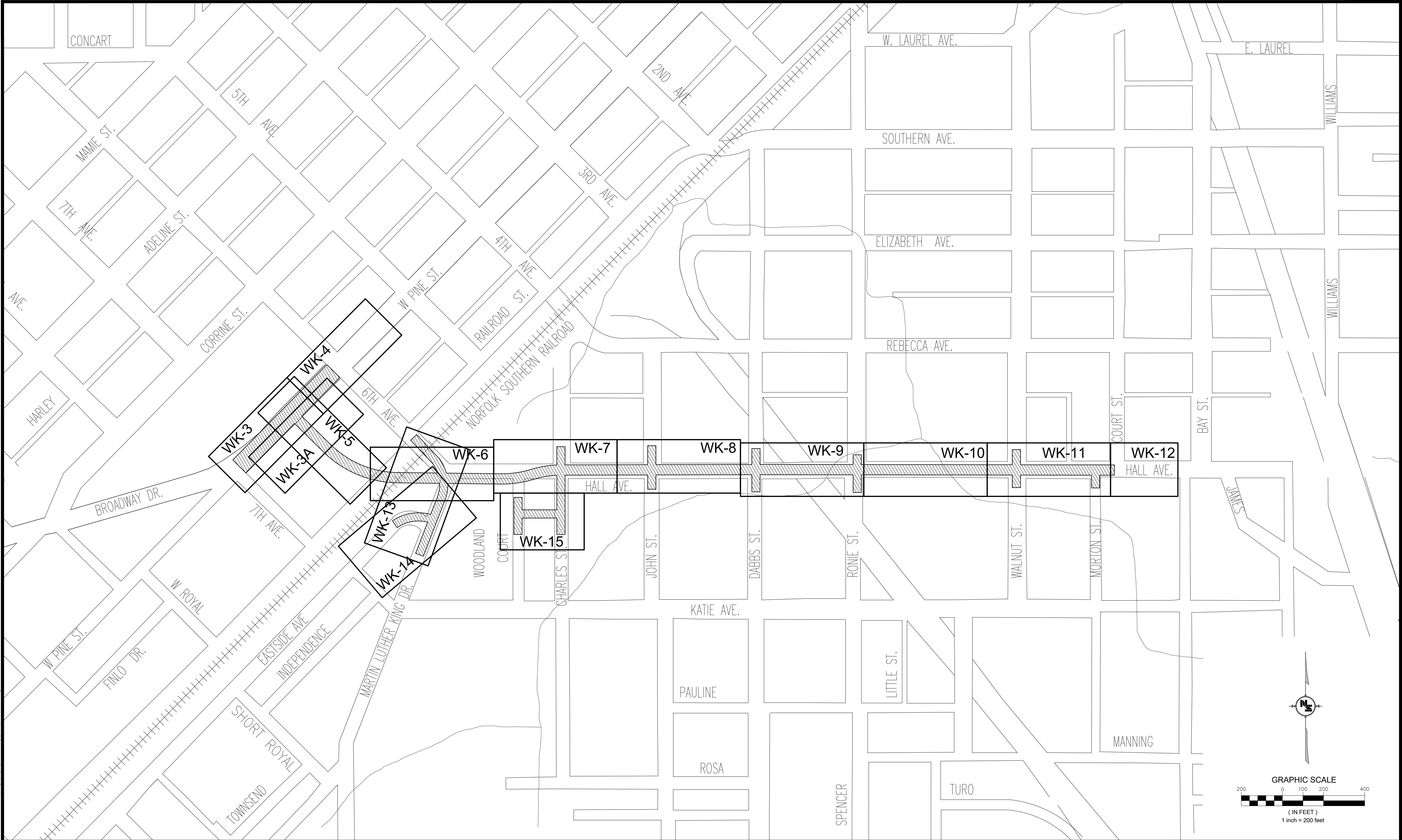
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			CHKD: GPC DATE: 08/2022	
			QA/QC: MWE DATE: 08/2022	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



DEMOLITION PLAN HALL AVENUE STA. 38+50 TO E.O.P.	
WORKING NUMBER: DEMO-6	DRAWING NUMBER: 29



NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	
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				DSGN: GPC DATE: 01/2022
				DRWN: JPF DATE: 01/2022
				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

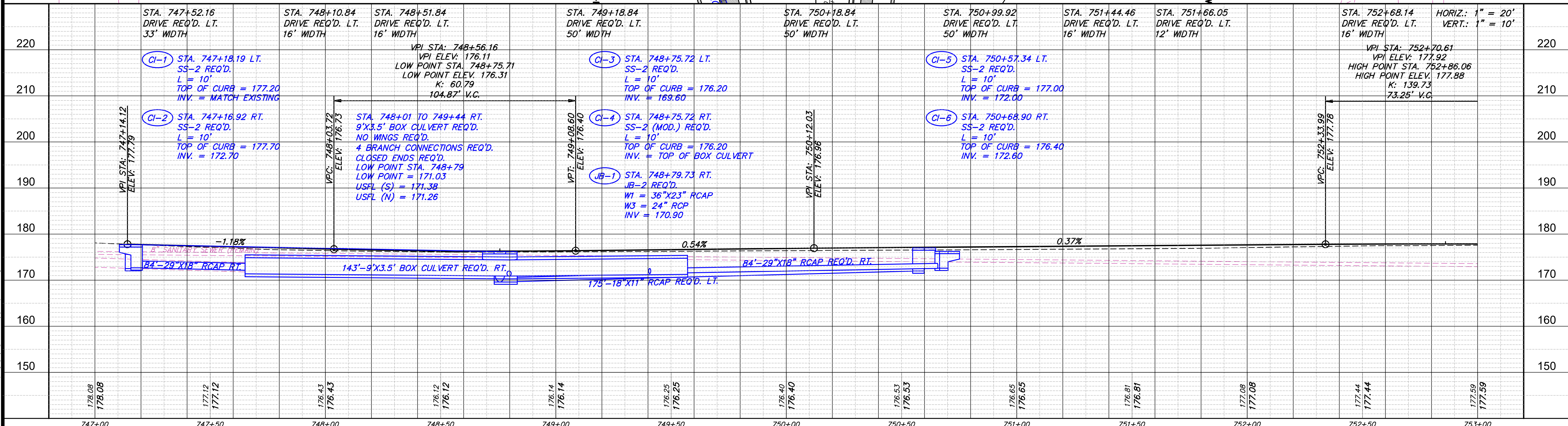
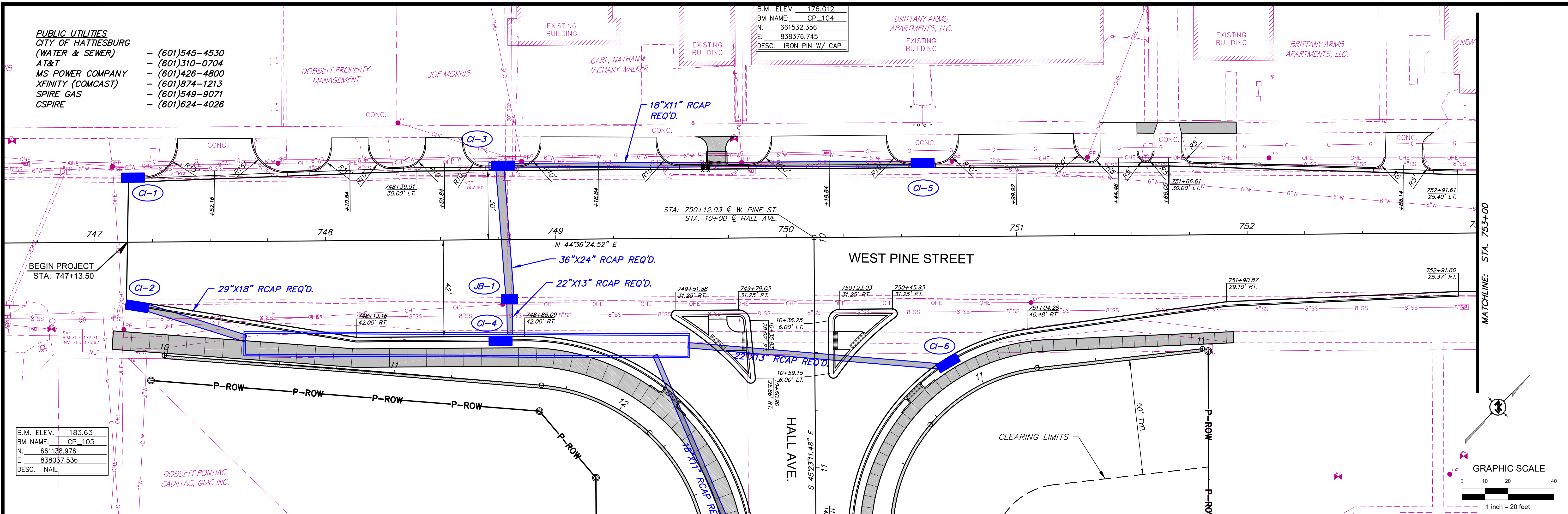
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



NEEL-SCHAFFER
Solutions you can build upon

OVERALL SHEET LAYOUT	
WORKING NUMBER:	DRAWING NUMBER:
OSL-1	30

8/1/2022 3:19 PM c:\p000\hattiesburg\16214_half_roadway\west\neel\project\2 - roadway\graphics\16214_Overall.dwg



NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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			
NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION	
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FILENAME: 16214_WK.dwg	
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SURVEYED BY:	
DSGN: GPC	DATE: 05/2022
DRWN: JPF	DATE: 05/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

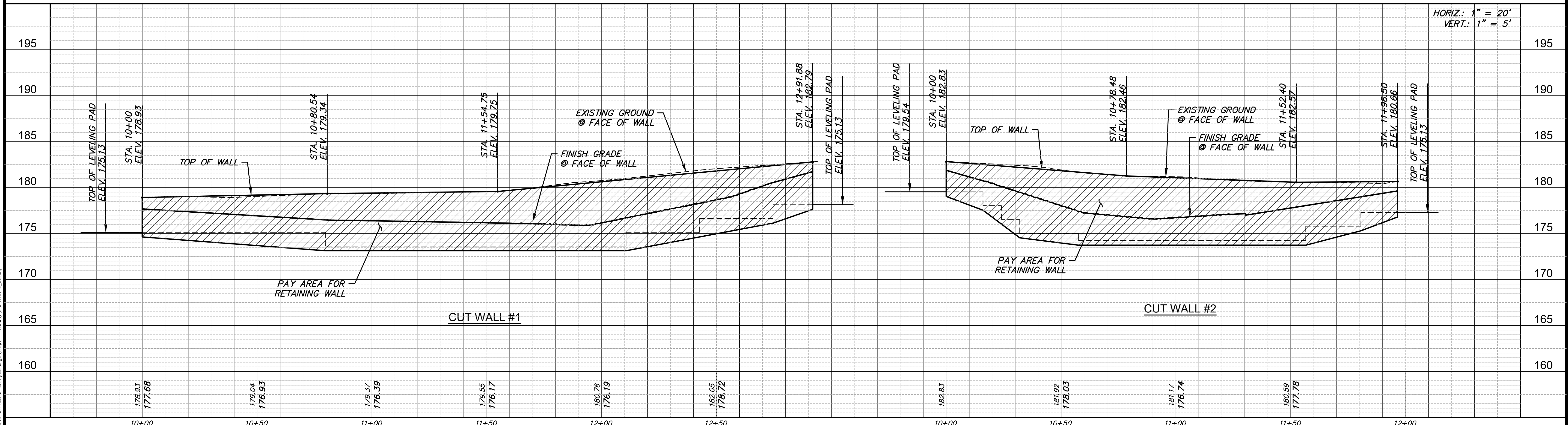
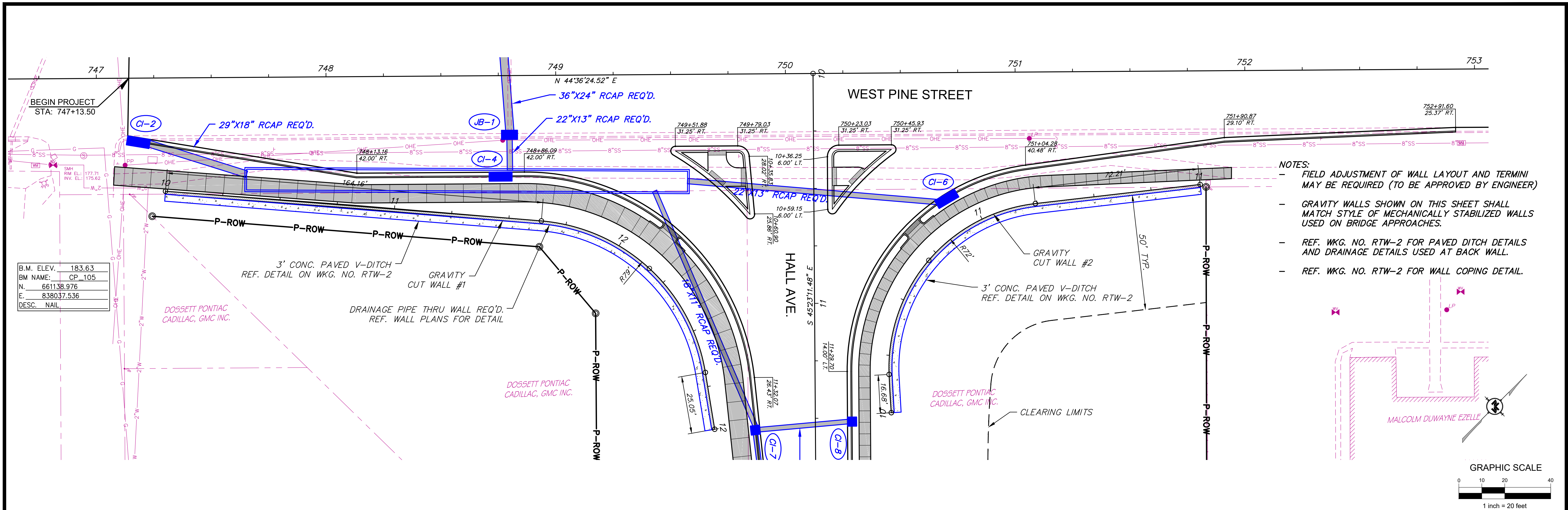
CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

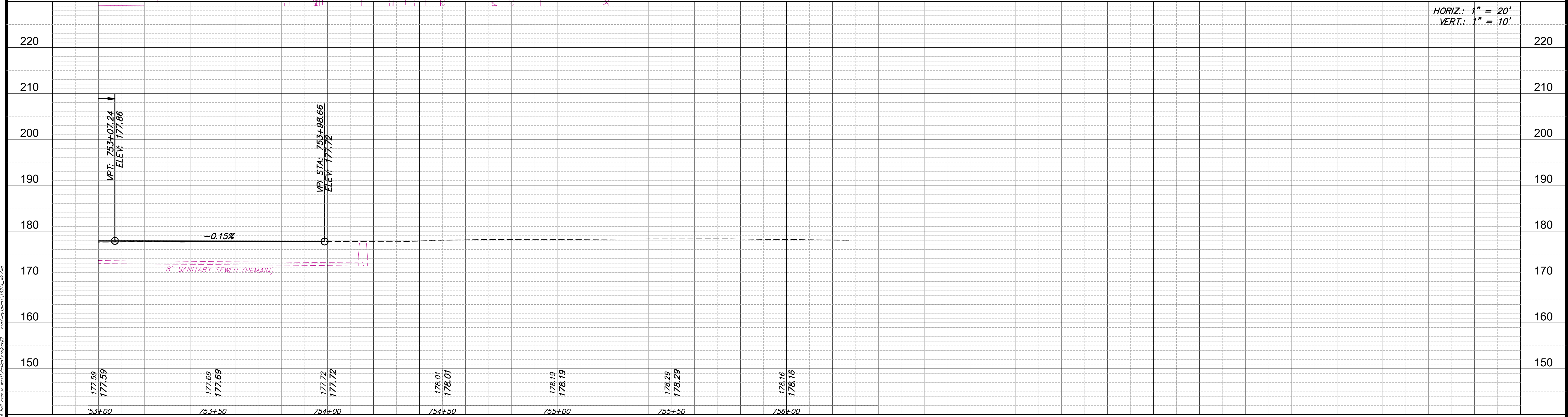
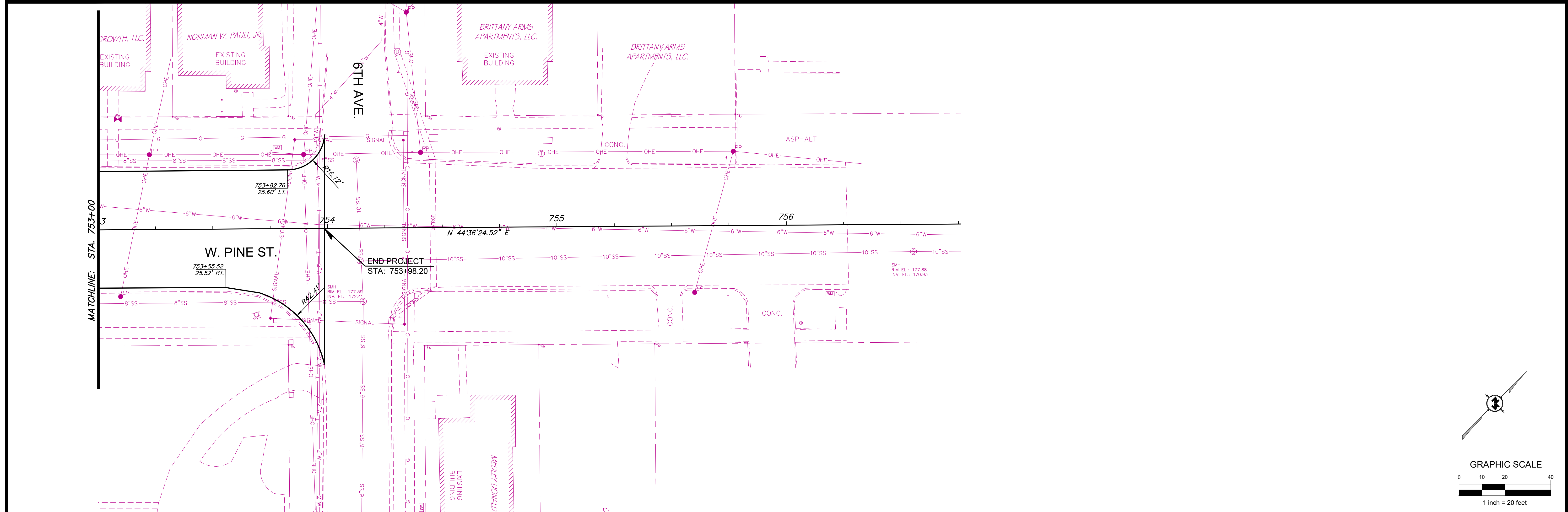
NEEL-SCHAFFER

Solutions you can build upon

PLAN AND PROFILE	
WEST PINE STREET	
B.O.P. TO STA. 753+00	
WORKING NUMBER:	DRAWING NUMBER:
WK-3	31



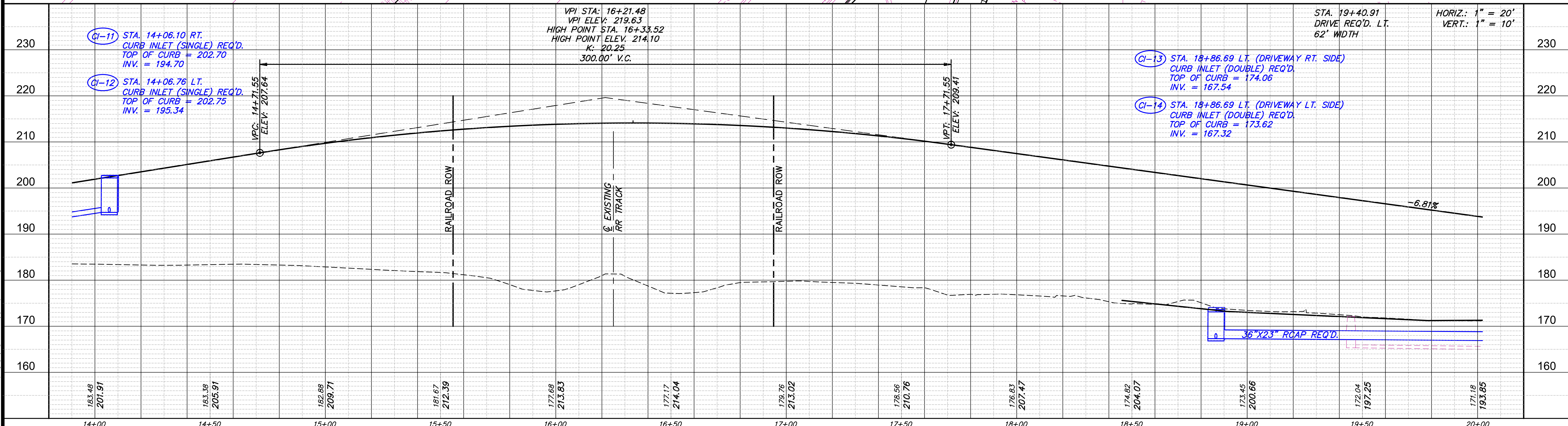
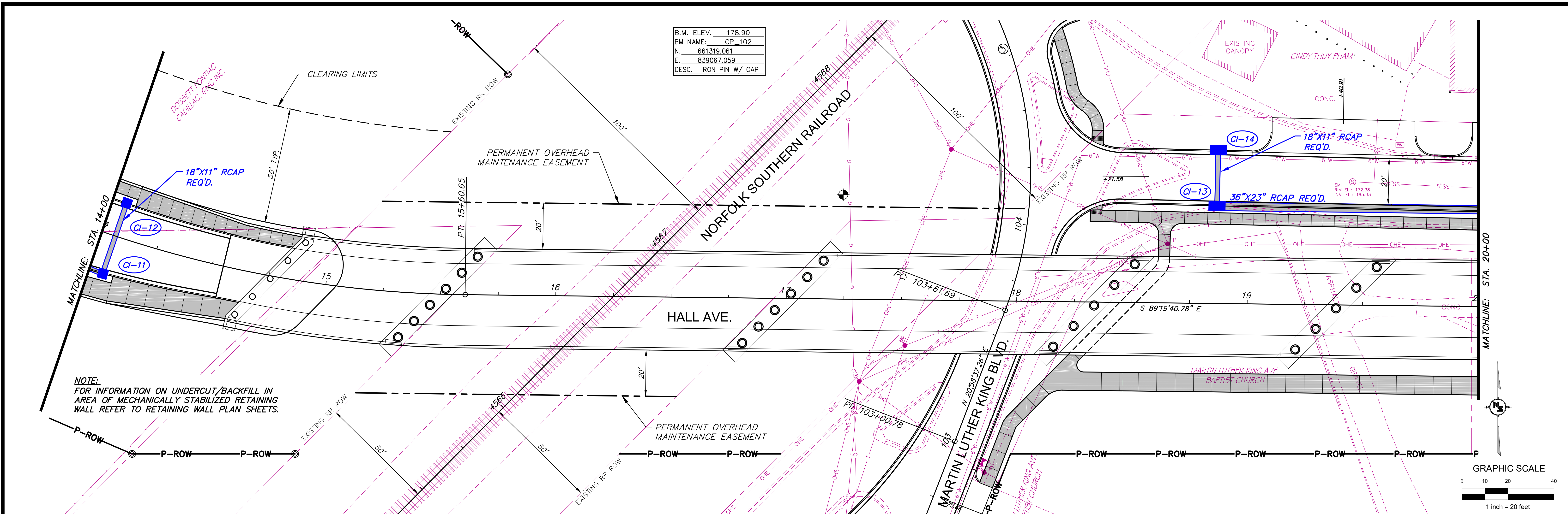
NOTICE TO DRAWING HOLDER NEEL-SCHAFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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 NO. DATE BY DESCRIPTION			DRAWING INFORMATION N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_WK.dwg SCALE: 1" = 20' SURVEYED BY: DSGN: GPC DATE: 05/2022 DRWN: JPF DATE: 05/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022			HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI			 NEEL-SCHAFER Solutions you can build upon			PLAN AND PROFILE GRAVITY CUT WALLS #1 & #2 HALL AVE. / WEST PINE ST.		
						WORKING NUMBER: WK-3A									DRAWING NUMBER: 32		



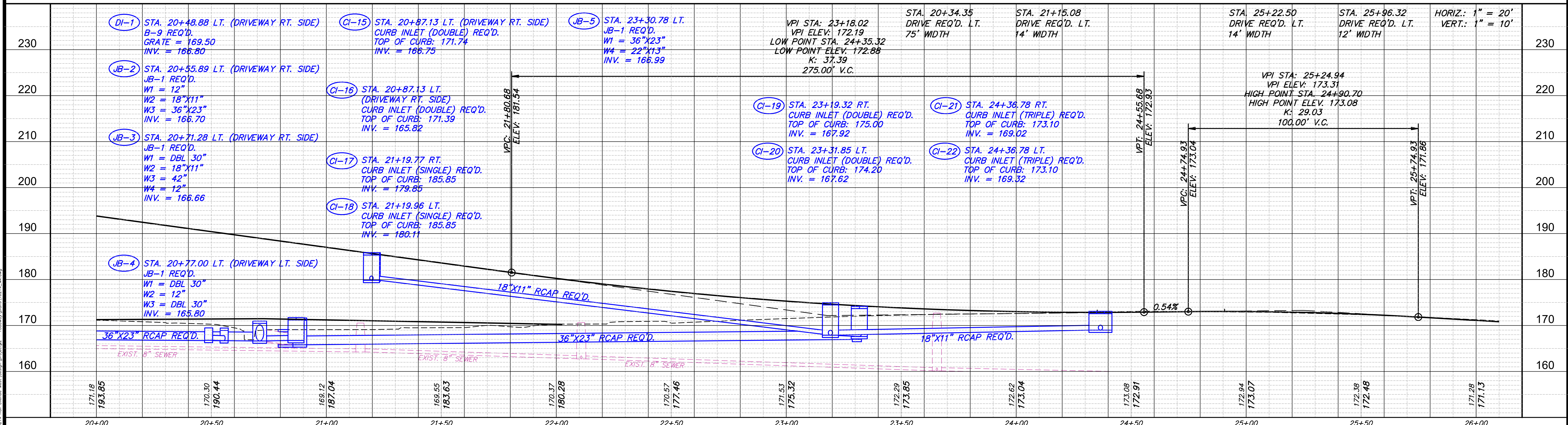
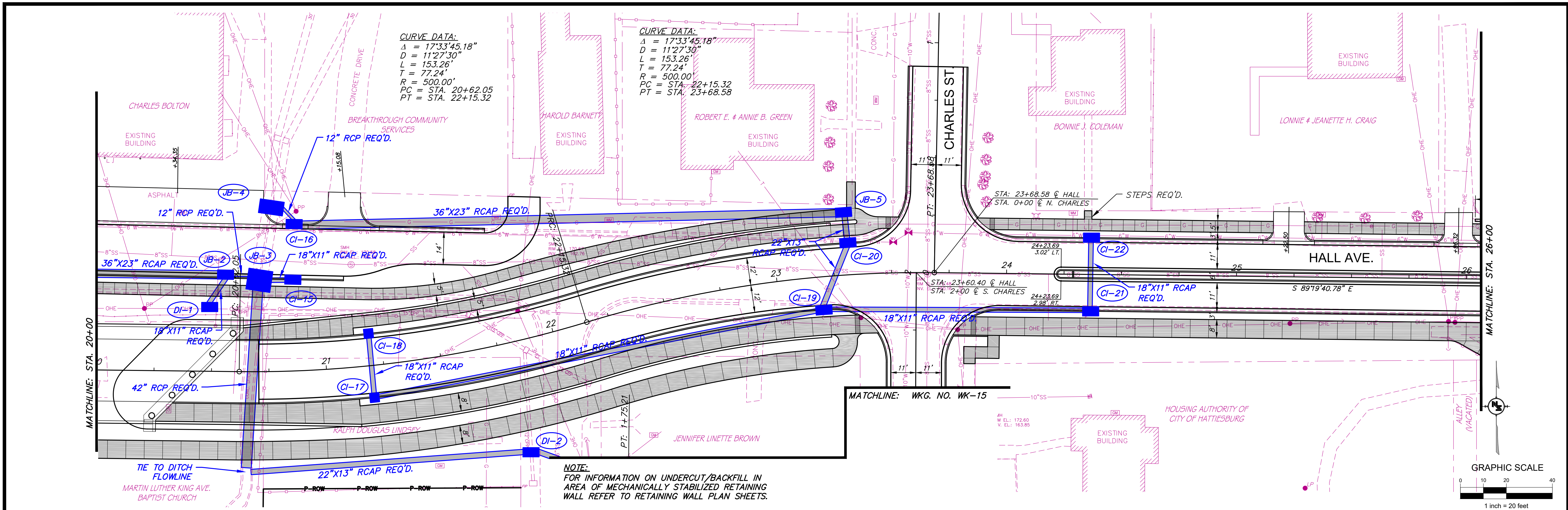
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	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
					FILENAME: 16214_WK.dwg	
					SCALE: AS SHOWN	
					SURVEYED BY:	
				DSGN: GPC	DATE: 05/2022	
				DRWN: JPF	DATE: 05/2022	
				CHKD: GPC	DATE: 08/2022	
				QA/QC: MWE	DATE: 08/2022	
HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI					 NEEL-SCHAFER <i>Solutions you can build upon</i>	
					PLAN AND PROFILE WEST PINE STREET STA. 753+00 TO E.O.P.	
					WORKING NUMBER: WK-4	DRAWING NUMBER: 33

8/1/2022 4:00 PM c:\16200\hobbiesburg\16214_half\external\neel\16214_half\roadway\plans\16214_wk.dwg

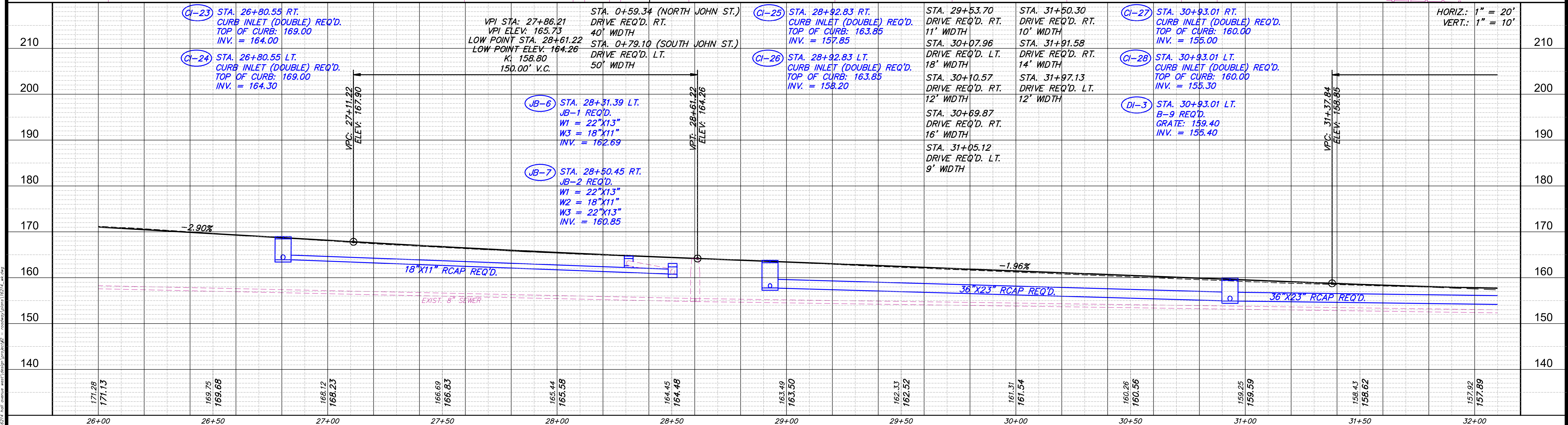
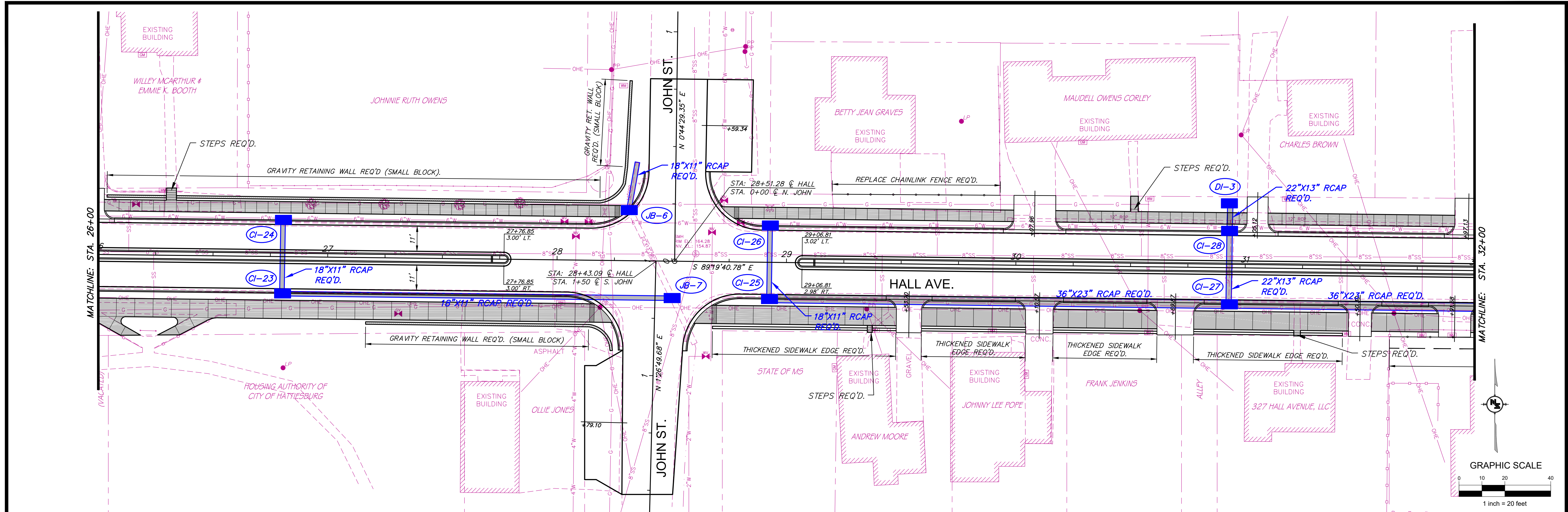
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BM NAME: CP_102
N. 661319.061
E. 839067.059
DESC. IRON PIN W/ CAP



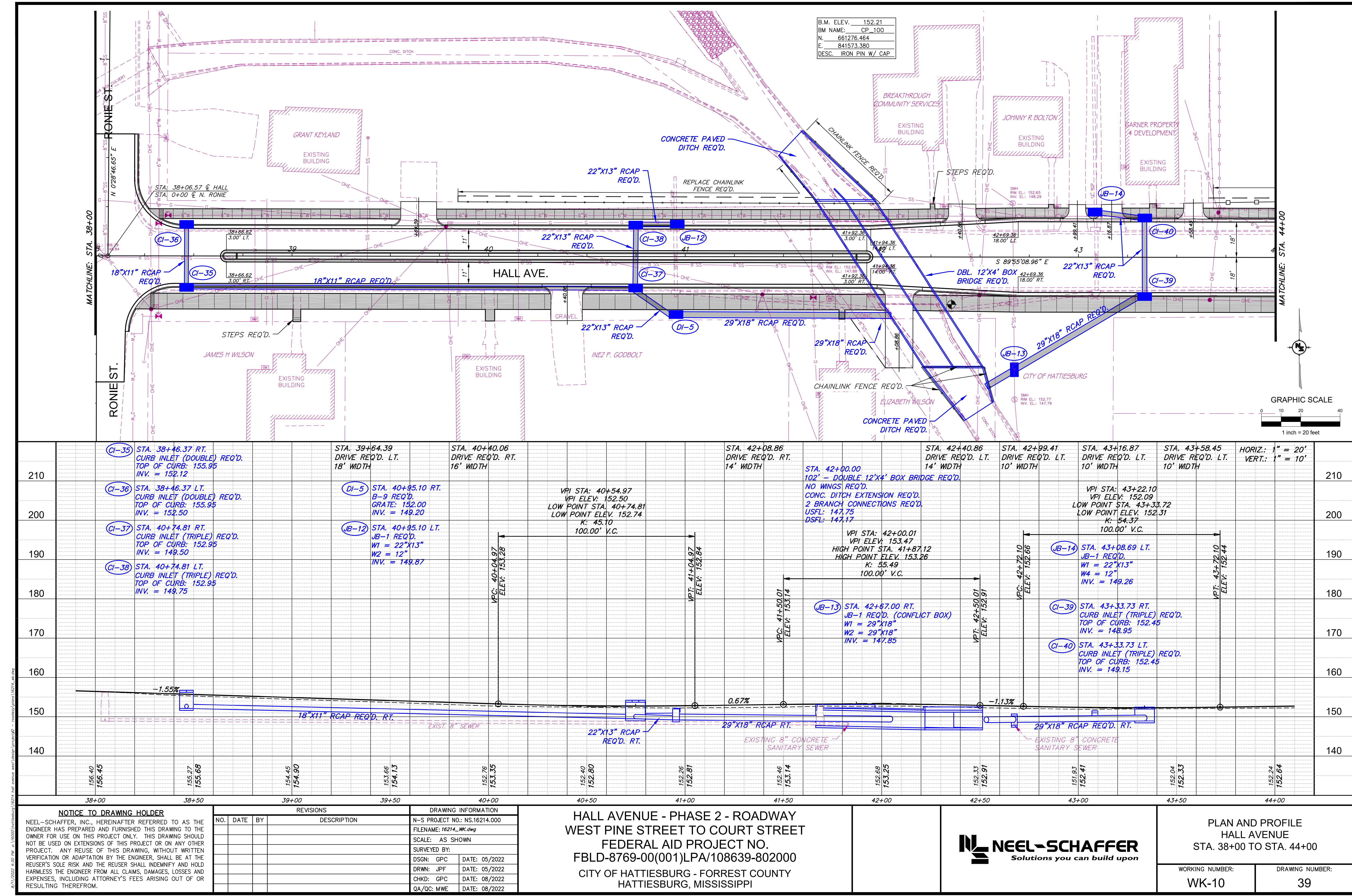
NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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 NO. DATE BY DESCRIPTION		DRAWING INFORMATION N-S PROJECT NO.: NS16214.000 FILENAME: 16214_WK.dwg SCALE: AS SHOWN SURVEYED BY: DSGN: GPC DATE: 05/2022 DRWN: JPF DATE: 05/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI			 NEEL-SCHAFFER Solutions you can build upon		PLAN AND PROFILE HALL AVENUE STA. 14+00 TO STA. 20+00 WORKING NUMBER: WK-6 DRAWING NUMBER: 35	
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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 NO. DATE BY DESCRIPTION		DRAWING INFORMATION N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_WK.dwg SCALE: AS SHOWN SURVEYED BY: DSGN: GPC DATE: 05/2022 DRWN: JPF DATE: 05/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022	HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI			 NEEL-SCHAFER Solutions you can build upon		PLAN AND PROFILE HALL AVENUE STA. 20+00 TO STA. 26+00 WORKING NUMBER: WK-7 DRAWING NUMBER: 36	
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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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 NO. DATE BY DESCRIPTION		DRAWING INFORMATION N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_WK.dwg SCALE: AS SHOWN SURVEYED BY: DSGN: GPC DATE: 05/2022 DRWN: JPF DATE: 05/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022	HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI			 NEEL-SCHAFFER Solutions you can build upon		PLAN AND PROFILE HALL AVENUE STA. 26+00 TO STA. 32+00		WORKING NUMBER: WK-8		DRAWING NUMBER: 37	
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B.M. ELEV.	152.21
BM NAME:	CP_100
N.	661276.464
E.	841573.380
DESC.	IRON PIN W/ CAP

210	(CI-35) STA. 38+46.37 RT. CURB INLET (DOUBLE) REQ'D. TOP OF CURB: 155.95 INV. = 152.12	STA. 39+64.39 DRIVE REQ'D. LT. 18' WIDTH	STA. 40+40.06 DRIVE REQ'D. RT. 16' WIDTH		STA. 42+08.86 DRIVE REQ'D. RT. 14' WIDTH	STA. 42+40.86 DRIVE REQ'D. LT. 14' WIDTH	STA. 42+99.41 DRIVE REQ'D. LT. 10' WIDTH	STA. 43+16.87 DRIVE REQ'D. LT. 10' WIDTH	STA. 43+58.45 DRIVE REQ'D. LT. 10' WIDTH	HORIZ.: 1" = 20' VERT.: 1" = 10'	210
200	(CI-36) STA. 38+46.37 LT. CURB INLET (DOUBLE) REQ'D. TOP OF CURB: 155.95 INV. = 152.50	(DI-5) STA. 40+95.10 RT. B-9 REQ'D. GRATE: 152.00 INV. = 149.20	(JB-12) STA. 40+95.10 LT. JB-1 REQ'D. W1 = 22"X13" W2 = 12" INV. = 149.87	VPI STA: 40+54.97 VPI ELEV: 152.50 LOW POINT STA: 40+74.81 LOW POINT ELEV: 152.74 K: 45.10 100.00' V.C.	STA. 42+00.00 102' - DOUBLE 12'X4' BOX BRIDGE REQ'D. NO WINGS REQ'D. CONC. DITCH EXTENSION REQ'D. 2 BRANCH CONNECTIONS REQ'D. USFL: 147.75 DSFL: 147.17				VPI STA: 43+22.10 VPI ELEV: 152.09 LOW POINT STA: 43+33.72 LOW POINT ELEV: 152.31 K: 54.37 100.00' V.C.		200
190	(CI-37) STA. 40+74.81 RT. CURB INLET (TRIPLE) REQ'D. TOP OF CURB: 152.95 INV. = 149.50				VPI STA: 42+00.01 VPI ELEV: 153.47 HIGH POINT STA: 41+87.12 HIGH POINT ELEV: 153.26 K: 55.49 100.00' V.C.			(JB-14) STA. 43+08.69 LT. JB-1 REQ'D. W1 = 22"X13" W4 = 12" INV. = 149.26			190
180	(CI-38) STA. 40+74.81 LT. CURB INLET (TRIPLE) REQ'D. TOP OF CURB: 152.95 INV. = 149.75				(JB-13) STA. 42+67.00 RT. JB-1 REQ'D. (CONFLICT BOX) W1 = 29"X18" W2 = 29"X18" INV. = 147.85			(CI-39) STA. 43+33.73 RT. CURB INLET (TRIPLE) REQ'D. TOP OF CURB: 152.45 INV. = 148.95			180
170								(CI-40) STA. 43+33.73 LT. CURB INLET (TRIPLE) REQ'D. TOP OF CURB: 152.45 INV. = 149.15			170
160											160
150											150
140											140

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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		
NO.	DATE	BY

DRAWING INFORMATION

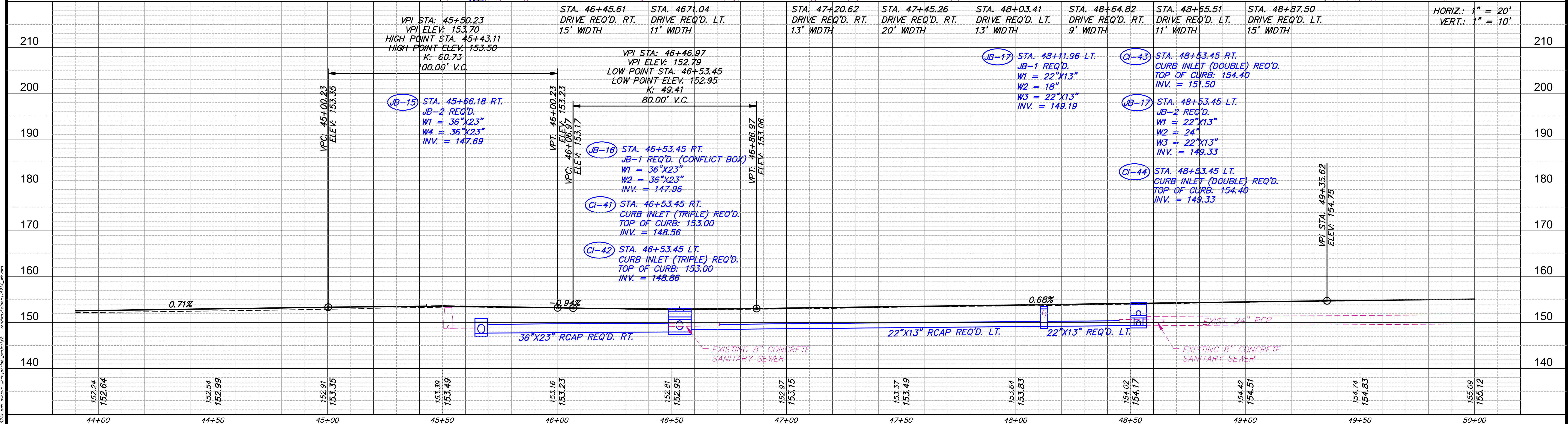
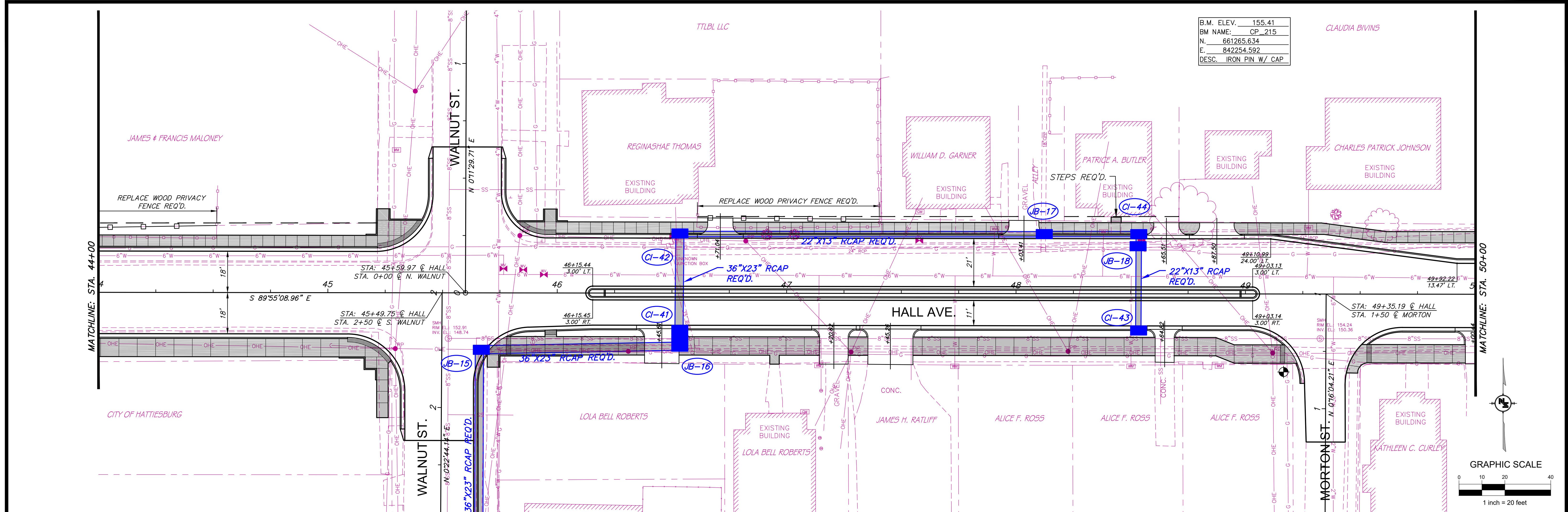
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FILENAME: 16214_WK.dwg
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SURVEYED BY:
DSGN: GPC DATE: 05/2022
DRWN: JPF DATE: 05/2022
CHKD: GPC DATE: 08/2022
QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

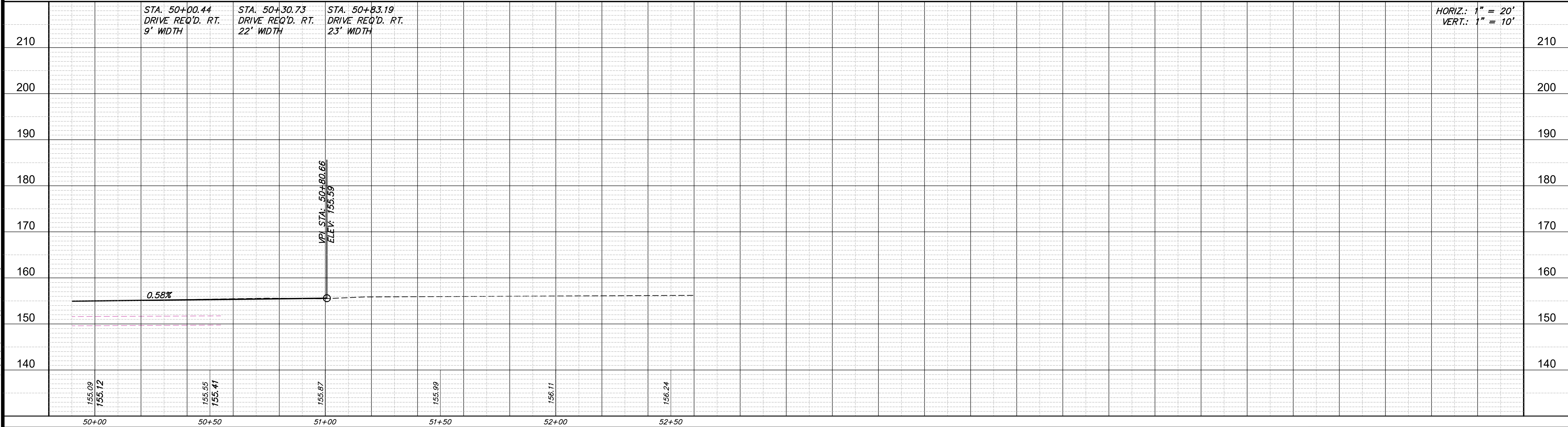
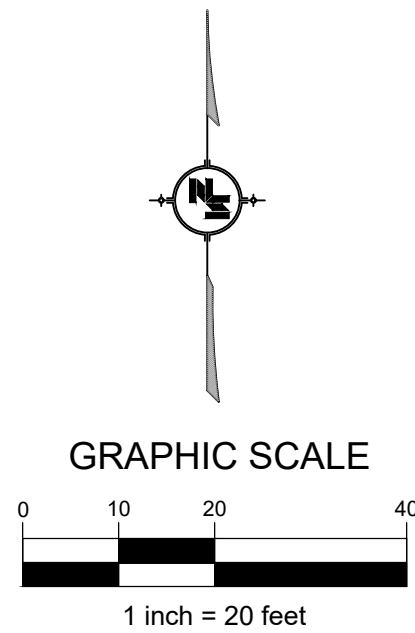
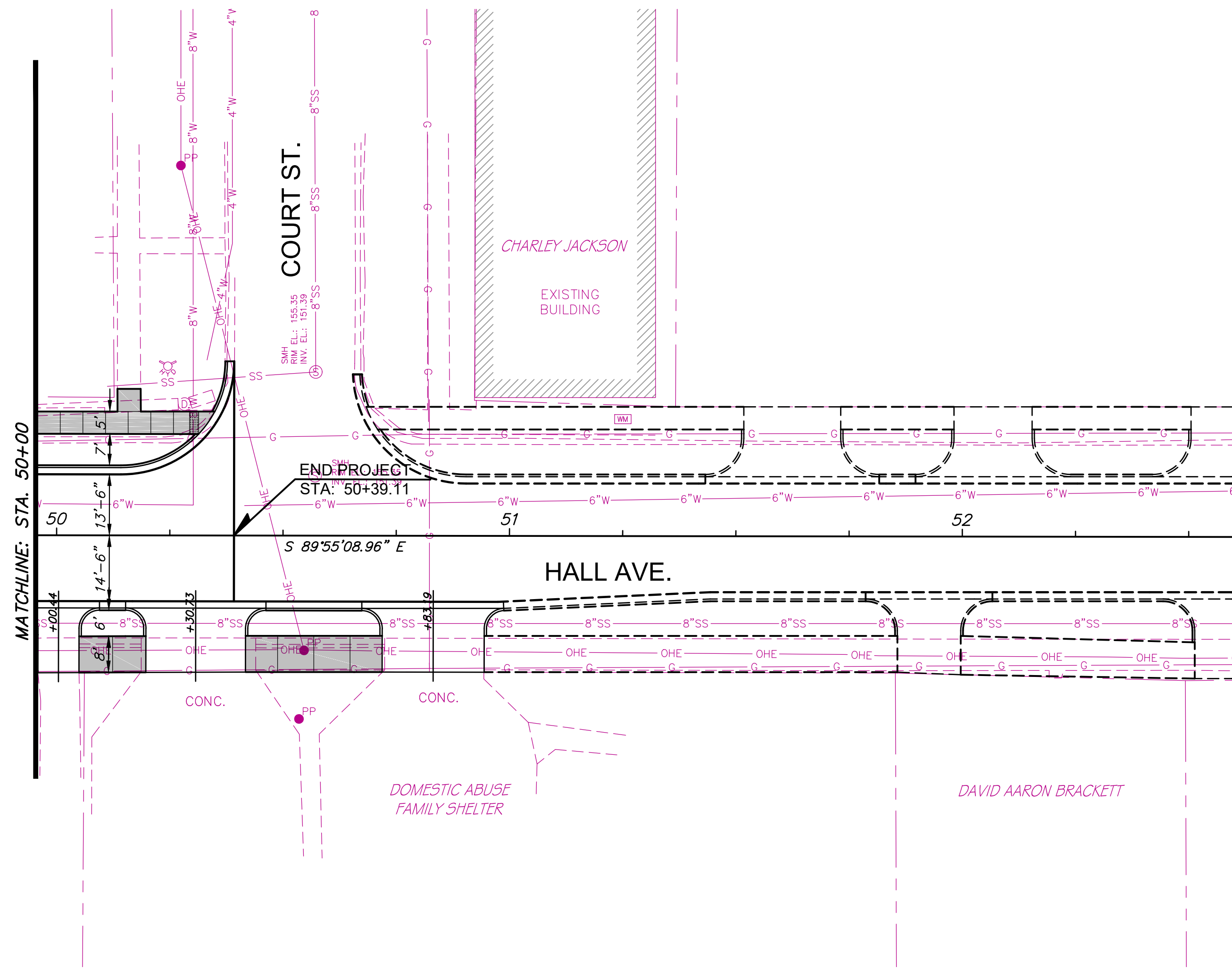


NEEL-SCHAFFER
Solutions you can build upon

PLAN AND PROFILE	
HALL AVENUE	
STA. 38+00 TO STA. 44+00	
WORKING NUMBER:	DRAWING NUMBER:
WK-10	39



NOTICE TO DRAWING HOLDER				REVISIONS		DRAWING INFORMATION		HALL AVENUE - PHASE 2 - ROADWAY		NEEL-SCHAFFER		PLAN AND PROFILE	
NEEL-SCHAFFER, 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.				NO.		N-S PROJECT NO.: NS.16214.000		WEST PINE STREET TO COURT STREET				STA. 44+00 TO STA. 50+00	
				DATE		FILENAME: 16214_WK.dwg		FEDERAL AID PROJECT NO.					
				BY		SCALE: AS SHOWN		FBLD-8769-00(001)LPA/108639-802000					
						SURVEYED BY:		CITY OF HATTIESBURG - FORREST COUNTY					
						DSGN: GPC DATE: 05/2022		HATTIESBURG, MISSISSIPPI					
				DRWN: JPF DATE: 05/2022									
				CHKD: GPC DATE: 08/2022								WORKING NUMBER:	
				QA/QC: MWE DATE: 08/2022								WK-11	
												DRAWING NUMBER:	
												40	



NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
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				FILENAME: 16214_WK.dwg
				SCALE: AS SHOWN
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				DSGN: GPC DATE: 05/2022
				DRWN: JPF DATE: 05/2022
				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

PLAN AND PROFILE

HALL AVENUE

STA. 50+00 TO E.O.P.

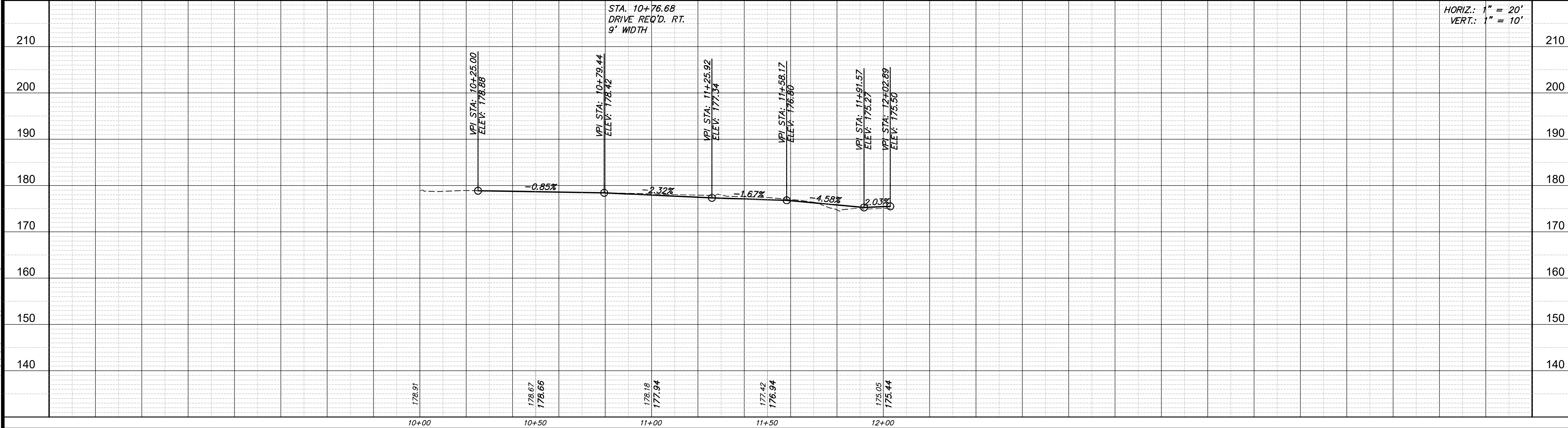
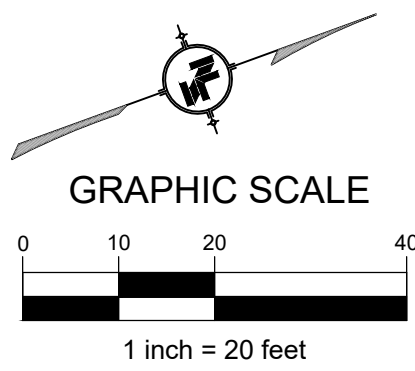
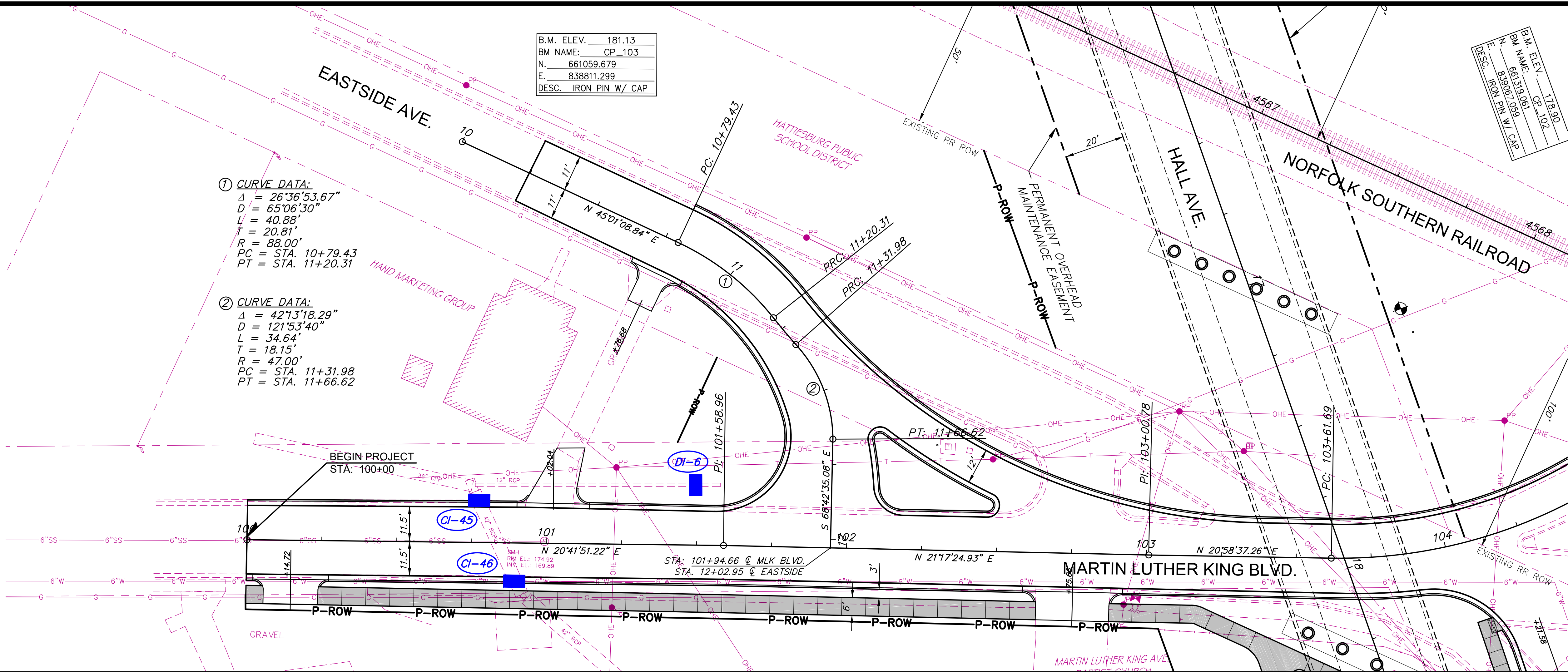
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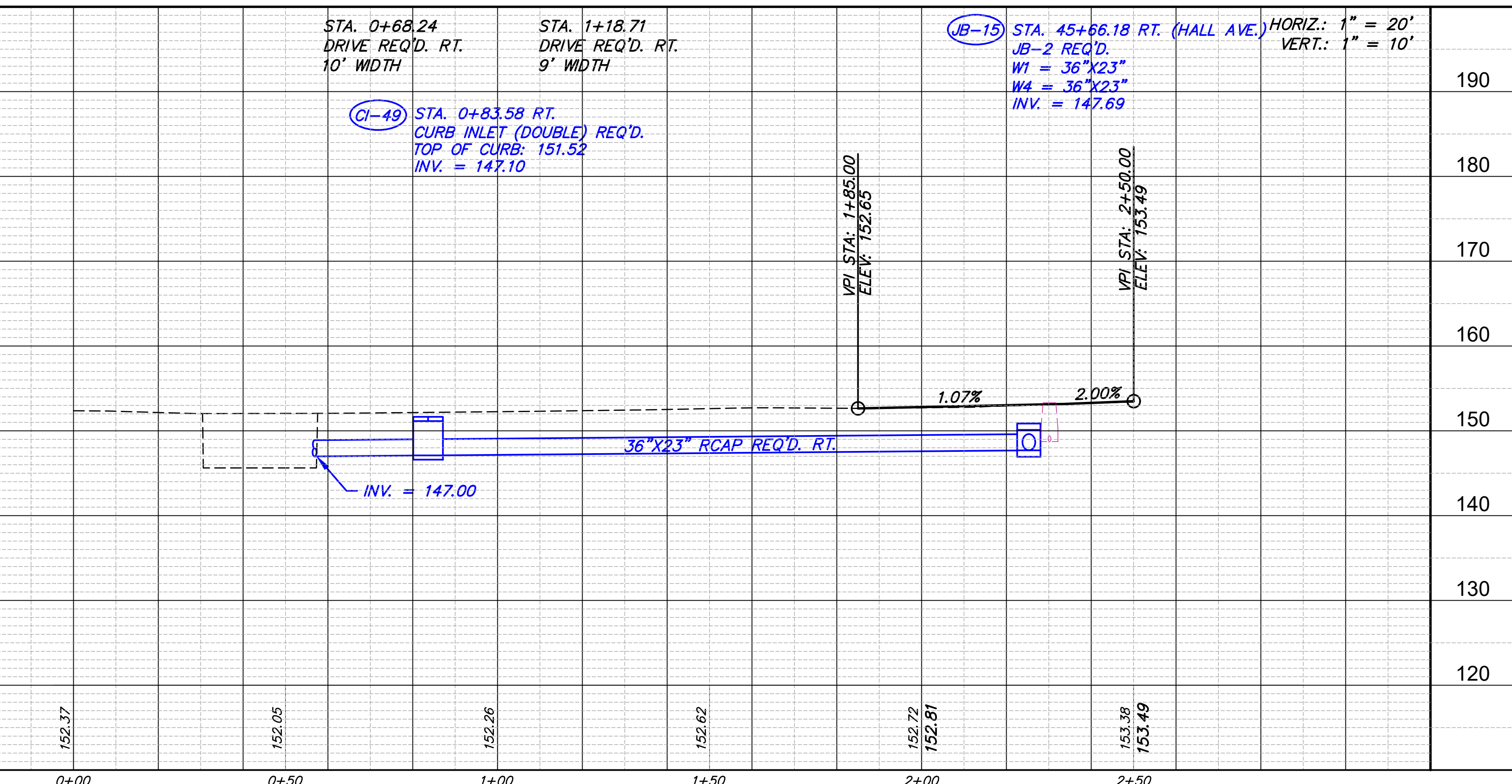
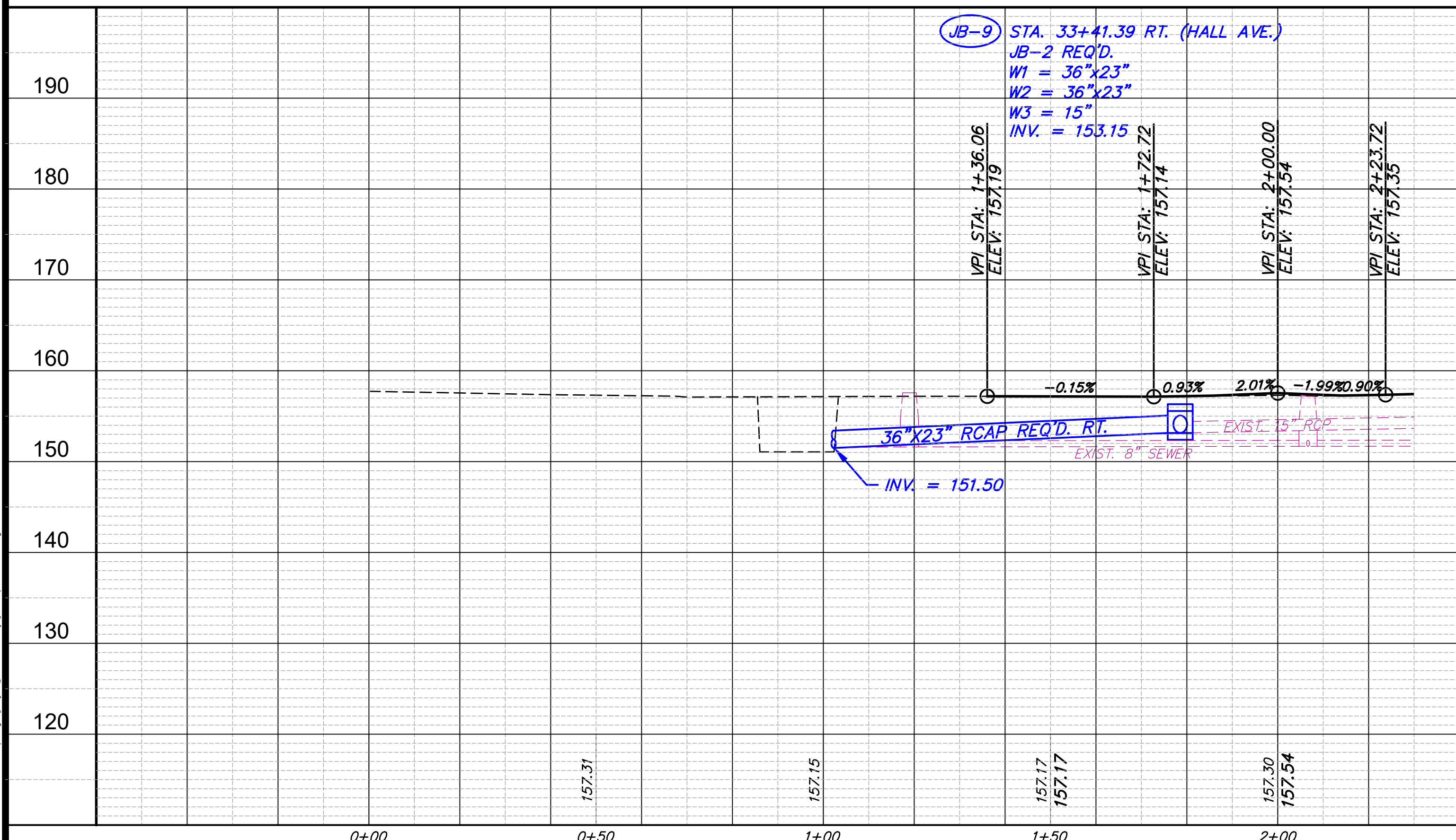
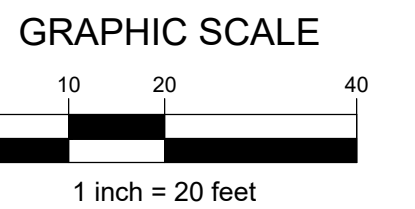
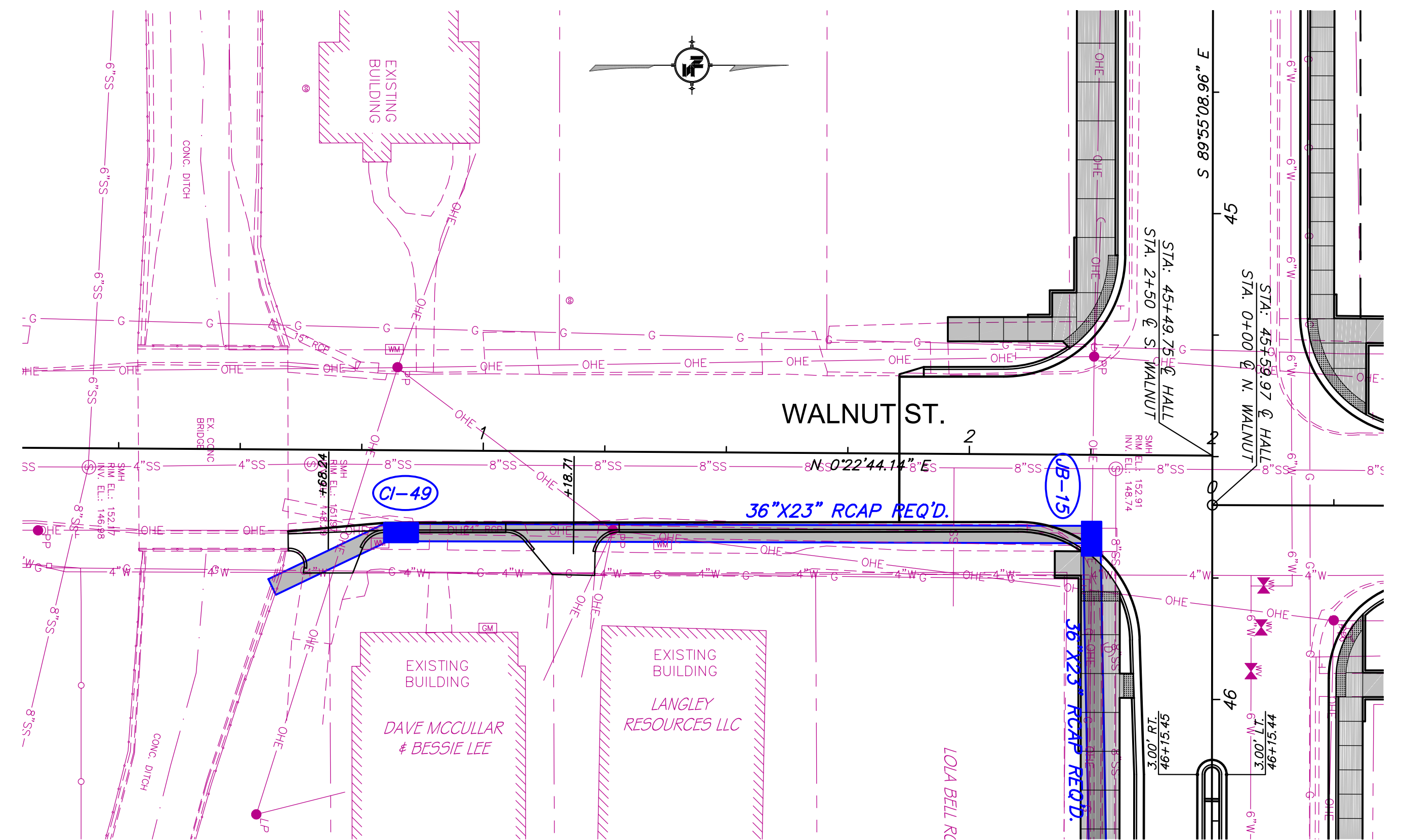
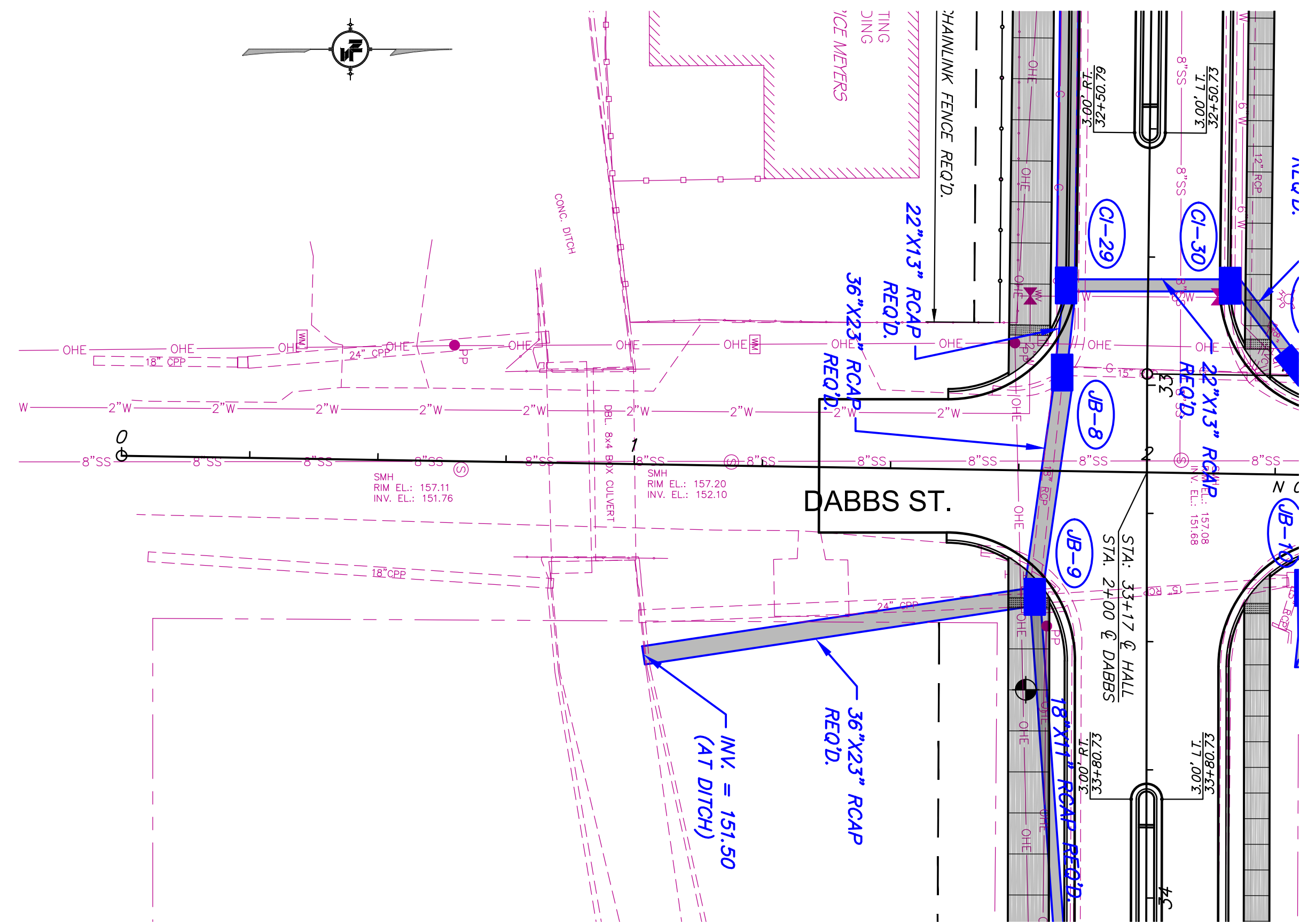
B.M. ELEV. 178.90
BM NAME: CP 102
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E. 83960.009
DESC. IRON PIN W/ CAP

① CURVE DATA:
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 $D = 65^{\circ}06'30''$
 $L = 40.88'$
 $T = 20.81'$
 $R = 88.00'$
 $PC = STA. 10+79.43$
 $PT = STA. 11+20.31$

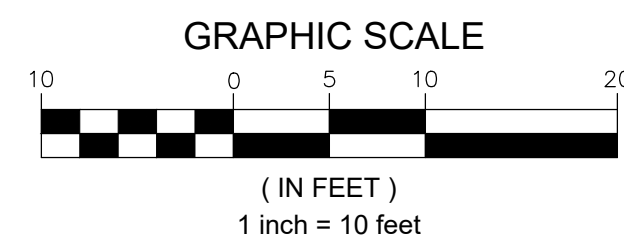
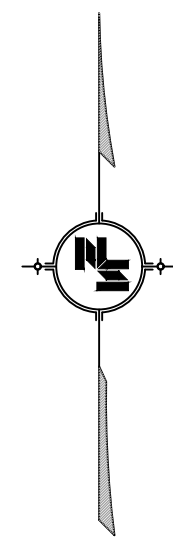
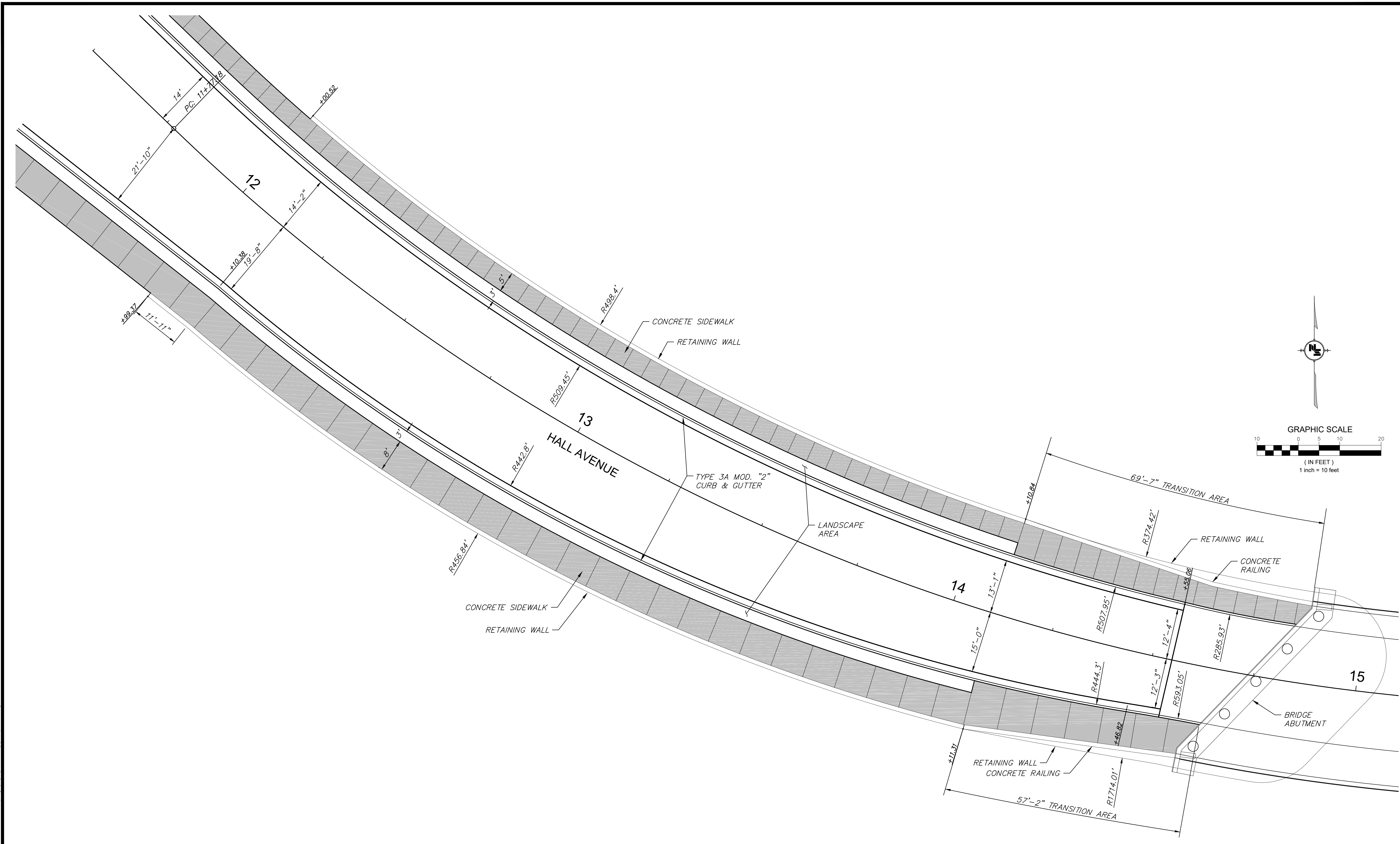
② CURVE DATA:
 $\Delta = 42^{\circ}13'18.29''$
 $D = 121^{\circ}53'40''$
 $L = 34.64'$
 $T = 18.15'$
 $R = 47.00'$
 $PC = STA. 11+31.98$
 $PT = STA. 11+66.62$



NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		PLAN AND PROFILE EASTSIDE AVENUE STA. 10+00 TO 12+02.95	
		NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			
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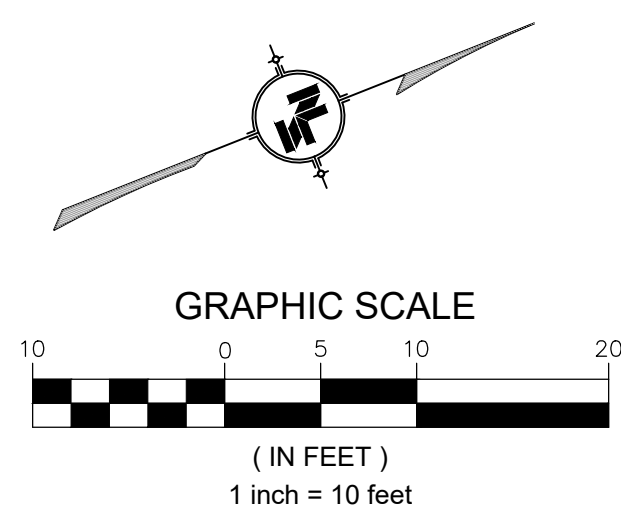
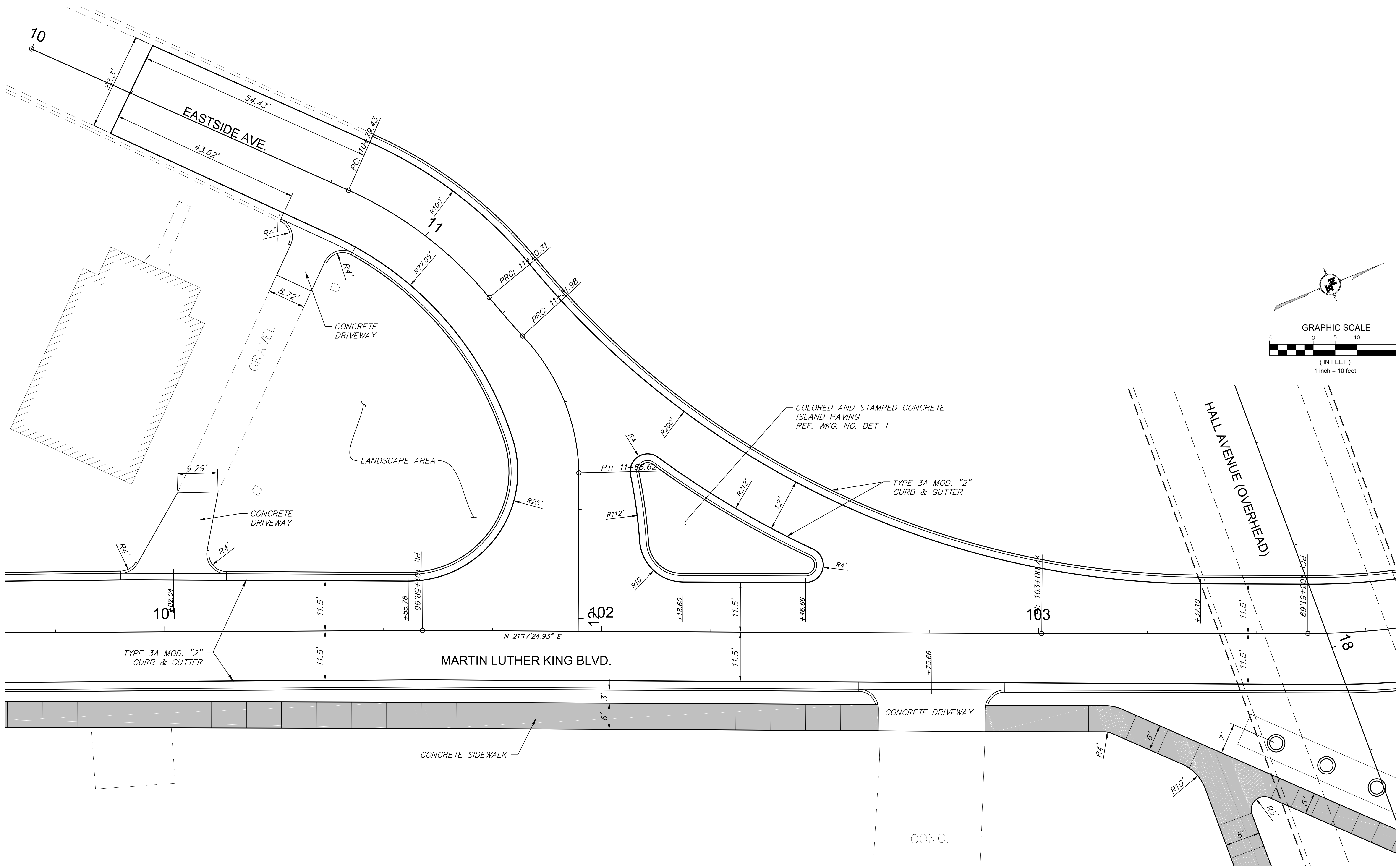


NOTICE TO DRAWING HOLDER NEEL-SCHAFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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 NO. DATE BY DESCRIPTION		DRAWING INFORMATION N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_WK.dwg SCALE: 1" = 20' SURVEYED BY: DSGN: GPC DATE: 06/2022 DRWN: JPF DATE: 06/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI					PLAN AND PROFILE DABBS ST. - STA. 0+00 TO STA. 2+00 WALNUT ST. - STA. 0+00 TO STA. 2+50 WORKING NUMBER: WK-16 DRAWING NUMBER: 45	
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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HERINAFTER 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	NEEL-SCHAFFER <i>Solutions you can build upon</i>	INTERSECTION DETAIL WEST BRIDGE APPROACH HALL AVENUE		
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NOTICE TO DRAWING HOLDER
NEEL-SCHAFFER, INC., HERINAFTER 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.

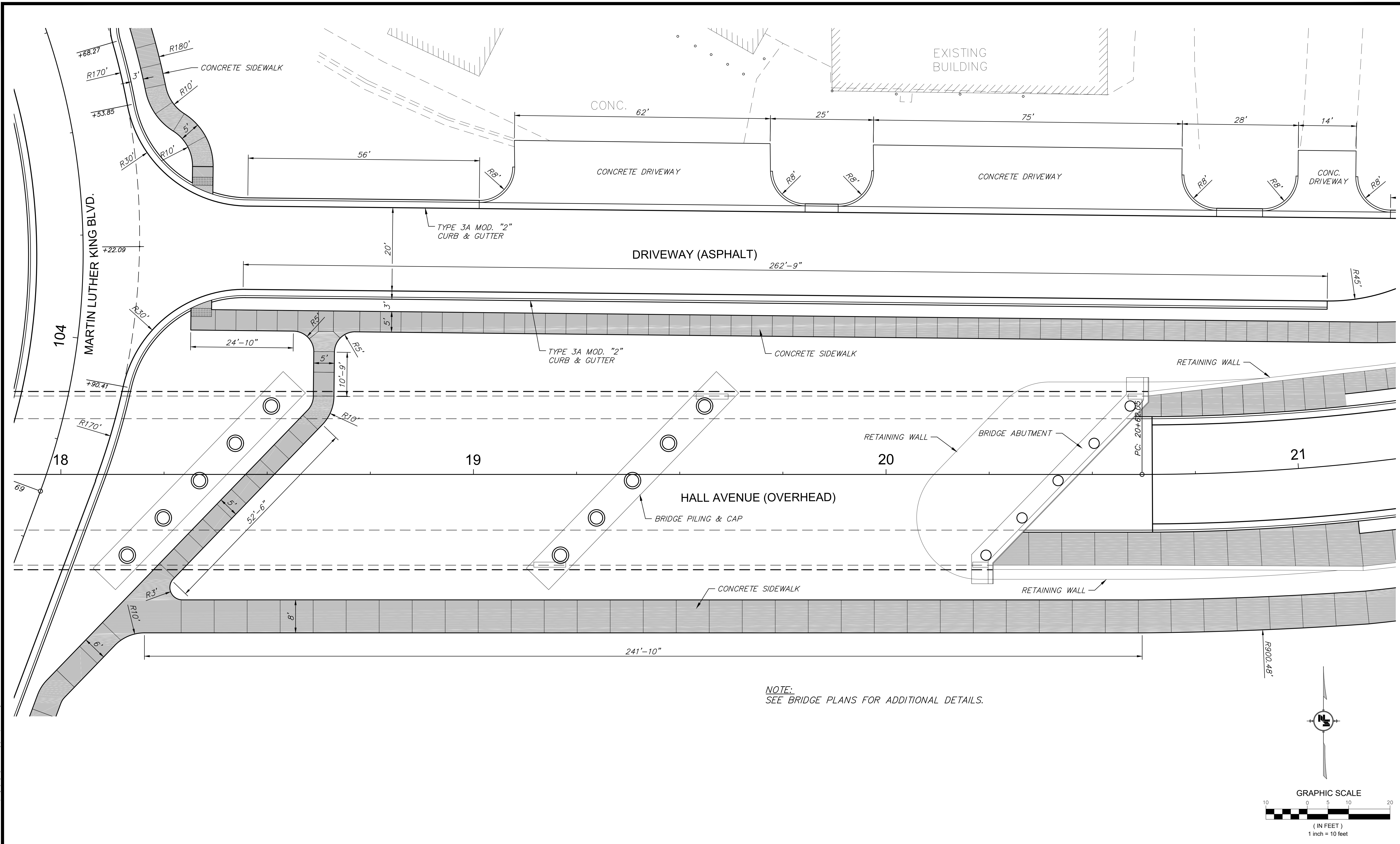
REVISIONS			DRAWING INFORMATION	
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				DSGN: GPC DATE: 04/2022
				DRWN: JPF DATE: 04/2022
				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

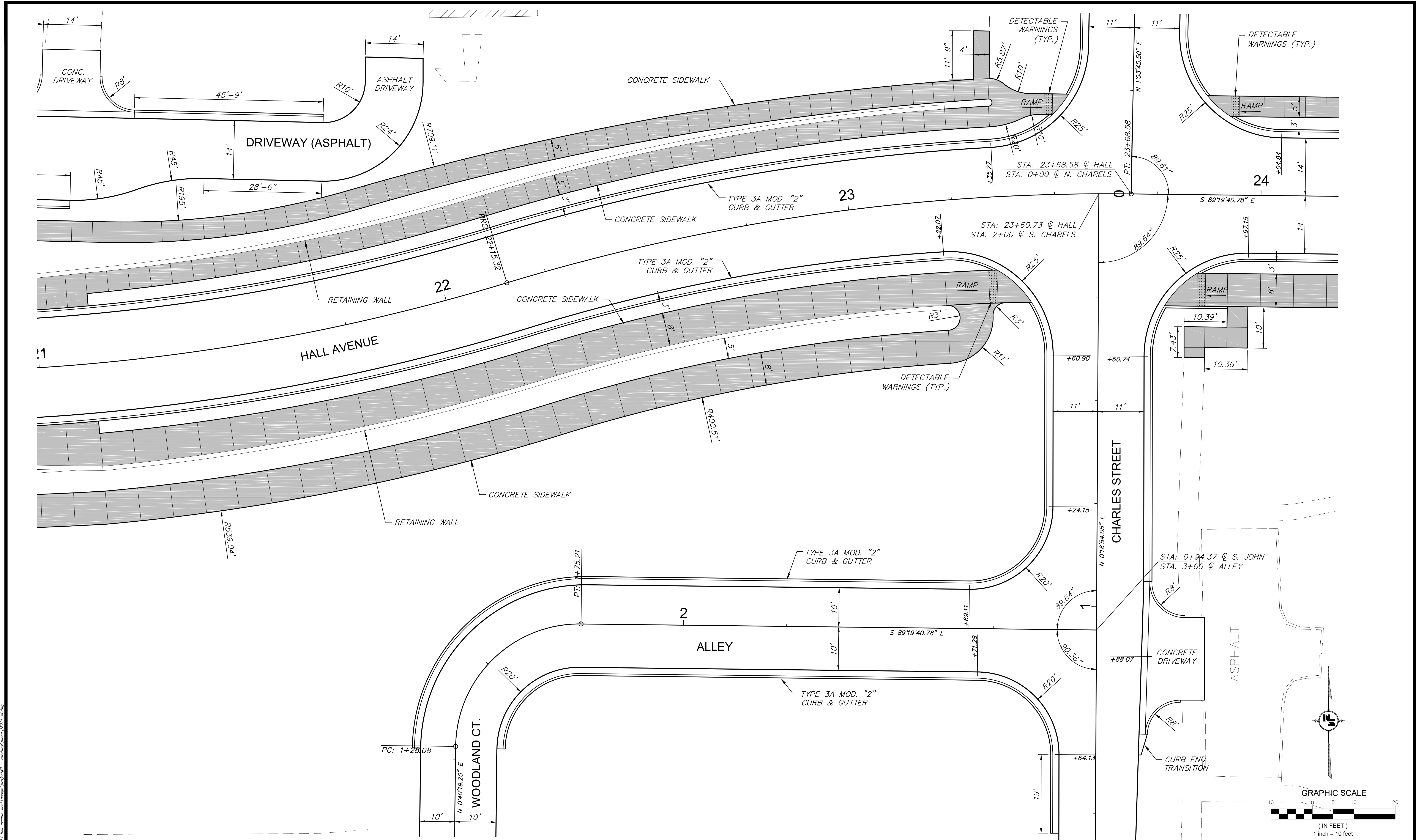
**NEEL-SCHAFFER**
Solutions you can build upon

INTERSECTION DETAIL
MARTIN LUTHER KING BLVD. /
EASTSIDE STREET

WORKING NUMBER: ID-2	DRAWING NUMBER: 48
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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		
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HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI					 NEEL-SCHAFFER <i>Solutions you can build upon</i>	
					INTERSECTION DETAIL DRIVEWAY AT MARTIN LUTHER KING BLVD.	
					WORKING NUMBER: ID-3	DRAWING NUMBER: 49



NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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			
NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION

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SCALE: 1" = 10'

SURVEYED BY: CLEARPOINT

DSGN: GPC

DATE: 04/2022

DRWN: JPF

DATE: 04/2022

CHKD: GPC

DATE: 08/2022

QA/QC: MWE

DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER

Solutions you can build upon

INTERSECTION DETAIL

HALL AVENUE / CHARLES STREET

AND ALLEY

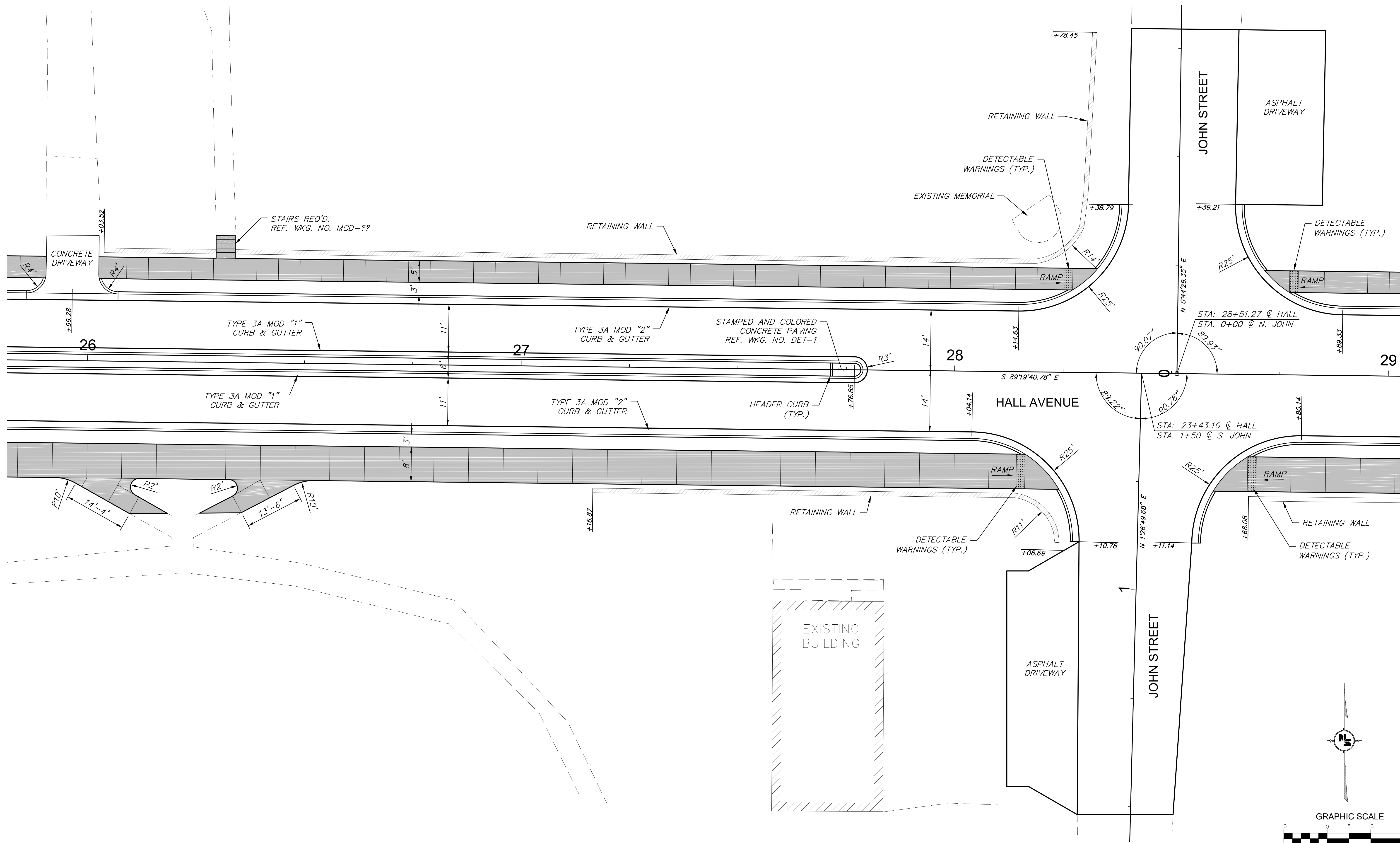
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ID-4

DRAWING NUMBER:

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NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
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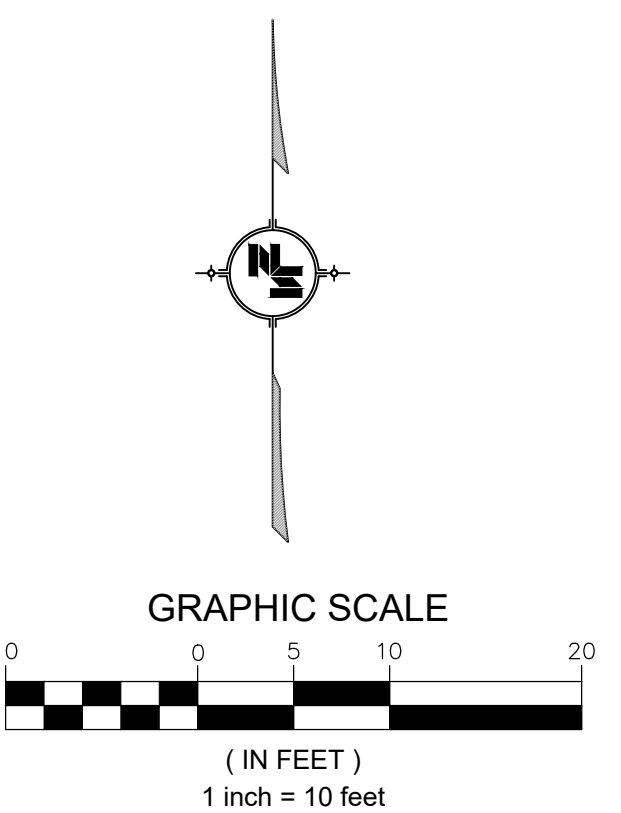
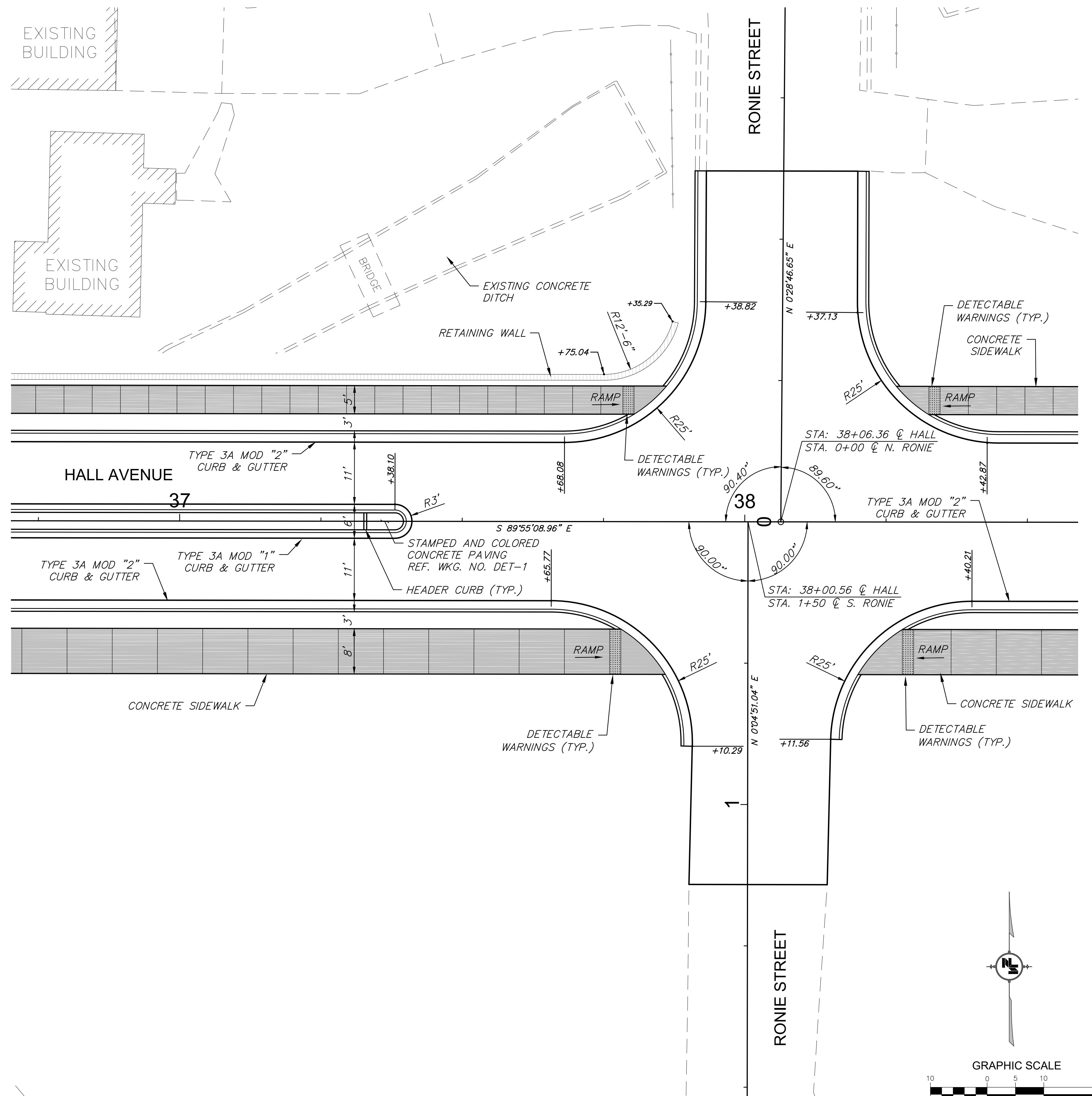
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



INTERSECTION DETAIL
HALL AVENUE / JOHN STREET

WORKING NUMBER:
ID-5

DRAWING NUMBER:
51



NEEL-SCHAFFER, 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	
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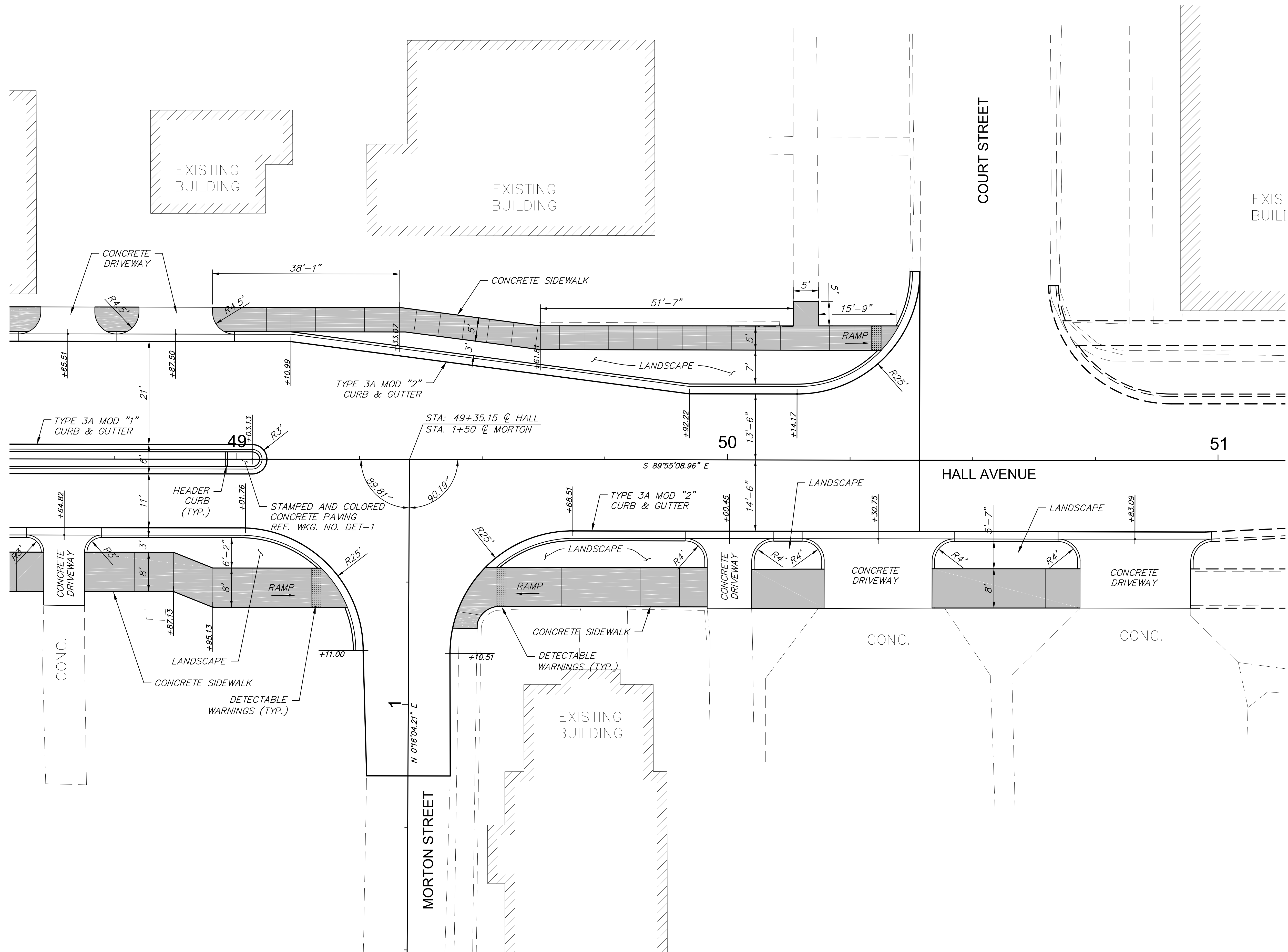
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



INTERSECTION DETAIL
HALL AVENUE / DABBS STREET
HALL AVENUE / RONIE STREET

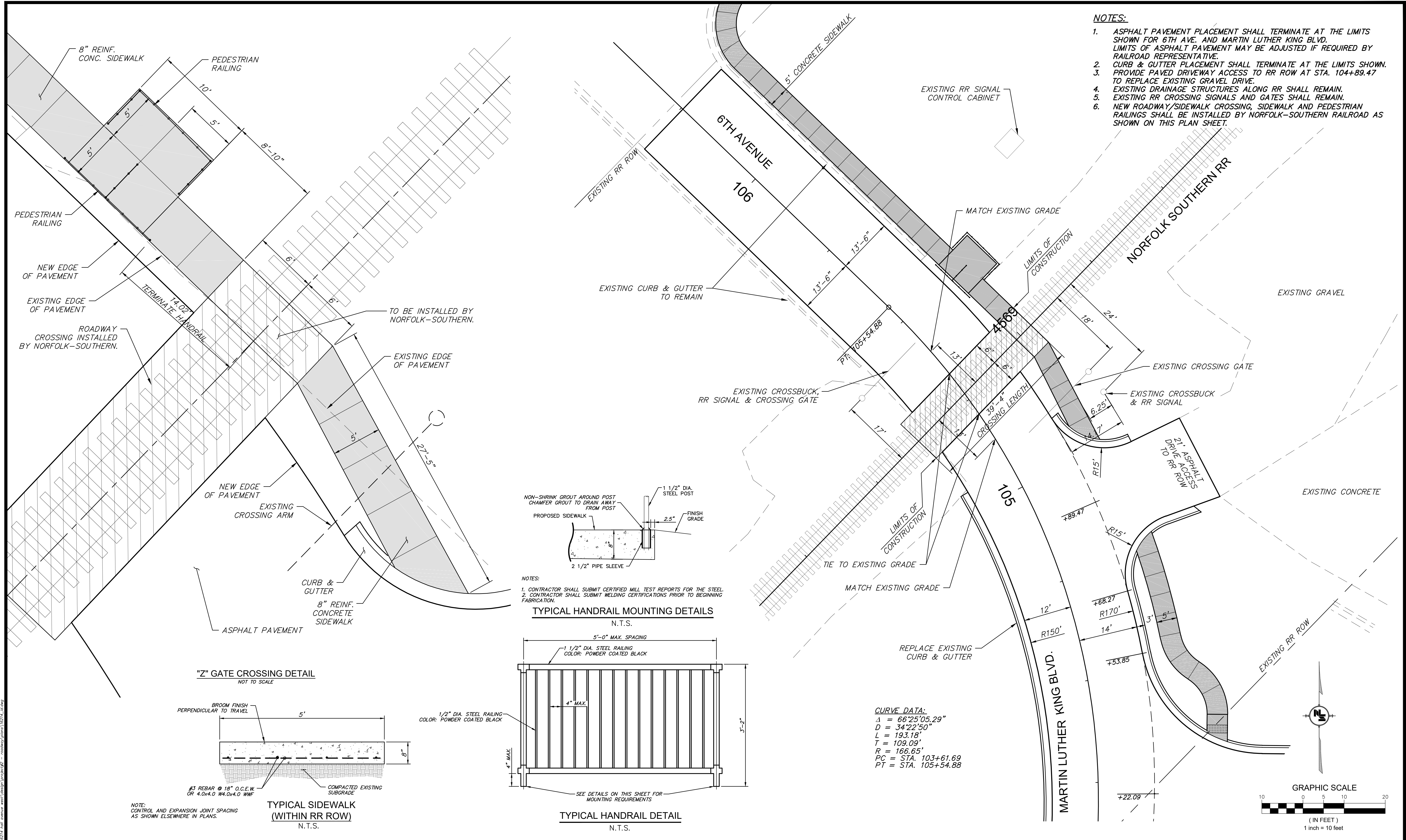
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DRAWING NUMBER:
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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		INTERSECTION DETAIL HALL AVENUE / MORTON STREET HALL AVENUE / COURT STREET			
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000							
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8/23/2022 10:53 AM: 16214 Intersection Detail.dwg

NOTICE TO DRAWING HOLDER

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REVISIONS

NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION

N-S PROJECT NO.: NS.16214.000

FILENAME: 16214_ID.dwg

SCALE: 1" = 10'

SURVEYED BY: CLEARPOINT

DSGN: GPC

DATE: 05/2022

DRWN: JPF

DATE: 05/2022

CHKD: GPC

DATE: 08/2022

QA/QC: MWE

DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER

Solutions you can build upon

INTERSECTION DETAIL

MARTIN LUTHER KING BLVD.

AND 6TH AVENUE

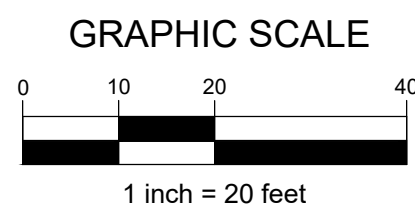
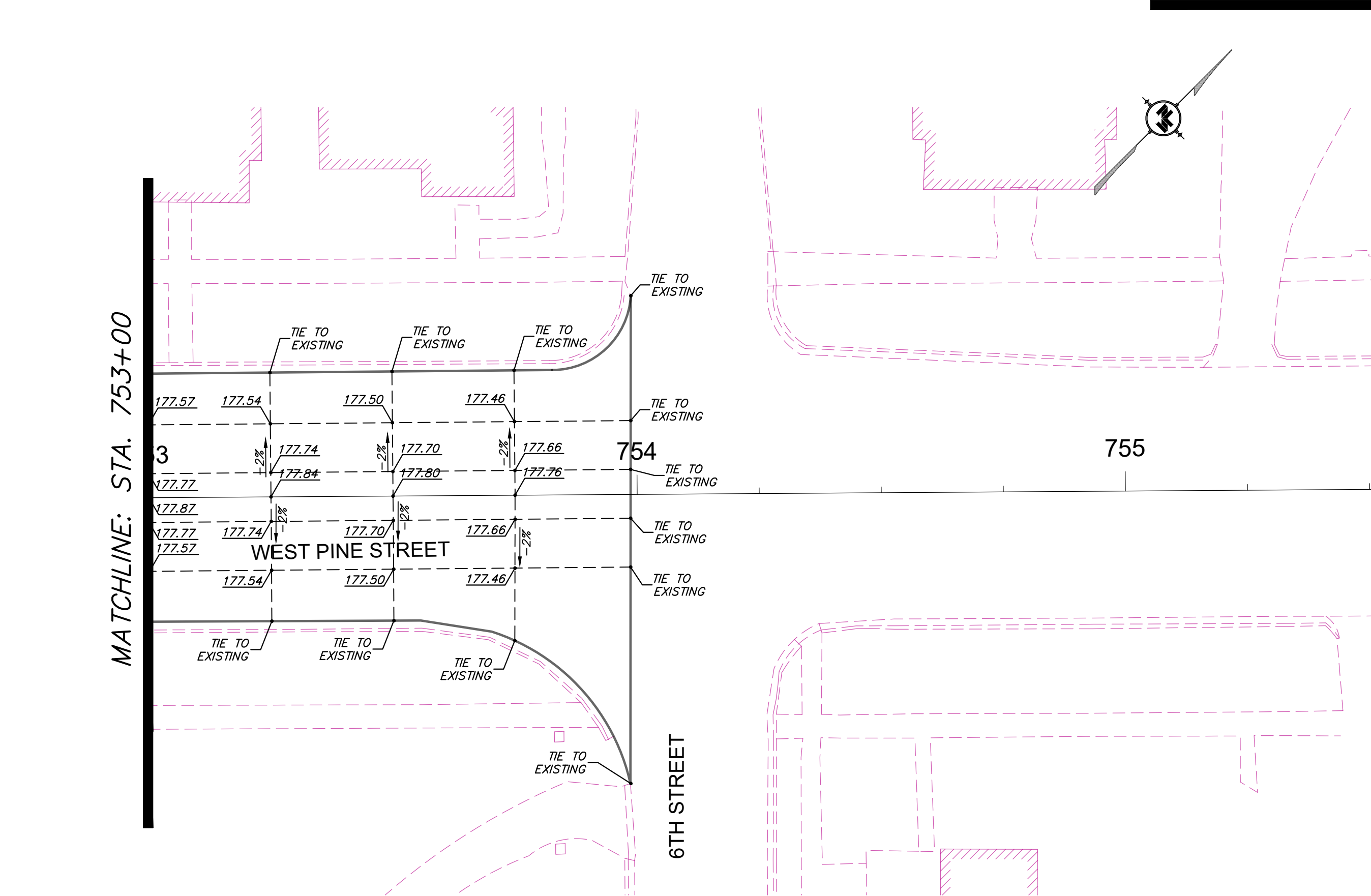
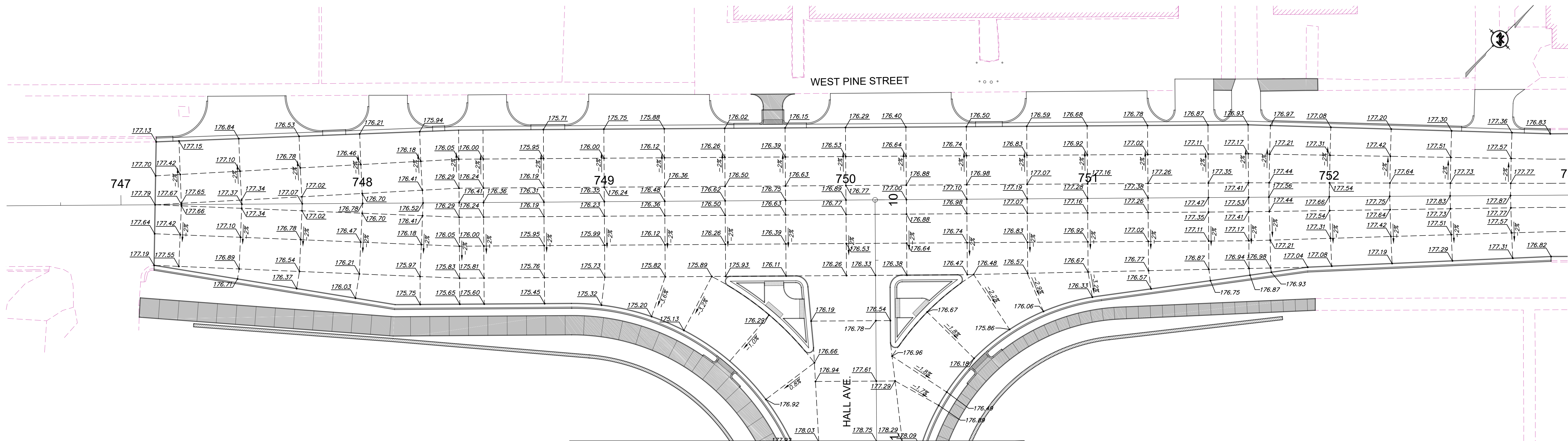
AT NORFOLK SOUTHERN RAILROAD

WORKING NUMBER:

ID-9

DRAWING NUMBER:

55



NOTICE TO DRAWING HOLDER

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REVISIONS				DRAWING INFORMATION	
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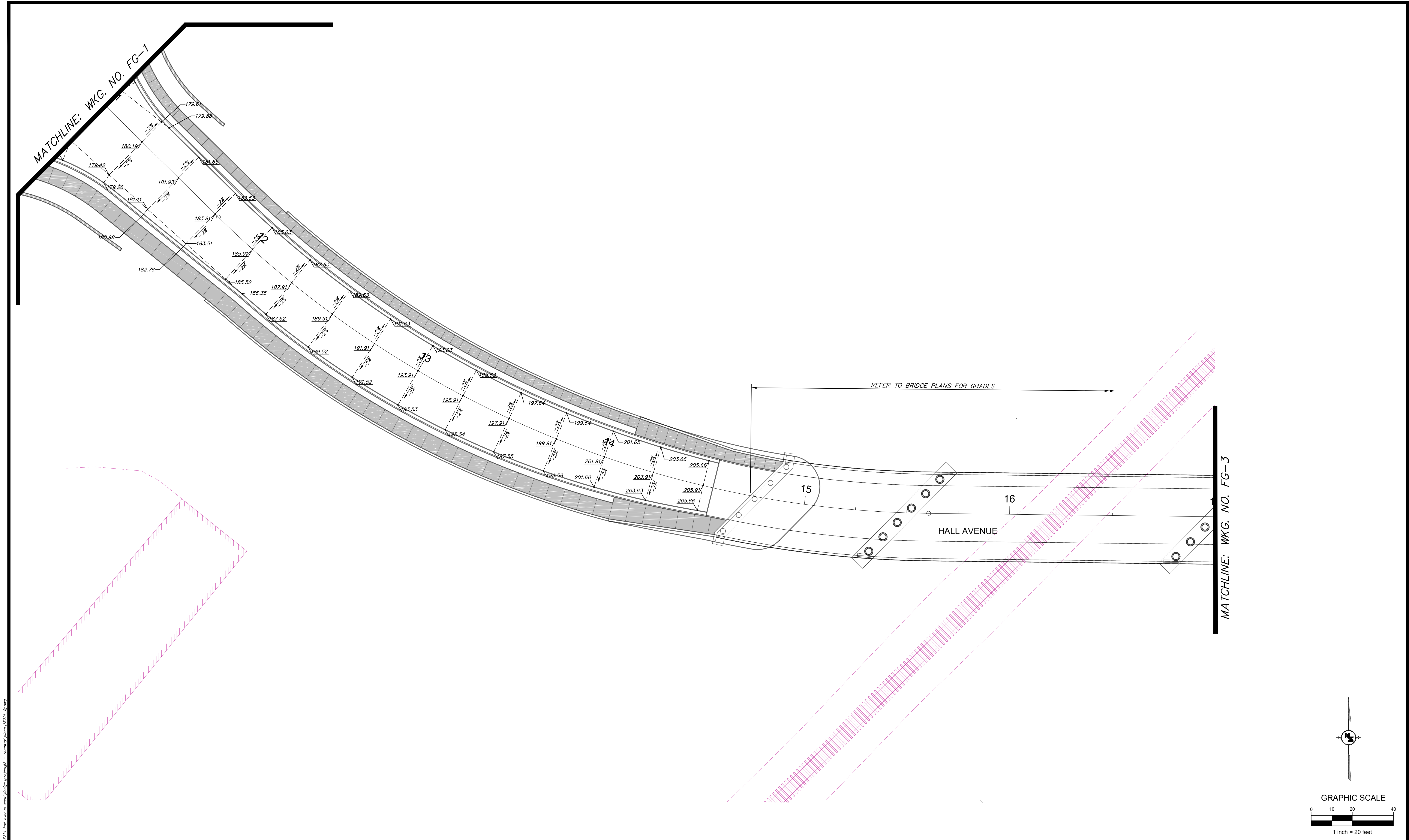
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



FORM GRADES
WEST PINE STREET
STA. 747+00 TO STA. 754+00

WORKING NUMBER:
FG-1

DRAWING NUMBER:
56



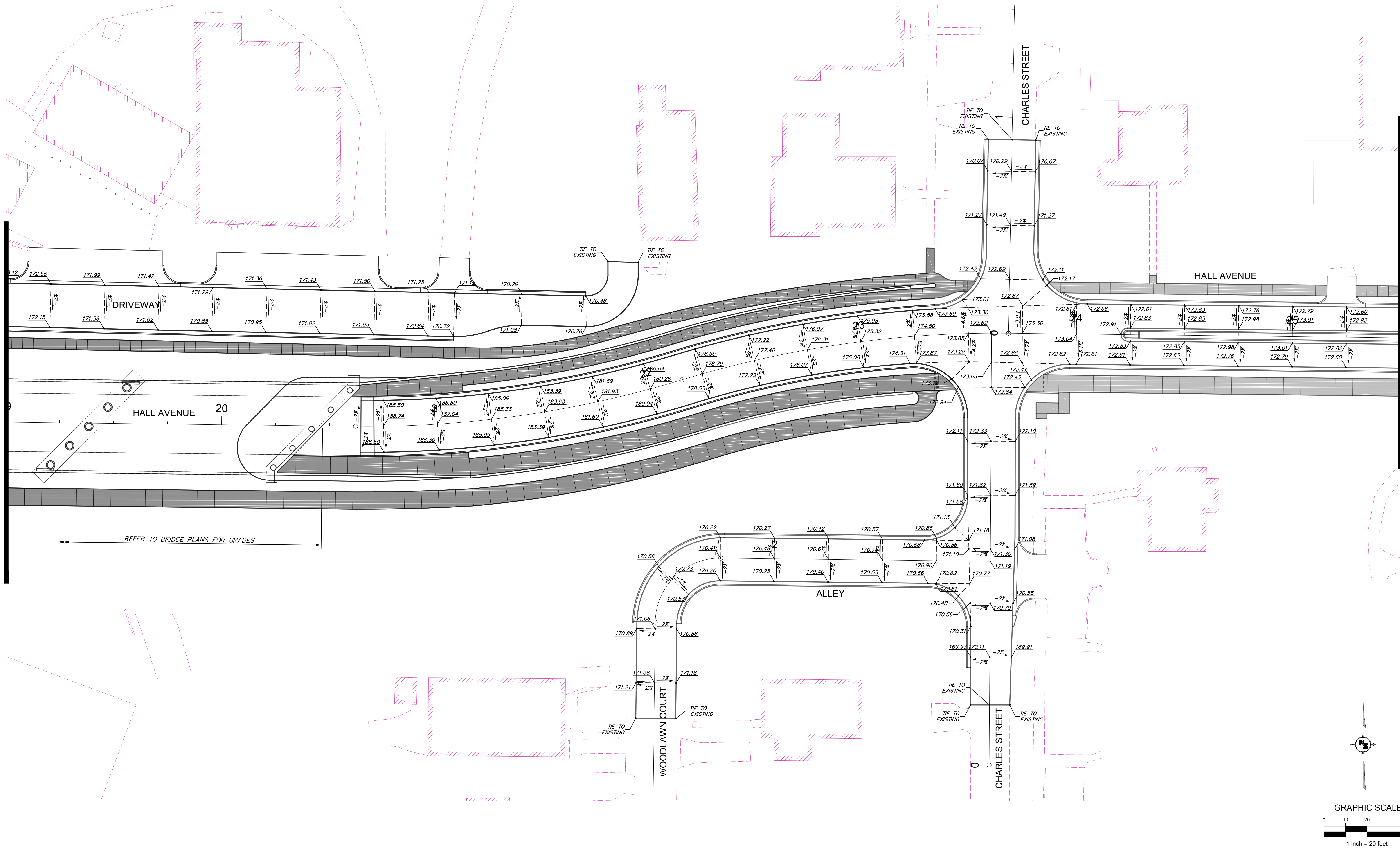
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NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	 NEEL-SCHAFFER <i>Solutions you can build upon</i>	FORM GRADES HALL AVENUE STA. 11+00 TO STA. 17+00			
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000							
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MATCHLINE: WKG. NO. FG-2

MATCHLINE: WKG. NO. FG-5



NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
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				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



FORM GRADES
HALL AVENUE
STA. 19+00 TO STA. 25+50

WORKING NUMBER:
FG-4

DRAWING NUMBER:
59

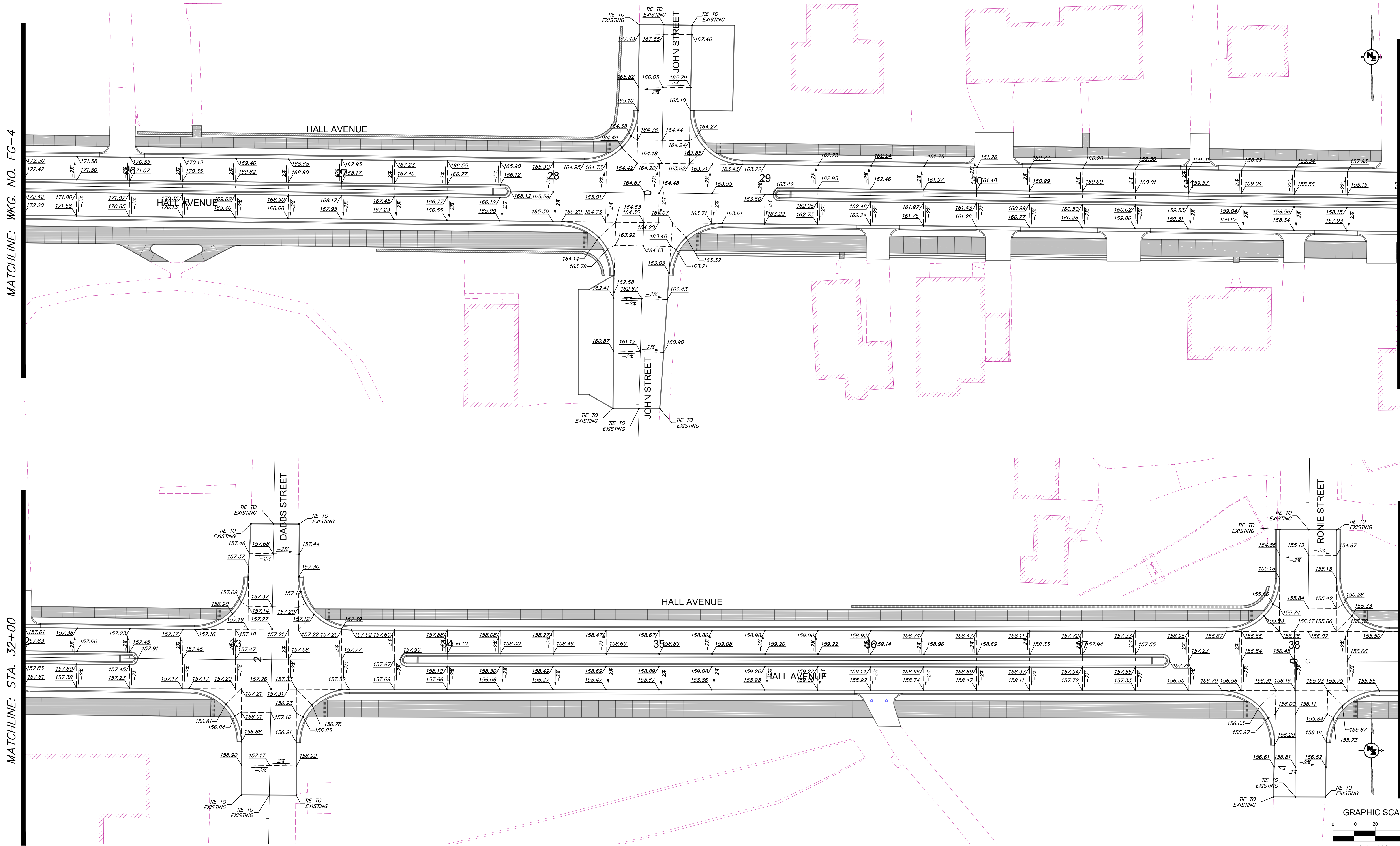
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MATCHLINE: WKG. NO. FG-4

MATCHLINE: STA. 32+00

MATCHLINE: STA. 32+00

MATCHLINE: WKG. NO. FG-6



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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_FG.dwg	
				SCALE: 1" = 20'	
				SURVEYED BY: CLEARPOINT	
				DSGN: GPC	DATE: 06/2022
				DRWN: JPF	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

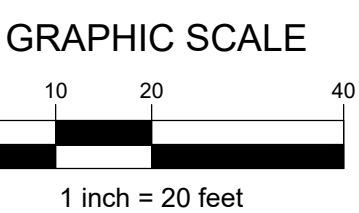
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



FORM GRADES
HALL AVENUE
STA. 25+50 TO STA. 38+50

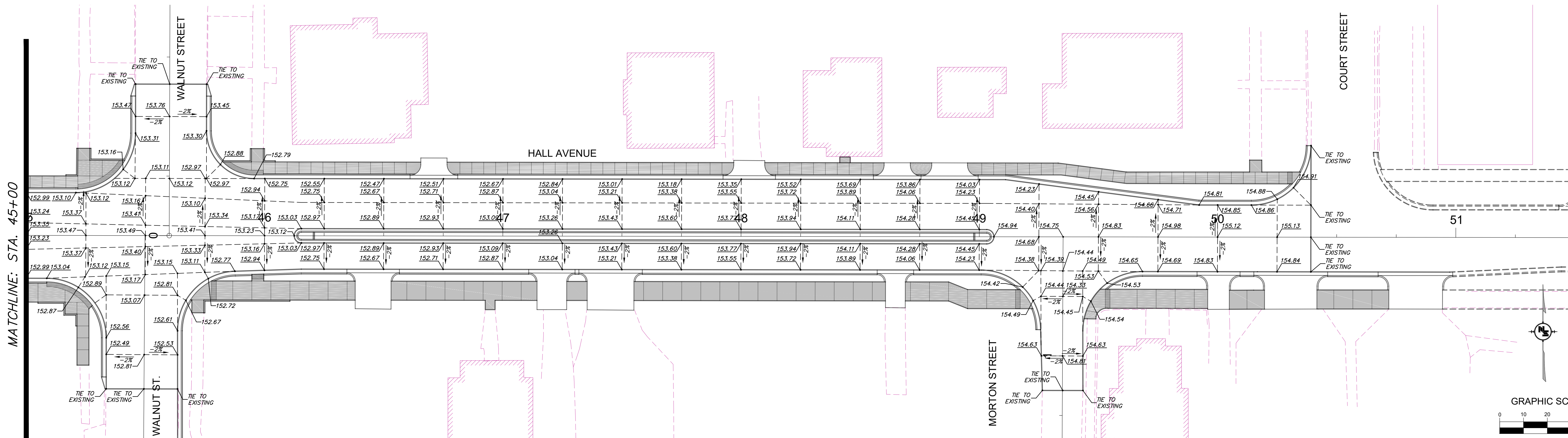
WORKING NUMBER:
FG-5

DRAWING NUMBER:
60



MATCHLINE: WKG. NO. FG-5

MATCHLINE: STA. 45+00



MATCHLINE: STA. 45+00



NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_FG.dwg	
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				DSGN: GPC	DATE: 06/2022
				DRWN: JPF	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



FORM GRADES
HALL AVENUE
STA. 38+50 TO E.O.P.

WORKING NUMBER:
FG-6

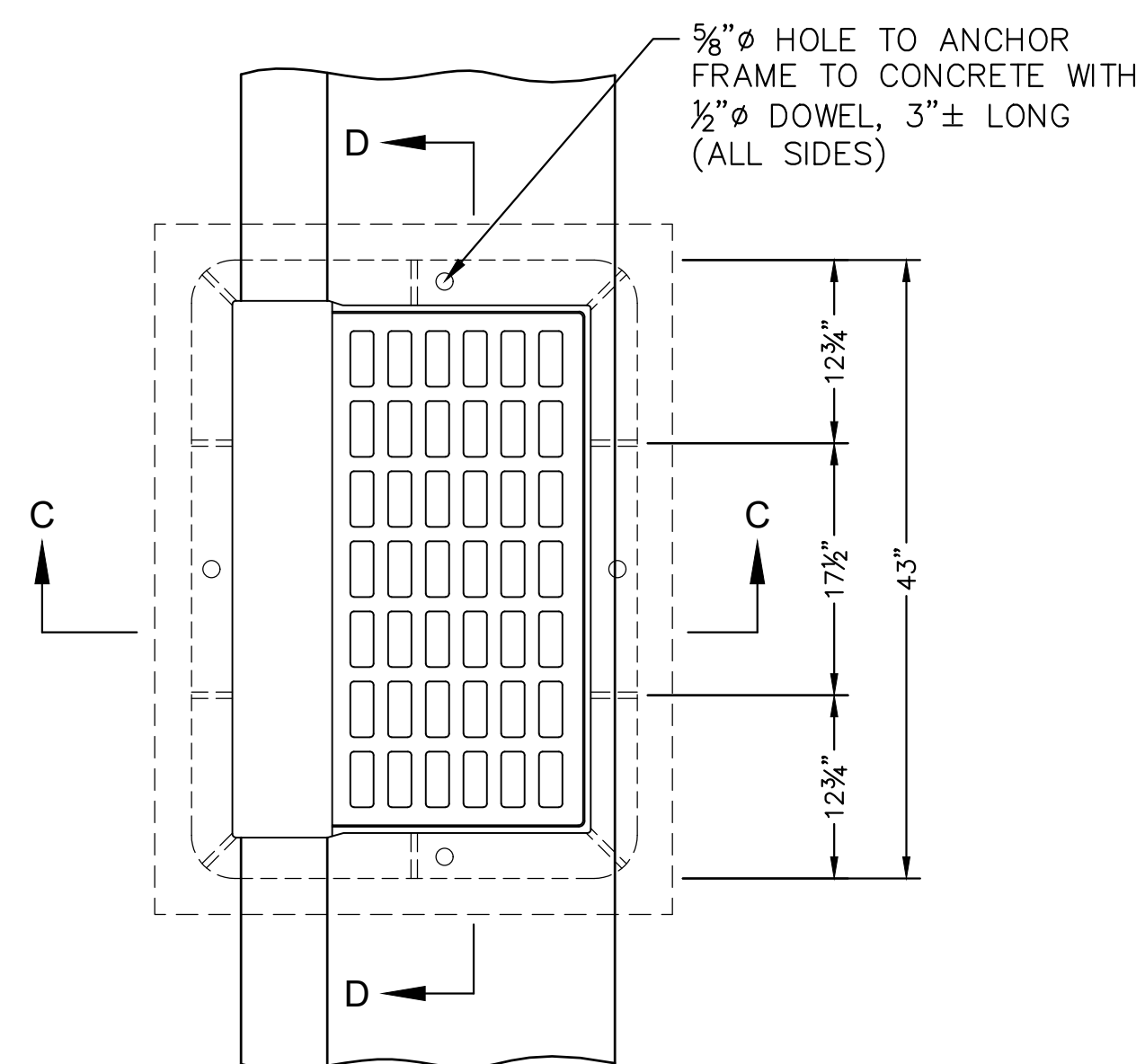
DRAWING NUMBER:
61

PLAN OF GRATE

SECTION A-A
(GRATE)

SECTION
(FRAME)

SECTION B-B
(GRATE)

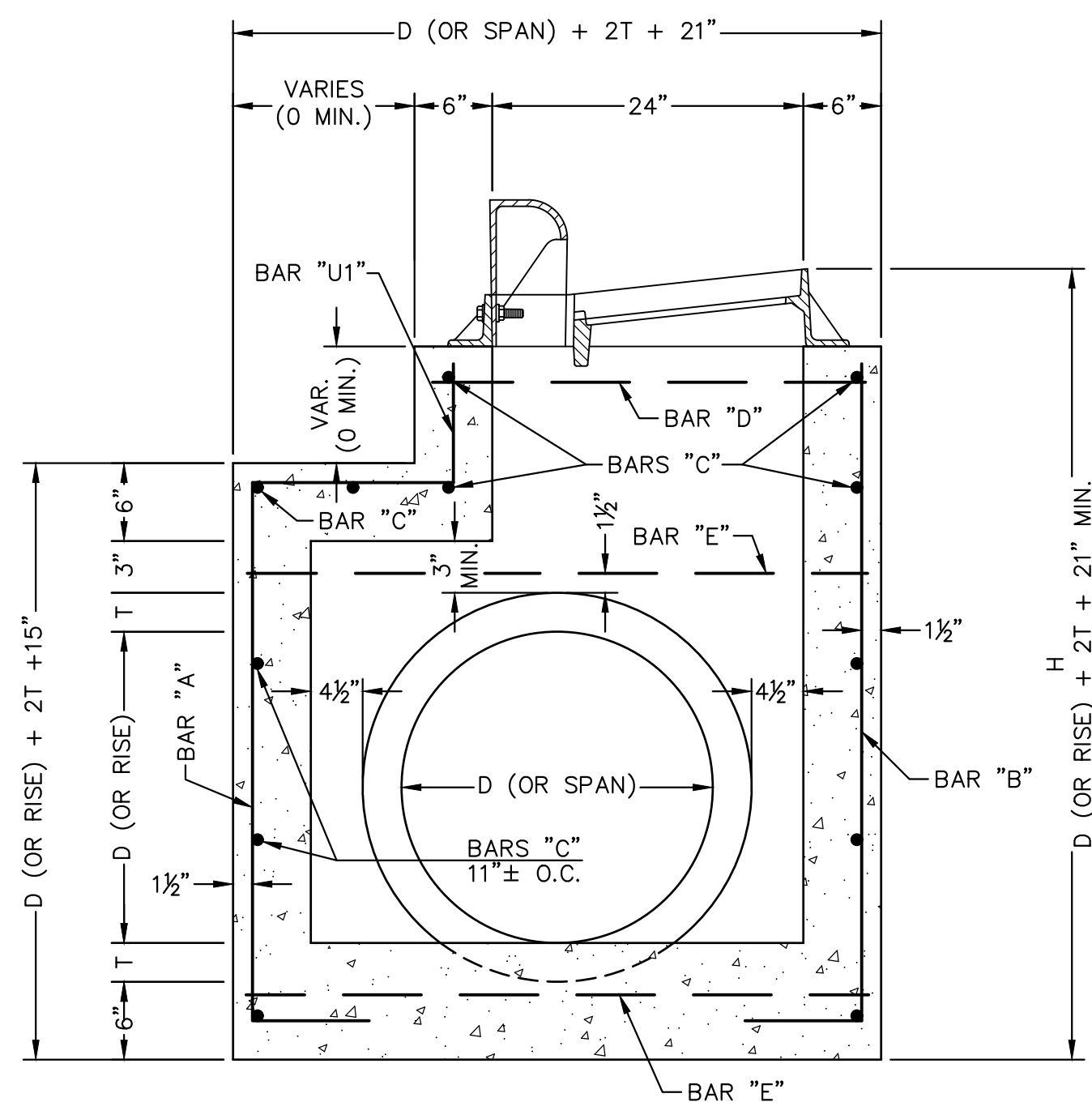


5 ~ #4 BARS,
[D (OR RISE) + D (OR SPAN) + 4T + 9"] LONG

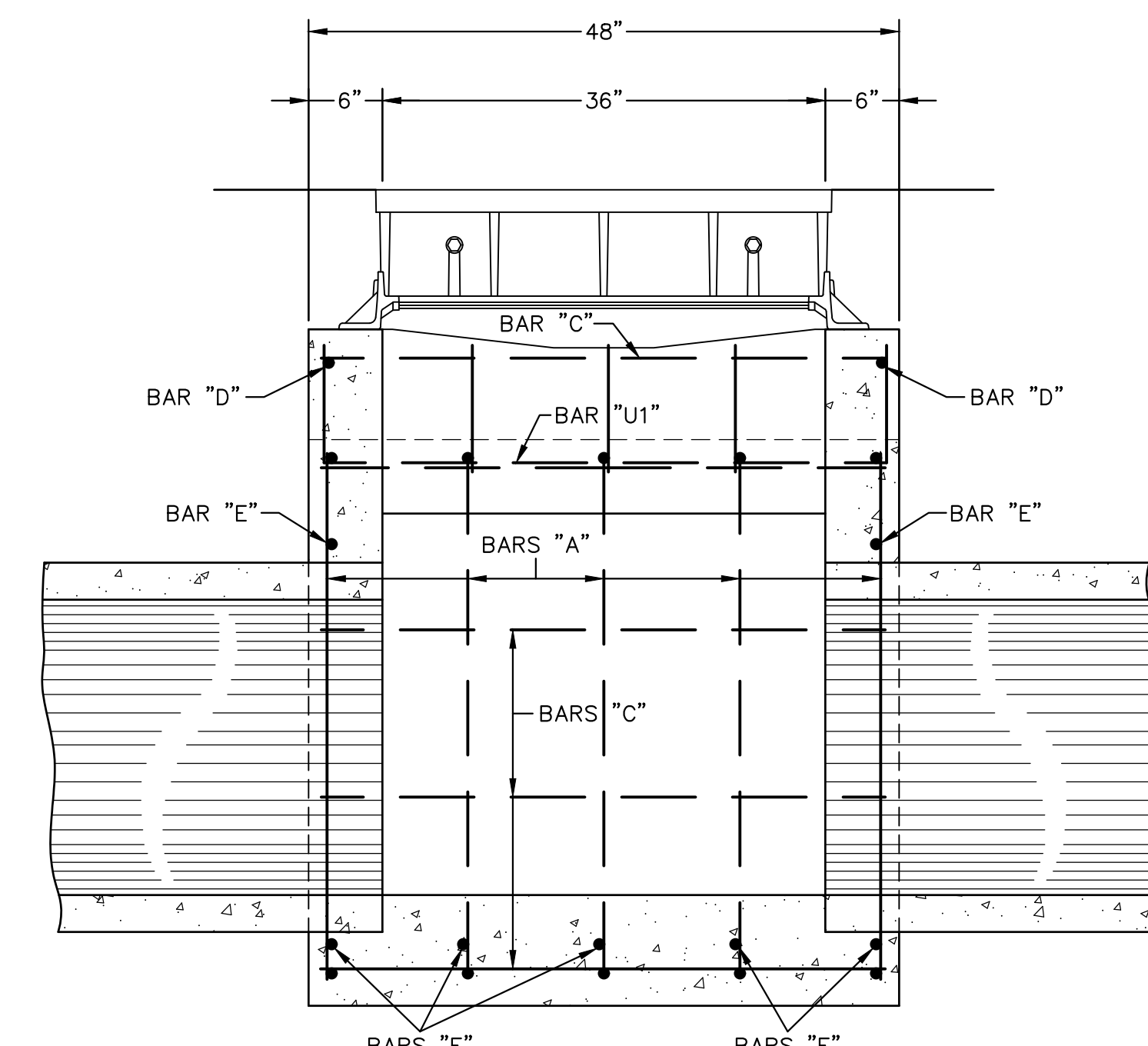
5 ~ #4 BARS,
[D (OR RISE) + 2T + 21"] LONG

1 ~ #4 BAR EACH,
VARIABLE LENGTH

BARS "C", "D" & "E"



SECTION C-C



SECTION D-D

QUANTITIES																	
PIPE SIZE	MIN. DEPTH TO F.L.	MIN. DEPTH INLET		PIPE OPENING DEDUCTION (yd ³)	T												
		CONC. (yd ³)	STEEL (lbs.)			"A" #4		"B" #4		"C" #4		"D" #4		"E" #4		"U1" #4	
						NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.		
15"	2.708	0.819	69	0.036	2"	5 @ 4'-0"	5 @ 3'-5"	10 @ 3'-9"	2 @ 2'-9"	7 @ 3'-1"	1 @ 3'-9"						
18"	2.958'	0.992	75	0.053	2½"	5 @ 4'-7"	5 @ 3'-8"	10 @ 3'-9"	2 @ 2'-9"	7 @ 3'-5"	1 @ 3'-9"						
24"	3.500'	1.310	88	0.091	3"	5 @ 5'-9"	5 @ 4'-3"	12 @ 3'-9"	2 @ 2'-9"	7 @ 4'-0"	1 @ 3'-9"						
30"	4.042'	1.659	99	0.138	3½"	5 @ 6'-11"	5 @ 4'-10"	13 @ 3'-9"	2 @ 2'-9"	7 @ 4'-7"	1 @ 3'-9"						
36"	4.584'	2.039	116	0.196	4"	5 @ 8'-1"	5 @ 5'-5"	16 @ 3'-9"	2 @ 2'-9"	7 @ 5'-2"	1 @ 3'-9"						
42"	5.125'	2.449	129	0.263	4½"	5 @ 9'-3"	5 @ 6'-0"	18 @ 3'-9"	2 @ 2'-9"	7 @ 5'-9"	1 @ 3'-9"						
48"	5.667'	2.890	140	0.340	5"	5 @ 10'-5"	5 @ 6'-7"	19 @ 3'-9"	2 @ 2'-9"	7 @ 6'-4"	1 @ 3'-9"						
18" X 11"	2.375	0.796	69	0.036	2"	8 @ 4'-6"	8 @ 3'-3"	10 @ 6'-9"	2 @ 2'-9"	10 @ 3'-9"	1 @ 6'-9"						
22" X 13"	2.542'	0.968	75	0.053	2½"	5 @ 4'-6"	5 @ 3'-3"	10 @ 3'-9"	2 @ 2'-9"	7 @ 3'-9"	1 @ 3'-9"						
29" X 18"	3.000'	1.284	91	0.087	3"	5 @ 5'-8"	5 @ 3'-9"	13 @ 3'-9"	2 @ 2'-9"	7 @ 4'-5"	1 @ 3'-9"						
36" X 23"	3.458'	1.631	102	0.129	3½"	5 @ 6'-10"	5 @ 4'-3"	14 @ 3'-9"	2 @ 2'-9"	7 @ 5'-1"	1 @ 3'-9"						
44" X 27"	3.833'	2.007	111	0.185	4"	5 @ 8'-0"	5 @ 4'-8"	14 @ 3'-9"	2 @ 2'-9"	7 @ 5'-10"	1 @ 3'-9"						
51" X 31"	4.208'	2.385	127	0.245	4½"	5 @ 9'-1"	5 @ 5'-1"	17 @ 3'-9"	2 @ 2'-9"	7 @ 6'-6"	1 @ 3'-9"						
58" X 36"	4.667'	2.823	138	0.318	5"	5 @ 10'-3"	5 @ 5'-7"	18 @ 3'-9"	2 @ 2'-9"	7 @ 7'-2"	1 @ 3'-9"						

NOTES:

1. NO PIPE OPENINGS HAVE BEEN DEDUCTED FROM QUANTITIES SHOWN ABOVE.
2. FOR EACH ADDITIONAL FOOT OF INLET HEIGHT, ADD 0.222 yd3 CLASS "b" CONCRETE AND 10 lbs. REINFORCING STEEL.
3. 2 BARS "C" AND 2 BARS "D" ARE REQUIRED PER EACH ADDITIONAL FOOT OF INLET HEIGHT. LENGTH OF BARS "B" AND BARS "U1" WILL INCREASE WITH ADDITIONAL HEIGHT.
4. WEIGHT OF FRAME CASTING = 306 lbs.
WEIGHT OF GRATE = 180 lbs.

NOTICE TO DRAWING HOLDER

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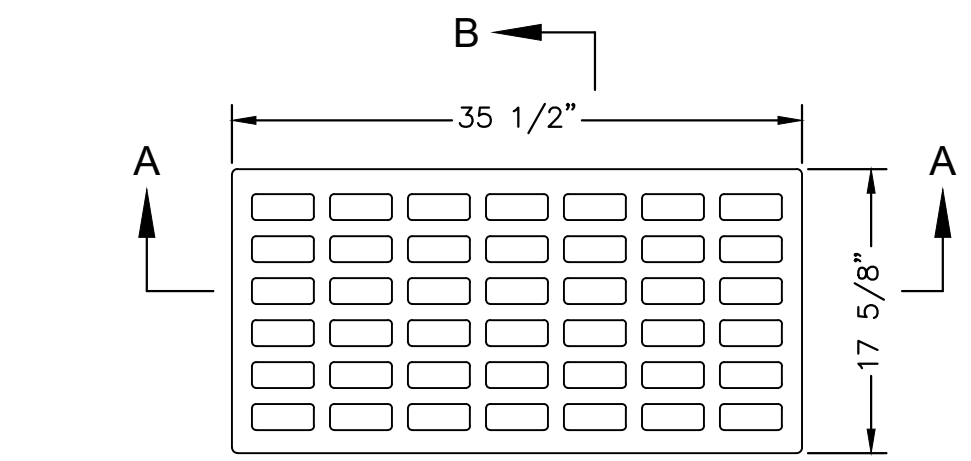
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NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
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				SURVEYED BY:	
				DSGN: GPC	DATE: 04/2022
				DRWN: JPF	DATE: 04/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWF	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

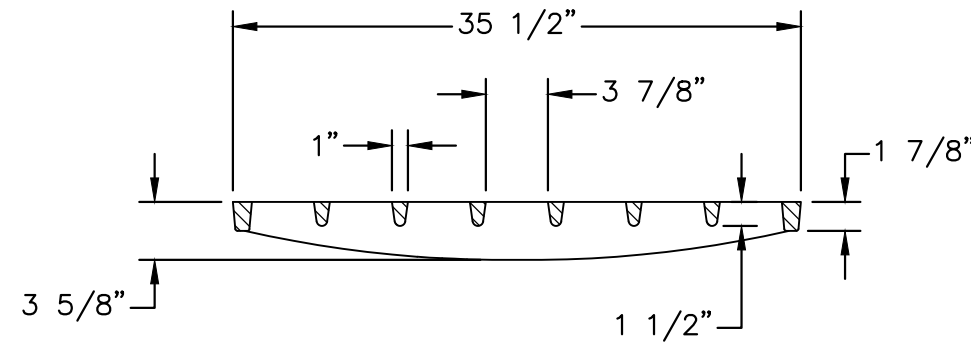
CURB INLET
SINGLE UNIT

WORKING NUMBER:
CI-1

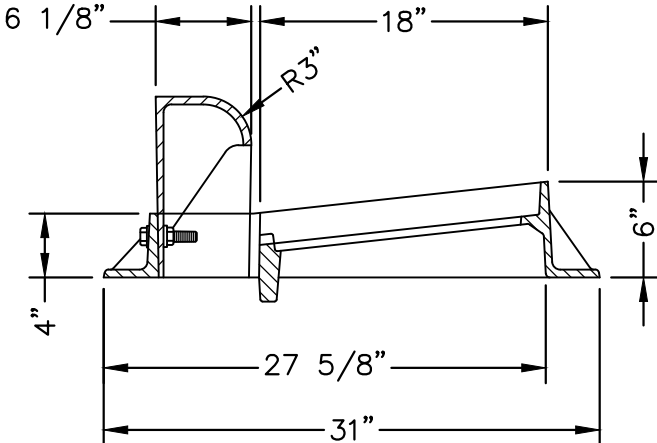
DRAWING NUMBER:
62



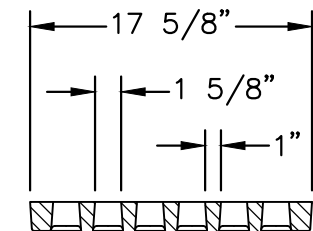
PLAN OF GRATE



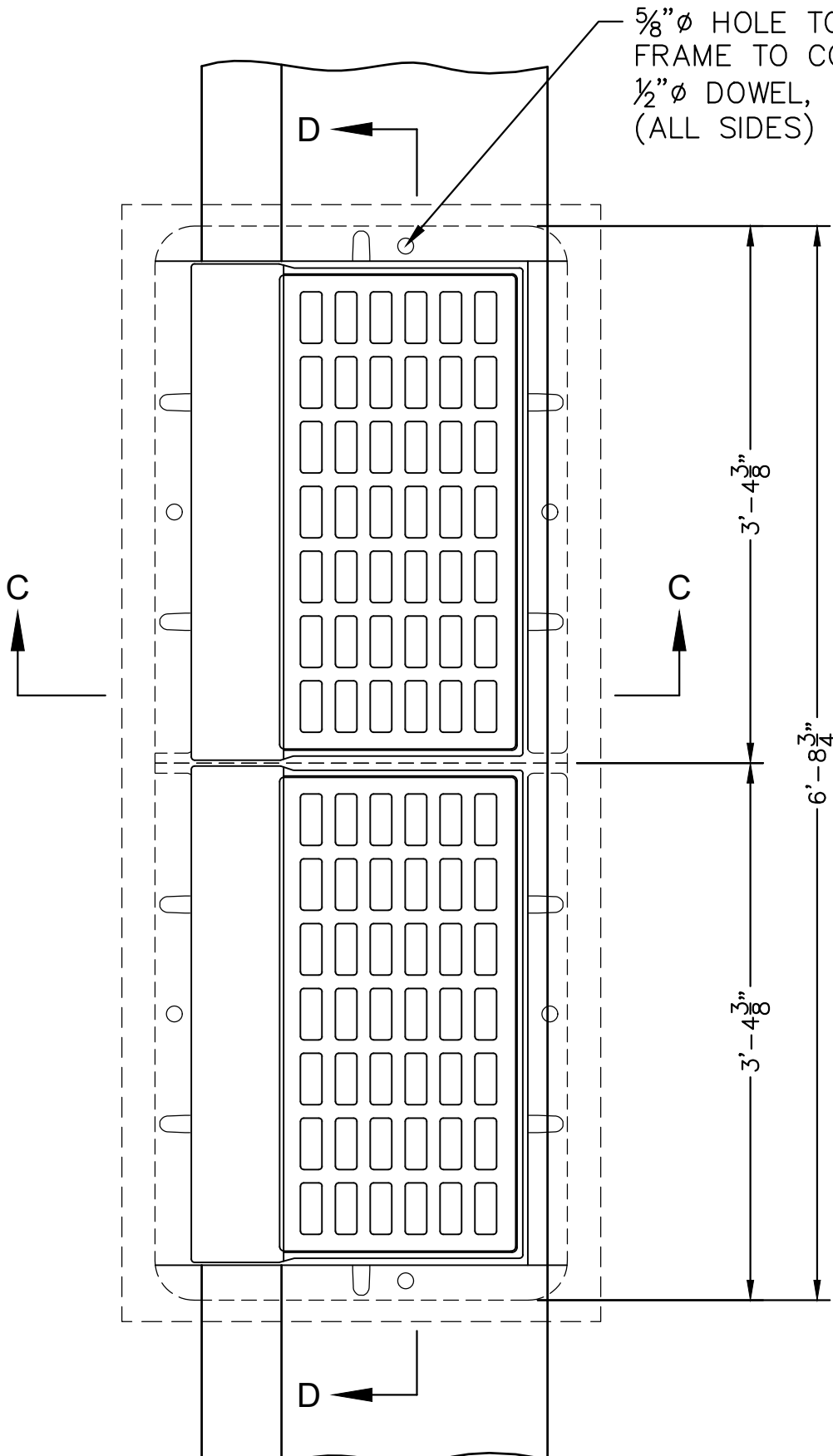
SECTION A-A
(GRATE)



SECTION
(FRAME)

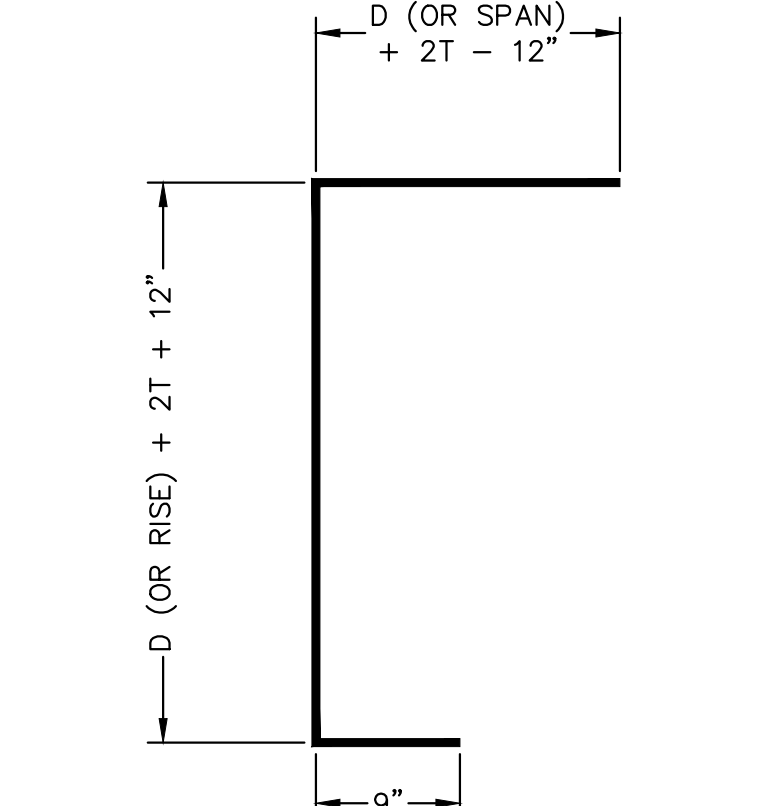


SECTION B-B
(GRATE)



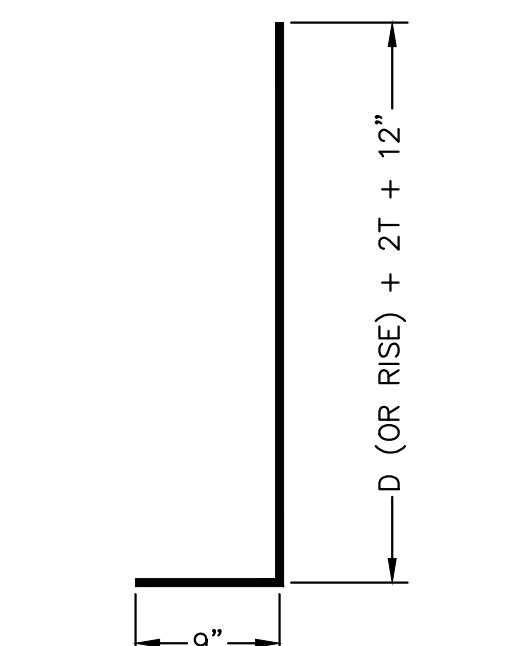
QUANTITIES											
PIPE SIZE	MIN. DEPTH TO F.L.	MIN. DEPTH INLET		PIPE OPENING DEDUCTION (yd ³)	T						
		CONC. (yd ³)	STEEL (lbs.)			"A"	"B"	"C"	"D"	"E"	"U1"
						#4	#4	#4	#4	#4	#4
						NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.
15"	2.708'	1.325	114	0.036	2"	8 @ 4'-0"	8 @ 3'-5"	10 @ 6'-9"	2 @ 2'-9"	10 @ 3'-1"	1 @ 6'-9"
18"	2.958'	1.591	121	0.053	2½"	8 @ 4'-7"	8 @ 3'-8"	10 @ 6'-9"	2 @ 2'-9"	10 @ 3'-5"	1 @ 6'-9"
24"	3.500'	2.067	143	0.091	3"	8 @ 5'-9"	8 @ 4'-3"	12 @ 6'-9"	2 @ 2'-9"	10 @ 4'-0"	1 @ 6'-9"
30"	4.042'	2.580	156	0.138	3½"	8 @ 6'-11"	8 @ 4'-10"	13 @ 6'-9"	2 @ 2'-9"	10 @ 4'-7"	1 @ 6'-9"
36"	4.584'	3.128	188	0.196	4"	8 @ 8'-1"	8 @ 5'-5"	16 @ 6'-9"	2 @ 2'-9"	10 @ 5'-2"	1 @ 6'-9"
42"	5.125'	3.713	210	0.263	4½"	8 @ 9'-3"	8 @ 6'-0"	18 @ 6'-9"	2 @ 2'-9"	10 @ 5'-9"	1 @ 6'-9"
48"	5.667'	4.334	228	0.340	5"	8 @ 10'-5"	8 @ 6'-7"	19 @ 6'-9"	2 @ 2'-9"	10 @ 6'-4"	1 @ 6'-9"
18" X 11"	2.375	1.382	114	0.036	2"	8 @ 4'-6"	8 @ 3'-3"	10 @ 6'-9"	2 @ 2'-9"	10 @ 3'-9"	1 @ 6'-9"
22" X 13"	2.542'	1.565	120	0.053	2½"	8 @ 4'-6"	8 @ 3'-3"	10 @ 6'-9"	2 @ 2'-9"	10 @ 3'-9"	1 @ 6'-9"
29" X 18"	3.000'	2.043	147	0.087	3"	8 @ 5'-8"	8 @ 3'-9"	13 @ 6'-9"	2 @ 2'-9"	10 @ 4'-5"	1 @ 6'-9"
36" X 23"	3.458'	2.559	165	0.129	3½"	8 @ 6'-10"	8 @ 4'-3"	14 @ 6'-9"	2 @ 2'-9"	10 @ 5'-1"	1 @ 6'-9"
44" X 27"	3.833'	3.112	178	0.185	4"	8 @ 8'-0"	8 @ 4'-8"	14 @ 6'-9"	2 @ 2'-9"	10 @ 5'-10"	1 @ 6'-9"
51" X 31"	4.208'	3.662	205	0.245	4½"	8 @ 9'-1"	8 @ 5'-1"	17 @ 6'-9"	2 @ 2'-9"	10 @ 6'-6"	1 @ 6'-9"
58" X 36"	4.667'	4.287	222	0.318	5"	8 @ 10'-3"	8 @ 5'-7"	18 @ 6'-9"	2 @ 2'-9"	10 @ 7'-2"	1 @ 6'-9"

- NOTES:
- NO PIPE OPENINGS HAVE BEEN DEDUCTED FROM QUANTITIES SHOWN ABOVE.
 - FOR EACH ADDITIONAL FOOT OF INLET HEIGHT, ADD 0.333 yd³ CLASS "B" CONCRETE AND 22 lbs. REINFORCING STEEL.
 - 2 BARS "C" AND 2 BARS "D" ARE REQUIRED PER EACH ADDITIONAL FOOT OF INLET HEIGHT. LENGTH OF BARS "B" AND BARS "U1" WILL INCREASE WITH ADDITIONAL HEIGHT.
 - WEIGHT OF FRAME CASTINGS = 631 lbs.
WEIGHT OF GRATES = 360 lbs.



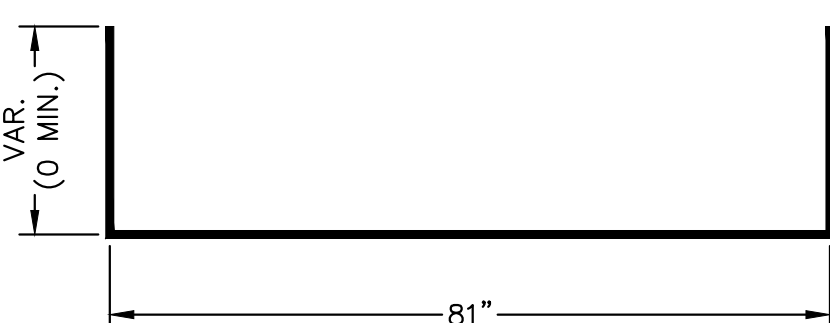
8 ~ #4 BARS,
[D (OR RISE) + D (OR SPAN) + 4T + 9"] LONG

BARS "A"



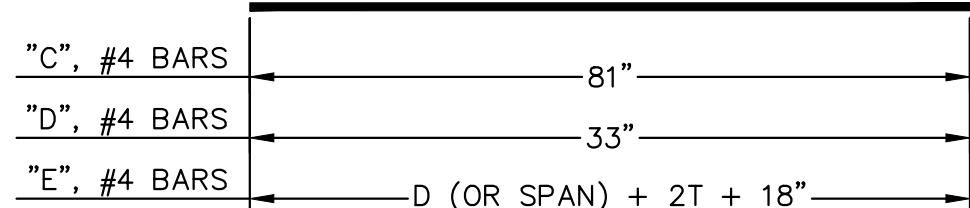
8 ~ #4 BARS,
[D (OR RISE) + 2T + 21"] LONG

BARS "B"

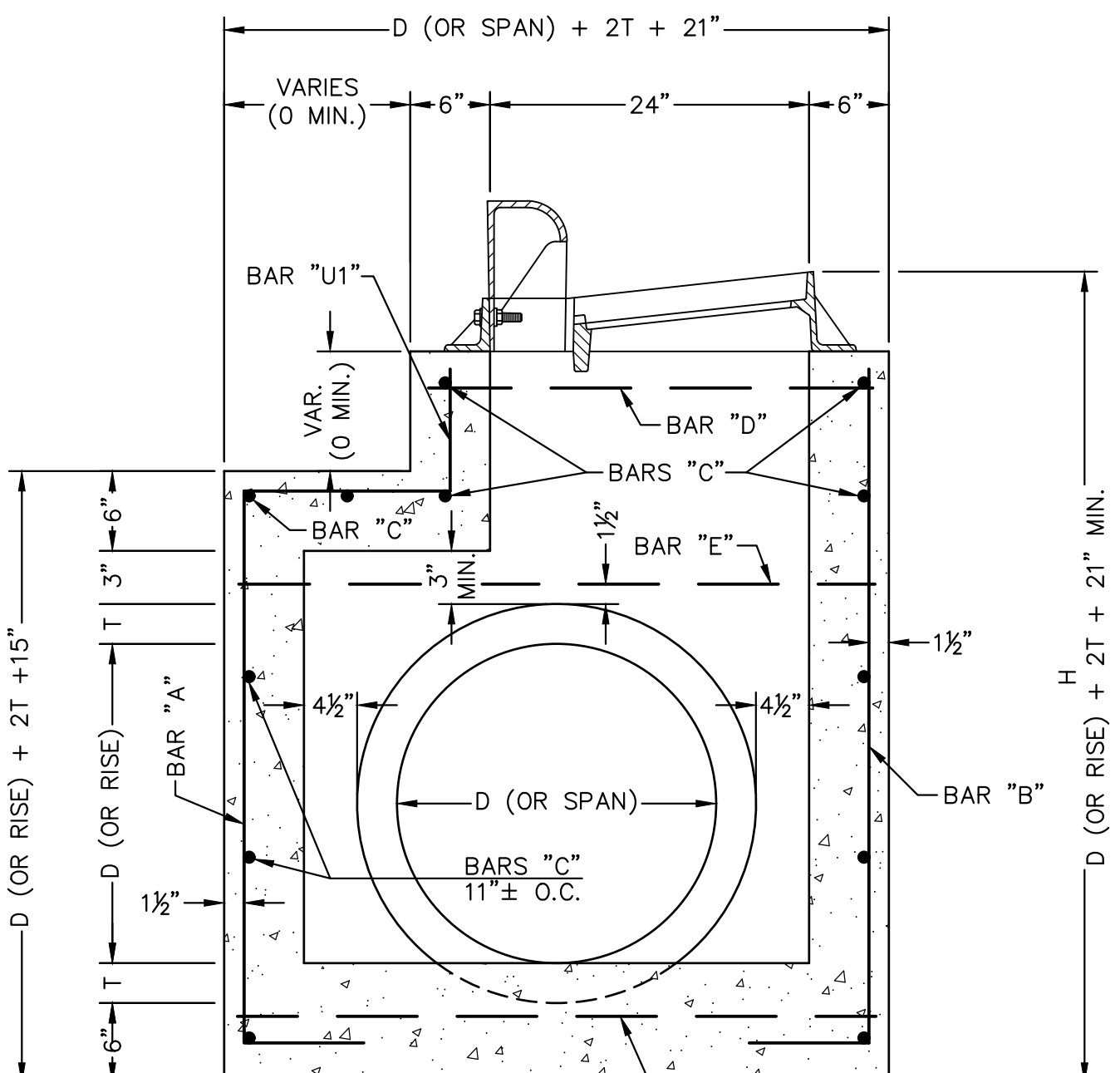


1 ~ #4 BAR EACH,
VARIABLE LENGTH

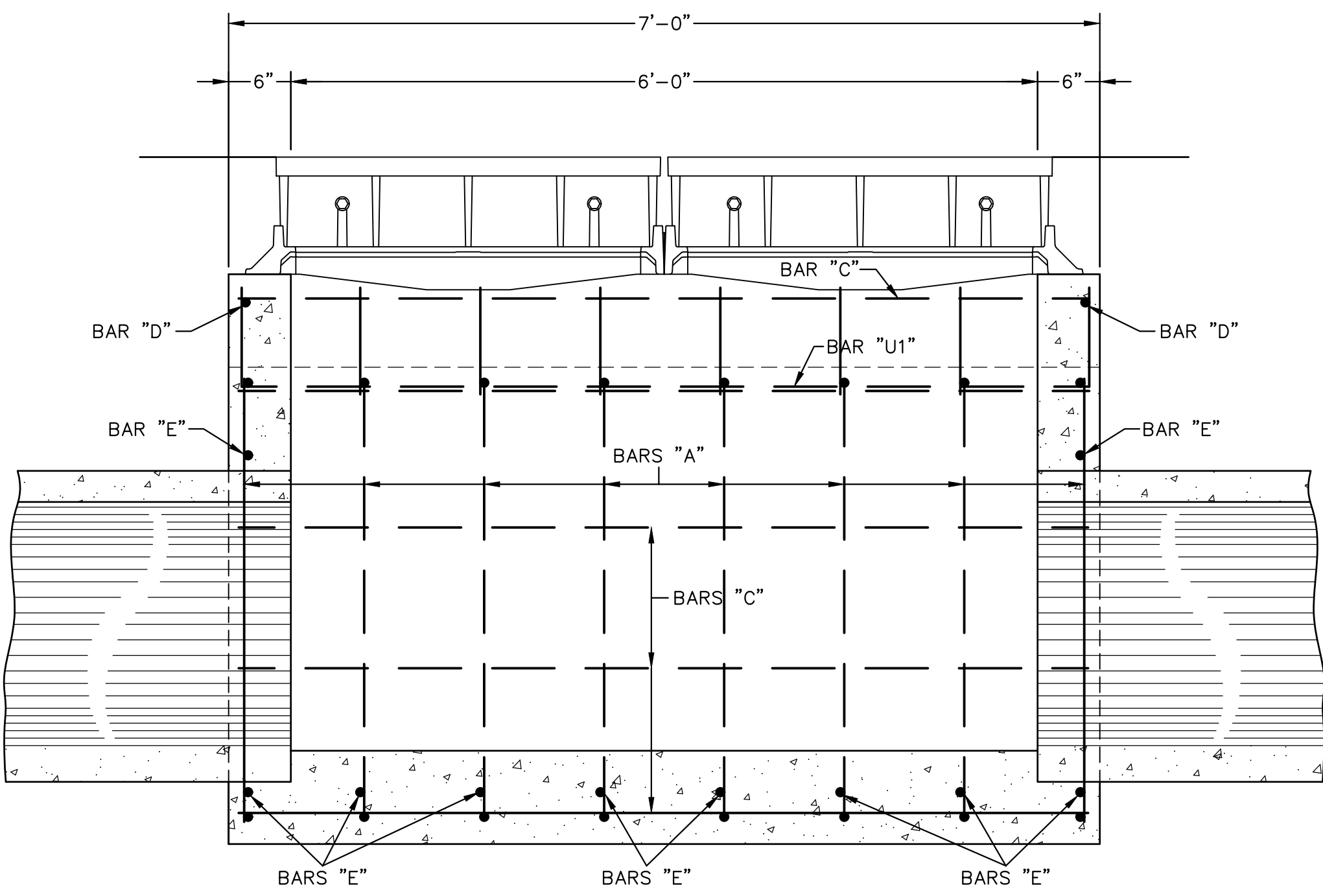
BAR "U1"



BARS "C", "D" & "E"



SECTION C-C



SECTION D-D

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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_DrainDetail.dwg	
				SCALE: NO SCALE	
				SURVEYED BY:	
				DSGN: GPC	DATE: 04/2022
				DRWN: JPF	DATE: 04/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

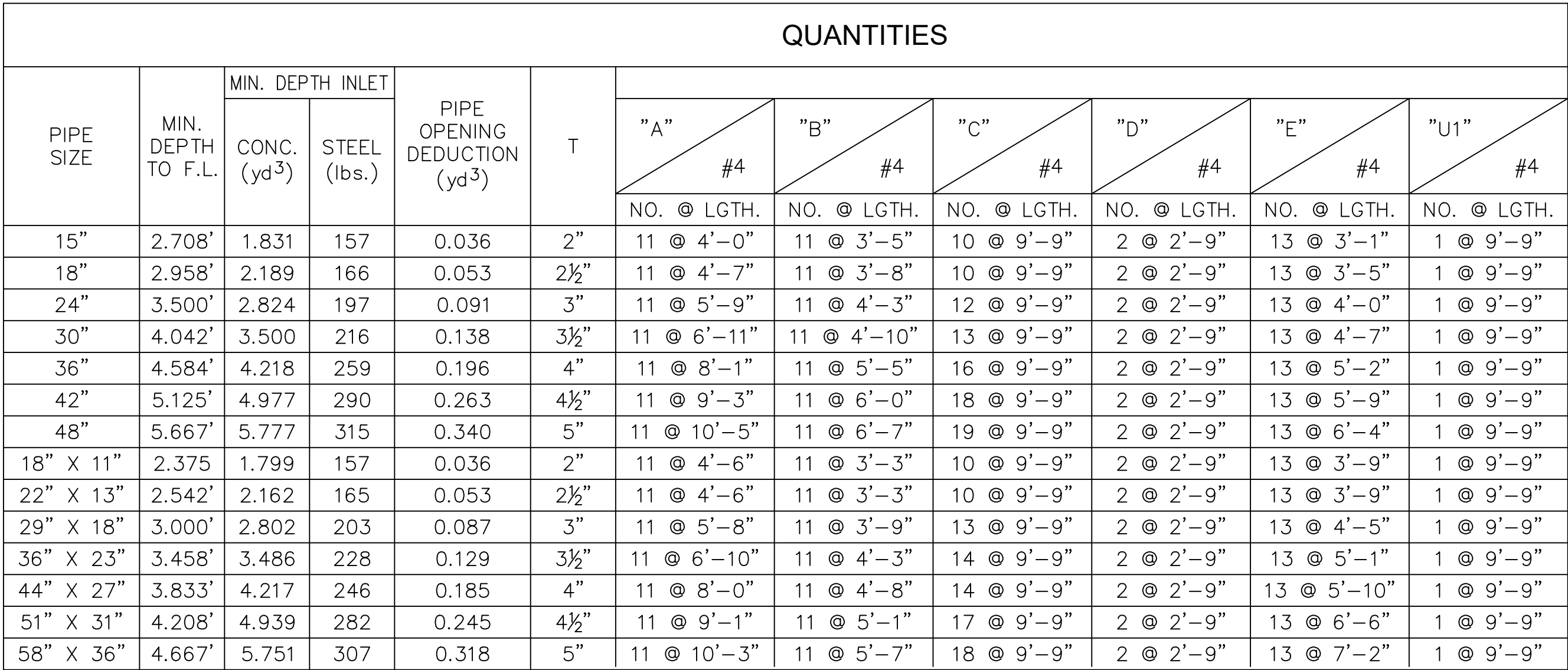
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



CURB INLET
DOUBLE UNIT

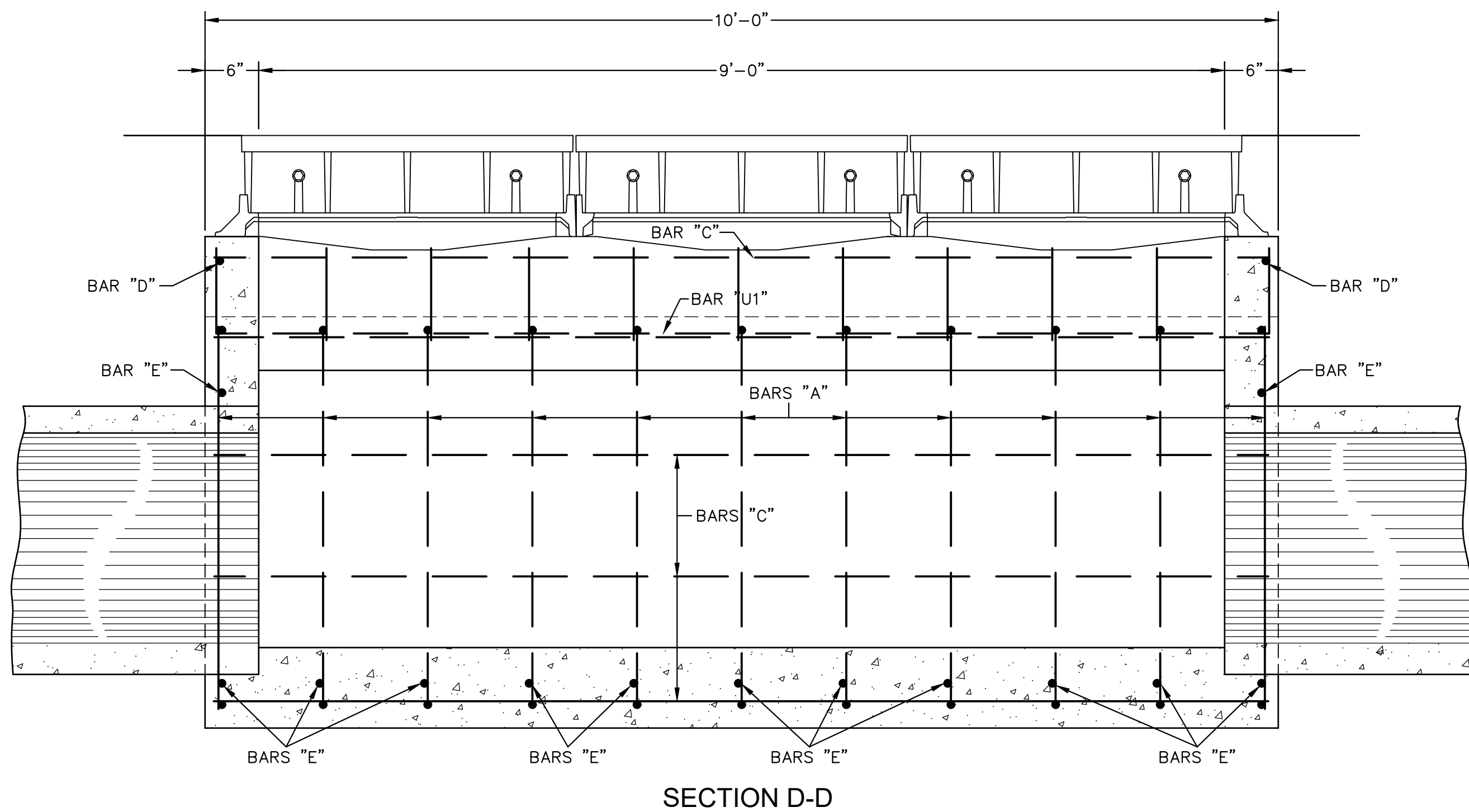
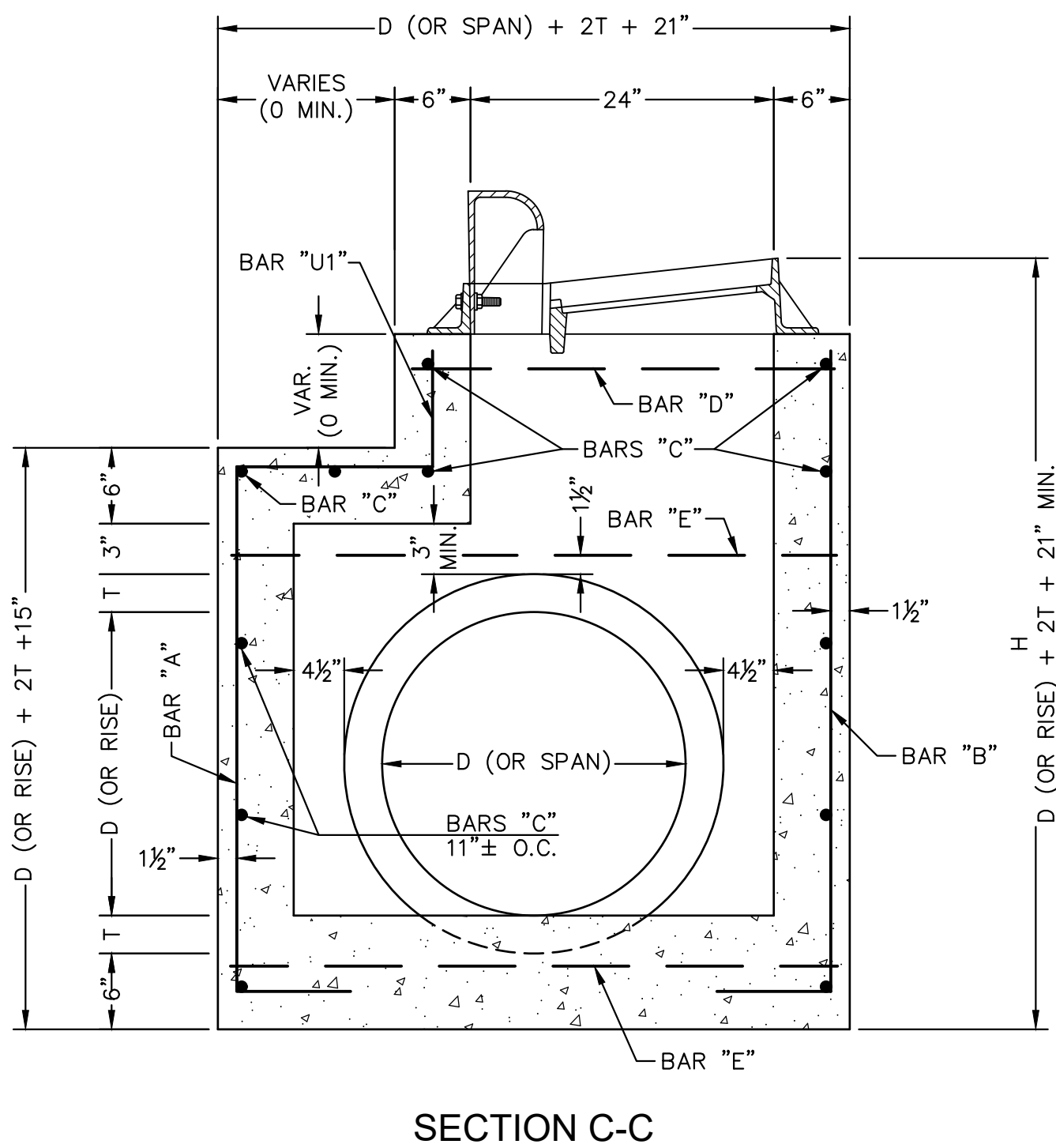
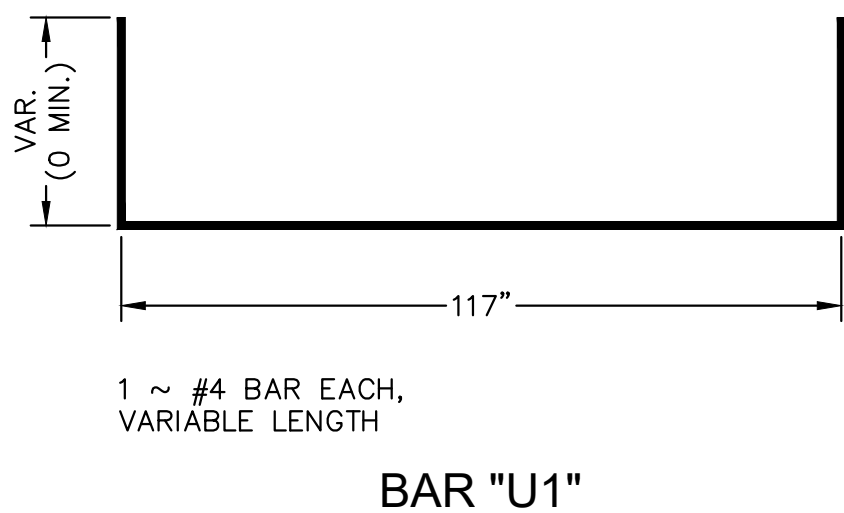
WORKING NUMBER:
CI-2

DRAWING NUMBER:
63



NOTES:

1. NO PIPE OPENINGS HAVE BEEN DEDUCTED FROM QUANTITIES SHOWN ABOVE.
2. FOR EACH ADDITIONAL FOOT OF INLET HEIGHT, ADD 0.444 yd³ CLASS "B" CONCRETE AND 32 lbs. REINFORCING STEEL.
3. 2 BARS "C" AND 2 BARS "D" ARE REQUIRED PER EACH ADDITIONAL FOOT OF INLET HEIGHT. LENGTH OF BARS "B" AND BARS "U1" WILL INCREASE WITH ADDITIONAL HEIGHT.
4. WEIGHT OF FRAME CASTINGS = 1006 lbs.
WEIGHT OF GRATES = 540 lbs.



SECTION C-C

SECTION D-D

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

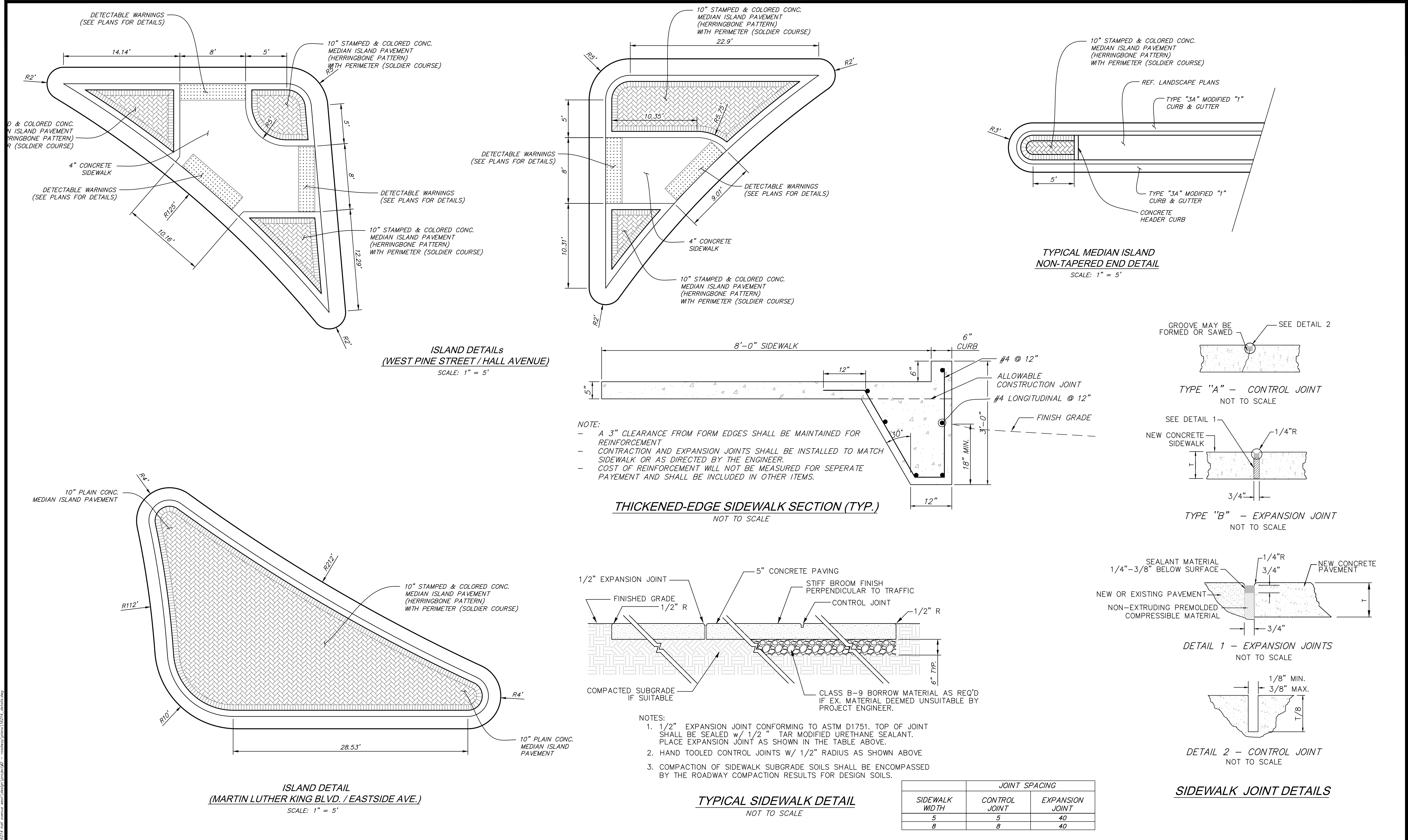


NEEL-SCHAFFER
Solutions you can build upon

CURB INLET
TRIPLE UNIT

WORKING NUMBER:
C1-3

DRAWING NUMBER:
64



NOTICE TO DRAWING HOLDER

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NO.

DATE

BY

DESCRIPTION

DRAWING INFORMATION

N-S PROJECT NO.: NS.16214.000

FILENAME: 16214_Details.dwg

SCALE: AS SHOWN

SURVEYED BY:

DSGN: GPC

DATE: 06/2022

DRWN: JPF

DATE: 06/2022

CHKD: GPC

DATE: 08/2022

QA/QC: MWE

DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER

Solutions you can build upon

MISCELLANEOUS DETAILS

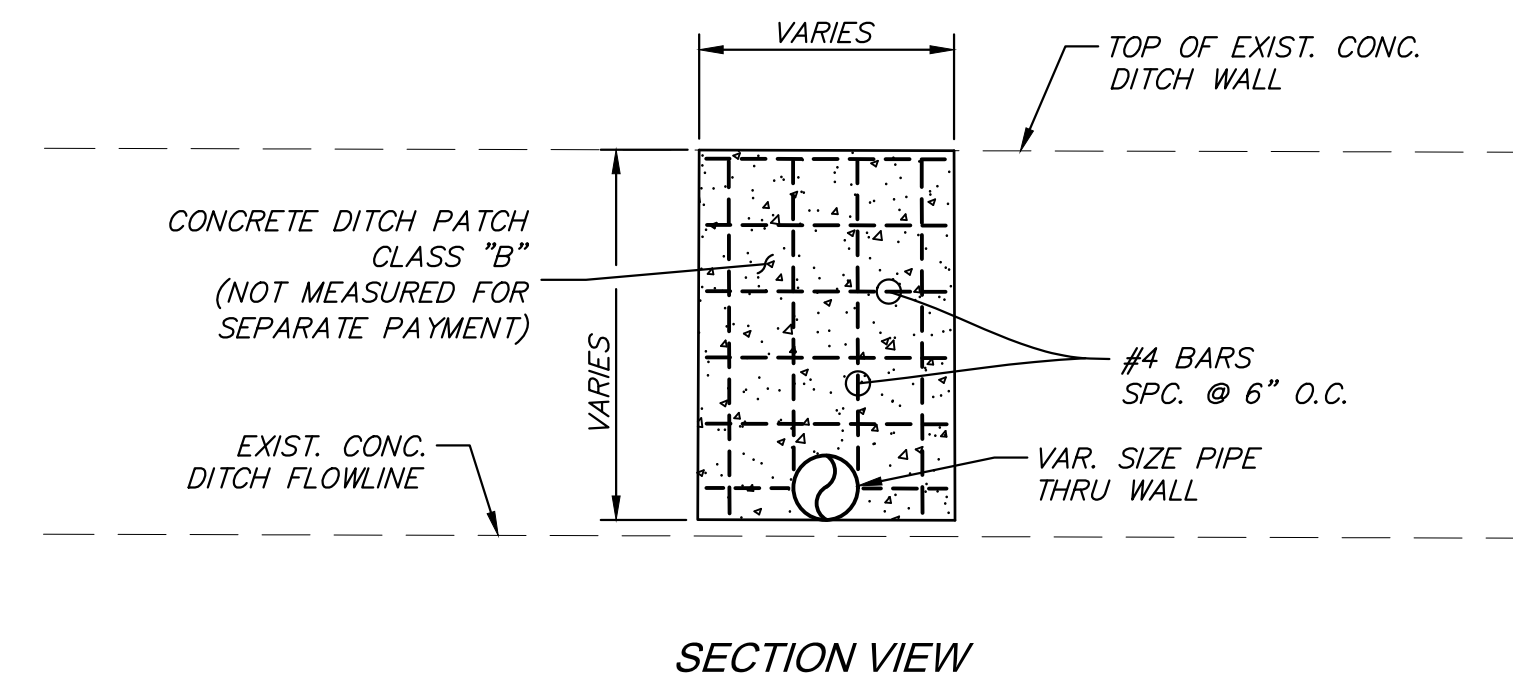
PAVED ISLANDS AND SIDEWALK

WORKING NUMBER:

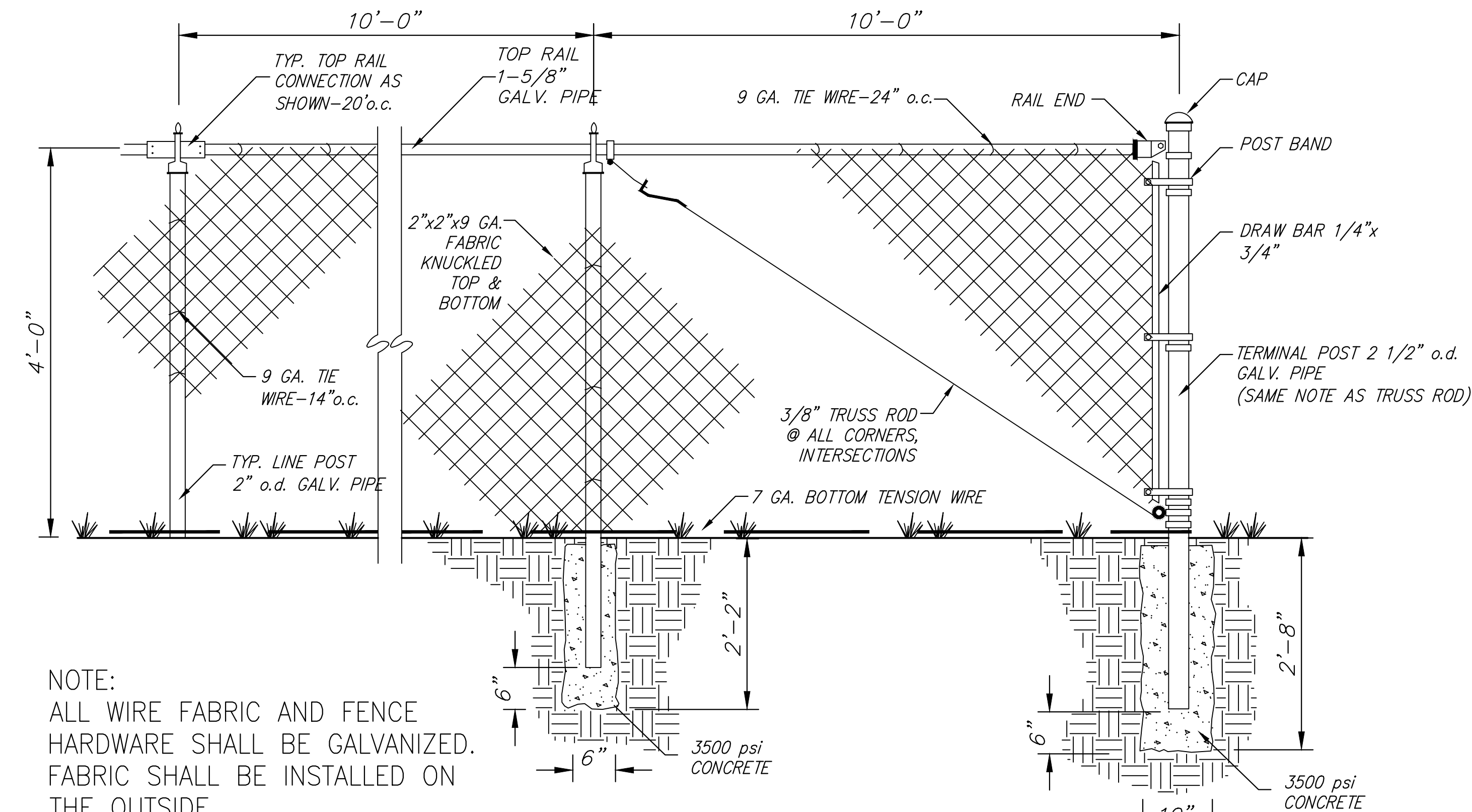
DET-1

DRAWING NUMBER:

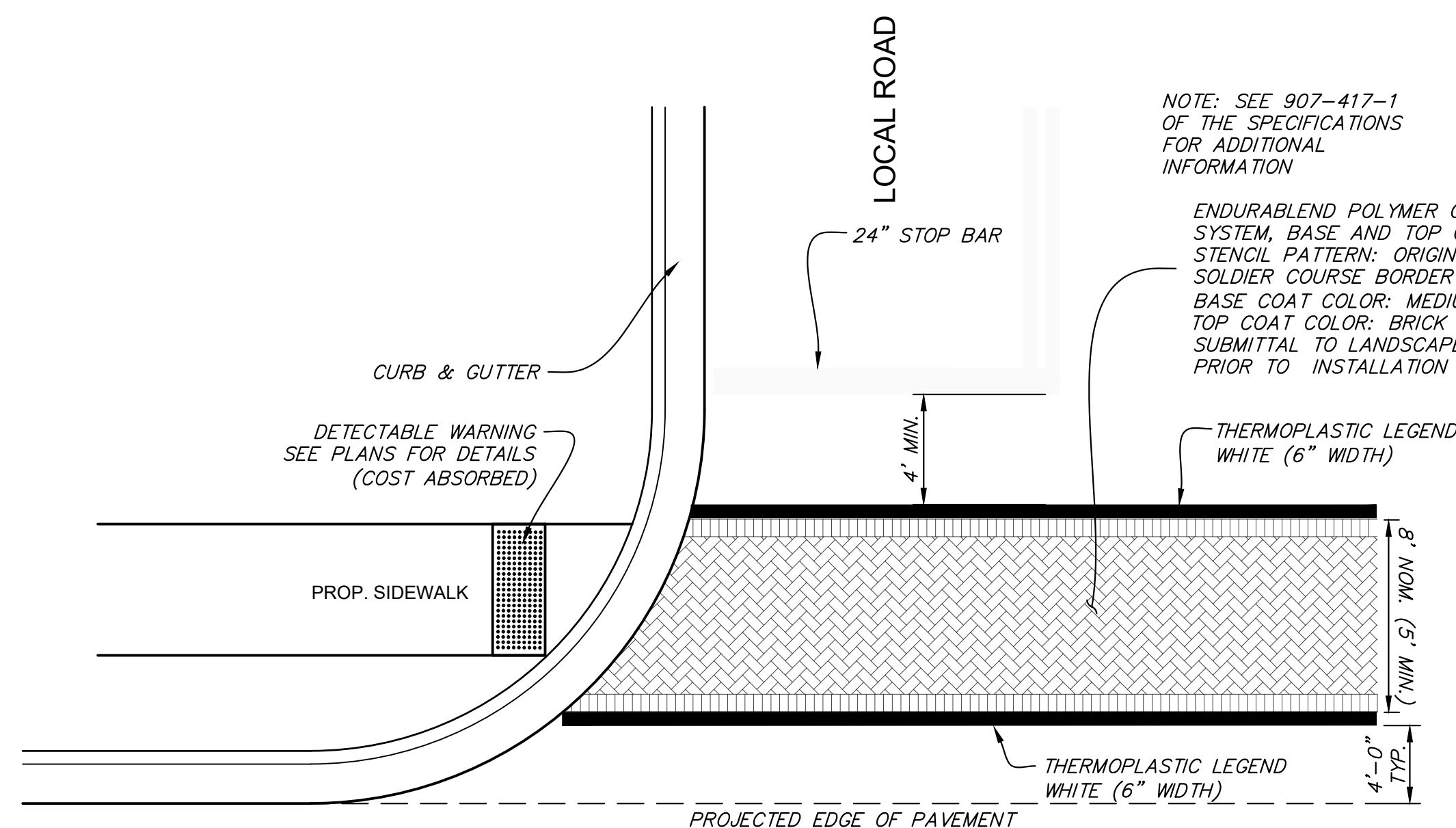
65



NOTE:
ALL SAWCUTS, REMOVAL ITEMS, CONCRETE AND REINFORCEMENT
REQUIRED TO PERFORM THIS WORK SHALL NOT BE MEASURED
FOR SEPARATE PAYMENT BUT SHALL BE INCLUDED IN THE COST
OF OTHER ITEMS.

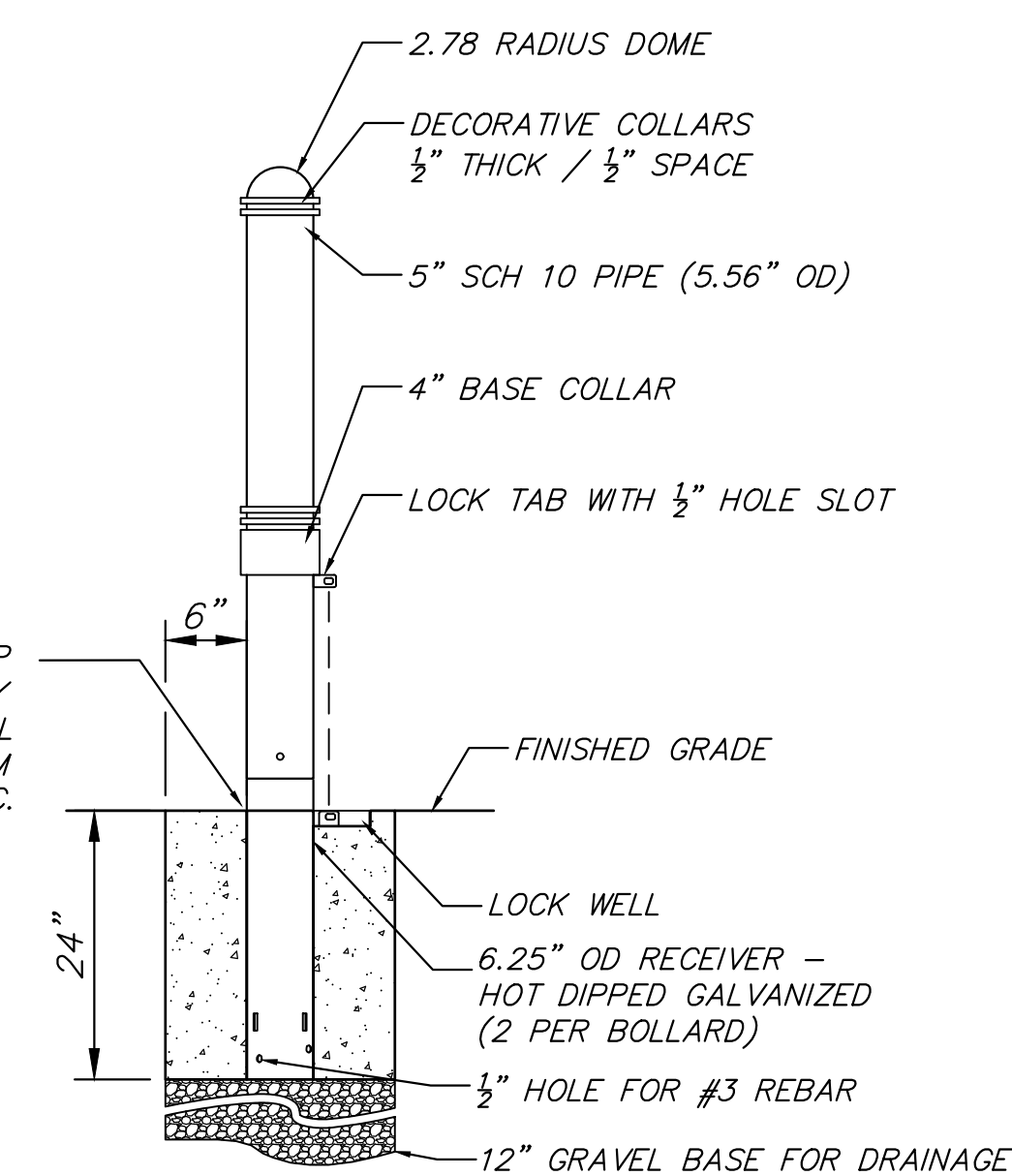
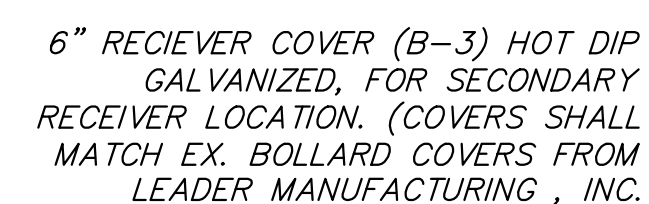


CHAINLINK FENCE DETAIL (TYP.)
NOT TO SCALE



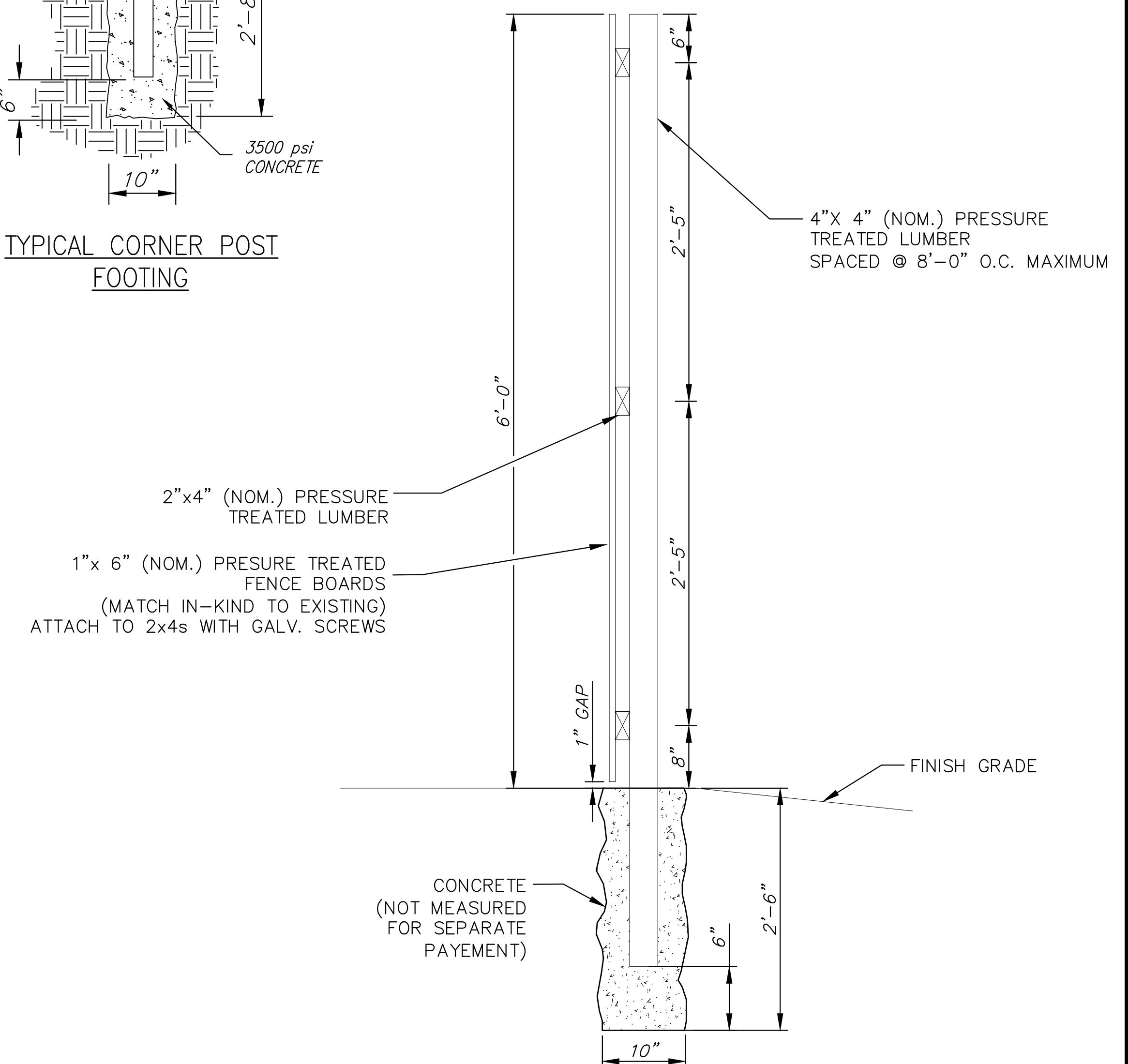
NOTE: SEE 907-417-1
OF THE SPECIFICATIONS
FOR ADDITIONAL
INFORMATION

ENDURABLEND POLYMER CEMENT SURFACE
SYSTEM, BASE AND TOP COAT REQUIRED,
STENCIL PATTERN: ORIGINAL HERRINGBONE WITH
SOLDIER COURSE BORDER
BASE COAT COLOR: MEDIUM GRAY (GROUT LINE)
TOP COAT COLOR: BRICK RED
SUBMITTAL TO LANDSCAPE ARCHITECT REQUIRED
PRIOR TO INSTALLATION



NOTE: EACH BOLLARD LOCATION SHALL HAVE TWO (2) RECEIVERS (COST ABSORBED) - ONE (1) LOCATED IN THE PRIMARY LOCATION (PATHWAY/SIDEWALK) AND ONE (1) IN A SECONDARY LOCATION (ADJACENT AREA) TO HOLD THE BOLLARD WHEN REMOVED FROM THE PRIMARY LOCATION. SECONDARY BOLLARD RECEIVERS SHALL CONTAIN A TOP COVER (LOCKABLE) SO WHEN INSTALLED IT IS FLUSH WITH SURROUNDING AREA.

TYPICAL CORNER POST
FOOTING



WOOD FENCE SECTION DETAIL (TYP.)
NOT TO SCALE

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REVISIONS				DRAWING INFORMATION	
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				SURVEYED BY:	
				DSGN: GPC	DATE: 06/2022
				DRWN: JPF	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWF	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

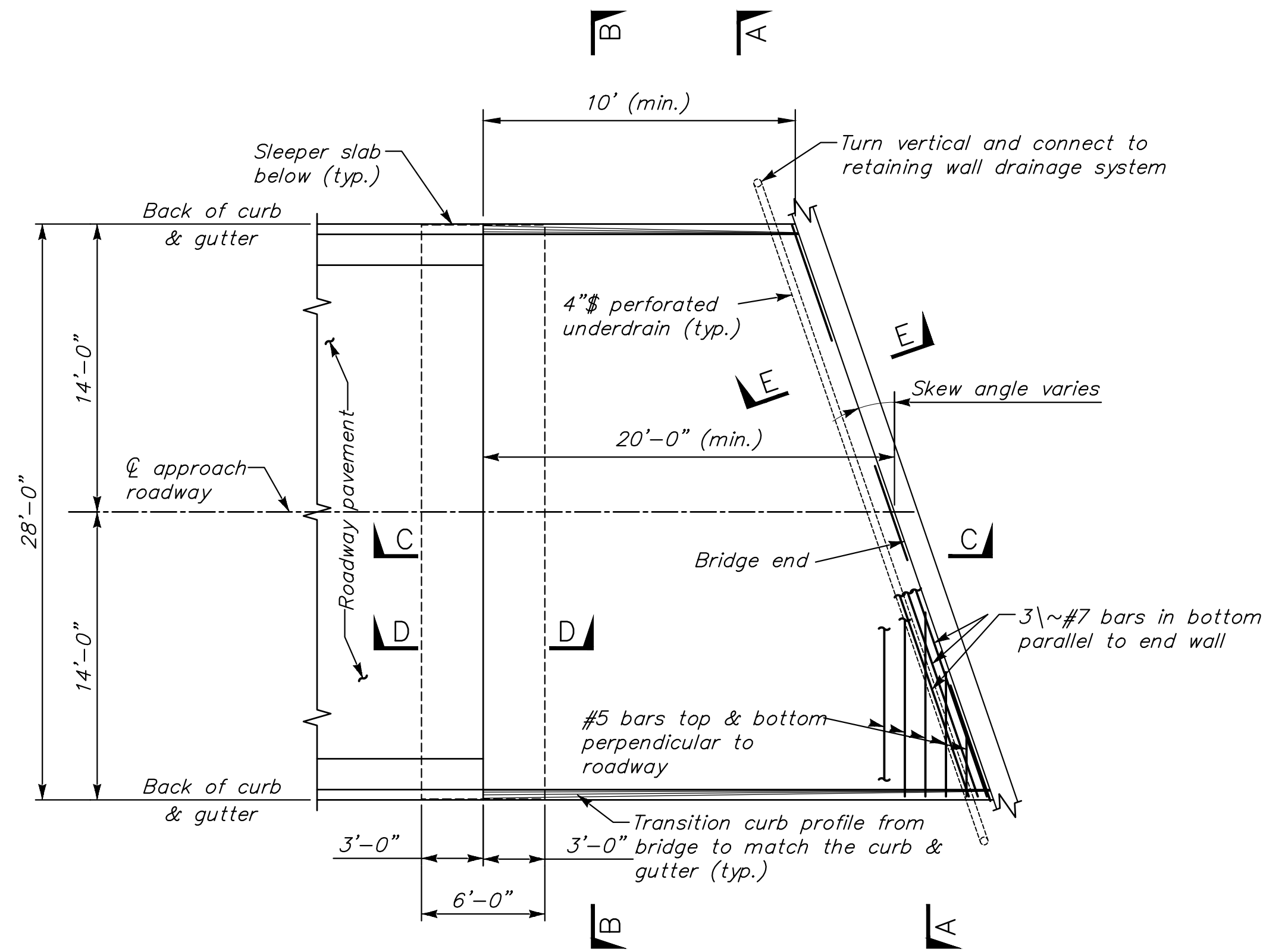


MISCELLANEOUS DETAILS
BOLLARDS, CROSSWALK STRIPING
DITCH WALL PATCH & FENCE

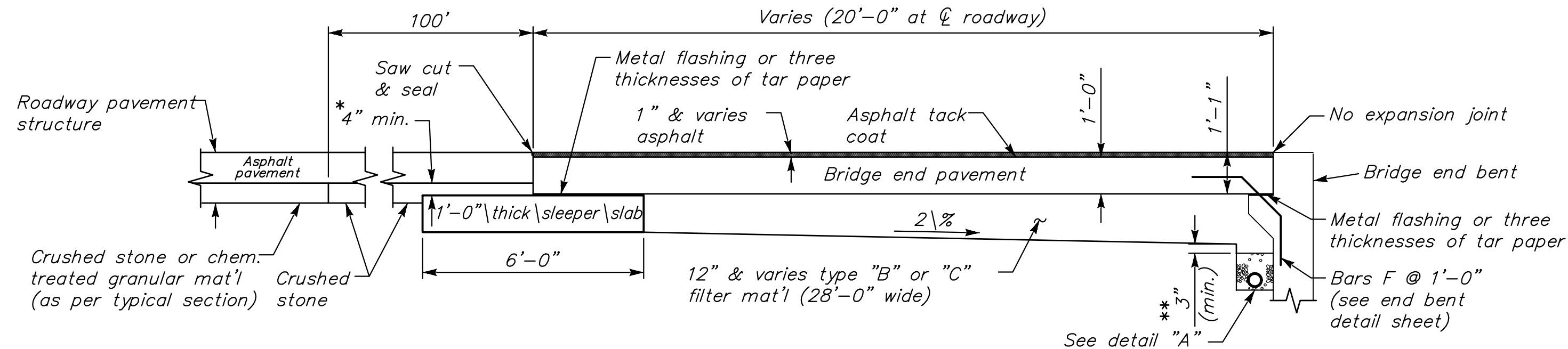
WORKING NUMBER:
DET-2

DRAWING NUMBER:
66

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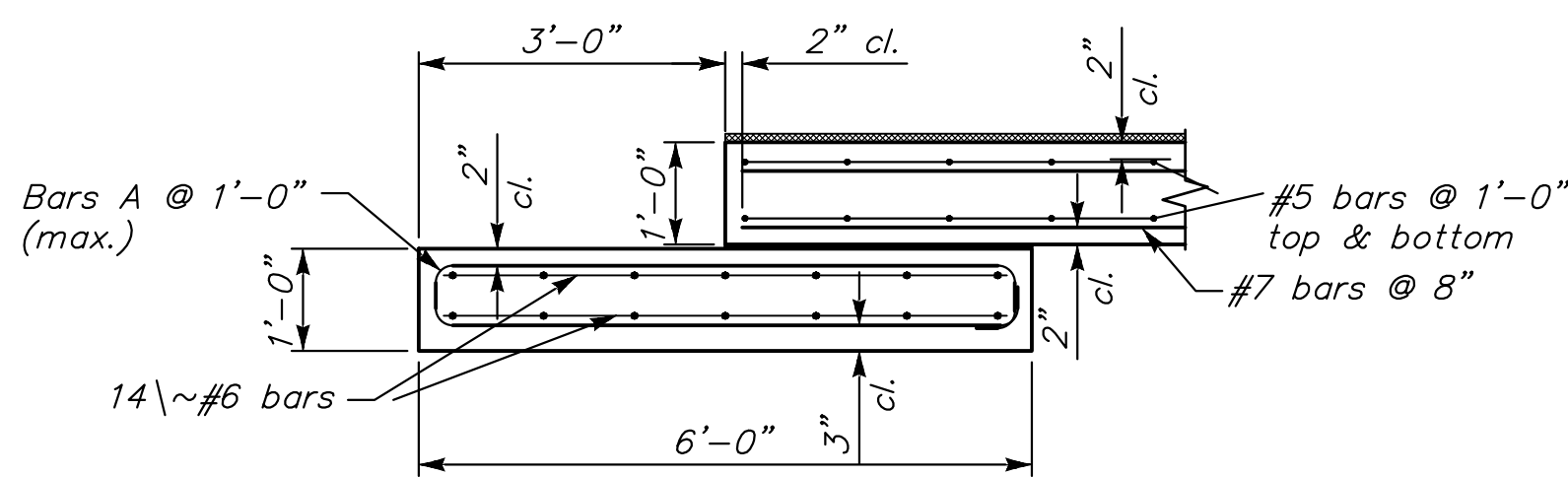
PLAN AT BRIDGE END
Showing concrete dimensions. End bent 6 is similar.
NOT TO SCALE



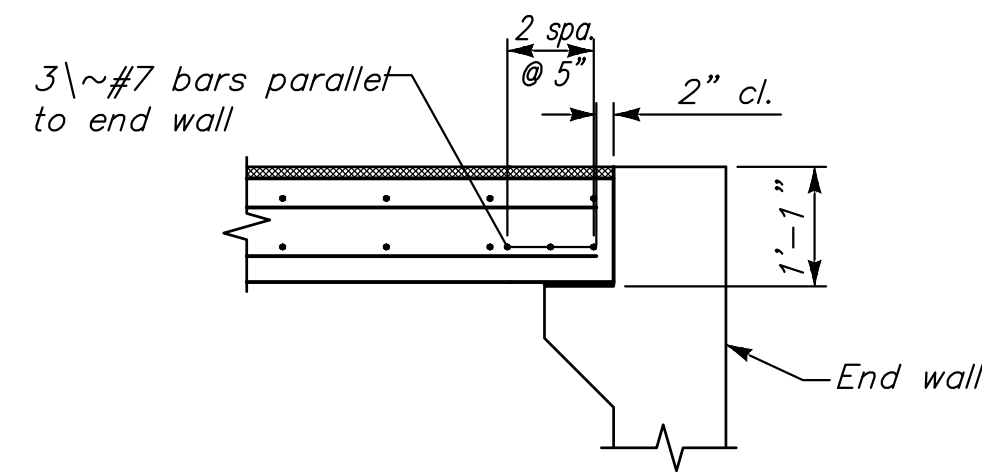
SECTION C-C
NOT TO SCALE

“*” NOTE: When the area between the sleeper slab and the asphalt is less than 4”, asphalt should be used instead of crushed stone.

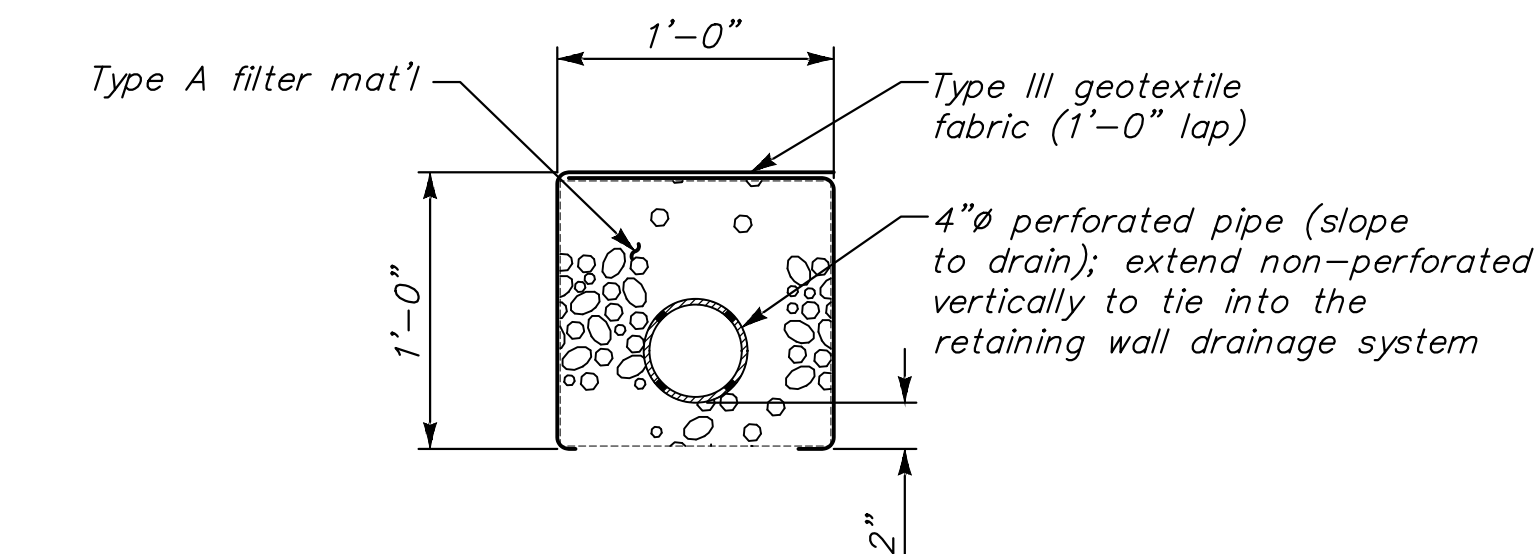
“**” NOTE: Adjust as necessary to ensure proper drainage



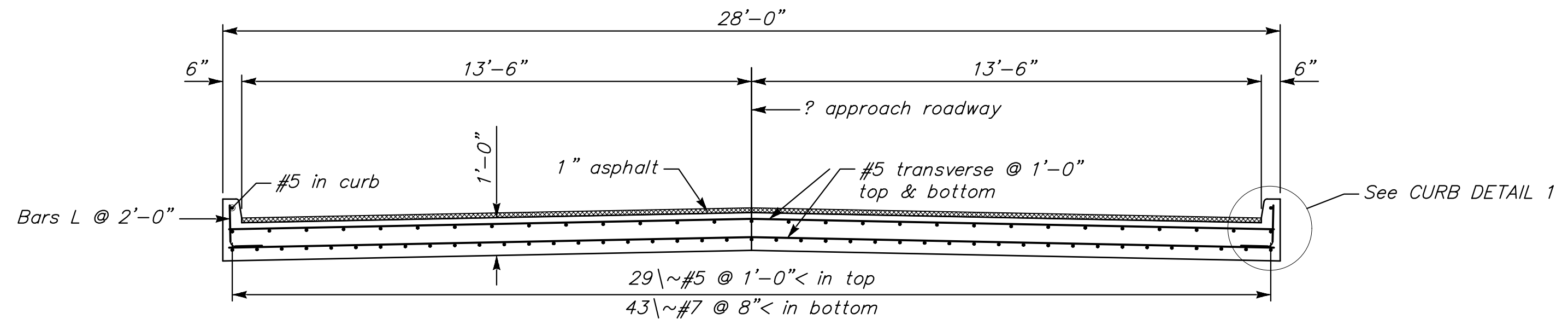
SECTION D-D
N. T. S.



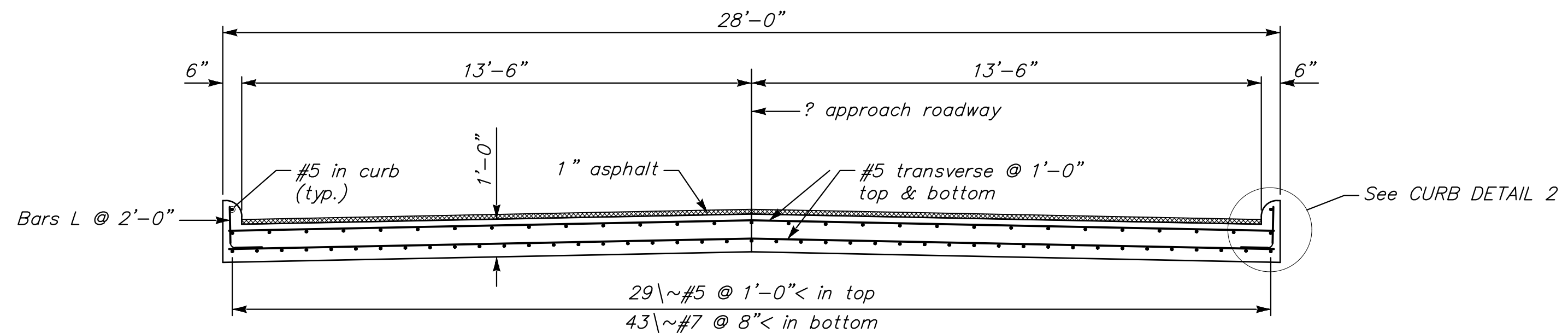
SECTION E-E
N. T. S.



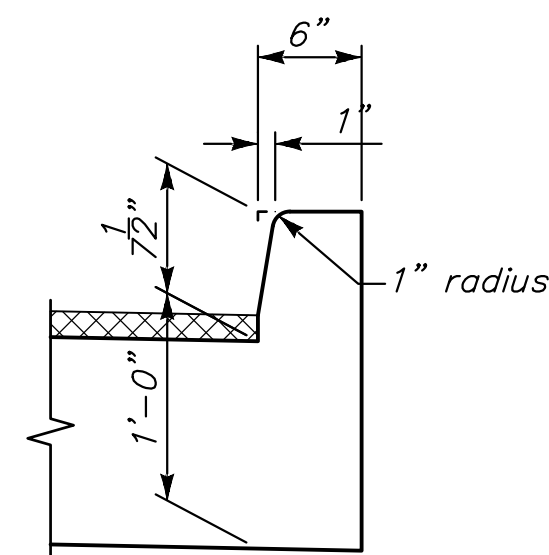
DETAIL "A"
N. T. S.



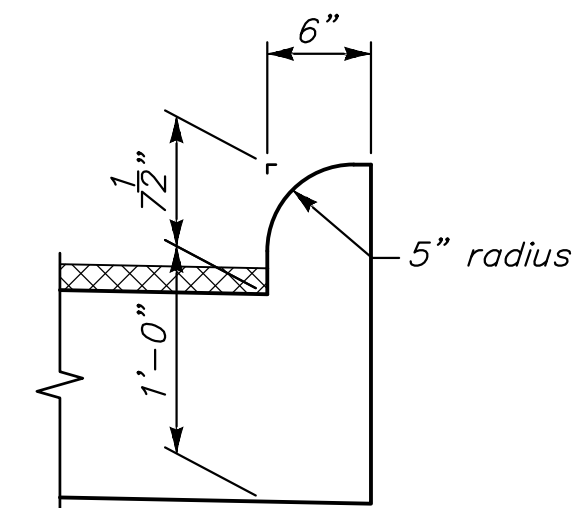
SECTION A-A
NOT TO SCALE



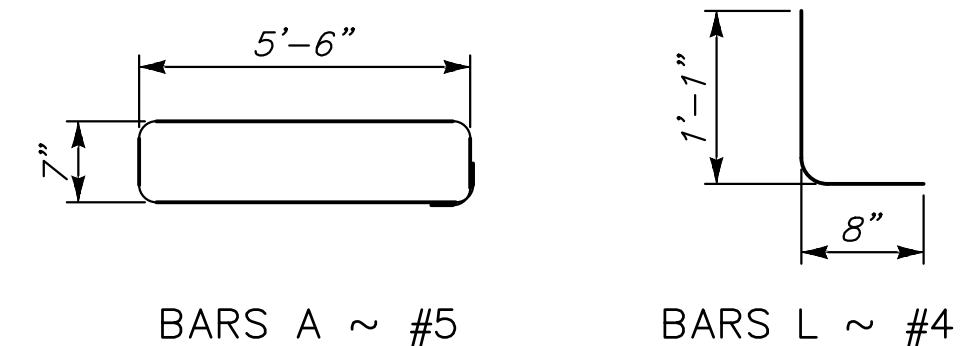
SECTION B-B
NOT TO SCALE



CURB DETAIL 1
N. T. S.



CURB DETAIL 2
N. T. S.



BAR BENDING DETAILS
Dimensions are out to out.

UNDERDRAIN NOTES:

- 4"Ø perforated drain pipe to be installed under the roadway and 2' outside of the bridge end pavement.
- 4"Ø non-perforated drain pipe to be installed for the remainder of the distance to tie into the retaining wall drain system.

GENERAL NOTES:

- If bridge end pavement is constructed in more than one section, longitudinal construction joints with tie bars shall be used. Tie bars shall be #5 bars, 2'-6" long and spaced 2'-6" O.C.. Such construction joint shall be used where indicated on plans.
- Reinforcement (deformed) may be furnished full length or may be spliced. If bars are spliced, they shall be spliced not less than 35 diameters.
- Transverse bars B shall be continuous across joints and slab. When feasible, use one length of bar to run across joints and slab, however where it is necessary to use more than one length of bar, bars shall be spliced not less than 35 diameters.
- If top lift of asphalt is greater than 1.5", the lift shall be transitioned to 1.5" across the length of the bridge end pavement.
- The bridge end pavement pay item includes bridge end pavement, sleeper slab, and metal flashing. Cost for perforated pipe shall be included with retaining wall items. All other items shown on this sheet will be paid as indicated elsewhere in the plans.
- The finished crown of the bridge end slab shall conform to the bridge deck. Transition from normal crown of asphalt pavement to crown of bridge end slab shall be made in a distance of 100 feet.
- Class "B" concrete required for sleeper slab and bridge end pavement. Class "AA" concrete may be used with approval of the engineer (no cost adjustment will be made).

NOTICE TO DRAWING HOLDER

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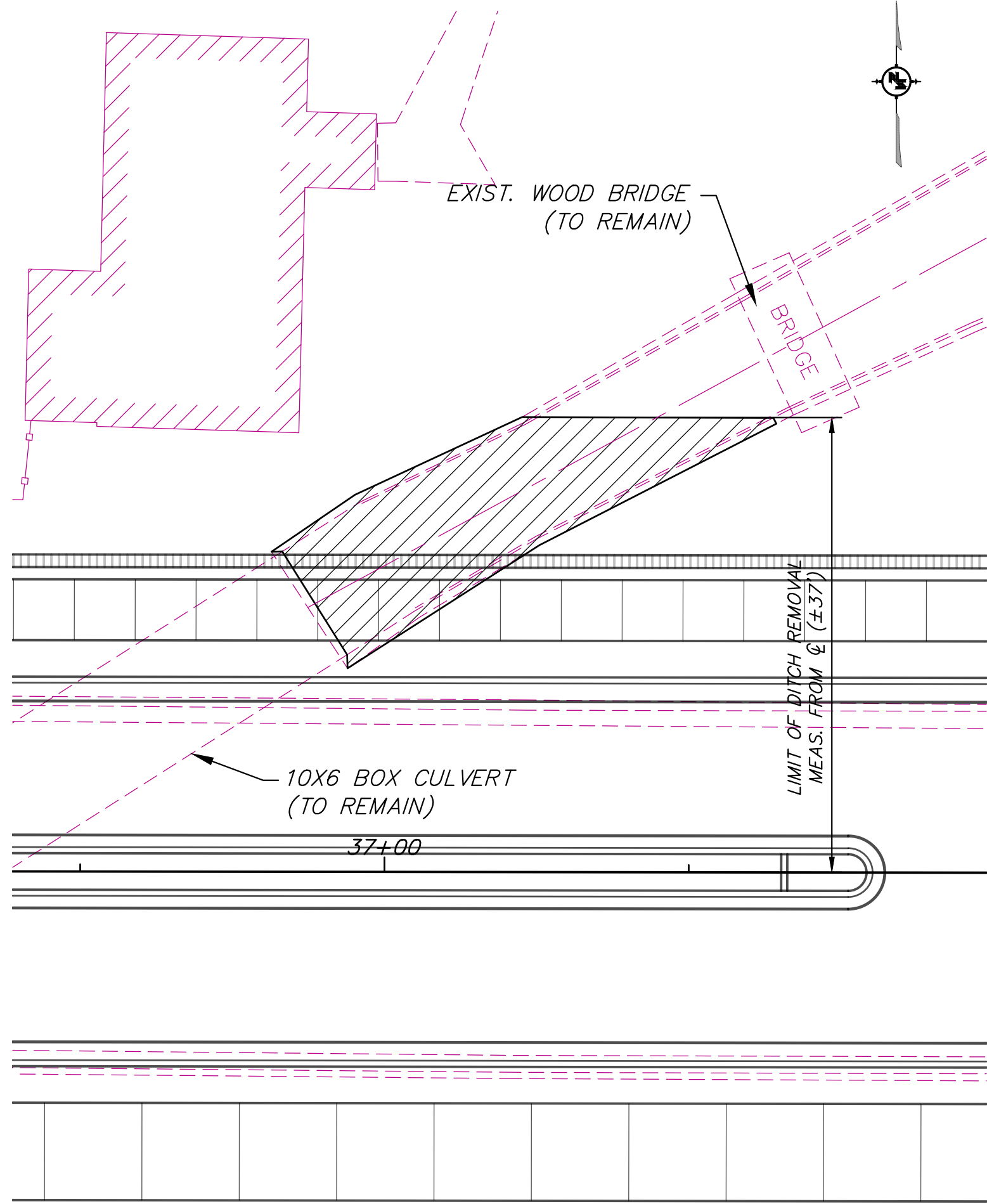
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				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

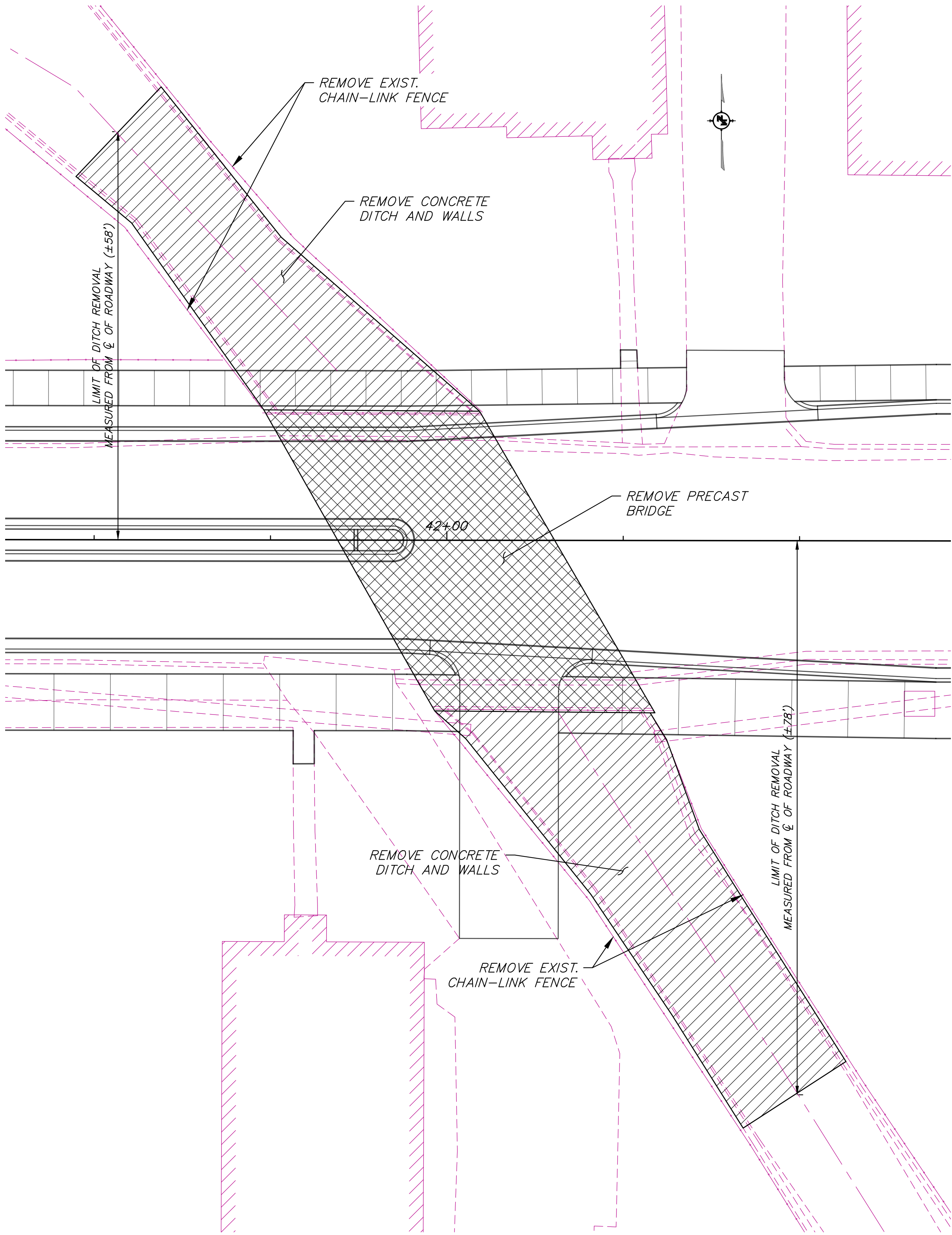


MISCELLANEOUS DETAILS
BRIDGE END PAVING

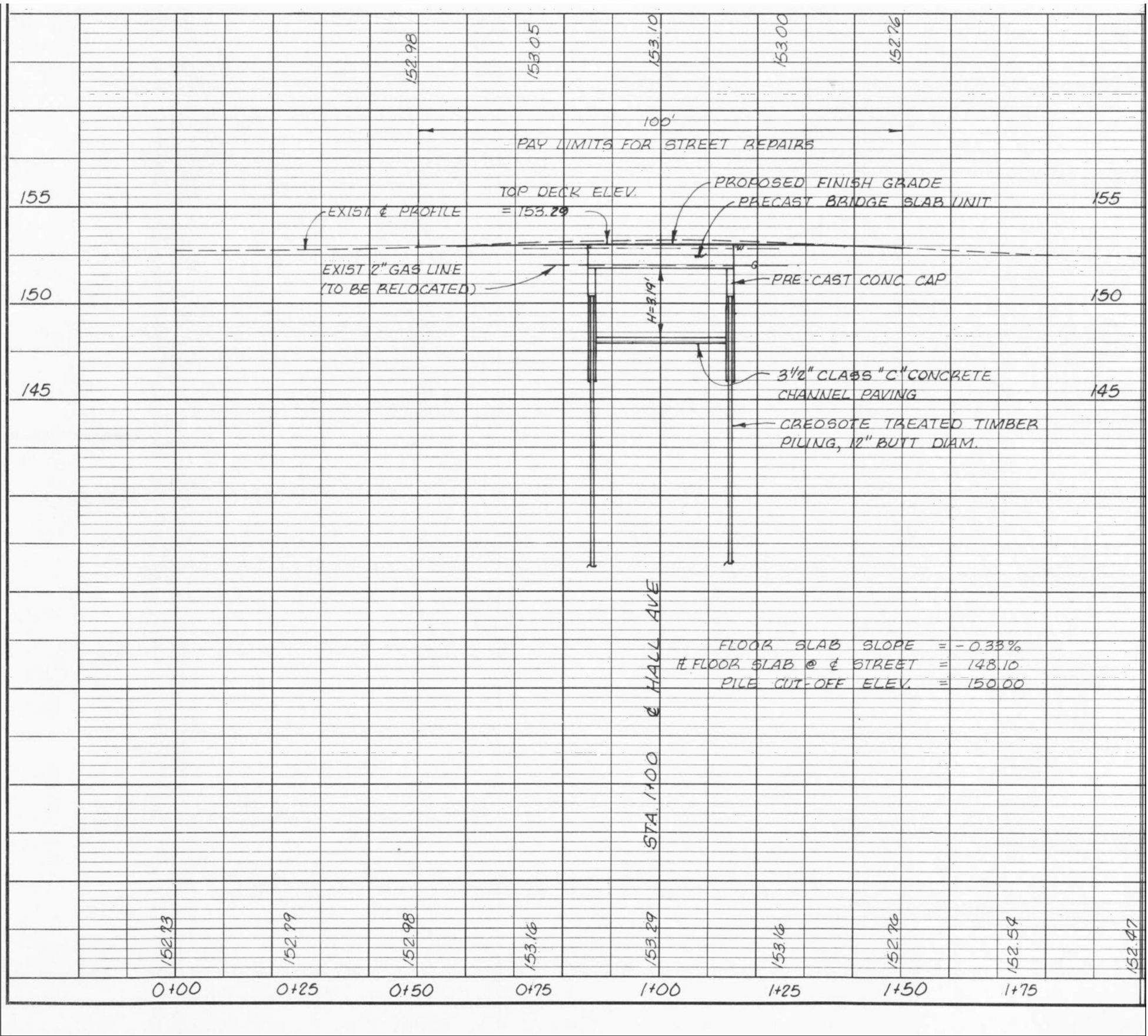
WORKING NUMBER:	DRAWING NUMBER:
DET-4	68



10X6 BOX CULVERT @ STA. 36+95

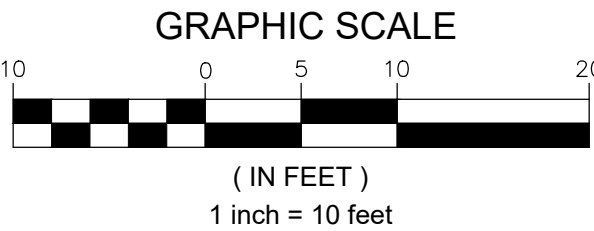


PRECAST BRIDGE @ STA. 42+00



AS-BUILT SECTION FOR BRIDGE @ STA. 42+00
NOT TO SCALE

- NOTES:
- "AS-BUILT" PROFILE SECTION VIEW SHOWN IS FOR INFORMATIONAL PURPOSES ONLY.
 - CONCRETE DITCH STRUCTURE SHALL BE REMOVED TO LIMITS SHOWN. CONTRACTOR SHALL TAKE MEASURES TO ENSURE THAT REMAINING EMBANKMENT MATERIAL IS STABILIZED TO PREVENT EROSION THAT MAY ENDANGER EXISTING STRUCTURES.
 - BRIDGE TIMBER PILING SHALL BE REMOVED TO A DEPTH OF 3' BELOW PROPOSED DITCH GRADE.
 - ALL MATERIAL REMOVED SHALL BECOME THE PROPERTY OF THE CONTRACTOR.
 - CONTRACTOR SHALL INSTALL TEMPORARY FENCING AROUND PERIMETER OF REMOVAL AREA TO PREVENT UNAUTHORIZED ENTRY. FENCING SHALL BE 6' TALL CHAIN-LINK PANELS OR FABRIC SECURED TO POSTS. POSTS SHALL BE EMBEDDED IN GROUND SUFFICIENTLY TO PREVENT EASY REMOVAL BY UNAUTHORIZED PERSONS. POSTS SHALL BE OF SUFFICIENT SIZE AND SPACING TO SUPPORT FENCE WEIGHT.
 - REFER TO WKG. NOS. WK-9 & WK-10 FOR NEW DRAINAGE STRUCTURE INFORMATION.



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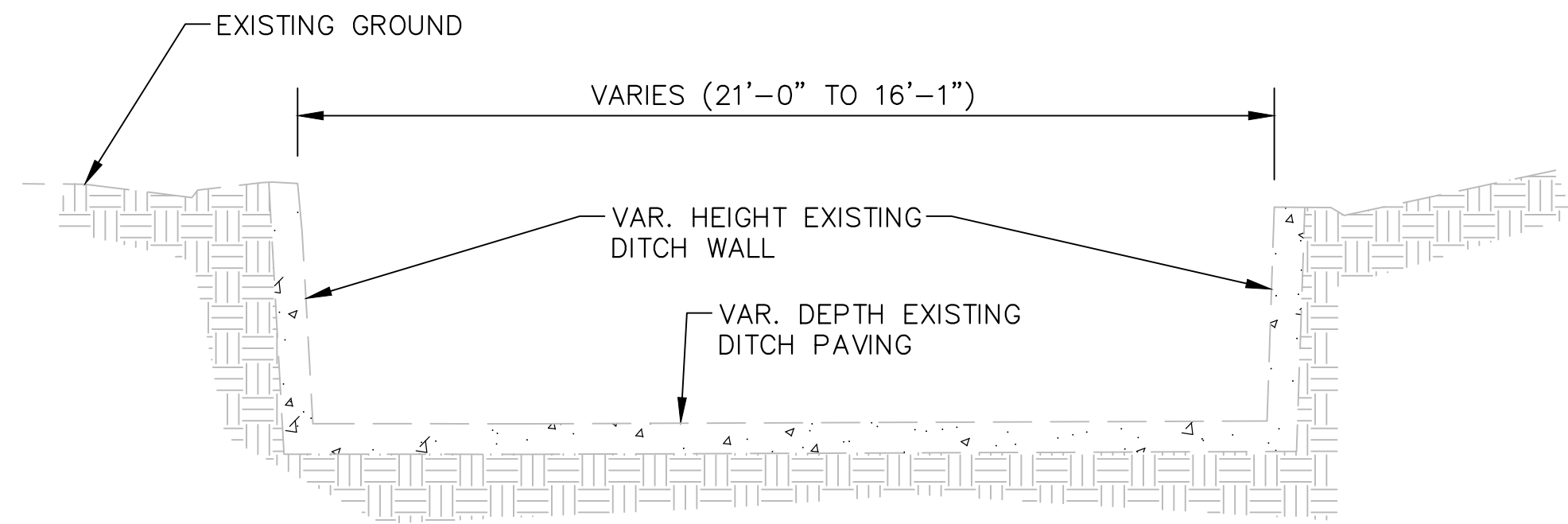
NOTICE TO DRAWING HOLDER				REVISIONS				DRAWING INFORMATION			
NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE 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.				NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			
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HATTIESBURG, MISSISSIPPI

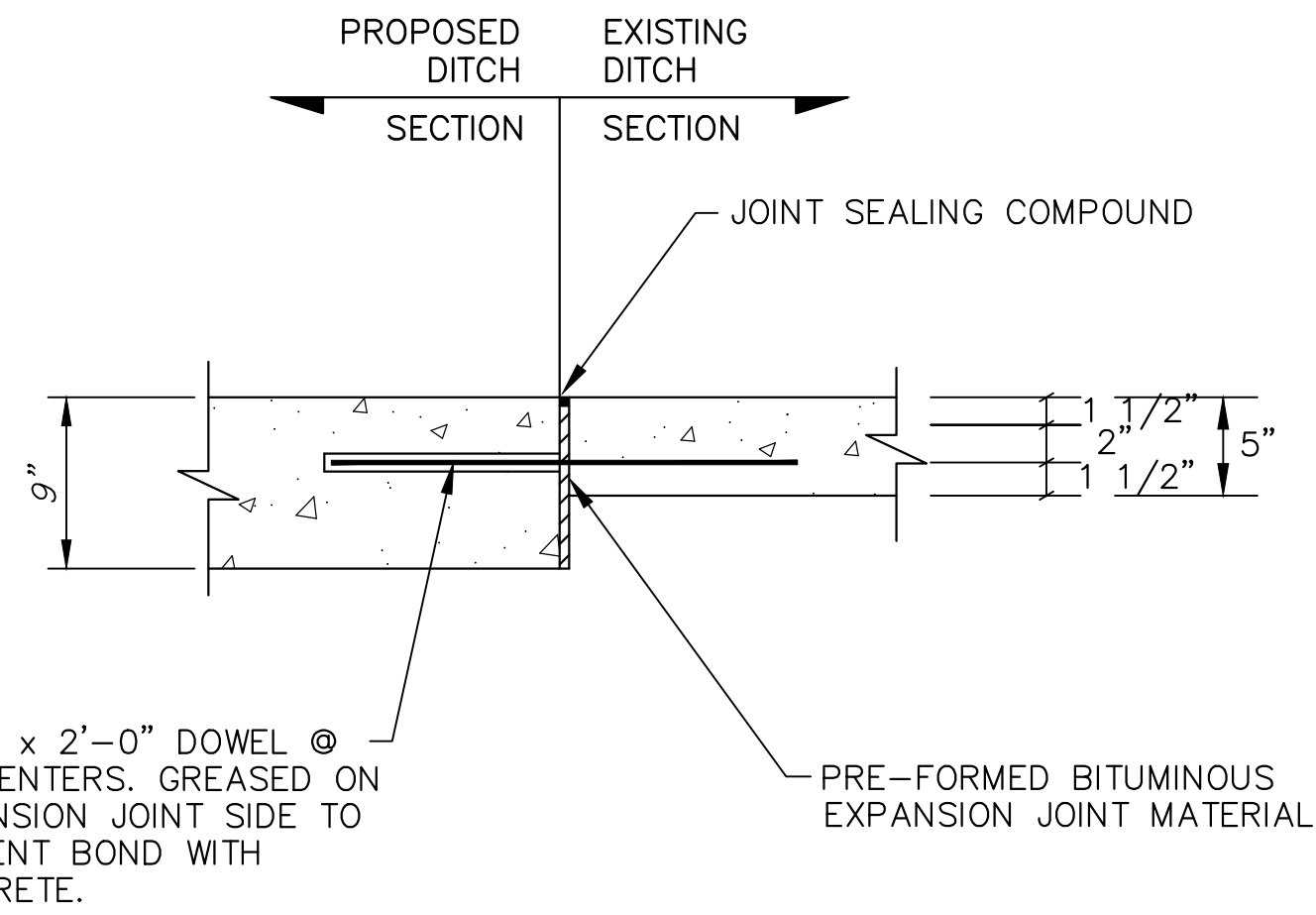


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Solutions you can build upon

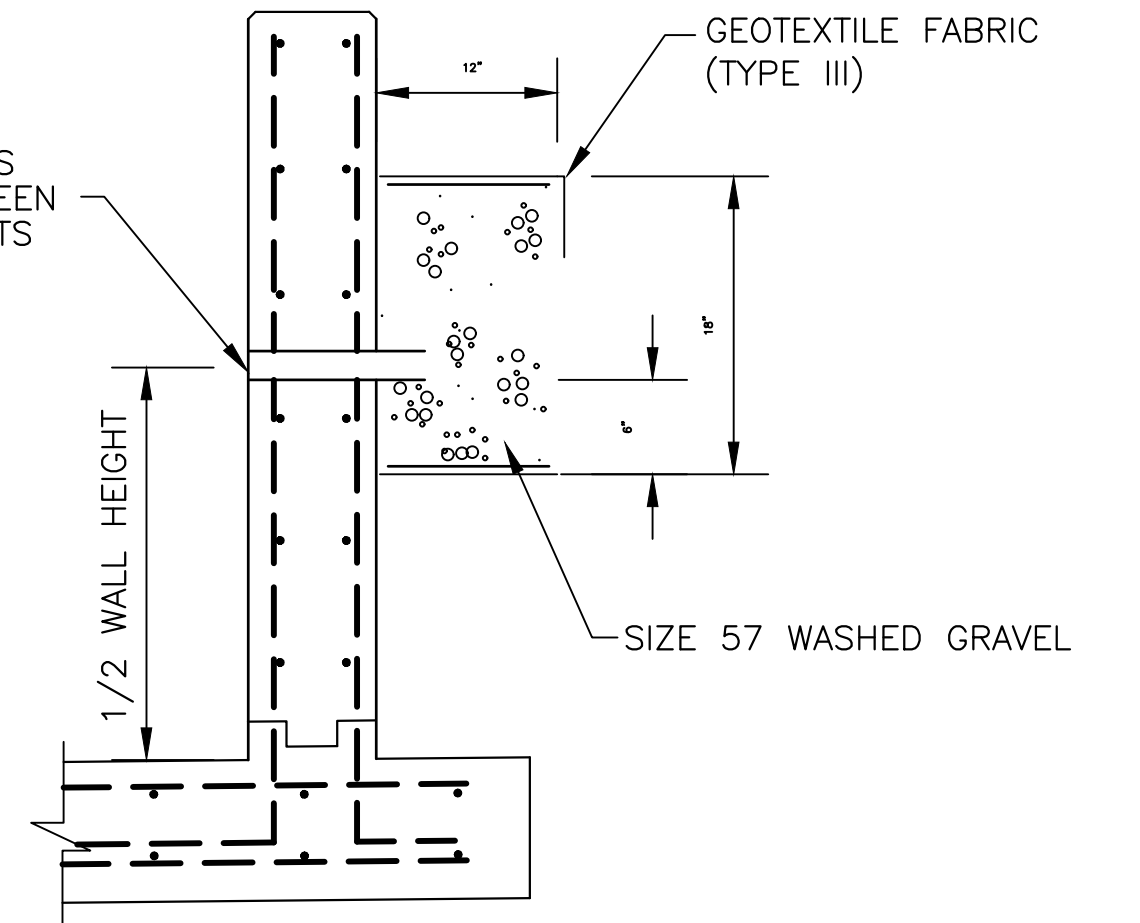
PRECAST BRIDGE & CONCRETE DITCH REMOVAL DETAILS	
WORKING NUMBER: DET-5	DRAWING NUMBER: 69



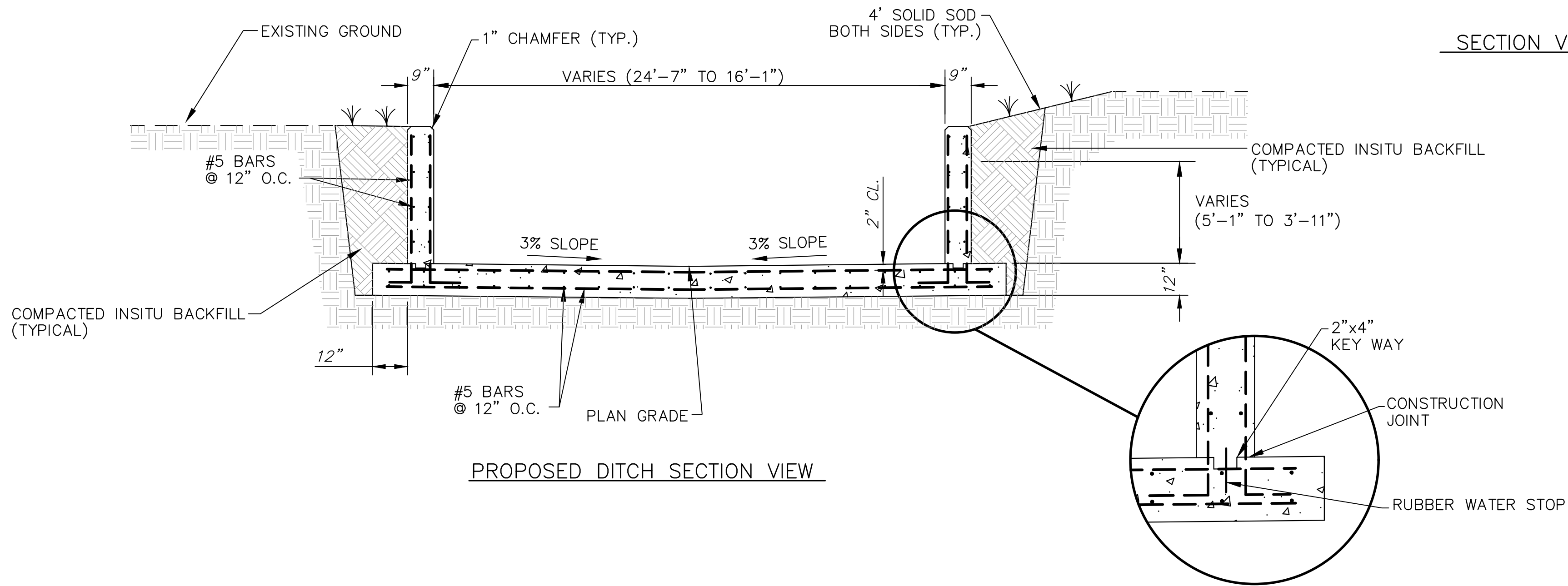
TYPICAL EXISTING DITCH SECTION



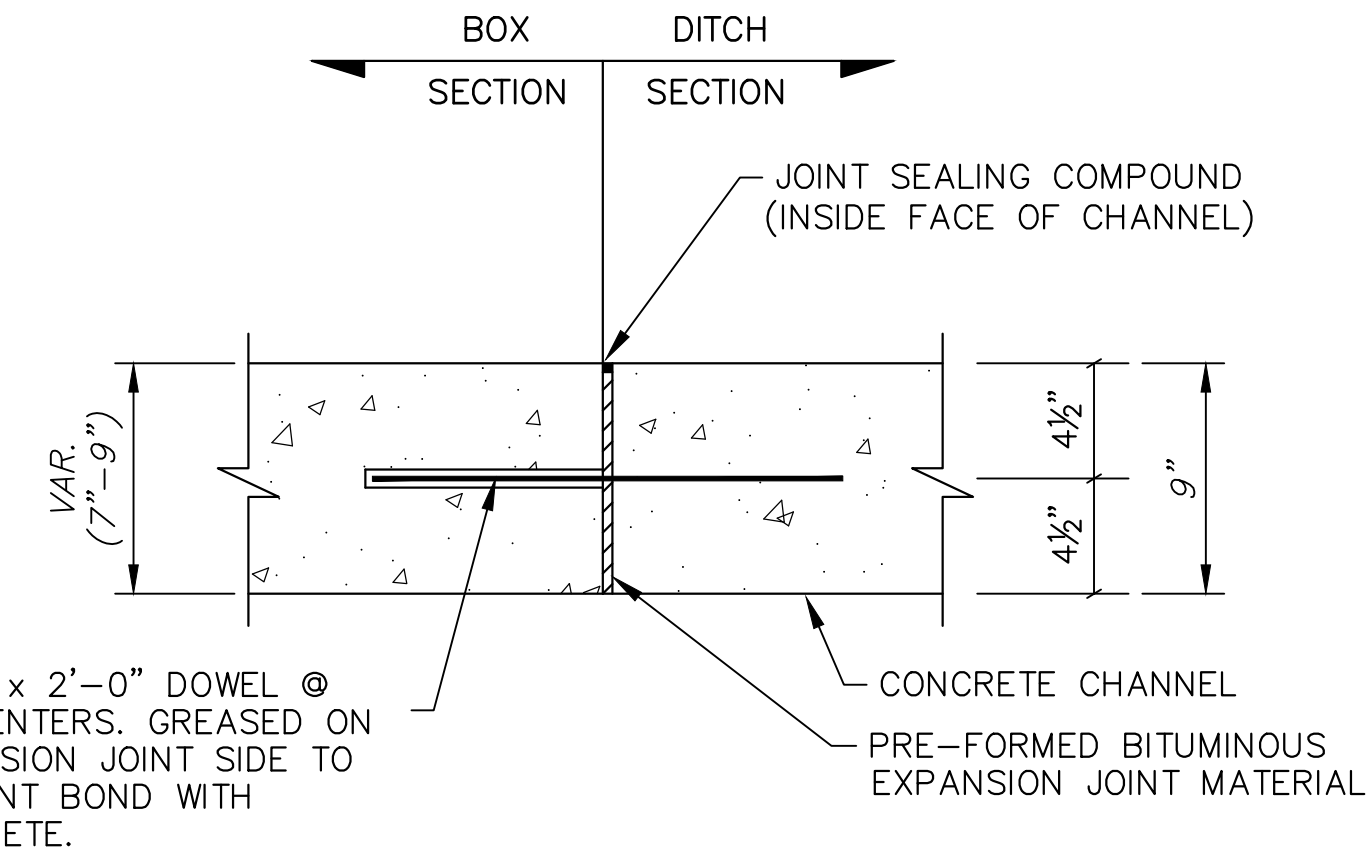
SECTION VIEW - DITCH/DITCH SLAB SECTION



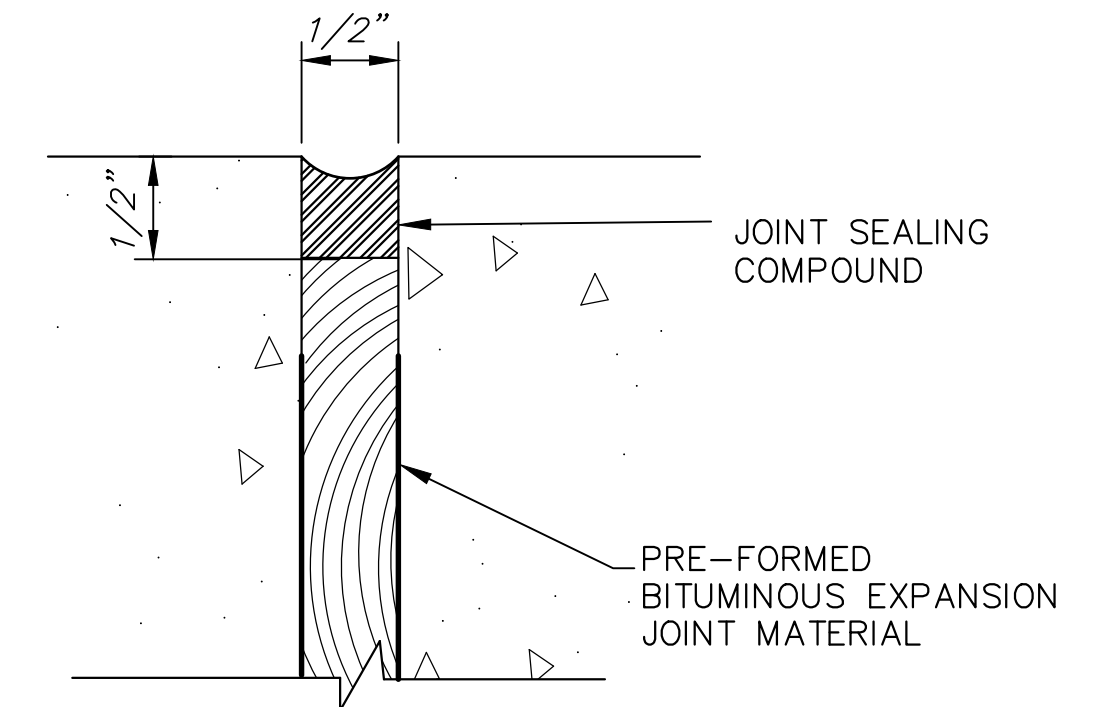
WEEP HOLE DETAIL



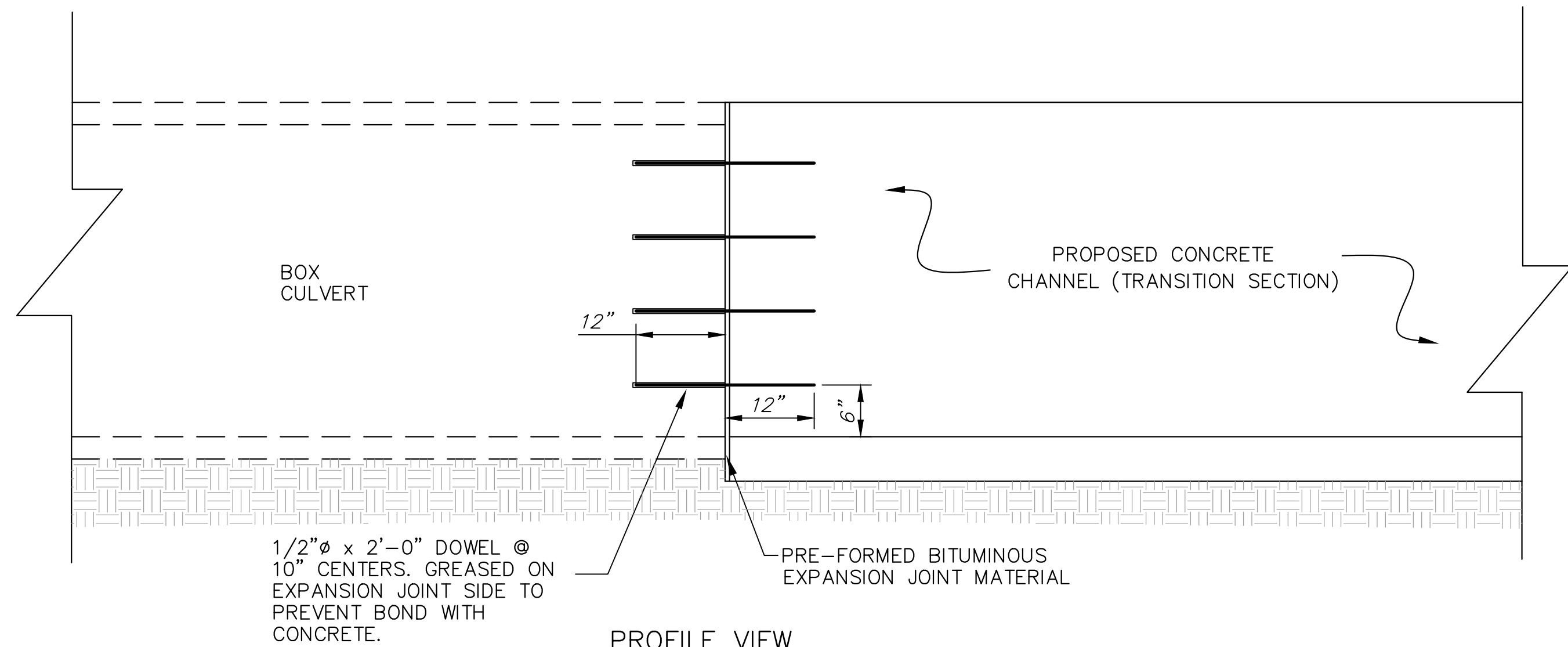
PROPOSED DITCH SECTION VIEW



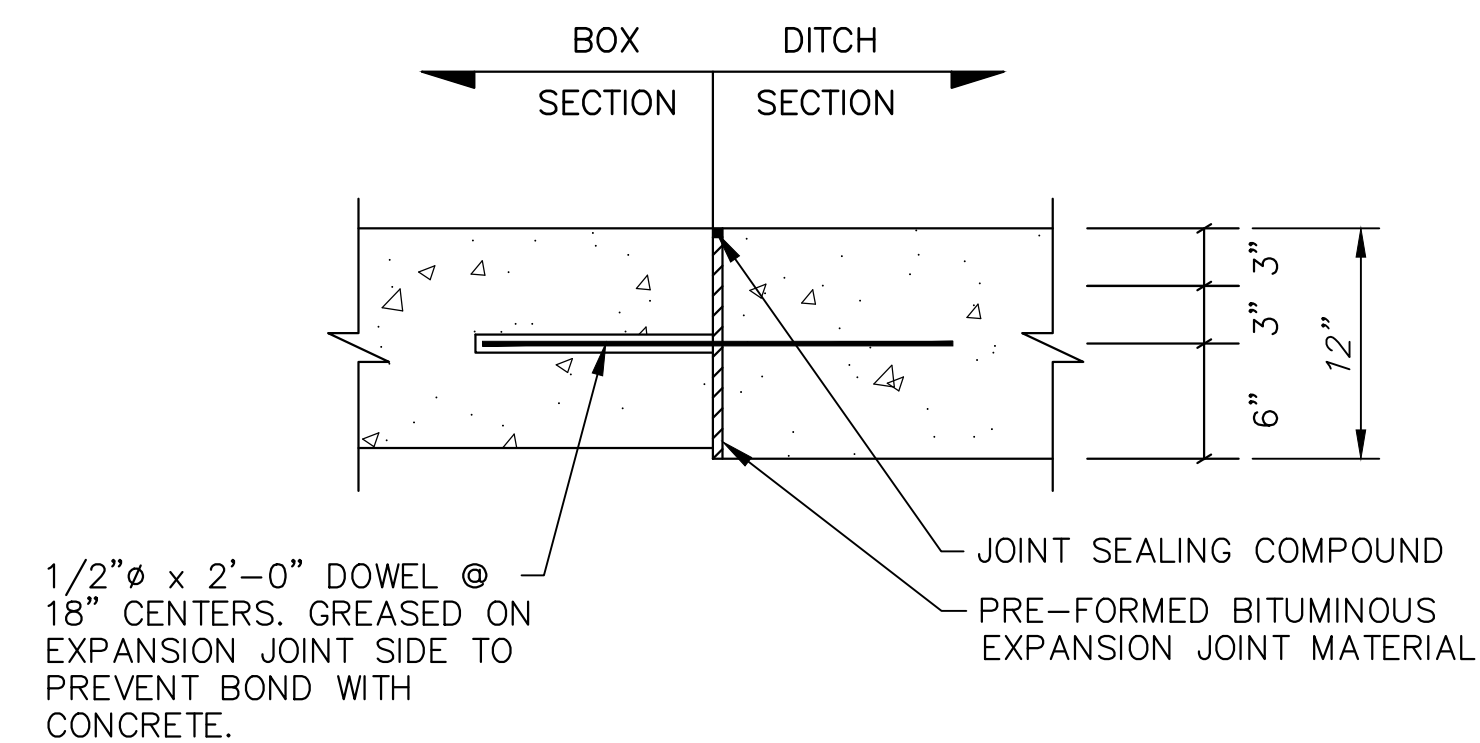
PLAN VIEW - WALL SECTION



EXPANSION JOINT DETAIL



PROFILE VIEW



SECTION VIEW - BOX/DITCH SLAB SECTION

NOTE:S

- EXPANSION JOINTS REQ'D EVERY 40', CONTROL JOINTS REQ'D EVERY 10'
- WEEP HOLES REQ'D EVERY 20'
- CONCRETE PAVED DITCH SHALL RECEIVE A STIFF BROOM FINISH PERPENDICULAR TO THE FLOW OF WATER.
- CONTRACTOR SHALL INSTALL 4' OF SOD ADJACENT TO THE TOP OF CONCRETE PAVED DITCH (BOTH SIDES). ALL OTHER DISTURBED AREAS SHALL RECEIVE HYDROSEEDING.
- SUBGRADE FOR CONCRETE PAVED DITCH TO BE COMPACTED TO 92% (MIN.) OF STANDARD PROCTOR MAXIMUM DRY DENSITY.

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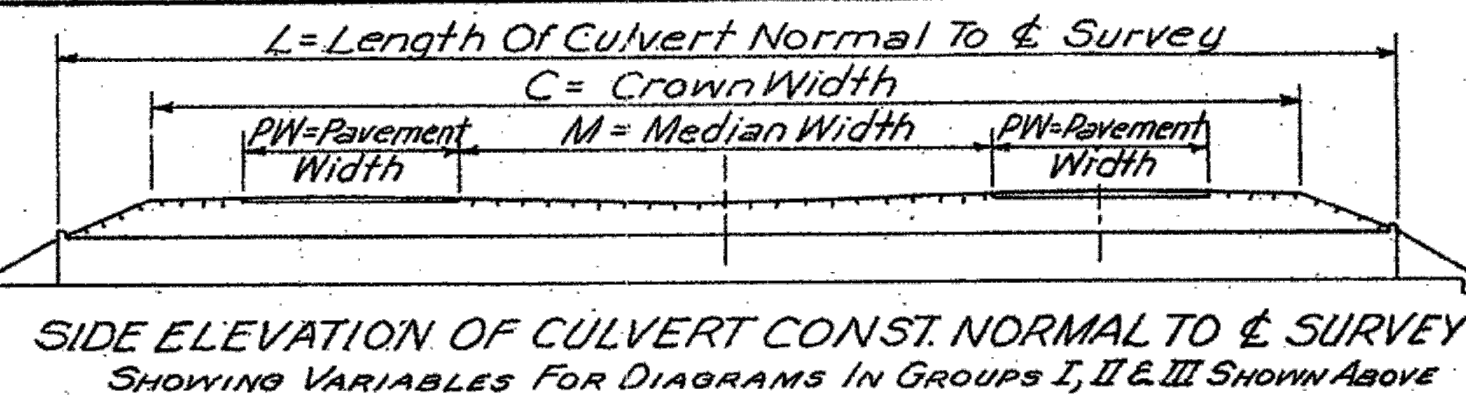
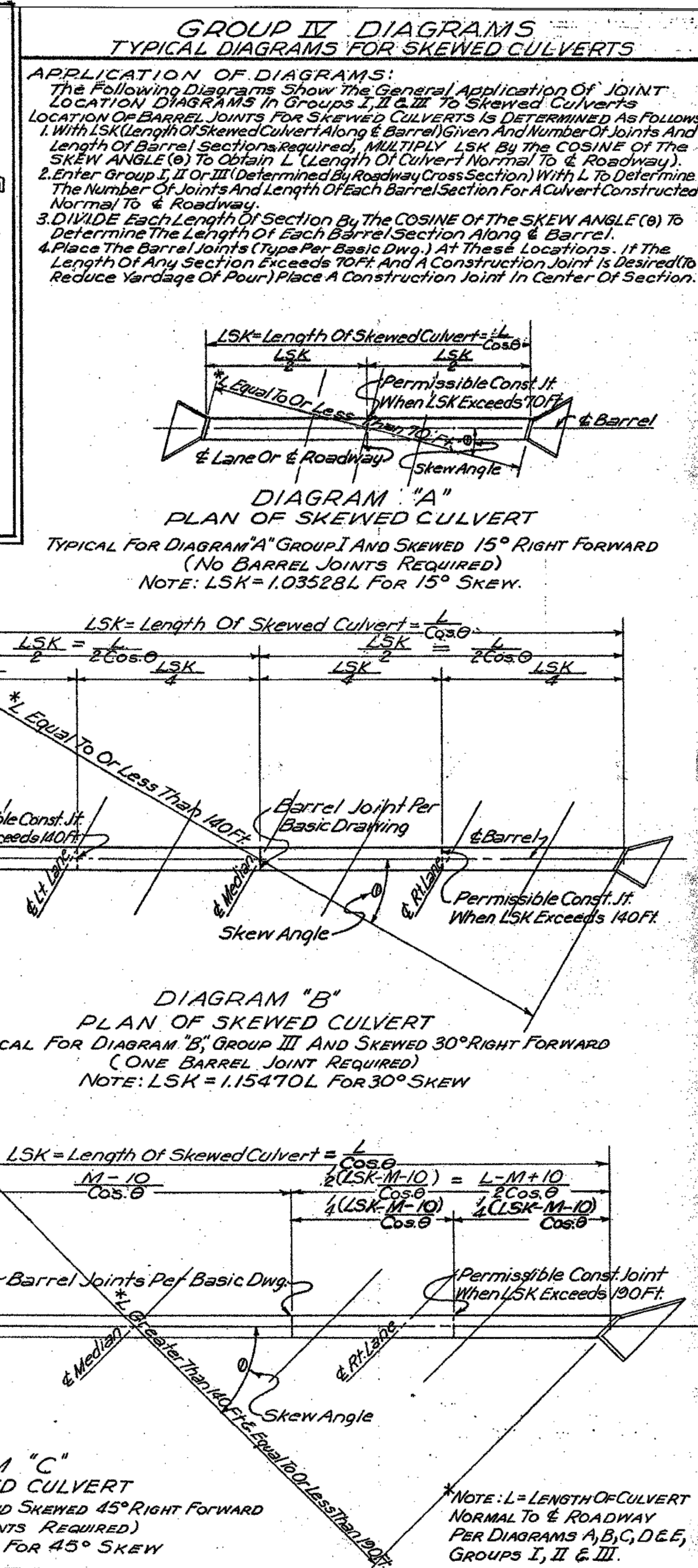
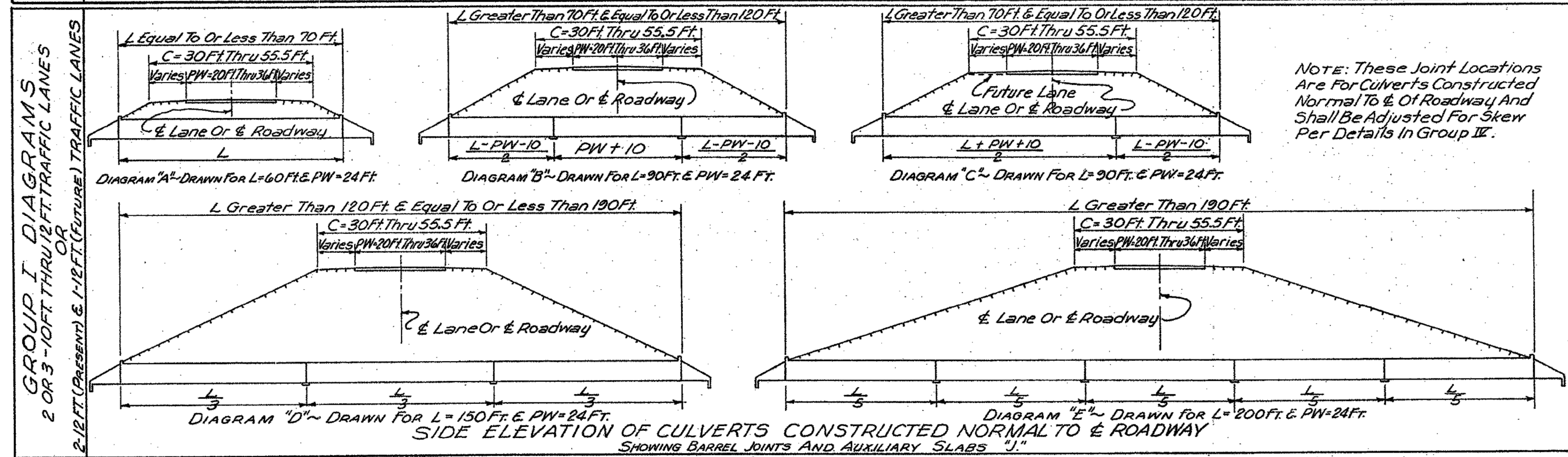
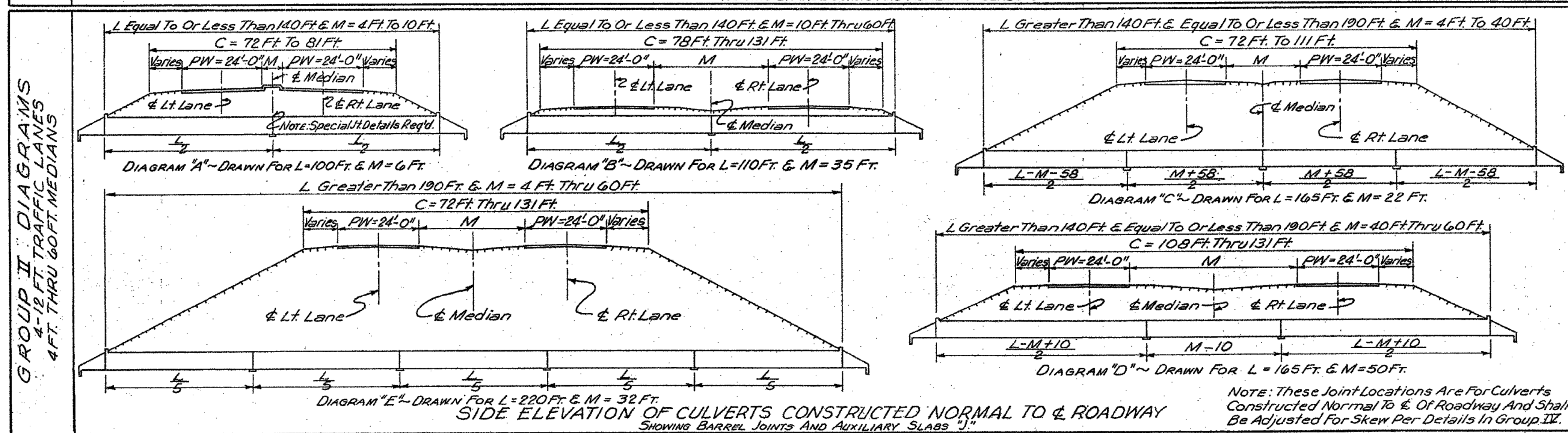
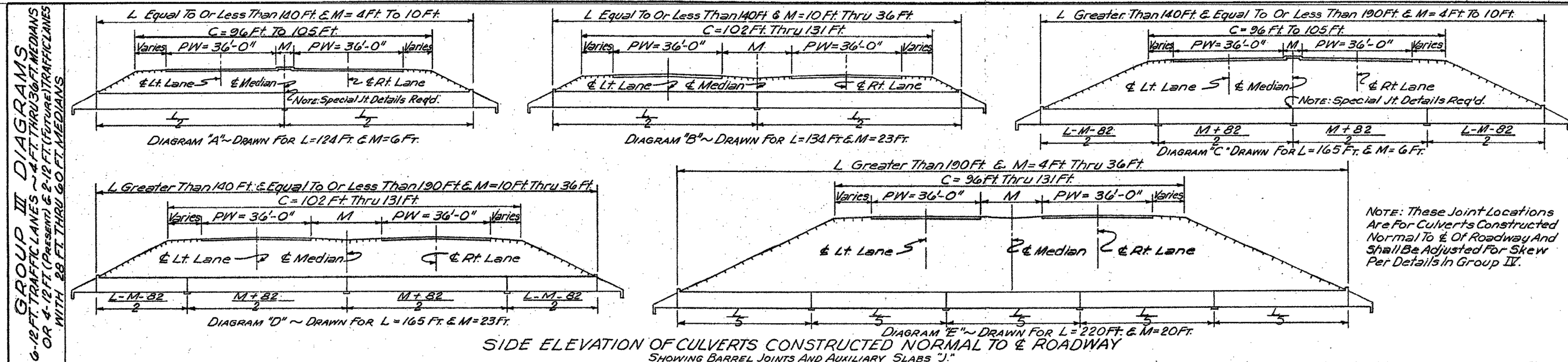
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



CONCRETE DITCH
CONSTRUCTION DETAILS

WORKING NUMBER:
DET-6

DRAWING NUMBER:
70



GENERAL NOTES:
This Drawing Shows The Barrel Joint Locations For Box Culverts Constructed Normal To & Of Roadway And General Details Necessary To Locate Joints For Culverts On 15, 30 And 45° Skews. The Diagrams On This Sheet Show Joint Locations For Culverts Under Variable Amounts Of Cover, Crown Width And Side Slopes. Barrel Joints Shall Be Of Type Per Basic Drawing And Shall Be Placed Only At Locations Shown Unless Otherwise Stated. Joints Shall Not Be Located Closer Than 5 Ft. Outside Pavement For Cover Of 8 Ft. Or Less Except In Cases Where Median Is Less Than 10 Ft. Where Cover Is 8 Ft. Or Less And A Joint Occurs Within The Limits Of 5 Ft. Beyond Each Edge Of Pavement, Use Complete Collar At Joints Per Drawing I.C.J.-1 Or I.C.J.S.-1. Where Cover Exceeds 8 Ft. Joints May Be Located Without Regard To Pavement Edge. Construction Joints Per Group III, If Required, Shall Have Reinforcement Continuous Thru Joint And Shall Be Placed Only At Locations Indicated. General Requirements Of Basic Culvert Drawings Shall Apply Except As Specifically Modified Hereon.

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HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER
Solutions you can build upon

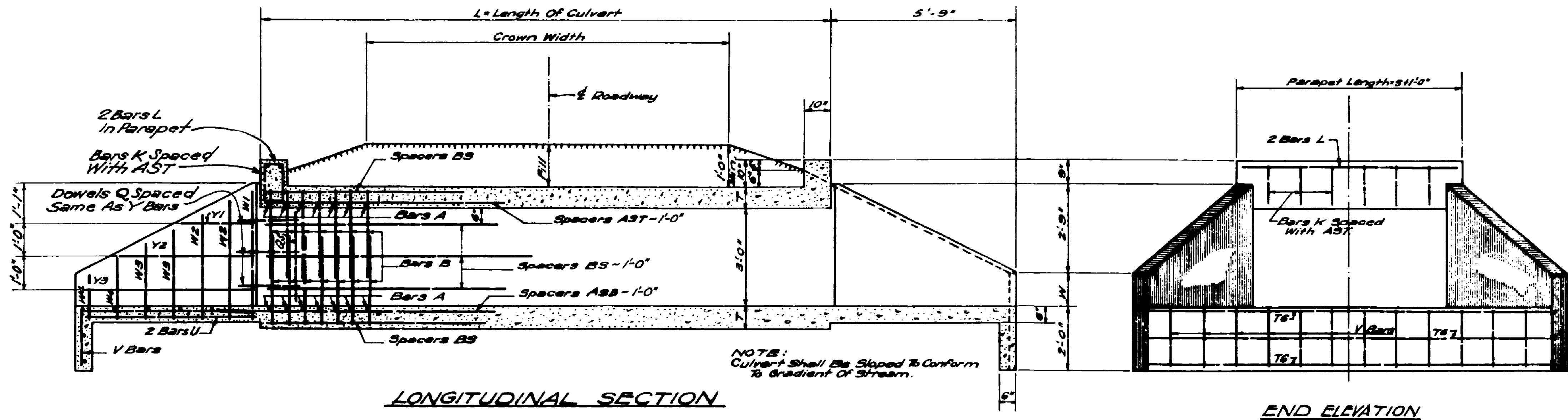
BOX CULVERT DRAWING
BARREL JOINT LOCATIONS
NORMAL AND SKEWED CULVERTS

WORKING NUMBER:
SD-IBJL-1

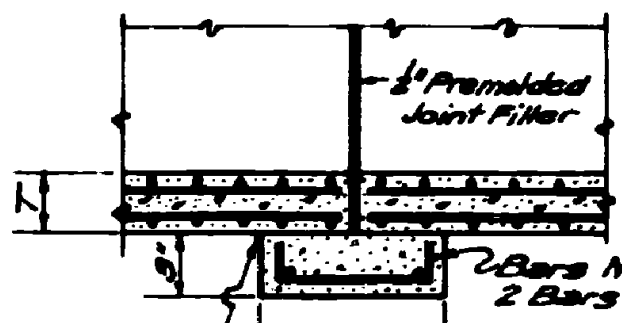
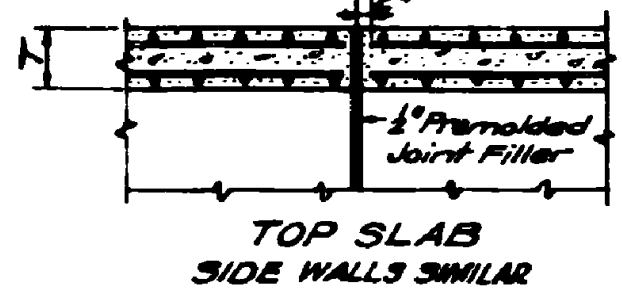
DRAWING NUMBER:
71

CULVERT DIMENSIONS						ESTIMATED QUANTITIES						BAR LIST FOR BARREL (L=40') & PARAPETS																		BAR LIST 2 AUX. SLABS J								
						CULVERT (L=40')		PER LIN. FT. BARREL		2 AUX. SLABS J		BARS A		BARS B		BARS B1		DOWELS Q-#4		SPACERS QS-#4		BARS AS1-#4		BARS ASB-#4		BARS BS-#4		BARS K-#4		BARS L-#4		BARS M-#4						
CLEAR SPAN	MAX. FILL	T	V	W	Y	CONCRETE CU.YD.	REINF. STEEL LB.	CONCRETE CU.YD.	REINF. STEEL LB.	CONCRETE CU.YD.	REINF. STEEL LB.	NO.	SIZE	SPAC. LENGTH	NO.	SIZE	SPAC. LENGTH	NO.	SIZE	SPAC. LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH	NO.	LENGTH				
3'	35'	6 1/2"	6"	10 1/2"	9'-3"	14.28	2,083	0.2716	43.1	0.40	24	1/2"	5"	3'-9"	1/2"	5"	3'-9"	1/2"	5"	3'-9"	12	2'-6"	4	2'-7"	3	40'-11"	3	43'-9"	14	40'-11"	6	3'-11"	4	3'-8"	4	3'-8"	10	2'-2"
4'	25'	7"	6"	11"	10'-3"	16.84	2,348	0.3272	49.0	0.49	30	1/2"	5"	4'-9"	1/2"	5"	4'-9"	1/2"	5"	4'-9"	12	2'-6"	4	2'-7"	4	40'-11"	4	43'-9"	14	40'-11"	8	4'-0"	4	3'-8"	4	3'-8"	12	2'-2"
5'	20'	7 1/2"	6 1/2"	11 1/2"	11'-3"	20.17	2,812	0.4020	59.7	0.60	36	1/2"	5"	5'-10"	1/2"	5"	5'-10"	1/2"	5"	5'-10"	12	2'-6"	4	2'-7"	5	40'-11"	5	43'-9"	14	40'-11"	10	4'-1"	4	3'-8"	4	3'-8"	14	2'-2"
6'	18'	8"	6 1/2"	10"	12'-3"	23.24	3,579	0.4702	78.1	0.70	41	1/2"	5"	6'-10"	1/2"	5"	6'-10"	1/2"	5"	6'-10"	12	2'-6"	4	2'-7"	6	40'-11"	6	43'-9"	14	40'-11"	12	4'-2"	4	3'-8"	4	3'-8"	16	2'-2"
7'	14'	8"	6 1/2"	10"	13'-3"	25.54	4,066	0.5195	89.3	0.80	47	1/2"	5"	7'-10"	1/2"	5"	7'-10"	1/2"	5"	7'-10"	12	2'-6"	4	2'-7"	7	40'-11"	7	43'-9"	14	40'-11"	14	4'-2"	4	3'-8"	4	3'-8"	18	2'-2"
8'	11'	8 1/2"	7"	10 1/2"	14'-3"	29.52	4,592	0.6106	101.5	0.91	53	1/2"	5"	8'-11"	1/2"	5"	8'-11"	1/2"	5"	8'-11"	12	2'-6"	4	2'-7"	8	40'-11"	8	43'-9"	14	40'-11"	16	4'-3"	4	3'-8"	4	3'-8"	20	2'-2"
9'	10'	9"	7 1/2"	11 1/2"	15'-3"	33.77	5,421	0.7083	121.5	1.01	58	1/2"	5"	10'-0"	1/2"	5"	10'-0"	1/2"	5"	10'-0"	12	2'-6"	4	2'-7"	9	40'-11"	9	43'-9"	14	40'-11"	18	4'-4"	4	3'-8"	4	3'-8"	22	2'-2"

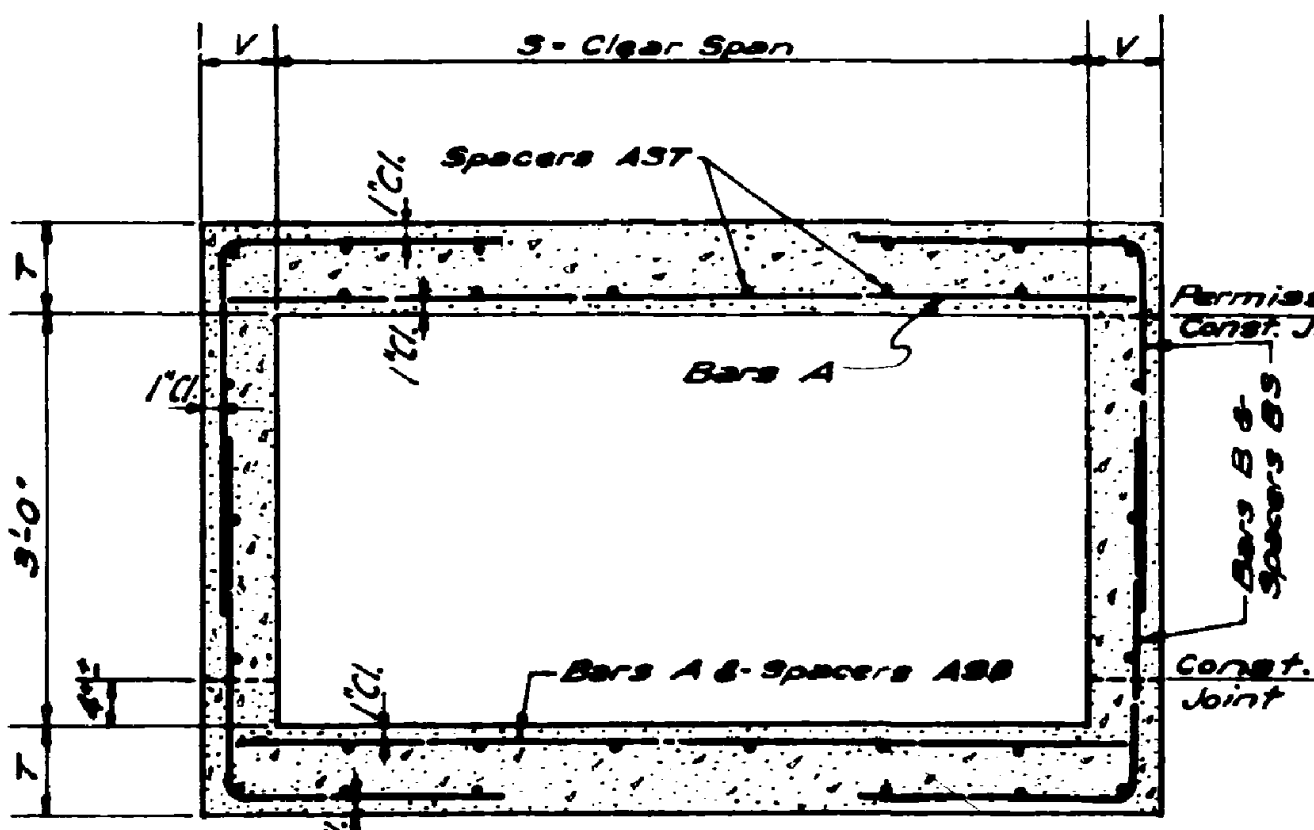
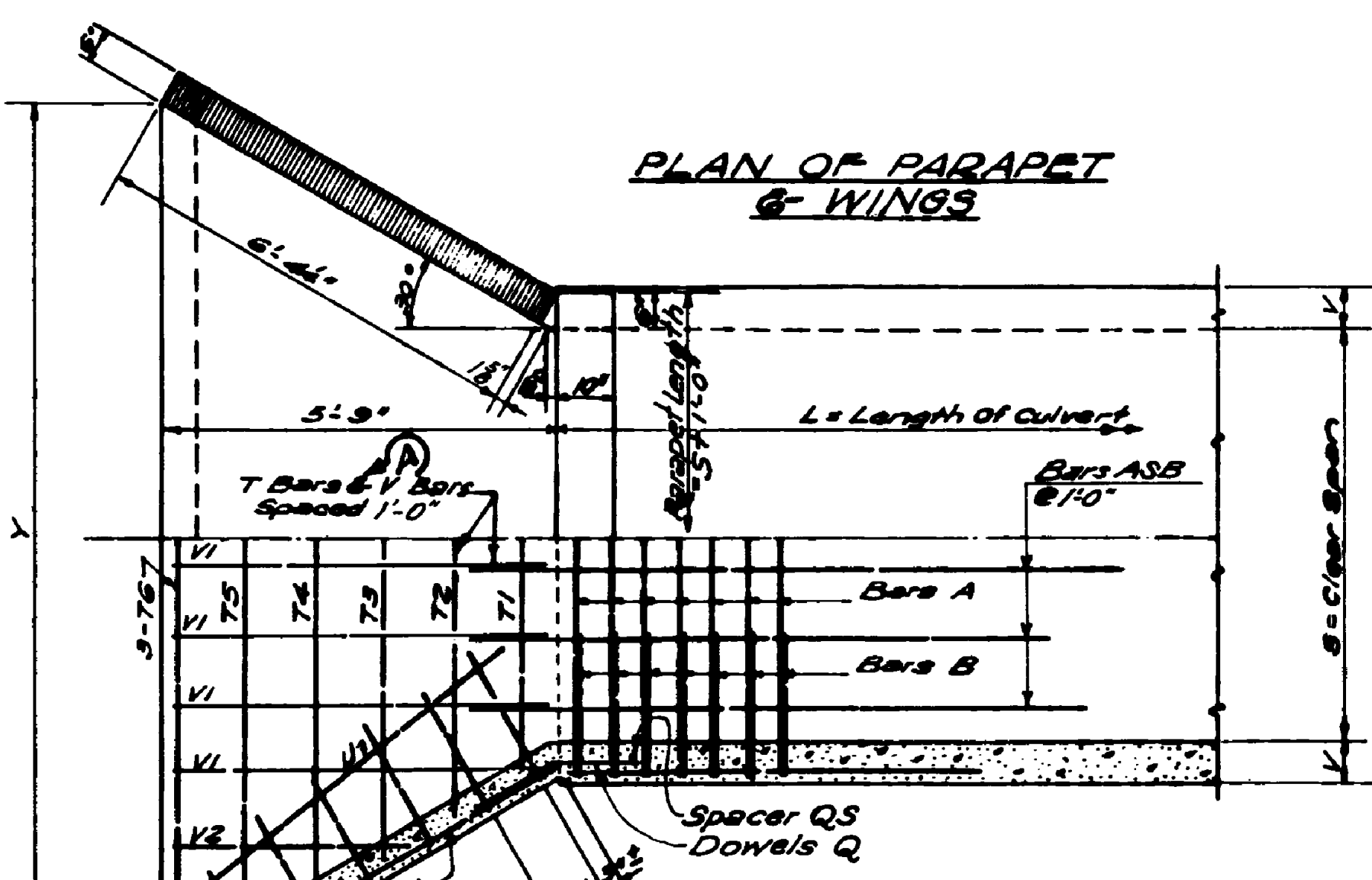
DESIGN DATA
Specifications: A.A.S.H.O. 1969
Live Load: HS15-44
Unit Stresses: $f_c = 2000$ psi, $f_s = 120,000$ psi, $n = 10$



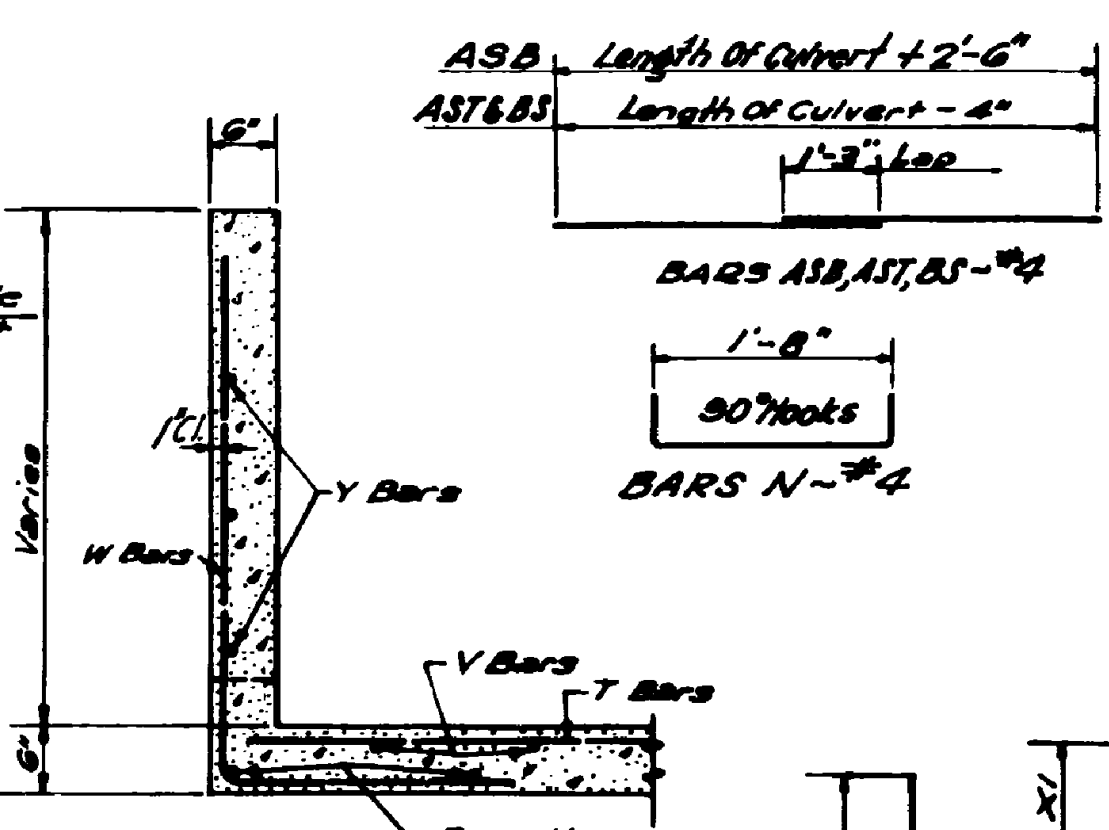
BAR LIST FOR WINGS & APRONS										NO. REQUIRED	SPAN	DIM. X	DIM. Y1	LENGTH
BAR	SIZE	NO.	SPAN	NO.	SPAN	NO.	SPAN	NO.	SPAN					
T1	#4	2	2	2	2	2	2	2	2	2	2	2	2	9'-10"
T2	#4	2	2	2	2	2	2	2	2	2	2	2	2	9'-2 1/2"
T3	#4	2	2	2	2	2	2	2	2	2	2	2	2	9'-3 1/2"
T4	#4	2	2	2	2	2	2	2	2	2	2	2	2	9'-4 1/2"
T5	#4	2	2	2	2	2	2	2	2	2	2	2	2	9'-5 1/2"
T6	#4	6	6	6	6	6	6	6	6	6	6	6	6	9'-6 1/2"
U	#4	8	8	8	8	8	8	8	8	8	8	8	8	6'-1"
V1	#4	10	12	14	16	18	20	22	24	2	5'-5"	1'-8"	7'-1"	
V2	#4	4	4	4	4	4	4	4	4	2	3'-6"	1'-8"	5'-2"	
V3	#4	4	4	4	4	4	4	4	4	1	1'-9"	1'-8"	3'-5"	
W1	#4	4	4	4	4	4	4	4	4	2	2'-2"	W+2'-10"	W+3'-0"	
W2	#4	8	8	8	8	8	8	8	8	2	2'-0"	W+2'-0"	W+4'-0"	
W3	#4	8	8	8	8	8	8	8	8	1	1'-8"	W+1'-2"	W+2'-10"	
W4	#4	8	8	8	8	8	8	8	8	1	1'-4"	W+1'-4"	W+1'-8"	
Y1	#4	4	4	4	4	4	4	4	4				2'-0"	
Y2	#4	4	4	4	4	4	4	4	4				4'-4"	
Y3	#4	4	4	4	4	4	4	4	4				6'-1"	



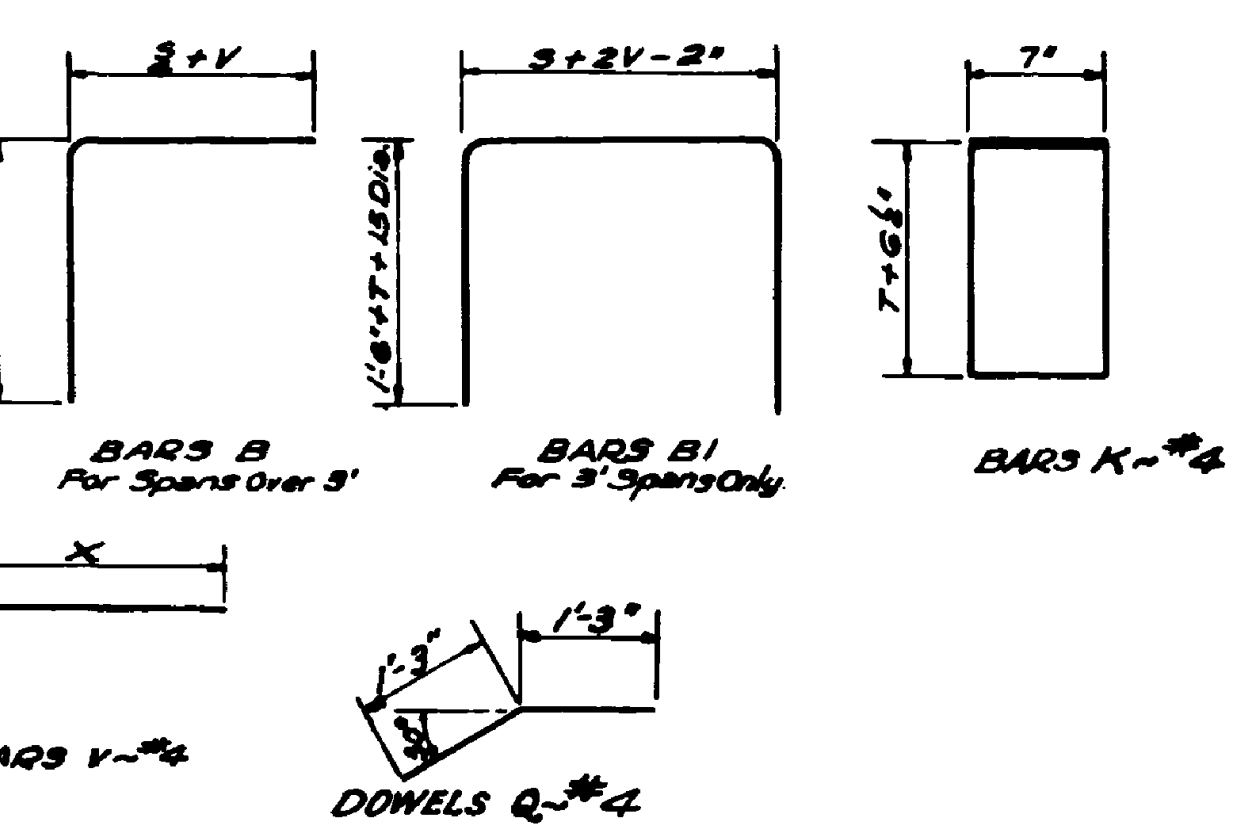
DETAILS OF BARREL JOINT & AUXILIARY SLAB J
Trowel Finish & Cover With 15 Lb. Roofing Felt
Length of Auxiliary Slab = S + 2V



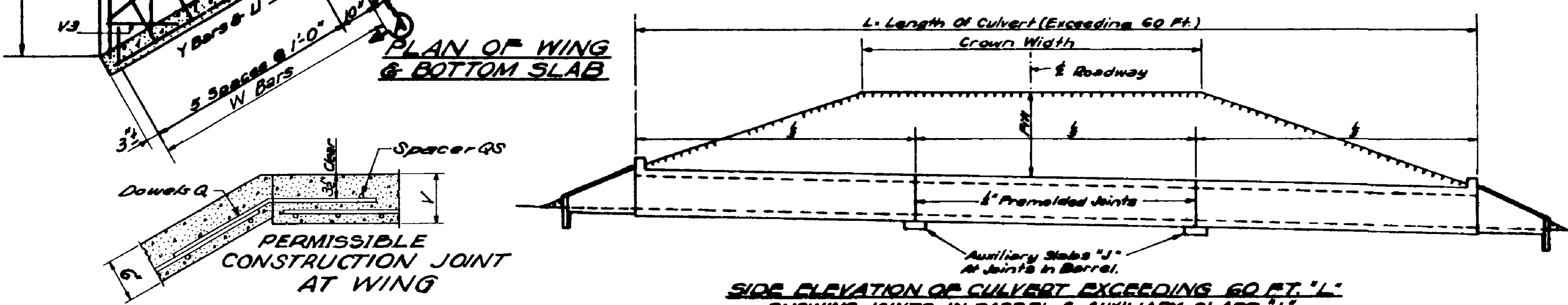
CROSS SECTION
Spacers AST Tie To Bars A in Top Slab.
Spacers ASB Tie To Bars A in Bottom Slab.
Spacers BS Tie To Bars B or B1.
Bars B Are Replaced By B1 For 3' Span.



SECTION "A-A"
BARS A, B, B1, K, L, M, N, U, V, W, X, Y, Z
BARS V-#4
BARS W-#4



BAR BENDING DETAILS
Dimensions Are Out To Out



SIDE ELEVATION OF CULVERT EXCEEDING 60 FT. "L"
SHOWING JOINTS IN BARREL & AUXILIARY SLAB J

GENERAL NOTES:-
Specifications: Mississippi State Highway Department.
All Concrete Shall Be Class "B".
Concrete Surfaces Shall Be Finished In Accordance With Sub-Section 804.24.
All Exposed Corners Shall Be Chamfered 3/8 Inch.
Reinforcing Steel Shall Be Placed 1" Clear Minimum From Surface Of The Concrete And Shall Be Adequately Supported From The Forms.
All Bars Shall Be Accurately Spaced And Securely Tied At Each Intersection Before Placing Concrete.
Horizontal Construction Joints Shall Be Placed Only At The Locations Shown And The Concrete Shall Be Allowed To Set A Minimum Period Of 2 Hours Before Continuing The Pour.
When The Length Of The Culvert Exceeds 60 Feet Place Vertical Expansion Joints And Auxiliary Slabs V1 At The Joints.
The Quantities Shown Will Be Used As The Basis For Final Payment Unless This Drawing Is Modified.

NOTICE TO DRAWING HOLDER
NEEL-SCHAFFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.	FILENAME
				NS.16214.000	16214_BoxDetails.dwg
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				SURVEYED BY:	
				DSGN:	GPC
				DATE:	06/2022
				DRWN:	JPF
				DATE:	06/2022
				CHKD:	GPC
				DATE:	08/2022
				QA/QC:	MWE
				DATE:	08/2022

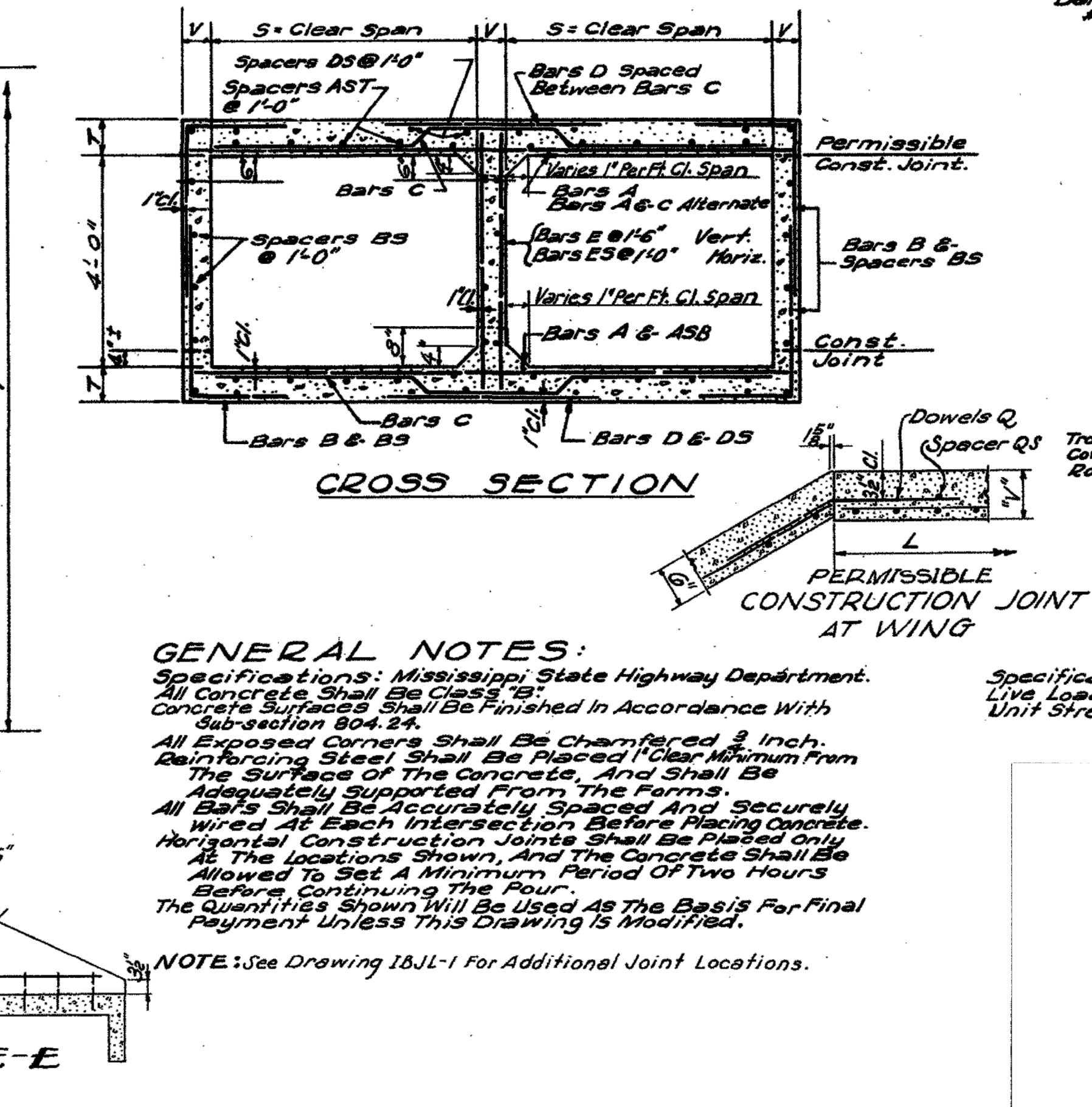
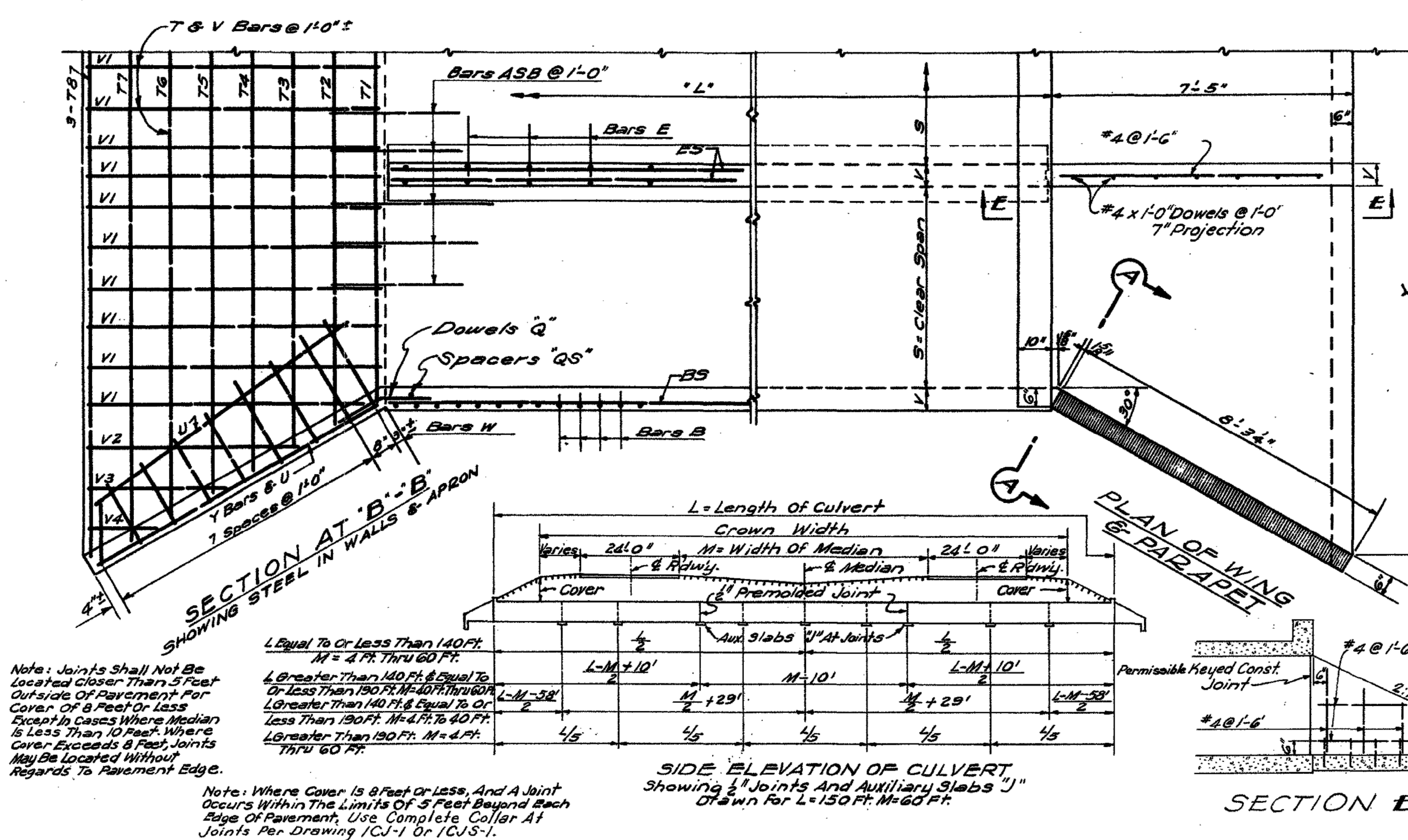
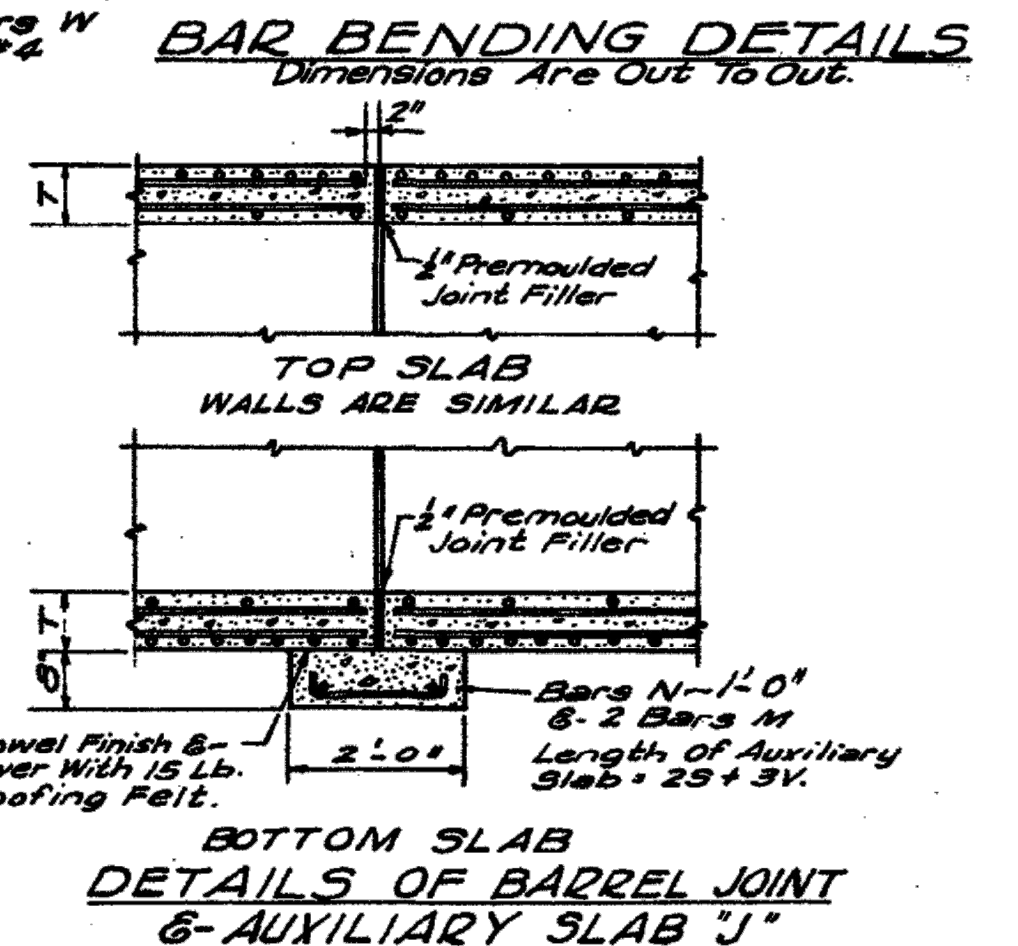
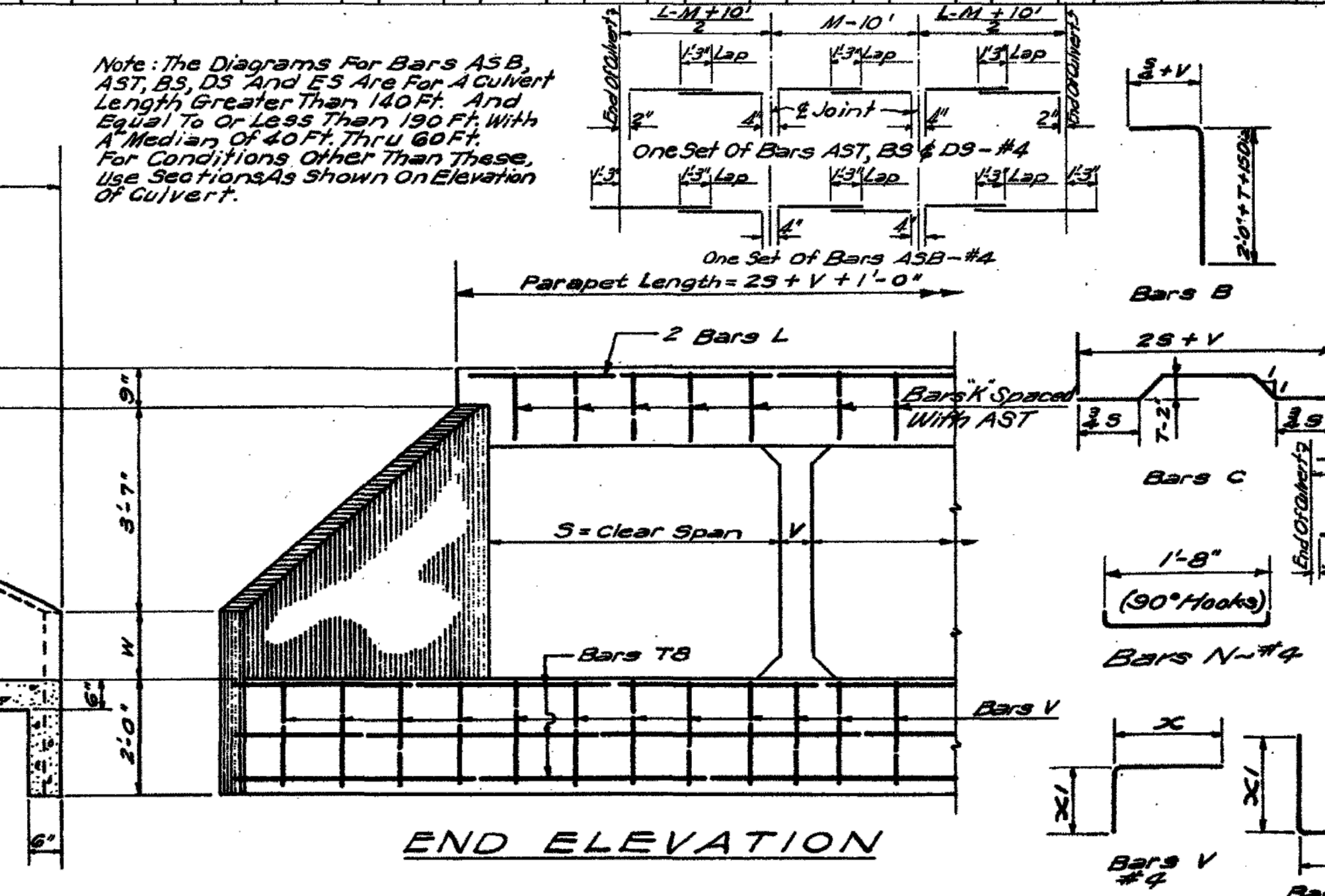
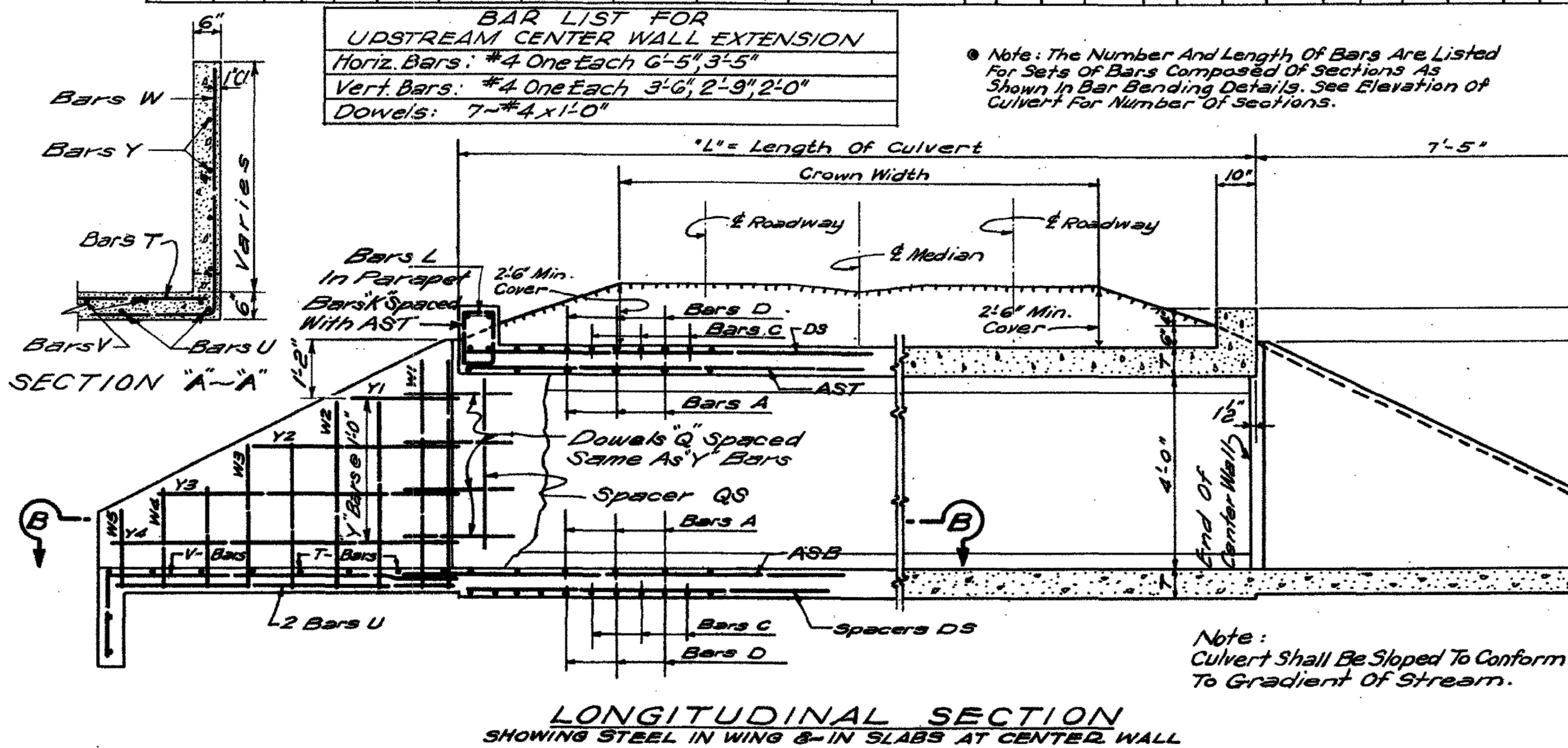
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER
Solutions you can build upon

BASIC CULVERT DRAWING SINGLE CELL HEIGHT 3FT. - TOTAL SPAN 3-9FT.	
WORKING NUMBER: SD-BS-3	DRAWING NUMBER: 72

CULVERT DIMENSIONS						ESTIMATED QUANTITIES						BAR LIST FOR BARREL (L=150') PARAPETS & 2 AUXILIARY SLABS "J"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
						CULVERT (L=150')		PER LIFT, BARREL		1 AUX. SLAB "J"		BARS "A"		BARS "B"		BARS "C"		BARS "D"		DOWNELS Q=1"		SPACERS Q=3/4"		SETS OF BARS "A" #4		SETS OF BARS "B" #5		SETS OF BARS "C" #5		BARS "E" #4		BARS "F" #4		BARS "G" #4		BARS "H" #4		BARS "I" #4		BARS "J" #4																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
CLEAR SPAN	MAX. COVER	T	V	W	Y	CONC. CU. YD.	REINF. STEEL LB.	CONC. CU. YD.	REINF. STEEL LB.	CONC. CU. YD.	REINF. STEEL LB.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE	SPAC.	LGTH.	NO.	SIZE</

BAR LIST FOR WINGS & APRONS										NO. REQUIRED				DIM.				LENGTH	
BAR SIZE	SPAN	4'	5'	6'	8'	10'	12'	14'	16'	SPAN	4'	5'	6'	8'	10'	12'	14'	16'	LENGTH
T1	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+1'0"
T2	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+2'2"
T3	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+3'4"
T4	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+4'6"
T5	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+5'8"
T6	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+6'10"
T7	#4	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	29+8'0"
T8	#4	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	29+9'0"
U	#4	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8'0"
V1	#4	22	26	30	36	46	54	7'1"	1'8"	8'9"									
V2	#4	4	4	4	4	4	4	5'4"	1'8"	7'0"									
V3	#4	4	4	4	4	4	4	3'8"	1'8"	5'4"									
V4	#4	4	4	4	4	4	4	1'11"	1'8"	3'7"									
W1	#4	8	8	8	8	8	8	2'6"	W+5'5"	W+5'11"									
W2	#4	8	8	8	8	8	8	2'9"	W+2'7"	W+2'10"									
W3	#4	8	8	8	8	8	8	1'11"	W+1'8"	W+2'7"									
W4	#4	8	8	8	8	8	8	1'7"	W+10"	W+2'5"									
W5	#4	4	4	4	4	4	4	1'7"	W+5'	W+2'10"									
Y1	#4	4	4	4	4	4	4			2'2"									
Y2	#4	4	4	4	4	4	4			2'6"									
Y3	#4	4	4	4	4	4	4			8'9"									
Y4	#4	4	4	4	4	4	4			8'0"									



GENERAL NOTES:

Specifications: Mississippi State Highway Department.

All Concrete Shall Be Class "B".

Concrete Surfaces Shall Be Finished In Accordance With Sub-section 804.24.

All Exposed Corners Shall Be Chamfered 3 Inch.

Reinforcing Steel Shall Be Placed 1' Clear Minimum From The Surface Of The Concrete, And Shall Be Adequately Supported From The Forms.

All Bars Shall Be Accurately Spaced And Securely Wired At Each Intersection Before Placing Concrete.

Horizontal Construction Joints Shall Be Placed Only At The Locations Shown, And The Concrete Shall Be Allowed To Set A Minimum Period Of Two Hours Before Continuing The Pour.

The Quantities Shown Will Be Used As The Basis For Final Payment Unless This Drawing Is Modified.

DESIGN DATA

Specifications: A.A.S.H.O. 1969.

Live Load: HS 20-44, Mod. For 2-24,000# Axles.

Unit Stresses: $f_s = 20,000 \text{ psi}$; $f_c = 4,200 \text{ psi}$; $n = 10$.

NOTE: See Drawing 1BJ-1 For Additional Joint Locations.

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	
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					SURVEYED BY:
					DSGN: GPC DATE: 06/2022
					DRWN: JPF DATE: 06/2022
					CHKD: GPC DATE: 08/2022
					QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFER
Solutions you can build upon

BASIC CULVERT DRAWING
DOUBLE CELL
HEIGHT 4 FT.
TOTAL SPAN 8-24 FT.

WORKING NUMBER: SD-IBD-4-2W
DRAWING NUMBER: 73

TABLE OF DIMENSIONS											
CULVERT HEIGHT	"J"	"LW1"	"LW2"	"V1"	"N2"	"P"	"R1"	"R2"	"R3"	"U"	"Z"
4'	3'-10"	1'-7 1/2"	1'-3 3/8"			1.155Q+1.14	2 3/4"	4 3/8"	1 1/8"	6"	1'-6"
5'	4'-6"	1'-7 1/2"	1'-3 3/8"			1.155Q+1.14	2 3/4"	4 3/8"	1 1/8"	6"	1'-6"
6'	5'-9"	1'-7 1/2"	1'-3 3/8"			1.155Q+1.32	2 3/4"	4 3/8"	1 1/8"	7"	1'-9"
8'	7'-4"	2'-2 2/8"	3'-1 1/8"			1.155Q+1.61	3 3/4"	6 5/8"	1 1/8"	8 1/2"	2'-0"
10'	8'-4"	2'-2 2/8"	3'-1 1/8"	2'-11"	6'-6"	1.155Q+1.89	4"	8 3/4"	1 1/8"	10"	2'-0"
12'	9'-7"	2'-2 2/8"	3'-1 1/8"	3'-3"	7'-0"	1.155Q+2.08	4 1/4"	9"	1 1/8"	11"	2'-9"

Note: Q For Single Cell Culvert = S (Clear Span).
Q For Double Cell Culvert = 2S + V.

TABLE OF V BARS ~ #4											
CULVERT HEIGHT	NO.	DIM. X	NO.	DIM. X	NO.	DIM. X	NO.	DIM. X	NO.	DIM. X	NO.
4'	1	1'-10"	3	8'-11 1/2"	21"	3	9'-0"	6'-2 1/4"			
5'	1	1'-10"	4	11'-3"	6'-11 1/2"	3	11'-4"	6'-4 1/8"			
6'	1	1'-10"	5	13'-10"	6'-3 3/4"	5	13'-11"	6'-2 1/4"			
8'	1	1'-10"	7	21'-9"	6'-2 1/4"	7	21'-10"	6'-1 1/4"			
10'	1	1'-10"	8	25'-7"	6'-3 3/8"	8	25'-8"	6'-2 1/8"			
12'	1	1'-10"	9	30'-2"	6'-4 1/4"	9	30'-3"	6'-3 1/8"			

TABLE OF T BARS ~ #4											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	T1 TO T11	1Ea	P-4" TO P+1'-10"	5'	T1 TO T18	1Ea	P-4" TO P+1'-9"	6'	T1 TO T21	1Ea	P-4" TO P+1'-10"
5'	T12	3	P+8'-8"	6'	T19	3	P+1'-0"	8'	T22	3	P+1'-3"
6'	T13	3	P+1'-0"	8'	T20	3	P+1'-0"	10'	T23	3	P+1'-0"
8'	T14	3	P+1'-0"	10'	T21	3	P+1'-0"	12'	T24	3	P+1'-0"

TABLE OF U BARS ~ #4											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	U1 TO U11	1Ea	P-4" TO P+1'-10"	5'	U1 TO U18	1Ea	P-4" TO P+1'-9"	6'	U1 TO U21	1Ea	P-4" TO P+1'-10"
5'	U12	3	P+8'-8"	6'	U19	3	P+1'-0"	8'	U22	3	P+1'-3"
6'	U13	3	P+1'-0"	8'	U20	3	P+1'-0"	10'	U23	3	P+1'-0"
8'	U14	3	P+1'-0"	10'	U21	3	P+1'-0"	12'	U24	3	P+1'-0"

TABLE OF Y BARS ~ #4											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	Y1 TO Y3	1Ea	5'-11" TO 13'-6"	5'	Y1 TO Y8	1Ea	5'-11" TO 13'-6"	6'	Y1 TO Y11	1Ea	5'-11" TO 13'-6"
5'	Y4	1	15'-11"	6'	Y9	1	15'-11"	8'	Y12	1	15'-11"
6'	Y5	1	15'-11"	8'	Y10	1	15'-11"	10'	Y13	1	15'-11"
8'	Y6	1	15'-11"	10'	Y11	1	15'-11"	12'	Y14	1	15'-11"

TABLE OF WL BARS											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	W1 TO W10	1Ea	2'-6" TO 1'-7"	5'	W1 TO W15	1Ea	2'-6" TO 1'-7"	6'	W1 TO W20	1Ea	2'-6" TO 1'-7"
5'	W11	1Ea	2'-6" TO 1'-7"	6'	W16	1Ea	2'-6" TO 1'-7"	8'	W21	1Ea	2'-6" TO 1'-7"
6'	W12	1Ea	2'-6" TO 1'-7"	8'	W17	1Ea	2'-6" TO 1'-7"	10'	W22	1Ea	2'-6" TO 1'-7"
8'	W13	1Ea	2'-6" TO 1'-7"	10'	W18	1Ea	2'-6" TO 1'-7"	12'	W23	1Ea	2'-6" TO 1'-7"

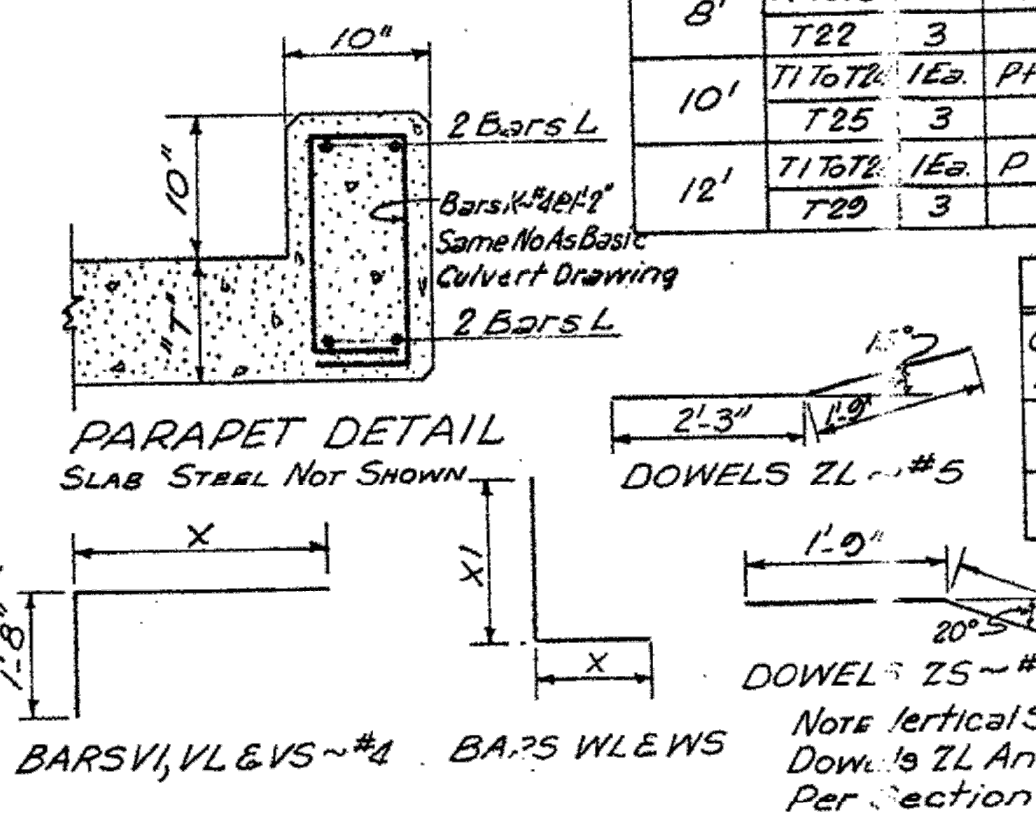
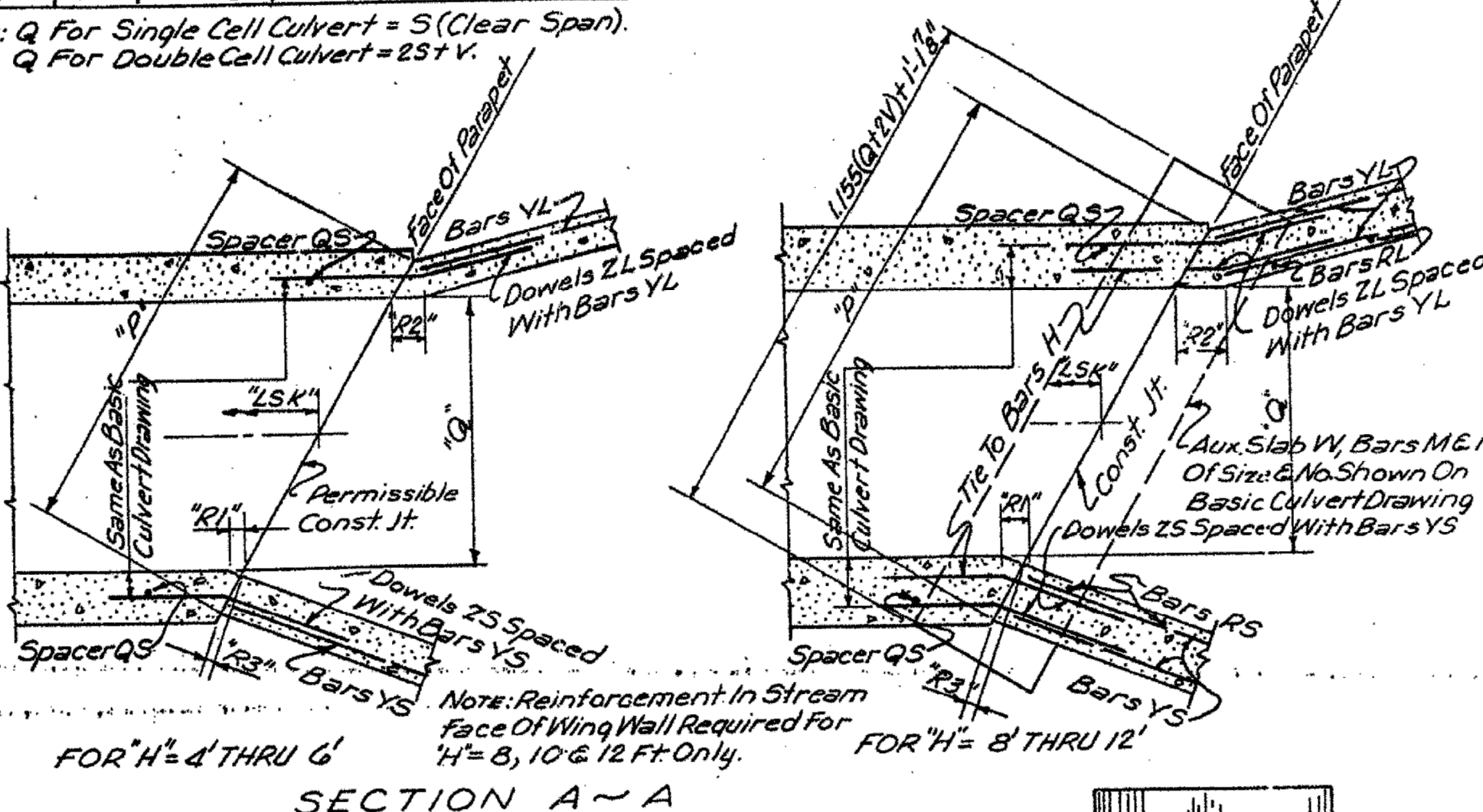
TABLE OF WS BARS											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	W1 TO W13	1Ea	2'-6" TO 1'-7"	5'	W1 TO W18	1Ea	2'-6" TO 1'-7"	6'	W1 TO W23	1Ea	2'-6" TO 1'-7"
5'	W14	1Ea	2'-6" TO 1'-7"	6'	W19	1Ea	2'-6" TO 1'-7"	8'	W24	1Ea	2'-6" TO 1'-7"
6'	W15	1Ea	2'-6" TO 1'-7"	8'	W20	1Ea	2'-6" TO 1'-7"	10'	W25	1Ea	2'-6" TO 1'-7"

TABLE OF FS, QS, ZL & ZS BARS											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	FS1 TO FS13	1Ea	W+6'-7" TO W+7"	5'	FS1 TO FS18	1Ea	W+6'-7" TO W+7"	6'	FS1 TO FS23	1Ea	W+6'-7" TO W+7"
5'	FS14	1Ea	W+6'-7" TO W+7"	6'	FS19	1Ea	W+6'-7" TO W+7"	8'	FS24	1Ea	W+6'-7" TO W+7"
6'	FS15	1Ea	W+6'-7" TO W+7"	8'	FS20	1Ea	W+6'-7" TO W+7"	10'	FS25	1Ea	W+6'-7" TO W+7"

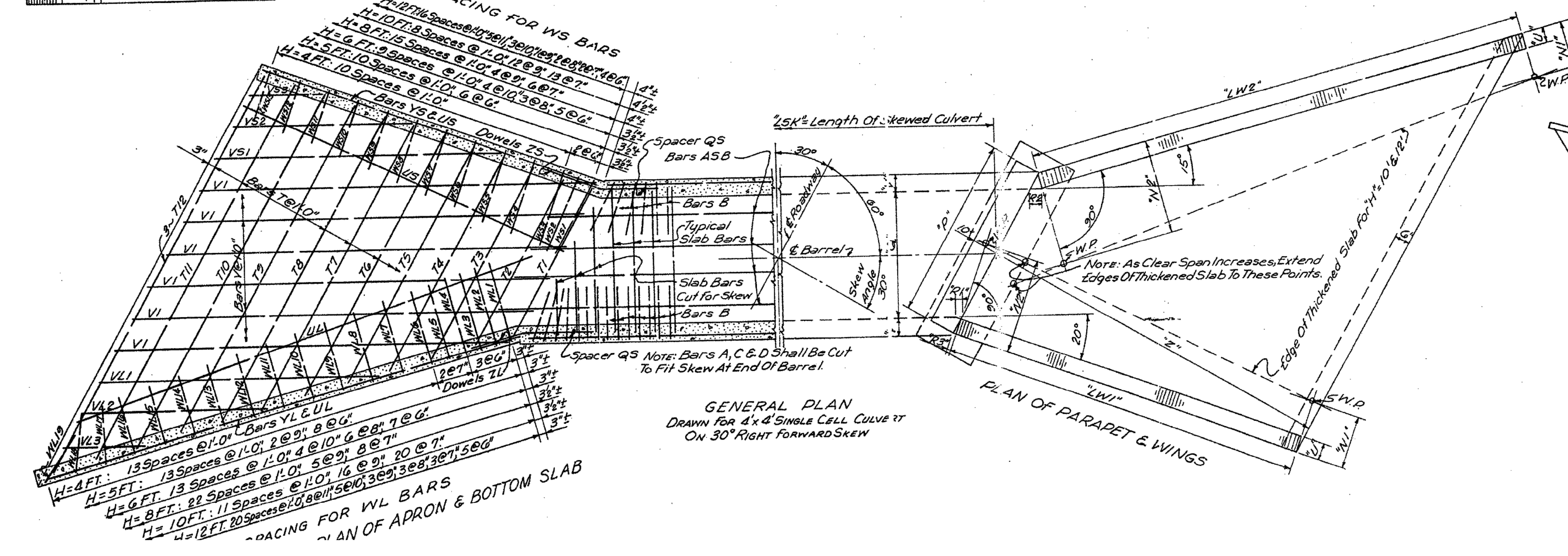
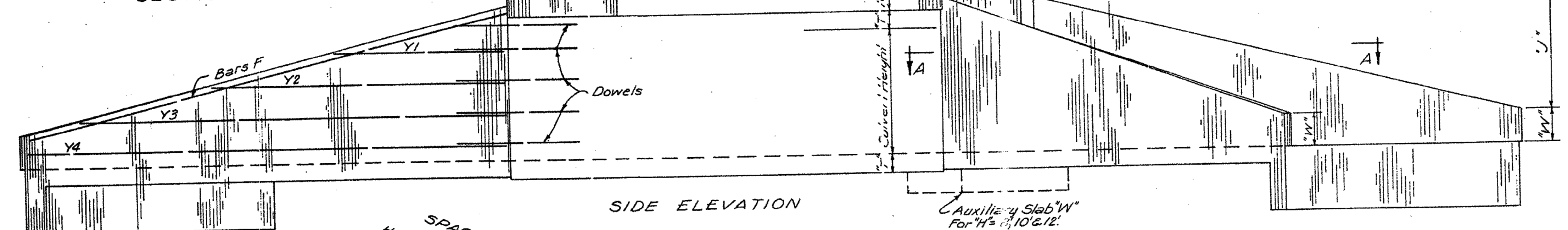
TABLE OF R BARS ~ #4											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	R1 TO R13	1Ea	W+6'-7" TO W+7"	5'	R1 TO R18	1Ea	W+6'-7" TO W+7"	6'	R1 TO R23	1Ea	W+6'-7" TO W+7"
5'	R14	1Ea	W+6'-7" TO W+7"	6'	R19	1Ea	W+6'-7" TO W+7"	8'	R24	1Ea	W+6'-7" TO W+7"
6'	R15	1Ea	W+6'-7" TO W+7"	8'	R20	1Ea	W+6'-7" TO W+7"	10'	R25	1Ea	W+6'-7" TO W+7"

TABLE OF L & M BARS											
CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH	CULVERT HEIGHT	BAR NO.	NO.	LENGTH
4'	L1 TO L13	1Ea	W+6'-7" TO W+7"	5'	L1 TO L18	1Ea	W+6'-7" TO W+7"	6'	L1 TO L23	1Ea	W+6'-7" TO W+7"
5'	L14	1Ea	W+6'-7" TO W+7"	6'	L19	1Ea	W+6'-7" TO W+7"	8'	L24	1Ea	W+6'-7" TO W+7"
6'	L15	1Ea	W+6'-7" TO W+7"	8'	L20	1Ea	W+6'-7" TO W+7"	10'	L25	1Ea	W+6'-7" TO W+7"

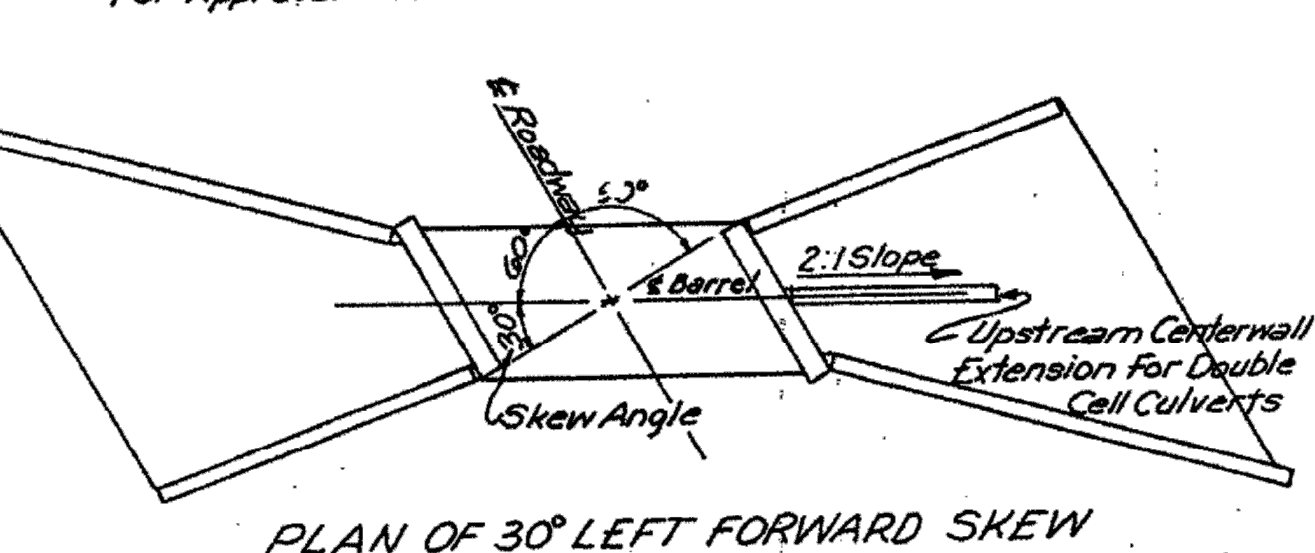
Note: The Number Of Bars Shown In The Tables Is The Number Required For One Complete Headwall Assembly At One End Of Culvert.



BAR BENDING DETAILS
DIMENSIONS ARE OUT TO OUT



GENERAL NOTES:
This Drawing Shows The General Details Necessary To Modify A Single Or Double Cell Culvert With Wings With 3:1 Slope For A 30° Skew. All Governing Dimensions, Reinforcement Details And General Requirements Of Basic Culvert Drawings, Drawings JWS-3 And JWS-3 And Or Drawings 1BSM-3W And 1BDM-3W Shall Apply Except As Specifically Modified Hereon. A Complete Placing Plan Showing All Governing Dimensions, Bar List And Bending Details Shall Be Submitted To The Project Engineer For Approval Prior To Fabrication Of The Reinforcing Steel.



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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

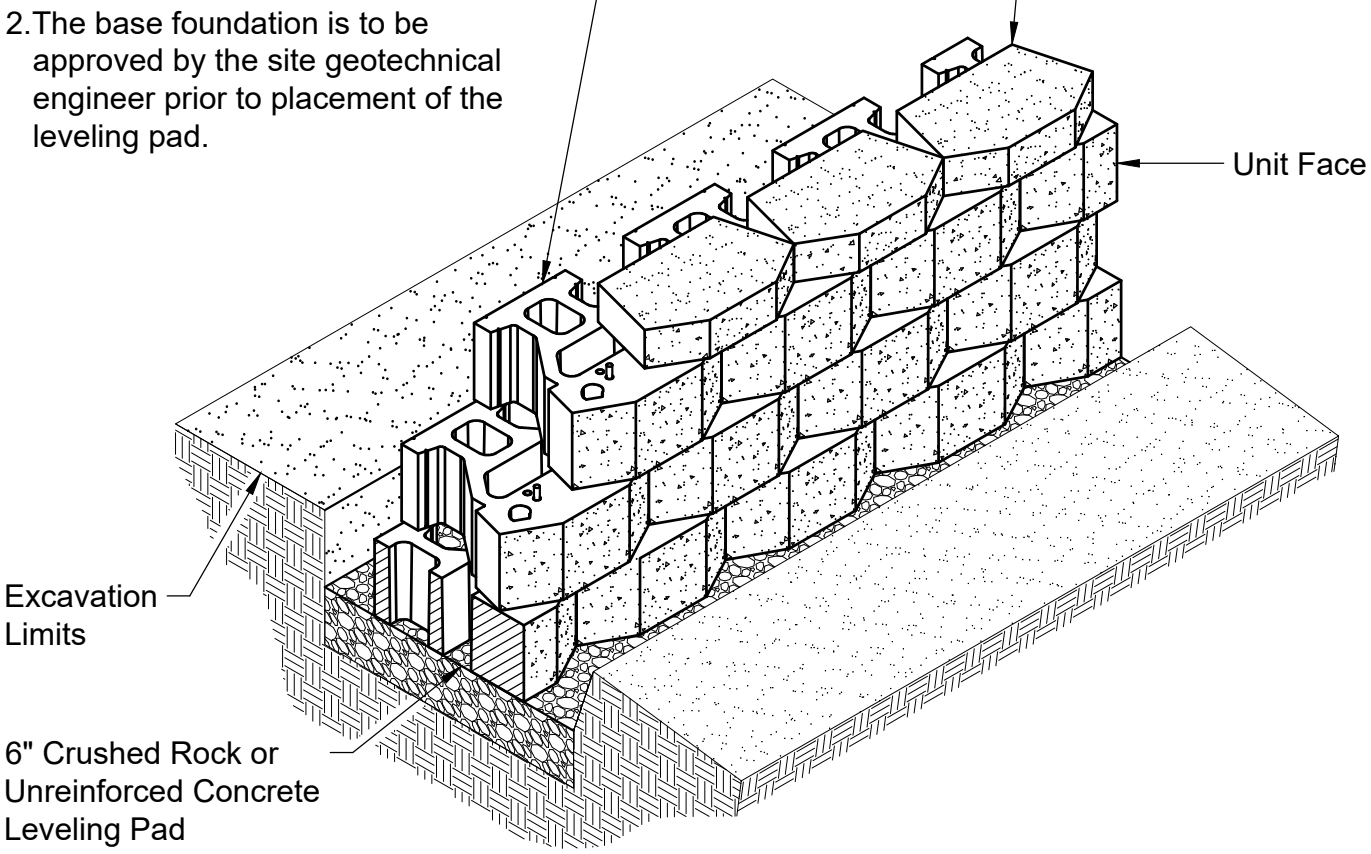
NEEL-SCHAFFER
Solutions you can build upon

BOX CULVERT DRAWING
30° SKEW DETAILS
WINGS WITH 3:1 SLOPE
SINGLE & DOUBLE CELL CULVERTS
WORKING NUMBER: SD-ISK-30-3W
DRAWING NUMBER: 74

Base Leveling Pad Notes:

1. The leveling pad is to be constructed of crushed stone or 2,000 psi unreinforced concrete
2. The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

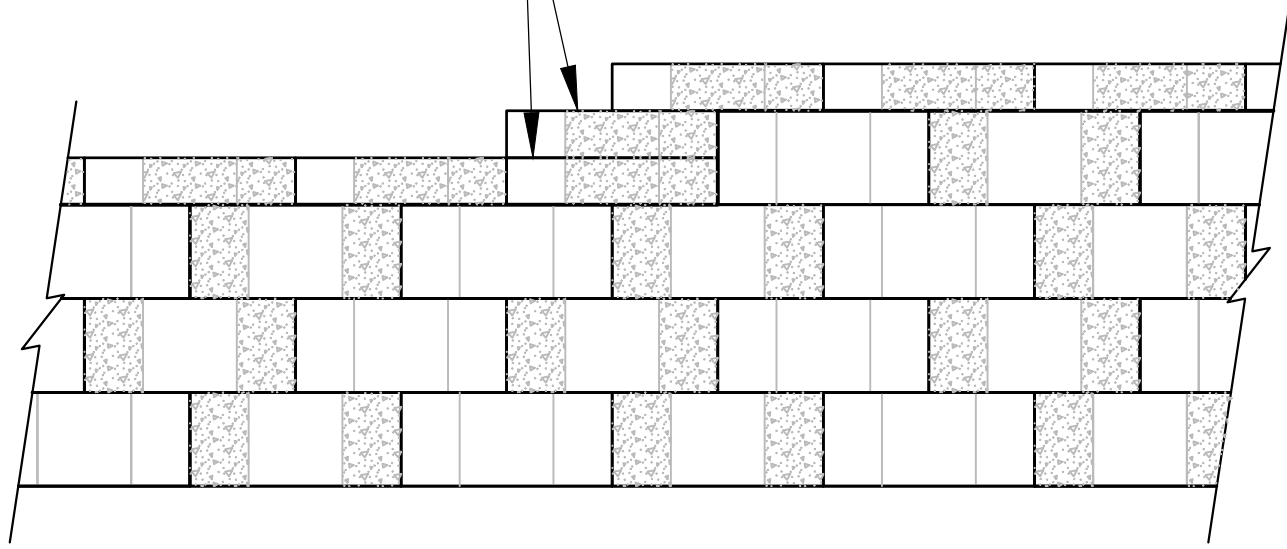
Standard Unit		Cap Unit	
Width:	18"	Width:	18"
*Depth:	18"	*Depth:	10 1/2"
Height:	8"	Height:	4"
*Weight:	102 lbs	*Weight:	45 lbs



Standard Unit/Base Pad Isometric Section View

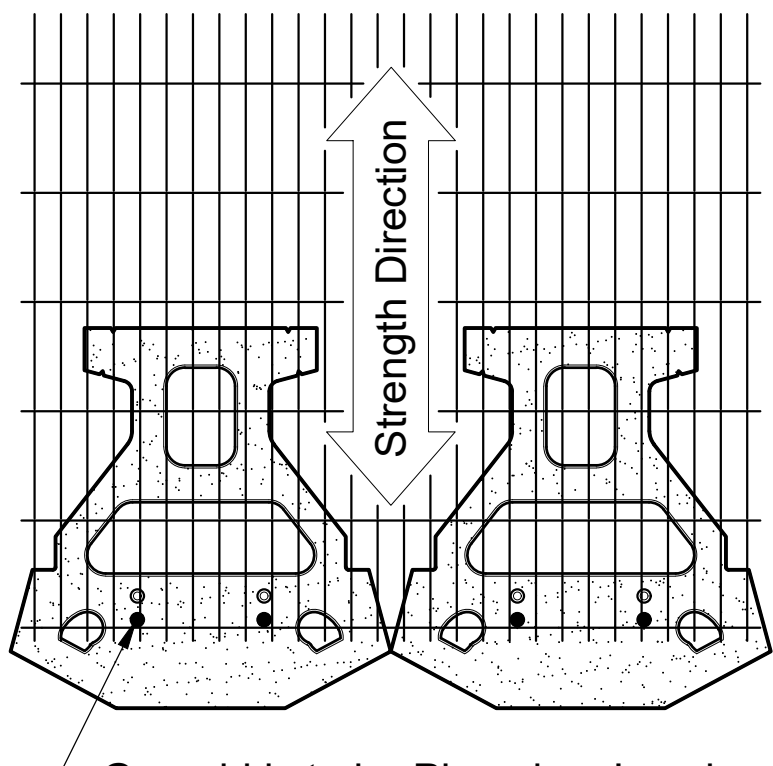
*Dimensions & Weight May Vary by Region

(2) - 4" Cap Units or (1) - 8" Cap Unit



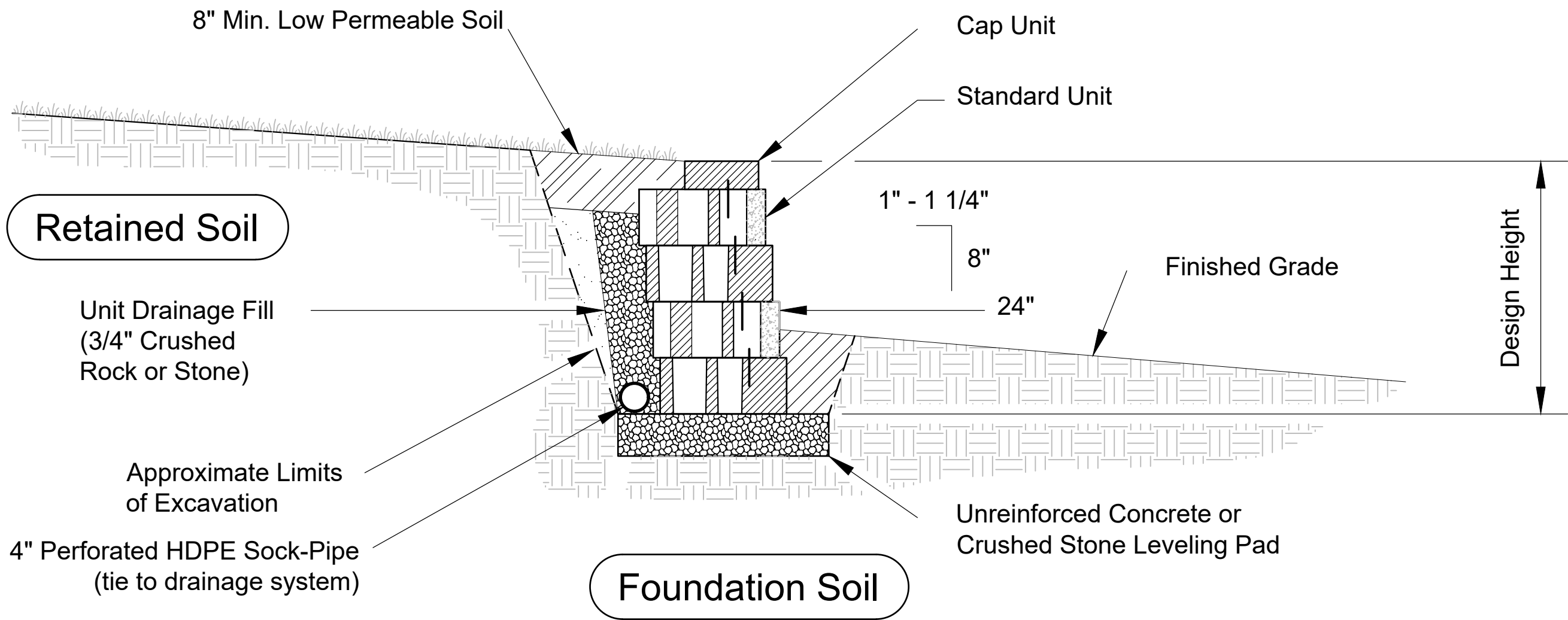
1. Secure all cap units with Keystone Kapseal or equal.

Top of Wall Steps



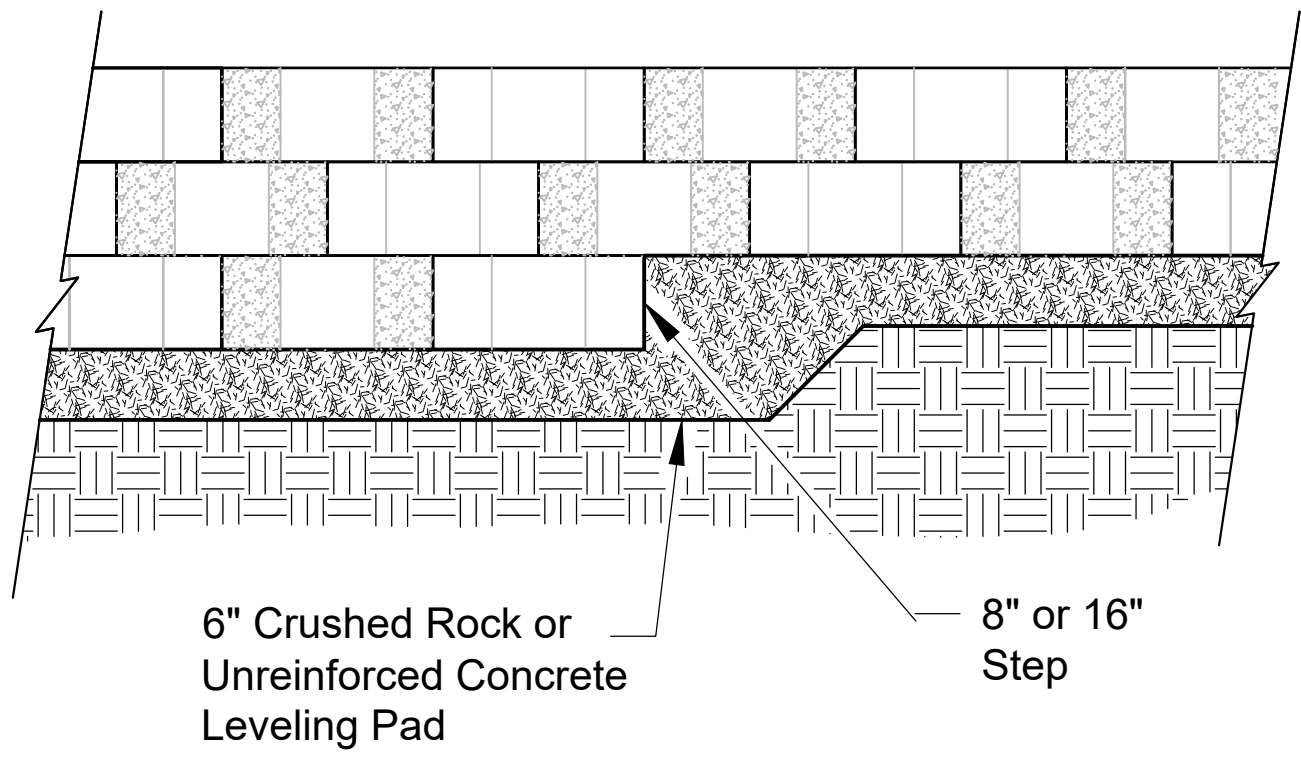
Geogrid is to be Placed on Level Backfill and Extended Over the Fiberglass Pins. Place Next Unit. Pull Grid Taught and Backfill. Stake as required.

Grid & Pin Connection



Typical Gravity Wall Section

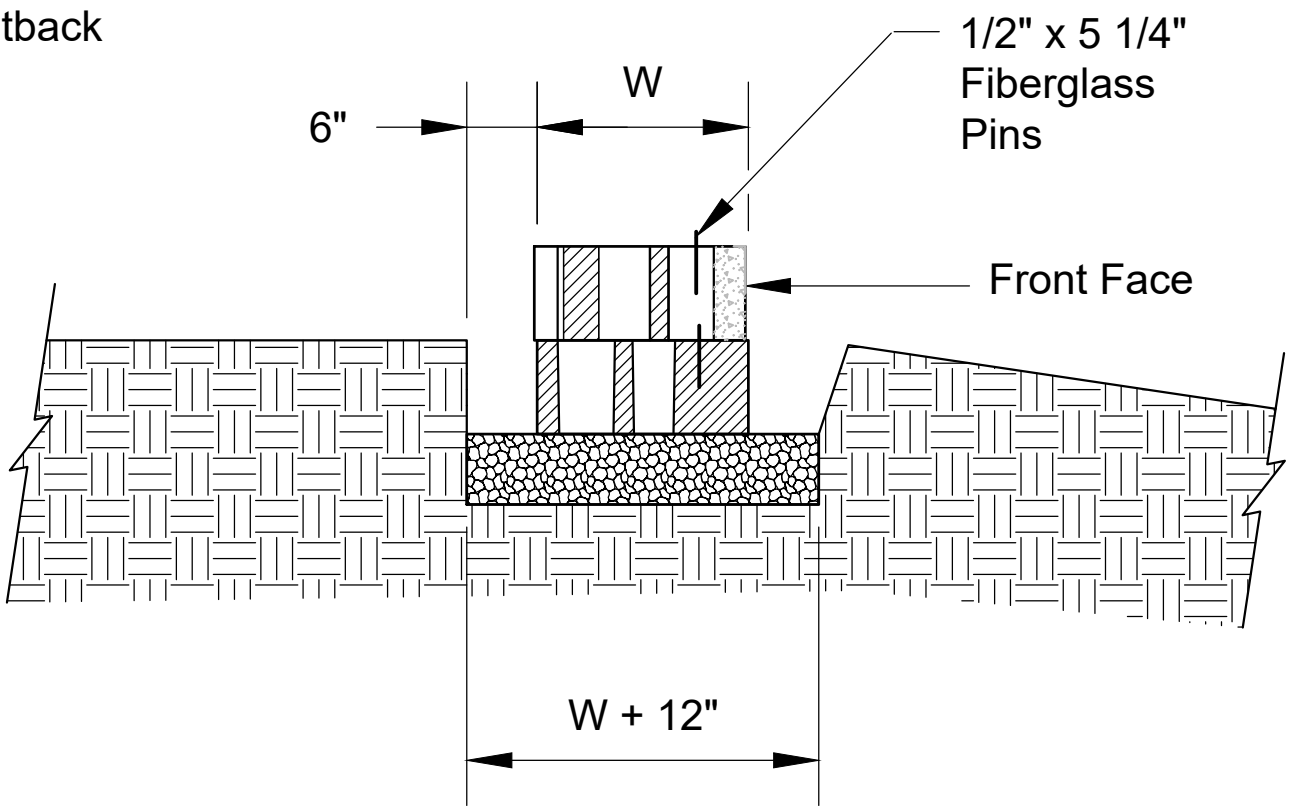
Standard Unit - 1" Setback



Elevation

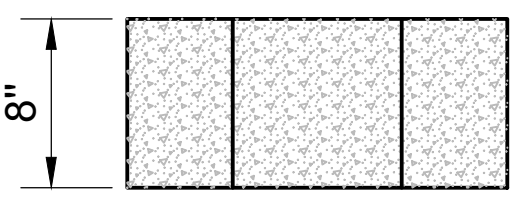
Note:

1. The leveling pad is to be constructed of crushed stone or 2000 psi ± unreinforced concrete.

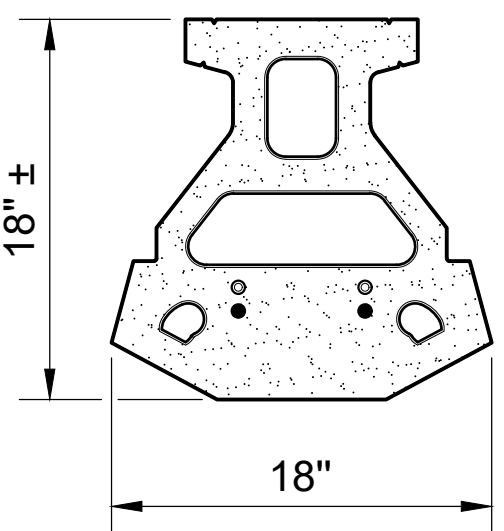


Section

Leveling Pad Detail



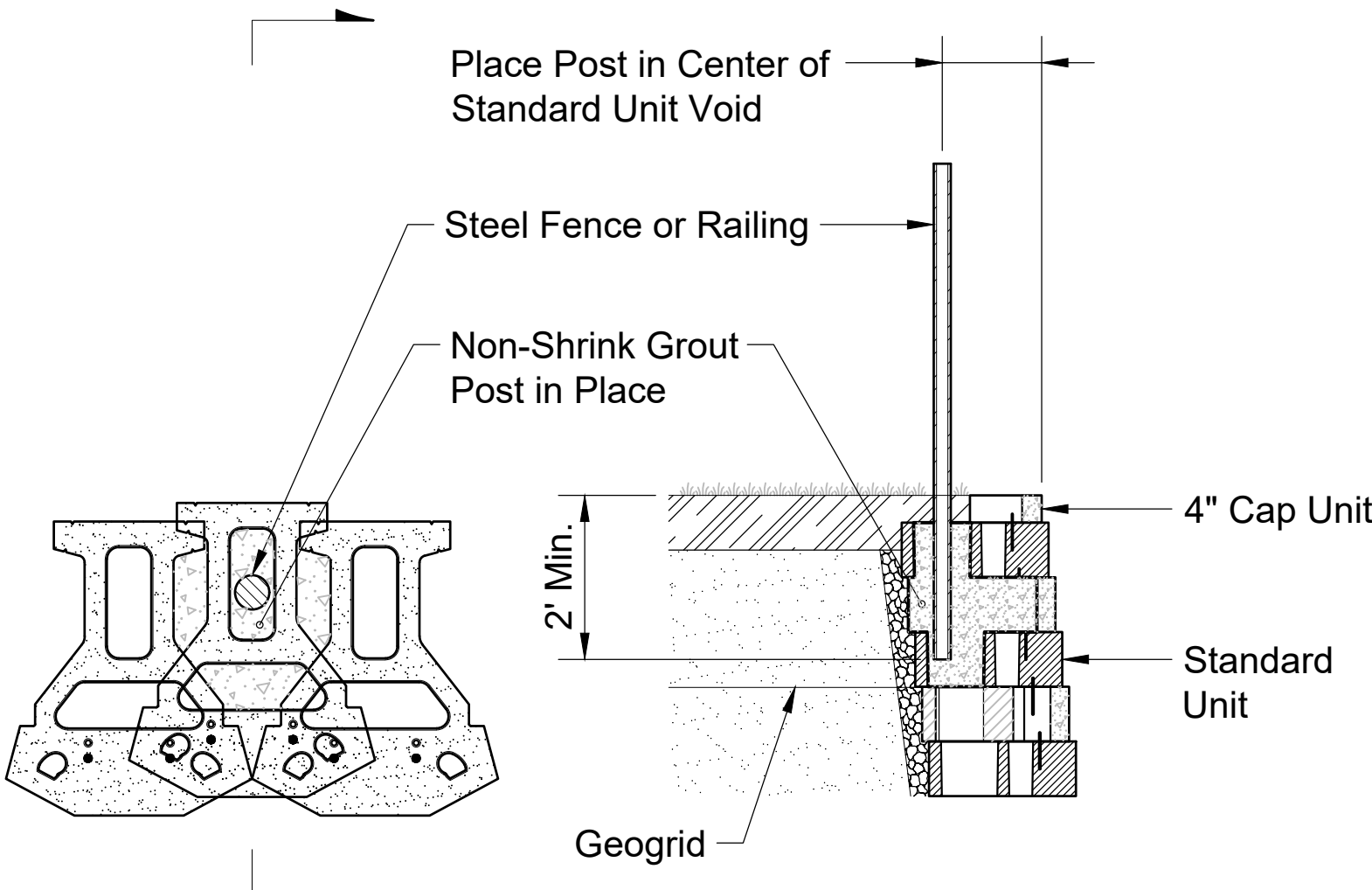
Standard Elevation



Standard Plan

Standard Unit

* Dimensions May Vary by Region



Fence Plan Detail

Fence Section Detail

Standard Unit - 1" Setback

Note:

1. All materials necessary for construction of the modular retaining wall system are included in the square foot price of the wall, as per section 809.05 of the MDOT Standard Specifications.
2. Color to be selected by Owner. Contractor shall provide color charts in submittal.

NOTICE TO DRAWING HOLDER

NEEL-SCHAFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	

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FILENAME: 16214_Ret-Wall_Details.dwg	
SCALE: NO SCALE	
SURVEYED BY:	
DSGN: GPC	DATE: 06/2022
DRWN: JPF	DATE: 06/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

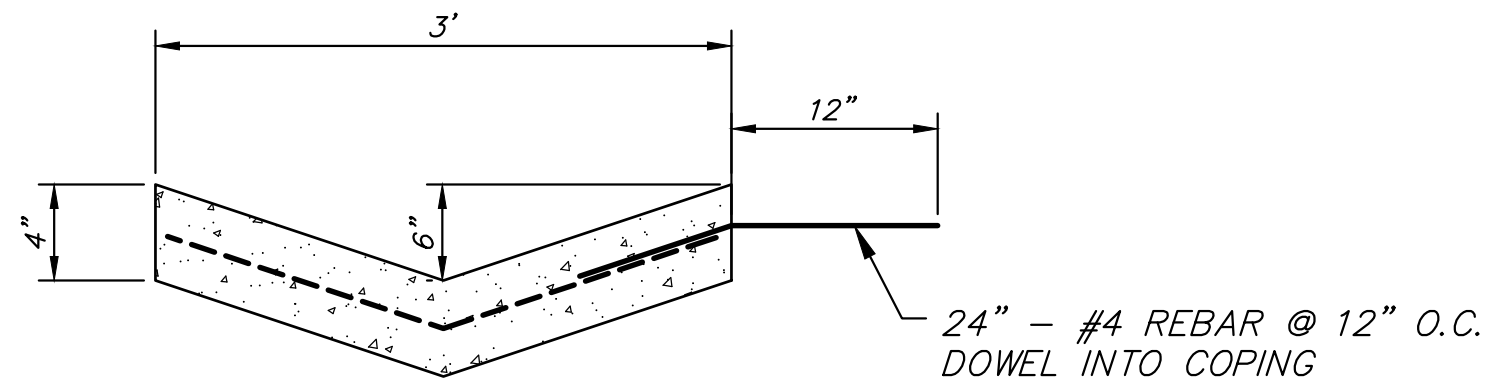
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



GRAVITY RETAINING WALL DETAILS
(SMALL BLOCK WALL)

WORKING NUMBER:
RTW-1

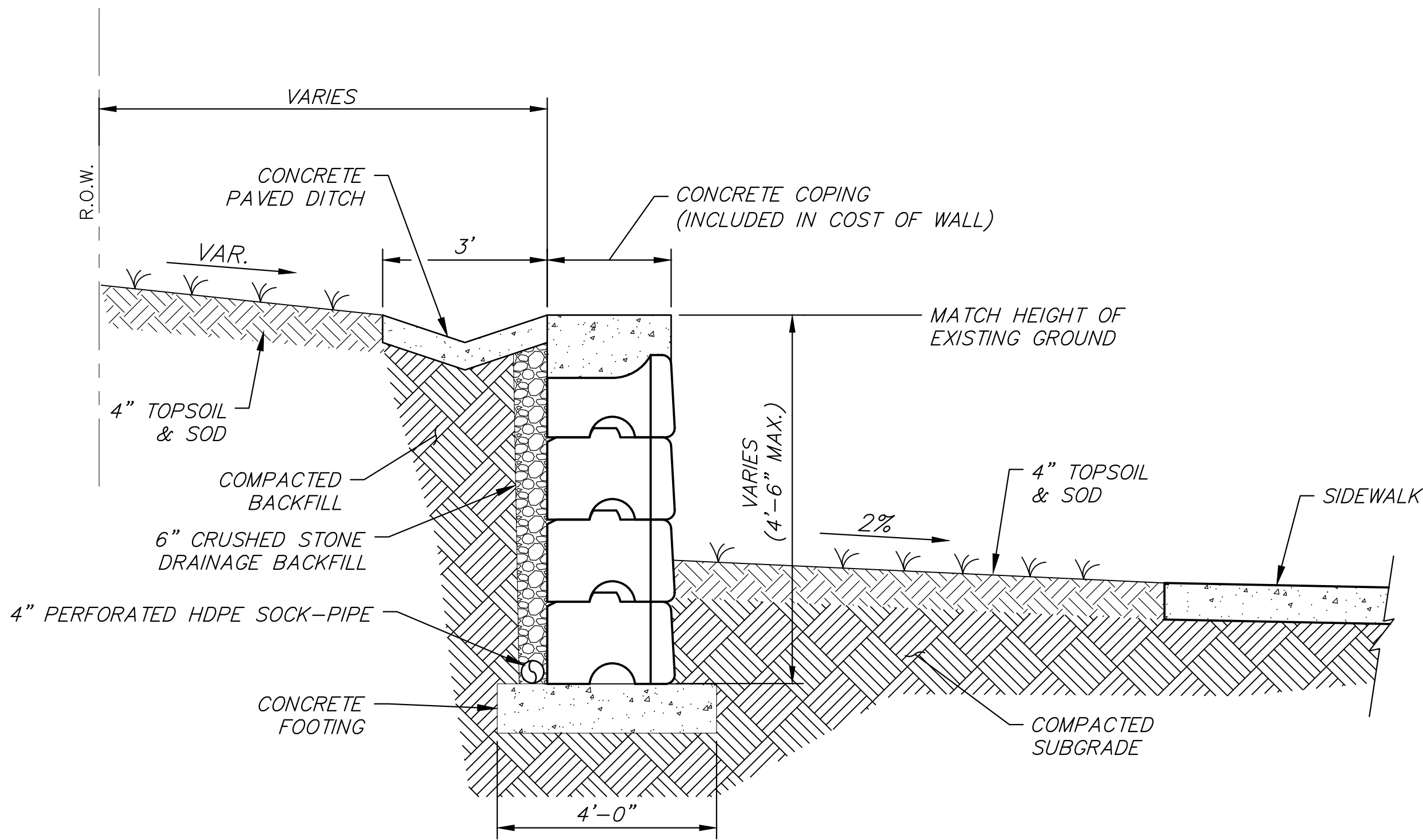
DRAWING NUMBER:
75



CONCRETE PAVED DITCH DETAIL

Not to Scale

- NOTE:
- CONTRACTION JOINTS SHALL BE SPACED @ 10' O.C.
 - EXPANSION JOINTS SHALL BE SPACED @ 30' O.C.



TYPICAL LARGE BLOCK
GRAVITY TYPE RETAINING WALL SECTION

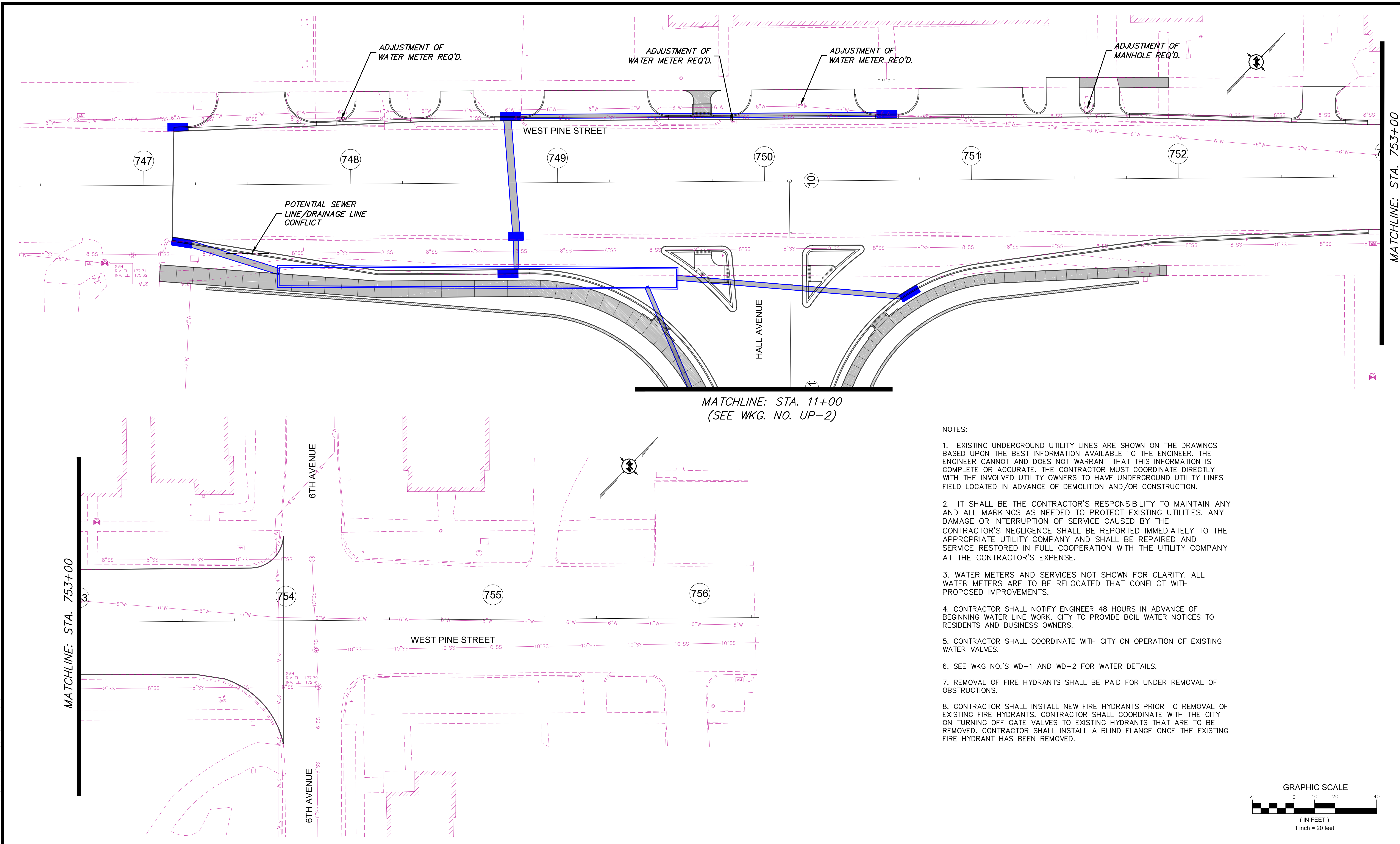
Not to Scale

- NOTE:
- LARGE BLOCK GRAVITY RETAINING WALL ONLY TO BE INSTALLED WHERE SHOWN ON WKG. NO. WK-3A. STYLE/COLOR SHALL MATCH MECHANICALLY-STABILIZED RETAINING WALL APPROVED FOR USE ON BRIDGE APPROACHES.
 - ALL ITEMS SHOWN ON THIS SHEET WILL NOT BE MEASURED FOR SEPARATE PAYMENT AND SHALL BE INCLUDED IN PAY ITEM 907-809-A002, RETAINING WALL SYSTEM, GRAVITY TYPE.
 - BLOCK RETAINING WALL SHALL BE INSTALLED AS PER MANUFACTURERS RECOMMENDATIONS.

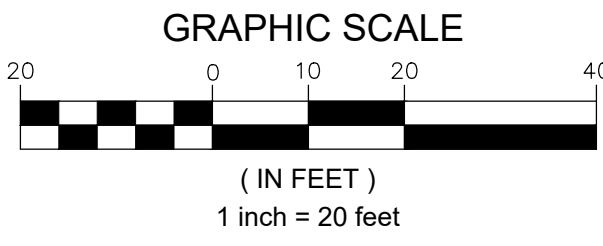
- Note:
1. All materials necessary for construction of the modular retaining wall system are included in the square foot price of the wall, as per section 809.05 of the MDOT Standard Specifications.
 2. Concrete paved ditch and dowels shall be included in the square foot price of wall.

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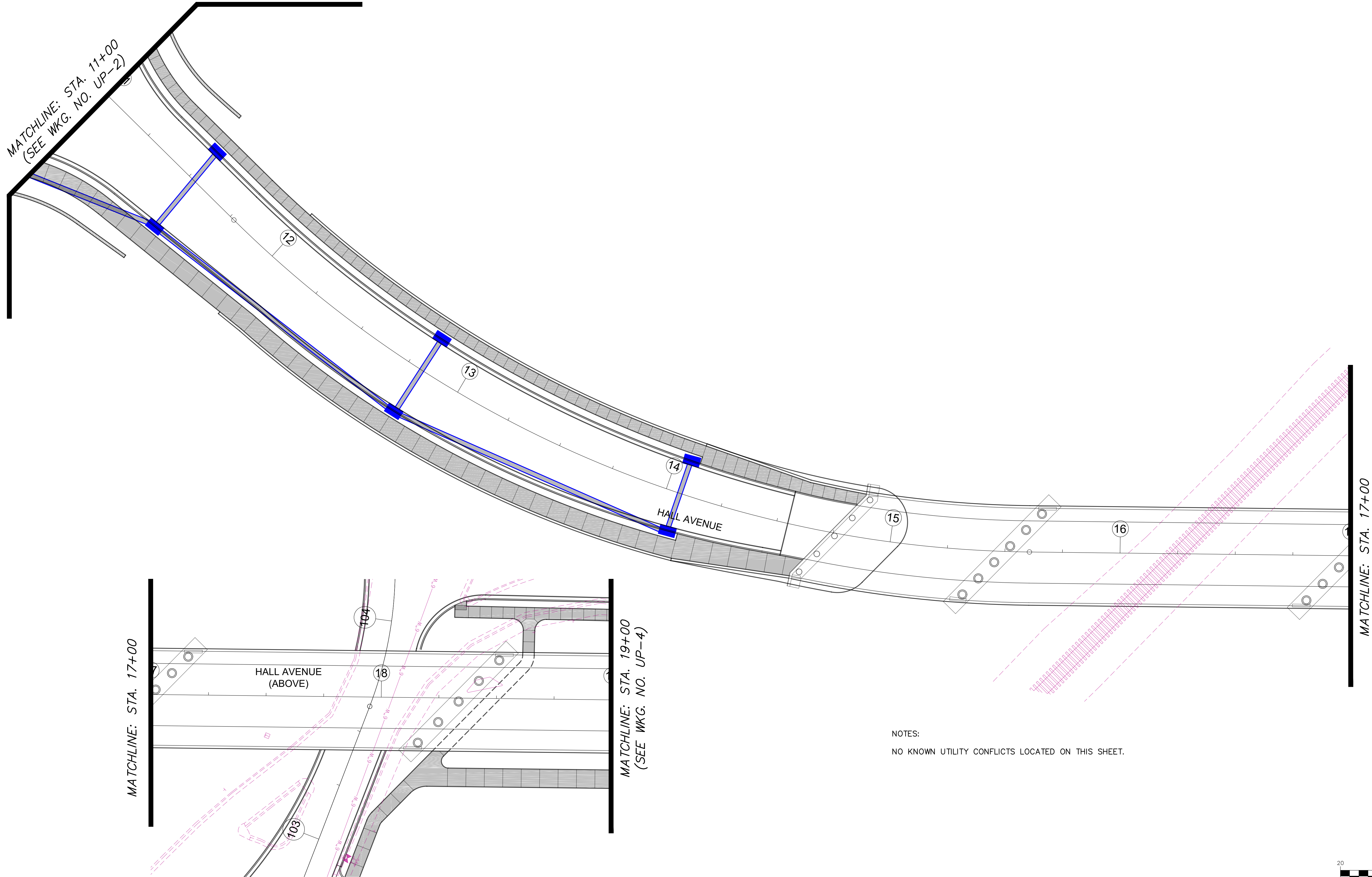
NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	 NEEL-SCHAFFER <i>Solutions you can build upon</i>	GRAVITY RETAINING WALL DETAILS (LARGE BLOCK WALL)		
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_Ret-Wall_Details.dwg SCALE: NO SCALE SURVEYED BY: DSGN: GPC DATE: 06/2022 DRWN: JPF DATE: 06/2022 CHKD: GPC DATE: 08/2022 QA/QC: MWE DATE: 08/2022							
											WORKING NUMBER: RTW-2	DRAWING NUMBER: 76



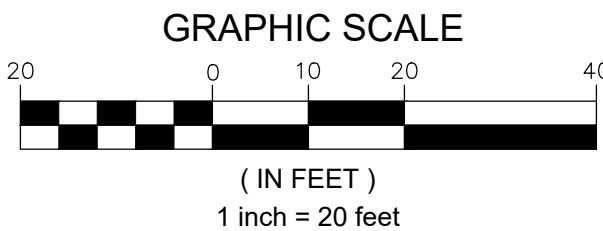
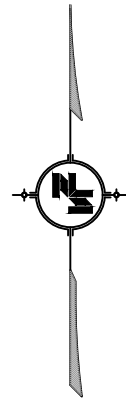
- NOTES:
1. EXISTING UNDERGROUND UTILITY LINES ARE SHOWN ON THE DRAWINGS BASED UPON THE BEST INFORMATION AVAILABLE TO THE ENGINEER. THE ENGINEER CANNOT AND DOES NOT WARRANT THAT THIS INFORMATION IS COMPLETE OR ACCURATE. THE CONTRACTOR MUST COORDINATE DIRECTLY WITH THE INVOLVED UTILITY OWNERS TO HAVE UNDERGROUND UTILITY LINES FIELD LOCATED IN ADVANCE OF DEMOLITION AND/OR CONSTRUCTION.
 2. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN ANY AND ALL MARKINGS AS NEEDED TO PROTECT EXISTING UTILITIES. ANY DAMAGE OR INTERRUPTION OF SERVICE CAUSED BY THE CONTRACTOR'S NEGLIGENCE SHALL BE REPORTED IMMEDIATELY TO THE APPROPRIATE UTILITY COMPANY AND SHALL BE REPAIRED AND SERVICE RESTORED IN FULL COOPERATION WITH THE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
 3. WATER METERS AND SERVICES NOT SHOWN FOR CLARITY. ALL WATER METERS ARE TO BE RELOCATED THAT CONFLICT WITH PROPOSED IMPROVEMENTS.
 4. CONTRACTOR SHALL NOTIFY ENGINEER 48 HOURS IN ADVANCE OF BEGINNING WATER LINE WORK. CITY TO PROVIDE BOIL WATER NOTICES TO RESIDENTS AND BUSINESS OWNERS.
 5. CONTRACTOR SHALL COORDINATE WITH CITY ON OPERATION OF EXISTING WATER VALVES.
 6. SEE WKG NO.'S WD-1 AND WD-2 FOR WATER DETAILS.
 7. REMOVAL OF FIRE HYDRANTS SHALL BE PAID FOR UNDER REMOVAL OF OBSTRUCTIONS.
 8. CONTRACTOR SHALL INSTALL NEW FIRE HYDRANTS PRIOR TO REMOVAL OF EXISTING FIRE HYDRANTS. CONTRACTOR SHALL COORDINATE WITH THE CITY ON TURNING OFF GATE VALVES TO EXISTING HYDRANTS THAT ARE TO BE REMOVED. CONTRACTOR SHALL INSTALL A BLIND FLANGE ONCE THE EXISTING FIRE HYDRANT HAS BEEN REMOVED.



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	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			
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					SCALE: 1" = 20'			
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				DSGN: GPC	DATE: 05/2022	HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		
				DRWN: JPF	DATE: 05/2022			
				CHKD: GPC	DATE: 08/2022			
				QA/QC: MWE	DATE: 08/2022			
 UTILITY PLAN WEST PINE STREET STA. 747+00 TO 754+00 <table border="1"><tr><td>WORKING NUMBER: UP-1</td><td>DRAWING NUMBER: 77</td></tr></table>							WORKING NUMBER: UP-1	DRAWING NUMBER: 77
WORKING NUMBER: UP-1	DRAWING NUMBER: 77							



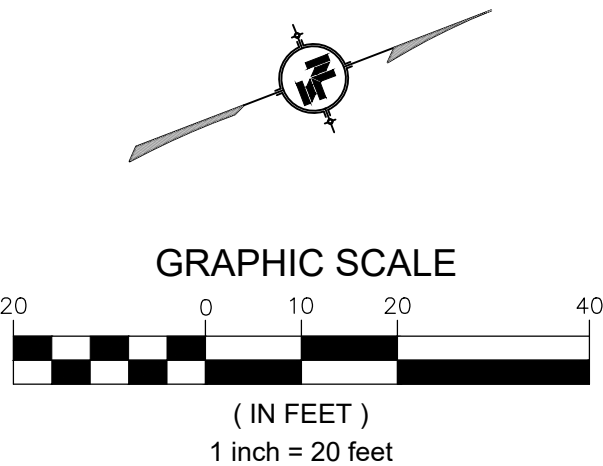
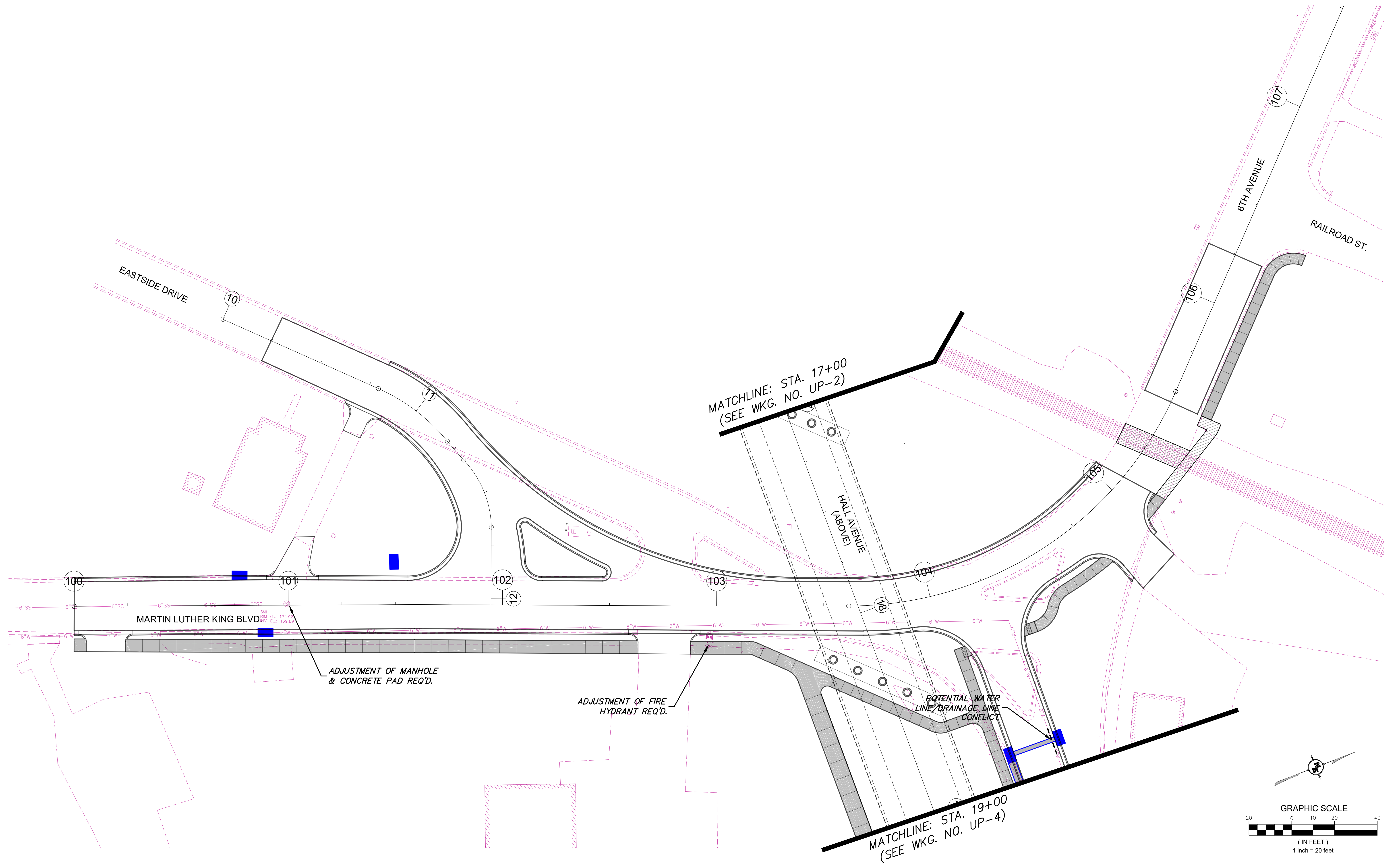
NOTES:
NO KNOWN UTILITY CONFLICTS LOCATED ON THIS SHEET.



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				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



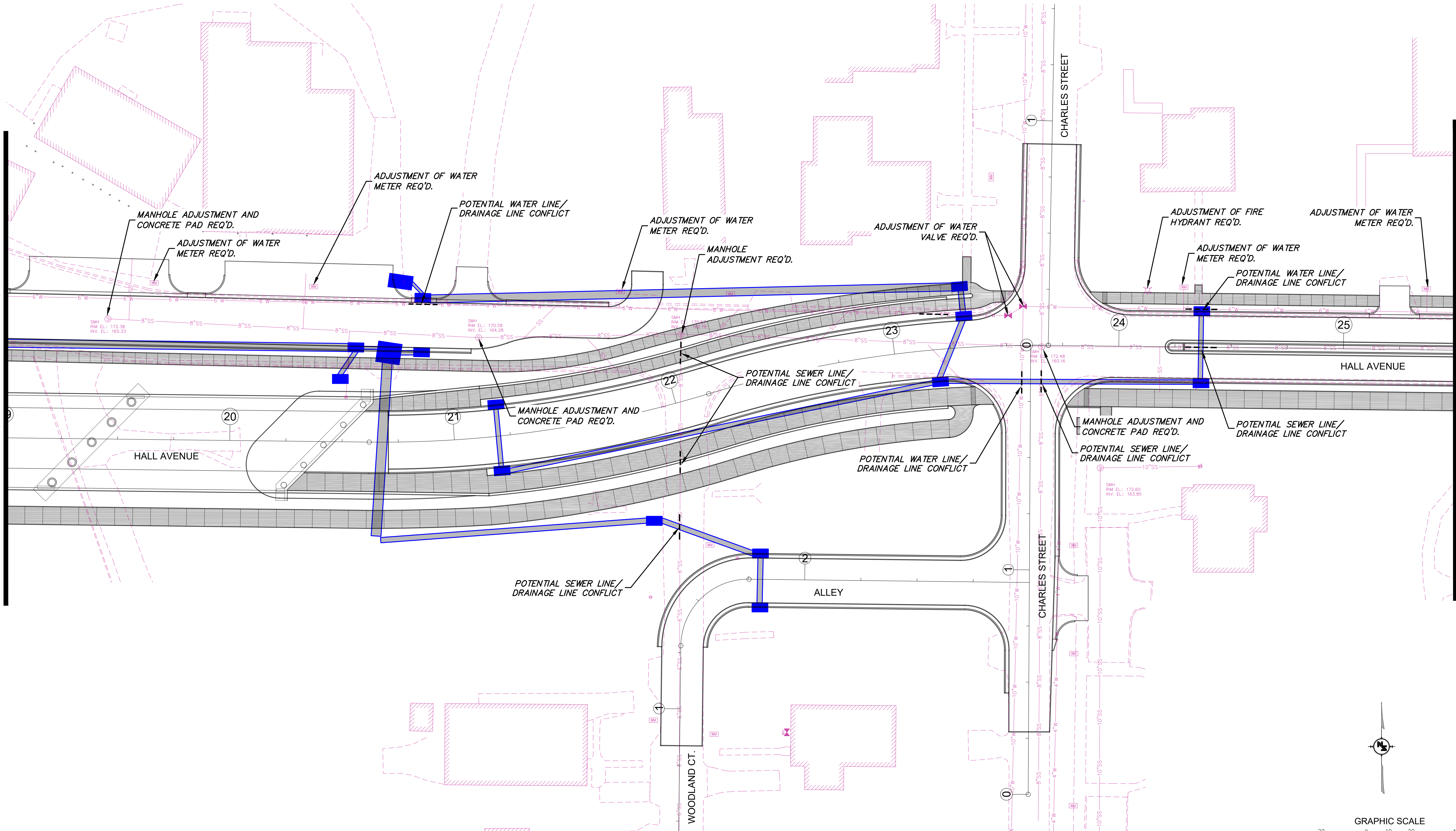
UTILITY PLAN
MARTIN LUTHER KING BLVD.
STA. 100+00 TO STA. 107+00

WORKING NUMBER:
UP-3

DRAWING NUMBER:
79

MATCHLINE: STA. 19+00 (SEE WKG. NO. UP-2)

MATCHLINE: STA. 25+50 (SEE WKG. NO. UP-5)



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	
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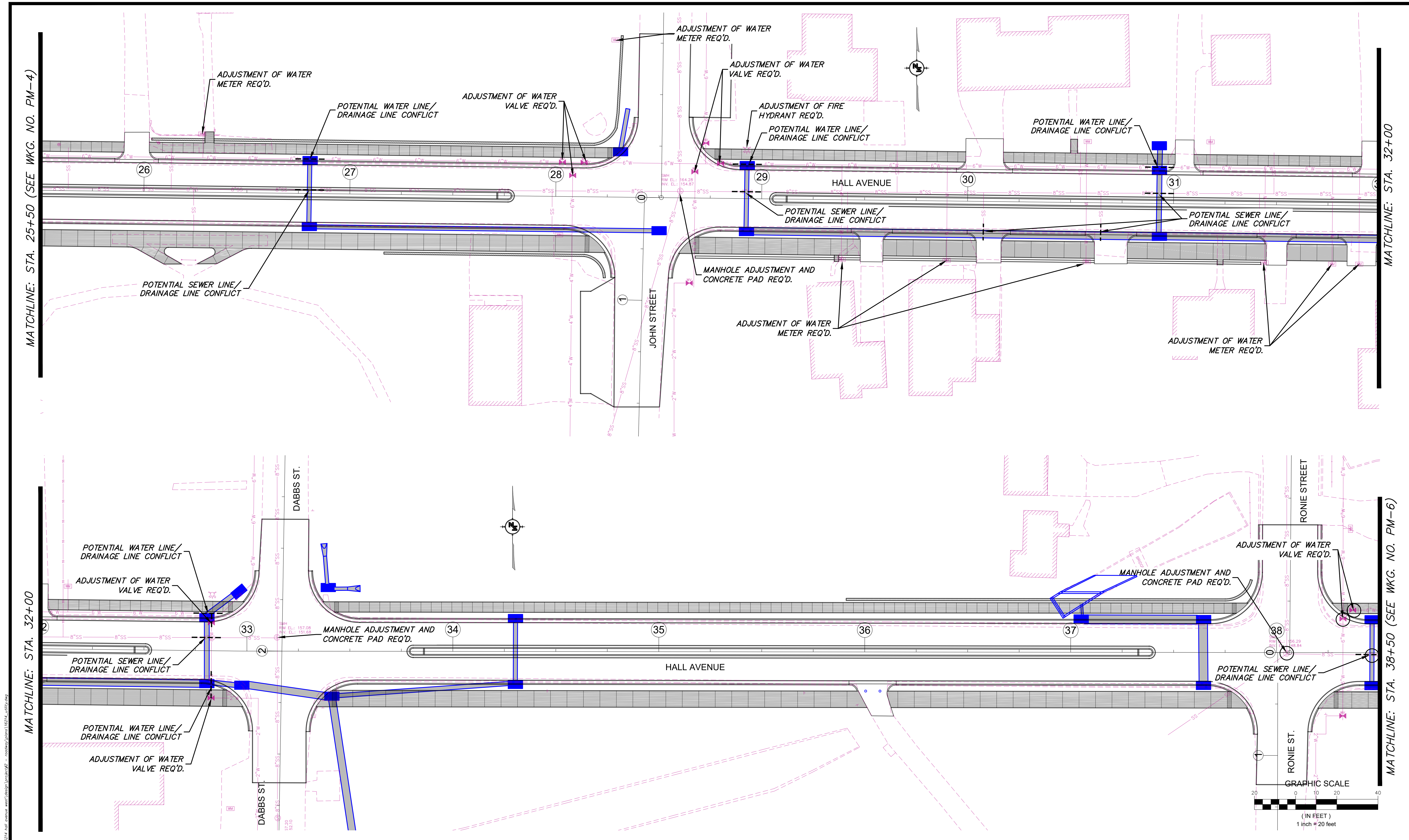
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



UTILITY PLAN
HALL AVENUE
STA. 19+00 TO STA. 25+50

WORKING NUMBER:
UP-4

DRAWING NUMBER:
80



NOTICE TO DRAWING HOLDER

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HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

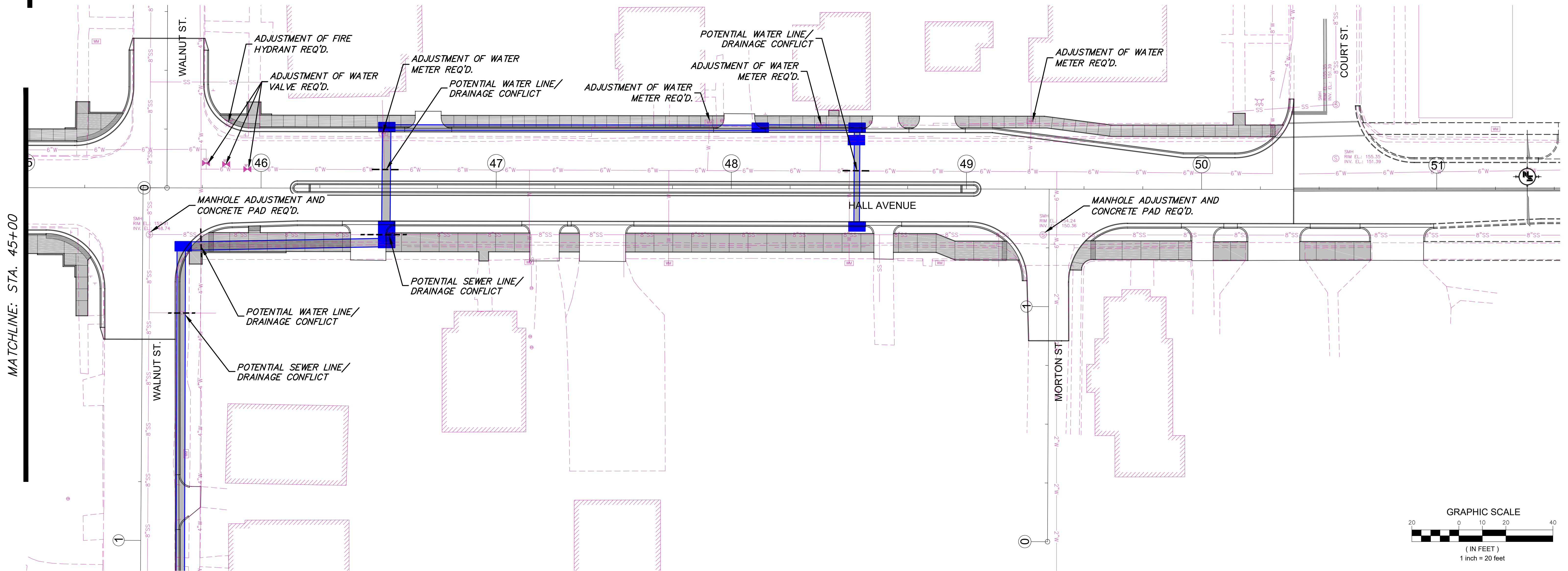
CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

UTILITY PLAN	
HALL AVENUE	
STA. 25+50 TO STA. 38+50	
WORKING NUMBER:	DRAWING NUMBER:
UP-5	81

MATCHLINE: STA. 38+50 (SEE WKG. NO. PM-5)

MATCHLINE: STA. 45+00



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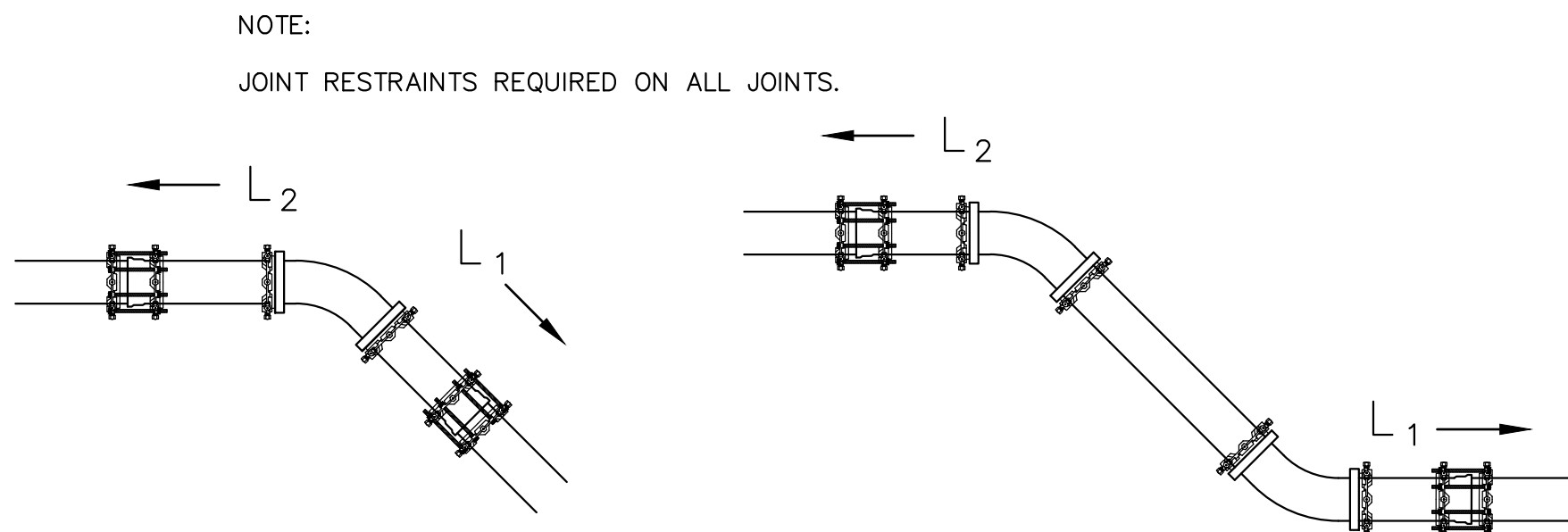
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



UTILITY PLAN
HALL AVENUE
STA. 38+50 TO E.O.P.

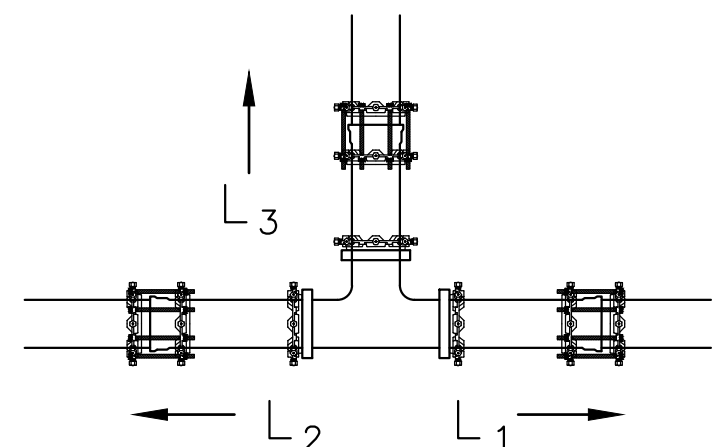
WORKING NUMBER:
UP-6

DRAWING NUMBER:
82

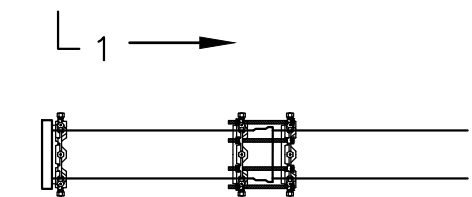


HORIZONTAL BEND

VERTICAL BEND



TEE CONNECTION



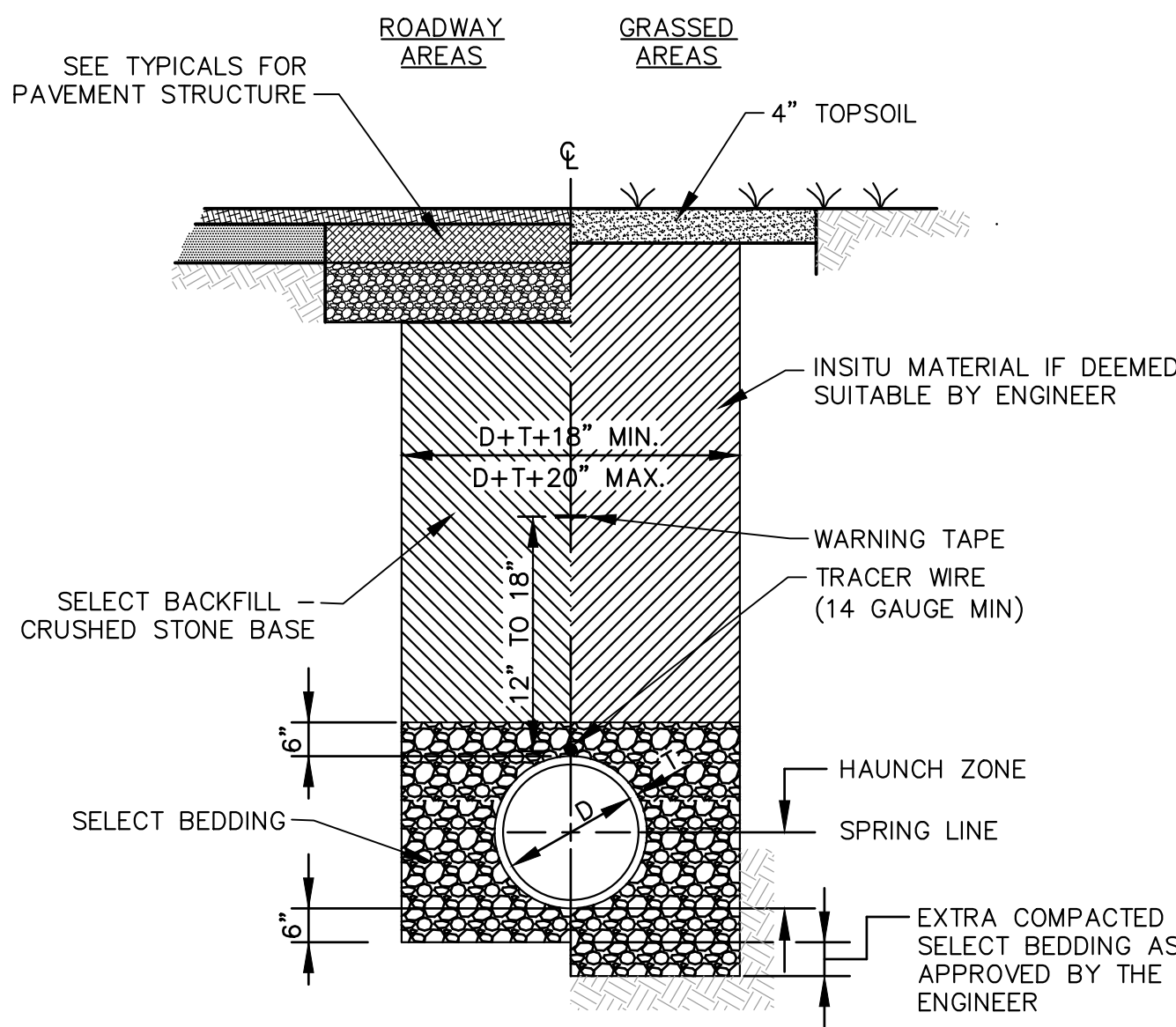
DEAD END

	RESTRAINING LENGTHS FOR JOINT RESTRAINTS								
	10" PIPE			8" PIPE			6" PIPE		
	L ₁	L ₂	L ₃	L ₁	L ₂	L ₃	L ₁	L ₂	L ₃
HORIZONTAL RESTRAINTS									
90° ELBOW	19'	19'		16'	16'		12'	12'	
45° ELBOW	8'	8'		7'	7'		5'	5'	
22 1/2° ELBOW	4'	4'		4'	4'		3'	3'	
11 1/4° ELBOW	2'	2'		2'	2'		2'	2'	
DEAD END	43'			36'			27'		
TEE 6" BRANCH	3'	3'	8'	3'	3'	12'	3'	3'	16'
8" BRANCH	3'	3'	21'	3'	3'	24'	3'	3'	27'
10" BRANCH	3'	3'	31'	3'	3'	34'	3'	3'	36'
VERTICAL RESTRAINTS									
45° ELBOW	5'	18'		4'	15'		3'	12'	
22 1/2° ELBOW	3'	9'		2'	8'		2'	6'	
11 1/4° ELBOW	2'	5'		1'	4'		1'	3'	

NOTE: MINIMUM RESTRAINED LENGTHS AS SHOWN ARE BASED ON THE FOLLOWING CONDITIONS:
PIPE: DUCTILE IRON, SOIL TYPE: SILTY SAND, TEST PRESSURE: 150 PSI, SAFETY FACTOR: 1.5 TO 1,
DEPTH OF BURY: 4 FT. TRENCH TYPE: SEE DETAIL THIS SHEET.
TEE FITTING PIPE JOINT MINIMUM LENGTH: 3 FEET.
IF THESE ARE NOT THE CONDITIONS ENCOUNTERED IN THE FIELD, CONTRACTOR SHOULD CONTACT
PRODUCT REPRESENTATIVE FOR THE REQUIRED RESTRAINT LENGTHS.

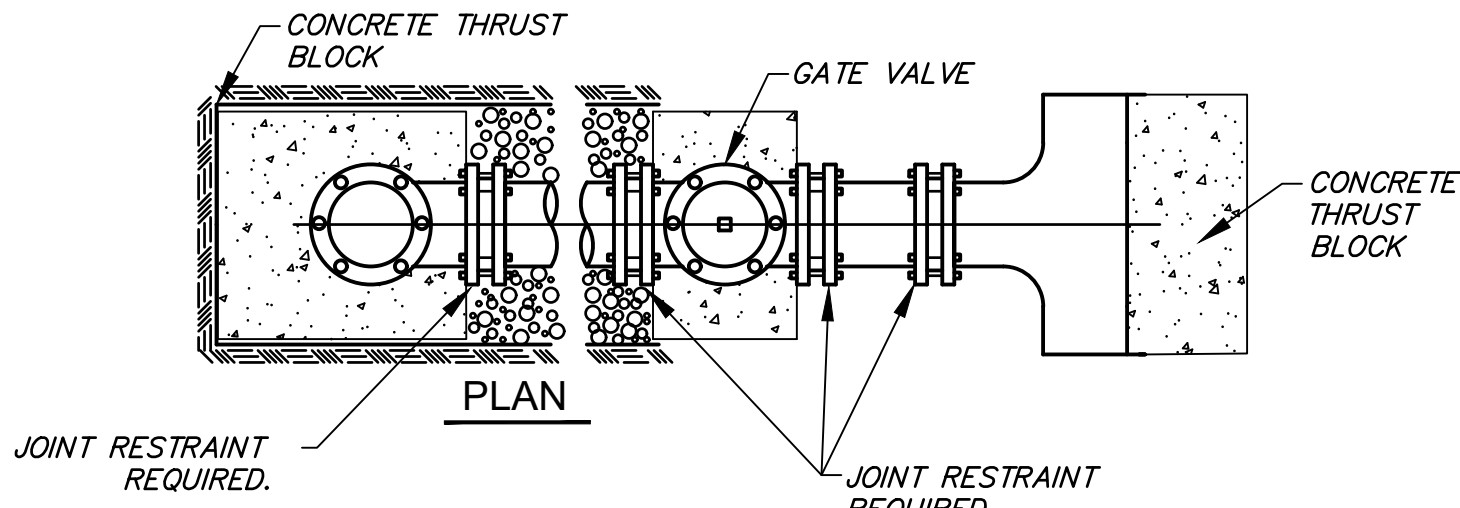
WATER MAIN JOINT RESTRAINTS

NOT TO SCALE



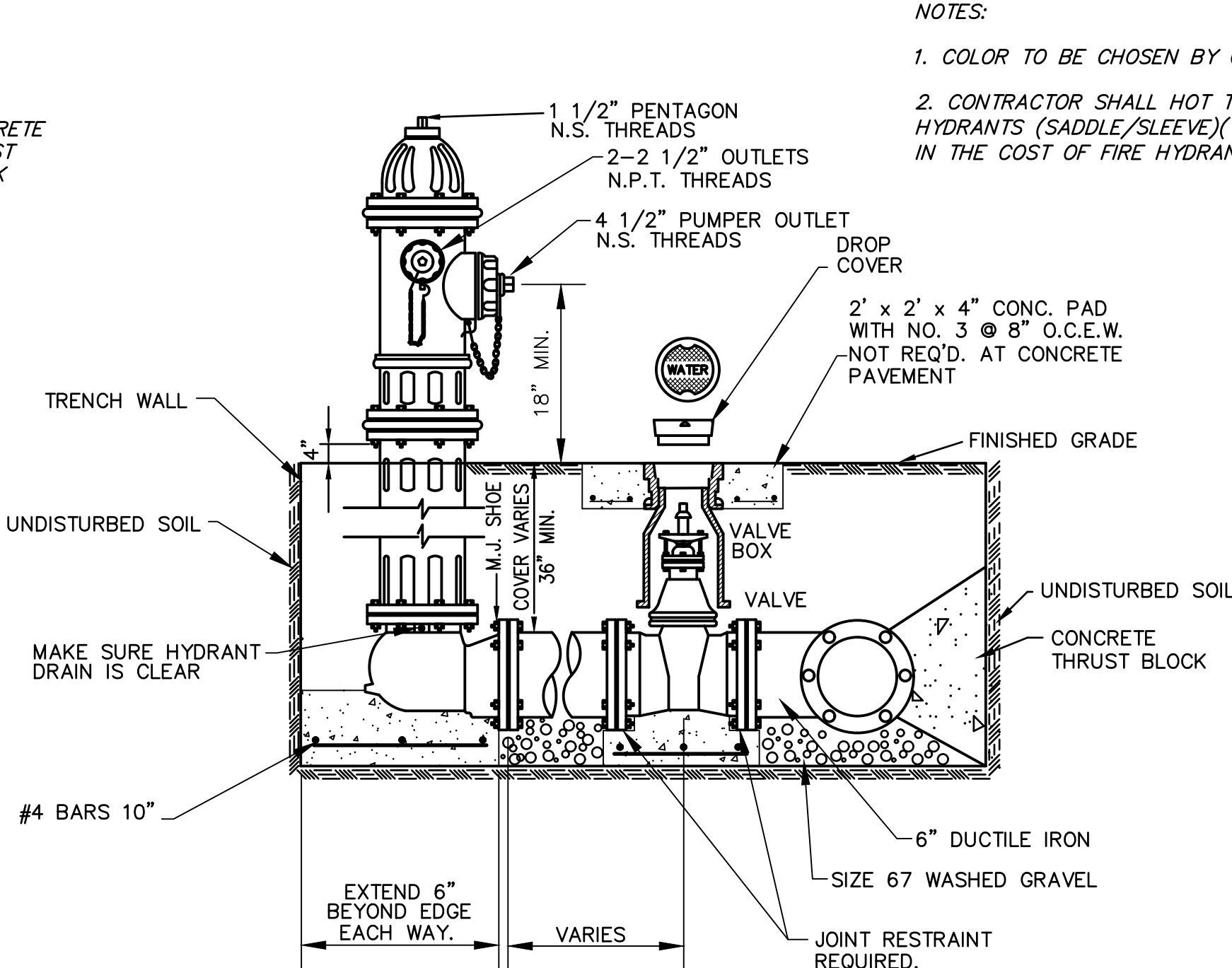
TYPICAL TRENCH DETAIL FOR UTILITY LINE

NOT TO SCALE



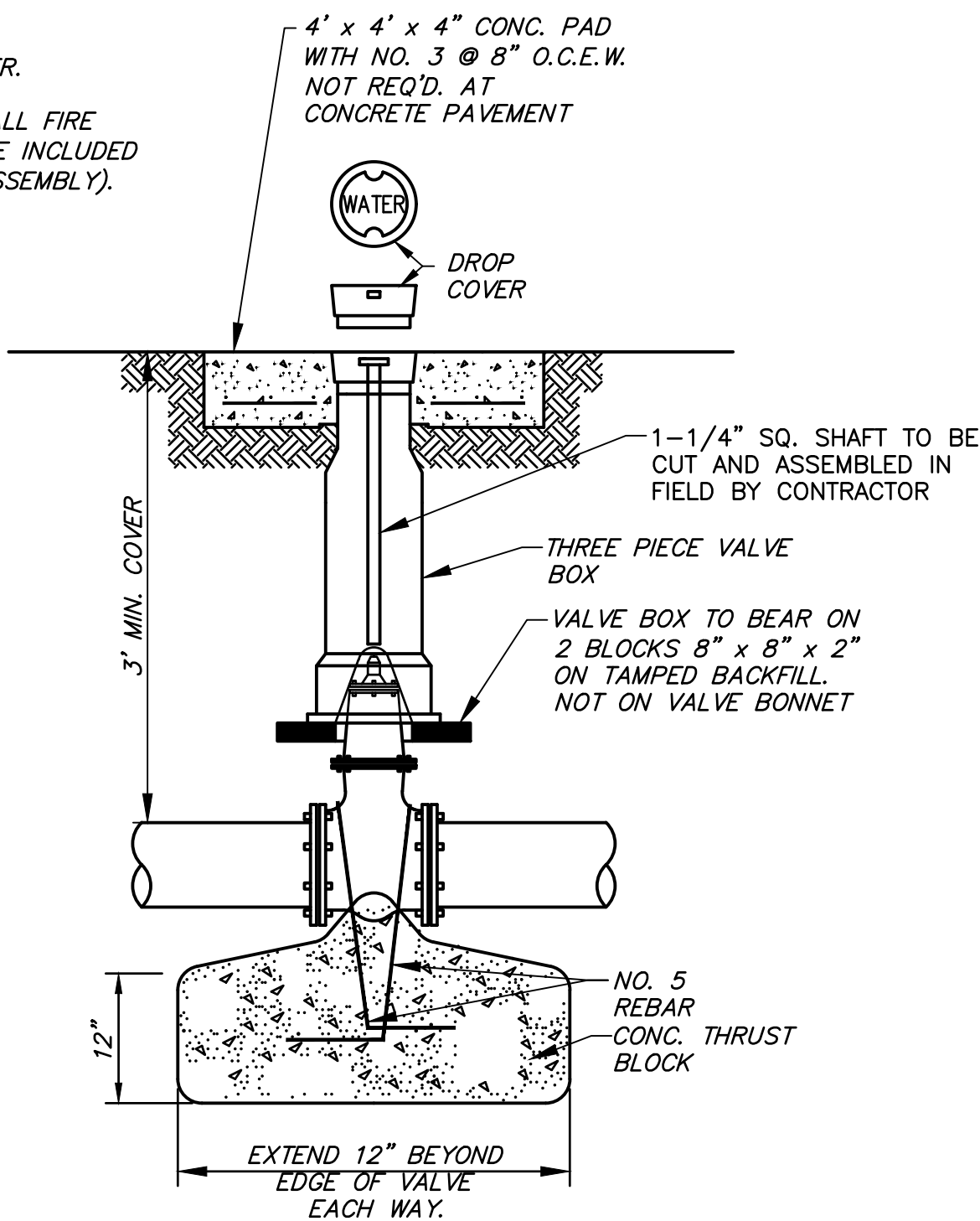
TYPICAL FIRE HYDRANT ASSEMBLY INSTALLATION

NOTE: GATE VALVES WILL BE REQUIRED ON ALL FIRE HYDRANT LEGS.
NOT TO SCALE



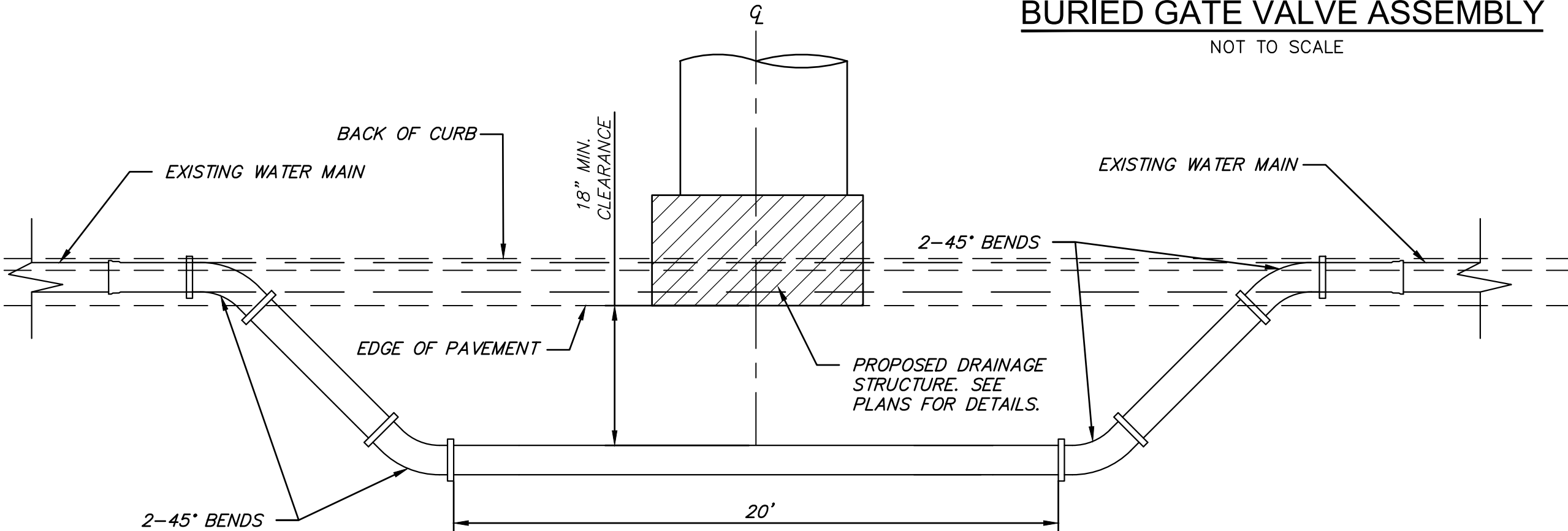
ELEVATION

NOT TO SCALE



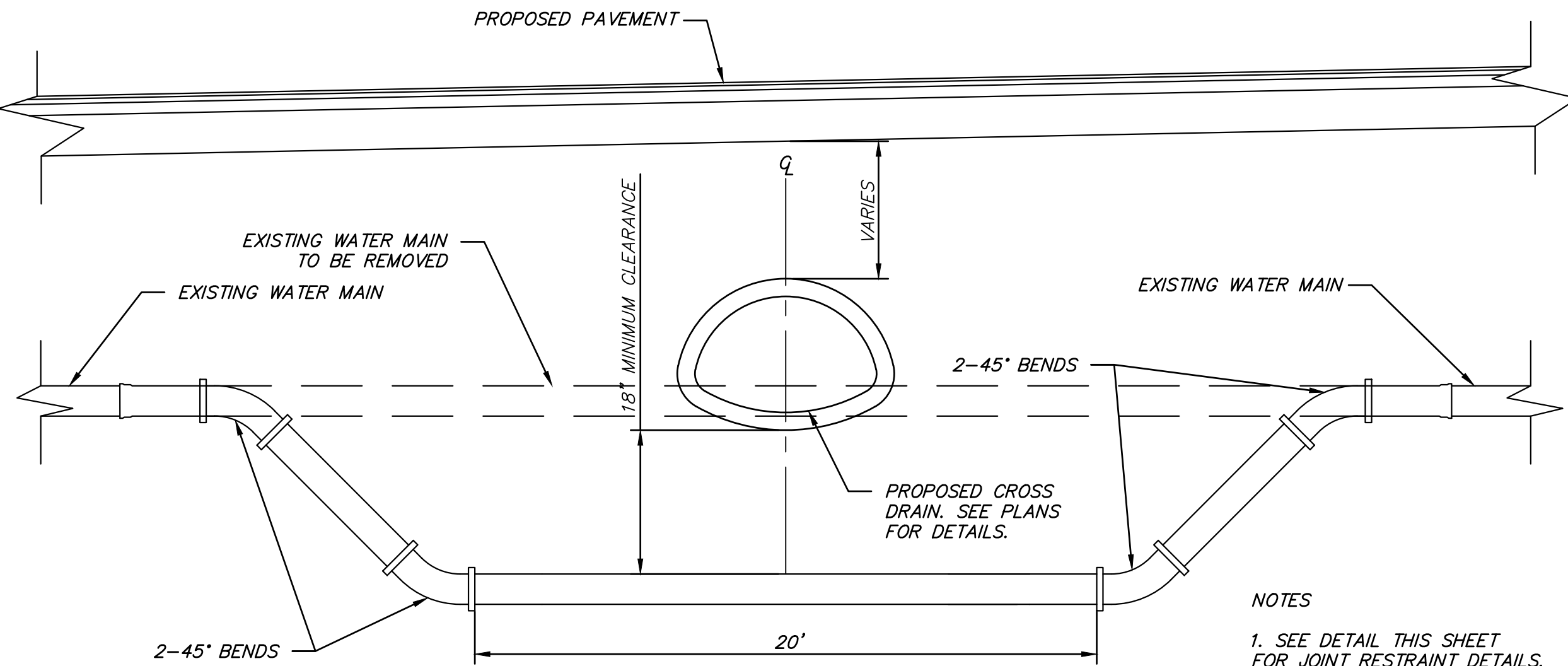
BURIED GATE VALVE ASSEMBLY

NOT TO SCALE



WATER MAIN AT STORM DRAIN
CROSSING-TYPICAL PLAN VIEW

NOT TO SCALE



WATER MAIN AT STORM DRAIN
CROSSING-TYPICAL SECTION

NOT TO SCALE

- NOTES
1. SEE DETAIL THIS SHEET FOR JOINT RESTRAINT DETAILS.
 2. SEE PLANS FOR POTENTIAL LOCATIONS.

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NOTICE TO DRAWING HOLDER

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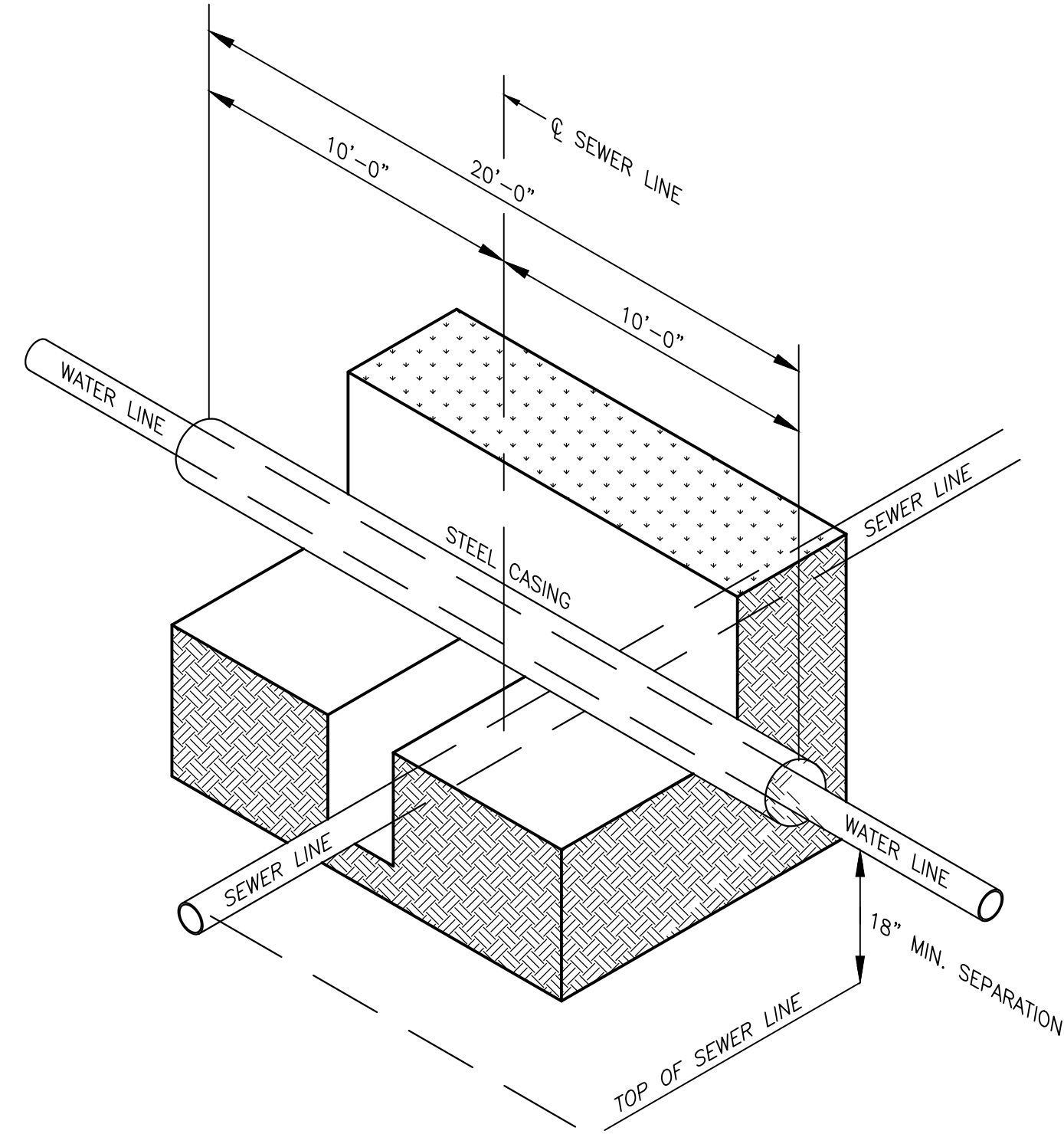
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



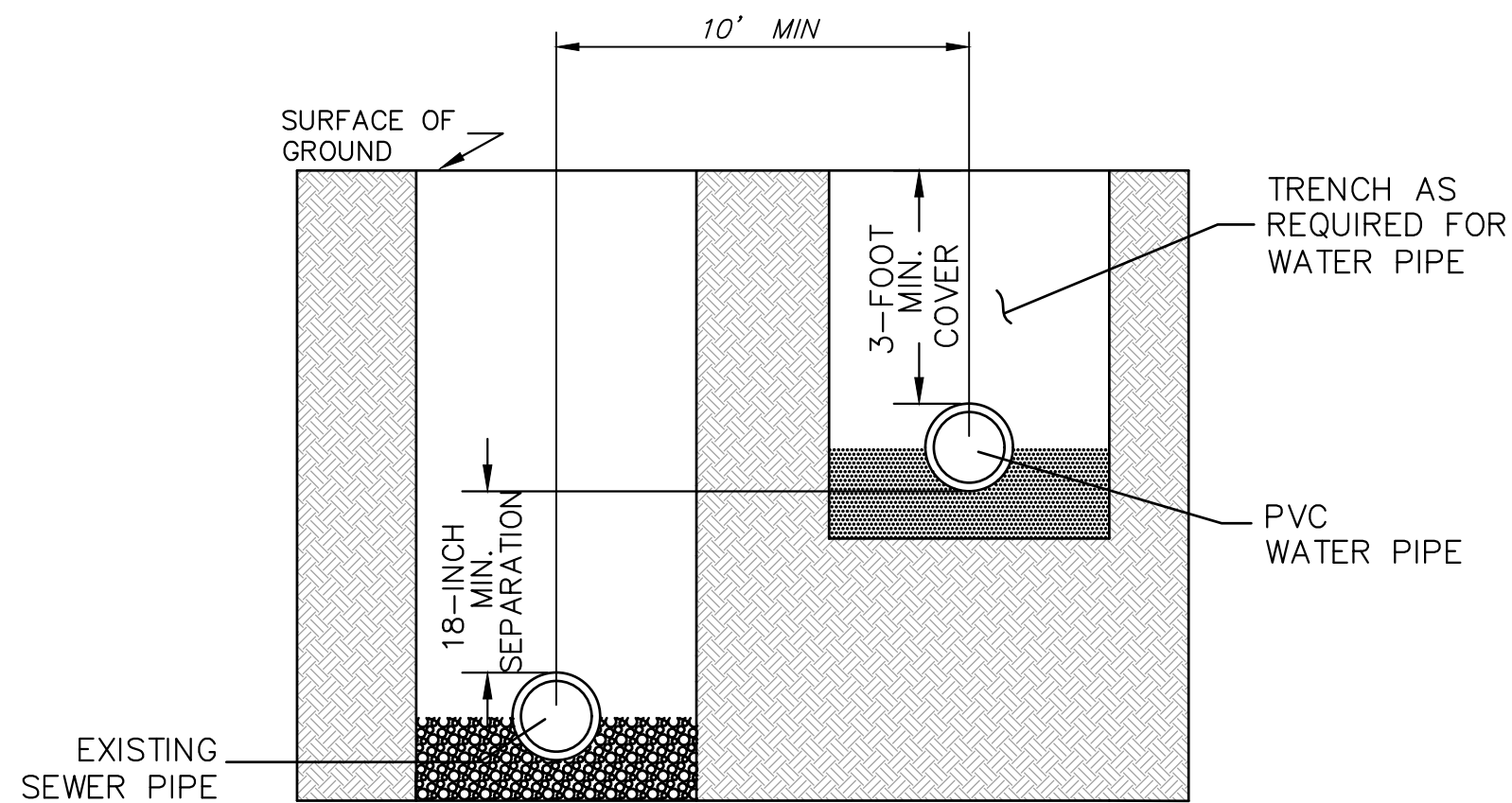
MISCELLANEOUS
UTILITY DETAILS

WORKING NUMBER:
UTD-1

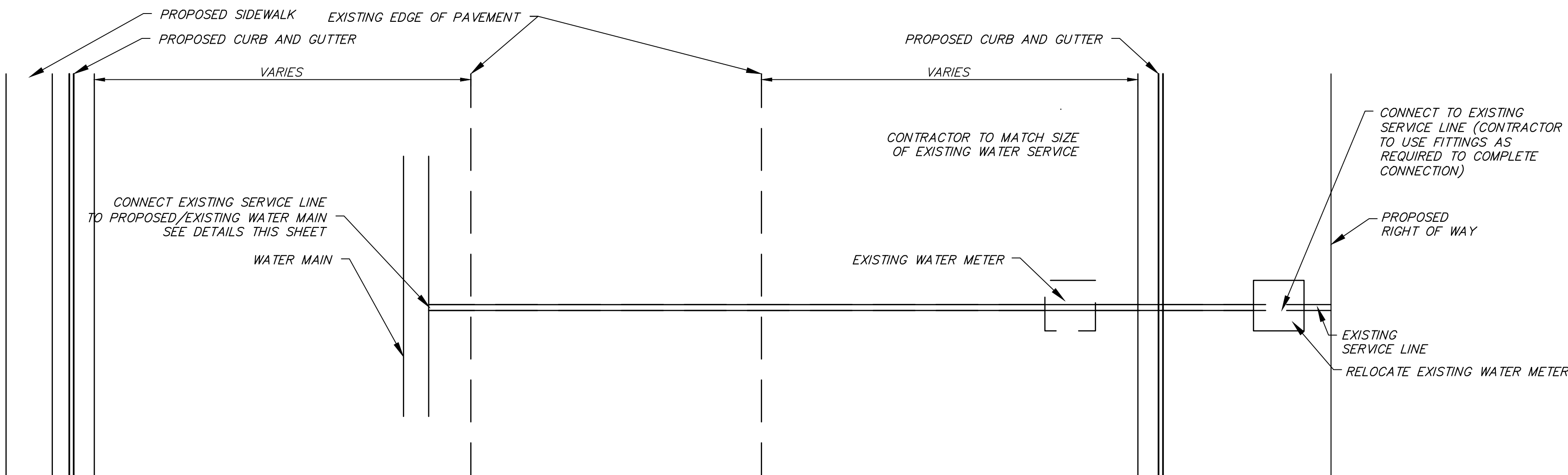
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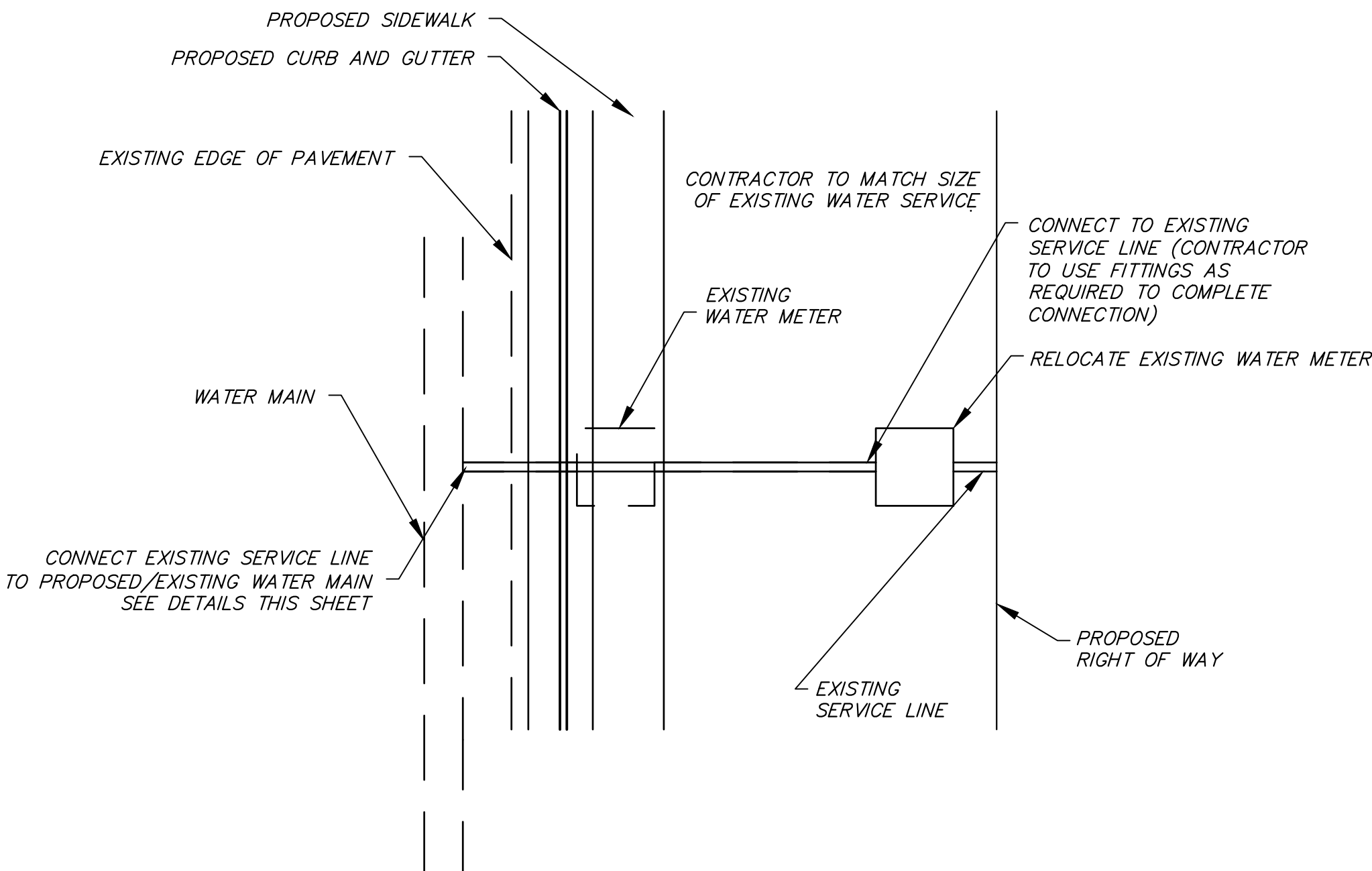
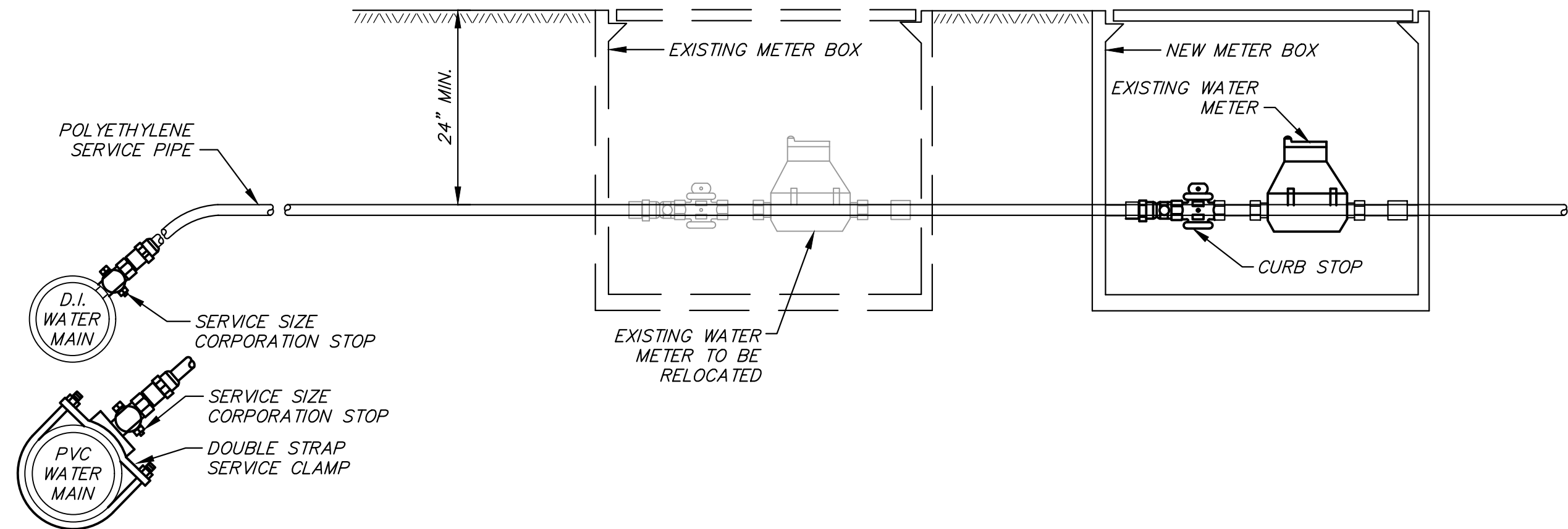
TYPICAL DETAIL FOR WATER LINE AND
SEWER LINE CROSSING REQUIREMENTS
NOT TO SCALE



SEPARATION REQUIREMENTS FOR WATER AND SEWER LINES
NOT TO SCALE



LONG SERVICE CONNECTION
NOT TO SCALE



SHORT SERVICE CONNECTION
NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL RELOCATE EXISTING WATER METER AS DIRECTED BY THE ENGINEER AND CITY. CONTRACTOR SHALL DISPOSE OF EXISTING METER BOX (COST ABSORBED).
2. CITY OF HATTIESBURG TO PROVIDE WATER METERS THAT NEED REPLACING. COST OF RELOCATING EXISTING WATER METER OR USING NEW WATER METER SHALL BE INCLUDED IN THE COST OF RELOCATING EXISTING WATER METER.
3. LONG/SHORT SERVICE CONNECTION SHALL BE PAID UNDER PAY ITEM 603-D010, "ADJUSTMENT OF WATER METER", AND SHALL INCLUDE FABRICATING, FURNISHING, AND INSTALLING THE WATER METER COMPONENTS, FURNISHING AND INSTALLING CONNECTIONS, RECONNECTION TO WATER MAIN, CURB STOP, CORPORATION STOP, WATER SERVICE LINE, NEW METER BOX, RELOCATION OF EXISTING WATER METER, BORING (LONG SERVICE), EXCAVATION, BACKFILL, BEDDING, SATISFACTORY DISPOSAL OF SURPLUS MATERIALS, AND ALL EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

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NOTICE TO DRAWING HOLDER
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
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FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



NEEL-SCHAFFER
Solutions you can build upon

MISCELLANEOUS UTILITY DETAILS	
WORKING NUMBER: UTD-2	DRAWING NUMBER: 84

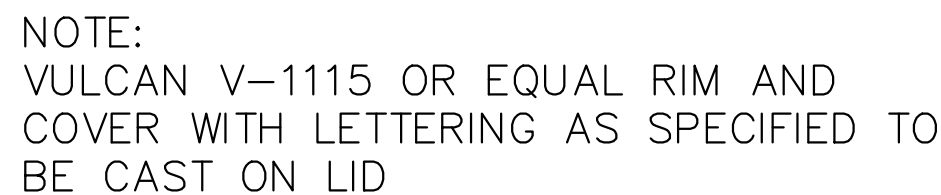


STANDARD DRAINAGE MANHOLE FRAME & COVER

NOT TO SCALE



NOT TO SCALE

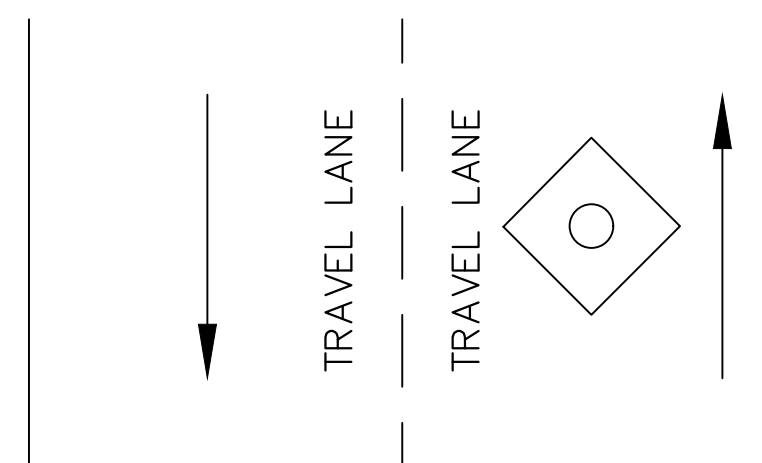


STANDARD SEWER MANHOLE COVER

NOT TO SCALE



NOT TO SCALE



CONCRETE PAD FOR MANHOLE & VALVES

NOT TO SCALE

NOTE:

1. CONCRETE PAD TO BE 12" THICK.
2. #5 REBAR TO BE PLACED 3" FROM TOP OF CONCRETE PAD.
3. CONCRETE TO BE PLACED IN A DIAMOND SHAPE ALONG TRAVEL LANE. (SEE ABOVE)
4. PADS TO BE INSTALLED AFTER NEW ASPHALT IS IN PLACE. PAD AND LID TO MATCH NEW ASPHALT CROSS-SLOPE.

NOTES:

1. CONFLICT BOX SHALL BE MEASURED AS EACH AND SHALL INCLUDE FABRICATING, FURNISHING, INSTALLING THE CONFLICT BOX, FURNISHING AND INSTALLING CONNECTIONS TO OTHER STRUCTURES, ALL CONCRETE, GROUT, REINFORCEMENT, EXCAVATION, BACKFILL, STEEL CASING, BEDDING, SATISFACTORY DISPOSAL OF SURPLUS MATERIALS, AND ALL EQUIPMENT, TOOLS, LABOR, AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

2. CONCRETE SHALL BE CLASS "B" CONCRETE AND MEET THE REQUIREMENTS OF SECTION 804. REINFORCING STEEL SHALL MEET THE REQUIREMENTS OF SECTION 602.

3. WASHED GRAVEL SHALL BE SIZE 57 AND MEET THE REQUIREMENTS OF SECTION 703.

4. ALL EXPOSED EDGES SHALL BE CHAMFERED $3/4"$



SECTION A-A



TYPICAL CONFLICT BOX

NOT TO SCALE



MISCELLANEOUS UTILITY DETAILS

WORKING NUMBER:

UTD-3

DRAWING NUMBER:

85

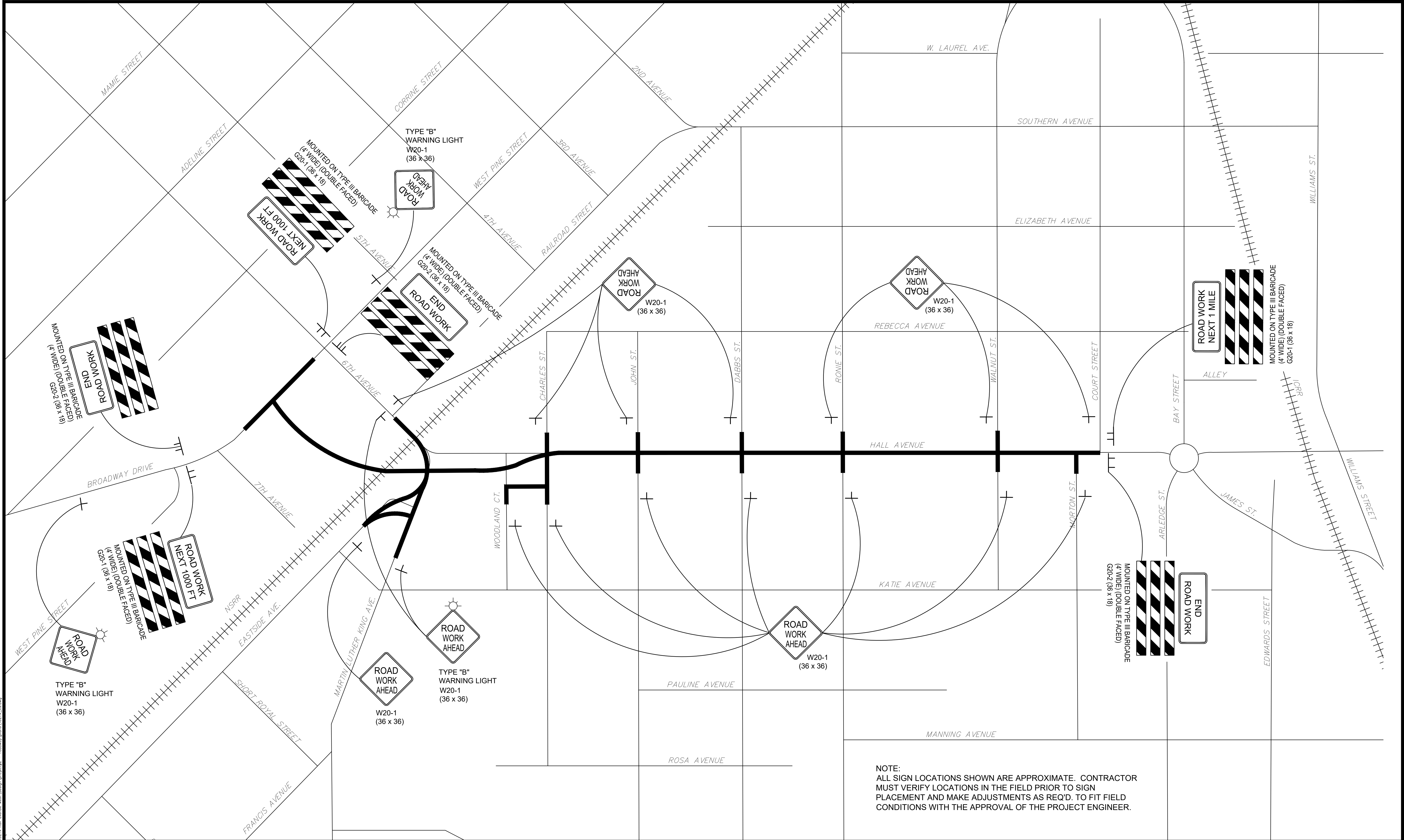
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				QA/QC: MWF	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



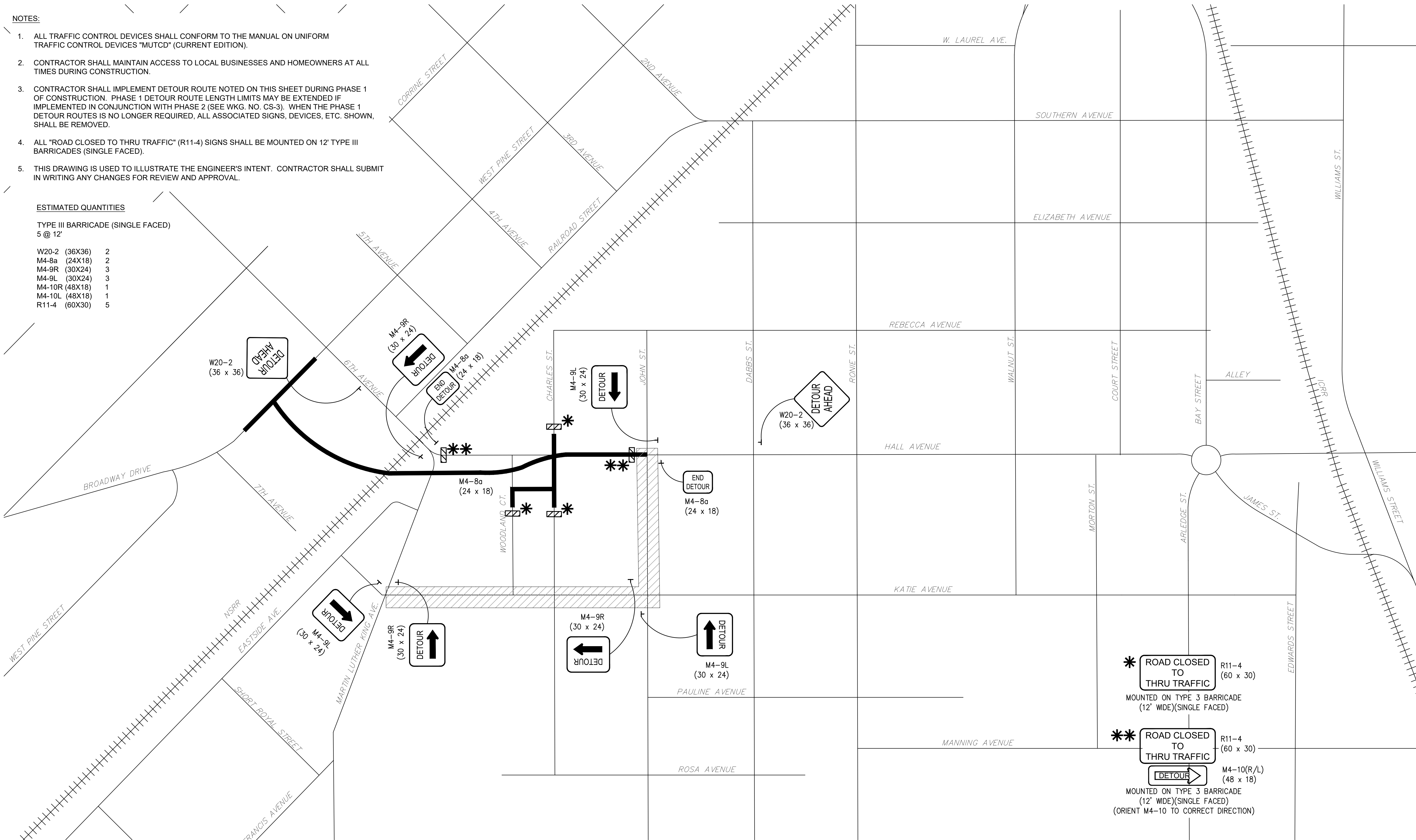
NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		TRAFFIC CONTROL DETAIL CONSTRUCTION SIGNING	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000				
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					SCALE: 1" = 200'				
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					DRWN: JPF DATE: 02/2022				
					CHKD: GPC DATE: 08/2022				
				QA/QC: MWE DATE: 08/2022			WORKING NUMBER: CS-1	DRAWING NUMBER: 86	

- NOTES:
1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES "MUTCD" (CURRENT EDITION).
 2. CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL BUSINESSES AND HOMEOWNERS AT ALL TIMES DURING CONSTRUCTION.
 3. CONTRACTOR SHALL IMPLEMENT DETOUR ROUTE NOTED ON THIS SHEET DURING PHASE 1 OF CONSTRUCTION. PHASE 1 DETOUR ROUTE LENGTH LIMITS MAY BE EXTENDED IF IMPLEMENTED IN CONJUNCTION WITH PHASE 2 (SEE WKG. NO. CS-3). WHEN THE PHASE 1 DETOUR ROUTES IS NO LONGER REQUIRED, ALL ASSOCIATED SIGNS, DEVICES, ETC. SHOWN, SHALL BE REMOVED.
 4. ALL "ROAD CLOSED TO THRU TRAFFIC" (R11-4) SIGNS SHALL BE MOUNTED ON 12" TYPE III BARRICADES (SINGLE FACED).
 5. THIS DRAWING IS USED TO ILLUSTRATE THE ENGINEER'S INTENT. CONTRACTOR SHALL SUBMIT IN WRITING ANY CHANGES FOR REVIEW AND APPROVAL.

ESTIMATED QUANTITIES

TYPE III BARRICADE (SINGLE FACED)
5 @ 12'

W20-2 (36X36)	2
M4-8a (24X18)	2
M4-9R (30X24)	3
M4-9L (30X24)	3
M4-10R (48X18)	1
M4-10L (48X18)	1
R11-4 (60X30)	5



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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



CONSTRUCTION SIGNING DETAIL
DETOUR ROUTE - PHASE 1

WORKING NUMBER:	DRAWING NUMBER:
CS-2	87

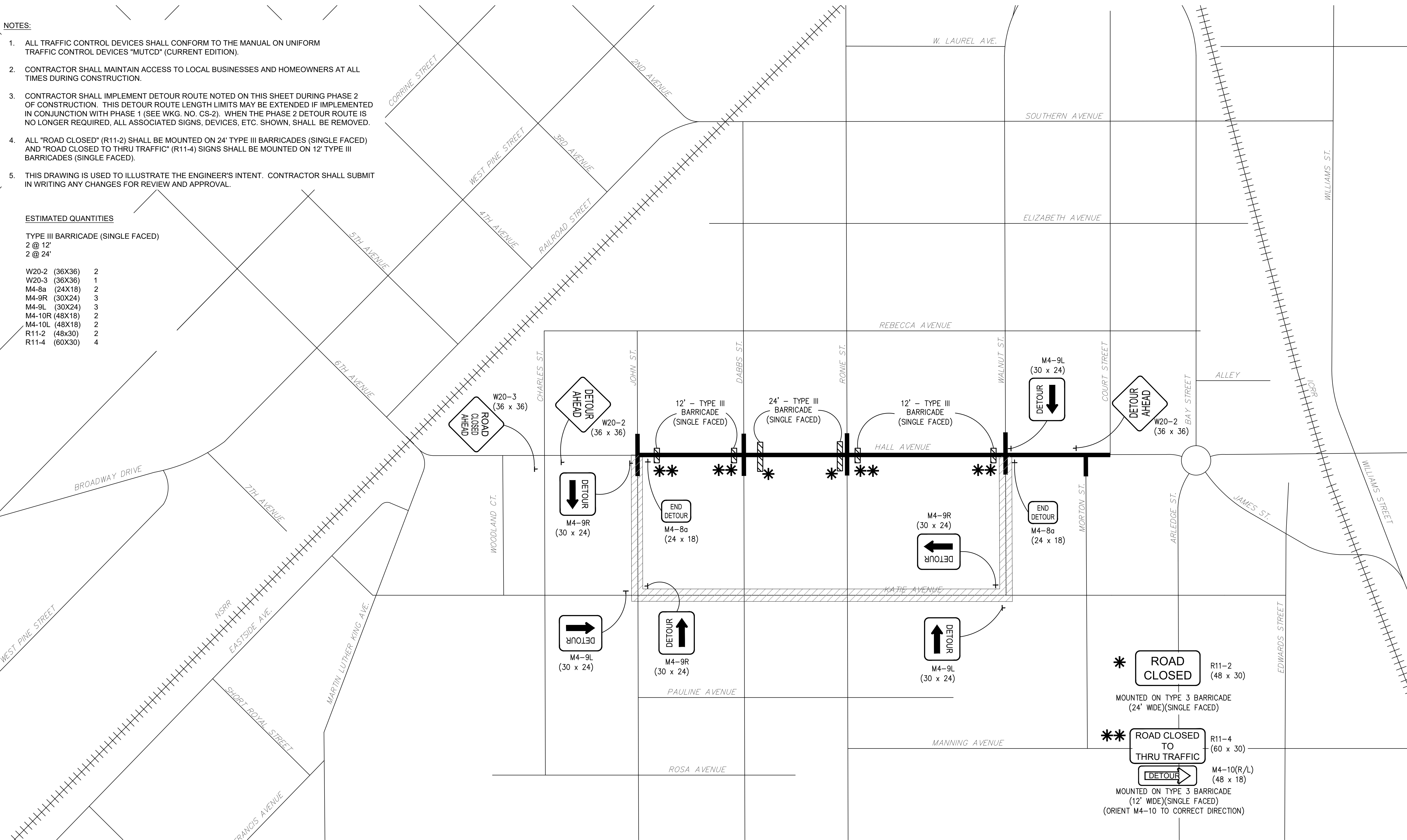
NOTES:

1. ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES "MUTCD" (CURRENT EDITION).
2. CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL BUSINESSES AND HOMEOWNERS AT ALL TIMES DURING CONSTRUCTION.
3. CONTRACTOR SHALL IMPLEMENT DETOUR ROUTE NOTED ON THIS SHEET DURING PHASE 2 OF CONSTRUCTION. THIS DETOUR ROUTE LENGTH LIMITS MAY BE EXTENDED IF IMPLEMENTED IN CONJUNCTION WITH PHASE 1 (SEE WKG. NO. CS-2). WHEN THE PHASE 2 DETOUR ROUTE IS NO LONGER REQUIRED, ALL ASSOCIATED SIGNS, DEVICES, ETC. SHOWN, SHALL BE REMOVED.
4. ALL "ROAD CLOSED" (R11-2) SHALL BE MOUNTED ON 24' TYPE III BARRICADES (SINGLE FACED) AND "ROAD CLOSED TO THRU TRAFFIC" (R11-4) SIGNS SHALL BE MOUNTED ON 12' TYPE III BARRICADES (SINGLE FACED).
5. THIS DRAWING IS USED TO ILLUSTRATE THE ENGINEER'S INTENT. CONTRACTOR SHALL SUBMIT IN WRITING ANY CHANGES FOR REVIEW AND APPROVAL.

ESTIMATED QUANTITIES

TYPE III BARRICADE (SINGLE FACED)
2 @ 12'
2 @ 24'

W20-2 (36X36) 2
W20-3 (36X36) 1
M4-8a (24X18) 2
M4-9R (30X24) 3
M4-9L (30X24) 3
M4-10R (48X18) 2
M4-10L (48X18) 2
R11-2 (48X30) 2
R11-4 (60X30) 4



NOTICE TO DRAWING HOLDER

NEEL-SCHAFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	
				N-S PROJECT NO.: NS.16214.000
				FILENAME: 16214_CS.dwg
				SCALE: 1" = 200'
				SURVEYED BY:
				DSGN: GPC DATE: 02/2022
				DRWN: JPF DATE: 02/2022
				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

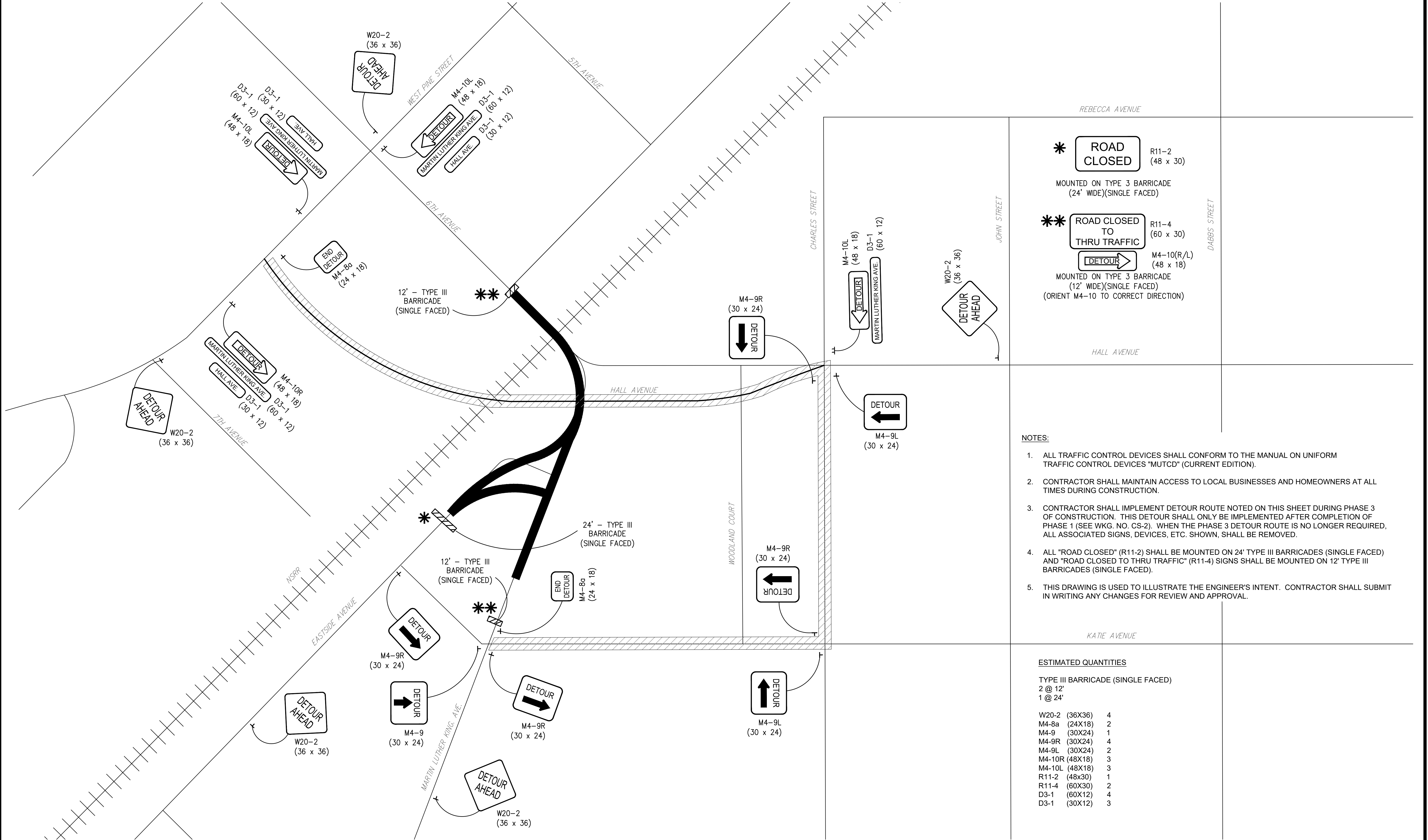


CONSTRUCTION SIGNING DETAIL
DETOUR ROUTE - PHASE 2

WORKING NUMBER:
CS-3

DRAWING NUMBER:
88

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*

ROAD
CLOSED

R11-2
(48 x 30)

MOUNTED ON TYPE 3 BARRICADE
(24' WIDE)(SINGLE FACED)

**

ROAD CLOSED
TO
THRU TRAFFIC

R11-4
(60 x 30)

DETOUR

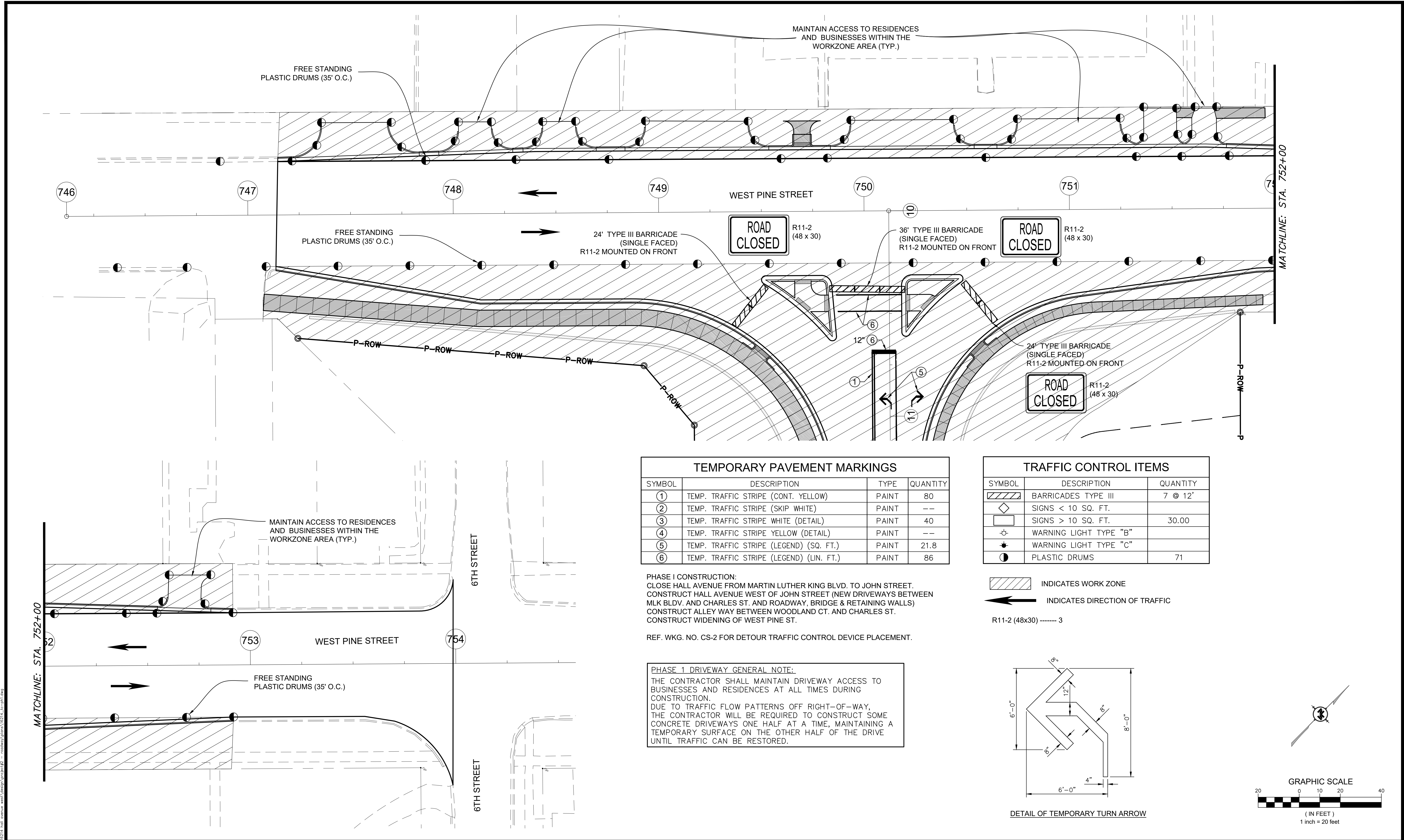
M4-10(R/L)
(48 x 18)

MOUNTED ON TYPE 3 BARRICADE
(12' WIDE)(SINGLE FACED)
(ORIENT M4-10 TO CORRECT DIRECTION)

- NOTES:
- ALL TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES "MUTCD" (CURRENT EDITION).
 - CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL BUSINESSES AND HOMEOWNERS AT ALL TIMES DURING CONSTRUCTION.
 - CONTRACTOR SHALL IMPLEMENT DETOUR ROUTE NOTED ON THIS SHEET DURING PHASE 3 OF CONSTRUCTION. THIS DETOUR SHALL ONLY BE IMPLEMENTED AFTER COMPLETION OF PHASE 1 (SEE WKG. NO. CS-2). WHEN THE PHASE 3 DETOUR ROUTE IS NO LONGER REQUIRED, ALL ASSOCIATED SIGNS, DEVICES, ETC. SHOWN, SHALL BE REMOVED.
 - ALL "ROAD CLOSED" (R11-2) SHALL BE MOUNTED ON 24' TYPE III BARRICADES (SINGLE FACED) AND "ROAD CLOSED TO THRU TRAFFIC" (R11-4) SIGNS SHALL BE MOUNTED ON 12' TYPE III BARRICADES (SINGLE FACED).
 - THIS DRAWING IS USED TO ILLUSTRATE THE ENGINEER'S INTENT. CONTRACTOR SHALL SUBMIT IN WRITING ANY CHANGES FOR REVIEW AND APPROVAL.

ESTIMATED QUANTITIES	
TYPE III BARRICADE (SINGLE FACED)	
2 @ 12'	
1 @ 24'	
W20-2 (36X36)	4
M4-8a (24X18)	2
M4-9 (30X24)	1
M4-9R (30X24)	4
M4-9L (30X24)	2
M4-10R (48X18)	3
M4-10L (48X18)	3
R11-2 (48X30)	1
R11-4 (60X30)	2
D3-1 (60X12)	4
D3-1 (30X12)	3

NOTICE TO DRAWING HOLDER		REVISIONS		DRAWING INFORMATION		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		NEEL-SCHAFFER Solutions you can build upon		CONSTRUCTION SIGNING DETAIL DETOUR ROUTE - PHASE 3	
NEEL-SCHAFFER, 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.		NO.	DATE	BY	DESCRIPTION					WORKING NUMBER:	DRAWING NUMBER:
						N-S PROJECT NO.: NS.16214.000				CS-4	89
						FILENAME: 16214_CS.dwg					
						SCALE: 1" = 100'					
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						DSGN: GPC DATE: 02/2022					
						DRWN: JPF DATE: 02/2022					
						CHKD: GPC DATE: 08/2022					
						QA/QC: MWE DATE: 08/2022					



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				DSGN: GPC DATE: 04/2022
				DRWN: JPF DATE: 04/2022
				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY

WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA/108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

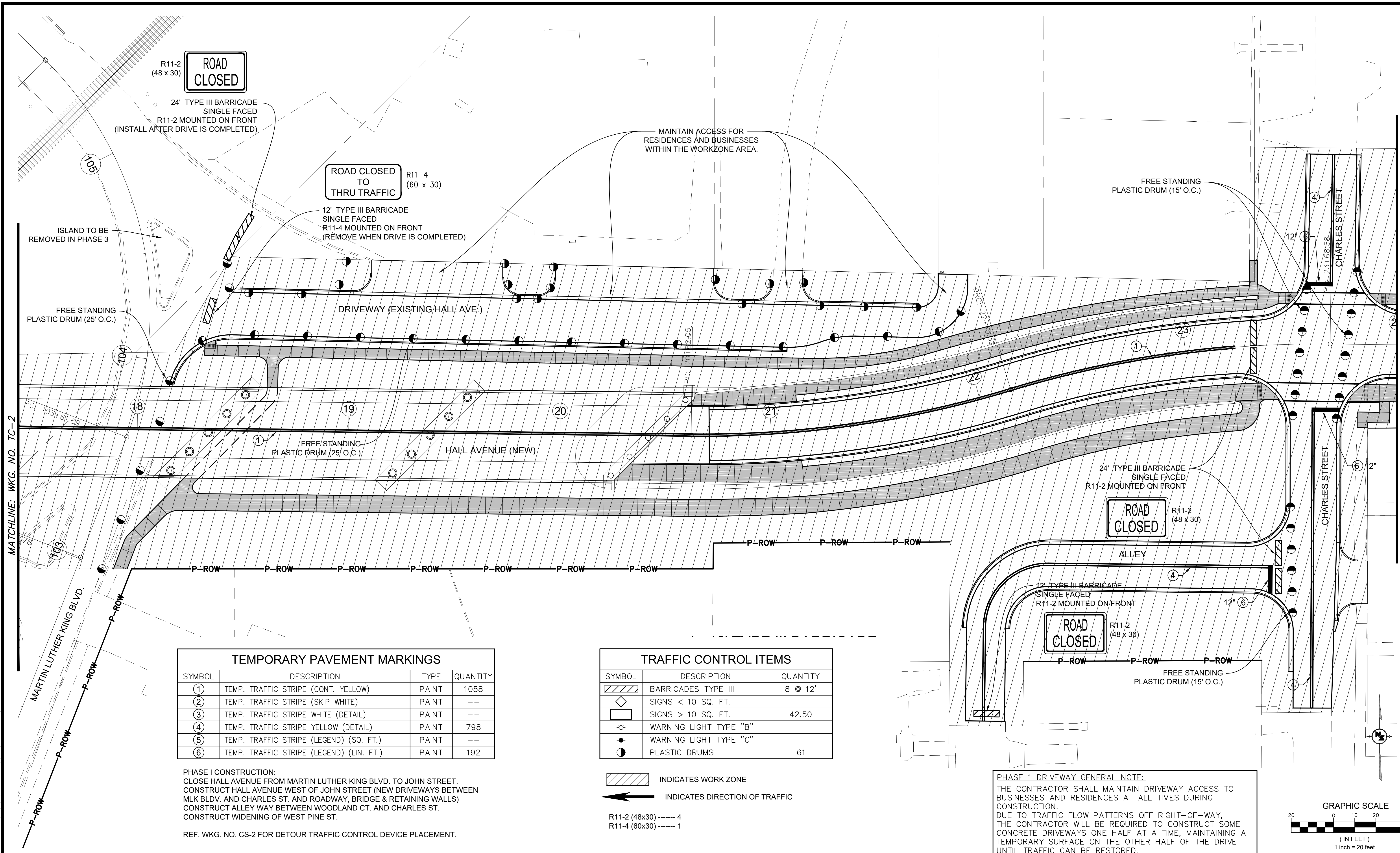
HATTIESBURG, MISSISSIPPI

TRAFFIC CONTROL PLAN

PHASE 1 (WEST PINE STREET)

STA. 746+00 TO STA. 754+00

WORKING NUMBER:	DRAWING NUMBER:
TC-1	90



TEMPORARY PAVEMENT MARKINGS			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	1058
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	--
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	--
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	798
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	--
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	192

PHASE I CONSTRUCTION:
CLOSE HALL AVENUE FROM MARTIN LUTHER KING BLVD. TO JOHN STREET.
CONSTRUCT HALL AVENUE WEST OF JOHN STREET (NEW DRIVEWAYS BETWEEN MLK BLDV. AND CHARLES ST. AND ROADWAY, BRIDGE & RETAINING WALLS)
CONSTRUCT ALLEY WAY BETWEEN WOODLAND CT. AND CHARLES ST.
CONSTRUCT WIDENING OF WEST PINE ST.

REF. WKG. NO. CS-2 FOR DETOUR TRAFFIC CONTROL DEVICE PLACEMENT.

TRAFFIC CONTROL ITEMS		
SYMBOL	DESCRIPTION	QUANTITY
	BARRICADES TYPE III	8 @ 12'
	SIGNS < 10 SQ. FT.	
	SIGNS > 10 SQ. FT.	42.50
	WARNING LIGHT TYPE "B"	
	WARNING LIGHT TYPE "C"	
	PLASTIC DRUMS	61

INDICATES WORK ZONE
 INDICATES DIRECTION OF TRAFFIC
R11-2 (48x30) ----- 4
R11-4 (60x30) ----- 1

PHASE 1 DRIVEWAY GENERAL NOTE:
THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION.
DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY, THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE UNTIL TRAFFIC CAN BE RESTORED.

NOTICE TO DRAWING HOLDER
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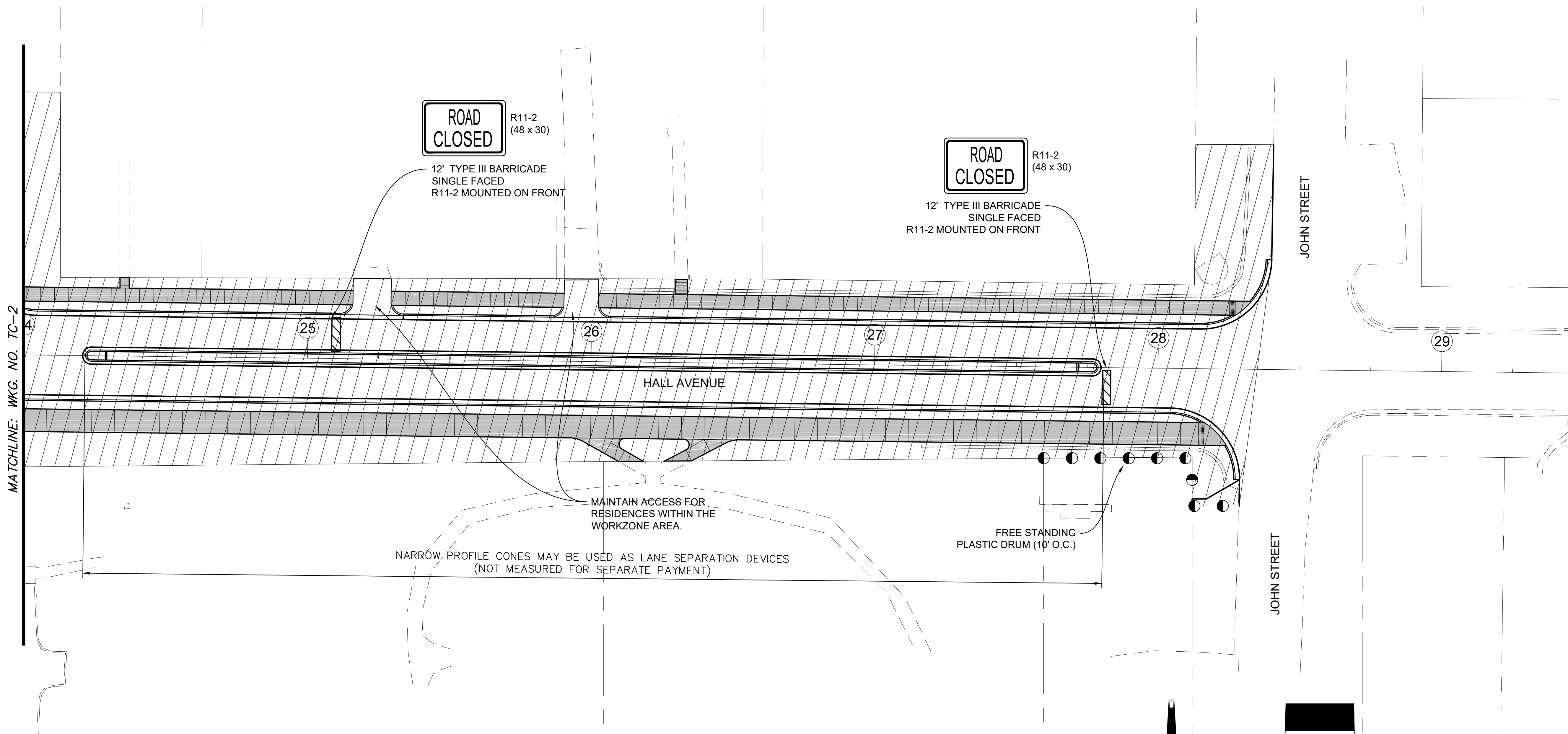
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FILENAME: 16214_TC-PH1.dwg	
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DSGN: GPC	DATE: 04/2022
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QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TRAFFIC CONTROL PLAN
PHASE 1 (HALL AVENUE)
STA. 18+00 TO STA. 24+00

WORKING NUMBER:	DRAWING NUMBER:
TC-3	92



TEMPORARY PAVEMENT MARKINGS			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	--
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	--
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	--
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	--
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	--
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	--

PHASE 1 CONSTRUCTION:
CLOSE HALL AVENUE FROM MARTIN LUTHER KING BLVD. TO JOHN STREET.
CONSTRUCT HALL AVENUE WEST OF JOHN STREET (NEW DRIVEWAYS BETWEEN
MLK BLVD. AND CHARLES ST. AND ROADWAY, BRIDGE & RETAINING WALLS)
CONSTRUCT ALLEY WAY BETWEEN WOODLAND CT. AND CHARLES ST.
CONSTRUCT WIDENING OF WEST PINE ST.

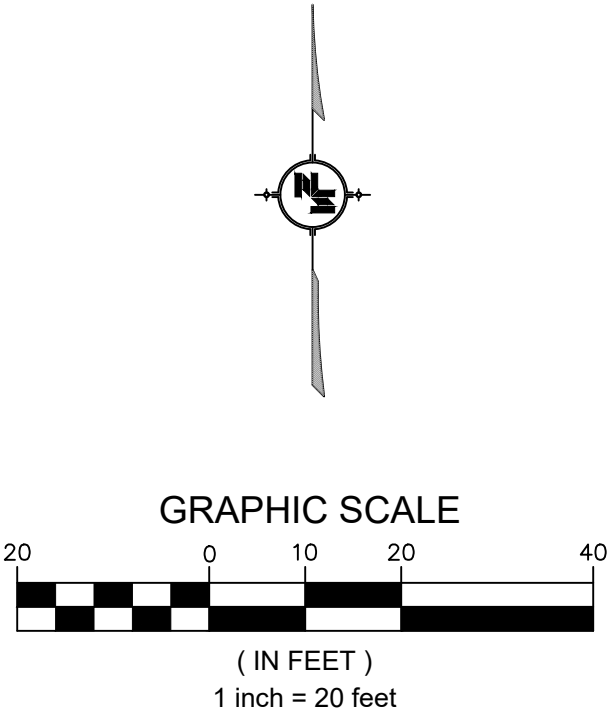
REF. WKG. NO. CS-2 FOR DETOUR TRAFFIC CONTROL DEVICE PLACEMENT.

TRAFFIC CONTROL ITEMS		
SYMBOL	DESCRIPTION	QUANTITY
	BARRICADES TYPE III	2 @ 12'
	SIGNS < 10 SQ. FT.	
	SIGNS > 10 SQ. FT.	20.00
	WARNING LIGHT TYPE "B"	
	WARNING LIGHT TYPE "C"	
	PLASTIC DRUMS	9

INDICATES WORK ZONE
 INDICATES DIRECTION OF TRAFFIC
R11-2 (48x30) ----- 2

NARROW PROFILE CONES
(NOT MEASURED FOR SEPARATE PAYMENT)
 PLASTIC DRUMS
(PAID UNDER APPROPRIATE PAY ITEM)

PHASE 1 DRIVEWAY GENERAL NOTE:
THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION.
DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY, THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE UNTIL TRAFFIC CAN BE RESTORED.



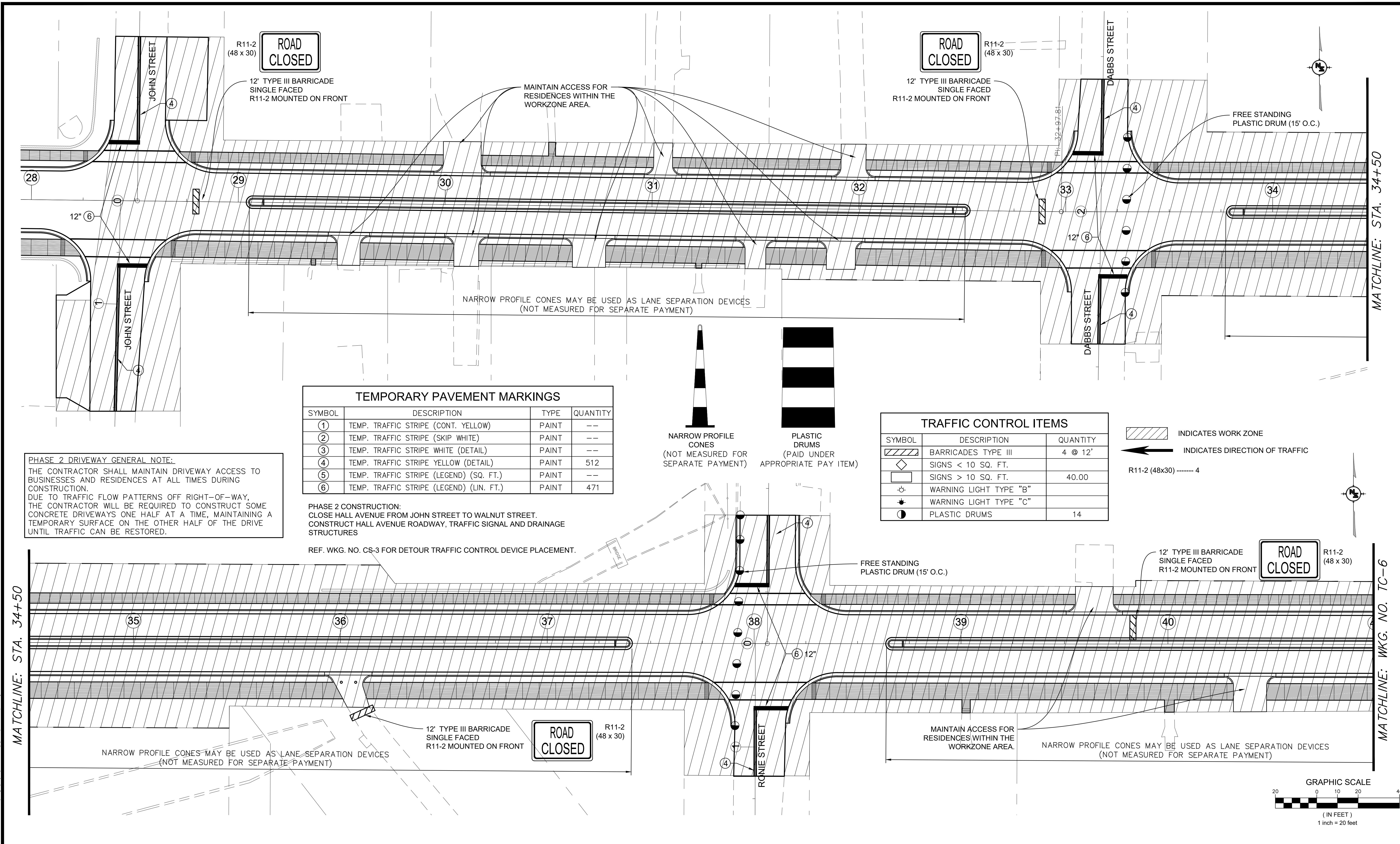
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NOTICE TO DRAWING HOLDER
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				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

TRAFFIC CONTROL PLAN PHASE 1 (HALL AVENUE) STA. 24+00 TO STA. 28+00	
WORKING NUMBER: TC-4	DRAWING NUMBER: 93



PHASE 2 DRIVEWAY GENERAL NOTE:
THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION. DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY, THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE UNTIL TRAFFIC CAN BE RESTORED.

TEMPORARY PAVEMENT MARKINGS			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	--
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	--
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	--
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	512
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	--
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	471

PHASE 2 CONSTRUCTION:
CLOSE HALL AVENUE FROM JOHN STREET TO WALNUT STREET.
CONSTRUCT HALL AVENUE ROADWAY, TRAFFIC SIGNAL AND DRAINAGE STRUCTURES

REF. WKG. NO. CS-3 FOR DETOUR TRAFFIC CONTROL DEVICE PLACEMENT.

TRAFFIC CONTROL ITEMS		
SYMBOL	DESCRIPTION	QUANTITY
[Barricade Symbol]	BARRICADES TYPE III	4 @ 12'
[Sign Symbol]	SIGNS < 10 SQ. FT.	
[Sign Symbol]	SIGNS > 10 SQ. FT.	40.00
[Light Symbol]	WARNING LIGHT TYPE "B"	
[Light Symbol]	WARNING LIGHT TYPE "C"	
[Drum Symbol]	PLASTIC DRUMS	14

[Hatched Box] INDICATES WORK ZONE
[Arrow] INDICATES DIRECTION OF TRAFFIC
R11-2 (48x30) ----- 4

NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION
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N-S PROJECT NO.: NS.16214.000
FILENAME: 16214_TC-PH2.dwg
SCALE: 1" = 20'
SURVEYED BY: CLEARPOINT
DSGN: GPC DATE: 04/2022
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER
Solutions you can build upon

TRAFFIC CONTROL PLAN PHASE 2 STA. 28+00 TO STA. 41+00	
WORKING NUMBER: TC-5	DRAWING NUMBER: 94

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MATCHLINE: WKG. NO. TC-5

MATCHLINE: STA. 47+00

MATCHLINE: STA. 47+00

MAINTAIN ACCESS FOR
RESIDENCES WITHIN THE
WORKZONE AREA.

3 @ 12' TYPE III BARRICADE
SINGLE FACED
R11-2 MOUNTED ON FRONT

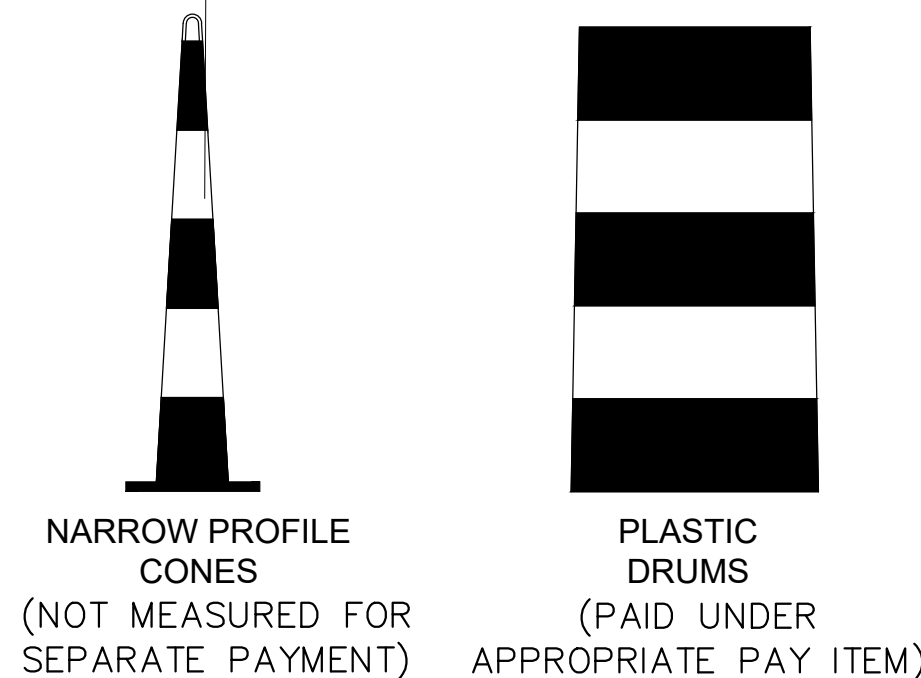
R11-2
(48 x 30)

ROAD
CLOSED

2 @ 12' TYPE III BARRICADE
SINGLE FACED
R11-2 MOUNTED ON FRONT

R11-2
(48 x 30)

ROAD
CLOSED



MAINTAIN ACCESS FOR
RESIDENCES WITHIN THE
WORKZONE AREA.

NARROW PROFILE CONES MAY BE USED AS LANE SEPARATION DEVICES
(NOT MEASURED FOR SEPARATE PAYMENT)

2 @ 12' TYPE III BARRICADE
SINGLE FACED
R11-2 MOUNTED ON FRONT

R11-2
(48 x 30)

ROAD
CLOSED

TEMPORARY PAVEMENT MARKINGS

SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	740
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	--
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	512
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	182
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	32.7
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	548

PHASE 2 CONSTRUCTION:
CLOSE HALL AVENUE FROM JOHN STREET TO WALNUT STREET.
CONSTRUCT HALL AVENUE ROADWAY, TRAFFIC SIGNAL AND DRAINAGE
STRUCTURES

INDICATES WORK ZONE
INDICATES DIRECTION OF TRAFFIC
R11-2 (48x30) ----- 7

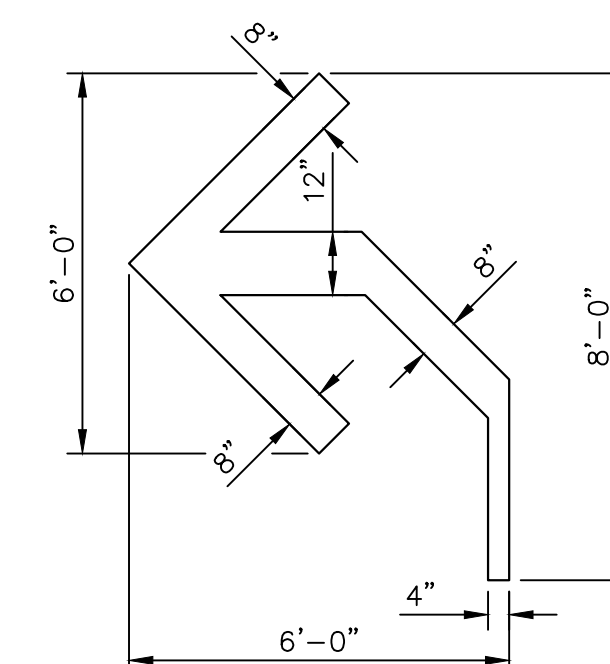
REF. WKG. NO. CS-3 FOR DETOUR TRAFFIC CONTROL DEVICE PLACEMENT.

TRAFFIC CONTROL ITEMS

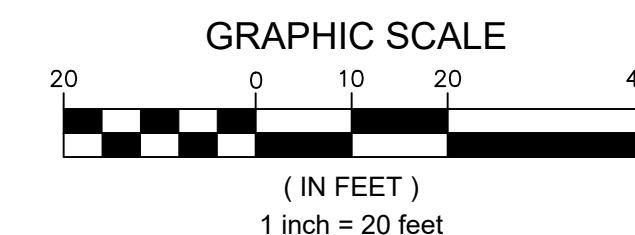
SYMBOL	DESCRIPTION	QUANTITY
▨	BARRICADES TYPE III	7 @ 12'
◇	SIGNS < 10 SQ. FT.	
□	SIGNS > 10 SQ. FT.	70.00
⊕	WARNING LIGHT TYPE "B"	
⊙	WARNING LIGHT TYPE "C"	
●	PLASTIC DRUMS	--

PHASE 2 DRIVEWAY GENERAL NOTE:

THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO
BUSINESSES AND RESIDENCES AT ALL TIMES DURING
CONSTRUCTION.
DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY,
THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME
CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A
TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE
UNTIL TRAFFIC CAN BE RESTORED.



DETAIL OF TEMPORARY TURN ARROW



NOTICE TO DRAWING HOLDER

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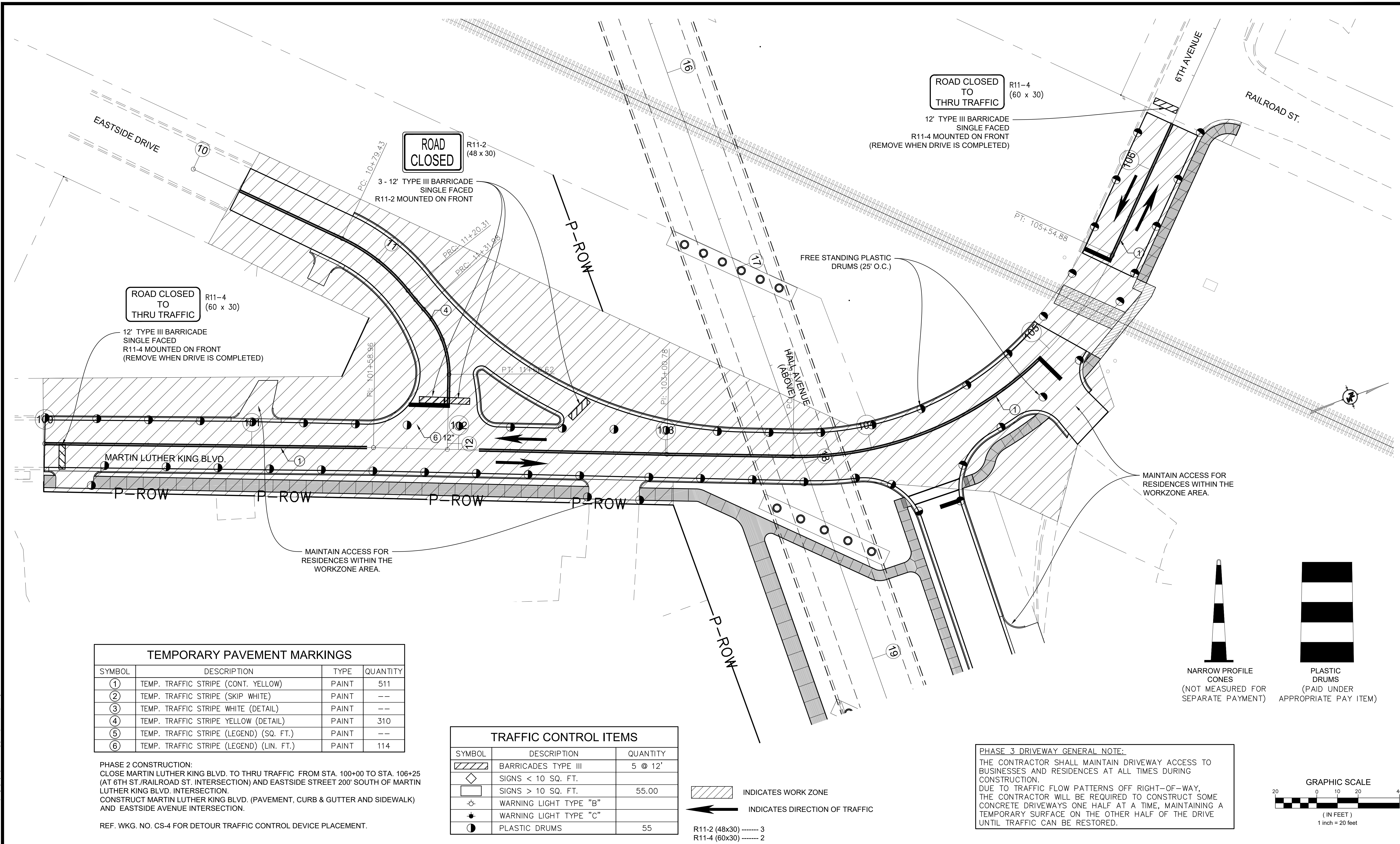
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TRAFFIC CONTROL PLAN
PHASE 2
STA. 41+00 TO E.O.P.

WORKING NUMBER:	DRAWING NUMBER:
TC-6	95



TEMPORARY PAVEMENT MARKINGS			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	511
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	--
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	--
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	310
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	--
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	114

PHASE 2 CONSTRUCTION:
CLOSE MARTIN LUTHER KING BLVD. TO THRU TRAFFIC FROM STA. 100+00 TO STA. 106+25
(AT 6TH ST./RAILROAD ST. INTERSECTION) AND EASTSIDE STREET 200' SOUTH OF MARTIN
LUTHER KING BLVD. INTERSECTION.
CONSTRUCT MARTIN LUTHER KING BLVD. (PAVEMENT, CURB & GUTTER AND SIDEWALK)
AND EASTSIDE AVENUE INTERSECTION.

REF. WKG. NO. CS-4 FOR DETOUR TRAFFIC CONTROL DEVICE PLACEMENT.

TRAFFIC CONTROL ITEMS		
SYMBOL	DESCRIPTION	QUANTITY
	BARRICADES TYPE III	5 @ 12'
	SIGNS < 10 SQ. FT.	
	SIGNS > 10 SQ. FT.	55.00
	WARNING LIGHT TYPE "B"	
	WARNING LIGHT TYPE "C"	
	PLASTIC DRUMS	55

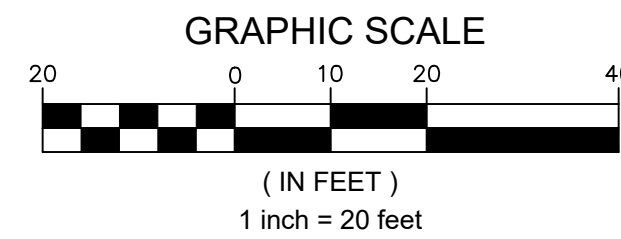
INDICATES WORK ZONE
 INDICATES DIRECTION OF TRAFFIC

R11-2 (48x30) ----- 3
R11-4 (60x30) ----- 2

PHASE 3 DRIVEWAY GENERAL NOTE:
THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO
BUSINESSES AND RESIDENCES AT ALL TIMES DURING
CONSTRUCTION.
DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY,
THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME
CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A
TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE
UNTIL TRAFFIC CAN BE RESTORED.

NARROW PROFILE
CONES
(NOT MEASURED FOR
SEPARATE PAYMENT)

PLASTIC
DRUMS
(PAID UNDER
APPROPRIATE PAY ITEM)



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EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR
RESULTING THEREFROM.

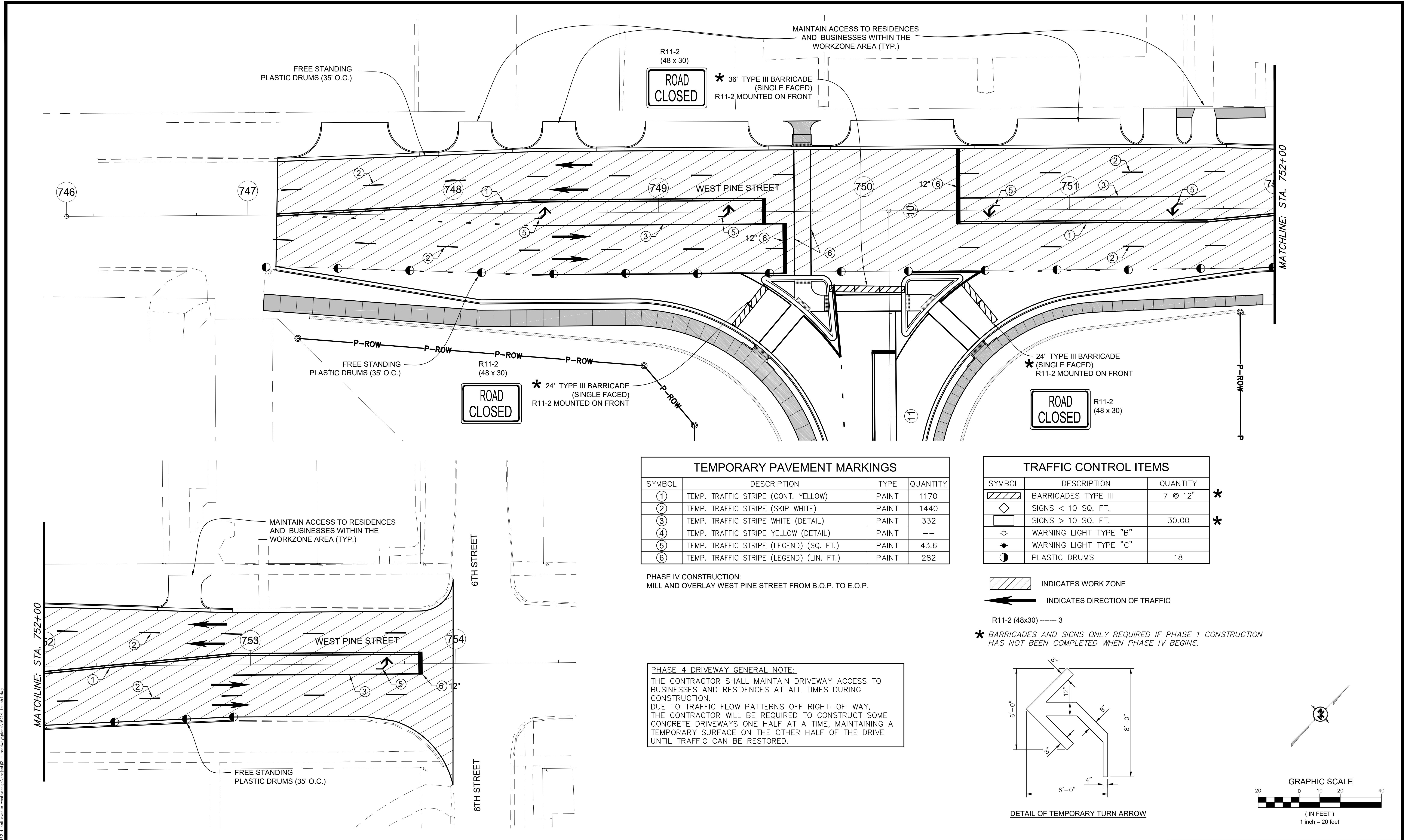
REVISIONS			DRAWING INFORMATION
NO.	DATE	BY	DESCRIPTION

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SURVEYED BY: CLEARPOINT	
DSGN: GPC	DATE: 04/2022
DRWN: JPF	DATE: 04/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TRAFFIC CONTROL PLAN PHASE 3 MARTIN LUTHER KING BLVD. STA. 100+00 TO STA. 107+00	
WORKING NUMBER: TC-7	DRAWING NUMBER: 96



TEMPORARY PAVEMENT MARKINGS			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	TEMP. TRAFFIC STRIPE (CONT. YELLOW)	PAINT	1170
②	TEMP. TRAFFIC STRIPE (SKIP WHITE)	PAINT	1440
③	TEMP. TRAFFIC STRIPE WHITE (DETAIL)	PAINT	332
④	TEMP. TRAFFIC STRIPE YELLOW (DETAIL)	PAINT	--
⑤	TEMP. TRAFFIC STRIPE (LEGEND) (SQ. FT.)	PAINT	43.6
⑥	TEMP. TRAFFIC STRIPE (LEGEND) (LIN. FT.)	PAINT	282

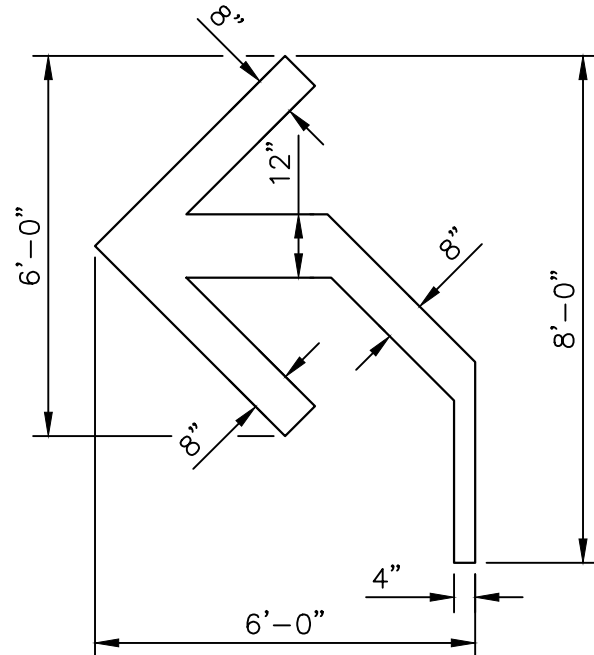
PHASE IV CONSTRUCTION:
MILL AND OVERLAY WEST PINE STREET FROM B.O.P. TO E.O.P.

PHASE 4 DRIVEWAY GENERAL NOTE:
THE CONTRACTOR SHALL MAINTAIN DRIVEWAY ACCESS TO BUSINESSES AND RESIDENCES AT ALL TIMES DURING CONSTRUCTION.
DUE TO TRAFFIC FLOW PATTERNS OFF RIGHT-OF-WAY, THE CONTRACTOR WILL BE REQUIRED TO CONSTRUCT SOME CONCRETE DRIVEWAYS ONE HALF AT A TIME, MAINTAINING A TEMPORARY SURFACE ON THE OTHER HALF OF THE DRIVE UNTIL TRAFFIC CAN BE RESTORED.

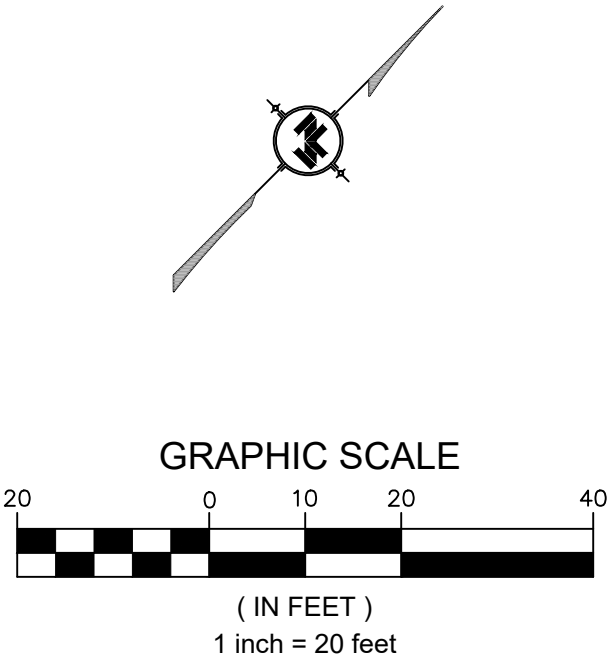
TRAFFIC CONTROL ITEMS		
SYMBOL	DESCRIPTION	QUANTITY
	BARRICADES TYPE III	7 @ 12'
	SIGNS < 10 SQ. FT.	
	SIGNS > 10 SQ. FT.	30.00
	WARNING LIGHT TYPE "B"	
	WARNING LIGHT TYPE "C"	
	PLASTIC DRUMS	18

INDICATES WORK ZONE
 INDICATES DIRECTION OF TRAFFIC

R11-2 (48x30) ----- 3
* BARRICADES AND SIGNS ONLY REQUIRED IF PHASE 1 CONSTRUCTION HAS NOT BEEN COMPLETED WHEN PHASE IV BEGINS.



DETAIL OF TEMPORARY TURN ARROW



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REVISIONS			DRAWING INFORMATION	
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER
Solutions you can build upon

TRAFFIC CONTROL PLAN PHASE 4 (WEST PINE STREET) STA. 747+00 TO 754+00	
WORKING NUMBER: TC-8	DRAWING NUMBER: 97

TYPE "D" SILT BASIN	
STABILIZED CONSTRUCTION ENTRANCE	
CONCRETE WASH-OUT	
INLET PROTECTION	
SILT FENCE	
TURBIDITY BARRIER	
SUPER SILT FENCE	
EROSION CONTROL BLANKET	
WATTLE DITCH CHECK	
SILT FENCE DITCH CHECK	
ROCK DITCH CHECK	
SAND BAG DITCH CHECK	
ROCK DITCH CHECK (WITH SUMP EXCAVATION)	

EROSION AND SEDIMENT CONTROL PLANS NOTE:

QUANTITIES FOR PROJECT ARE ESTIMATED FROM *MINIMAL* REQUIREMENTS.
CONTRACTOR SHALL USE THE BLANK WKG. NO'S ECP-2 THRU ECP-8 TO SUBMIT HIS EROSION CONTROL PLAN.

CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND ADJUSTING BMP'S DURING THE CONSTRUCTION PHASES AS REQUIRED TO CONTAIN/CONTROL EROSION AND SEDIMENT.

EROSION AND SEDIMENT CONTROL PHASES:

INITIAL CONSTRUCTION PHASE – AS CLEARING BEGINS AND PRIOR TO ANY GRUBBING OR GRADING WORK.

INTERMEDIATE CONSTRUCTION PHASE – INSTALL BMP'S AS NEEDED WHERE WORK IN GRADED SECTIONS, DETOURS AND STRUCTURE CONSTRUCTION PROGRESSES.

FINAL CONSTRUCTION PHASE – INSTALL BMP'S AS NEEDED TO MAINTAIN FINAL GRADED SURFACES UNTIL PERMANENT EROSION CONTROL AND VEGETATION IS ESTABLISHED.

PHASING NOTES:

THE PHASING OF EROSION AND SEDIMENT CONTROL MEASURES AS DESCRIBED ABOVE AND SHOWN ON THE PLANS, IS NOT INTENDED TO DICTATE THE SEQUENCE OF CONSTRUCTION.

SEDIMENT AND EROSION CONTROL MEASURES SHOULD ONLY BE IMPLEMENTED IN AREAS WHERE CONSTRUCTION IS ACTIVELY TAKING PLACE. IT IS EXPECTED THAT SOME AREAS OF THE PROJECT WILL HAVE NO BMP'S, WHILE OTHER AREAS MAY HAVE INITIAL, INTERMEDIATE AND/OR NO FINAL BMP'S, DEPENDING ON PROGRESS OF CONSTRUCTION.

CONTRACTOR SHALL SUBMIT EROSION CONTROL PLAN FOR APPROVAL BY THE ENGINEER. ONCE THE PLAN IS APPROVED AND THE INITIAL BMP'S ARE ESTABLISHED, WORK CAN PROGRESS.

BMP'S REQUIRED IN THE INTERMEDIATE PHASE SHOULD BE INSTALLED AS THE WORK PROGRESS IMPACTS THE AREA DURING CONSTRUCTION.

UPON COMPLETION OF THE WORK, FINAL PHASE BMP'S SHOULD BE EMPLOYED AS REQUIRED UNTIL THE ERODIBLE SOIL HAS BEEN PROTECTED BY THE ESTABLISHMENT OF PERMANENT VEGETATION.

- EROSION AND SEDIMENT CONTROL GENERAL NOTES:
- FUEL TANKS SHALL NOT BE STORED ON RIGHT-OF-WAY. VEHICLES TRANSPORTING CHEMICALS, FERTILIZERS, ETC. SHALL NOT BE LEFT UNATTENDED ON RIGHT-OF-WAY.
 - MULCH FROM CLEARING OPERATIONS MAY BE STOCKPILED AND SPREAD (UNDER THE DIRECTION OF THE ENGINEER) ON SITE TO TEMPORARILY STABILIZE THE DISTURBED SOILS IN CLEARED AREAS. (NOT A SEPARATE PAY ITEM)
 - LARGE PARTICLE MULCH MAY BE LINEARLY PILED TO ACT AS A TEMPORARY SEDIMENTATION/EROSION BARRIER AT THE TOE OF SLOPES (SIMILAR TO THE TEMPORARY BRUSH BARRIER DETAIL ON WKG. NO. ECD-2). COST TO BE ABSORBED IN OTHER ITEMS OF WORK.
 - AVOID REMOVAL OR DISTURBANCE OF ESTABLISHED VEGETATION OUTSIDE OF SLOPE STAKES.
 - ESTABLISHED STABILIZED CONSTRUCTION ENTRANCES AND CONCRETE WASHOUT LOCATIONS MAY BE MOVED AT THE DISCRETION OF THE CONTRACTOR AND APPROVAL OF THE ENGINEER.
 - FLOCCULANTS SHOULD BE APPLIED TO WATTLE DITCH CHECKS, ROCK DITCH CHECKS AND IN DITCHES PRIOR TO SILT BASINS. ALL FLOCCULANTS ARE TO BE APPLIED IN ACCORDANCE WITH THE STORMWATER POLLUTION PREVENTION PLAN FOR THE PROJECT AND THE MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY LARGE CONSTRUCTION GENERAL PERMIT (SPECIFICALLY P. 17, ACT 5, CONDITION T-11 AND P. 25, ACT 8, CONTITION T-1) AS ISSUED JANUARY 13, 2017.
 - THE TEMPORARY STREAM DIVERSIONS MAY BE REQUIRED AT SPECIFIC LOCATIONS. CONTRACTOR IS RESPONSIBLE FOR DESIGN THAT WILL ALLOW EXISTING STREAM FLOW TO ADEQUATELY PASS THROUGH THE CONSTRUCTION AREA. (REF.: WKG. NO. ECD-19)
 - THE ENGINEER MAY REQUIRE EXPOSED ERODABLE SOIL FROM THE EXCAVATION OF SLOPES AND DEMOLITION AREAS SHALL BE COVERED WITH EROSION CONTROL BLANKET, TYPE II, BY THE END OF THE WORK DAY OR BEFORE A RAINFALL EVENT, WHICHEVER OCCURS FIRST.

NOTICE TO DRAWING HOLDER

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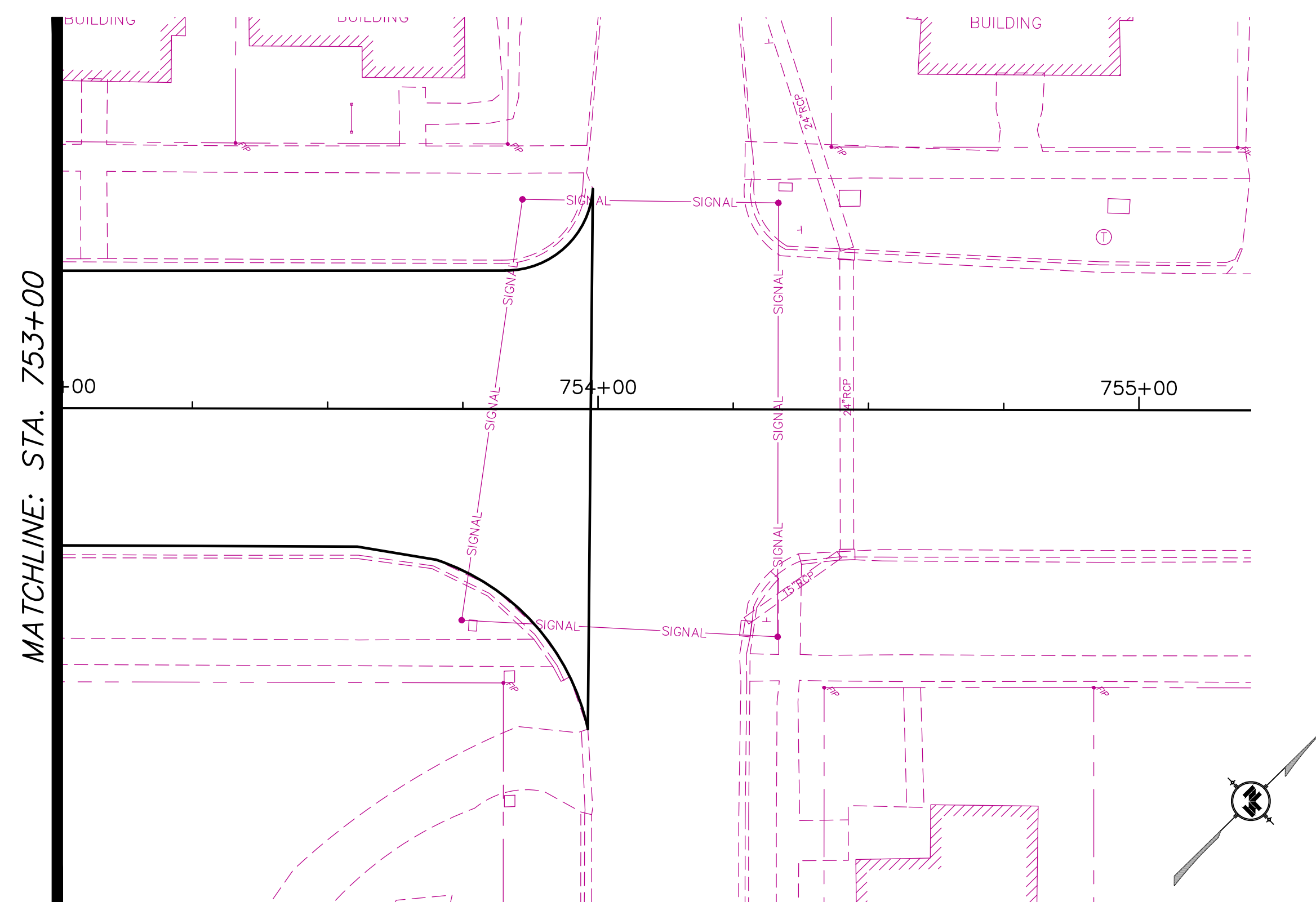
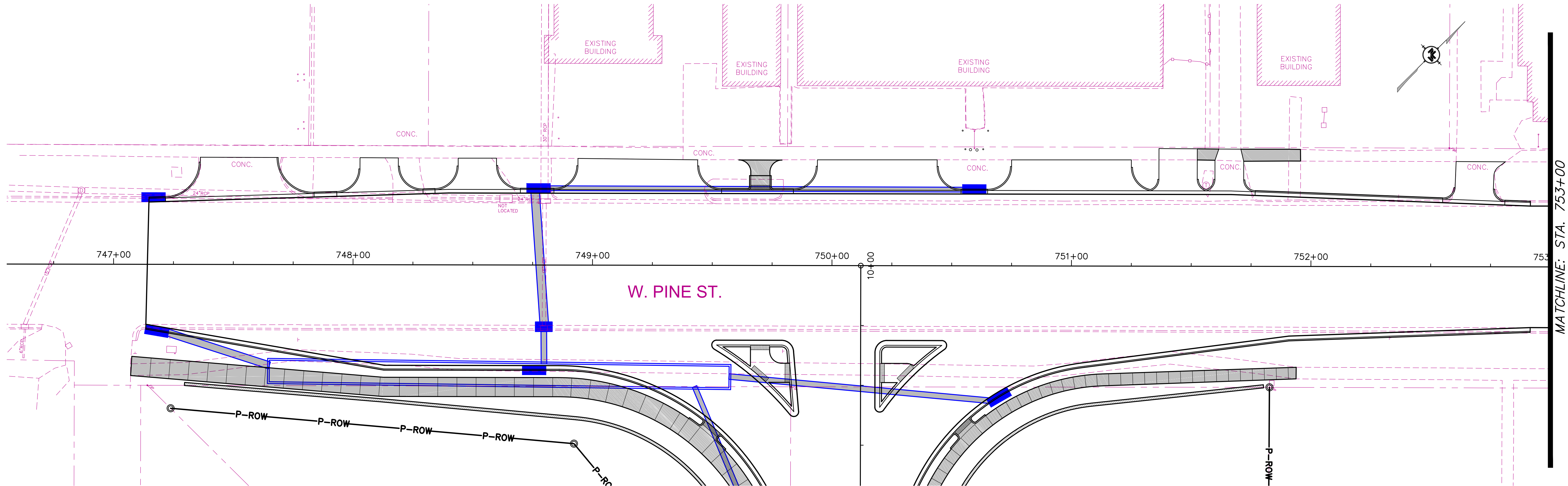
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				DRWN: JPF	DATE: 04/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

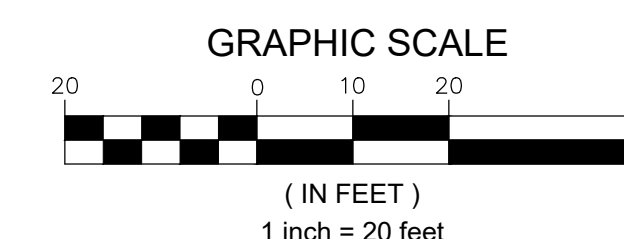


EROSION AND SEDIMENT
CONTROL PLAN
LEGEND AND NOTES

WORKING NUMBER:	DRAWING NUMBER:
ECP-1	98



TEMPORARY EROSION CONTROL			
ITEMS	UNITS	SYMBOL	TOTALS
WATTLES (20")	L.F.		
ROCKBAGS	L.F.		
ROCK DITCH CHECK	EA,		
SILT FENCE	L.F.		
SUPER SILT FENCE	L.F.		
INLET SILTATION GUARD	EA.		
TURBIDITY BARRIER	L.F.		
TEMP. STREAM DIVERSION	EA.		



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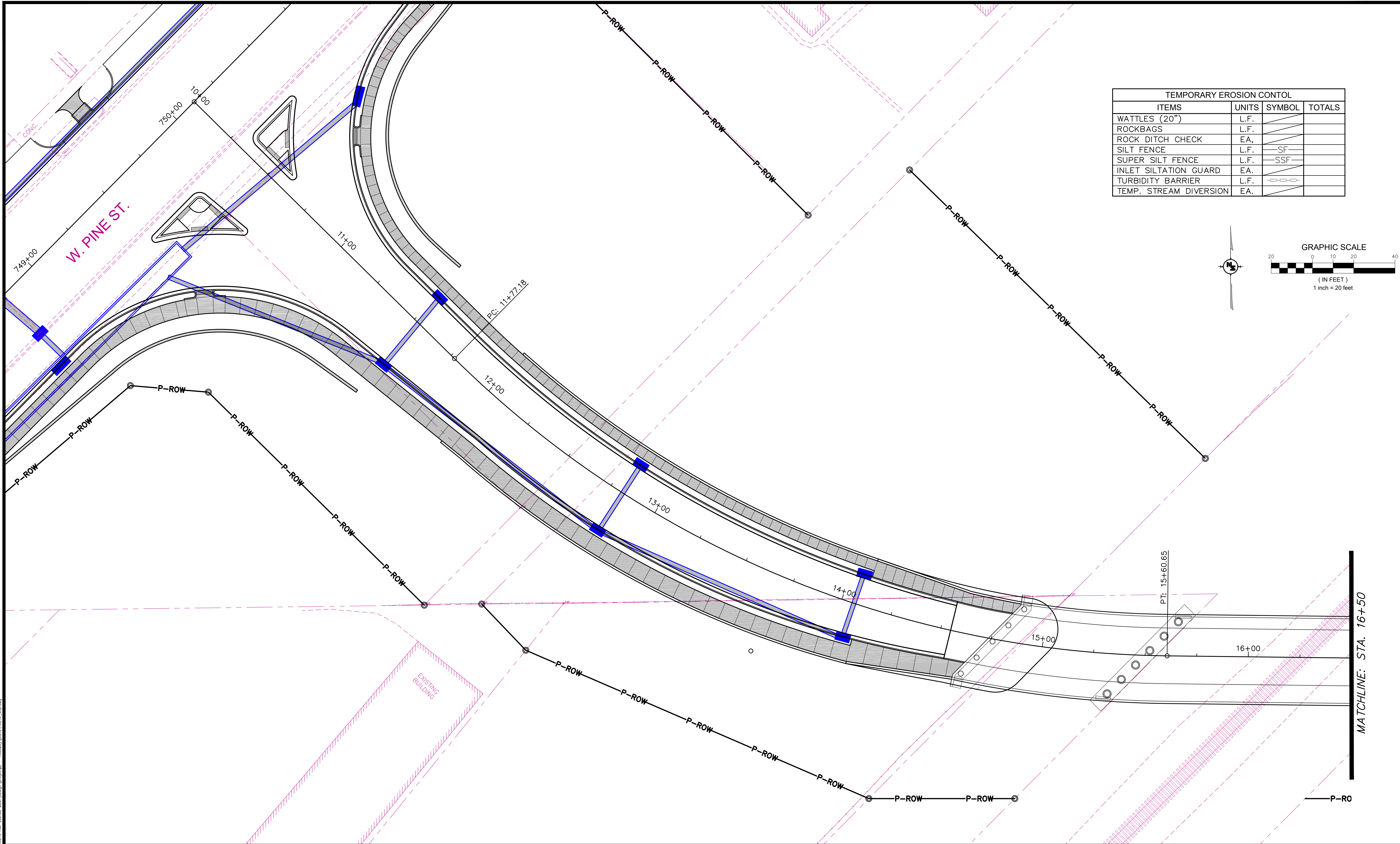
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



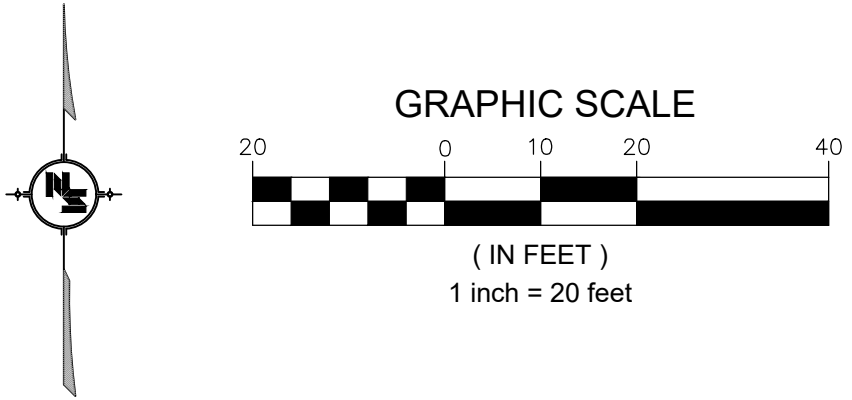
EROSION AND SEDIMENT
CONTROL PLAN
WEST PINE STREET
STA. 747+00 TO STA. 754+00

WORKING NUMBER:
ECP-2

DRAWING NUMBER:
99



TEMPORARY EROSION CONTROL			
ITEMS	UNITS	SYMBOL	TOTALS
WATTLES (20")	L.F.		
ROCKBAGS	L.F.		
ROCK DITCH CHECK	EA.		
SILT FENCE	L.F.	SF	
SUPER SILT FENCE	L.F.	SSF	
INLET SILTATION GUARD	EA.		
TURBIDITY BARRIER	L.F.		
TEMP. STREAM DIVERSION	EA.		



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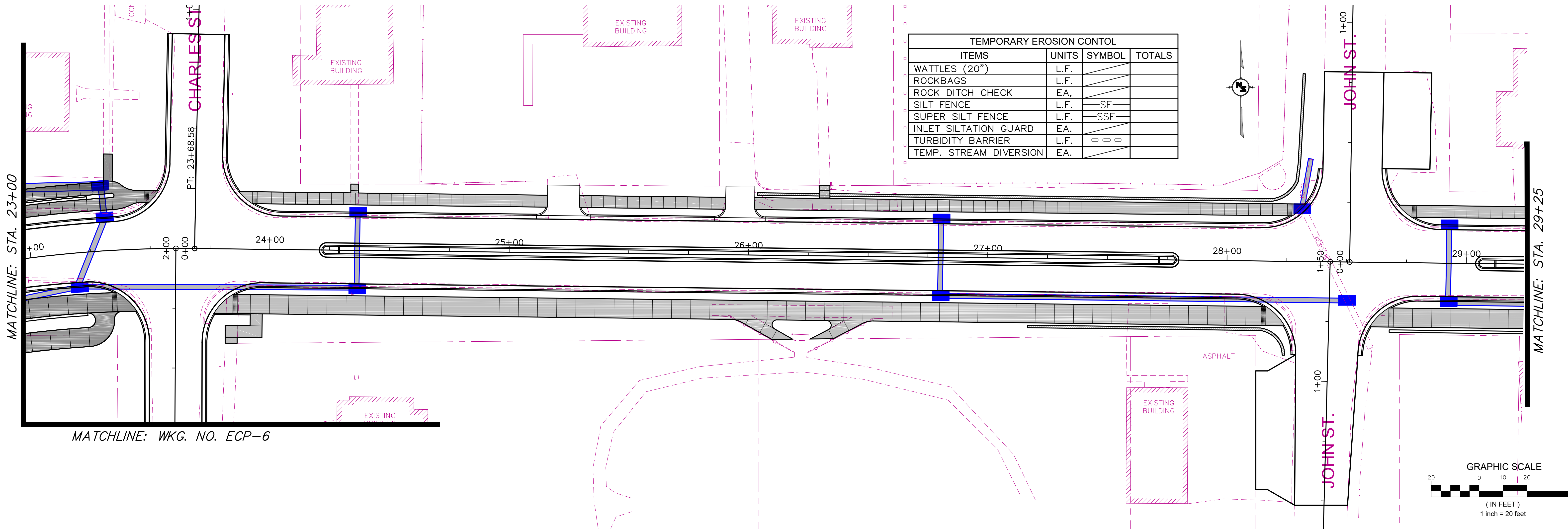
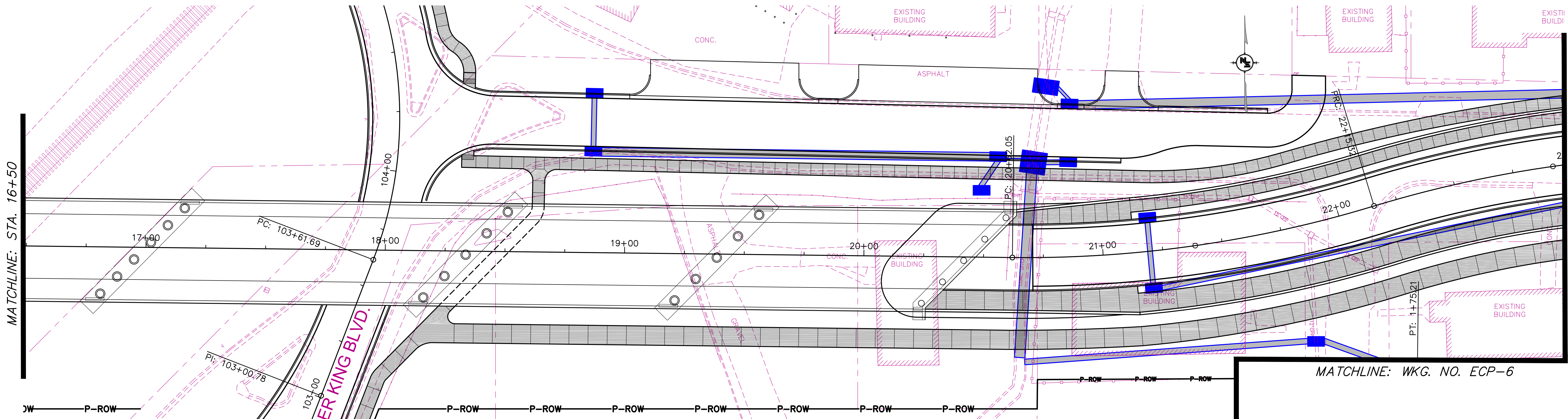
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NO.	DATE	BY	DESCRIPTION	

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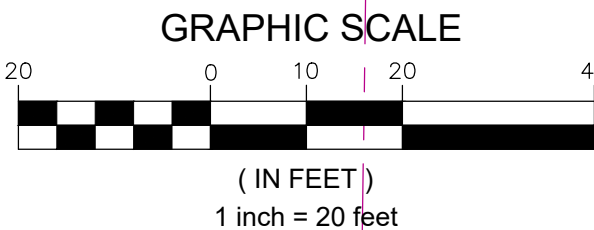
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

EROSION AND SEDIMENT CONTROL PLAN
HALL AVENUE
STA. 10+00 TO STA. 16+50

WORKING NUMBER:	DRAWING NUMBER:
ECP-3	100



TEMPORARY EROSION CONTROL			
ITEMS	UNITS	SYMBOL	TOTALS
WATTLES (20")	L.F.		
ROCKBAGS	L.F.		
ROCK DITCH CHECK	E.A.		
SILT FENCE	L.F.		
SUPER SILT FENCE	L.F.		
INLET SILTATION GUARD	E.A.		
TURBIDITY BARRIER	L.F.		
TEMP. STREAM DIVERSION	E.A.		



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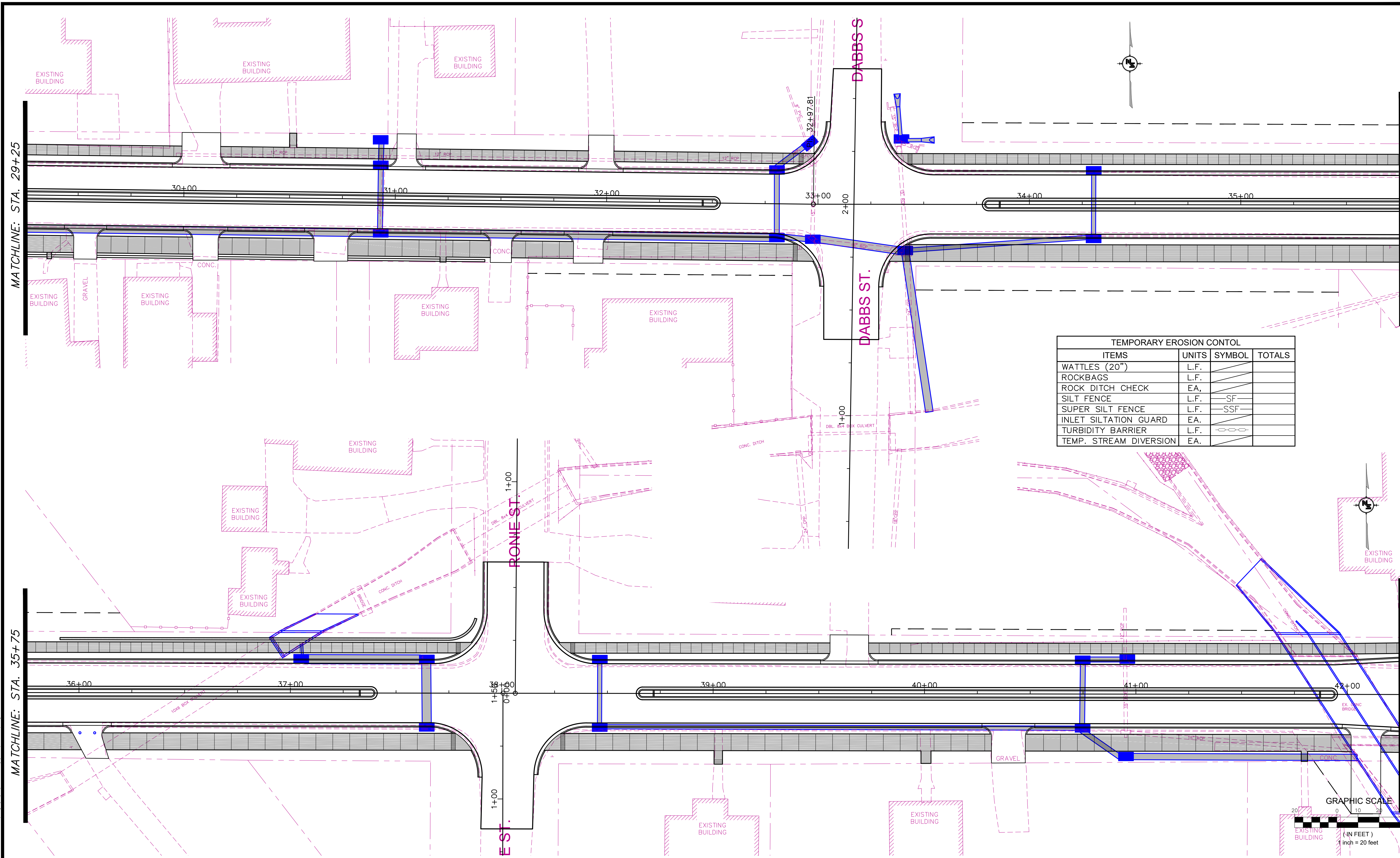
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

EROSION AND SEDIMENT CONTROL PLAN
HALL AVENUE
STA. 16+50 TO STA. 29+25

WORKING NUMBER: ECP-4	DRAWING NUMBER: 101
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TEMPORARY EROSION CONTROL			
ITEMS	UNITS	SYMBOL	TOTALS
WATTLES (20")	L.F.		
ROCKBAGS	L.F.		
ROCK DITCH CHECK	EA.		
SILT FENCE	L.F.		
SUPER SILT FENCE	L.F.		
INLET SILTATION GUARD	EA.		
TURBIDITY BARRIER	L.F.		
TEMP. STREAM DIVERSION	EA.		

NOTICE TO DRAWING HOLDER
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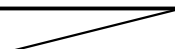
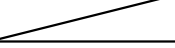
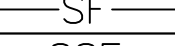
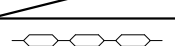
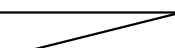
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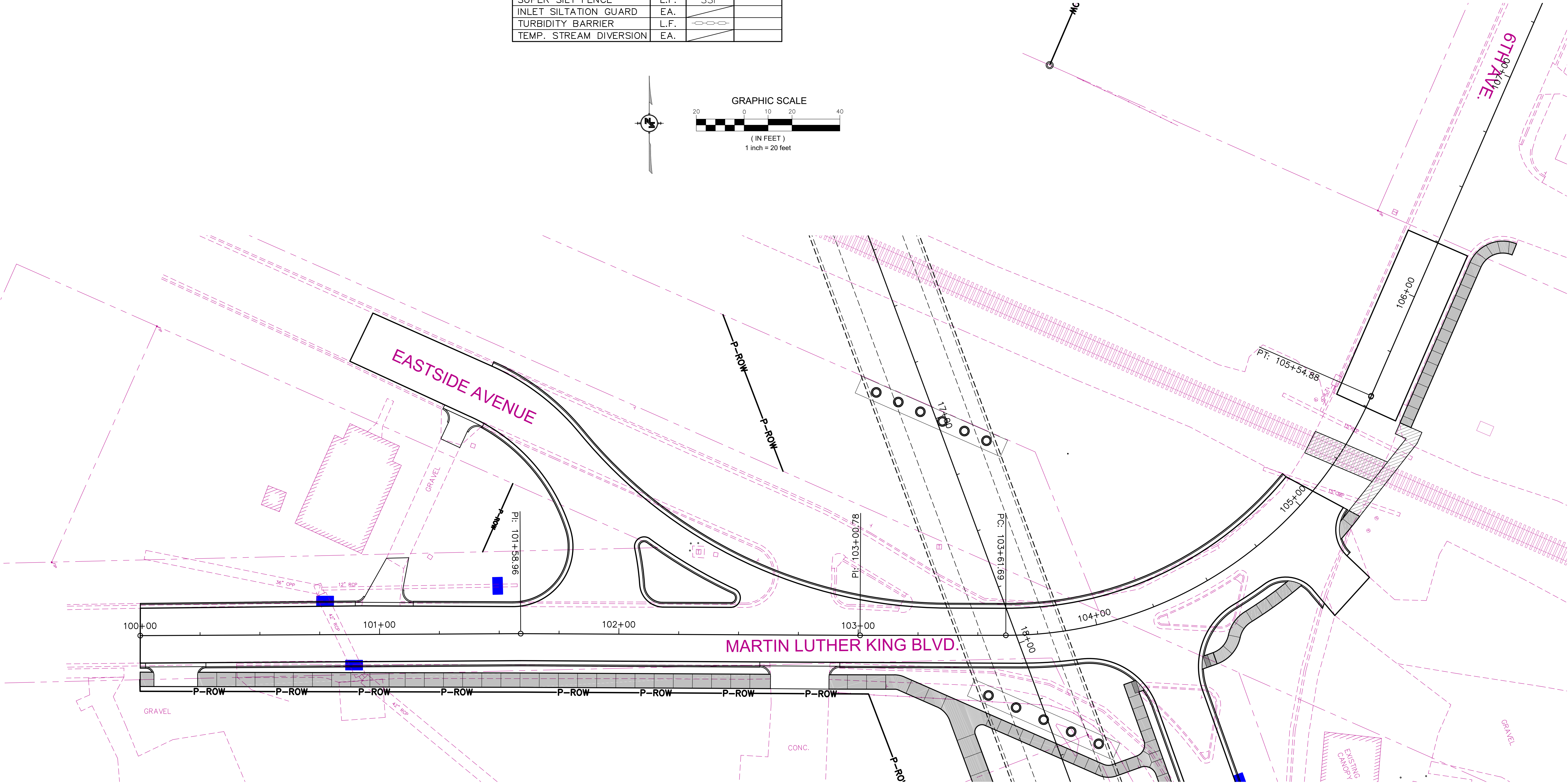
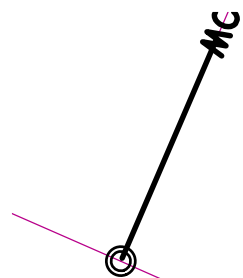
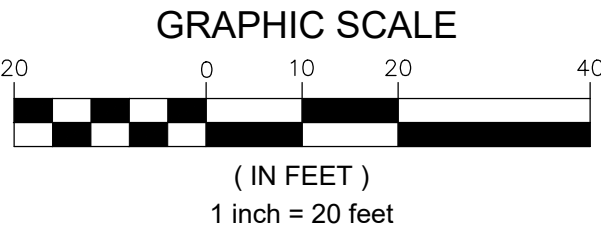
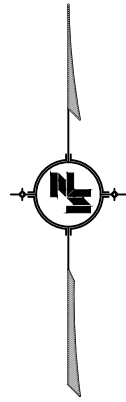
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



EROSION AND SEDIMENT CONTROL PLAN HALL AVENUE STA. 29+25 TO STA. 42+25	
WORKING NUMBER: ECP-5	DRAWING NUMBER: 102

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TEMPORARY EROSION CONTROL			
ITEMS	UNITS	SYMBOL	TOTALS
WATTLES (20")	L.F.		
ROCKBAGS	L.F.		
ROCK DITCH CHECK	EA.		
SILT FENCE	L.F.		
SUPER SILT FENCE	L.F.		
INLET SILTATION GUARD	EA.		
TURBIDITY BARRIER	L.F.		
TEMP. STREAM DIVERSION	EA.		



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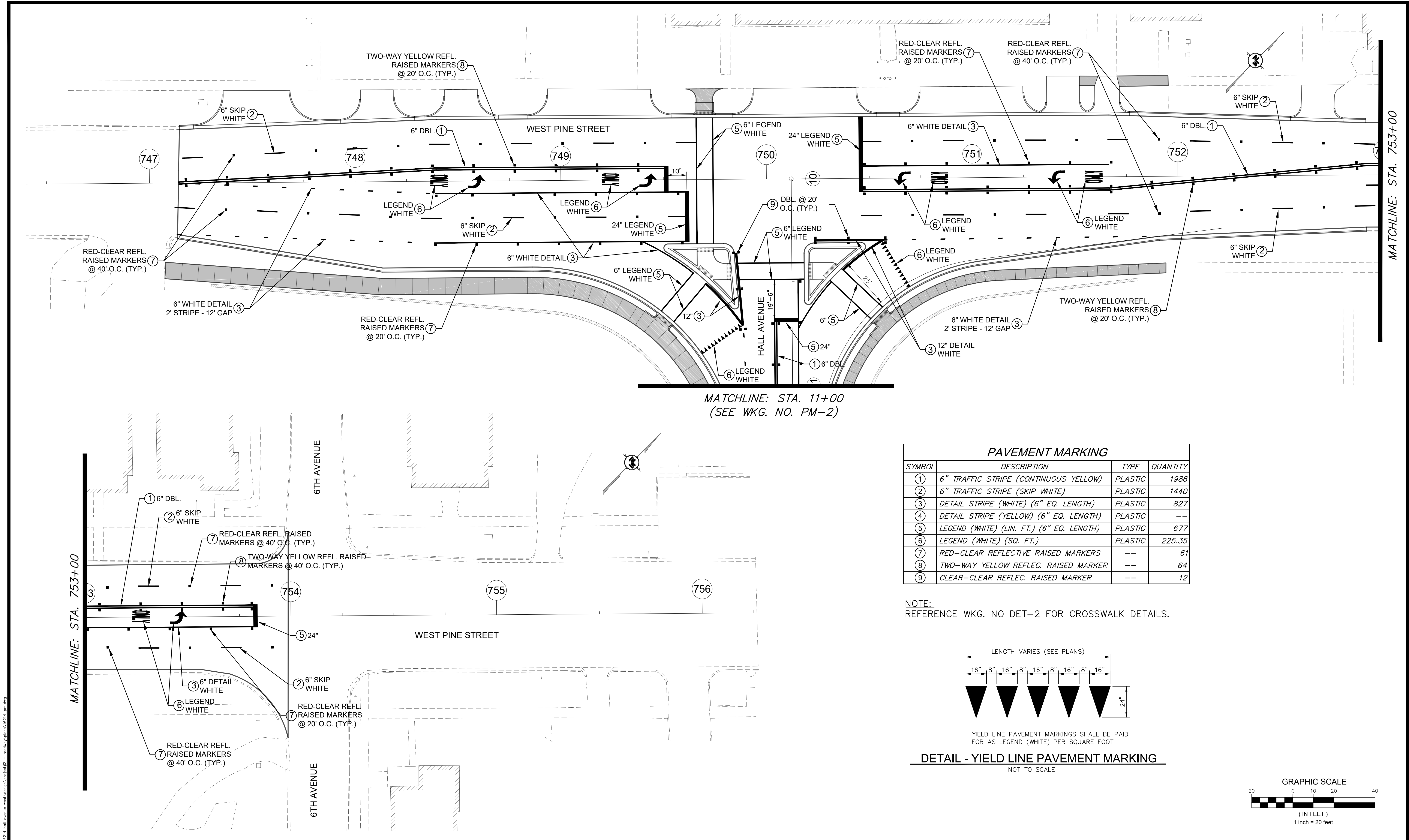
NOTICE TO DRAWING HOLDER
NEEL-SCHAFER, INC., HERINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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	
NO.	DATE	BY	DESCRIPTION	
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				CHKD: GPC DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

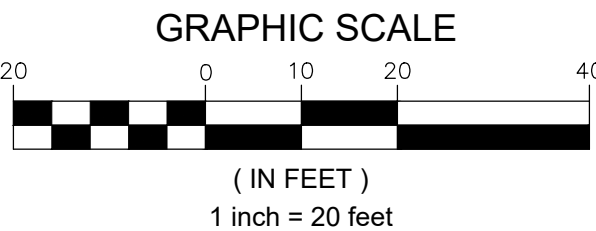
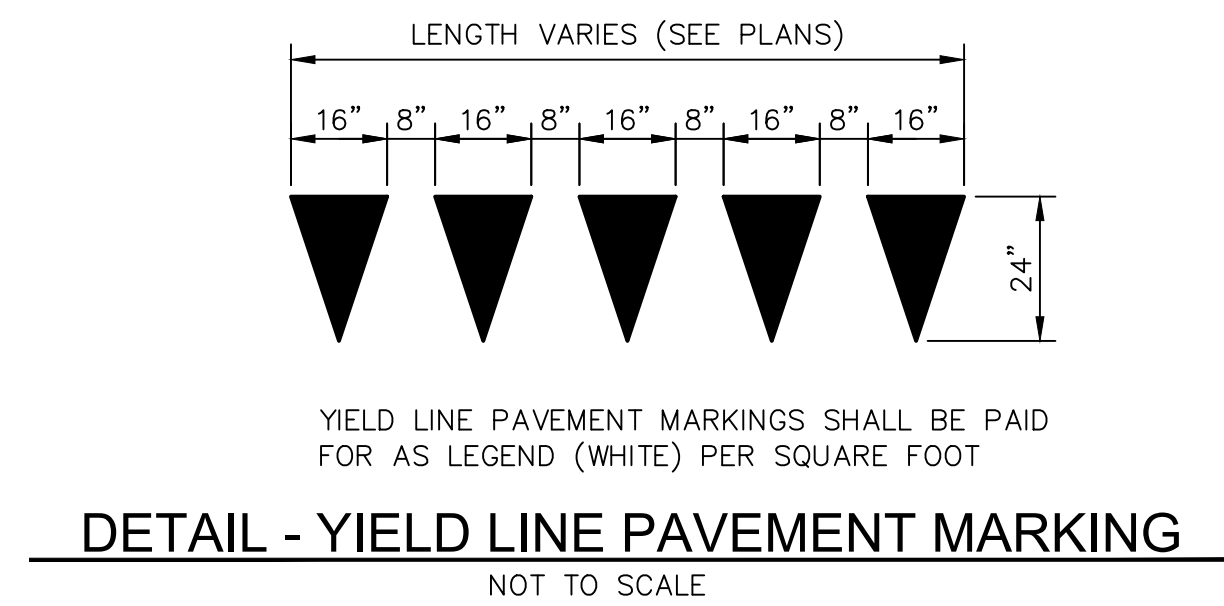


EROSION AND SEDIMENT CONTROL PLAN MARTIN LUTHER KING BLVD. STA. 100+00 TO STA. 107+00	
WORKING NUMBER: ECP-7	DRAWING NUMBER: 104



PAVEMENT MARKING			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	6" TRAFFIC STRIPE (CONTINUOUS YELLOW)	PLASTIC	1986
②	6" TRAFFIC STRIPE (SKIP WHITE)	PLASTIC	1440
③	DETAIL STRIPE (WHITE) (6" EQ. LENGTH)	PLASTIC	827
④	DETAIL STRIPE (YELLOW) (6" EQ. LENGTH)	PLASTIC	--
⑤	LEGEND (WHITE) (LIN. FT.) (6" EQ. LENGTH)	PLASTIC	677
⑥	LEGEND (WHITE) (SQ. FT.)	PLASTIC	225.35
⑦	RED-CLEAR REFLECTIVE RAISED MARKERS	--	61
⑧	TWO-WAY YELLOW REFLEC. RAISED MARKER	--	64
⑨	CLEAR-CLEAR REFLEC. RAISED MARKER	--	12

NOTE:
REFERENCE WKG. NO DET-2 FOR CROSSWALK DETAILS.



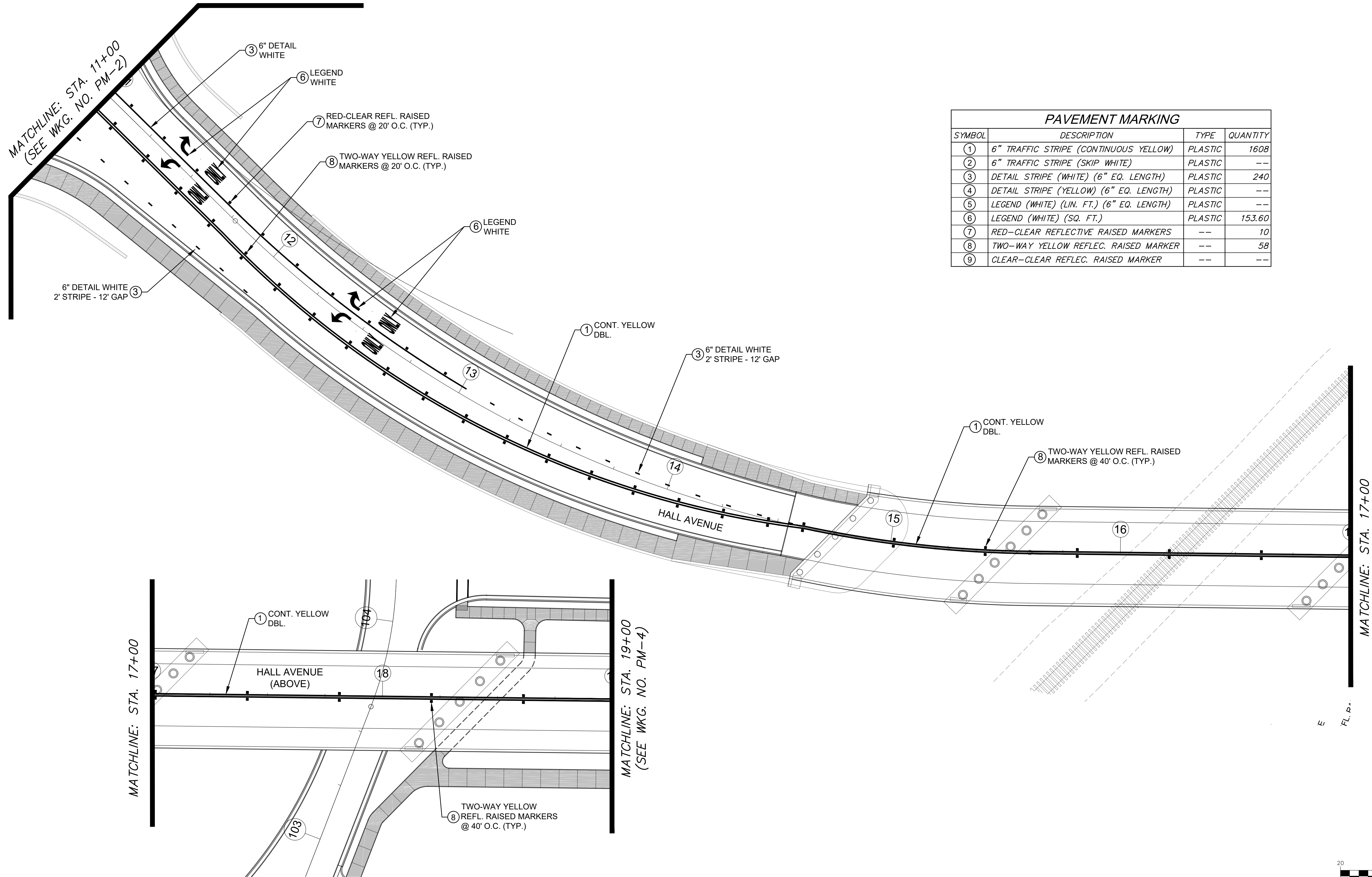
NOTICE TO DRAWING HOLDER
NEEL-SCHAFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION 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	
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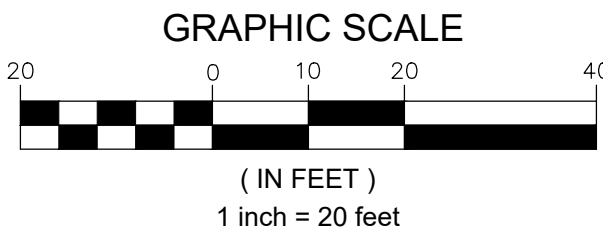
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PAVEMENT MARKING DETAILS WEST PINE ST. STA. 747+00 TO STA. 754+0	
WORKING NUMBER: PM-1	DRAWING NUMBER: 105



PAVEMENT MARKING			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	6" TRAFFIC STRIPE (CONTINUOUS YELLOW)	PLASTIC	1608
②	6" TRAFFIC STRIPE (SKIP WHITE)	PLASTIC	--
③	DETAIL STRIPE (WHITE) (6" EQ. LENGTH)	PLASTIC	240
④	DETAIL STRIPE (YELLOW) (6" EQ. LENGTH)	PLASTIC	--
⑤	LEGEND (WHITE) (LIN. FT.) (6" EQ. LENGTH)	PLASTIC	--
⑥	LEGEND (WHITE) (SQ. FT.)	PLASTIC	153.60
⑦	RED-CLEAR REFLECTIVE RAISED MARKERS	--	10
⑧	TWO-WAY YELLOW REFLEC. RAISED MARKER	--	58
⑨	CLEAR-CLEAR REFLEC. RAISED MARKER	--	--



NOTICE TO DRAWING HOLDER
NEEL-SCHAFFER, INC., HERINAFTER 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	
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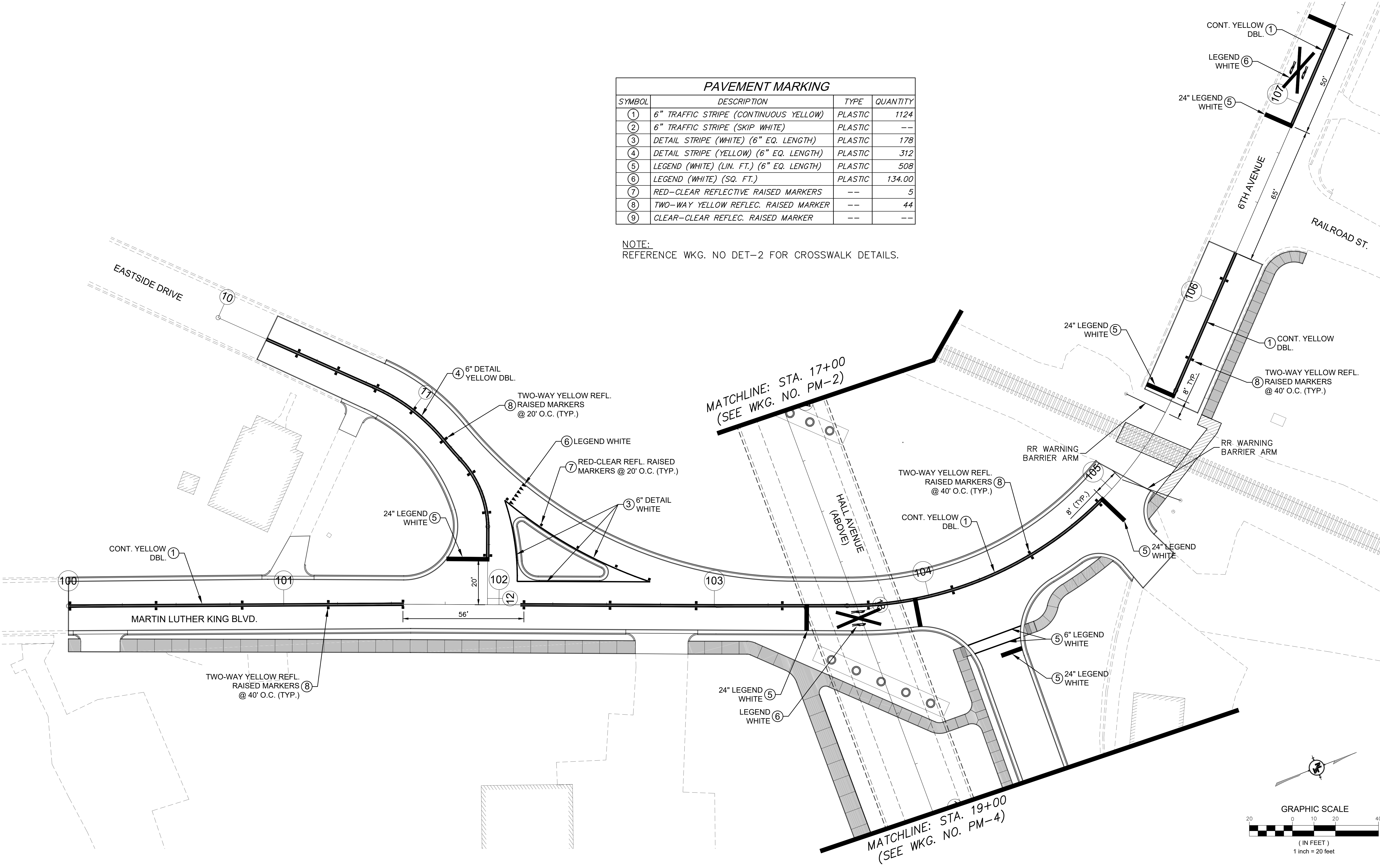
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PAVEMENT MARKING DETAILS HALL AVE. STA. 11+00 TO STA. 19+00	
WORKING NUMBER: PM-2	DRAWING NUMBER: 106

PAVEMENT MARKING			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	6" TRAFFIC STRIPE (CONTINUOUS YELLOW)	PLASTIC	1124
②	6" TRAFFIC STRIPE (SKIP WHITE)	PLASTIC	--
③	DETAIL STRIPE (WHITE) (6" EQ. LENGTH)	PLASTIC	178
④	DETAIL STRIPE (YELLOW) (6" EQ. LENGTH)	PLASTIC	312
⑤	LEGEND (WHITE) (LIN. FT.) (6" EQ. LENGTH)	PLASTIC	508
⑥	LEGEND (WHITE) (SQ. FT.)	PLASTIC	134.00
⑦	RED-CLEAR REFLECTIVE RAISED MARKERS	---	5
⑧	TWO-WAY YELLOW REFLEC. RAISED MARKER	---	44
⑨	CLEAR-CLEAR REFLEC. RAISED MARKER	---	--

NOTE:
REFERENCE WKG. NO DET-2 FOR CROSSWALK DETAILS.



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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	

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DSGN: GPC	DATE: 05/2022
DRWN: JPF	DATE: 05/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PAVEMENT MARKING DETAILS MARTIN LUTHER KING BLVD. STA. 100+00 TO STA. 107+00	
WORKING NUMBER: PM-3	DRAWING NUMBER: 107

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MATCHLINE: STA. 19+00 (SEE WKG. NO. PM-2)

MATCHLINE: STA. 25+50 (SEE WKG. NO. PM-5)

PAVEMENT MARKING			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	6" TRAFFIC STRIPE (CONTINUOUS YELLOW)	PLASTIC	842
②	6" TRAFFIC STRIPE (SKIP WHITE)	PLASTIC	--
③	DETAIL STRIPE (WHITE) (6" EQ. LENGTH)	PLASTIC	--
④	DETAIL STRIPE (YELLOW) (6" EQ. LENGTH)	PLASTIC	798
⑤	LEGEND (WHITE) (LIN. FT.) (6" EQ. LENGTH)	PLASTIC	297
⑥	LEGEND (WHITE) (SQ. FT.)	PLASTIC	--
⑦	RED-CLEAR REFLECTIVE RAISED MARKERS	--	--
⑧	TWO-WAY YELLOW REFLEC. RAISED MARKER	--	58
⑨	CLEAR-CLEAR REFLEC. RAISED MARKER	--	--

NOTE:
REFERENCE WKG. NO DET-2 FOR CROSSWALK DETAILS.

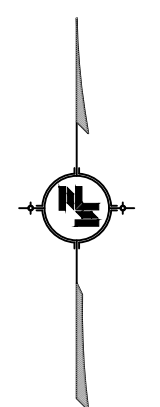
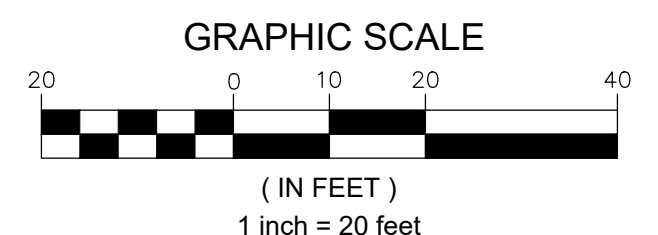
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

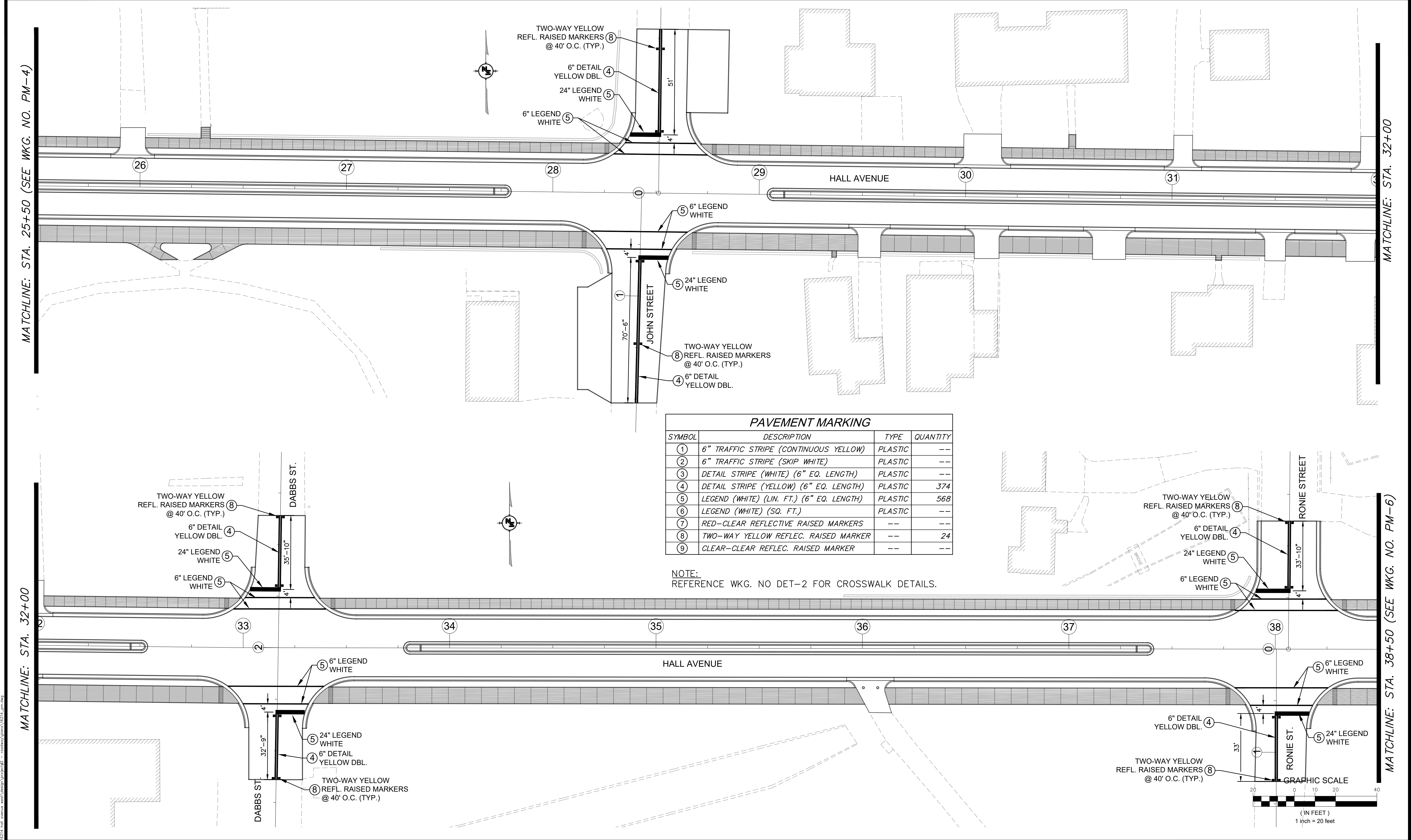


PAVEMENT MARKING DETAILS
HALL AVE.
STA. 19+00 TO STA. 25+50

WORKING NUMBER:
PM-4

DRAWING NUMBER:
108





NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION
NO.	DATE	BY	DESCRIPTION

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER

Solutions you can build upon

PAVEMENT MARKING DETAILS
HALL AVE.
STA. 25+50 TO STA. 38+50

WORKING NUMBER:
PM-5

DRAWING NUMBER:
109

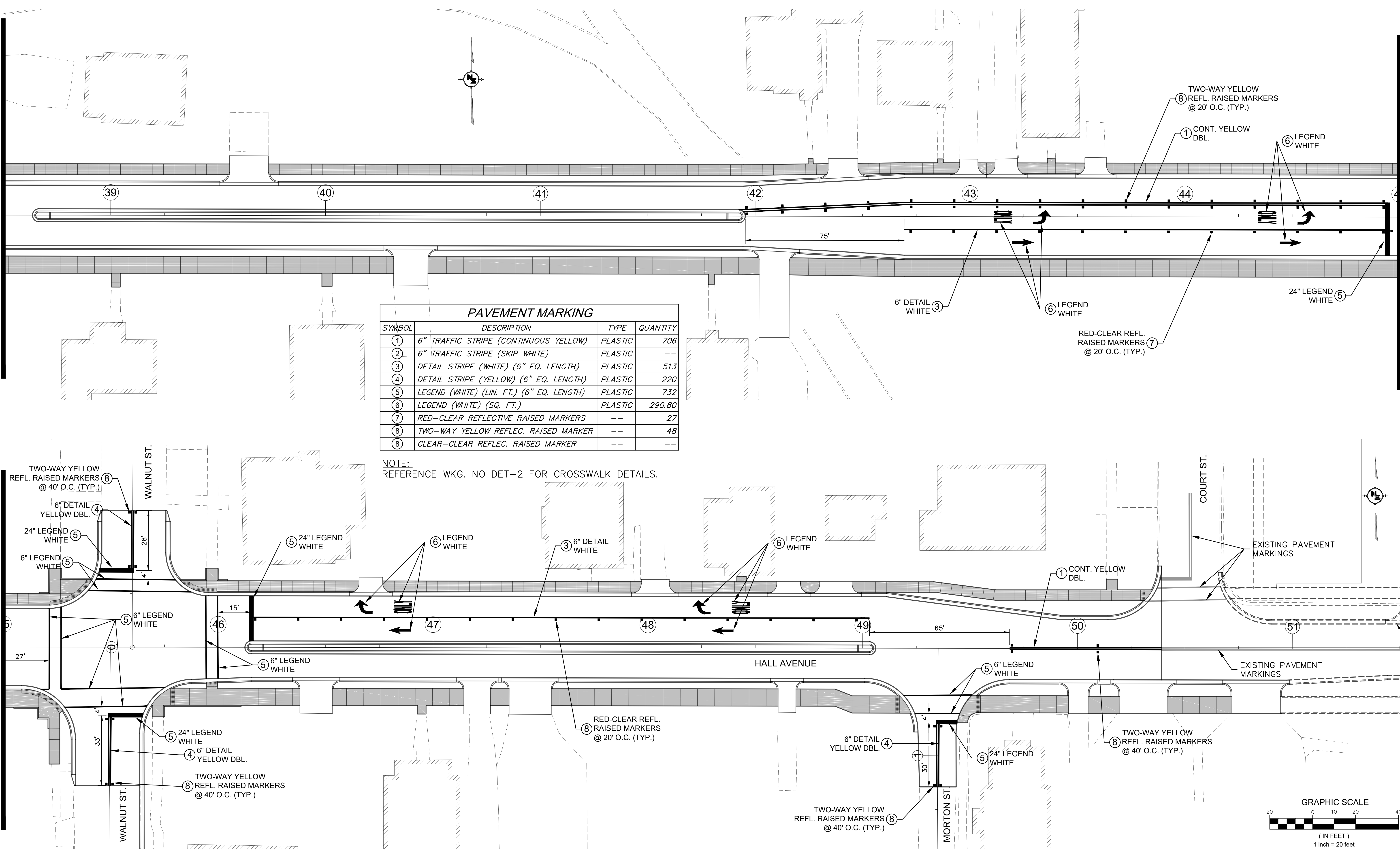
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MATCHLINE: STA. 38+50 (SEE WKG. NO. PM-5)

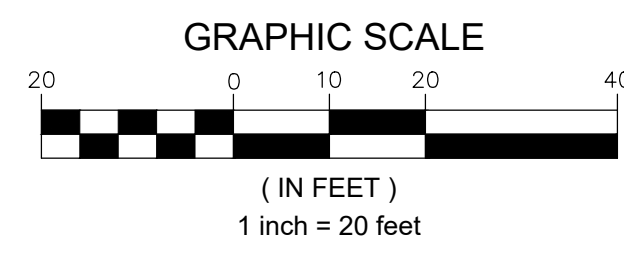
MATCHLINE: STA. 45+00

MATCHLINE: STA. 45+00



PAVEMENT MARKING			
SYMBOL	DESCRIPTION	TYPE	QUANTITY
①	6" TRAFFIC STRIPE (CONTINUOUS YELLOW)	PLASTIC	706
②	6" TRAFFIC STRIPE (SKIP WHITE)	PLASTIC	--
③	DETAIL STRIPE (WHITE) (6" EQ. LENGTH)	PLASTIC	513
④	DETAIL STRIPE (YELLOW) (6" EQ. LENGTH)	PLASTIC	220
⑤	LEGEND (WHITE) (LIN. FT.) (6" EQ. LENGTH)	PLASTIC	732
⑥	LEGEND (WHITE) (SQ. FT.)	PLASTIC	290.80
⑦	RED-CLEAR REFLECTIVE RAISED MARKERS	--	27
⑧	TWO-WAY YELLOW REFLEC. RAISED MARKER	--	48
⑧	CLEAR-CLEAR REFLEC. RAISED MARKER	--	--

NOTE:
REFERENCE WKG. NO DET-2 FOR CROSSWALK DETAILS.



NOTICE TO DRAWING HOLDER

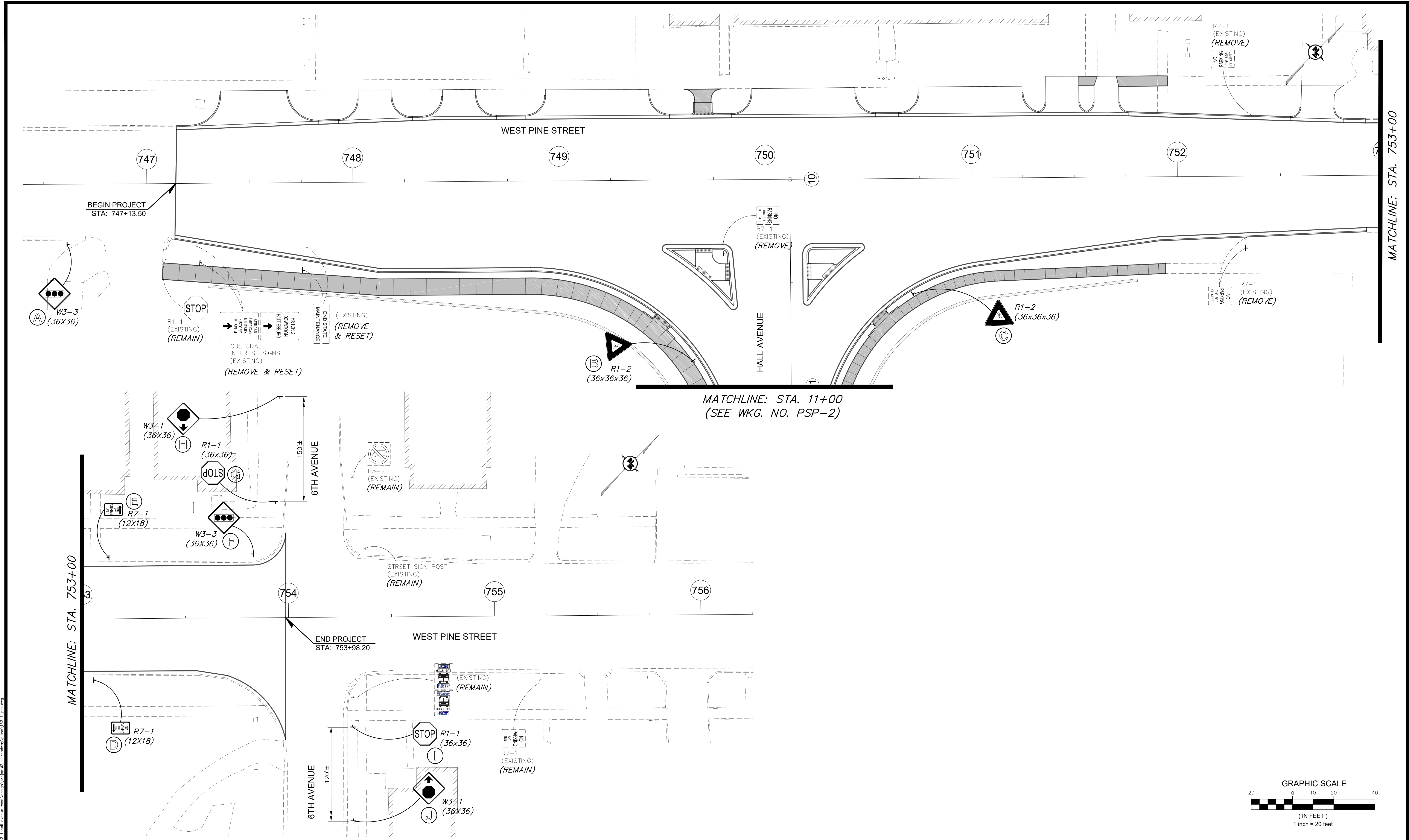
NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTATION 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	
NO.	DATE	BY	DESCRIPTION	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

PAVEMENT MARKING DETAILS
HALL AVE.
STA. 38+50 TO E.O.P.

WORKING NUMBER: PM-6	DRAWING NUMBER: 110
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		NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000			
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MATCHLINE: STA. 11+00
(SEE WKG. NO. PSP-2)

MATCHLINE: STA. 17+00

MATCHLINE: STA. 19+00
(SEE WKG. NO. PSP-4)

MATCHLINE: STA. 17+00

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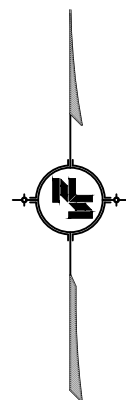
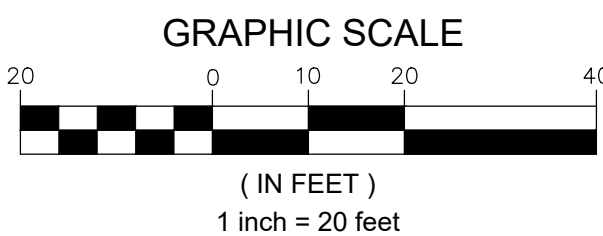
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PERMANENT SIGNING PLAN
HALL AVENUE
STA. 11+00 TO STA. 19+00

WORKING NUMBER:
PSP-2

DRAWING NUMBER:
1002



A
W8-13
(36X36)

B
W3-3
(36X36)

HALL AVENUE

HALL AVENUE

12

13

14

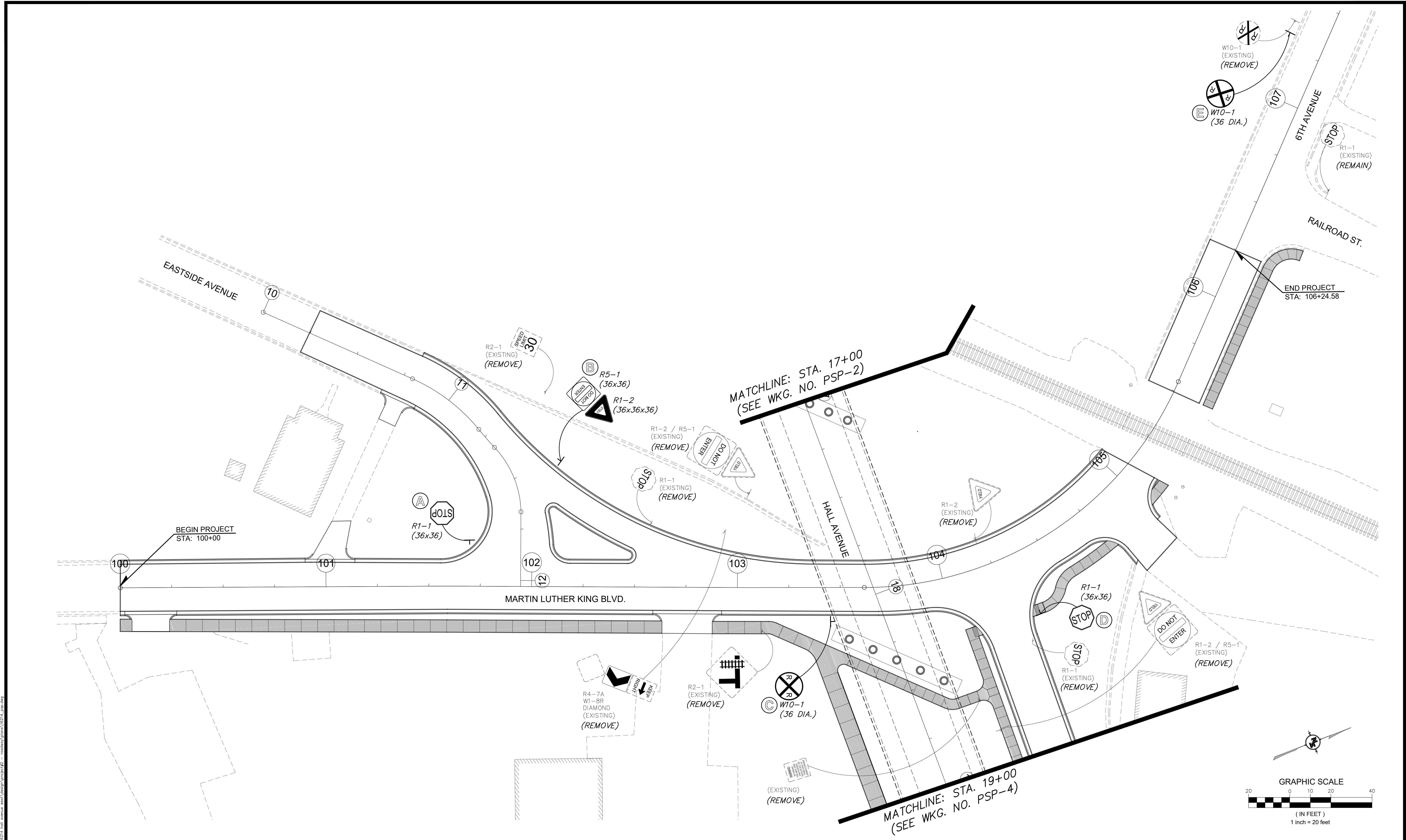
15

16

104

18

103



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				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFER

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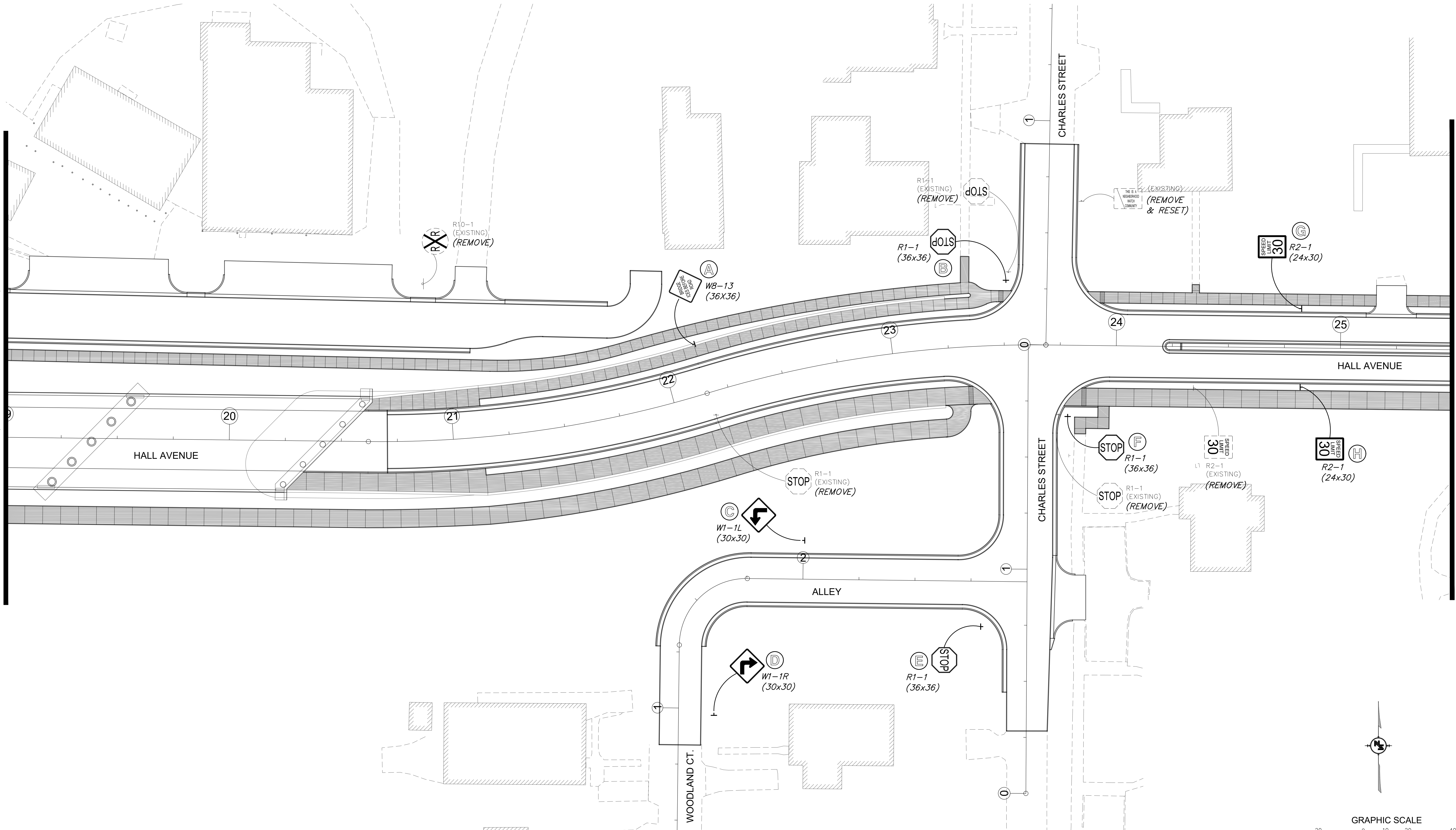
PERMANENT SIGNING PLAN
MARTIN LUTHER KING BLVD.
STA. 100+00 TO STA. 107+50

WORKING NUMBER:
PSP-3

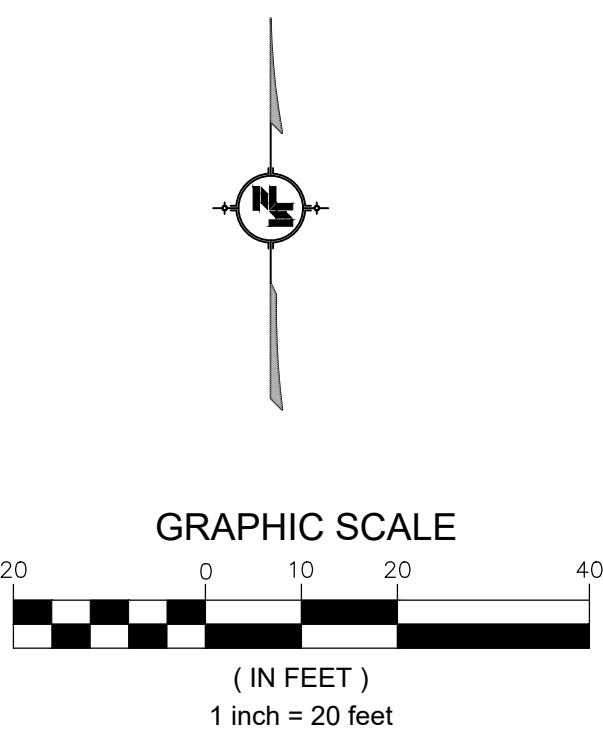
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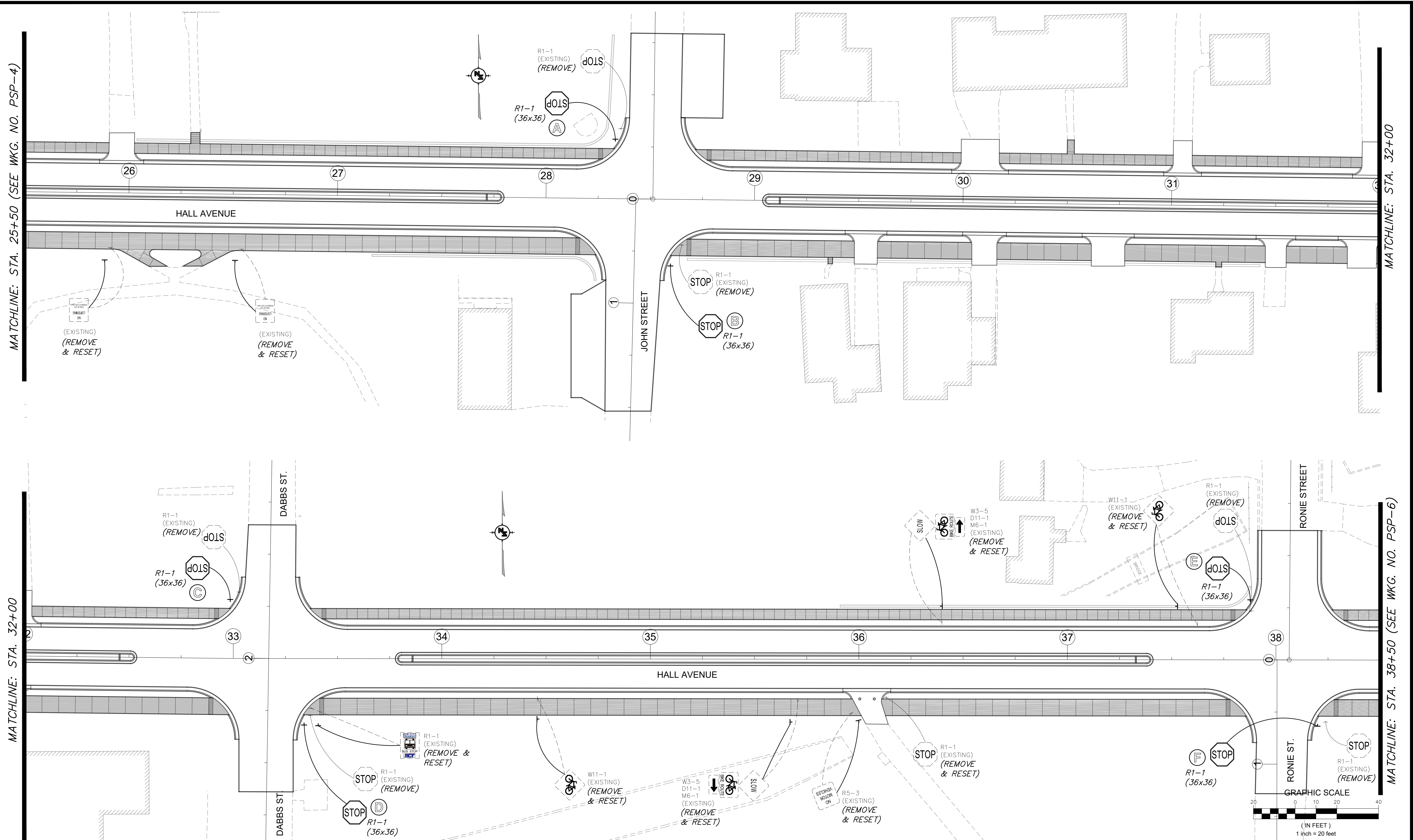
MATCHLINE: STA. 19+00 (SEE WKG. NO. PSP-2)



MATCHLINE: STA. 25+50 (SEE WKG. NO. PSP-5)



NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI		PERMANENT SIGNING PLAN HALL AVENUE STA. 19+00 TO STA. 25+50		
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000						
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					QA/QC: MWE	DATE: 08/2022					
									WORKING NUMBER: PSP-4		DRAWING NUMBER: 1004



NOTICE TO DRAWING HOLDER

REVISONS				DRAWING INFORMATION	
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				DRWN: JPF	DATE: 05/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWF	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PERMANENT SIGNING PLAN
HALL AVENUE
STA. 25+50 TO STA. 38+50

WORKING NUMBER:
PSP-5

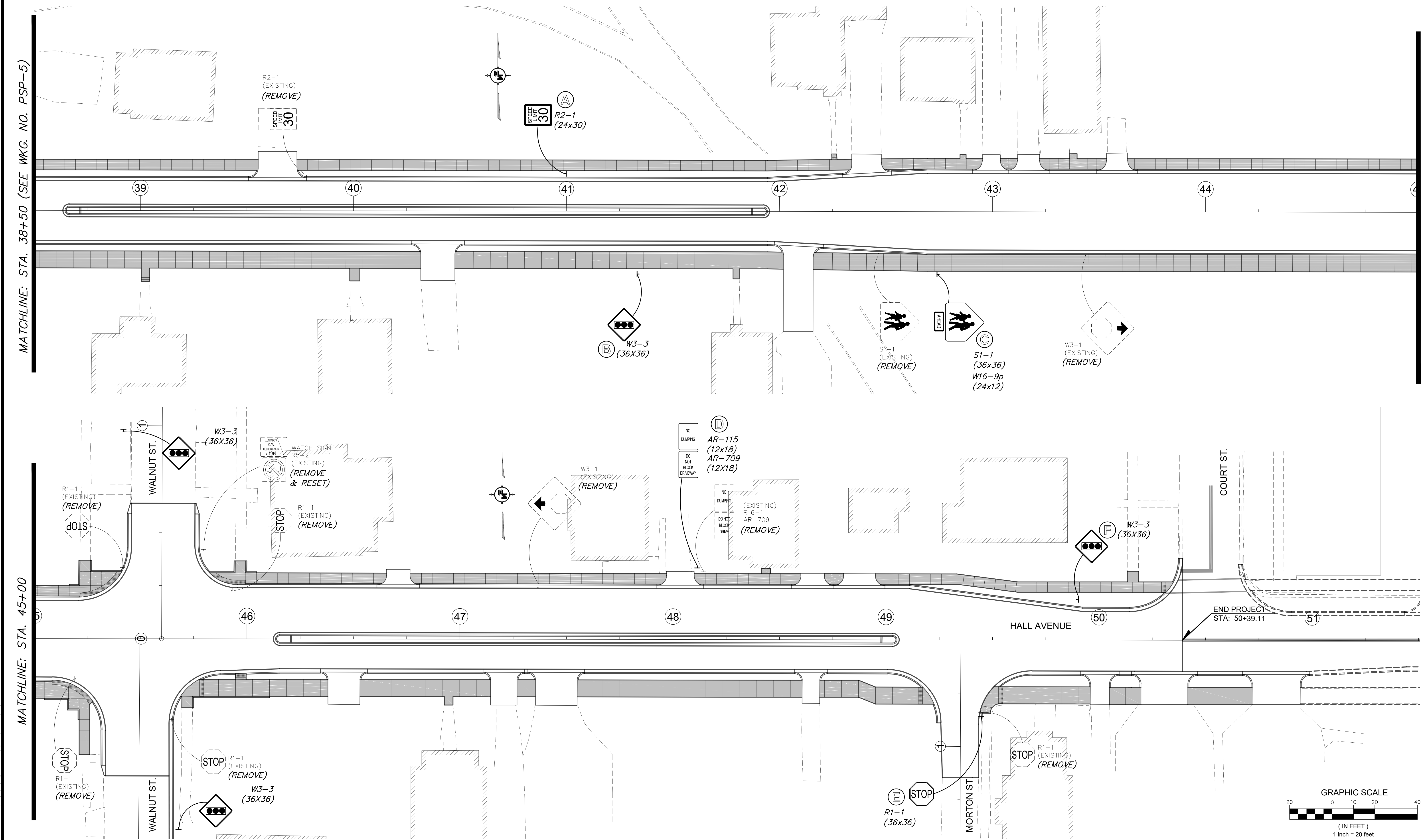
DRAWING NUMBER:
1005

8/17/2022 9:42 AM c:\p000\hattiesburg\16214 hall avenue west\psp\project\16214 hall avenue west\psp\project\16214.psd

MATCHLINE: STA. 38+50 (SEE WKG. NO. PSP-5)

MATCHLINE: STA. 45+00

MATCHLINE: STA. 45+00



NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
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			FILENAME: 16214_PSP.dwg	
			SCALE: 1" = 20'	
			SURVEYED BY: CLEARPOINT	
			DSGN: GPC DATE: 05/2022	
			DRWN: JPF DATE: 05/2022	
			CHKD: GPC DATE: 08/2022	
			QA/QC: MWE DATE: 08/2022	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PERMANENT SIGNING PLAN
HALL AVENUE
STA. 38+50 TO E.O.P.

WORKING NUMBER:
PSP-6

DRAWING NUMBER:
1006

HALL AVENUE WEST

QUANTITIES FOR TRAFFIC SIGNALS

PARTICIPATING ITEMS						NON-PARTICIPATING ITEMS		PROJECT TOTAL
Pay Item Number	Description	Units	TSI-1 West Pine Stree @ Hall Avenue	TSI-3 West Pine Street @ 6th Avenue	PARTICIPATING TOTAL	TSI-4 Walnut Street @ Hall Avenue	NON-PARTICIPATING TOTAL	
907-632-A007	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller	EA	1		1	1	1	2
907-634-A230	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 30' & 40' Arm	EA	1		1		0	1
907-634-A254	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 40' & 40' Arm	EA	1		1		0	1
907-634-A365	Traffic Signal Equipment Pole, Type III, 17' Shaft, 30' & 40' Arms	EA			0	1	1	1
907-634-A374	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 40' Arms	EA			0	1	1	1
907-634-A545	Traffic Signal Equipment Pole, Type VI, 8' Shaft	EA	1		1	2	2	3
907-634-C001	Pole Foundations, Class "B" Concrete	CY	8.43		8.43	9.02	9.02	17.45
635-A059	Traffic Signal Head, Type 1	EA	8		8	8	8	16
635-A065	Traffic Signal Head, Type 2 FYA	EA	2		2	1	1	3
635-A076	Traffic Signal Head, Type 6	EA	4		4	8	8	12
907-636-B003	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	165		165		0	165
907-636-B014	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	415		415	410	410	825
907-636-B016	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	315		315	300	300	615
907-636-B028	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor	LF	10		10	15	15	25
907-636-D001	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	80		80		0	80
907-636-D006	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	40		40	72	72	112
907-636-D008	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	205		205	197	197	402
907-637-A002	Pull Box Enclosure, Type 2	EA	2		2	3	3	5
907-637-A003	Pull Box Enclosure, Type 3	EA	1		1	1	1	2
907-637-C028	Traffic Signal Conduit, Underground, Type 4, 2"	LF	35		35	65	65	100
907-637-C030	Traffic Signal Conduit, Underground, Type 4, 3"	LF	30		30	40	40	70
907-637-D003	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"	LF	130		130	200	200	330
907-639-B001	Type 1 Optical Detector	EA	3		3	4	4	7
907-639-C001	Type 1 Optical Detector Cable	EA	455		455	480	480	935
907-639-D001	Multimode Phase Selector	EA	1		1	1	1	2
907-643-A003	Video Vehicle Detection Sensor, Type 3	EA	1		1	1	1	2
907-643-B001	Video Vehicle Detection Cable	LF	60		60	110	110	170
907-645-B001	Accessible Pedestrian Detection Assembly	EA	4		4	8	8	12
647-A001	Removal of Existing Traffic Signal Equipment	LS		100%	1		0	1
907-653-A001	Traffic Sign	SF			0		0	0
907-653-B001	Street Name Sign	SF	24		24	22.5	22.5	46.5
907-663-A001	Network Switch, Type A	EA	1		1		0	1

Traffic Signal Project Notes

1. SPECIFICATIONS FROM THE MISSISSIPPI STANDARD SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION BY MISSISSIPPI DEPARTMENT OF TRANSPORTATION, ENGLISH 2017 EDITION WILL BE USED UNLESS OTHERWISE NOTED BY SPECIAL PROVISIONS.
2. CONSTRUCTION SHALL COMPLY WITH ALL GOVERNING CODES.
3. SIGNAL CONTRACTOR SHALL BE RESPONSIBLE FOR CALLING MISSISSIPPI-811 TO VERIFY EXISTING UTILITIES. CONTRACTOR SHALL BE RESPONSIBLE FOR DAMAGES TO EXISTING UTILITIES AND FOR ALL INTERRUPTIONS CAUSED AS A RESULT OF HIS WORK.
4. ALL NEW RAISED OBJECTS TO BE PLACED A MINIMUM OF 2 FT. BEHIND FACE OF CURB. NEW TRAFFIC SIGNAL POLES TO BE PLACED A MINIMUM OF 8 FT. BEHIND FACE OF CURB EXCEPT WHERE IN CONFLICT WITH UTILITIES OR RIGHT-OF-WAY. PLACEMENT OF RAISED OBJECTS AND NEW POLES SHALL CONFORM TO A.D.A. REQUIREMENTS.
5. CONSTRUCTION SURVEY AND STAKING SHALL BE THE RESPONSIBILITY OF THE SIGNAL CONTRACTOR. (INCLUDED IN GENERAL CONSTRUCTION STAKING PAY ITEM). ALL NEW SIGNAL EQUIPMENT LOCATIONS SHALL BE STAKED BY CONTRACTOR. ANY FIELD ADJUSTMENTS SHALL BE MADE BY THE CONTRACTOR AND NEW LOCATION APPROVED BY THE PROJECT ENGINEER PRIOR TO INSTALLATION.
6. CONTROLLER TIMINGS TO BE PROVIDED BY CITY.
7. NEW TRAFFIC SIGNAL CONTROLLERS / MMU'S / AND/OR CONTROLLER CABINETS SHALL BE THE LATEST MODEL AND EQUIPPED WITH 3.58G FIRMWARE. TRAFFIC SIGNAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING AND DOWNLOADING NEW TIMINGS INTO NEW CONTROLLERS PRIOR TO TURN ON. CONTRACTOR SHALL SUPPLY THUMB DRIVE WITH LATEST TIMINGS IN EACH CABINET.
8. PUSHBUTTONS SHALL BE INSTALLED TO BEST MEET ADA REQUIREMENTS. PREFERRED HEIGHT OF BUTTONS ARE 42".
9. CONTRACTOR SHALL MAINTAIN MINIMUM HEIGHT REQUIREMENTS FOR SIGNAL HEADS (17' VERTICAL CLEARANCE TO ROADWAY) AND MINIMUM HEAD SPACING (8' HORIZONTAL).
10. SIGNAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY MAKE-READY COST INCURRED TO PROVIDE POWER SERVICES TO THE EQUIPMENT, NOT A SEPARATE PAY ITEM (COST ABSORBED UNDER OTHER SIGNAL ITEMS). THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING AN INDEPENDENT INVESTIGATION INTO UTILITY MAKE-READY COST FOR BIDDING PURPOSES.
11. SIGNAL CONTRACTOR SHALL BE REQUIRED TO REMOVE ANY UNUSED MATERIAL SUCH AS EXCAVATION OR DEBRIS AT THE END OF EACH DAY. THE COST OF DISPOSING OF MATERIALS DEEMED AS EXCESS EXCAVATION BY THE ENGINEER SHALL BE ABSORBED FOR PAYMENT IN OTHER ITEMS. AREAS THAT ARE DISTURBED, AND WHICH WILL NOT RECEIVE ADDITIONAL CONSTRUCTION FOR 14 DAYS OR MORE, SHALL RECEIVE SEEDING AND MULCH WITHIN 7 DAYS OF BEING DISTURBED AS AN EROSION CONTROL MEASURE (COST ABSORBED).
12. ALL COSTS ASSOCIATED WITH TRAFFIC CONTROL DEVICES AND INSTALLATION SHALL BE INCLUDED IN MAINTENANCE OF TRAFFIC (618-A001).
13. ALL WORK REQUIRING A LANE CLOSURE IF NOT PART OF A DETOUR PLAN, SHALL BE RESTRICTED TO: MONDAY THROUGH FRIDAY, THE CONTRACTOR SHALL NOT BE ALLOWED TO CLOSE ANY LANES BETWEEN THE HOURS OF 7:00 - 8:30 A.M. OR BETWEEN 4:00 - 5:30 P.M.
14. THE MAJORITY OF CONSTRUCTION SHOULD BE ABLE TO BE ACCOMPLISHED WITH SHOULDER WORK ONLY, SEE TSD-10 AND TCP SHEETS FOR DETAILS. IF THE CONTRACTOR REQUIRED A SHORT-TERM STATIONARY (DAYTIME WORK OCCUPYING A LOCATION FOR MORE THAN 1 HOUR) FULL LANE CLOSURE, CONTRACTOR SHALL BE REQUIRED TO INSTALL TRAFFIC CONTROL MEASURES AS SHOWN ON MDOT STANDARD SHEETS. CONTRACTOR WILL BE REQUIRED TO USE AN ARROW PANEL.
15. EXISTING SALVAGED TRAFFIC SIGNAL EQUIPMENT SHALL BE RETURNED TO THE CITY. CONTRACTOR SHALL CONTACT THE CITY TO DETERMINE WHICH ITEMS THEY WANT AND THE LOCATION OF RETURN. PAID FOR UNDER 647-A001, REMOVAL OF EXISTING TRAFFIC SIGNAL, LUMP SUM. DISPOSAL OF UNWANTED ITEMS SHALL BE INCLUDED IN THIS PAY ITEM WITH NO ADDITION COST TO THE PROJECT.
16. SEE THIS SHEET FOR MORE INFO ON PAY ITEM FOOTNOTES; TSD-1 FOR ADDITIONAL GENERAL NOTES.

8/11/2022 4:09 PM c:\p000\hattiesburg\16214_half_avenue_west\tsi\project\2 -- roadway\gintah\16214_half-eq-- notes.dwg

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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		HALL AVENUE - PHASE 2 - ROADWAY WEST PINE STREET TO COURT STREET FEDERAL AID PROJECT NO. FBLD-8769-00(001)LPA/108639-802000 CITY OF HATTIESBURG - FORREST COUNTY HATTIESBURG, MISSISSIPPI	PRELIMINARY NOT FOR CONSTRUCTION		TRAFFIC SIGNAL ESTIMATED QUANTITIES & NOTES	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000 FILENAME: 16214_TSI-EQ_ NOTES.dwg SCALE: NO SCALE SURVEYED BY: DSGN: GPC DATE: 05/2022 DRWN: JPF DATE: 05/2022 CHKD: DATE: QA/QC: DATE:				WORKING NUMBER: TSI-EQ	DRAWING NUMBER: 2001

NO FL	FLR	FLR	FLR
 01	 02	NOT USED 03	 04
 05	 06	NOT USED 07	 08
NO FL	FLR		FLR

NEW POLES SHALL BE BLACK IN COLOR.
DESIGN WIND SPEED = 120 MPH WITH NO ICE LOADING.
POLE FOUNDATIONS SHALL BE CLASS B CONCRETE.

POLES	SHAFT	ARM	TYPE	FOUNDATION	SPACING	ST. NAME SIGN
P1	30'	40' S	III (L)	36" x 15'	9', 15', 27', 36', 39'	Hall Ave
		40' W			14', 25', 36'	W Pine St
P2	30'	40' N	III (L)	36" x 15'	10', 16', 28', 37', 40'	Hall Ave
		30' E			8', 15', 26'	W Pine St
P3	8'	---	VI	24" x 5'	PEDESTAL POLE	

Diagram illustrating the layout of two rectangular signs with dimensions and area calculations.

Left Sign (W Pine St):

- Overall Width: 4'-6"
- Overall Height: 1'-6"
- Top Border: 5.4"
- Bottom Border: 4.7"
- Left Border: 6.1"
- Right Border: 6.1"
- Text Area Width: 41.8"
- Text Area Height: 8"
- Area: 6.75 SF

Right Sign (Hall Ave):

- Overall Width: 3'-6"
- Overall Height: 1'-6"
- Top Border: 5.4"
- Bottom Border: 4.7"
- Left Border: 3.75"
- Right Border: 3.75"
- Text Area Width: 34.5"
- Text Area Height: 8"
- Area: 5.25 SF

12" LENSES W BACKPLATES

TYPE 1

TYPE 2 FYA

TYPE 6

**COUNTDOWN
LED**

**SIGNAL HEAD INVENTORY
EXISTING : NONE**

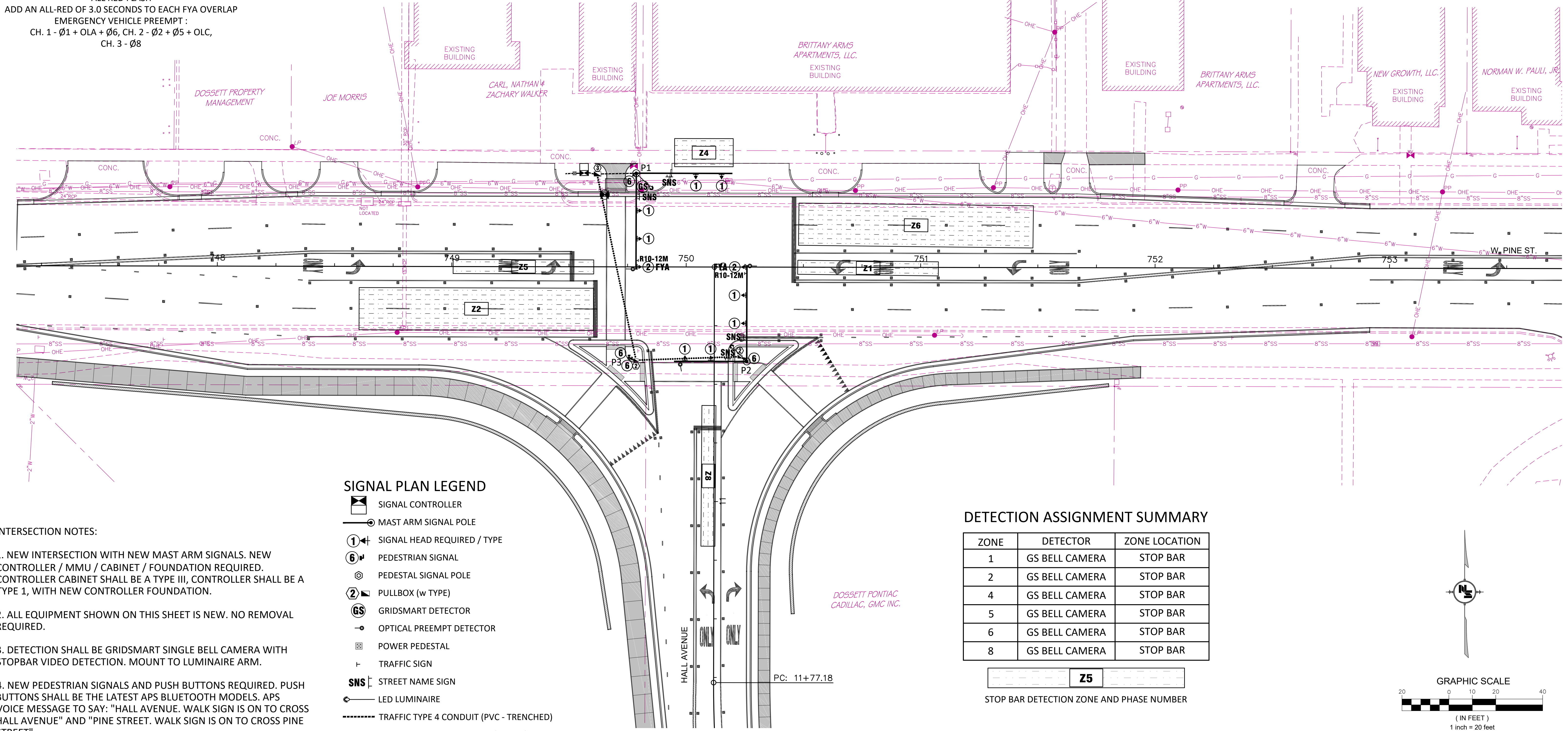
NEW : 8-1's, 2-FYA's, 4-6's

HEADS SHALL BE YELLOW IN COLOR

R10-3e
9" x 15"

LEFT TURN
YIELD
ON FLASHING
YELLOW
ARROW

R10-12M
30" x 36"
OST ABSORBED
SUPPLIED w
FYA HEAD



ZONE	DETECTOR	ZONE LOCATION
1	GS BELL CAMERA	STOP BAR
2	GS BELL CAMERA	STOP BAR
4	GS BELL CAMERA	STOP BAR
5	GS BELL CAMERA	STOP BAR
6	GS BELL CAMERA	STOP BAR
8	GS BELL CAMERA	STOP BAR

A north arrow pointing upwards, with a circle in the center containing the letters 'N' and 'S'. Below the arrow is a graphic scale bar with alternating black and white segments. The scale is marked with the numbers 20, 0, 10, 20, and 40. Below the scale bar, the text '(IN FEET)' is written, followed by the text '1 inch = 20 feet'.

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

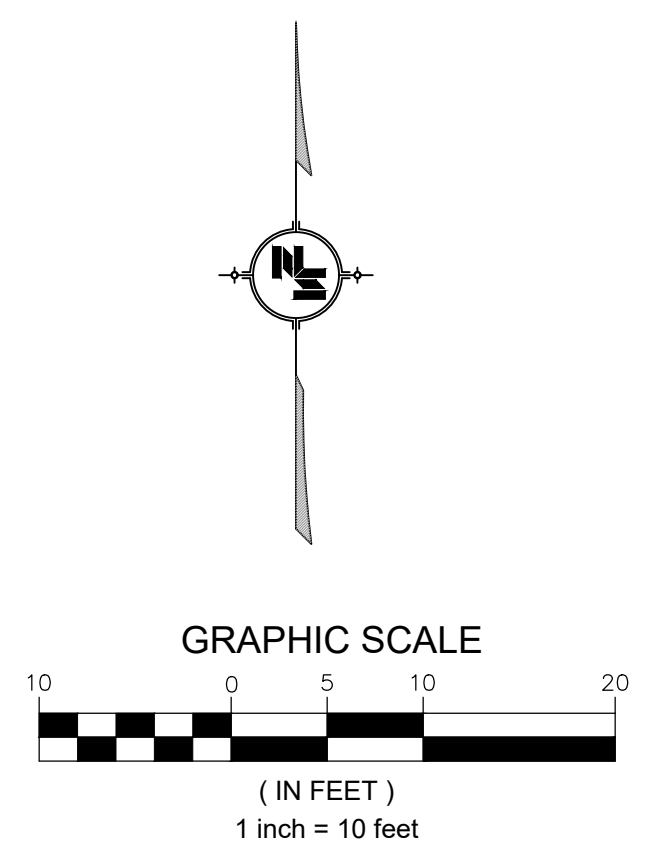
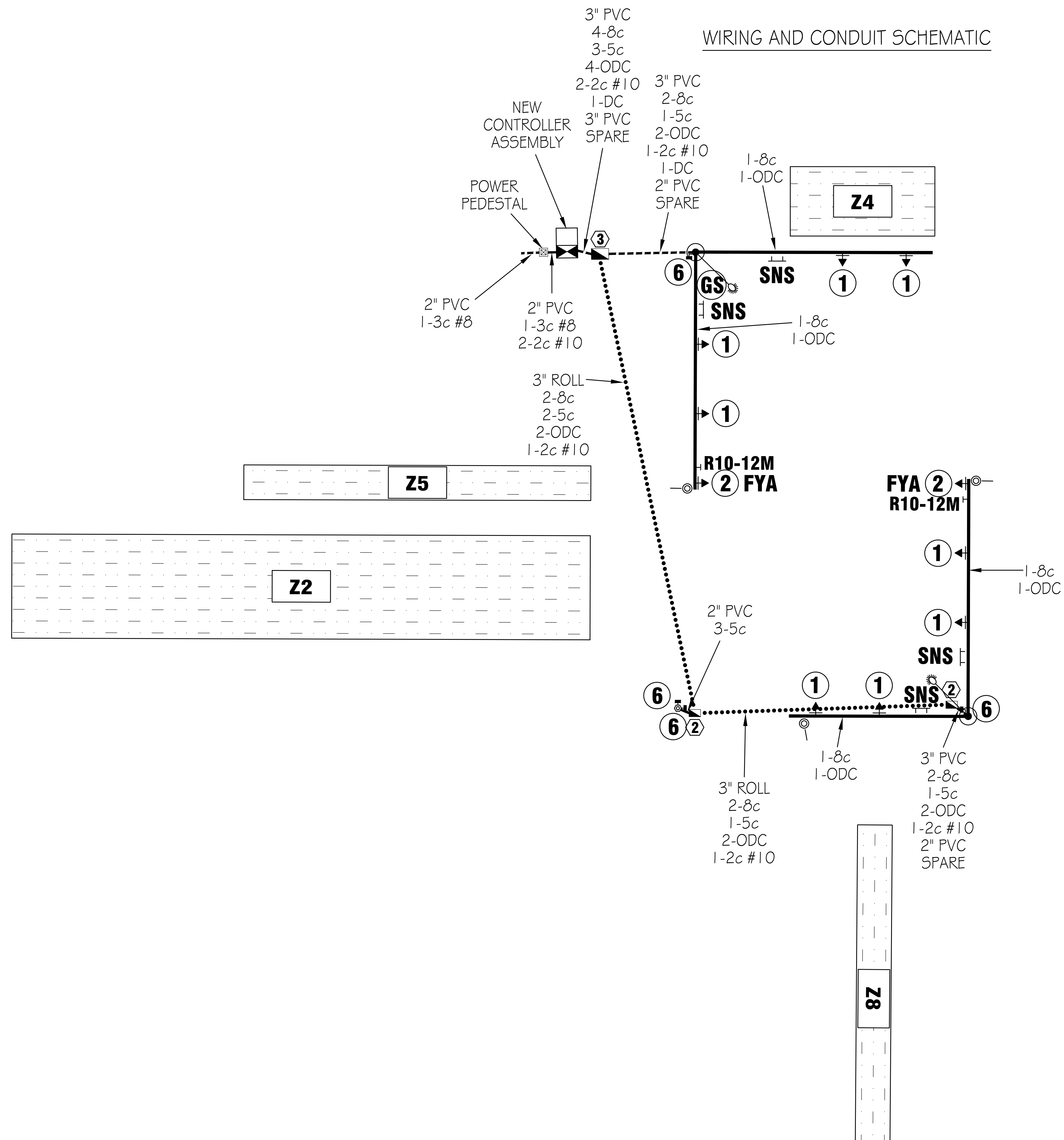
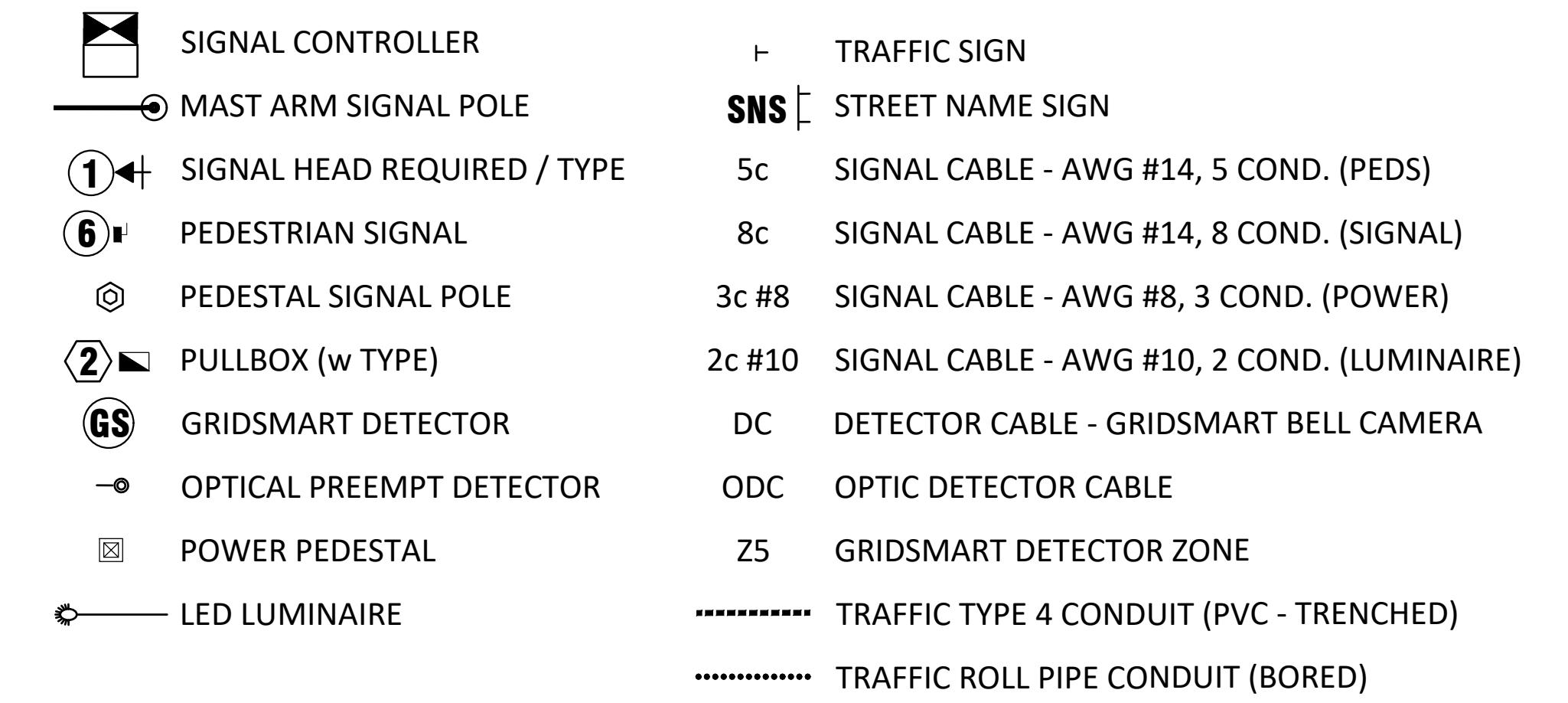


TRAFFIC SIGNAL INSTALLATION WEST PINE STREET / HALL AVENUE

WORKING NUMBER:
TSI-1

DRAWING NUMBER:
2002

SIGNAL PLAN LEGEND



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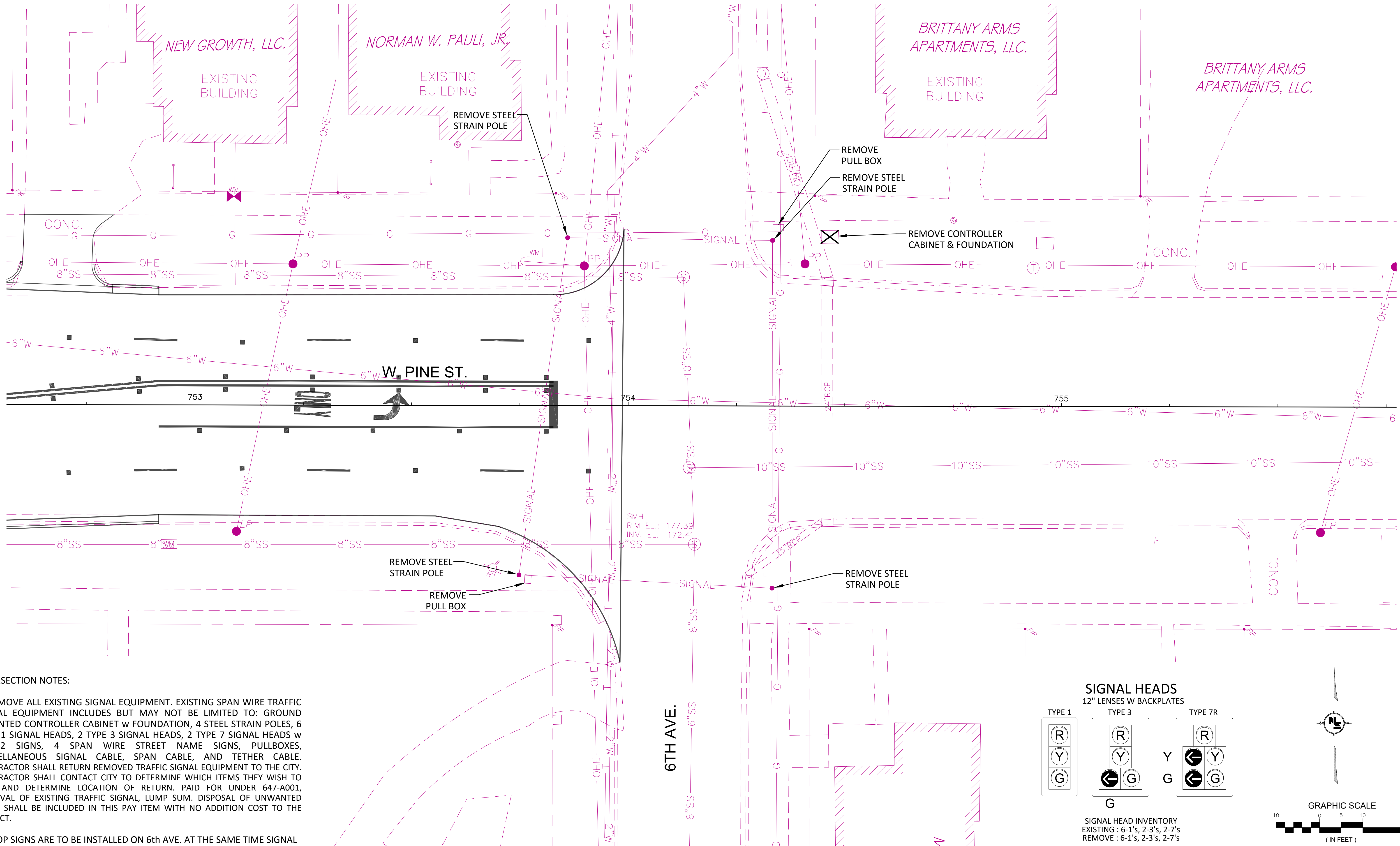
HALL AVENUE - PHASE 2 - ROADWAY
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TRAFFIC SIGNAL
WIRING & CONDUIT SCHEMATIC
WEST PINE STREET / HALL AVENUE

WORKING NUMBER:
TSI-2

DRAWING NUMBER:
2003



INTERSECTION NOTES:

1. REMOVE ALL EXISTING SIGNAL EQUIPMENT. EXISTING SPAN WIRE TRAFFIC SIGNAL EQUIPMENT INCLUDES BUT MAY NOT BE LIMITED TO: GROUND MOUNTED CONTROLLER CABINET w FOUNDATION, 4 STEEL STRAIN POLES, 6 TYPE 1 SIGNAL HEADS, 2 TYPE 3 SIGNAL HEADS, 2 TYPE 7 SIGNAL HEADS w R10-12 SIGNS, 4 SPAN WIRE STREET NAME SIGNS, PULLBOXES, MISCELLANEOUS SIGNAL CABLE, SPAN CABLE, AND TETHER CABLE. CONTRACTOR SHALL RETURN REMOVED TRAFFIC SIGNAL EQUIPMENT TO THE CITY. CONTRACTOR SHALL CONTACT CITY TO DETERMINE WHICH ITEMS THEY WISH TO KEEP AND DETERMINE LOCATION OF RETURN. PAID FOR UNDER 647-A001, REMOVAL OF EXISTING TRAFFIC SIGNAL, LUMP SUM. DISPOSAL OF UNWANTED ITEMS SHALL BE INCLUDED IN THIS PAY ITEM WITH NO ADDITION COST TO THE PROJECT.

2. STOP SIGNS ARE TO BE INSTALLED ON 6th AVE. AT THE SAME TIME SIGNAL IS PUT OUT OF SERVICE. SEE WORKING NUMBER PSP-1.

SIGNAL HEADS
12" LENSES W BACKPLATES

TYPE 1

TYPE 3

TYPE 7R

SIGNAL HEAD INVENTORY
EXISTING : 6-1's, 2-3's, 2-7's
REMOVE : 6-1's, 2-3's, 2-7's

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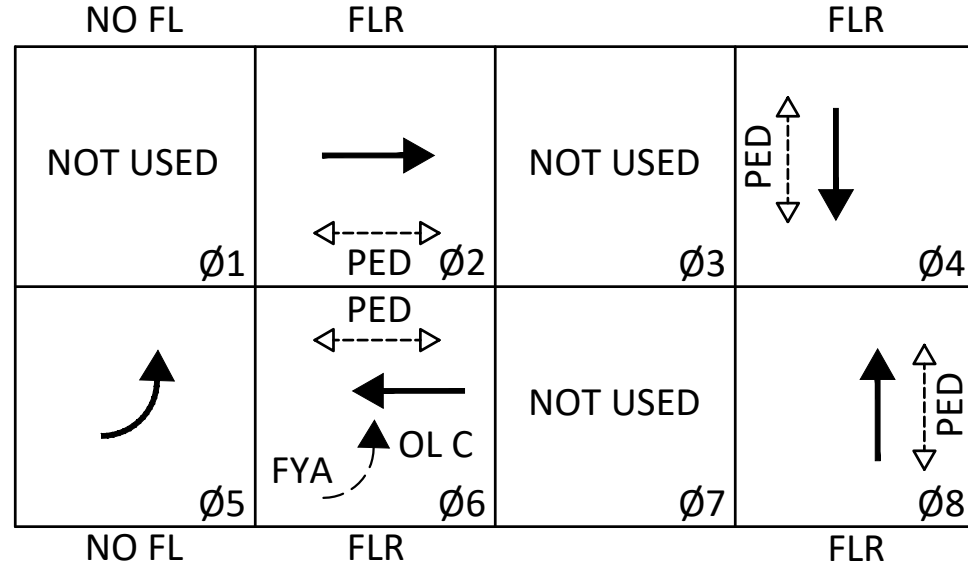


TRAFFIC SIGNAL DEMOLITION
WEST PINE STREET / 6TH AVENUE

WORKING NUMBER:
TSI-3

DRAWING NUMBER:
2004

SIGNAL PHASING DIAGRAM



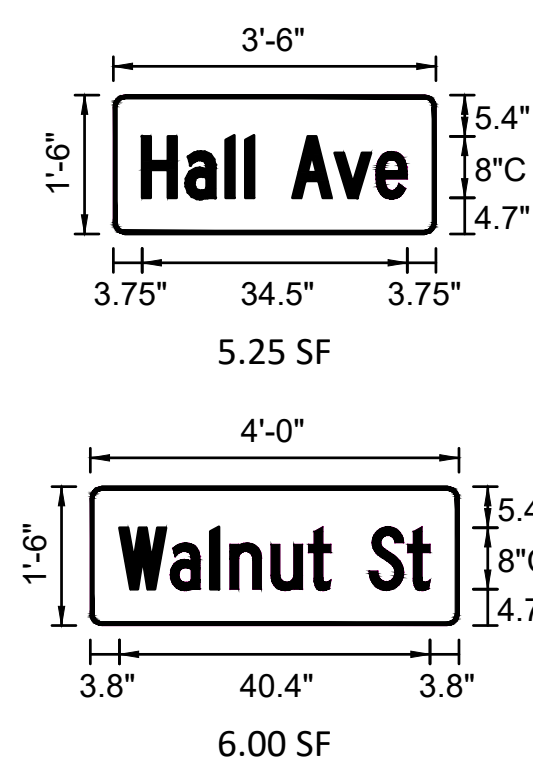
OL C = -G/Y = 5, +GRN = 6, FLR
VOLUME/DENSITY TIMING, MINIMUM RECALL - Ø2 & Ø6
ALL RED FLASH
ADD AN ALL-RED OF 3.0 SECONDS TO EACH FYA OVERLAP
EMERGENCY VEHICLE PREEMPT :
CH. 1 - Ø6, CH. 2 - Ø2 + Ø5 + OLC,
CH. 3 - Ø8, CH. 4 - Ø4

SIGNAL POLE CHART

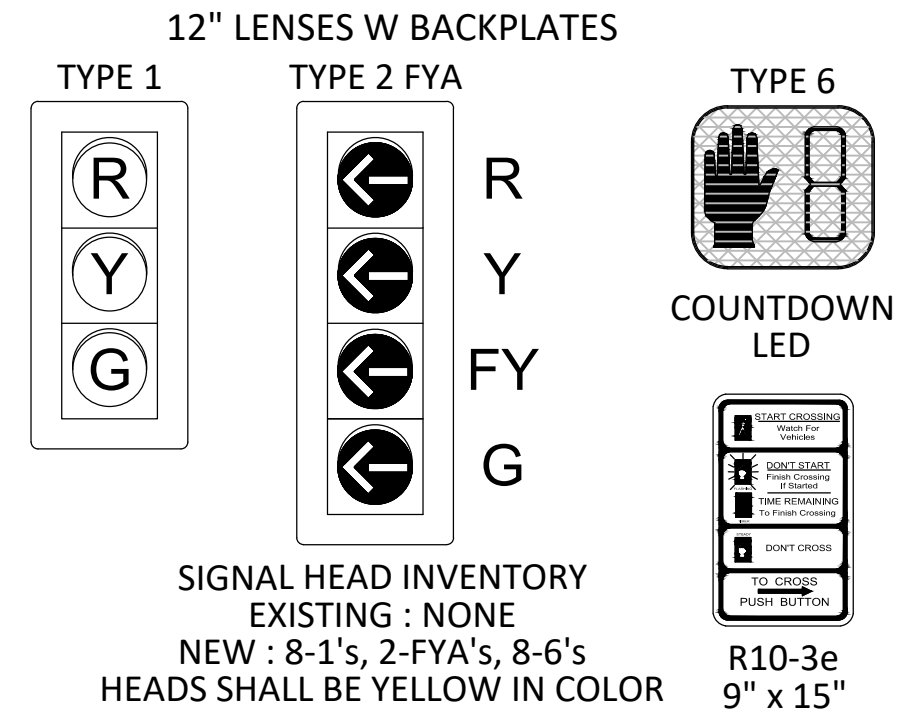
POLES	SHAFT	ARM	TYPE	FOUNDATION	SPACING	ST. NAME SIGN
P1	17'	30' S 40' W	III	36" x 15'	8', 14', 24'	Walnut St Hall Ave
P2	8'	---	VI	24" x 5'	PEDESTAL POLE	
P3	17'	40' N 35' E	III	36" x 15'	9', 15', 27', 36', 39'	Walnut St Hall Ave
P4	8'	---	VI	24" x 5'	PEDESTAL POLE	

NEW POLES SHALL BE BLACK IN COLOR.
DESIGN WIND SPEED = 120 MPH WITH NO ICE LOADING.
POLE FOUNDATIONS SHALL BE CLASS B CONCRETE.

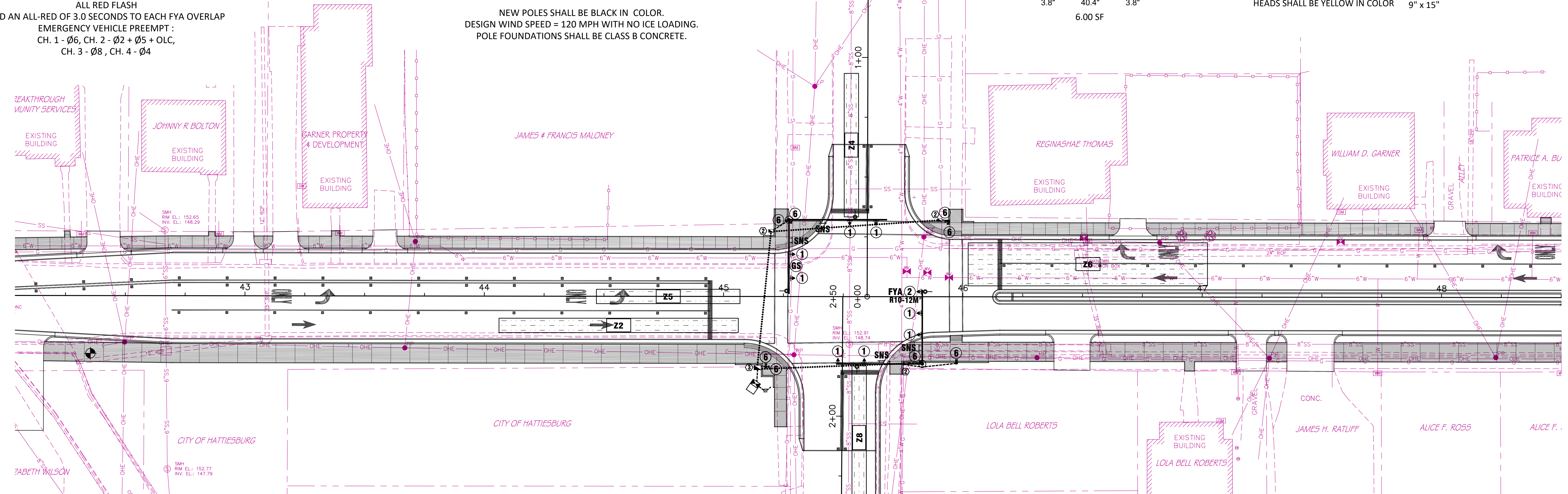
STREET NAME SIGNS



SIGNAL HEADS



OVERHEAD SIGNS



SIGNAL PLAN LEGEND

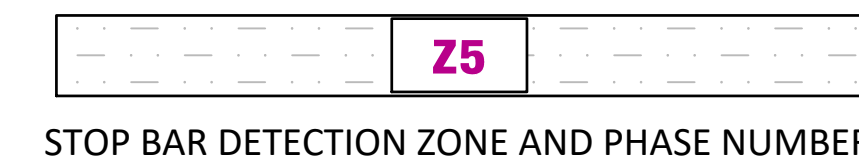
- SIGNAL CONTROLLER
- MAST ARM SIGNAL POLE
- SIGNAL HEAD REQUIRED / TYPE
- PEDESTRIAN SIGNAL
- PEDESTAL SIGNAL POLE
- PULLBOX (w TYPE)
- GRIDSMAST DETECTOR
- OPTICAL PREEMPT DETECTOR
- POWER PEDESTAL
- TRAFFIC SIGN
- STREET NAME SIGN
- LED LUMINAIRE
- TRAFFIC TYPE 4 CONDUIT (PVC - TRENCHED)
- TRAFFIC ROLL PIPE CONDUIT (BORED)

INTERSECTION NOTES:

- 4-WAY STOP INTERSECTION SHALL BE CONVERTED TO NEW MAST ARM SIGNALS. NEW CONTROLLER / MMU / CABINET / FOUNDATION REQUIRED. CONTROLLER CABINET SHALL BE A TYPE III, CONTROLLER SHALL BE A TYPE 1, WITH NEW CONTROLLER FOUNDATION.
- ALL EQUIPMENT SHOWN ON THIS SHEET IS NEW. ONLY REMOVAL REQUIRED IS OF STOP SIGNS ONCE SIGNAL BECOMES OPERATIONAL.
- DETECTION SHALL BE GRIDSMAST SINGLE BELL CAMERA WITH STOPBAR VIDEO DETECTION. MOUNT TO MAST ARM.
- NEW PEDESTRIAN SIGNALS AND PUSH BUTTONS REQUIRED. PUSH BUTTONS SHALL BE THE LATEST APS BLUETOOTH MODELS. APS VOICE MESSAGE TO SAY: "HALL AVENUE. WALK SIGN IS ON TO CROSS HALL AVENUE" AND "WALNUT STREET. WALK SIGN IS ON TO CROSS WALNUT STREET".

DETECTION ASSIGNMENT SUMMARY

ZONE	DETECTOR	ZONE LOCATION
2	GS BELL CAMERA	STOP BAR
4	GS BELL CAMERA	STOP BAR
5	GS BELL CAMERA	STOP BAR
6	GS BELL CAMERA	STOP BAR
8	GS BELL CAMERA	STOP BAR



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HATTIESBURG, MISSISSIPPI

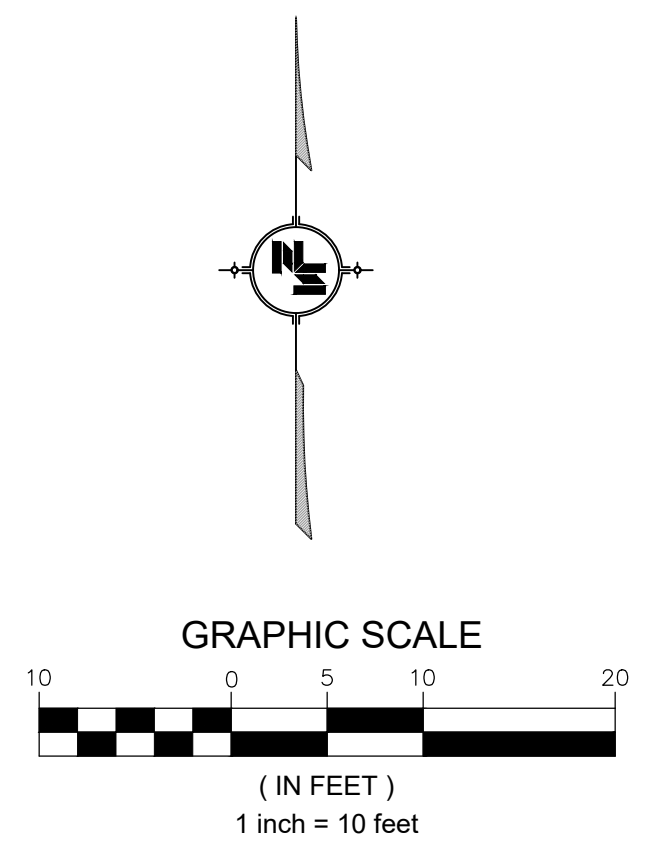
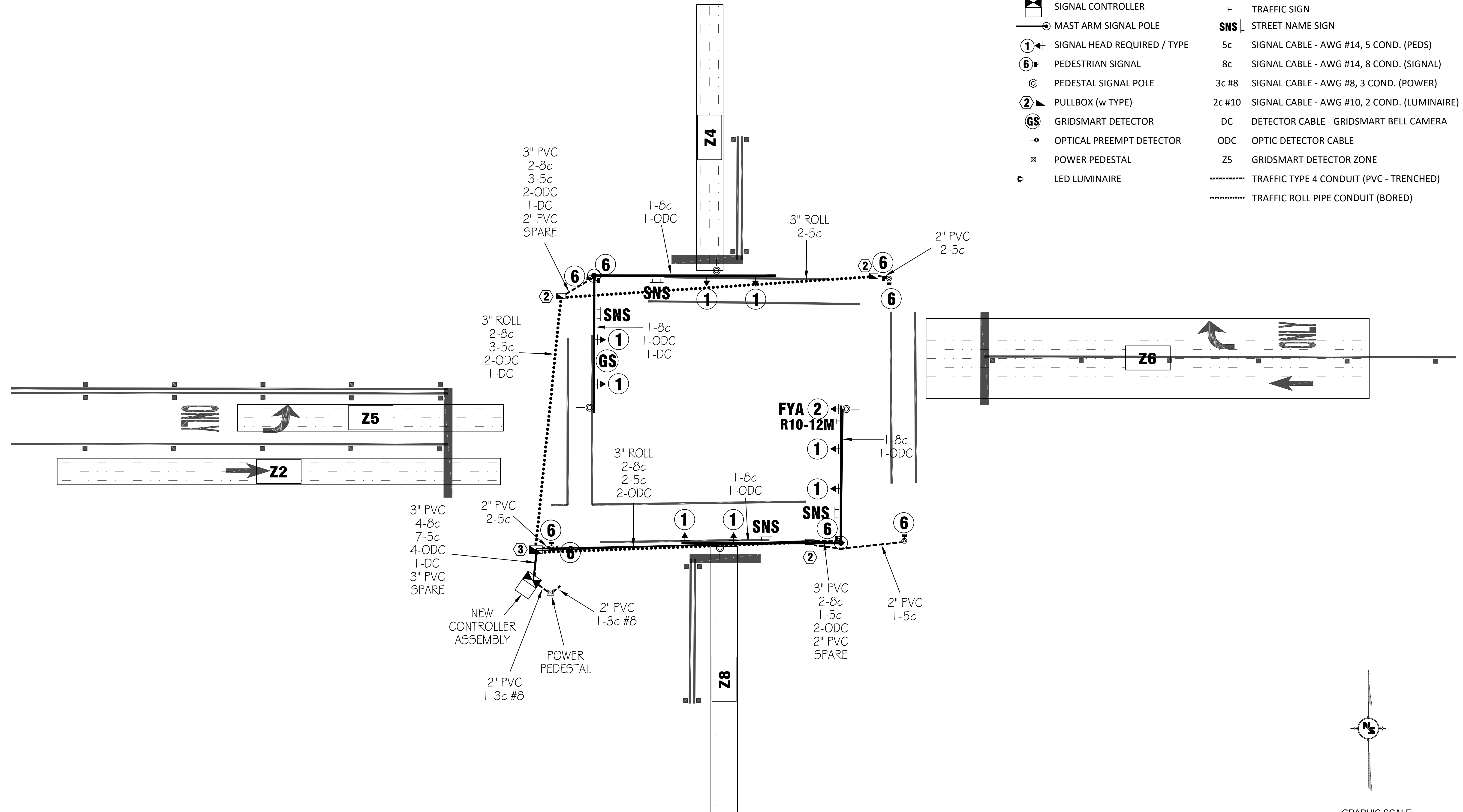


TRAFFIC SIGNAL INSTALLATION
HALL AVENUE / WALNUT STREET
NON-PARTICIPATING

WORKING NUMBER:
TSI-4

DRAWING NUMBER:
2005

	SIGNAL CONTROLLER		TRAFFIC SIGN
	MAST ARM SIGNAL POLE		STREET NAME SIGN
	SIGNAL HEAD REQUIRED / TYPE	5c	SIGNAL CABLE - AWG #14, 5 COND. (PEDS)
	PEDESTRIAN SIGNAL	8c	SIGNAL CABLE - AWG #14, 8 COND. (SIGNAL)
	PEDESTAL SIGNAL POLE	3c #8	SIGNAL CABLE - AWG #8, 3 COND. (POWER)
	PULLBOX (w TYPE)	2c #10	SIGNAL CABLE - AWG #10, 2 COND. (LUMINAIRE)
	GRIDSMART DETECTOR	DC	DETECTOR CABLE - GRIDSMART BELL CAMERA
	OPTICAL PREEMPT DETECTOR	ODC	OPTIC DETECTOR CABLE
	POWER PEDESTAL	Z5	GRIDSMART DETECTOR ZONE
	LED LUMINAIRE	-----	TRAFFIC TYPE 4 CONDUIT (PVC - TRENCHED)
			TRAFFIC ROLL PIPE CONDUIT (BORED)



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	
NO.	DATE	BY	DESCRIPTION		
				N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_TSI.dwg	
				SCALE: 1" = 20'	
				SURVEYED BY:	
				DSGN: GPC	DATE: 05/2022
				DRWN: JPF	DATE: 05/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWF	DATE: 08/2022



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WORKING NUMBER: TSI-5	DRAWING NUMBER: 2006
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TRAFFIC SIGNAL GENERAL NOTES

1. POLES, SIGNAL HEADS, EQUIPMENT BOXES, PULLBOXES AND CONDUIT LOCATIONS MAY BE VARIED SLIGHTLY TO FIT FIELD CONDITIONS AS DIRECTED BY THE PROJECT ENGINEER. HOWEVER, SIGNAL HEAD OR POLE LOCATIONS SHALL BE WITHIN REQUIREMENTS OUTLINED IN THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND HIGHWAY DESIGN AND OPERATIONAL PRACTICES RELATED TO HIGHWAY SAFETY.

2. THE CONTRACTOR SHALL PROVIDE MAST ARM POLE DESIGN CERTIFICATION AND CALCULATIONS AS OUTLINED IN SECTION 722.02 OF STANDARD SPECIFICATIONS. DESIGN STANDARD FOR MAST ARMS POLES SHALL BE 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. USE FATIGUE CATEGORY II, USE 50 YEAR DESIGN SERVICE LIFE AND DO NOT CONSIDER GALLOPING OR TRUCK-INDUCED GUSTS. WIND AND ICE LOADS VARIABLE BASED UPON MAPS IN THE 2013 AASHTO SPECIFICATION. USE UPSWEPT MAST ARMS UNLESS OTHERWISE NOTED ON PLANS. SEE TSD 3.

3. DETERMINATION OF REQUIRED SIZES, LENGTHS AND GAUGES OF TYPE I - XI STEEL POLES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR IN ACCORDANCE WITH THE PLANS AND SECTION 722.02 OF THE STANDARD SPECIFICATIONS, UNLESS OTHERWISE SPECIFIED IN PLANS OR SPECIFICATIONS.

4. TRAFFIC SIGNAL MAST ARM POLES SHALL BE HOT DIPPED GALVANIZED WITH FINISH APPROVED BY THE PROJECT ENGINEER.

5. TRAFFIC SIGNAL MAST ARM POLES REQUIRING LUMINAIRES ARE DESIGNATED BY (L). ALL LUMINAIRES SHALL BE LED UNLESS OTHERWISE NOTED ON PLANS.

6. STAINLESS STEEL TAG ATTACHED TO THE POLE SHAFT USING 3/16 INCH STAINLESS STEEL POP RIVETS WITH PROPERTIES AND INFORMATION AS FOLLOWS:
- MINIMUM 1/16 INCH THICKNESS
- MINIMUM 1/4 INCH STAMPED LEGEND WITH FOLLOWING INFORMATION:
-- MANUFACTURER NAME
-- MONTH / YEAR OF MANUFACTURE
-- UNIQUE IDENTIFYING NUMBER FOR FUTURE MANUFACTURER REFERENCE
-- EXTERNAL PROJECT NUMBER FROM THE PLANS COVER SHEET (EXAMPLE: STP-XXXX-XX...)
TAG TO BE INSTALLED ON SHAFT SIDE OPPOSITE THE MAINLINE HIGHWAY AND LOCATED APPROXIMATELY 48 INCHES ABOVE THE TOP OF BASE PLATE.

7. THE TOP OF THE STRAIN POLE FOUNDATION SHALL BE 6" ABOVE THE GROUND. THE CONTRACTOR SHALL PROVIDE POLES OF SUFFICIENT LENGTH PLUS 2 FEET TO PROVIDE REQUIRED VERTICAL CLEARANCE OF THE TRAFFIC SIGNAL HEADS WITHOUT EXTENDING THE FOUNDATION ABOVE THE GROUND LINE OF THE POINT WHERE THE POLE IS LOCATED, EVEN THOUGH THIS MAY BE BELOW THE FINISHED GRADE OF THE ROADWAY.

8. ALL STRAIN POLES AT AN INTERSECTION SHALL BE THE SAME DIAMETER AND UTILIZE THE SAME BOLT CIRCLE SPACING.

9. POLE FOUNDATIONS AND BASE MOUNTED CABINET FOUNDATIONS, GRADE SHALL BE ESTABLISHED TO ±3" OF EDGE OF PAVEMENT ELEVATION UNLESS APPROVED BY SIGNAL PROJECT ENGINEER.

10. TRAFFIC SIGNAL HEADS SHALL BE BLACK IN COLOR UNLESS OTHERWISE NOTED ON PLANS WITH BLACK BACK PLATES

11. PEDESTRIAN HEADS SHALL BE BLACK IN COLOR UNLESS OTHERWISE NOTED ON PLANS.

12. PEDESTRIAN PUSHBUTTONS SHALL BE EITHER STANDARD PUSHBUTTONS OR APS (ACCESSIBLE PEDESTRIAN SYSTEM) STYLE AS NOTED ON PLANS. SIGNS TO BE INCLUDED IN PAY ITEM FOR PEDESTRIAN PUSHBUTTONS AT NO ADDITIONAL COST. SIDE OF POLE LOCATIONS OF PUSHBUTTONS MAY BE FIELD ADJUSTED. PUSHBUTTON HARDWARE SHALL BE BLACK IN COLOR UNLESS OTHERWISE NOTED ON PLANS.

13. FIELD DRILL AND TAP EXISTING POLES WHERE PEDESTRIAN SIGNALS AND PUSHBUTTONS ARE REQUIRED ON PLANS. (ABSORBED ITEM).

14. TRAFFIC SIGNAL CABINETS AND CONTROLLERS SHALL BE WIRED TO PROVIDE FOR ALL PHASES INCLUDING FUTURE PHASES IN ACCORDANCE WITH THE PHASE SEQUENCE DIAGRAM.

15. ALL TRAFFIC SIGNAL CONTROLLERS SHALL BE ETHERNET READY, AND COMPATIBLE WITH MDOT'S EXISTING TRAFFIC SIGNAL MANAGEMENT SOFTWARE. ALL TRAFFIC SIGNAL CONTROLLER FIRMWARE SHALL BE CAPABLE OF DELAYING THE ONSET OF THE FLASHING YELLOW ARROW. ALL MMU'S SHALL BE ETHERNET READY, 16 CHANNEL, AND CAPABLE OF RUNNING 12 DIFFERENT MODES OF FLASHING YELLOW ARROW OPERATION. THE CONTRACTOR SHALL COORDINATE WITH MDOT FOR IP ADDRESSES ON ALL NETWORKABLE DEVICES. DEVICES INCLUDE BUT NOT LIMITED TO: CONTROLLER, MMU WITH SDLC CABLE (CONFLICT MONITOR), AND DETECTION UNITS. TRAFFIC SIGNAL CONTROLLER CABINET SHALL HAVE A 16 LOAD BAY FACILITY, REAR ACCESS DOOR, LAPTOP TRAY, AND DUAL POSITION INTERNAL LED LIGHTING. ALL TRAFFIC SIGNAL CONTROLLER CABINETS SHALL HAVE A 5 POSITION CARD RACK AND ONE 175 WATT MINIMUM POWER SUPPLY AND 4 AVAILABLE SLOTS UNLESS OTHERWISE NOTED ON PLANS. SEE 907-632.02.6.1.

16. FOR PROTECTED/PERMITTED LEFT TURN PHASING USING TYPE 2 FYA TRAFFIC SIGNAL HEADS, OPERATION SHALL BE AS FOLLOWS: THE PROTECTED PHASE OF THIS OPERATION SHALL DISPLAY A SOLID GREEN ARROW, FOLLOWED BY A SOLID YELLOW ARROW, AND ENDING WITH A SOLID RED ARROW. THE PERMITTED PORTION OF THIS OPERATION SHALL START WITH A FLASHING YELLOW ARROW, FOLLOWED BY A SOLID YELLOW ARROW, AND ENDING WITH A SOLID RED ARROW. THERE SHALL BE A DELAY (AS DIRECTED BY THE PROJECT ENGINEER) BETWEEN THE END OF THE PROTECTED PORTION OF THIS OPERATION AND THE BEGINNING OF THE PERMITTED PORTION OF THIS OPERATION. DURING THIS DELAY, THE OPPOSING PHASE THRU HEADS ARE CAPABLE OF DISPLAYING A GREEN BALL. SIGNAL CONTROLLER WITH FIRMWARE NECESSARY TO ACCOMPLISH THIS DELAY SHALL BE PROVIDED.

17. POLES AND FOUNDATIONS OF EXISTING SIGNAL INSTALLATION REMOVALS SHALL BE CUT OFF 6" BELOW GROUND, REMOVED AND AREA RESTORED TO MATCH ADJACENT SURFACE AS DIRECTED BY THE PROJECT ENGINEER.

18. ALL REMOVED EXISTING TRAFFIC SIGNAL EQUIPMENT SHALL BECOME THE PROPERTY OF THE CONTRACTOR, UNLESS SPECIFIC ITEMS ARE NOTED IN THE PLANS TO BE SALVAGED AS DIRECTED BY THE PROJECT ENGINEER.

19. THE CONTRACTOR SHALL BE REQUIRED TO PROVIDE ELECTRICAL SERVICE FROM THE POWER COMPANY SERVICE POINT TO THE POWER SERVICE PEDESTAL. FOR SPAN WIRE INSTALLATION, POWER SHALL RUN FROM THE POWER COMPANY SERVICE POINT AERIAL TO THE SIGNAL POLE NEAREST THE CONTROLLER, THE SERVICE SHALL THEN RUN TO THE CONTROLLER AS SHOWN ON THE PLANS. FOR MAST ARM INSTALLATION, POWER SHALL RUN FROM THE POWER COMPANY SERVICE POINT UNDERGROUND DIRECTLY TO THE POWER SERVICE PEDESTAL, THEN TO THE CONTROLLER CABINET, AS SHOWN ON THE PLANS. A DISCONNECT SHALL BE INSTALLED AT THE POWER COMPANY SERVICE POLE FOR MAST ARM INSTALLATIONS.

20. POWER SERVICE METER SHALL NOT BE MOUNTED ON THE CONTROLLER CABINET OR MAST ARM POLE SHAFTS. A SEPARATE POWER SERVICE PEDESTAL FOR MOUNTING THESE ITEMS IS REQUIRED. (SEE TSD-6 & TSD-7). BLACK CONDUCTORS SHALL BE USED FOR ALL LINE (HOT) WIRES AND WHITE CONDUCTORS SHALL BE USED FOR ALL NEUTRAL WIRES.

21. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE THE NECESSARY ARRANGEMENTS WITH THE LOCAL POWER COMPANY TO PROVIDE THE POWER SUPPLY ASSEMBLY FOR ANY NEW INSTALLATION. THE CONTRACTOR SHALL PAY FOR, AT NO COST TO THE DEPARTMENT, ALL DEPOSITS, HOOK-UP CHARGES, OR OTHER SERVICE FEES REQUIRED BY THE POWER COMPANY FOR THE ESTABLISHMENT OF NEW SERVICE. THE COST OF ALL SUCH FEES SHALL BE CONSIDERED INCIDENTAL AND ABSORBED WITHIN EXISTING PAY ITEMS. THE DEPARTMENT OR THE LOCAL AGENCY WILL BE RESPONSIBLE FOR PAYMENT OF THE MONTHLY SERVICE BILL FOR THE NEW POWER SERVICE INSTALLATION. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO SWAP THE ELECTRICAL SERVICE ACCOUNT OVER TO THE DEPARTMENT OR LOCAL AGENCY. WHEN ELECTRIC POWER SERVICE EXISTS AND IS USED FOR THE OPERATION OF AN EXISTING SYSTEM, THE MONTHLY SERVICE FEES SHALL CONTINUE TO BE PAID BY THE DEPARTMENT OR THE LOCAL AGENCY. IF THE EXISTING POWER SERVICE IS INTENDED FOR USE WITH A NEW SIGNAL SYSTEM, THEN ANY SERVICE CHARGE FEES

- SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SIMILARLY, IF AN EXISTING POWER SERVICE IS TO BE DISCONNECTED, ANY SERVICE CHARGE FEES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE COST OF ALL SUCH FEES SHALL BE CONSIDERED INCIDENTAL AND ABSORBED WITHIN EXISTING PAY ITEMS.

22. WHEN CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING TEMPORARY SIGNALS TO ACCOMMODATE ROADWAY CONSTRUCTION, IT SHALL BE PAID FOR UNDER PAY ITEM 619-H1, TRAFFIC SIGNAL, LUMP SUM, UNLESS OTHERWISE NOTED ON PLANS.

23. VEHICLE LOOP ASSEMBLIES SHALL BE INSTALLED IN THE TOP LAYER OF BINDER OR EXISTING SURFACE BEFORE THE FINAL SURFACE COURSE IS APPLIED (BASED ON 2" FINAL LIFT MAXIMUM).

24. WHEN RADAR, VIDEO , OR MULTI-SENSOR DETECTION IS USED, THE SYSTEM MAY REQUIRE BOTH STOP BAR AND ADVANCE DETECTION. TSI PLANS SHOW A GENERIC LAYOUT FOR DETECTION; DETECTOR MAY BE RELOCATED PER MANUFACTURER'S RECOMMENDATIONS. THERE SHALL BE NO EXTRA PAY FOR MOVING OF DETECTORS OTHER THAN CABLE LENGTHS. MANUFACTURER TO HAVE FACTORY REP ON SITE DURING INSTALLATIONS UNLESS CERTIFIED BY THE MANUFACTURER. DETECTION CABLE WILL BE MEASURED BY THE LINEAR FOOT, MEASURED HORIZONTALLY ALONG THE CONDUIT, MESSENGER CABLE OR MAST ARM AND VERTICALLY ALONG THE POLE. DETECTION CABLE FOR CAMERAS, THE POWER AND VIDEO CABLE MAY BE IN THE SAME JACKET. ALL DETECTION UNITS SHALL BE NETWORKABLE DEVICES AND BE ON THE MDOT NETWORK IF NOTED ON PLANS.

25. ALL GROUNDING EQUIPMENT SHALL BE COST ABSORBED.

26. MESSENGER CABLE AND OTHER SUPPORTING DEVICES WHERE REQUIRED SHALL BE ABSORBED IN THE PAY ITEMS FOR SIGNAL CABLE.

27. THE CONTRACTOR SHALL STAKE THE LOCATION OF EACH POLE FOUNDATION AND NOTIFY THE PROJECT ENGINEER FOR CONCURRENCE IN THE LOCATION BEFORE PROCEEDING WITH THE PURCHASE OF THE POLE.

28. THE CONTRACTOR SHALL BE REQUIRED TO ADEQUATELY AND COMPLETELY COVER TRAFFIC SIGNAL HEADS DURING TIMES THAT THEY ARE NOT IN OPERATION WITH A DURABLE, OUTDOOR- HARDENED MATERIAL THAT CONTRASTS WITH THE COLOR OF THE HEAD THAT CLEARLY DESIGNATES THAT THE SIGNAL IS NOT IN "STOP AND GO" MODE. HEAD COVERS ARE TO BE APPROVED BY THE PROJECT ENGINEER.

29. A NEW TRAFFIC SIGNAL INSTALLATION SHALL BE PUT IN FLASH OPERATION FOR A PERIOD OF THREE (3) TO SEVEN (7) DAYS PRIOR TO THE ACTIVATION OF THE SIGNAL'S "STOP AND GO" OPERATION. ACTIVATION OF NEW TRAFFIC SIGNALS SHALL BE DURING A MID-WEEK WEEKDAY (TUESDAY – THURSDAY) DURING A NON-PEAK TIME AND SHALL BE COORDINATED WITH THE PROJECT ENGINEER. UPON INITIAL INSPECTION AND ACCEPTANCE TESTING OF THE NEW TRAFFIC SIGNAL INSTALLATION, THE CONTRACTOR SHALL REQUEST THE START OF THE 30 DAY BURN-IN PERIOD TO COMMENCE, AS OUTLINED IN SUBSECTION 631.03.4 OF THIS SPECIFICATION. ANY NOTED DEFICIENCIES FOUND WITHIN THAT 30 DAY PERIOD SHALL BE CORRECTED TO THE SATISFACTION OF THE PROJECT ENGINEER. THE 30 DAY BURN-IN PERIOD MUST COMMENCE WITHIN THE CONTRACT TIME, AND BEFORE SUBSTANTIAL COMPLETION OF THE PROJECT IS GRANTED.

30. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING FINAL INSPECTION MEETING WITH DISTRICT OFFICE, PROJECT OFFICE AND TRAFFIC ENGINEERING FOR SIGNAL PORTION OF THE PROJECT.



TRAFFIC SIGNAL GENERAL NOTES

WORKING NUMBER: TSD-1	DRAWING NUMBER: 2007
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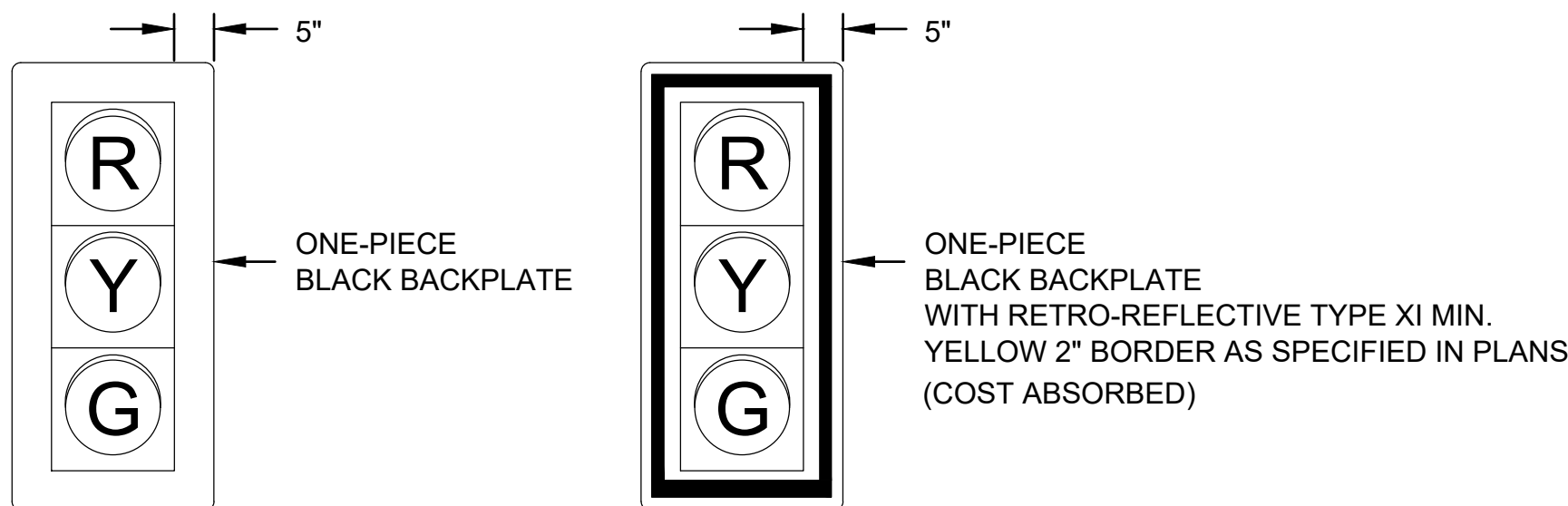
DETAIL OF TYPICAL TRAFFIC SIGNAL HEADS

TYPE 1	TYPE 2	TYPE 2 FYA	TYPE 2B FYA	TYPE 2P FYA	TYPE 3	TYPE 4	TYPE 6	TYPE 7	TYPE H
			 BIMODAL YELLOW/YELLOW STEADY YELLOW & FLASHING ARROW IN SAME MIDDLE SETION						

NOTES:

- ALL SIGNAL HEADS SHALL BE BLACK IN COLOR UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL SIGNAL HEADS SHALL BE L.E.D. LENSES UNLESS OTHERWISE NOTED ON THE PLANS. TYPE "A" SIGNAL HEAD IS TO BE GEOMETRICALLY PROGRAMMED VIA LOUVERS.
- LETTER "R" ON HEAD TYPES MEANS RIGHT TURN ARROW(S).
- TYPE 6 SIGNAL HEAD SYMBOLS/NUMBERS SHALL BE FULLY ILLUMINATED (NO OUTLINE SYMBOLS ALLOWED). THERE IS A SEPARATE PAY ITEM FOR PEDESTRIAN PUSHBUTTON. PEDESTRIAN PUSHBUTTON SHALL BE FURNISHED WITH R10-3e SIGN. (COST ABSORBED).
- ALL FYA SIGNAL HEAD SHALL BE FURNISHED WITH R10-12M SIGN.
WHEN NOTED ON PLANS, TYPE 4 & 5 SIGNAL HEADS SHALL BE FURNISHED WITH R10-10L , R10-10R, OR R10-17M SIGN.
TYPE 7 SIGNAL HEAD SHALL BE FURNISHED WITH R10-12 SIGN. TYPE 7 R REQUIRES NO SIGN.
TYPE H SIGNAL HEAD SHALL BE FURNISHED WITH R10-23 SIGN WHEN INDICATED ON PLANS.
COST OF SIGNAL SIGNS, MOUNTING BRACKETS, HARDWARE, AND LABOR SHALL BE COST ABSORBED.
- FOR SPAN WIRE INSTALLATION, THE HOUSING FOR THE RED INDICATION OF A TYPE 7 HEAD, SHALL BE ALUMINUM.

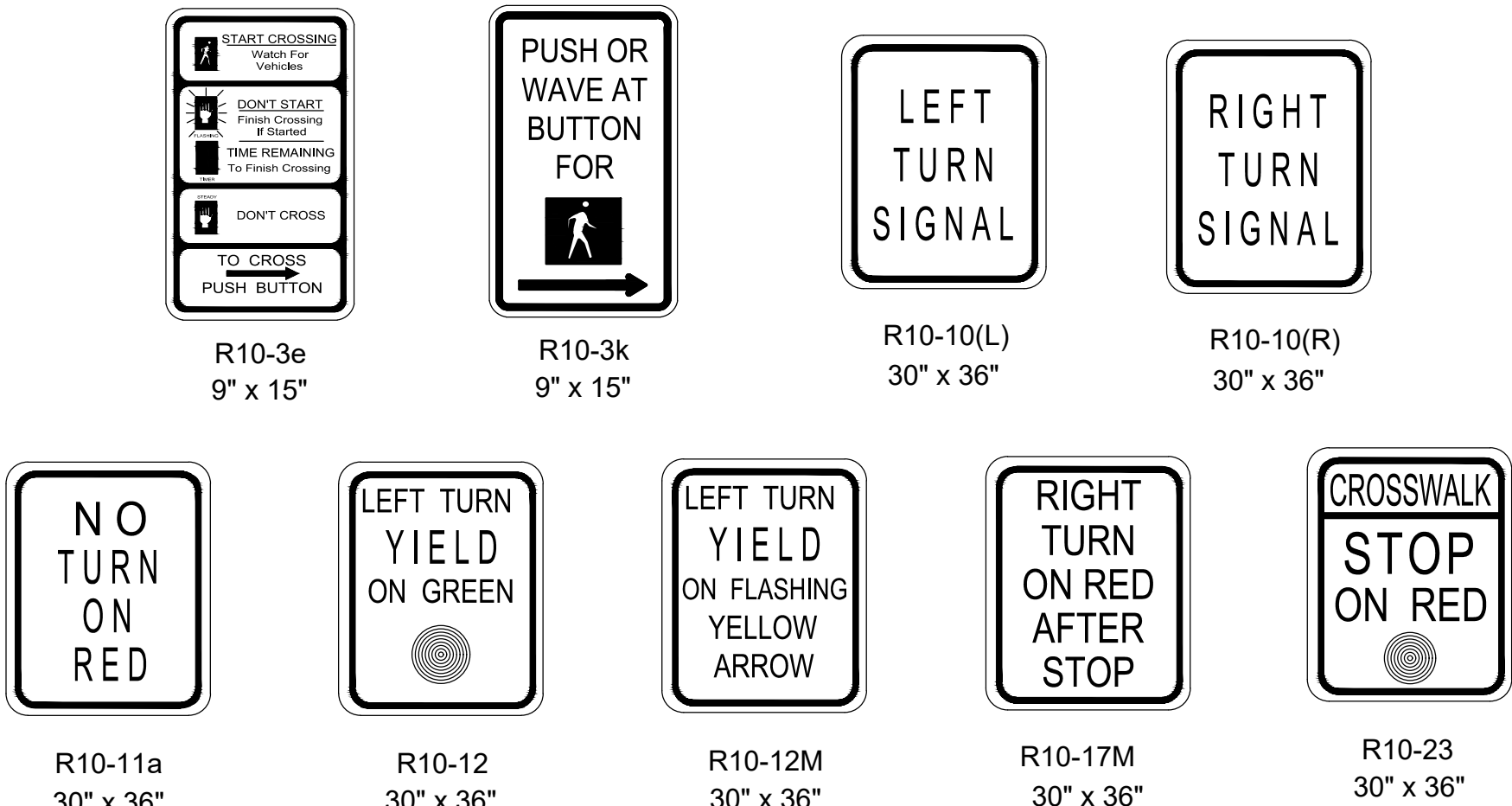
DETAIL OF TRAFFIC SIGNAL WITH BACKPLATE



NOTE:

ALL SIGNAL HEADS SHALL INCLUDE BACKPLATES AND VISORS
UNLESS OTHERWISE NOTED ON TRAFFIC SIGNAL INSTALLATION SHEETS.

DETAIL OF TYPICAL TRAFFIC SIGNAL SIGNS



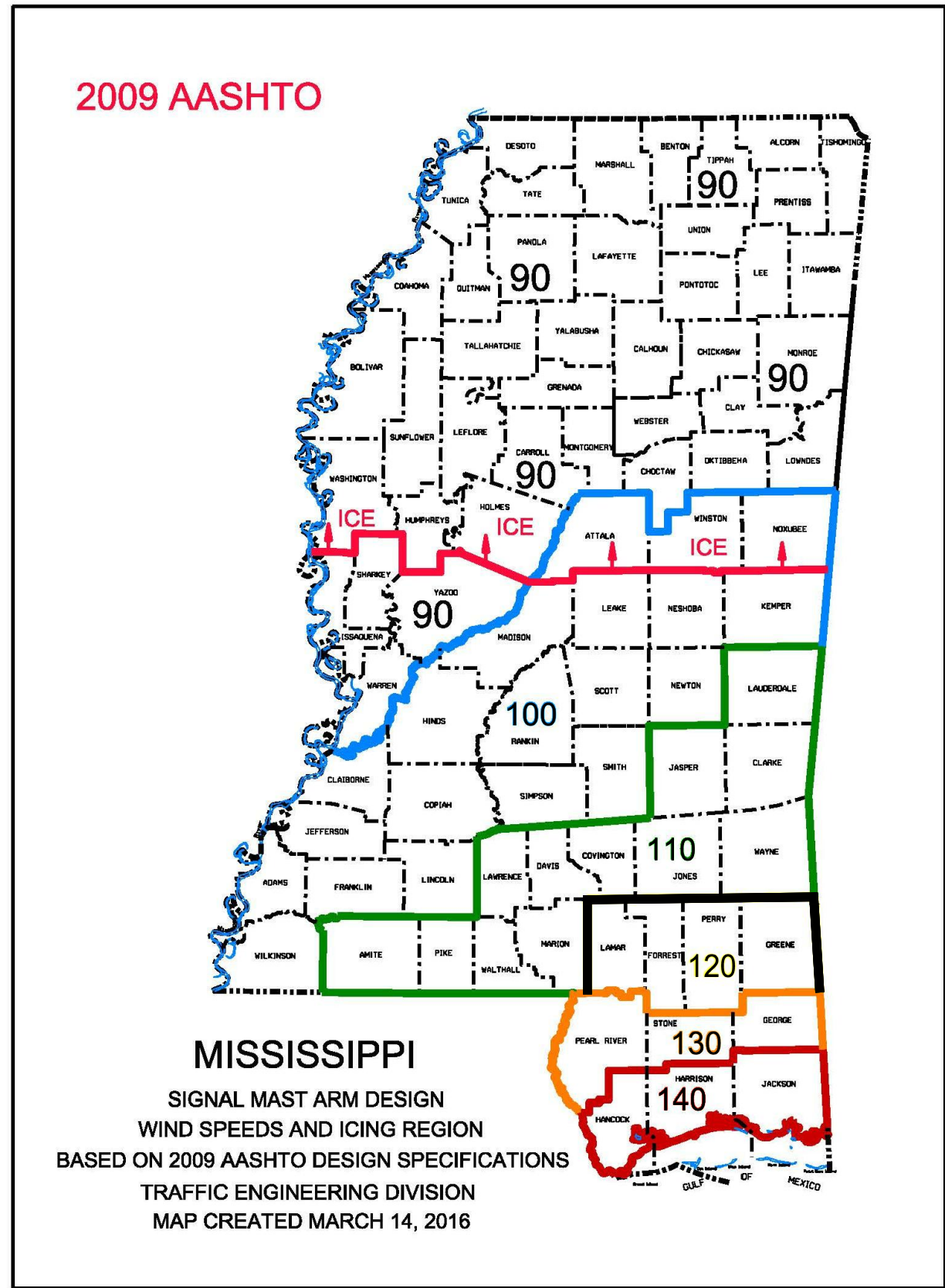
NOTES:

- ALUMINUM SIGN BLANKS ARE TO BE ALUMINUM ALLOY 5052-H38 AND 0.10" THICK.
- THE SIGNS SHALL BE SUPPLIED WITH MOUNTING BRACKETS AND HARDWARE AS REQUIRED.
- NUMBER 12 PLATED JACK CHAINS SHALL BE ATTACHED TO THE BOTTOM OF ALL SPAN WIRE MOUNTED SIGNS.
- CHAINS SHALL BE ATTACHED TO SIGN AND TETHER USING "S" HOOKS.
- THE SIZE OF THE SIGN BLANK, LEGEND, BORDER AND THE COLOR OF THE BACKGROUND AND LEGEND IS TO CONFORM TO THE M.U.T.C.D. (LATEST EDITION).
- REFLECTIVE SHEETING FOR TRAFFIC SIGNS SHALL BE TYPE XI PRISMATIC RETROREFLECTIVE SHEETING.

SIGNAL PLAN LEGEND

	SIGNAL HEAD REQUIRED / TYPE
	PEDESTRAIN HEAD REQUIRED
	EXISTING SIGNAL HEAD
	SIGN
	VEHICLE LOOP DETECTOR
	QUADRAPOLE VEHICLE LOOP DETECTOR
	VEHICLE LOOP DETECTOR NUMBER
	WIRELESS MAGNETOMETER SENSOR
	BASE MOUNTED CABINET FOR SIGNAL CONTROLLER
	POLE MOUNTED CABINET FOR SIGNAL CONTROLLER
	EXISTING POLE
	POLE REQUIRED
	NEW PEDESTAL POLE
	MAST ARM POLE REQUIRED
	EXISTING PULLBOX
	PULLBOX REQUIRED (TYPE SPECIFIED ON PLAN SHEETS)
	RADAR DETECTOR (RD)
	VIDEO DETECTOR (VD)
	MULTI SENSOR DETECTOR (MS)
	OPTICAL DETECTOR UNIT
	CONDUIT
	ROLL PIPE
	LUMINAIRE
	DECORATIVE LUMINAIRE
	GROUND MOUNTED PEDESTAL SERVICE PANEL
	RADIO INTERCONNECT ANTENNA
	TWO-WAY WIRELESS ANTENNA
	WIRELESS REPEATER
	PTZ / FIXED CAMERA
	P.B. PUSH BUTTON
	S.C. SHIELDED CABLE
	POW POWER CABLE
	LUM LUMINAIRE POWER CABLE
	ODC OPTICAL DETECTOR CABLE
	8c NUMBER OF CONDUCTORS
	I.C. INTERCONNECT CABLE
	RAD RADIO COMMUNICATIONS CABLE
	FO FIBER OPTIC CABLE (72 SM)
	FO DROP FIBER DROP CABLE (12 SM)
	DC DETECTION CABLE
	STOP BAR DETECTION ZONE
	ADVANCED DETECTION ZONE

WIND SPEEDS AND ICING REGION MAP



2009/2013 AASHTO WIND LOAD LIST BY COUNTY

COUNTY	BASIC WIND SPEED MPH	ICE LOADING REQD
Adams	100	NO
Alcorn	90	YES
Amite	110	NO
Attala	100	YES
Benton	90	YES
Bolivar	90	YES
Calhoun	90	YES
Carroll	90	YES
Chickasaw	90	YES
Choctaw	90	YES
Claiborne	100	NO
Clarke	110	NO
Clay	90	YES
Coahoma	90	YES
Copiah	90	NO
Covington	110	NO
DeSoto	90	YES
Forrest	120	NO
Franklin	100	NO
George	130	NO
Greene	120	NO
Grenada	90	YES
Hancock	140	NO
Harrison	140	NO
Hinds	100	NO
Holmes	90	YES
Humphreys	90	YES
Issaquena	90	NO
Itawamba	90	YES
Jackson	140	NO
Jasper	110	NO
Jefferson	100	NO

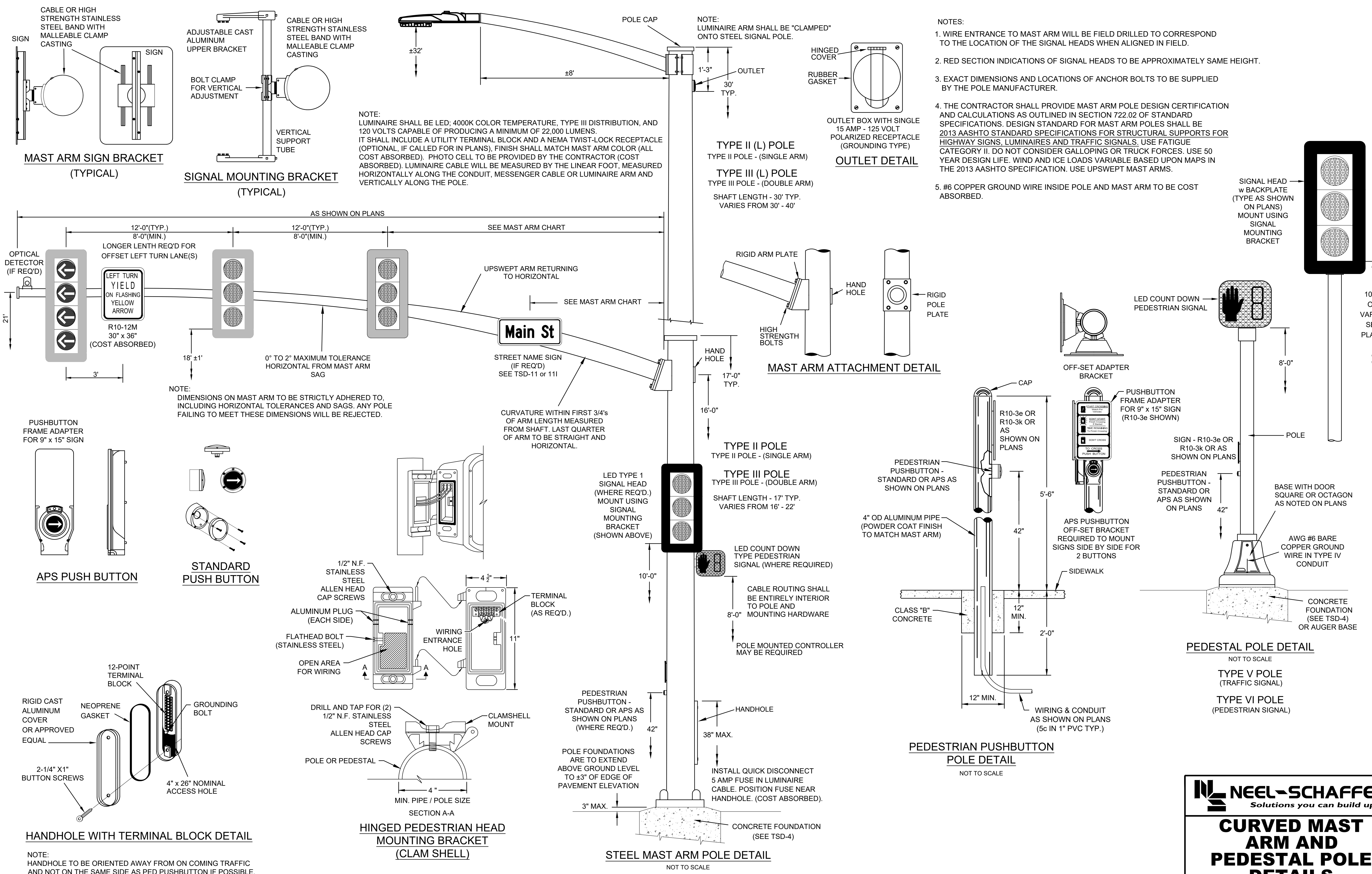
COUNTY	BASIC WIND SPEED MPH	ICE LOADING REQD
Jefferson Davis	110	NO
Jones	110	NO
Kemper	100	NO
Lafayette	90	YES
Lamar	120	NO
Lauderdale	110	NO
Lawrence	110	NO
Leake	100	NO
Lee	90	YES
Leflore	90	YES
Lincoln	100	NO
Lowndes	90	YES
Madison	100	NO
Marion	110	NO
Marshall	90	YES
Monroe	90	YES
Montgomery	90	YES
Neshoba	100	NO
Newton	100	NO
Noxubee	100	YES
Oktibbeha	90	YES
Panola	90	YES
Pearl River	130	NO
Perry	120	NO
Pike	110	NO
Pontotoc	90	YES
Prentiss	90	YES
Quitman	90	YES
Rankin	100	NO
Scott	100	NO
Sharkey	90	NO
Simpson	100	NO
Smith	100	NO
Stone	130	NO
Sunflower	90	YES
Tallahatchie	90	YES
Tate	90	YES
Tippah	90	YES
Tishomingo	90	YES
Tunica	90	YES
Union	90	YES
Walthall	110	NO
Warren	90	NO
Washington	90	YES
Wayne	110	NO
Webster	90	YES
Wilkinson	100	NO
Winston	100	YES
Yalobusha	90	YES
Yazoo	90	NO



TRAFFIC SIGNAL
HEADS, TRAFFIC
SIGNAL SIGNS AND
WIND SPEEDS

WORKING NUMBER:
TSD-2

DRAWING NUMBER:
2008



- NOTES:
1. WIRE ENTRANCE TO MAST ARM WILL BE FIELD DRILLED TO CORRESPOND TO THE LOCATION OF THE SIGNAL HEADS WHEN ALIGNED IN FIELD.
 2. RED SECTION INDICATIONS OF SIGNAL HEADS TO BE APPROXIMATELY SAME HEIGHT.
 3. EXACT DIMENSIONS AND LOCATIONS OF ANCHOR BOLTS TO BE SUPPLIED BY THE POLE MANUFACTURER.
 4. THE CONTRACTOR SHALL PROVIDE MAST ARM POLE DESIGN CERTIFICATION AND CALCULATIONS AS OUTLINED IN SECTION 722.02 OF STANDARD SPECIFICATIONS. DESIGN STANDARD FOR MAST ARM POLES SHALL BE 2013 AASHTO STANDARD SPECIFICATIONS FOR STRUCTURAL SUPPORTS FOR HIGHWAY SIGNS, LUMINAIRES AND TRAFFIC SIGNALS. USE FATIGUE CATEGORY II. DO NOT CONSIDER GALLOPING OR TRUCK FORCES. USE 50 YEAR DESIGN LIFE. WIND AND ICE LOADS VARIABLE BASED UPON MAPS IN THE 2013 AASHTO SPECIFICATION. USE UPSWEPT MAST ARMS.
 5. #6 COPPER GROUND WIRE INSIDE POLE AND MAST ARM TO BE COST ABSORBED.

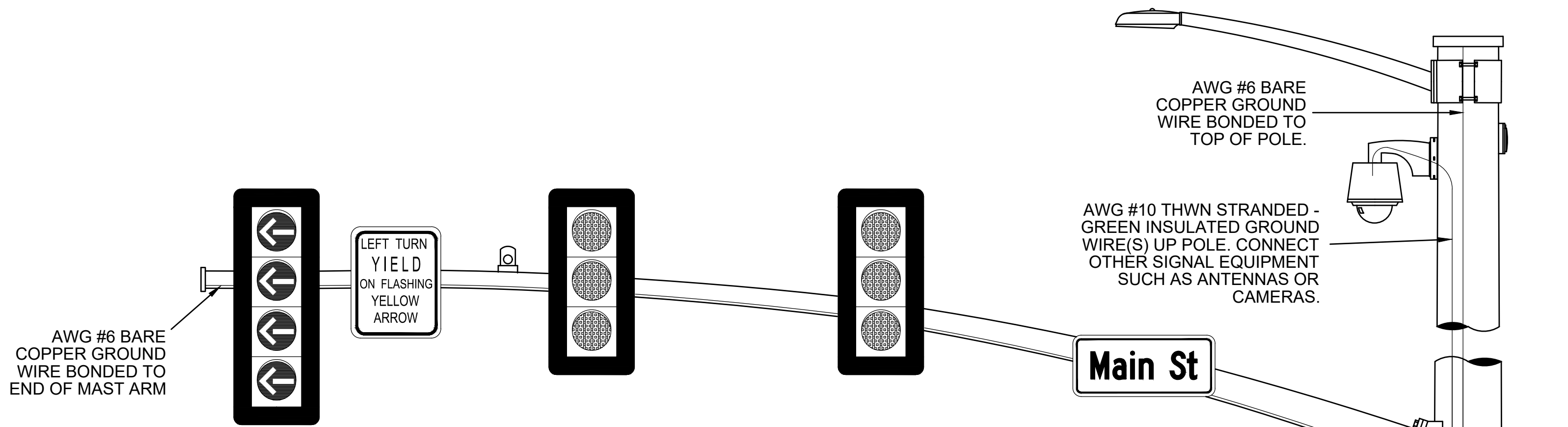


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**CURVED MAST
ARM AND
PEDESTAL POLE
DETAILS**

WORKING NUMBER: TSD-3C	DRAWING NUMBER: 2009
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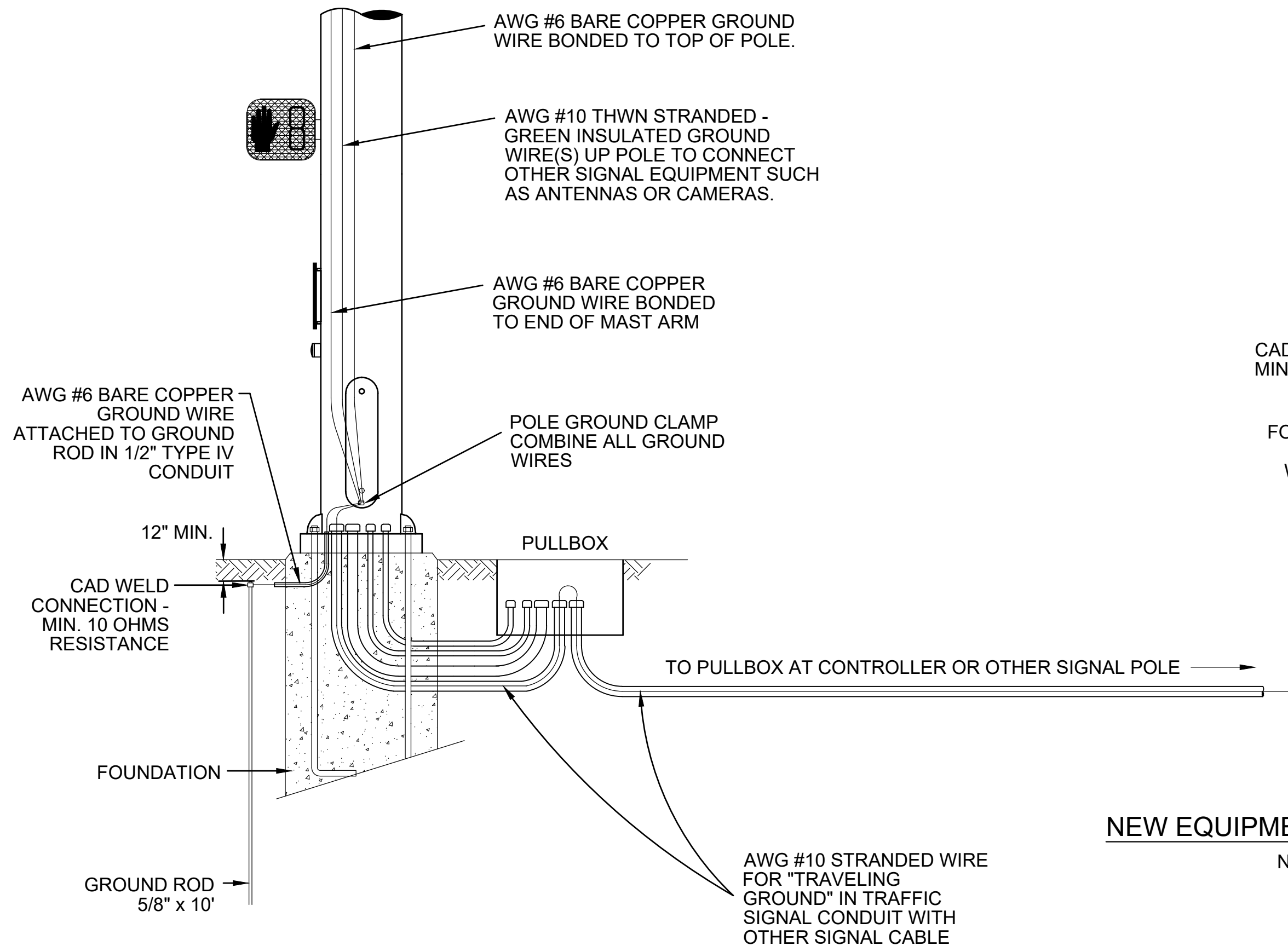
GENERAL GROUNDING NOTES:

1. GROUND RODS USED SHALL BE COPPER CLAD, STEEL RODS OF THE DIAMETER AND LENGTH SHOWN ON THE PLANS. GROUND RODS SHALL CONFORM TO THE REQUIREMENTS OF UL-467. GROUNDING ROD COUPLERS SHALL BE UL APPROVED, MADE FROM BRONZE, STAINLESS STEEL OR COPPER CLAD WITH A SOLID CENTER PROVIDING 100 PERCENT CONDUCTIVITY.
2. SINGLE GROUND RODS SHALL BE DRIVEN VERTICALLY UNTIL THE TOP OF THE ROD IS AT LEAST 12 INCHES BELOW THE FINISHED GROUND.
3. SOLID CONDUCTOR COPPER WIRE, AWG # 6 SHALL BE USED FOR GROUNDING CONDUCTOR AND BONDING JUMPERS UNLESS OTHERWISE STATED IN THE PLANS. BARE SOLID CONDUCTOR COPPER WIRE SHALL MEET THE REQUIREMENTS OF ASTM B2.
4. AWG #10 THWN STRANDED - GREEN INSULATED WIRE SHALL BE USED FOR TRAVELING GROUND. THIS WIRE RUNS FROM POLE TO POLE BACK TO CONTROLLER CABINET TO TIE ALL EQUIPMENT TOGETHER. IT IS INSTALLED IN THE SAME CONDUIT AS THE OTHER SIGNAL CABLES.
5. THE GROUNDING CONDUCTOR SHALL BE CONTINUOUS AND SHALL BE CONNECTED TO A COMMON GROUND SYSTEM BETWEEN ALL SUPPORTING POLES AND STRUCTURES, TO EACH TRANSFORMER, AND TO EACH GROUNDING CONDUCTOR IN A MULTI-CONDUCTOR CABLE ASSEMBLY. ADDITIONAL GROUNDING RODS ELECTRODES (UP TO FOUR (4) RODS) SHALL BE INSTALLED TO OBTAIN A MAXIMUM VALUE OF FIVE (5) OHMS TO GROUND.
6. BOLTED GROUNDING CONNECTIONS OF SOLDER-LESS TYPE MADE OF THE HIGH STRENGTH ELECTRICAL BRONZE WITH SILICON BRONZE CLAMPING BOLTS AND HARDWARE MAY BE USED; DESIGNED SUCH THAT, BOLTS, NUTS, LOCK WASHERS AND SIMILAR HARDWARE THAT MIGHT NICK OR OTHERWISE DAMAGE THE GROUND WIRE WILL NOT DIRECTLY CONTACT THE GROUND WIRE. GROUNDING SPLICES SHALL NOT BE INSULATED.
7. EXOTHERMIC WELDED GROUND CONNECTIONS SHALL BE USE WHERE SPECIFIED.
8. ALL SIGNAL EQUIPMENT AND CABLE SHALL BE PROTECTED WITH AN INLINE SURGE SUPPRESSOR IF RECOMMENDED BY THE MANUFACTURER OR A PANEL MOUNTED SURGE SUPPRESSOR AS RECOMMENDED BY THE MANUFACTURER OR APPROVED EQUAL, INSTALLED AND GROUNDED PER MANUFACTURER'S RECOMMENDATIONS.
9. ALL GROUNDING EQUIPMENT AND WIRE SHALL BE COST ABSORBED.

AWG #6 BARE COPPER GROUND WIRE BONDED TO END OF MAST ARM

AWG #10 THWN STRANDED - GREEN INSULATED GROUND WIRE(S) UP POLE. CONNECT OTHER SIGNAL EQUIPMENT SUCH AS ANTENNAS OR CAMERAS.

AWG #6 BARE COPPER GROUND WIRE BONDED TO TOP OF POLE.

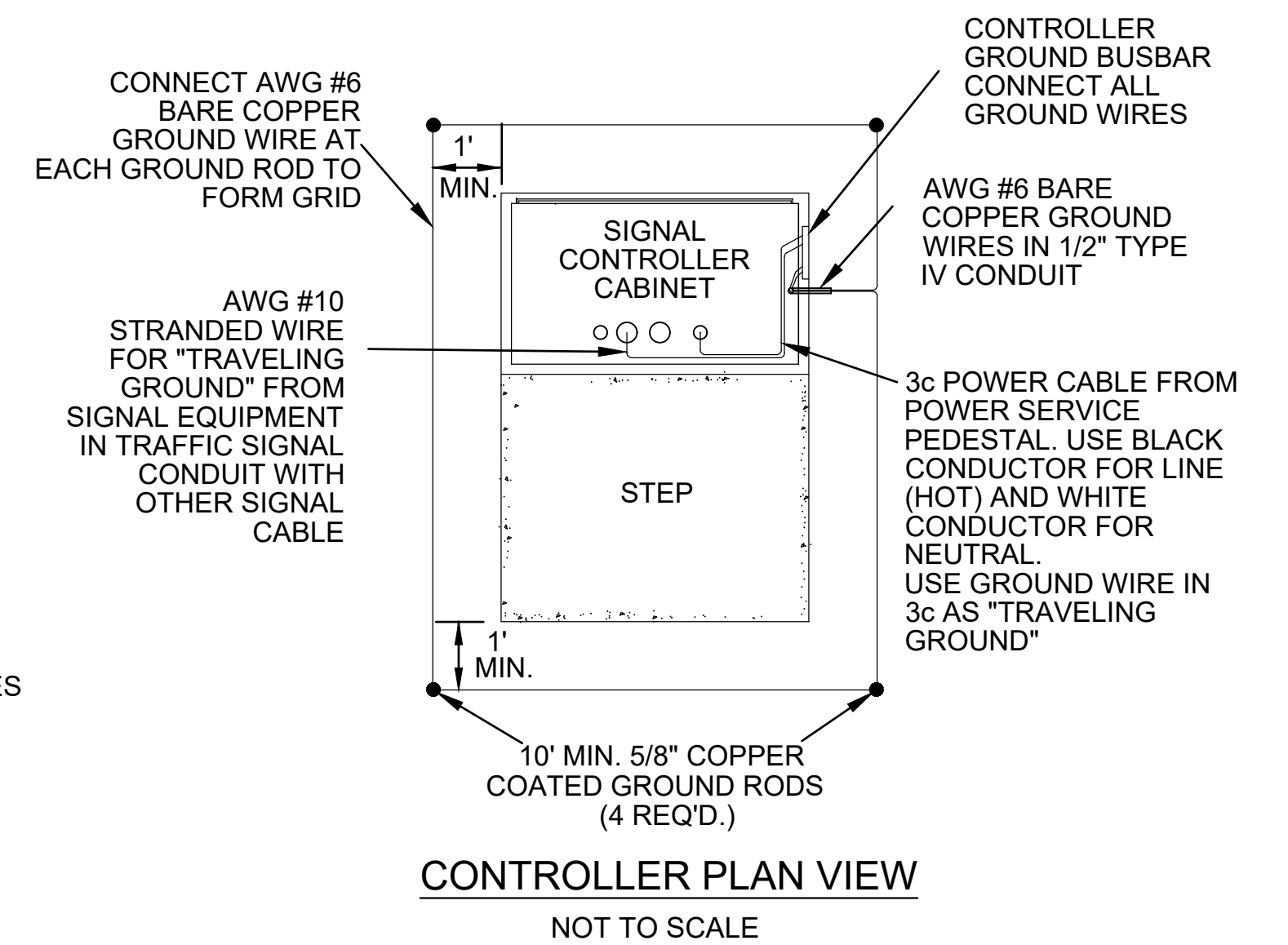


NEW EQUIPMENT GROUNDING DETAIL

NOT TO SCALE

GROUNDING NOTES:

1. GROUND RODS USED SHALL BE COPPER CLAD, STEEL RODS OF THE DIAMETER AND LENGTH SHOWN ON THE PLANS. GROUND RODS SHALL CONFORM TO THE REQUIREMENTS OF UL-467. GROUNDING ROD COUPLERS SHALL BE UL APPROVED, MADE FROM BRONZE, STAINLESS STEEL OR COPPER CLAD WITH A SOLID CENTER PROVIDING 100 PERCENT CONDUCTIVITY.
2. SINGLE GROUND RODS SHALL BE DRIVEN VERTICALLY UNTIL THE TOP OF THE ROD IS AT LEAST 12 INCHES BELOW THE FINISHED GROUND.
3. SOLID CONDUCTOR COPPER WIRE, AWG # 6 SHALL BE USED FOR GROUNDING CONDUCTOR AND BONDING JUMPERS UNLESS OTHERWISE STATED IN THE PLANS. BARE SOLID CONDUCTOR COPPER WIRE SHALL MEET THE REQUIREMENTS OF ASTM B2.
4. AWG #10 THWN STRANDED - GREEN INSULATED WIRE SHALL BE USED FOR TRAVELING GROUND. THIS WIRE RUNS FROM POLE TO POLE BACK TO CONTROLLER CABINET TO TIE ALL EQUIPMENT TOGETHER. IT IS INSTALLED IN THE SAME CONDUIT AS THE OTHER SIGNAL CABLES.
5. THE GROUNDING CONDUCTOR SHALL BE CONTINUOUS AND SHALL BE CONNECTED TO A COMMON GROUND SYSTEM BETWEEN ALL SUPPORTING POLES AND STRUCTURES, TO EACH TRANSFORMER, AND TO EACH GROUNDING CONDUCTOR IN A MULTI-CONDUCTOR CABLE ASSEMBLY. ADDITIONAL GROUNDING RODS ELECTRODES (UP TO FOUR (4) RODS) SHALL BE INSTALLED TO OBTAIN A MAXIMUM VALUE OF FIVE (5) OHMS TO GROUND.
6. BOLTED GROUNDING CONNECTIONS OF SOLDER-LESS TYPE MADE OF THE HIGH STRENGTH ELECTRICAL BRONZE WITH SILICON BRONZE CLAMPING BOLTS AND HARDWARE MAY BE USED; DESIGNED SUCH THAT, BOLTS, NUTS, LOCK WASHERS AND SIMILAR HARDWARE THAT MIGHT NICK OR OTHERWISE DAMAGE THE GROUND WIRE WILL NOT DIRECTLY CONTACT THE GROUND WIRE. GROUNDING SPLICES SHALL NOT BE INSULATED.
7. EXOTHERMIC WELDED GROUND CONNECTIONS SHALL BE USE WHERE SPECIFIED.
8. ALL SIGNAL EQUIPMENT AND CABLE SHALL BE PROTECTED WITH AN INLINE SURGE SUPPRESSOR IF RECOMMENDED BY THE MANUFACTURER OR A PANEL MOUNTED SURGE SUPPRESSOR AS RECOMMENDED BY THE MANUFACTURER OR APPROVED EQUAL, INSTALLED AND GROUNDED PER MANUFACTURER'S RECOMMENDATIONS.
9. ALL GROUNDING EQUIPMENT AND WIRE SHALL BE COST ABSORBED.



CONTROLLER PLAN VIEW

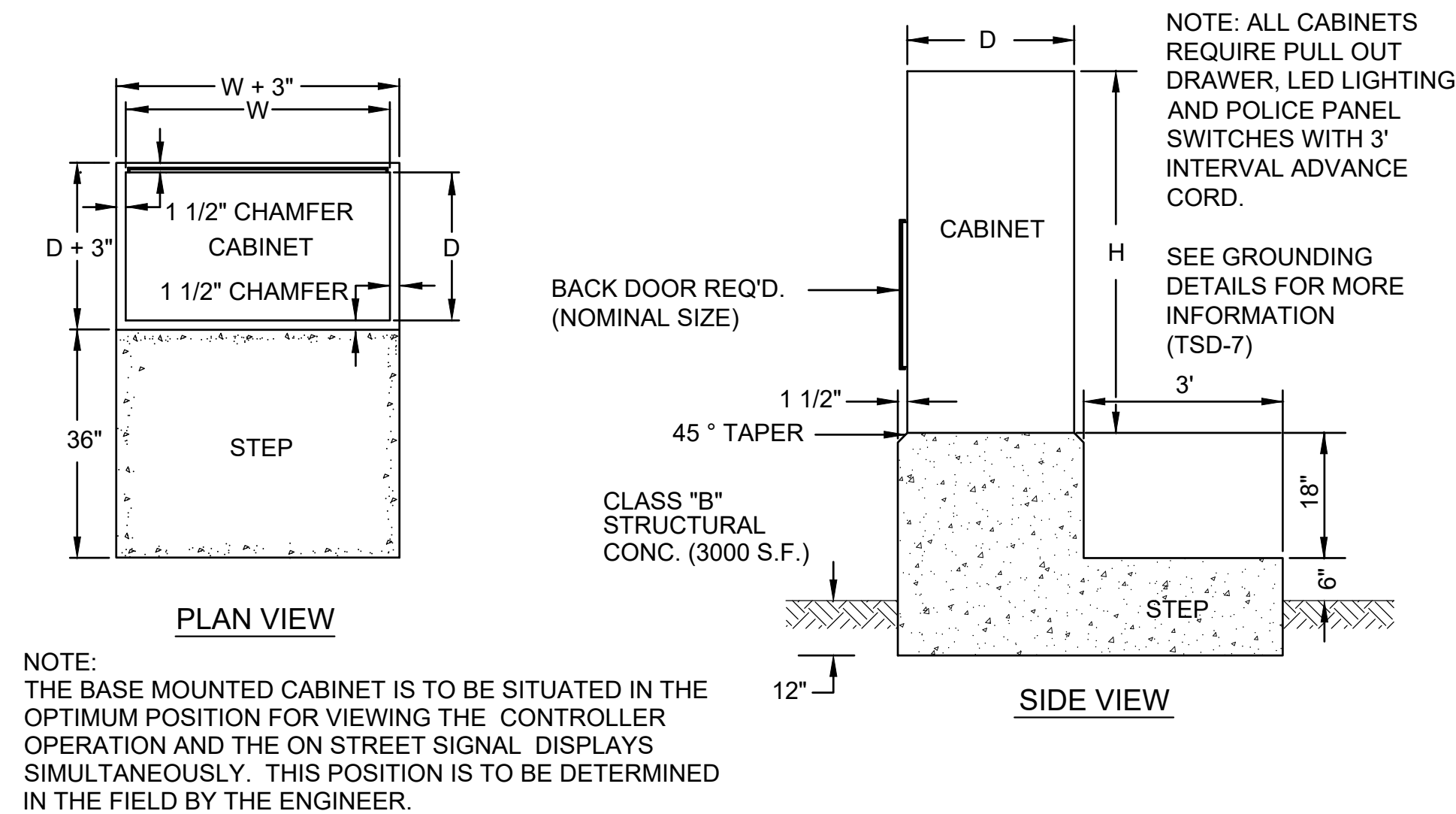
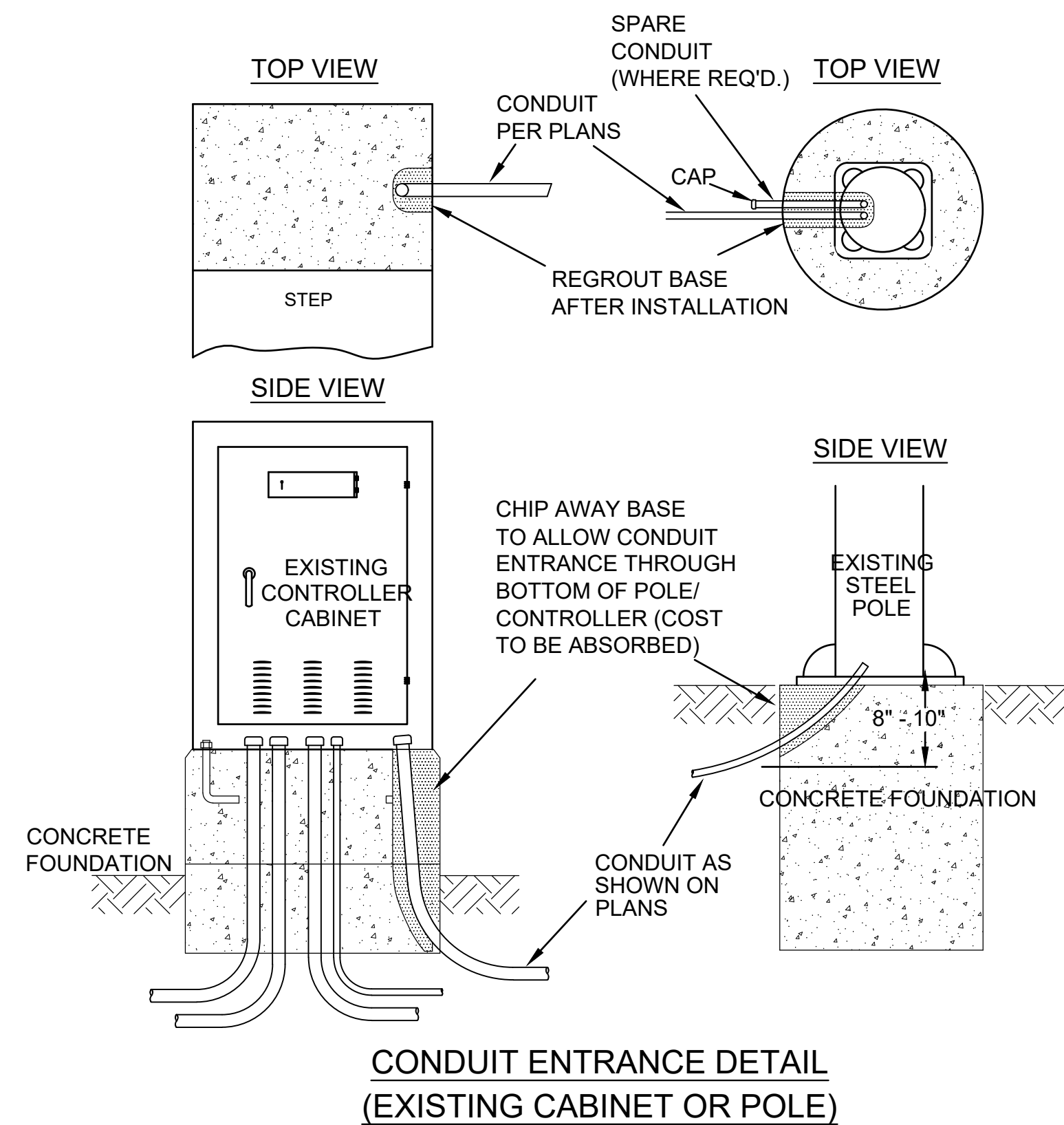
NOT TO SCALE



TRAFFIC SIGNAL GROUNDING DETAILS

WORKING NUMBER:
TSD-5

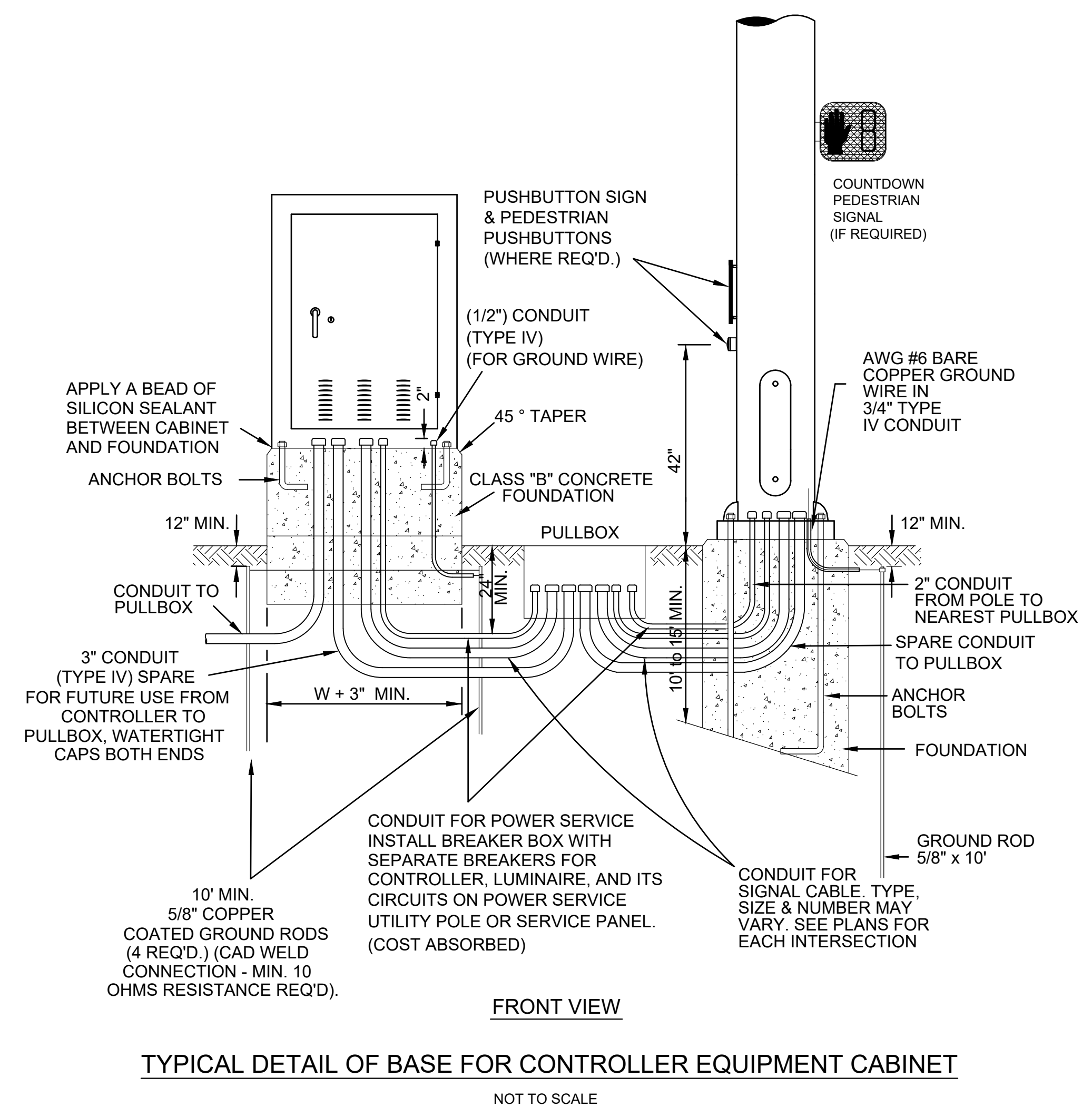
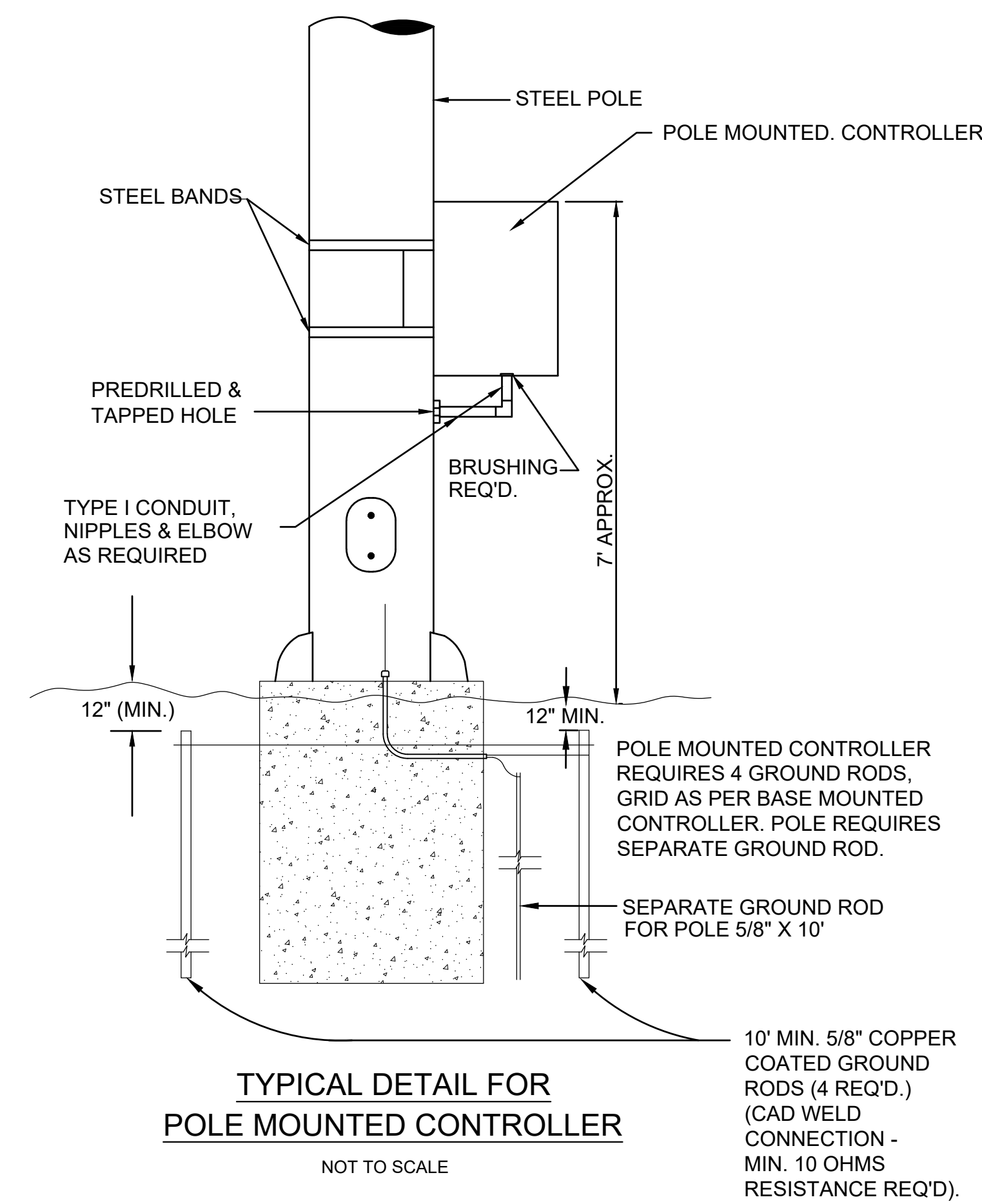
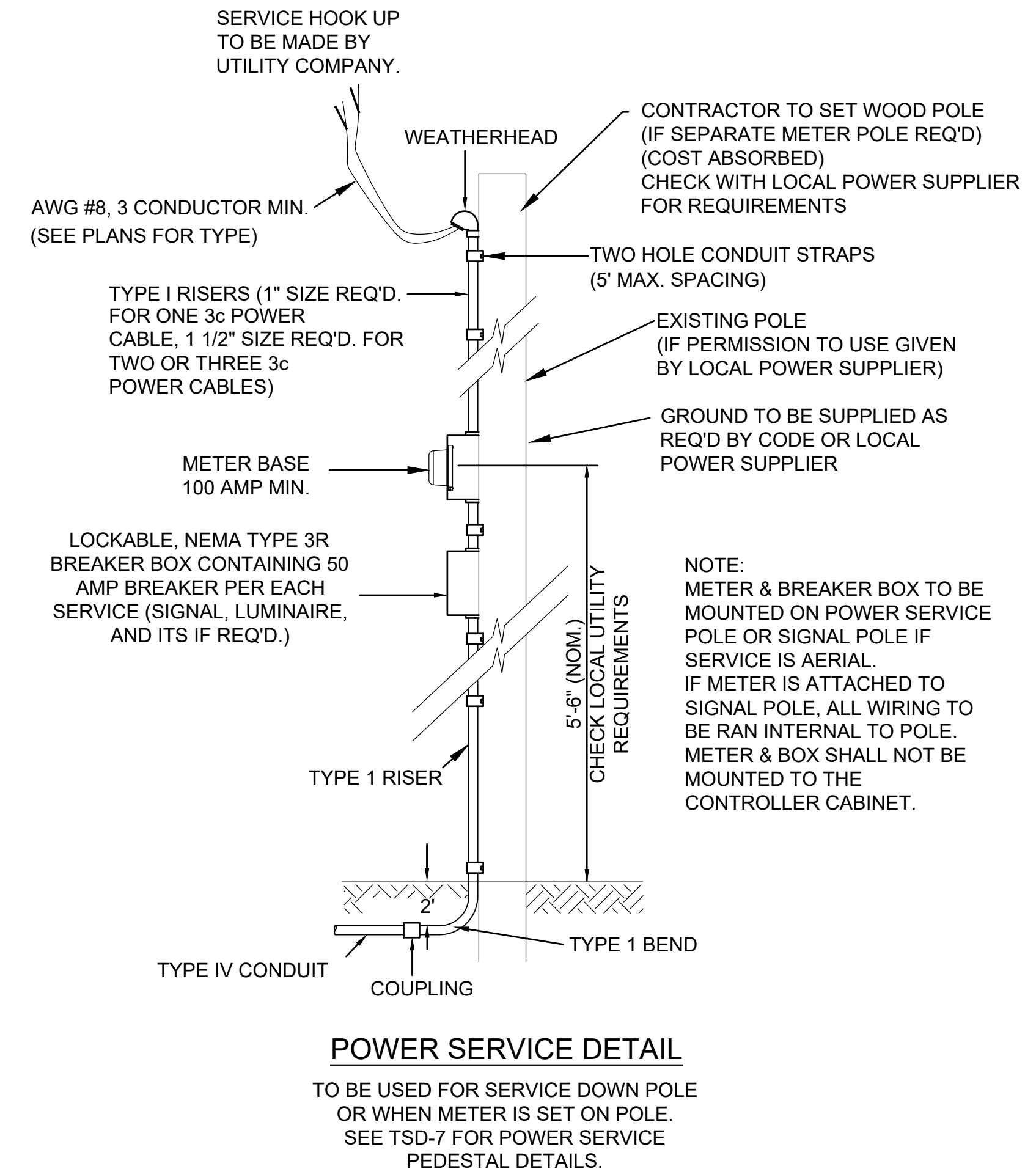
DRAWING NUMBER:
2011



CABINET INFORMATION

TYPE	SIZE (MIN.)	LOAD BAY
TYPE I CABINET	51\"H x 30\"W x 18\"D	8 POSITION
TYPE II CABINET	51\"H x 36\"W x 18\"D	12 POSITION
TYPE III CABINET	56\"H x 44\"W x 27\"D	16 POSITION
TYPE IV CABINET	56\"H x 57\"W x 29\"D	16 POSITION
TYPE V CABINET	77\"H x 44\"W x 27\"D	16 POSITION

TYPE I AND II MAY BE POLE OR BASE MOUNTED, ALL OTHERS ARE BASE MOUNT. CONTRACTOR TO VERIFY CABINET SIZE BEFORE POURING FOUNDATION.

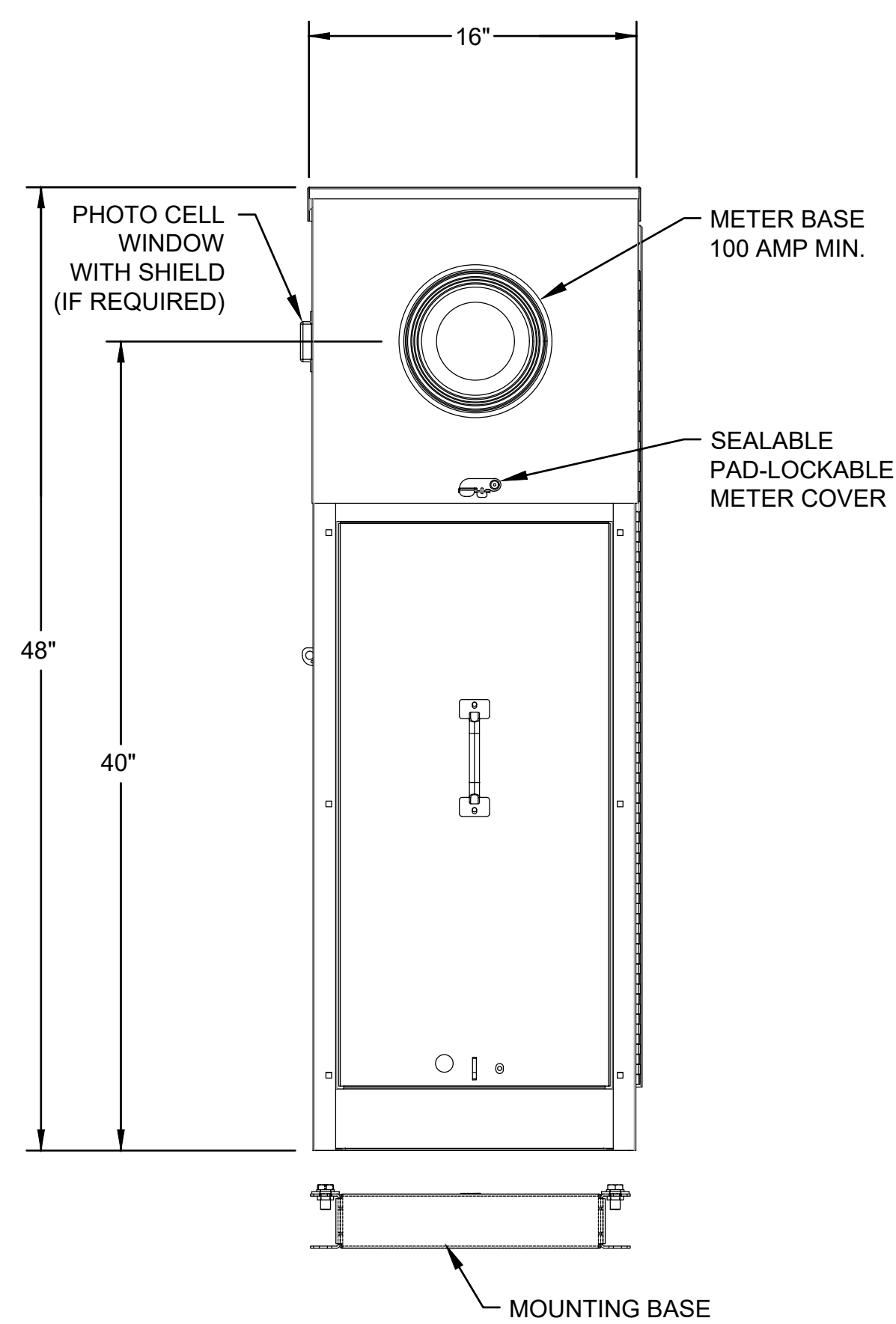


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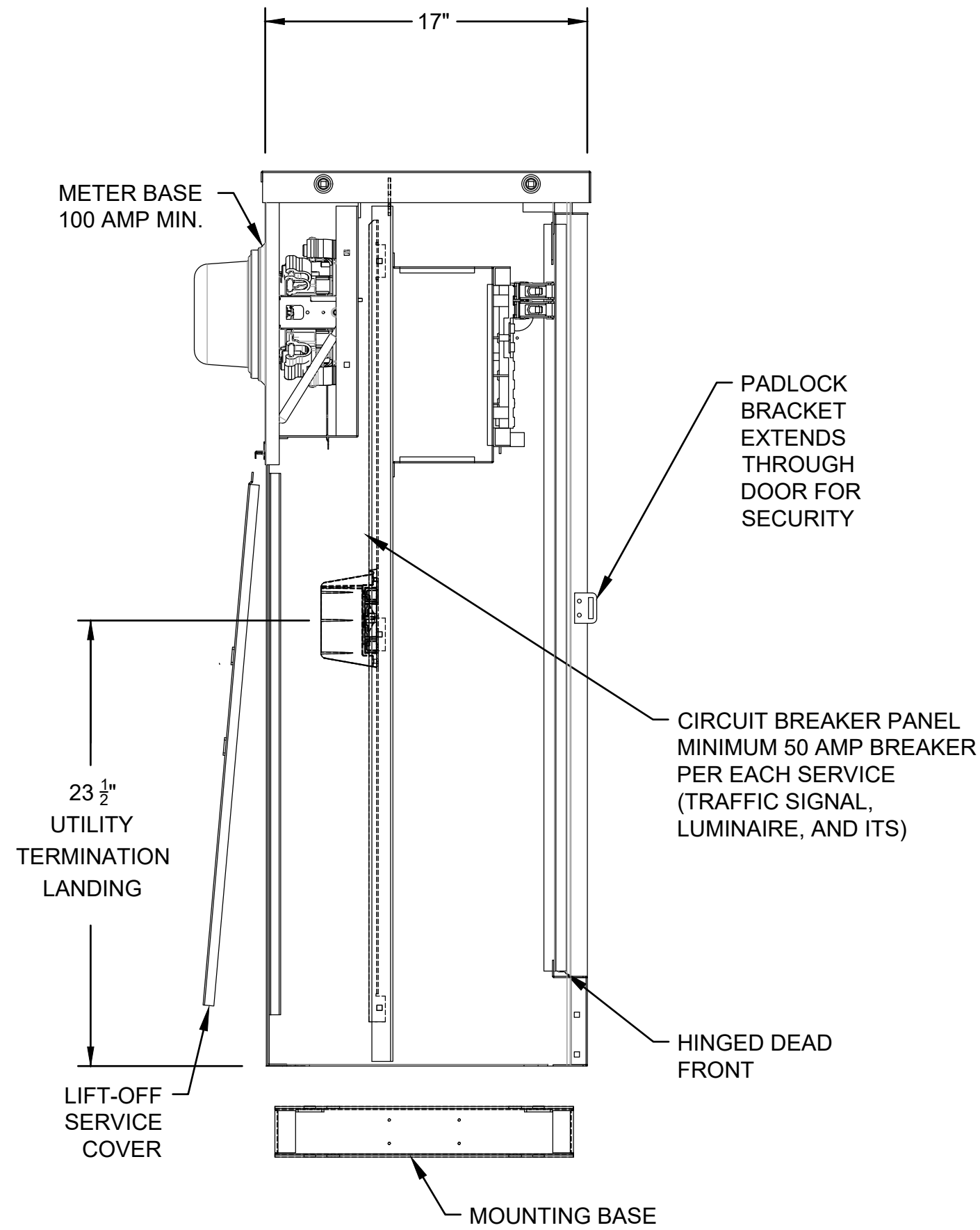
CONTROLLER CABINET AND POWER SERVICE DETAILS

WORKING NUMBER:
TSD-6

DRAWING NUMBER:
2012



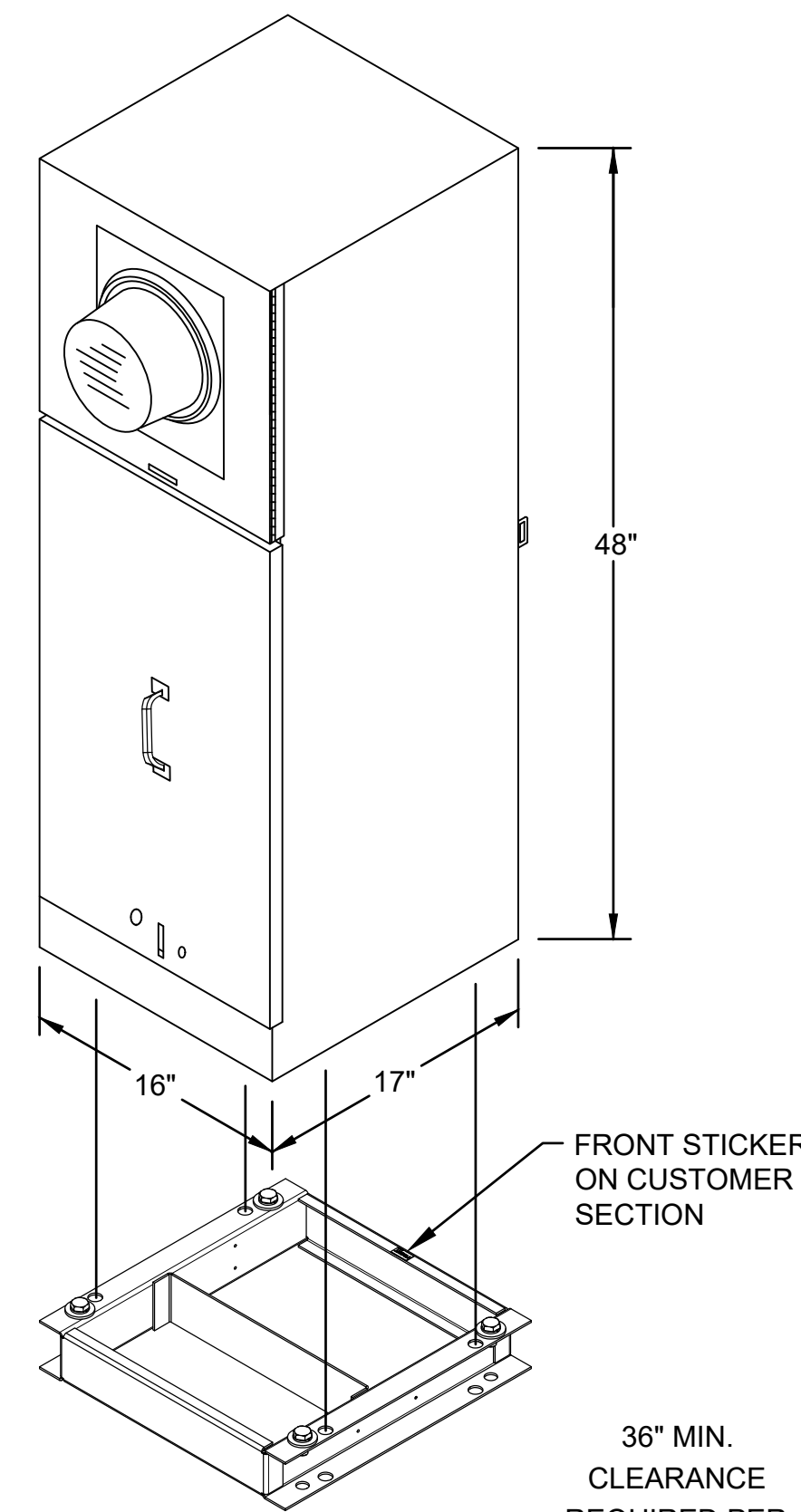
FRONT VIEW



SIDE VIEW

**16" COMMERCIAL PEDESTAL
(EXPOSED METER)**

NOT TO SCALE



GENERAL NOTES:
1. THE PEDESTAL SHALL BE OF NEMA TYPE 3R RAINPROOF CONSTRUCTION AND SHALL BE UL LISTED AS "ENCLOSED INDUSTRIAL CONTROL EQUIPMENT" (UL 508A). EXTERNAL CONSTRUCTION SHALL COMPLY WITH UL50 REQUIREMENTS AND SHALL BE UNPAINTED ALUMINUM.

2. NOMINAL SIZE OF THE PEDESTAL SHALL BE 48"H X 16"W X 17"D. DIMENSION SHOWN ARE TYPICAL. CONTRACTOR TO VERIFY ALL DIMENSIONS WITH MANUFACTURER PRIOR TO INSTALLATION.

3. PEDESTAL SHALL HAVE A VOLTAGE RATING OF 120V/240V SINGLE PHASE WITH AN AMPERAGE RATING THAT IS ADEQUATE TO RUN ALL TRAFFIC SIGNAL EQUIPMENT AS SPECIFIED IN THE PLANS (MAX 800A).

4. HINGES SHALL BE STAINLESS STEEL AND OF THE CONTINUOUS PIANO HINGE TYPE.

5. THE PEDESTAL MOUNTING BOLTS SHALL NOT BE EXTERNALLY ACCESSIBLE. THE PEDESTAL SHALL BE ABLE TO BE EMBEDDED IN CONCRETE OR USE ANCHOR BOLTS FOR MOUNTING ON CONCRETE BASE. EITHER PEDESTAL MOUNTING BASE OR ANCHOR BOLT KIT SHALL BE REQUIRED FOR INSTALLATION.

6. THE SERVICE PEDESTAL SHALL HAVE THREE SEPARATE ISOLATED SECTIONS FOR METERING EQUIPMENT, UTILITY TERMINATION AND CUSTOMER EQUIPMENT.

7. THE METERING SECTION SHALL BE PAD-LOCKABLE AND SEALABLE AND HAVE A HINGED SWING DOOR FOR ACCESS TO DEMAND METERS. METER SOCKET TYPE SHALL MEET THE REQUIREMENTS OF THE SERVING UTILITY.

8. THE UTILITY TERMINATION SECTION SHALL BE PAD-LOCKABLE AND SEALABLE AND SHALL HAVE A STAINLESS STEEL HANDLE PROVIDED ON A LIFT-OFF COVER. SUFFICIENT CLEARANCE SHALL BE PROVIDED FOR A 4-INCH DIAMETER CONDUIT FOR UTILITY CABLES ENTRANCE. UTILITY LANDING LUGS SHALL BE UL LISTED AND SHALL ACCOMMODATE #6 350 KCMIL CONDUCTORS.

9. THE CUSTOMER COMPARTMENT DOOR SHALL BE HINGED ON THE LEFT HAND SIDE. A STAINLESS PAD-LOCKABLE HASP SHALL BE PROVIDED TO SECURE CUSTOMER COMPARTMENT. AN OUTDOOR RATED HEAVY DUTY COMBINATION LOCK SHALL BE PROVIDED TO LOCK THE CUSTOMER COMPARTMENT DOOR. A DOOR KEEPER SHALL BE PROVIDED TO KEEP THE DOOR IN AN OPEN POSITION. A PRINT POCKET SHALL BE PROVIDED ON THE INSIDE OF THE DOOR IN A WEATHERPROOF SLEEVE. REQUIRED UL LABELING SHALL BE LOCATED ON THE INSIDE OF THE CUSTOMER DOOR. DISTRIBUTION AND CONTROL EQUIPMENT SHALL BE BEHIND AN INTERNAL DEAD-FRONT DOOR WITH A QUARTER-TURN SECURING LATCH AND SHALL BE HINGED TO OPEN MORE THAN 90 DEGREES. THE DEAD-FRONT DOOR SHALL BE HINGED ON THE SAME SIDE AS THE CUSTOMER SECTION DOOR.

10. ALL DISTRIBUTION AND CONTROL EQUIPMENT SHALL BE FACTORY WIRED USING 600 VOLT WIRE SIZED TO NEC AND UL REQUIREMENTS.

11. THE SERVICE PEDESTAL SHALL BE RATED FOR OPERATION AT 10K MINIMUM (AIC) AMPS INTERRUPTING CAPACITY. THE PROVIDED DOCUMENTATION SHALL LIST CIRCUIT BREAKER COMBINATIONS AND THOSE TO BE USED FOR DE-RATED OPERATION FOR SERIES RATINGS. CIRCUIT BREAKERS SHALL BE PERMANENTLY LABELED WITH ENGRAVED NAME PLATES.

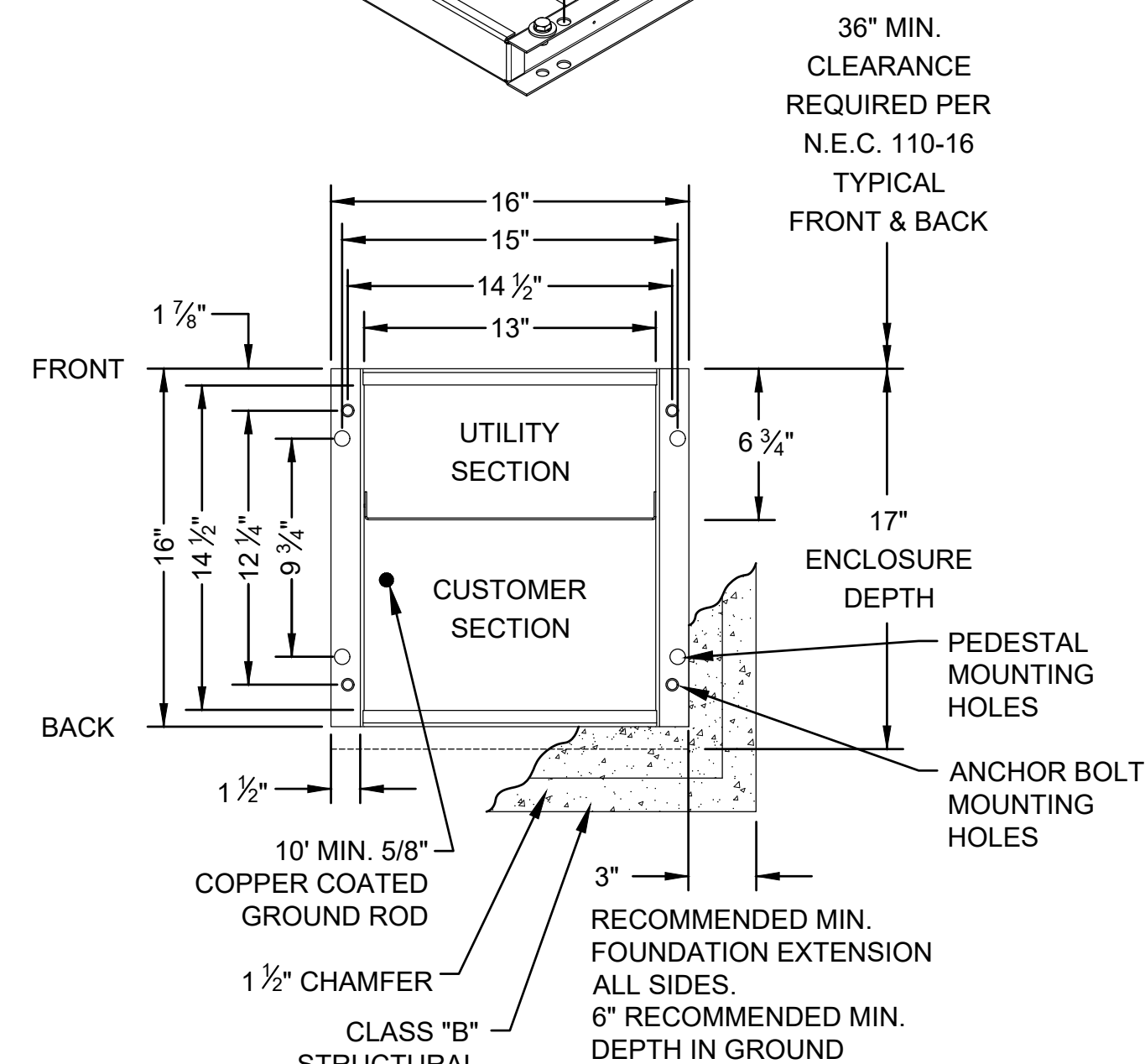
12. THE PANEL SHALL CONTAIN AS A MINIMUM A 50 AMP BREAKER PER EACH SERVICE (TRAFFIC SIGNAL, LUMINAIRE, AND ITS IF ITS EQUIPMENT IS INSTALLED ON PROJECT.)

13. A DISCONNECT SHALL BE INSTALLED AT THE SERVICE POLE. WIRES FROM POWER COMPANY SHALL BE BLACK FOR LINE (HOT) AND WHITE FOR NEUTRAL.

14. PHOTO CELL SHALL BE REQUIRED IF THE PROJECT WILL INSTALL LUMINAIRES AND/OR ILLUMINATED STREET NAME SIGNS.

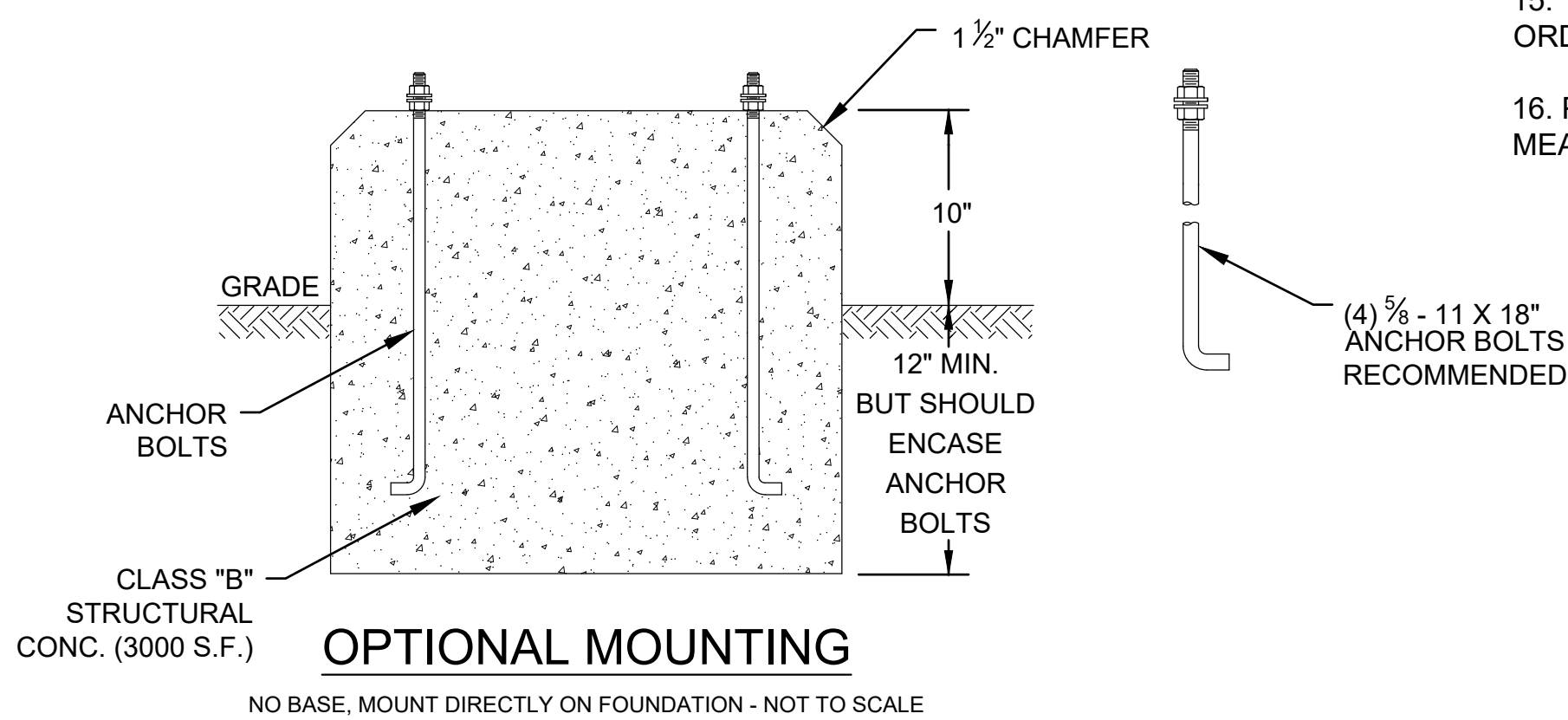
15. THE SERVING UTILITY SHALL BE CONSULTED FOR REQUIREMENTS BEFORE ORDERING OR INSTALLING EQUIPMENT.

16. POWER SERVICE PEDESTAL, AS SPECIFIED IN THE PROJECT PLANS, WILL BE MEASURED AS A UNIT PER EACH.



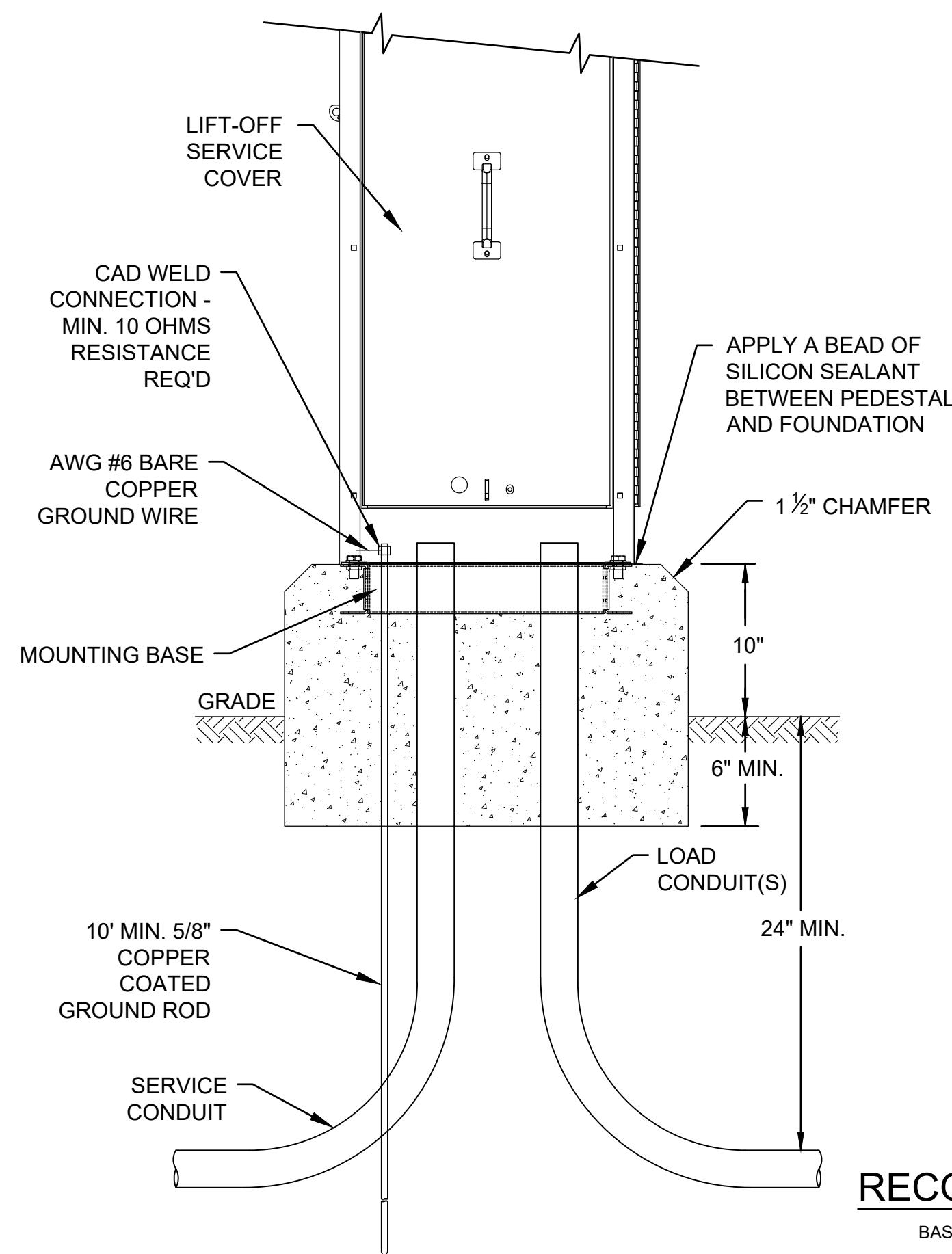
MOUNTING BASE DETAIL

NOT TO SCALE



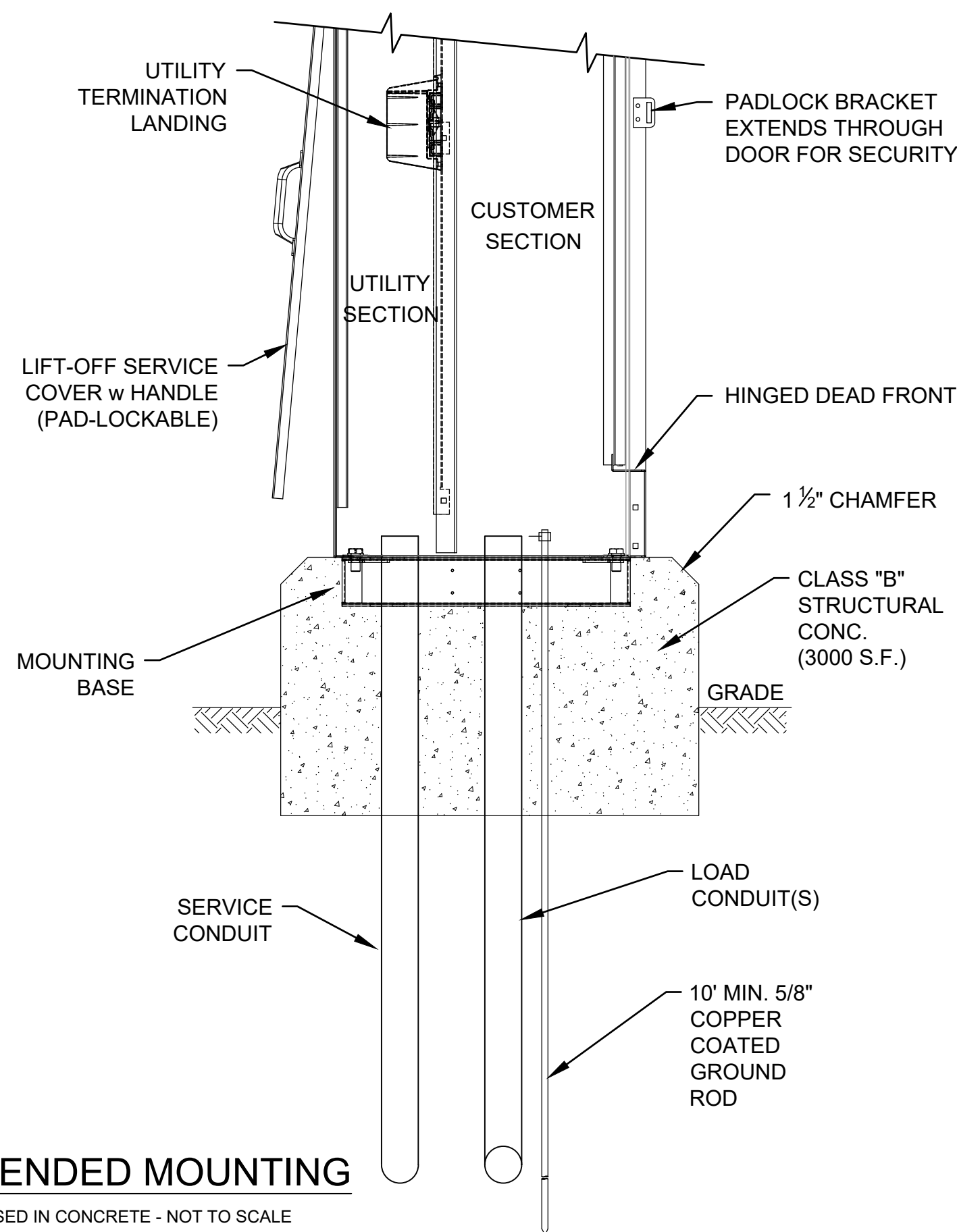
OPTIONAL MOUNTING

NO BASE, MOUNT DIRECTLY ON FOUNDATION - NOT TO SCALE



RECOMMENDED MOUNTING

BASE ENCLOSED IN CONCRETE - NOT TO SCALE



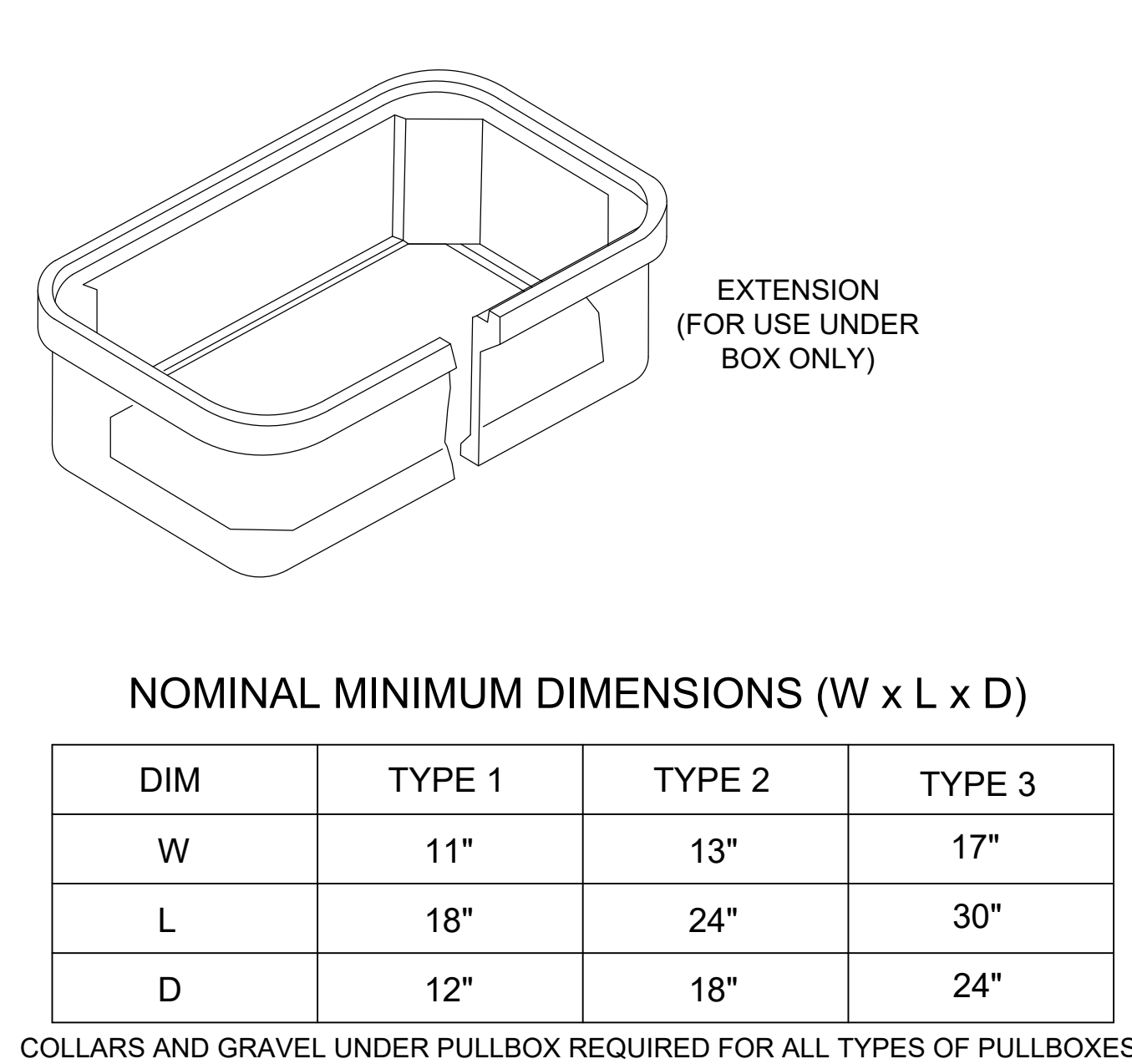
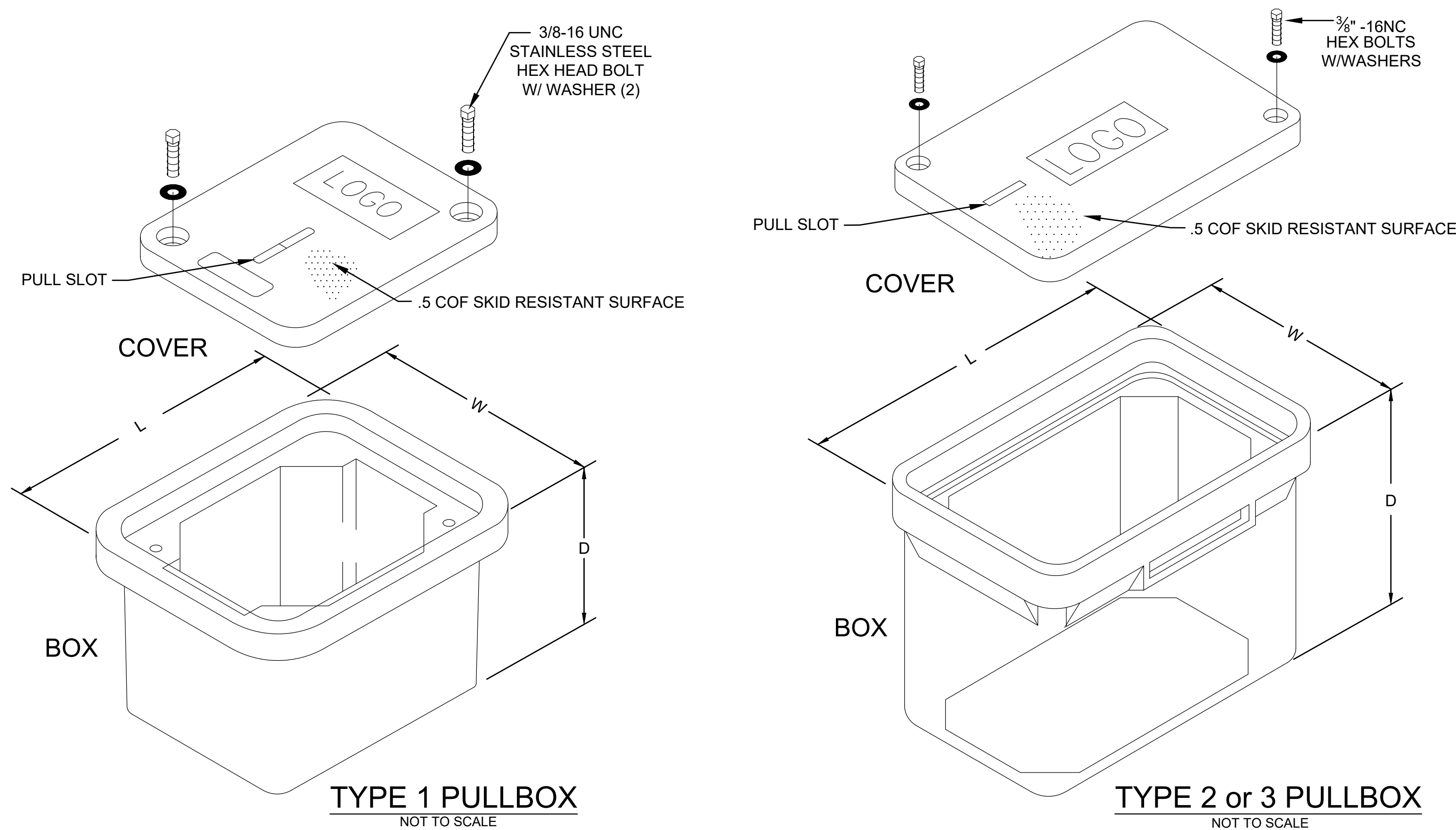


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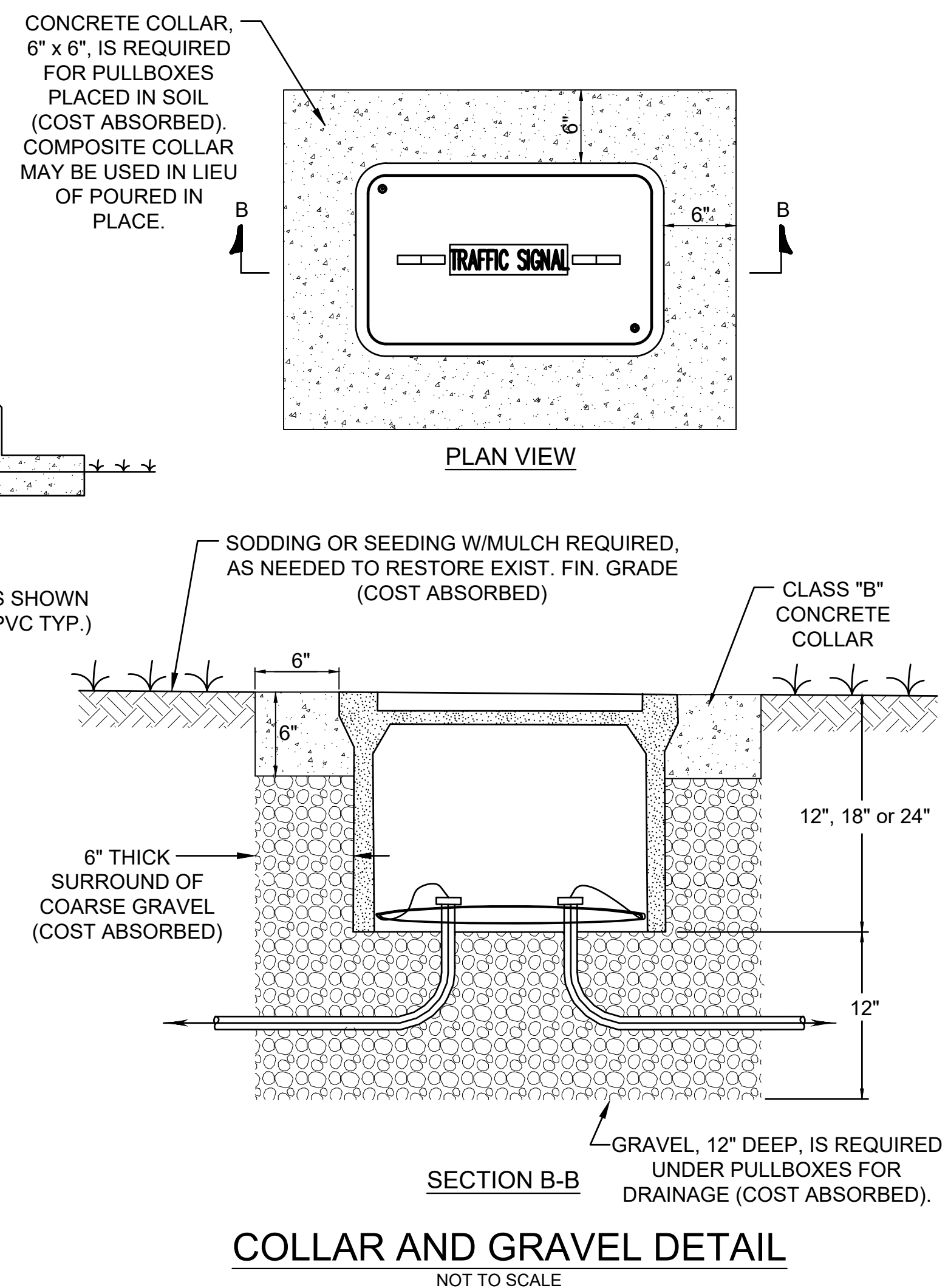
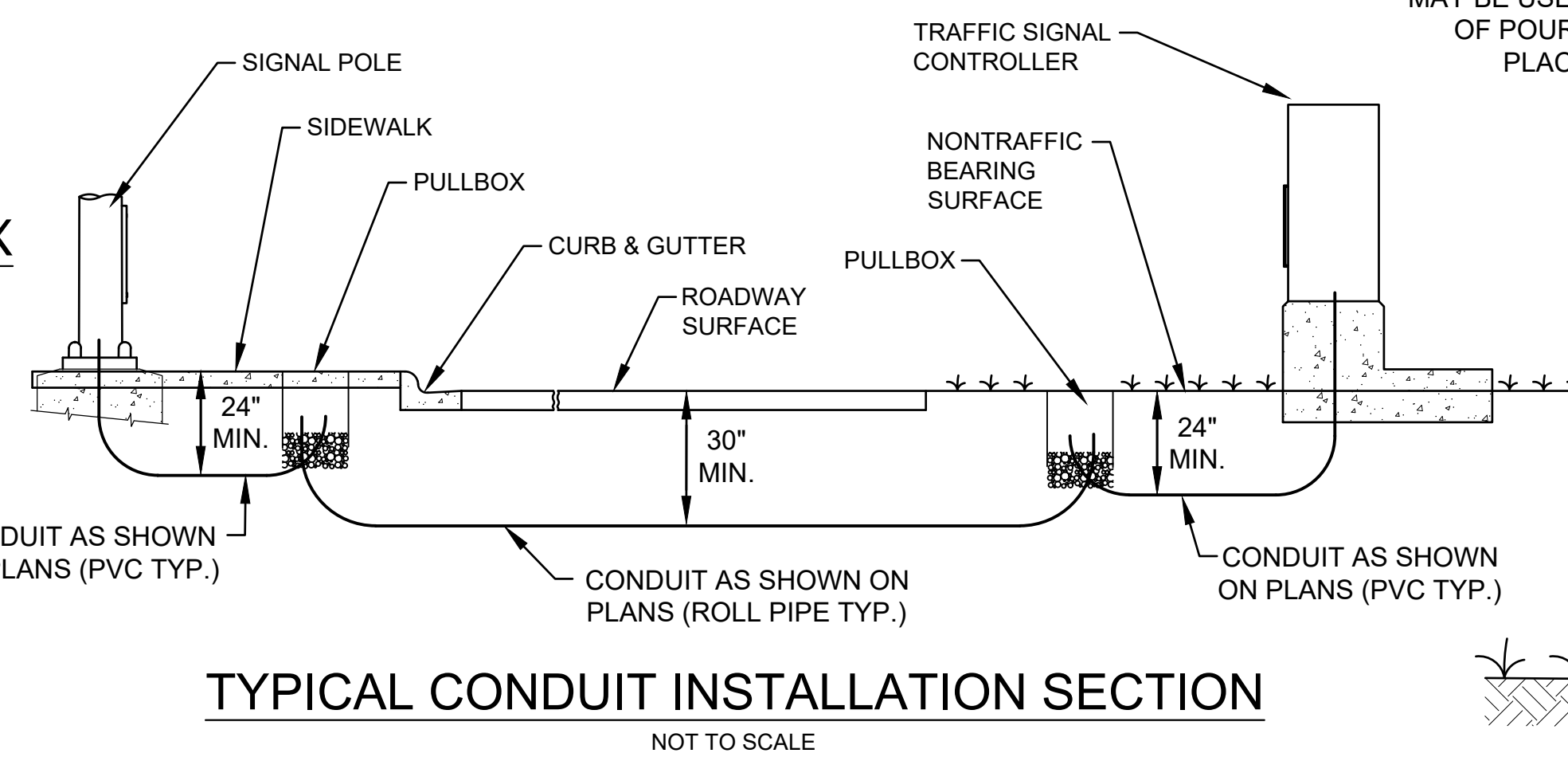
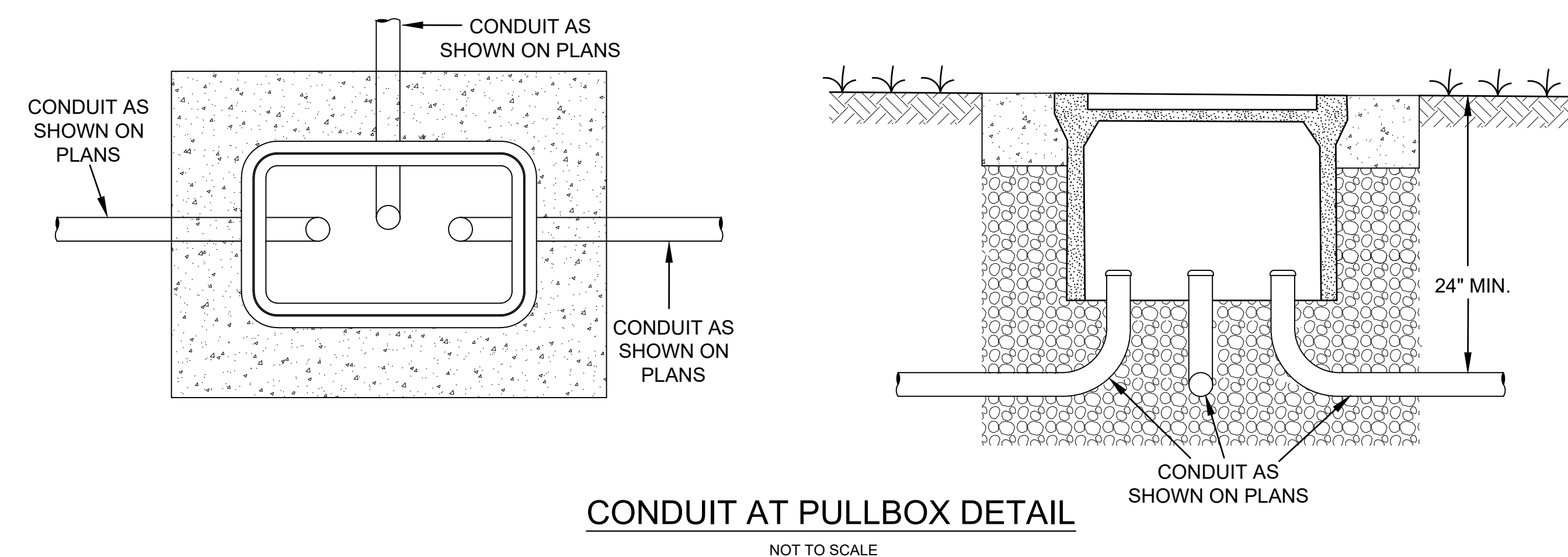
**POWER SERVICE
PEDESTAL**

WORKING NUMBER:
TSD-7

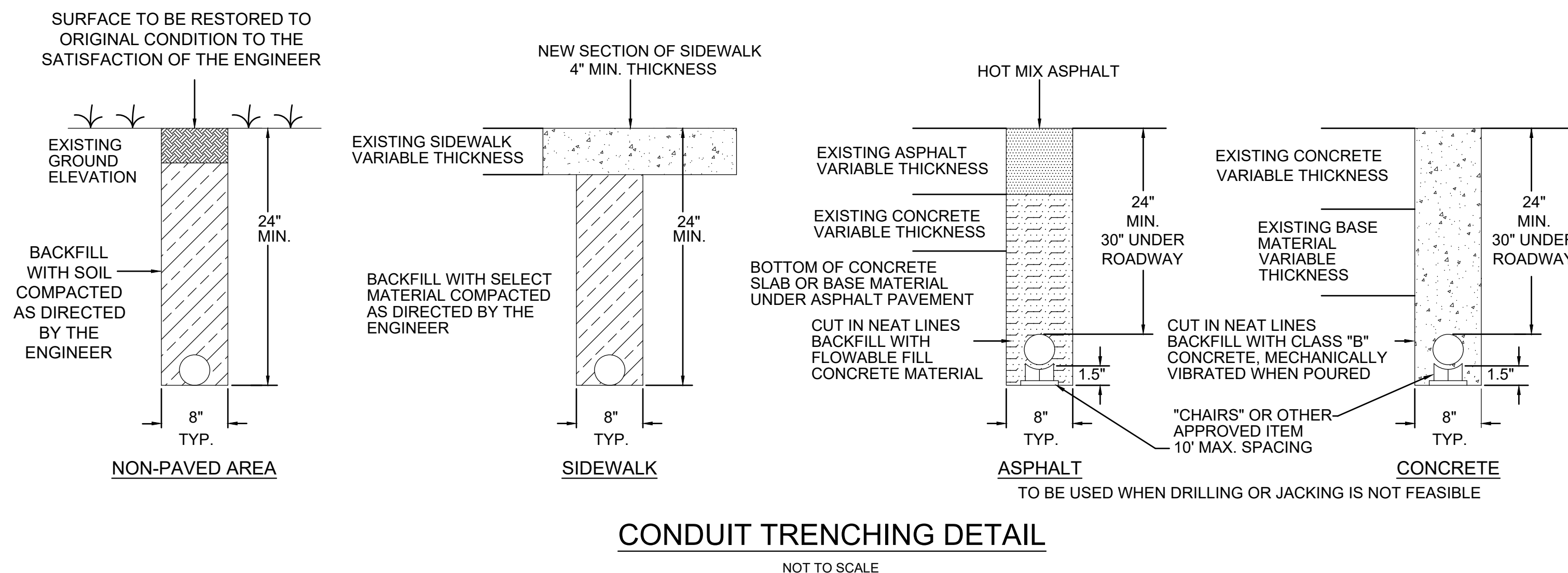
DRAWING NUMBER:
2013



- PULLBOX NOTES:
1. GRADE LEVEL PULL BOX, ENCLOSURES, STRUCTURAL JUNCTION BOXES AND COVERS SHALL MEET THE REQUIREMENTS OF SUBSECTION 722.06 OF SPECS. ALL PULLBOXES SHALL BE TIER 22 = 22,500-POUND DESIGN LOAD, 33,750-POUND TEST LOAD.
 2. IN GENERAL, TYPE 2 BOXES ARE USED FOR CORNERS WHERE SIGNAL CONDUIT UNDER ROADWAY AND TO SIGNAL POLE MEET, TYPE 3 BOXES ARE USED AT CONTROLLER CORNER WHERE ADDITIONAL ROOM FOR EXTRA CONDUIT IS REQUIRED.
 3. LOGOS SHALL READ TRAFFIC, SIGNAL, OR TRAFFIC SIGNAL.
 4. PULLBOXES SHALL NOT BE LOCATED IN THE ROADWAY, SIDEWALK, DRIVEWAY OR OTHER PATHWAY SURFACES UNLESS SPECIFICALLY REQUIRED ON THE PLANS. THEY SHALL NOT BE LOCATED IN DRAINAGE COLLECTION AREAS AND LOCATIONS WHERE DRAINAGE RUNOFF OCCURS SHOULD BE AVOIDED WHENEVER POSSIBLE.
 5. THE FINAL GRADE OF PULLBOX TOP SHALL BE FLUSH WITH ADJACENT MATERIAL WHEN THEY MUST BE INSTALLED WITHIN SIDEWALKS, ISLANDS OR BARRIER WALLS. THE FINAL GRADE OF TOP LOCATED IN SOIL OR SODDED AREAS SHALL BE APPROXIMATELY ONE (1) INCH HIGHER THAN ADJACENT EARTH OR SODDED AREAS.



- CONDUIT NOTES:
1. TOP OF CONDUIT DEPTH SHALL BE A MINIMUM OF 24" UNLESS WHEN INSTALLED UNDER PAVED ROADWAY WHERE IT SHALL BE 30" MINIMUM DEPTH.
 2. CONDUIT BORED OR DRILLED UNDER RAILROAD SHALL BE 10' MIN. BELOW RR BED, CONDUIT BORED OR DRILLED UNDER STREAMS SHALL BE 5' MIN. BELOW STEAM BED. BORE LOGS WILL BE REQUIRED FOR EACH LOCATION.
 3. PULL TAPE SHALL BE INSTALLED INTO EACH EMPTY CONDUIT (COST ABSORBED).
 4. CONDUIT TO BE SEALED WITH DUCT SEALER ONCE CABLE IS INSTALLED. BLANK DUCT PLUGS SHALL BE INSTALLED IN EACH EMPTY CONDUIT.
 5. SAWCUT SIDEWALK AT EXISTING JOINTS AND REPLACE ENTIRE SECTION TO MATCH EXISTING MATERIAL. WHEN NEW SIDEWALK IS BEING CONSTRUCTED, CONDUIT, PULLBOX, AND POLE ARE TO BE INSTALLED BEFORE SIDEWALK IS POURED.
 6. TYPE I CONDUIT IS RIGID GALV. STEEL; TYPE IV CONDUIT IS PVC; FLEXIBLE CONDUIT AND ROLL PIPE ARE HDPE.
 7. ELECTRICAL SUBCONTRACTOR SHALL COORDINATE CONDUIT INSTALLATION WORK UNDER ROADWAY WITH ROADWAY CONSTRUCTION PHASING IN ORDER TO MINIMIZE JACKING.
 8. MATERIAL REMOVED THAT IS NOT SUITABLE FOR BACKFILL OR IS EXCESS SHALL BE DISPOSED OF BY THE CONTRACTOR (COST ABSORBED).
 9. CONDUIT WILL BE MEASURED PER LINEAR FEET TO THE NEAREST FOOT FROM CENTER TO CENTER OF PULL BOX AND/OR FOUNDATION. MEASUREMENT IN UNDERGROUND CONDUIT IS ONLY IN THE HORIZONTAL PLANE AND NO ADDITIONAL QUANTITY SHALL BE ADDED FOR CONDUIT DEPTH OR CHANGE IN ELEVATION OF THE CONDUIT. ANY ABOVE GROUND VERTICAL CONDUIT RUNS, AS INDICATED IN THE PLANS, SHALL BE MEASURED PER LINEAR FEET TO THE NEAREST FOOT.

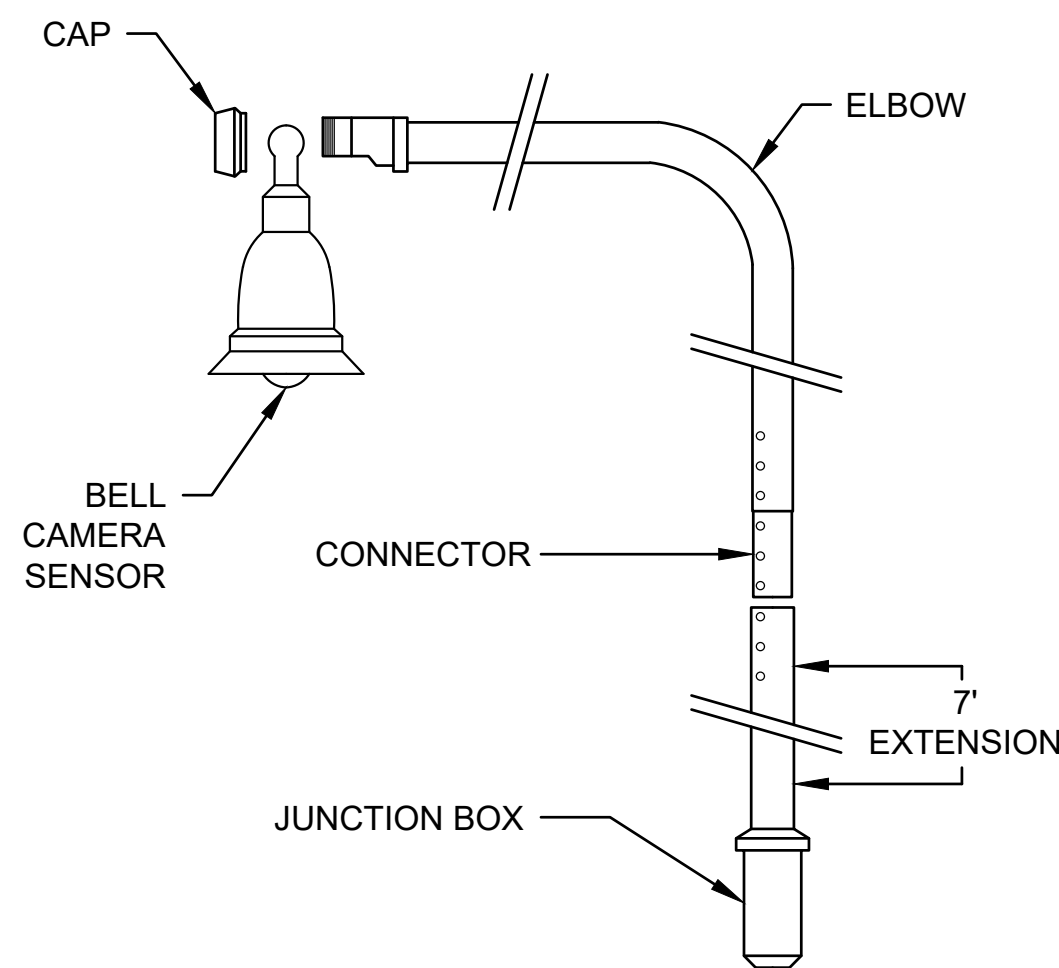


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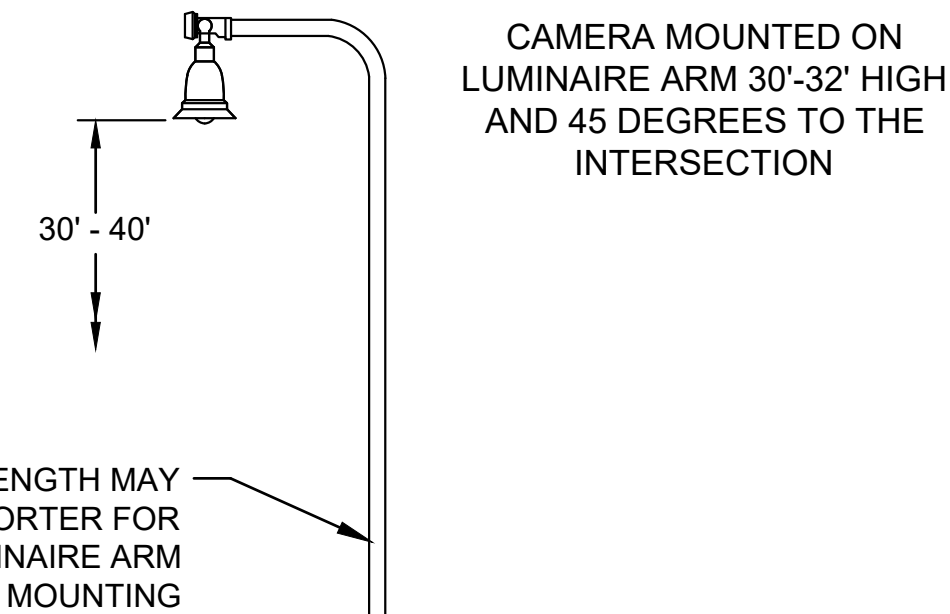
PULL BOX AND CONDUIT TRENCHING DETAILS

WORKING NUMBER: TSD-8

DRAWING NUMBER: 2014



TYPICAL 2-SECTION POLE ASSEMBLY
FOR VIVTDS SENOR MOUNTING
NOT TO SCALE



NOTES:
1. CAMERA SHOULD BE MOUNTED AT LEAST 30' HIGH WHEN USING LUMINAIRE ARM AND NO LESS THAN 27' WHEN USING MAST ARM.

2. MAST ARM MOUNTS ARE ONLY ACCEPTABLE IF THE CAMERA CAN BE LOCATED NEAR THE CENTER WITH NO OCCLUSION.

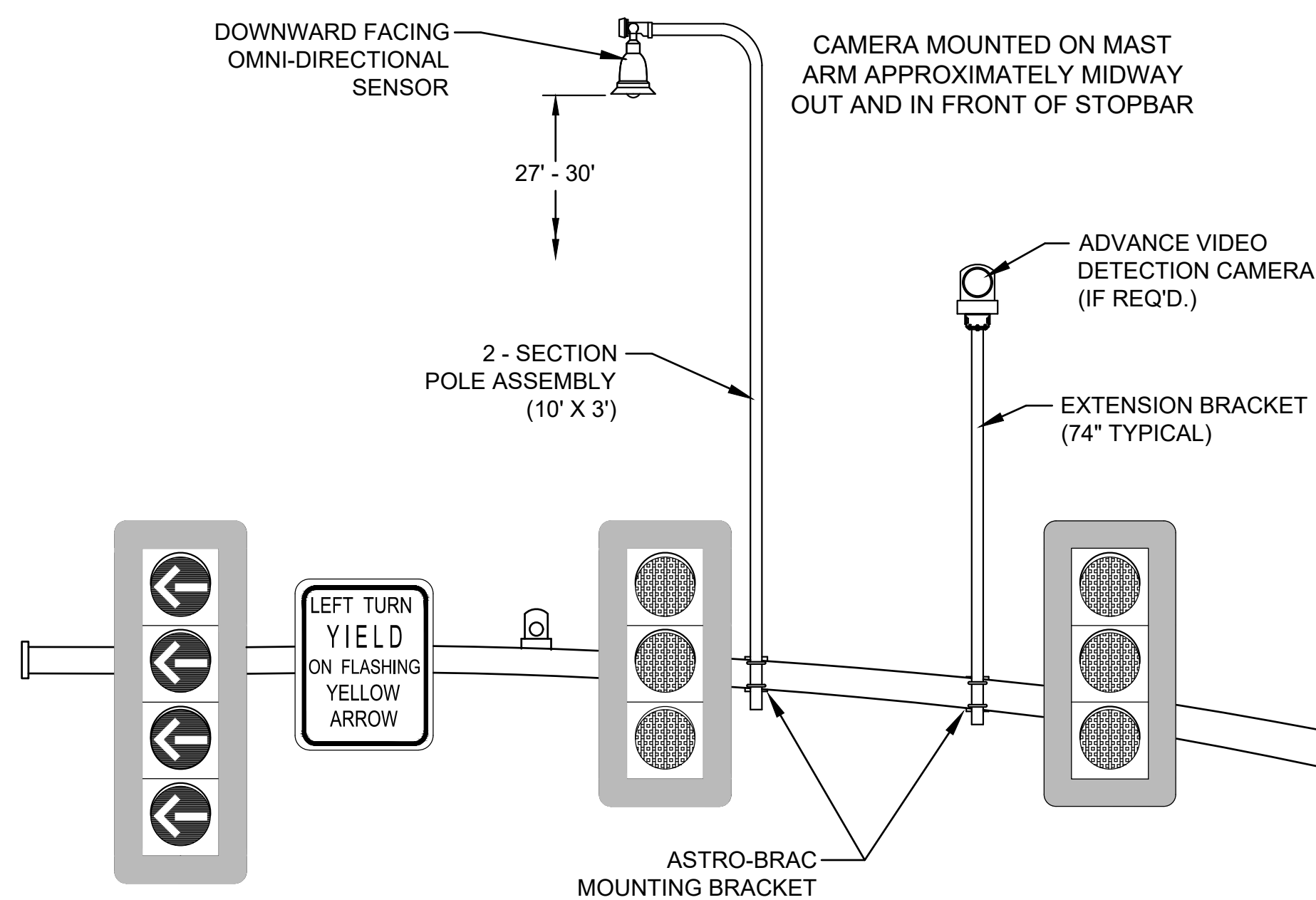
3. CAMERA MUST BE LESS THAN 75' FROM THE INTERSECTION CENTER WHEN MOUNTED ON LUMINAIRE ARM WITH NO MORE THAN 150' FROM FURTHEST STOPBAR AND 50' ON MAST ARM WITH NO MORE THAN 100' FROM FURTHEST STOPBAR.

4. CAMERA SHOULD BE LOCATED IN FRONT OF ALL STOPLINES WITH LEAST AMOUNT OF OCCLUSION.

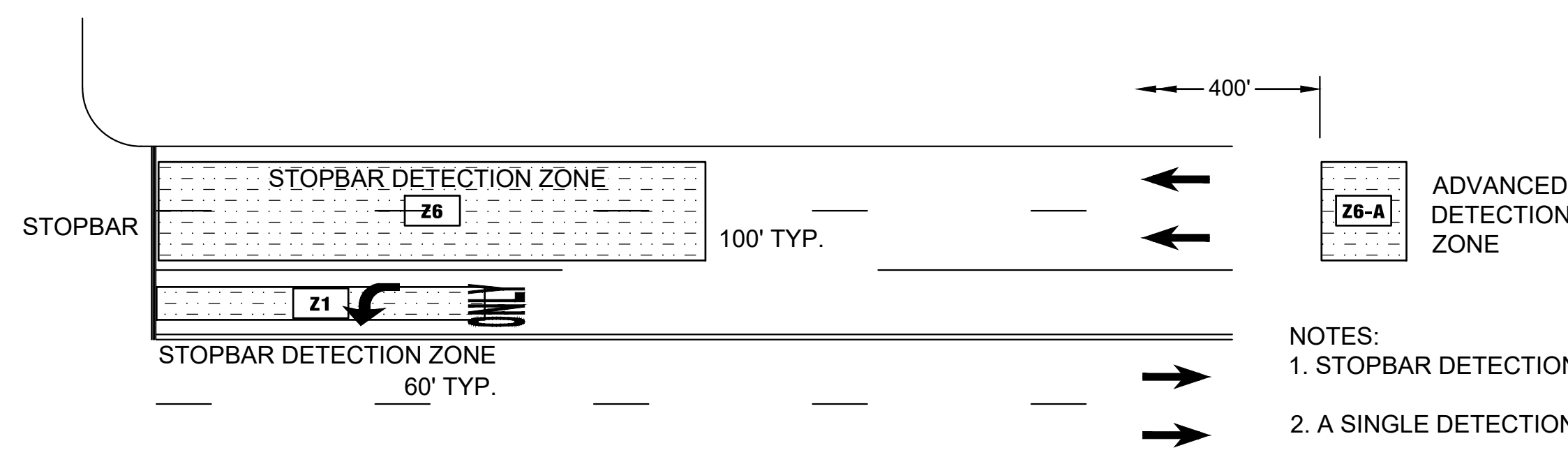
5. INSTALLER SHALL AIM FOR BEST "HEAD-ON" VIEW OF ALL APPROACHES.

6. CAMERA RESISTANCE TO GROUND EQUAL TO OR LESS THAN 25 ohms.

7. BELL CAMERA HAS APPROXIMATELY 150' TRACKING RADIUS MOUNTED ON MAST ARM, 200' ON LUMINAIRE ARM.

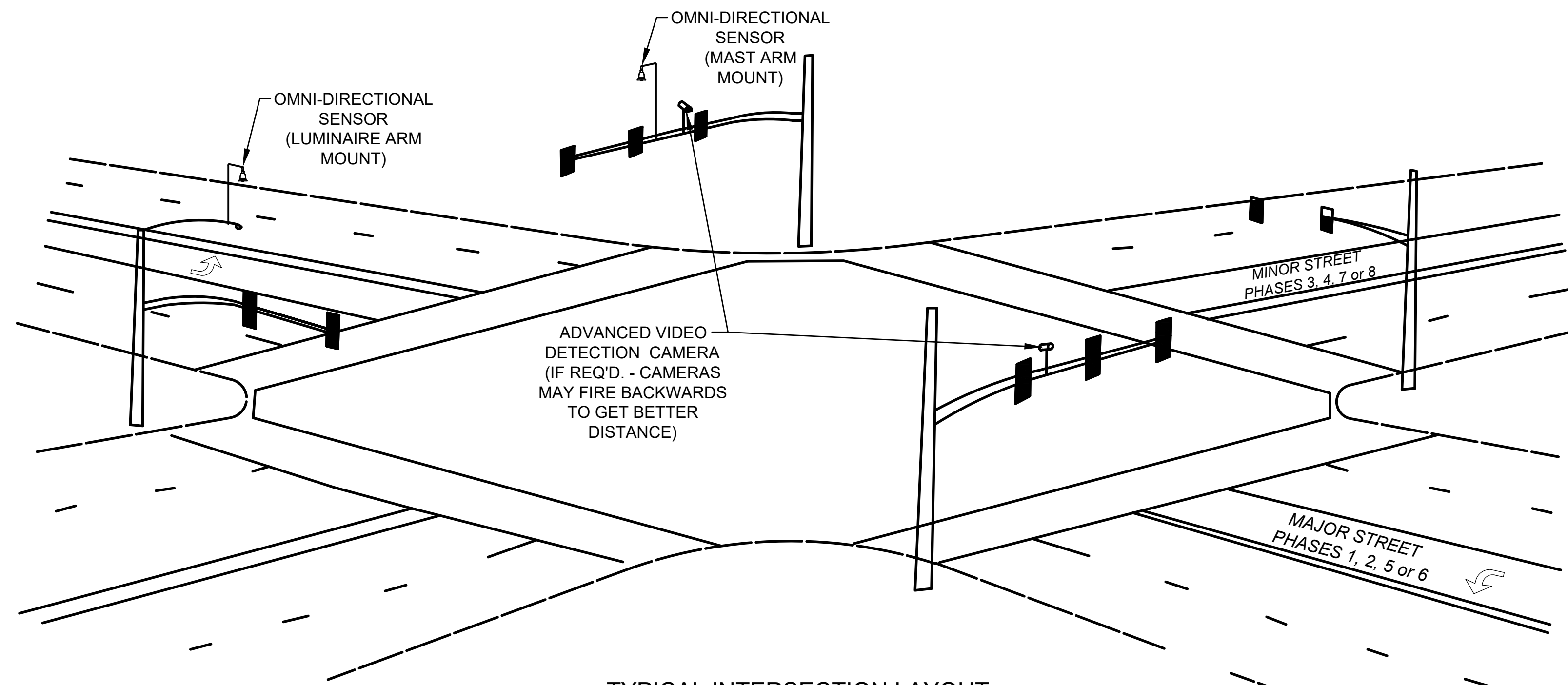


VIVTDS SENSOR CAMERA PLACEMENT
NOT TO SCALE



DETECTION ZONES
NOT TO SCALE

- NOTES:
1. STOPBAR DETECTION ZONES SHOULD BE APPROXIMATELY 3-4 CAR LENGTHS.
 2. A SINGLE DETECTION ZONE SHOULD COVER ALL LANES FOR EACH PHASE.
 3. DETECTION ZONE SHALL NOT OVERLAP.
 4. TYPICAL ZONE SET UP IS 60' IN LENGTH FOR SIDE STREETS AND TURN LANES, 100' IN LENGTH FOR MAJOR APPROACHES.
 5. ASSIGN PHASE INPUTS TO WIRED PHASES ONLY, i.e. STOP-LINE PRESENCE ZONES.
 6. THE FRONT OF THE STOPBAR ZONE (i.e. THE STOP LINE), SHALL BE NO MORE THAN 150' FROM THE CAMERA.
 7. THE FRONT OF THE ADVANCE ZONE SHALL BE NO MORE THAN 400' FROM THE CAMERA.



TYPICAL INTERSECTION LAYOUT
NOT TO SCALE

GENERAL NOTES:
1. TYPE 3 VIDEO VEHICLE DETECTION (VIVTDS) WILL PROVIDE PRESENCE OR PULSE DETECTION OF VEHICLES, BICYCLES, AND PEDESTRIANS FOR TRAFFIC SIGNAL CONTROLLER INPUTS. TYPE 3 VIVTDS DETECTOR SHALL BE A SINGLE SENSOR HAVING A FISHEYE LENS FOR OMNIDIRECTIONAL VIEWING OF ROADWAY OR INTERSECTION. THE WORK SHALL CONSIST OF PROVIDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY TO FURNISH, INSTALL, AND TEST THE VIDEO VEHICLE DETECTION EQUIPMENT, COMPLETE AND READY FOR SERVICE. LARGER INTERSECTIONS MAY REQUIRE TWO CAMERAS. ADDITIONAL SENSORS MAY BE REQUIRED FOR ADVANCED DETECTION. THESE SENSORS MAY BE TRADITIONAL FIXED SENSORS INCORPORATED INTO THE VIVTDS SYSTEM.

2. INSTALL VIDEO DETECTION PROCESSOR UNIT(S) INSIDE CONTROLLER CABINET UNLESS OTHERWISE NOTED ON PLANS.

3. AIM THE CAMERA SO THE HORIZON IS NOT VISIBLE IN THE FIELD OF VIEW.

4. INSURE WATER -TIGHT CABLE ENTRY AND EXIT POINTS FOR CONNECTIONS.

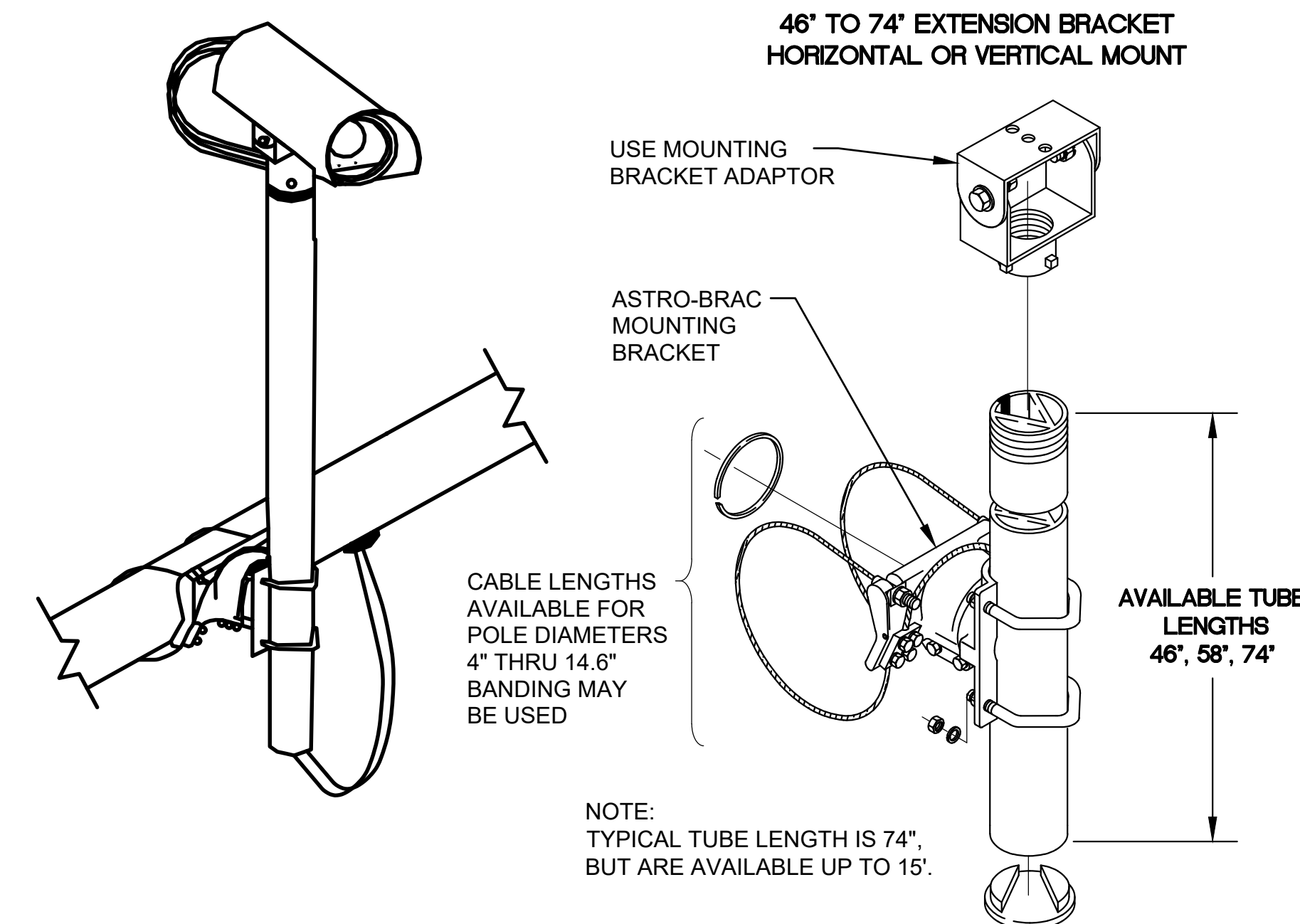
5. CONTRACTOR TO USE MANUFACTURE'S SUPPLIED OR APPROVED CABLE, CONNECTIONS AND MOUNTING HARDWARE.

6. DETECTION SUPPLIER TO ASSIST CONTRACTOR WITH INFORMATION ON BEST MOUNTING POSITION (LOCATION ON ARM, MOUNTING HEIGHT, ETC.).

7. POWER AND VIDEO CABLE PROVIDED SHALL BE AS RECOMMENDED BY THE MANUFACTURER FOR OPTIMAL VIDEO DETECTION PERFORMANCE. THE POWER AND VIDEO CABLE MAY BE INSTALLED UNDER THE SAME OUTER JACKET. THE CABLES WILL BE MEASURED BY THE LINEAR FOOT, MEASURED HORIZONTALLY ALONG THE CONDUIT, MESSENGER CABLE OR MAST ARM AND VERTICALLY ALONG THE POLE.

8. SURGE PROTECTION DEVICES SHALL BE PROVIDED FOR ALL NEW OR ADDED VIDEO DETECTION DEVICES AS RECOMMENDED BY THE MANUFACTURER.

9. ALL DETECTION UNITS SHALL BE NETWORKABLE DEVICES AND BE ON THE MDOT / CITY NETWORK IF NOTED ON PLANS.



ADVANCED VIDEO DETECTION EXTENSION BRACKET
NOT TO SCALE

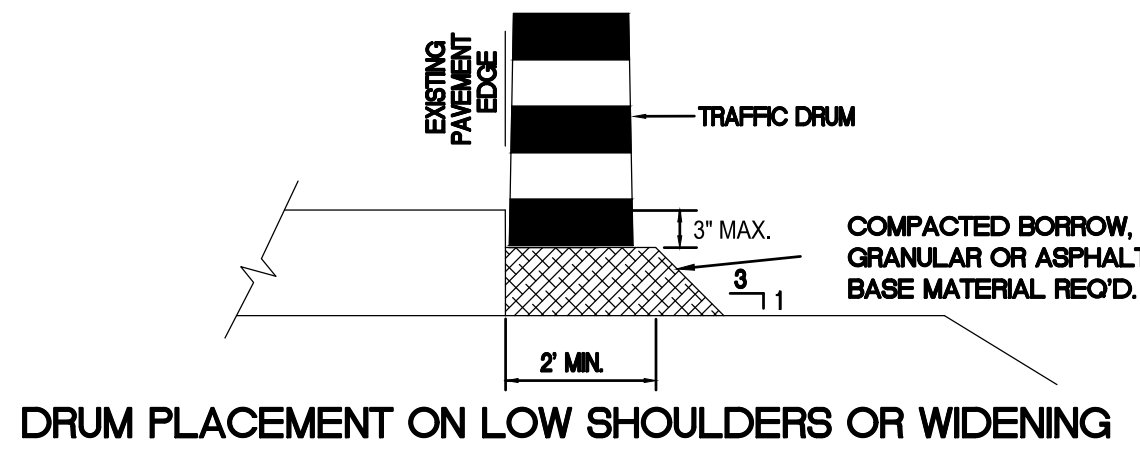
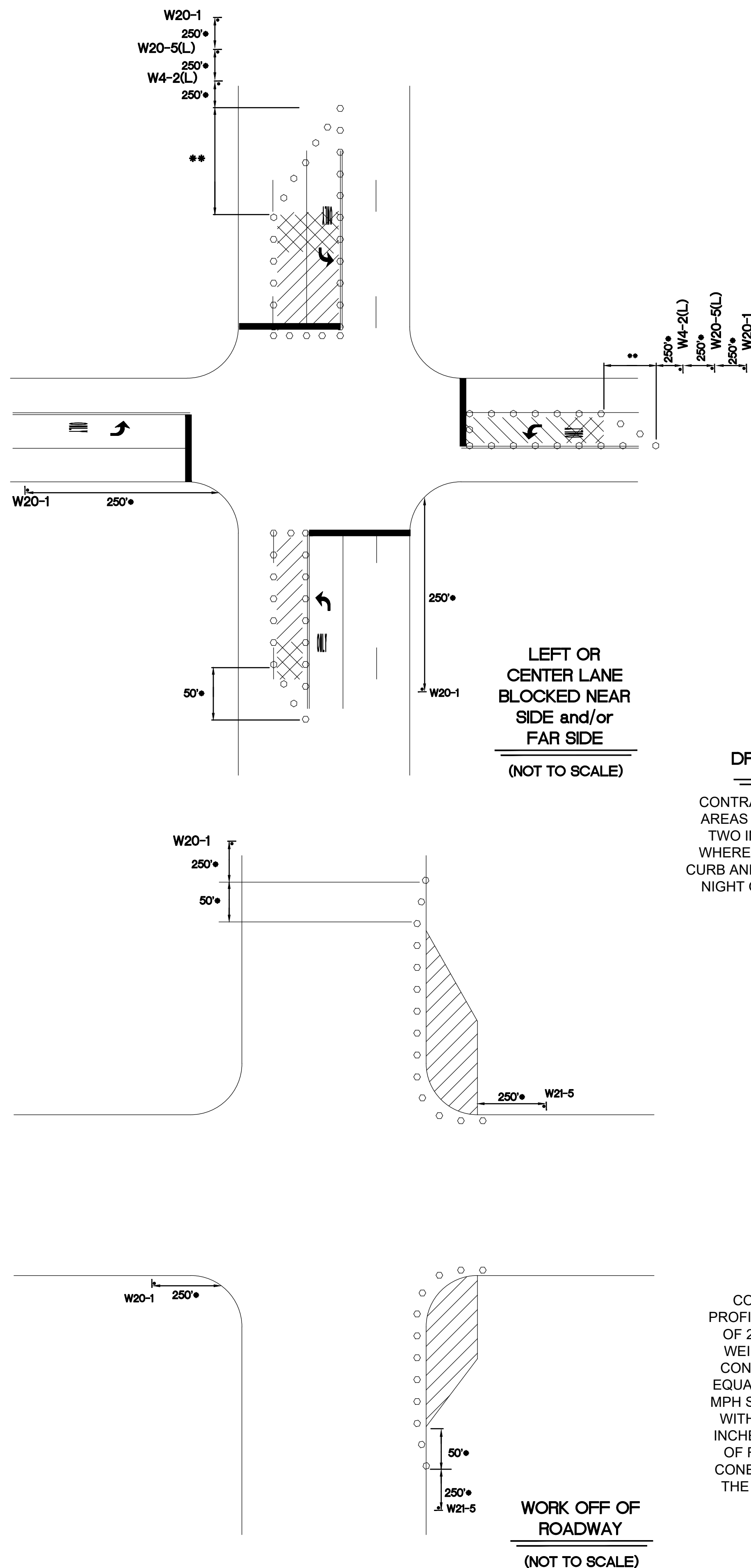
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**VIDEO/MULTISENSOR
DETECTION
INSTALLATION FOR
TRAFFIC SIGNALS**

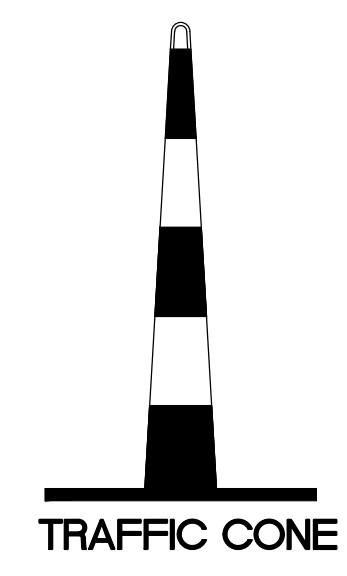
WORKING NUMBER:
TSD-9GS

DRAWING NUMBER:
2015

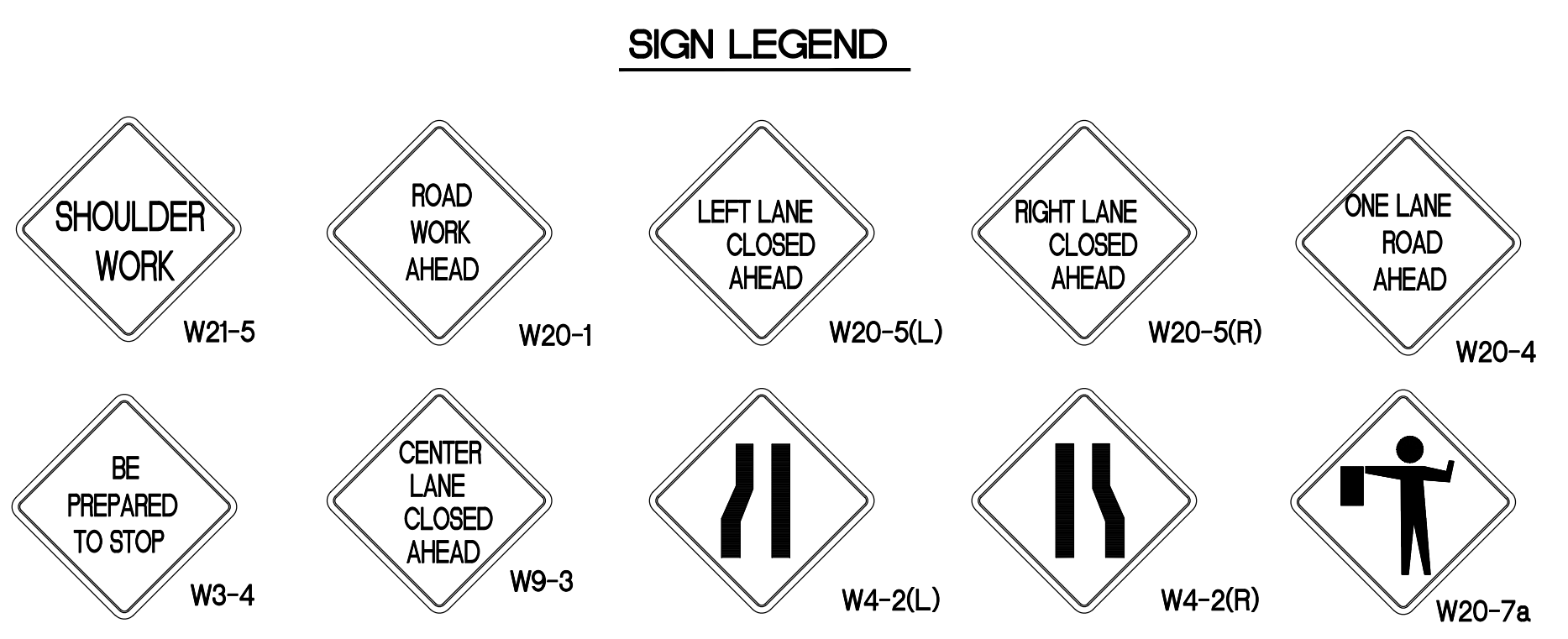
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CONTRACTOR SHALL PLACE PLASTIC DRUMS ADJACENT TO ROADWAY IN AREAS WHERE THE WIDENING HAS NOT BEEN CONSTRUCTED TO WITHIN TWO INCHES OF EXISTING PAVEMENT ELEVATIONS. DRUMS REQUIRED WHERE WORK ZONE INCLUDES UNDERCUT SHOULDER AND REMOVAL OF CURB AND GUTTER. DRUMS TO BE PLACED AS SHOWN IN DETAILS, LEFT FOR NIGHT OPERATION OR SUSPENSIONS OF WORK. COST TO BE ABSORBED (UNDER PAY ITEM 618-A).



CONES SHALL BE NARROW PROFILE WITH A MINIMUM HEIGHT OF 28 INCHES AND A MINIMUM WEIGHT OF TEN (10) POUNDS. CONES USED IN SPEED ZONES EQUAL TO OR GREATER THAN 45 MPH SHALL BE NARROW PROFILE WITH A MINIMUM HEIGHT OF 28 INCHES AND A MINIMUM WEIGHT OF FIFTEEN (15) POUNDS. ALL CONES SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.



- GENERAL NOTES:
- ADDITIONAL ADVANCE WARNING SIGNS MAY BE NECESSARY. ANY ADDITIONAL SIGNS SHOULD BE INCLUDED UNDER PAY ITEM 618-A, MAINTENANCE OF TRAFFIC.
 - POST MOUNTED SIGNS SHALL HAVE A 7' MINIMUM MOUNTING HEIGHT.
 - PAYMENT FOR ALL SIGNS, CONES, DRUMS, CONCRETE BARRIERS, STEEL PLATES AND OTHER MATERIALS, BARRICADES, LABOR AND INCIDENTALS REQUIRED TO IMPLEMENT THE TRAFFIC CONTROL PLAN SHALL BE INCLUDED UNDER PAY ITEM 618-A, MAINTENANCE OF TRAFFIC.
 - APPROACH SIDE TRAFFIC CONTROL TO BE USED WHEN WORK OCCURS ON EITHER THE APPROACH SIDE OR THE FAR SIDE OF THE INTERSECTION. FAR SIDE TRAFFIC CONTROL IS NOT NEEDED WHEN WORK IS CONFINED TO THE APPROACH SIDE ONLY.
 - FOR A DIVIDED HIGHWAY SITUATION, A SECOND SET OF ADVANCE WARNING SIGNS SHALL BE ERECTED IN MEDIAN AREA (8' MIN. MEDIAN WIDTH REQUIRED).

LEGEND

- DRUMS (30' MAXIMUM SPACING) - CONES SHALL BE NARROW PROFILE WITH A MINIMUM HEIGHT OF 28 INCHES AND A MINIMUM WEIGHT OF TEN (10) POUNDS. CONES USED IN SPEED ZONES EQUAL TO OR GREATER THAN 45 MPH SHALL BE NARROW PROFILE WITH A MINIMUM HEIGHT OF 28 INCHES AND A MINIMUM WEIGHT OF FIFTEEN (15) POUNDS. ALL CONES SHALL BE APPROVED BY THE ENGINEER PRIOR TO USE.
- SIGNS - SEE SIGN LEGEND MIN. SIZE 48" x 48", BLACK ON ORANGE BACKGROUND
- FLAGGER WITH PADDLE - 18" STOP/SLOW PADDLES ACCEPTED AS PROPER TRAFFIC CONTROL DEVICES SHALL BE USED. HAND HELD FLAGS SHALL NOT BE FOR FLAGGING OPERATION.



* CONSIDERED MINIMUM DISTANCE - ENGINEER TO DETERMINE APPROPRIATE SPACING IN THE FIELD

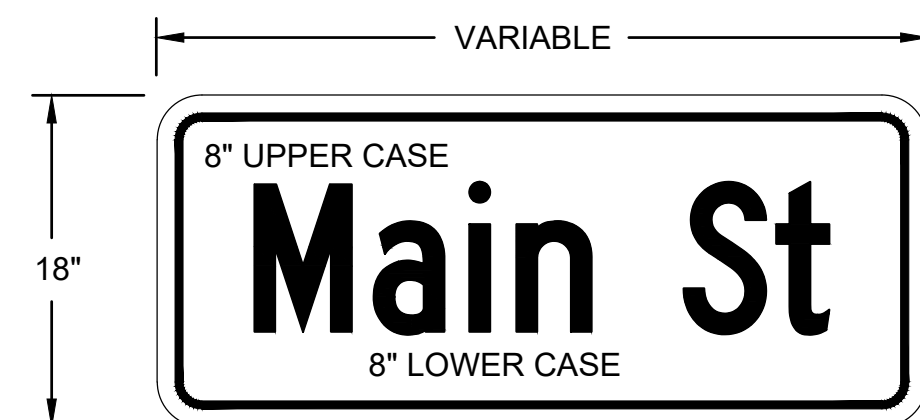
** SPEED LIMIT	BUFFER	TAPER LENGTH (Feet)
M.P.H.	FEET	(Per 12' Lane Shift)
20	115	80
25	155	125
30	200	180
35	250	245
40	305	320
45	360	540
50	425	600
55	495	660
60	570	720
65	645	780
70	730	840

NEEL-SCHAFER
Solutions you can build upon

TRAFFIC CONTROL PLAN
(TYPICAL SIGNAL INSTALLATION)

WORKING NUMBER: TSD-10

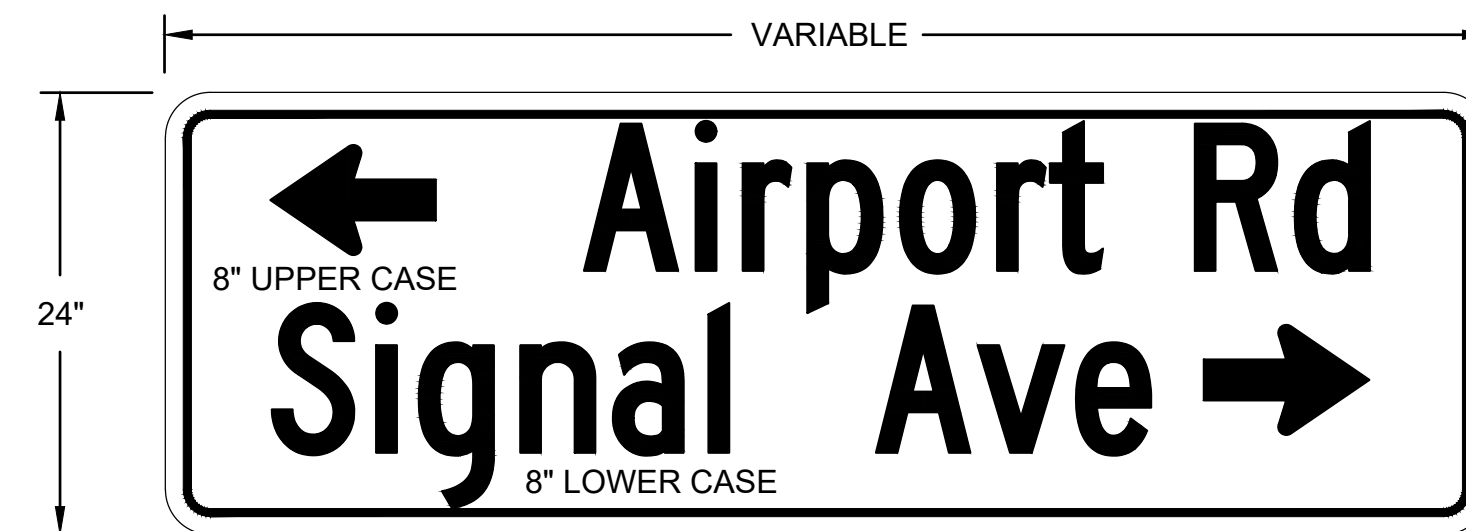
DRAWING NUMBER: 2016



SINGLE LINE STREET NAME SIGN DETAIL
(TYPICAL)

8" UPPER CASE & LOWER CASE LETTERS; SERIES "C"
THICKNESS = 0.1"

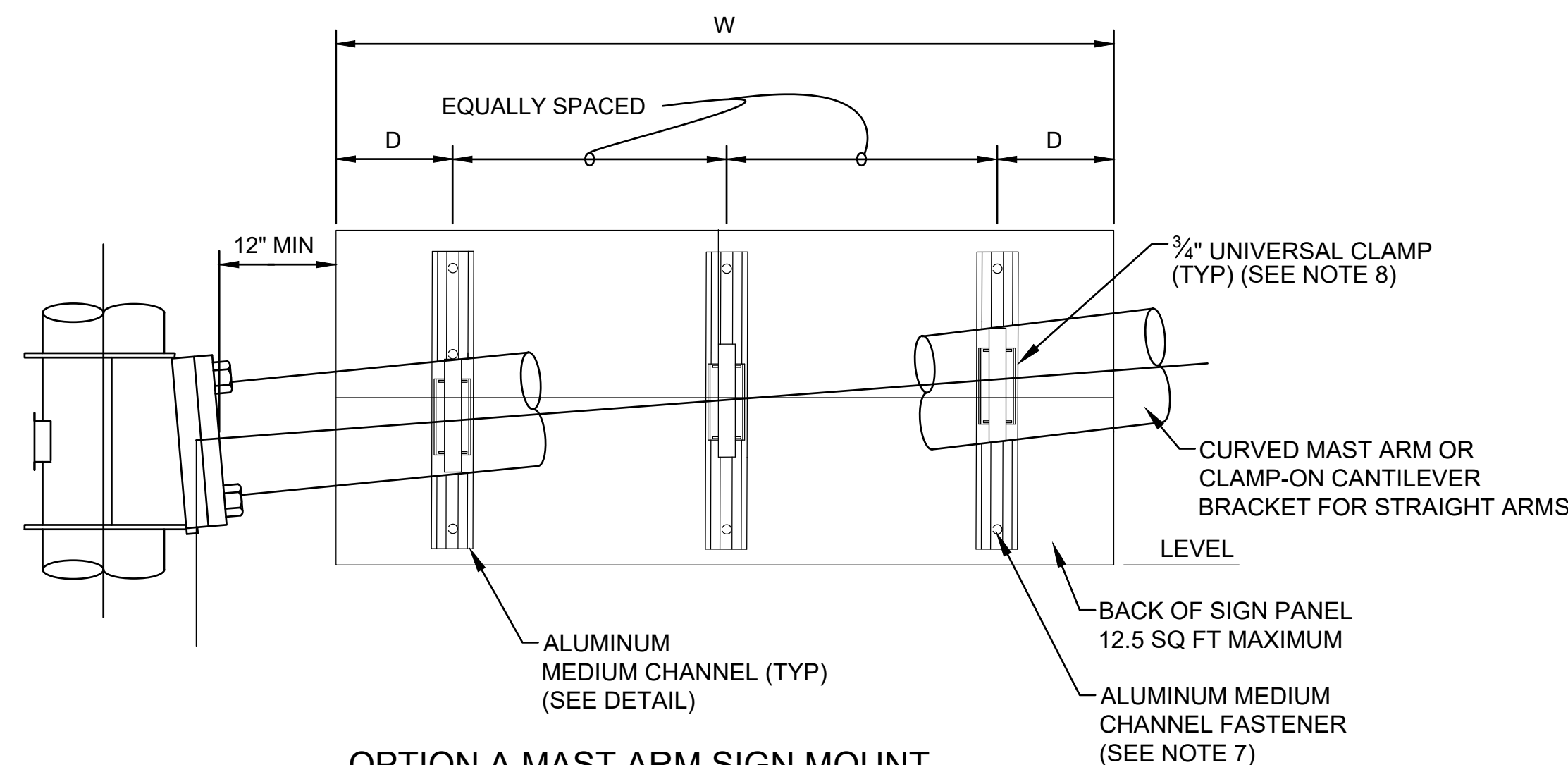
WHITE LETTERS AND BORDER ON GREEN TYPE XI PRISMATIC RETROREFLECTIVE SHEETING.
DIRECTLY APPLIED RETROREFLECTIVE SHEETING ONLY. DIGITALLY PRINTING WILL NOT BE ALLOWED.



DOUBLE LINE STREET NAME SIGN DETAIL
(TYPICAL)

8" UPPER CASE & LOWER CASE LETTERS; SERIES "C"
THICKNESS = 0.1"

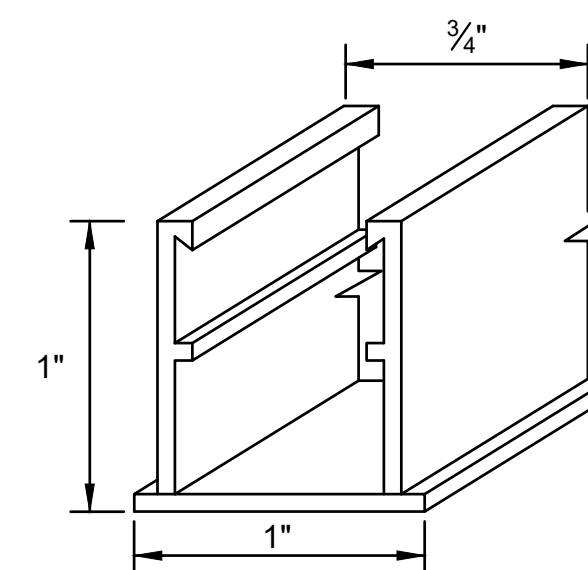
WHITE LETTERS AND BORDER ON GREEN TYPE XI PRISMATIC RETROREFLECTIVE SHEETING
DIRECTLY APPLIED RETROREFLECTIVE SHEETING ONLY. DIGITALLY PRINTING WILL NOT BE ALLOWED.
ROADWAY TO LEFT ON TOP, ROADWAY TO RIGHT ON BOTTOM
JUSTIFY TEXT AND ARROW LEFT AND RIGHT ON SIGN



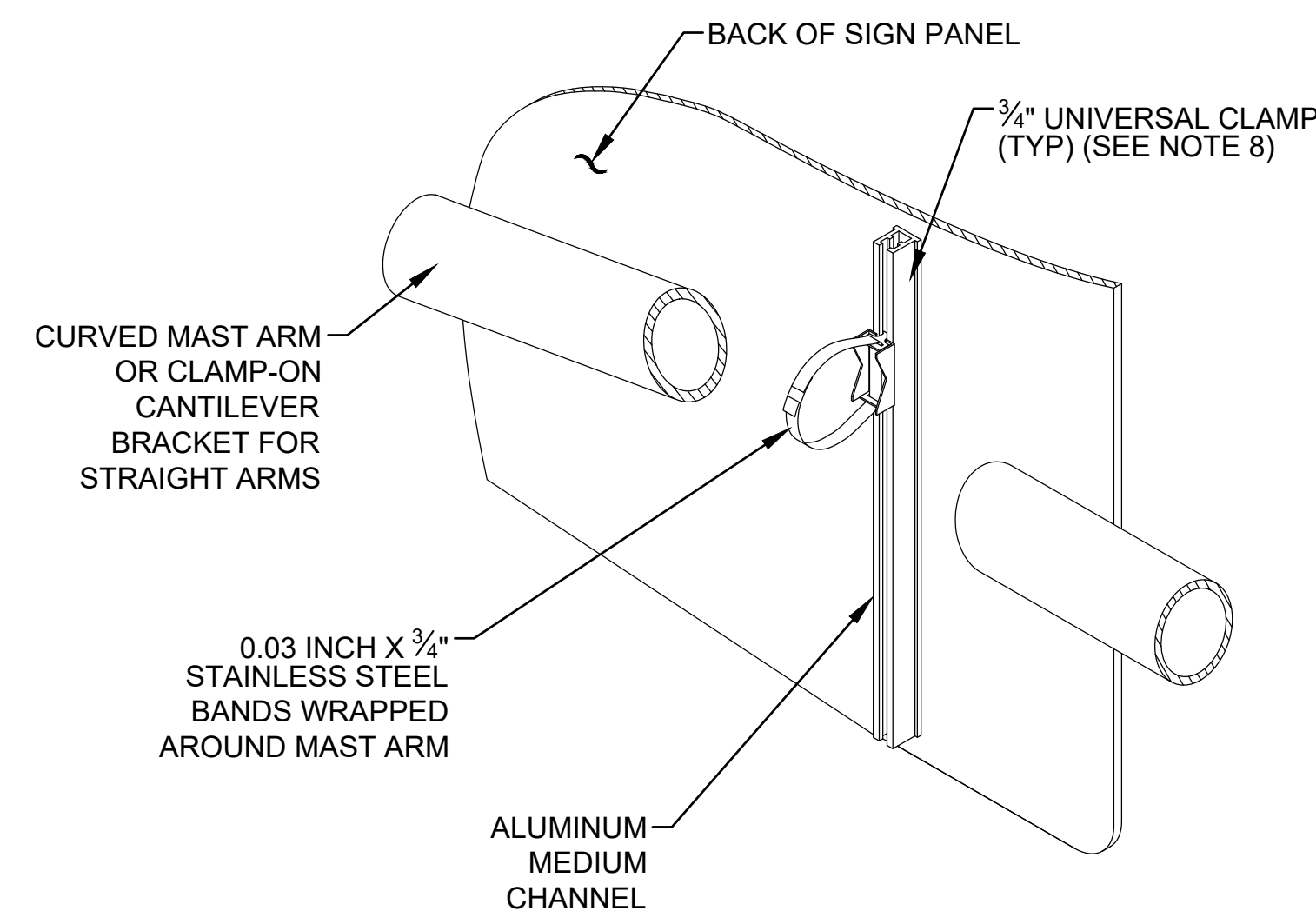
OPTION A MAST ARM SIGN MOUNT
(SEE TABLE 1)
(SEE NOTE 4)

TABLE 1
DIMENSIONS OF OPTION A

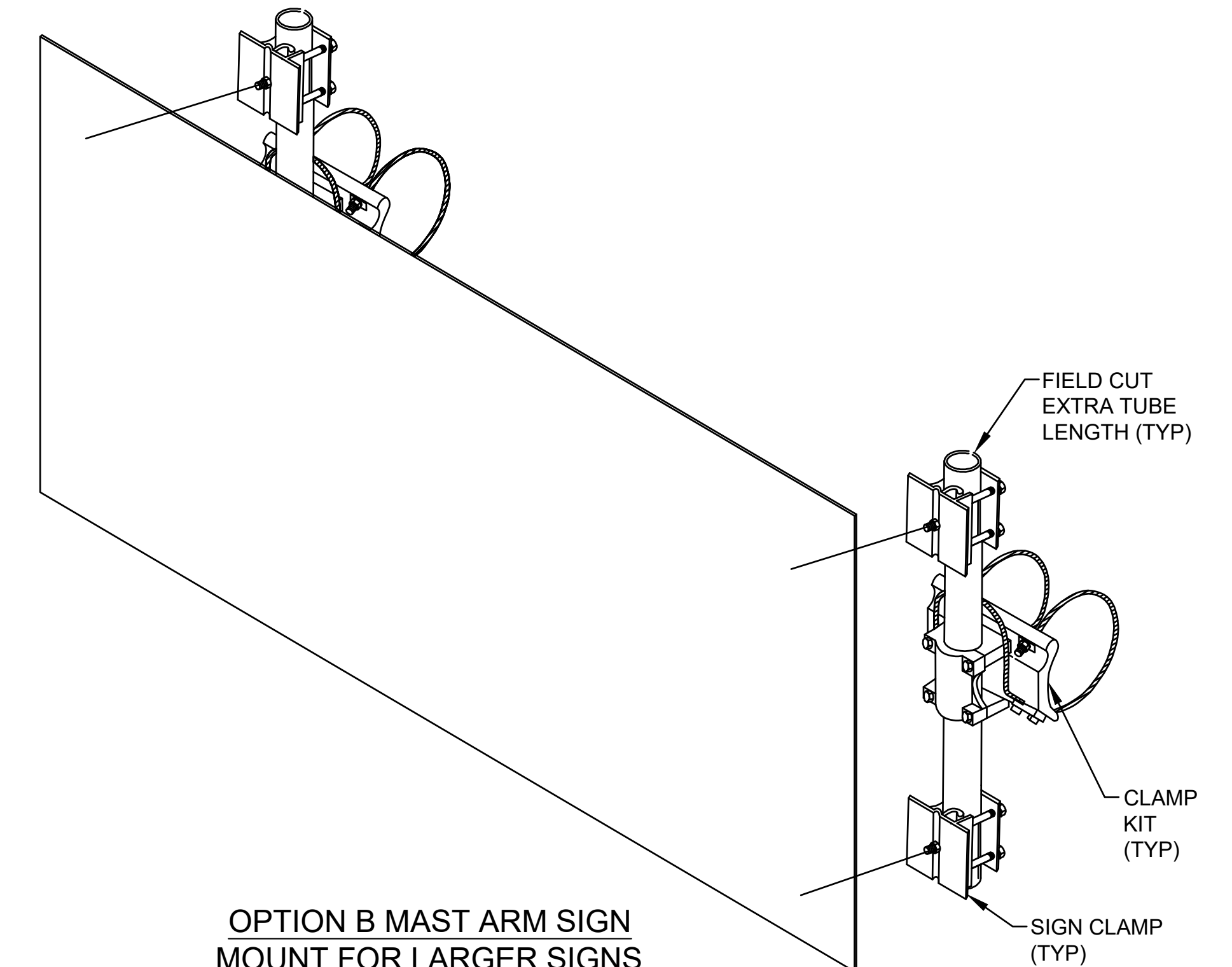
WIDTH OF SIGN (W, INCH)	D (INCH)	NUMBER OF MEDIUM CHANNELS
$W \leq 48$	$W/4$	2
$48 < W \leq 96$	12	3



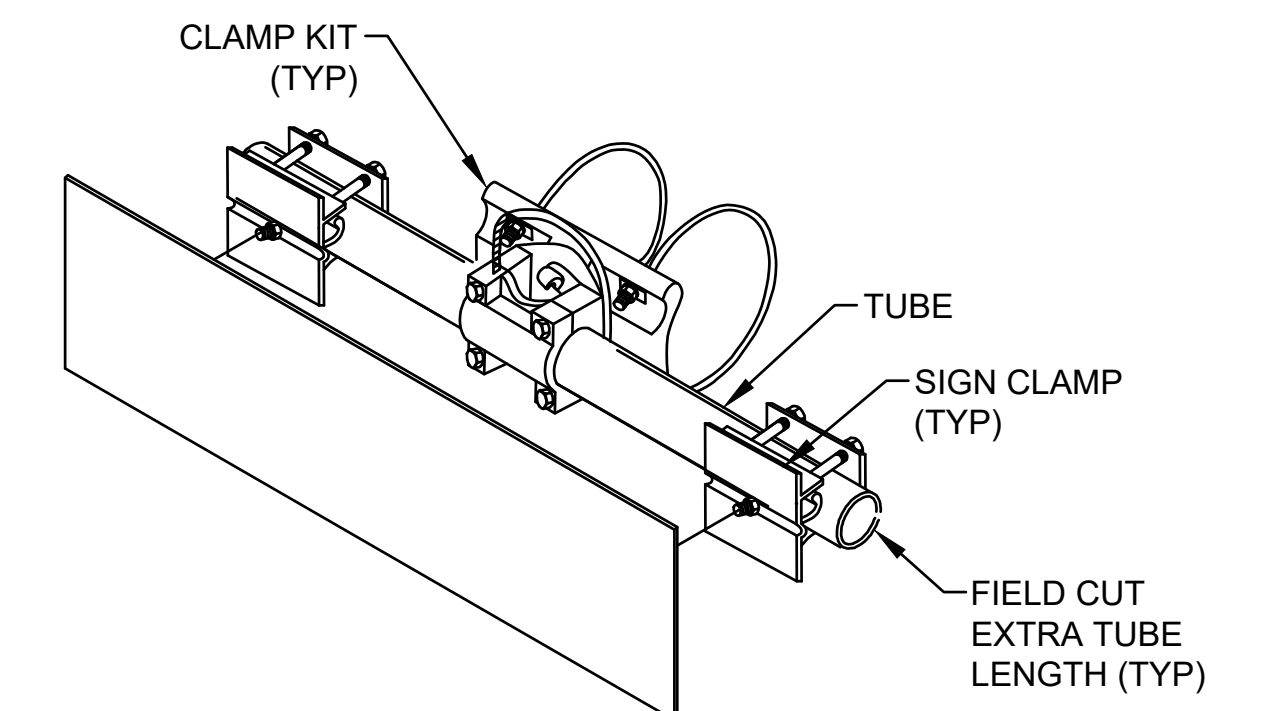
ALUMINUM MEDIUM CHANNEL DETAIL



OPTION A INSTALLATION DETAIL

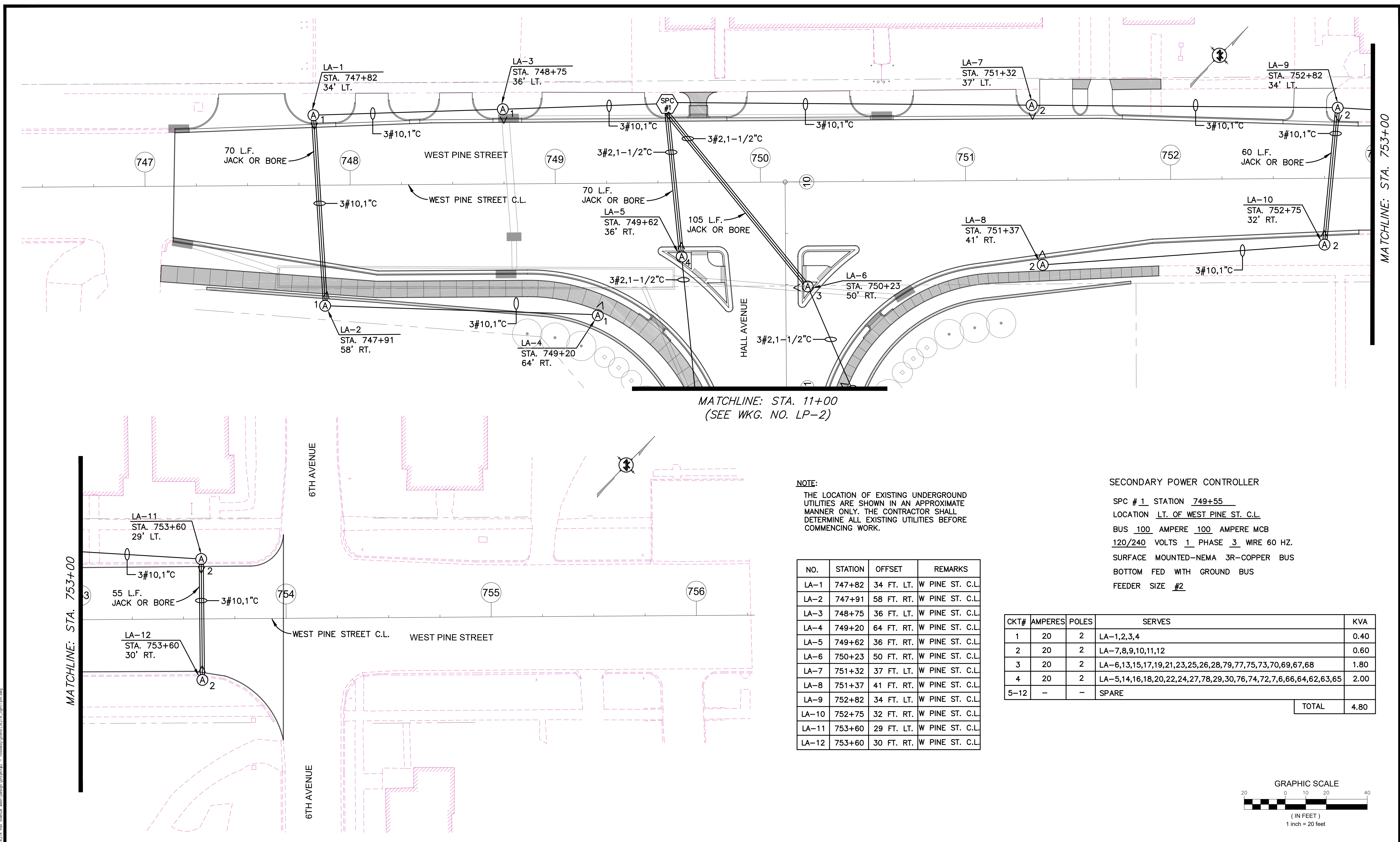


OPTION B MAST ARM SIGN MOUNT FOR LARGER SIGNS



OPTION B MAST ARM SIGN MOUNT FOR SMALL SIGNS

- GENERAL NOTES:
- SEE TSD-3 FOR ADDITIONAL MAST ARM INFORMATION.
 - ALL MATERIALS FOR TRAFFIC AND STREET NAME SIGNS SHALL BE NEW AND MEET THE REQUIREMENTS OF SECTION 721 OF THE STANDARD SPECIFICATIONS.
 - PROVIDE MINIMUM 17 FT CLEARANCE FROM THE BOTTOM OF THE SIGN OR SIGN MOUNTING ASSEMBLY TO THE HIGHEST POINT ON THE ROADWAY SURFACE UNDER THE SIGN.
 - ADJUST UNIVERSAL CLAMP LOCATION TO LEVEL SIGN. OPTION B SHALL BE USED WHEN CURVED SECTION OF MAST ARM WILL NOT ALLOW FOR LEVEL INSTALLATION.
 - TRAFFIC SIGN AND STREET NAME SIGN WILL BE MEASURED BY THE SQUARE FOOT, WHICH MEASUREMENT BEING INCLUSIVE OF ALUMINUM SIGN BLANK, APPLIED REFLECTIVE SHEETING, MOUNTING BRACKETS AND BANDING MATERIALS AND BEGIN INCLUSIVE OF ALL MATERIALS, WORK AND SERVICES NECESSARY FOR A PROPERLY CONSTRUCTED SIGN.
 - ATTACH THE ALUMINUM MEDIUM CHANNEL TO SIGN PANEL WITH STAINLESS STEEL BOLTS, TAPPING SCREWS OR POP RIVETS AS SPECIFIED. USE ADHESIVE ONLY WHEN SHOP APPLIED. NO FIELD ADHESIVE IS ALLOWED.



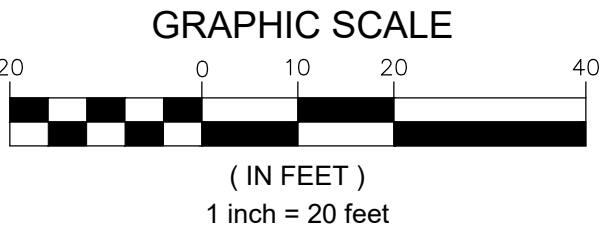
MATCHLINE: STA. 11+00
(SEE WKG. NO. LP-2)

NOTE:
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NO.	STATION	OFFSET	REMARKS
LA-1	747+82	34 FT. LT.	W PINE ST. C.L.
LA-2	747+91	58 FT. RT.	W PINE ST. C.L.
LA-3	748+75	36 FT. LT.	W PINE ST. C.L.
LA-4	749+20	64 FT. RT.	W PINE ST. C.L.
LA-5	749+62	36 FT. RT.	W PINE ST. C.L.
LA-6	750+23	50 FT. RT.	W PINE ST. C.L.
LA-7	751+32	37 FT. LT.	W PINE ST. C.L.
LA-8	751+37	41 FT. RT.	W PINE ST. C.L.
LA-9	752+82	34 FT. LT.	W PINE ST. C.L.
LA-10	752+75	32 FT. RT.	W PINE ST. C.L.
LA-11	753+60	29 FT. LT.	W PINE ST. C.L.
LA-12	753+60	30 FT. RT.	W PINE ST. C.L.

SECONDARY POWER CONTROLLER
SPC # 1 STATION 749+55
LOCATION LT. OF WEST PINE ST. C.L.
BUS 100 AMPERE 100 AMPERE MCB
120/240 VOLTS 1 PHASE 3 WIRE 60 HZ.
SURFACE MOUNTED-NEMA 3R-COPPER BUS
BOTTOM FED WITH GROUND BUS
FEEDER SIZE #2

CKT#	AMPERES	POLES	SERVES	KVA
1	20	2	LA-1,2,3,4	0.40
2	20	2	LA-7,8,9,10,11,12	0.60
3	20	2	LA-6,13,15,17,19,21,23,25,26,28,79,77,75,73,70,69,67,68	1.80
4	20	2	LA-5,14,16,18,20,22,24,27,78,29,30,76,74,72,7,6,66,64,62,63,65	2.00
5-12	-	-	SPARE	
TOTAL				4.80



NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	

N-S PROJECT NO.: NS.16214.000
FILENAME: 16214_Light-Pin.dwg
SCALE: 1" = 20'
SURVEYED BY: CLEARPOINT
DSGN: VR/KC DATE: 06/2022
DRWN: JEM DATE: 06/2022
CHKD: GPC DATE: 08/2022
QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

NEEL-SCHAFFER
Solutions you can build upon

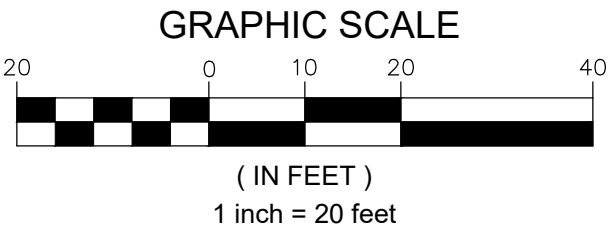
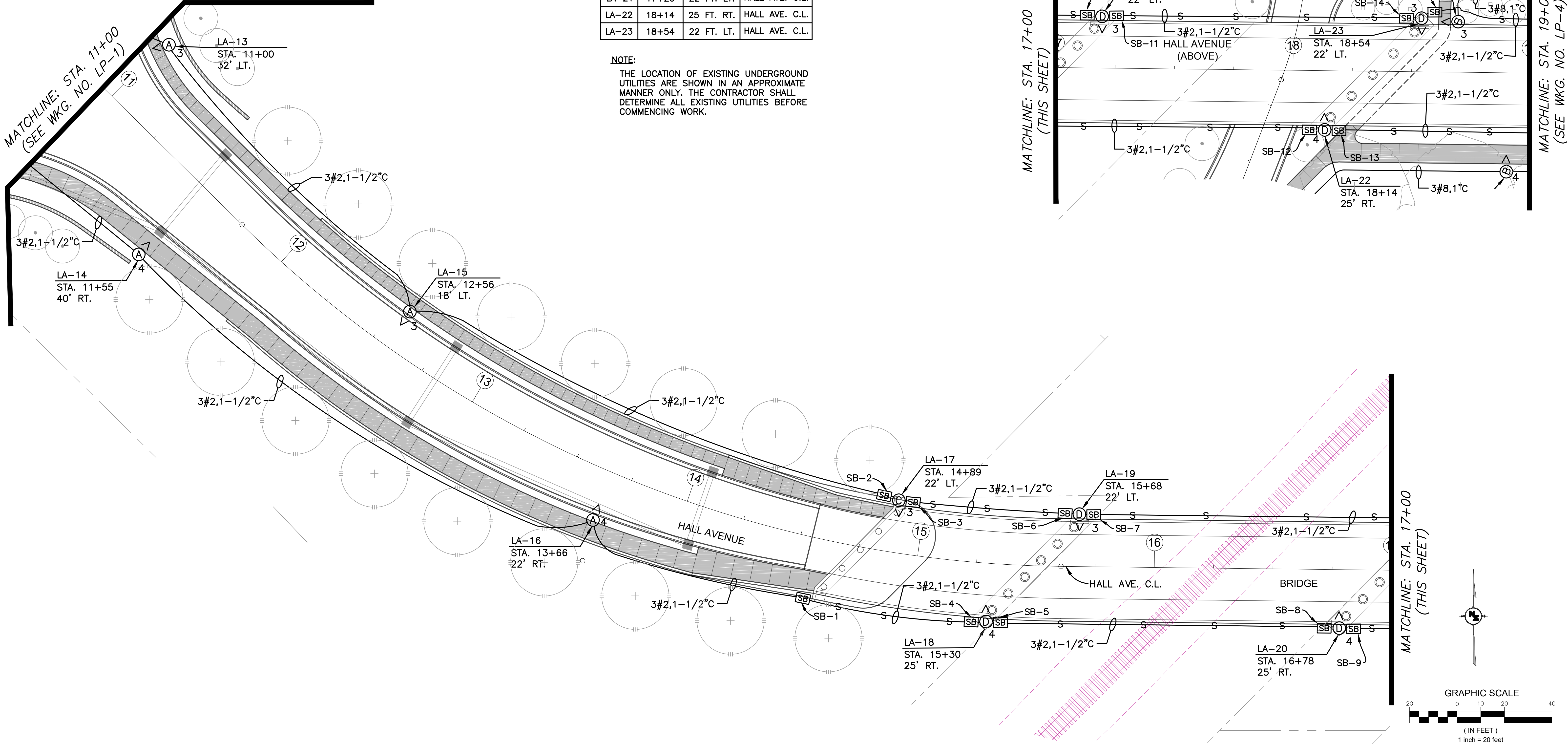
WORKING NUMBER: LP-1	DRAWING NUMBER: 4002
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8/1/2022 4:11 PM c:\16000\Hattiesburg\16214 hall avenue west\design\project\16214 hall avenue west\design\project\16214_light-pin.dwg

NO.	STATION	OFFSET	REMARKS
LA-13	11+00	32 FT. LT.	HALL AVE. C.L.
LA-14	11+55	40 FT. RT.	HALL AVE. C.L.
LA-15	12+56	18 FT. LT.	HALL AVE. C.L.
LA-16	13+66	22 FT. RT.	HALL AVE. C.L.
LA-17	14+89	22 FT. LT.	HALL AVE. C.L.
LA-18	15+30	25 FT. RT.	HALL AVE. C.L.
LA-19	15+68	22 FT. LT.	HALL AVE. C.L.
LA-20	16+78	25 FT. RT.	HALL AVE. C.L.
LA-21	17+20	22 FT. LT.	HALL AVE. C.L.
LA-22	18+14	25 FT. RT.	HALL AVE. C.L.
LA-23	18+54	22 FT. LT.	HALL AVE. C.L.

NOTE:
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NOTE
ITEMS OF WORK SHOWN ON THIS SHEET ARE LOCATED ON BRIDGE.
SEE WKG. NO. LP-3 FOR WORK LOCATED UNDER BRIDGE.



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REVISIONS		
NO.	DATE	BY

DRAWING INFORMATION

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FILENAME: 16214_Light-Plan.dwg
SCALE: 1" = 20'
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DSGN: VR/KC DATE: 06/2022
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

VERNON GLEN OPEN

REGISTERED PROFESSIONAL

ENGINEER

11836

STATE OF MISSISSIPPI

08-12-22

LIGHTING PLAN
HALL AVENUE
STA. 11+00 TO STA. 19+00

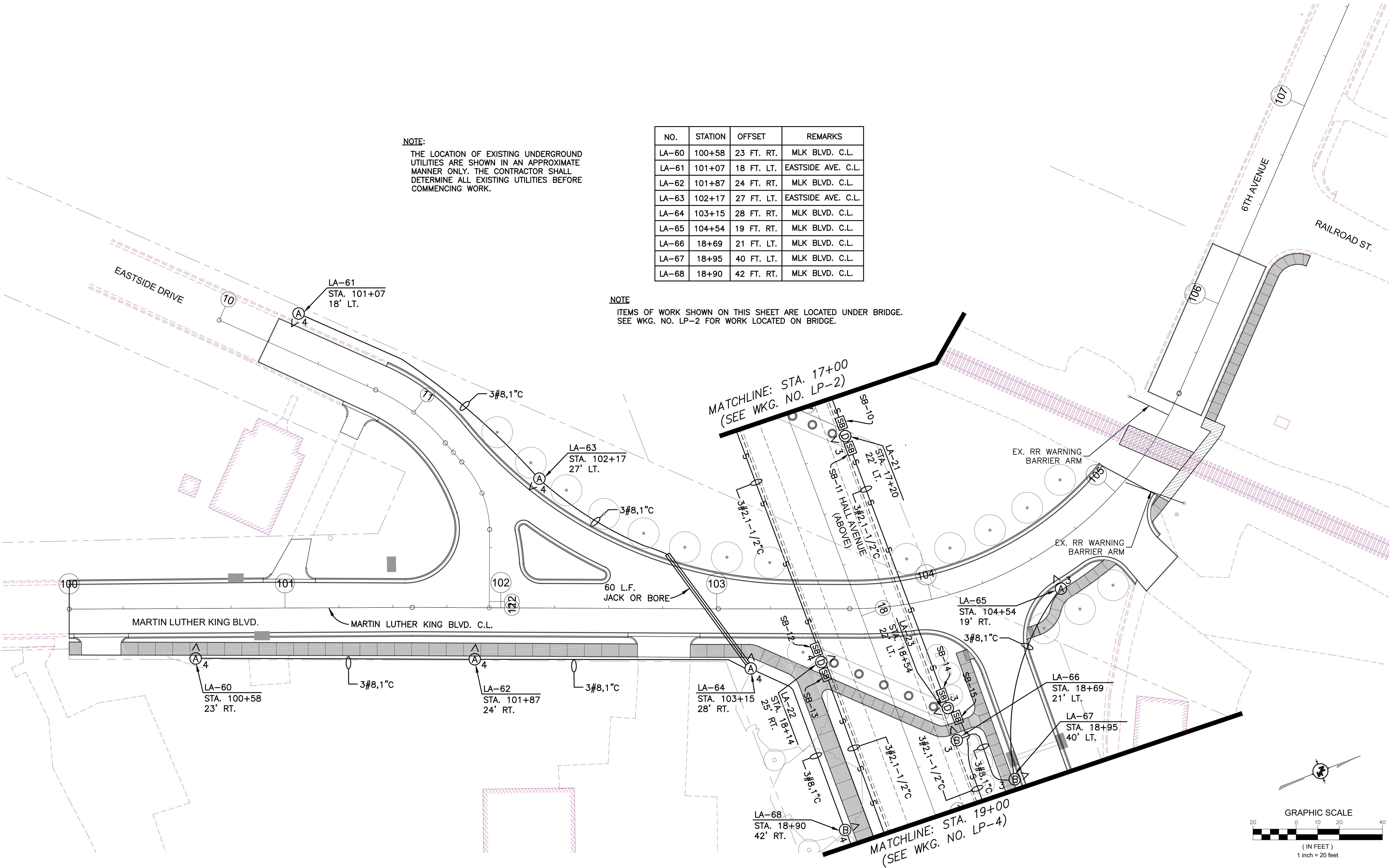
WORKING NUMBER:
LP-2

DRAWING NUMBER:
4003

NOTE:
THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE MANNER ONLY. THE CONTRACTOR SHALL DETERMINE ALL EXISTING UTILITIES BEFORE COMMENCING WORK.

NO.	STATION	OFFSET	REMARKS
LA-60	100+58	23 FT. RT.	MLK BLVD. C.L.
LA-61	101+07	18 FT. LT.	EASTSIDE AVE. C.L.
LA-62	101+87	24 FT. RT.	MLK BLVD. C.L.
LA-63	102+17	27 FT. LT.	EASTSIDE AVE. C.L.
LA-64	103+15	28 FT. RT.	MLK BLVD. C.L.
LA-65	104+54	19 FT. RT.	MLK BLVD. C.L.
LA-66	18+69	21 FT. LT.	MLK BLVD. C.L.
LA-67	18+95	40 FT. LT.	MLK BLVD. C.L.
LA-68	18+90	42 FT. RT.	MLK BLVD. C.L.

NOTE
ITEMS OF WORK SHOWN ON THIS SHEET ARE LOCATED UNDER BRIDGE.
SEE WKG. NO. LP-2 FOR WORK LOCATED ON BRIDGE.

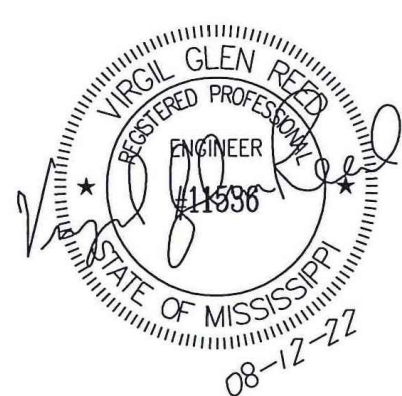


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				DSGN: VR/KC	DATE: 06/2022
				DRWN: JEM	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



LIGHTING PLAN
MARTIN LUTHER KING BLVD.
STA. 100+00 TO 107+00

WORKING NUMBER:
LP-3

DRAWING NUMBER:
4004

MATCHLINE: STA. 19+00 (SEE WKG. NO. LP-3)

MATCHLINE: STA. 25+50 (SEE WKG. NO. LP-5)

NOTE:

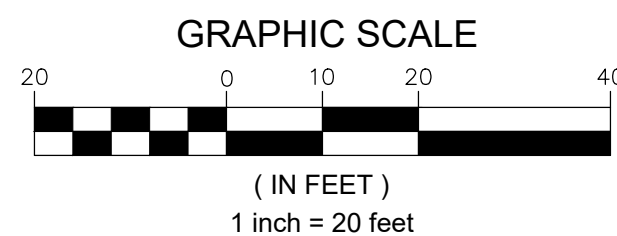
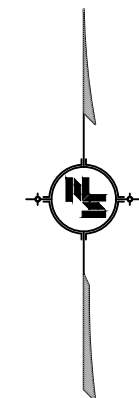
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HALL AVENUE LIGHT POLE LOCATION

NO.	STATION	OFFSET	REMARKS
LA-24	19+20	25 FT. RT.	HALL AVE. C.L.
LA-25	19+59	22 FT. LT.	HALL AVE. C.L.
LA-26	20+60	22 FT. LT.	HALL AVE. C.L.
LA-27	21+55	17 FT. RT.	HALL AVE. C.L.
LA-28	22+84	16 FT. LT.	HALL AVE. C.L.
LA-29	16+78	25 FT. RT.	CHARLES ST. C.L.
LA-30	1+90	13 FT. LT.	WOODLAND CT. C.L.
LA-31	24+11	18 FT. RT.	HALL AVE. C.L.
LA-32	25+38	18 FT. LT.	HALL AVE. C.L.

MARTIN LUTHER KING BLVD. LIGHT POLE LOCATION

NO.	STATION	OFFSET	REMARKS
LA-69	19+90	41 FT. RT.	HALL AVE. C.L.
LA-70	19+98	40 FT. LT.	HALL AVE. C.L.
LA-71	20+87	41 FT. RT.	HALL AVE. C.L.
LA-72	21+00	40 FT. LT.	HALL AVE. C.L.
LA-73	21+80	41 FT. RT.	HALL AVE. C.L.
LA-74	22+00	34 FT. LT.	HALL AVE. C.L.
LA-75	22+75	42 FT. RT.	HALL AVE. C.L.
LA-76	23+00	32 FT. LT.	HALL AVE. C.L.

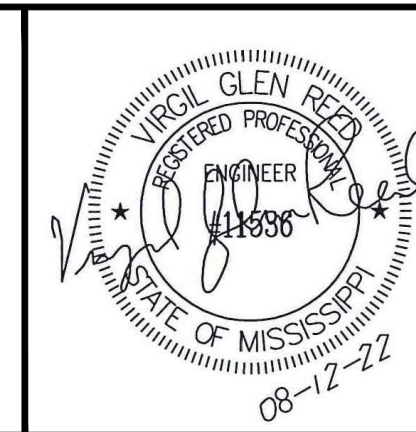


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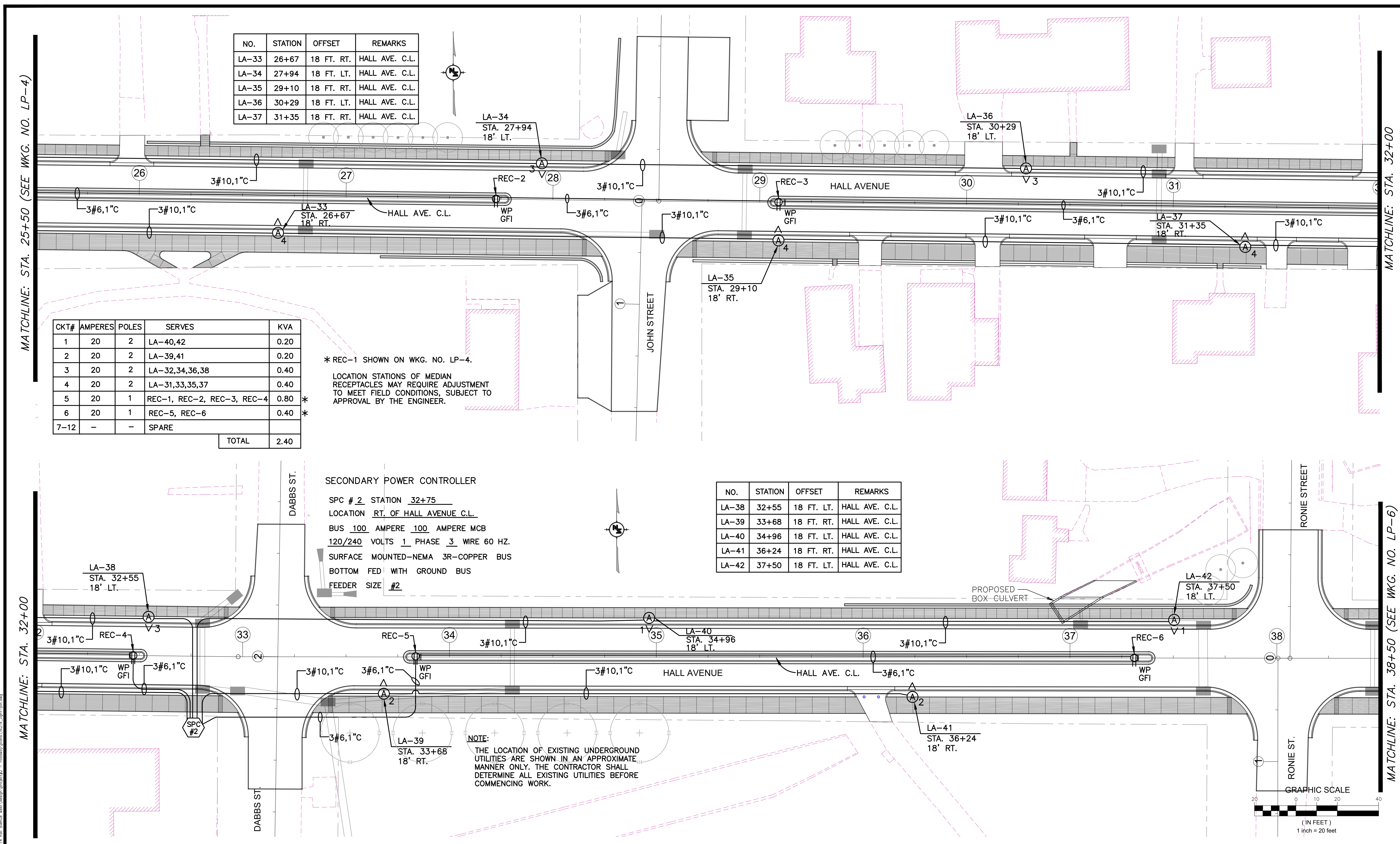
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



LIGHTING PLAN
HALL AVENUE
STA. 19+00 TO STA. 25+50

WORKING NUMBER:
LP-4

DRAWING NUMBER:
4005



NO.	STATION	OFFSET	REMARKS
LA-33	26+67	18 FT. RT.	HALL AVE. C.L.
LA-34	27+94	18 FT. LT.	HALL AVE. C.L.
LA-35	29+10	18 FT. RT.	HALL AVE. C.L.
LA-36	30+29	18 FT. LT.	HALL AVE. C.L.
LA-37	31+35	18 FT. RT.	HALL AVE. C.L.

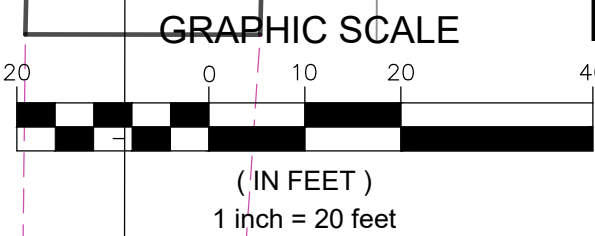
CKT#	AMPERES	POLES	SERVES	KVA
1	20	2	LA-40,42	0.20
2	20	2	LA-39,41	0.20
3	20	2	LA-32,34,36,38	0.40
4	20	2	LA-31,33,35,37	0.40
5	20	1	REC-1, REC-2, REC-3, REC-4	0.80
6	20	1	REC-5, REC-6	0.40
7-12	-	-	SPARE	
TOTAL				2.40

* REC-1 SHOWN ON WKG. NO. LP-4.
LOCATION STATIONS OF MEDIAN RECEPTACLES MAY REQUIRE ADJUSTMENT TO MEET FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE ENGINEER.

SECONDARY POWER CONTROLLER
SPC # 2 STATION 32+75
LOCATION RT. OF HALL AVENUE C.L.
BUS 100 AMPERE 100 AMPERE MCB
120/240 VOLTS 1 PHASE 3 WIRE 60 HZ.
SURFACE MOUNTED-NEMA 3R-COPPER BUS
BOTTOM FED WITH GROUND BUS
FEEDER SIZE #2

NO.	STATION	OFFSET	REMARKS
LA-38	32+55	18 FT. LT.	HALL AVE. C.L.
LA-39	33+68	18 FT. RT.	HALL AVE. C.L.
LA-40	34+96	18 FT. LT.	HALL AVE. C.L.
LA-41	36+24	18 FT. RT.	HALL AVE. C.L.
LA-42	37+50	18 FT. LT.	HALL AVE. C.L.

NOTE:
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DSGN: VR/KC DATE: 06/2022
DRWN: JEM DATE: 06/2022
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

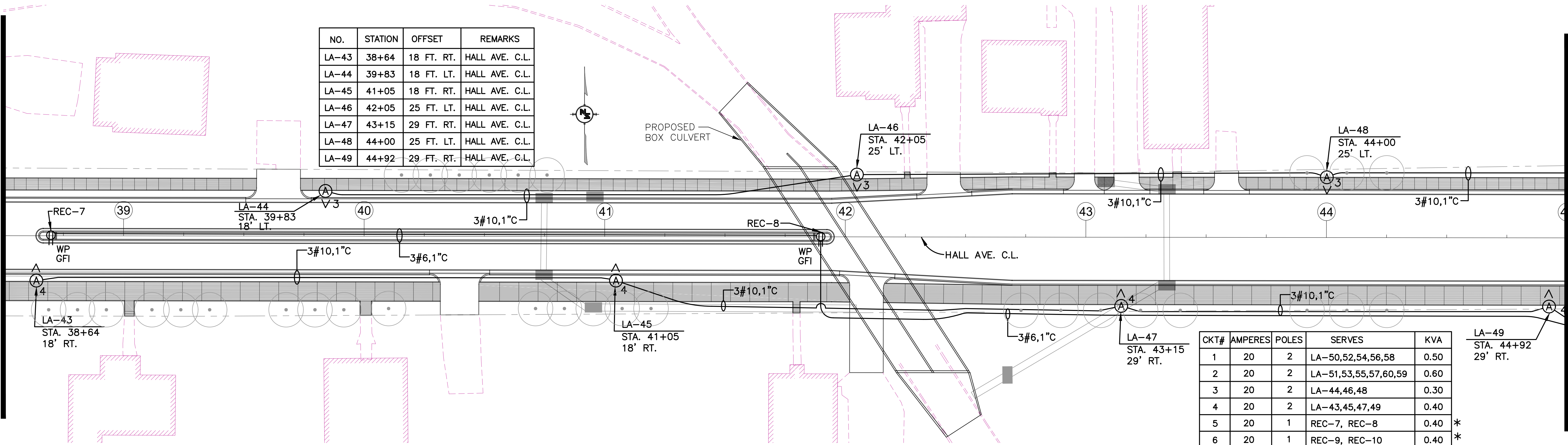
NEEL-SCHAFFER
Solutions you can build upon

LIGHTING PLAN HALL AVENUE STA. 25+50 TO STA. 38+50	
WORKING NUMBER: LP-5	DRAWING NUMBER: 4006

MATCHLINE: STA. 38+50 (SEE WKG. NO. LP-5)

MATCHLINE: STA. 45+00

NO.	STATION	OFFSET	REMARKS
LA-43	38+64	18 FT. RT.	HALL AVE. C.L.
LA-44	39+83	18 FT. LT.	HALL AVE. C.L.
LA-45	41+05	18 FT. RT.	HALL AVE. C.L.
LA-46	42+05	25 FT. LT.	HALL AVE. C.L.
LA-47	43+15	29 FT. RT.	HALL AVE. C.L.
LA-48	44+00	25 FT. LT.	HALL AVE. C.L.
LA-49	44+92	29 FT. RT.	HALL AVE. C.L.



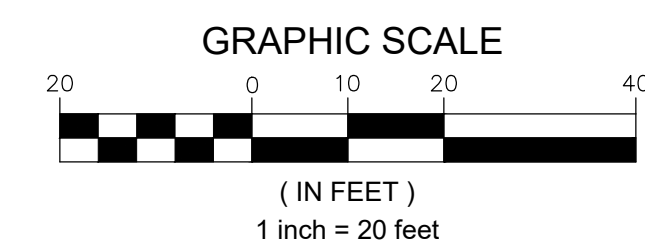
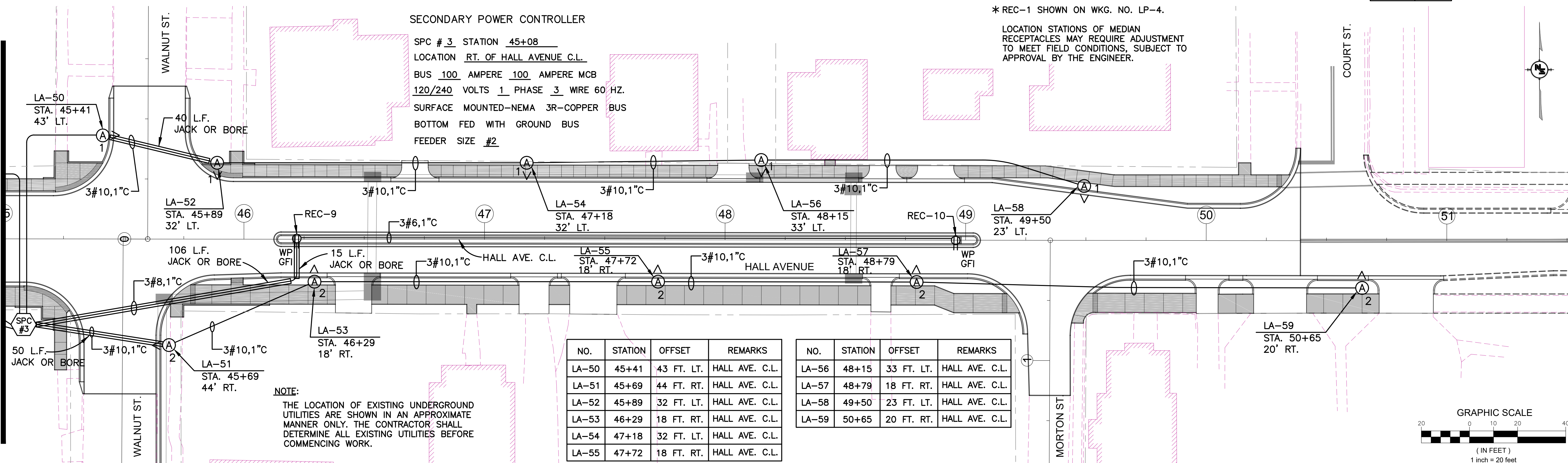
MATCHLINE: STA. 45+00

SECONDARY POWER CONTROLLER

SPC # 3 STATION 45+08
LOCATION RT. OF HALL AVENUE C.L.
BUS 100 AMPERE 100 AMPERE MCB
120/240 VOLTS 1 PHASE 3 WIRE 60 HZ.
SURFACE MOUNTED-NEMA 3R-COPPER BUS
BOTTOM FED WITH GROUND BUS
FEEDER SIZE #2

* REC-1 SHOWN ON WKG. NO. LP-4.

LOCATION STATIONS OF MEDIAN RECEPTACLES MAY REQUIRE ADJUSTMENT TO MEET FIELD CONDITIONS, SUBJECT TO APPROVAL BY THE ENGINEER.

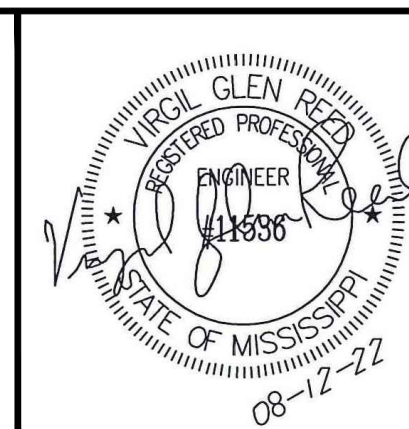


NOTICE TO DRAWING HOLDER

NEEL-SCHAFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	
			N-S PROJECT NO.: NS.16214.000	
			FILENAME: 16214_Light-Pin.dwg	
			SCALE: 1" = 20'	
			SURVEYED BY: CLEARPOINT	
			DSGN: VR/KC DATE: 06/2022	
			DRWN: JEM DATE: 06/2022	
			CHKD: GPC DATE: 08/2022	
			QA/QC: MWE DATE: 08/2022	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

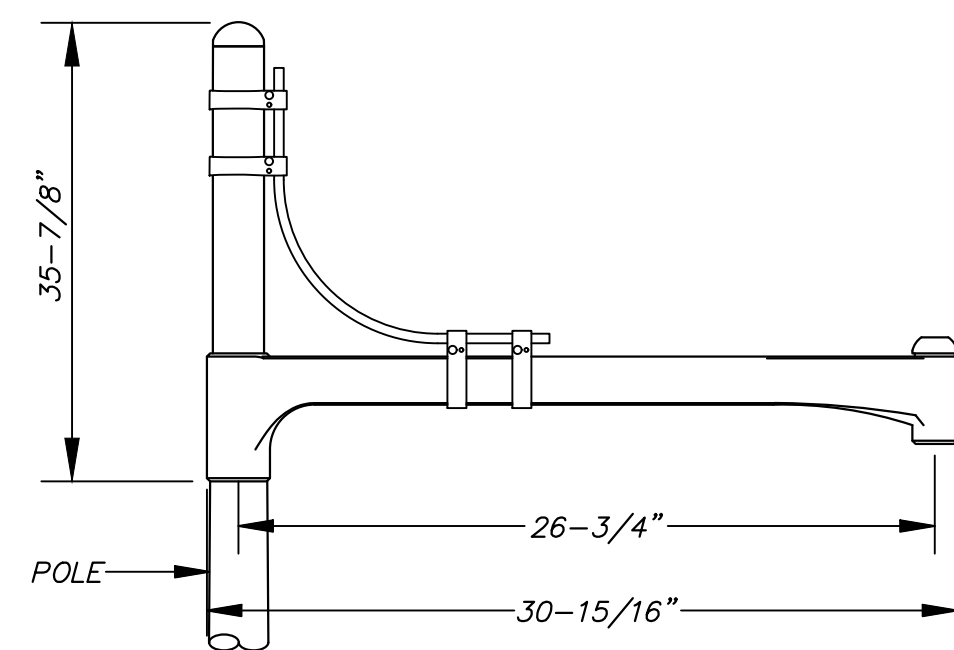


NEEL-SCHAFER
Solutions you can build upon

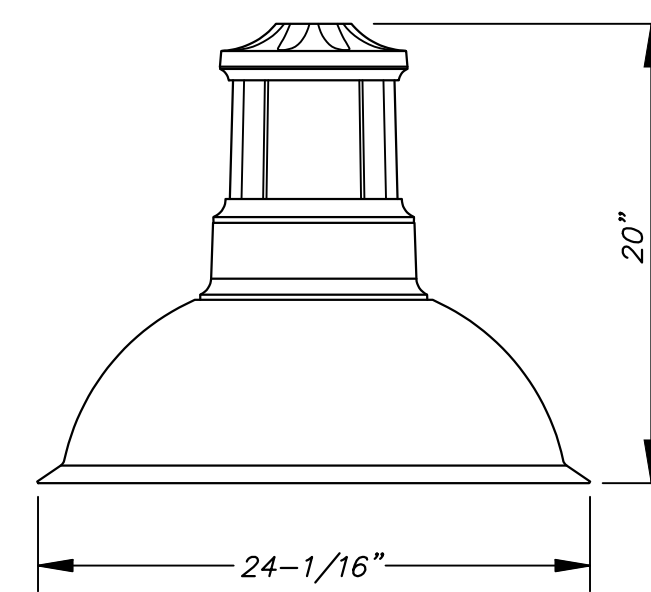
LIGHTING PLAN
HALL AVENUE
STA. 38+50 TO E.O.P.

WORKING NUMBER:
LP-6

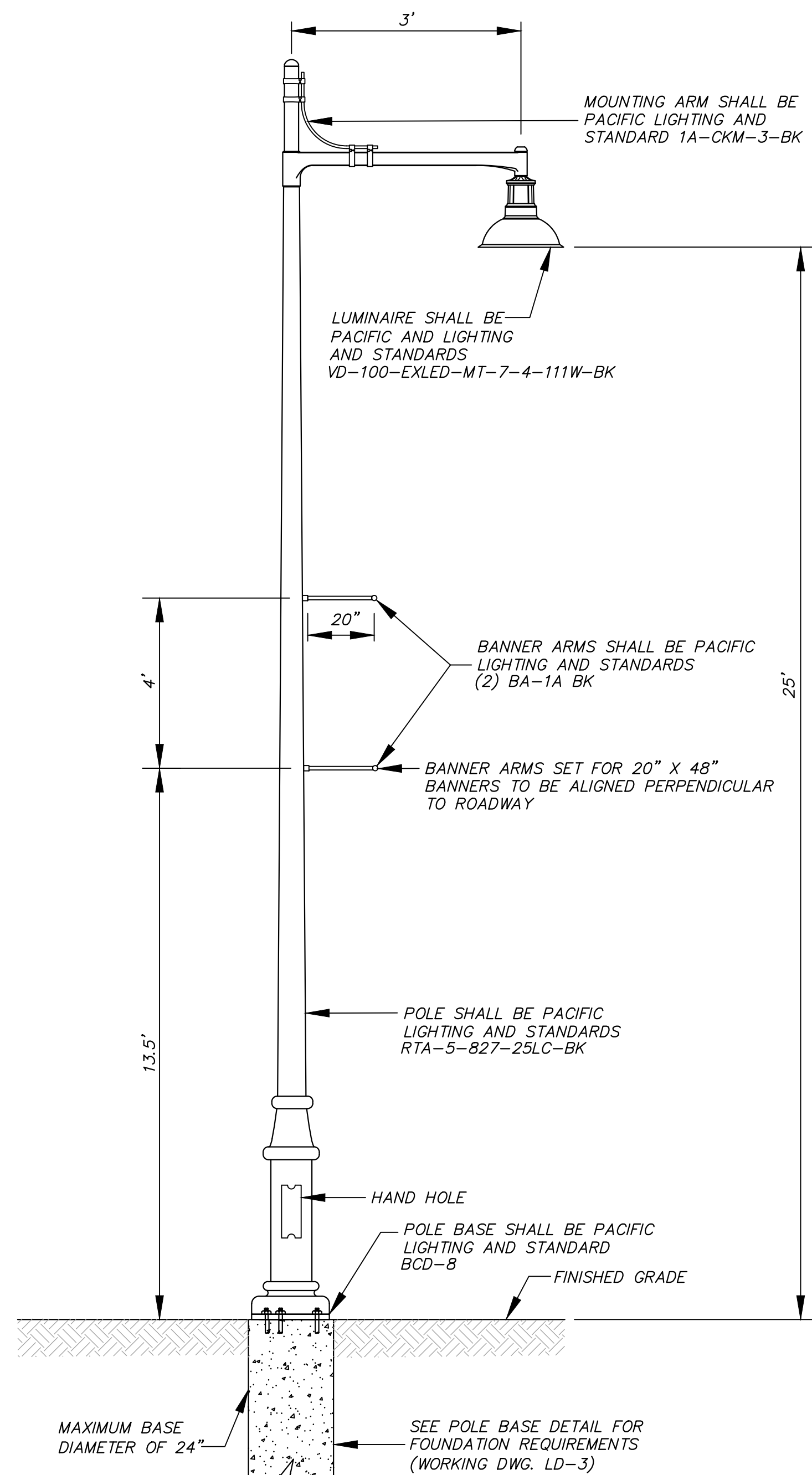
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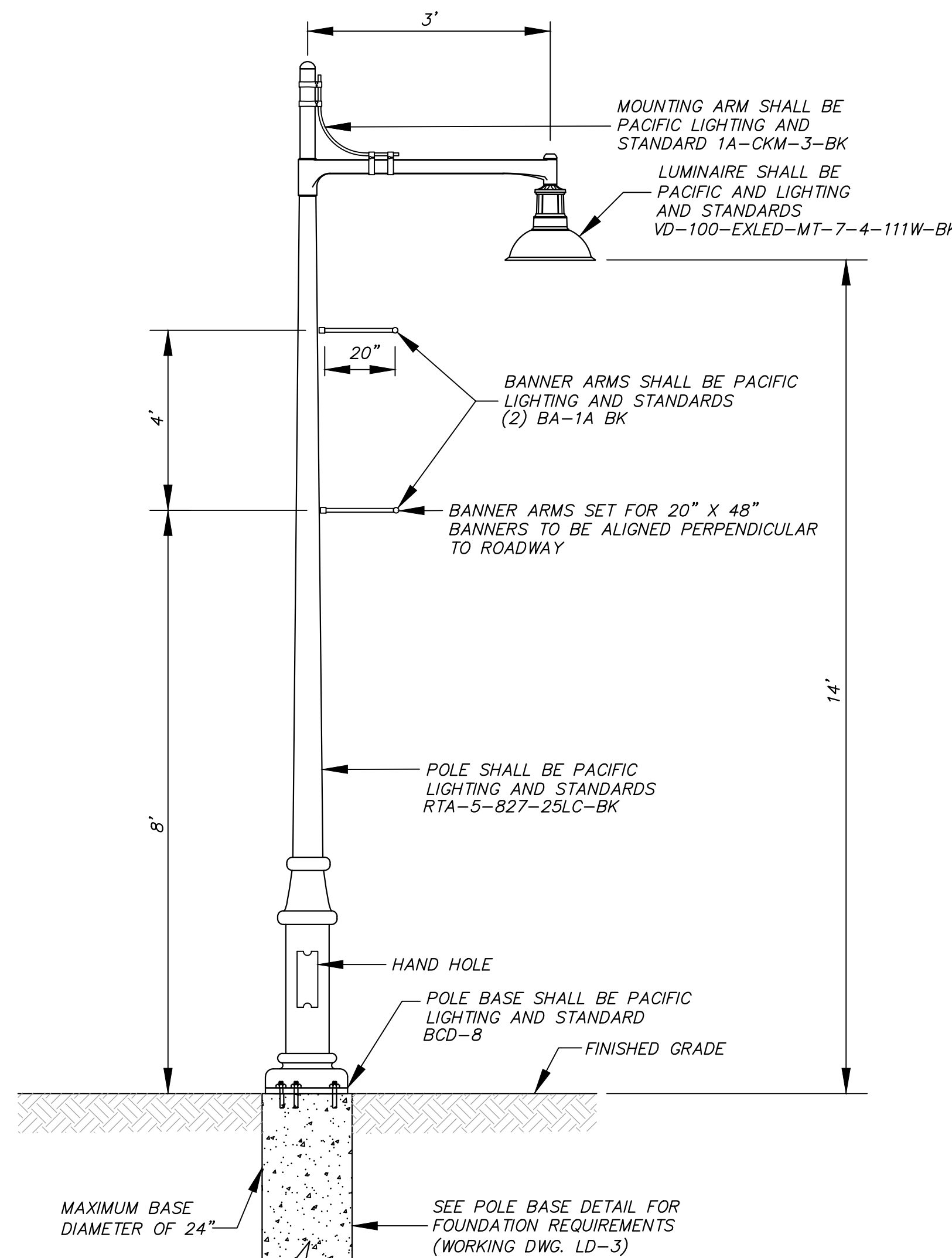
1
LD-1
**SINGLE POLE MOUNT ARM
WITH ROUNDED UPPER BAR**
N.T.S.



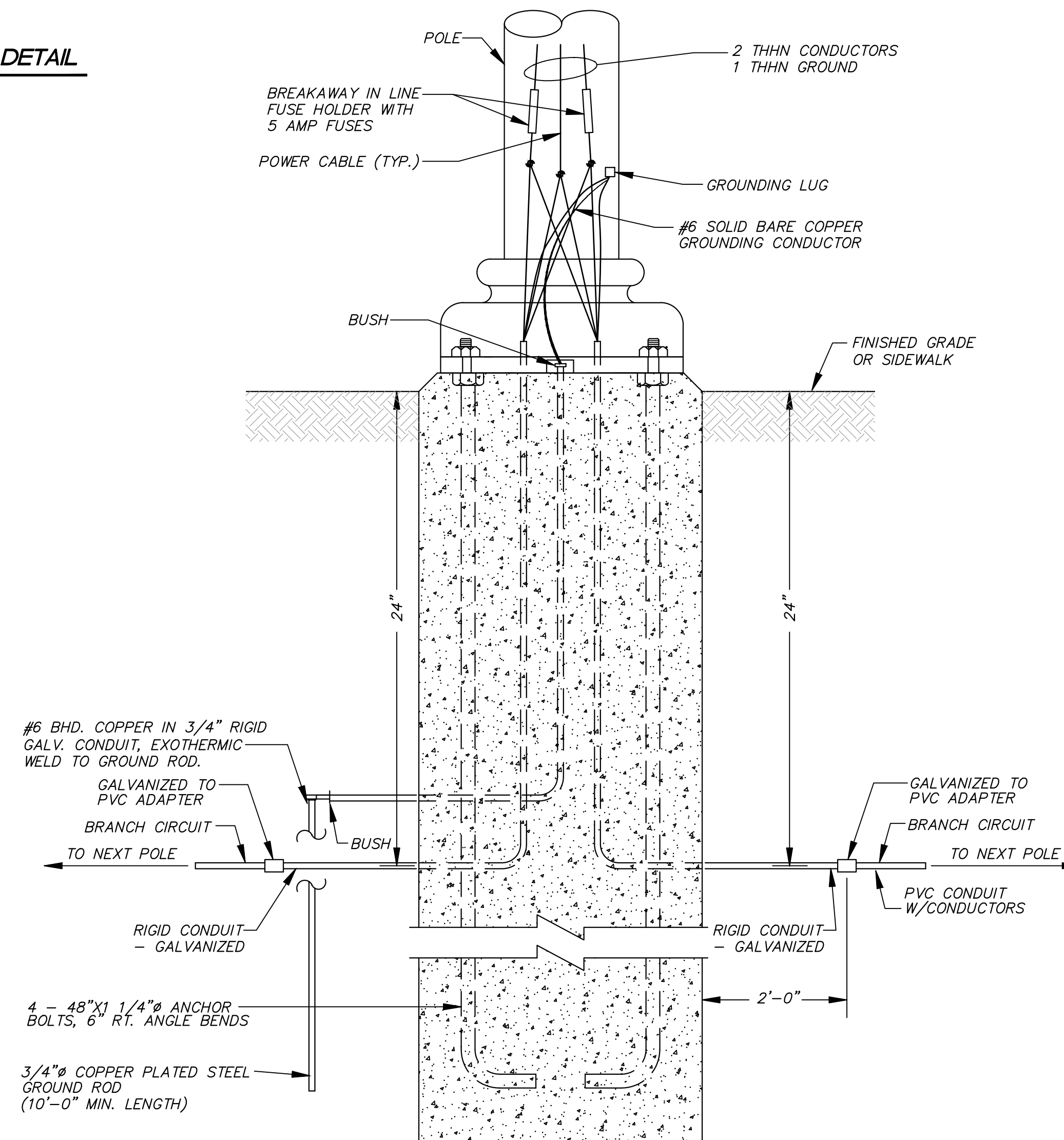
2
LD-1
LUMINAIRE-LED LIGHTING ASSEMBLY DETAIL
N.T.S.



TYPE 'A'
LIGHTING ASSEMBLY
N.T.S.



TYPE 'B'
LIGHTING ASSEMBLY
N.T.S.



WIRING DIAGRAM
N.T.S.

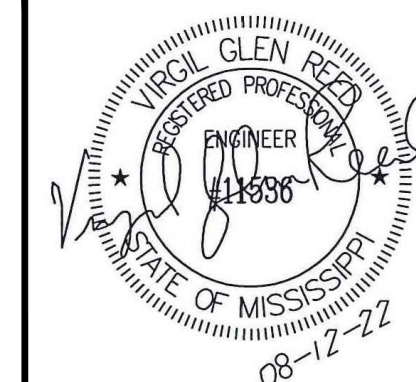
NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	

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SCALE: NO SCALE
SURVEYED BY:
DSGN: VR/KC DATE: 06/2022
DRWN: JEM DATE: 06/2022
CHKD: GPC DATE: 08/2022
QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FB LD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



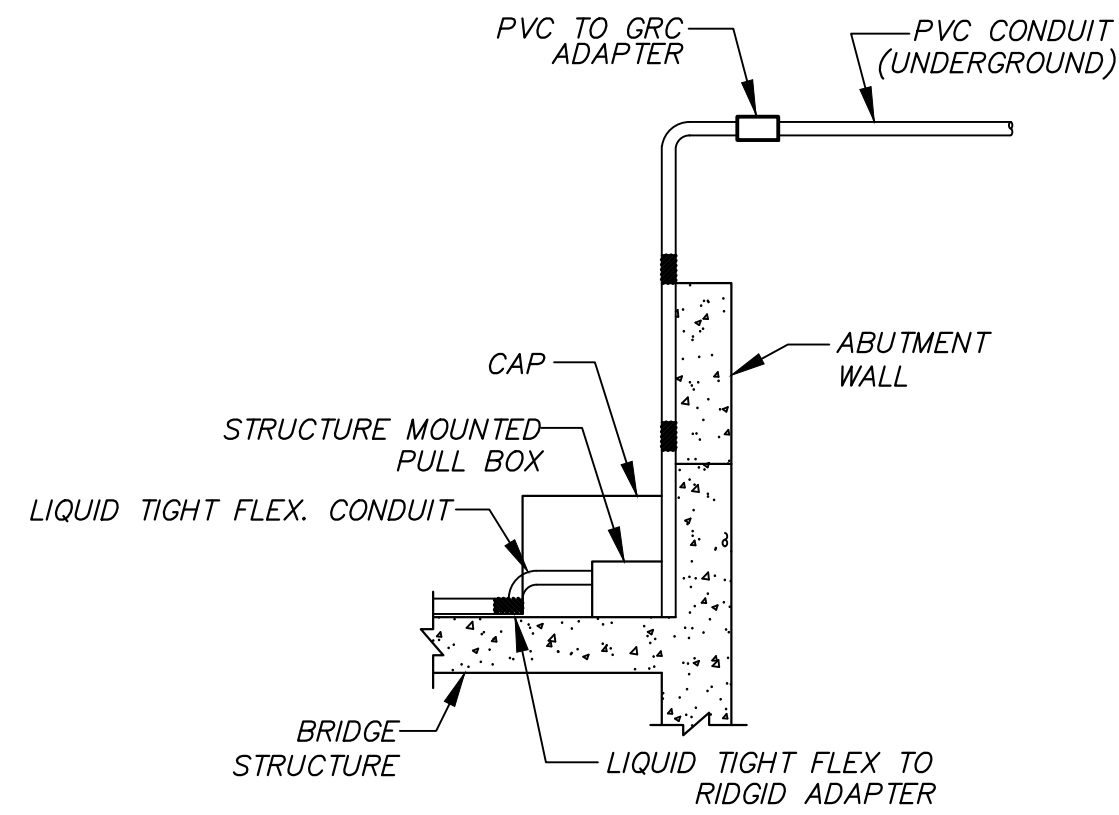
NEEL-SCHAFER
Solutions you can build upon

LIGHTING DETAILS I

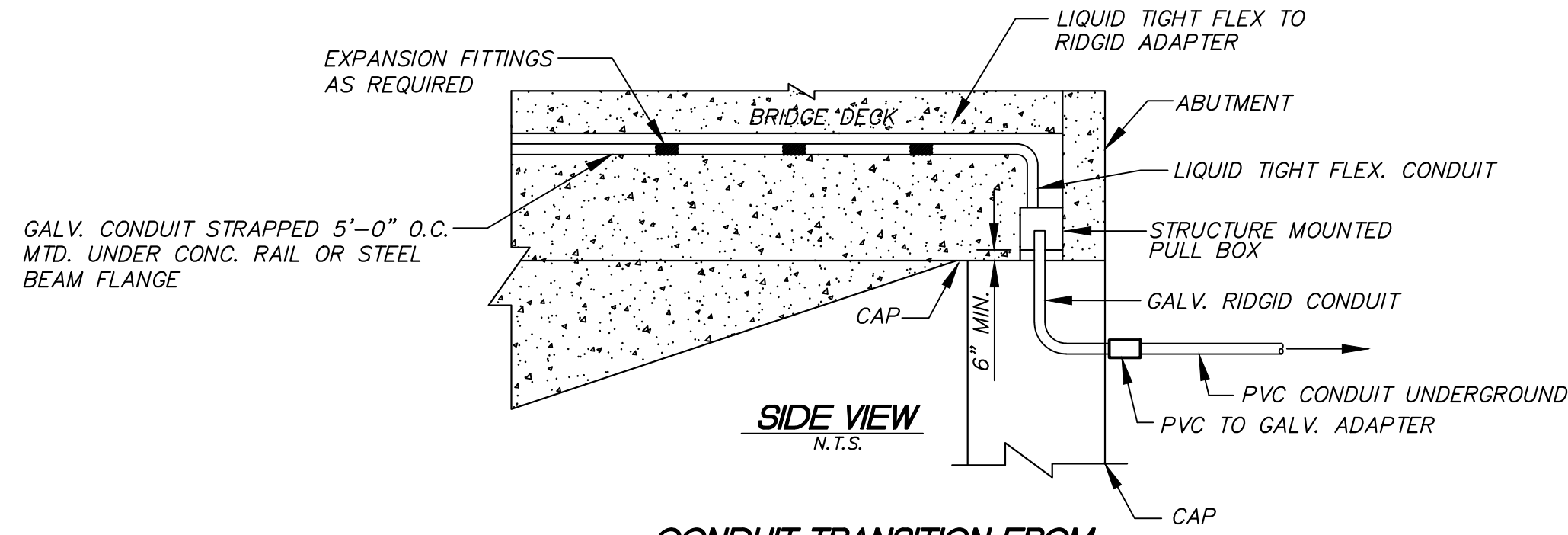
WORKING NUMBER:
LD-1

DRAWING NUMBER:
4008

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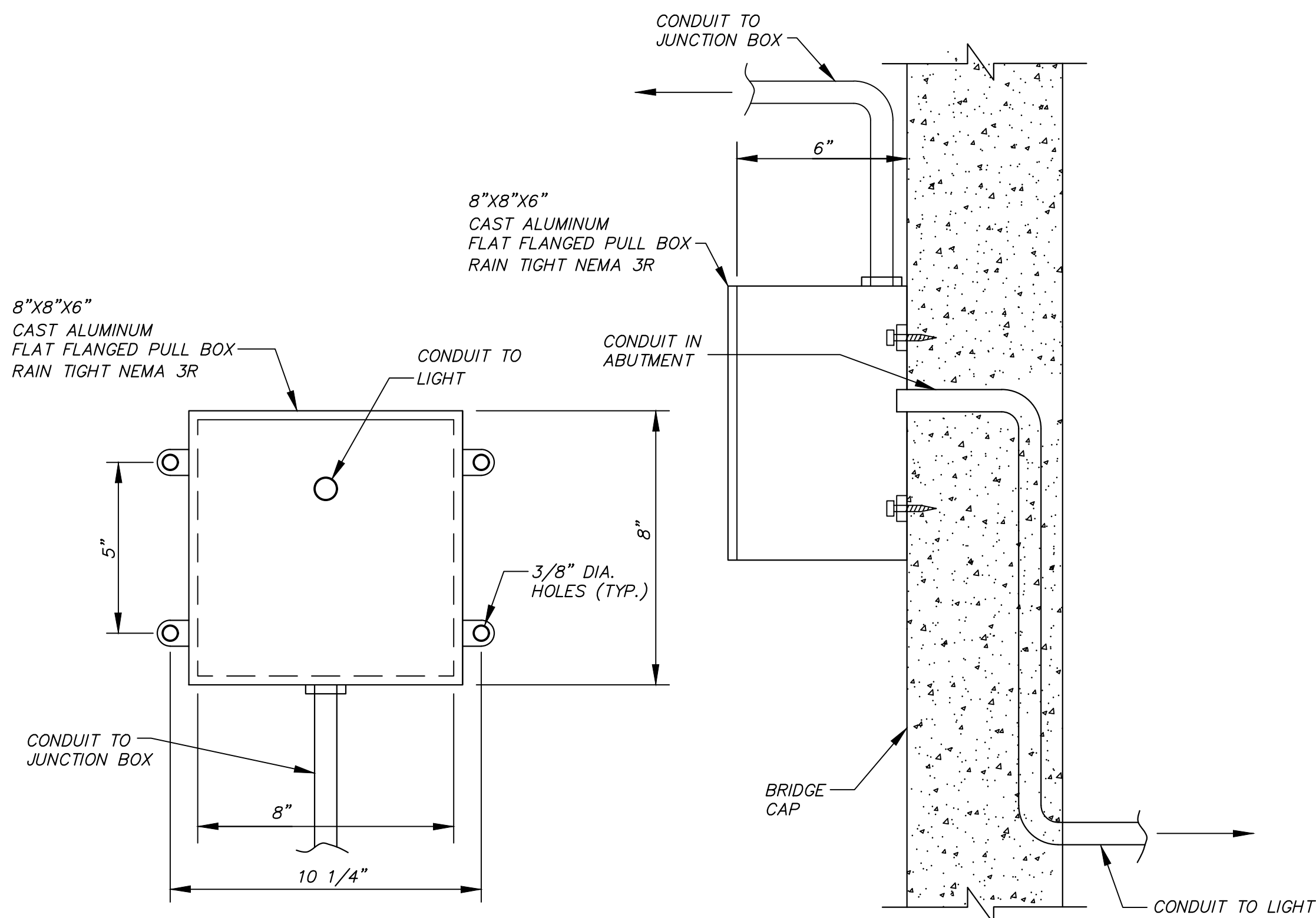


PLAN VIEW
N.T.S.



SIDE VIEW
N.T.S.

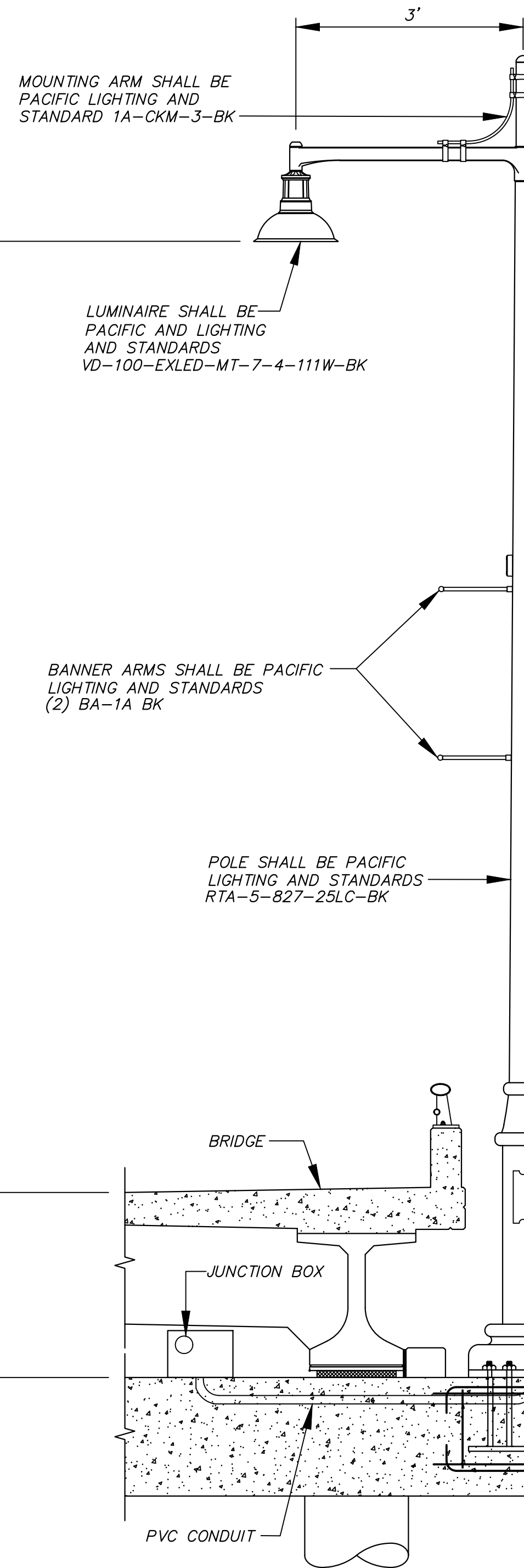
CONDUIT TRANSITION FROM
UNDERGROUND TO STRUCTURE MOUNTED
AT BRIDGE END DETAIL
N.T.S.



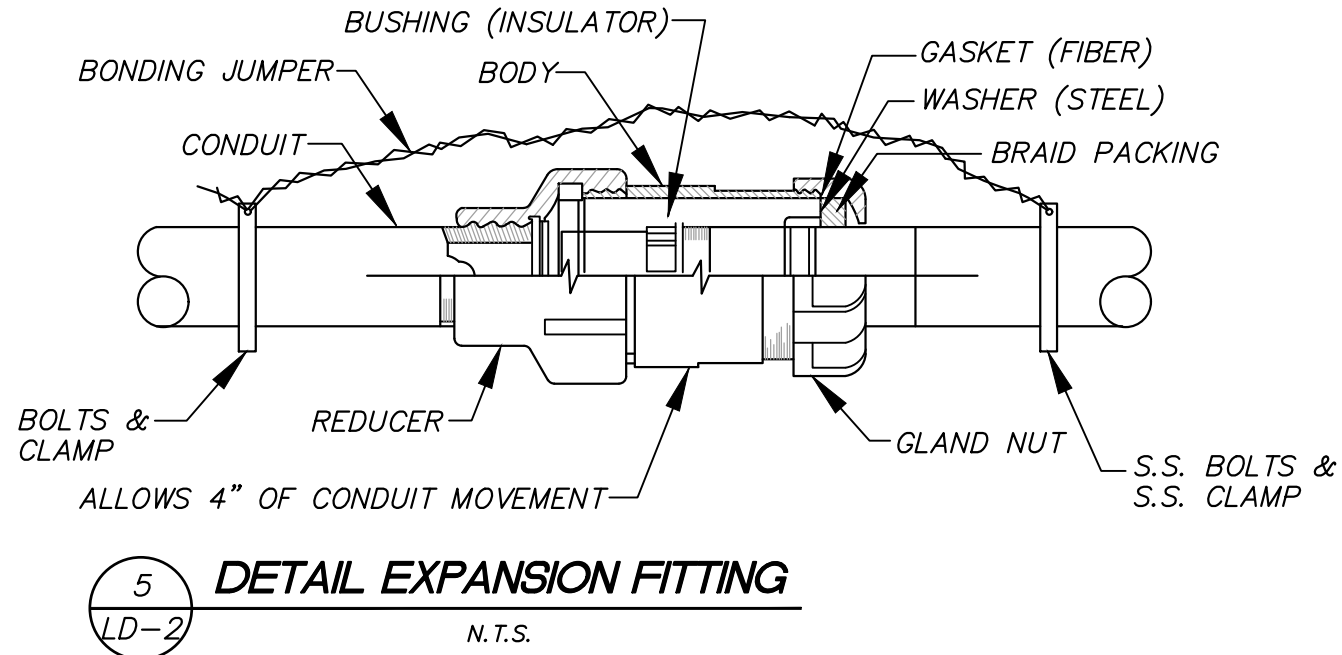
PLAN VIEW
N.T.S.

END VIEW
N.T.S.

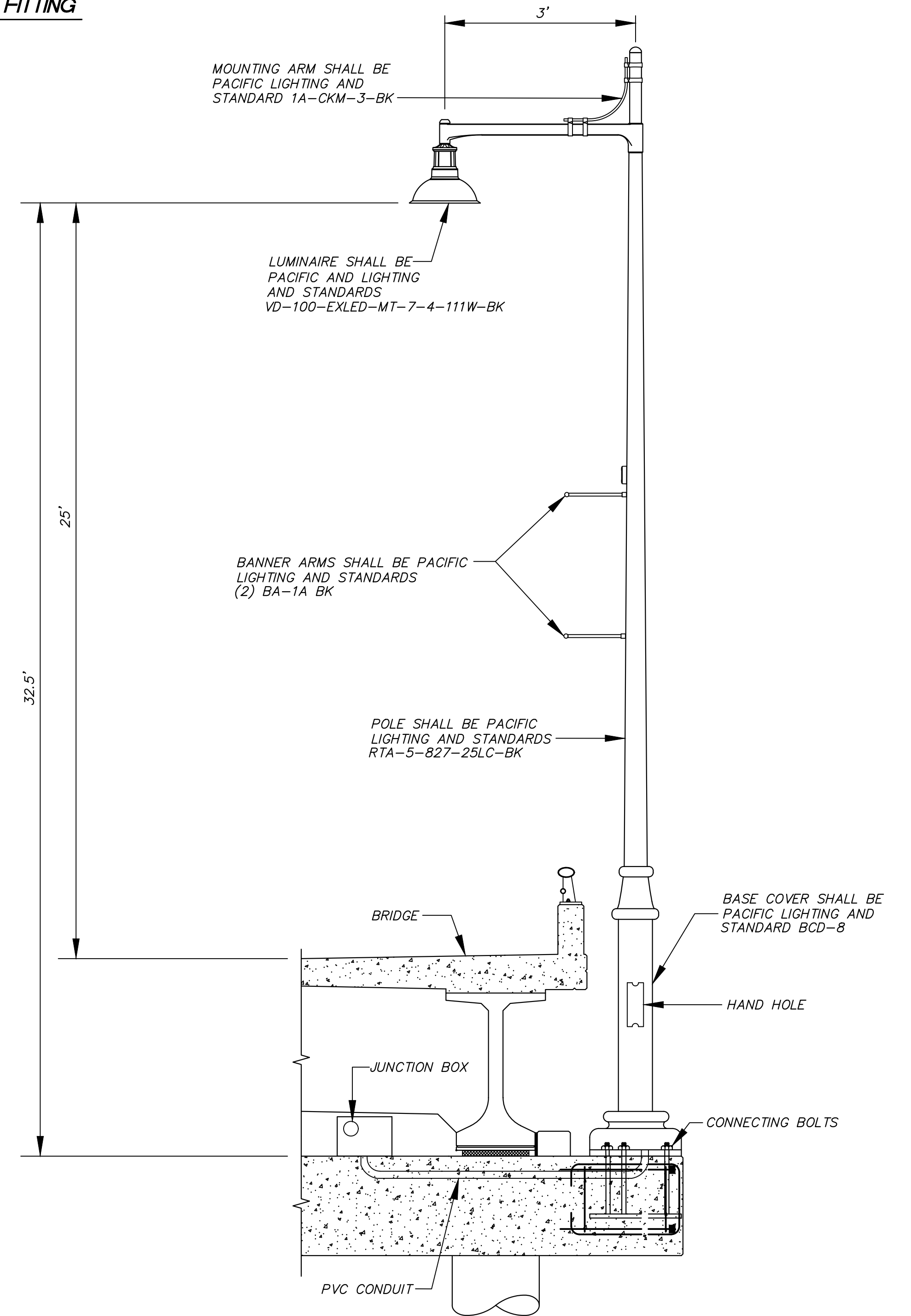
STRUCTURE MOUNTED PULL BOX DETAIL
N.T.S.



TYPE 'C'
LIGHTING ASSEMBLY
LIGHT POLE FOUNDATION
ON BRIDGE
N.T.S.



DETAIL EXPANSION FITTING
N.T.S.



TYPE 'D'
LIGHTING ASSEMBLY
LIGHT POLE FOUNDATION
ON BRIDGE
N.T.S.

NOTE: JUNCTION BOX AND FLEXIBLE CONDUIT SHALL BE ABSORBED IN COST FOR BRIDGE MOUNTED LOW MAST ASSEMBLY

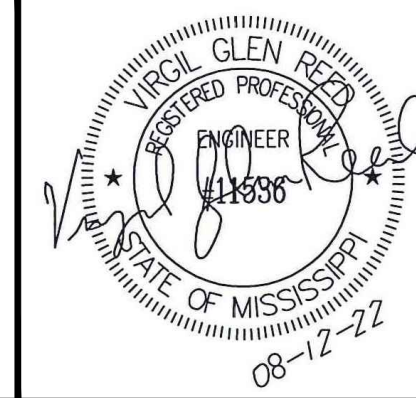
NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	

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DSGN: VR/KC	DATE: 06/2022
DRWN: JEM	DATE: 06/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

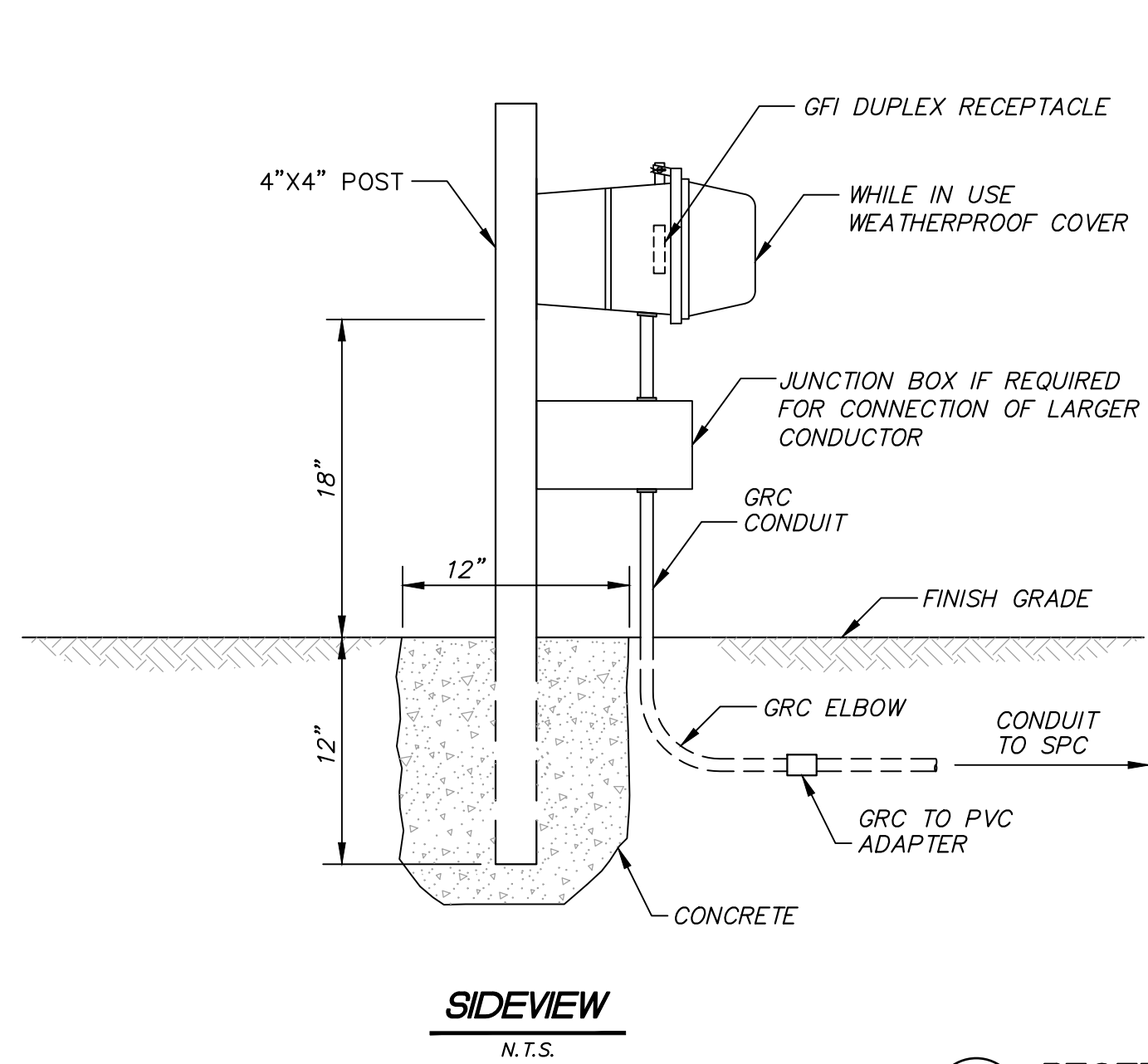


NEEL-SCHAFFER
Solutions you can build upon

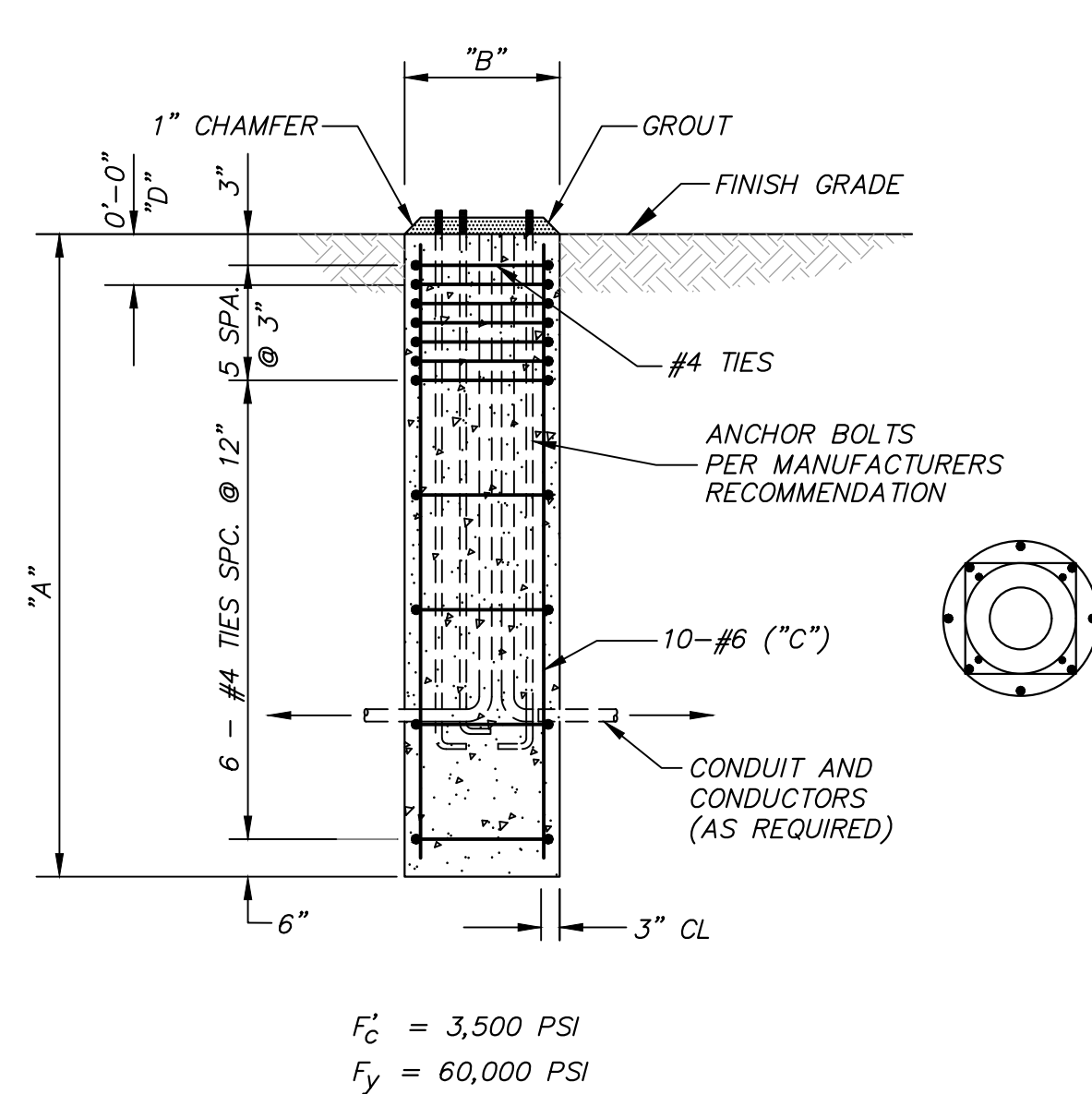
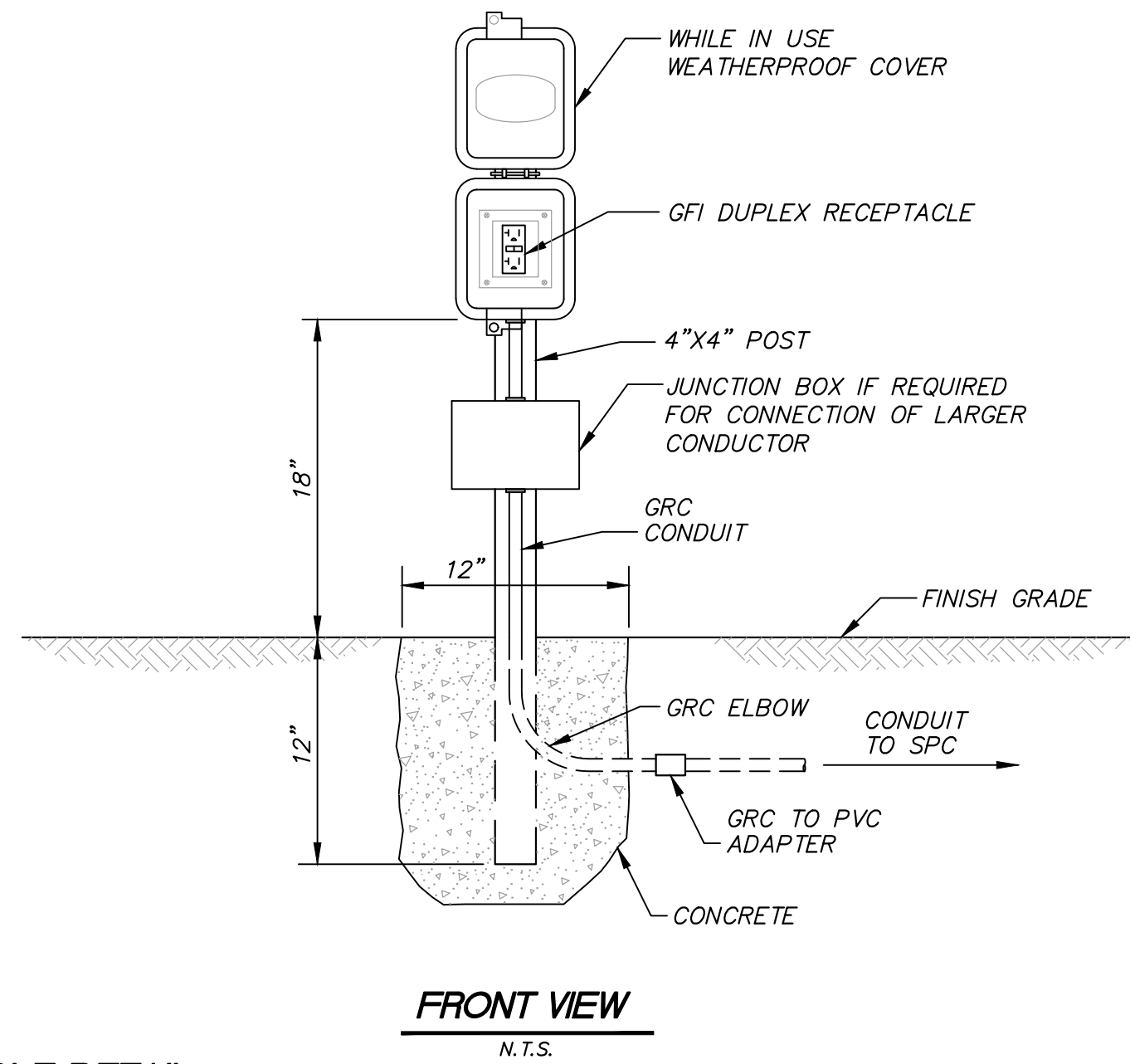
LIGHTING DETAILS II

WORKING NUMBER:
LD-2

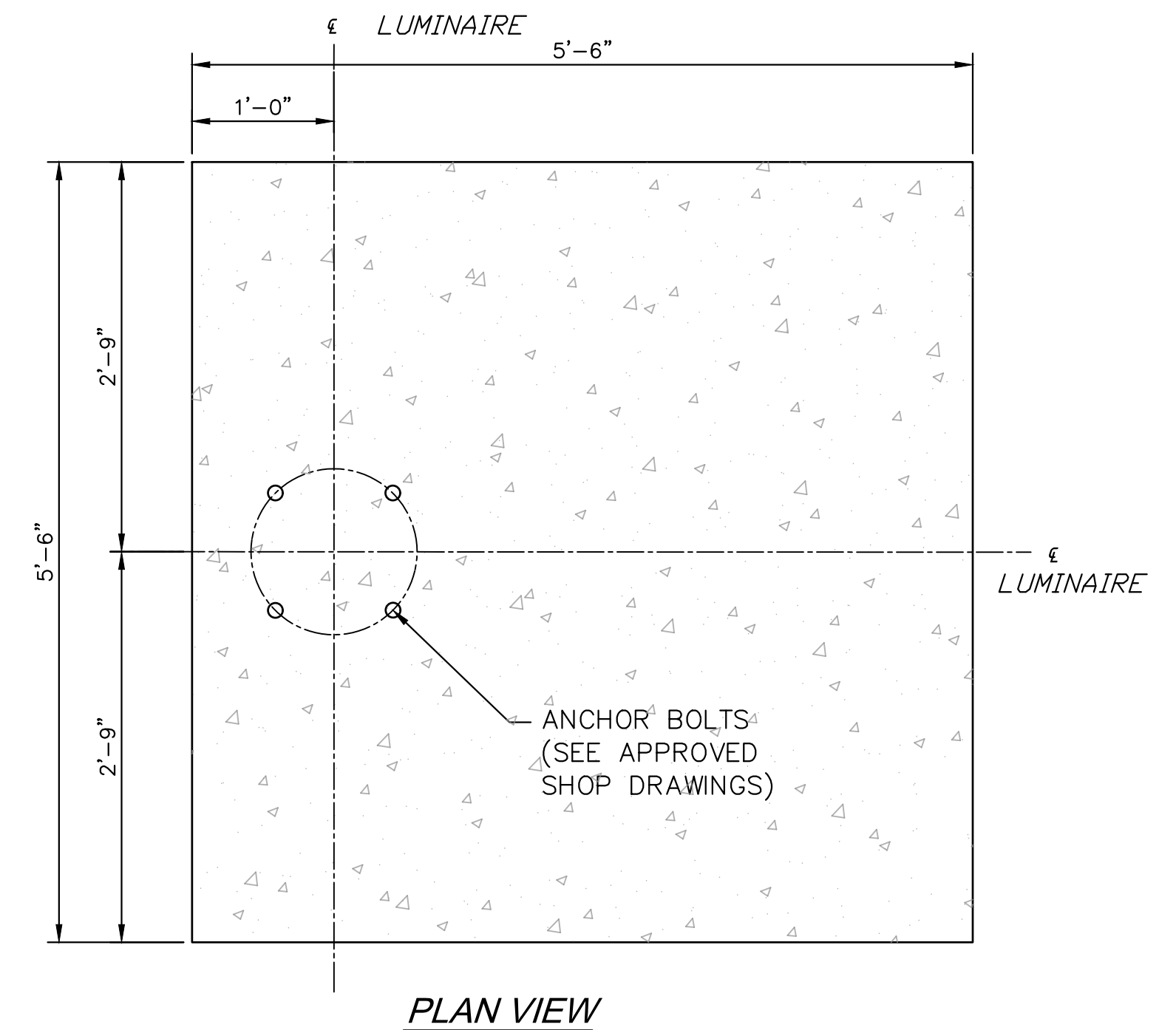
DRAWING NUMBER:
4009



1 RECEPTACLE DETAIL
LD-3 N.T.S.

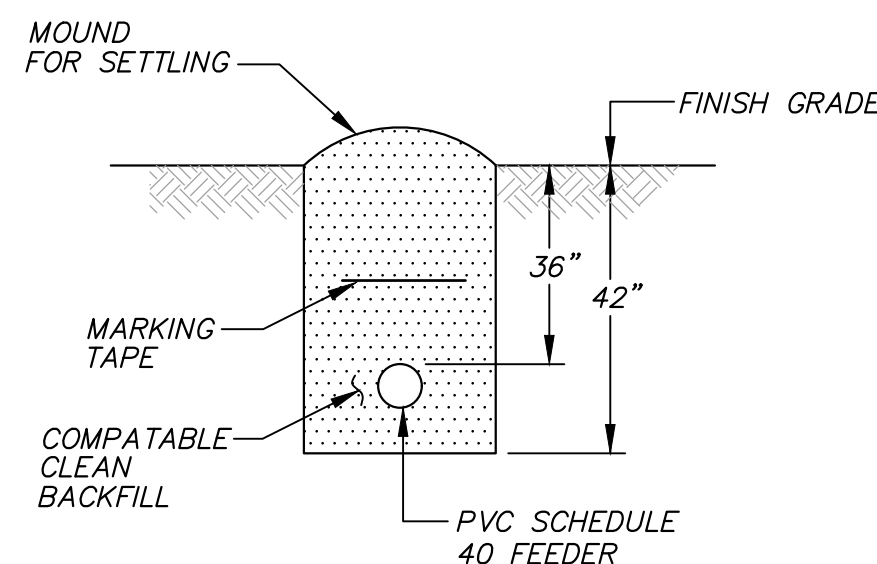


2 FOUNDATION DETAILS
LD-3 N.T.S.

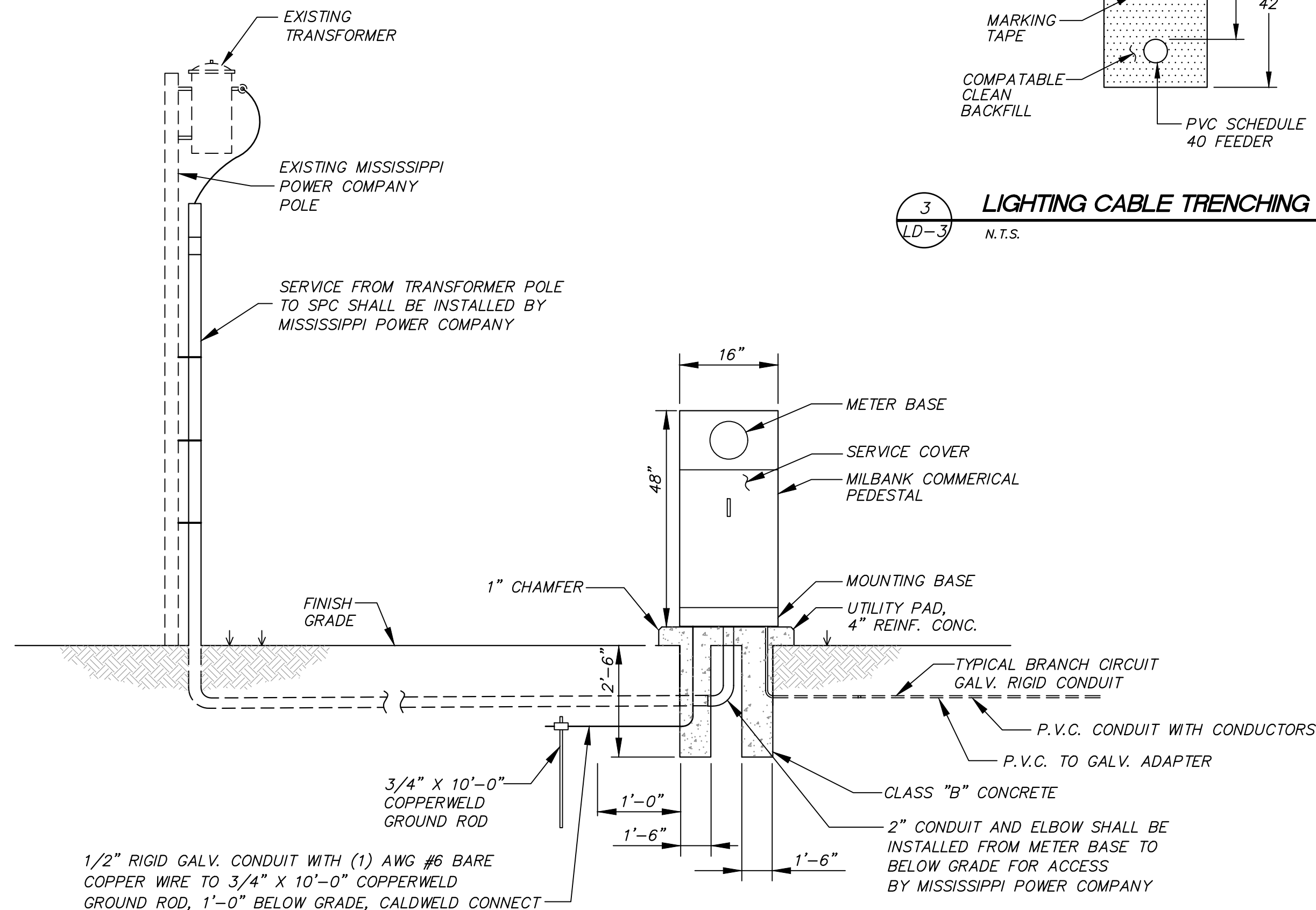


PLAN VIEW

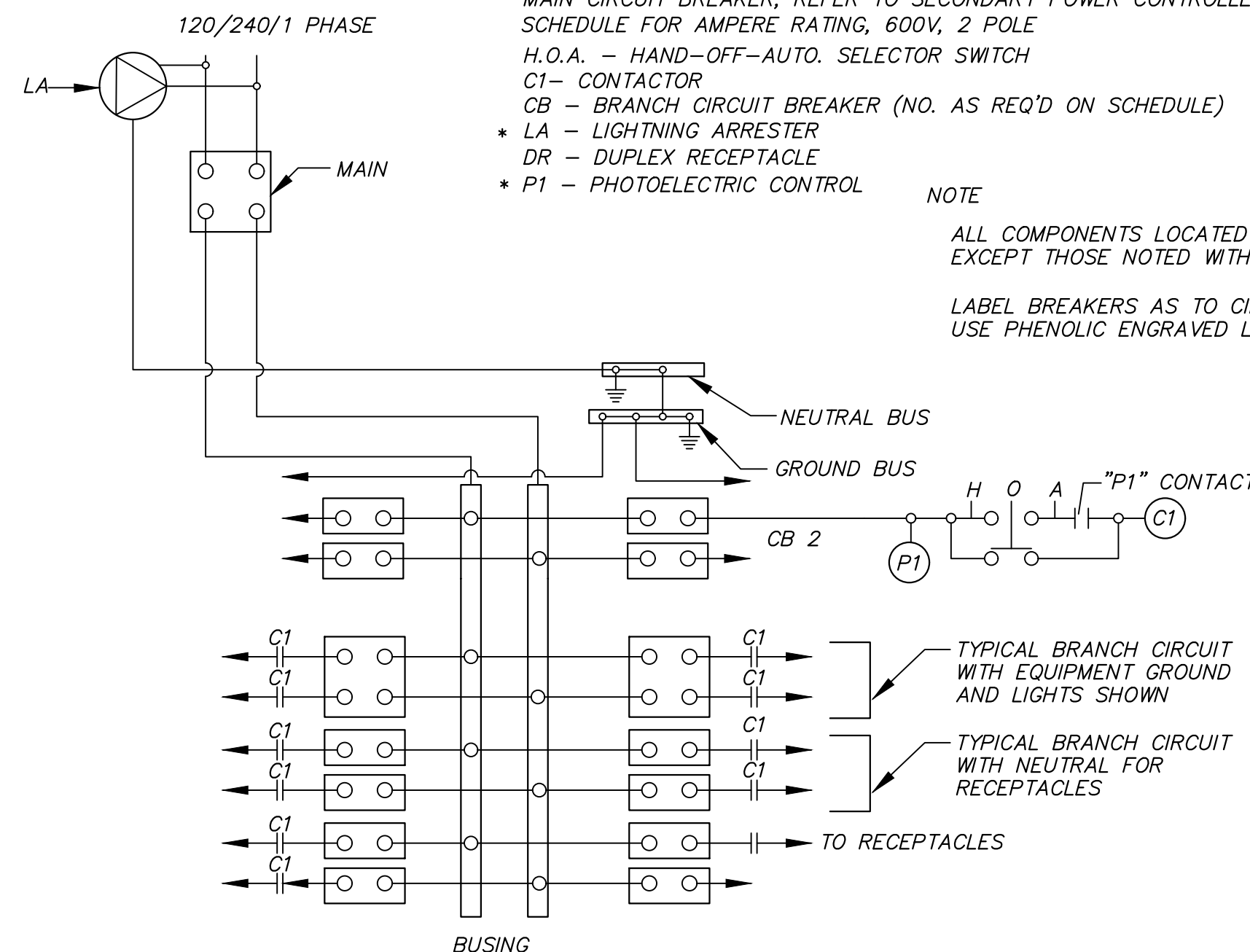
LIGHTING ASSEMBLY LOW MAST SCHEDULE - FOUNDATIONS						
POLE DESIGNATION	TYPE	A	B	C	D	
A	25-1-3-LED	7'	30"	10-#6	0"	
B	14-1-3-LED	6'	30"	10-#6	0"	
C	BRIDGE					
D	BRIDGE					



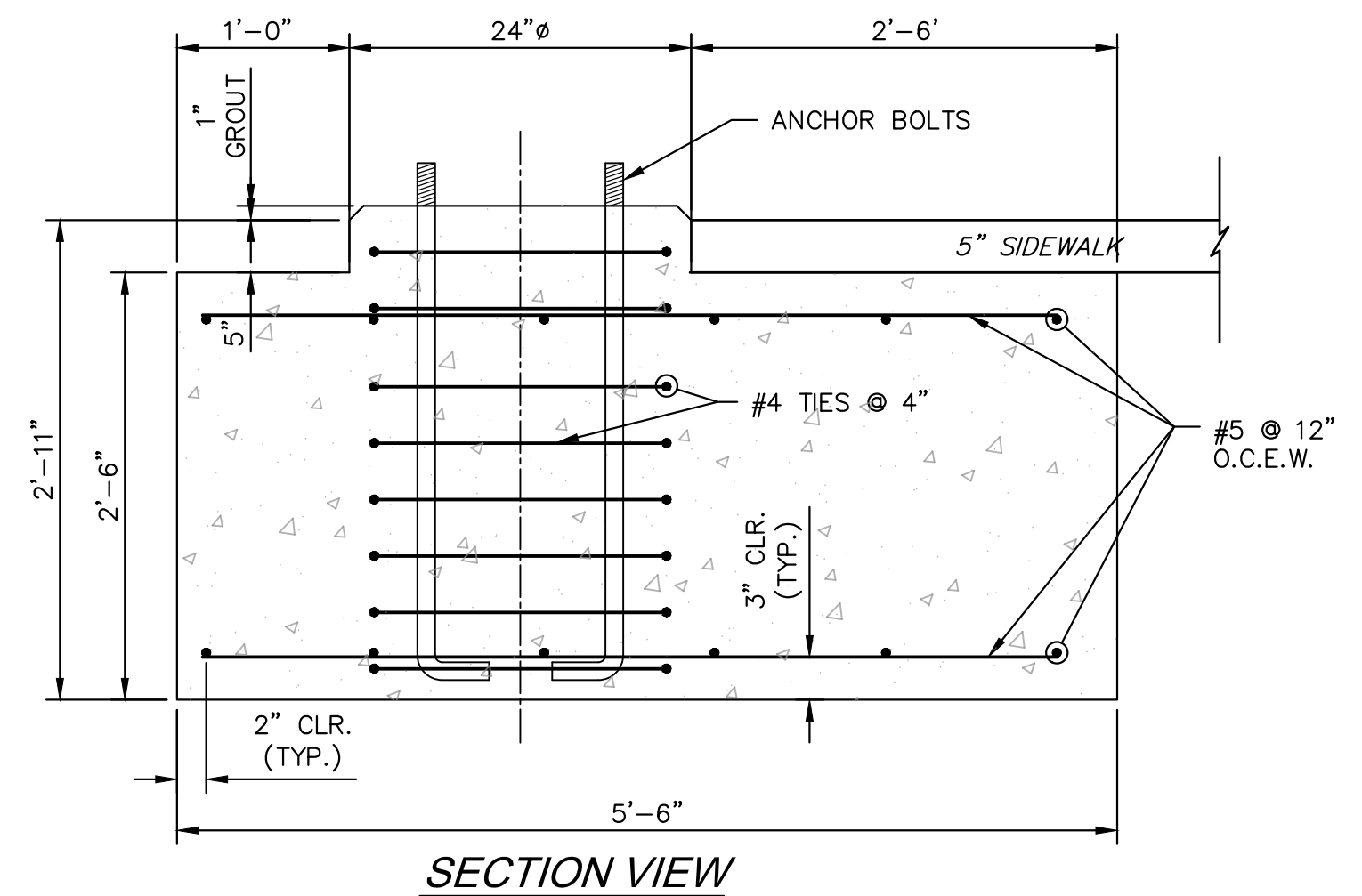
3 LIGHTING CABLE TRENCHING DETAIL
LD-3 N.T.S.



4 SECONDARY POWER CONTROLLER DETAIL
LD-3 N.T.S.



5 SCHEMATIC OF LIGHTING CONTROLLER DETAIL
LD-3 N.T.S.



SPECIAL LIGHTING ASSEMBLY FOUNDATION
N.T.S.

NOTE:

SPREAD FOOTING DETAIL ABOVE SHALL ONLY BE USED WHERE UNKNOWN CONFLICTS ARE DISCOVERED DURING CONSTRUCTION AND ONLY WITH THE APPROVAL OF THE ENGINEER.

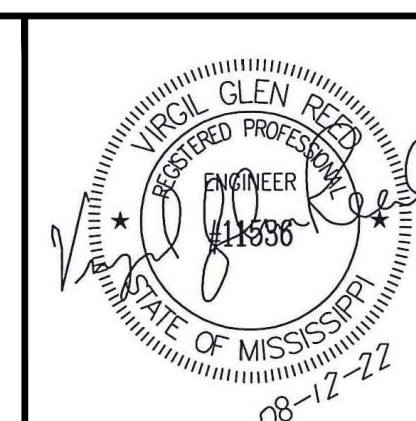
CONSTRUCTION OF THESE FOUNDATIONS SHALL BE PAID AS PAY ITEM 907-242-PP001, INSTALLATION OF SPREAD FOOTING, LIGHTING FOUNDATIONS, PER PLANS.
QUANTITIES INCLUDED IN COST OF EACH FOUNDATION:
CONCRETE: 2.849 CY
REINFORCEMENT: 161 LBS

NOTICE TO DRAWING HOLDER

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REVISIONS				DRAWING INFORMATION	
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				DSGN: VR/KC DATE: 06/2022	
				DRWN: JEM DATE: 06/2022	
				CHKD: GPC DATE: 08/2022	
				QA/QC: MWE DATE: 08/2022	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

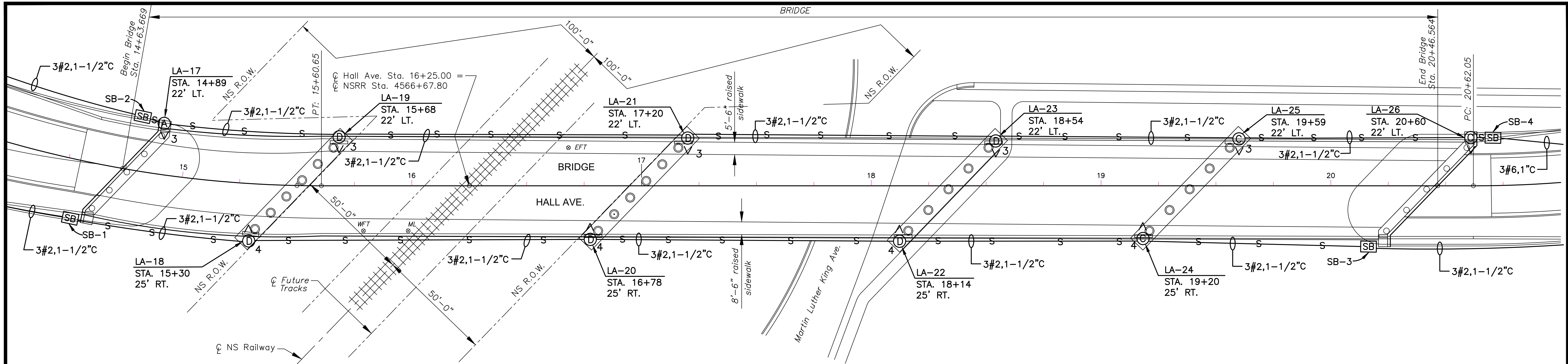


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Solutions you can build upon

LIGHTING DETAILS III

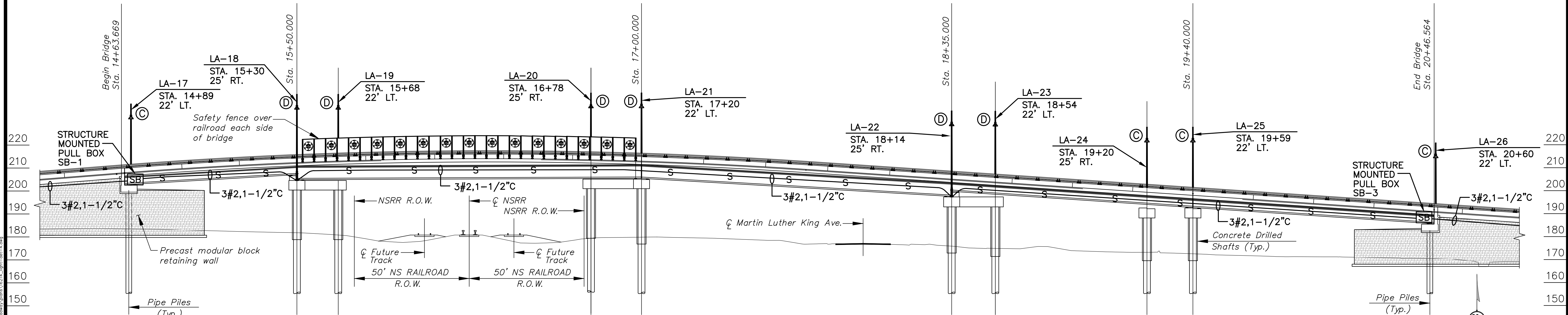
WORKING NUMBER:
LD-3

DRAWING NUMBER:
4010



BRIDGE LIGHTING PLAN - HALL AVENUE

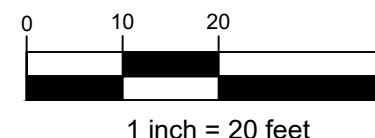
SCALE: 1" = 20'



BRIDGE LIGHTING PLAN - PROFILE HALL AVENUE

SCALE: 1" = 20'

GRAPHIC SCALE

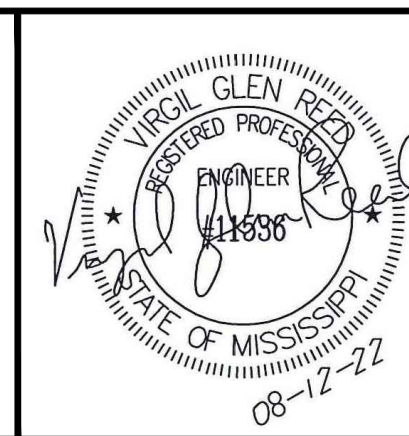


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REVISIONS				DRAWING INFORMATION	
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				DRWN: JEM DATE: 06/2022	
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				QA/QC: MWE DATE: 08/2022	

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

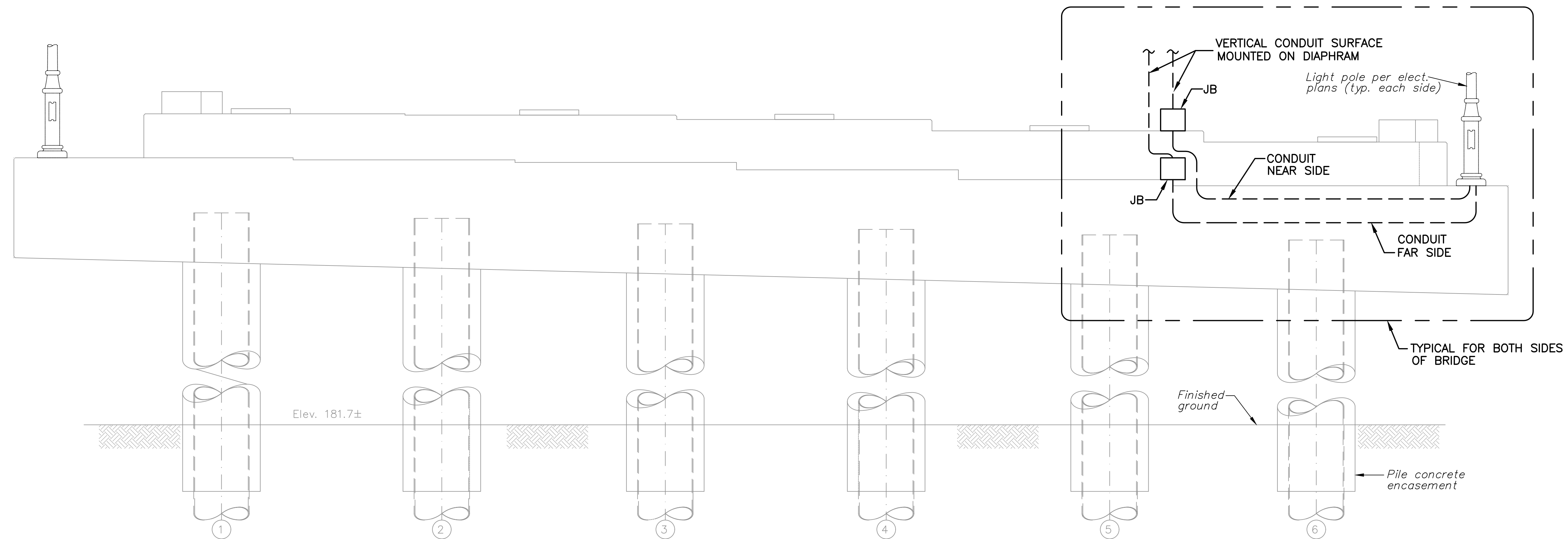
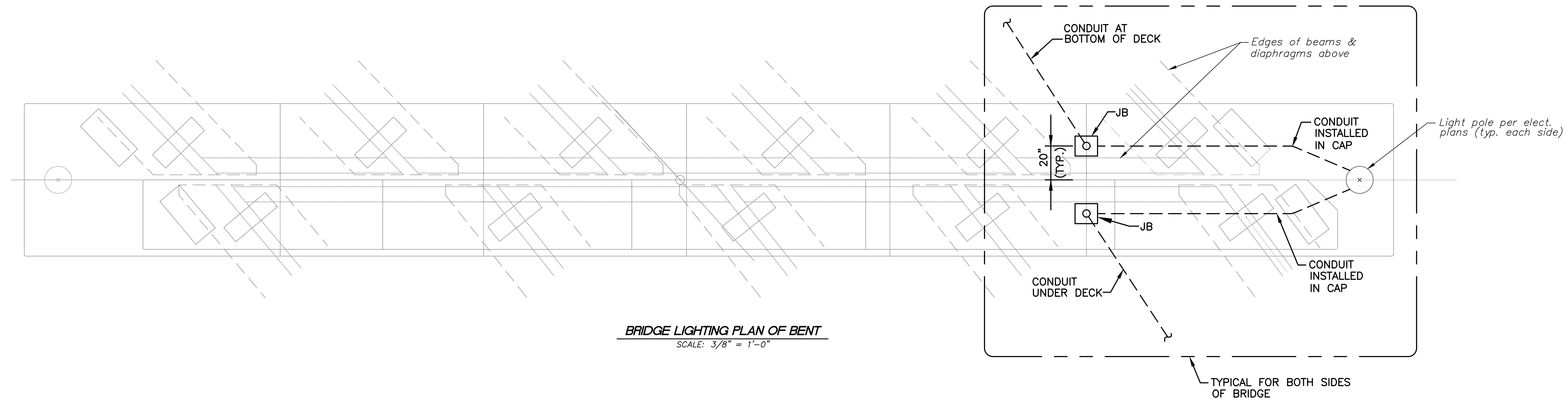


NEEL-SCHAFFER
Solutions you can build upon

BRIDGE AT STA. 16+25
HALL AVE. OVER NS RAILROAD
BRIDGE LIGHTING PLAN
AND ELECTRICAL DETAILS

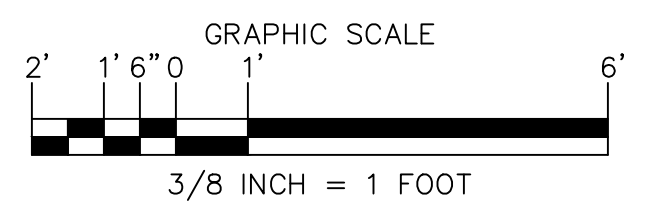
WORKING NUMBER:
LD-4

DRAWING NUMBER:
4011



NOTE:

THE CONDUITS INSTALLED IN CAP WILL BE ABSORBED IN PAY ITEM FOR BRIDGE MOUNTED LIGHTING ASSEMBLY.

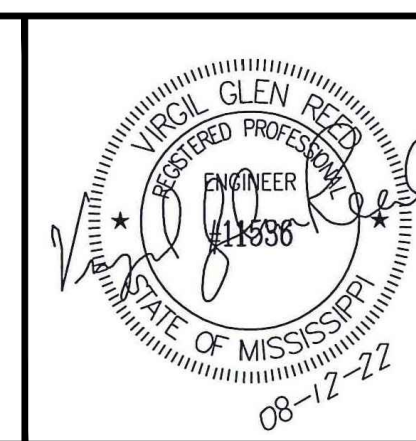


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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
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				QA/QC: MWE	DATE: 08/2022

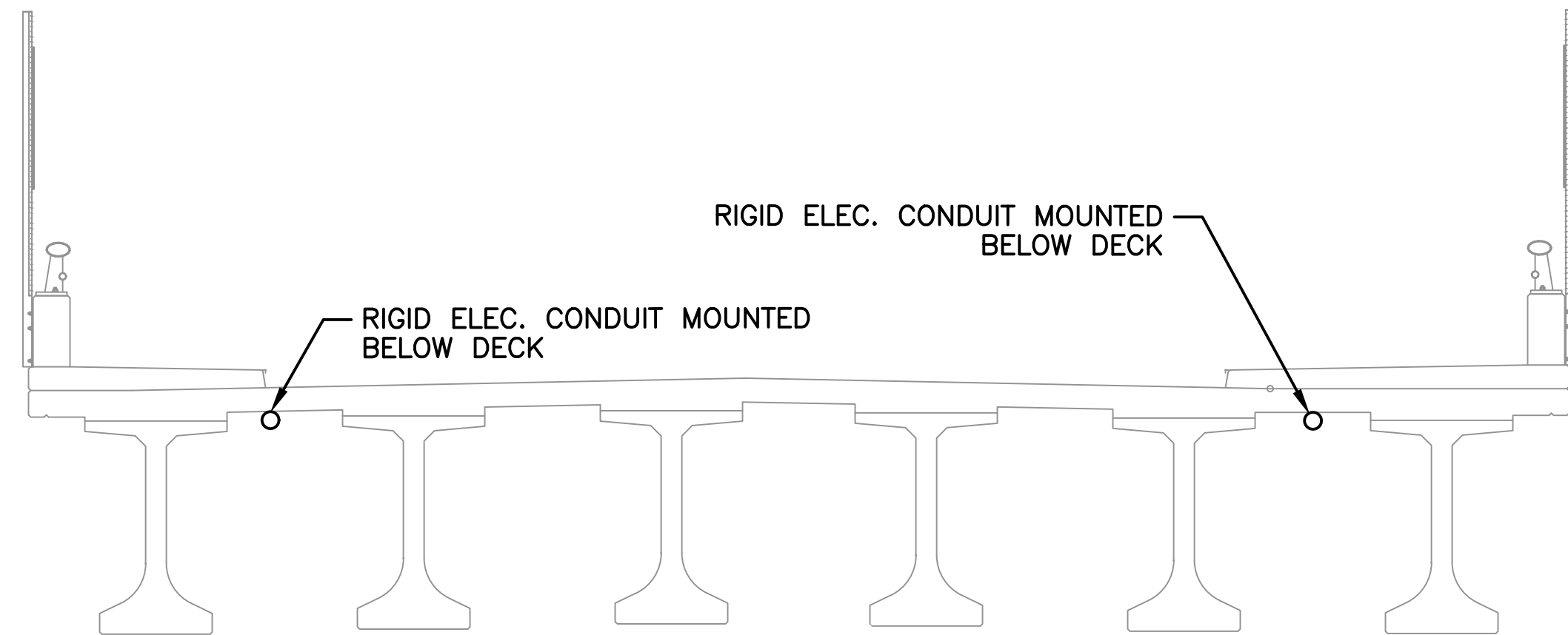
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



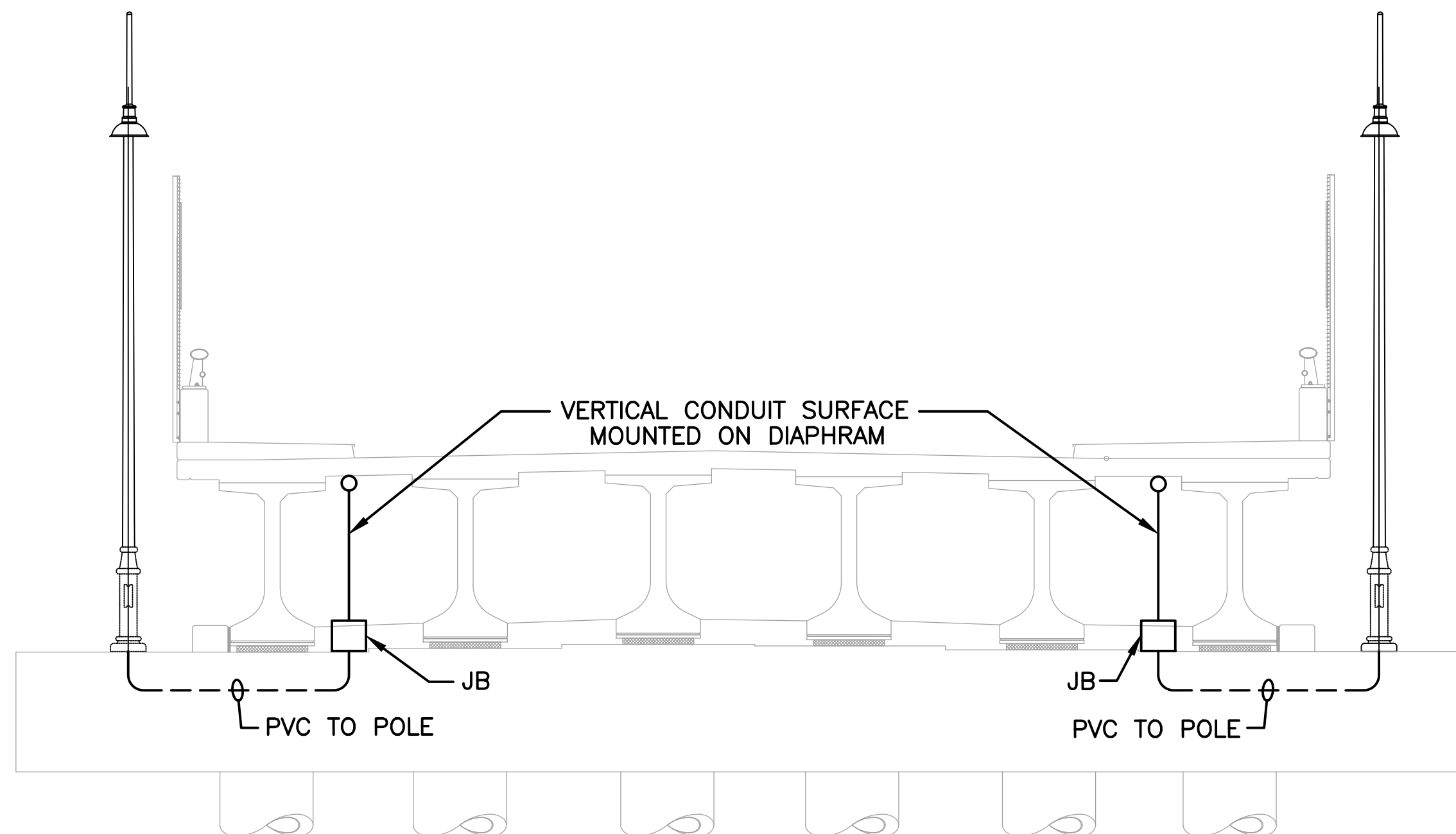
NEEL-SCHAFFER
Solutions you can build upon

BRIDGE AT STA. 16+25
BRIDGE LIGHTING PLAN OF BENT
ELEVATION AND
ELECTRIAL DETAILS

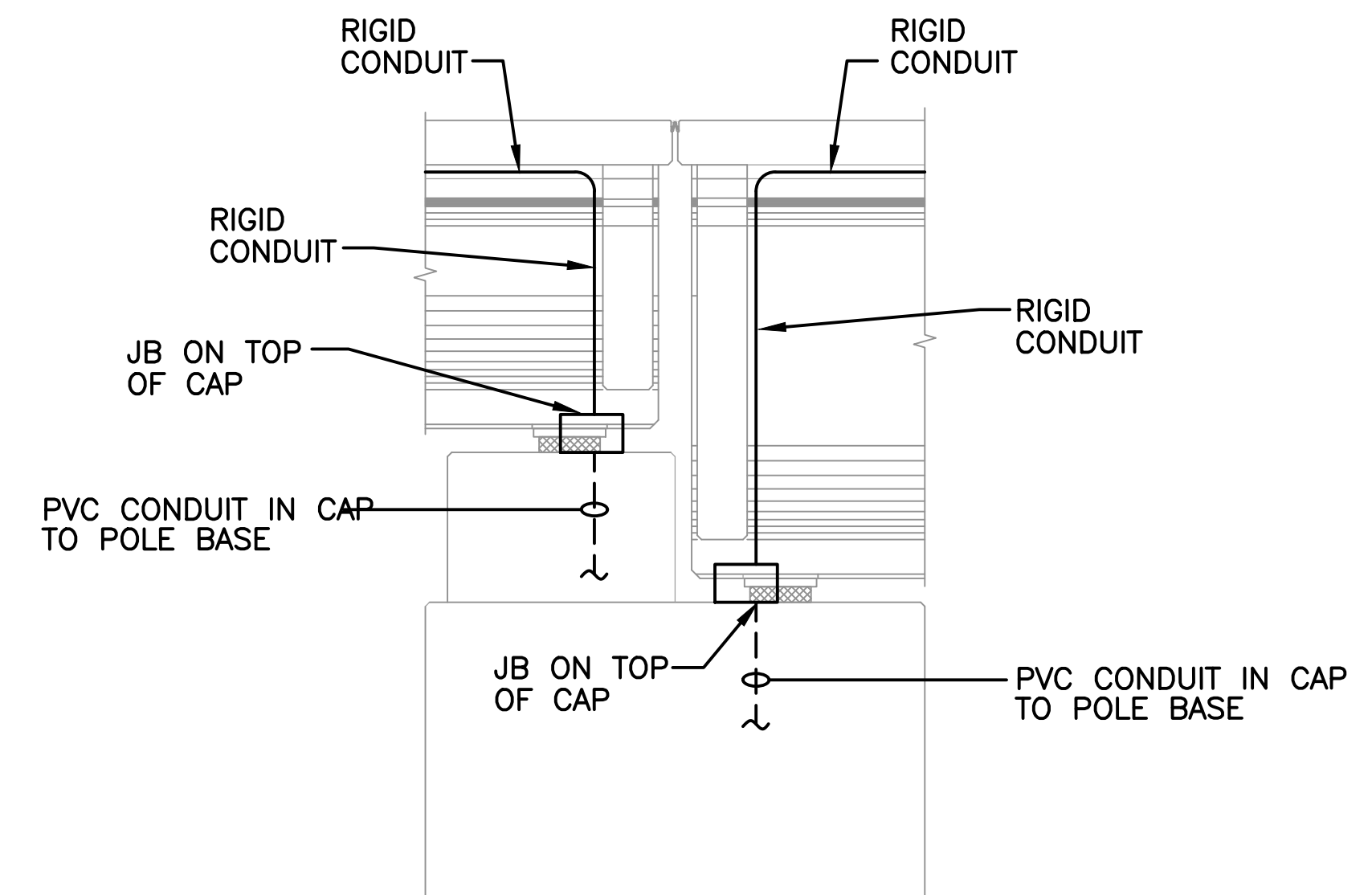
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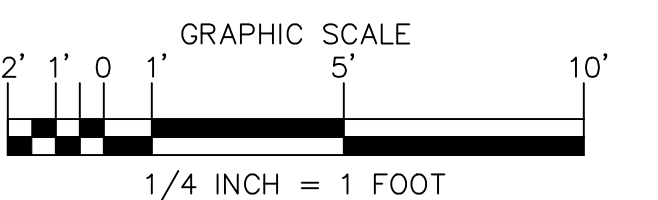
BRIDGE LIGHTING SECTION - NEAR MIDSPAN
SCALE: 1/4" = 1'-0"



BRIDGE LIGHTING SECTION - AT INT. BENT
SCALE: 1/4" = 1'-0"



BRIDGE CONDUIT DIAPHRAM MOUNTED DETAIL
SCALE: 1/4" = 1'-0"



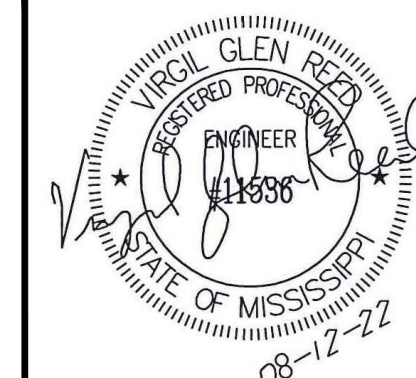
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NOTICE TO DRAWING HOLDER

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REVISIONS				DRAWING INFORMATION	
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				DSGN: VR/KC	DATE: 06/2022
				DRWN: JEM	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



BRIDGE AT STA. 16+25
BRIDGE LIGHTING SECTION
NEAR MIDSPAN AND
AT INT. BENT AND DIAPHRAM

WORKING NUMBER: LD-6	DRAWING NUMBER: 4013
--------------------------------	--------------------------------

ESTIMATED QUANTITIES - LIGHTING ITEMS

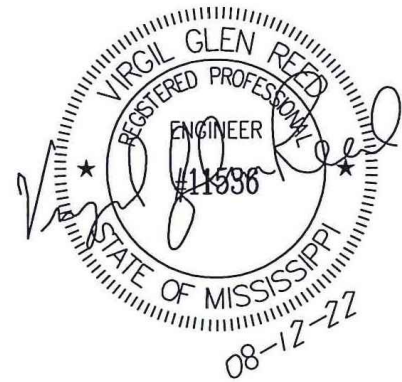
LIGHTING ASSEMBLY	STATION	LOW MAST TYPE				FIXTURE MOUNTING HEIGHT	NUMBER OF LUMINAIRES	LAMP WATTS	S.P.C. NUMBER	LAMP TYPE	IES TYPE	FOUNDATION CONCRETE (CY) 30" DIAMETER	UG BRANCH CKT AWG # LF 3 CONDUCTORS				UG BR. CKT AWG # LF 3 COND. JACKED OR BORED				STR. MNT. BRANCH CKT. AWG # LF 3 CONDUCTORS		STRUCTURE MOUNTED PULL BOX	REMARKS
		A	B	BRIDGE MOUNTED C	BRIDGE MOUNTED D								#10	#8	#6	#2	#10	#8	#6	#2	#2	#6		
LA-1	747+82	1				25	1	100	1	LED	III	1.27	95											WEST PINE STREET
LA-2	747+91	1				25	1	100	1	LED	III	1.27					70							WEST PINE STREET
LA-3	748+75	1				25	1	100	1	LED	III	1.27	80											WEST PINE STREET
LA-4	749+20	1				25	1	100	1	LED	III	1.27	135											WEST PINE STREET
LA-5	749+62	1				25	1	100	1	LED	III	1.27								70				WEST PINE STREET
LA-6	750+23	1				25	1	100	1	LED	III	1.27								105				WEST PINE STREET
LA-7	751+32	1				25	1	100	1	LED	III	1.27	180											WEST PINE STREET
LA-8	751+37	1				25	1	100	1	LED	III	1.27	135											WEST PINE STREET
LA-9	752+82	1				25	1	100	1	LED	III	1.27	150											WEST PINE STREET
LA-10	752+75	1				25	1	100	1	LED	III	1.27					60							WEST PINE STREET
LA-11	753+60	1				25	1	100	1	LED	III	1.27	80											WEST PINE STREET
LA-12	753+60	1				25	1	100	1	LED	III	1.27					55							WEST PINE STREET
LA-13	11+00	1				25	1	100	1	LED	III	1.27				60								HALL AVENUE
LA-14	11+55	1				25	1	100	1	LED	III	1.27				120								HALL AVENUE
LA-15	12+56	1				25	1	100	1	LED	III	1.27				155								HALL AVENUE
LA-16	13+66	1				25	1	100	1	LED	III	1.27				225								HALL AVENUE
LA-17	14+89			1		25	1	100	1	LED	III					200					25		2	HALL AVENUE
LA-18	15+30				1	25	1	100	1	LED	III				90						85		3	HALL AVENUE
LA-19	15+68				1	25	1	100	1	LED	III										80		2	HALL AVENUE
LA-20	16+78				1	25	1	100	1	LED	III										150		2	HALL AVENUE
LA-21	17+20				1	25	1	100	1	LED	III										155		2	HALL AVENUE
LA-22	18+14				1	25	1	100	1	LED	III										140		2	HALL AVENUE
LA-23	18+54				1	25	1	100	1	LED	III										135		2	HALL AVENUE
LA-24	19+20			1		25	1	100	1	LED	III										105		2	HALL AVENUE
LA-25	19+59			1		25	1	100	1	LED	III										105		2	HALL AVENUE
LA-26	20+60			1		25	1	100	1	LED	III										105		2	HALL AVENUE
LA-27	21+55	1				25	1	100	1	LED	III	1.27				165					80		1	HALL AVENUE
LA-28	22+84	1				25	1	100	1	LED	III	1.27			200							25		HALL AVENUE
LA-29	16+78	1				25	1	100	1	LED	III	1.27		60										HALL AVENUE
LA-30	1+90	1				25	1	100	1	LED	III	1.27		90										ALLEY
LA-31	24+11	1				25	1	100	2	LED	III	1.27	260											HALL AVENUE
LA-32	25+38	1				25	1	100	2	LED	III	1.27	260											HALL AVENUE
LA-33	26+67	1				25	1	100	2	LED	III	1.27	245											HALL AVENUE
LA-34	27+94	1				25	1	100	2	LED	III	1.27	235											HALL AVENUE
LA-35	29+10	1				25	1	100	2	LED	III	1.27	230											HALL AVENUE
LA-36	30+29	1				25	1	100	2	LED	III	1.27	230											HALL AVENUE
LA-37	31+35	1				25	1	100	2	LED	III	1.27	170											HALL AVENUE
LA-38	32+55	1				25	1	100	2	LED	III	1.27	70											HALL AVENUE
LA-39	33+68	1				25	1	100	2	LED	III	1.27	80											HALL AVENUE
LA-40	34+96	1				25	1	100	2	LED	III	1.27	270											HALL AVENUE
LA-41	36+24	1				25	1	100	2	LED	III	1.27	260											HALL AVENUE
LA-42	37+50	1				25	1	100	2	LED	III	1.27	260											HALL AVENUE
LA-43	38+64	1				25	1	100	3	LED	III	1.27	250											HALL AVENUE
LA-44	39+83	1				25	1	100	3	LED	III	1.27	225											HALL AVENUE
LA-45	41+05	1				25	1	100	3	LED	III	1.27	215											HALL AVENUE
LA-46	42+05	1				25	1	100	3	LED	III	1.27	200											HALL AVENUE
LA-47	43+15	1				25	1	100	3	LED	III	1.27	180											HALL AVENUE
LA-48	44+00	1				25	1	100	3	LED	III	1.27	140											HALL AVENUE
LA-49	44+92	1				25	1	100	3	LED	III	1.27	20											HALL AVENUE
LA-50	45+41	1				25	1	100	3	LED	III	1.27	90											HALL AVENUE
LA-51	45+69	1				25	1	100	3	LED	III	1.27					50							HALL AVENUE
LA-52	45+89	1				25	1	100	3	LED	III	1.27					40							HALL AVENUE
LA-53	46+29	1				25	1	100	3	LED	III	1.27	70											HALL AVENUE
LA-54	47+18	1				25	1	100	3	LED	III	1.27	130											HALL AVENUE
LA-55	47+72	1				25	1	100	3	LED	III	1.27	145											HALL AVENUE
LA-56	48+15	1				25	1	100	3	LED	III	1.27	100											HALL AVENUE
LA-57	48+79	1				25	1	100	3	LED	III	1.27	110											HALL AVENUE
LA-58	49+50	1				25	1	100	3	LED	III	1.27	140											HALL AVENUE
LA-59	50+65	1				25	1	100	3	LED	III	1.27	190											HALL AVENUE
TOTAL THIS SHEET		49	0	4	6							62.23	5630	150	200	1015	275	0	0	175	1165	25	22	

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000	
				FILENAME: 16214_Light_EQ-1.dwg	
				SCALE: NO SCALE	
				SURVEYED BY:	
				DSGN: VR/KC	DATE: 06/2022
				DRWN: JEM	DATE: 06/2022
				CHKD: GPC	DATE: 08/2022
				QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



ESTIMATED QUANTITIES
LIGHTING ITEMS
SHEET 1 OF 2

WORKING NUMBER:
LEQ-1

DRAWING NUMBER:
4014

ESTIMATED QUANTITIES - LIGHTING ITEMS

LIGHTING ASSEMBLY	STATION	LOW MAST TYPE				FIXTURE MOUNTING HEIGHT	NUMBER OF LUMINAIRES	LAMP WATTS	S.P.C. NUMBER	LAMP TYPE	IES TYPE	FOUNDATION CONCRETE (CY) 30" DIAMETER	UG BRANCH CKT AWG # LF 3 CONDUCTORS				UG BR. CKT AWG # LF 3 COND. JACKED OR BORED				STR. MNT. BRANCH CKT. AWG # LF 3 CONDUCTORS		STRUCTURE MOUNTED PULL BOX	REMARKS
		A	B	BRIDGE MOUNTED C	BRIDGE MOUNTED D								#10	#8	#6	#2	#10	#8	#6	#2	#2	#6		
LA-60	100+58	1				25	1	100	1	LED	III	1.27		130										MARTIN LUTHER KING BLVD.
LA-61	101+07	1				25	1	100	1	LED	III	1.27		135										MARTIN LUTHER KING BLVD.
LA-62	101+87	1				25	1	100	1	LED	III	1.27		130										MARTIN LUTHER KING BLVD.
LA-63	102+17	1				25	1	100	1	LED	III	1.27		75				60						MARTIN LUTHER KING BLVD.
LA-64	103+15	1				25	1	100	1	LED	III	1.27		100										MARTIN LUTHER KING BLVD.
LA-65	104+54	1				25	1	100	1	LED	III	1.27		100										MARTIN LUTHER KING BLVD.
LA-66	18+69		1			14	1	100	1	LED	III	1.10		35										HALL AVE. (UNDER BRIDGE)
LA-67	18+95		1			14	1	100	1	LED	III	1.10		105										HALL AVE. (UNDER BRIDGE)
LA-68	18+90		1			14	1	100	1	LED	III	1.10		100										HALL AVE. (UNDER BRIDGE)
LA-69	19+90		1			14	1	100	1	LED	III	1.10			100									HALL AVE. (UNDER BRIDGE)
LA-70	19+98		1			14	1	100	1	LED	III	1.10			100									HALL AVE. (UNDER BRIDGE)
LA-71	20+87		1			14	1	100	1	LED	III	1.10			100									HALL AVE. (UNDER BRIDGE)
LA-72	21+00		1			14	1	100	1	LED	III	1.10			100									HALL AVE. (UNDER BRIDGE)
LA-73	21+80		1			14	1	100	1	LED	III	1.10			100									HALL AVE. (UNDER BRIDGE)
LA-74	22+00		1			14	1	100	1	LED	III	1.10			90									HALL AVE. (UNDER BRIDGE)
LA-75	22+75		1			14	1	100	1	LED	III	1.10				130								HALL AVE. (UNDER BRIDGE)
LA-76	23+00		1			14	1	100	1	LED	III	1.10			20									HALL AVE. (UNDER BRIDGE)
REC-1															345									MEDIAN ISLAND
REC-2															140									MEDIAN ISLAND
REC-3															340									MEDIAN ISLAND
REC-4															50									MEDIAN ISLAND
REC-5															135									MEDIAN ISLAND
REC-6															350									MEDIAN ISLAND
REC-7															320									MEDIAN ISLAND
REC-8															350									MEDIAN ISLAND
REC-9																		121						MEDIAN ISLAND
REC-10															275									MEDIAN ISLAND
TOTAL THIS SHEET		6	11	0	0							19.72	0	910	2915	130	0	60	121	0	0	0	0	
TOTAL FROM LEQ-1		49	0	4	6							62.23	5630	150	200	1015	275	0	0	175	1165	25	22	
PROJECT TOTALS		55	11	4	6							81.95	5630	1060	3115	1145	275	60	121	175	1165	25	22	

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NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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

NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION

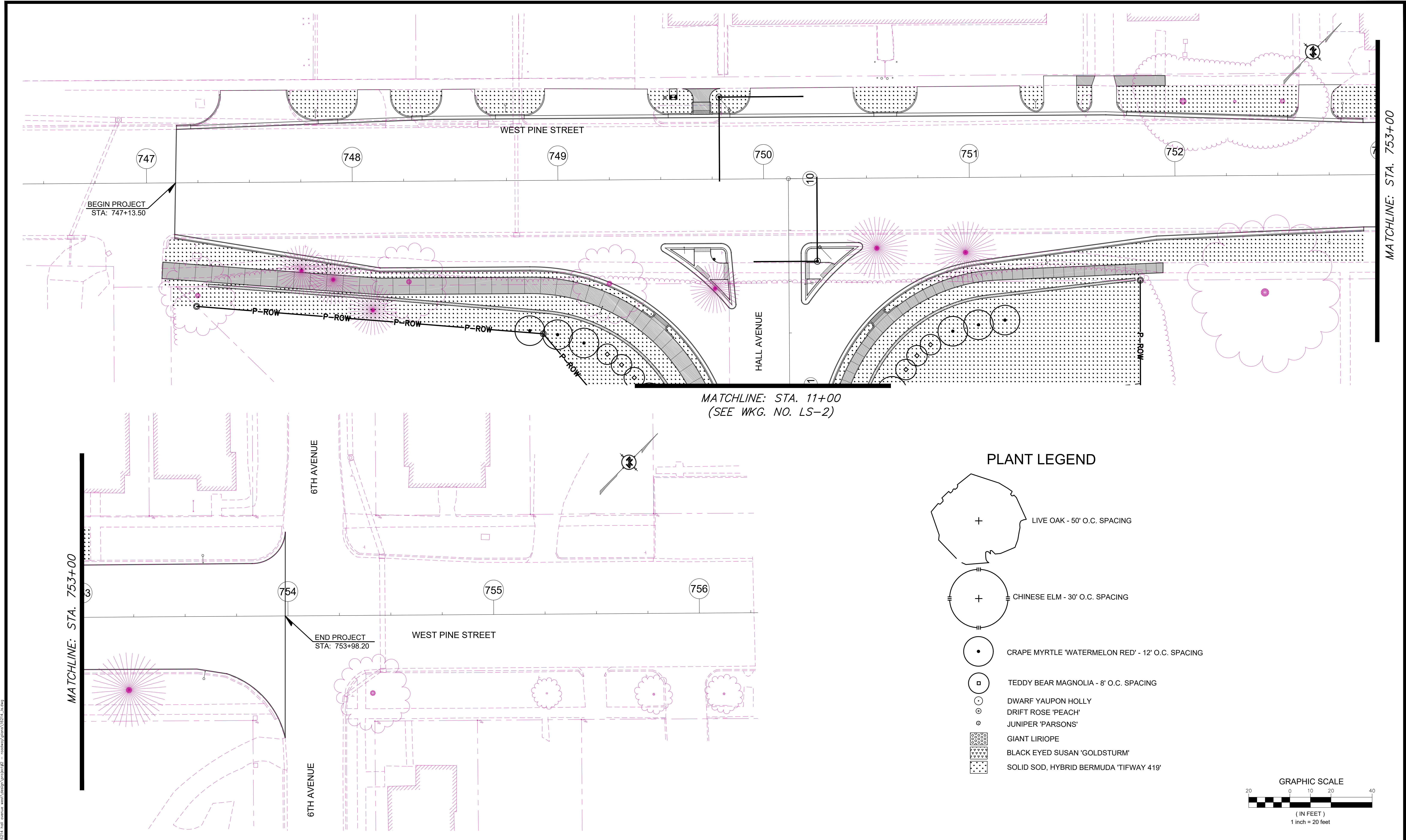
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DRWN: JEM	DATE: 06/2022
CHKD: GPC	DATE: 08/2022
QA/QC: MWE	DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

ESTIMATED QUANTITIES
LIGHTING ITEMS
SHEET 2 OF 2

WORKING NUMBER:
LEQ-2

DRAWING NUMBER:
4015



NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.16214.000
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					SURVEYED BY: CLEARPOINT
					DSGN: PKT DATE: 08/2022
					DRWN: PKT DATE: 08/2022
					CHKD: RPB DATE: 08/2022
					QA/QC: MWE DATE: 08/2022

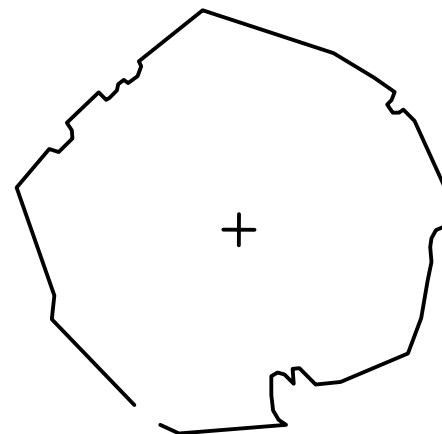
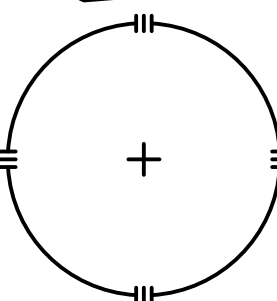
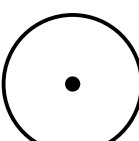
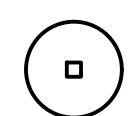
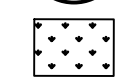
HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

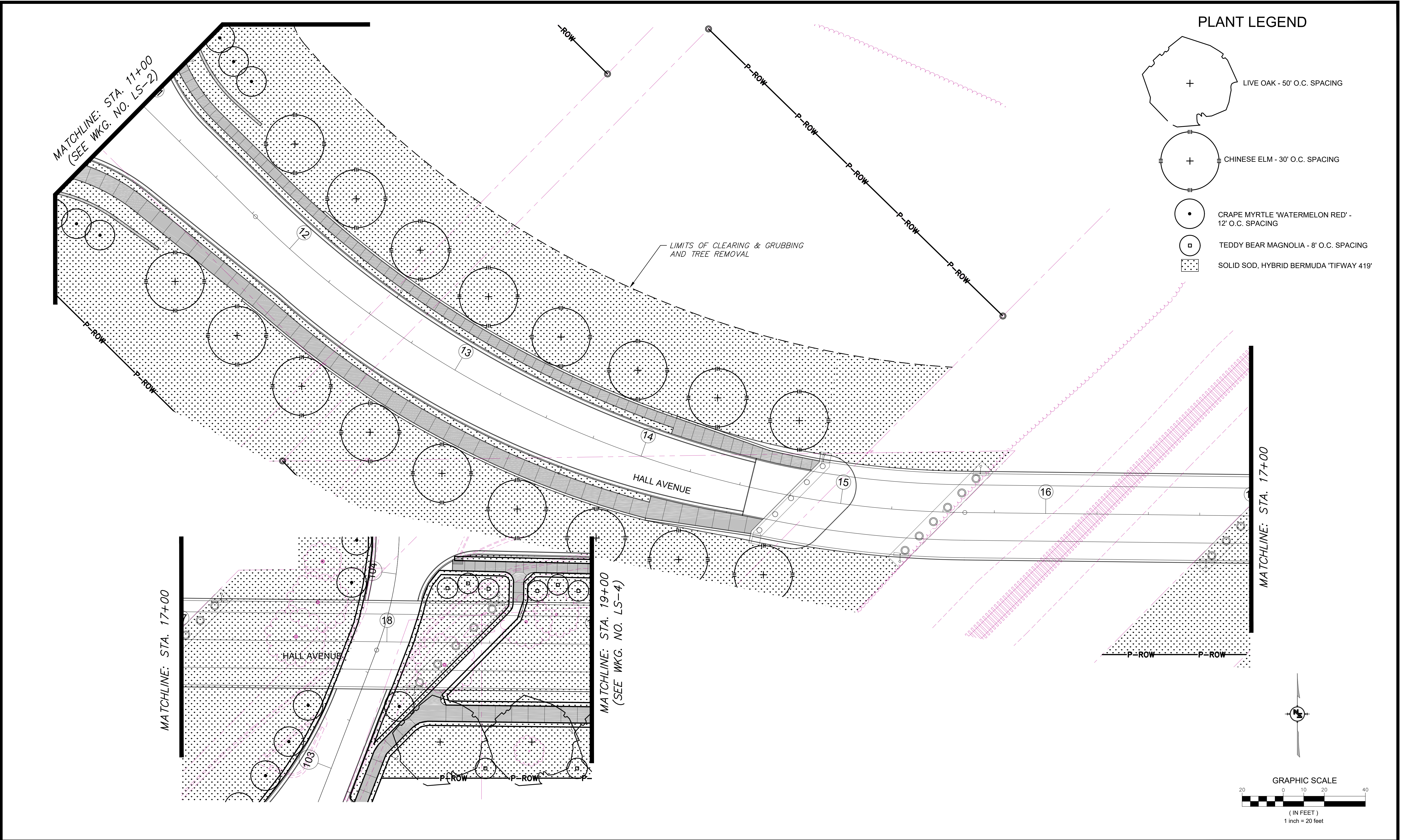
LANDSCAPE PLAN
WEST PINE STREET
B.O.P. TO E.O.P.

WORKING NUMBER:
LS-1

DRAWING NUMBER:
5001

PLANT LEGEND

-  LIVE OAK - 50' O.C. SPACING
-  CHINESE ELM - 30' O.C. SPACING
-  CRAPE MYRTLE 'WATERMELON RED' - 12' O.C. SPACING
-  TEDDY BEAR MAGNOLIA - 8' O.C. SPACING
-  SOLID SOD, HYBRID BERMUDA 'TIFWAY 419'



NOTICE TO DRAWING HOLDER

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NO.	DATE	BY	DESCRIPTION	
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				FILENAME: 16214_LS.dwg
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				SURVEYED BY: CLEARPOINT
				DSGN: PKT DATE: 08/2022
				DRWN: PKT DATE: 08/2022
				CHKD: RPB DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



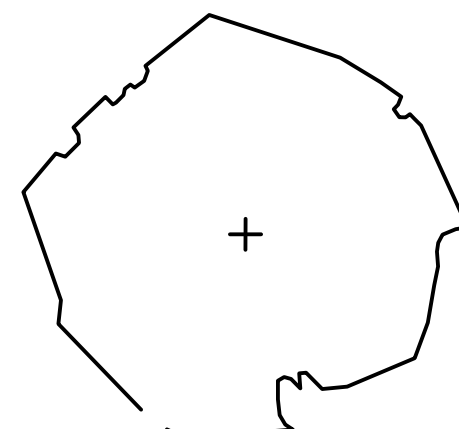
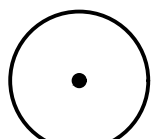
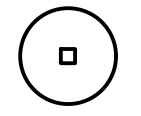
NEEL-SCHAFER
Solutions you can build upon

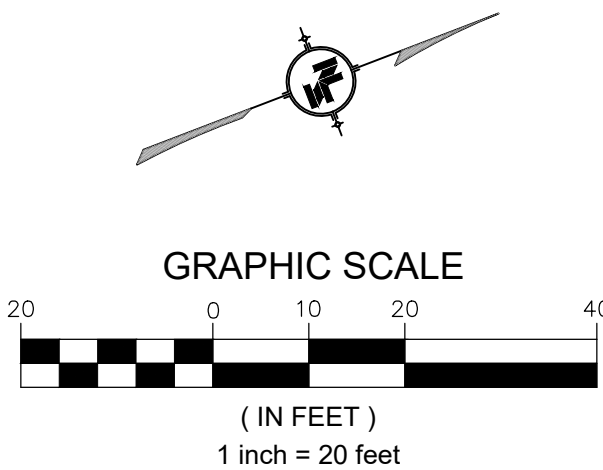
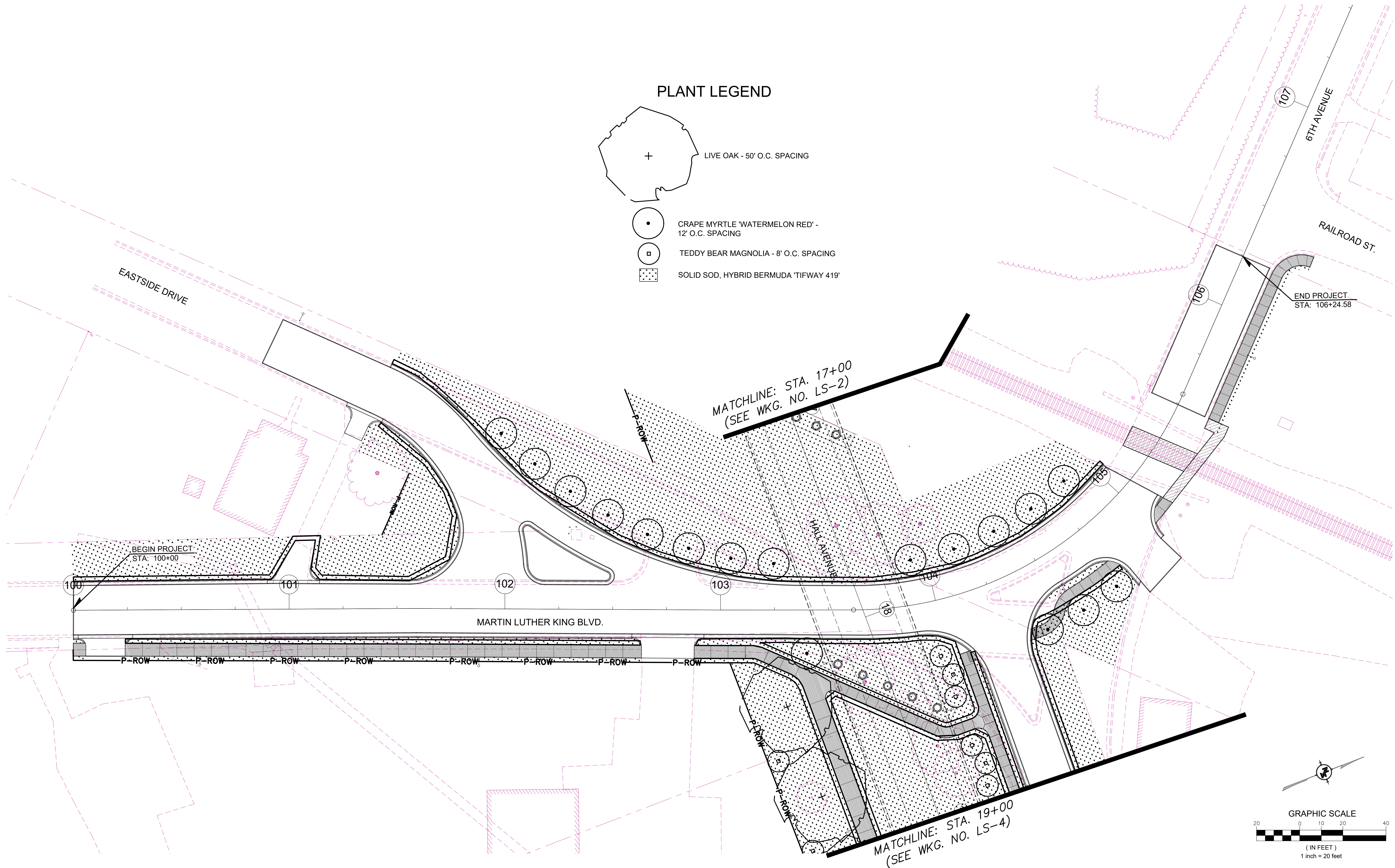
LANDSCAPE PLAN
HALL AVENUE
STA. 11+00 TO STA. 19+00

WORKING NUMBER:
LS-2

DRAWING NUMBER:
5002

PLANT LEGEND

-  LIVE OAK - 50' O.C. SPACING
-  CRAPE MYRTLE 'WATERMELON RED' - 12' O.C. SPACING
-  TEDDY BEAR MAGNOLIA - 8' O.C. SPACING
-  SOLID SOD, HYBRID BERMUDA 'TIFWAY 419'



NOTICE TO DRAWING HOLDER

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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
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				DSGN: PKT DATE: 08/2022
				DRWN: PKT DATE: 08/2022
				CHKD: RPB DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



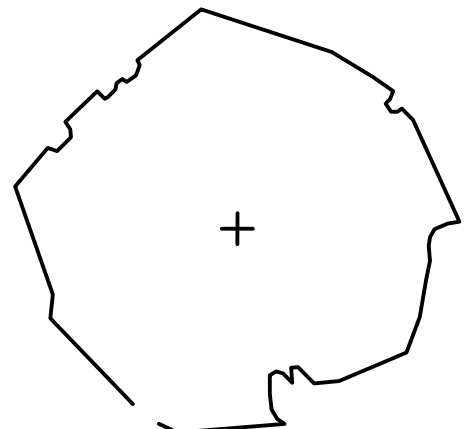
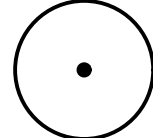
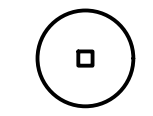
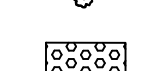
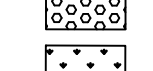
LANDSCAPE PLAN
MARTIN LUTHER KING BLVD.
STA. 100+00 TO STA. 106+24.58

WORKING NUMBER: LS-3	DRAWING NUMBER: 5003
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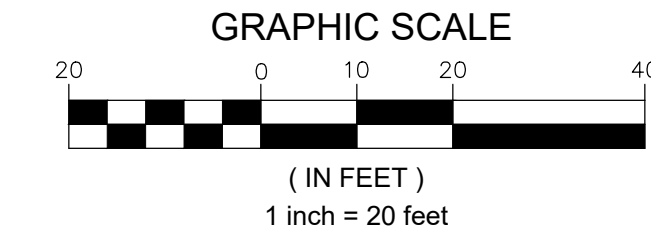
MATCHLINE: STA. 19+00 (SEE WKG. NO. LS-2)

MATCHLINE: STA. 25+50 (SEE WKG. NO. LS-5)

PLANT LEGEND

-  LIVE OAK - 30' O.C. SPACING
-  CRAPE MYRTLE 'WATERMELON RED' - 12' O.C. SPACING
-  TEDDY BEAR MAGNOLIA - 8' O.C. SPACING
-  DRIFT ROSE 'PEACH'
-  JUNIPER 'PARSONS'
-  GIANT LIRIOPE
-  SOLID SOD, HYBRID BERMUDA 'TIFWAY 419'

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



NOTICE TO DRAWING HOLDER
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			DSGN: PKT	DATE: 08/2022
			DRWN: PKT	DATE: 08/2022
			CHKD: RPB	DATE: 08/2022
			QA/QC: MWE	DATE: 08/2022

LANDSCAPE PLAN HALL AVENUE STA. 19+00 TO STA. 25+50	
WORKING NUMBER: LS-4	DRAWING NUMBER: 5004

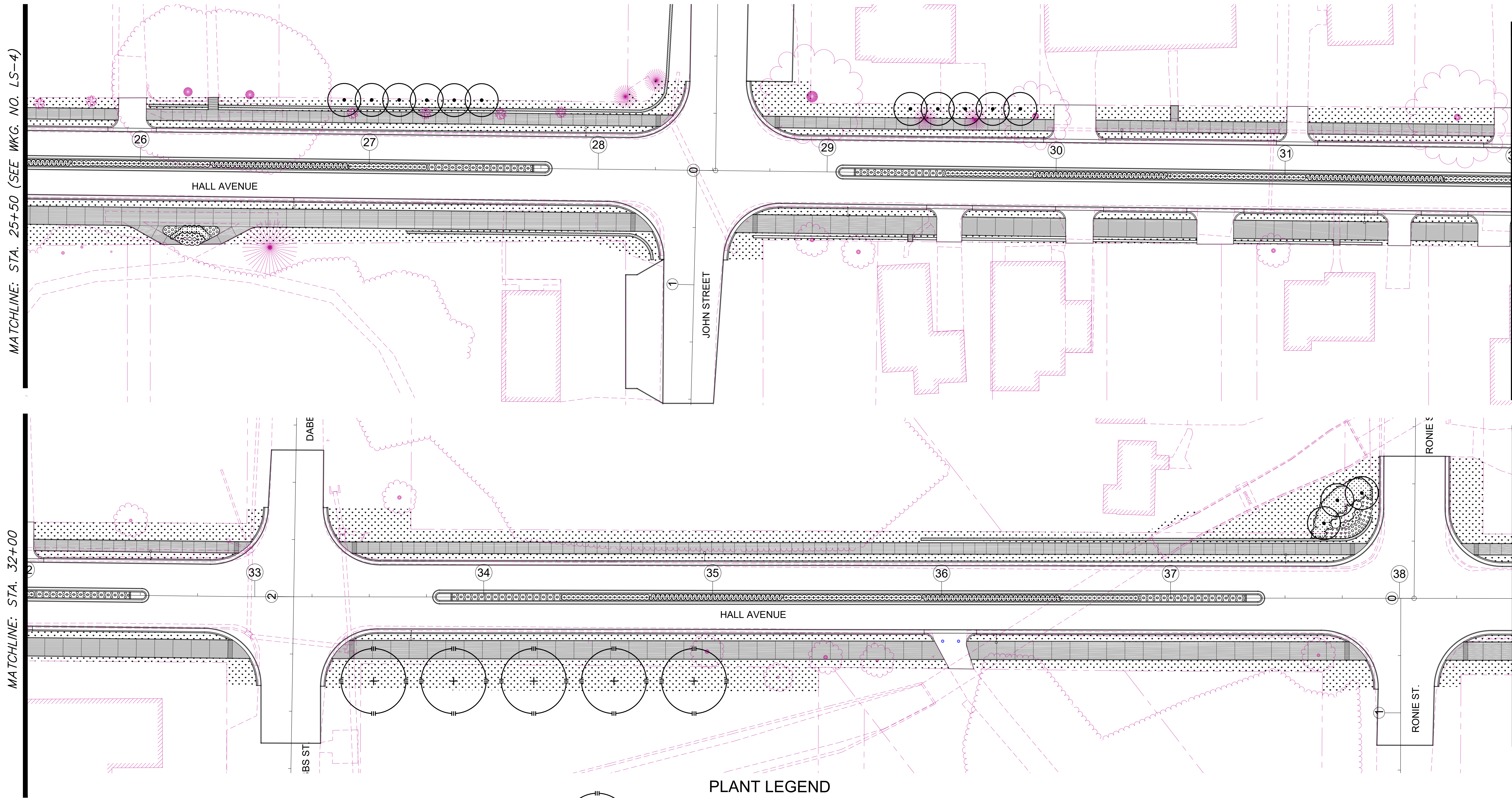
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MATCHLINE: STA. 25+50 (SEE WKG. NO. LS-4)

MATCHLINE: STA. 32+00

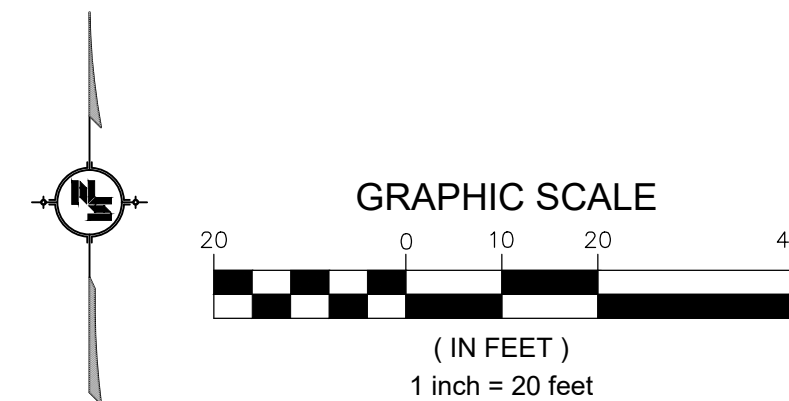
MATCHLINE: STA. 32+00

MATCHLINE: STA. 38+50 (SEE WKG. NO. LS-6)



PLANT LEGEND

- CHINESE ELM - 30' O.C. SPACING
- DWARF YAUPON HOLLY
- DRIFT ROSE 'PEACH'
- JUNIPER 'PARSONS'
- GIANT LIRIOPE
- BLACK EYED SUSAN 'GOLDSTURM'
- SOLID SOD, HYBRID BERMUDA 'TIFWAY 419'
- CRAPE MYRTLE 'WATERMELON RED' 12' O.C. SPACING



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REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	
				N-S PROJECT NO.: NS.16214.000
				FILENAME: 16214_LS.dwg
				SCALE: 1" = 20'
				SURVEYED BY: CLEARPOINT
				DSGN: PKT DATE: 08/2022
				DRWN: PKT DATE: 08/2022
				CHKD: RPB DATE: 08/2022
				QA/QC: MWE DATE: 08/2022

HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



NEEL-SCHAFFER
Solutions you can build upon

LANDSCAPE PLAN
HALL AVENUE
STA. 25+50 TO STA. 38+50

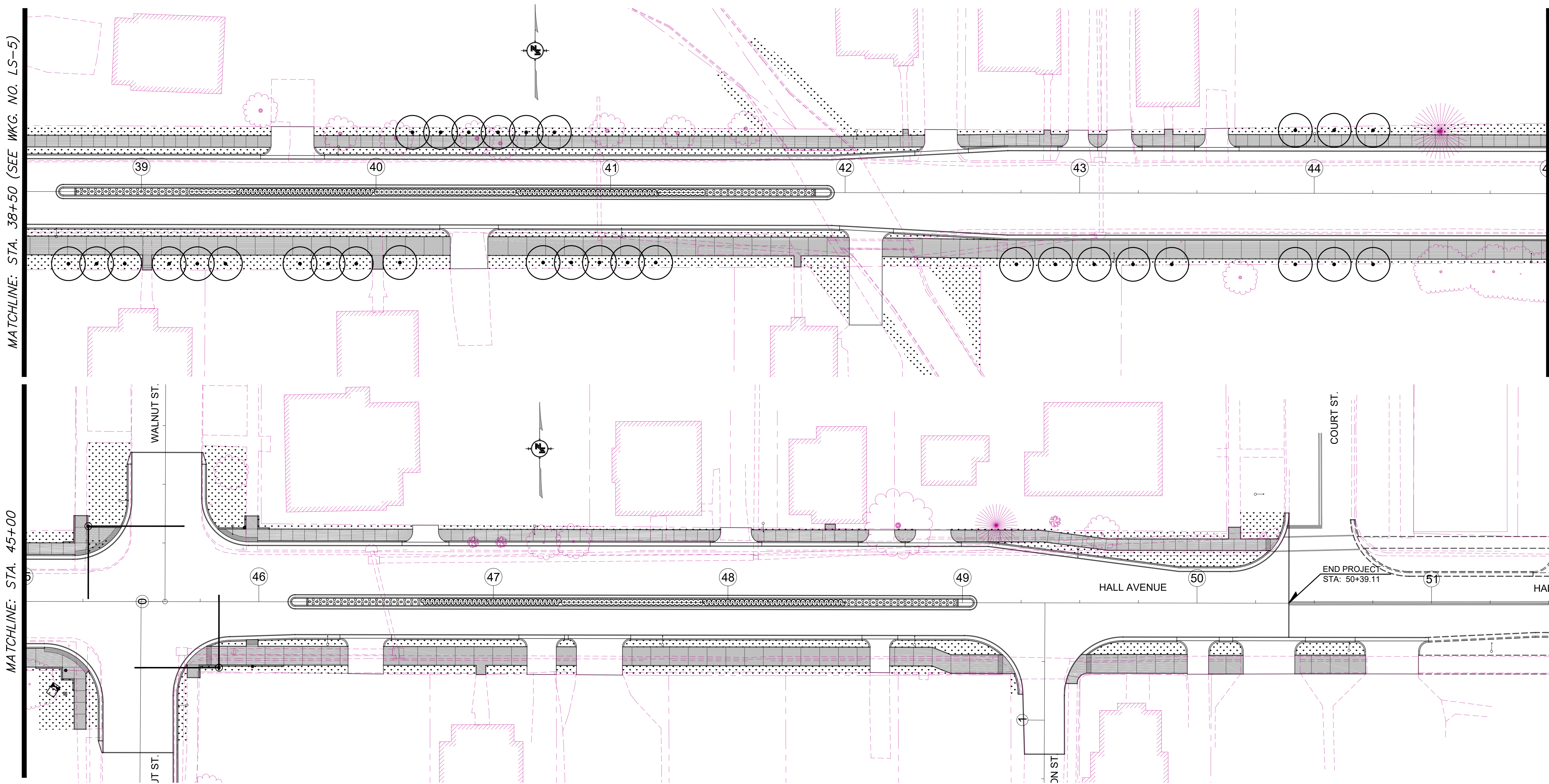
WORKING NUMBER:
LS-5

DRAWING NUMBER:
5005

MATCHLINE: STA. 38+50 (SEE WKG. NO. LS-5)

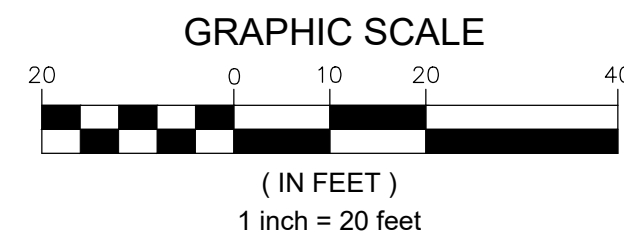
MATCHLINE: STA. 45+00

MATCHLINE: STA. 45+00



PLANT LEGEND

- CRAPE MYRTLE 'WATERMELON RED' - 12' O.C. SPACING
- ⊙ DRIFT ROSE 'PEACH'
- ⊙ JUNIPER 'PARSONS'
- GIANT LIRIOPE
- SOLID SOD, HYBRID BERMUDA 'TIFWAY 419'



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			FILENAME: 16214_LS.dwg	
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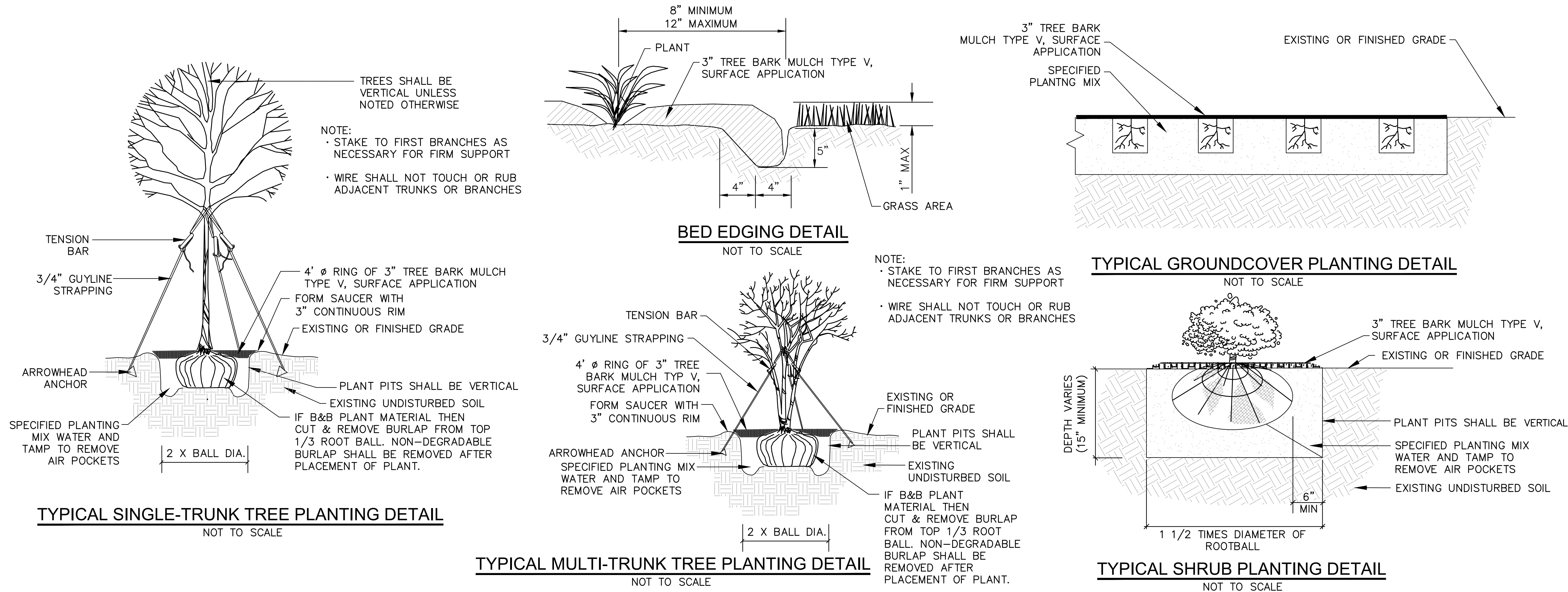
HALL AVENUE - PHASE 2 - ROADWAY
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FBLD-8769-00(001)LPA/108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



LANDSCAPE PLAN
HALL AVENUE
STA. 38+50 TO E.O.P.

WORKING NUMBER:
LS-6

DRAWING NUMBER:
5006



LANDSCAPE QUANTITIES & VEGETATION SCHEDULE								
LANDSCAPE ITEMS		QTY	SIZE/UNIT	SEASONAL APPLICATIONS--DATES & RATES				REQUIREMENTS
				SPRING & SUMMER		FALL & WINTER		
PAY ITEM NO.	ITEMS			RATES	DATES	RATES	DATES	
211--B001	TOPSOIL FOR SLOPE TREATMENT, CONTRACTOR FURNISHED	2,500	CU. YD.	PER CU.YD.	NOT APPLICABLE	PER CU.YD.	NOT APPLICABLE	4" MIN. DEPTH, APPLIED TO AREAS TO RECEIVE SOLID SODDING, CENTIPEDE
211--C001	TOPSOIL FOR PLANT HOLES, CONTRACTOR FURNISHED	385	CU. YD.	PER CU.YD.	NOT APPLICABLE	PER CU.YD.	NOT APPLICABLE	24" IN MEDIAN AREAS (364 CY), 3" DEPTH IN OTHER BED PREP AREAS (8 CY), 0.1 CY MIXED INTO BACKFILL FOR TREES NOT IN BED PREP AREA (13 CY), SOIL BROUGHT TO SITE MUST BE STERILE AND WEED SEED FREE
ABSORBED	STANDARD GROUND PREPARATION	19,500	SQ. YD.	PER SQ.YD.	NOT APPLICABLE	PER SQ.YD.	NOT APPLICABLE	APPLIED TO AREAS TO RECEIVE SOLID SODDING, CENTIPEDE
216--B001	SOLID SODDING, CENTIPEDE	19,500	SQ. YD.	PER SQ.YD.	MARCH 1 TO SEPTEMBER 30	NOT APPLICABLE	NOT APPLICABLE	SOD CERTIFICATE REQUIRED TO BE APPROVED BY ENGINEER IN ADVANCE
219--A001	WATERING	390	K GAL	AS REQUIRED	NOT APPLICABLE	AS REQUIRED	NOT APPLICABLE	CONTRACTOR IS RESPONSIBLE FOR ALL WATERING & MAINTENANCE DURING THE CONSTRUCTION (SEE SPECIFICATIONS)
230--A051	SHRUB PLANTING, GIANT LIRIOPE	500	1 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT
230--A100	SHRUB PLANTING, PARSONS JUNIPER	770	1 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT
230--A055	SHRUB PLANTING, 'GOLDSTRUM' BLACK EYED SUSAN	30	1 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT
230--A042	SHRUB PLANTING, DWARF YAUPON HOLLY	5	3 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT
L00076--230--A500	SHRUB PLANTING, DRIFT ROSE 'PEACH'	300	3 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT
230--B027	TREE PLANTING, CRAPE MYRTLE 'WATERMELON RED'	93	30 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; MULTI--TRUNK (3 OR 5 CANES)/TREE FORM; FULL CANOPY; 6' CLEAR TRUNK
L00076--230--B500	TREE PLANTING, TEDDY BEAR MAGNOLIA	30	15 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; BRANCHED TO GROUND
230--B050	TREE PLANTING, LIVE OAK	6	30 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; SINGLE STRAIGHT TRUNK/TREE FORM; FULL CANOPY; 6' CLEAR TRUNK
230--B032	TREE PLANTING, DRAKE CHINESE ELM	22	30 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; SINGLE STRAIGHT TRUNK/TREE FORM; FULL CANOPY; 6' CLEAR TRUNK
L00076--230--B500	TREE PLANTING, TEDDY BEAR MAGNOLIA	15	45 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; BRANCHED TO GROUND
230--B050	TREE PLANTING, LIVE OAK	3	65 GALLON	EACH	UPON REQUEST BY ENGINEER	EACH	UPON REQUEST BY ENGINEER	FULL & HEALTHY PLANT; SINGLE STRAIGHT TRUNK/TREE FORM; FULL CANOPY; 6' CLEAR TRUNK
230--D001	BED PREPARATION	5,600	SQ. FT.	PER SQ. FT.	NOT APPLICABLE	PER SQ. FT.	NOT APPLICABLE	APPLIED TO AREAS AS NOTED IN THE PLANS TO RECEIVE SHRUB PLANTING, ADD TREE BARK MULCH TYPE III & ROTO--TILL INTO EXISTING SOIL TO A MIN. DEPTH OF 6"
232--A002	FERTILIZER FOR WOODY PLANT MATERIAL, TABLET, 21 GRAM	3	K	PER K	NOT APPLICABLE	PER K	NOT APPLICABLE	4 PER 15/30 GAL (630); 2 PER 3 GAL (610); 1 PER 1 GAL (1,300)
233--A003	TREE BARK MULCH, TYPE III	18	CU. YD.	PER CU.YD.	NOT APPLICABLE	PER CU.YD.	NOT APPLICABLE	0.1 CY FOR EACH TREE NOT IN BED PREP AREA (BACKFILL); TREE BARK MULCH FOR MEDIANS & LANDSCAPE BEDS ABSORBED IN BED PREPARATION PAY ITEM
233--A005	TREE BARK MULCH, TYPE V	18	CU. YD.	PER CU.YD.	NOT APPLICABLE	PER CU.YD.	NOT APPLICABLE	0.1 CY FOR EACH TREE NOT IN BED PREP AREA; ABSORBED IN BED PREP PAY ITEM
ABSORBED	MOISTURE ABSORBANT CRYSTALS	3,000	OZ	AS REQUIRED	UPON REQUEST BY ENGINEER	AS REQUIRED	UPON REQUEST BY ENGINEER	6 OZ PER 30 GAL (744), 2 OZ PER 15 GAL(66); 1 OZ PER 3/1 GAL(1,605); COST ABSORBED IN TREE & SHRUB ITEMS
ABSORBED	SELECTIVE, PRE--EMERGENCE HERBICIDE	25	LB.	AS REQUIRED	UPON REQUEST BY ENGINEER	AS REQUIRED	UPON REQUEST BY ENGINEER	2 GRAM PER SQUARE FEET OF BED PREPARATION AREA (11,200); COST ABSORBED IN BED PREP PAY ITEM
ABSORBED	SOIL TEST	1						REQUIRED TO BE SUBMITTED IN ADVANCE OF ALL LANDSCAPE CONSTRUCTION ITEMS (ABSORBED IN BED PREP)

ALL PLANT MATERIAL SHALL MEET THE MINIMUM STANDARDS FOR SPECIFIED CONTAINER SIZE AS DETERMINED BY THE AMERICAN STANDARD FOR NURSERY STOCK.

WEED CONTROL SCHEDULE (SUGGESTED SPRAY SCHEDULE):

INITIAL APPLICATION -- PRE EMERGENT HERBICIDE REQ'D AT TIME OF PLANTING. (SURFLAND, BARRACADE, SNAPSHOT, OR APPROVED EQUAL) USE AS DIRECTED PER MANUFACTURERS RECOMMENDATIONS

DURATION OF CONTRACTOR GROWTH AND COVERAGE PERIOD -- AS NEEDED SPRAYINGS (EVERY TWO WEEKS MIN.) OF POST EMERGENT HERBICIDE ARE REQUIRED DURING MAINTENANCE PERIOD IF DEEMED NECESSARY BY LANDSCAPE ARCHITECT, AFTER WEED CONTROL ASSESSMENT REVIEW

AS NEEDED SPRAY APPLICATIONS -- (IMAGE, CERTAINTY, GOAL, OR APPROVED EQUAL) USE AS DIRECTED PER MANUFACTURERS RECOMMENDATIONS.

WEED CONTROL NOTES:

- CONTRACTOR TO PERFORM ON SITE WEED CONTROL ASSESSMENTS EVERY TWO WEEKS (AT A MINIMUM) DURING THE DURATION OF THE GROWTH AND COVERAGE PERIOD.
- CONTRACTOR TO SUBMIT FINDINGS OF WEED CONTROL ASSESSMENTS BACK TO LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL.
- IF ASSESSMENT FINDS THE PRESENCE OF UNWANTED WEEDS, CONTRACTOR TO FORMULATE AND SUBMIT SPRAY SCHEDULE TO LANDSCAPE ARCHITECT IN ACCORDANCE WITH SUGGESTED SPRAY SCHEDULE (SEE THIS SHEET).
- CONTRACTOR IS RESPONSIBLE FOR RESEARCHING AND BEING FAMILIAR WITH HERBICIDE PRODUCTS AND POTENTIAL RISKS.
- FOR ADDITIONAL REQUIREMENTS SEE SECTION 230.03.14 WITH REGARDS TO PLANT ESTABLISHMENT
- ALL POST PLANTING WEED CONTROL ACTIVITIES PERFORMED BY CONTRACTOR TO BE ABSORBED INTO OTHER ITEMS.

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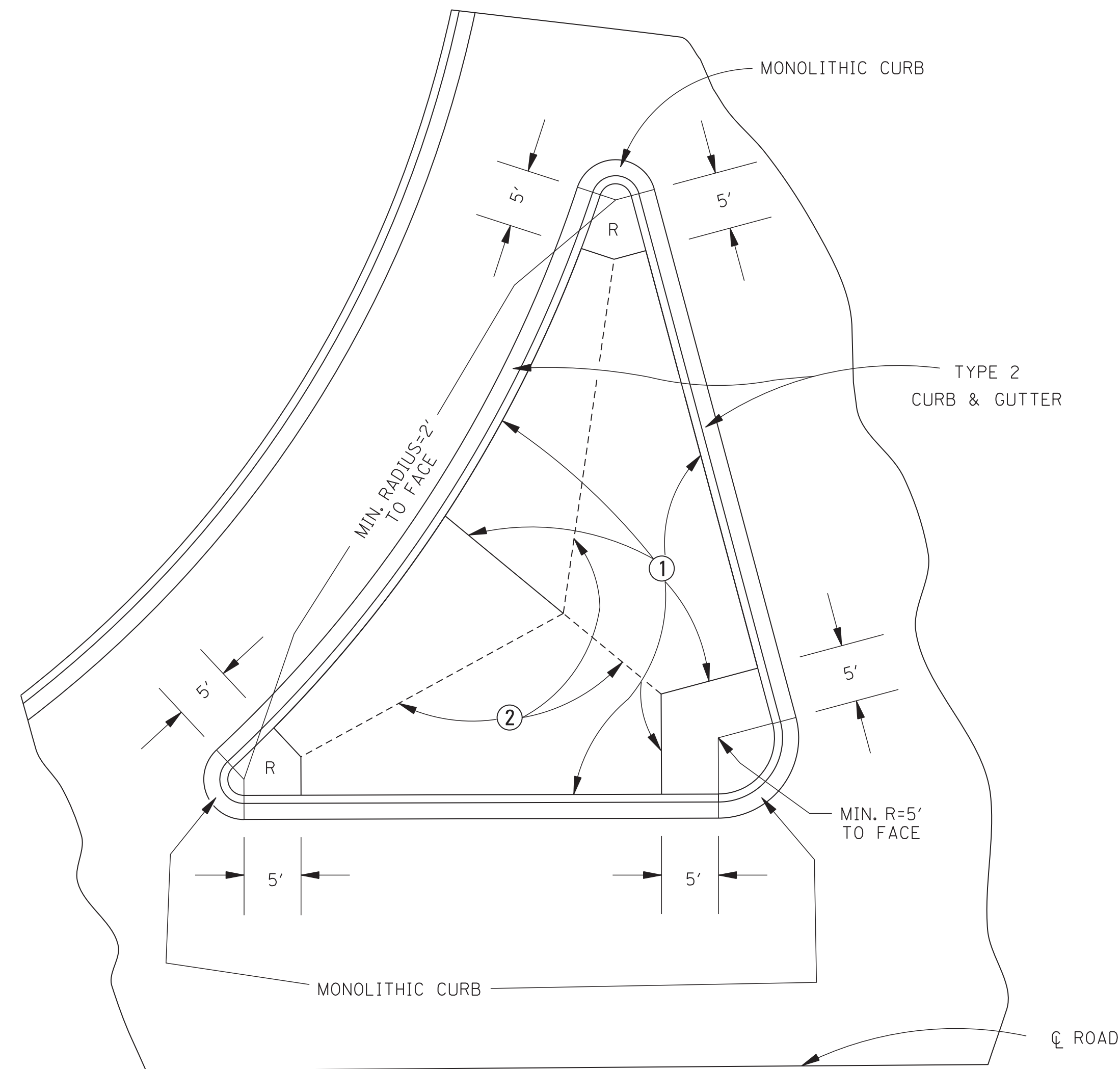
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HALL AVENUE - PHASE 2 - ROADWAY
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

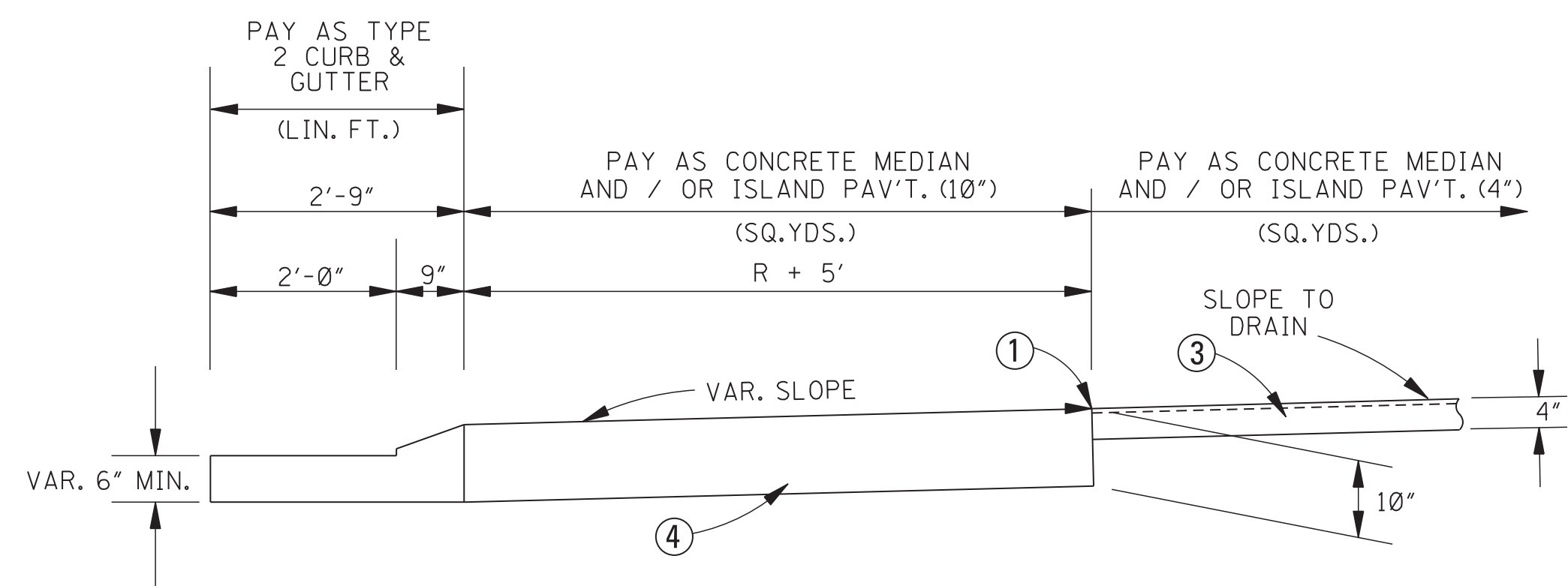
VEGETATION SCHEDULE

WORKING NUMBER:
LS-7

DRAWING NUMBER:
5007



PLAN VIEW OF MONOLITHIC CURB & GUTTER AT ISLAND

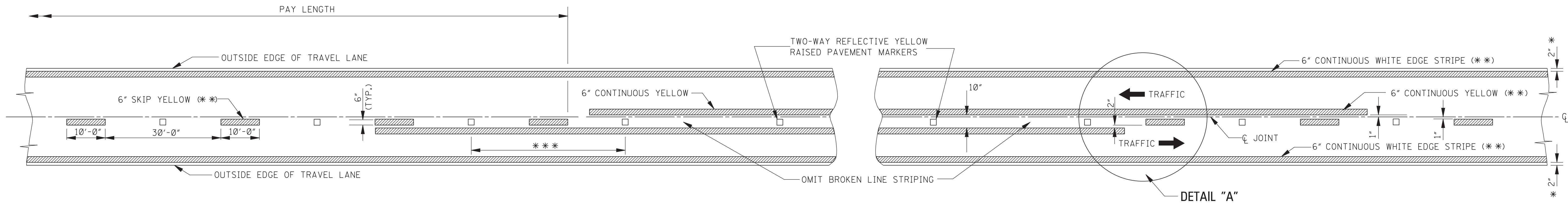


TYPICAL DETAIL OF MONOLITHIC CURB & GUTTER AT ISLAND

- ① 1/2" PREMOLDED EXPANSION JOINT (NOT A PAY ITEM) (SPACED AS PER SHEETS SD-1 OR SD-2)
- ② 1/2" TOOLED CONTRACTION JOINT OR 1/2" PREMOLDED EXPANSION JOINT (NOT A PAY ITEM) (SPACED AS PER SHEETS SD-1 OR SD-2) AS DIRECTED BY THE ENGINEER.
- ③ 4" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT
- ④ 10" CONCRETE MEDIAN AND/OR ISLAND PAVEMENT

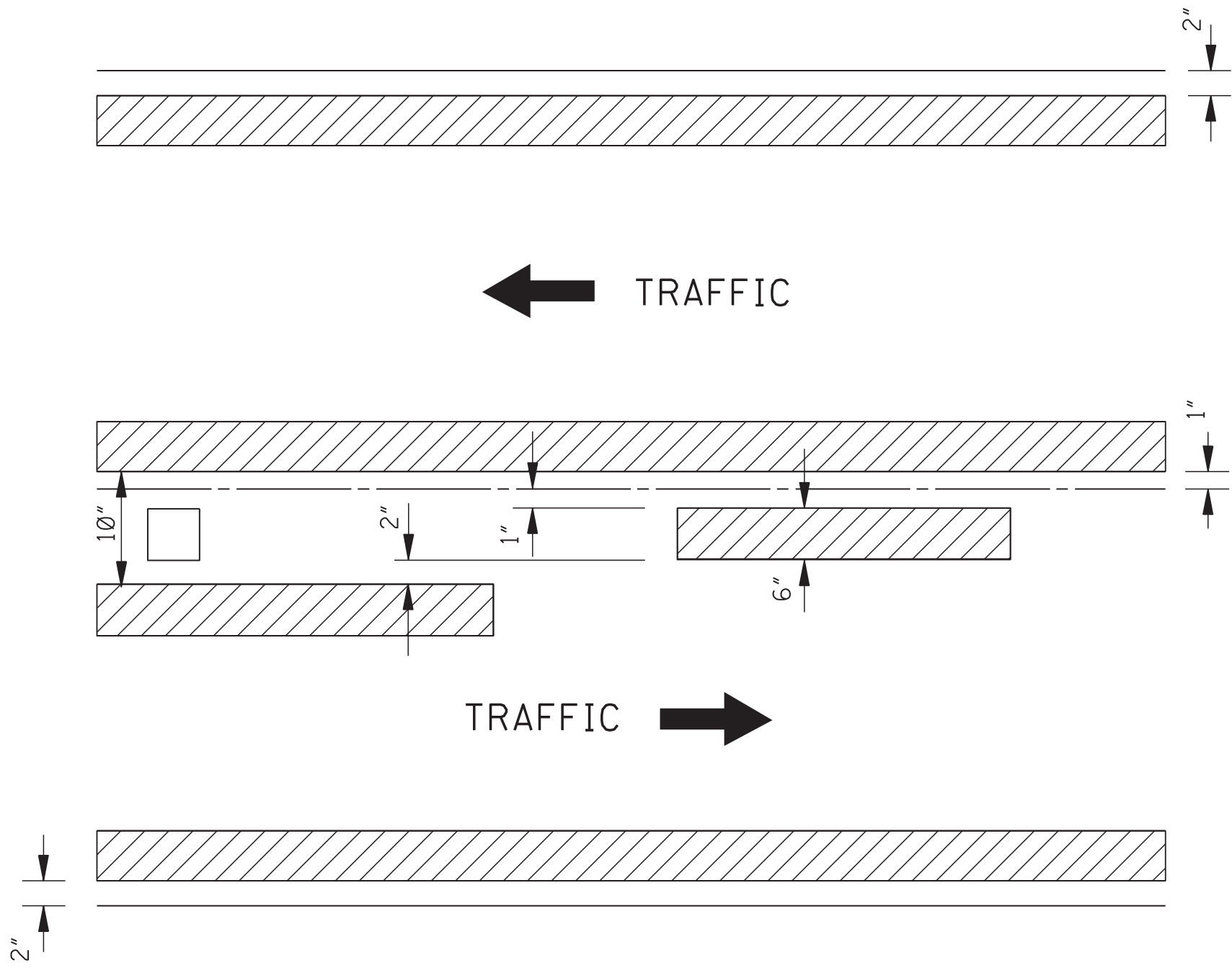
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
				REVISION		
				DATE	ISSUE DATE: AUGUST 01, 2017	
					CONCRETE ISLAND PAVEMENT DETAILS	
					WORKING NUMBER CIP-1	
					SHEET NUMBER 6011	





TWO-WAY TRAFFIC
(ASPHALT OR CONCRETE PAVEMENT)

NOTE: THE CRITERIA FOR NO-PASSING ZONES
CAN BE FOUND IN THE MDOT ROADWAY
DESIGN MANUAL, SECTION 11-1.01.



DETAIL "A"

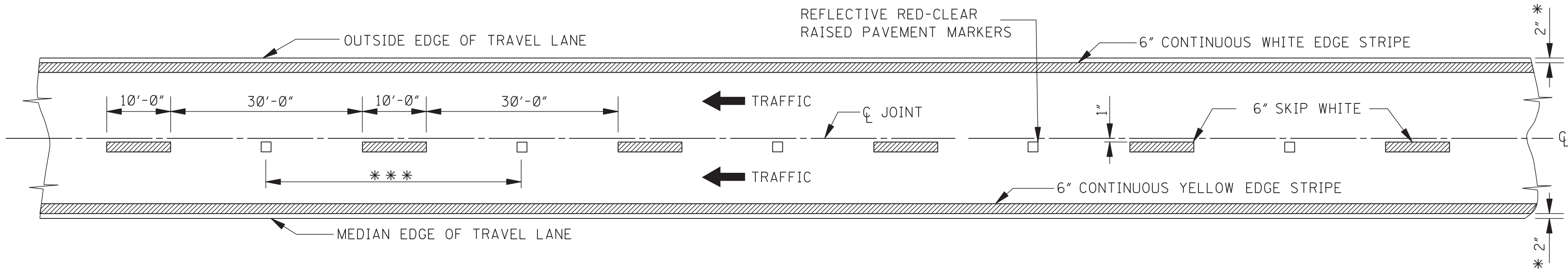
GENERAL NOTES:

- * 1. 2" UNLESS SHOWN ELSEWHERE ON THE PLANS. FOR STRIPING ON RUMBLE STRIP SECTIONS REFER TO WK. SHEETS RS-1, RS-2, AND RS-3.
- ** 2. EDGE STRIPE SHALL BE SAME MATERIAL AS LANE-LINE STRIPE (PAINT OR PLASTIC AS INDICATED IN PAY ITEMS).
- *** 3. SPACING OF REFLECTIVE RAISED PAVEMENT MARKERS IS AS FOLLOWS:

	URBAN AREA (ft-in)	RURAL AREA (ft-in)
TANGENT SECTIONS	40'-0"	80'-0"
HORIZONTAL CURVES	40'-0"	40'-0"
INTERCHANGE LIMITS	40'-0"	+ 40'-0"

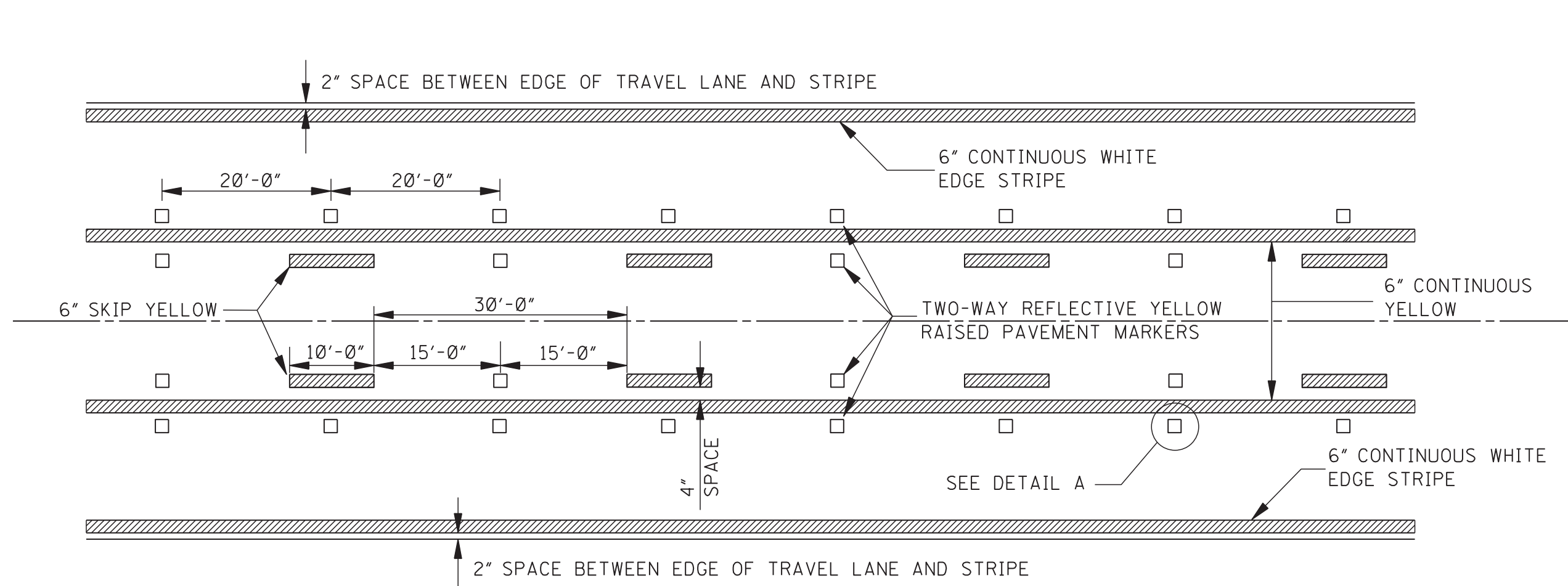
+ NOTE: ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS ON A 40'-0" SPACING WILL BE REQUIRED ON LANE-LINE(S) THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE (IN DIRECTION OF TRAFFIC) OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.

- 4. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS."

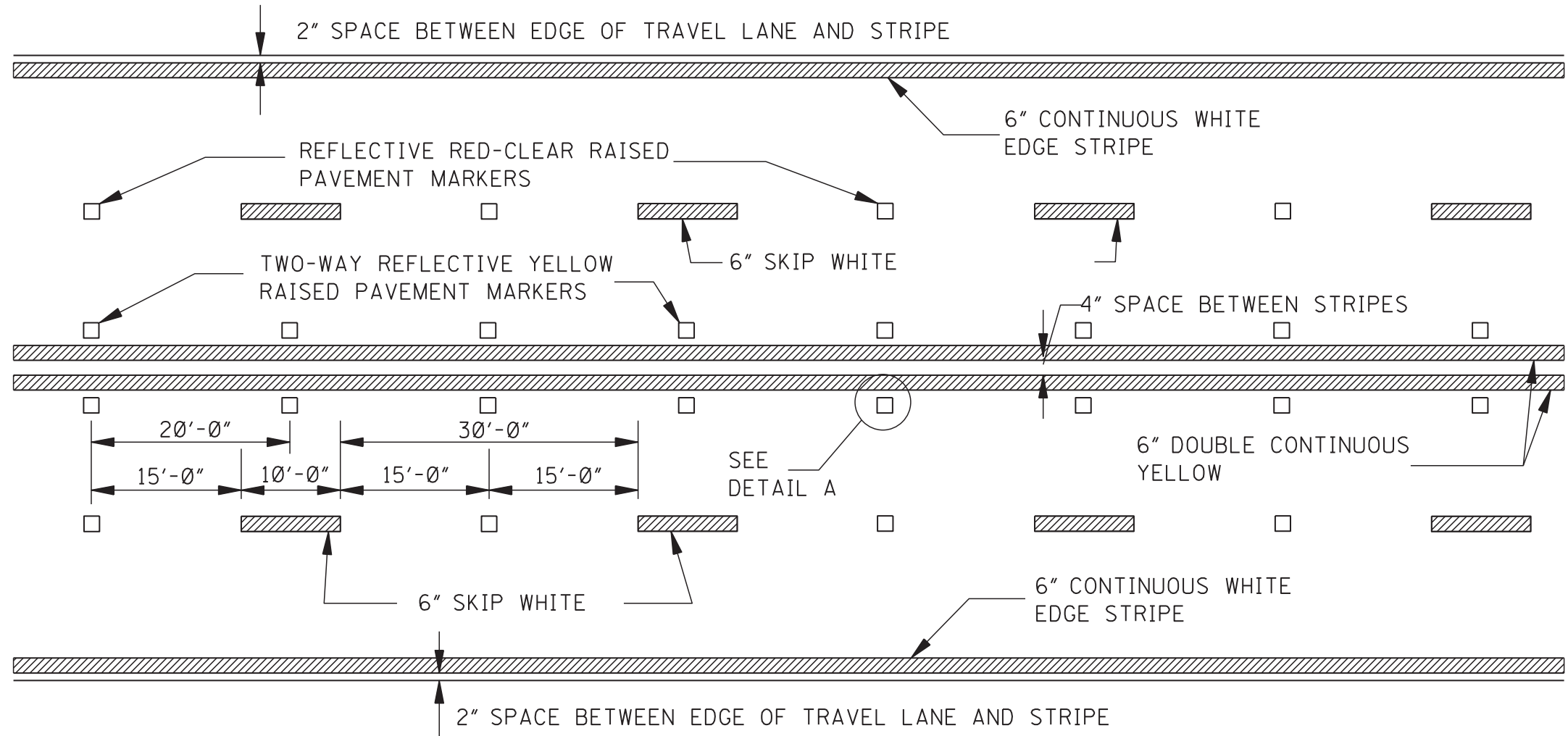


4-LANE WITH ONE-WAY TRAFFIC

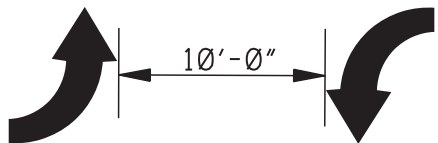
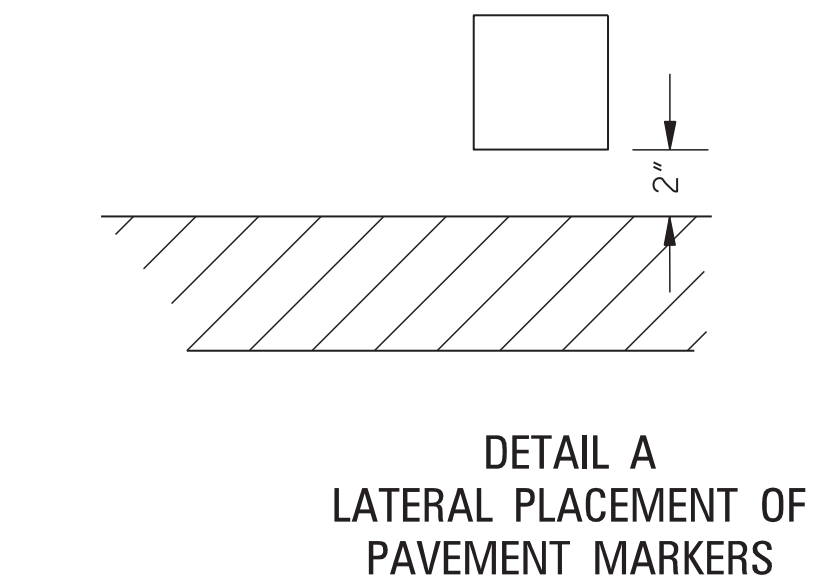
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	PAVEMENT MARKING DETAILS FOR 2-LANE AND 4-LANE DIVIDED ROADWAYS
				DATE	ISSUE DATE: AUGUST 01, 2017
					WORKING NUMBER PM-1
					SHEET NUMBER 6051



TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 3-LANE SECTION

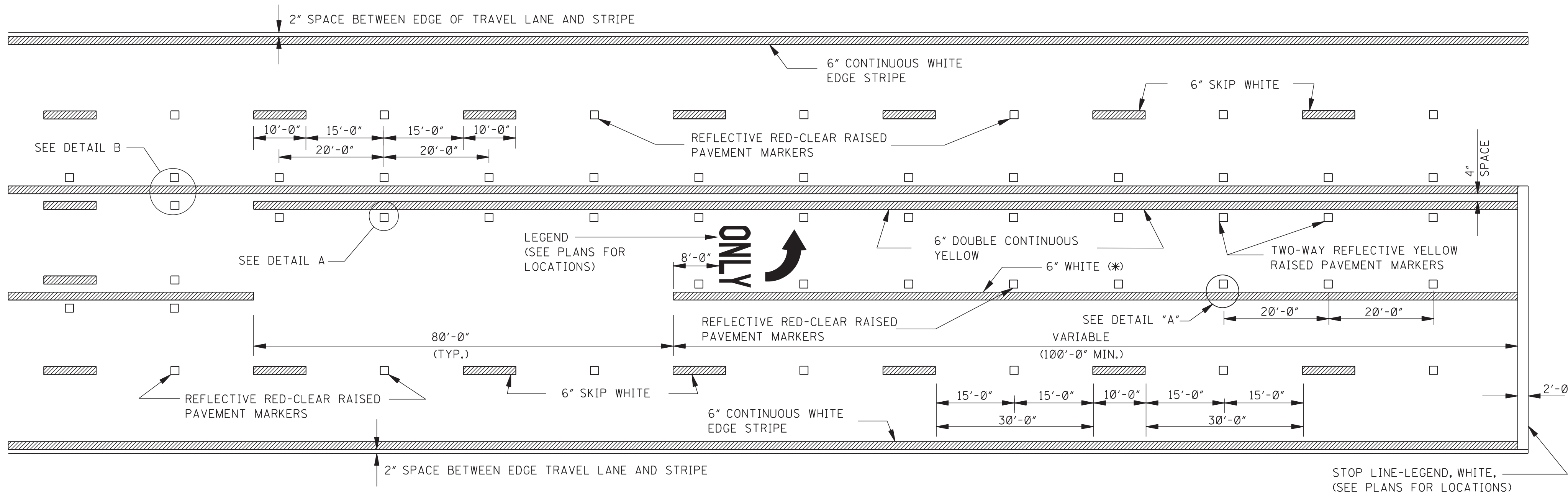


TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 4-LANE SECTION



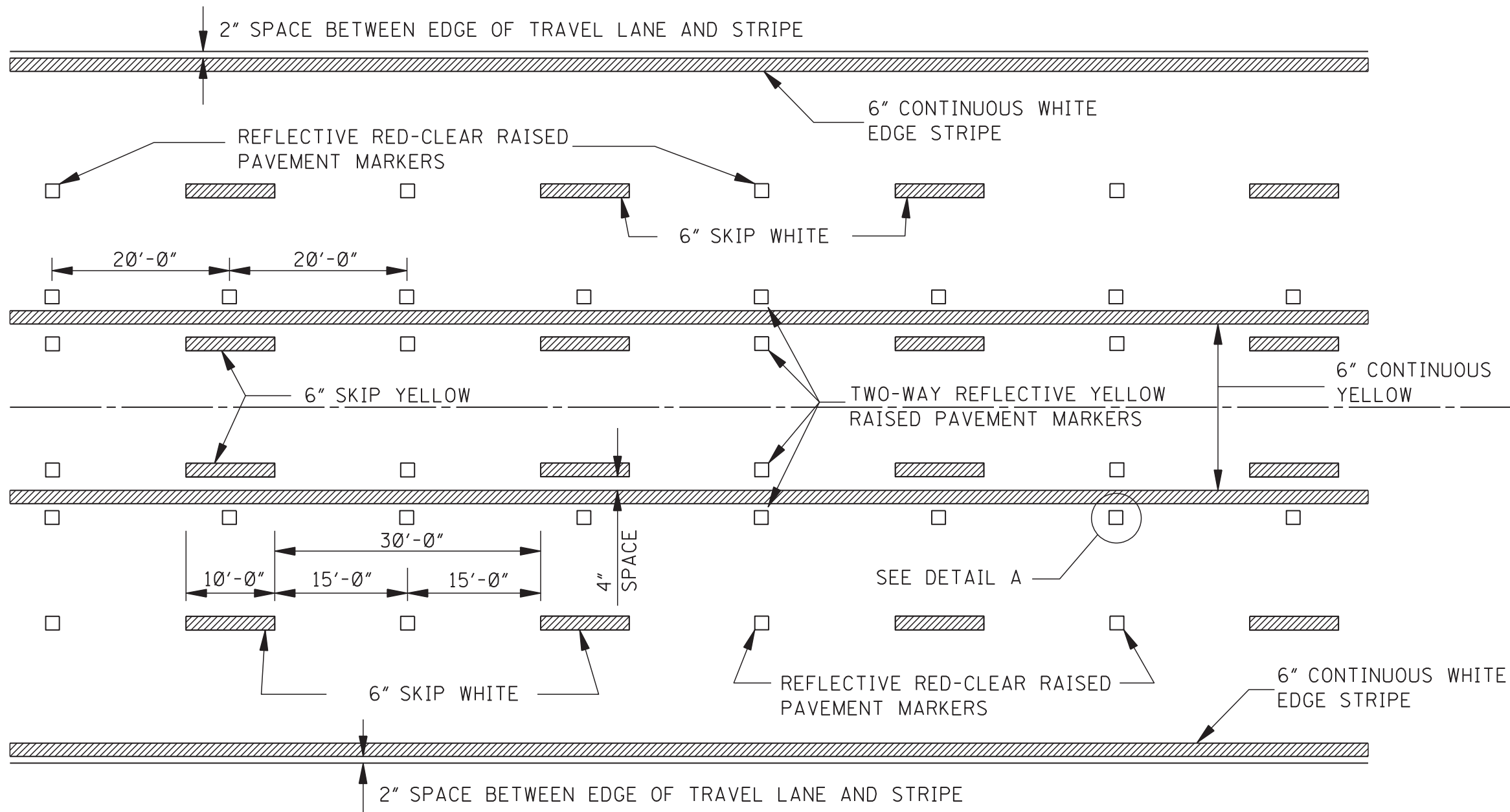
TYPICAL TWO-WAY ARROW INSTALLATION

NOTES: 1. CONSIDER EACH SEGMENT OF CONTINUOUS TWO-WAY LEFT TURN LANE SEPARATELY.
2. IF SEGMENT IS LESS THAN 350', PLACE ONE SET OF ARROWS IN CENTER OF SEGMENT.
3. IF SEGMENT IS GREATER THAN 350', PLACE FIRST SET OF ARROWS 50' TO 100' FROM BEGINNING AND/OR END OF SEGMENT AND SPACE ADDITIONAL SETS OF ARROWS (250' O.C.).

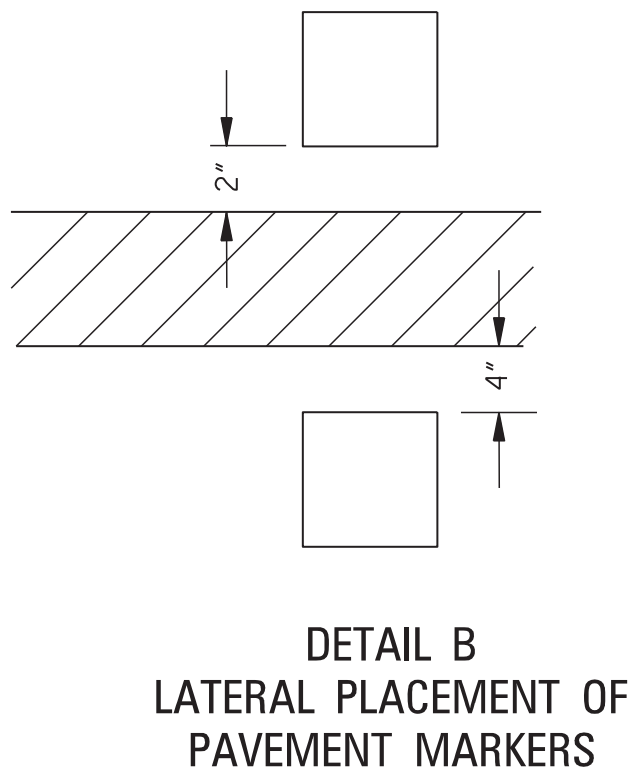
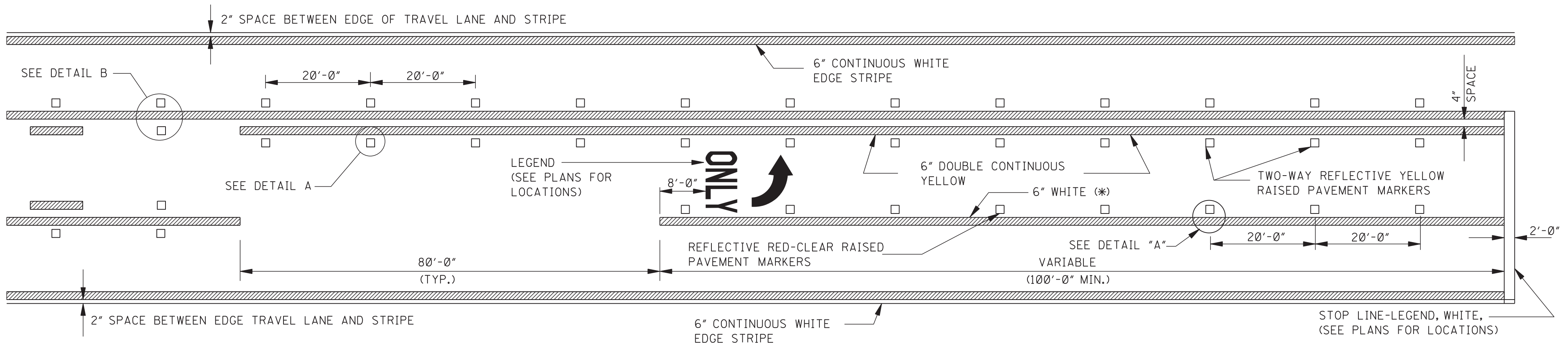


TYPICAL STRIPING AND RAISED PAVEMENT MARKERS AT LEFT TURN LANES

* NOTE: USE DETAIL STRIPING IF LENGTH < 150' AT THIS LOCATION, OTHERWISE USE CONTINUOUS STRIPING,

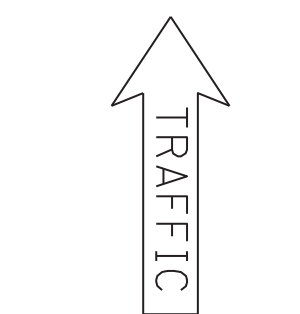
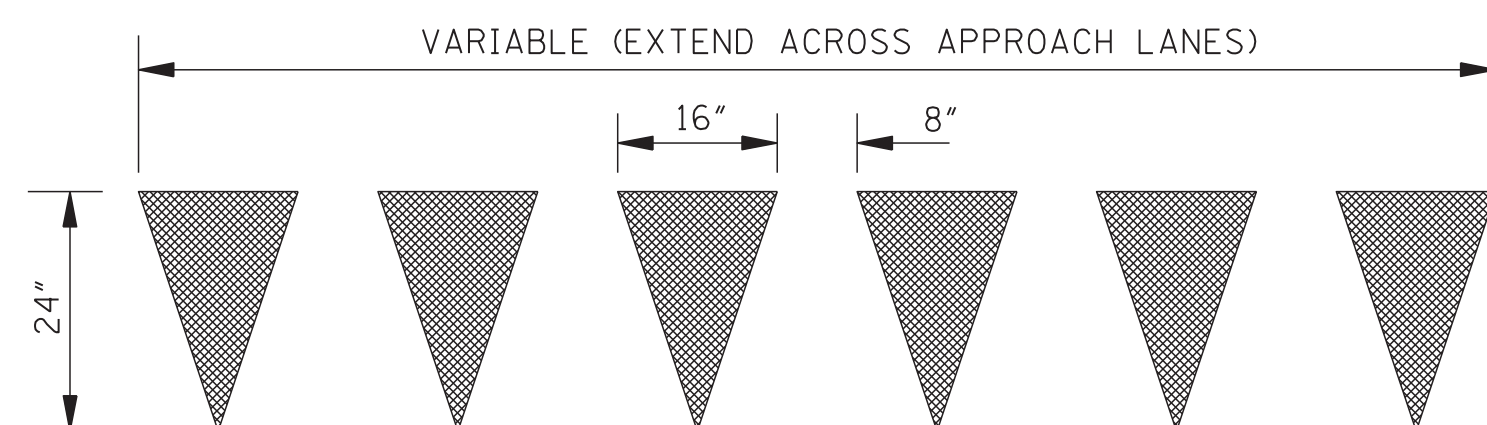
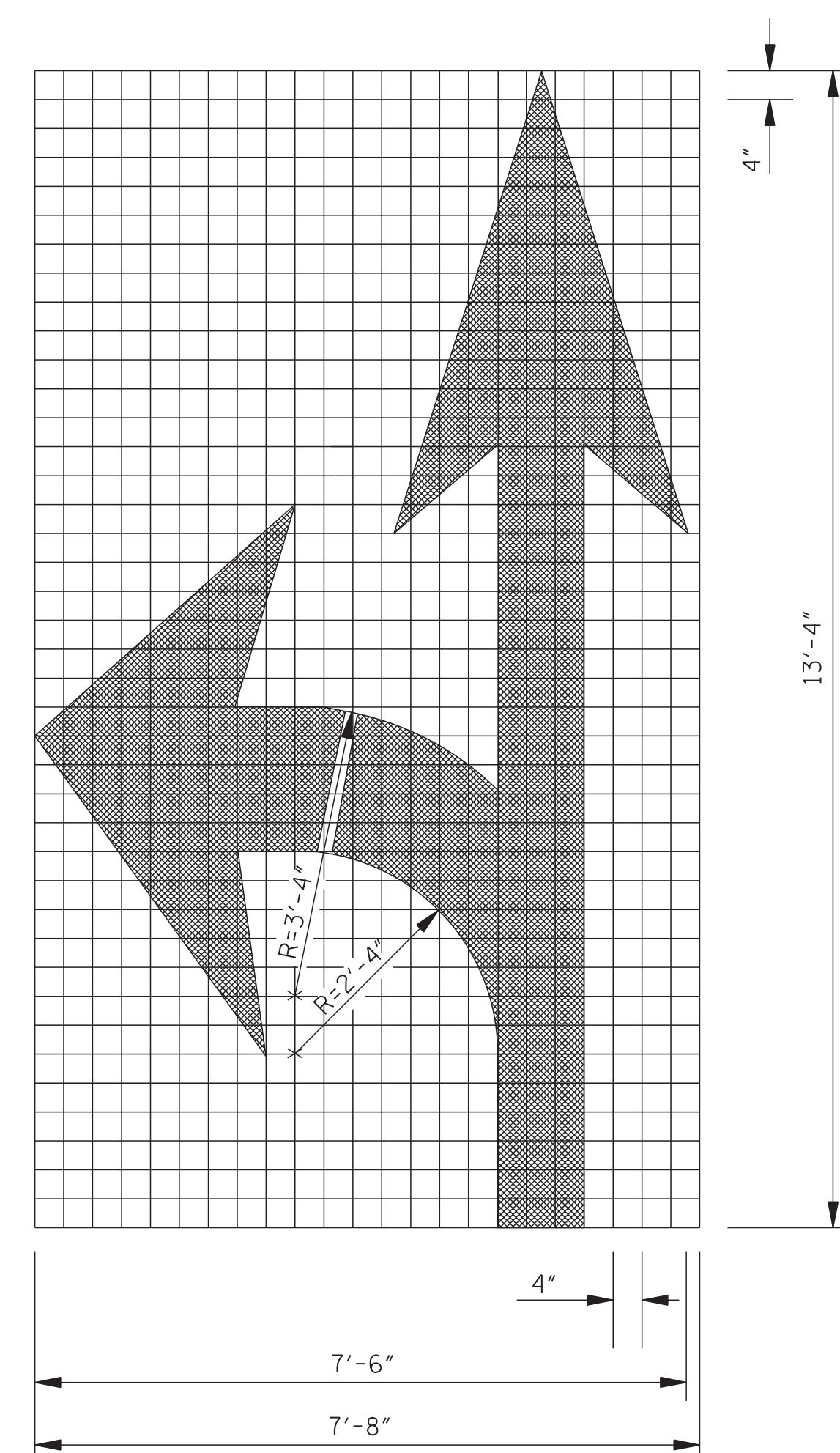
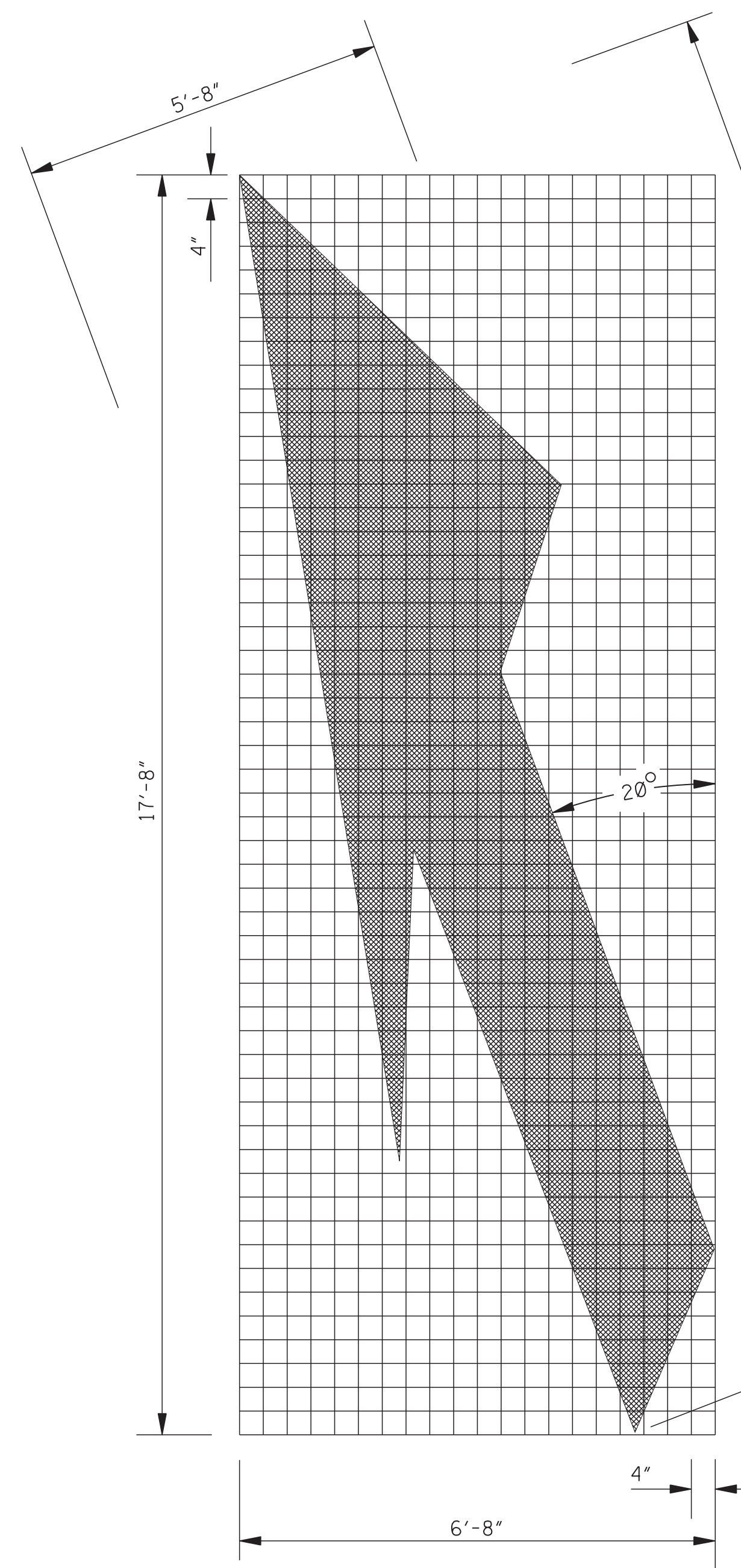
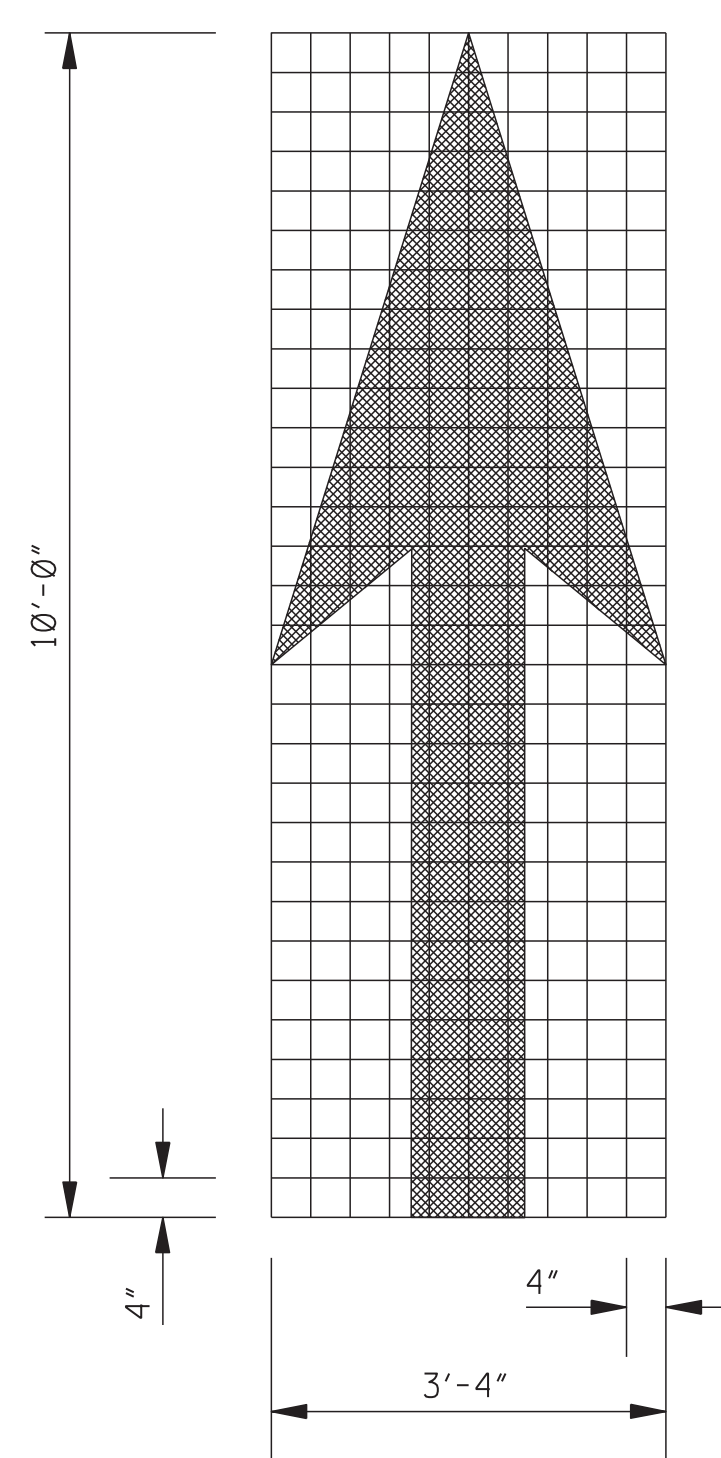
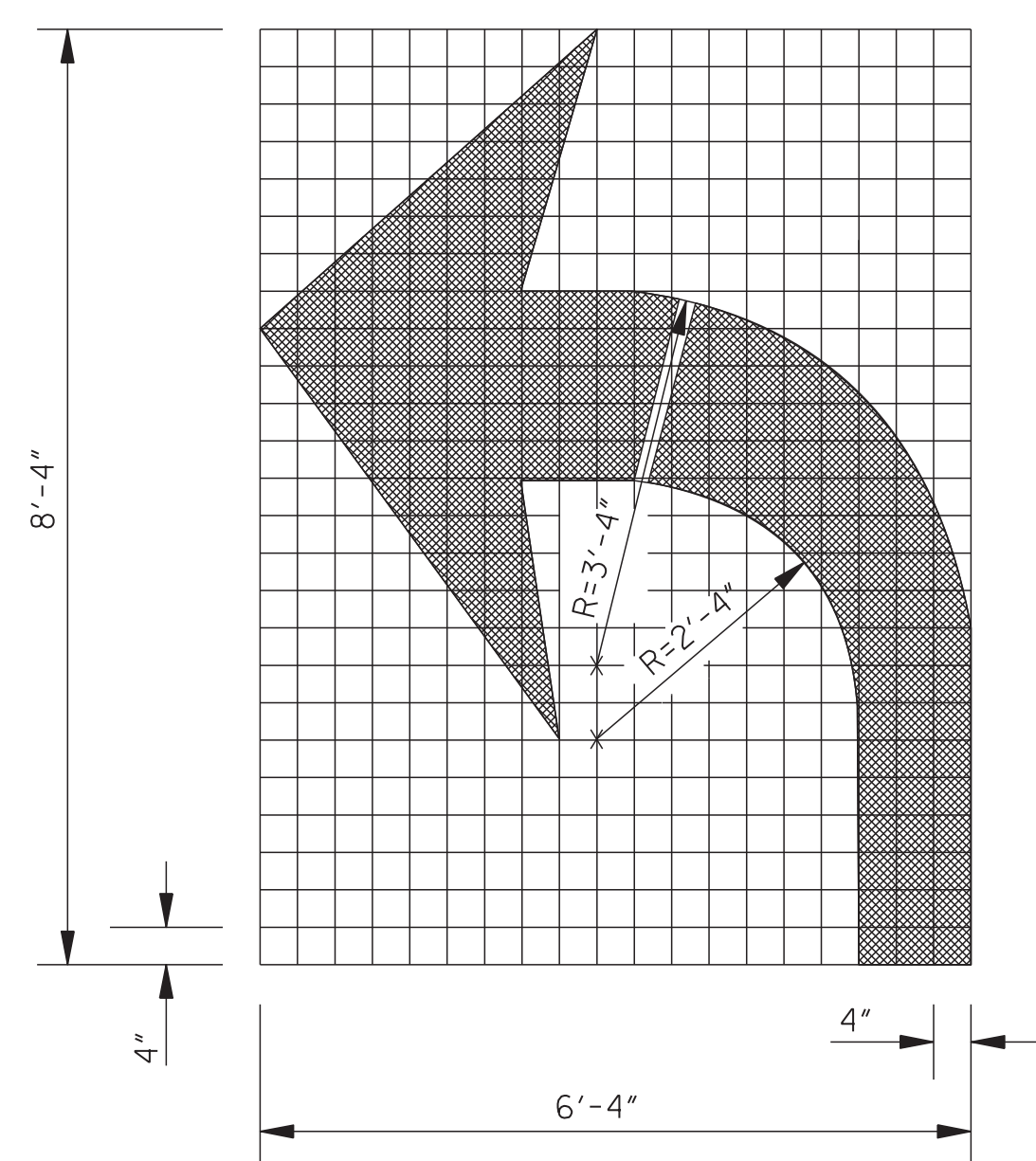
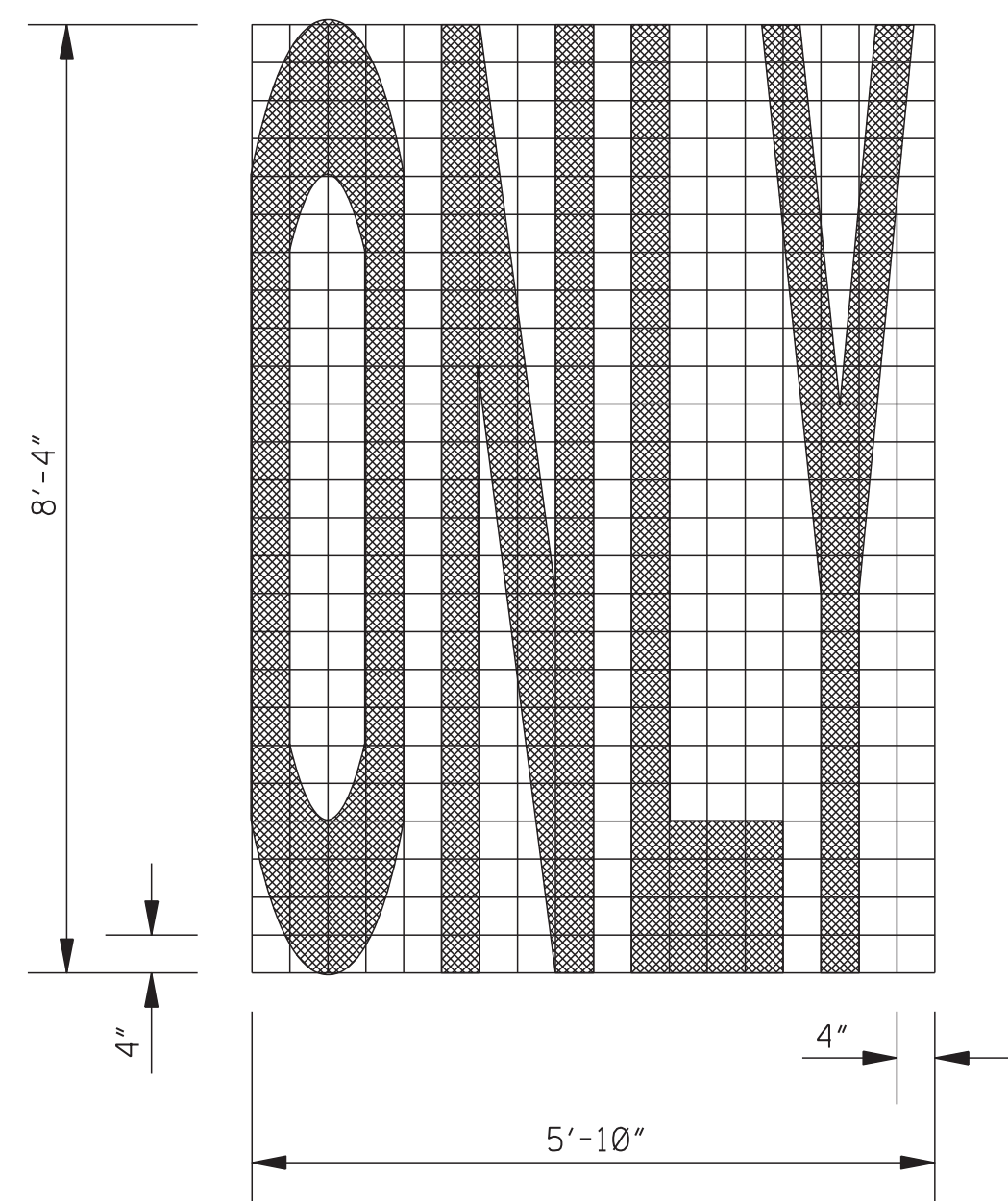


TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 5-LANE SECTION

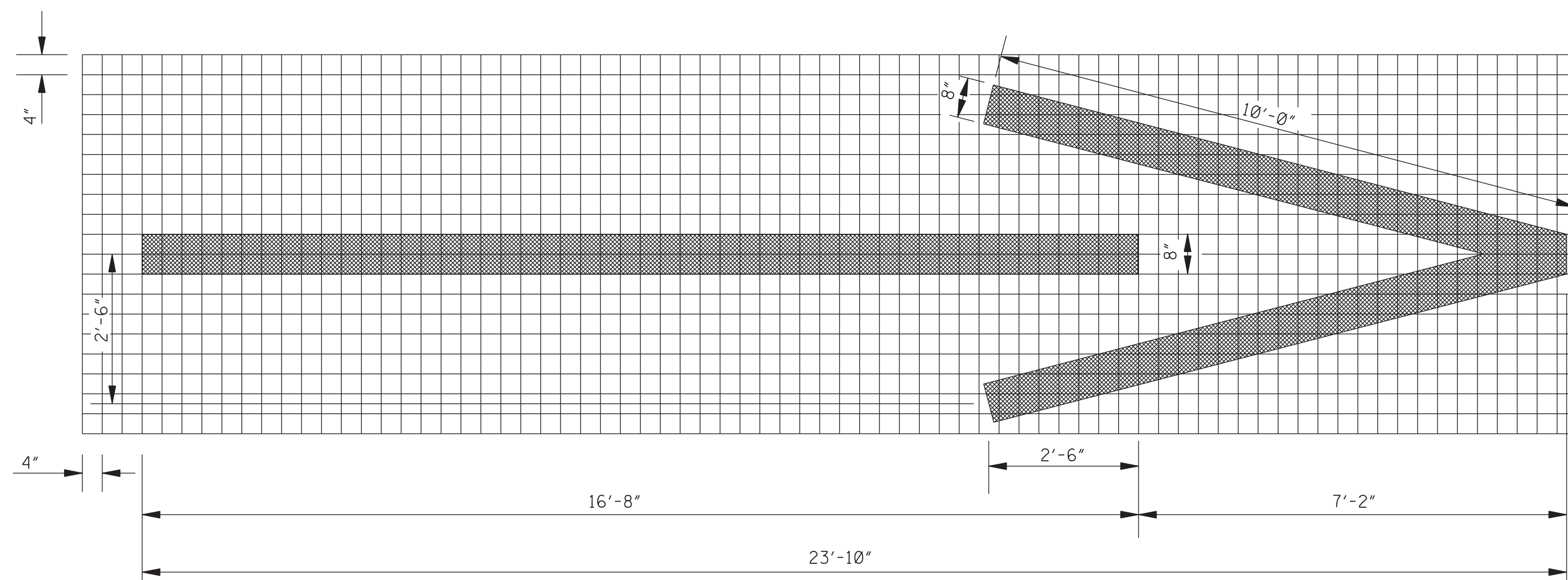


GENERAL NOTE:
1. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE RAISED PAVEMENT MARKERS AS LISTED IN THE MDOT "APPROVED SOURCES OF MATERIALS".

					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
					REVISION	PAVEMENT MARKING DETAILS FOR 3-LANE 4-LANE AND 5-LANE UNDIVIDED ROADWAYS	
					DATE		
					ISSUE DATE: _____ AUGUST 01, 2017 _____		 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER PM-2 SHEET NUMBER 6052



YIELD LINE



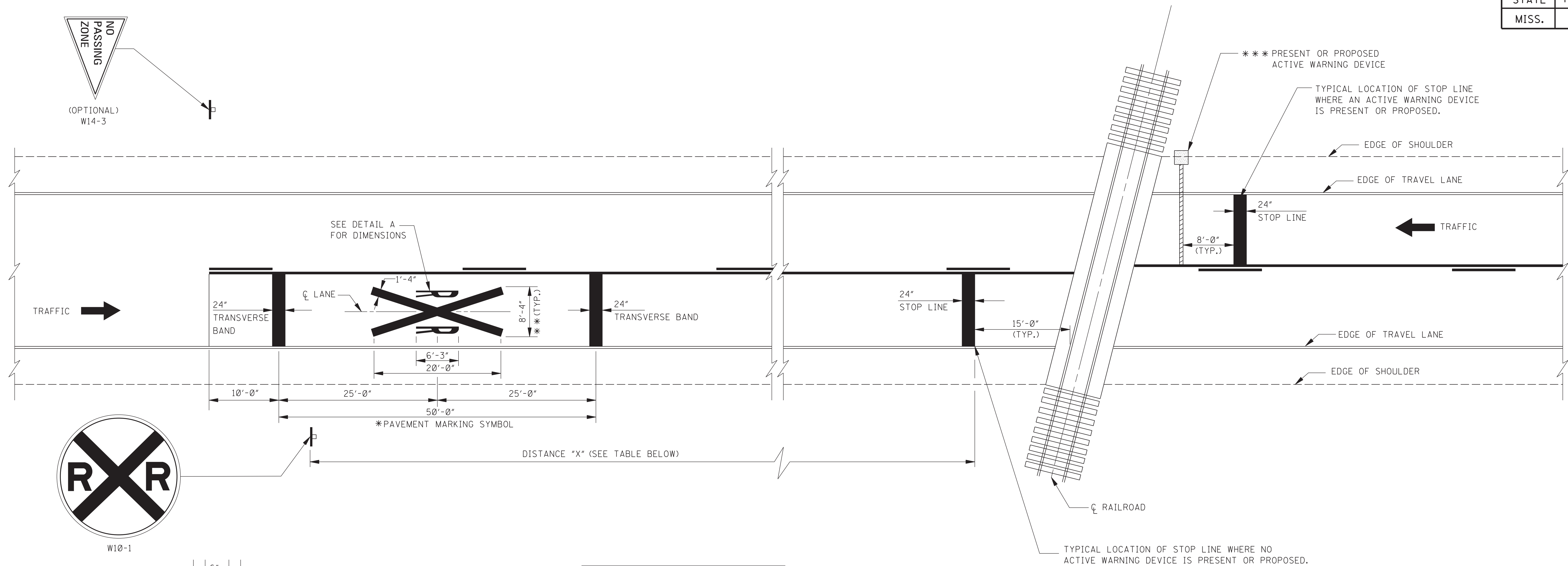
1-WAY ARROW

- GENERAL NOTES:
1. TWO HORIZONTAL GAPS (CAUSED BY TEMPLATE CONNECTORS) OF 1/2" OR LESS AND EXTENDING THE FULL WIDTH ARE PERMITTED IN EACH LETTER.
 2. FOR OTHER DETAILS, SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
 3. DIMENSIONS OF THE YIELD LINE MAY VARY WITH APPROVAL OF THE ENGINEER. SEE MUTCD, LATEST EDITION, FOR ALLOWABLE DIMENSIONS.
 4. PAY QUANTITIES FOR PAVEMENT MARKING LEGENDS ARE AS FOLLOWS:

PAY QUANTITIES	
LEGEND/SYMBOL	AREA (ft ²)
ONLY	22.0
TURN ARROW	16.4
THRU ARROW	12.3
COMB. ARROW	27.5
1-WAY ARROW	24.3
LANE REDUCTION ARROW	40.0

	BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
		ROADWAY DESIGN DIVISION	
		STANDARD PLAN	
	REVISION		
	DATE		

**PAVEMENT MARKING
LEGEND DETAILS**



DETAIL A
STANDARD "R" PAVEMENT MARKING
FOR R X R SYMBOL

ADVANCE WARNING SIGN PLACEMENT DISTANCE	
POSTED SPEED (mph)	① DISTANCE "X" (ft)
20	100
25	100
30	100
35	100
40	125
45	175
50	250
55	325
60	400
65	475

NOTE:
① DISTANCE "X" MAY BE ADJUSTED IF PROHIBITIVE PHYSICAL CONDITIONS EXIST AT THE DESIGNATED DISTANCE.

- GENERAL NOTES:
- *1. A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1).
 - *2. WIDTH OF R X R SYMBOL MAY VARY ACCORDING TO LANE WIDTH. HOWEVER, ON MULTI-LANE ROADS, THE TRANSVERSE BANDS AND STOP LINE SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
 3. R X R SYMBOL (63.0 ± 2), TRANSVERSE BANDS AND STOP LINE SHALL BE PAID FOR AS LEGEND, WHITE.
 - ***4. REFER TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" FOR LOCATION OF PROPOSED WARNING DEVICES AT RAILROAD-HIGHWAY GRADE CROSSINGS.

					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
					REVISION	TYPICAL PLACEMENT OF WARNING SIGNS AND PAVEMENT MARKINGS AT RAILROAD HIGHWAY GRADE CROSSINGS	
					DATE	ISSUE DATE: AUGUST 01, 2017	

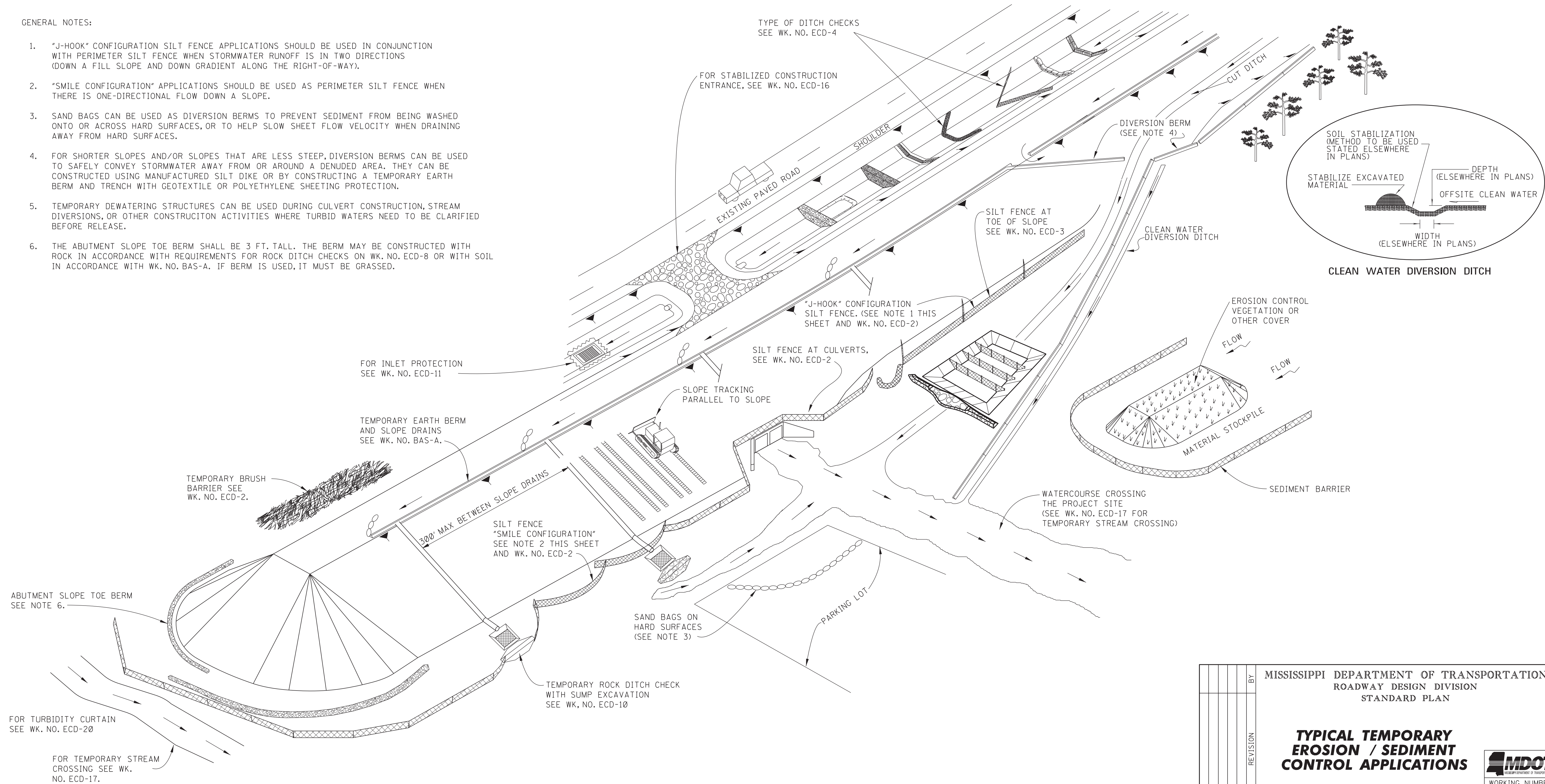


WORKING NUMBER
PM-7

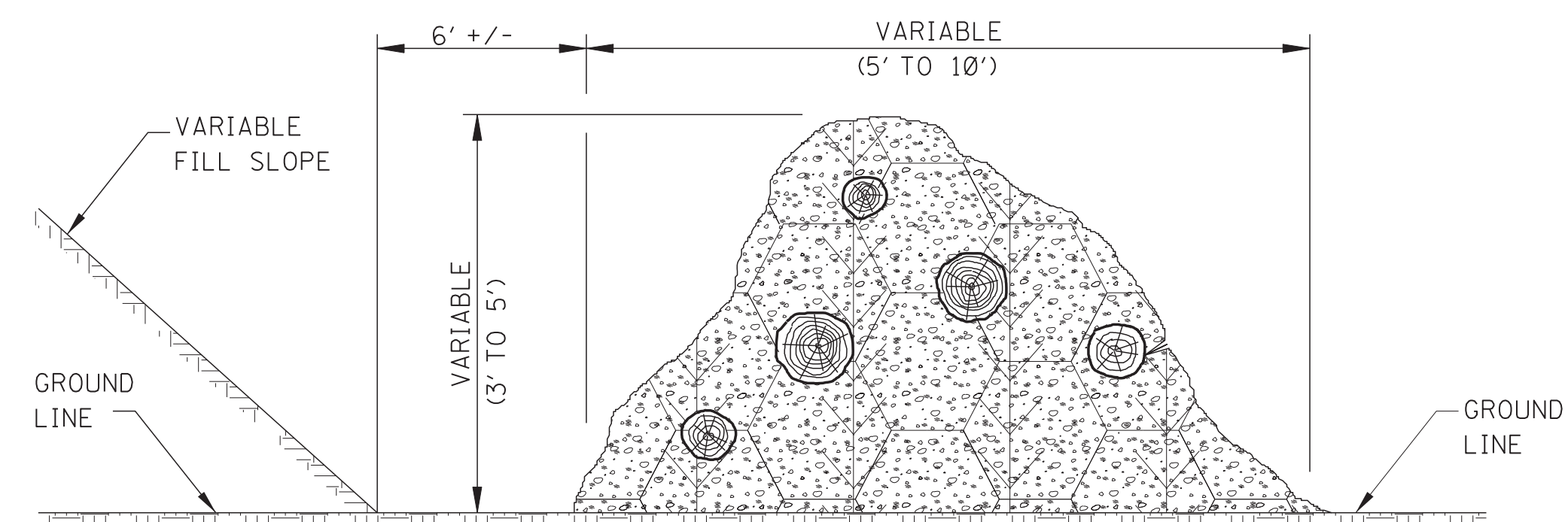
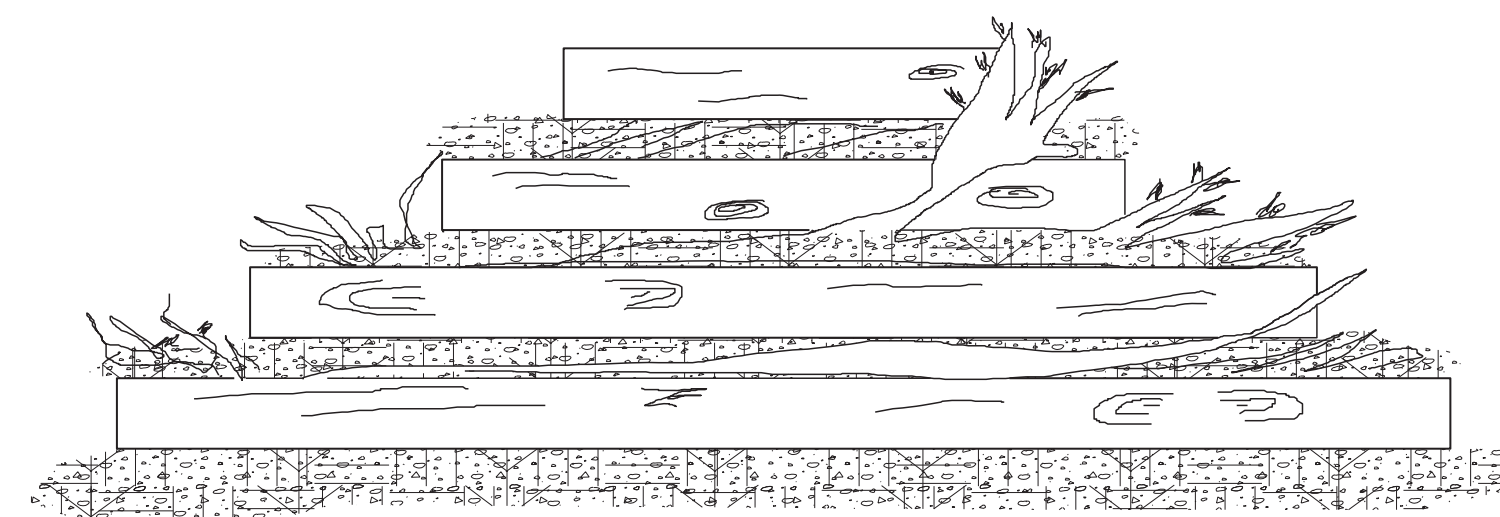
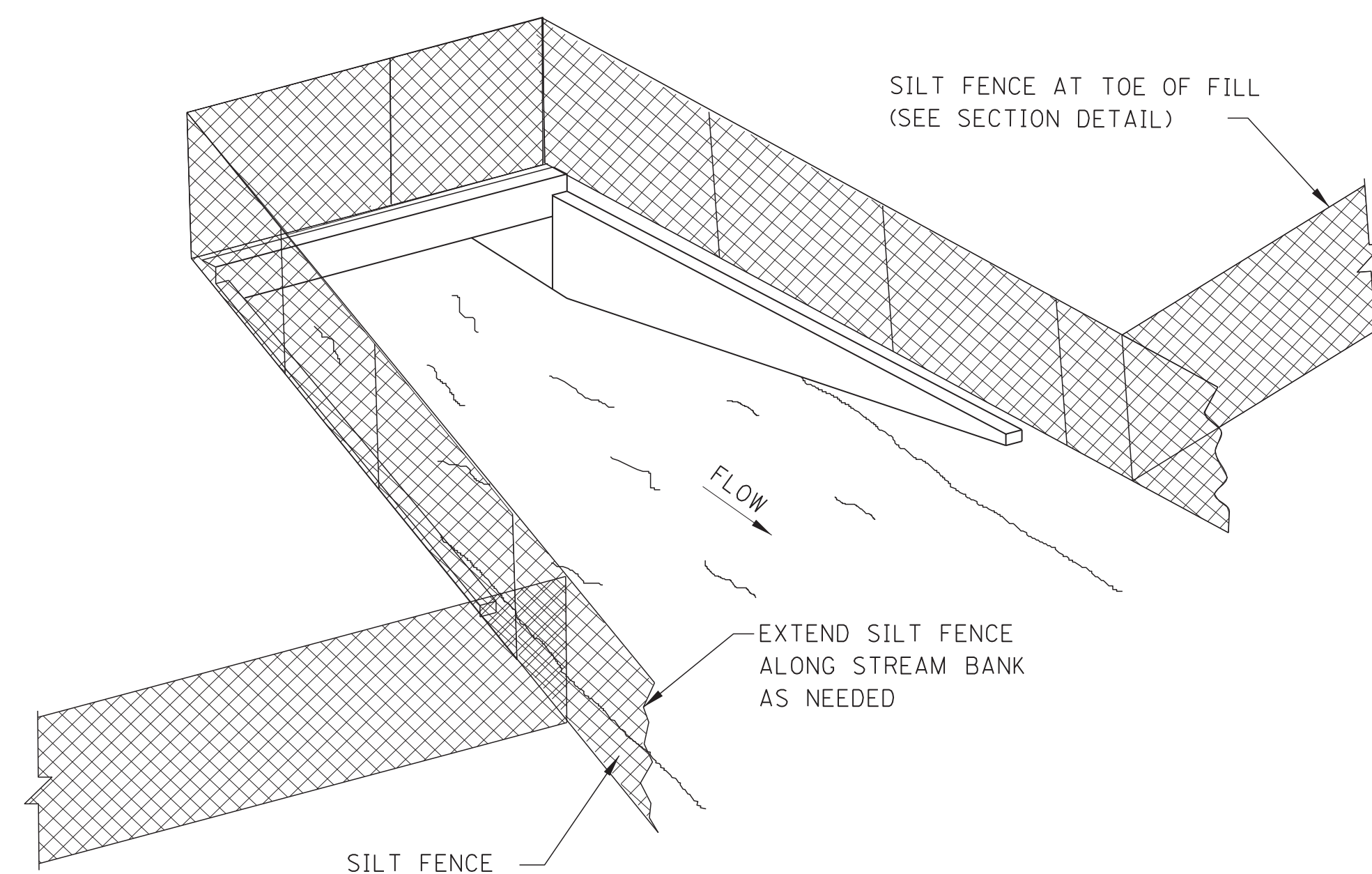
SHEET NUMBER
6057

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.

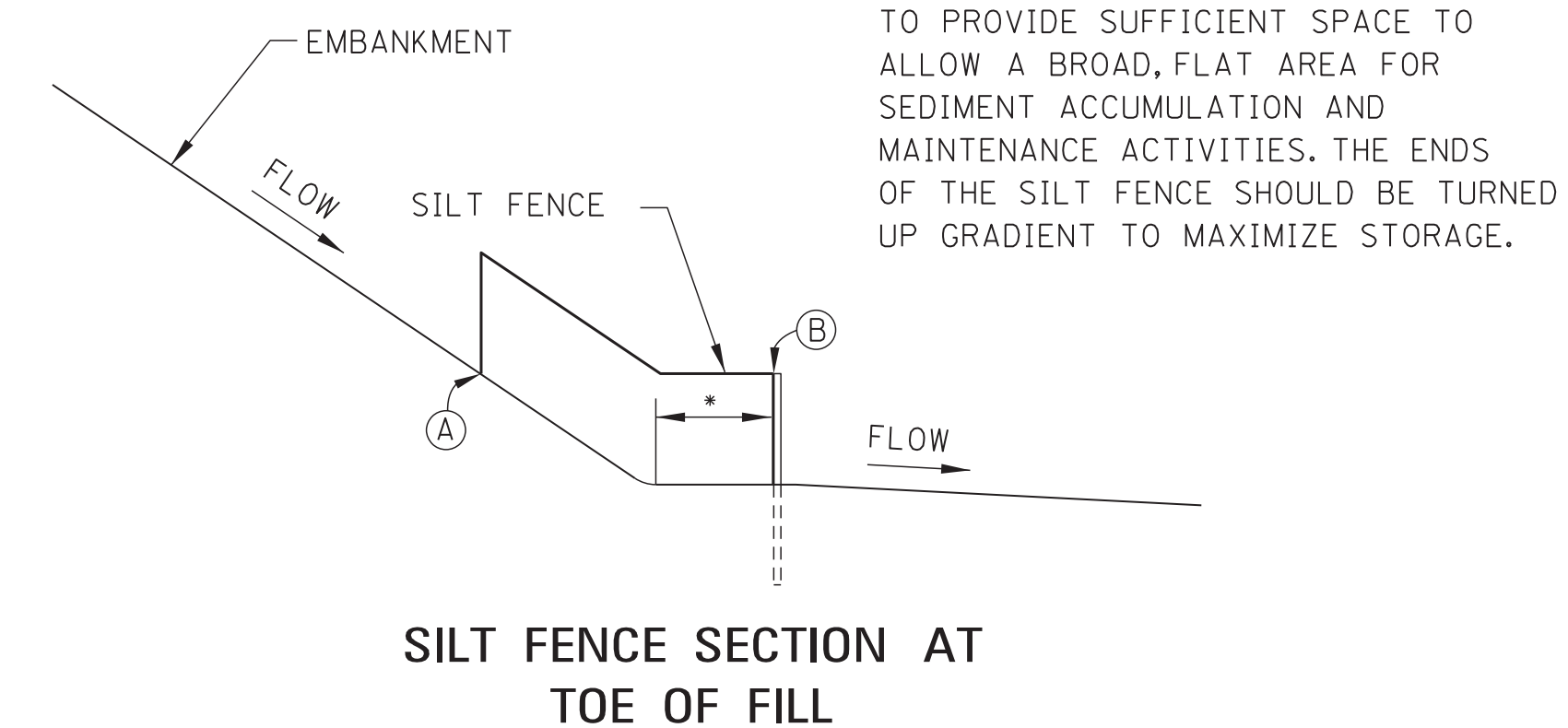
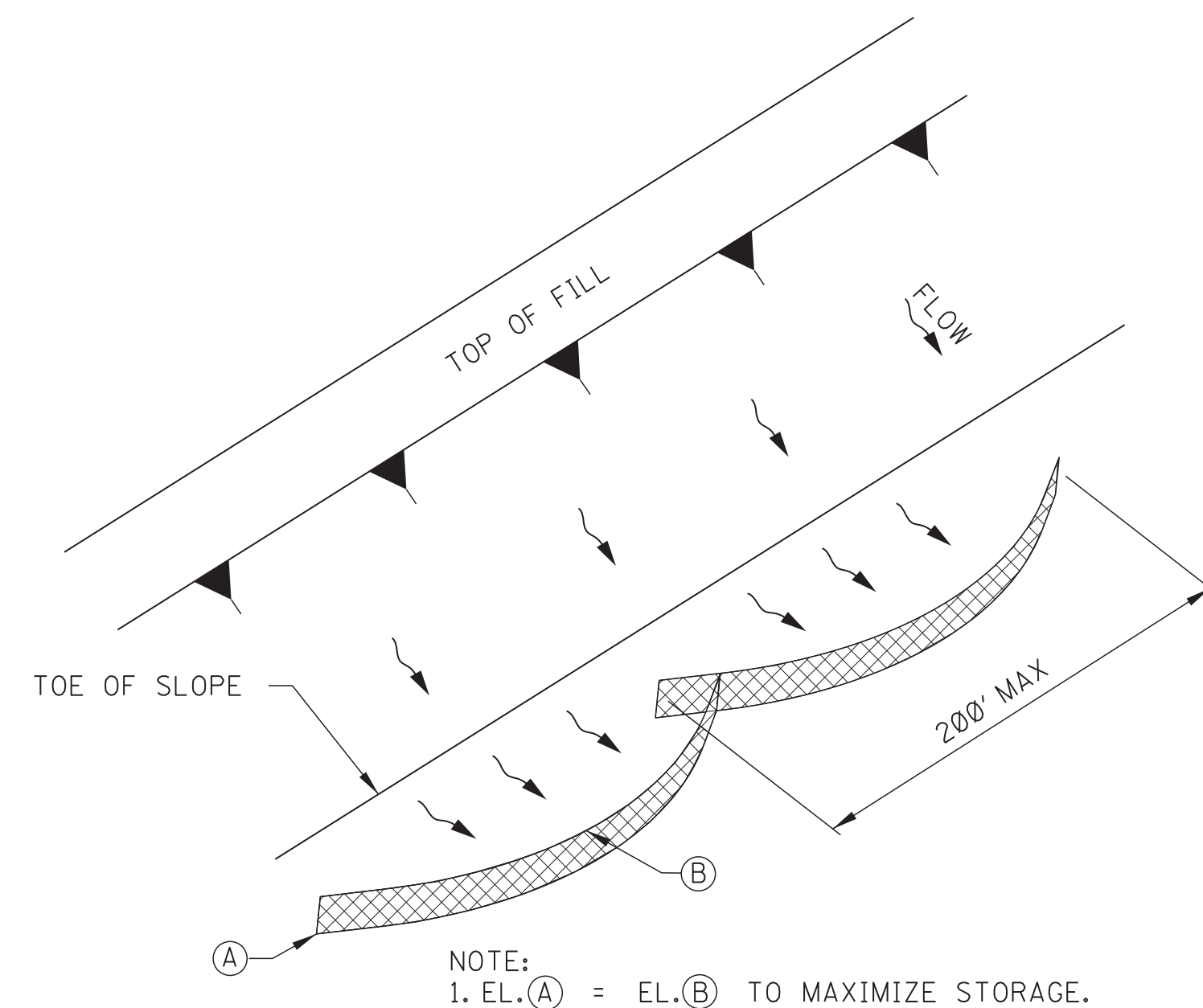
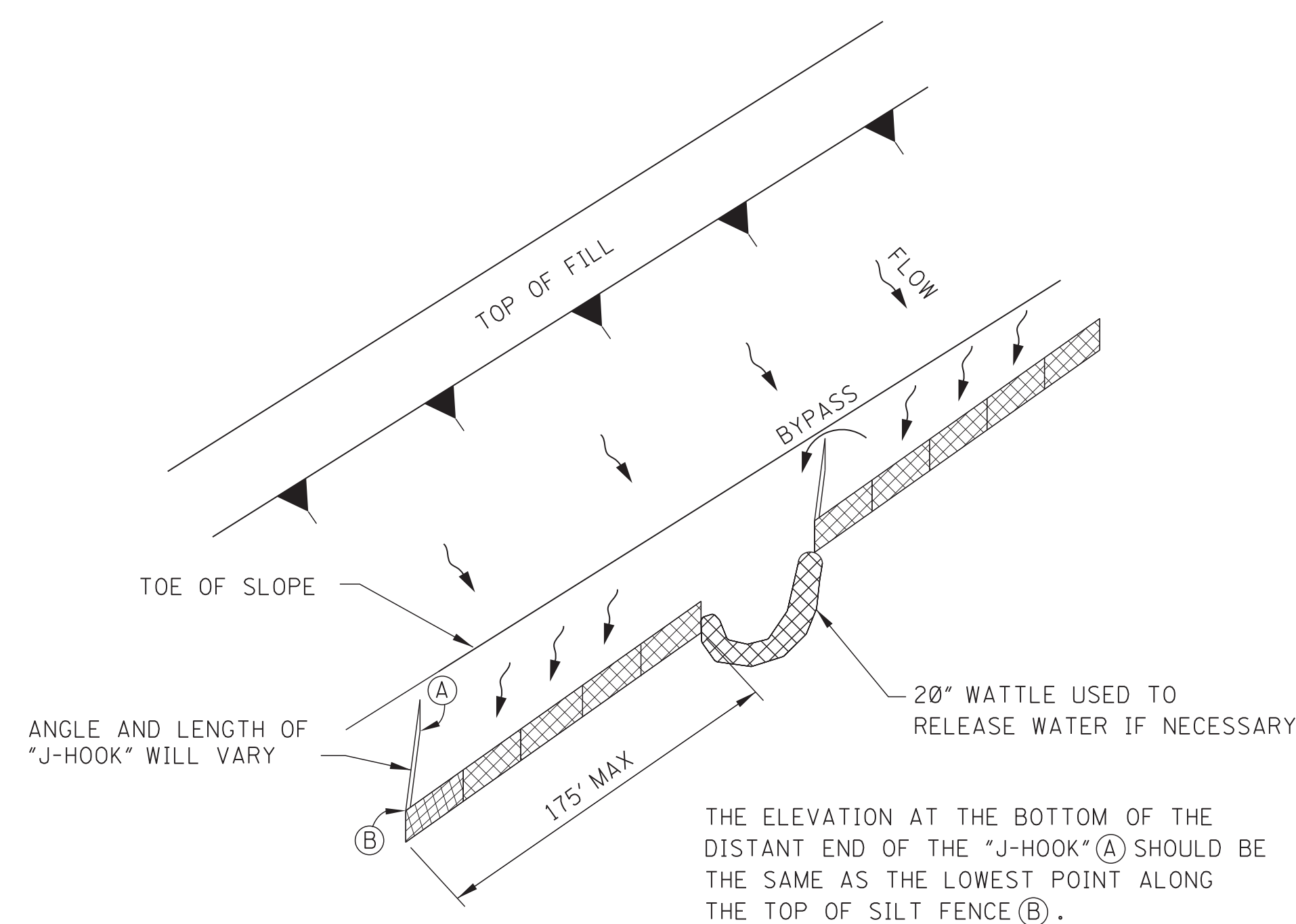


					BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
					REVISION	TYPICAL TEMPORARY EROSION / SEDIMENT CONTROL APPLICATIONS	
					DATE	ISSUE DATE: <u> AUGUST 01, 2017 </u>	
						 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-1 SHEET NUMBER 6101	

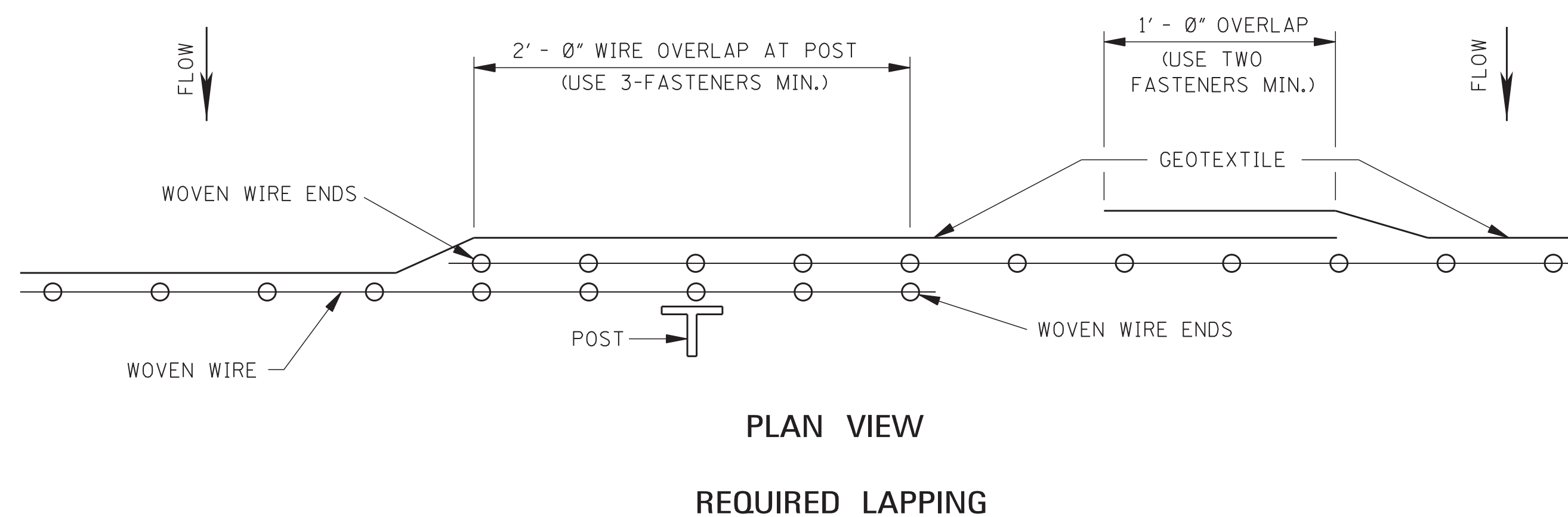
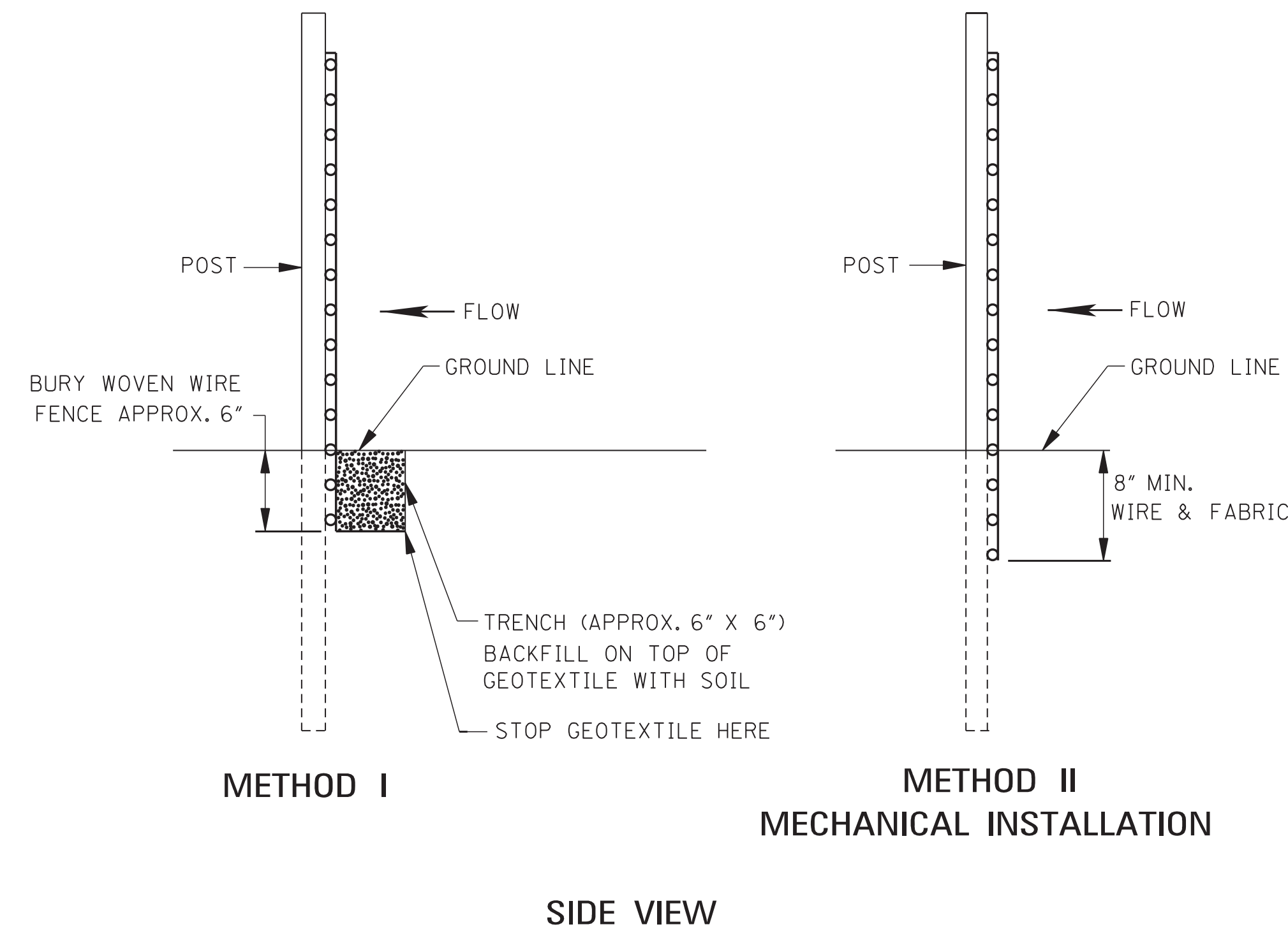
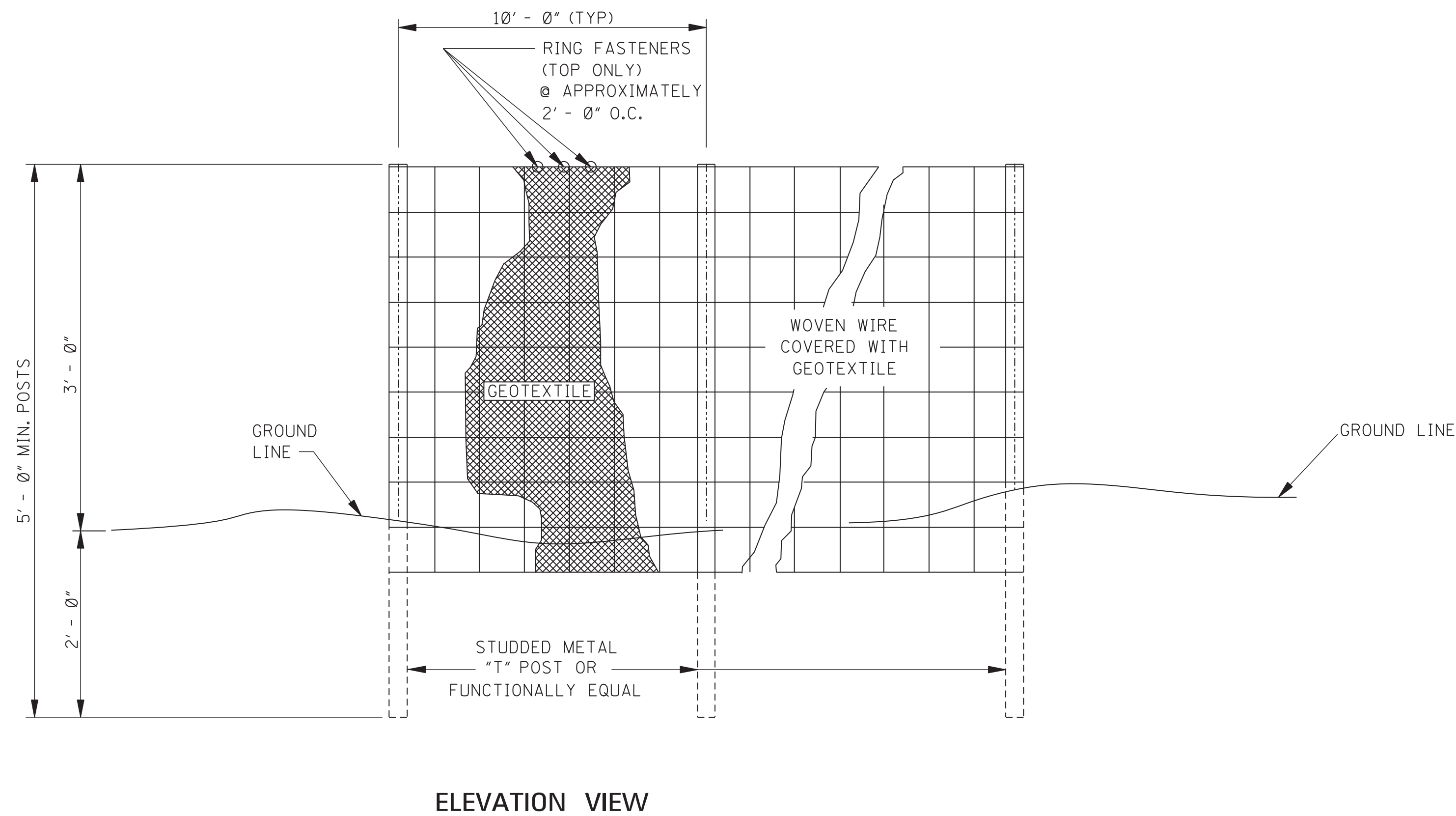


TEMPORARY BRUSH BARRIER

- 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.



			BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
				ROADWAY DESIGN DIVISION	
			REVISION	STANDARD PLAN	
				<i>DETAILS OF SEDIMENT BARRIER APPLICATIONS</i>	
			DATE		
				WORKING NUMBER ECD-2	
				SHEET NUMBER 6102	
				ISSUE DATE: <u>AUGUST 01, 2017</u>	

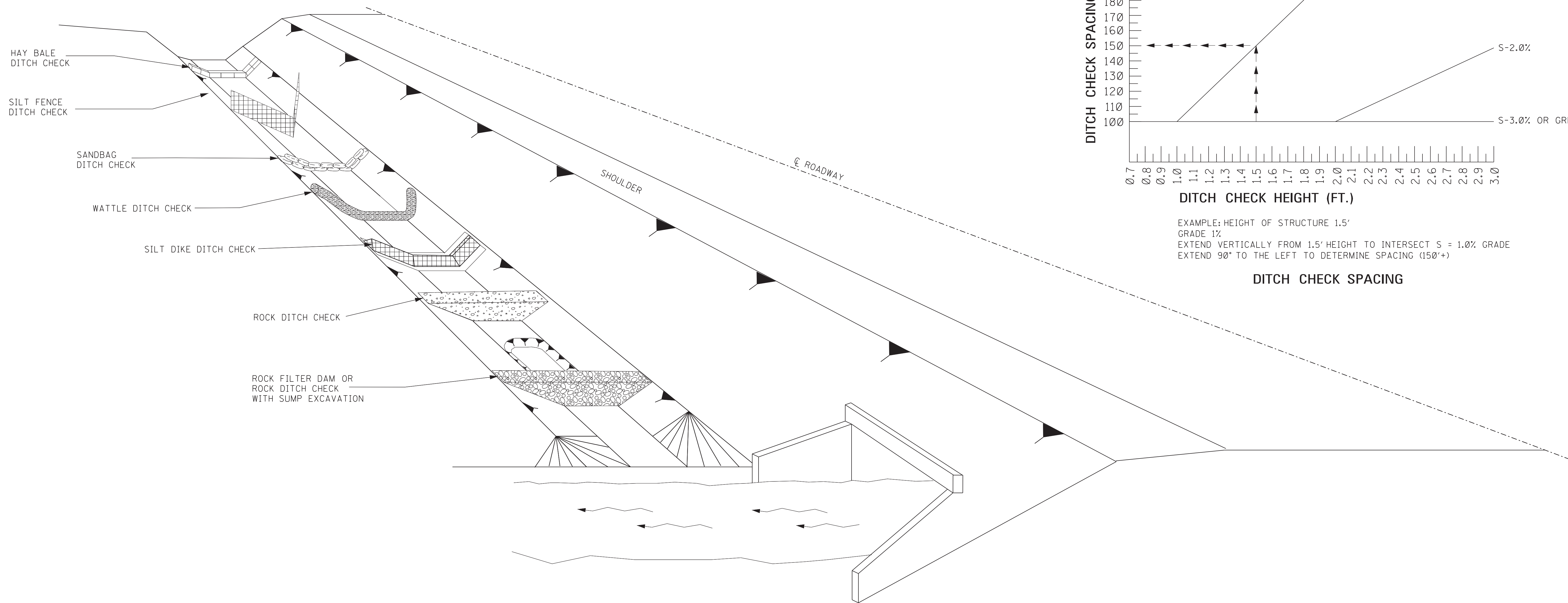


GENERAL NOTES:

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	DETAILS OF SILT FENCE INSTALLATION	
				DATE	ISSUE DATE: AUGUST 01, 2017	

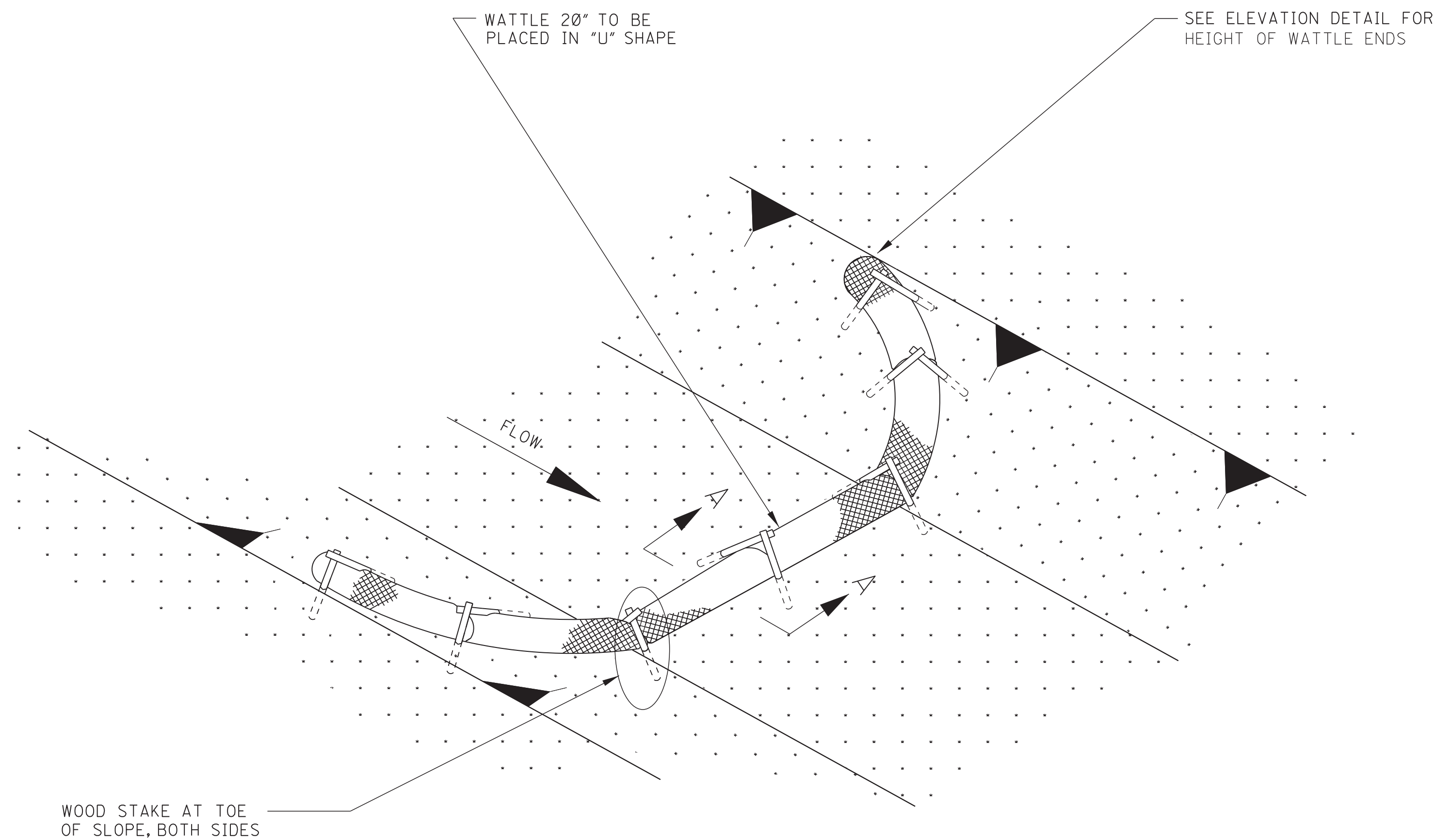

WORKING NUMBER ECD-3
SHEET NUMBER 6103



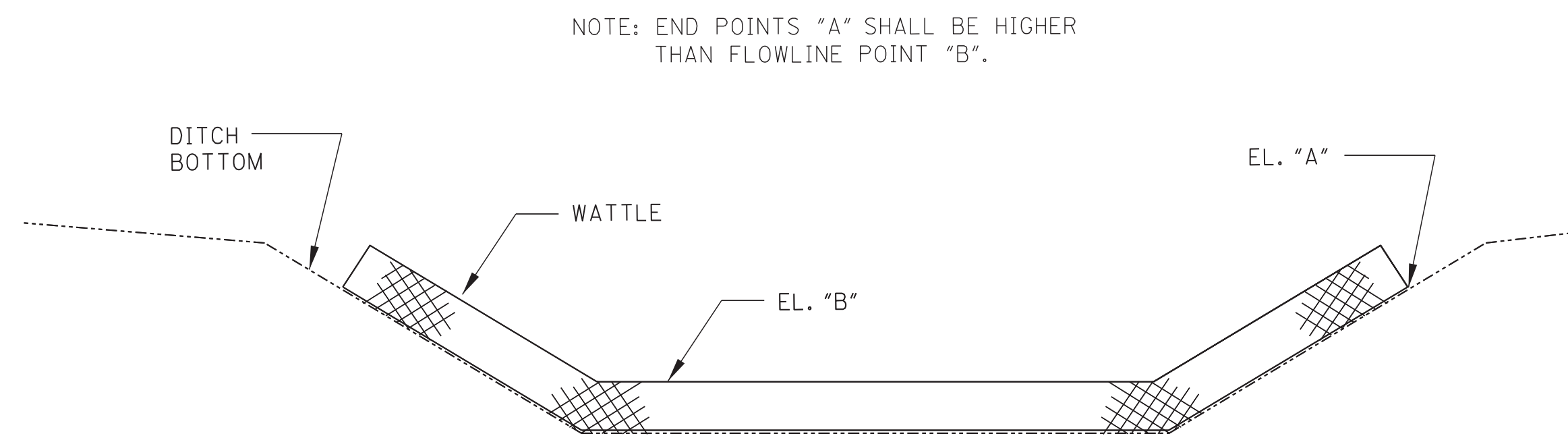
GENERAL NOTES:

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.

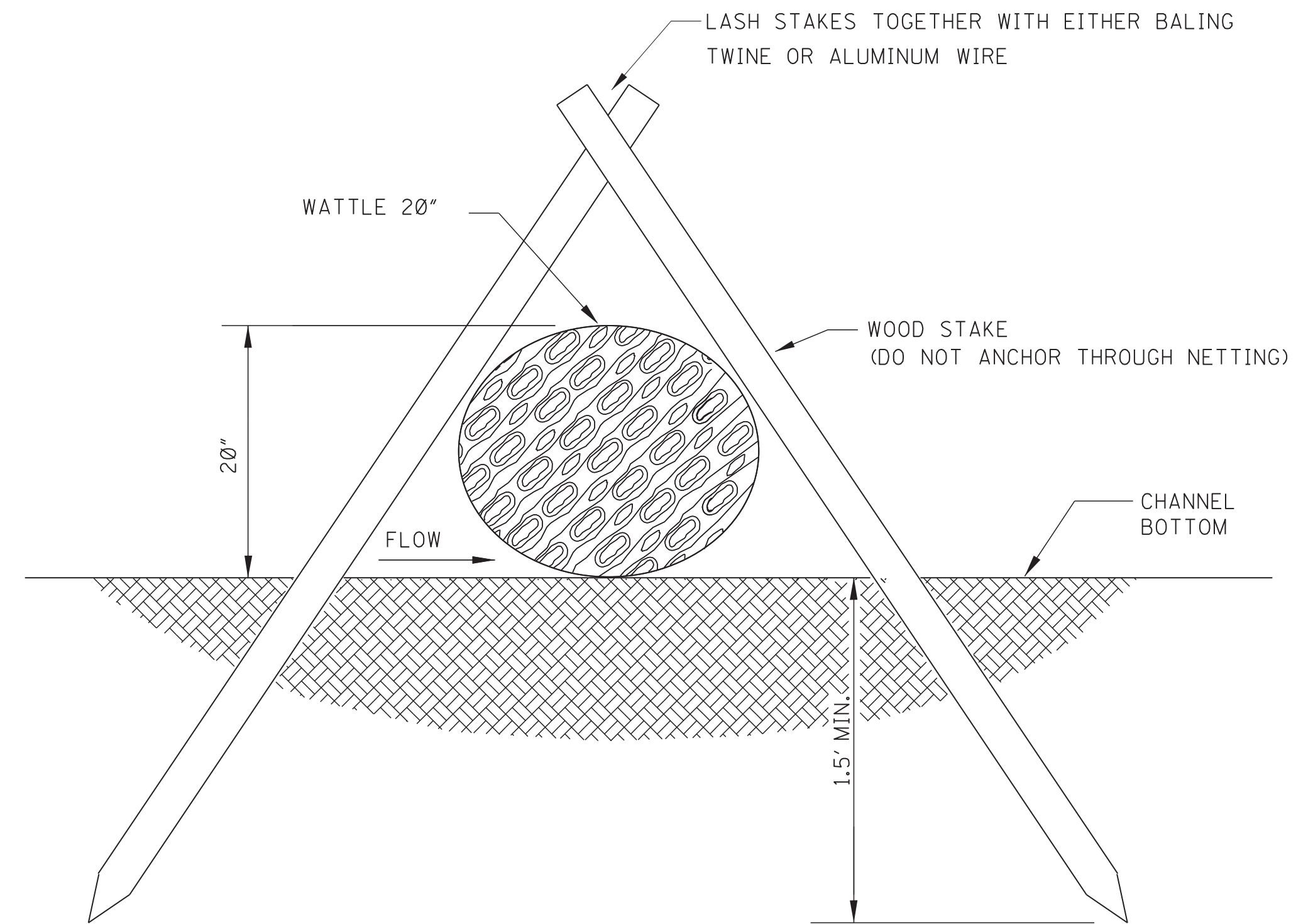
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				REVISION		
				DATE	ISSUE DATE: AUGUST 01, 2017	
					DITCH CHECK STRUCTURES, TYPICAL APPLICATIONS AND DETAILS	
					 WORKING NUMBER ECD-4 SHEET NUMBER 6104	



DETAIL (DITCH CHECK)



ELEVATION DETAIL



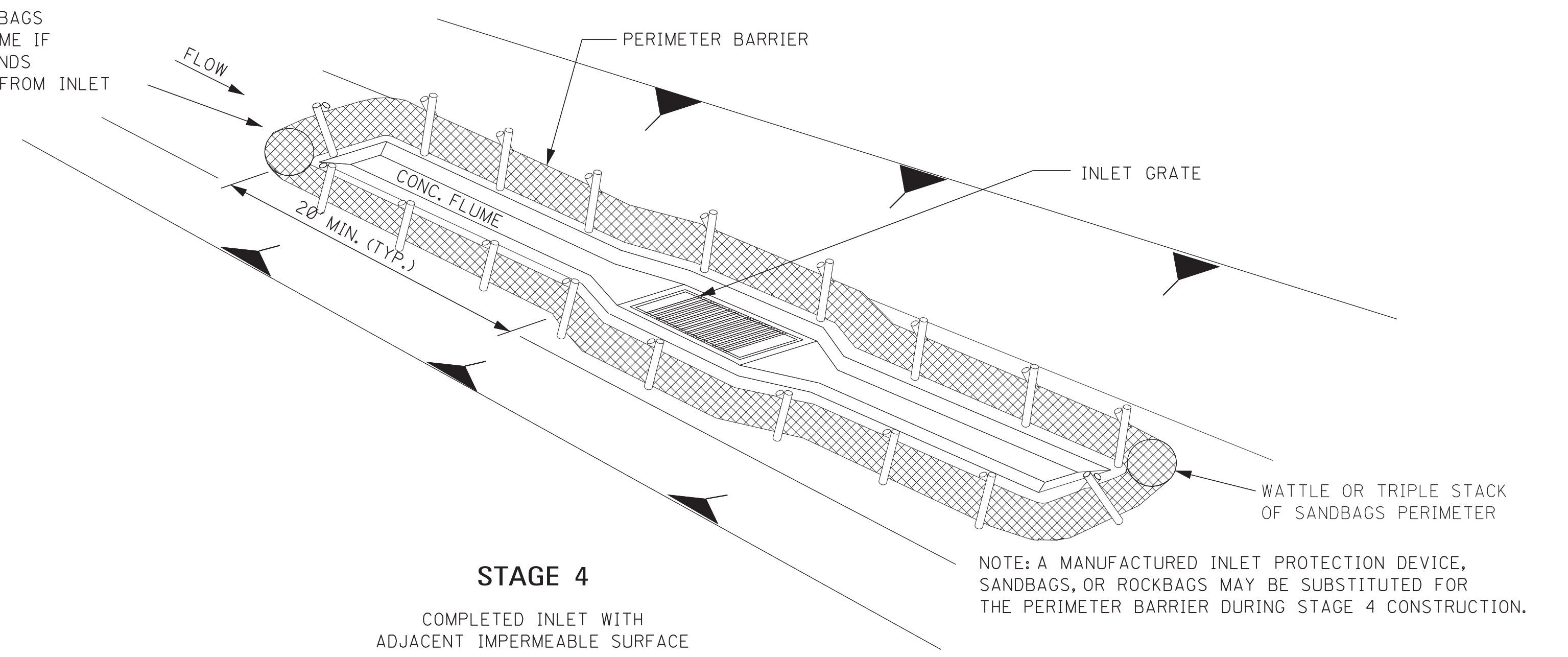
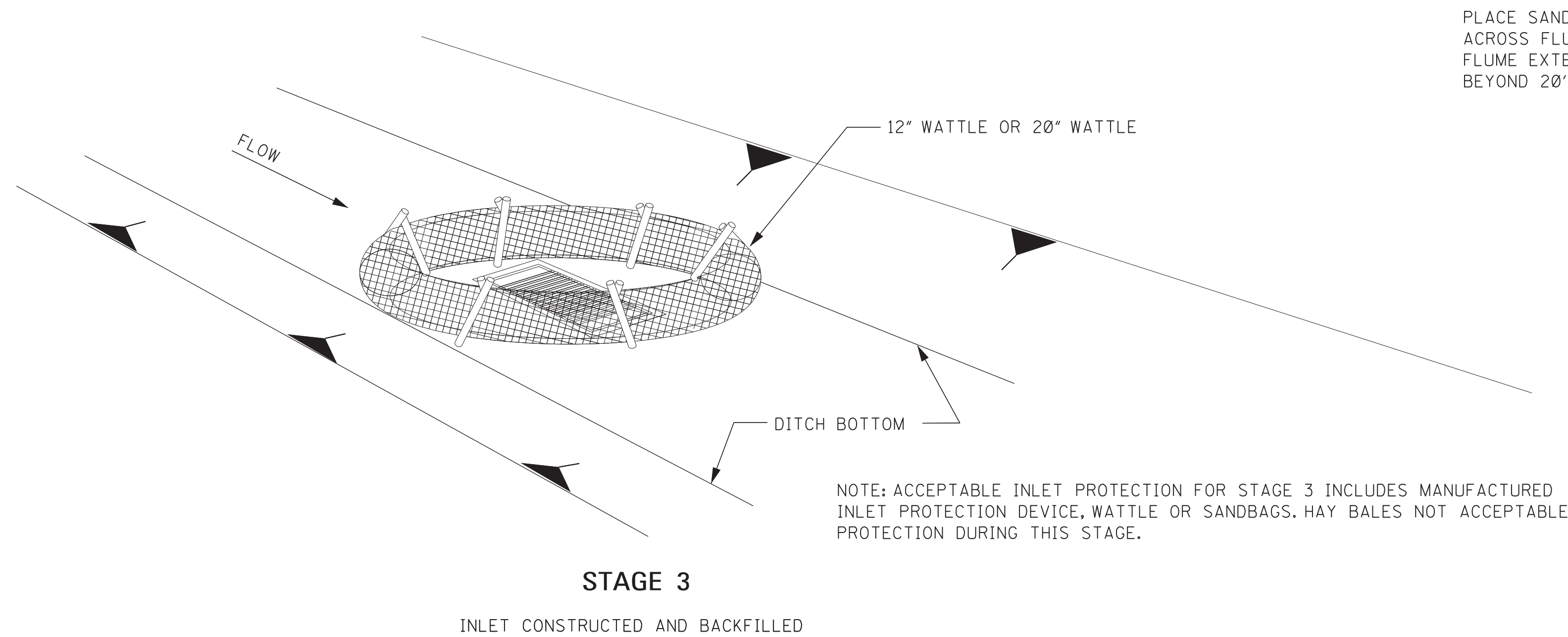
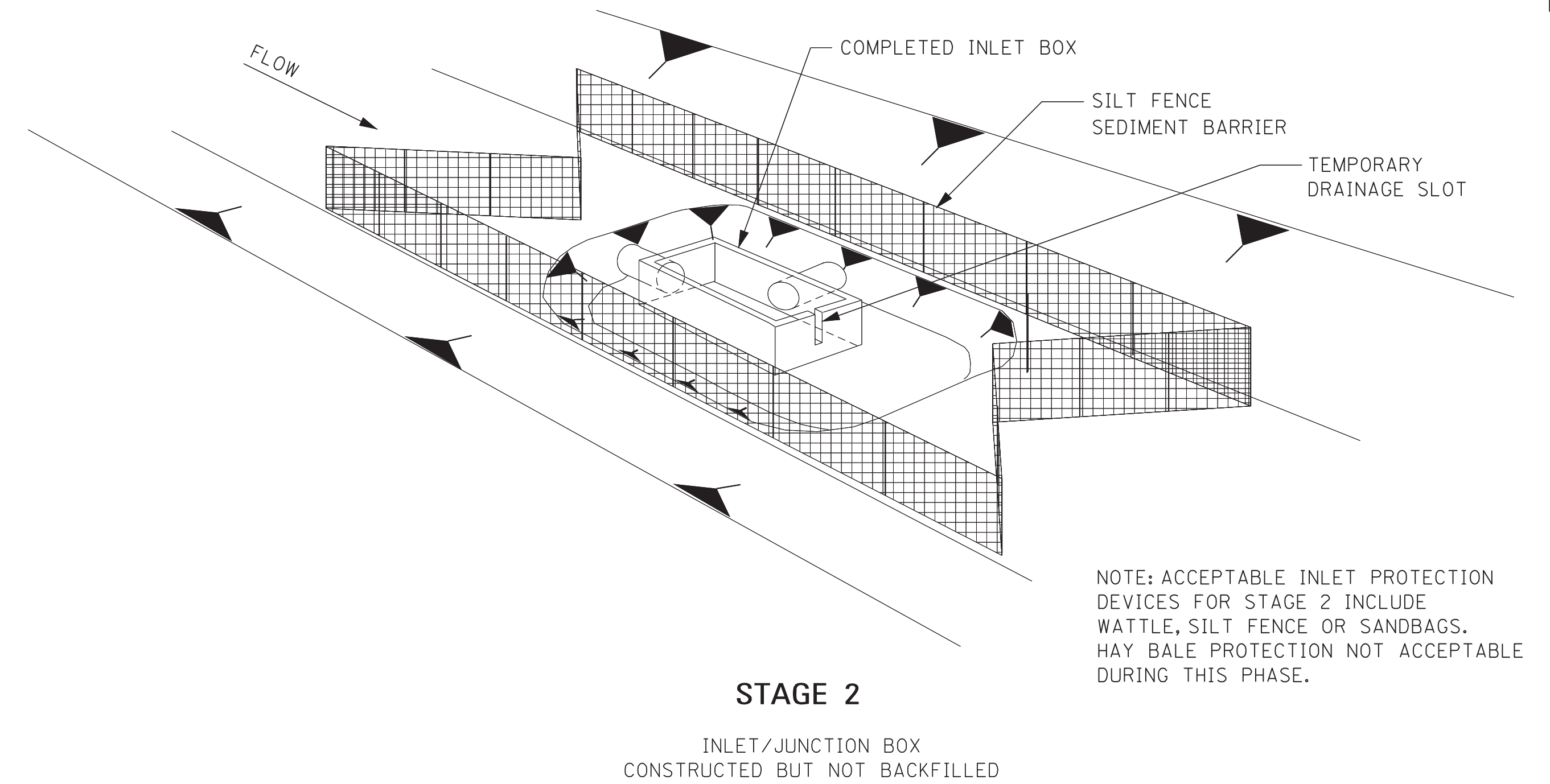
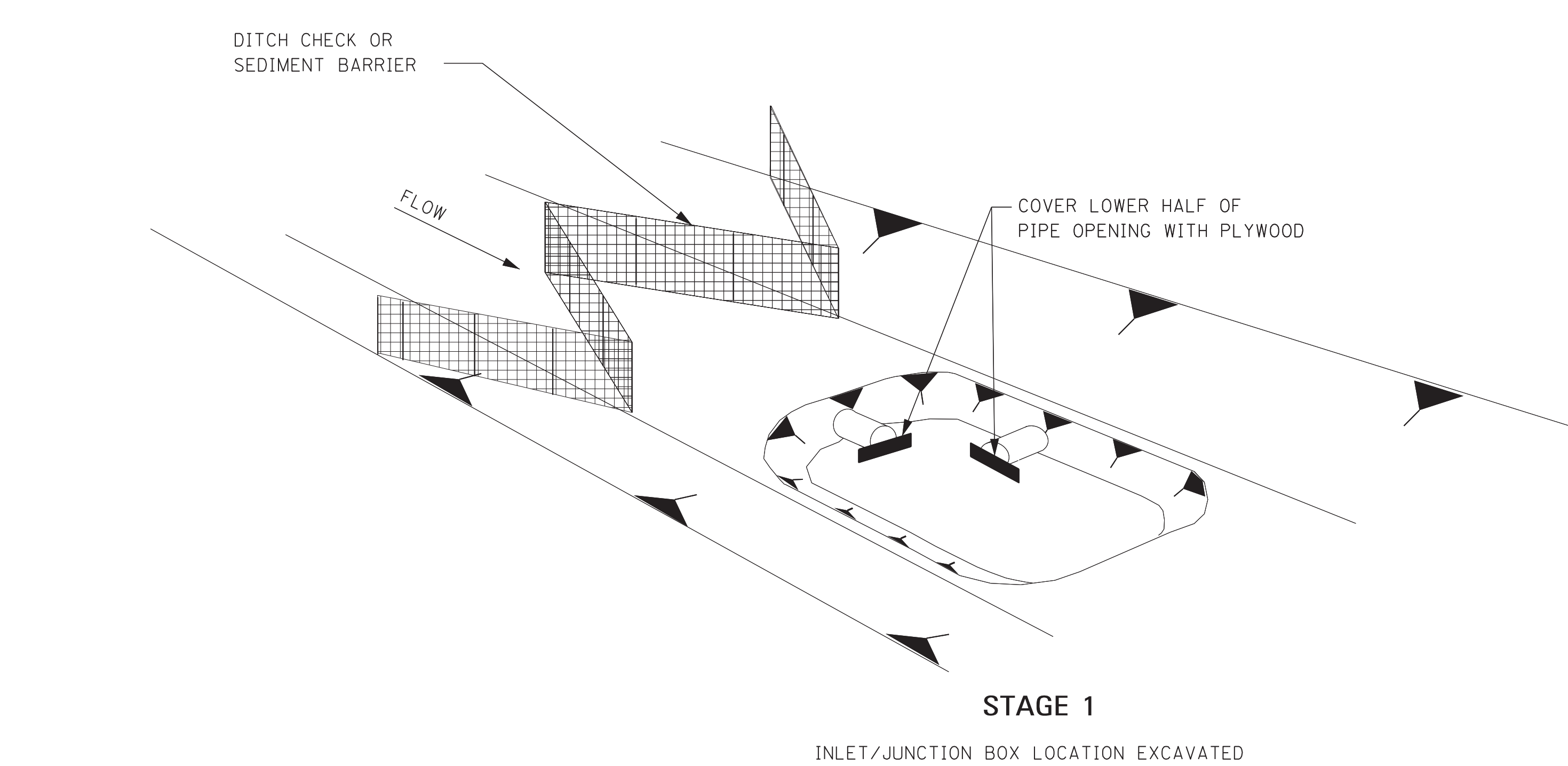
SECTION A-A

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>	
					 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-6	
					SHEET NUMBER 6106	





DITCH INLET CONSTRUCTION STAGES

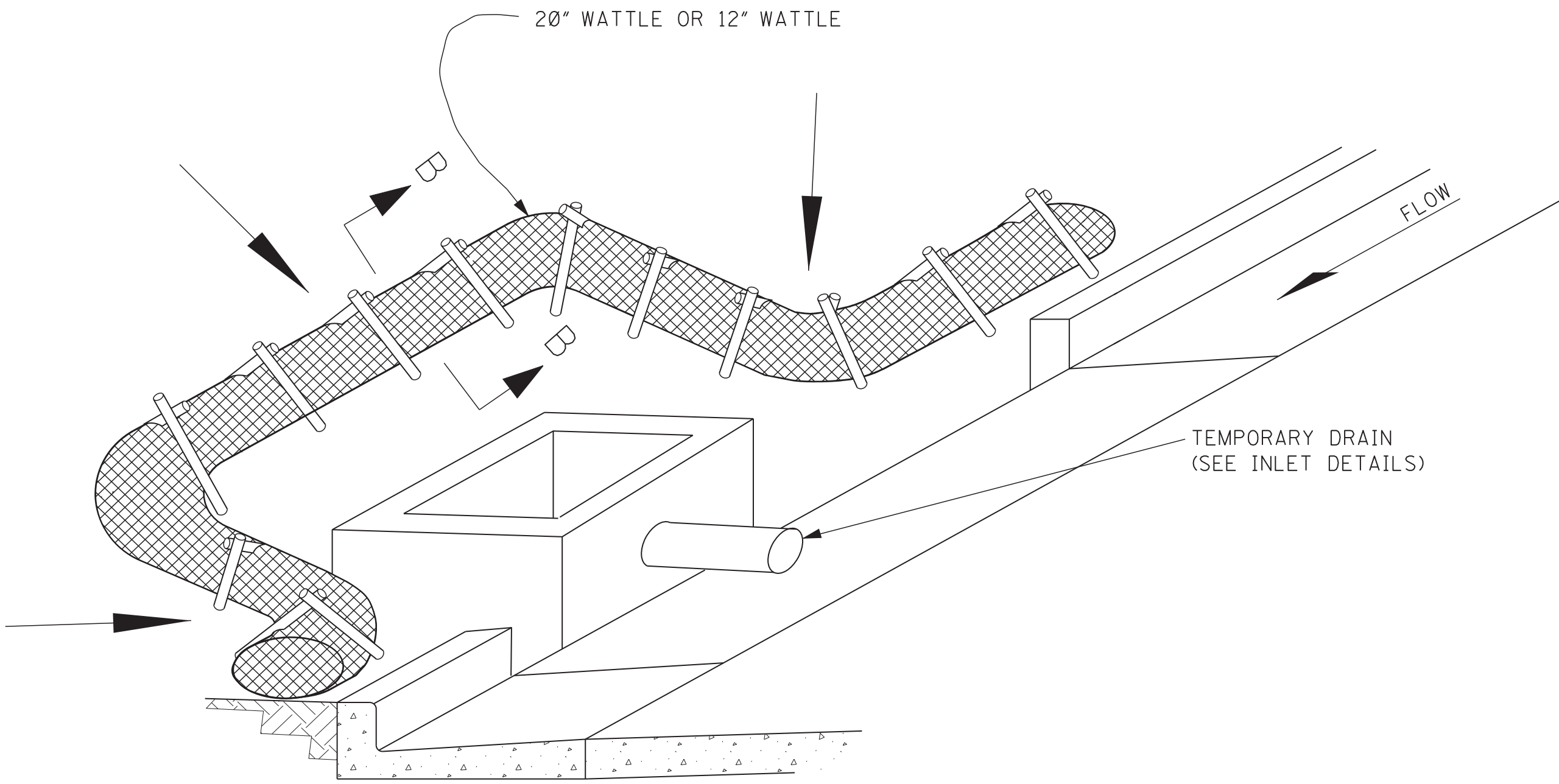
NOTES:

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.

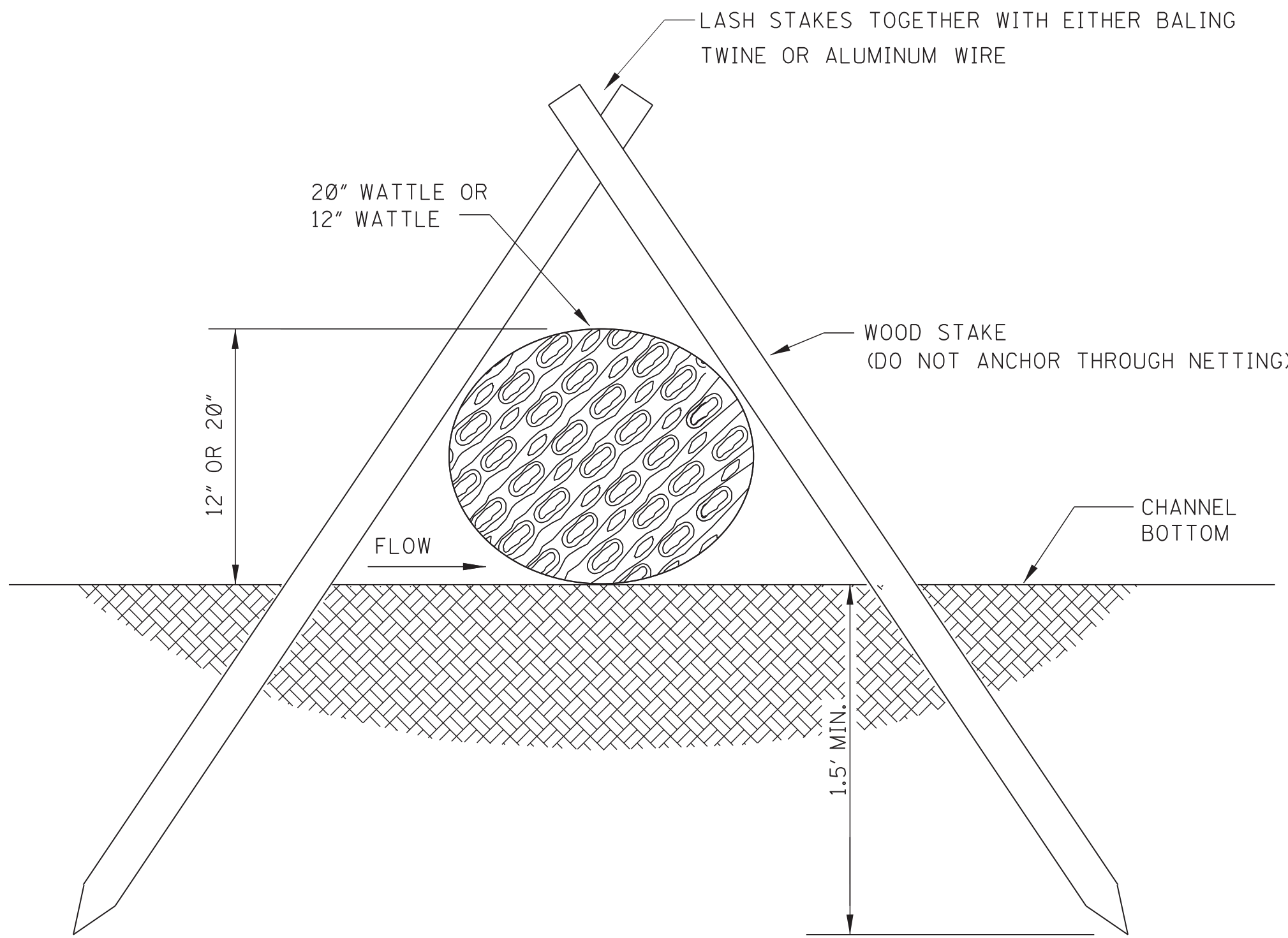
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				DATE				
				ISSUE DATE:	AUGUST 01, 2017			
					WORKING NUMBER ECD-11			
					SHEET NUMBER 6111			



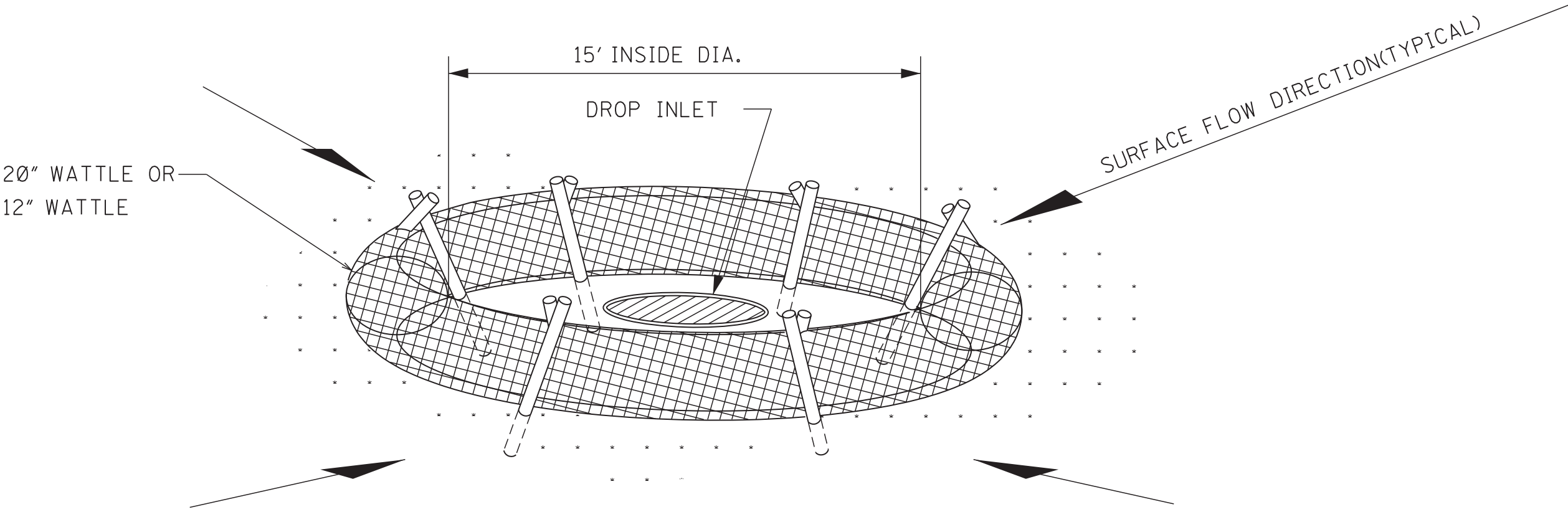
NOTE: SILT FENCE OR SANDBAGS MAY ALSO BE USED FOR THIS APPLICATION.
HAY BALES NOT ACCEPTABLE DURING THIS STAGE.



CURB INLET PROTECTION (STAGE 2)
SINGLE OR DOUBLE WING INLET



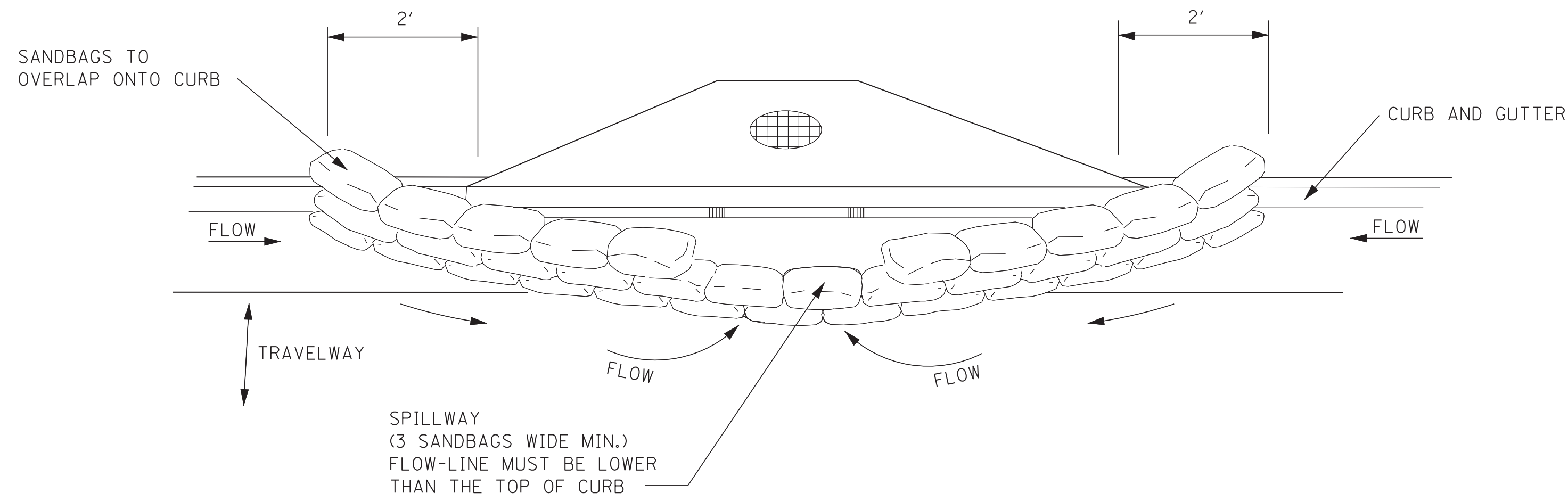
SECTION B-B



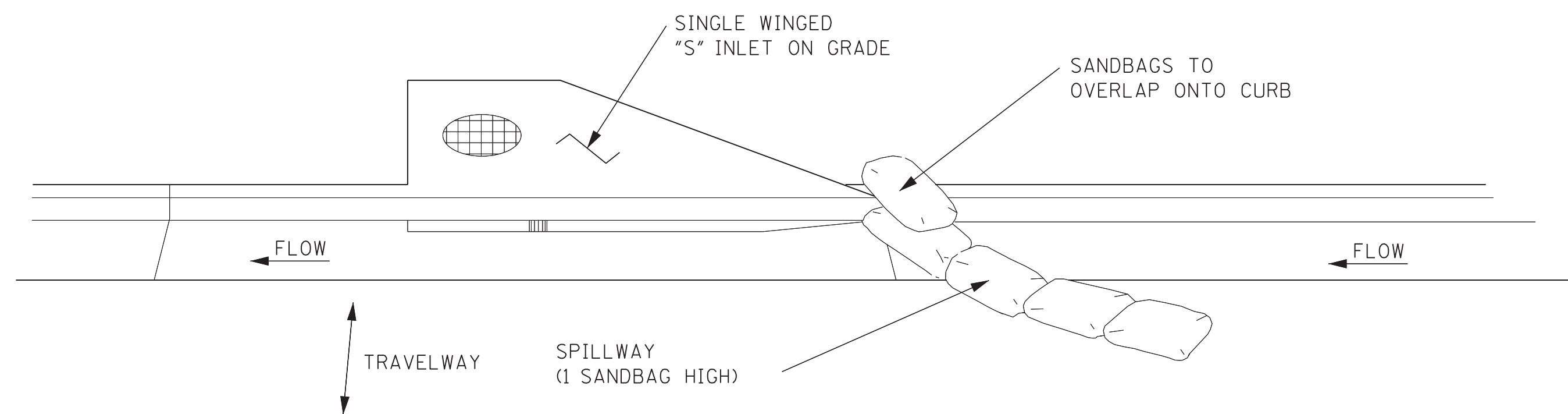
DROP INLET PROTECTION

- NOTES:
- 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.
 - OVERLAP ENDS OF WATTLES PER MANUFACTURER'S RECOMMENDATIONS (1' MIN., 3' MAX.)
 - TRENCHING OF WATTLES MAY BE NECESSARY IF PIPING BECOMES EVIDENT.
 - 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.

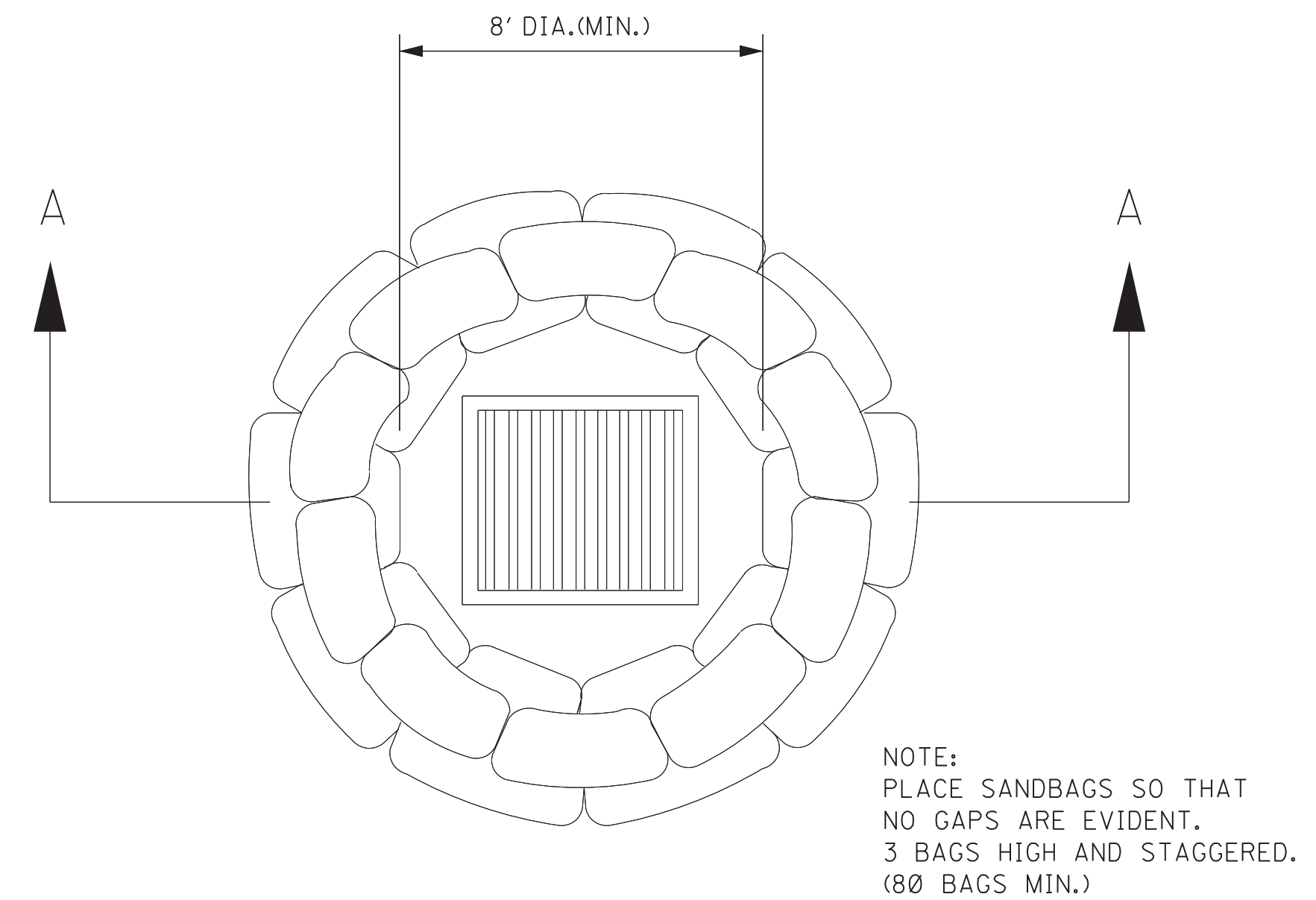
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				DATE	ISSUE DATE: _____ AUGUST 01, 2017 _____
					 MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER ECD-13 SHEET NUMBER 6113



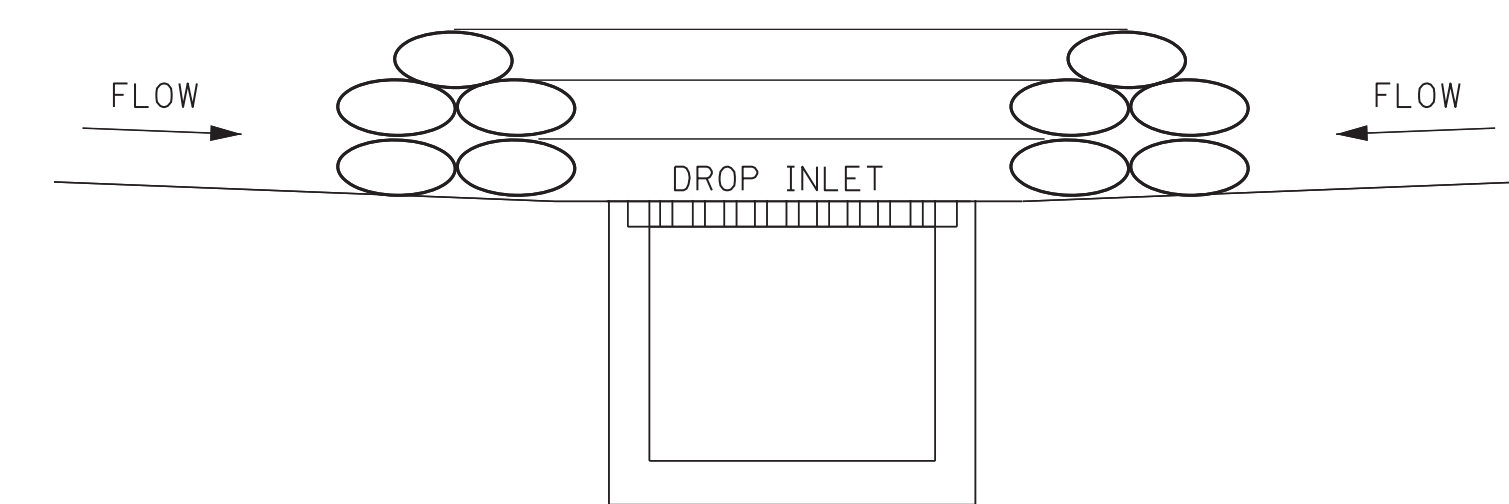
TYPICAL (SANDBAG) PROTECTION FOR INLET IN SAG



TYPICAL (SANDBAG) PROTECTION FOR INLET ON GRADE



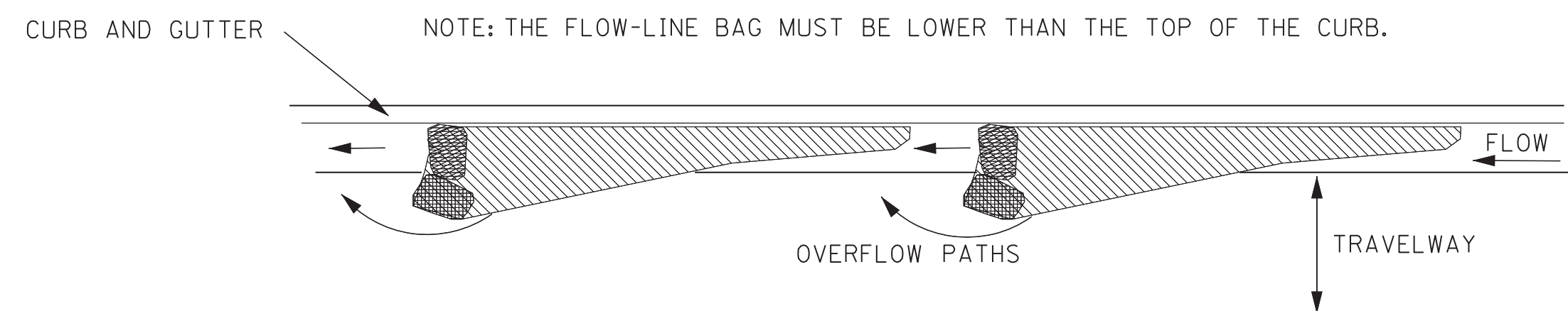
DROP INLET
PLAN VIEW



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 DENUDED AREAS EXIST BEHIND THE INLET, A SEDIMENT BARRIER SHOULD BE INSTALLED AROUND ITS PERIMETER TO CONTROL SEDIMENT.



CURB AND GUTTER SEDIMENT
CONTAINMENT SYSTEM

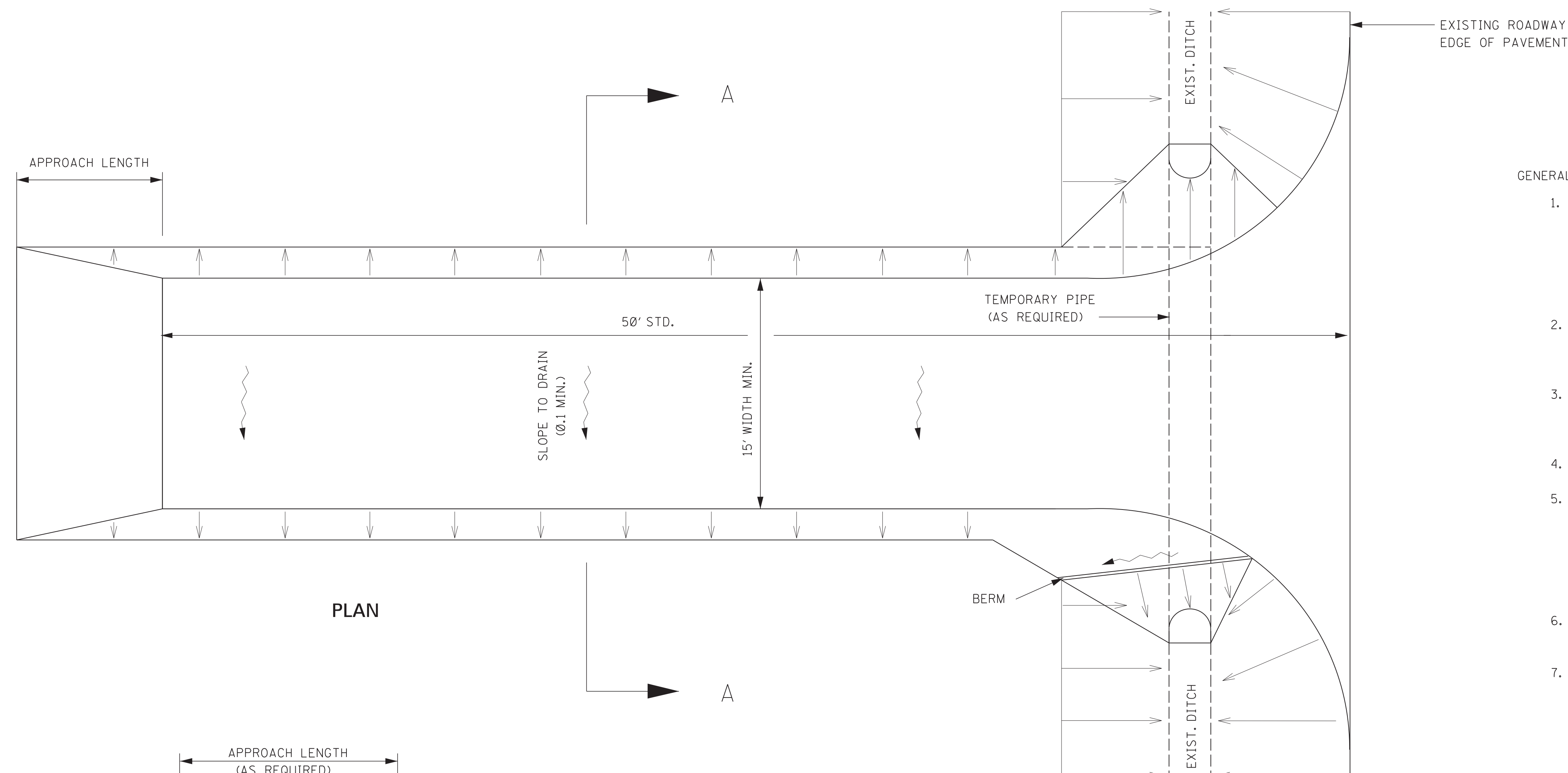
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				REVISION		
				DATE	ISSUE DATE: AUGUST 01, 2017	

**INLET PROTECTION
DETAILS OF SANDBAGS**

**MDOT**
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

WORKING NUMBER
ECD-15

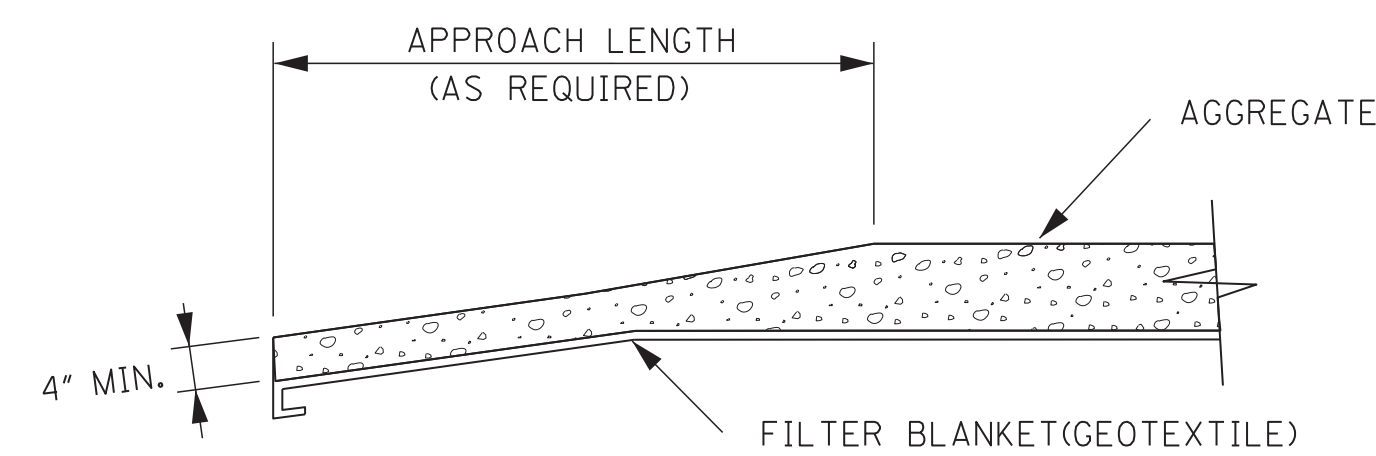
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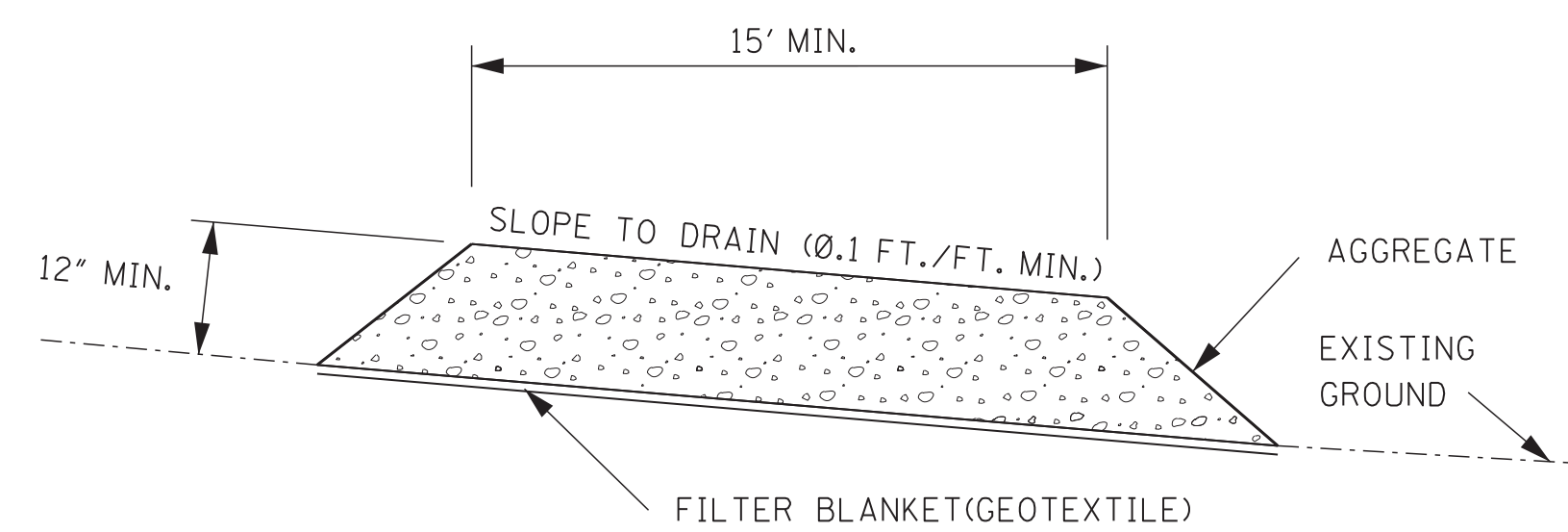
PLAN

GENERAL NOTES:

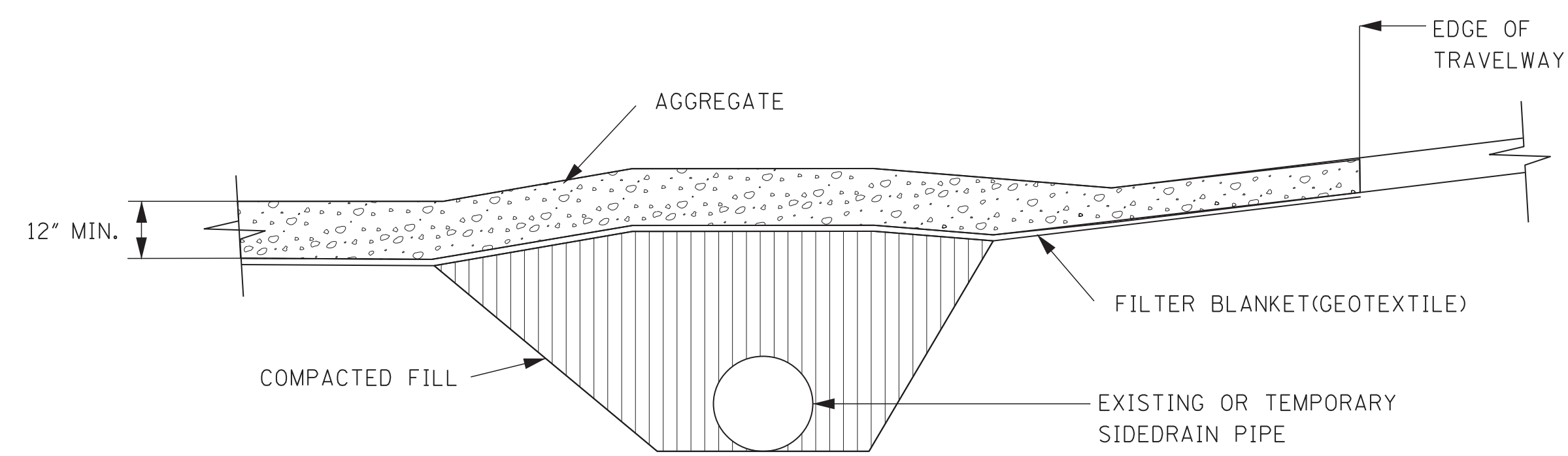
1. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE CONSTRUCTED AT POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE PROJECT SHALL BE DIRECTED THRU THE STABILIZED ENTRANCE. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TO LIMIT AND DIRECT VEHICULAR EGRESS ACROSS THE STABILIZED ENTRANCE.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STABILIZED CONSTRUCTION ENTRANCE AGGREGATE AND CONSTRUCTION MUD) SHOULD BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. SIZE III STABILIZER AGGREGATE OR LARGER SHALL BE USED.
5. THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION TO PREVENT OFFSITE TRACKING. THE STABILIZED CONSTRUCTION ENTRANCE SHOULD BE RINSED WHEN NECESSARY TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STABILIZED ENTRANCE MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
6. THE NOMINAL SIZE OF A STANDARD STABILIZED CONSTRUCTION ENTRANCE IS 15' X 50' UNLESS OTHERWISE SHOWN IN THE EROSION CONTROL PLAN.
7. COSTS OF ALL ITEMS ON THIS SHEET SHALL BE INCLUDED IN OTHER ITEMS BID.



TRANSITION DETAIL

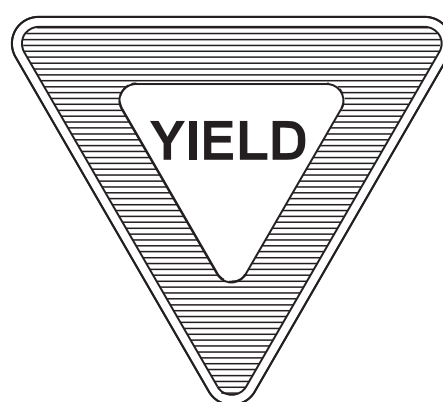
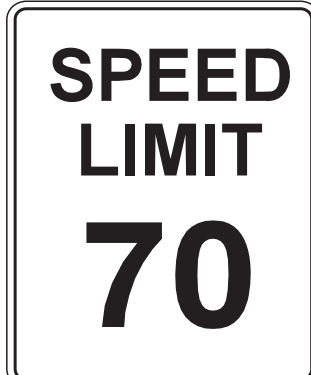
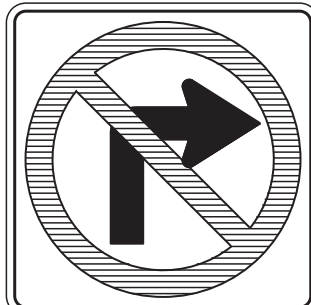
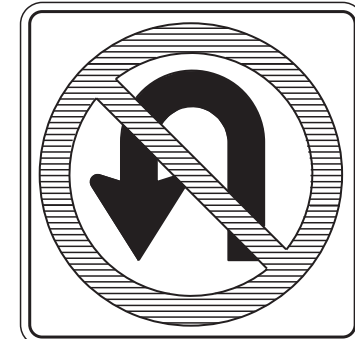
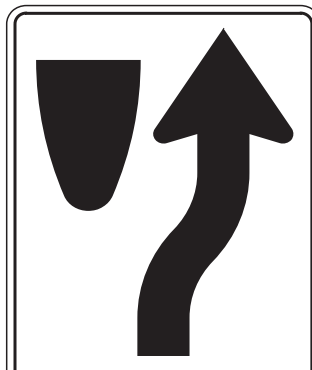
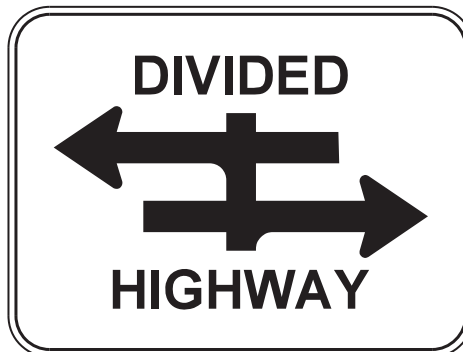
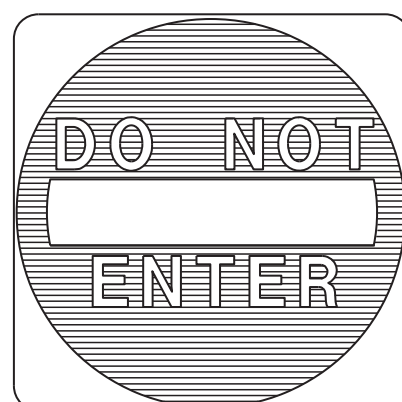


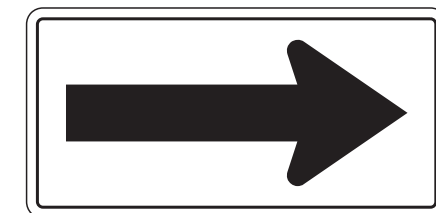
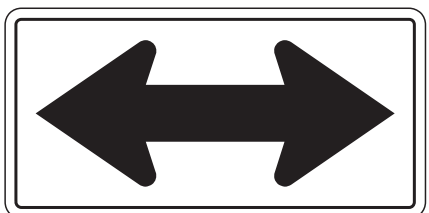
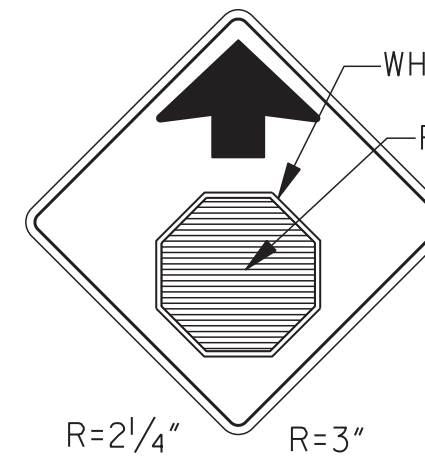
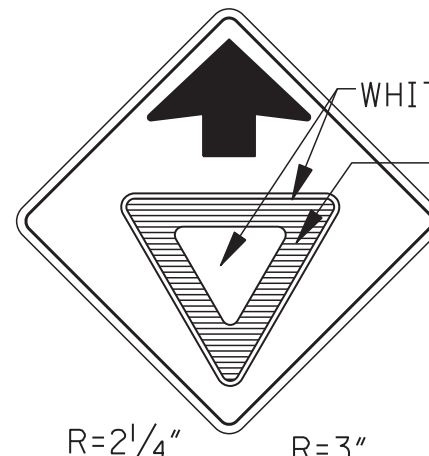
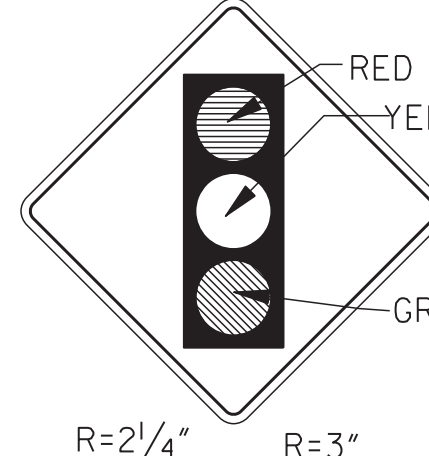
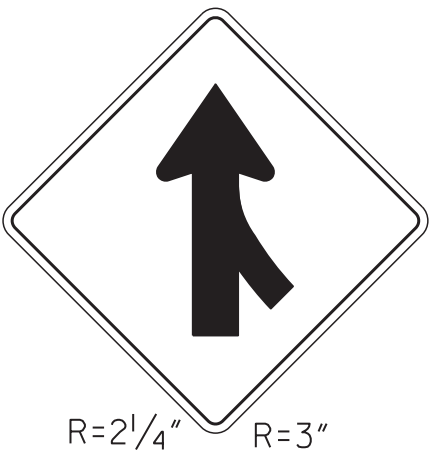
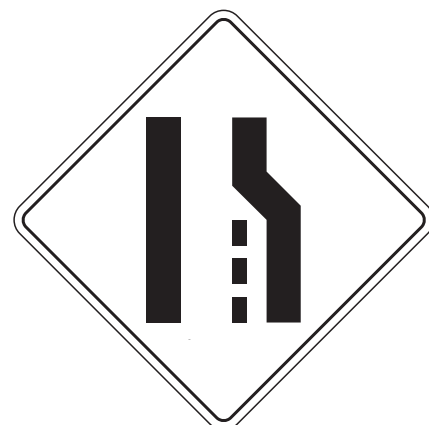
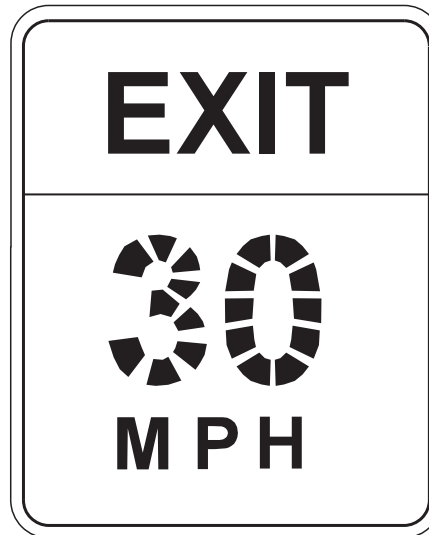
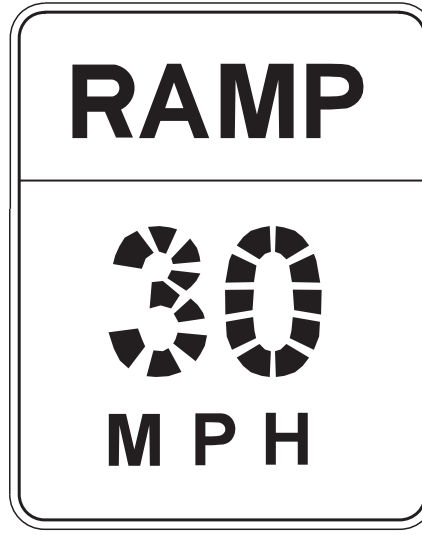
SECTION A-A



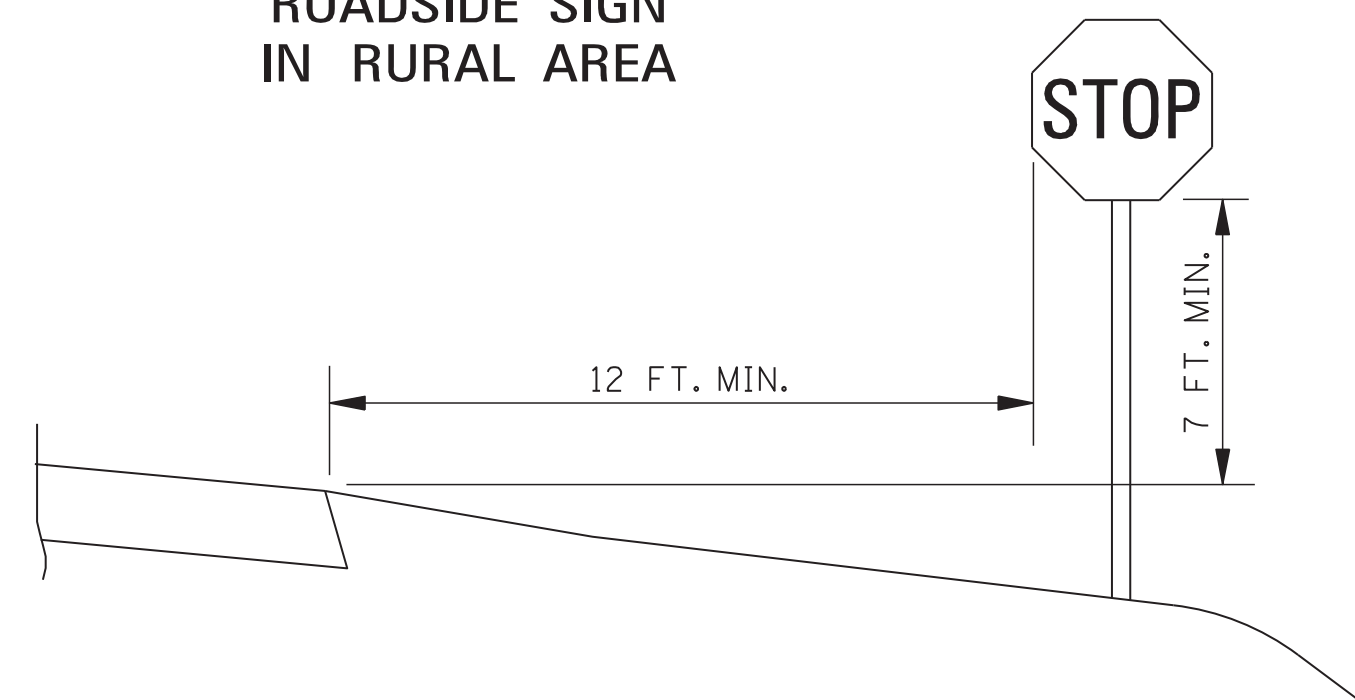
RURAL CONNECTION DETAIL

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	STABILIZED CONSTRUCTION ENTRANCE
				DATE	ISSUE DATE: AUGUST 01, 2017
					WORKING NUMBER ECD-16
					SHEET NUMBER 6116

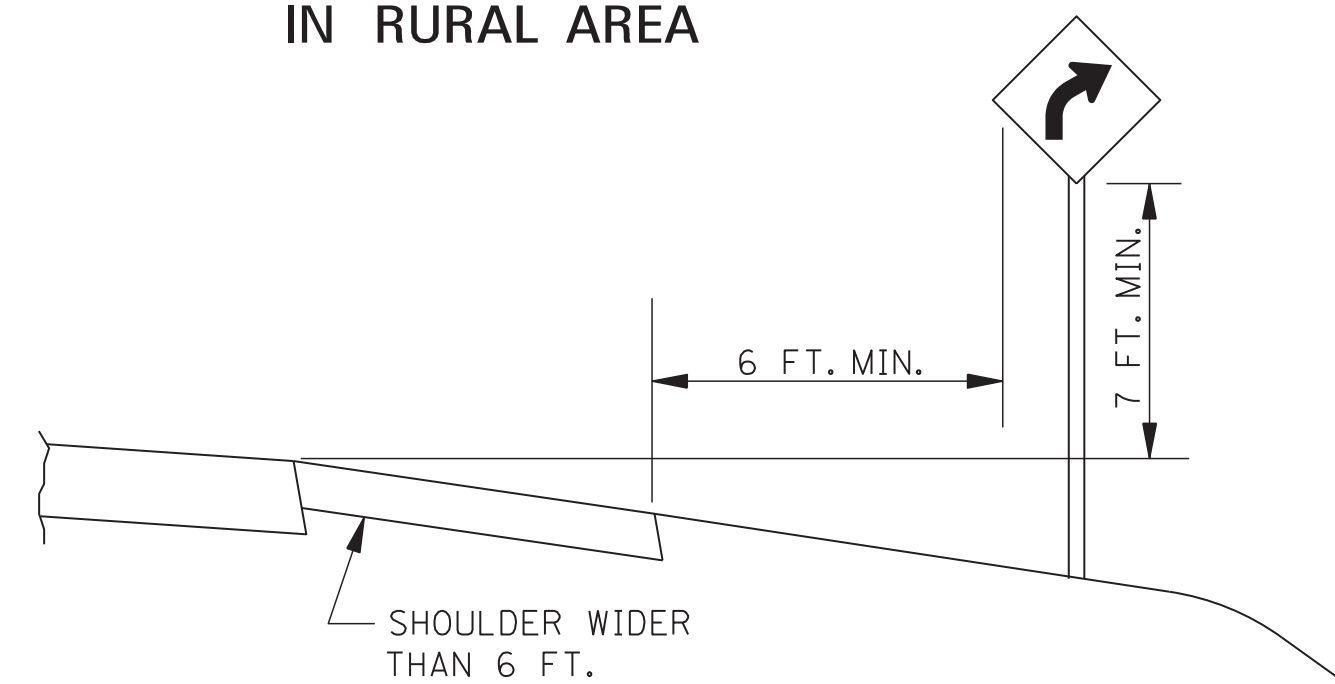
																		STATE	PROJECT NO.																																																																																																																																																																																																																																																																												
																		MISS.																																																																																																																																																																																																																																																																													
SIGN NUMBER		R1-1		R1-2			R2-1			R2-4a		R3-1		R3-2		R3-4		R3-5		R4-3																																																																																																																																																																																																																																																																											
ALUMINUM (6061-T6) SIGN BLANK THICKNESS		0.100"	0.125"	0.080"	0.100"	0.125"	0.080"	0.100"	0.125"	0.125"		0.080"	0.100"	0.080"	0.100"	0.080"	0.100"	0.080"		0.100"	0.125"																																																																																																																																																																																																																																																																										
LEGEND																																																																																																																																																																																																																																																																																															
				R=2"	R=3"	R=4"	R=1½"	R=2¼"	R=3"	R=3"		R=1½"	R=2¼"	R=1½"	R=2¼"	R=1⅞"		R=2¼"	R=3"																																																																																																																																																																																																																																																																												
		12" SERIES "C"	16" SERIES "C"	3" SERIES "C"		5" SERIES "C"	4" SERIES "E" 4" SERIES "E" 10" SERIES "E"	6" SERIES "E" 6" SERIES "E" 14" SERIES "E"	8" SERIES "E" 8" SERIES "E" 16" SERIES "E"	8" SERIES "E" 16" SERIES "E" 8" SERIES "C" 14" SERIES "D"						6" SERIES "D"		6" SERIES "D"	8" SERIES "D"																																																																																																																																																																																																																																																																												
		WIDTH OF BORDER INSIDE OUTSIDE	⅞" WHITE 1¼" WHITE	5" RED ¾" WHITE	6" RED 1" WHITE	8" RED 1½" WHITE	⅝" BLACK ⅜" WHITE	⅞" BLACK ⅝" WHITE	1¼" BLACK ¾" WHITE	⅞" BLACK ¾" WHITE		⅝" BLACK ⅜" WHITE	⅞" BLACK ⅝" WHITE	⅝" BLACK ⅜" WHITE	⅞" BLACK ⅝" WHITE	5" RED ¾" WHITE	6" RED 1" WHITE	8" RED 1½" WHITE	⅝" BLACK ⅜" WHITE	1¼" BLACK ¾" WHITE																																																																																																																																																																																																																																																																											
		SIZE (WIDTH X HEIGHT)	36" OCTAGON	48" OCTAGON	36" EQUIL. TRIANGLE	48" EQUIL. TRIANGLE	60" EQUIL. TRIANGLE	24" X 30"	36" X 48"	48" X 60"	48" X 96"		24" X 24"	36" X 36"	24" X 24"	36" X 36"	24" X 24"	36" X 36"	30" X 36"	36" X 48"	48" X 60"																																																																																																																																																																																																																																																																										
COLORS COPY BACKGROUND		WHITE RED	WHITE RED	RED WHITE	RED WHITE	RED WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE		BLACK & RED WHITE	BLACK & RED WHITE	BLACK & RED WHITE	BLACK & RED WHITE	BLACK & RED WHITE	BLACK & RED WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE																																																																																																																																																																																																																																																																											
REFLECTORIZATION		ALL	ALL	ALL	ALL	ALL	B'GROUND	B'GROUND	B'GROUND	BACKGROUND		BACKGROUND, CIRCLE, & DIAG.	BACKGROUND, CIRCLE, & DIAG.	BACKGROUND, CIRCLE, & DIAG.	BACKGROUND, CIRCLE, & DIAG.	BACKGROUND, CIRCLE, & DIAG.	BACKGROUND, CIRCLE, & DIAG.	BACKGROUND		BACKGROUND	BACKGROUND																																																																																																																																																																																																																																																																										
NUMBER OF POSTS FOR MOUNTING		1	1	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1																																																																																																																																																																																																																																																																											
NUMBER OF HOLES TO BE PUNCHED (⅜" DIA.)		2	4	2	4	4	2	4	6	10		2	2	2	2	2	2	2	4	6																																																																																																																																																																																																																																																																											
PUNCHING DISTANCE FROM EACH VERTICAL EDGE		18" (VERT. CENTER)	9"	18" (VERT. CENTER)	12" (FROM CENTER)	15" (FROM CENTER)	12" (VERT. CENTER)	3"	9"	9"		12" (VERT. CENTER)	18" (VERT. CENTER)	12" (VERT. CENTER)	18" (VERT. CENTER)	12" (VERT. CENTER)	18" (VERT. CENTER)	15" (VERT. CENTER)		3"	9"																																																																																																																																																																																																																																																																										
PUNCHING DISTANCE FROM TOP EDGE		3"; 33"	9"; 39"	3"; 27"	3"; 15"	3"; 21"	3"; 27"	9"; 39"	4"; 30"; 56"	4"; 28"; 52"; 60"; 92"		3"; 21"	6"; 30"	3"; 21"	6"; 30"	3"; 21"	6"; 30"	6"; 30"		9"; 39"	4"; 30"; 56"																																																																																																																																																																																																																																																																										
SIGN NUMBER		R4-7			R6-3			R5-1		R5-1a		R6-1L, R6-1R		R6-2L, R6-2R		R8-4		R11-1																																																																																																																																																																																																																																																																													
ALUMINUM (6061-T6) SIGN BLANK THICKNESS		0.080"		0.125"		0.080"		0.100"	0.125"	0.100"		0.080"		0.080"		0.080"	0.100"	0.125"		0.125"																																																																																																																																																																																																																																																																											
LEGEND																																																																																																																																																																																																																																																																																															
		R=1½"	R=2¼"	R=3"			R=1⅞"	R=3"	R=2¼"				R=1½"		R=2¼"		R=3"																																																																																																																																																																																																																																																																														
		4" SERIES "D"	6" SERIES "D"	8" SERIES "D"		4" SERIES "D"	6" SERIES "D"	8" SERIES "D"		4" SERIES "D"		6" SERIES "D"	4" SERIES "D"	6" SERIES "D"	4" SERIES "D"	6" SERIES "D"	8" SERIES "C"		10" SERIES "C"																																																																																																																																																																																																																																																																												
		WIDTH OF BORDER INSIDE OUTSIDE	⅝" BLACK ⅜" WHITE	⅞" BLACK ⅝" WHITE	1¼" BLACK ¾" WHITE	⅝" BLACK ⅜" WHITE	WHITE OUT- SIDE BORDER	WHITE OUT- SIDE BORDER	1" WHITE		½" WHITE		⅝" BLACK ⅜" WHITE	⅝" BLACK ⅜" WHITE	⅝" BLACK ⅜" WHITE	⅞" BLACK ⅝" WHITE	⅞" BLACK ⅝" WHITE	1¼" BLACK ¾" WHITE																																																																																																																																																																																																																																																																													
		SIZE (WIDTH X HEIGHT)	24" X 30"	36" X 48"	48" X 60"	30" X 24"	36" X 36"	48" X 48"	42" X 30"		36" X 12"		24" X 30"	30" X 24"	48" X 36"	36" X 48"	48" X 60"																																																																																																																																																																																																																																																																														
COLORS COPY BACKGROUND		BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE	WHITE RED	WHITE RED	WHITE RED		BLACK (WHITE ARROW) BLACK		BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE	BLACK WHITE																																																																																																																																																																																																																																																																													
REFLECTORIZATION		BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND		ALL	ALL	ALL		ARROW & BORDER		BACKGROUND		BACKGROUND		BACKGROUND		BACKGROUND																																																																																																																																																																																																																																																																												
NUMBER OF POSTS FOR MOUNTING		1	1	1	1		1	1	1		1		1	1	1	2	1	1																																																																																																																																																																																																																																																																													
NUMBER OF HOLES TO BE PUNCHED (⅜" DIA.)		2	4	6	2		2	4	4		2		2	2	2	4	4	6																																																																																																																																																																																																																																																																													
PUNCHING DISTANCE FROM EACH VERTICAL EDGE		12" (VERT. CENTER)	3"	9"	15" (VERT. CENTER)		18" (VERT. CENTER)	9"	9"		18" (VERT. CENTER)		12" (VERT. CENTER)	15" (VERT. CENTER)	9"	3"	9"																																																																																																																																																																																																																																																																														
PUNCHING DISTANCE FROM TOP EDGE		3"; 27"	9"; 39"	4"; 30"; 56"	3"; 21"		6"; 30"	4"; 44"	3"; 27"		1½"; 10½"		3"; 27"	3"; 21"	3"; 33"	9"; 39"	4"; 30"; 56"																																																																																																																																																																																																																																																																														
GENERAL NOTES: 1. THE QUANTITIES LISTED ON THE SUMMARY OF QUANTITIES SHEET FOR THE SIGNS SHOWN ON THIS SHEET WILL BE USED AS THE BASIS FOR FINAL PAYMENT, EXCEPT WHERE SIGNS ARE MODIFIED FROM THAT SHOWN. 2. THE SPEED LIMITS REQUIRED ON SIGNS R2-1 AND R2-4a WILL BE SHOWN ON INDIVIDUAL PLAN SHEETS.																						BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN																																																																																																																																																																																																																																																																								
																								REVISION																																																																																																																																																																																																																																																																							
																							DATE	ISSUE DATE: AUGUST 01, 2017																																																																																																																																																																																																																																																																							

																STATE	PROJECT NO.							
																MISS.								
SIGN NUMBER	W1-1L W1-1R		W1-2L W1-2R		W1-3L W1-3R		W1-4L W1-4R		W1-6L W1-6R		W1-7		W3-1a		W3-2a		W3-3		W4-1L W4-1R	W4-101L W4-101R				
ALUMINUM (6061-T6) SIGN BLANK THICKNESS	0.125"		0.125"		0.125"		0.125"		0.100"		0.100"		0.125"		0.125"		0.125"		0.125"	0.125"				
LEGEND																								
	R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"		R=1⅞"		R=1⅞"		R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"					
	LETTER & NUMERAL SERIES																							
	WIDTH OF BORDER	INSIDE OUTSIDE	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	¾" BLACK ½" YELLOW	¾" BLACK ½" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW				
	SIZE (WIDTH X HEIGHT)		36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	48" X 24"	48" X 24"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"				
	COLORS	COPY BACKGROUND	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW				
	REFLECTORIZATION		BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND & SYMBOL	BACKGROUND & SYMBOL	BACKGROUND & SYMBOL	BACKGROUND & SYMBOL	BACKGROUND & "LIGHTS"	BACKGROUND & "LIGHTS"	BACKGROUND	BACKGROUND				
	NUMBER OF POSTS FOR MOUNTING		1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1				
	NUMBER OF HOLES TO BE PUNCHED (⅜" DIA.)		2	4	2	4	2	4	2	4	4	4	2	4	2	4	2	4	2	4				
	PUNCHING DISTANCE FROM EACH VERT. EDGE		VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	9"	9"	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER				
	PUNCHING DISTANCE FROM TOP EDGE		18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	3"; 21"	3"; 21"	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER				
SIGN NUMBER	W4-2		W6-1		W6-2		W6-3		W13-1		W13-2		W13-3		W10-1									
ALUMINUM (6061-T6) SIGN BLANK THICKNESS	0.125"		0.125"		0.125"		0.125"		0.080"		0.125"		0.125"		0.100"									
LEGEND	NOTE: SEE PLAN SHEETS FOR IDEOGRAM REQUIRED ON INDIVIDUAL SIGNS.																							
	R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"		R=2¼" R=3"		R=1½"		R=3"		R=3"		R=3"									
	LETTER & NUMERAL SERIES								10" SERIES "E" 4" SERIES "E"		8" SERIES "E" 16" SERIES "E" 6" SERIES "E" (SEE NOTE)		8" SERIES "E" 16" SERIES "E" 6" SERIES "E" (SEE NOTE)		8" SERIES "E"									
	WIDTH OF BORDER	INSIDE OUTSIDE	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅞" BLACK ⅝" YELLOW	1¼" BLACK ¾" YELLOW	⅝" BLACK ⅜" YELLOW	1¼" BLACK ¾" YELLOW	1¼" BLACK ¾" YELLOW	1¼" BLACK ¾" YELLOW	1¼" BLACK ¾" YELLOW	¾" BLACK ½" YELLOW	¾" BLACK ½" YELLOW							
	SIZE (WIDTH X HEIGHT)		36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	36" X 36"	48" X 48"	24" X 24"	48" X 60"	48" X 60"	48" X 60"	48" X 60"	36" DIAMETER	36" DIAMETER							
	COLORS	COPY BACKGROUND	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW	BLACK YELLOW							
	REFLECTORIZATION		BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND	BACKGROUND							
	NUMBER OF POSTS FOR MOUNTING		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1							
	NUMBER OF HOLES TO BE PUNCHED (⅜" DIA.)		2	4	2	4	2	4	2	4	2	6	6	6	6	2	2							
	PUNCHING DISTANCE FROM EACH VERT. EDGE		VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	VERT. CENTER	15" FROM VERT. CENTER	12" (VERT. CENTER)	9"	9"	9"	9"	15"	15"							
	PUNCHING DISTANCE FROM TOP EDGE		18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	18" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER	3"; 21"	4"; 30"; 56"	4"; 30"; 56"	4"; 30"; 56"	4"; 30"; 56"	15" FROM HORIZ. CENTER	15" FROM HORIZ. CENTER							

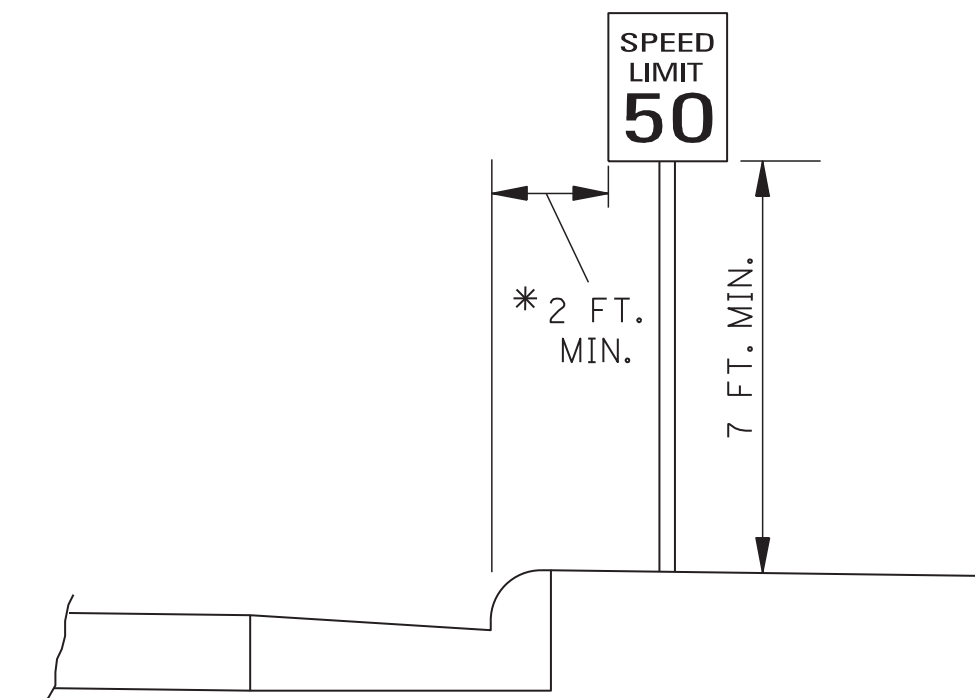
ROADSIDE SIGN
IN RURAL AREA



ROADSIDE SIGN
IN RURAL AREA

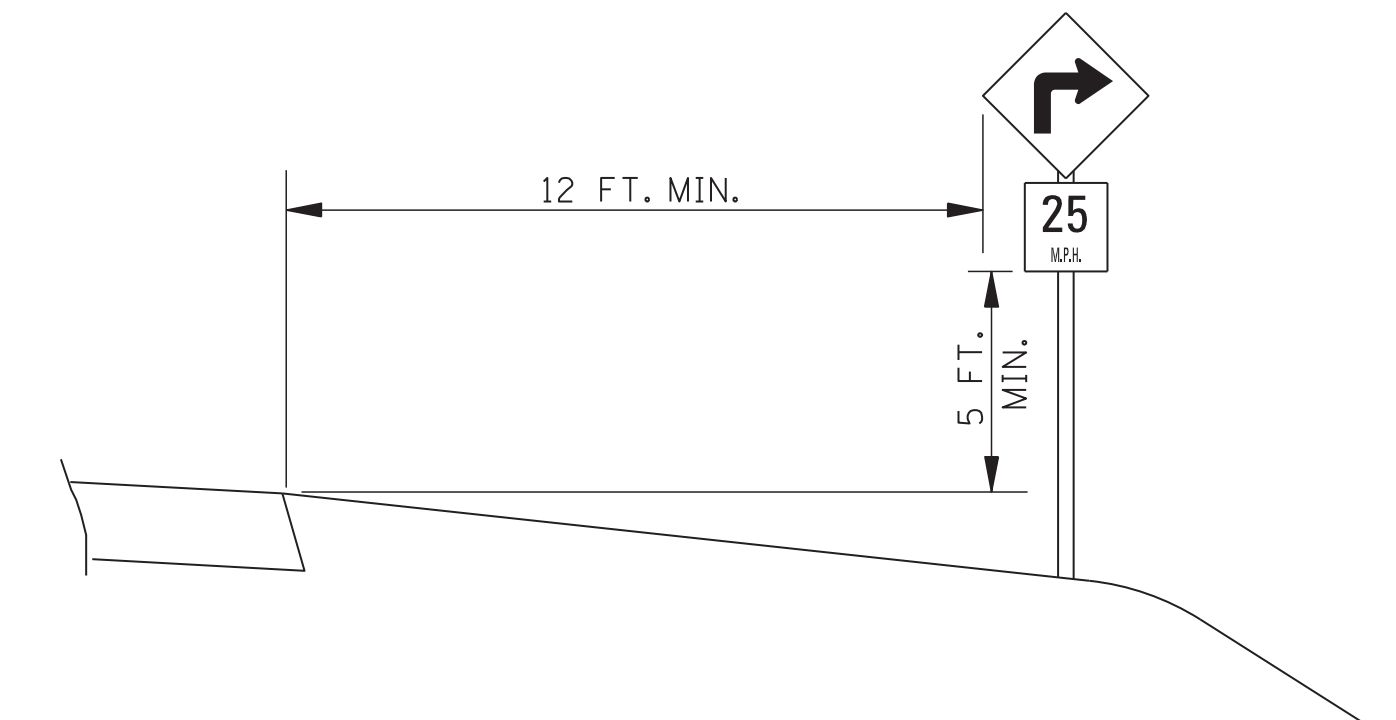


ROADSIDE SIGN IN BUSINESS,
COMMERCIAL, OR RESIDENTIAL AREA

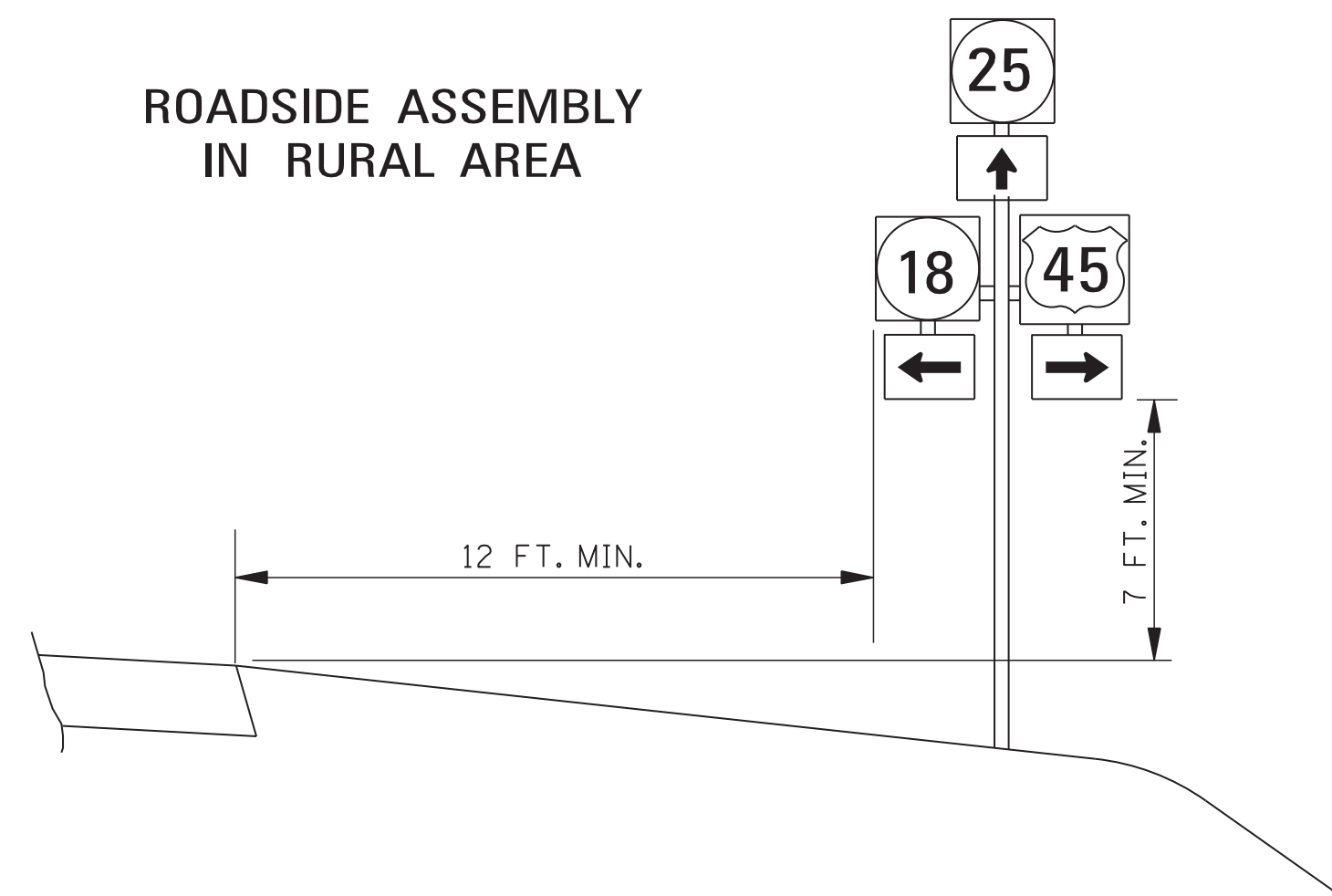


* THE 2 FT. MINIMUM OFFSET APPLIES ONLY TO STANDARD SIGNS MOUNTED ON U-POSTS. ALL STANDARD SIGNS MOUNTED ON PIPE WILL BE OFFSET A MINIMUM OF 4 FT.. RAMP DESTINATION SIGNS WILL BE OFFSET 4 FT. FROM THE SHOULDERS.

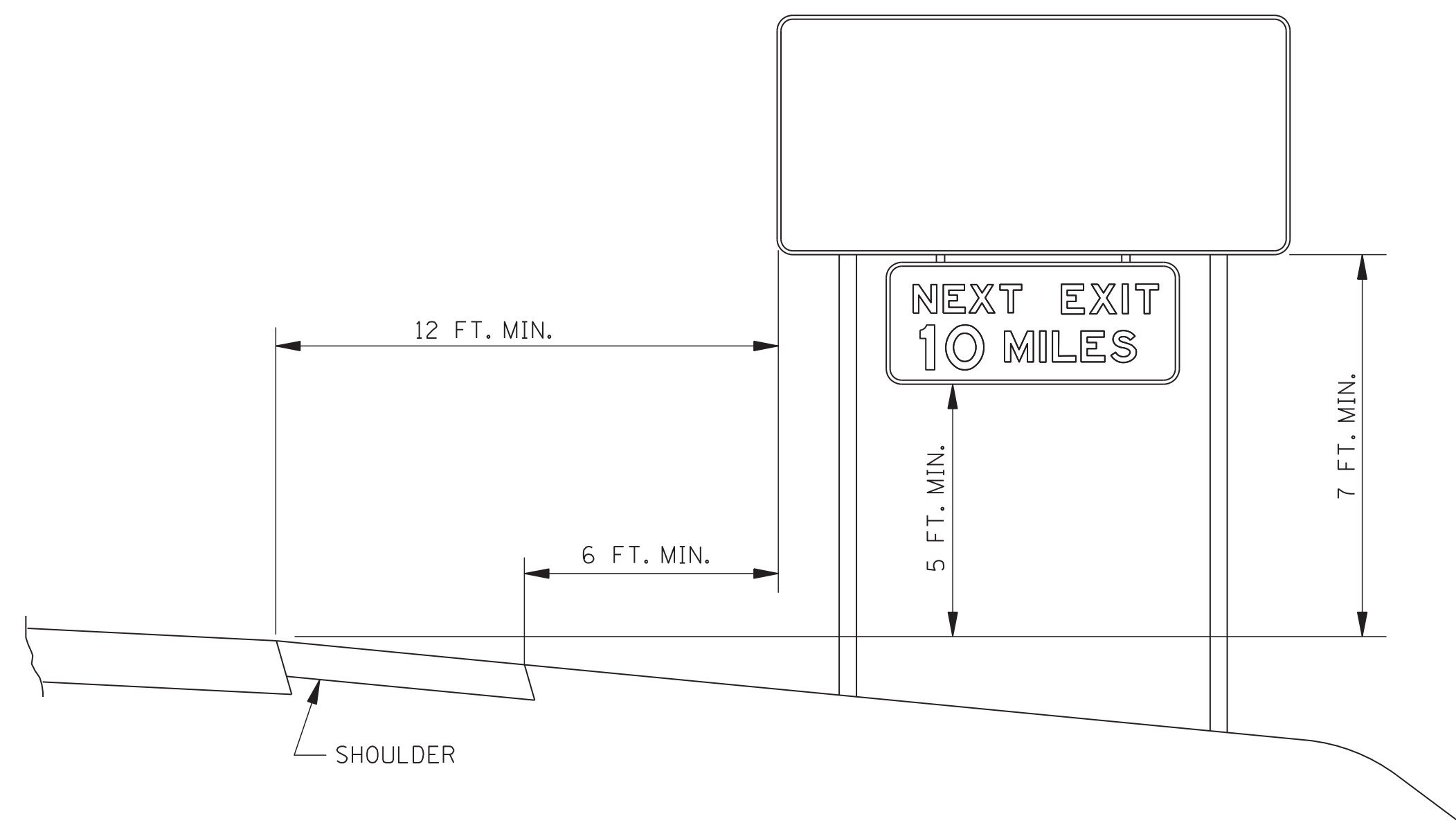
WARNING SIGN WITH ADVISORY
SPEED PLAQUE IN RURAL AREA



ROADSIDE ASSEMBLY
IN RURAL AREA



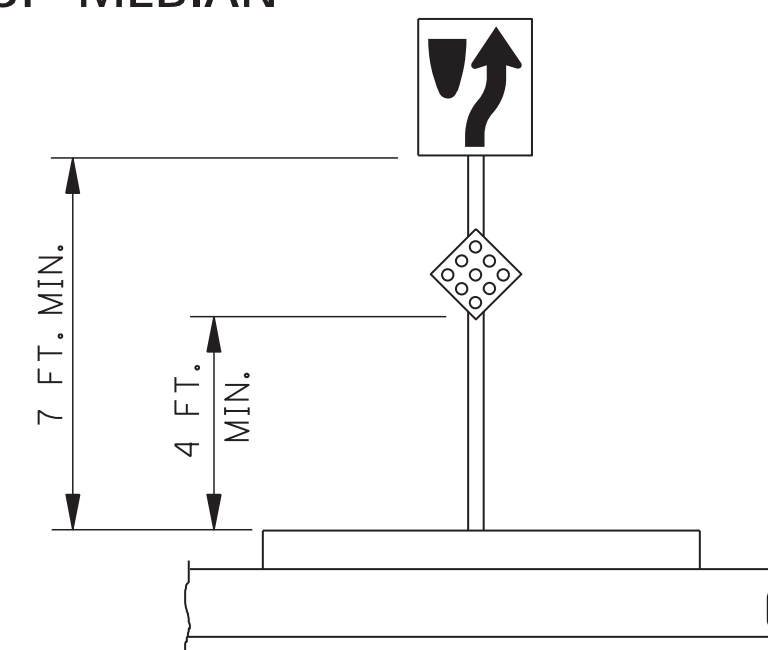
INTERSTATE OR FREEWAY SIGN WITH SECONDARY SIGN



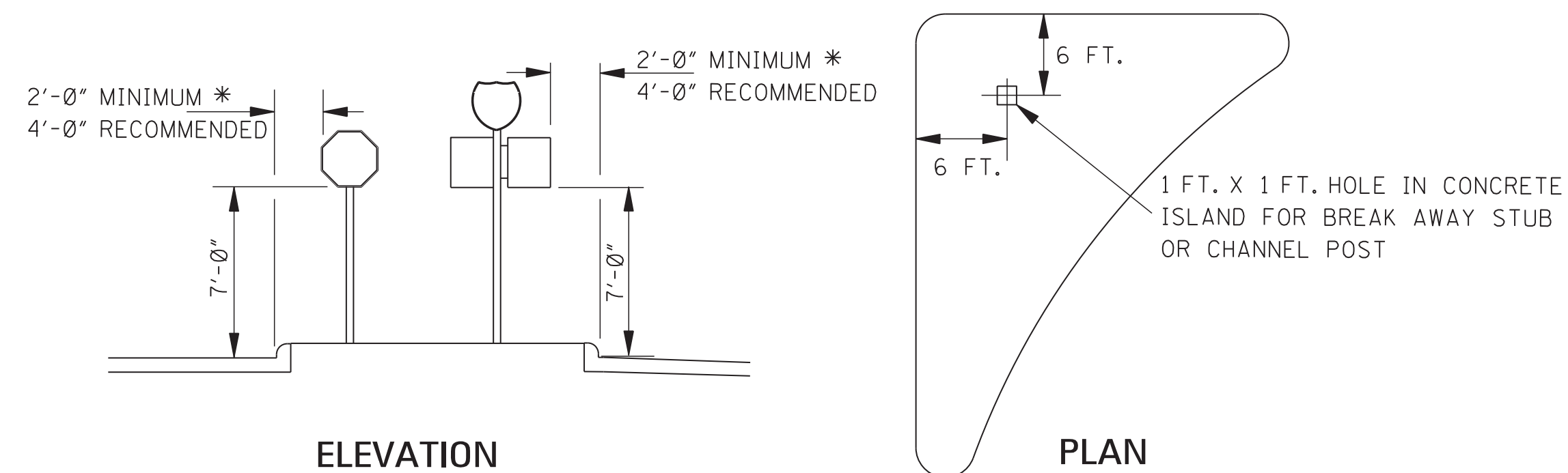
OVERHEAD SIGN



SIGN ON NOSE
OF MEDIAN



SIGNS IN ISLANDS OR BEHIND CURB USING U-POSTS OR PIPE POSTS



ELEVATION

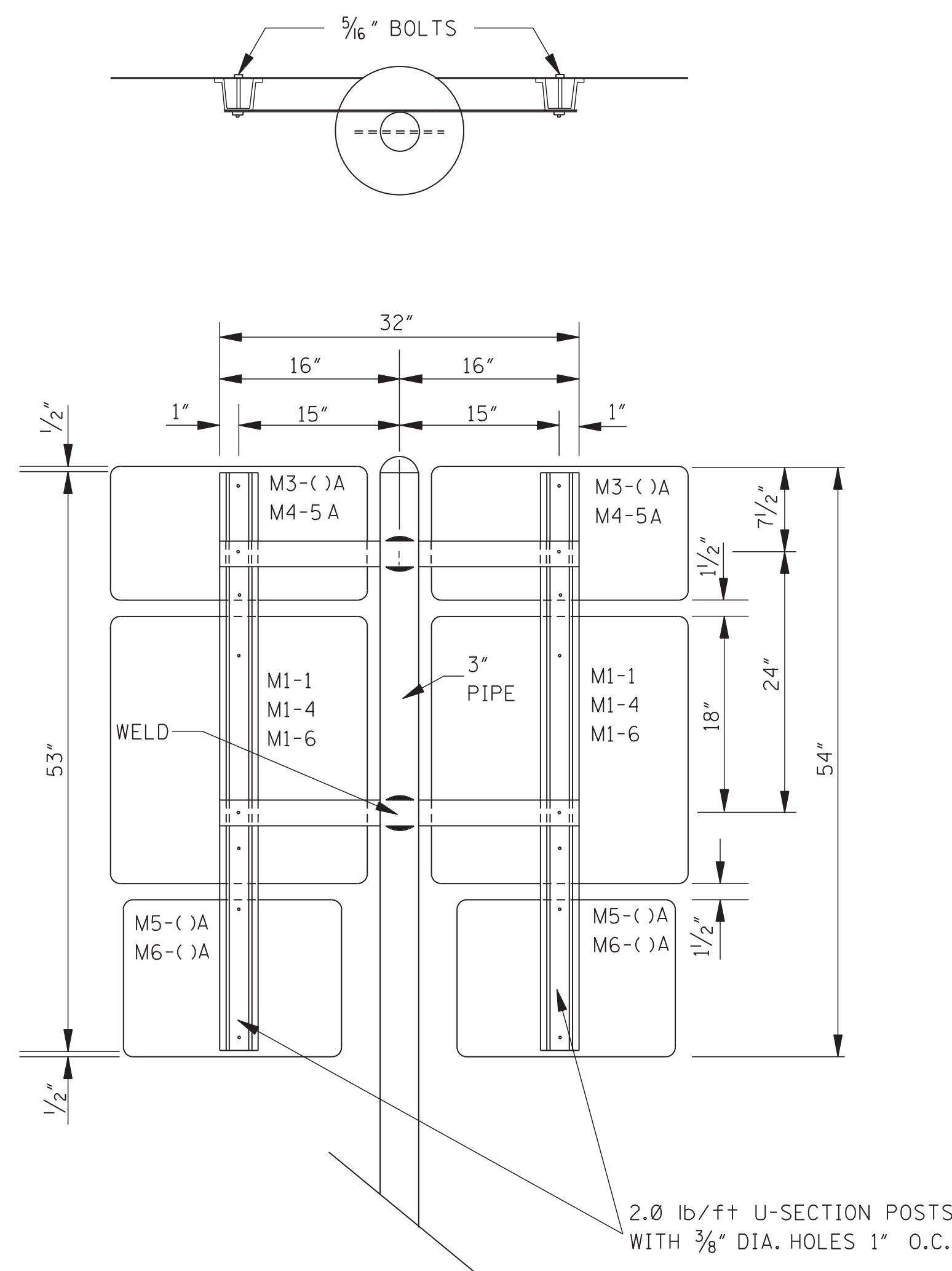
PLAN

GENERAL NOTES:

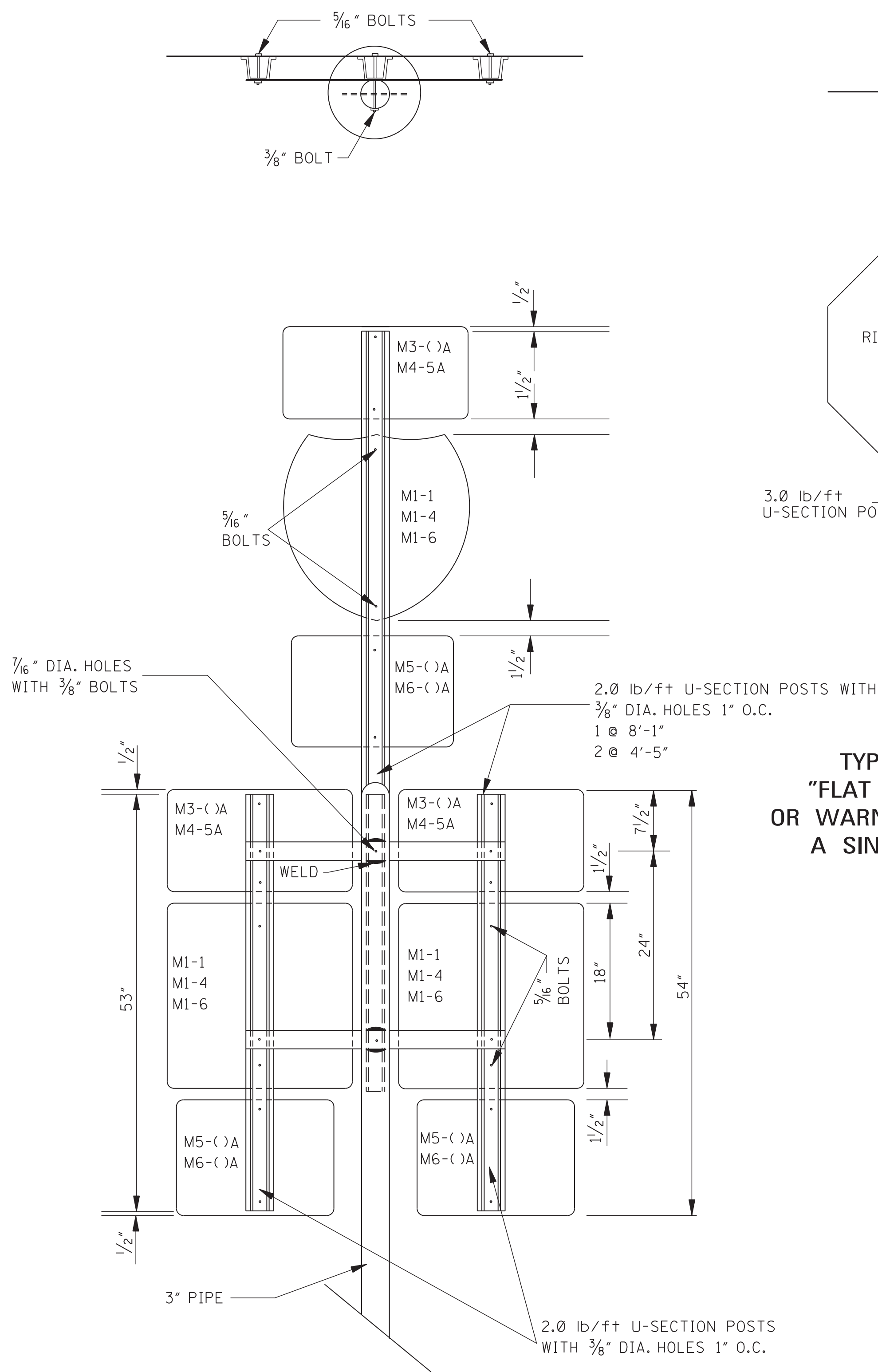
- SEE SECTION 2A-19 OF THE MUTCD FOR REDUCED LATERAL OFFSET DISTANCES THAT MAY BE USED IN AREAS WHERE LATERAL OFFSETS ARE LIMITED, AND IN BUSINESS, COMMERCIAL, OR RESIDENTIAL AREAS WHERE SIDEWALK WIDTH IS LIMITED OR WHERE EXISTING POLES ARE CLOSE TO THE CURB.
- SIGNS SHALL BE LOCATED OUTSIDE THE CLEAR ZONE UNLESS PLACED ON A BREAKAWAY OR YIELDING SUPPORT.

* THE 2 FT. MINIMUM OFFSET APPLIES ONLY TO STANDARD SIGNS MOUNTED ON U-POSTS. ALL STANDARD SIGNS MOUNTED ON PIPE WILL BE OFFSET A MINIMUM OF 4 FT.. RAMP DESTINATION SIGNS WILL BE OFFSET 4 FT. FROM THE SHOULDERS.

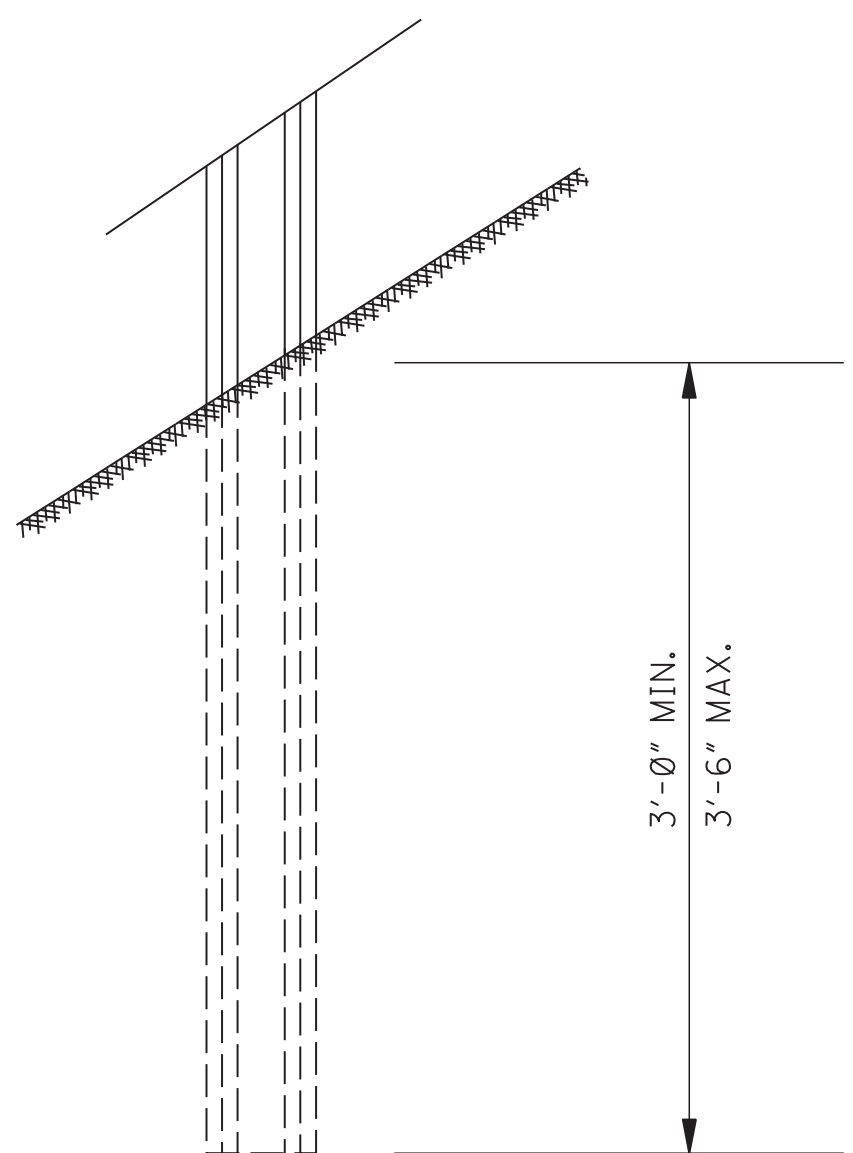
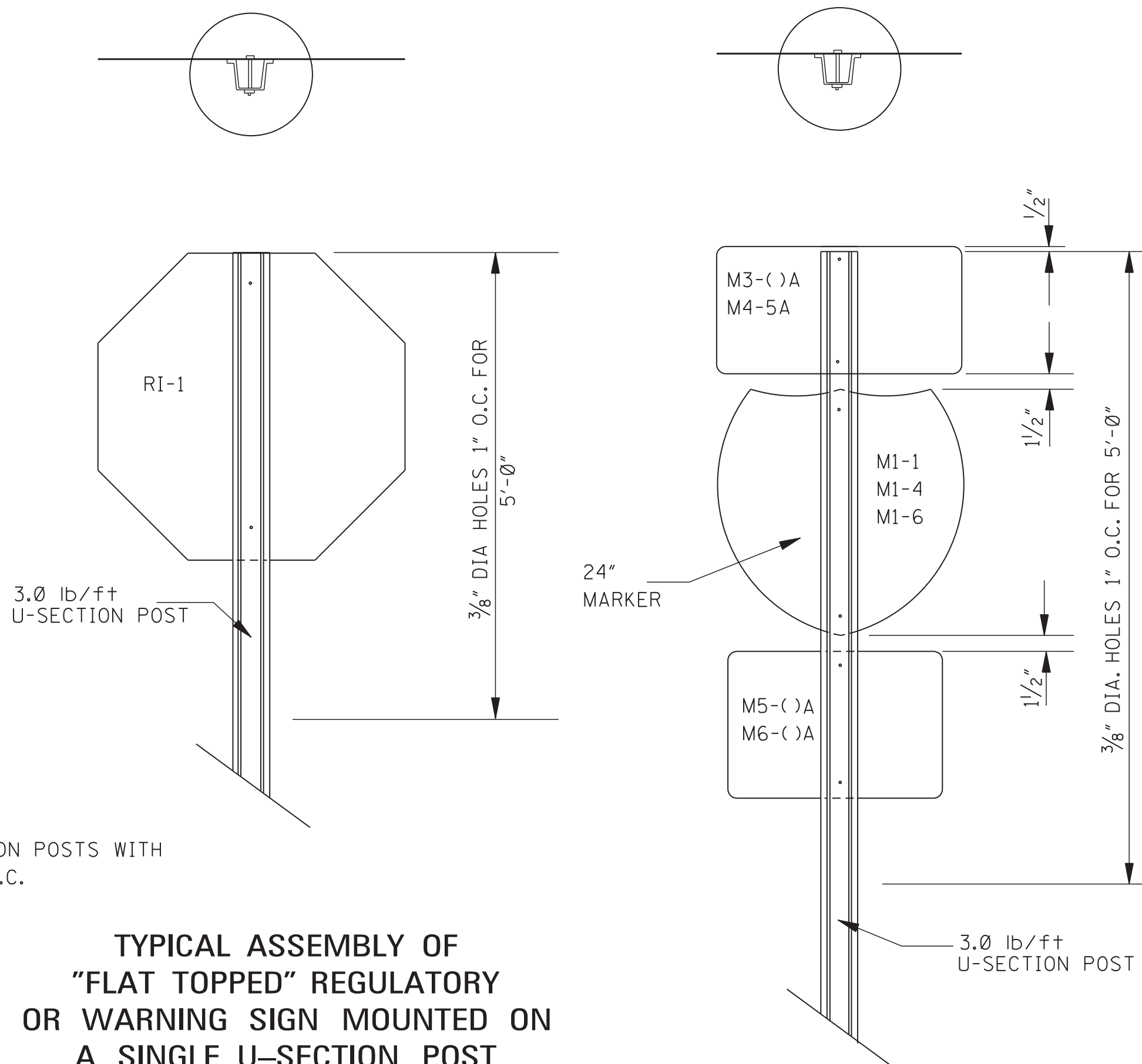
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION
					ROADWAY DESIGN DIVISION
					STANDARD PLAN
					STANDARD ROADSIDE SIGN ASSEMBLY AND INSTALLATION
					
					WORKING NUMBER SN-4
					SHEET NUMBER 6306
				DATE	ISSUE DATE: AUGUST 01, 2017



TYPICAL ROUTE ASSEMBLY



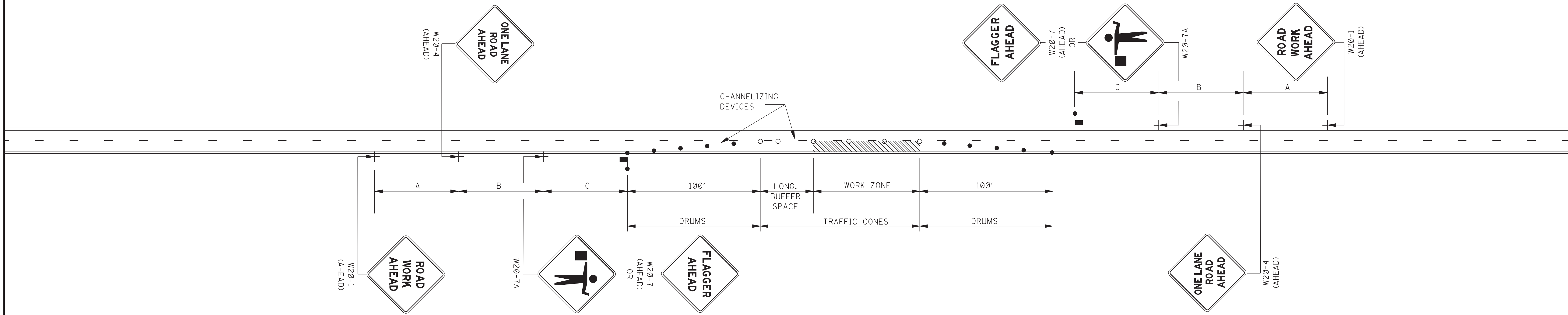
TYPICAL STACKED ROUTE ASSEMBLY



FOOTING DETAIL FOR U-SECTION POSTS

- GENERAL NOTES:
1. UNLESS OTHERWISE SPECIFIED, HORIZONTAL BRACES ARE $\frac{1}{16}$ " X $2\frac{1}{2}$ " X VARIABLE LENGTH FLAT STEEL BARS. BARS ARE WELDED TO PIPE AS SHOWN. WHEN FABRICATION IS COMPLETE, POST SHALL BE GALVANIZED AS PER SECTION 630 OF THE STANDARD SPECIFICATION.
 2. HOLES IN FLAT BARS ARE $\frac{3}{8}$ " DIAMETER.
 3. SIGNS ARE FASTENED TO FLAT BARS AND U-SECTION POST WITH $\frac{3}{16}$ " BOLTS, WITH FLAT WASHER AND LOCK-NUTS.
 4. GROUND PLATE NOT REQUIRED ON U-SECTION POST.
 5. SEE WK. NO. SN-4B FOR DETAIL OF 3" PIPE FOOTING DETAIL.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN STANDARD ROADSIDE SIGN ASSEMBLY AND INSTALLATION	
				REVISION		
		DATE	ISSUE DATE: AUGUST 01, 2017			MDOT MISSISSIPPI DEPARTMENT OF TRANSPORTATION
						WORKING NUMBER SN-4A
						SHEET NUMBER 6307



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.

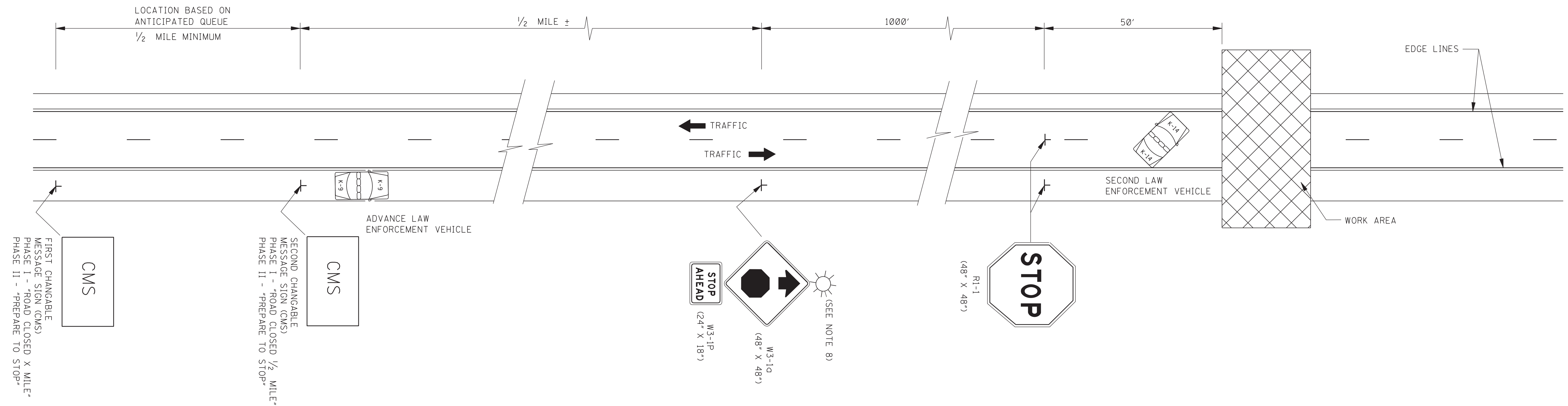
LEGEND

- 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	TRAFFIC CONTROL PLAN WITH FLAGGER (ONE-LANE CLOSURE OF TWO-WAY TRAFFIC)
				DATE	ISSUE DATE: AUGUST 01, 2017
					MDOT MISSISSIPPI DEPARTMENT OF TRANSPORTATION WORKING NUMBER TCP-1 SHEET NUMBER 6351

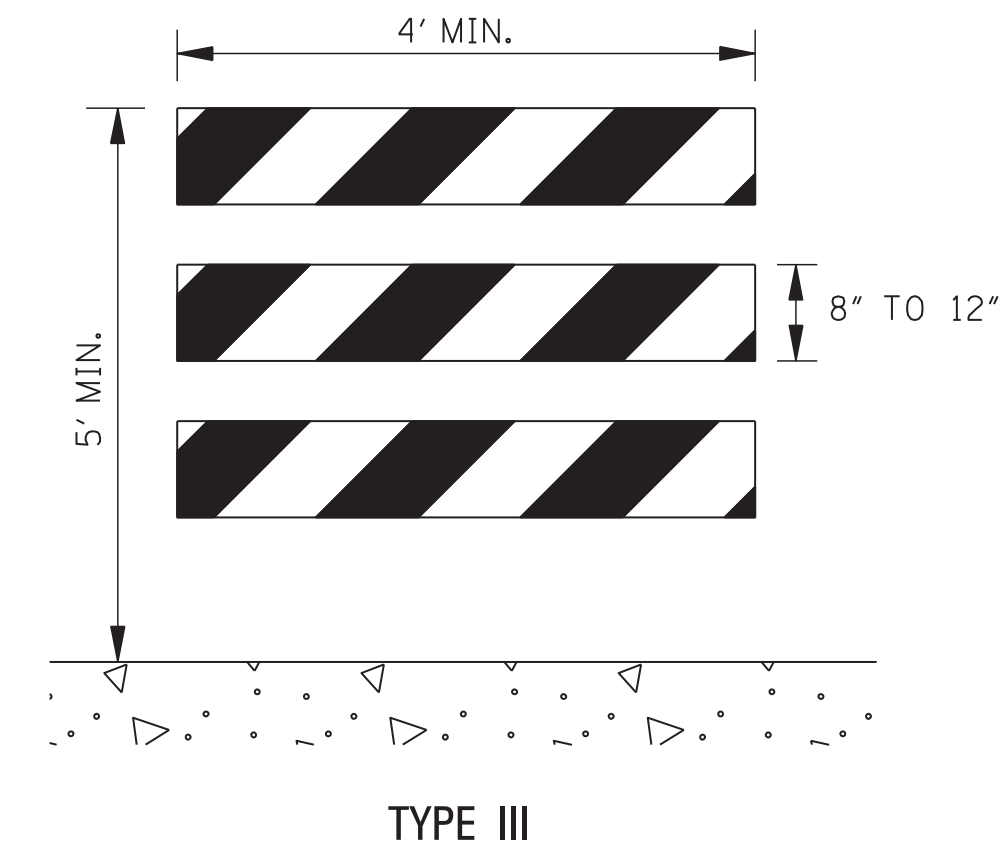
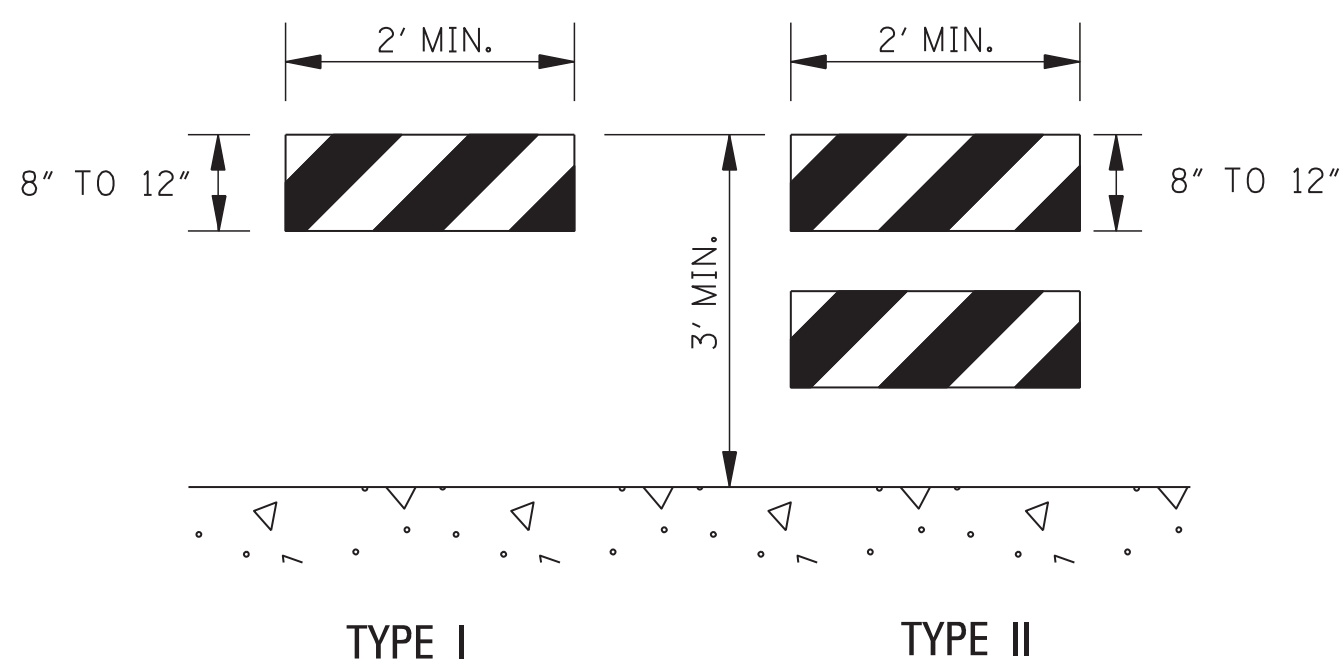
STATE	PROJECT NO.
MISS.	



GENERAL NOTES:

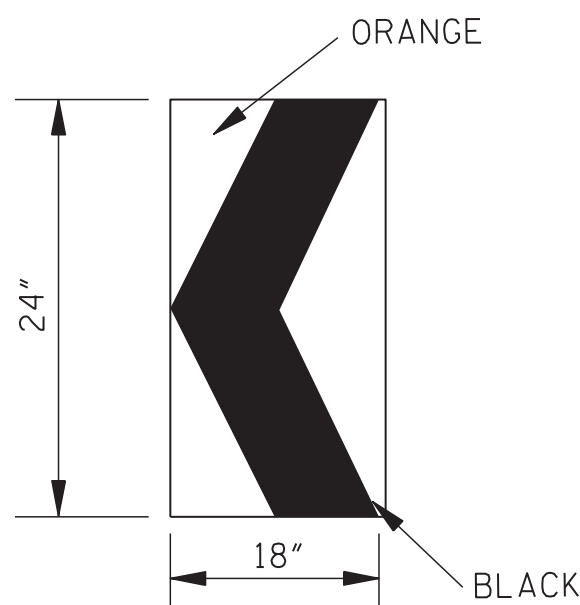
1. THIS TYPE OF HIGHWAY CLOSURE SHOULD ONLY BE USED FOR CONSTRUCTION OPERATIONS WHEN THE DURATION OF CLOSURE WILL NOT EXCEED 30 MINUTES. AFTER THE HIGHWAY HAS BEEN CLOSED AND REOPENED VIA THIS PROCEDURE, A MINIMUM PERIOD OF 30 MINUTES SHOULD ELAPSE BEFORE ANOTHER SHORT DURATION CLOSURE, EXCEPT WITH THE APPROVAL OF THE ENGINEER.
 2. AT LEAST TWO LAW ENFORCEMENT OFFICERS AND TWO LAW ENFORCEMENT VEHICLES SHOULD BE PROVIDED ON EACH APPROACH TO THE CLOSURE. EACH LAW ENFORCEMENT VEHICLE SHOULD HAVE A ROOF MOUNTED FLASHING BLUE LIGHT OR LIGHT BAR.
 3. RESTRICTIONS ON ROAD CLOSURES ARE SPECIFIED IN THE CONTRACT DOCUMENT.
 4. THE ADVANCE LAW ENFORCEMENT VEHICLE SHOULD BE MOVED BACK AS REQUIRED BY THE QUEUING OF STOPPED VEHICLES.
 5. IF QUEUE EXCEEDS THE FIRST CHANGABLE MESSAGE SIGN (CMS) AT ANYTIME DURING A CLOSURE; THE TRAFFIC CONTROL PLAN SHOULD BE ADJUSTED AS NECESSARY, WITH APPROVAL OF THE ENGINEER.
6. TRAFFIC CONTROL SHOULD BE REMOVED IN THE FOLLOWING ORDER:
 - A. FIRST CHANGABLE MESSAGE SIGN (CMS)
 - B. SECOND CHANGABLE MESSAGE SIGN (CMS)
 - C. ADVANCE LAW ENFORCEMENT VEHICLE, LIGHTS AND FLASHERS ON.
 - D. "W3-1a (48" X 48")" AND "W3-1P (24" X 18")" SIGNS ERECTED.
 - E. "R1-1 (48" X 48")" SIGNS ERECTED TO STOP TRAFFIC. THE ORDER OF ERECTION SHOULD BE IN THE FOLLOWING ORDER: RIGHT SHOULDER THEN CENTER.
 - F. SECOND LAW ENFORCEMENT VEHICLE, LIGHTS AND FLASHERS ON.
 7. TRAFFIC CONTROL SHOULD BE REMOVED IN THE FOLLOWING ORDER:
 - A. WITH TRAFFIC STOPPED REMOVE THE "R1-1 (48" X 48")" SIGNS TOWARD THE RIGHT SHOULDER IN THE FOLLOWING ORDER: CENTER THEN SIGN ON THE RIGHT SHOULDER. SECOND LAW ENFORCEMENT VEHICLE LEADS TRAFFIC THROUGH WORK AREA.
 - B. AFTER ALL STOPPED VEHICLES HAVE STARTED MOVING, THE "W3-1a (48" X 48")" AND "W3-1P (24" X 18")" SIGNS SHOULD BE REMOVED. THESE SIGNS MAY BE COVERED IF RE-USE IS IMMINENT.
 - C. AFTER ALL VEHICLES HAVE RESUMED APPROXIMATELY NORMAL SPEED, THE CHANGABLE MESSAGE SIGNS TURNED OFF.
 8. UNFLOWER PLACEMENTS SHOULD NOT BE CLOSED DURING HOURS OF DARKNESS EXCEPT FOR EMERGENCIES OR WITH THE APPROVAL OF THE ENGINEER. WHEN THE HIGHWAY MUST BE CLOSED DURING HOURS OF DARKNESS, A TYPE B HIGH INTENSITY FLASHING BARRICADE WARNING LIGHT SHALL BE USED ON EACH W3-1a SIGN.
 9. IF AN ENTRANCE RAMP IS LOCATED BETWEEN THE SECOND CMS AND R1-1, THE CMS, "W3-1a (48" X 48")", AND "W3-1P (24" X 18")" SIGNS SHOULD ALSO BE ERECTED ON THE RAMP SHOULDER.
 10. THE ABOVE DURATION WILL APPLY TO EACH APPROACH TO THE CLOSURE.
 11. 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, INCLUDING SECURING LAW ENFORCEMENT SERVICES.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	
					<i>SHORT DURATION CLOSING OF TWO-LANE TWO-WAY HIGHWAYS</i>
				DATE	 WORKING NUMBER TCP-6 SHEET NUMBER 6356
					ISSUE DATE: <u> AUGUST 01, 2017 </u>



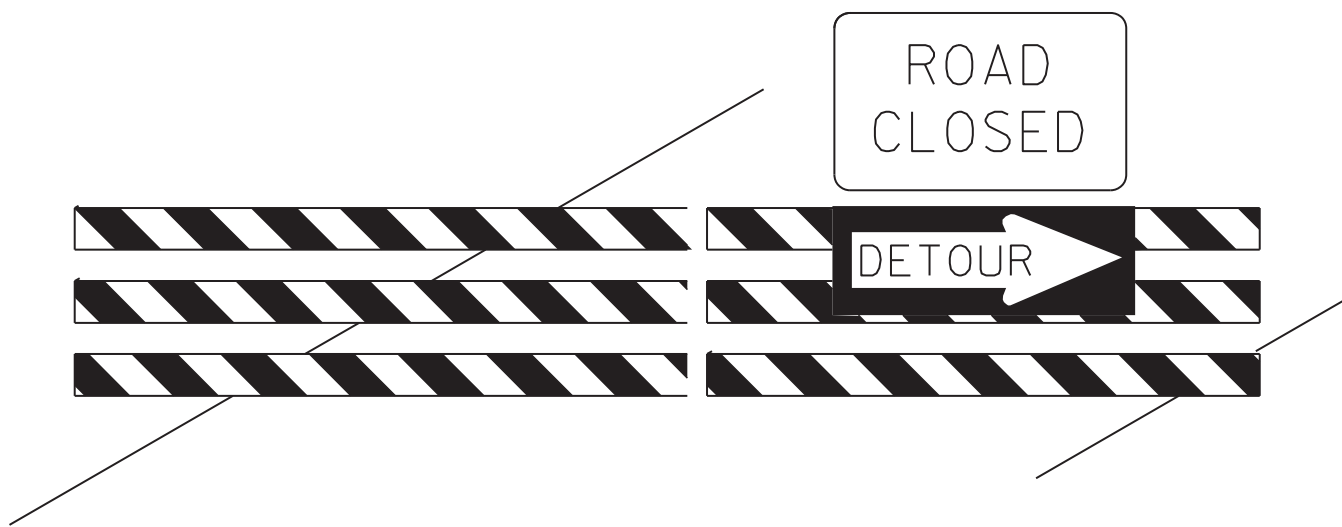
STANDARD BARRICADES

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.

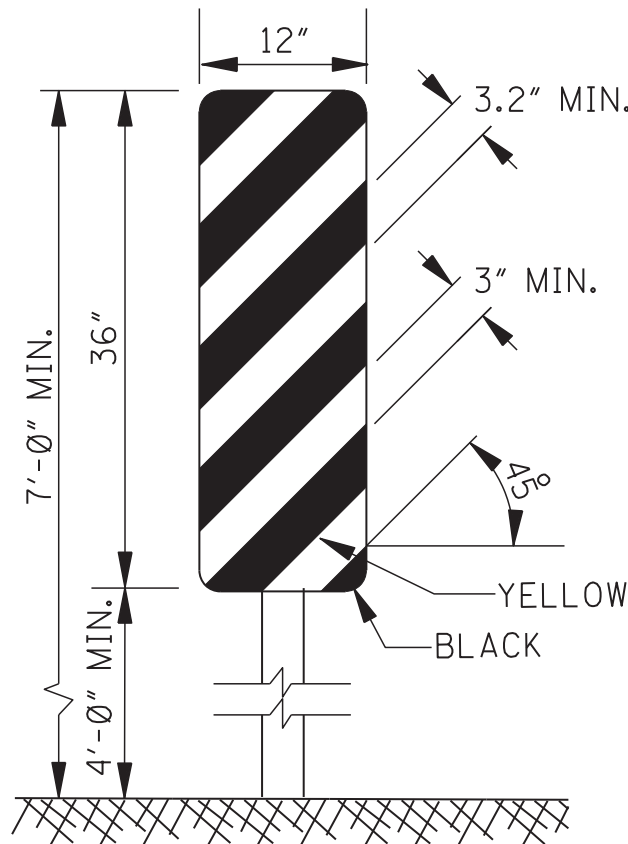


BARRICADE CLOSING A ROAD

BARRICADE CHARACTERISTICS

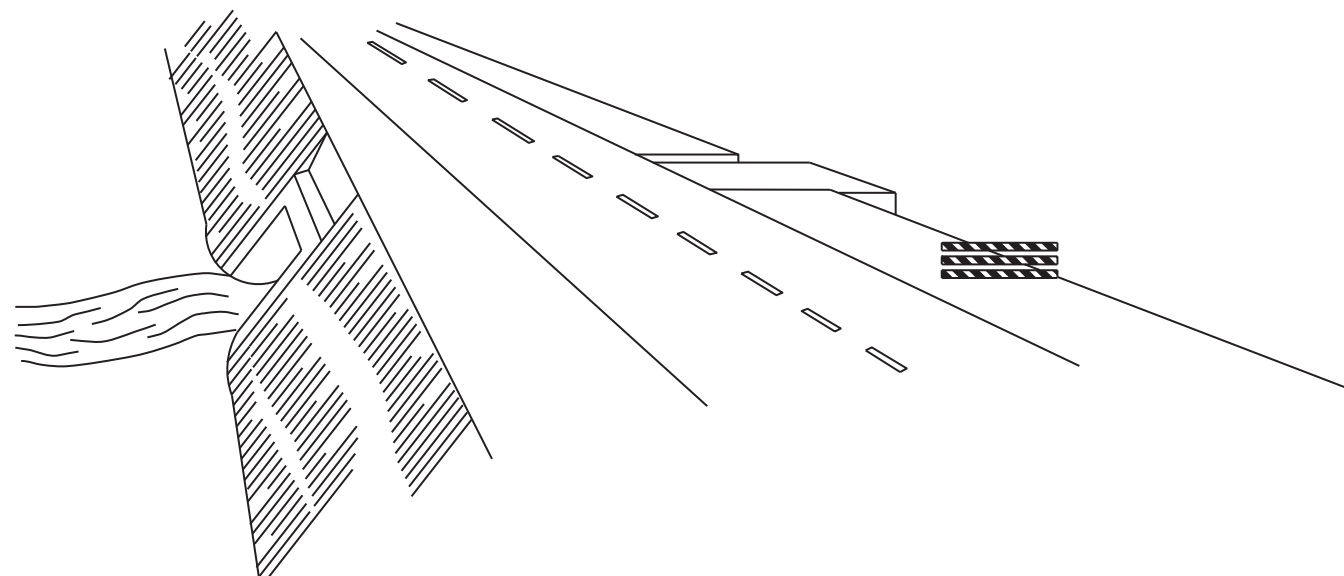
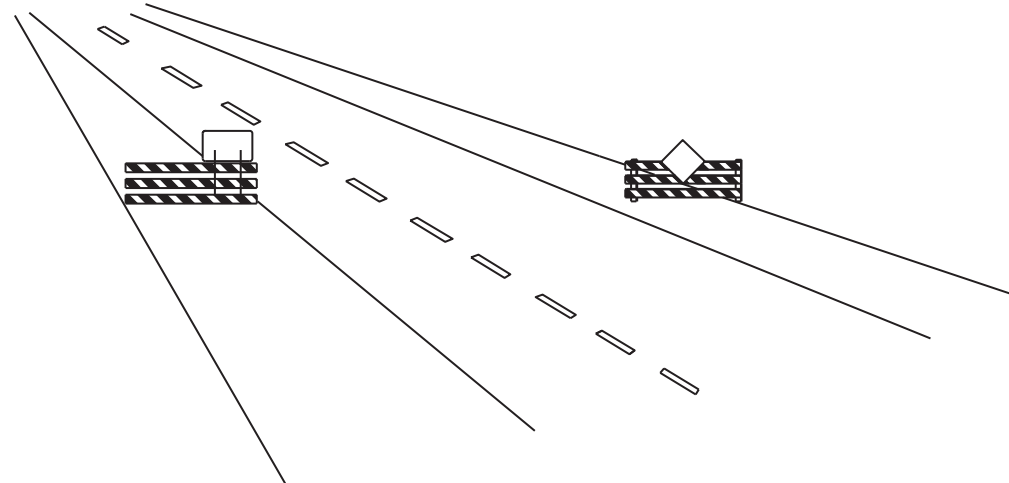
	I	II	III
WIDTH OF RAIL * *	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.	8" MIN. - 12" MAX.
LENGTH OF RAIL **	24" MIN.	24" MIN.	48" MIN.
WIDTH OF STRIPE *	6"	6"	6"
HEIGHT	36" MIN.	36" MIN.	60" MIN.
NUMBER OF RETROREFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE 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.



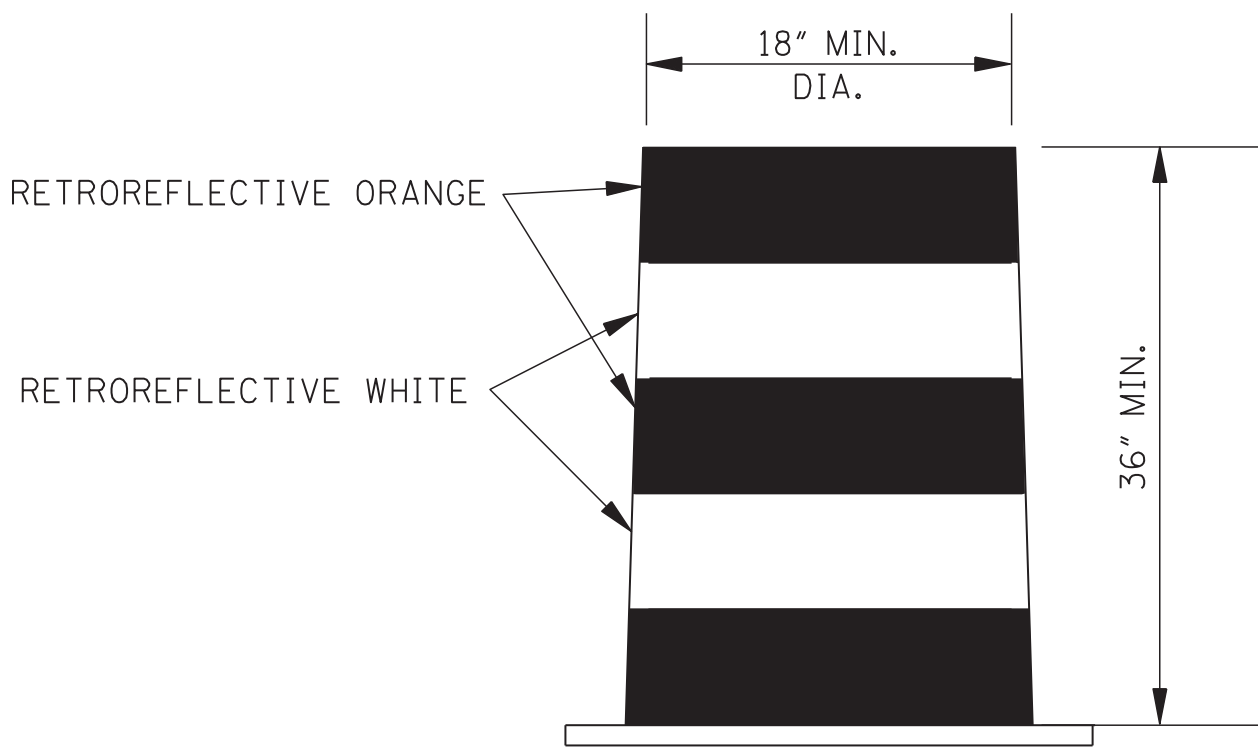
TYPE 3 OBJECT MARKER
(OM-3R)

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

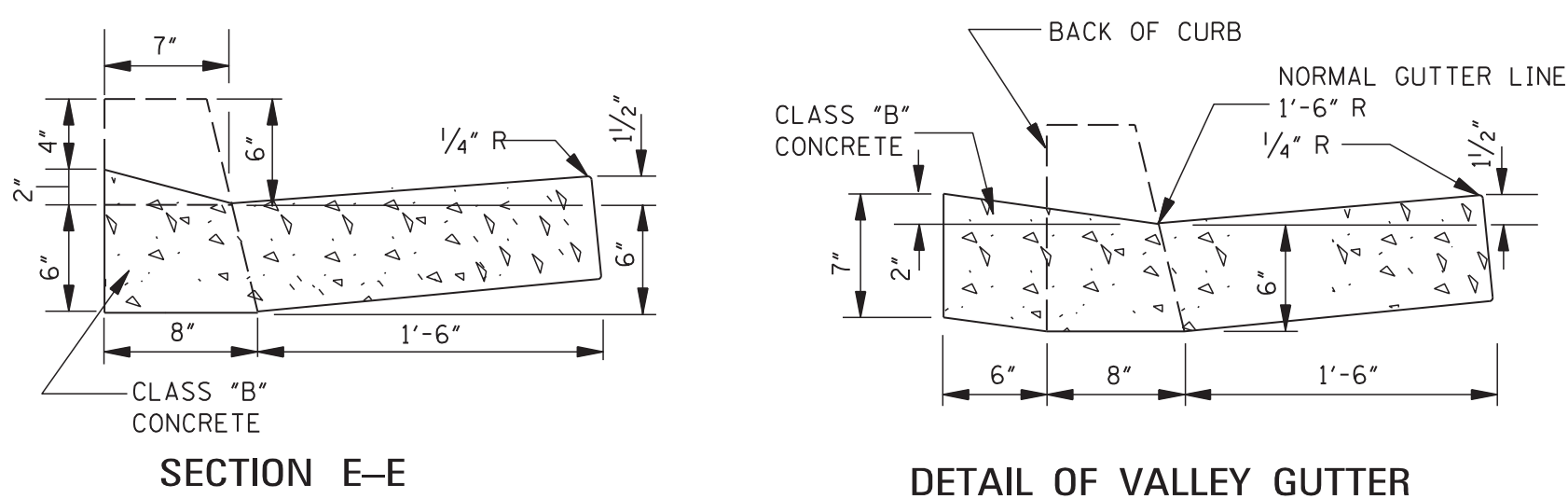
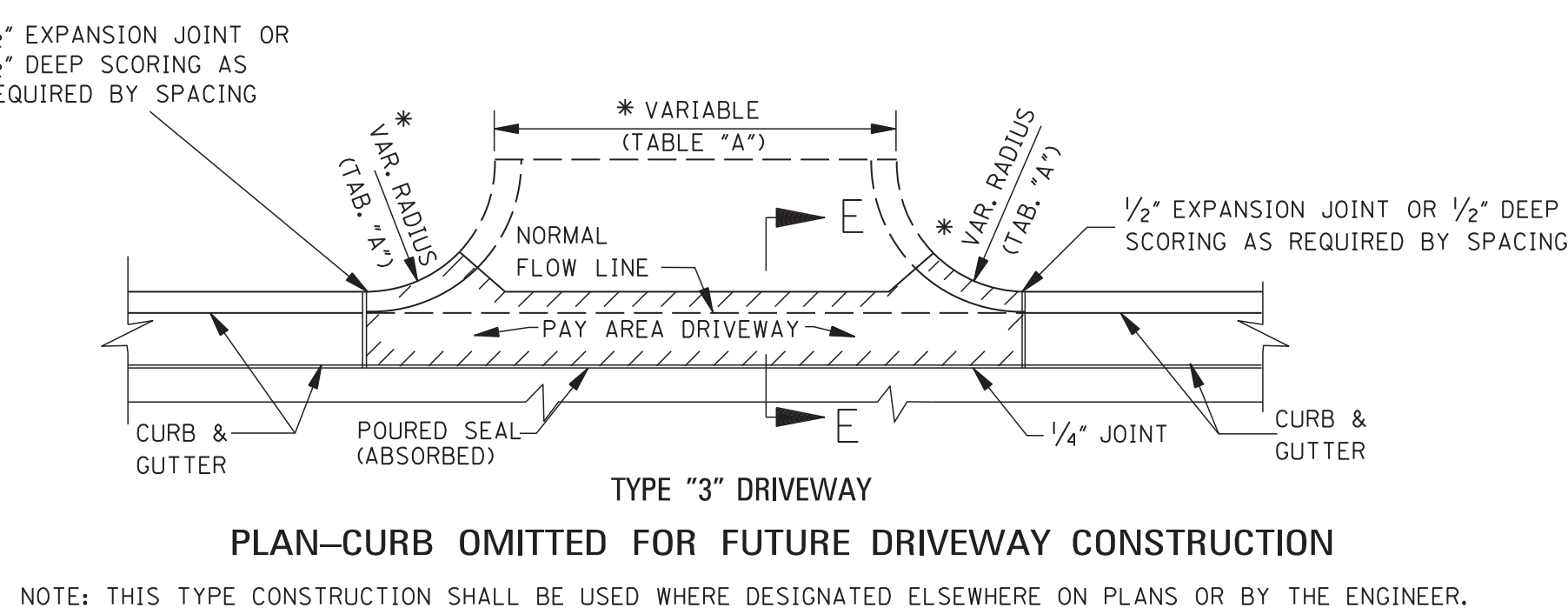
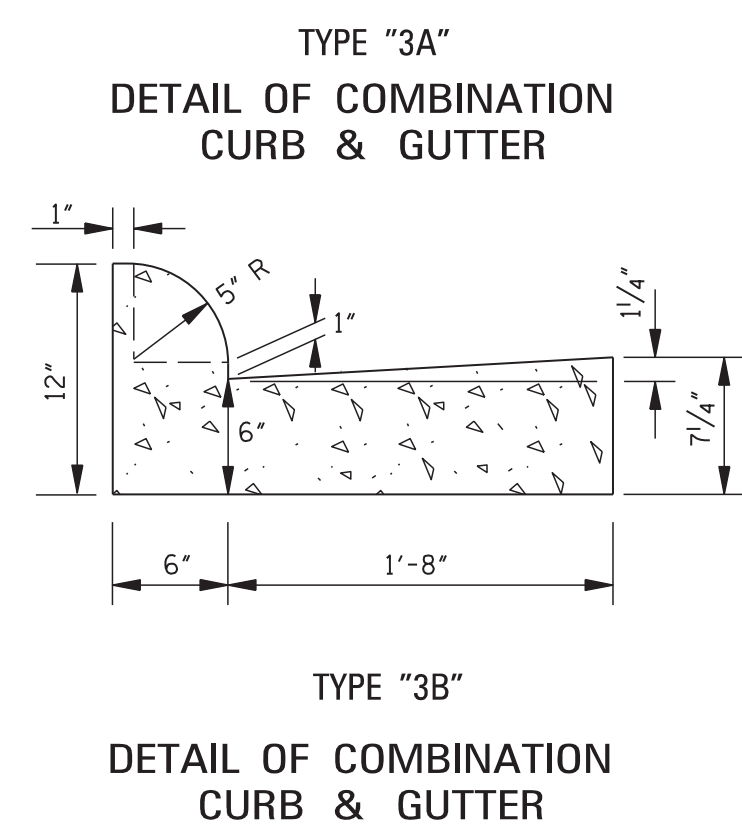
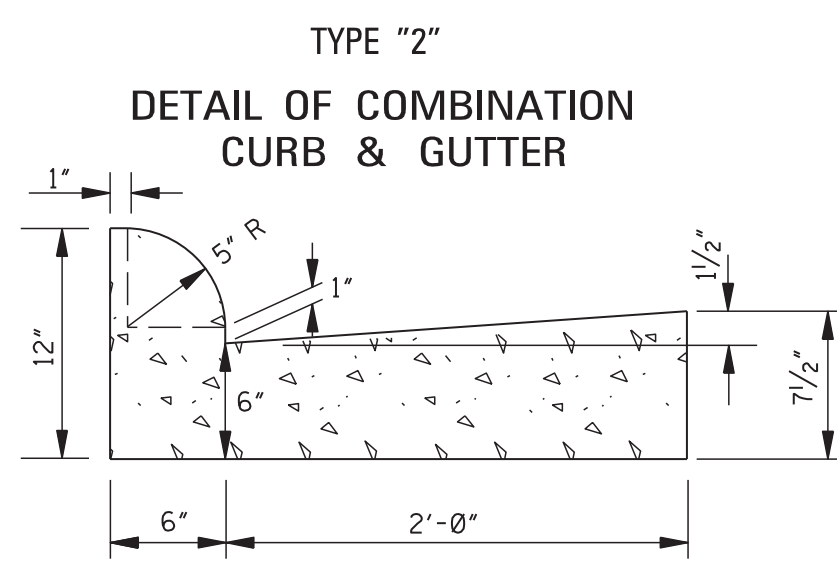
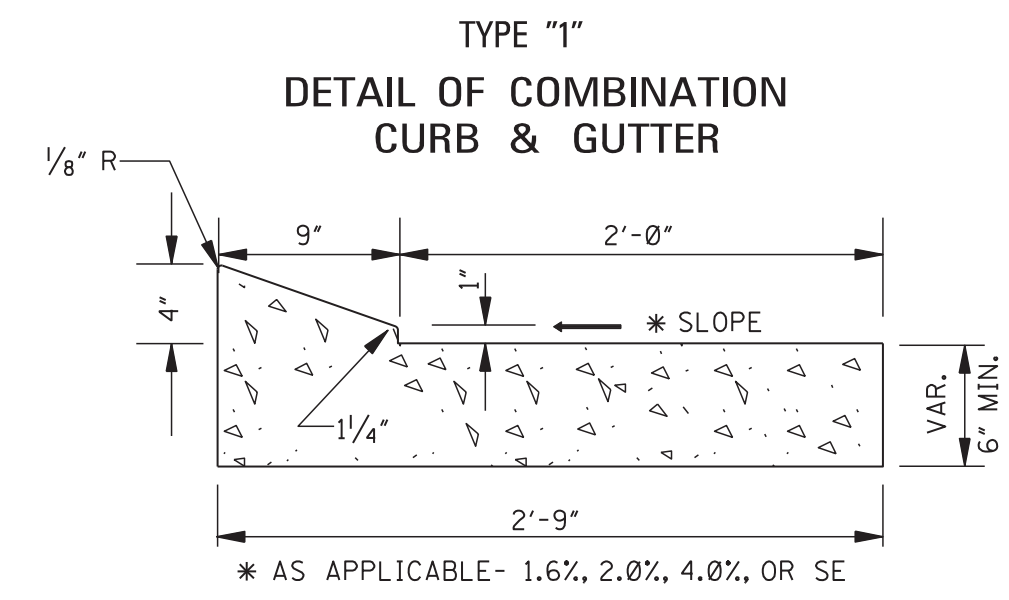
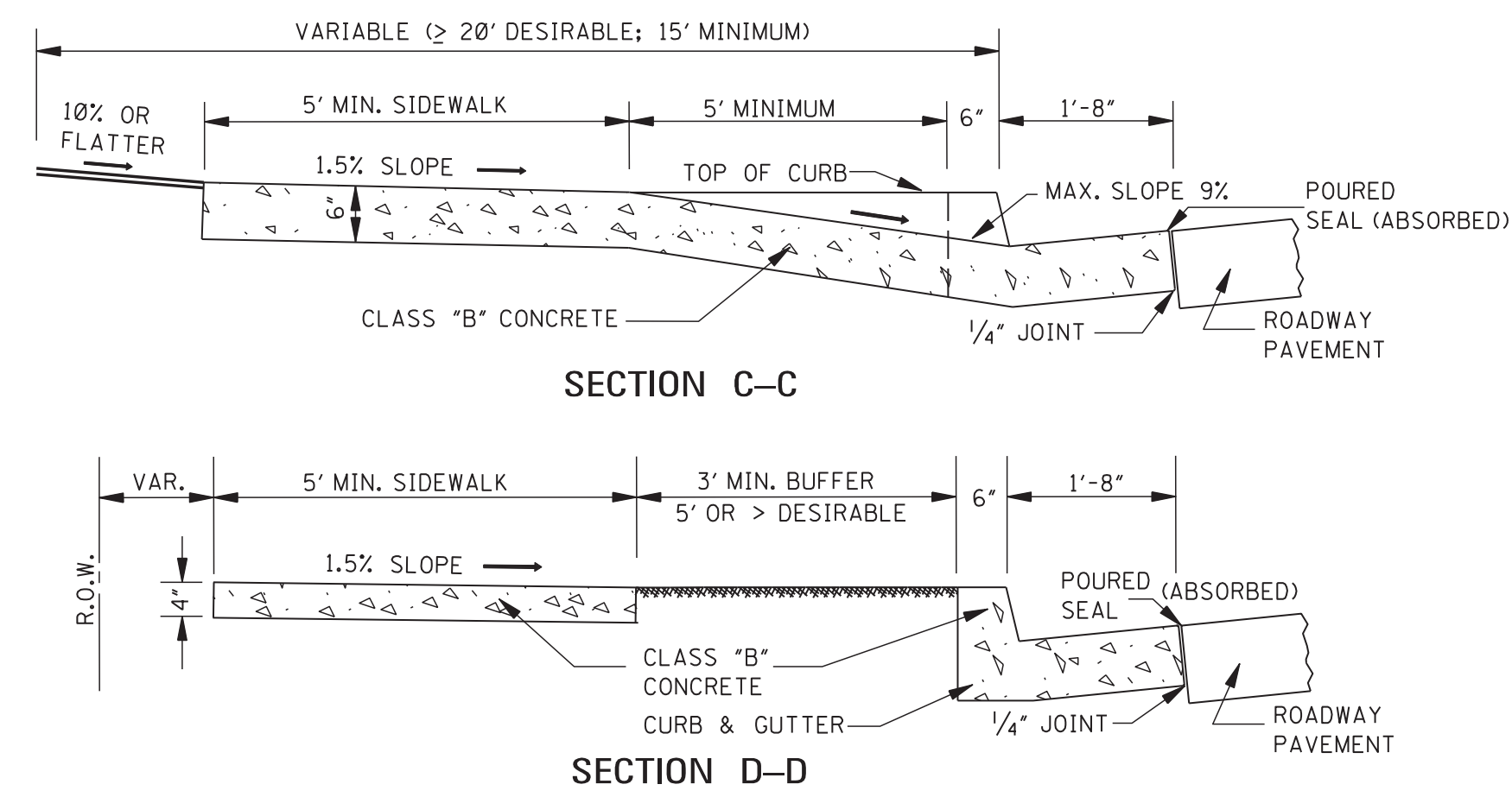
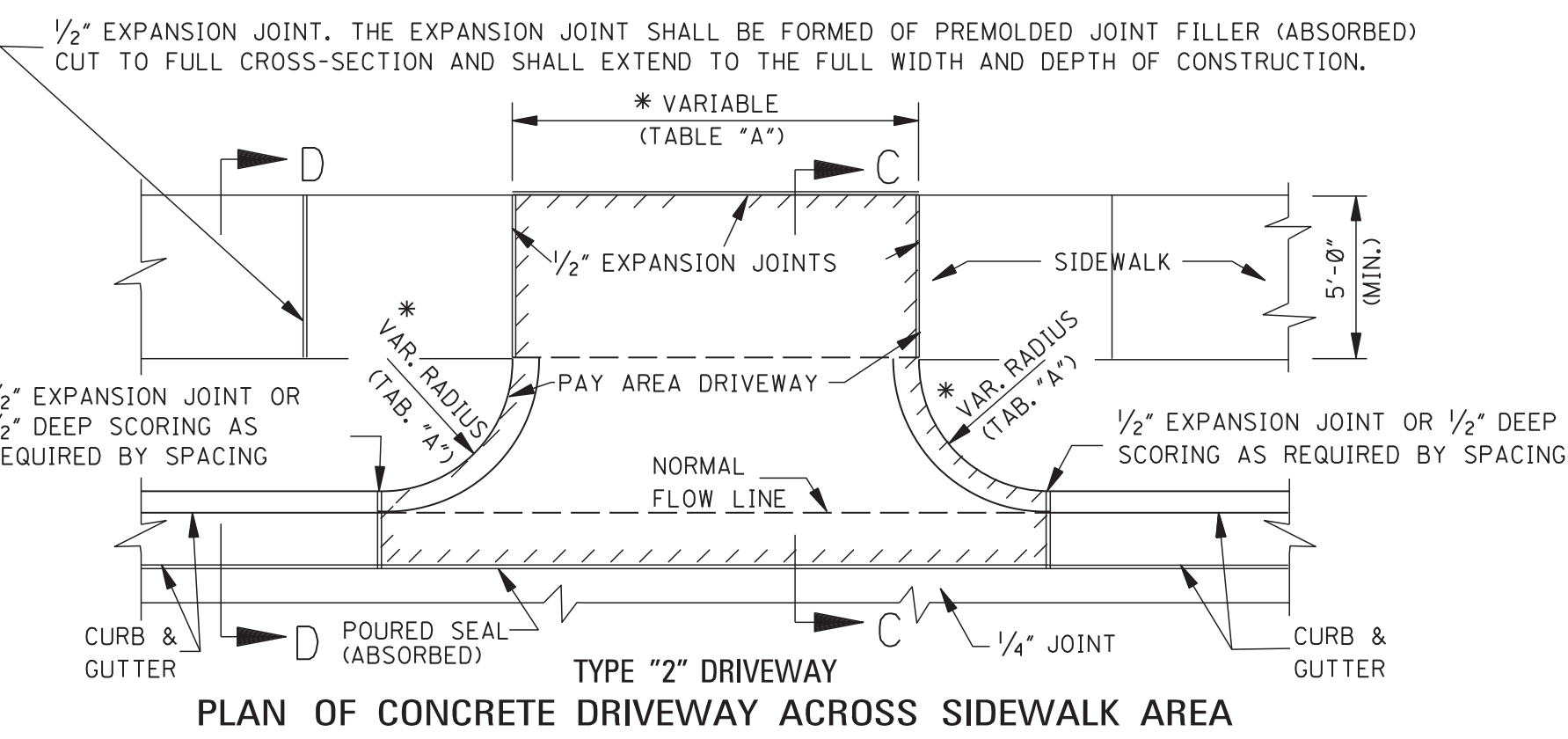
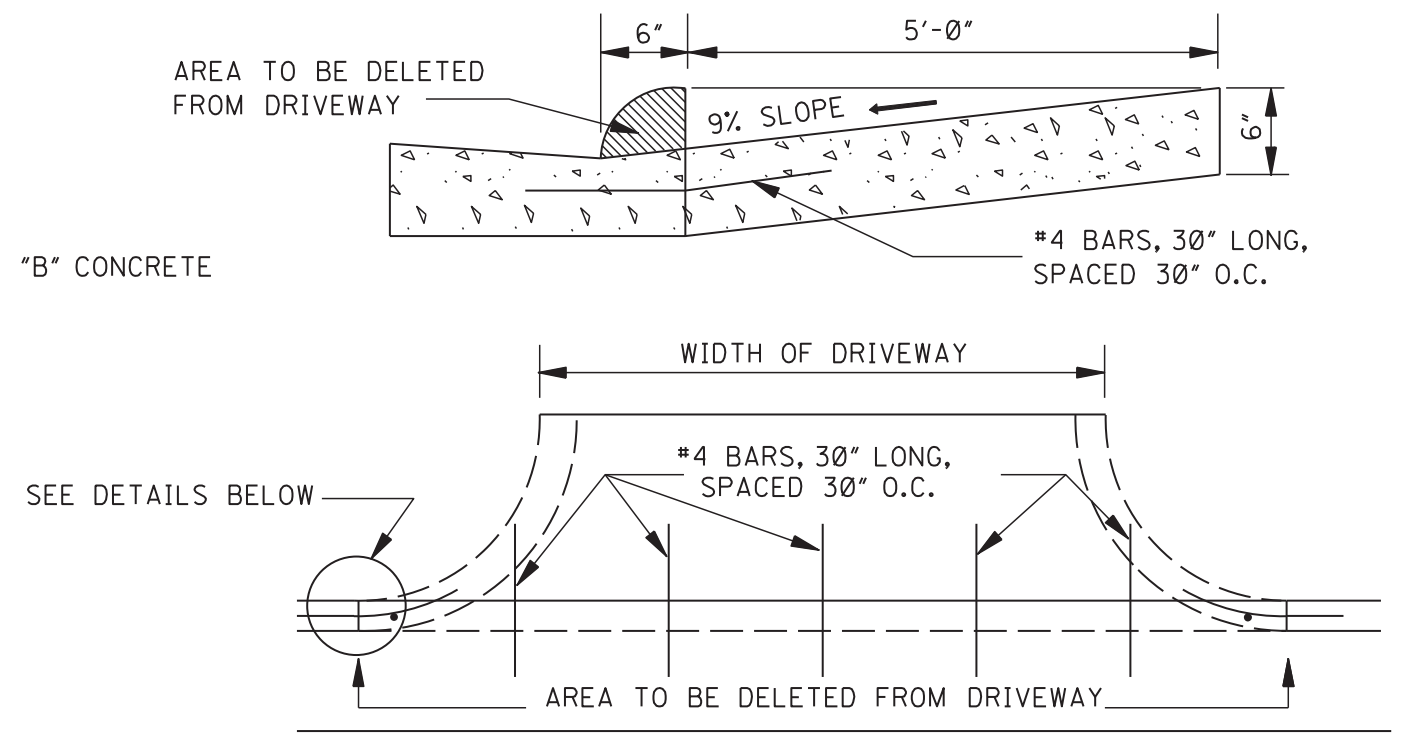
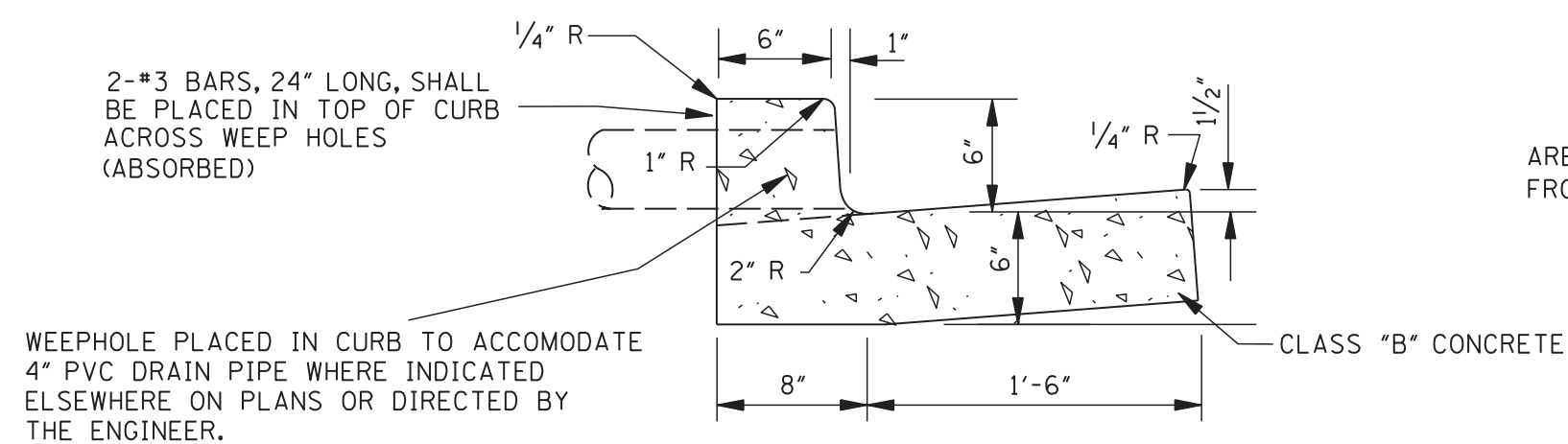
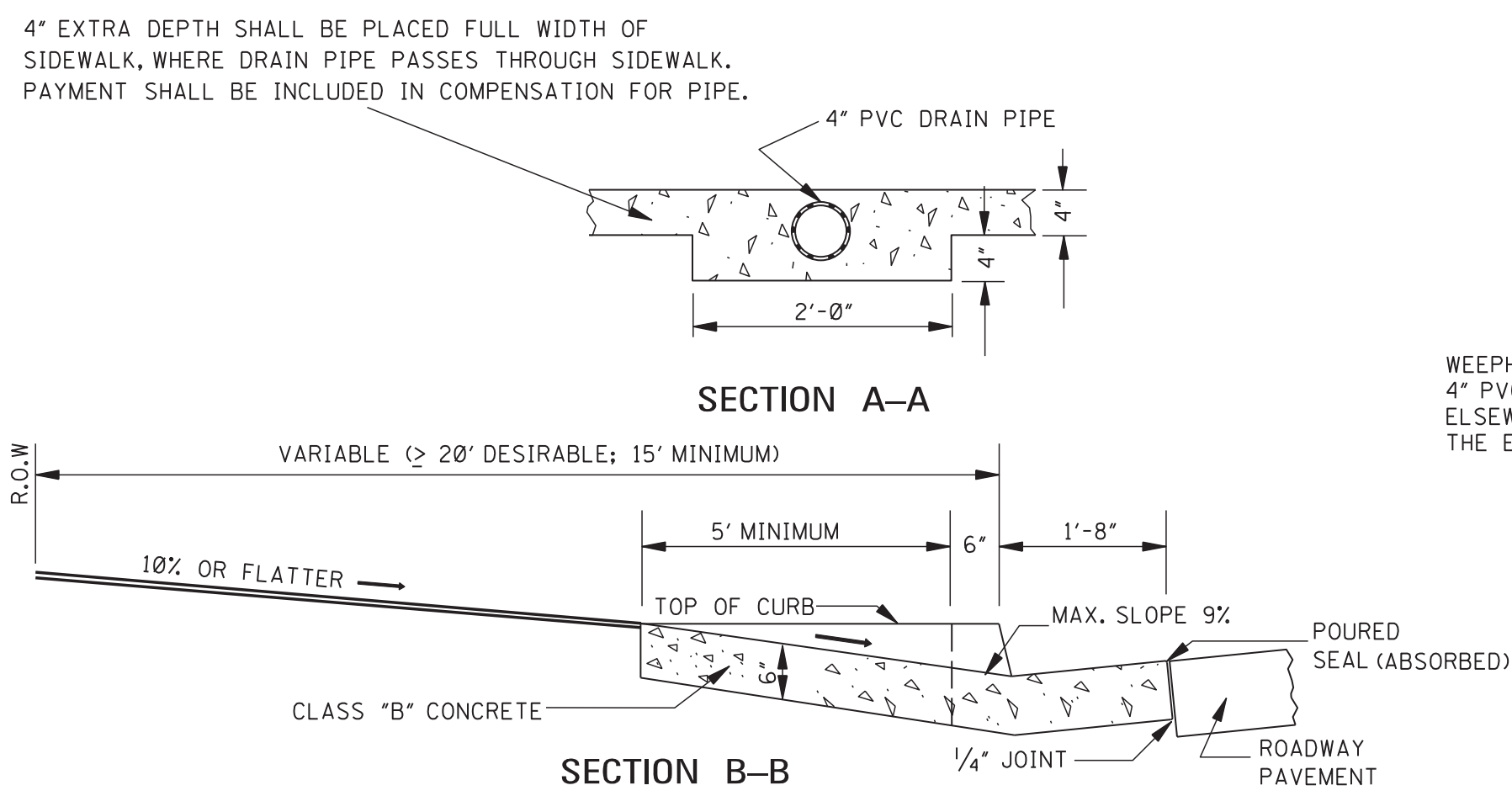
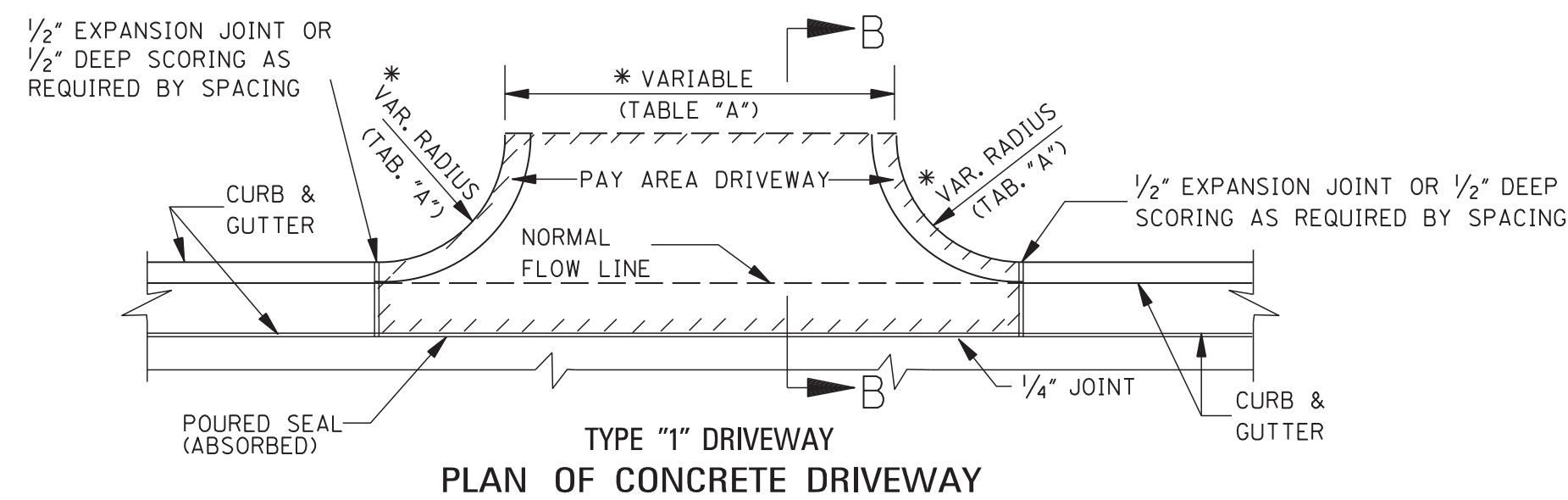
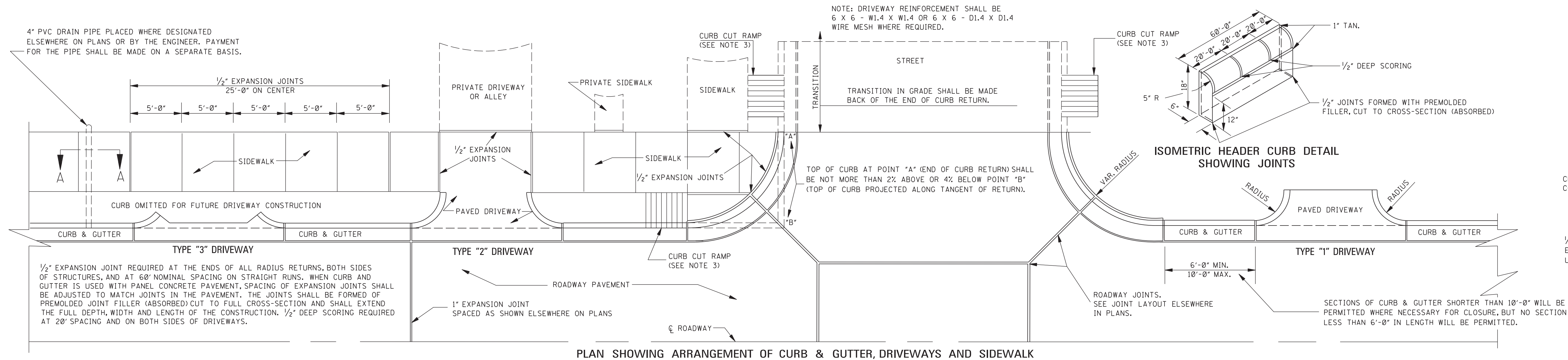
1. PLASTIC DRUMS SHALL BE ON END AND USED AS AN EXPEDIENT METHOD FOR TRAFFIC CHANNELIZATION. THE COLOR AND MARKING OF DRUMS SHALL BE CONSISTENT WITH MARKING STANDARDS FOR BARRICADE. THE PREDOMINANT COLOR ON DRUMS SHALL BE ORANGE WITH FOUR (4) RETROREFLECTIVE, HORIZONTAL, CIRCUMFERENTIAL STRIPES (2 ORANGE & 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	
				DATE	
				ISSUE DATE:	AUGUST 01, 2017



WORKING NUMBER
TCP-8

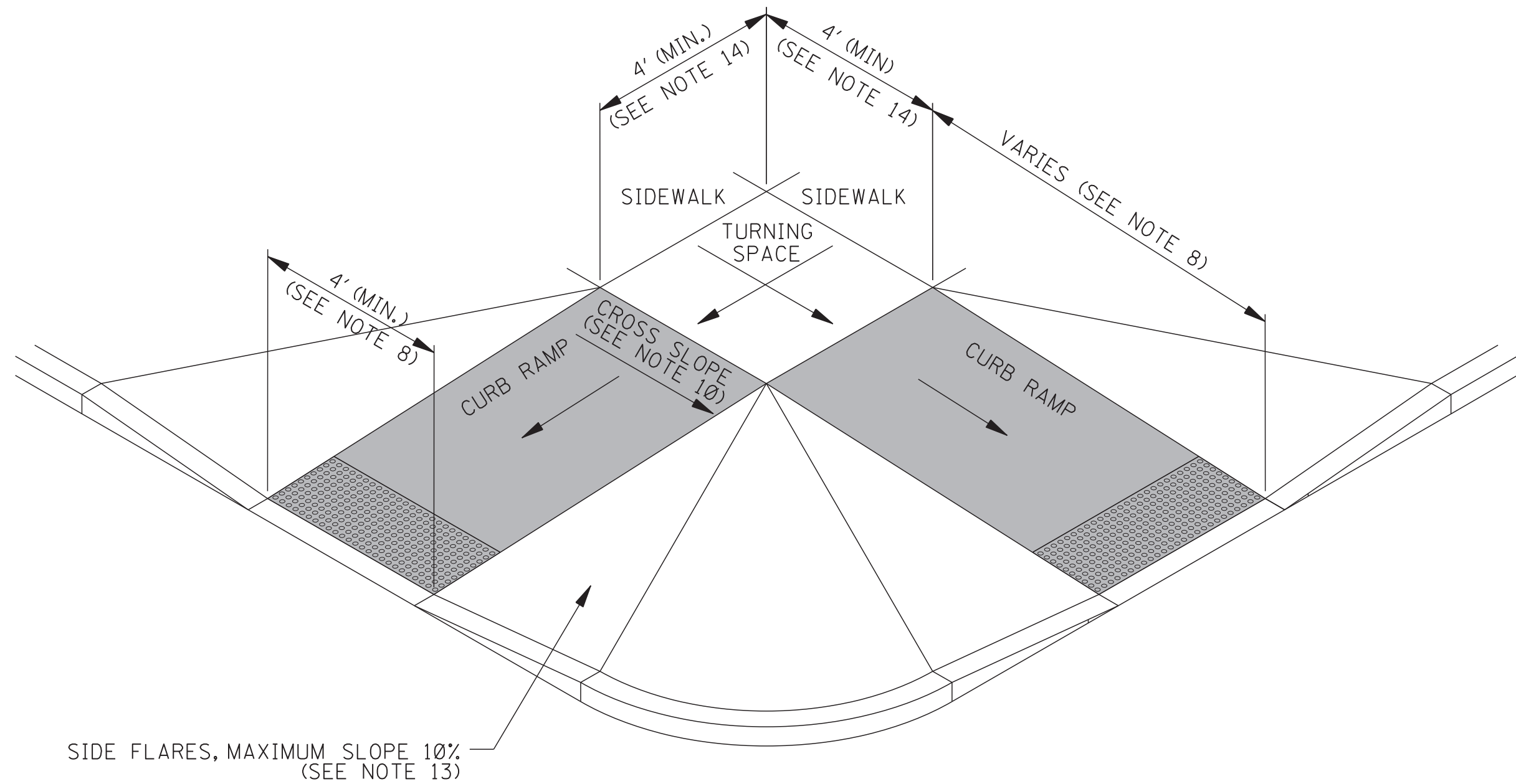
SHEET NUMBER
6358



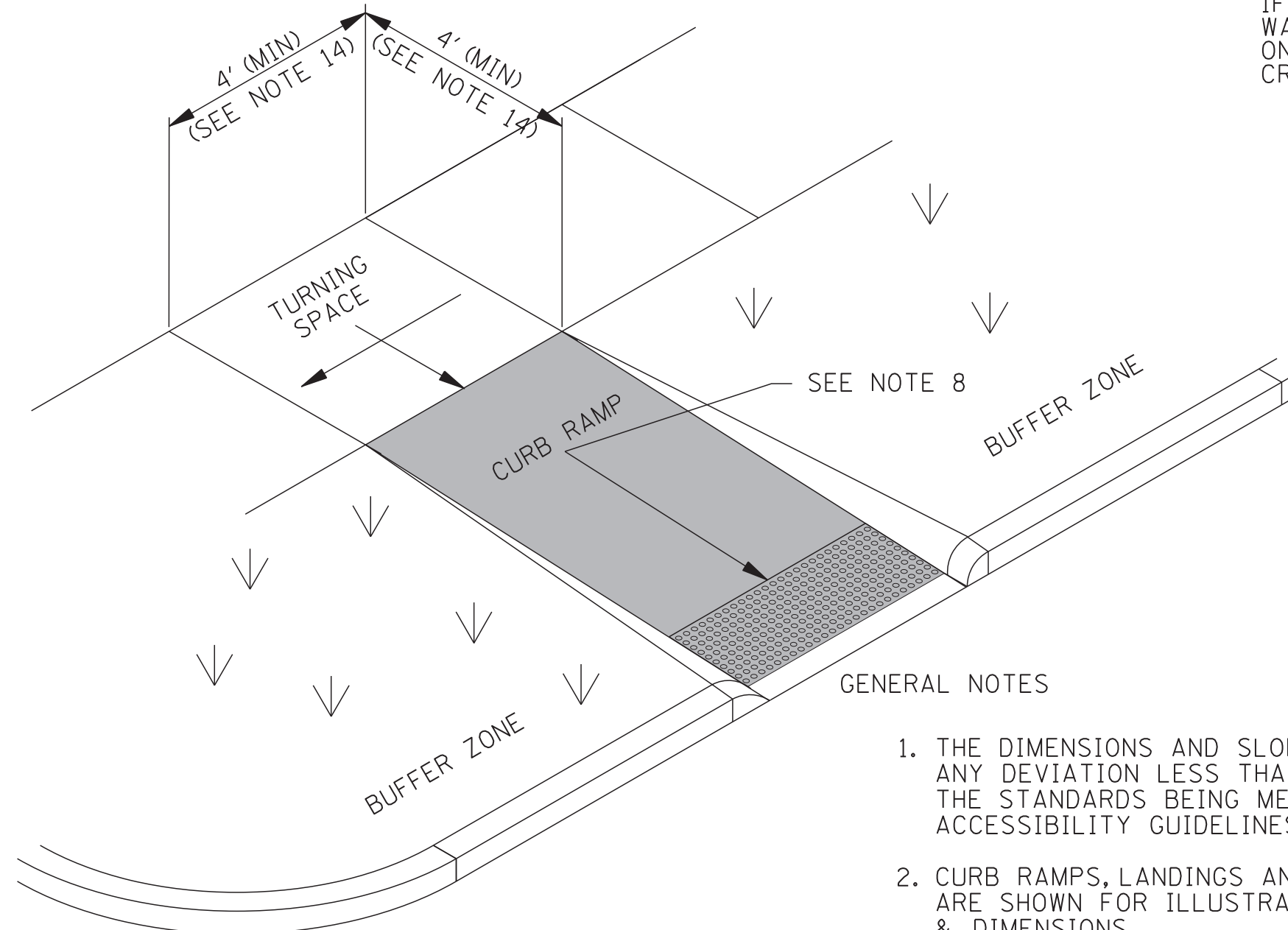
- GENERAL NOTES:
- TRAVERSE CONTRACTION JOINTS ARE REQUIRED AT 20' ON CENTER FOR ALL CONCRETE DRIVEWAYS THAT EXTEND PAST THE END OF THE CURB RETURN. A 1/2" WIDE EXPANSION JOINT IS REQUIRED AT THE END OF THE CURB RETURN AND AT 60' ON CENTER THROUGHOUT THE LENGTH OF THE DRIVEWAY. A LONGITUDINAL CONTRACTION JOINT IS REQUIRED FOR ALL DRIVEWAYS EXCEEDING 20' IN WIDTH.
 - SEE WK. NOS. CR-1, CR-2, CR-3 & CR-4 FOR DETAILS OF CURB-CUT RAMPS.
 - MAXIMUM 2% CROSS-SLOPE ON SIDEWALKS.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

**DRIVEWAYS,
CURB & GUTTER,
& SIDEWALK**

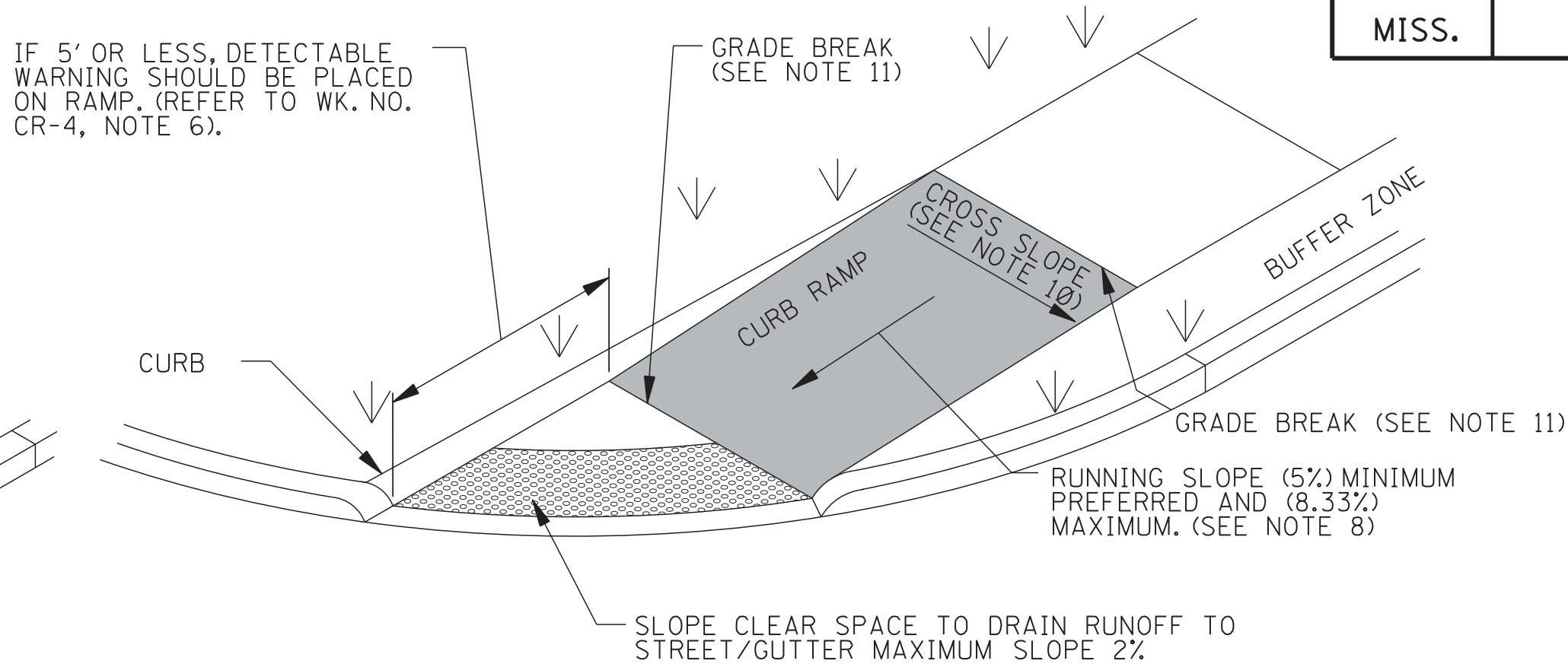


TYPE 1 – PERPENDICULAR CURB RAMP



TYPE 2 – PERPENDICULAR RETURNED CURB RAMP

SIDES OF CURB RAMPS MAY BE RETURNED, PROVIDING USEFUL DIRECTIONAL CUES, IF PROTECTED FROM CROSS TRAVEL BY LANDSCAPING, STREET FURNITURE, POLES, OR EQUIPMENT.



TYPE 3 – ALTERNATE PERPENDICULAR RETURNED CURB RAMP

GENERAL NOTES

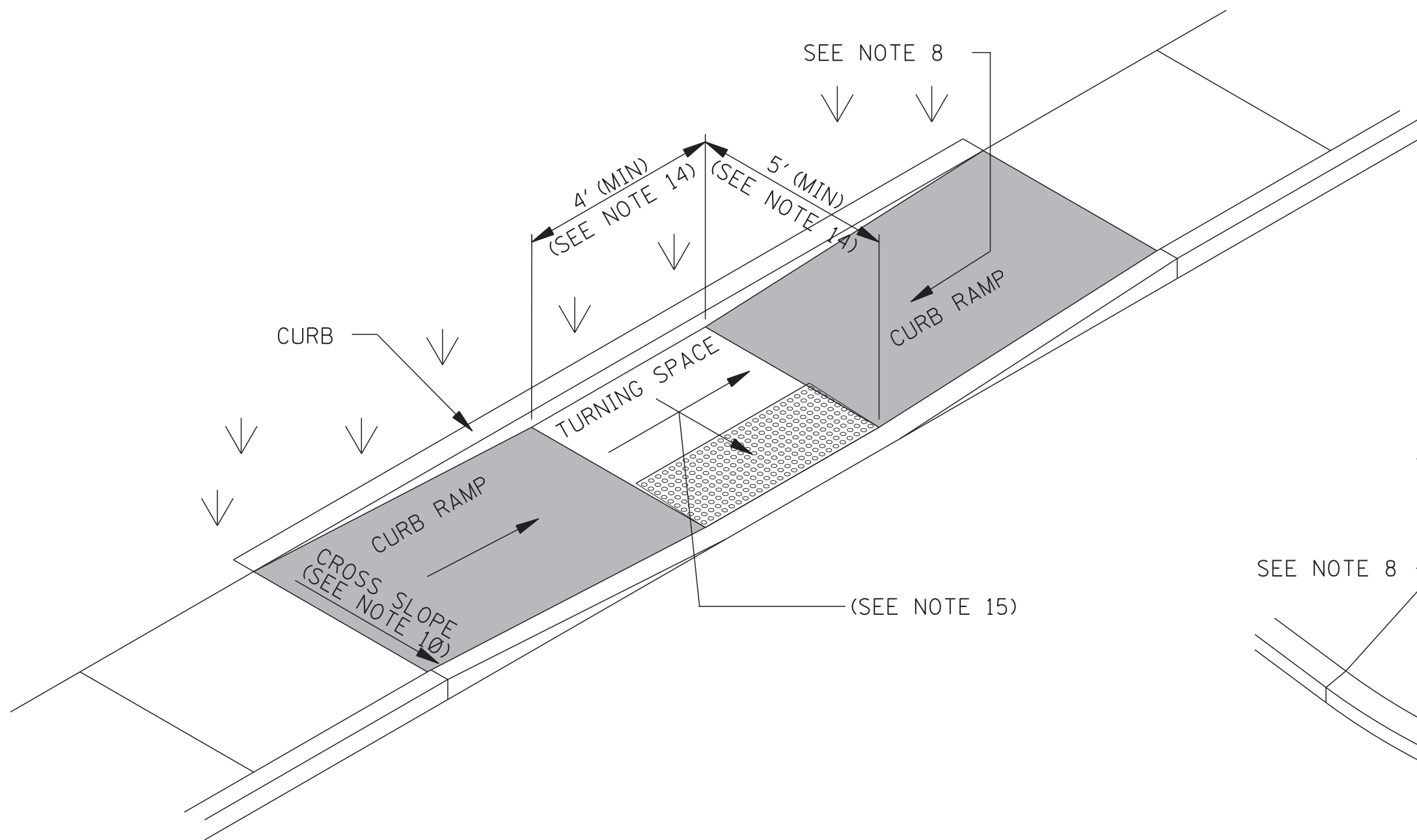
1. THE DIMENSIONS AND SLOPES PRESENTED IN THE DETAILS ARE THE MINIMUM NECESSARY TO COMPLY WITH THE ADA AND MDOT STANDARDS. ANY DEVIATION LESS THAN THE MINIMUM WIDTH OR GREATER THAN THE MAXIMUM SLOPE FROM THESE STANDARDS MUST BE DOCUMENTED WITH THE STANDARDS BEING MET TO THE GREATEST EXTENT PRACTICABLE AND CONSISTENT WITH THE MOST CURRENT PUBLIC RIGHT-OF-WAY ACCESSIBILITY GUIDELINES (PROWAG).
2. CURB RAMPS, LANDINGS AND BLENDED TRANSITIONS MAY REQUIRE THE USE OF DETECTABLE WARNINGS. DETECTABLE WARNINGS ON THIS SHEET ARE SHOWN FOR ILLUSTRATION ONLY. REFER TO THE DETECTABLE WARNING DETAILS ON WK. NO. CR-4 FOR DETAILS ON PLACEMENT, ORIENTATION & DIMENSIONS.
3. THE LOCATION, ORIENTATION, AND TYPE OF CURB RAMPS SHOULD BE AS SHOWN IN THE PLANS.
4. ANY COMBINATION OF PERPENDICULAR, PERPENDICULAR RETURNED, AND PARALLEL CURB RAMPS MAY BE USED TO ACHIEVE AN ACCESSIBLE DESIGN AS LONG AS THE BASIC REQUIREMENTS FOR CURB RAMPS ARE MET.
5. CURB RAMPS SHALL BE PAID FOR AS SIDEWALK.
6. THE THICKNESS OF THE CURB RAMP SHALL BE A MINIMUM OF 4".
7. BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4' MINIMUM BY 4' MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.

CURB RAMP NOTES:

8. THE CLEAR WIDTH OF CURB RAMP RUNS (EXCLUDING ANY FLARED SIDES), BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE THE WIDTH OF THE SIDEWALK, OR 4' MINIMUM. THE RUNNING SLOPE OF A CURB RAMP SHALL BE 5% MINIMUM, AND 8.33% MAXIMUM (7.1% PREFERRED). THE RUNNING SLOPE OF BLENDED TRANSITIONS SHALL BE 5% MAXIMUM.
9. WHERE THE SLOPE OF THE ROADWAY EXCEEDS 8.33%, THE CURB RAMP LENGTH IS THE LENGTH NECESSARY TO MEET THE EXISTING SIDEWALK. IT IS NOT NECESSARY THAT THE RAMP EXCEED 15'.
10. THE CROSS SLOPE OF CURB RAMPS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 2% MAXIMUM (1.5% PREFERRED). AT PEDESTRIAN STREET CROSSINGS WITHOUT YIELD OR STOP CONTROL AND AT MIDBLOCK PEDESTRIAN STREET CROSSINGS, THE CROSS SLOPE IS PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
11. GRADE BREAKS AT THE TOP AND BOTTOM OF CURB RAMP RUNS SHALL BE PERPENDICULAR TO THE DIRECTION OF THE RAMP RUN. GRADE BREAKS SHALL NOT BE PERMITTED ON THE SURFACE OF RAMP RUNS AND TURNING SPACES. SURFACE SLOPES THAT MEET AT GRADE BREAKS SHALL BE FLUSH.
12. RAMP TRANSITIONS BETWEEN WALKS, TURNING SPACES, LANDINGS, GUTTERS, OR STREETS SHALL BE FLUSH AND FREE OF ABRUPT VERTICAL CHANGES.
13. WHERE A PEDESTRIAN CIRCULATION PATH CROSSES THE CURB RAMP, FLARED SIDES SHALL BE SLOPED 10% MAXIMUM, MEASURED PARALLEL TO THE CURB LINE.

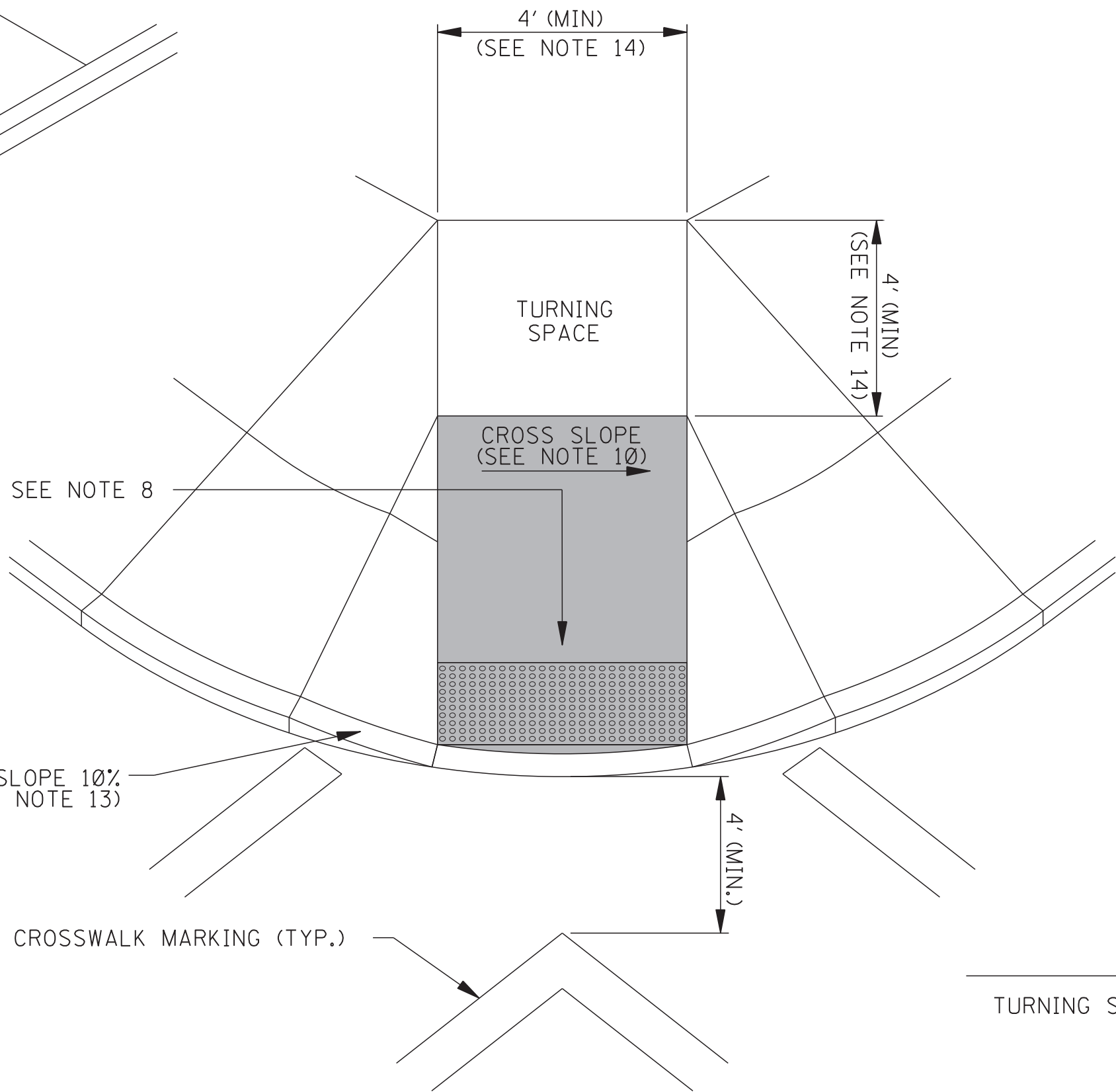
TURNING SPACE NOTES:

14. A TURNING SPACE 4' MINIMUM BY 4' MINIMUM SHALL BE PROVIDED AT THE TOP OF PERPENDICULAR RAMPS AND AT THE BOTTOM OF PARALLEL RAMPS. TURNING SPACES ARE ALLOWED TO OVERLAP OTHER TURNING SPACES AND CLEAR SPACES. IF THE TURNING SPACE IS CONSTRAINED BY A CURB, WALL, OR OTHER OBSTRUCTION, THE TURNING SPACE SHALL BE 4' MINIMUM BY 5' MINIMUM, WITH THE 5' DIMENSION PROVIDED IN THE DIRECTION OF TRAVEL TOWARD THE CONSTRAINT.
15. THE RUNNING SLOPE OF TURNING SPACES SHALL BE 2% MAXIMUM (1.5% PREFERRED). THE CROSS SLOPE OF TURNING SPACES SHALL BE 2% MAXIMUM (1.5% PREFERRED). AT PEDESTRIAN STREET CROSSINGS WITHOUT YIELD OR STOP CONTROL AND AT MIDBLOCK PEDESTRIAN STREET CROSSINGS, THE CROSS SLOPE SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
16. BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE 4' MINIMUM BY 4' MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.
17. THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE FOOT OF CURB RAMP RUNS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 5% MAXIMUM. IT IS BEST PRACTICE TO PROVIDE A 2' LEVEL STRIP AT THE GUTTER IF THE GRADE BREAK EXCEEDS 11%.



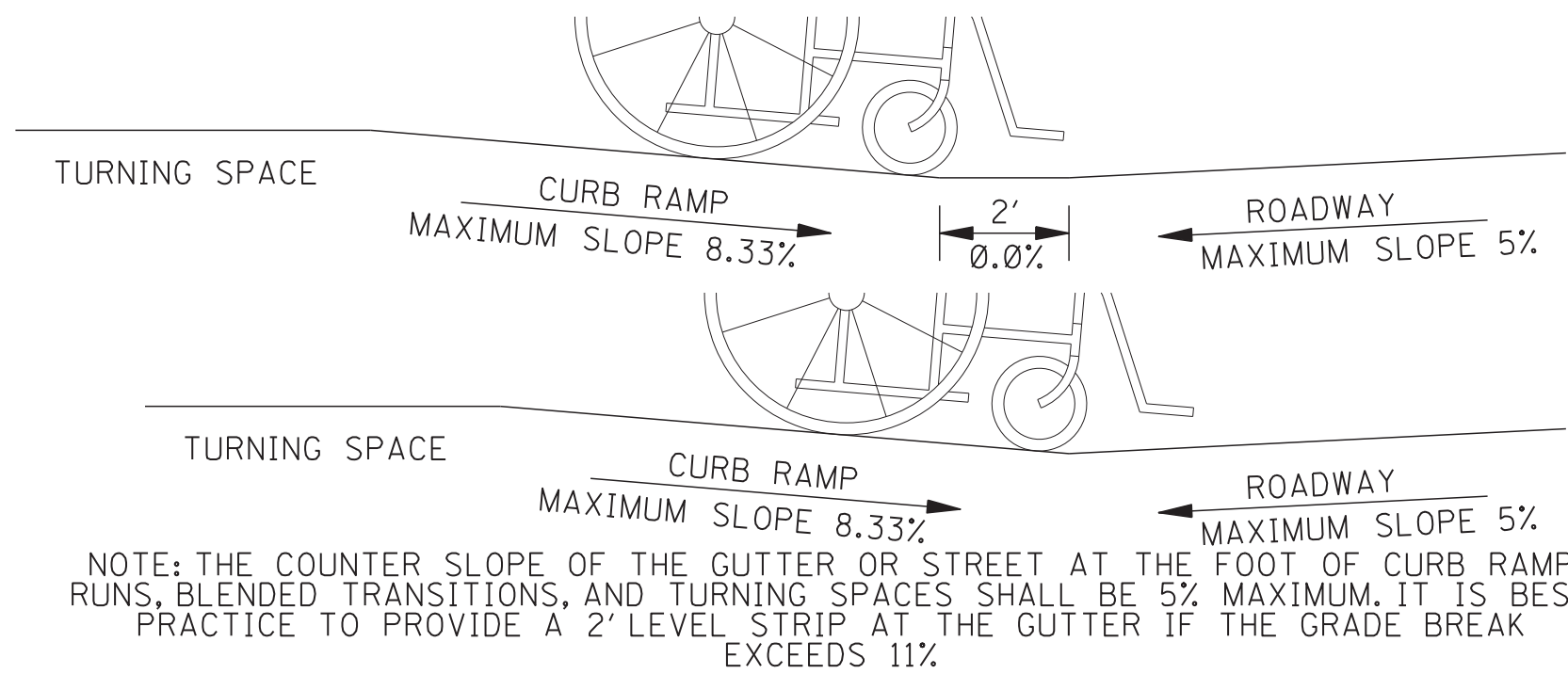
TYPE 4 – PARALLEL CURB RAMP

THE CURB BEHIND THE TURNING SPACE AND RAMPS IS NOT REQUIRED, BUT IS SUGGESTED FOR RETAINING SOIL AND PROVIDING AN EDGE FOR PEDESTRIANS WITH VISUAL IMPAIRMENTS.



TYPE 5 – DIAGONAL CURB RAMP

DIAGONAL CURB RAMPS ARE UNACCEPTABLE IN NEW CONSTRUCTION. THEY MAY BE USED FOR ALTERATIONS ONLY IF IT IS THE ONLY OPTION THAT WILL WORK.



COUNTER SLOPE CONDITIONS

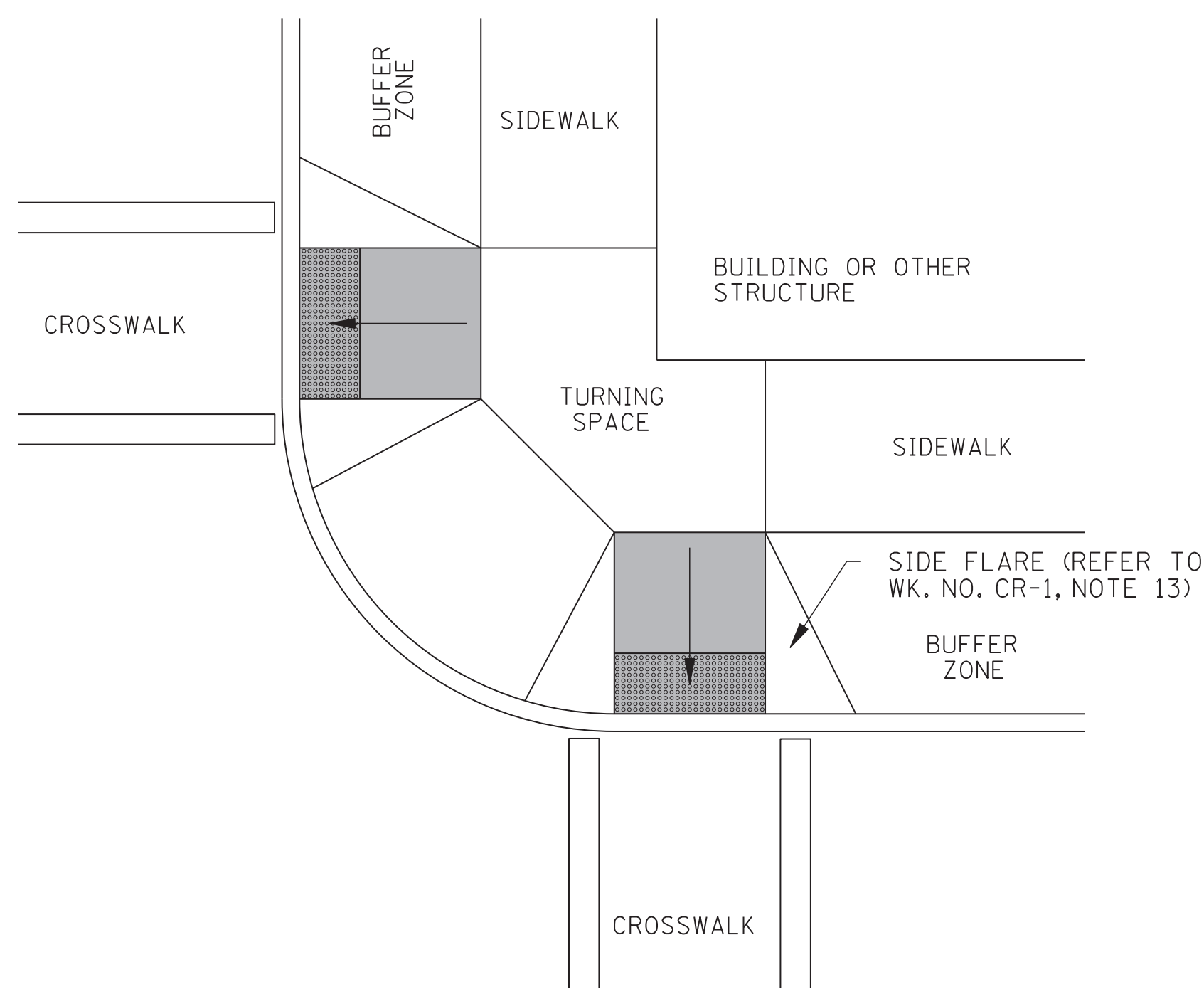
BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION									
	ROADWAY DESIGN DIVISION									
REVISION	STANDARD PLAN									
DATE	ISSUE DATE: AUGUST 01, 2017									

MDOT

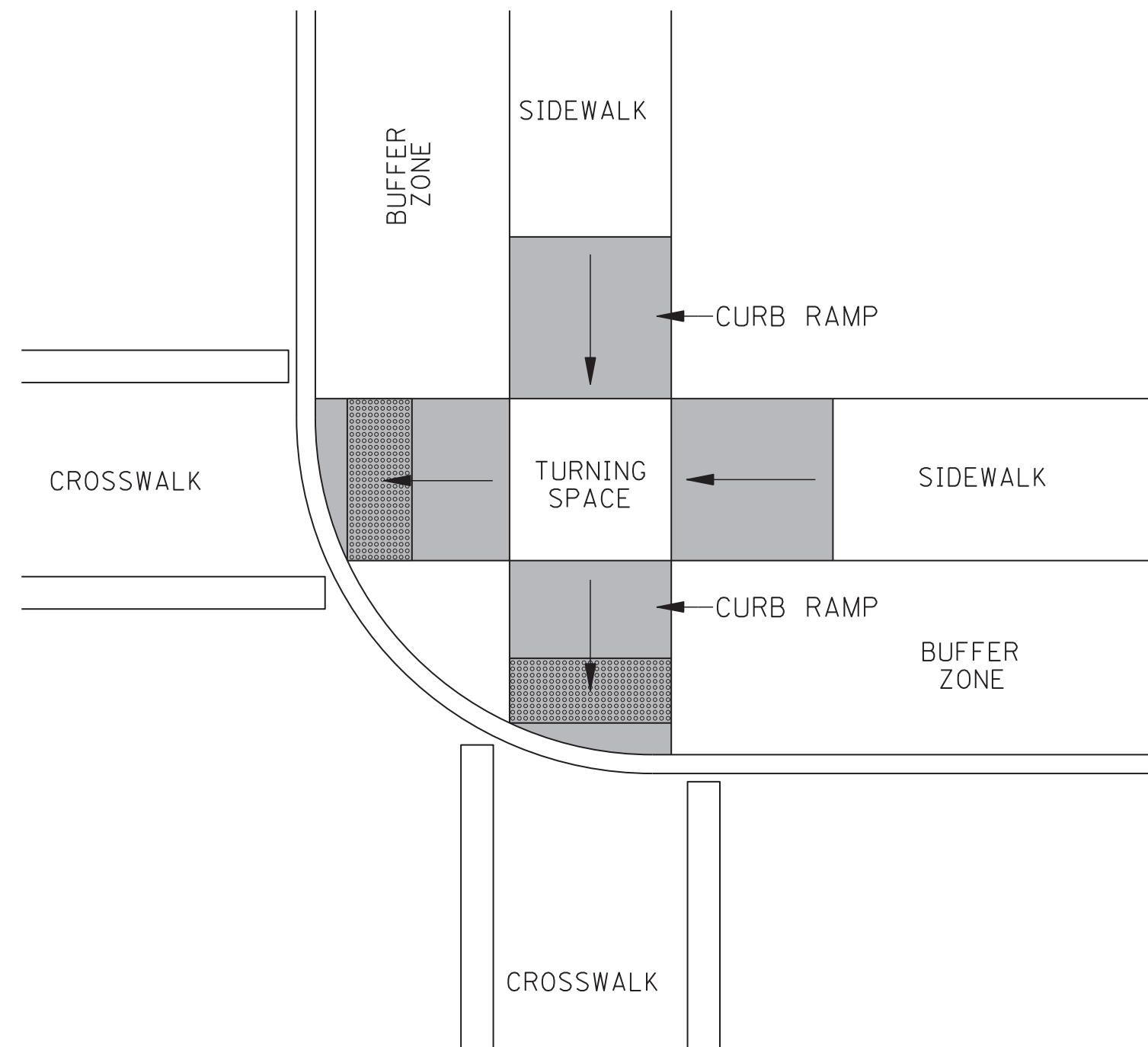
MISSISSIPPI DEPARTMENT OF TRANSPORTATION

WORKING NUMBER
CR-1

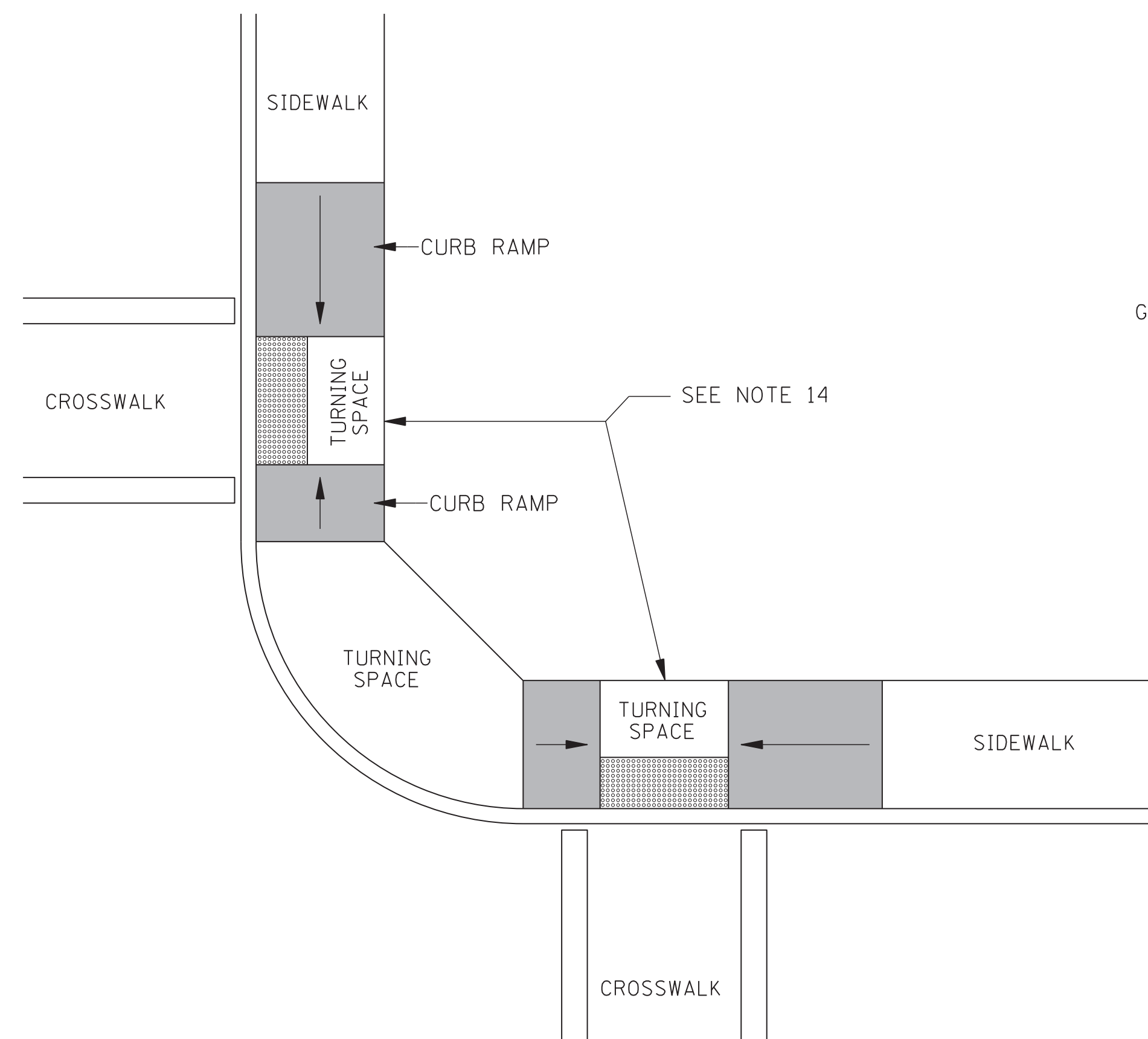
SHEET NUMBER
6421



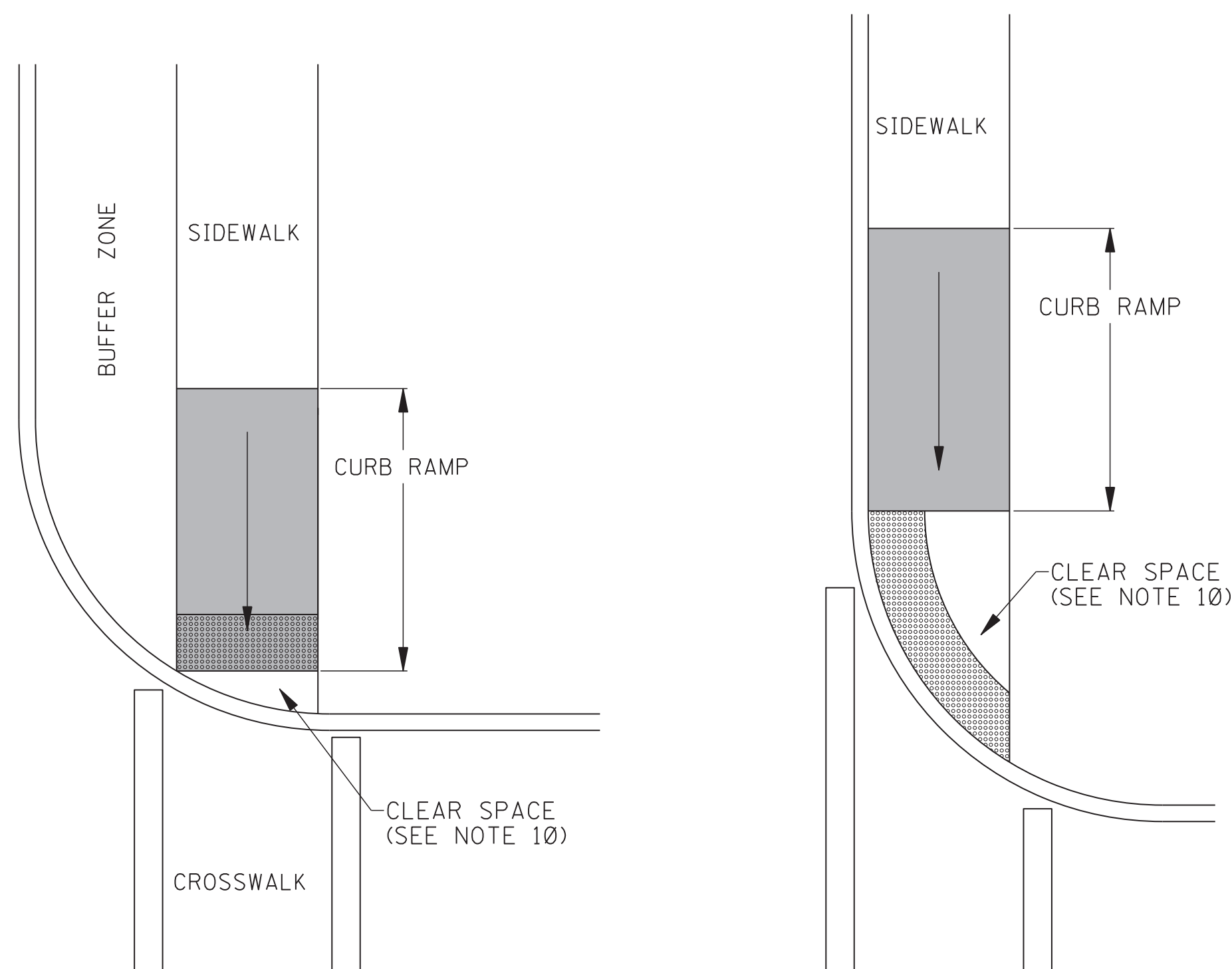
CURB RAMP CONFIGURATION: TYPE A



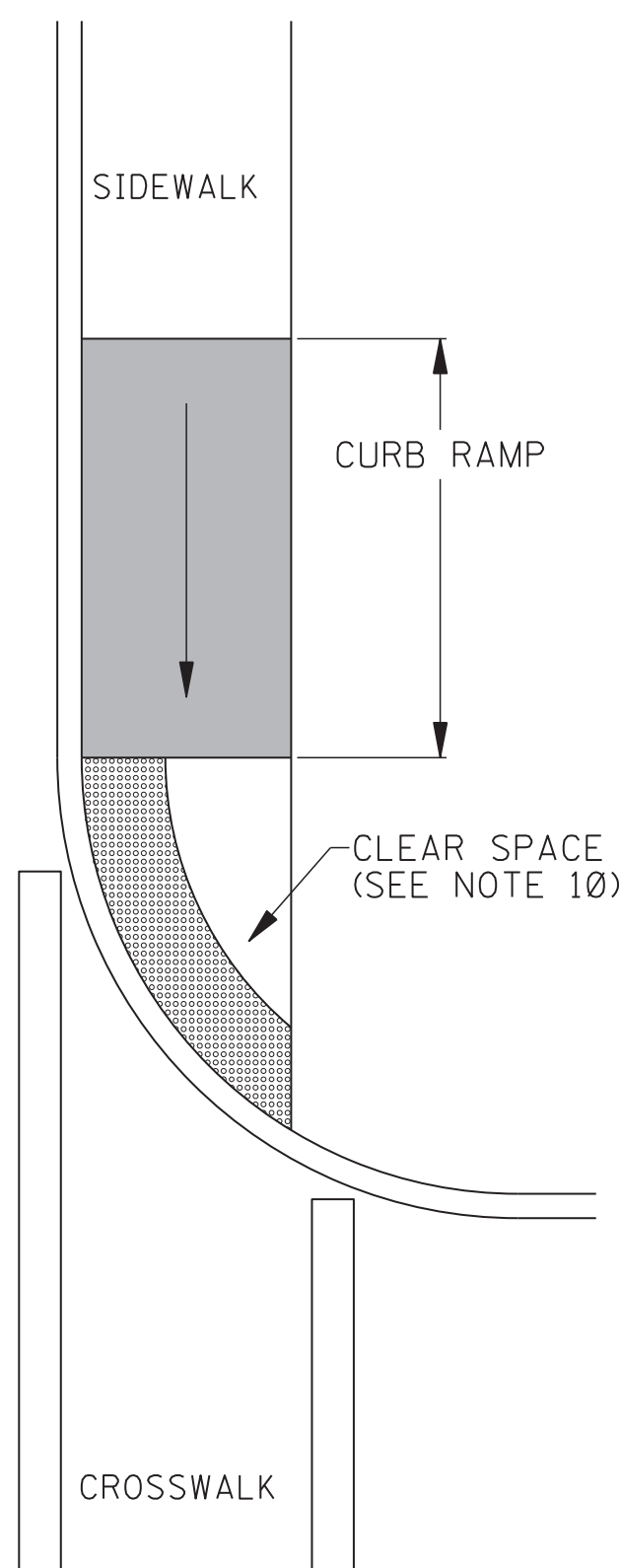
CURB RAMP CONFIGURATION: TYPE B



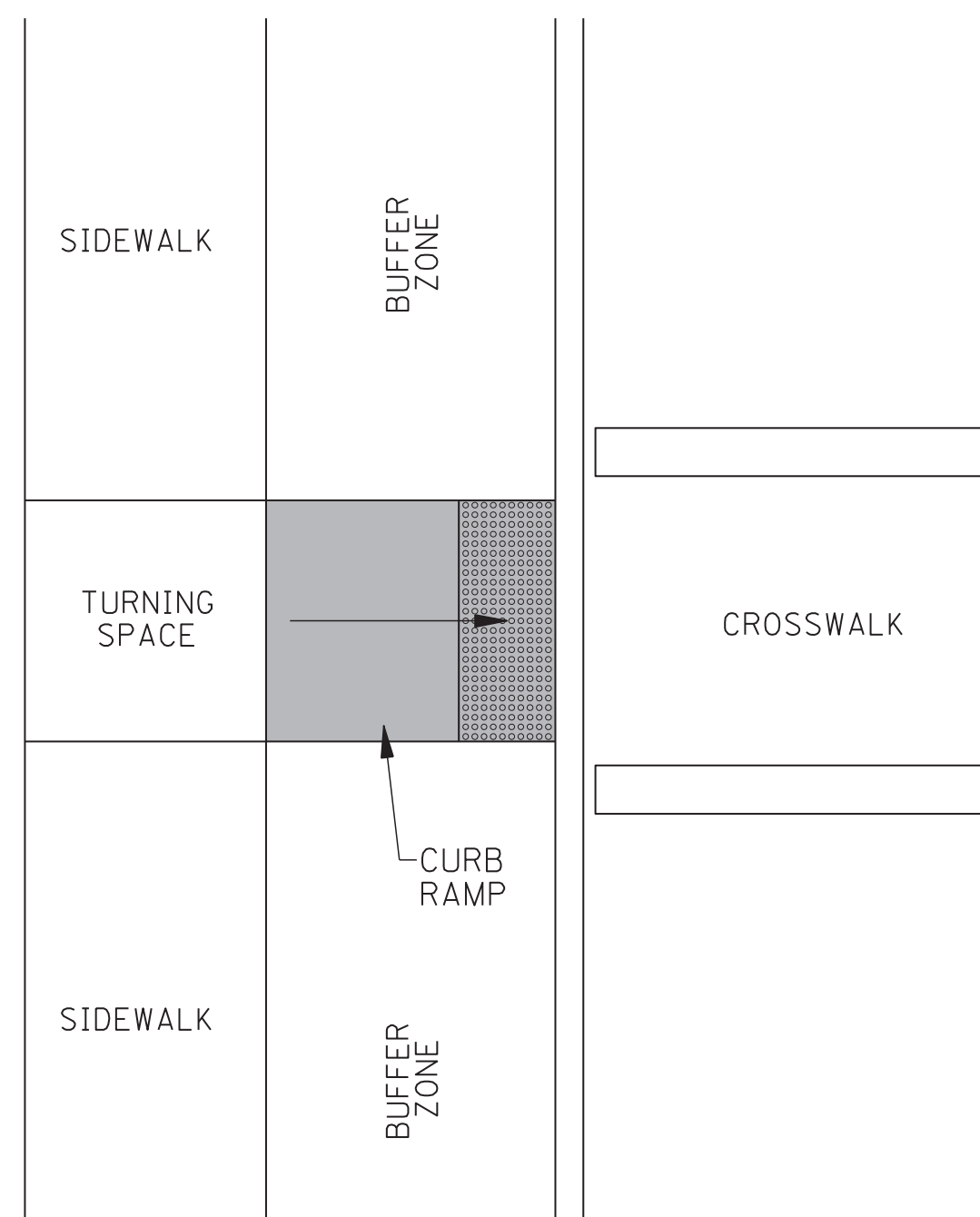
CURB RAMP CONFIGURATION: TYPE C



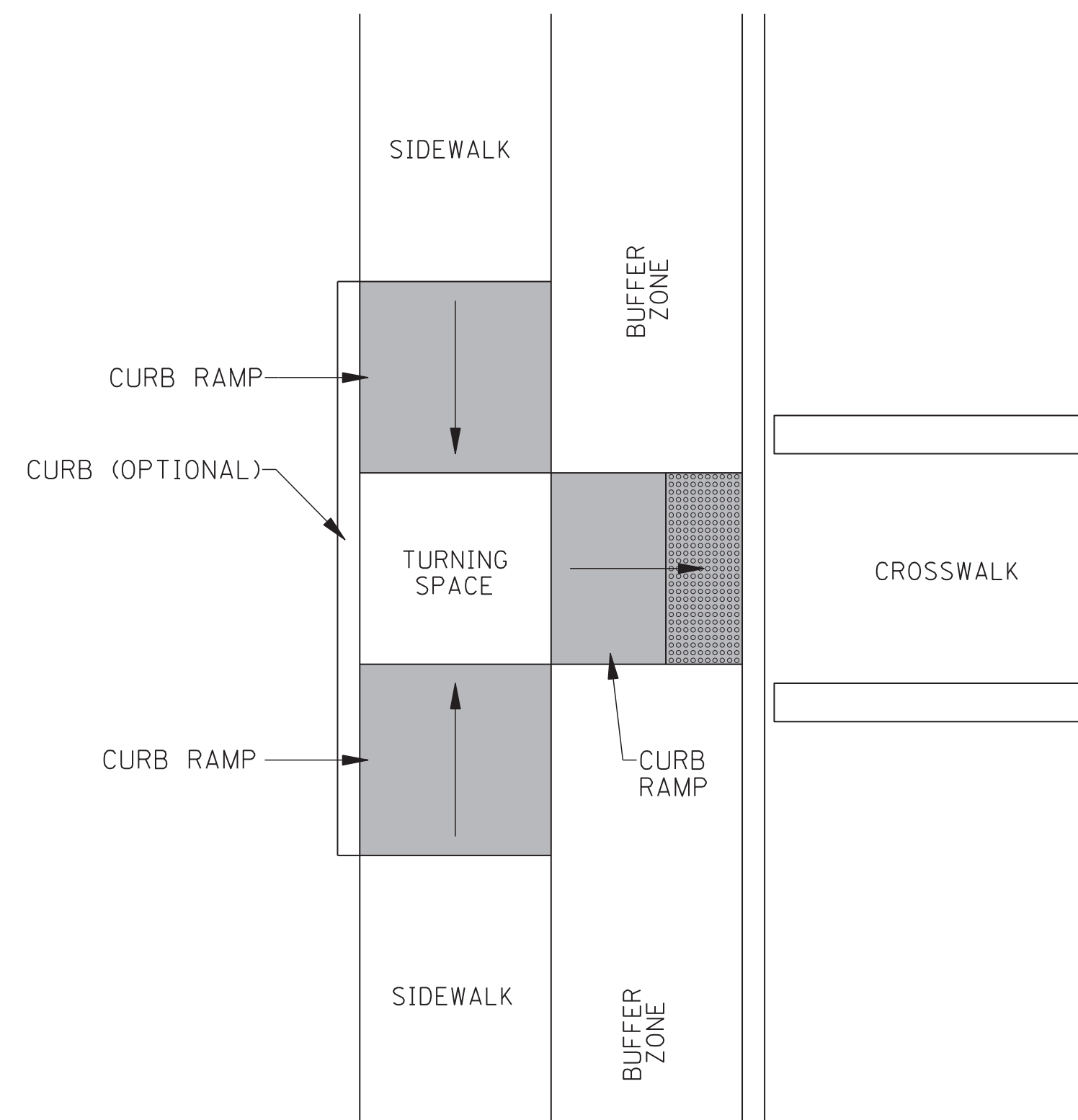
CURB RAMP CONFIGURATION: TYPE D



CURB RAMP CONFIGURATION: TYPE E



CURB RAMP CONFIGURATION: TYPE F



CURB RAMP CONFIGURATION: TYPE G
MID BLOCK CROSSING

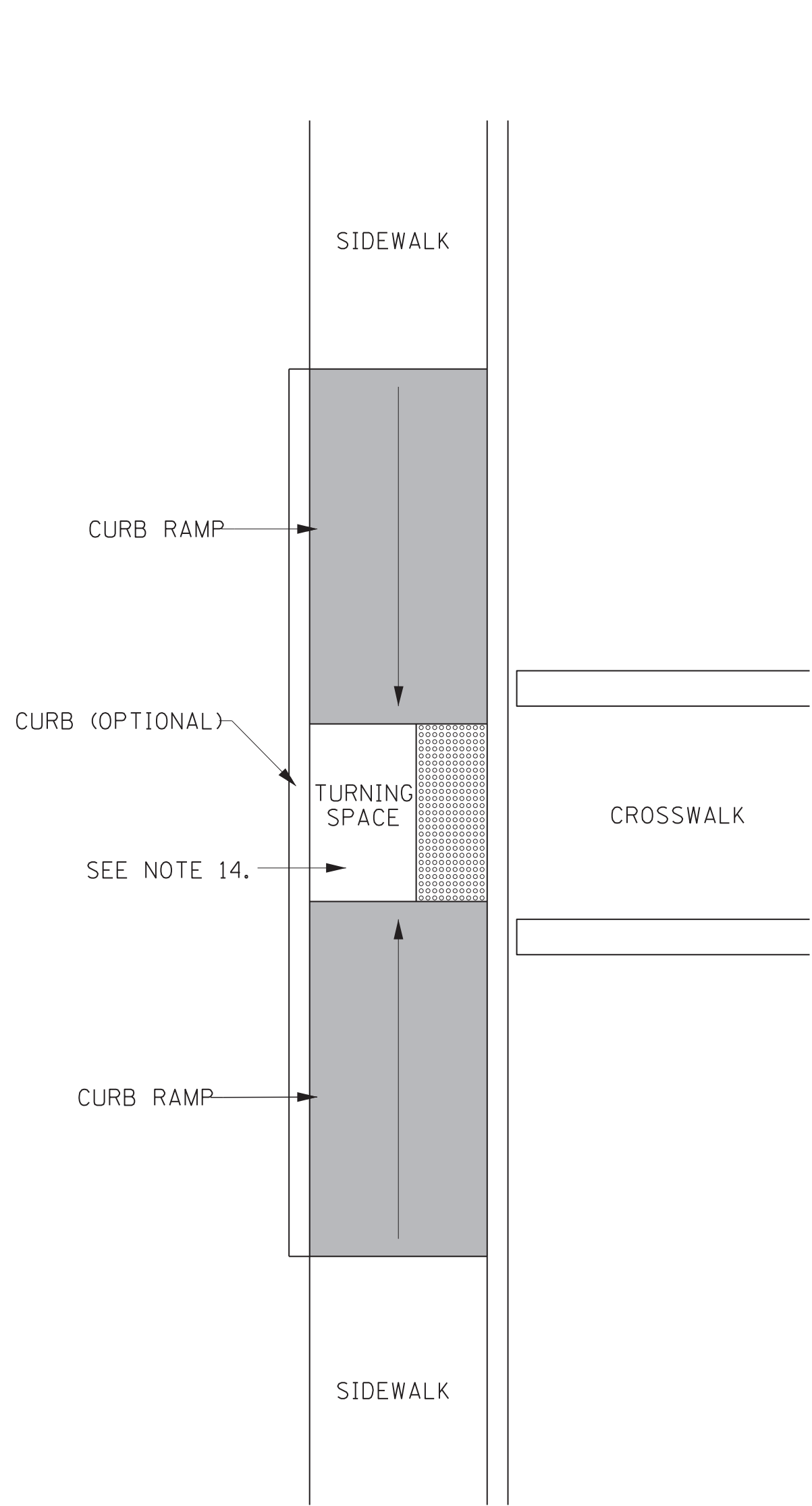
THE CURB BEHIND THE TURNING SPACE AND RAMPS IS NOT REQUIRED, BUT IS SUGGESTED FOR RETAINING SOIL AND PROVIDING AN EDGE FOR PEDESTRIANS WITH VISUAL IMPAIRMENTS.

GENERAL NOTES:

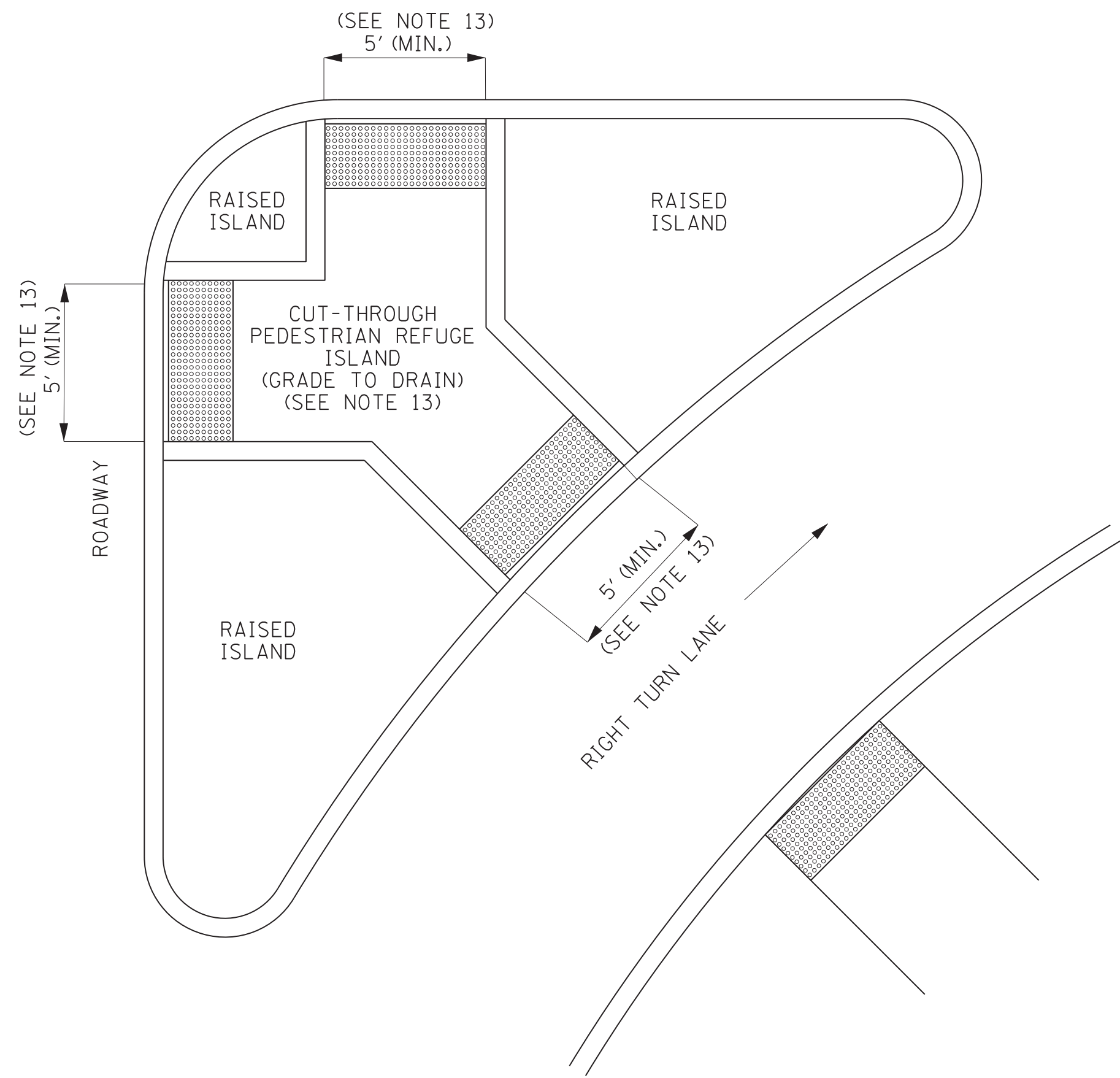
1. FOR DIMENSIONS & GEOMETRIC VALUES REFER TO WK. NO. CR-1.
2. THE CONFIGURATIONS SHOWN GENERICALLY REPRESENT THE MOST COMMON SITUATIONS ENCOUNTERED. THEY ARE INTENDED TO PRESENT CURB RAMP DESIGN CONCEPTS. SITE CONDITIONS AT INDIVIDUAL LOCATIONS REQUIRE SPECIFIC DESIGNS. CURB RAMP DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF WK. NOS. CR-1, CR-2, CR-3 AND CR-4.
3. COORDINATE TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD.
4. DETECTABLE WARNINGS SHOWN ON THIS SHEET ARE FOR ILLUSTRATION ONLY. FOR SPECIFIC PLACEMENT ORIENTATIONS AND DIMENSIONS REFER TO WK. NO. CR-4.
5. THE CROSS SLOPE OF CURB RAMPS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 2% MAXIMUM (1.5% PREFERRED). AT PEDESTRIAN STREET CROSSINGS WITHOUT YIELD OR STOP CONTROL AND AT MIDBLOCK PEDESTRIAN STREET CROSSINGS, THE CROSS SLOPE SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
6. DIAGONAL CURB RAMPS ARE UNACCEPTABLE IN NEW CONSTRUCTION. THEY MAY BE USED FOR ALTERATIONS ONLY IF IT IS THE ONLY OPTION THAT WILL WORK.
7. GRATES SHALL NOT BE LOCATED ON CURB RAMPS, BLENDED TRANSITIONS, TURNING SPACES, OR LANDINGS. ACCESS COVERS OF SIMILAR SURFACES SHALL COMPLY WITH APPLICABLE SURFACE REQUIREMENTS.
8. UTILITIES, SIGNS, AND OTHER FIXED OBJECTS SHALL NOT BE PLACED ON A CURB RAMP, PEDESTRIAN ACCESS ROUTE, OR IN A MANNER THAT INTERFERES WITH THE USE OF THE CURB RAMP.
9. THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM, AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
10. THERE SHALL BE A CLEAR SPACE AT THE BOTTOM OF THE ALTERNATE PERPENDICULAR RETURNED CURB RAMP. IT SHALL SLOPE TO DRAIN RUNOFF TO STREET/GUTTER AND HAVE A MAXIMUM SLOPE OF 2% (1.5% PREFERRED).
11. TURNING SPACES MAY OVERLAP WITH ADJACENT TURNING SPACES OR A SINGLE TURNING SPACE MAY SERVE MULTIPLE CURB RAMPS.
12. TURNING SPACES MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
13. THE CLEAR WIDTH OF PEDESTRIAN ACCESS ROUTES WITHIN MEDIANS AND PEDESTRIAN REFUGE ISLANDS SHALL BE 5' MINIMUM.
14. BEYOND THE BOTTOM GRADE BREAK, A TURNING SPACE OF 4' MINIMUM BY 4' MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.

NOTE: SEE WK. NO. CR-4 FOR
DETECTABLE WARNING DIMENSIONS
AND PLACEMENT ORIENTATION.

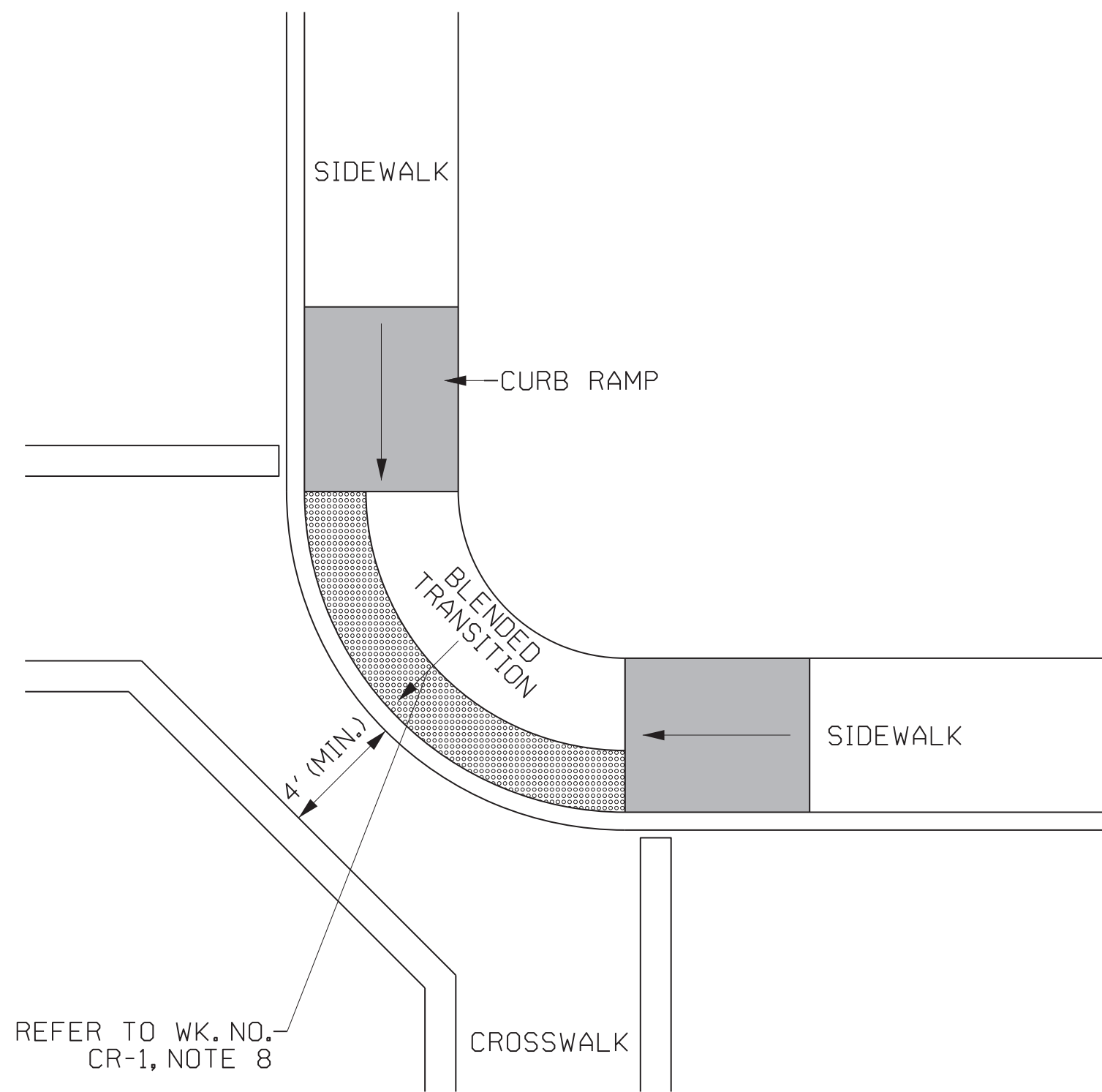
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	CURB RAMPS PLACEMENT DETAILS
				DATE	ISSUE DATE: AUGUST 01, 2017
					WORKING NUMBER CR-2
					SHEET NUMBER 6422



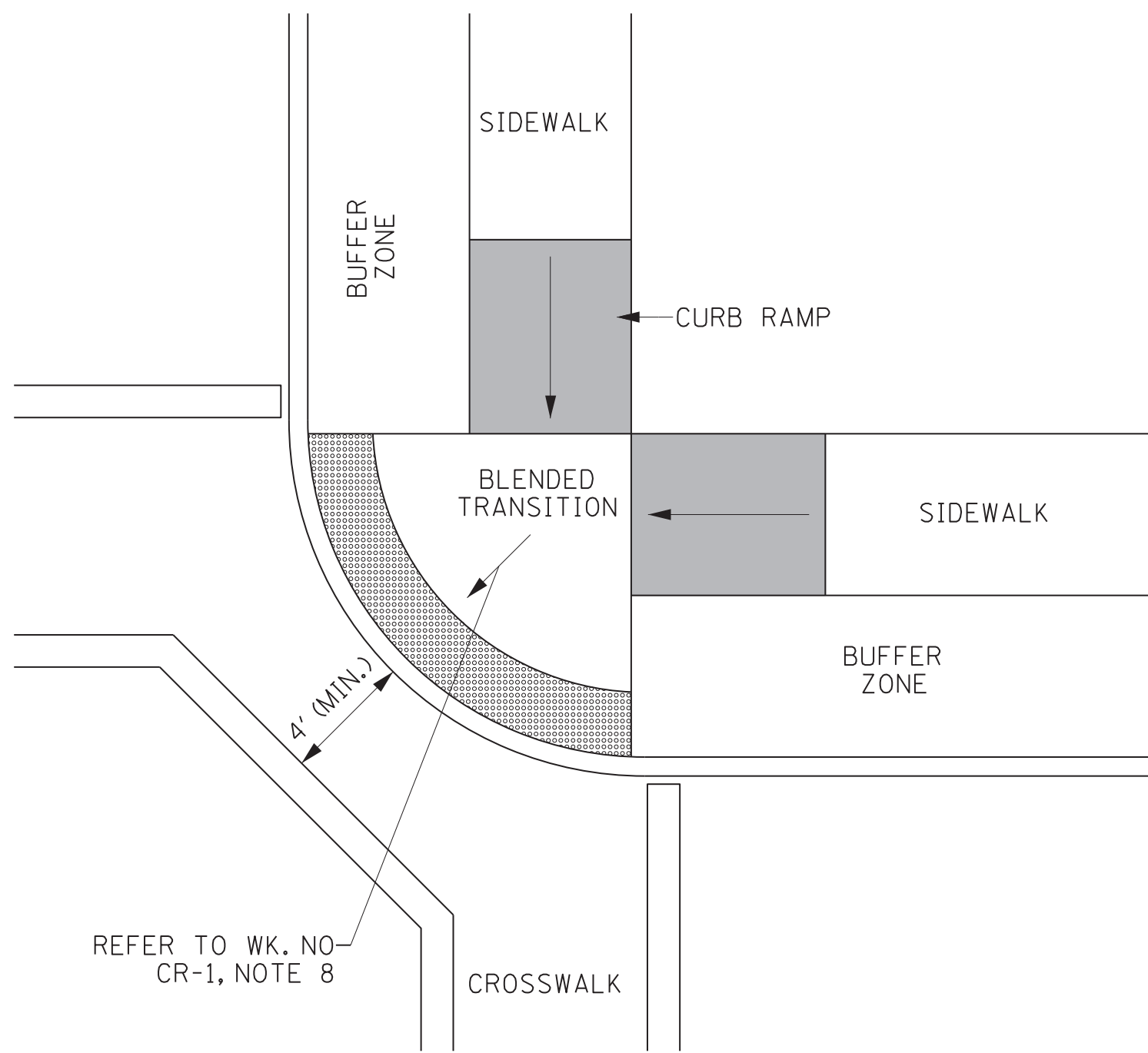
CURB RAMP CONFIGURATION: TYPE H



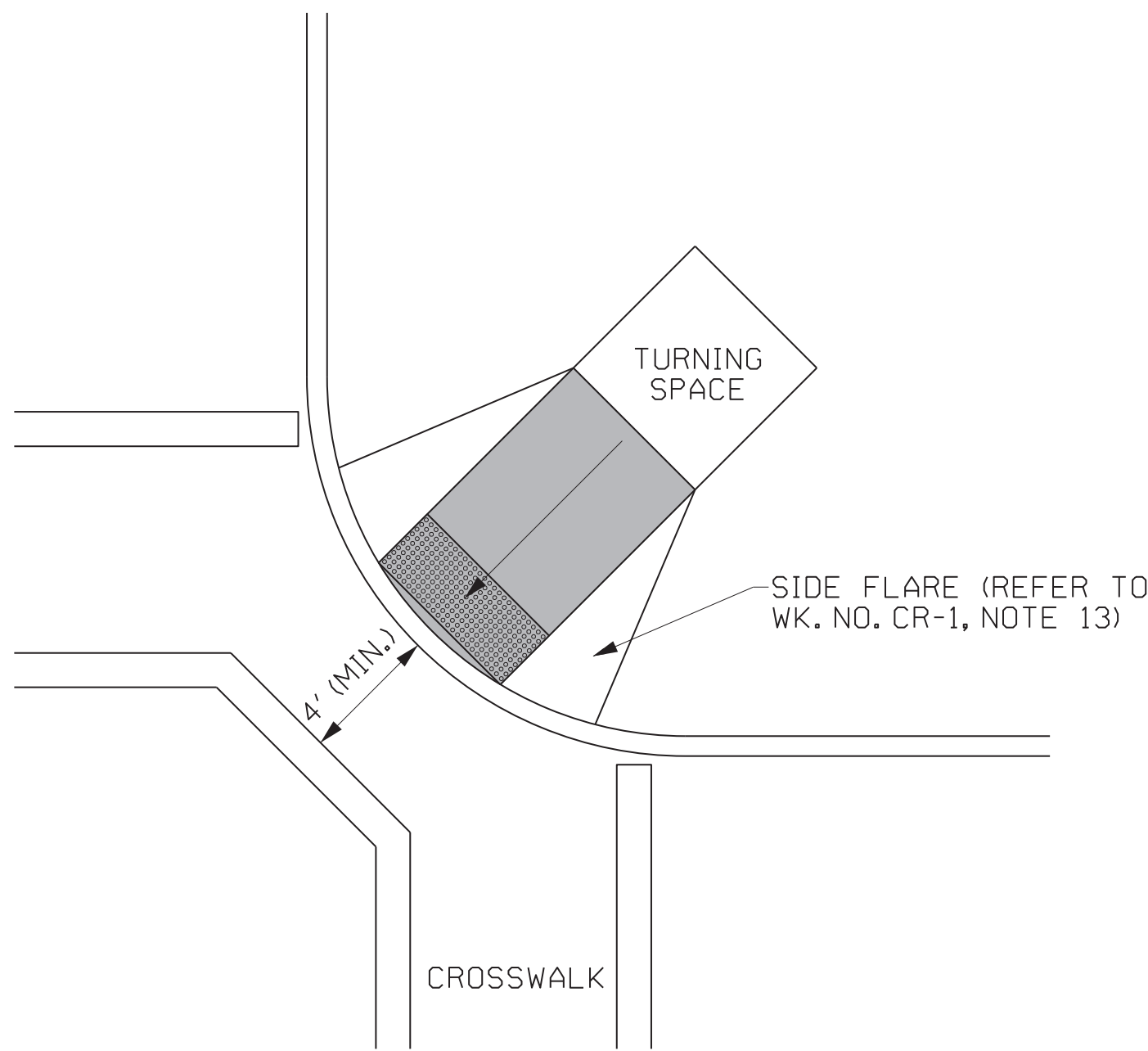
CURB RAMP CONFIGURATION: TYPE I
RIGHT TURN ISLAND CUT THROUGH



CURB RAMP CONFIGURATION: TYPE K
NOT RECOMMENDED



CURB RAMP CONFIGURATION: TYPE J
NOT RECOMMENDED



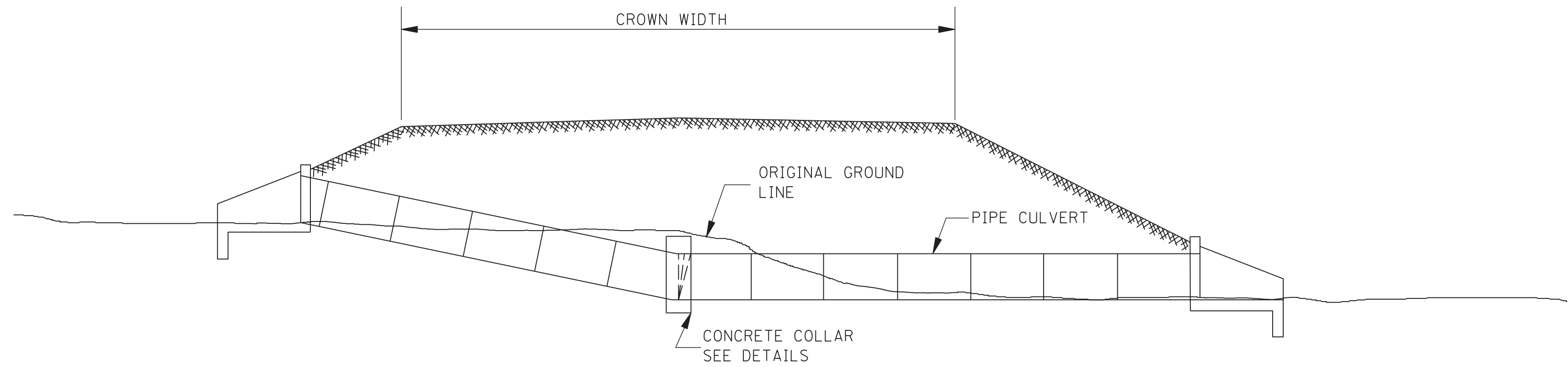
CURB RAMP CONFIGURATION: TYPE L
NOT RECOMMENDED
REFER TO NOTE 6

- GENERAL NOTES:
- FOR DIMENSIONS & GEOMETRIC VALUES REFER TO WK. NO. CR-1.
 - THE CONFIGURATIONS SHOWN GENERICALLY REPRESENT THE MOST COMMON SITUATIONS ENCOUNTERED. THEY ARE INTENDED TO PRESENT CURB RAMP DESIGN CONCEPTS. SITE CONDITIONS AT INDIVIDUAL LOCATIONS REQUIRE SPECIFIC DESIGNS. CURB RAMP DESIGNS MUST BE CONSISTENT WITH THE PROVISIONS OF WK. NOS. CR-1, CR-2, CR-3 AND CR-4.
 - COORDINATE TRAFFIC CONTROL DEVICES, UTILITY LOCATIONS, SIGNS, STREET FURNITURE AND DRAINAGE TO ENSURE A CONTINUOUS PEDESTRIAN ACCESS ROUTE AT ALL CURB RAMP LOCATIONS. GUIDANCE FOR CROSSWALK MARKINGS AND TRAFFIC CONTROL DEVICES IS PROVIDED IN THE MUTCD.
 - DETECTABLE WARNINGS SHOWN ON THIS SHEET ARE FOR ILLUSTRATION ONLY. FOR SPECIFIC PLACEMENT ORIENTATIONS AND DIMENSIONS REFER TO WK. NO. CR-4.
 - THE CROSS SLOPE OF CURB RAMPS, BLENDED TRANSITIONS, AND TURNING SPACES SHALL BE 2% MAXIMUM (1.5% PREFERRED). AT PEDESTRIAN STREET CROSSINGS WITHOUT YIELD OR STOP CONTROL AND AT MIDBLOCK PEDESTRIAN STREET CROSSINGS, THE CROSS SLOPE SHALL BE PERMITTED TO EQUAL THE STREET OR HIGHWAY GRADE.
 - DIAGONAL CURB RAMPS ARE UNACCEPTABLE IN NEW CONSTRUCTION. THEY MAY BE USED FOR ALTERATIONS ONLY IF IT IS THE ONLY OPTION THAT WILL WORK.
 - GRATES SHALL NOT BE LOCATED ON CURB RAMPS, BLENDED TRANSITIONS, TURNING SPACES, OR LANDINGS. ACCESS COVERS OF SIMILAR SURFACES SHALL COMPLY WITH APPLICABLE SURFACE REQUIREMENTS.
 - UTILITIES, SIGNS, AND OTHER FIXED OBJECTS SHALL NOT BE PLACED ON A CURB RAMP, PEDESTRIAN ACCESS ROUTE, OR IN A MANNER THAT INTERFERES WITH THE USE OF THE CURB RAMP.
 - THE SURFACE OF ALL CURB RAMPS SHALL BE STABLE, FIRM, AND SLIP RESISTANT. A COARSE BROOM FINISH RUNNING PERPENDICULAR TO THE SLOPE IS RECOMMENDED ON CONCRETE RAMP SURFACES, EXCLUSIVE OF THE DETECTABLE WARNING FIELDS.
 - THERE SHALL BE A CLEAR SPACE AT THE BOTTOM OF THE ALTERNATE PERPENDICULAR RETURNED CURB RAMP. IT SHALL SLOPE TO DRAIN RUNOFF TO STREET/GUTTER AND HAVE A MAXIMUM SLOPE OF 2% (1.5% PREFERRED).
 - TURNING SPACES MAY OVERLAP WITH ADJACENT TURNING SPACES OR A SINGLE TURNING SPACE MAY SERVE MULTIPLE CURB RAMPS.
 - TURNING SPACES MAY OVERLAP WITH THE CLEAR GROUND SPACE REQUIRED AT PEDESTRIAN SIGNAL PUSH BUTTONS.
 - THE CLEAR WIDTH OF PEDESTRIAN ACCESS ROUTES WITHIN MEDIANS AND PEDESTRIAN REFUGE ISLANDS SHALL BE 5' MINIMUM.
 - BEYOND THE BOTTOM GRADE BREAK, A TURNING SPACE OF 4' MINIMUM BY 4' MINIMUM SHALL BE PROVIDED WITHIN THE WIDTH OF THE PEDESTRIAN STREET CROSSING AND WHOLLY OUTSIDE THE PARALLEL VEHICLE TRAVEL LANE.

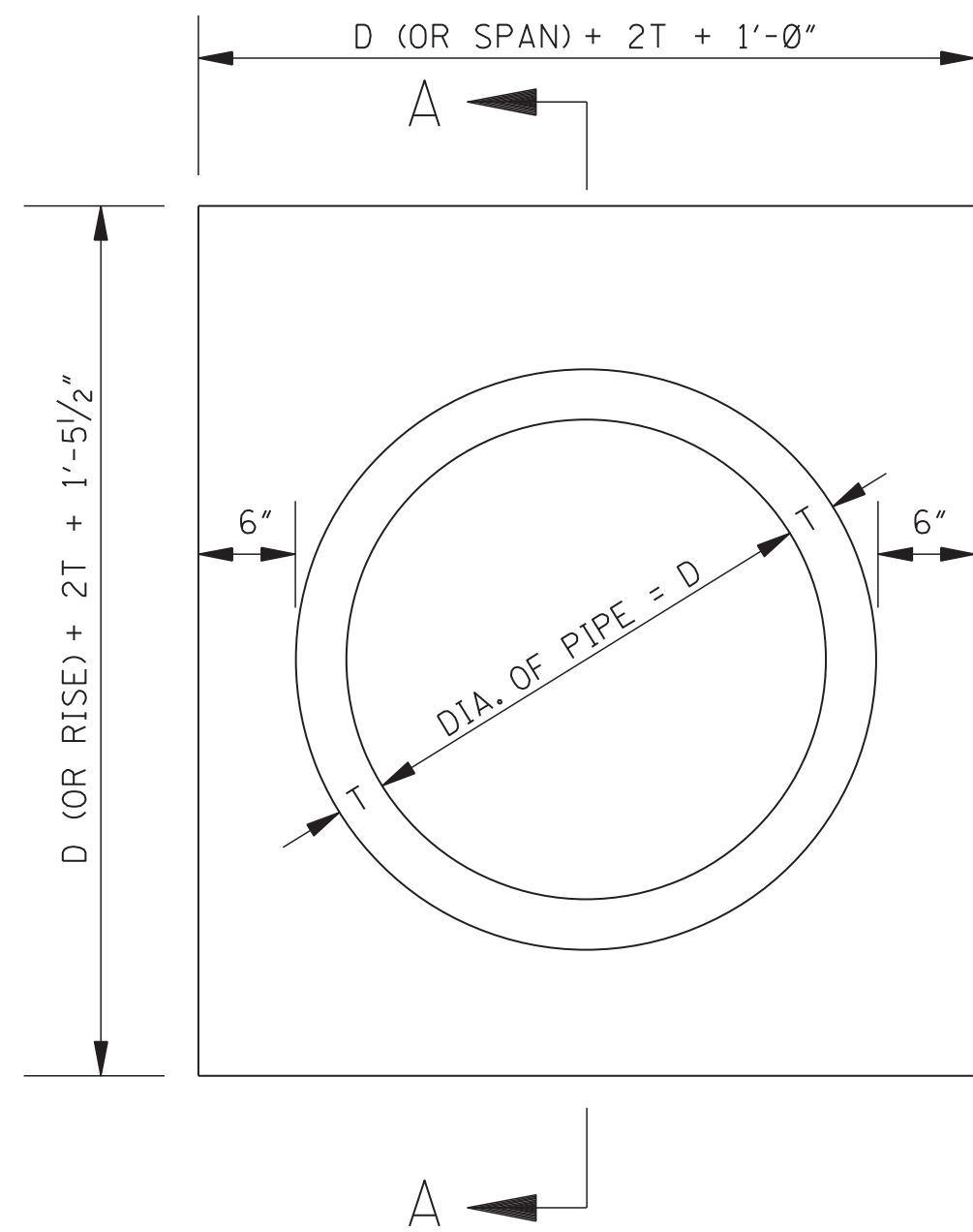
NOTE: SEE WK. NO. CR-4 FOR
DETECTABLE WARNING DIMENSIONS
AND PLACEMENT ORIENTATION.

				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN			
				REVISION	CURB RAMPS PLACEMENT DETAILS			
				DATE				
				ISSUE DATE:	AUGUST 01, 2017			
					WORKING NUMBER CR-3			
					SHEET NUMBER 6423			



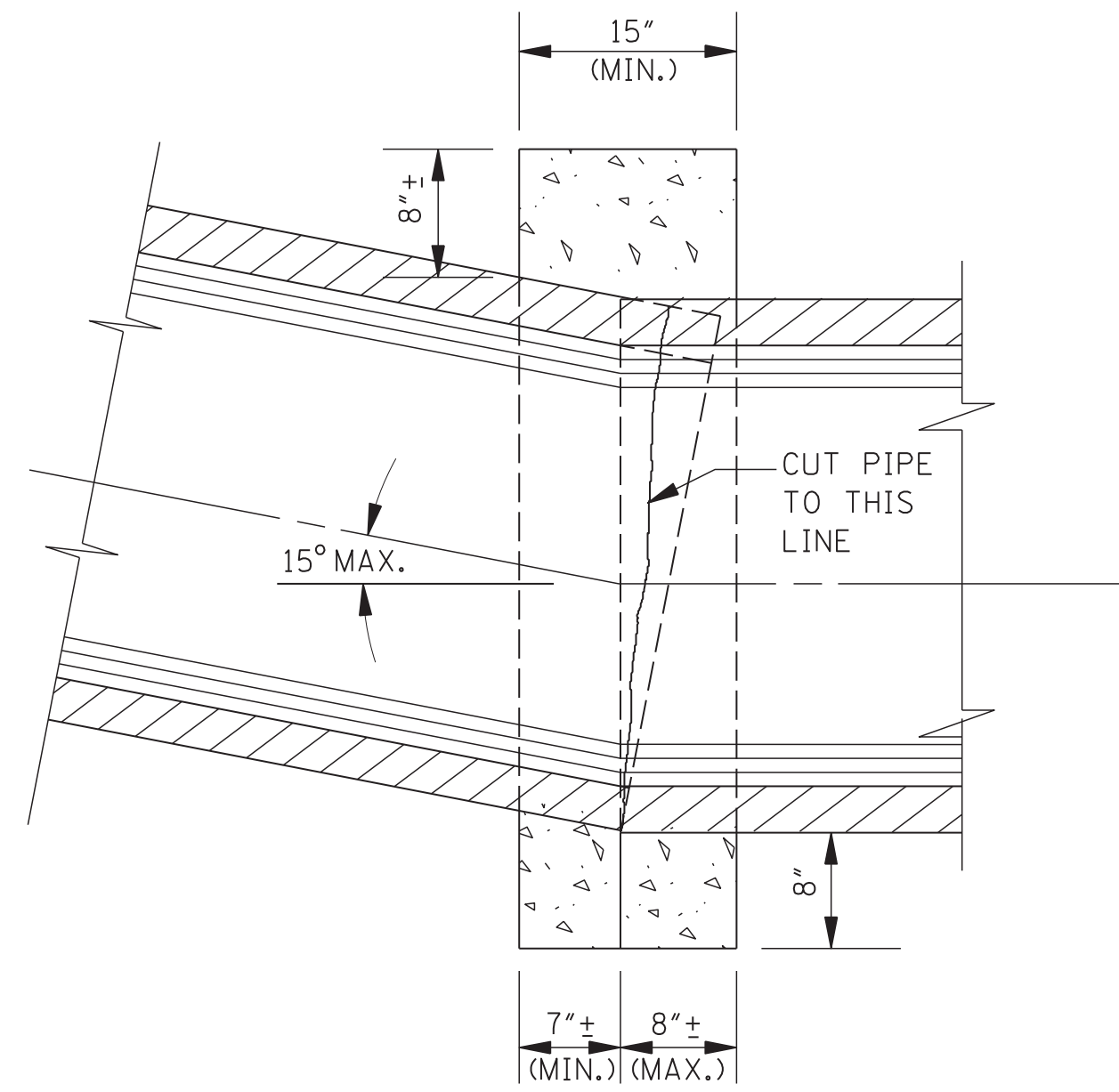


TYPICAL INSTALLATION FOR PIPE CULVERT WITH BROKEN FLOW LINE



ELEVATION OF CONCRETE COLLAR

NOTE: CIRCULAR PIPE IS SHOWN, ARCH PIPE IS SIMILAR.



SECTION A-A

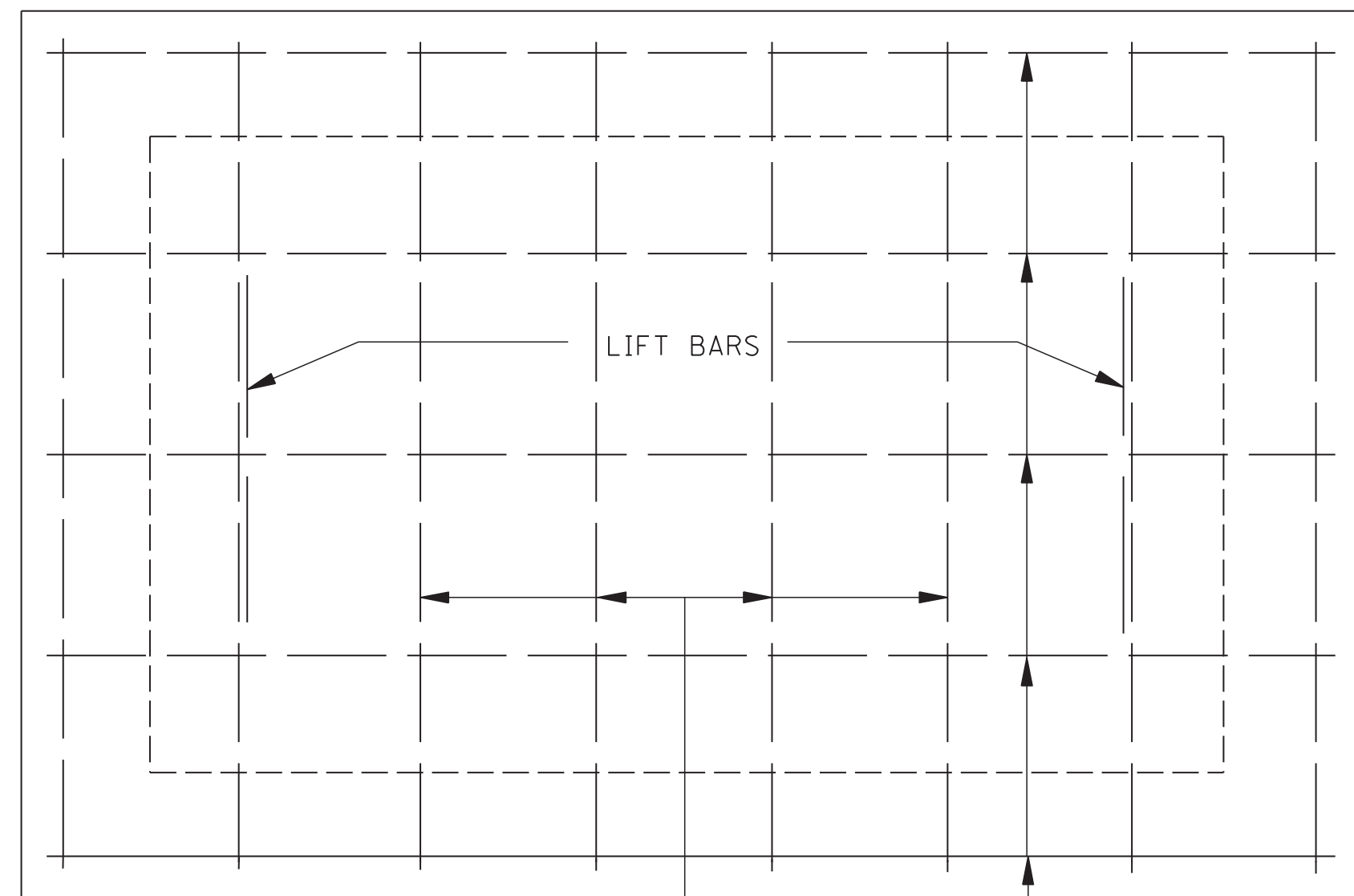
GENERAL NOTES:

1. THE MAXIMUM BEND ANGLE IS 15 DEGREES.
2. THE FOLLOWING QUANTITIES SHALL BE THE BASIS FOR PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE:

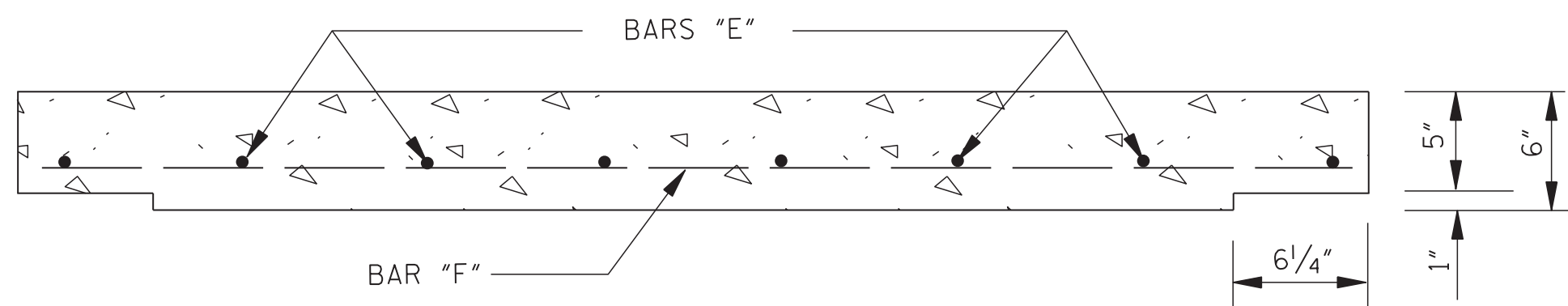
QUANTITIES FOR CONCRETE COLLAR FOR PIPE CULVERTS			
CIRCULAR PIPE		ARCH PIPE	
DIA. OF PIPE	CLASS "B" CONCRETE (yd ³)	SIZE OF PIPE	CLASS "B" CONCRETE (yd ³)
12"	0.240		
15"	0.260	18 x 11	0.280
18"	0.320	22 x 13	0.310
24"	0.410	29 x 18	0.410
30"	0.510	36 x 23	0.490
36"	0.620	44 x 27	0.600
42"	0.730	51 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		
				DATE		
					CONCRETE PIPE COLLAR	
					WORKING NUMBER PC-1	
					ISSUE DATE: AUGUST 01, 2017	
					SHEET NUMBER 6503	

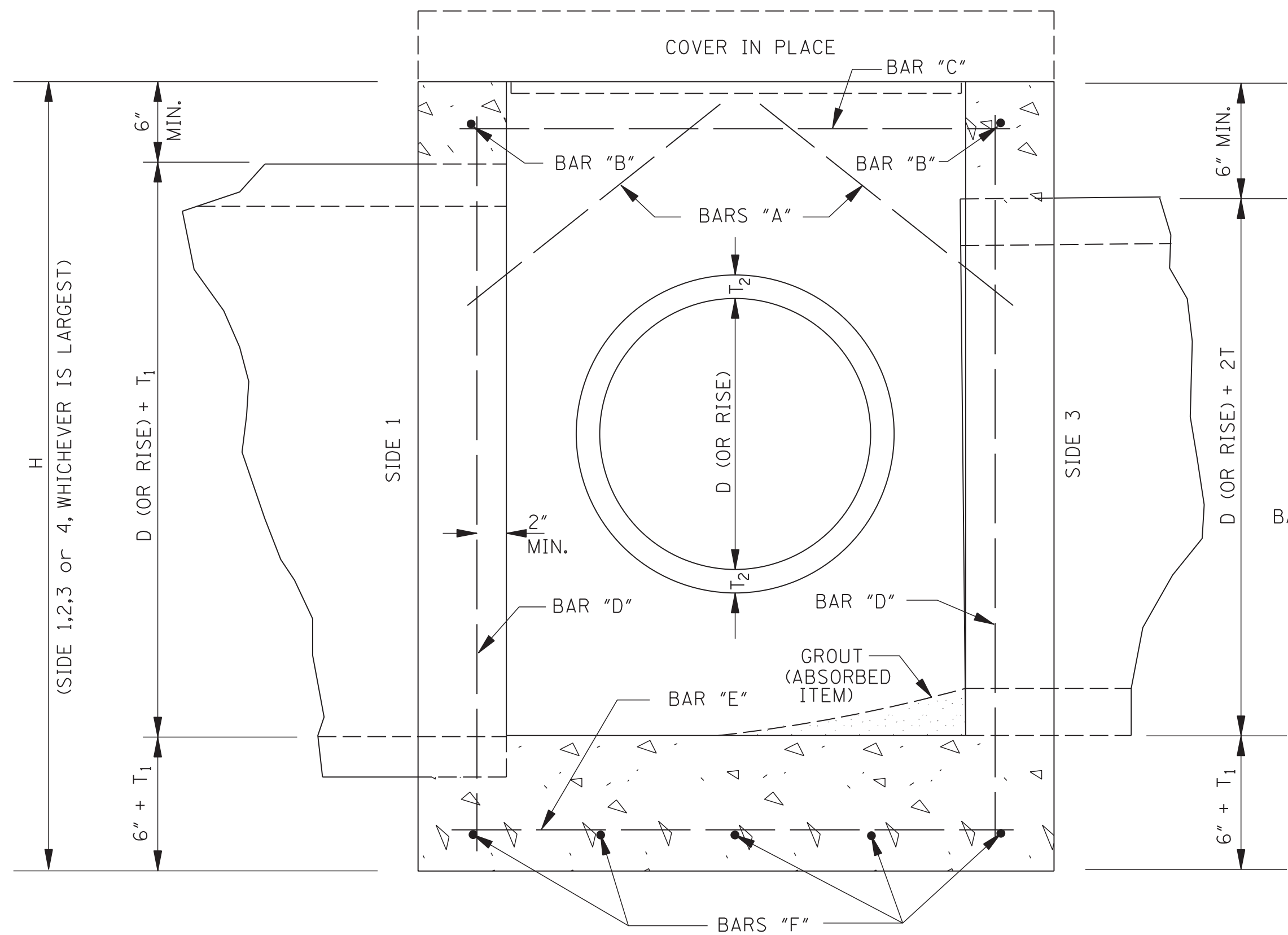




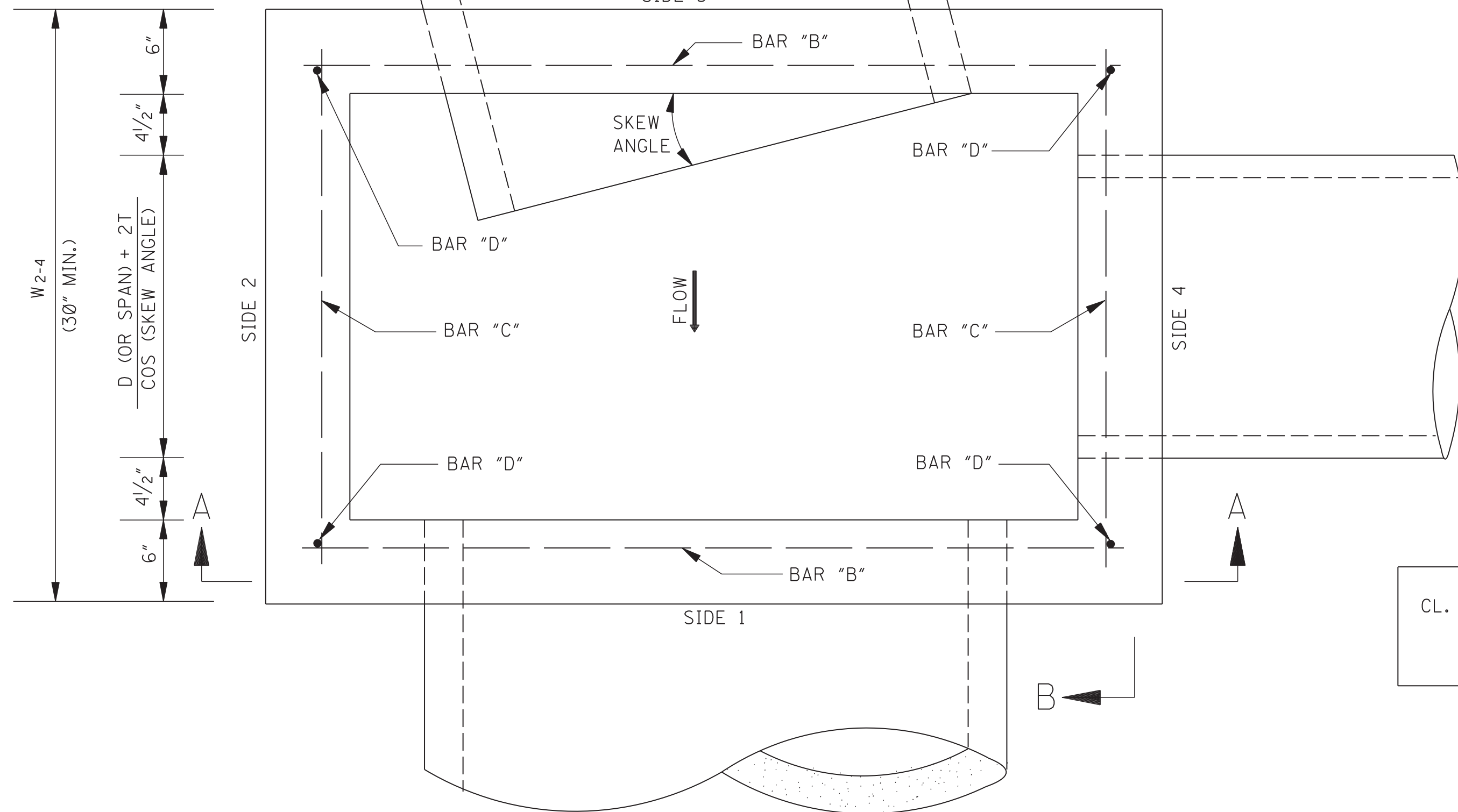
PLAN OF COVER



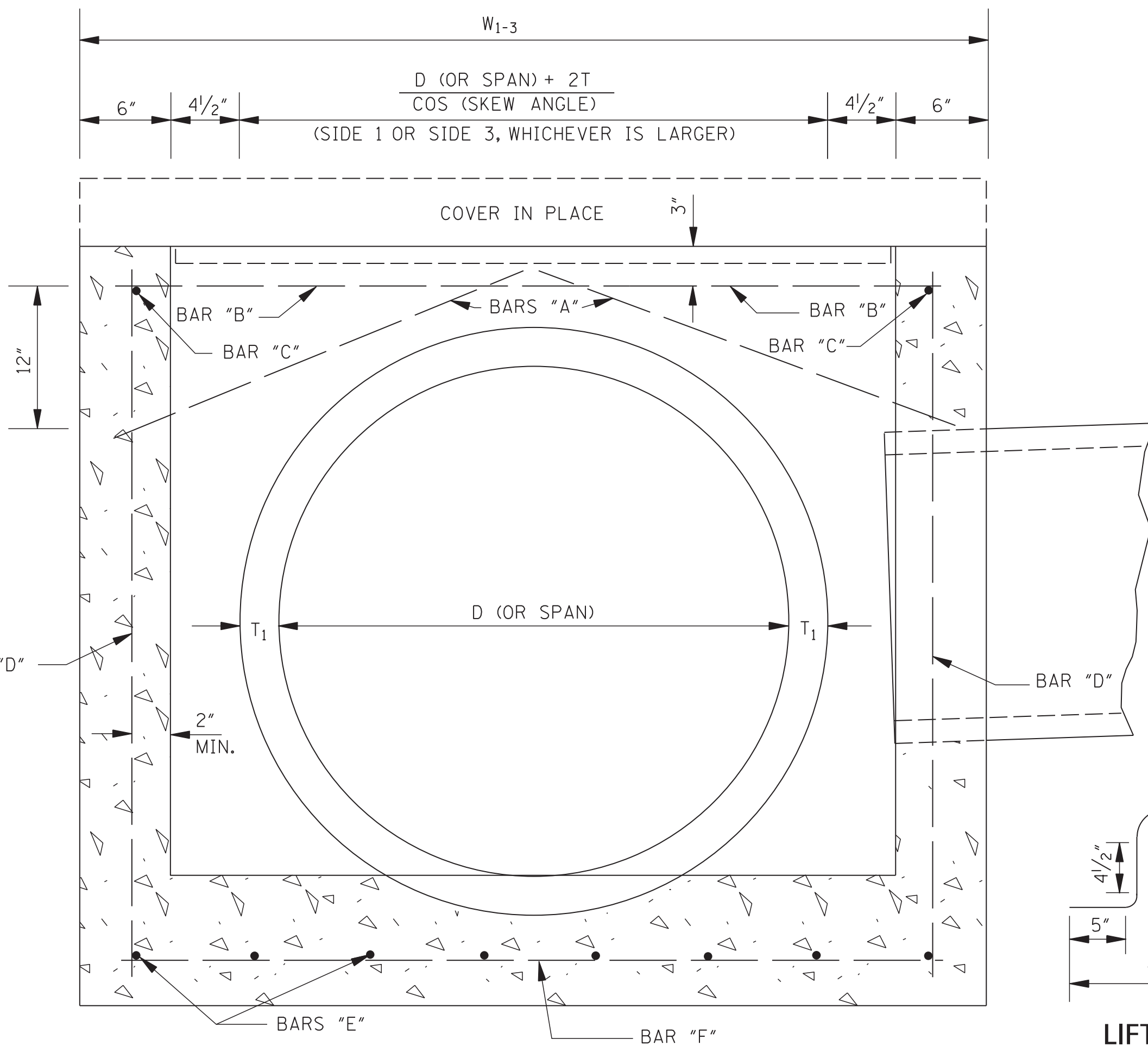
ELEVATION OF COVER



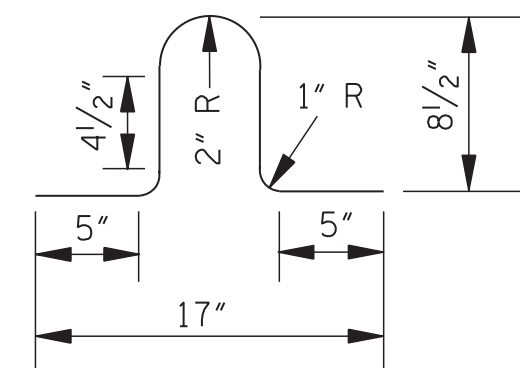
SECTION B-B



PLAN



SECTION A-A



LIFT BAR

NOTE: LIFT BAR TO BE FABRICATED FROM A #4 BAR 30" LONG. TWO LIFT BARS ARE REQUIRED. REINFORCING STEEL FOR 2 LIFT BARS = 3.3 lbs.

REINFORCING BAR LIST			
BAR	SIZE	NUMBER REQUIRED	LENGTH
A	#4	2 PER PIPE OPENING	$\sqrt{196 + \left(\frac{W^*}{2} + 2\right)^2}$
B	#4	2	$W_{1-3} - 6"$
C	#4	2	$W_{2-4} - 6"$
D	#4	4	$H - 6"$
E	#4	$2 \left[\left(\frac{W_{1-3}}{9"} \right)^{**} + 1 \right]$	$W_{2-4} - 4"$
F	#4	$2 \left[\left(\frac{W_{2-4}}{9"} \right)^{**} + 1 \right]$	$W_{1-3} - 4"$

NOTE: VARIABLES AND DESIGNATIONS ARE AS FOLLOWS:
D (OR SPAN) = PIPE DIAMETER (OR SPAN)
 W_{1-3} = WIDTH OF SIDE 1 & SIDE 3
 W_{2-4} = WIDTH OF SIDE 2 & SIDE 4
 W^* = W_{1-3} OR W_{2-4} (SIDE OF ENTERING PIPE)
 ** = ROUND TO NEAREST WHOLE NUMBER

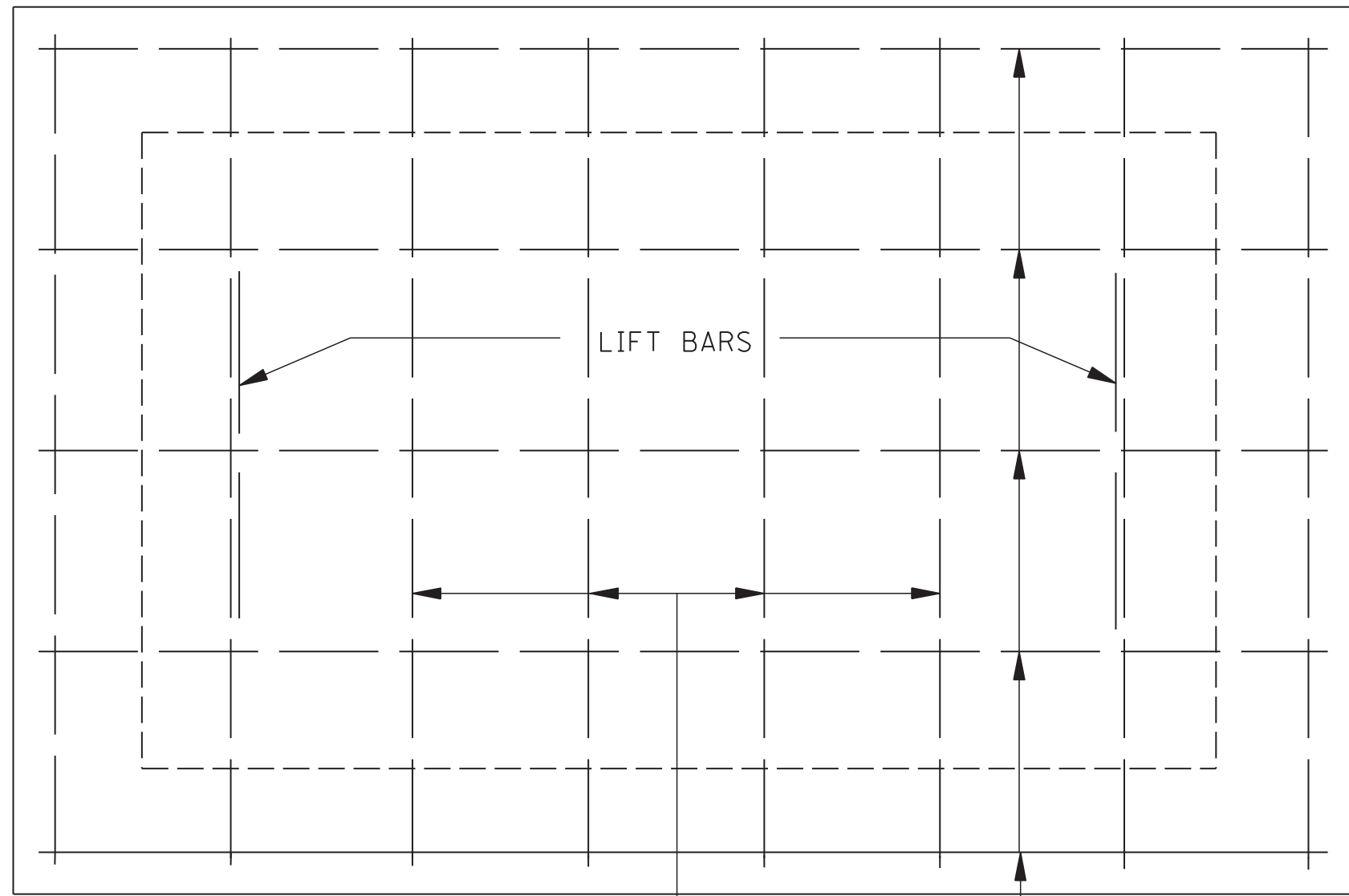
CL. "B" CONC. (yd³) = [(Q1 + Q2) / 46,656] - Σ PIPE OPENING DEDUCTIONS
WHERE: Q1 = [5" W_{1-3} W_{2-4}] + [1" (W_{1-3} - 12.5" W_{2-4} - 12.5") + [(T₁ + 6") W_{1-3} W_{2-4}]
Q2 = 12" [H - (T₁ + 6")] [(W_{1-3} - 12") + W_{2-4}]

COMMON PIPE SIZE						
CIRCULAR PIPE				ARCH PIPE		
PIPE SIZE	T	PIPE OPENING DEDUCTION (yd ³)		PIPE SIZE	T	PIPE OPENING DEDUCTION (yd ³)
18"	2½"	0.053		22" × 13"	2½"	0.053
24"	3"	0.091		29" × 18"	3"	0.087
30"	3½"	0.138		36" × 23"	3½"	0.129
36"	4"	0.196		44" × 27"	4"	0.185
42"	4½"	0.263		51" × 31"	4½"	0.245
48"	5"	0.340		58" × 36"	5"	0.318
54"	5½"	0.427		65" × 40"	5½"	0.394
60"	6"	0.524		73" × 45"	6"	0.489
66"	6½"	0.630				
72"	7"	0.747				

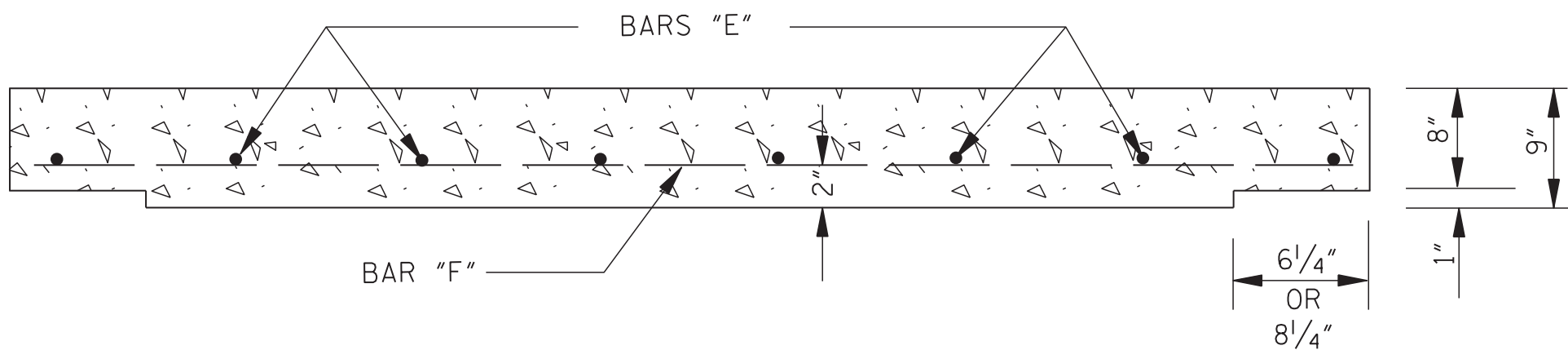
GENERAL NOTES:

- REINFORCING STEEL QUANTITIES TO BE COMPUTED FROM BAR LIST AND SHOWN ELSEWHERE ON THE PLANS.
- QUANTITIES FOR JUNCTION BOXES SHOWN ON THE PLANS WILL BE THE BASIS FOR PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE.
- CONCRETE SHALL BE CLASS "B" AND REINFORCING STEEL SHALL BE DEFORMED BARS.
- SIDE 1 OF THE JUNCTION BOX WILL ALWAYS BE THE OUTFLOW SIDE.
- IF PIPES ARE SKEWED MORE THAN 15° OR IF SKEWED PIPES PRODUCE CONFLICTS WITH ANOTHER OPENING, THE PIPE SHALL BE BROKEN BACK TO THE WALL OF THE JUNCTION BOX.

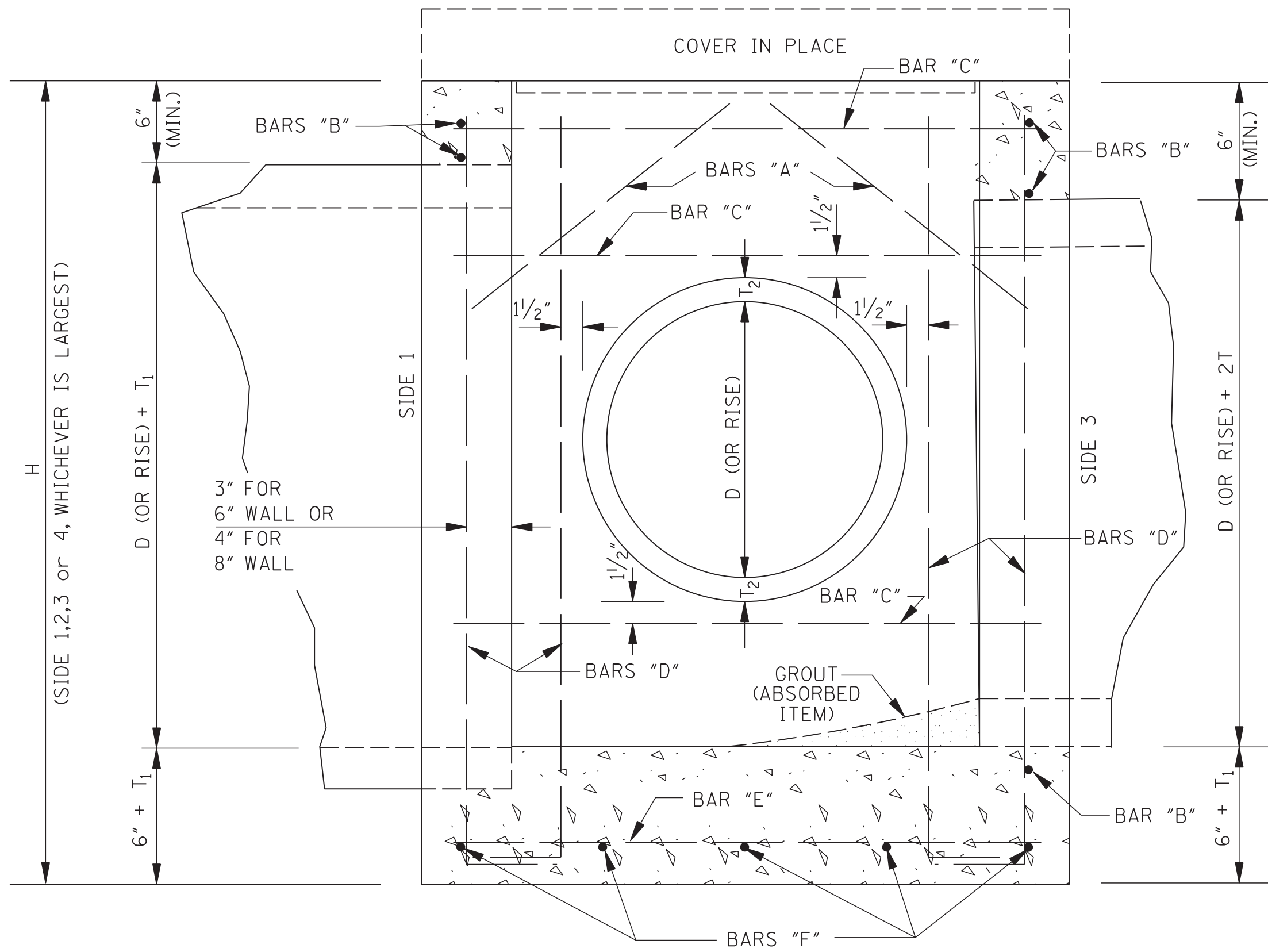
		BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
		REVISION	ROADWAY DESIGN DIVISION	
		DATE	STANDARD PLAN	
			JUNCTION BOX FOR PIPE CULVERTS	
			WORKING NUMBER JB-1	
			SHEET NUMBER 6504	
			ISSUE DATE: AUGUST 01, 2017	



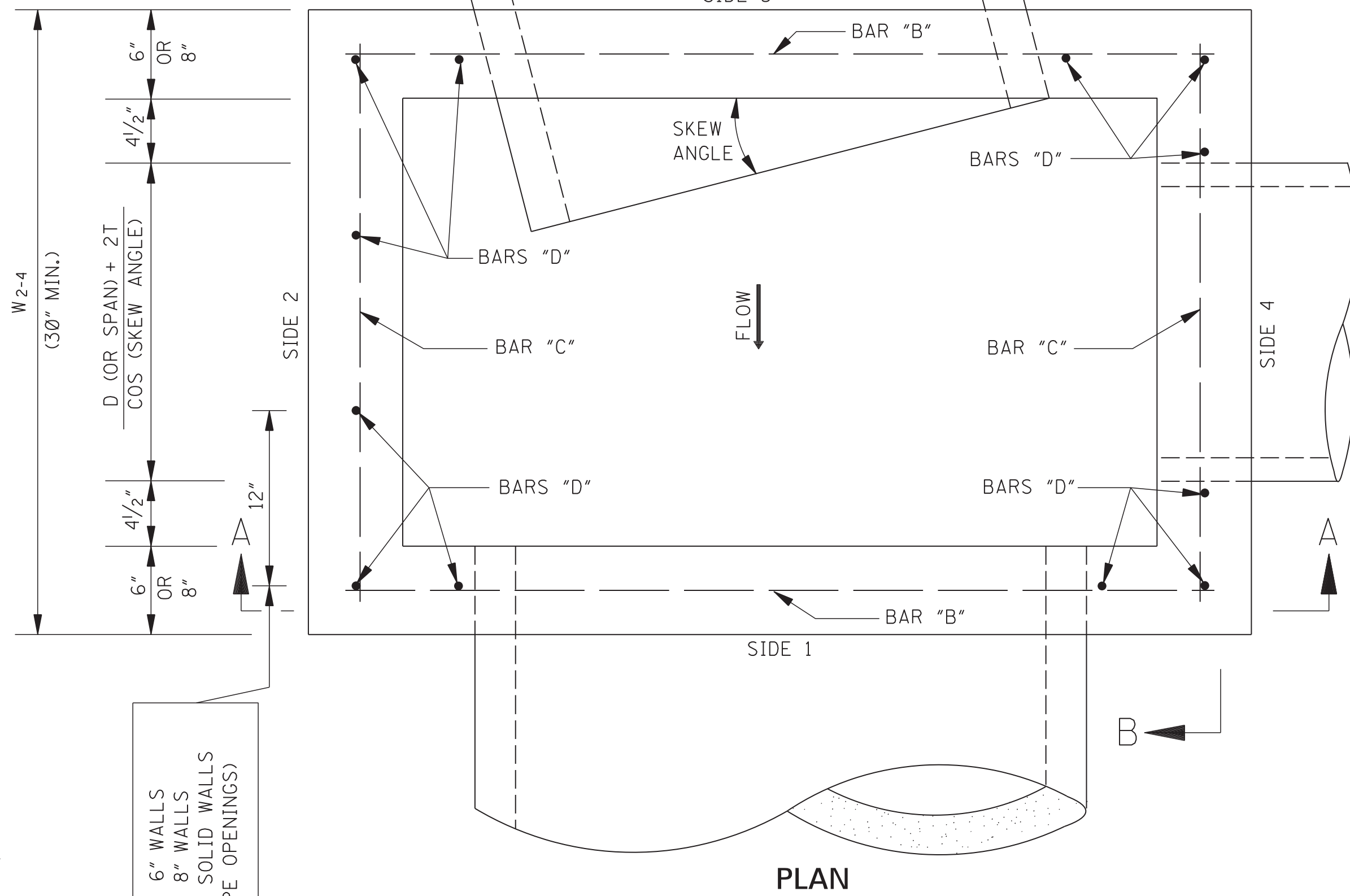
PLAN OF COVER



ELEVATION OF COVER

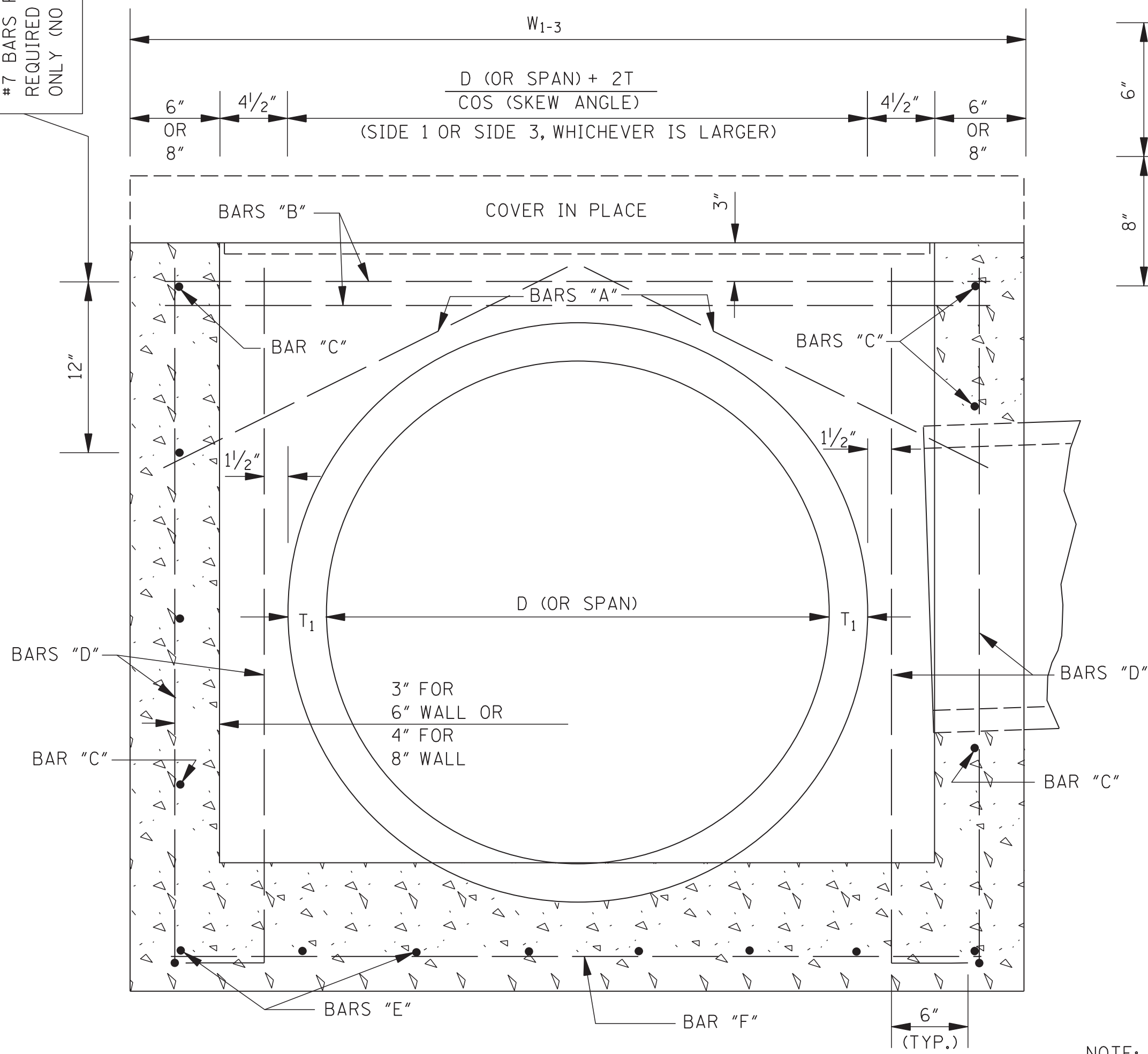


SECTION B-B

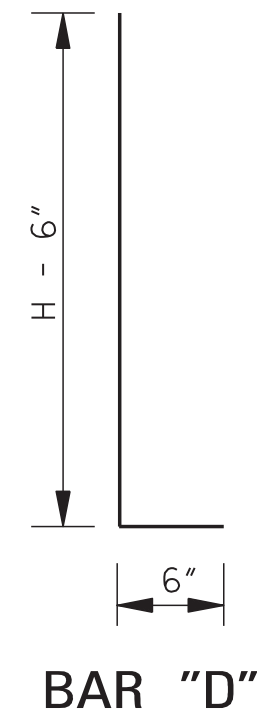


PLAN

#6 BARS FOR 6" WALLS
#7 BARS FOR 8" WALLS
REQUIRED ON SOLID WALLS
ONLY (NO PIPE OPENINGS)



SECTION A-A



REINFORCING BAR LIST			
BAR	SIZE	NUMBER REQUIRED	LENGTH
"A"	#4	2 PER PIPE OPENING	$\sqrt{196 + \left(\frac{W^*}{2} + 2\right)^2}$
"B"	#6 FOR 6" WALL #7 FOR 8" WALL	2 + [2 PER OPENING SIDE 3] + [1 PER SIDE 1] + [12" O.C. FOR SOLID WALL]	$W_{1-3} - 4"$
"C"		2 + [2 PER OPENING] + [12" O.C. FOR SOLID WALL]	$W_{2-4} - 4"$
"D"		4 + [2 PER OPENING] + [12" O.C. FOR SOLID WALL]	H
"E"	#6	$2 \left[\left(\frac{W_{1-3}}{6} \right)^{**} + 1 \right]$	$W_{2-4} - 4"$
"F"	#6	$2 \left[\left(\frac{W_{2-4}}{6} \right)^{**} + 1 \right]$	$W_{1-3} - 4"$

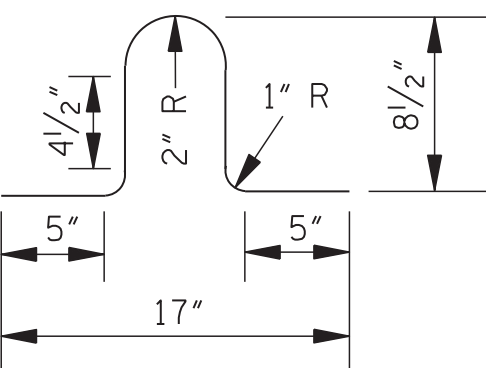
NOTE: VARIABLES AND DESIGNATIONS ARE AS FOLLOWS:
D (OR SPAN) = PIPE DIAMETER (OR SPAN)
W₁₋₃ = WIDTH OF SIDE 1 & SIDE 3
W₂₋₄ = WIDTH OF SIDE 2 & SIDE 4
W* = W₁₋₃ OR W₂₋₄ (SIDE OF ENTERING PIPE)
** = ROUND TO NEAREST WHOLE NUMBER

CL. "B" CONC. (yd³) = [(Q1 + Q2) / 46,656] - Σ PIPE OPENING DEDUCTIONS
WHERE: 6" WALL
Q1 = [8"W₁₋₃W₂₋₄] + [1"(W₁₋₃ - 12.5")(W₂₋₄ - 12.5")] + [(T₁ + 6")W₁₋₃W₂₋₄]
Q2 = 12"[H - (T₁ + 6")][(W₁₋₃ - 12") + W₂₋₄]
OR: 8" WALL
Q1 = [8"W₁₋₃W₂₋₄] + [1"(W₁₋₃ - 16.5")(W₂₋₄ - 16.5")] + [(T₁ + 6")W₁₋₃W₂₋₄]
Q2 = 16"[H - (T₁ + 6")][(W₁₋₃ - 16") + W₂₋₄]

COMMON PIPE SIZE			
CIRCULAR PIPE			
PIPE SIZE	T	PIPE OPENING DEDUCTION (yd ³)	
		6" WALL	+8" WALL
18"	2 1/2"	0.053	0.071
24"	3"	0.091	0.121
30"	3 1/2"	0.138	0.184
36"	4"	0.196	0.261
42"	4 1/2"	0.263	0.350
48"	5"	-	0.453
54"	5 1/2"	-	0.569
60"	6"	-	0.699
66"	6 1/2"	-	0.840
72"	7"	-	0.996
ARCH PIPE			
PIPE SIZE	T	PIPE OPENING DEDUCTION (yd ³)	
		6" WALL	+8" WALL
22" X 13"	2 1/2"	0.053	0.071
29" X 18"	3"	0.087	0.116
36" X 23"	3 1/2"	0.129	0.172
44" X 27"	4"	0.185	0.247
51" X 31"	4 1/2"	-	0.327
58" X 36"	5"	-	0.424
65" X 40"	5 1/2"	-	0.525
73" X 45"	6"	-	0.652

+ NOTE: IF ANY PIPE REQUIRING A 8" WALL IS USED, ALL WALLS SHALL BE 8" REGARDLESS OF PIPE SIZE.

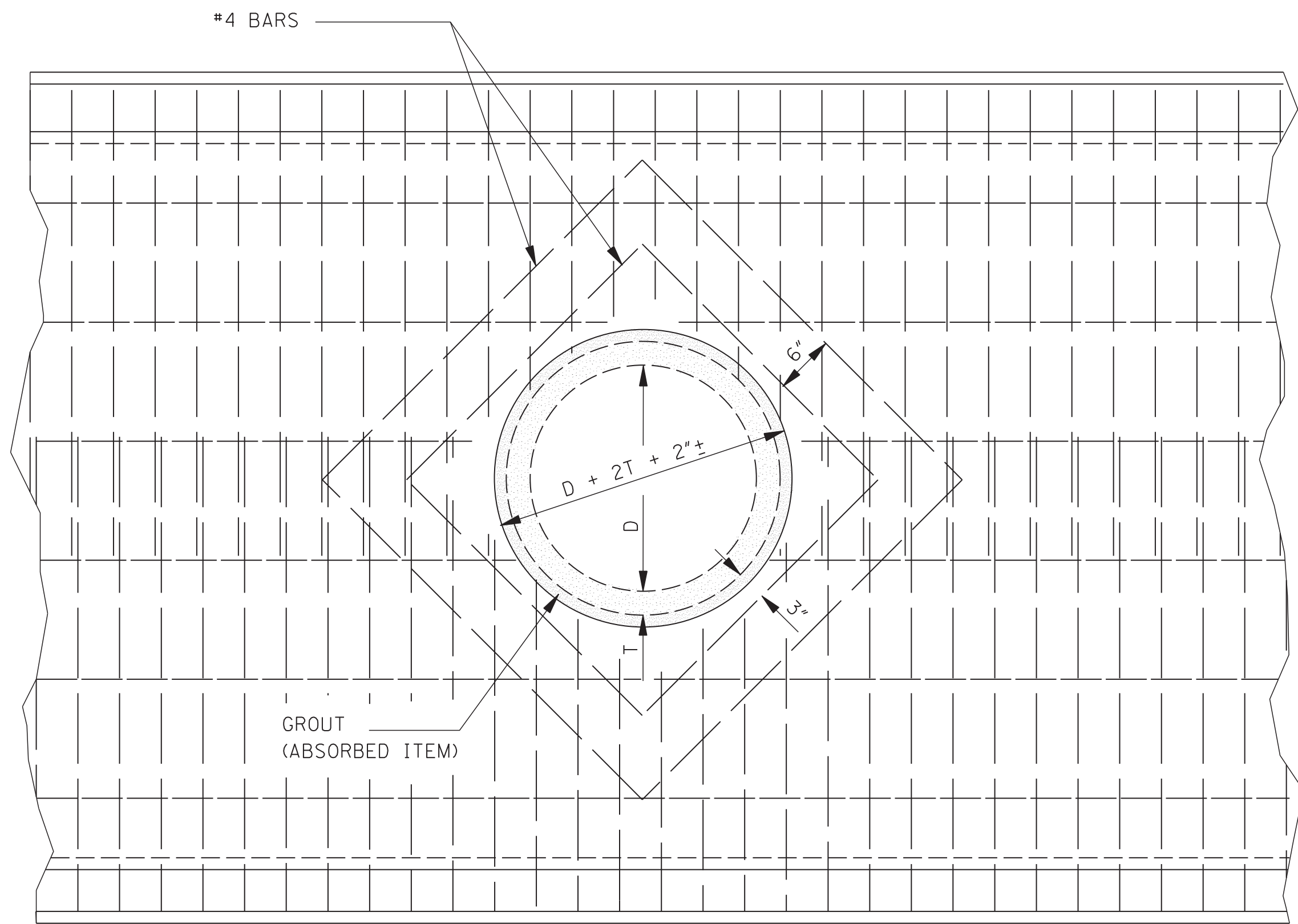
- GENERAL NOTES:
- REINFORCING STEEL QUANTITIES TO BE COMPUTED FROM BAR LIST AND SHOWN ELSEWHERE ON THE PLANS.
 - QUANTITIES FOR JUNCTION BOXES SHOWN ON THE PLANS WILL BE THE BASIS FOR PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE.
 - CONCRETE SHALL BE CLASS "B" AND REINFORCING STEEL SHALL BE DEFORMED BARS, ASTM A 615, GRADE 60 OR AASHTO M 31, GRADE 60.
 - SIDE 1 OF THE JUNCTION BOX WILL ALWAYS BE THE OUTFLOW SIDE.
 - IF PIPES ARE SKEWED MORE THAN 15° OR IF SKEWED PIPES PRODUCE CONFLICTS WITH ANOTHER OPENING, THE PIPE SHALL BE BROKEN BACK TO THE WALL OF THE JUNCTION BOX.



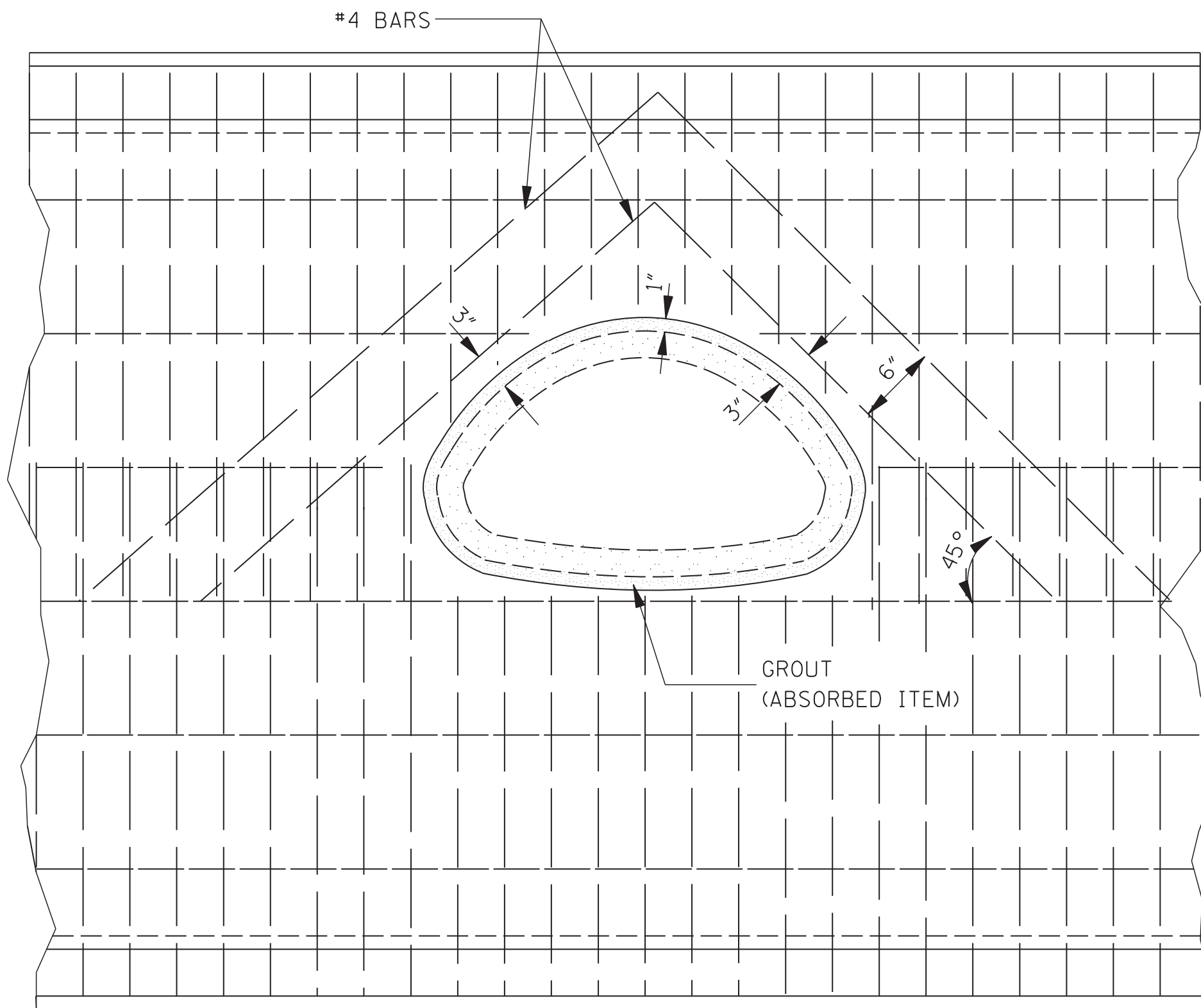
LIFT BAR

NOTE: LIFT BAR TO BE FABRICATED FROM A #4 BAR 30" LONG. TWO LIFT BARS ARE REQUIRED. REINFORCING STEEL FOR 2 LIFT BARS = 3.3 lbs.

		BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
		REVISION	ROADWAY DESIGN DIVISION	
			STANDARD PLAN	
			JUNCTION BOX TYPE 2	
			FOR TRAFFIC LOAD	
			(MAXIMUM "W" = 9'-3")	
		DATE	ISSUE DATE: AUGUST 01, 2017	
				WORKING NUMBER JB-2
				SHEET NUMBER 6506



ELEVATION SHOWING CIRCULAR PIPE
STUBBED INTO BOX CULVERT BARREL OR WING-WALL



ELEVATION SHOWING ARCH PIPE STUBBED
INTO BOX CULVERT BARREL OR WING-WALL

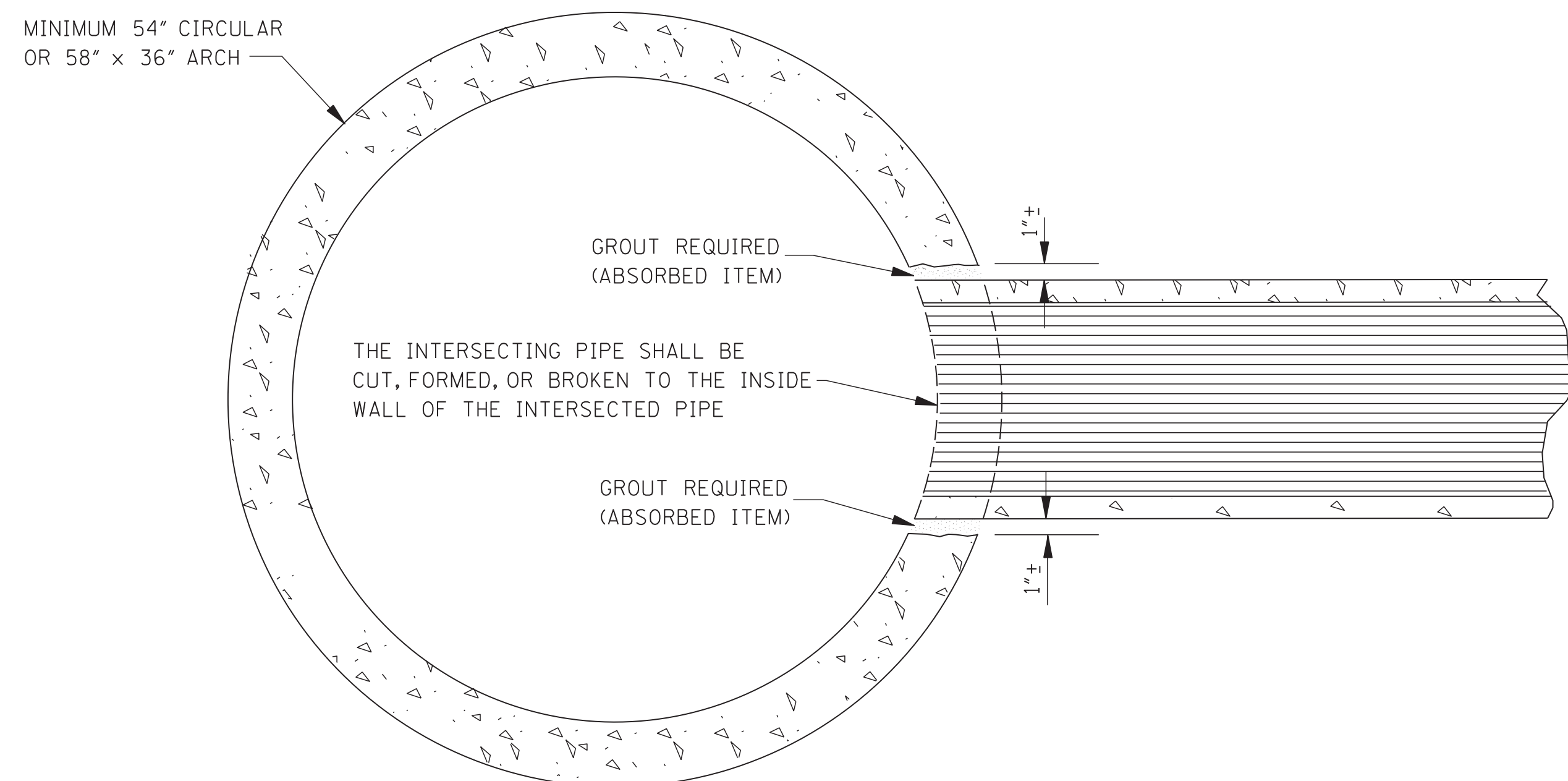
BAR LIST		
PIPE SIZE	#4 BARS	
	NO.	LGTH.
18"	4	2'-6"
	4	3'-6"
24"	4	3'-1"
	4	4'-1"
30"	4	3'-8 1/2"
	4	4'-8 1/2"
22" X 13"	2	3'-10"
	2	4'-9"
29" X 18"	1	5'-4"
	2	4'-6"
	1	6'-3"

NOTES:

1. A 24" DIAMETER PIPE IS THE MAXIMUM SIZE THAT MAY BE STUBBED INTO A 54" DIAMETER PIPE.
2. A 60" DIAMETER PIPE IS THE MINIMUM SIZE THAT A 30" DIAMETER PIPE MAY BE STUBBED INTO.

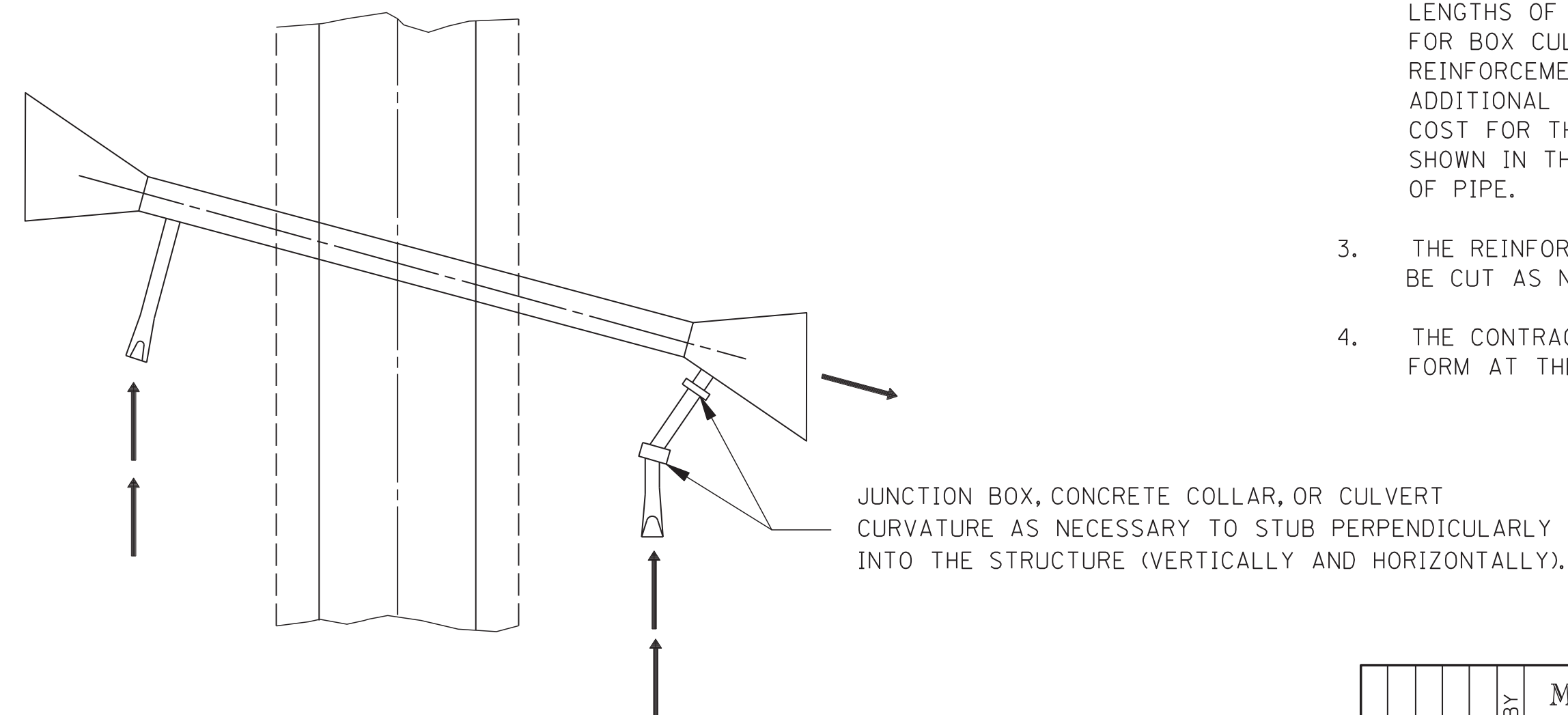
GENERAL NOTES:

1. PAYMENT FOR WORK AND MATERIALS FOR STUBBING A PIPE CULVERT INTO A BOX CULVERT OR CONCRETE PIPE SHALL BE PAID FOR AS A BRANCH CONNECTION OF THE APPROPRIATE SIZE, TYPE AND DESCRIPTION.
2. THE TABLE ON THIS SHEET INDICATES THE NUMBER AND LENGTHS OF ADDITIONAL REINFORCING STEEL BARS REQUIRED FOR BOX CULVERTS CONSTRUCTED. FOR A DOUBLE ROW OF REINFORCEMENT, DOUBLE THE NUMBER OF BARS SHOWN. THE ADDITIONAL REINFORCING STEEL SHALL BE INCLUDED IN THE COST FOR THIS TYPE OF BRANCH CONNECTION. THE QUANTITIES SHOWN IN THE TABLE ARE FOR THE MOST COMMON SIZES OF PIPE.
3. THE REINFORCEMENT OF THE INTERSECTED BOX OR PIPE SHALL BE CUT AS NECESSARY TO ACCOMMODATE THE STUBBED PIPE.
4. THE CONTRACTOR MAY INSERT THE INTERSECTING PIPE INTO THE FORM AT THE PROPER LOCATION IN LIEU OF FORMING BY BLOCKING OUT.



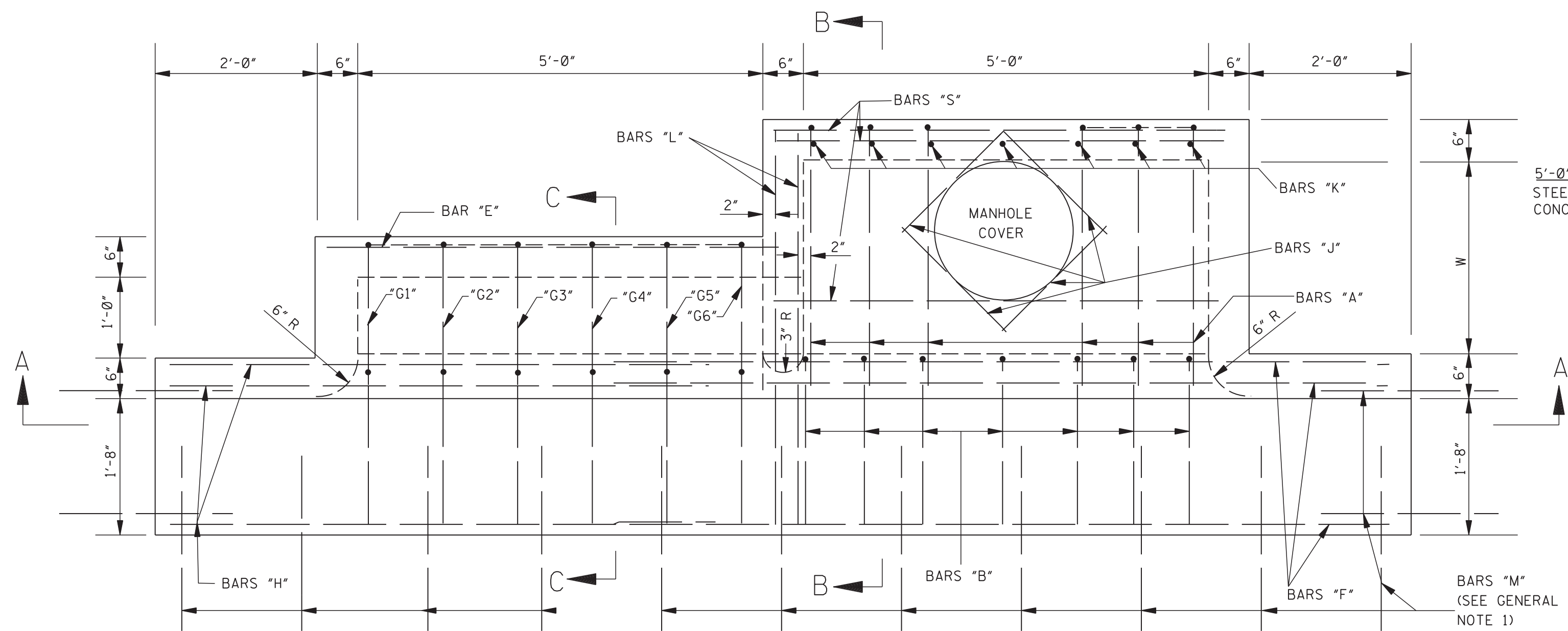
ELEVATION SHOWING PIPE CULVERT
STUBBED INTO CONCRETE PIPE CULVERT

NOTE: TYPICAL INSTALLATION FOR MEDIAN STUB TO CROSSING DRAIN WITH MINIMUM COVER.

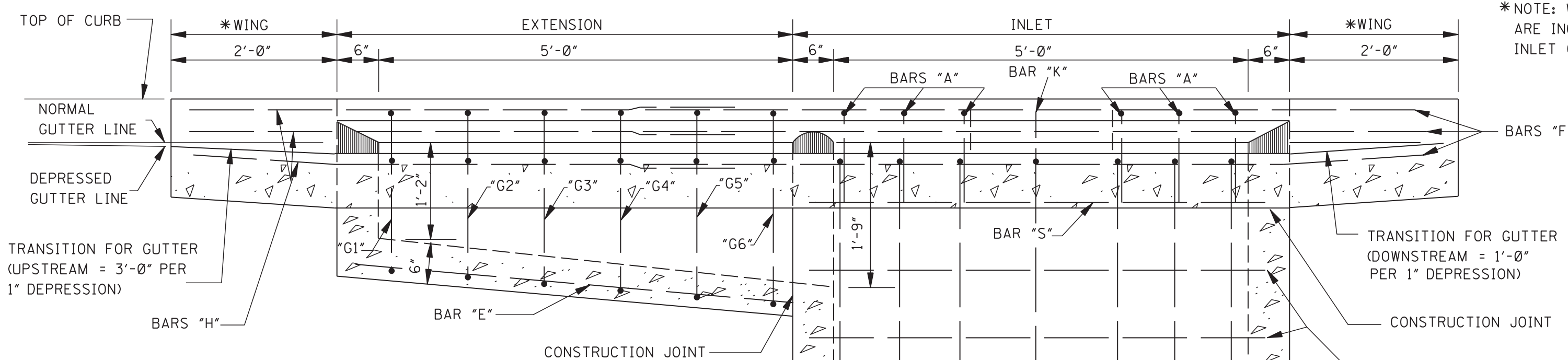


TYPICAL PLAN OF BRANCH CONNECTION
TO BOX CULVERT WING-WALL

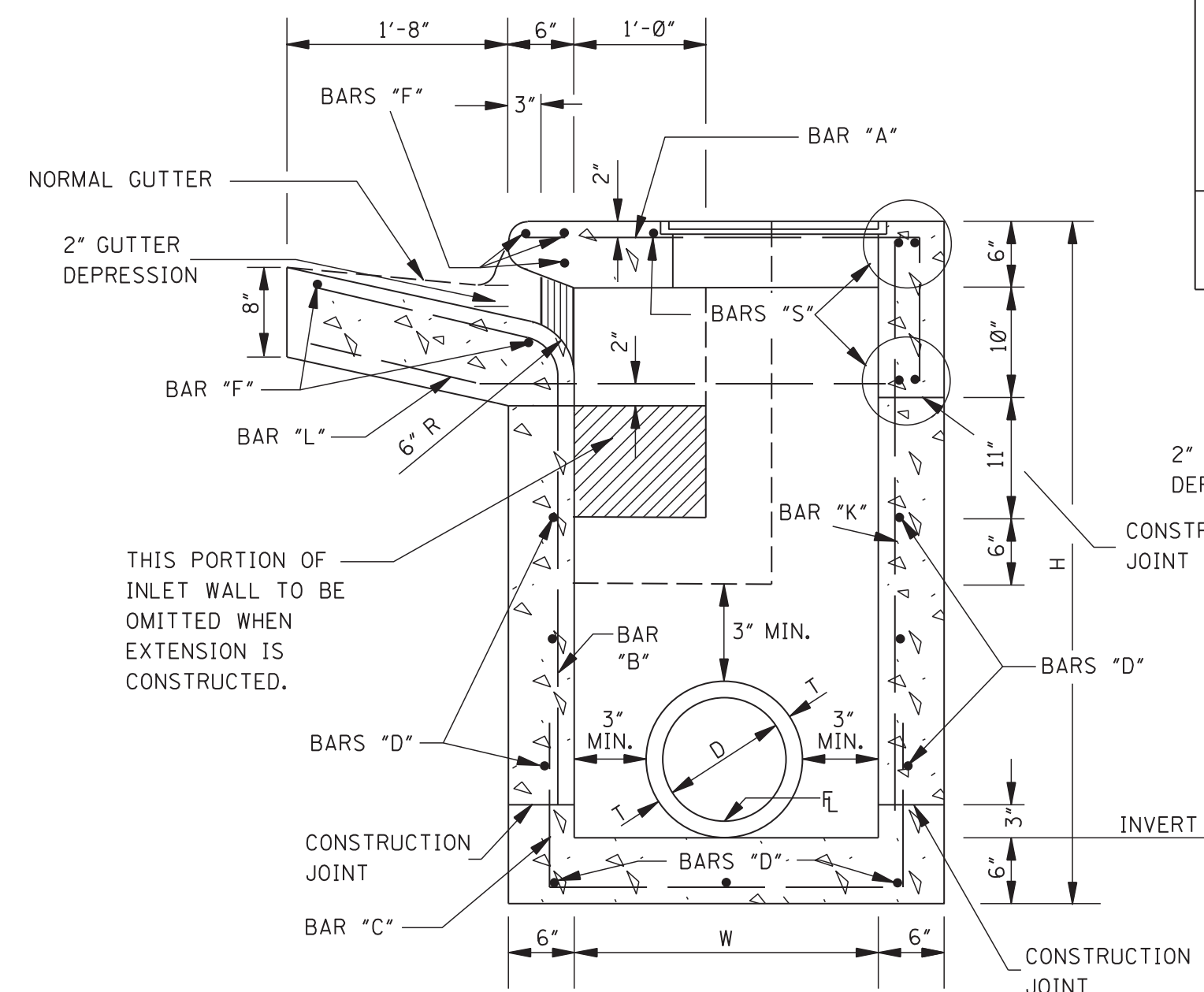
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN
				REVISION	BRANCH CONNECTIONS
				DATE	WORKING NUMBER BC-1
				ISSUE DATE:	SHEET NUMBER 6507
					AUGUST 01, 2017



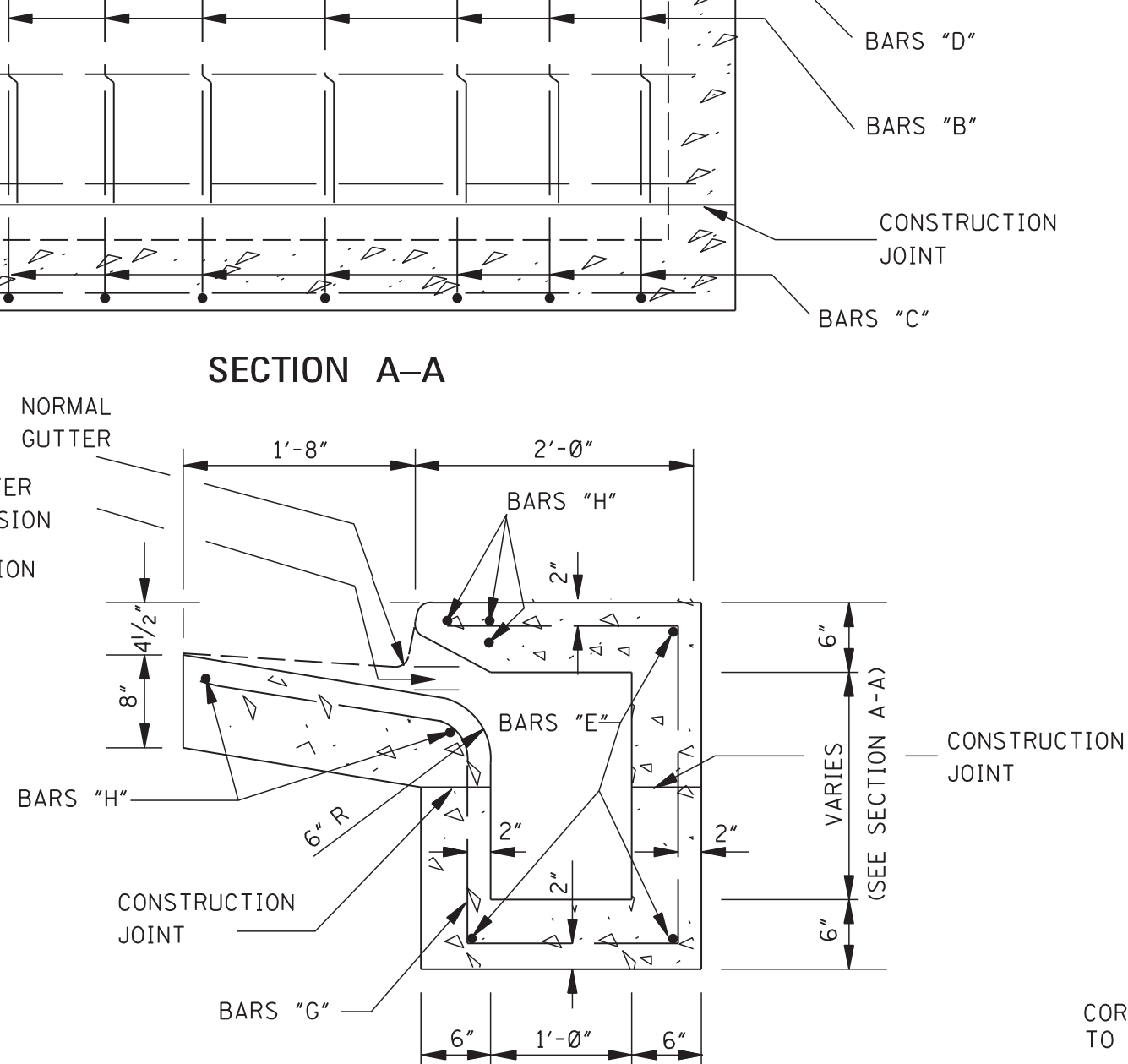
PLAN



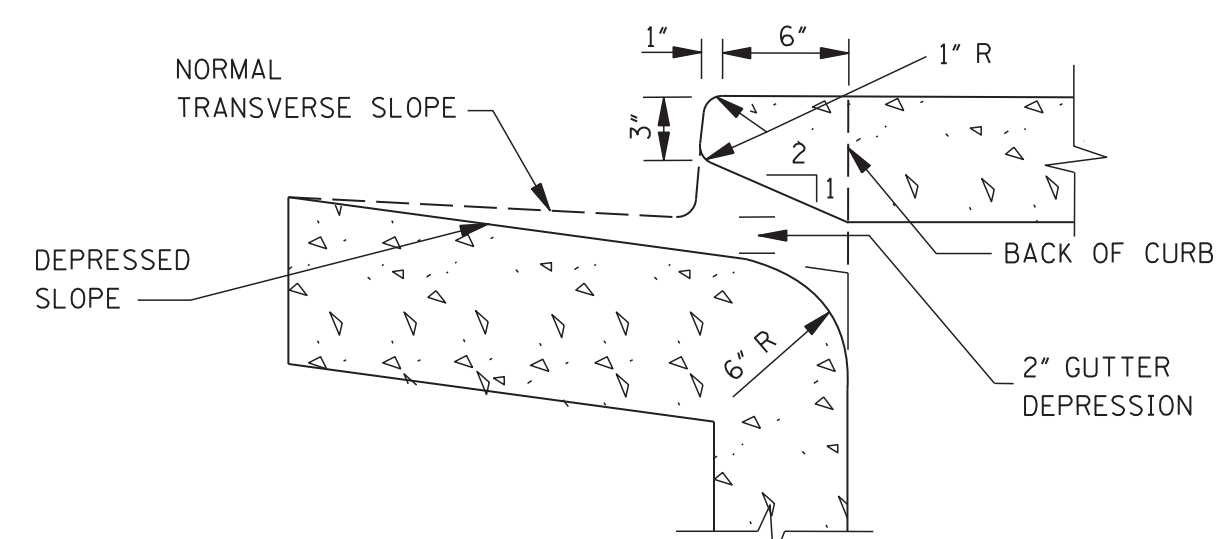
SECTION A-A



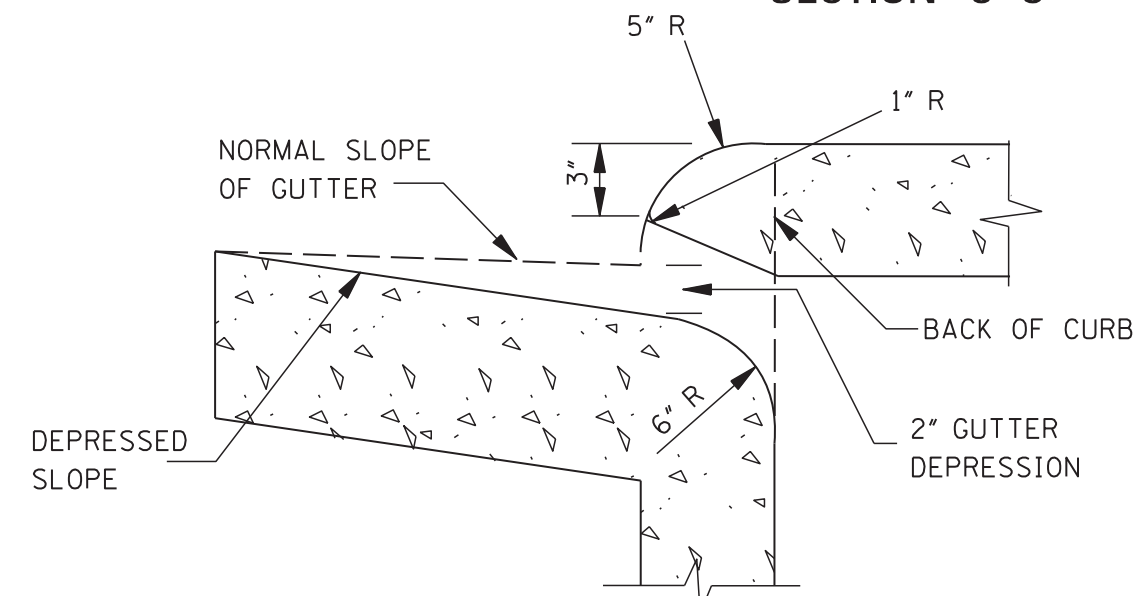
SECTION B-B



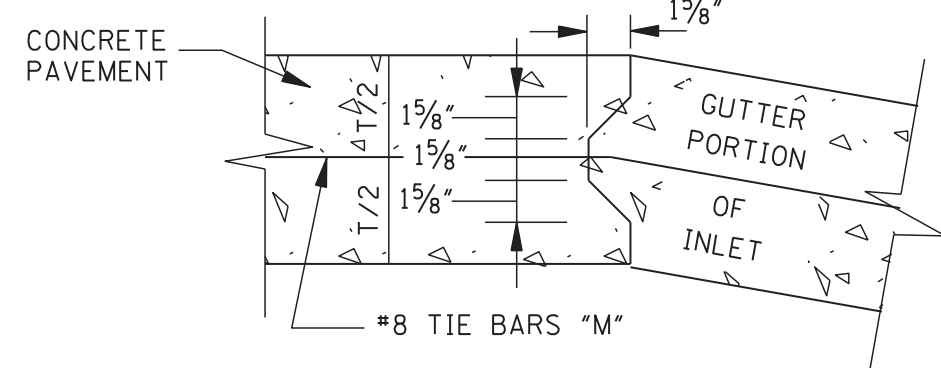
SECTION C-C



THROAT DETAIL OF BARRIER CURB

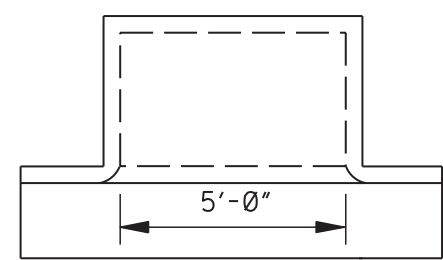


THROAT DETAIL OF ROLLED CURB



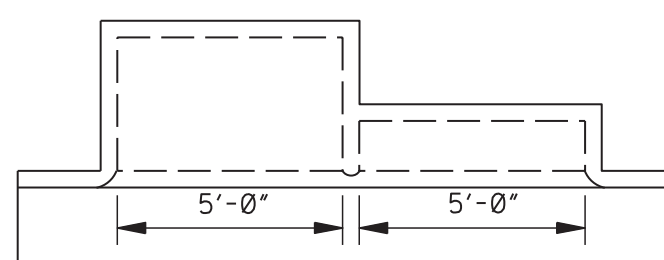
DETAIL OF KEYED CONSTRUCTION JOINTS

NOTES: FIELD BEND BARS "L" TO CENTER OF GUTTER SECTION



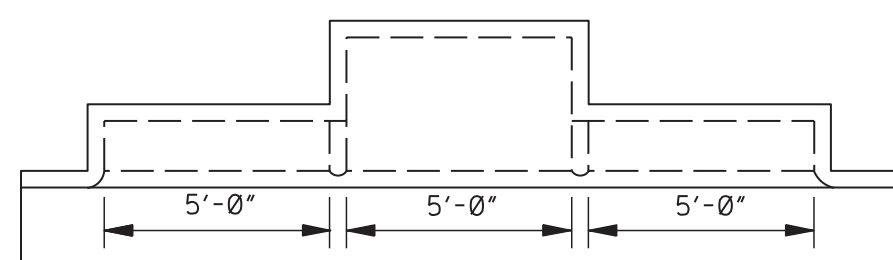
REGULAR INLET

5'-0" INLET
STEEL = 8.68W + 9.35Y + 3.79W' + 7.57H' + 121
CONC. = (WY + 5.5W + 6Y + 14.611)/27



INLET WITH ONE EXTENSION

10'-0" INLET
STEEL = 8.68W + 9.35Y + 3.79W' + 7.57H' + 231
CONC. = (WY + 5.5W + 6Y + 38.641)/27



INLET WITH TWO EXTENSIONS

15'-0" INLET
STEEL = 8.68W + 9.35Y + 3.79W' + 7.57H' + 341
CONC. = (WY + 5.5W + 6Y + 62.671)/27

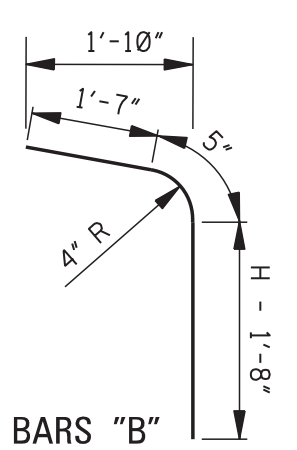
PLAN OF INLET AND EXTENSIONS

ADD. CONCRETE PER FOOT OF H		ADD. CONCRETE PER FOOT OF W	
W	yd ³ /ft	H	yd ³ /ft
2'-6"	0.315	3'-6"	0.315
3'-0"	0.333	4'-0"	0.333
3'-6"	0.352	4'-6"	0.352
4'-0"	0.371	5'-0"	0.370
4'-6"	0.389	5'-6"	0.389
5'-0"	0.408	6'-0"	0.408
5'-6"	0.426	6'-6"	0.426
6'-0"	0.445	7'-0"	0.445
6'-6"	0.463	7'-6"	0.463
7'-0"	0.481	8'-0"	0.482
		8'-6"	0.500

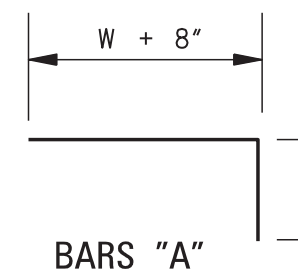
QUANTITIES FOR ONE EXTENSION					
BAR	SIZE	LENGTH	SPACING	NUMBER	WEIGHT
"E"	#4	5'-8"	AS SHOWN	3	11
"G"	#4	SEE SCHEDULE	0'-11"	6	34
"H"	#6	6'-9"	AS SHOWN	5	51
"L"	#6	4'-9"	AS SHOWN	2	14
TOTAL STEEL FOR ONE EXTENSION = 110 lbs					
TOTAL CONCRETE FOR ONE EXTENSION = 0.89 yd ³					
NOTE: WHERE EXTENSION IS USED WITH CONCRETE PAVEMENT, ADD 27 lbs OF STEEL FOR BARS "M".					

BAR "G" SCHEDULE

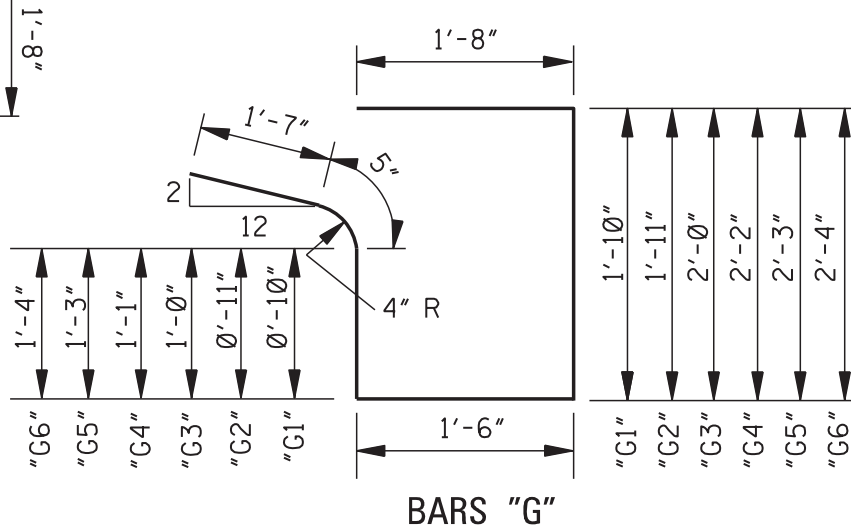
BAR "G"	LENGTH
"G1"	7'-10"
"G2"	8'-0"
"G3"	8'-2"
"G4"	8'-5"
"G5"	8'-8"
"G6"	8'-10"



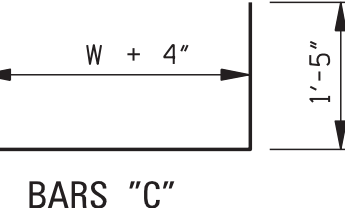
BARS "B"



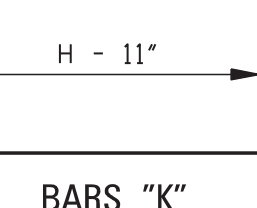
BARS "A"



BARS "G"

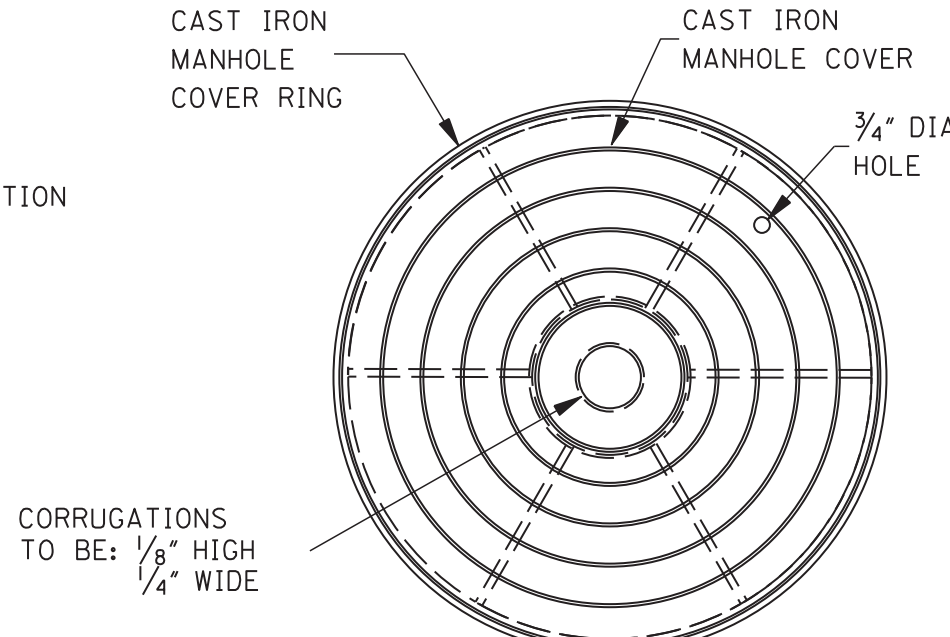


BARS "C"

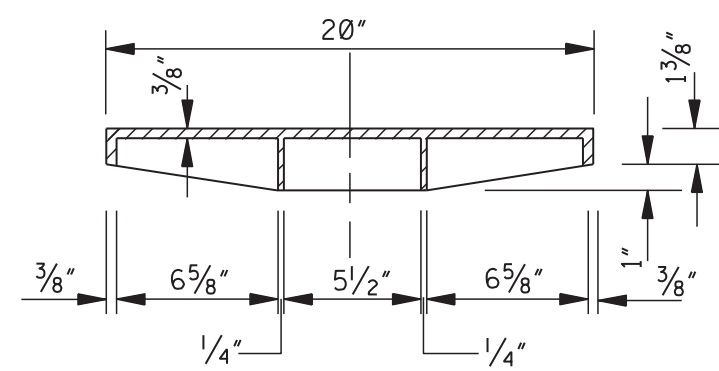


BARS "K"

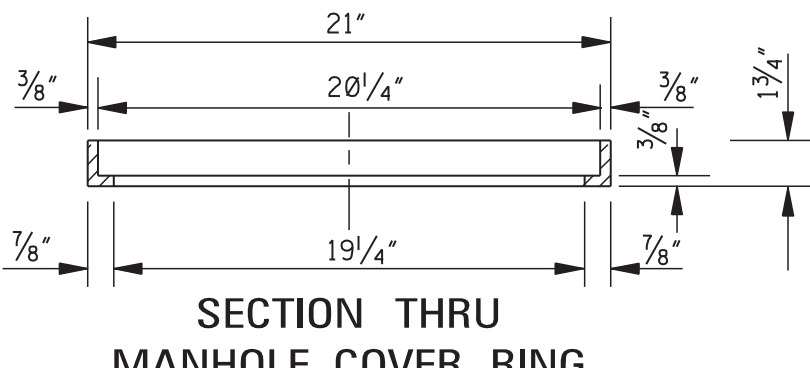
BAR DETAILS



PLAN



SECTION THRU MANHOLE COVER



SECTION THRU MANHOLE COVER RING

NOTE: WEIGHT OF RING & COVER = 79 lbs

NOTES:
1. W AND H ARE EXPRESSED IN DECIMAL FEET.
2. W' = W ROUNDED TO NEAREST WHOLE FOOT.
3. Y = (H-0.5).
4. H' = (H - 2.08) ROUNDED TO NEAREST WHOLE FOOT.
5. NO DEDUCTIONS ARE MADE FOR PIPE OPENINGS IN FORMULAS.

W=2'-6"		BILL OF REINFORCING STEEL FOR 1-5'-0" INLET														* TOTAL STEEL	TOTAL CONC.
H	BAR "A" L = 4'-2" #4 @ 9"	BAR "C" L = 5'-8" #4 @ 9"	BAR "S" L = 5'-8" #4 @ 12"	BAR "D" L = 5'-8" #4 @ 12"	BAR "F" L = 9'-8" #6	BAR "J" L = 2'-3" #4	BAR "B" #4 @ 9"	BAR "K" #4 @ 9"	LGTH.	NO.	lbs	LGTH.	NO.	lbs	lbs	yd ³	
3'-6"	6 17	7 27	5 19	5 19	5 73	4 6	3'-10"	7 18	2'-7"	7 12	190	2'-7"	7 12	190	1.99		
4'-0"	6 17	7 27	5 19	7 26	5 73	4 6	4'-4"	7 20	3'-1"	7 14	202	3'-1"	7 14	202	2.15		
4'-6"	6 17	7 27	5 19	7 26	5 73	4 6	4'-10"	7 23	3'-7"	7 17	207	3'-7"	7 17	207	2.31		
5'-0"	6 17	7 27	5 19	9 34	5 73	4 6	5'-4"	7 25	4'-1"	7 19	219	4'-1"	7 19	219	2.47		
5'-6"	6 17	7 27	5 19	9 34	5 73	4 6	5'-10"	7 27	4'-7"	7 21	224	4'-7"	7 21	224	2.62		
6'-0"	6 17	7 27	5 19	11 42	5 73	4 6	6'-4"	7 30	5'-1"	7 24	238	5'-1"	7 24	238	2.78		
6'-6"	6 17	7 27	5 19	11 42	5 73	4 6	6'-10"	7 32	5'-7"	7 26	240	5'-7"	7 26	240	2.94		
7'-0"	6 17	7 27	5 19	13 49	5 73	4 6	7'-4"	7 34	6'-1"	7 28	253	6'-1"	7 28	253	3.10		
7'-6"	6 17	7 27	5 19	13 49	5 73	4 6	7'-10"	7 37	6'-7"	7 31	257	6'-7"	7 31	257	3.25		

W=3'-0"		BILL OF REINFORCING STEEL FOR 1-5'-0" INLET														* TOTAL STEEL	TOTAL CONC.
H	BAR "A" L = 4'-8" #4 @ 9"	BAR "C" L = 6'-2" #4 @ 9"	BAR "S" L = 5'-8" #4 @ 12"	BAR "D" L = 5'-8" #4 @ 12"	BAR "F" L = 9'-8" #6	BAR "J" L = 2'-3" #4	BAR "B" #4 @ 9"	BAR "K" #4 @ 9"	LGTH.	NO.	lbs	LGTH.	NO.	lbs	lbs	yd ³	
3'-6"	6 19	7 29	5 19	5 19	5 73	4 6	3'-10"	7 18	2'-7"	7 12	194	2'-7"	7 12	194	2.15		
4'-0"	6 19	7 29	5 19	7 26	5 73	4 6	4'-4"	7 20	3'-1"	7 14	206	3'-1"	7 14	206	2.32		
4'-6"	6 19	7 29	5 19	7 26	5 73	4 6	4'-10"	7 23	3'-7"	7 17	211	3'-7"	7 17	211	2.49		
5'-0"	6 19	7 29	5 19	9 34	5 73	4 6	5'-4"	7 25	4'-1"	7 19	223	4'-1"	7 19	223	2.65		
5'-6"	6 19	7 29	5 19	9 34	5 73	4 6	5'-10"	7 27	4'-7"	7 21	228	4'-7"	7 21	228	2.82		
6'-0"	6 19	7 29	5 19	11 42	5 73	4 6	6'-4"	7 30	5'-1"	7 24	240	5'-1"	7 24	240	2.99		
6'-6"	6 19	7 29	5 19	11 42	5 73	4 6	6'-10"	7 32	5'-7"	7 26	245	5'-7"	7 26	245	3.15		
7'-0"	6 19	7 29	5 19	13 49	5 73	4 6	7'-4"	7 34	6'-1"	7 28	257	6'-1"	7 28	257	3.32		
7'-6"	6 19	7 29	5 19	13 49	5 73	4 6	7'-10"	7 37	6'-7"	7 31	262	6'-7"	7 31	262	3.49		

W=3'-6"		BILL OF REINFORCING STEEL FOR 1-5'-0" INLET														* TOTAL STEEL	TOTAL CONC.
H	BAR "A" L = 5'-2" #4 @ 9"	BAR "C" L = 6'-8" #4 @ 9"	BAR "S" L = 5'-8" #4 @ 12"	BAR "D" L = 5'-8" #4 @ 12"	BAR "F" L = 9'-8" #6	BAR "J" L = 2'-3" #4	BAR "B" #4 @ 9"	BAR "K" #4 @ 9"	LGTH.	NO.	lbs	LGTH.	NO.	lbs	lbs	yd ³	
3'-6"	6 21	7 31	5 19	6 23	5 73	4 6	3'-10"	7 18	2'-7"	7 12	202	2'-7"	7 12	202	2.31		
4'-0"	6 21	7 31	5 19	8 30	5 73	4 6	4'-4"	7 20	3'-1"	7 14	214	3'-1"	7 14	214	2.49		
4'-6"	6 21	7 31	5 19	8 30	5 73	4 6	4'-10"	7 23	3'-7"	7 17	219	3'-7"	7 17	219	2.66		
5'-0"	6 21	7 31	5 19	10 38	5 73	4 6	5'-4"	7 25	4'-1"	7 19	231	4'-1"	7 19	231	2.84		
5'-6"	6 21	7 31	5 19	10 38	5 73	4 6	5'-10"	7 27	4'-7"	7 21	236	4'-7"	7 21	236	3.01		
6'-0"	6 21	7 31	5 19	12 45	5 73	4 6	6'-4"	7 30	5'-1"	7 24	248	5'-1"	7 24	248	3.19		
6'-6"	6 21	7 31	5 19	12 45	5 73	4 6	6'-10"	7 32	5'-7"	7 26	253	5'-7"	7 26	253	3.37		
7'-0"	6 21	7 31	5 19	14 53	5 73	4 6	7'-4"	7 34	6'-1"	7 28	265	6'-1"	7 28	265	3.54		
7'-6"	6 21	7 31	5 19	14 53	5 73	4 6	7'-10"	7 37	6'-7"	7 31	270	6'-7"	7 31	270	3.72		

* NOTE: WHERE INLET IS USED WITH CONCRETE PAVEMENT, ADD 73 lbs OF STEEL FOR BARS "M".

GENERAL NOTES:

- WHERE INLET OR INLET WITH EXTENSION(S) IS USED WITH CONCRETE PAVEMENT WITH INTERGRAL CURB, THE PAVEMENT SHALL BE BLOCKED OUT TO THE DIMENSIONS AS SHOWN FOR THE GUTTER PORTION OF THE INLET OR INLET WITH EXTENSION(S). THE PORTION BLOCKED OUT SHALL BE PLACED INTEGRAL WITH THE TOP OF THE INLET OR INLET WITH EXTENSION(S). *8 DEFORMED BARS 30" LONG SHALL BE PLACED ON 18" CENTERS AT THE CENTER OF THE PAVEMENT. THESE BARS SHALL EXTEND INTO THE GUTTER PORTION OF THE INLET OR INLET WITH EXTENSION(S) 15". THE CONSTRUCTION JOINT BETWEEN THE CONCRETE PAVEMENT AND THE INLET OR INLET WITH EXTENSION(S) SHALL BE A KEYED JOINT AS SHOWN. A SMOOTH CONSTRUCTION JOINT WILL NOT BE PERMITTED. QUANTITIES FOR BLOCKED OUT AREA OF PAVEMENT SHALL BE INCLUDED IN QUANTITIES FOR INLET OR INLET WITH EXTENSION(S).
- THE QUANTITIES SHOWN, MINUS VOLUMETRIC DISPLACEMENT OF CONCRETE BY PIPE CULVERTS THROUGH INLET WALLS, WILL BE USED AS THE BASIS OF FINAL PAYMENT UNLESS THIS PLAN IS MODIFIED.
- FOR CONVENIENCE, DEPTHS OF INLETS SHOWN IN ABOVE TABLE ARE INCREMENTS OF 6". BUT ANY DEPTHS OTHER THAN THESE SHOWN MAY BE USED WHEREVER DEEMED NECESSARY. QUANTITIES FOR OTHER DEPTHS, FALLING WITHIN THE LIMITS OF THE TABLE, MAY BE FOUND BY INTERPOLATION.
- FIELD CUT AND BEND BARS AS NECESSARY TO ACCOMMODATE STORM SEWER. NO DEDUCTIONS ARE TO BE MADE IN STEEL QUANTITIES.
- WHERE INLET IS BEING USED ADJACENT TO SIDEWALK, REFER TO OTHER SHEETS FOR TOP DETAIL.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

**STORM SEWER INLET
TYPE SS-2**



WORKING NUMBER

SS-2

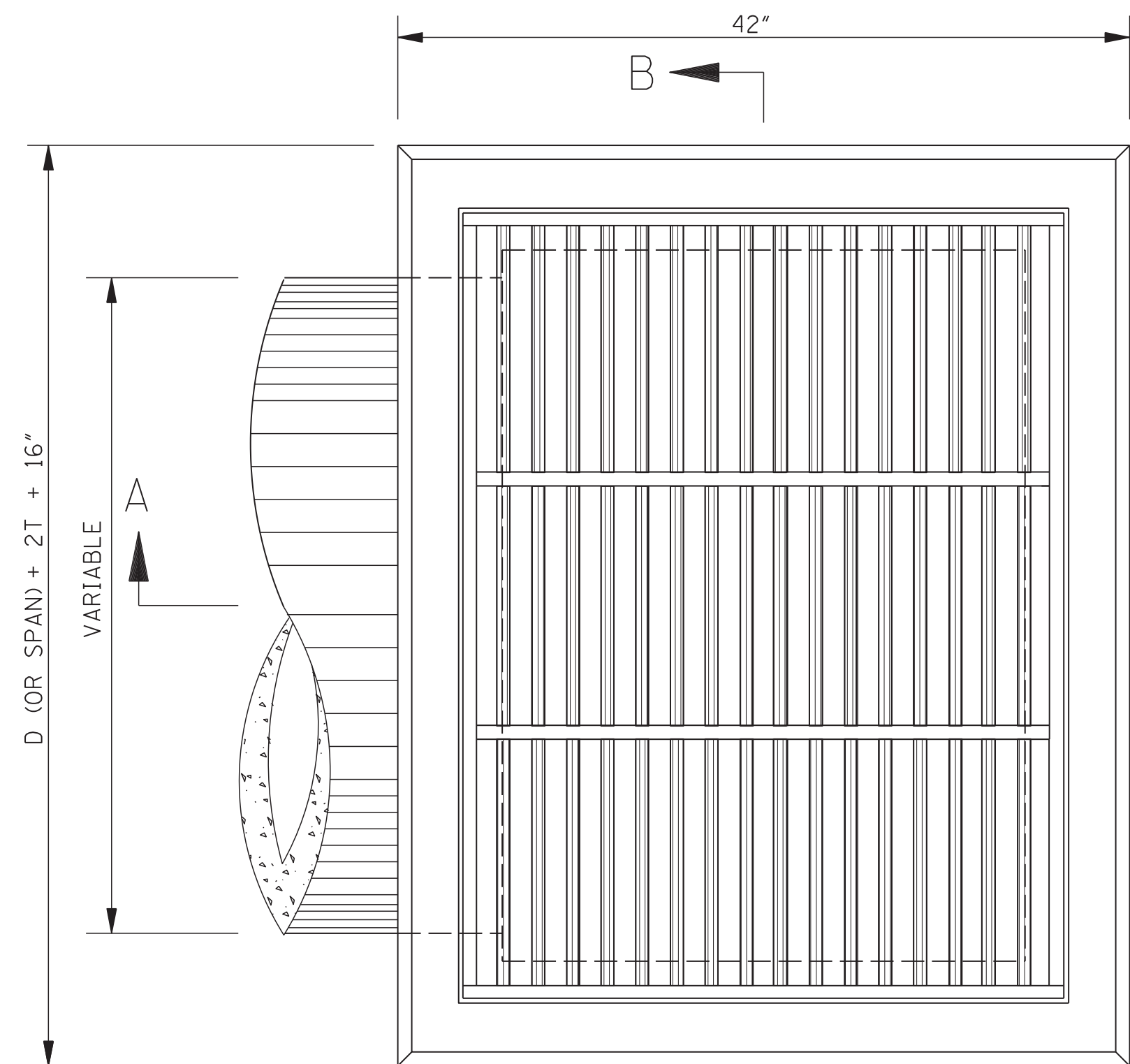
SHEET NUMBER

6524

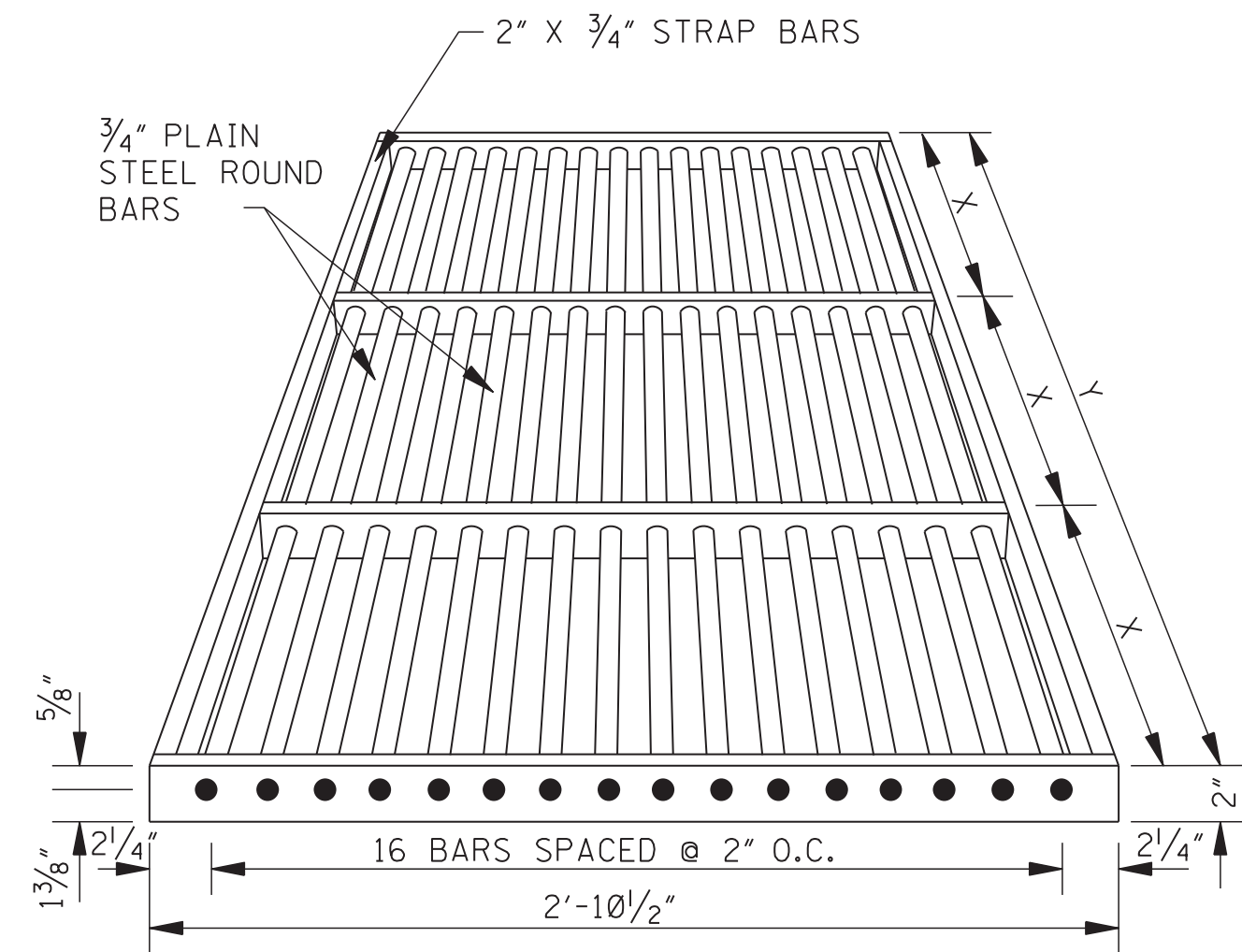
ISSUE DATE: AUGUST 01, 2017

"A", #4 BARS	AS PER TABLE
"B", #4 BARS	D (OR SPAN) + 2T + 9"
"C", #4 BARS	34"
"D", #4 BARS	D (OR RISE) + T + 4"

BARS "A", "B", "C" & "D"

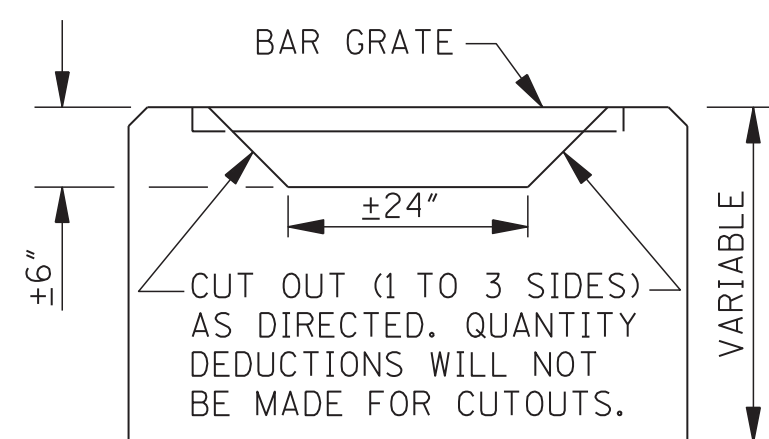
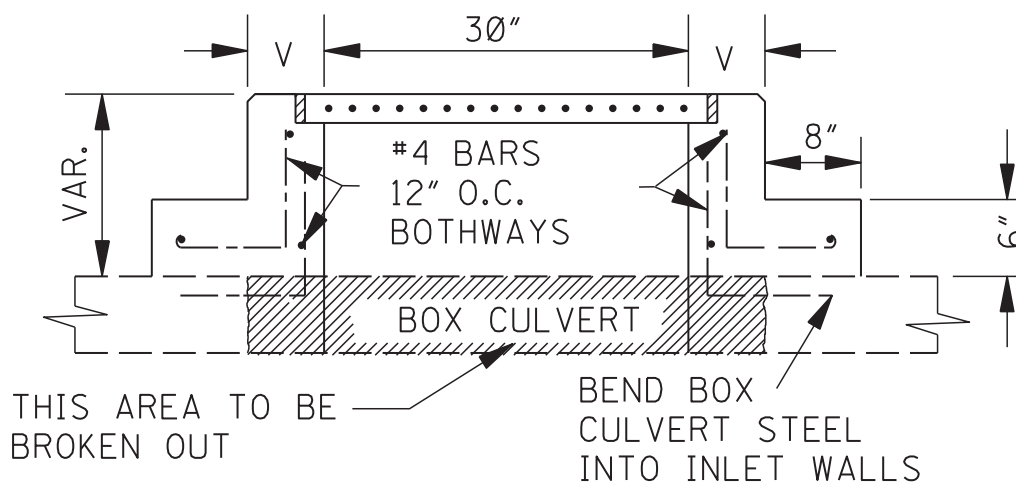


PLAN

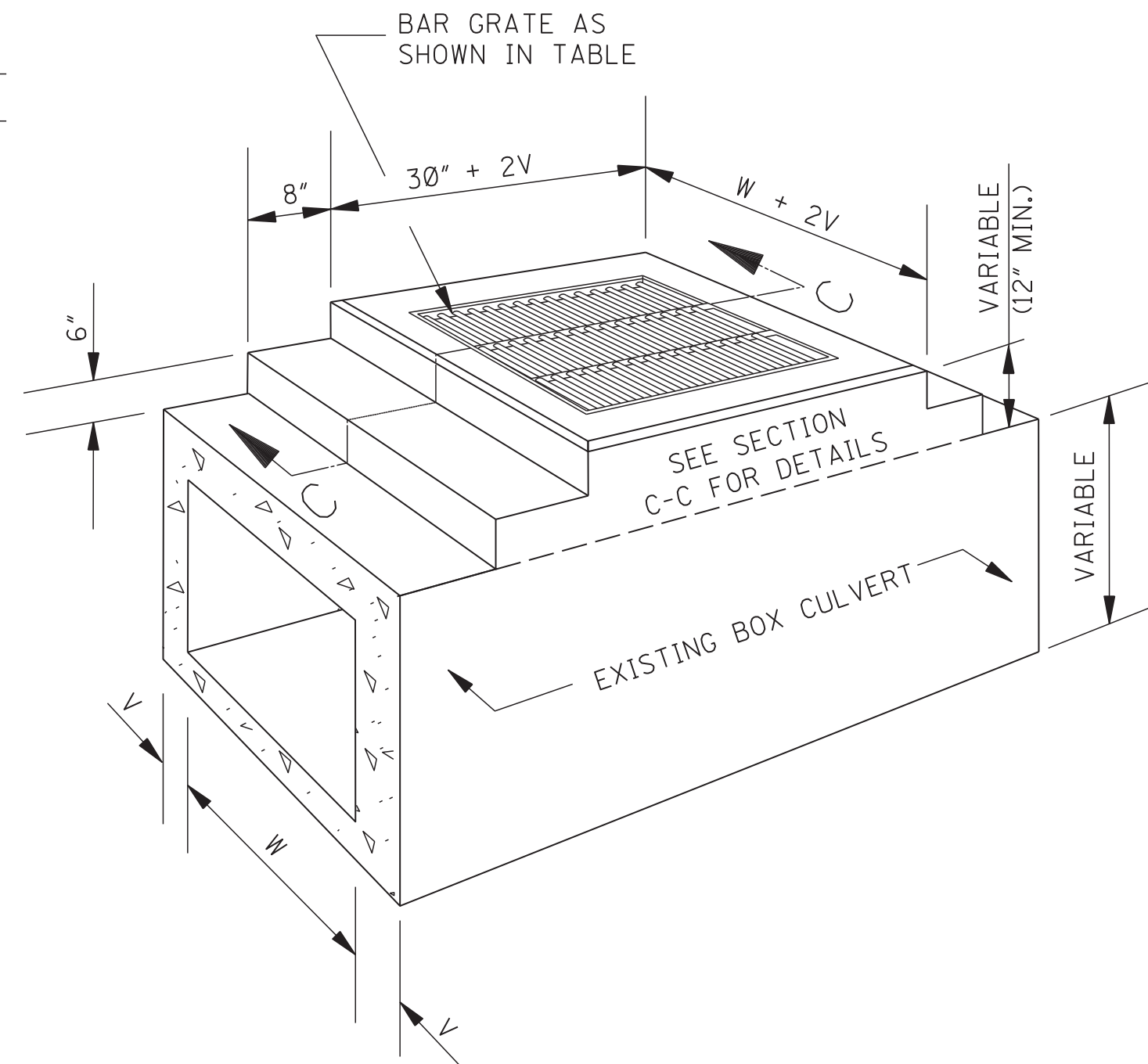
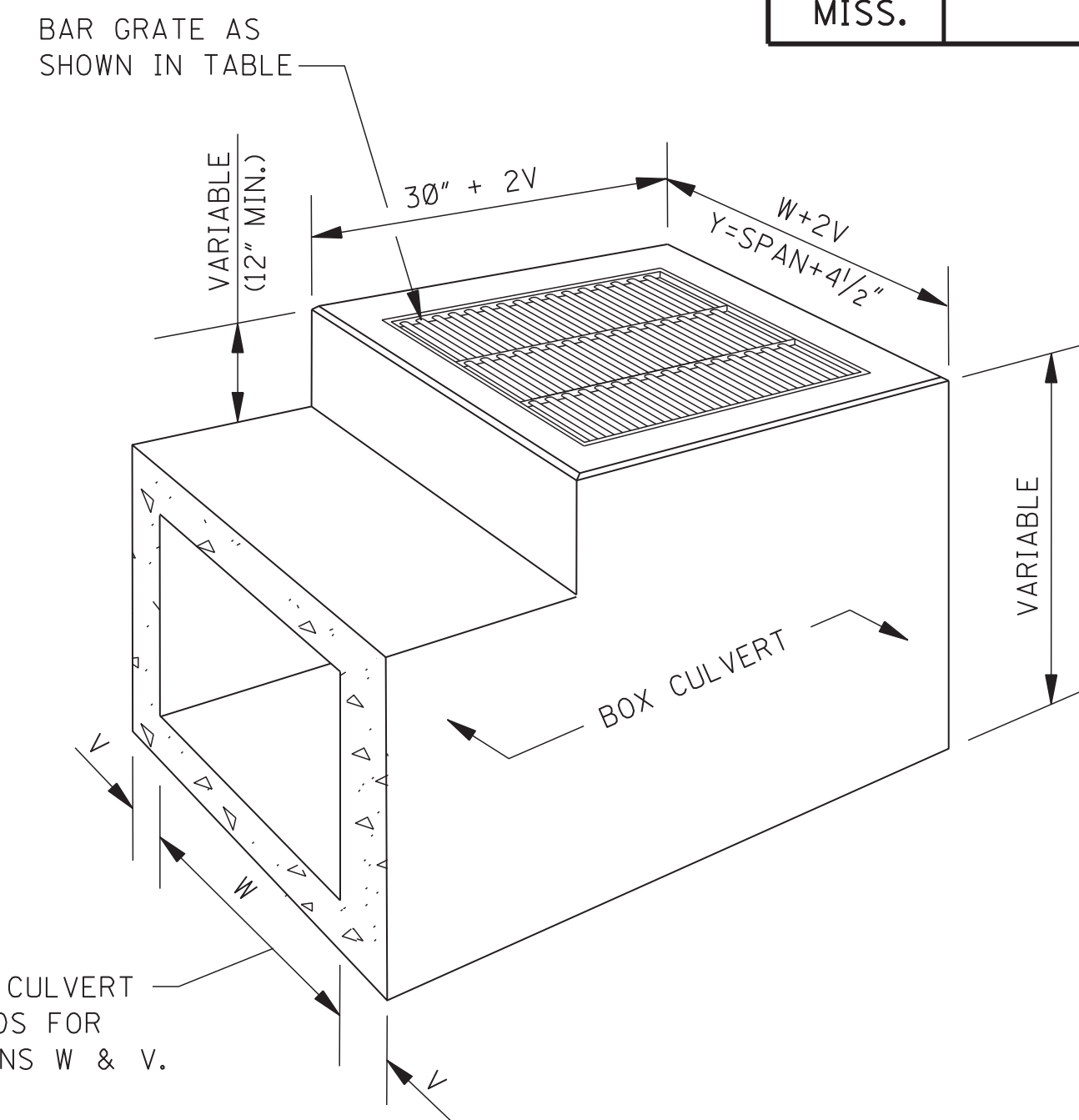


BAR GRATE DETAILS

NOTE: JUNCTIONS OF ROUND AND STRAP BARS SHALL BE WELDED. GRATE SHALL BE SHOP COATED WITH APPROVED EPOXY MASTIC PAINT.

ELEVATION
MODIFIED PIPE OR
BOX CULVERT INLET

SECTION C-C

SECTIONAL PERSPECTIVE
INLET ON EXISTING BOX CULVERTSECTIONAL PERSPECTIVE
INLET USED IN LIEU OF HEADWALLS

LENGTH AND WEIGHT OF GRATING

PIPE INLETS					BOX CULVERT INLETS				
PIPE SIZE	Y	X	NO. X-SPANS	WEIGHT (lbs)	BOX CULVERT SIZE	Y	X	NO. X-SPANS	WEIGHT (lbs)
18"	2'-7 1/2"	1'-3 3/4"	2	127	2' X 2'	2'-4 1/2"	1'-2 1/4"	2	119
22" X 13"	2'-11 1/2"	1'-5 3/4"	2	139	3' X 2'	3'-4 1/2"	1'-1 1/2"	3	166
24"	3'-2 1/2"	1'-7 1/4"	2	147	4' X 2'	4'-4 1/2"	1'-5 1/2"	3	200
29" X 18"	3'-7"	1'-2 1/2"	3	173	5' X 2'	5'-4 1/2"	1'-4 1/8"	4	247
30"	3'-9 1/2"	1'-3 3/4"	3	180	6' X 2'	6'-4 1/2"	1'-3 3/4"	5	293
36"	4'-4 1/2"	1'-5 1/2"	3	200	7' X 2'	7'-4 1/2"	1'-5 1/8"	5	328
42"	4'-11 1/2"	1'-2 1/8"	4	232	8' X 2'	8'-4 3/4"	1'-4 3/4"	6	374
48"	5'-6 1/2"	1'-4 5/8"	4	252	3' X 3'	3'-4 1/2"	1'-1 1/2"	3	166
54"	6'-1 1/2"	1'-6 3/8"	4	272	4' X 3'	4'-4 1/2"	1'-5 1/2"	3	200
60"	6'-8 1/2"	1'-4 3/32"	5	305	5' X 3'	5'-4 1/2"	1'-4 1/8"	4	247
					6' X 3'	6'-4 1/2"	1'-3 3/4"	5	293

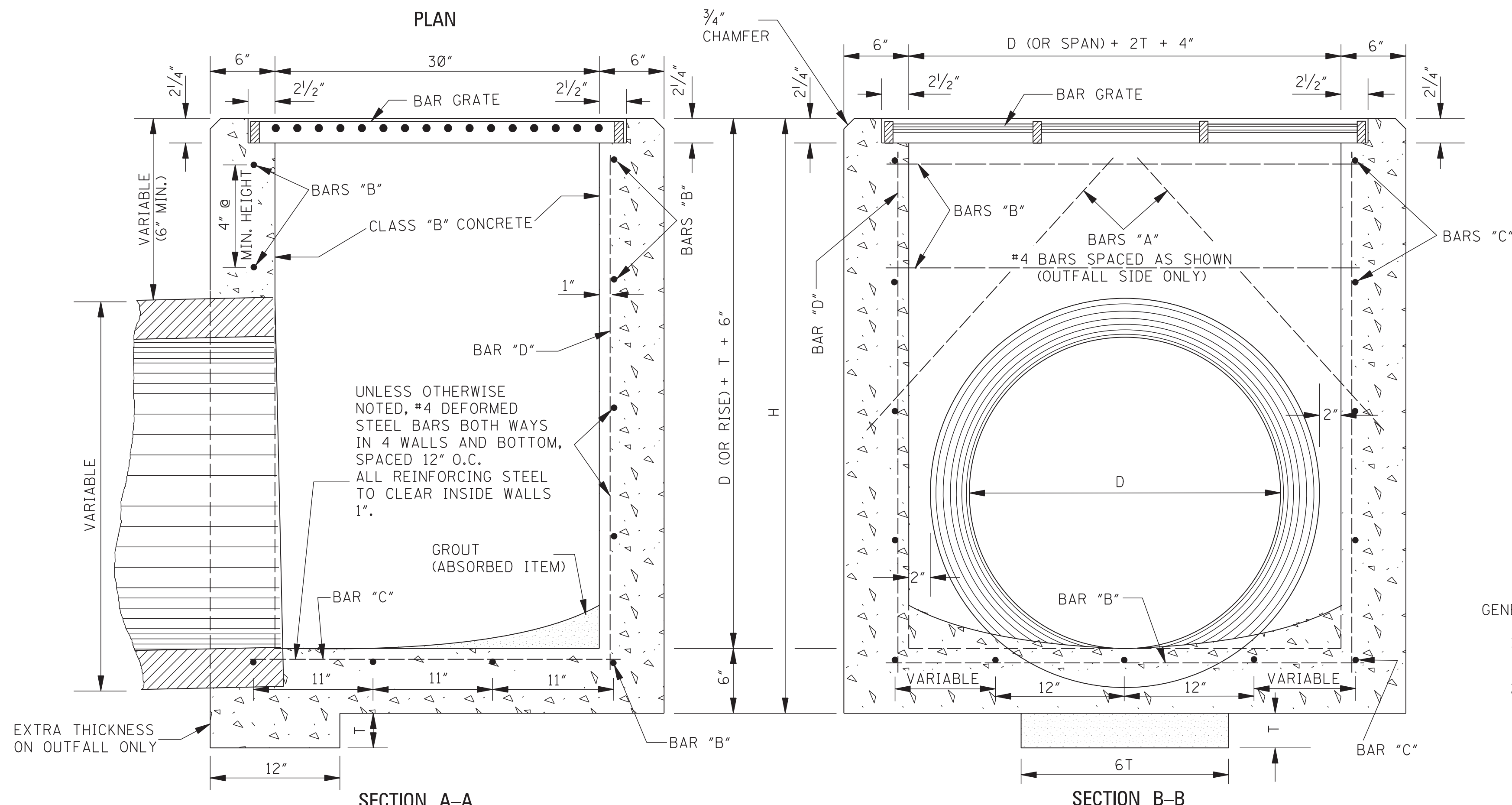
QUANTITIES

PIPE SIZE	MIN. DEPTH TO F.L.	MIN. DEPTH INLET		EACH ADDED FOOT		PIPE OPENING DEDUCTION (yd³)	T	BARS/SIZES			
		CONC * (yd³)	STEEL (lbs)	CONC (yd³)	STEEL (lbs)			"A" #4	"B" #4	"C" #4	"D" #4
								NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.	NO. @ LGTH.
18"	2.209'	0.623	42	0.213	13	0.053	2 1/2"	2 @ 21"	8 @ 32"	7 @ 34"	9 @ 24 1/2"
22" X 13"	1.833'	0.586	42	0.225	14	0.053	2 1/2"	2 @ 25"	8 @ 36"	7 @ 34"	9 @ 20"
24"	2.750'	0.800	55	0.235	14	0.091	3"	2 @ 25"	9 @ 39"	9 @ 34"	9 @ 31"
29" X 18"	2.250'	0.742	57	0.248	16	0.087	3"	2 @ 30"	9 @ 43 1/2"	9 @ 34"	11 @ 25"
30"	3.292'	0.992	70	0.256	16	0.138	3 1/2"	2 @ 30"	9 @ 46"	11 @ 34"	11 @ 37 1/2"
36"	3.834'	1.198	85	0.278	17	0.196	4"	2 @ 33"	10 @ 53"	13 @ 34"	11 @ 44"
42"	4.375'	1.418	93	0.299	18	0.263	4 1/2"	2 @ 36"	10 @ 60"	13 @ 34"	11 @ 50 1/2"
48"	4.917'	1.653	109	0.321	19	0.340	5"	2 @ 39"	11 @ 67"	15 @ 34"	11 @ 57"
54"	5.458'	1.902	136	0.343	21	0.427	5 1/2"	2 @ 42"	12 @ 74"	19 @ 34"	13 @ 63 1/2"
60"	6.000'	2.165	146	0.364	21	0.524	6"	2 @ 47"	12 @ 81"	19 @ 34"	13 @ 70"

*NOTE: ONE (1) PIPE OPENING HAS BEEN DEDUCTED FROM THE STRUCTURE.

GENERAL NOTES:

- QUANTITIES SHOWN WILL BE THE BASIS OF PAYMENT UNLESS AUTHORIZED MODIFICATIONS ARE MADE.
- BOX CULVERTS:
 - UNLESS OTHERWISE SHOWN, THE DETAILS OF THE BOX CULVERT INLETS SHALL CONFORM TO THOSE SHOWN FOR THE PIPE INLETS.
 - BOX CULVERT REINFORCEMENT SHALL BE CONTINUED AND RESHAPED TO ACCOMMODATE THE INLET BOX. ADDITIONAL BARS SHALL BE THE SAME DIAMETER AS THOSE IN THE BOX CULVERT AND THE CONCRETE SHALL BE THE SAME. QUANTITIES SHALL BE COMPUTED IN CONJUNCTION WITH QUANTITIES FOR BOX CULVERT.



PIPE CULVERT INLET

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

**DROP INLET AND GRATE
DETAILS FOR PIPE
AND BOX CULVERTS**

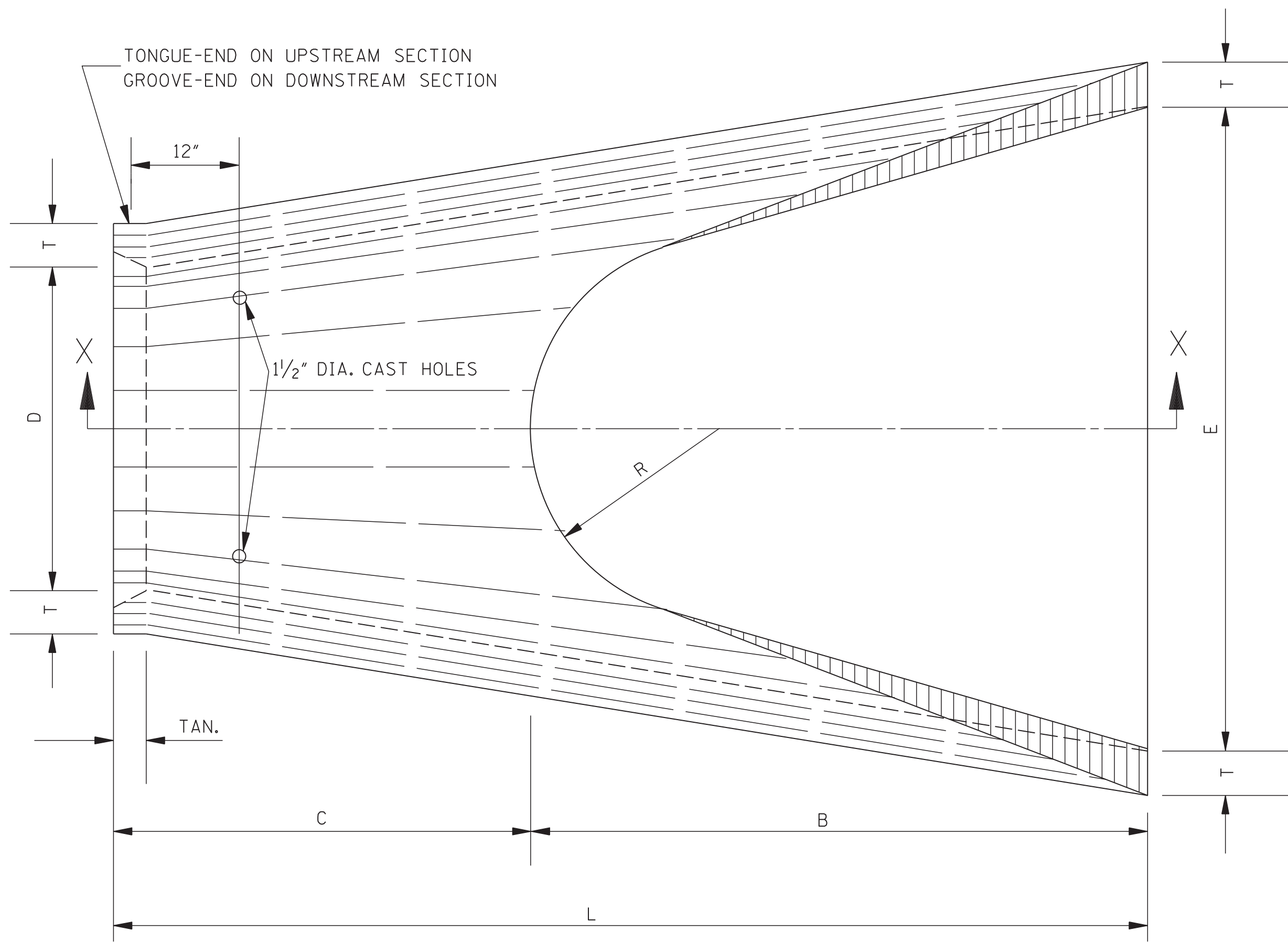
WORKING NUMBER
B-9

SHEET NUMBER
6527

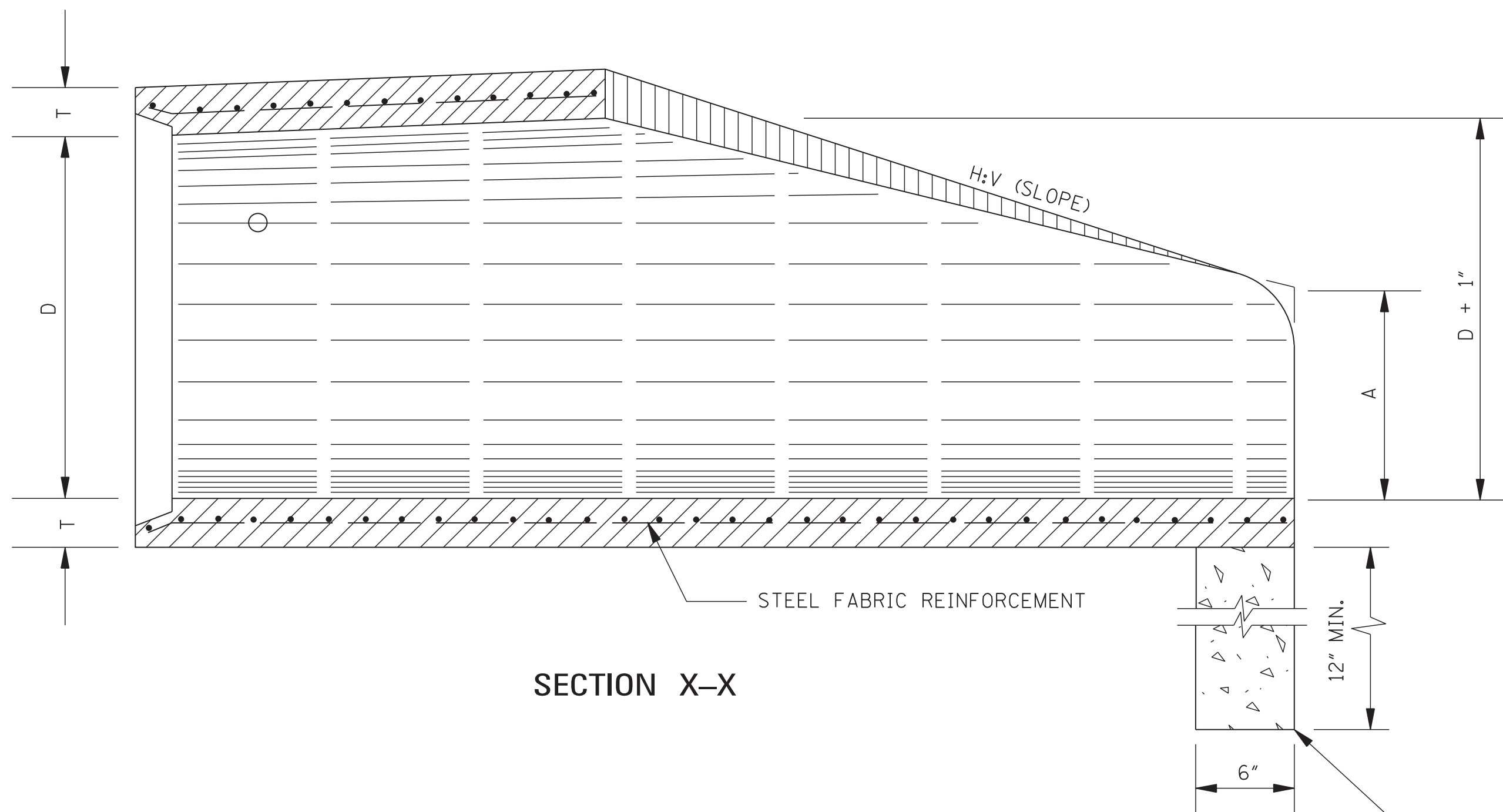
ISSUE DATE: AUGUST 01, 2017

BELL AND SPIGOT END OPTION

NOTE: BELL-END ON DOWNSTREAM SECTION
SPIGOT-END ON UPSTREAM SECTION.



PLAN OF DOWNSTREAM END



SECTION X-X

TOE WALL REQUIRED ON ALL FLARED END
SECTIONS. TO BE PAID FOR AS CLASS "B"
STRUCTURAL CONCRETE - MINOR STRUCTURES.

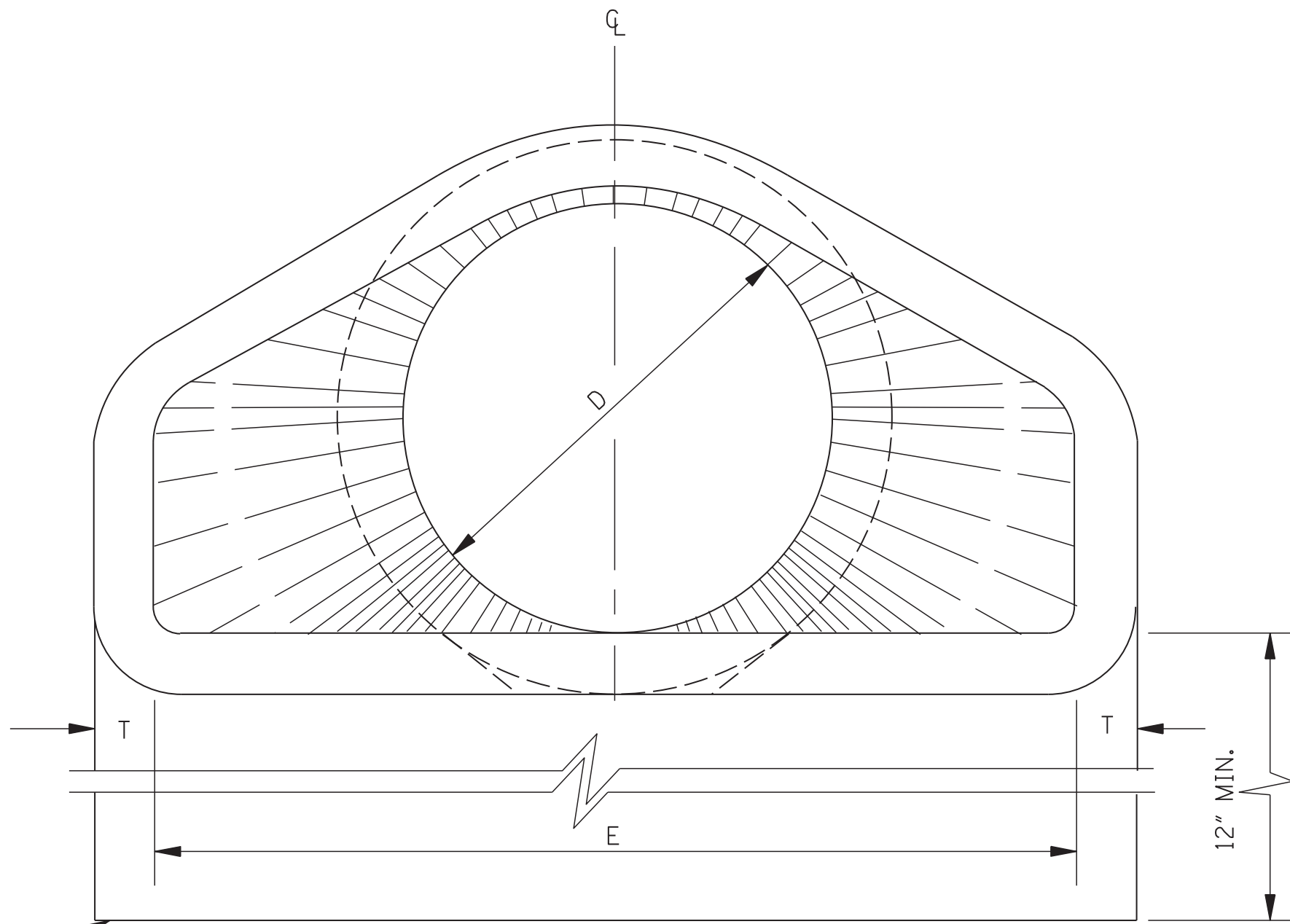
TABLE OF DIMENSIONS							
D	T	H:V	A	B	C	E	L
15"	2 1/4"	3:1	6"	2'-3"	4'-1"	2'-8"	6'-1"
18"	2 1/2"	3:1	9"	2'-3"	3'-10"	3'-0"	6'-1"
24"	3"	3:1	10"	3'-8"	2'-6"	4'-0"	6'-2"
30"	3 1/2"	3:1	1'-0"	4'-6"	1'-8"	5'-0"	6'-2"
36"	4"	3:1	1'-3"	5'-3"	2'-11"	6'-0"	8'-2"
42"	4 1/2"	3:1	1'-9"	5'-3"	2'-11"	6'-6"	8'-2"
48"	5"	3:1	2'-0"	6'-0"	2'-2"	7'-0"	8'-2"
54"	5 1/2"	3:1	2'-4"	6'-6"	1'-10"	7'-6"	8'-4"
* 60"	6"	3:1	2'-10"	6'-6"	1'-10"	8'-0"	8'-4"
* 66"	6 1/2"	3:1	3'-4"	6'-6"	1'-10"	8'-6"	8'-4"
* 72"	7"	3:1	3'-10"	6'-6"	1'-10"	9'-0"	8'-4"

* NOTE: SEE GENERAL NOTE 2.

TOE WALL CONC. QUANTITY (yd ³)
0.056
0.063
0.083
0.102
0.123
0.134
0.145
0.156
0.167
0.177
0.188

GENERAL NOTES:

- REINFORCEMENT SHALL CONFORM TO THE REQUIREMENTS OF REINFORCED CONCRETE PIPE OF LIKE DIAMETER PER AASHTO M 170, TABLE 2, WALL B.
- 2 - 1 1/2" DIA. CAST HOLES REQUIRED AS SHOWN TO ACCOMMODATE 2 - 1" DIA. TIE BOLTS, USED IN TIEING SECTION TO PIPE CULVERT.
- LENGTH (L) OF A BELL-END OPTION MAY VARY BY A NOMINAL EXTENSION ON THE BELL END.
- FLARED END SECTIONS SHOULD BE REGARDED AS OBSTACLES UNDER THE BELOW CONDITIONS AND AS SUCH SHOULD BE LOCATED OUTSIDE OF THE CLEAR ZONE:
 - CROSS DRAINS WITH SINGLE ROUND PIPES OF DIAMETER GREATER THAN 36" OR EQUIVALENT FOR ARCH PIPES.
 - CROSS DRAINS WITH MULTIPLE ROUND PIPES OF DIAMETER GREATER THAN 30" OR EQUIVALENT FOR ARCH PIPES.
 - PARALLEL SIDE DRAINS WITH SINGLE ROUND PIPES OF DIAMETER GREATER THAN 24" OR EQUIVALENT FOR ARCH PIPES.
- ALL SIZES OF FLARED END SECTIONS FOR CIRCULAR CONCRETE PIPE MAY BE FURNISHED WITH EITHER BELL AND SPIGOT OR TONGUE AND GROOVE ENDS.



END ELEVATION

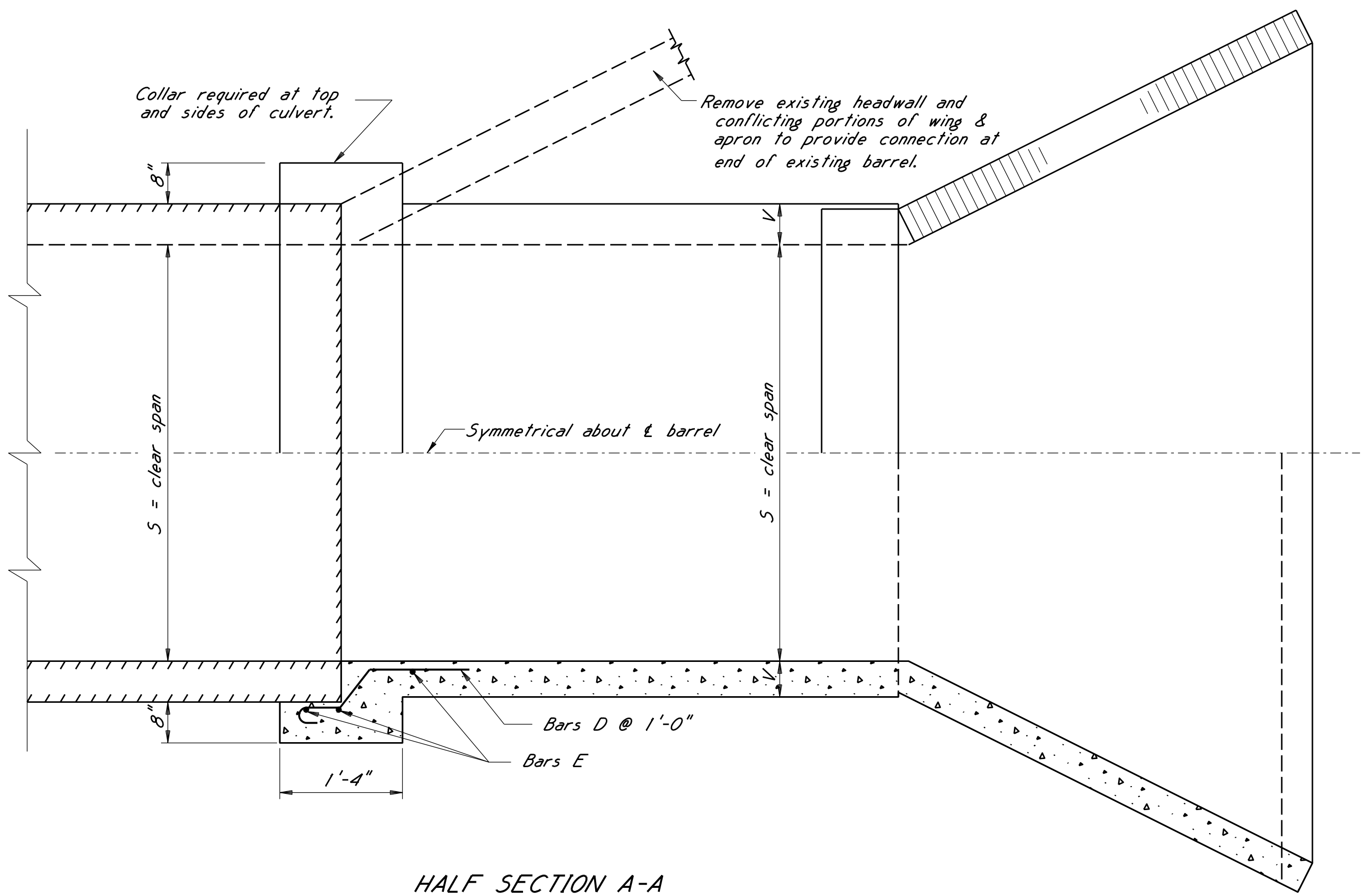
				BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN			
				REVISION	FLARED END SECTION FOR CONCRETE PIPE			
				DATE				
				ISSUE DATE:	AUGUST 01, 2017			



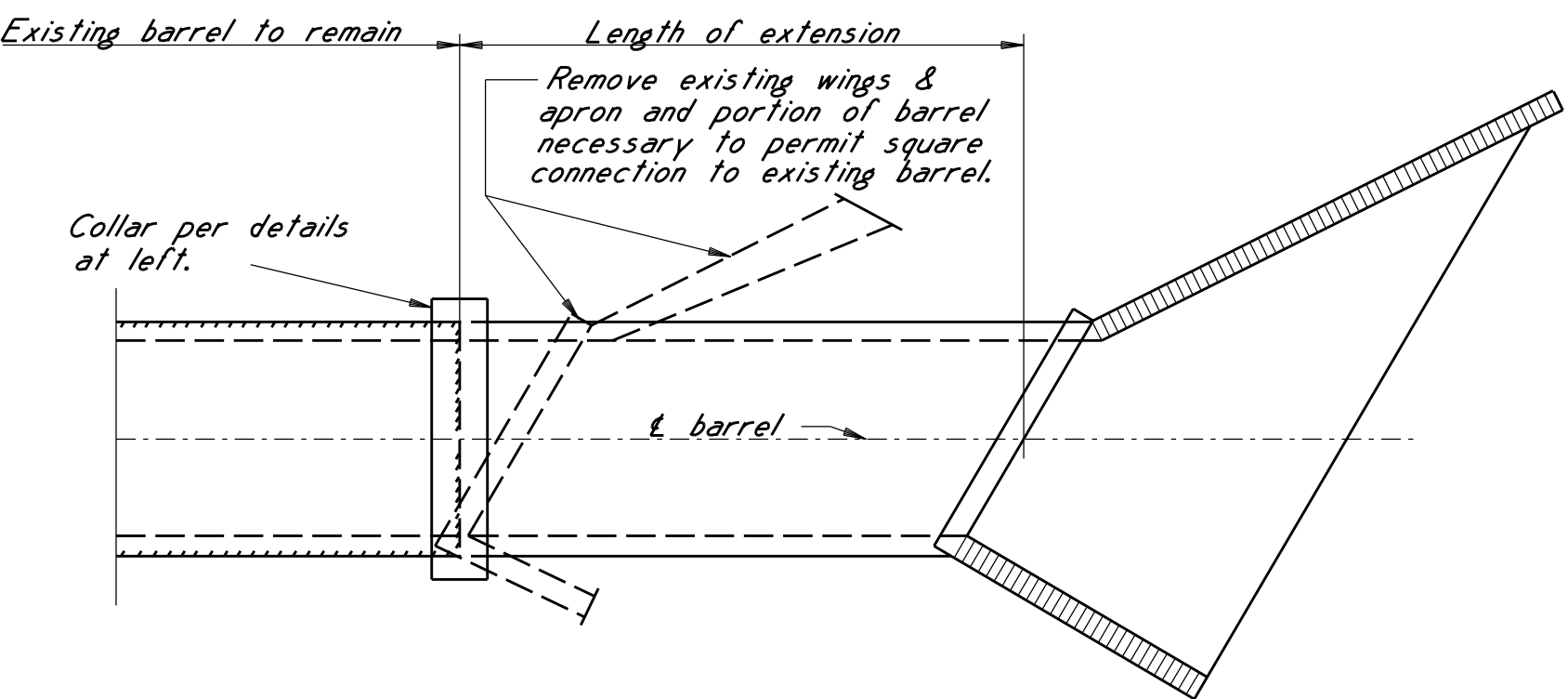
WORKING NUMBER
FE-1

SHEET NUMBER
6530

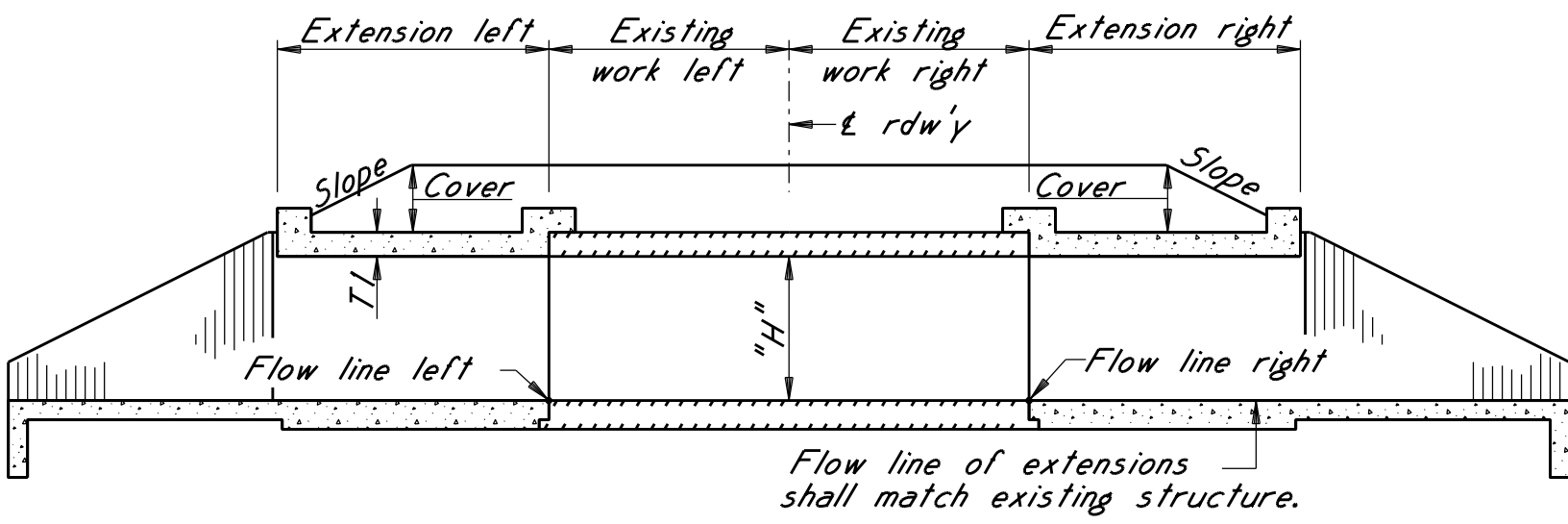
HALF TOP PLAN



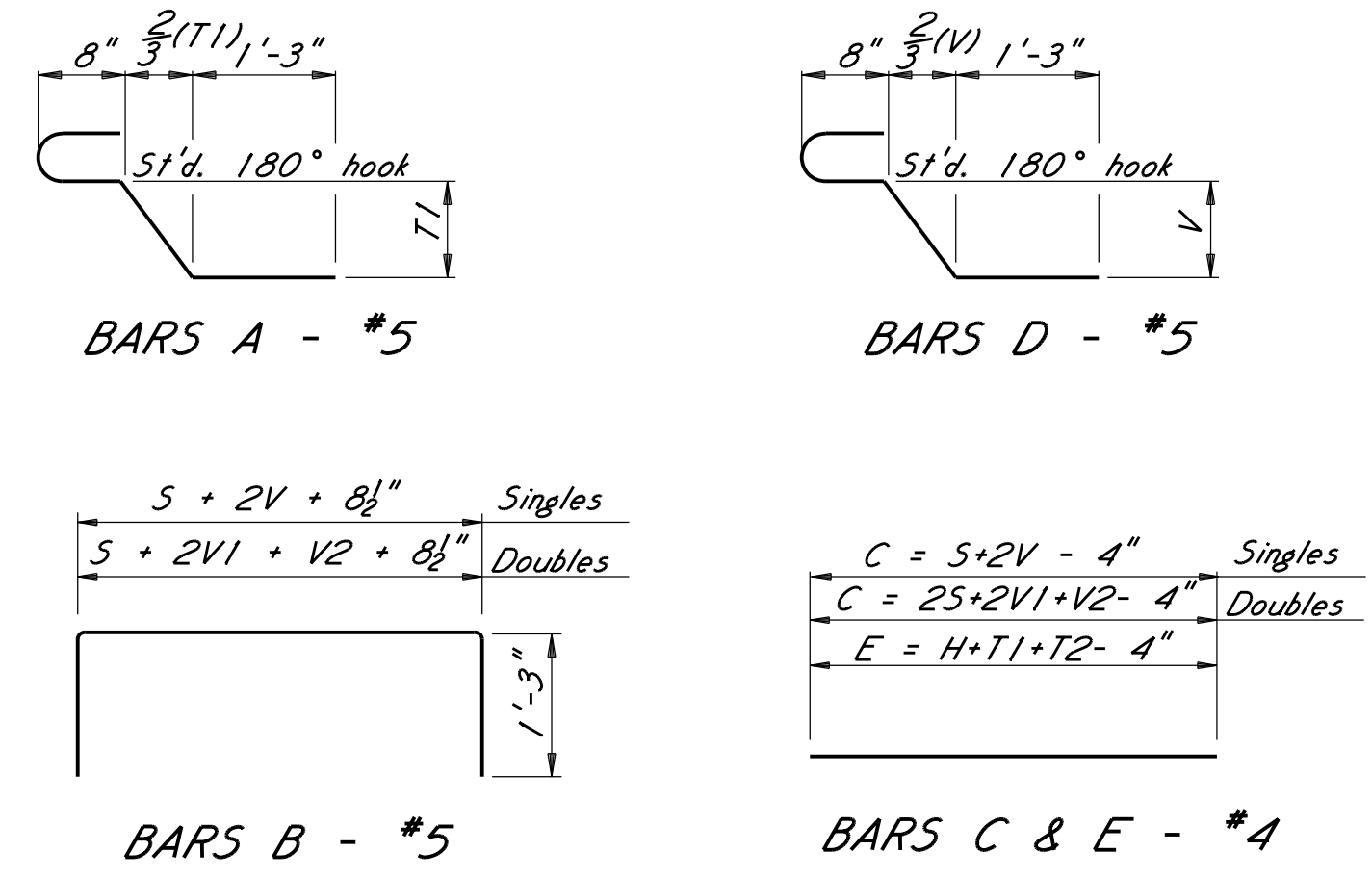
HALF SECTION A-A



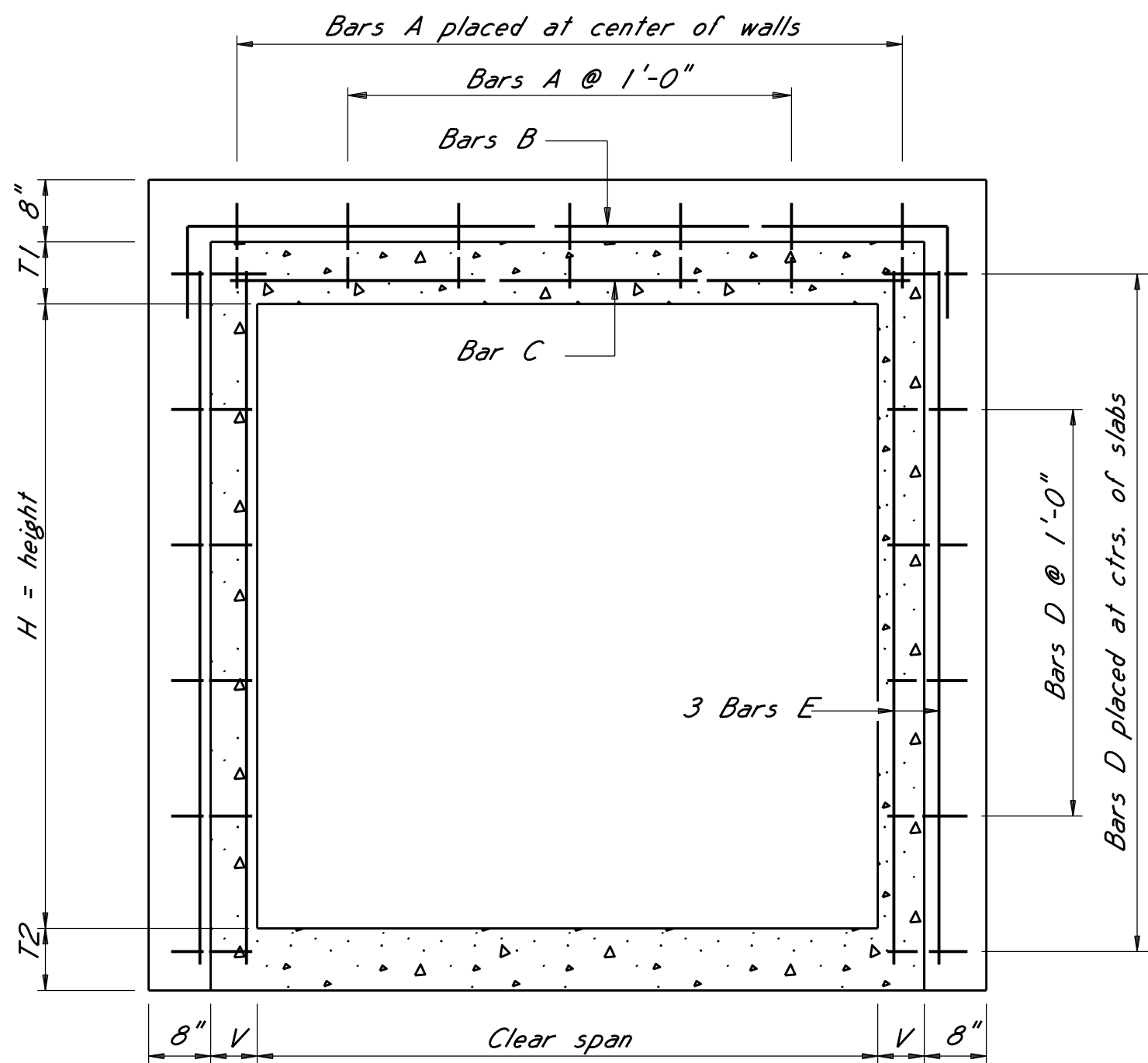
TYPICAL SKEW INSTALLATION



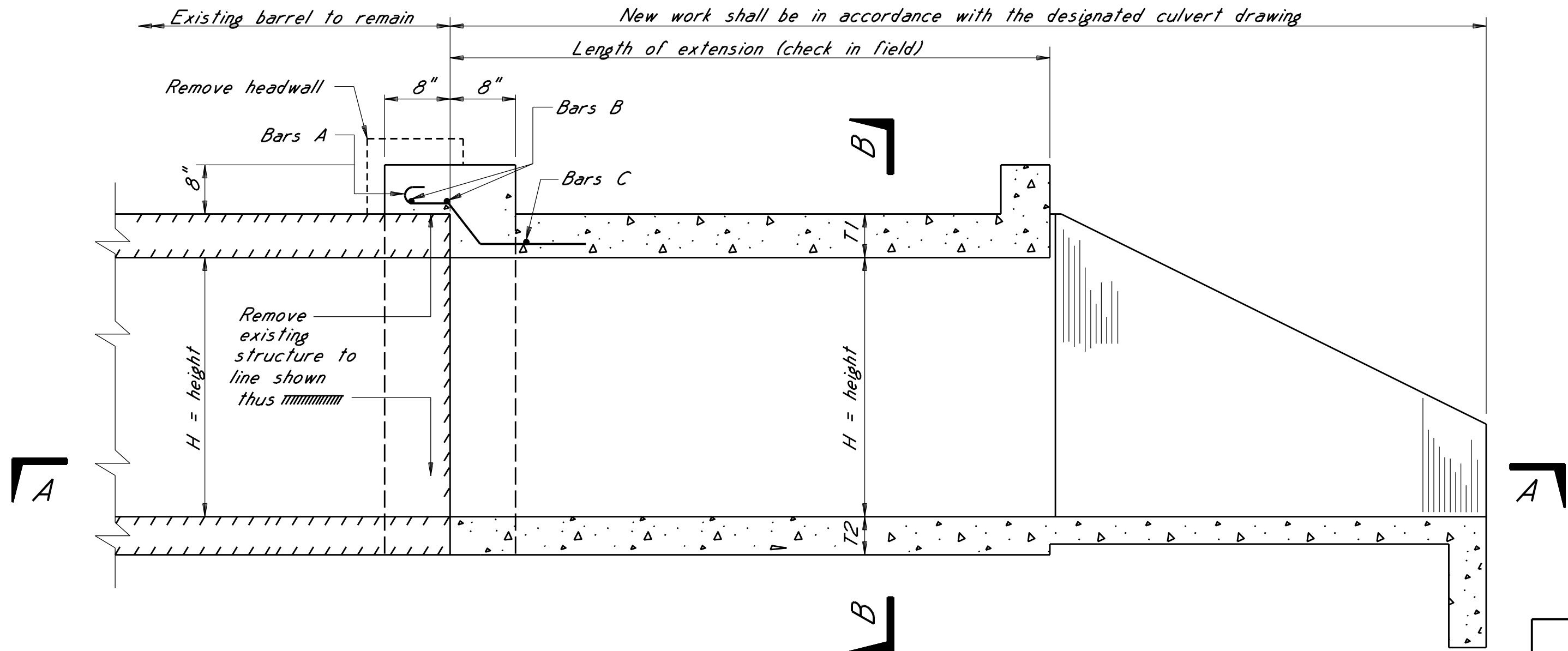
TYPICAL LONGITUDINAL SECTION



BAR BENDING DETAILS
Dimensions are out to out.

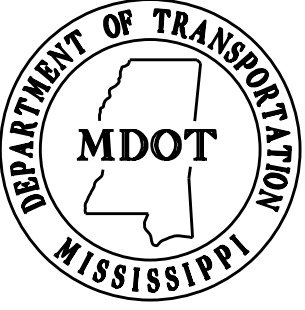


SECTION B-B

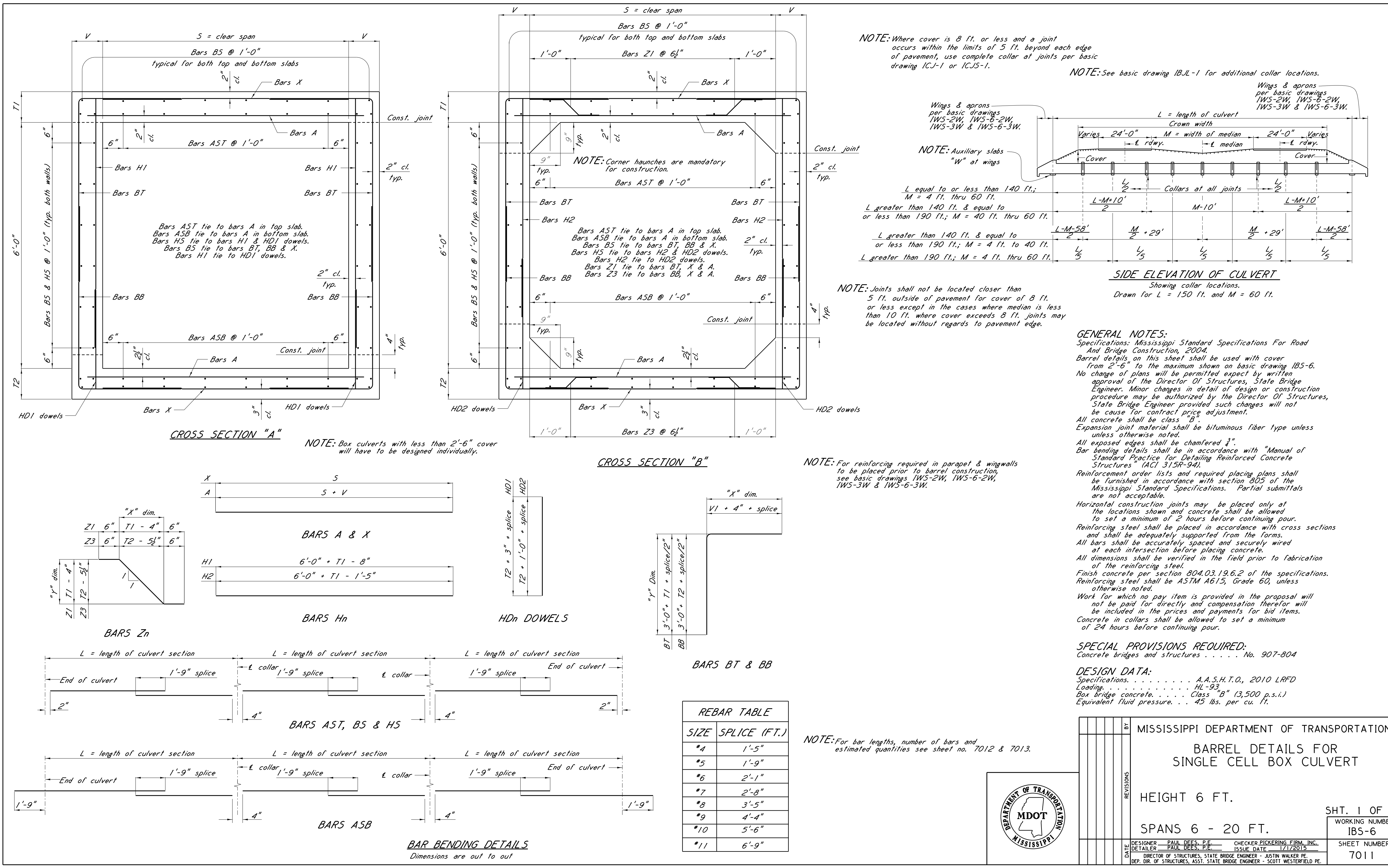


LONGITUDINAL SECTION

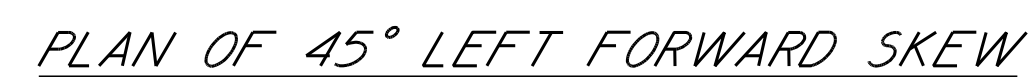
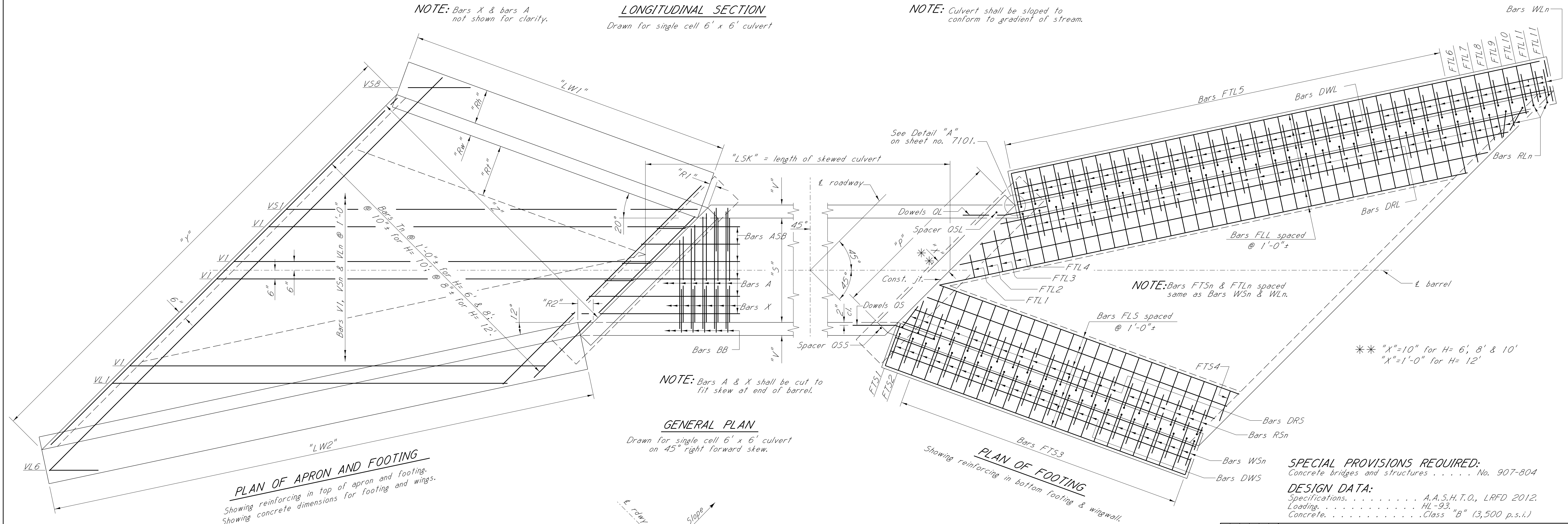
GENERAL NOTES:
This drawing is supplementary to basic culvert drawings of the IBS and IBD series and all typical details and general notes shown thereon shall apply.
The length of extensions for each end of the culvert shall be checked in the field by the project engineer before the reinforcing steel is ordered.
Bar list of reinforcing steel shall be submitted to the Project Engineer prior to fabrication, placing plan shall be furnished when extensions are skewed.
When the length of the extension is less than 10 feet, the vertical construction joints at the junction of the barrel and wings shown on the basic culvert drawings for culvert heights of 8 feet and greater shall be omitted.
This drawing is detailed for a single cell culvert and double cell structure shall be treated similarly.

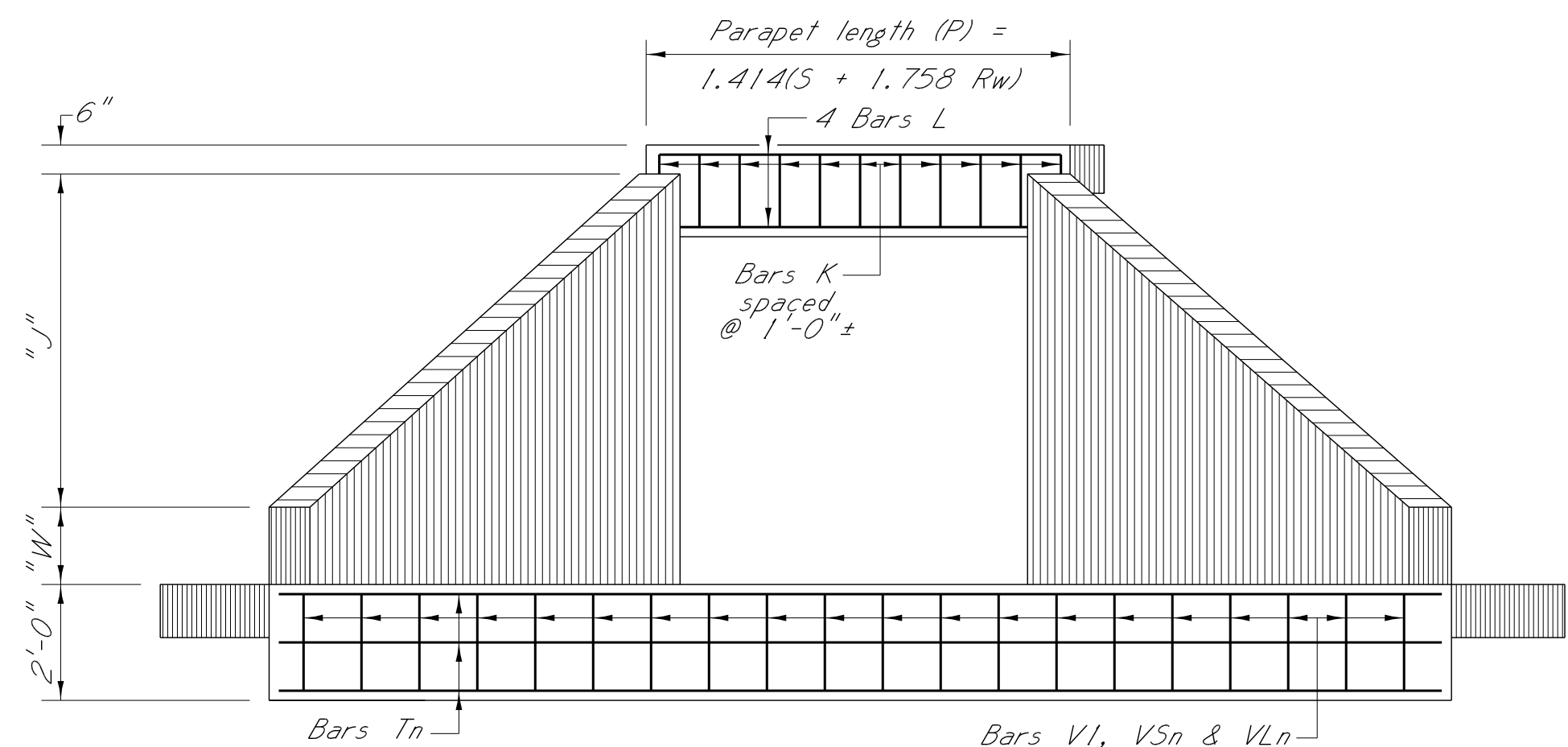


REVISIONS		BY		DATE	
MISSISSIPPI DEPARTMENT OF TRANSPORTATION CULVERT DRAWING EXTENSION DETAILS FOR LENGTHENING EXISTING BOX CULVERTS					
DESIGNER - PAUL DEES, P.E. CHECKER - PICKERING FIRM, INC. DETAILER - PAUL DEES, P.E. ISSUE DATE - 1/1/2015				WORKING NUMBER ICX-1	
DIRECTOR OF STRUCTURES, STATE BRIDGE ENGINEER - JUSTIN WALKER PE. DEP. DIR. OF STRUCTURES, ASST. STATE BRIDGE ENGINEER - SCOTT WESTERFIELD PE.				SHEET NUMBER 7010	

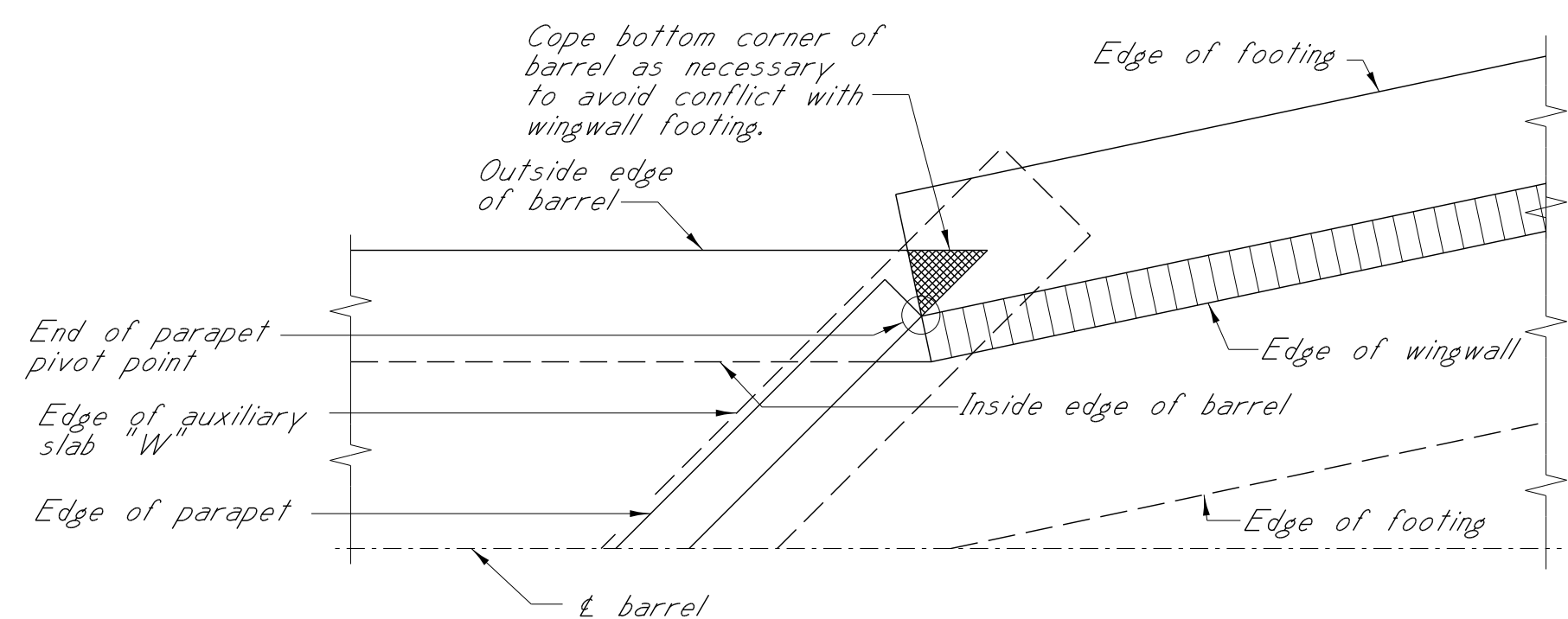


AREA OF OPENING	SIZE OF CUL VERT SQ. FT. FT. x FT. "S"x"H"																													EST. QUANTITIES							
		BAR LIST FOR BARREL																												PER LIN. FT. BARREL							
		COVER	T1	T2	V	BARS "A"		BARS "BT"		BARS "BB"		BARS "X"		BARS "Hn"		"HDn" DOWELS		BARS "AST"		BARS "ASB"		BARS "HS"		BARS "BS"				BARS "Z1"				BARS "Z2"			BARS "Z3"		
SIZE	SPACING					SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	SPACING	SIZE	NO.	SIZE	NO.	SIZE	NO.	SIZE	NO.	(WALLS)	NO.	(SLABS)	SIZE	SPACING	NO.	SIZE	SPACING	NO.	SIZE	SPACING	NO.		
36	6x6	5'-0"	9"	9"	9"	*6	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	10	*4	10	*4	12	*4	12	16										0.7500	127.443
		10'-0"	9"	9"	9"	*6	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	10	*4	10	*4	12	*4	12	16										0.7500	127.443
		15'-0"	9"	9"	9"	*6	6"	*4	6"	*4	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	10	*4	10	*4	12	*4	12	16										0.7500	145.207
		20'-0"	9"	10"	9"	*6	6"	*4	6"	*4	6"	*4	6"	*4	6"	*4	6"	*4	10	*4	10	*4	12	*4	12	16										0.7731	157.009
		25'-0"	9"	10"	9"	*6	6"	*4	6"	*4	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	10	*4	10	*4	12	*4	12	16										0.8148	145.541
		30'-0"	9"	10"	9"	*7	6"	*4	6"	*4	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	10	*4	10	*4	12	*4	12	16										0.8148	160.175
48	8x6	5'-0"	9"	10"	9"	*7	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	12	*4	12	*4	12	*4	12	20										0.8904	160.368
		10'-0"	9"	10"	9"	*7	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	8"	*4	12	*4	12	*4	12	*4	12	20										0.8904	160.368
		15'-0"	9"	10½"	9"	*7	6"	*4	6"	*4	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	12	*4	12	*4	12	*4	12	20										0.9051	187.382
		20'-0"	10"	1'-0"	9"	*7	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	12	*4	12	*4	12	*4	12	20										0.9784	213.764
		25'-0"	10"	1½"	9"	*7	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	12	*4	12	*4	12	*4	12	20										1.0054	213.535
		30'-0"	11"	1'-0½"	9"	*8	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	12	*4	12	*4	12	*4	12	20										1.0640	236.363
60	10x6	5'-0"	9"	1½"	9"	*6	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.0610	216.810
		10'-0"	9"	1½"	9"	*7	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.0610	240.116
		15'-0"	10"	1'-0"	9"	*7	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.1142	240.804
		20'-0"	1'-0"	1'-½"	9"	*8	6"	*5	6"	*5	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.2384	269.329
		25'-0"	1'-0"	1'-2"	10"	*8	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.3483	306.068
		30'-0"	1'-½"	1'-3"	11"	*8	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	14	*4	14	*4	12	*4	12	24										1.4900	309.490
72	12x6	5'-0"	9½"	1½"	9"	*7	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	16	*4	16	*4	12	*4	12	28										1.2083	301.239
		10'-0"	10½"	1'-1"	9"	*8	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	16	*4	16	*4	12	*4	12	28										1.3125	334.695
		15'-0"	1½"	1'-½"	9½"	*8	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	16	*4	16	*4	12	*4	12	28										1.3999	336.559
		20'-0"	1'-½"	1'-3½"	10½"	*8	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	16	*4	16	*4	12	*4	12	28										1.6196	340.898
		25'-0"	1'-2"	1'-4"	1'-0"	*8	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*5	16	*5	16	*5	12	*5	12	28										1.7824	427.914
		30'-0"	1'-½"	1'-3½"	1'-0½"	*9	6"	*8	6"	*8	6"	*4	6"	*4	1'-0"	*4	1'-0"	*5	16	*5	16	*5	12	*5	12	28	*4	1'-0"	10			*4	1'-0"	10	1.7652	567.064	
84	14x6	5'-0"	10"	1'-1"	9½"	*7	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	18	*4	18	*4	12	*4	12	32										1.4581	330.344
		10'-0"	1½"	1'-2"	10"	*8	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	18	*4	18	*4	12	*4	12	32										1.6034	420.390
		15'-0"	1'-1"	1'-2½"	10½"	*9	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	18	*4	18	*4	12	*4	12	32										1.7257	466.537
		20'-0"	1'-3½"	1'-5½"	1'-0"	*9	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	18	*4	18	*4	12	*4	12	32										2.0741	474.640
		25'-0"	1'-½"	1'-4"	1'-½"	*9	6"	*8	6"	*8	6"	*4	6"	*4	1'-0"	*4	1'-0"	*5	18	*5	18	*5	12	*5	12	32	*4	1'-0"	12			*4	1'-0"	12	2.0212	617.580	
		30'-0"	1'-3"	1'-5"	1'-3"	*10	6"	*9	6"	*9	6"	*4	6"	*4	1'-0"	*4	1'-0"	*5	18	*5	18	*5	12	*5	12	34	*4	1'-0"	12			*4	1'-0"	12	2.2269	785.868	
96	16x6	5'-0"	1½"	1'-2½"	1'-0½"	*7	6"	*6	6"	*6	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	20	*4	20	*4	12	*4	12	36										1.9141	364.268
		10'-0"	1'-0½"	1'-3"	1'-0½"	*8	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	20	*4	20	*4	12	*4	12	36										1.9978	459.655
		15'-0"	1'-3½"	1'-5½"	1'-0½"	*9	6"	*7	6"	*7	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	20	*4	20	*4	12	*4	12	36										2.3048	513.776
		20'-0"	1'-2"	1'-3½"	1'-2"	*10	6"	*9	6"	*9	6"	*4	6"	*4	1'-0"	*4	1'-0"	*4	20	*4	20	*4	12	*4	12	38	*4	1'-0"	10			*4	1'-0"	10	2.2294	780.734	
		25'-0"	1'-3½"	1'-5½"	1'-3½"	*10	6"	*9	6"	*9	6"	*4	6"	*4	1'-0"	*4	1'-0"	*5	20	*5	20	*5	12	*5	12	38	*4	1'-0"	10			*4	1'-0"	10	2.5085	831.647	
		30'-0"	1'-5½"	1'-6½"	1'-5½"	*10	6"	*9	6"	*9	6"	*4	6"	*4	1'-0"	*4																					

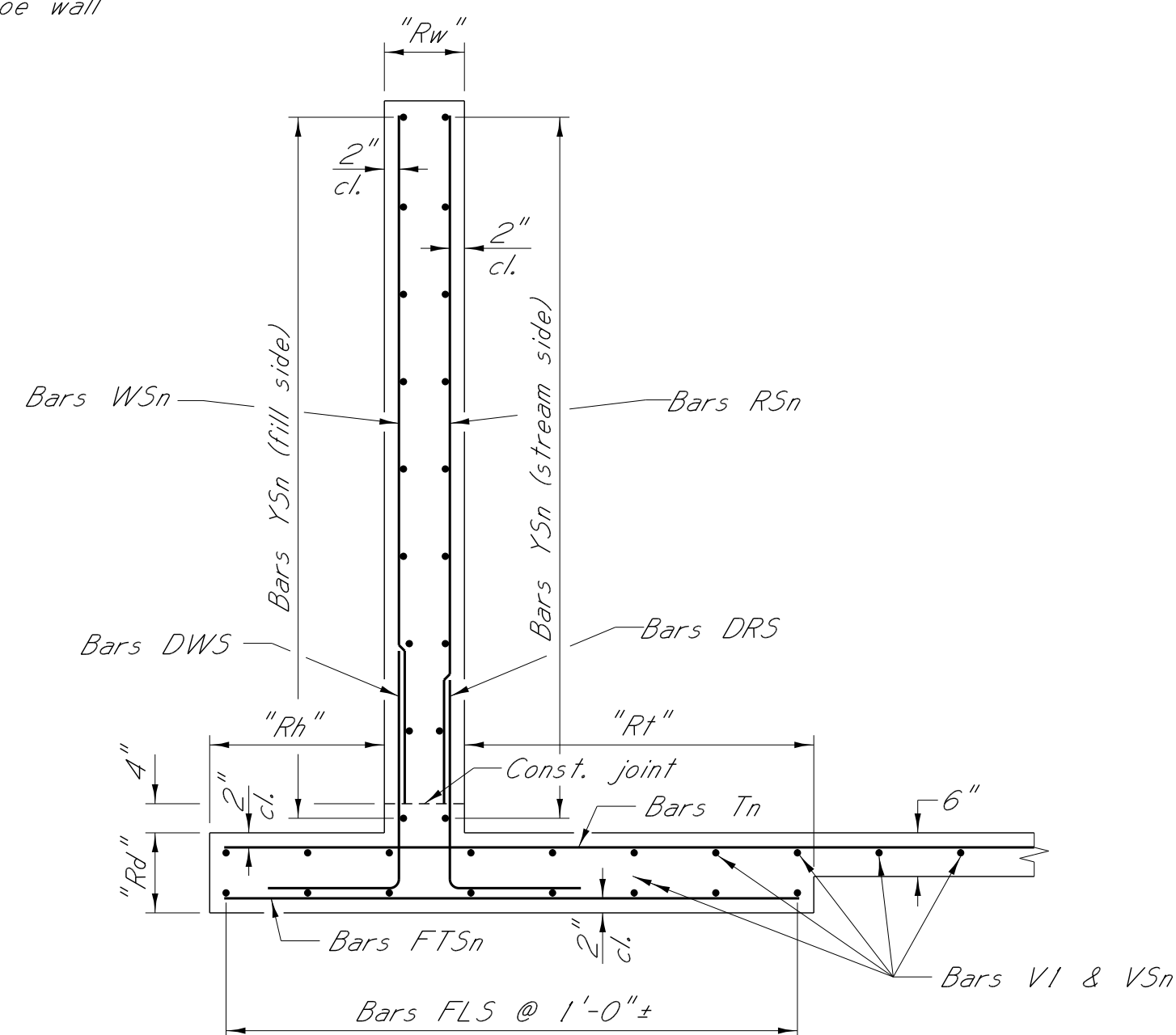
[illegible]



END ELEVATION
Showing reinforcing in parapet & toe wall



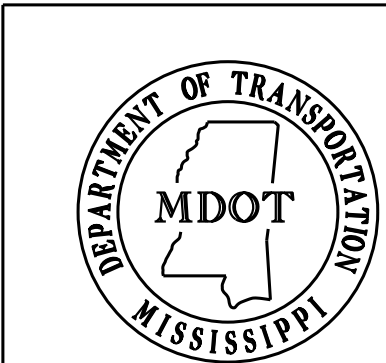
DETAIL "A"



CROSS SECTION WINGWALL
Showing reinforcing in "LWI" wingwall, footing and apron.

SPECIAL PROVISIONS REQUIRED:
Concrete bridges and structures No. 907-804

DESIGN DATA:
Specifications A.A.S.H.T.O., LRFD 2012.
Loading HL-93.
Concrete Class "B" (3,500 p.s.i.)



			BY	MISSISSIPPI DEPARTMENT OF TRANSPORTATION														
			REVISIONS	WINGS WITH 3:1 SLOPE FOR														
				BASIC CULVERT DRAWING														
				SINGLE CELL														
				45° SKEW DETAILS														
				HEIGHTS 6-12 FT.														
				SPANS 6-24 FT.														
				SHT. 2 OF 2														
				WORKING NUMBER														
				IWS-3W-45														
		DATE		DESIGNER <u>William K. McBeath, P.E.</u>					CHECKER <u>B. Keith Carr, P.E.</u>					SHEET NUMBER				
				DETAILER <u>Wesley Phillips, E.I.</u>					ISSUE DATE <u>01/01/2015</u>					7101				
				DIRECTOR OF STRUCTURES, STATE BRIDGE ENGINEER - JUSTIN WALKER PE.														
				DEP. DIR. OF STRUCTURES, ASST. STATE BRIDGE ENGINEER - SCOTT WESTERFIELD PE.														

HEIGHT = 6 FT.												
BAR LISTS FOR WINGS, FOOTING, PARAPET, APRON & AUXILIARY SLAB												
BAR	SIZE	NO. REQUIRED								DIM. X	DIM. Y	LENGTH
		SPAN										
		6'	8'	10'	12'	14'	16'	18'	20'			
T1	*4	1	1	1	1	1	1	1	1			1.4145+4'-7 ½"
T2	*4	1	1	1	1	1	1	1	1			1.4145+8'-3 ½"
T3	*4	1	1	1	1	1	1	1	1			1.4145+9'-6 ½"
T4	*4	1	1	1	1	1	1	1	1			1.4145+10'-7 ½"
T5	*4	1	1	1	1	1	1	1	1			1.4145+11'-8 ½"
T6	*4	1	1	1	1	1	1	1	1			1.4145+12'-9"
T7	*4	1	1	1	1	1	1	1	1			1.4145+13'-10"
T8	*4	1	1	1	1	1	1	1	1			1.4145+14'-11"
T9	*4	1	1	1	1	1	1	1	1			1.4145+15'-11 ½"
T10	*4	1	1	1	1	1	1	1	1			1.4145+17'-0 ½"
T11	*4	1	1	1	1	1	1	1	1			1.4145+18'-1"
T12	*4	1	1	1	1	1	1	1	1			1.4145+19'-2"
T13	*4	1	1	1	1	1	1	1	1			1.4145+20'-3"
T14	*4	1	1	1	1	1	1	1	1			1.4145+21'-3 ½"
T15	*4	1	1	1	1	1	1	1	1			1.4145+22'-4 ½"
T16	*4	1	1	1	1	1	1	1	1			1.4145+23'-5 ½"
T17	*4	1	1	1	1	1	1	1	1			1.4145+23'-6"
T18	*4	3	3	3	3	3	3	3	3			1.4145+19'-8 ½"
V1	*4	9	11	13	15	17	19	21	23	23'-11"	1'-8"	25'-7"
VL1	*4	1	1	1	1	1	1	1	1	22'-8 ½"	1'-8"	24'-4 ½"
VL2	*4	1	1	1	1	1	1	1	1	19'-0 ½"	1'-8"	20'-8 ½"
VL3	*4	1	1	1	1	1	1	1	1	15'-4"	1'-8"	17'-0"
VL4	*4	1	1	1	1	1	1	1	1	11'-7 ½"	1'-8"	13'-3 ½"
VL5	*4	1	1	1	1	1	1	1	1	7'-9"		7'-9"
VL6	*4	1	1	1	1	1	1	1	1	2'-10"		2'-10"
VS1	*4	1	1	1	1	1	1	1	1	23'-8"	1'-8"	25'-4"
VS2	*4	1	1	1	1	1	1	1	1	23'-0 ½"	1'-8"	24'-8 ½"
VS3	*4	1	1	1	1	1	1	1	1	22'-4 ½"	1'-8"	24'-0 ½"
VS4	*4	1	1	1	1	1	1	1	1	18'-7"	1'-8"	20'-3"
VS5	*4	1	1	1	1	1	1	1	1	14'-10"	1'-8"	16'-6"
VS6	*4	1	1	1	1	1	1	1	1	11'-1"	1'-8"	12'-9"
VS7	*4	1	1	1	1	1	1	1	1	7'-4"	1'-8"	9'-0"
VS8	*4	1	1	1	1	1	1	1	1	3'-7 ½"		3'-7 ½"
FTL1	*5	1	1	1	1	1	1	1	1			1'-4"
FTL2	*5	1	1	1	1	1	1	1	1			1'-10 ½"
FTL3	*5	1	1	1	1	1	1	1	1			2'-5"
FTL4	*5	1	1	1	1	1	1	1	1			2'-11 ½"
FTL5	*5	32	32	32	32	32	32	32	32			5'-5"
FTL6	*5	1	1	1	1	1	1	1	1			4'-11 ½"
FTL7	*5	1	1	1	1	1	1	1	1			4'-5"
FTL8	*5	1	1	1	1	1	1	1	1			3'-10 ½"
FTL9	*5	1	1	1	1	1	1	1	1			3'-4"
FTL10	*5	1	1	1	1	1	1	1	1			2'-10"
FTL11	*5	2	2	2	2	2	2	2	2			2'-5"
FLL	*4	7	7	7	7	7	7	7	7			31'-0 ½"
FTS1	*5	1	1	1	1	1	1	1	1			2'-6 ½"
FTS2	*5	1	1	1	1	1	1	1	1			4'-3"
FTS3	*5	22	22	22	22	22	22	22	22			5'-5"
FTS4	*5	1	1	1	1	1	1	1	1			1'-10"
FL5	*4	7	7	7	7	7	7	7	7			18'-4"
WS1	*5	1	1	1	1	1	1	1	1		W+5'-1"	W+5'-1"
WS2	*5	1	1	1	1	1	1	1	1		W+4'-10 ½"	W+4'-10 ½"
WS3	*5	1	1	1	1	1	1	1	1		W+4'-7 ½"	W+4'-7 ½"
WS4	*5	1	1	1	1	1	1	1	1		W+4'-4 ½"	W+4'-4 ½"
WS5	*5	1	1	1	1	1	1	1	1		W+4'-1 ½"	W+4'-1 ½"
WS6	*5	1	1	1	1	1	1	1	1		W+3'-10 ½"	W+3'-10 ½"
WS7	*5	1	1	1	1	1	1	1	1		W+3'-7 ½"	W+3'-7 ½"
WS8	*5	1	1	1	1	1	1	1	1		W+3'-4 ½"	W+3'-4 ½"
WS9	*5	1	1	1	1	1	1	1	1		W+3'-1 ½"	W+3'-1 ½"
WS10	*5	1	1	1	1	1	1	1	1		W+2'-10 ½"	W+2'-10 ½"
WS11	*5	1	1	1	1	1	1	1	1		W+2'-8"	W+2'-8"
WS12	*5	1	1	1	1	1	1	1	1		W+2'-5"	W+2'-5"
WS13	*5	1	1	1	1	1	1	1	1		W+2'-2"	W+2'-2"
WS14	*5	1	1	1	1	1	1	1	1		W+1'-11"	W+1'-11"

HEIGHT = 6 FT.												
BAR LISTS FOR WINGS, FOOTING, PARAPET, APRON & AUXILIARY SLAB												
BAR	SIZE	NO. REQUIRED								DIM. X	DIM. Y	LENGTH
		SPAN										
		6'	8'	10'	12'	14'	16'	18'	20'			
WS15	#5	1	1	1	1	1	1	1	1		W+1'-8"	W+1'-8"
WS16	#5	1	1	1	1	1	1	1	1		W+1'-5"	W+1'-5"
WS17	#5	1	1	1	1	1	1	1	1	1'-6"	W+2'-2"	W+3'-8"
WS18	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-11"	W+3'-5"
WS19	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-8"	W+3'-2"
WS20	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-5"	W+2'-11"
WS21	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-2"	W+2'-8"
WS22	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-11"	W+2'-5"
WS23	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-8 ½"	W+2'-2 ½"
WS24	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-5 ½"	W+1'-11 ½"
DWS	#5	16	16	16	16	16	16	16	16	1'-6"	2'-9"	4'-3"
WL1	#5	1	1	1	1	1	1	1	1		W+5'-1 ½"	W+5'-1 ½"
WL2	#5	1	1	1	1	1	1	1	1		W+5'-0"	W+5'-0"
WL3	#5	1	1	1	1	1	1	1	1		W+4'-10"	W+4'-10"
WL4	#5	1	1	1	1	1	1	1	1		W+4'-8"	W+4'-8"
WL5	#5	1	1	1	1	1	1	1	1		W+4'-6 ½"	W+4'-6 ½"
WL6	#5	1	1	1	1	1	1	1	1		W+4'-4 ½"	W+4'-4 ½"
WL7	#5	1	1	1	1	1	1	1	1		W+4'-3"	W+4'-3"
WL8	#5	1	1	1	1	1	1	1	1		W+4'-1"	W+4'-1"
WL9	#5	1	1	1	1	1	1	1	1		W+3'-11"	W+3'-11"
WL10	#5	1	1	1	1	1	1	1	1		W+3'-9 ½"	W+3'-9 ½"
WL11	#5	1	1	1	1	1	1	1	1		W+3'-7 ½"	W+3'-7 ½"
WL12	#5	1	1	1	1	1	1	1	1		W+3'-6"	W+3'-6"
WL13	#5	1	1	1	1	1	1	1	1		W+3'-4"	W+3'-4"
WL14	#5	1	1	1	1	1	1	1	1		W+3'-2"	W+3'-2"
WL15	#5	1	1	1	1	1	1	1	1		W+3'-0 ½"	W+3'-0 ½"
WL16	#5	1	1	1	1	1	1	1	1		W+2'-10 ½"	W+2'-10 ½"
WL17	#5	1	1	1	1	1	1	1	1		W+2'-9"	W+2'-9"
WL18	#5	1	1	1	1	1	1	1	1		W+2'-7"	W+2'-7"
WL19	#5	1	1	1	1	1	1	1	1		W+2'-5"	W+2'-5"
WL20	#5	1	1	1	1	1	1	1	1		W+2'-3 ½"	W+2'-3 ½"
WL21	#5	1	1	1	1	1	1	1	1		W+2'-1 ½"	W+2'-1 ½"
WL22	#5	1	1	1	1	1	1	1	1		W+2'-0"	W+2'-0"
WL23	#5	1	1	1	1	1	1	1	1		W+1'-10"	W+1'-10"
WL24	#5	1	1	1	1	1	1	1	1		W+1'-8 ½"	W+1'-8 ½"
WL25	#5	1	1	1	1	1	1	1	1		W+1'-6 ½"	W+1'-6 ½"
WL26	#5	1	1	1	1	1	1	1	1	1'-6"	W+2'-4 ½"	W+3'-10 ½"
WL27	#5	1	1	1	1	1	1	1	1	1'-6"	W+2'-2 ½"	W+3'-8 ½"
WL28	#5	1	1	1	1	1	1	1	1	1'-6"	W+2'-1"	W+3'-7"
WL29	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-11"	W+3'-5"
WL30	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-9 ½"	W+3'-3 ½"
WL31	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-7 ½"	W+3'-1 ½"
WL32	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-6"	W+3'-0"
WL33	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-4"	W+2'-10"
WL34	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-2"	W+2'-8"
WL35	#5	1	1	1	1	1	1	1	1	1'-6"	W+1'-0 ½"	W+2'-6 ½"
WL36	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-10 ½"	W+2'-4 ½"
WL37	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-9"	W+2'-3"
WL38	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-7"	W+2'-1"
WL39	#5	1	1	1	1	1	1	1	1	1'-6"	W+0'-5"	W+1'-11"
DWL	#5	25	25	25	25	25	25	25	25	1'-6"	2'-9"	4'-3"
RS1	#4	1	1	1	1	1	1	1	1		W+5'-1"	W+5'-1"
RS2	#4	1	1	1	1	1	1	1	1		W+4'-9 ½"	W+4'-9 ½"
RS3	#4	1	1	1	1	1	1	1	1		W+4'-6"	W+4'-6"
RS4	#4	1	1	1	1	1	1	1	1		W+4'-2 ½"	W+4'-2 ½"
RS5	#4	1	1	1	1	1	1	1	1		W+3'-11"	W+3'-11"
RS6	#4	1	1	1	1	1	1	1	1		W+3'-7 ½"	W+3'-7 ½"
RS7	#4	1	1	1	1	1	1	1	1		W+3'-4"	W+3'-4"
RS8	#4	1	1	1	1	1	1	1	1		W+3'-0 ½"	W+3'-0 ½"
RS9	#4	1	1	1	1	1	1	1	1		W+2'-8 ½"	W+2'-8 ½"
RS10	#4	1	1	1	1	1	1	1	1		W+2'-5"	W+2'-5"
RS11	#4	1	1	1	1	1	1	1	1		W+2'-1 ½"	W+2'-1 ½"
RS12	#4	1	1	1	1	1	1	1	1		W+1'-10"	W+1'-10"
RS13	#4	1	1	1	1	1	1	1	1		W+1'-6 ½"	W+1'-6 ½"

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-00-DI-BR.dgn
DATE: 8/12/2022 TIME: 1:58:10 PM USER: RJB

DESCRIPTION OF SHEET	WKG. NO.	SH. NO.
DETAILED INDEX (BRIDGE ITEMS)	DI-BR	8001
SUMMARY OF QUANTITIES (BRIDGE ITEMS)	SO-BR-1	8002

BRIDGE AT STA. 14+73.641 HALL AVENUE OVER
NORFOLK SOUTHERN RAILWAY (NSRR)

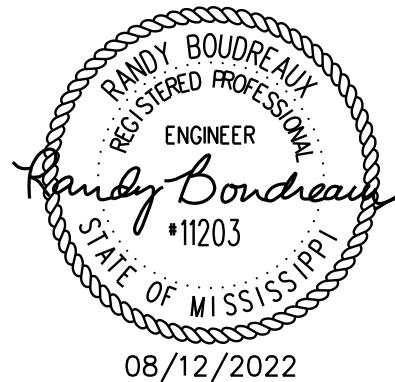
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ELEVATION & FOUNDATION PLAN	2	8004
NSRR PROFILE	3	8005
END BENT 1 DETAILS	4	8006
END BENT 6 DETAILS	5	8007
END BENT DETAILS	6	8008
INT. BENT 2 DETAILS	7	8009
INT. BENT 3 DETAILS	8	8010
INT. BENT 4 DETAILS	9	8011
INT. BENT 5 DETAILS	10	8012
INT. BENT SECTIONS	11	8013
INT. BENT DETAILS	12	8014
TYPICAL SECTION SPANS 1, 4 & 5	13	8015
PLAN OF SPAN 1	14	8016
TYPICAL SIDEWALK SECTIONS & PLAN OF RAISED SIDEWALKS SPAN 1	15	8017
PLAN OF SPAN 4	16	8018
PLAN OF SPAN 5	17	8019
PLAN OF RAISED SIDEWALKS SPANS 4 & 5	18	8020
TYPICAL SECTION SPAN 2	19	8021
PLAN OF SPAN 2	20	8022
PLAN OF RAISED SIDEWALKS SPAN 2	21	8023
TYPICAL SECTION SPAN 3	22	8024
PLAN OF SPAN 3	23	8025
PLAN OF RAISED SIDEWALKS SPAN 3	24	8026
RAILING DETAILS	25	8027
SAFETY FENCING DETAILS	26	8028
MISCELLANEOUS SPAN DETAILS	27	8029
75 FT. BEAM DETAILS (FIB-45)	28	8030
105 FT. BEAM DETAILS (FIB-45)	29	8031
135 FT. BEAM DETAILS (FIB-72)	30	8032
150 FT. BEAM DETAILS (FIB-72)	31	8033
MISCELLANEOUS BEAM DETAILS (1 of 2)	32	8034
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RETAINING WALLS "D" DETAILS (SHT. 2 OF 2)	45	8047
RETAINING WALLS "E" DETAILS	46	8048
RETAINING WALLS "F" DETAILS (SHT. 1 OF 2)	47	8049
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THE RETAINING WALL DESIGN WAS
PROVIDED BY:

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157



HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI



DETAILED INDEX
(BRIDGE ITEMS)

WORKING NUMBER:
DI-BR

DRAWING NUMBER:
8001

NOTICE TO DRAWING HOLDER
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EXPENSES, INCLUDING ATTORNEY'S FEES ARISING OUT OF OR
RESULTING THEREFROM.

REVISIONS			DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000
			FILENAME:	
			SCALE:	
			SURVEYED BY:	
			DSGN: RJB	DATE: 06/2022
			DRWN: RJB	DATE: 06/2022
			CHKD: BKC	DATE: 08/2022
			QA/QC:	DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-00-50-BR-1.dgn
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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD:	DATE:
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI

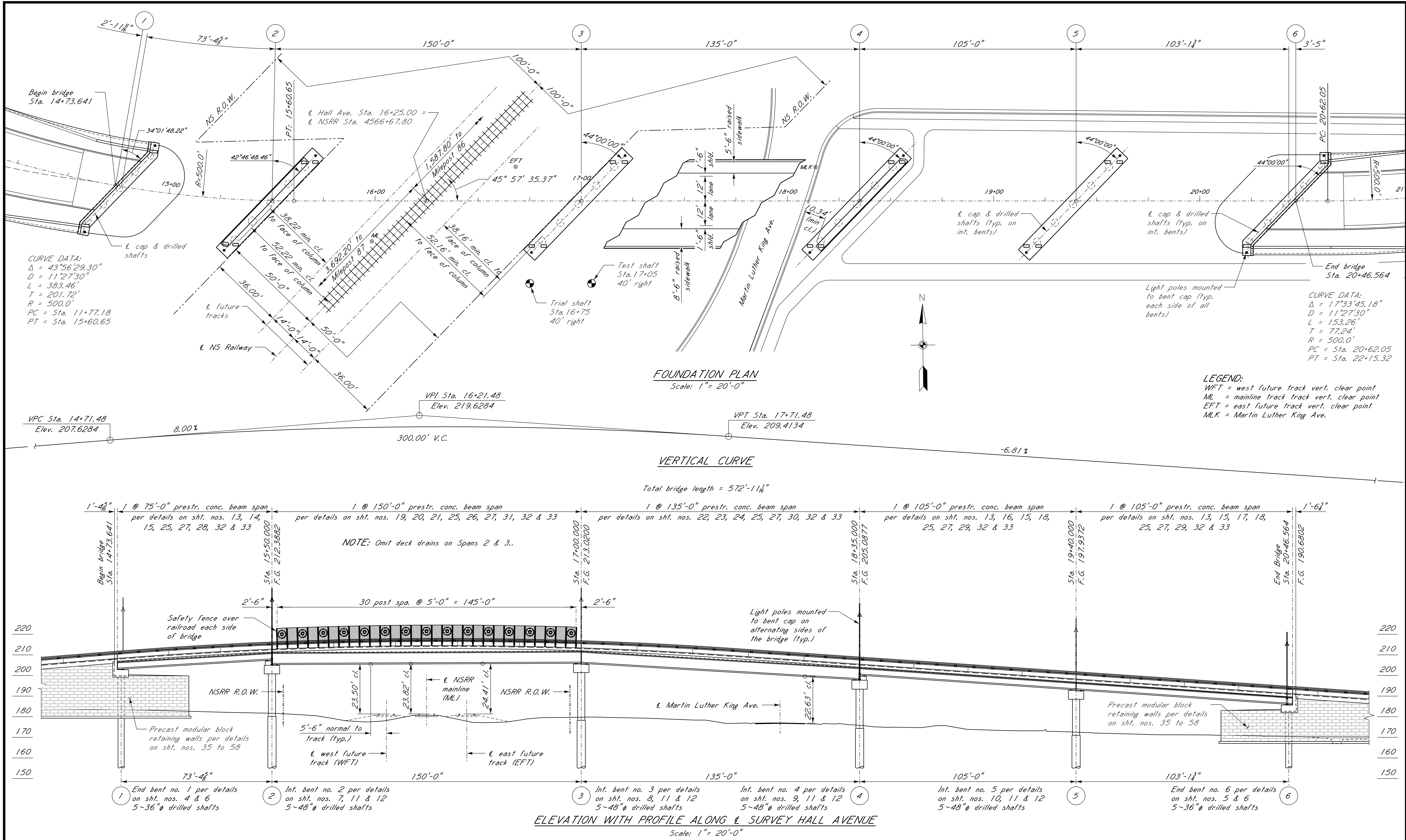


SUMMARY OF QUANTITIES
(BRIDGE ITEMS)

WORKING NUMBER: SQ-BR-1	DRAWING NUMBER: 8002
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SUMMARY OF QUANTITIES				
PAY ITEM NO.	PAY ITEM	UNIT	QUANTITIES	
	BRIDGE SUMMARY		PRELIMINARY	FINAL
501-K001	Transverse Grooving	SY	1456	
907-607-PP001	Safety Fence	LF	290	
803-K004	Drilled Shaft, 36" Diameter	LF	675	
803-K006	Drilled Shaft, 48" Diameter	LF	1425	
803-L002	Test Shaft, 48" Diameter	EA	1	
803-M005	Trial Shaft, 48" Diameter	LF	80	
803-N001	Exploration	LF	300	
803-0005	Permanent Casing, 36" Diameter	LF	220	
803-0018	Temporary Casing, 48" Diameter	LF	200	
804-A001	Bridge Concrete, Class AA	CY	1072	
804-A004	Bridge Concrete, Class BD	CY	1101	
804-C201	75' Prestressed Concrete Beam, Type FIB-45	LF	373	
804-C202	105' Prestressed Concrete Beam, Type FIB-45	LF	1048	
804-C203	135' Prestressed Concrete Beam, Type FIB-135	LF	674	
804-C204	150' Prestressed Concrete Beam, Type FIB-150	LF	897	
805-A001	Reinforcement	LBS	366644	
809-A003	Retaining Wall System, Mechanically Stabilized	SF	19494	
813-B001	Concrete-Steel Railing	LF	2253	
815-D001	Concrete Slope Paving	CY	229	

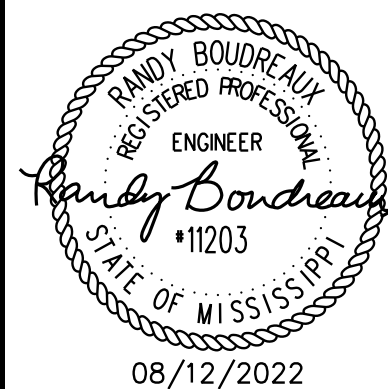
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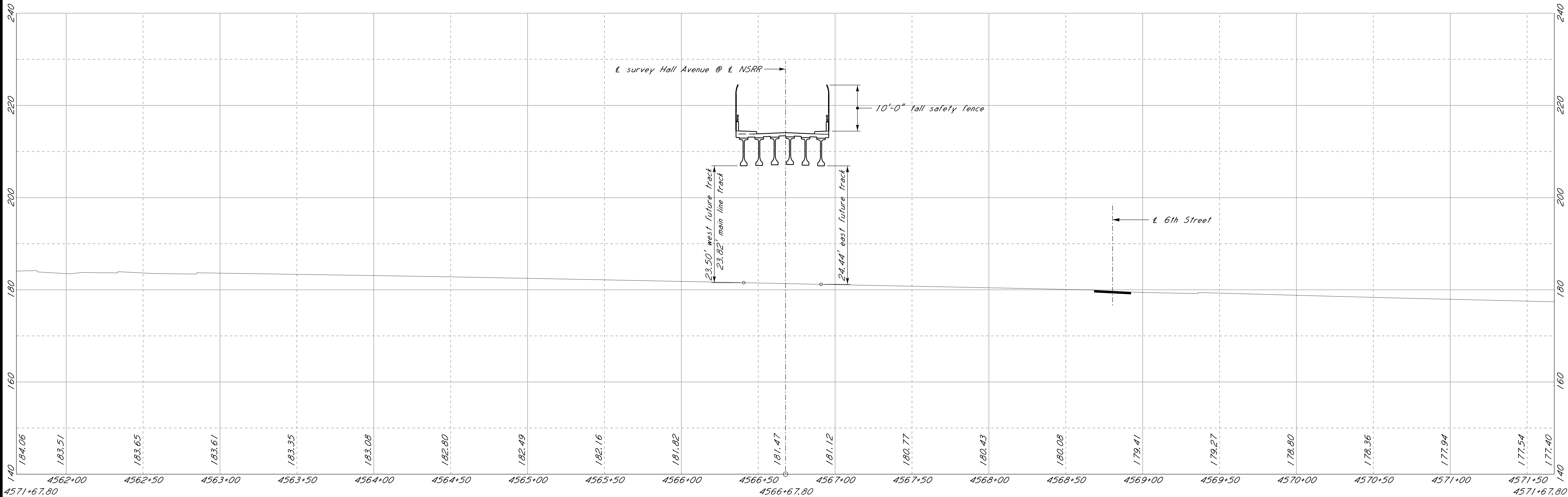
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				SCALE:	
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PLAN & ELEVATION	
WORKING NUMBER: 2 OF 59	DRAWING NUMBER: 8004

FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-03-NSRR Profile.dgn
DATE: 8/12/2022 TIME: 1:59:30 PM USER: RJB



NSRR - TRACK PROFILE

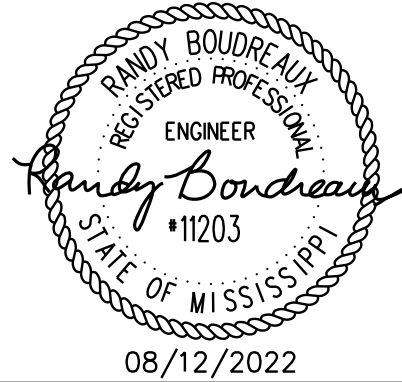
Looking west on Hall Ave.
Scale: 1" = 10'-0" vertical
1" = 30'-0" horizontal

NOTE: The elevations of the existing top-of-rail profile shall be verified to match the approved final plans before beginning construction whether profile is provided or not. Any discrepancies shall be brought to the attention of the Norfolk Southern Public Projects Engineer

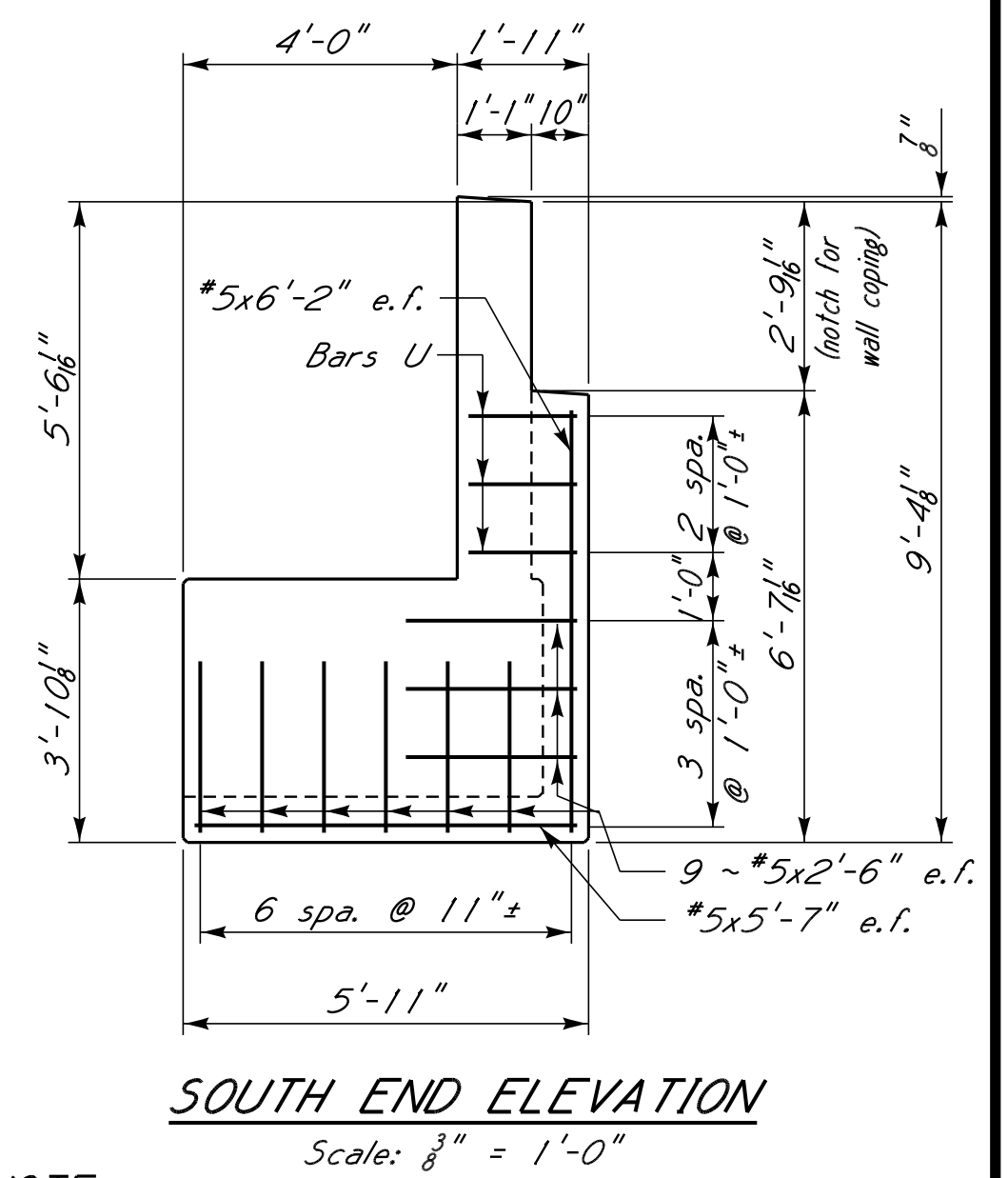
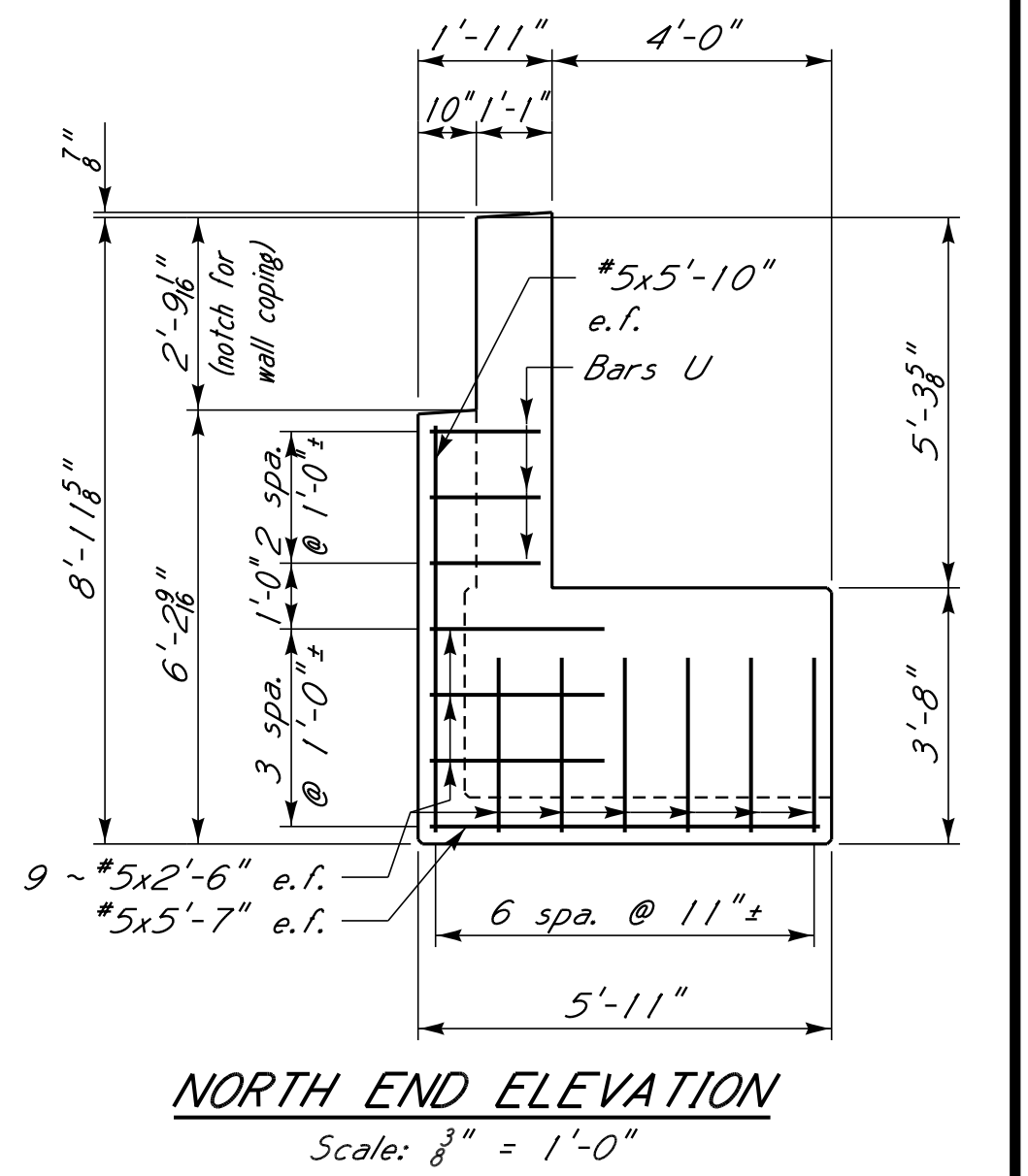
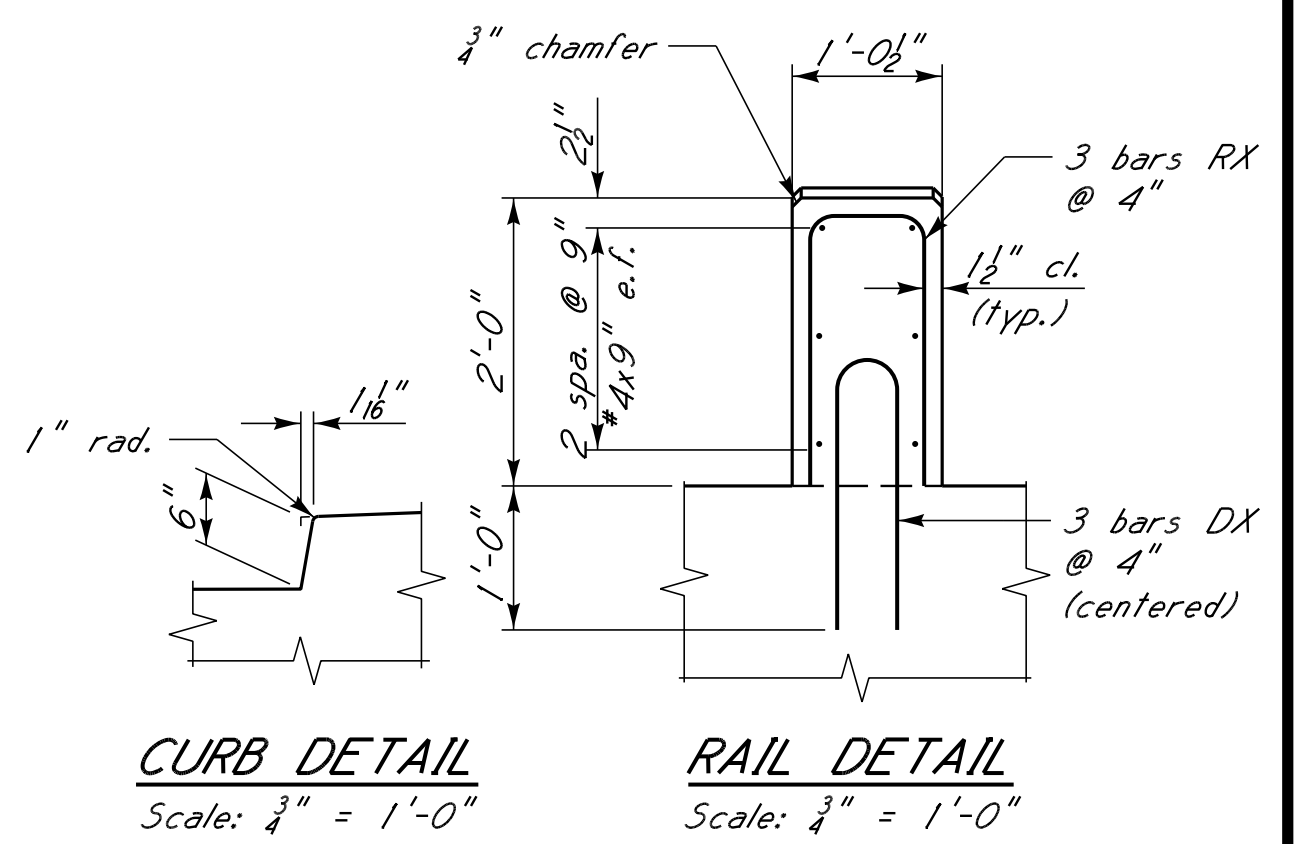
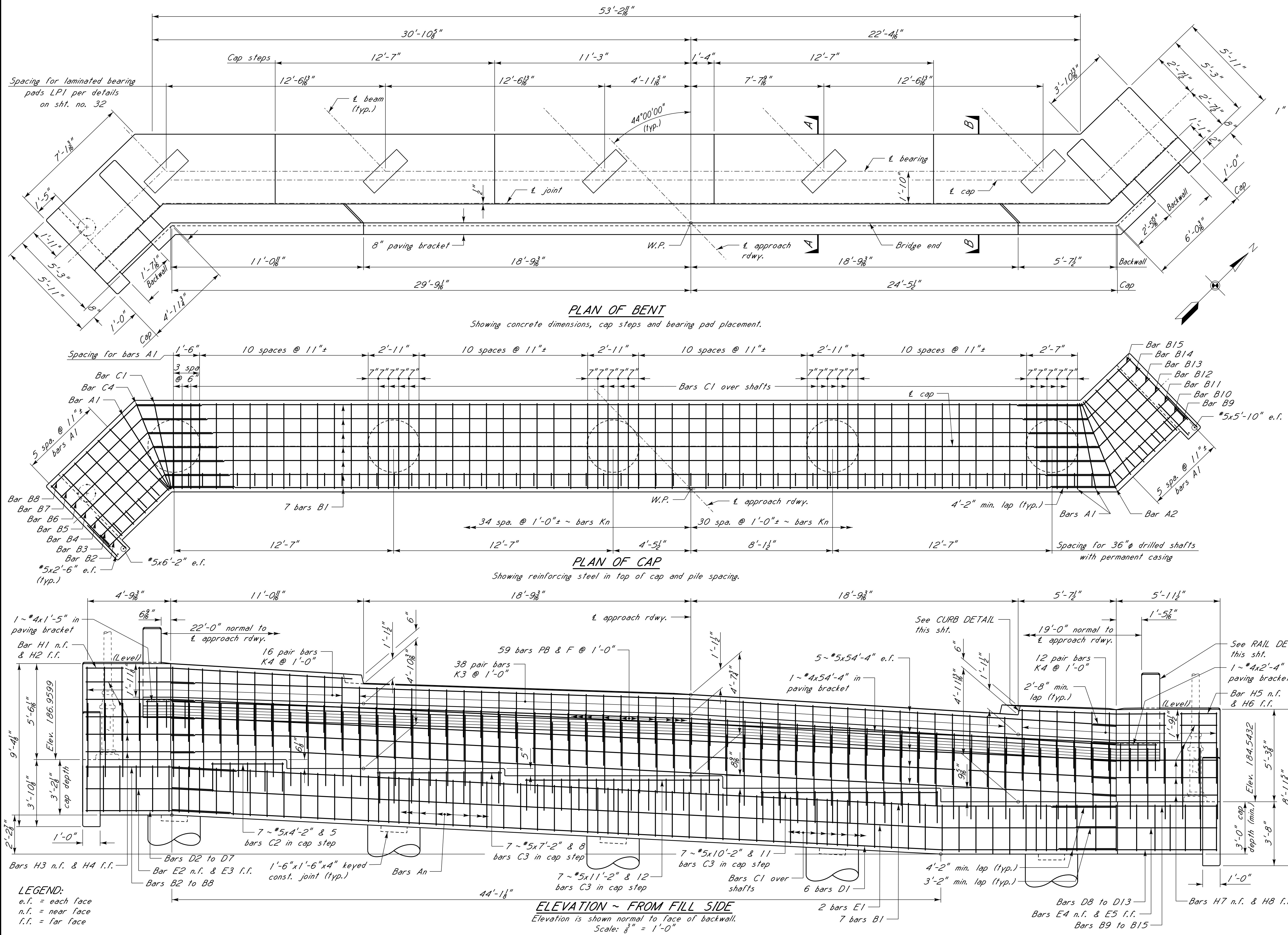
NOTICE TO DRAWING HOLDER			
NEEL-SCHAFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN 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	
NO.	DATE	BY	DESCRIPTION	
				N-S PROJECT NO.: 16214.000
				FILENAME:
				SCALE:
				SURVEYED BY:
				DSGN: RJB DATE: 06/2022
				DRWN: RJB DATE: 06/2022
				CHKD: BKC DATE: 08/2022
				QA/QC: DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



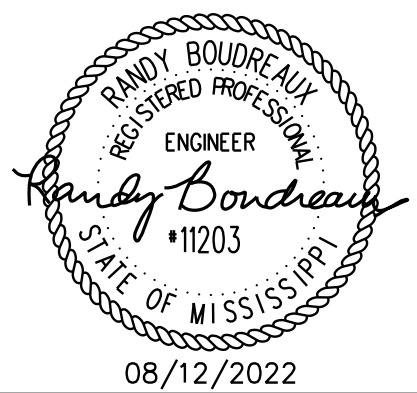
NORFOLK SOUTHERN RAILWAY TRACK PROFILE	
WORKING NUMBER: 3 OF 59	DRAWING NUMBER: 8005



NOTE:
Vertical dimensions shown are measured along fill face of end wall (Bridge End).
For GENERAL NOTES and other details, see sht. no. 1.
For sections A-A, B-B and bar bending details, see sht. no. 6.
All drilled shafts shall have permanent steel casing. The casing shall be installed no more than 7' into the existing ground.
For drilled shaft details, see sht. no. 1.

<u>NOTICE TO DRAWING HOLDER</u> NEEL-SCHAFFER, 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	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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					SCALE:	
					SURVEYED BY:	
					DSGN: RJB	DATE: 06/2022
					DRWN: RJB	DATE: 06/2022
					CHKD: BKC	DATE: 08/2022
					QA/QC:	DATE:

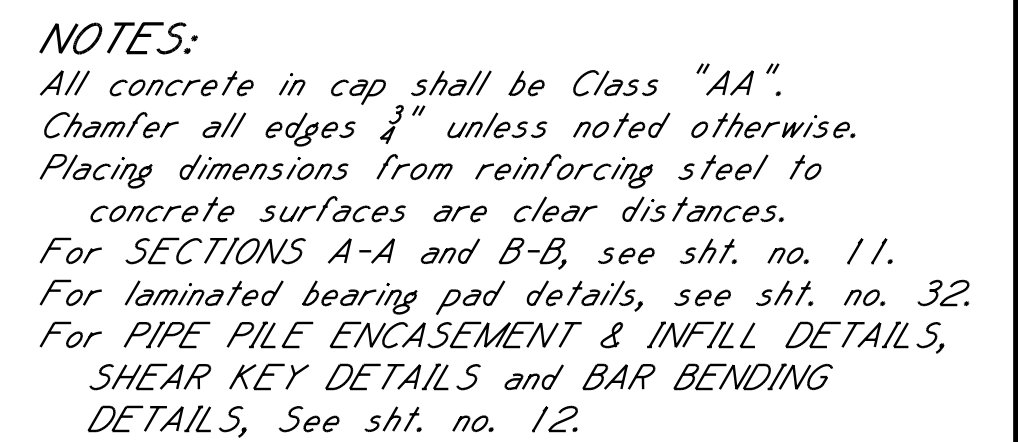
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI



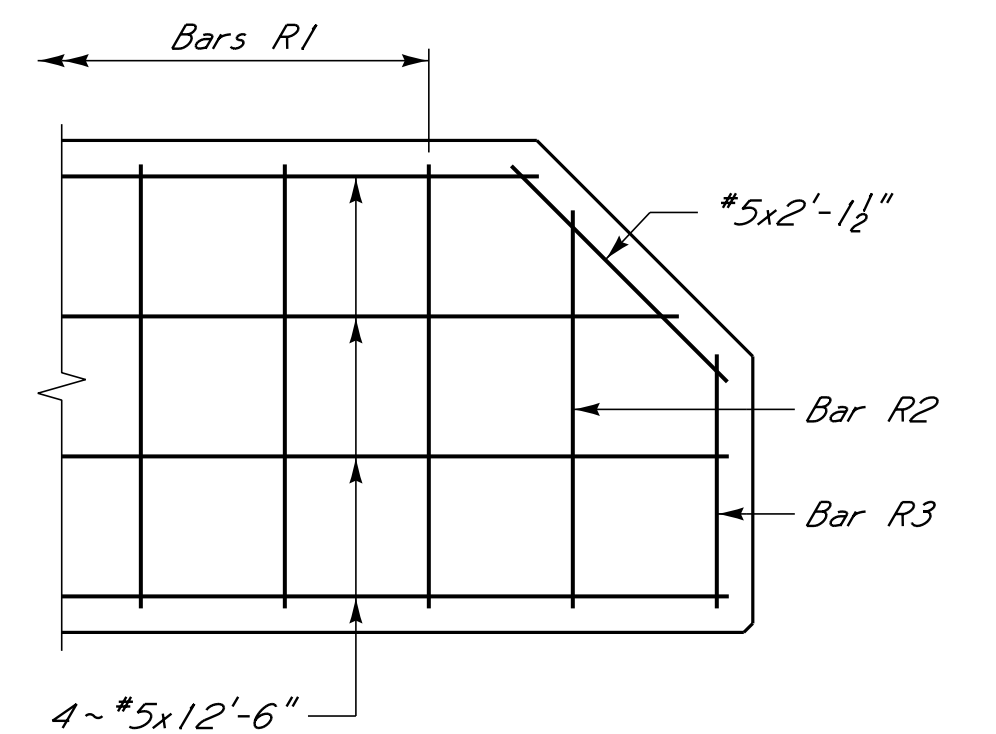
END BENT 6 DETAILS

WORKING NUMBER:
5 OF 59

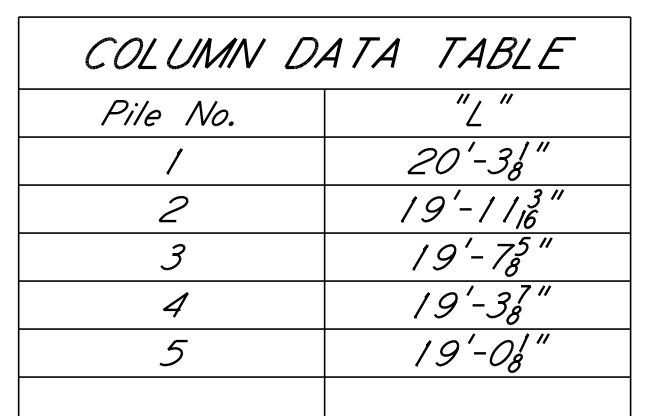
DRAWING NUMBER:
8007



Showing concrete dimensions, cap steps and bearing pad placement.



Scale: $\frac{3}{4}" = 1'-0"$



LEGEND:
e.f. = each face
f.f. = far face
n.f. = near face

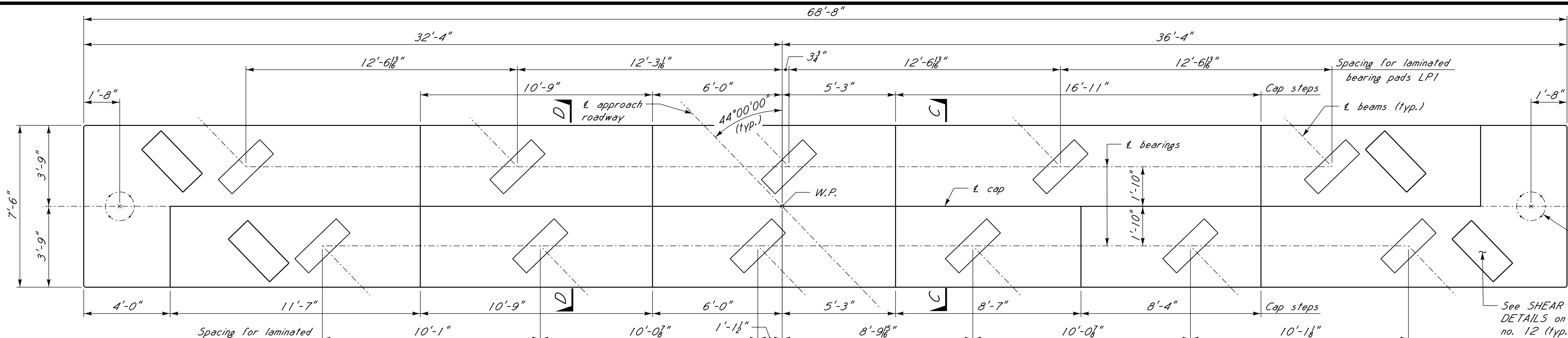
NEEL-SCHAFFER, INC., HEREINAFTER REFERRED TO AS THE ENGINEER HAS PREPARED AND FURNISHED THIS DRAWING TO THE OWNER FOR USE ON THIS PROJECT ONLY. THIS DRAWING SHOULD NOT BE USED ON EXTENSIONS OF THIS PROJECT OR ON ANY OTHER PROJECT. ANY REUSE OF THIS DRAWING, WITHOUT WRITTEN VERIFICATION OR ADAPTATION 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.

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				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

INT. BENT 2 DETAILS

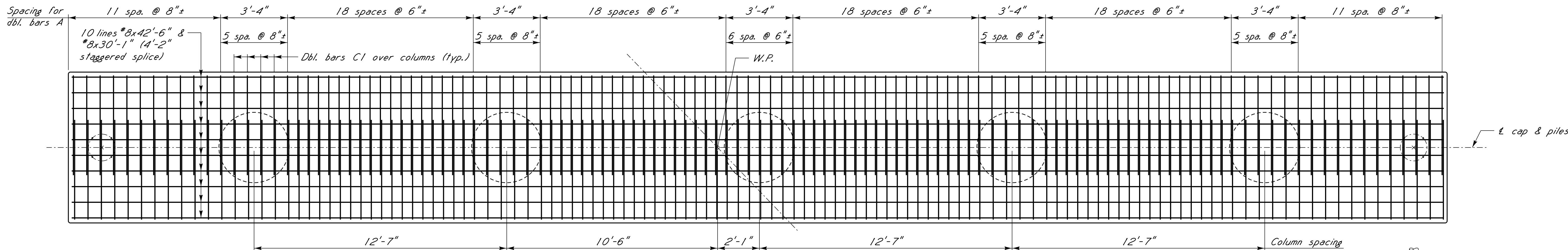
DRAWING NUMBER:
8009

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-08-Int. Bent 3 Details -D5.dgn
DATE: 8/12/2022 TIME: 1:42:58 PM USER: RJB



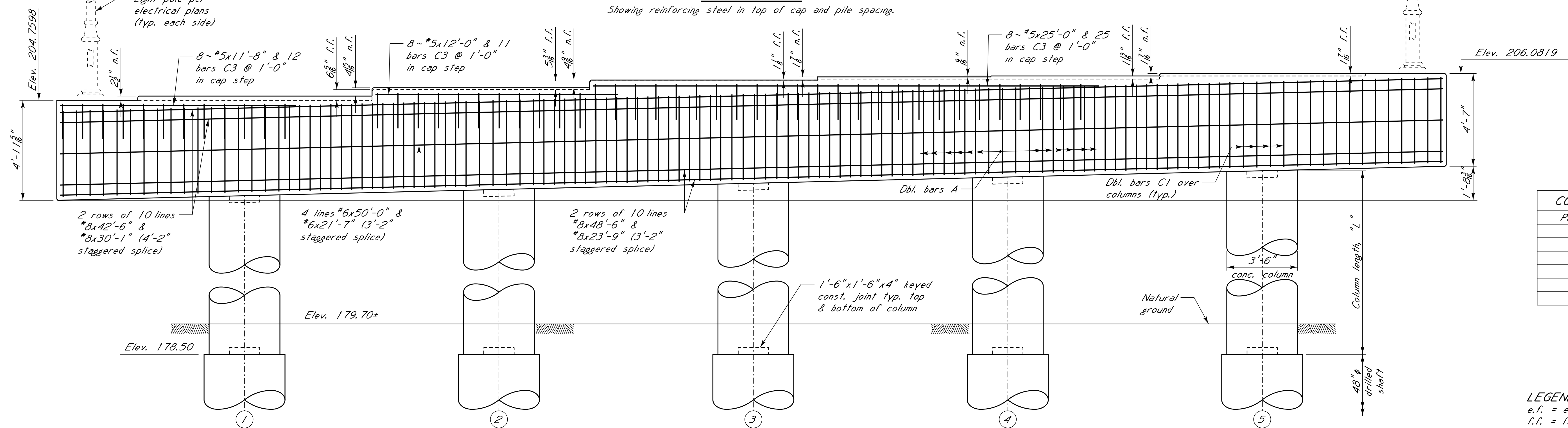
PLAN OF BENT

Showing concrete dimensions, cap steps and bearing pad placement.



PLAN OF CAP

Showing reinforcing steel in top of cap and pile spacing.



ELEVATION

Scale: 3/8" = 1'-0"

NOTES:
All concrete in cap shall be Class "AA".
Chamfer all edges 3/4" unless noted otherwise.
Placing dimensions from reinforcing steel to concrete surfaces are clear distances.
For SECTIONS C-C and D-D, see sht. no. 11.
For laminated bearing pad details, see sht. no. 32.
For PIPE PILE ENCASEMENT & INFILL DETAILS, SHEAR KEY DETAILS and BAR BENDING DETAILS, See sht. no. 12.

Anchor bolt assembly for light poles, see electrical plans for details

See SHEAR KEY DETAILS on sht. no. 12 (typ.)

COLUMN DATA TABLE	
Pile No.	"L"
1	21'-6 1/2"
2	21'-10 3/8"
3	22'-1 1/8"
4	22'-5 3/8"
5	22'-9 3/8"

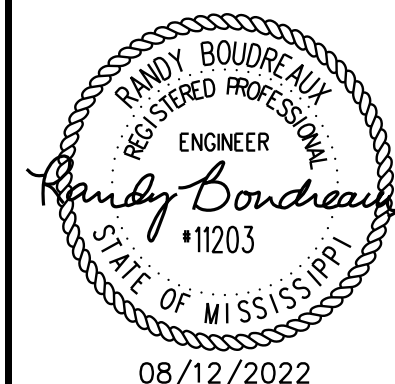
LEGEND:
e.f. = each face
l.f. = far face
n.f. = near face

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
NO.	DATE	BY	DESCRIPTION	

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

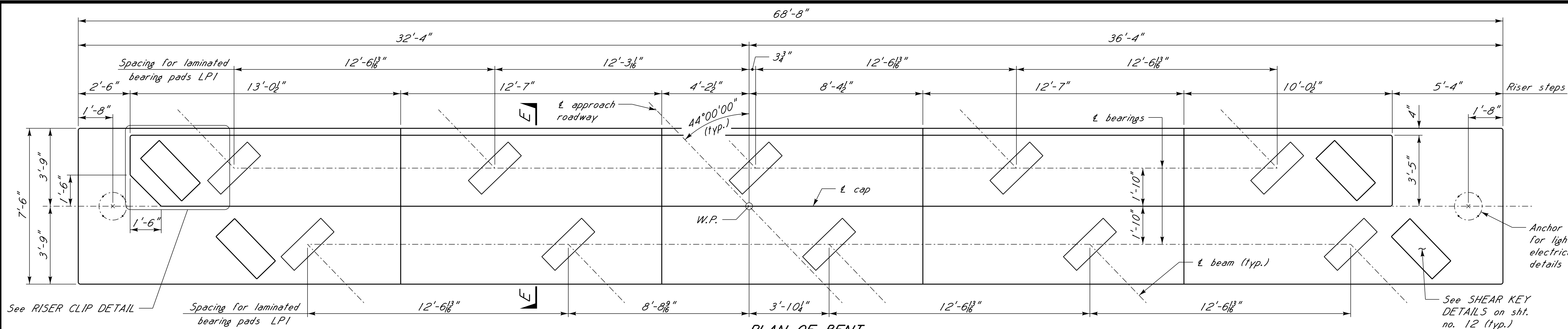


INT. BENT 3 DETAILS

WORKING NUMBER:
8 OF 59

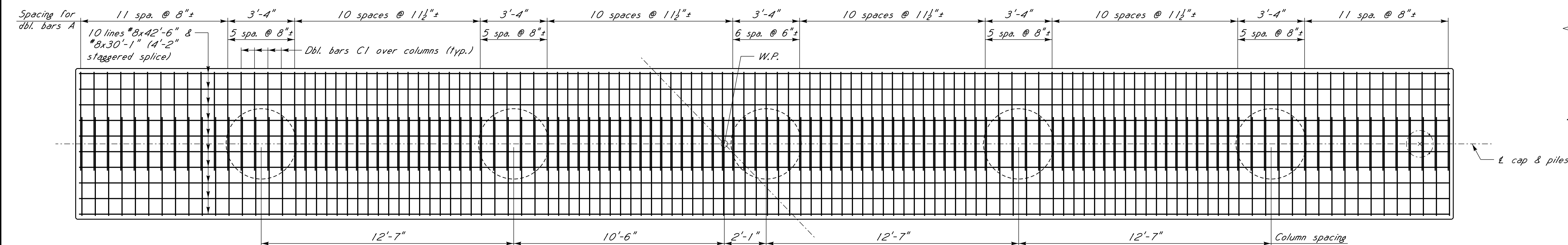
DRAWING NUMBER:
8010

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-09-Int. Bent 4 Details - DS.dgn
DATE: 8/12/2022 TIME: 1:42:58 PM USER: RJB



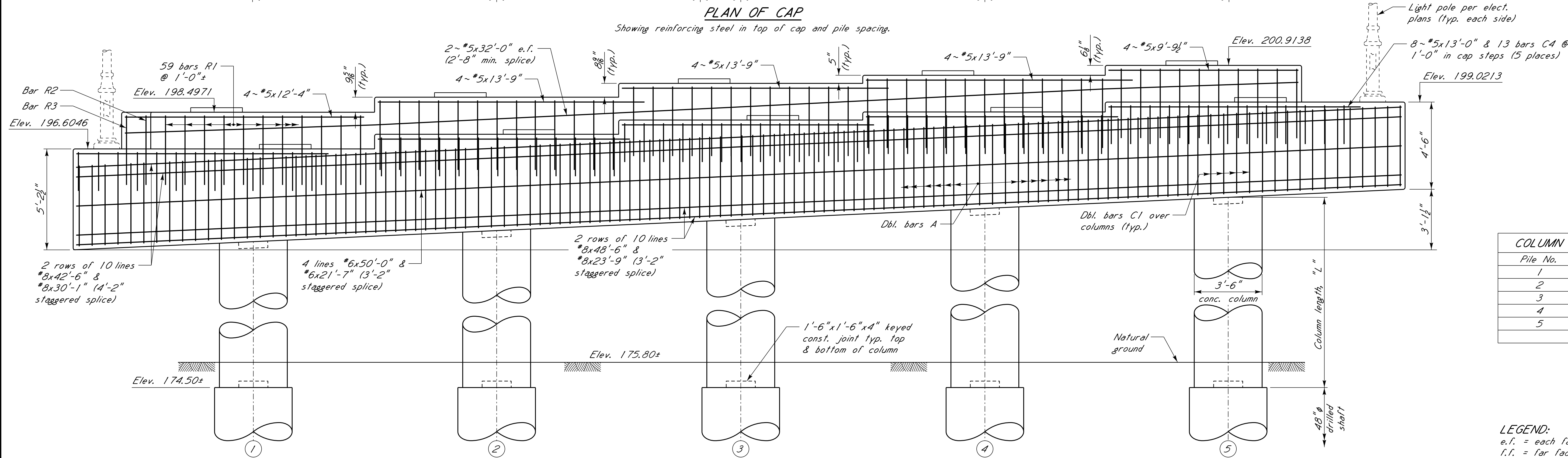
PLAN OF BENT

Showing concrete dimensions, cap steps and bearing pad placement.



PLAN OF CAP

Showing reinforcing steel in top of cap and pile spacing.

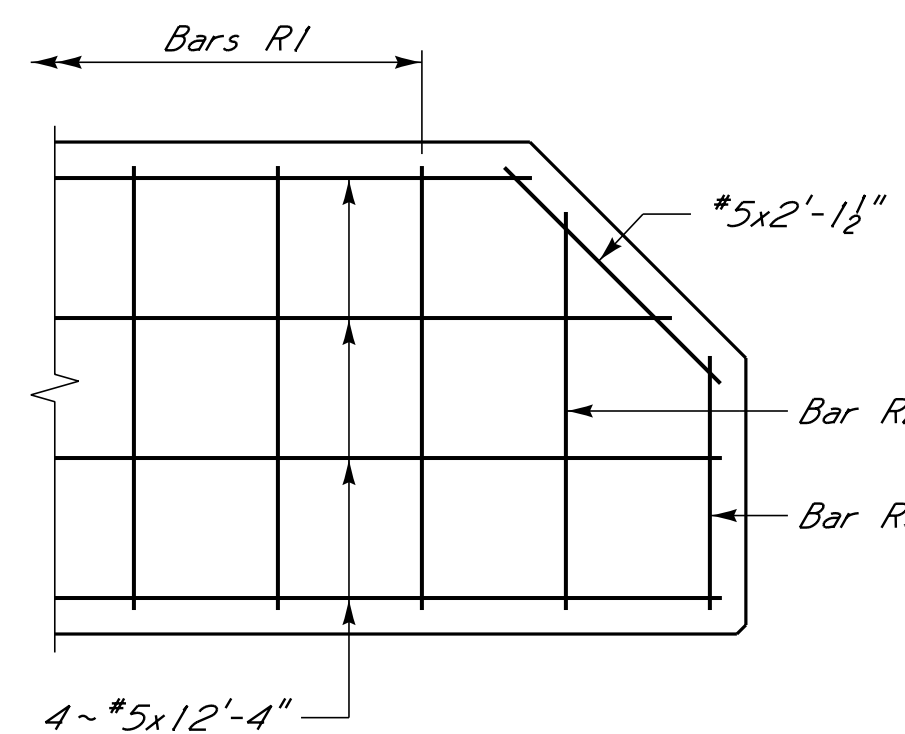


ELEVATION

Scale: 3/8" = 1'-0"

NOTES:

All concrete in cap shall be Class "AA".
Chamfer all edges 3" unless noted otherwise.
Placing dimensions from reinforcing steel to concrete surfaces are clear distances.
For SECTION E-E, see sht. no. 11.
For laminated bearing pad details, see sht. no. 32.
For PIPE PILE ENCASEMENT & INFILL DETAILS, SHEAR KEY DETAILS and BAR BENDING DETAILS, See sht. no. 12.



RISER CLIP DETAIL

Scale: 3/4" = 1'-0"

COLUMN DATA TABLE	
Pile No.	"L"
1	17'-3 13/16"
2	17'-10 1/8"
3	18'-5 3/4"
4	19'-0 1/6"
5	19'-7 1/4"

LEGEND:

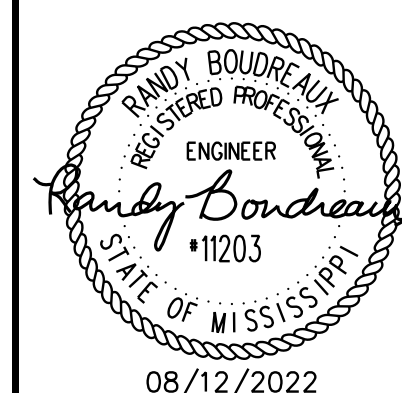
e.f. = each face
f.f. = far face
n.f. = near face

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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

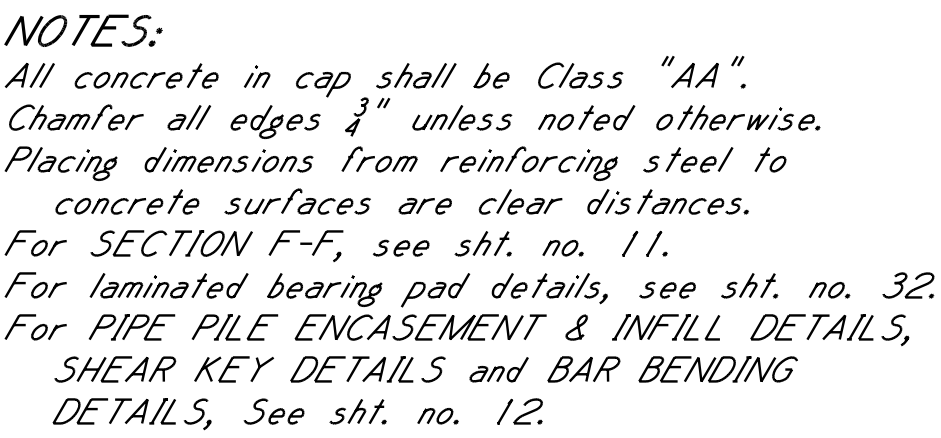
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



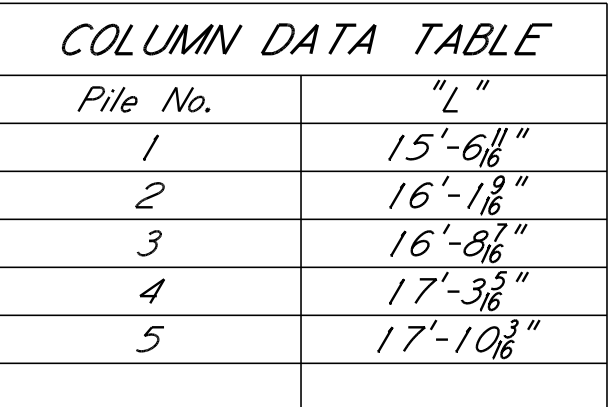
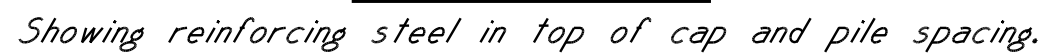
INT. BENT 4 DETAILS

WORKING NUMBER:
9 OF 59

DRAWING NUMBER:
8011



Showing concrete dimensions, cap steps and bearing pad placement.

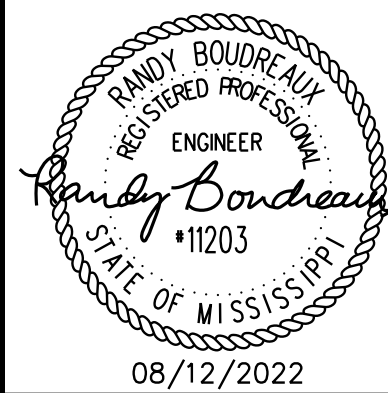


LEGEND:
e.f. = each face
f.f. = far face
n.f. = near face

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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI

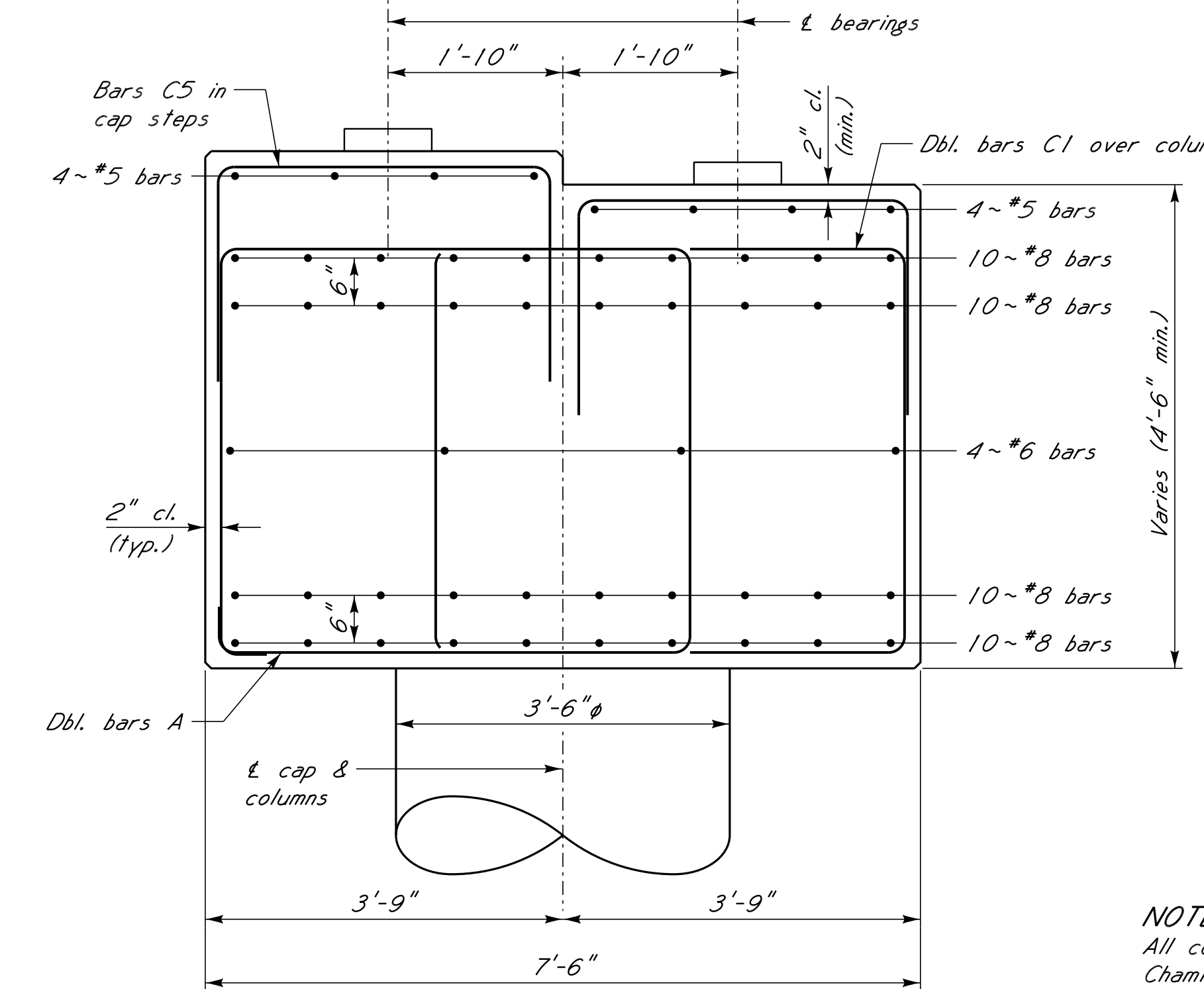
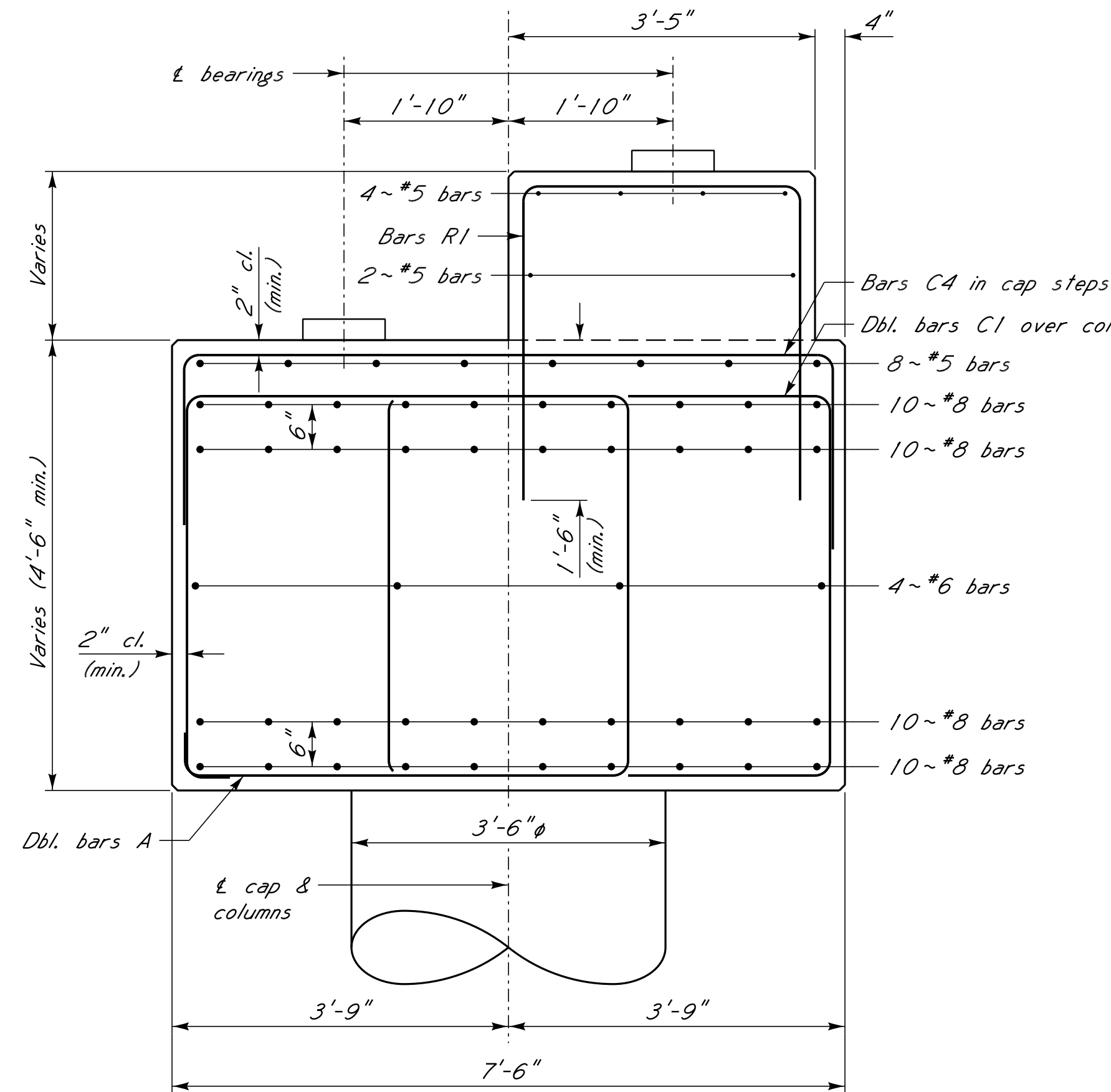
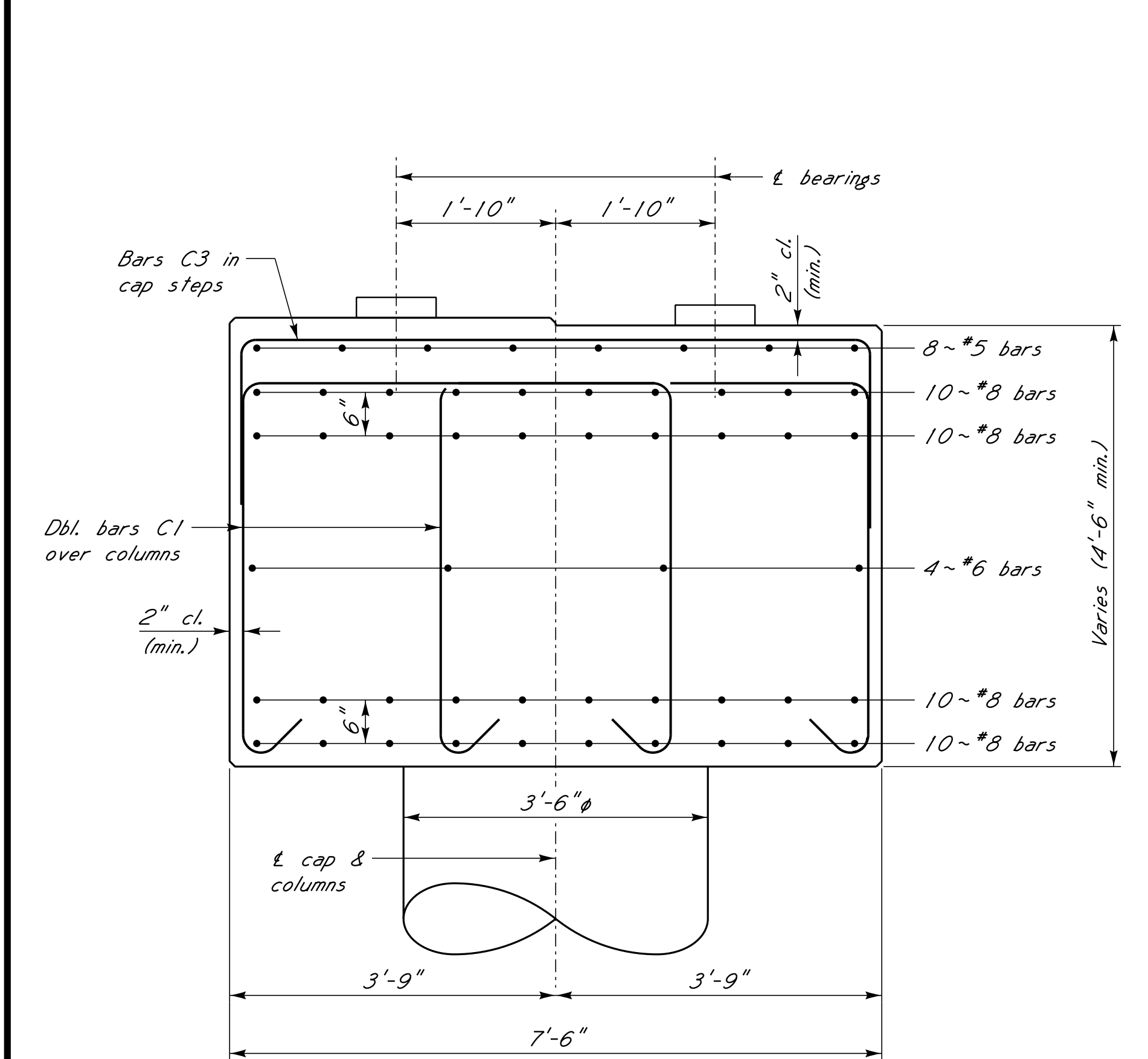
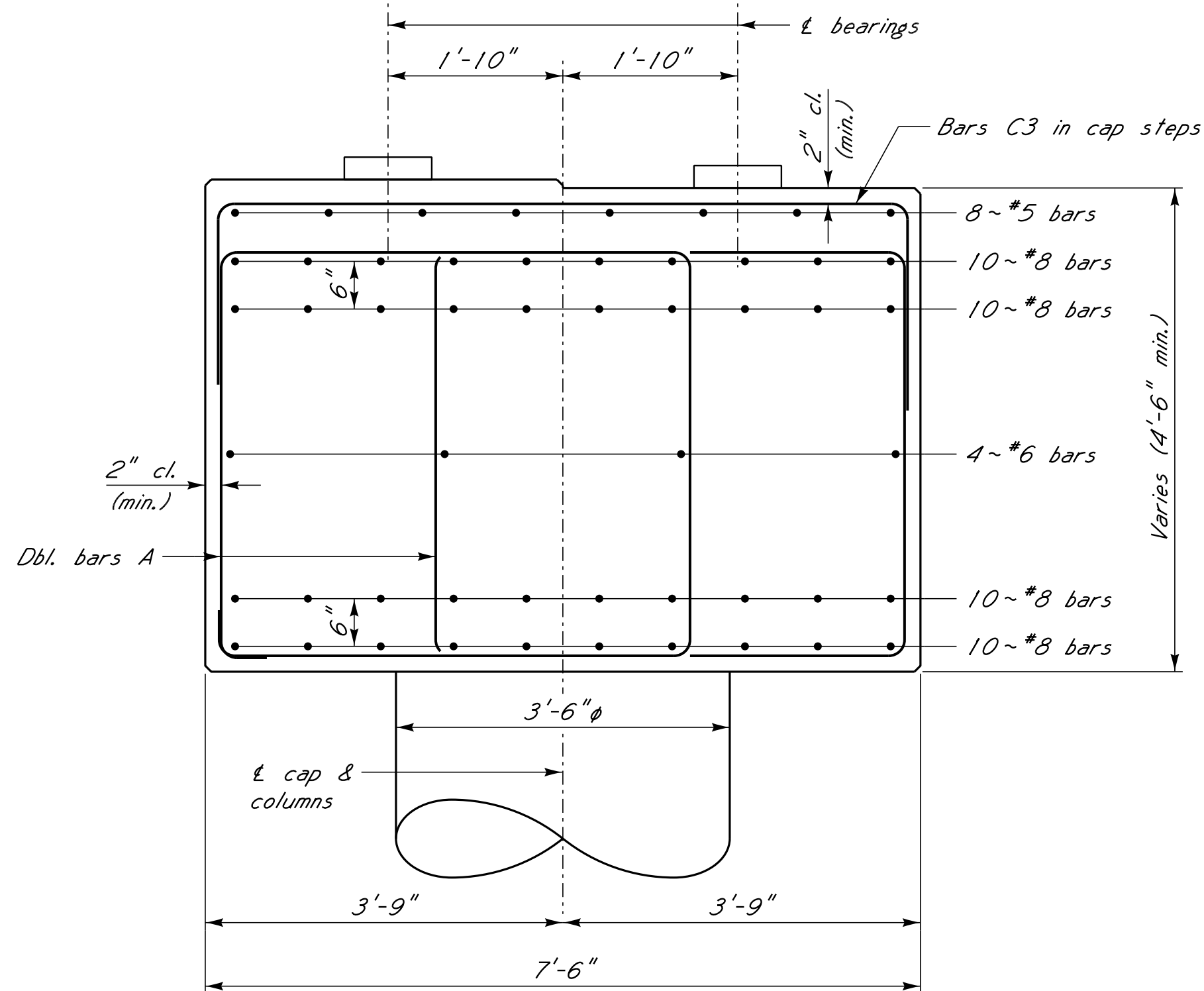
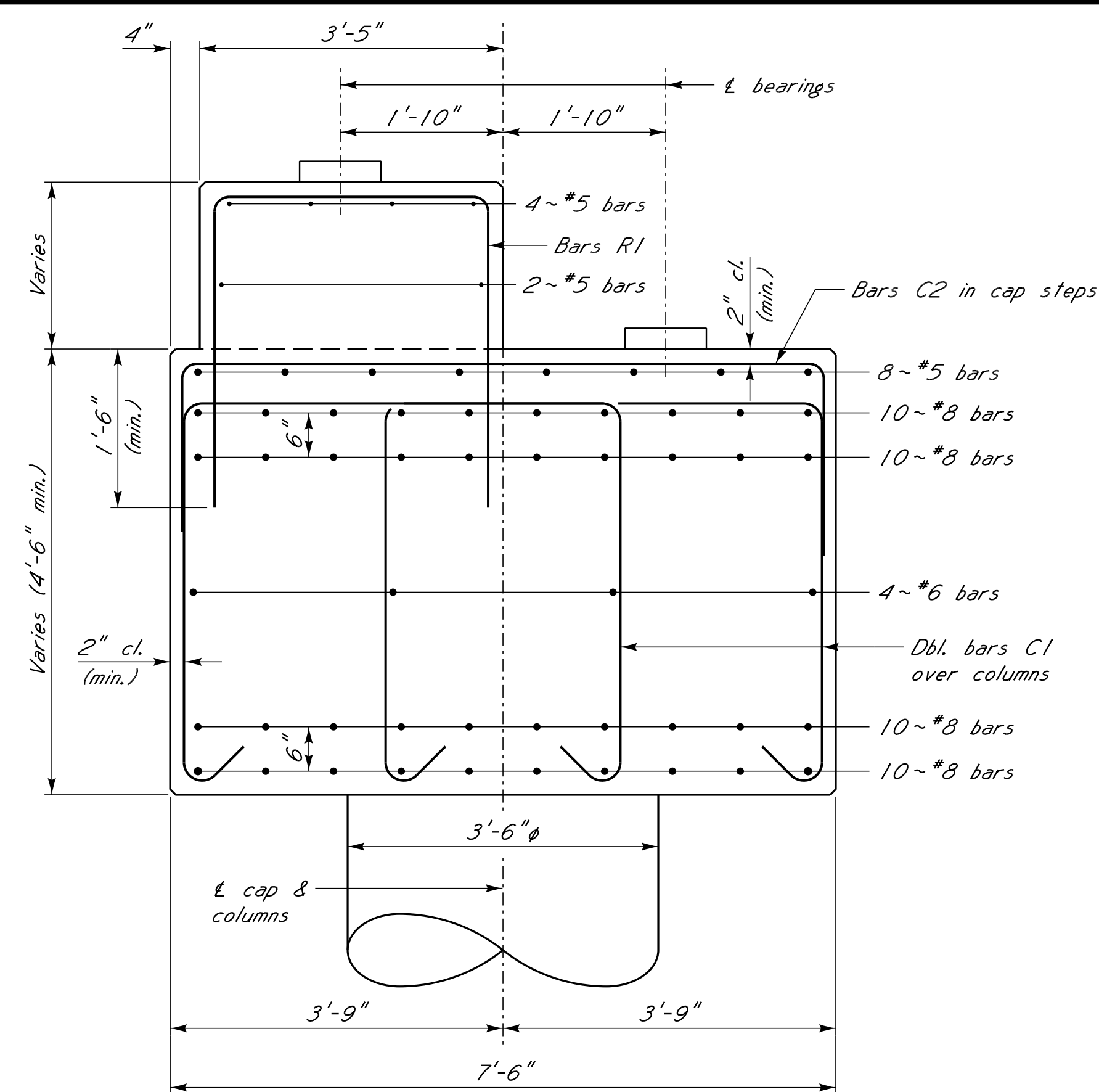
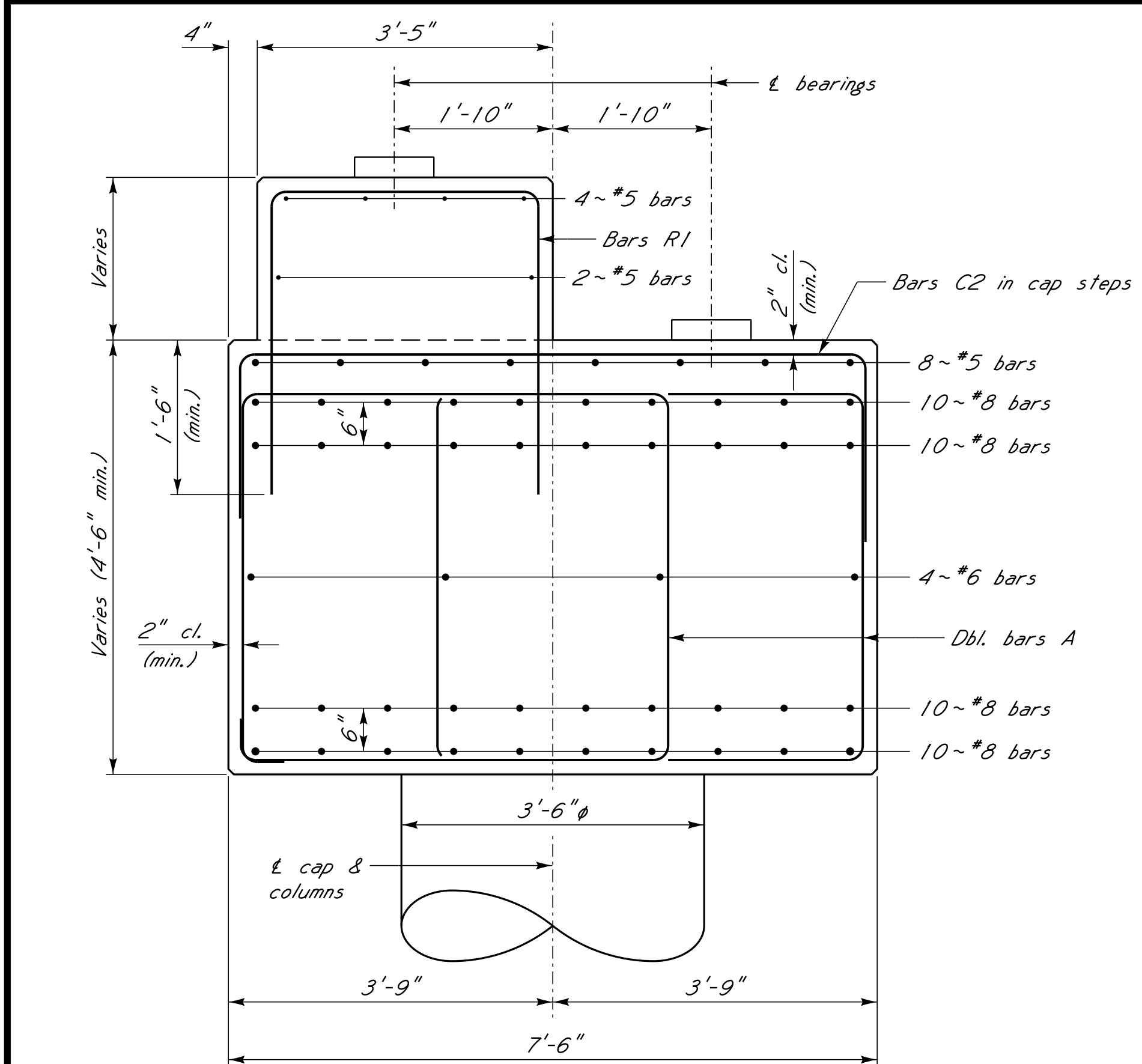


INT. BENT 5 DETAILS

WORKING NUMBER
10 OF 59

DRAWING NUMBER:
8012

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-1-Int. Bent Sections - DS.dgn
DATE: 8/12/2022 TIME: 1:42:58 PM USER: RJB



NOTES:
All concrete in cap shall be Class "AA".
Chamfer all edges $\frac{3}{4}$ " unless noted otherwise.
Placing dimensions from reinforcing steel to concrete surfaces are clear distances.
For location of sections, see sht. nos. 7 to 10.

REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
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				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

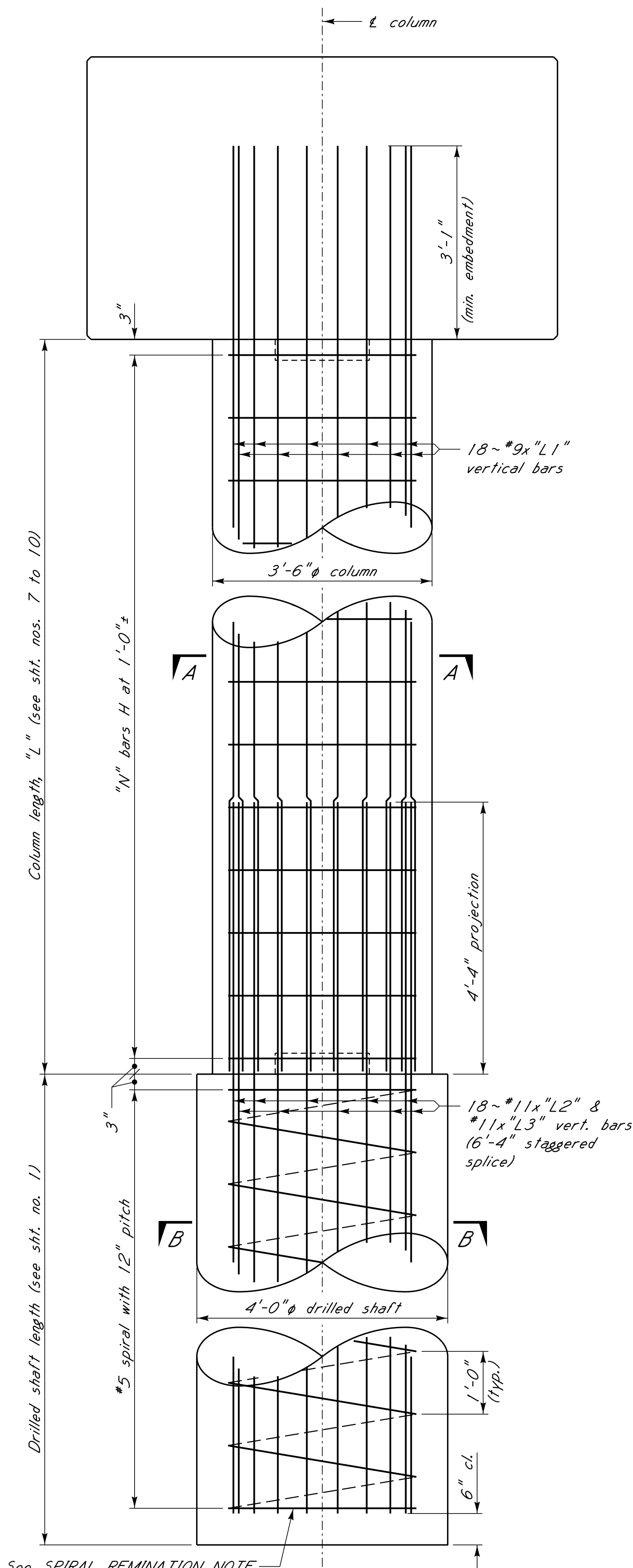
NOTICE TO DRAWING HOLDER
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HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

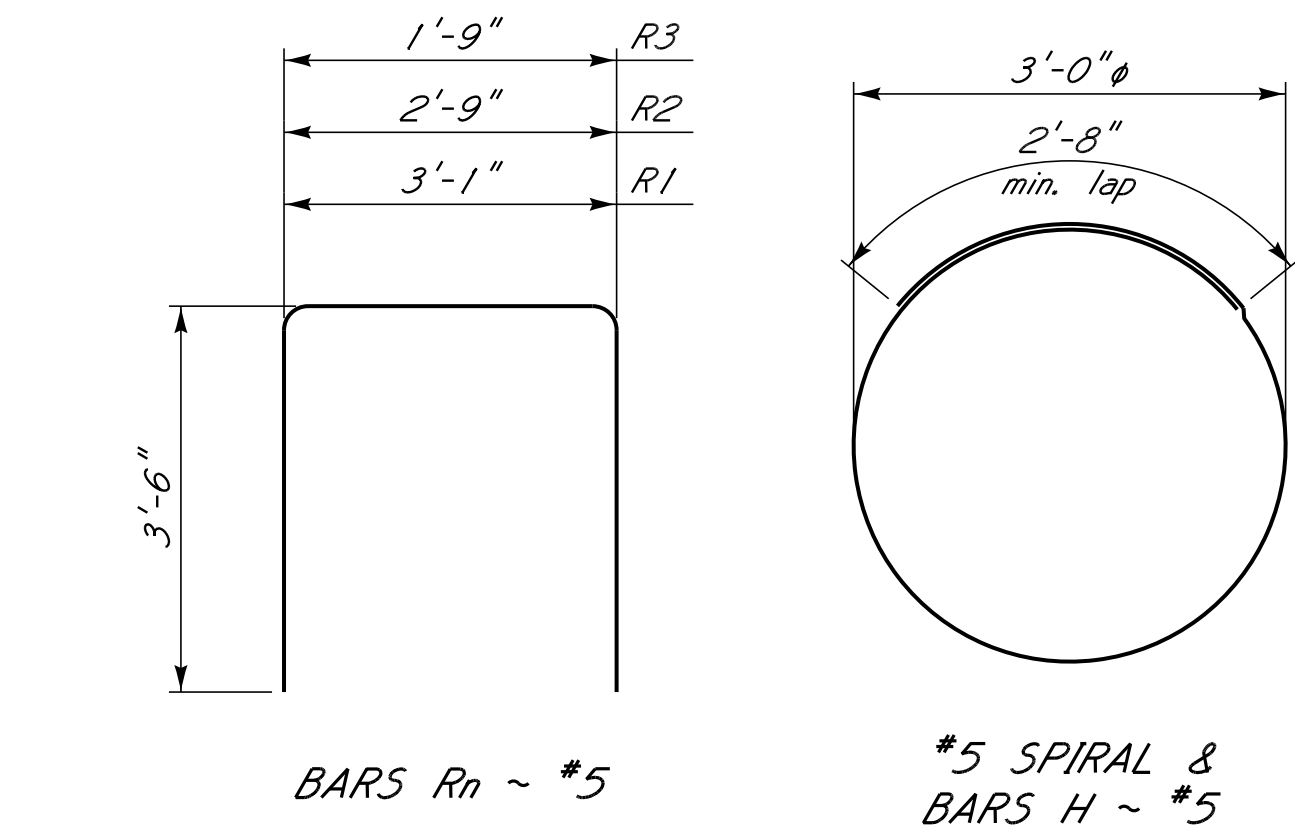


INT. BENT SECTIONS	
WORKING NUMBER: 11 OF 59	DRAWING NUMBER: 8011

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-12-Int. Bent Details - DS.dgn
DATE: 8/12/2022 TIME: 1:42:59 PM USER: RJB



SIDE ELEVATION ~ BENTS 2, 3, 4 & 5
Scale: N.T.S.

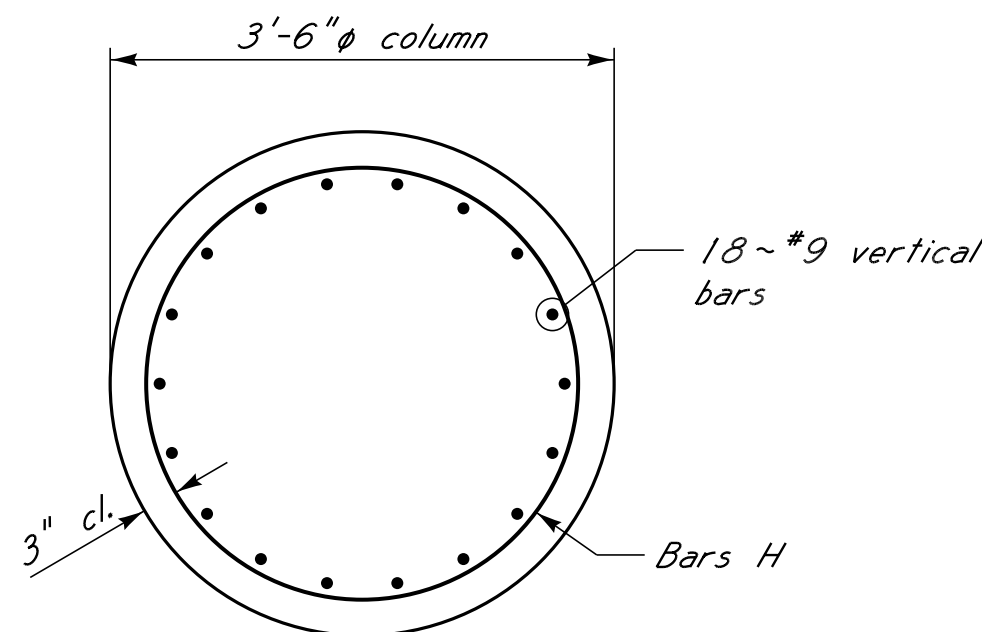


BAR BENDING DETAILS
Dimensions are out to out.

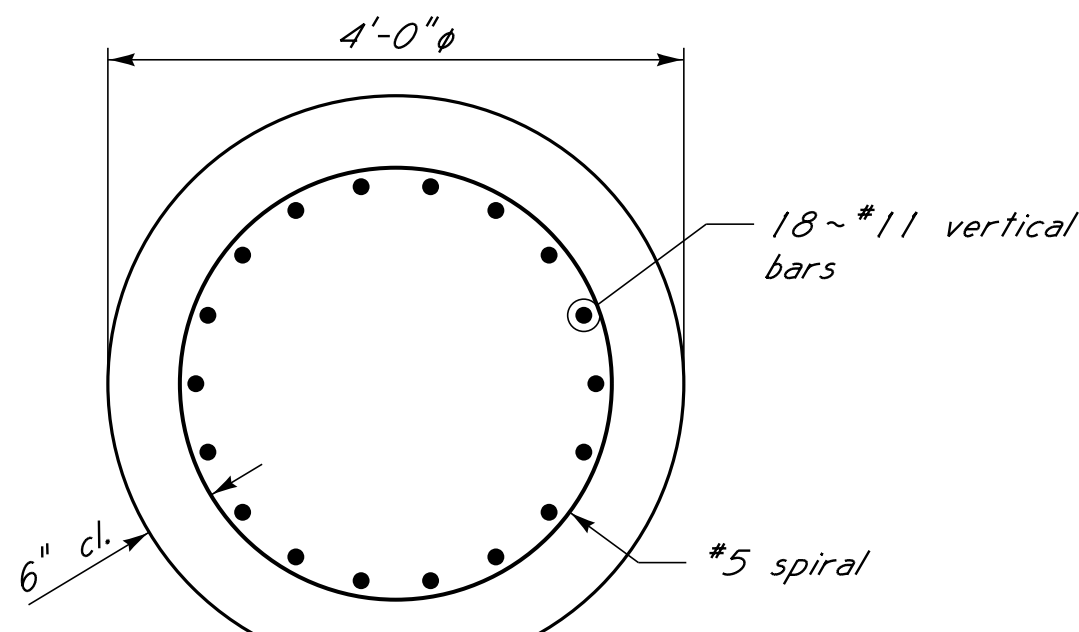
SPIRAL TERMINATION NOTE:
Terminations of all spiral reinforcement shall be provided by 1 1/2 extra turns of the spiral bar at each end of spiral.

SPIRAL SPLICE NOTES:
See #5 spiral bar bending detail for permissible lap splice.

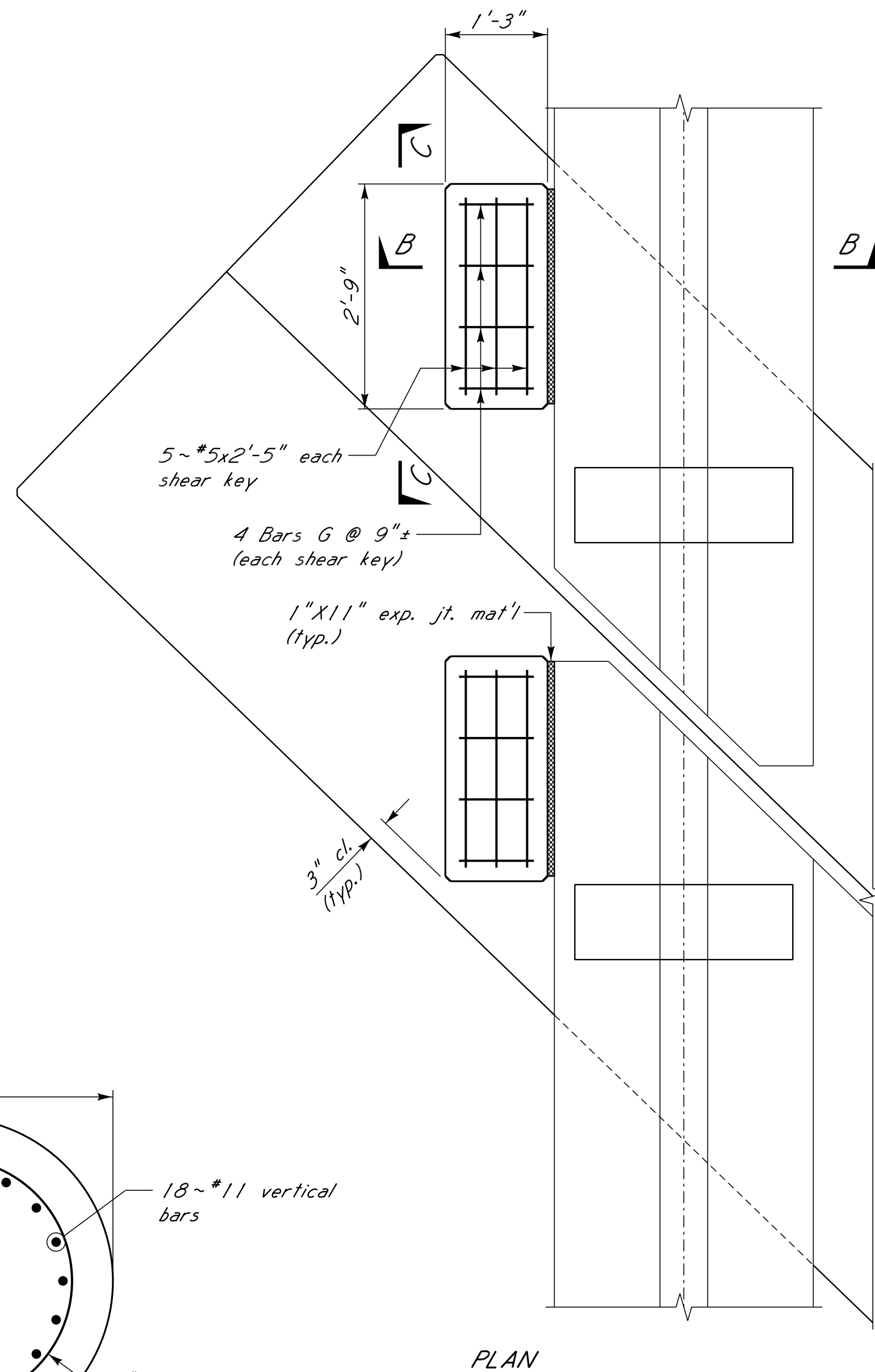
COLUMN & SHAFT DATA TABLE				
Col. No.	"L1"	"L2"	"L3"	"N"
Int. Bent 2				
1	23'-4"	60'-0"	24'-0"	21
2	23'-0"	60'-0"	24'-0"	21
3	22'-9"	60'-0"	24'-0"	21
4	22'-5"	60'-0"	24'-0"	21
5	22'-1"	60'-0"	24'-0"	20
Int. Bent 3				
1	24'-8"	60'-0"	29'-0"	22
2	25'-0"	60'-0"	29'-0"	23
3	25'-3"	60'-0"	29'-0"	23
4	25'-7"	60'-0"	29'-0"	23
5	25'-11"	60'-0"	29'-0"	24
Int. Bent 4				
1	20'-5"	60'-0"	19'-0"	18
2	21'-0"	60'-0"	19'-0"	19
3	21'-7"	60'-0"	19'-0"	20
4	22'-2"	60'-0"	19'-0"	20
5	22'-9"	60'-0"	19'-0"	21
Int. Bent 5				
1	18'-8"	60'-0"	9'-0"	16
2	19'-3"	60'-0"	9'-0"	17
3	19'-10"	60'-0"	9'-0"	17
4	20'-5"	60'-0"	9'-0"	18
5	21'-0"	60'-0"	9'-0"	18



SECTION A-A
Scale: 3/4" = 1'-0"



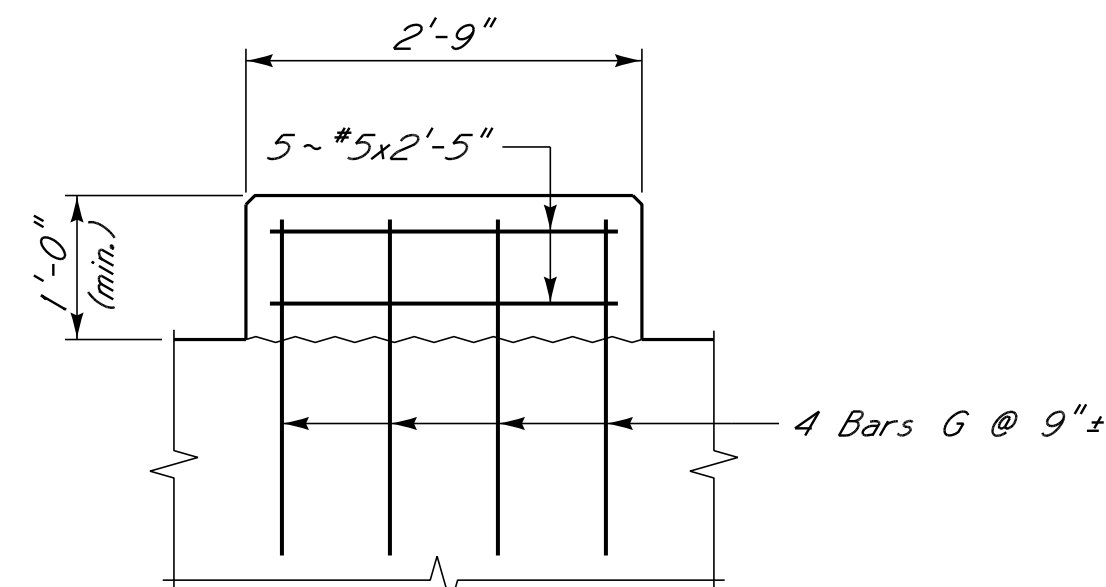
SECTION B-B
Scale: 3/4" = 1'-0"



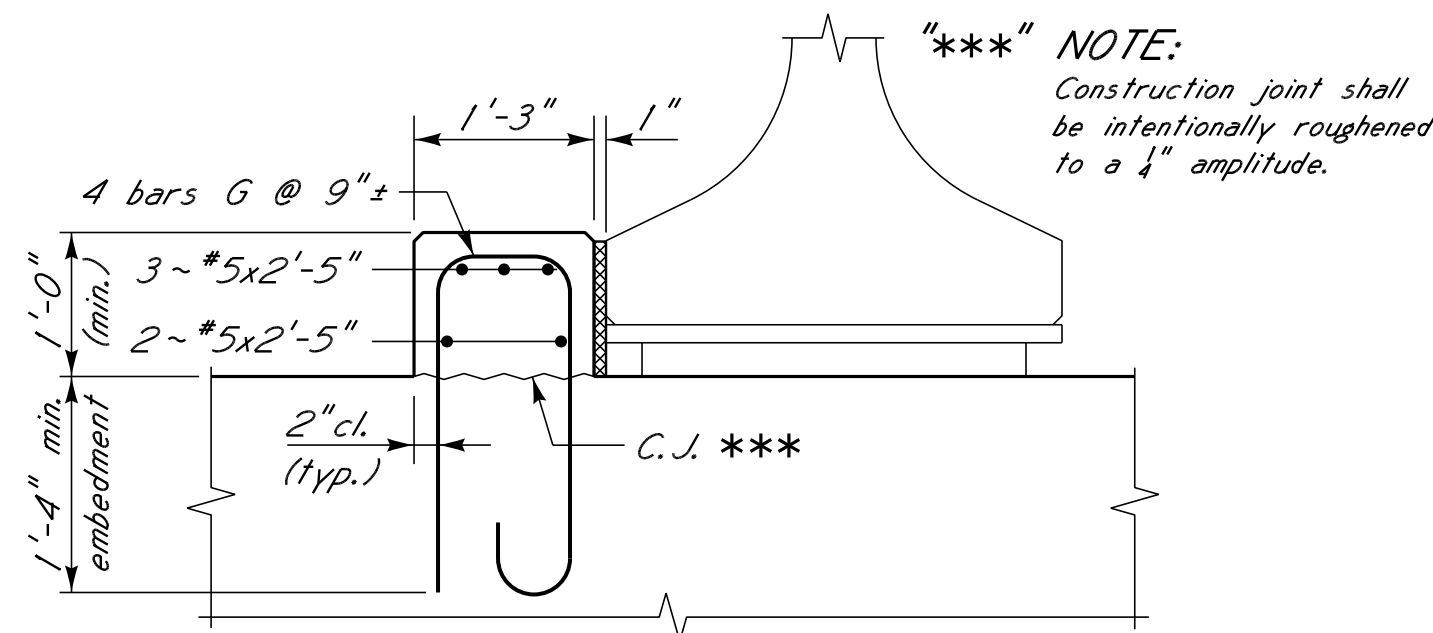
PLAN

CONCRETE SHEAR KEY DETAIL
Scale: 3/4" = 1'-0"

NOTE:
Shear keys shall be poured tight against expansion joint material after beams have been set on bearing pads.



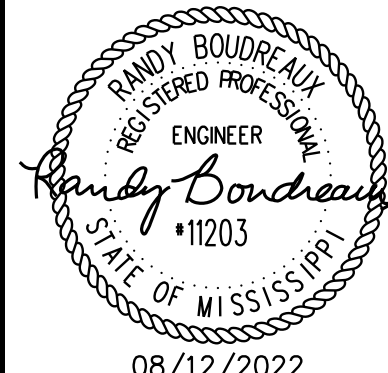
SECTION C-C



SECTION B-B

NOTES:
All concrete in cap shall be Class "AA".
Chamfer all edges 3/4" unless noted otherwise.
Placing dimensions from reinforcing steel to concrete surfaces are clear distances.
For int. bent details, see sht. nos. 7 to 11.

HALL AVENUE WEST - PHASE 2
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FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



INT. BENT DETAILS

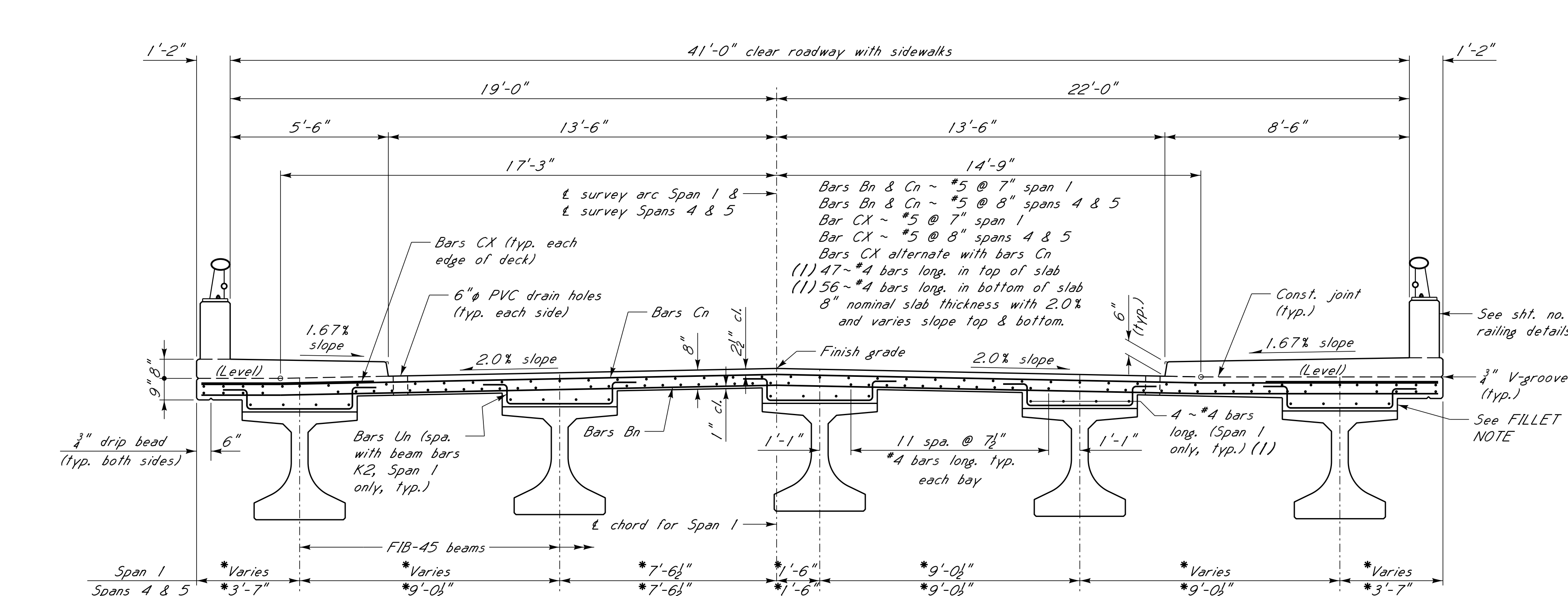
WORKING NUMBER:
12 OF 59

DRAWING NUMBER:
8014

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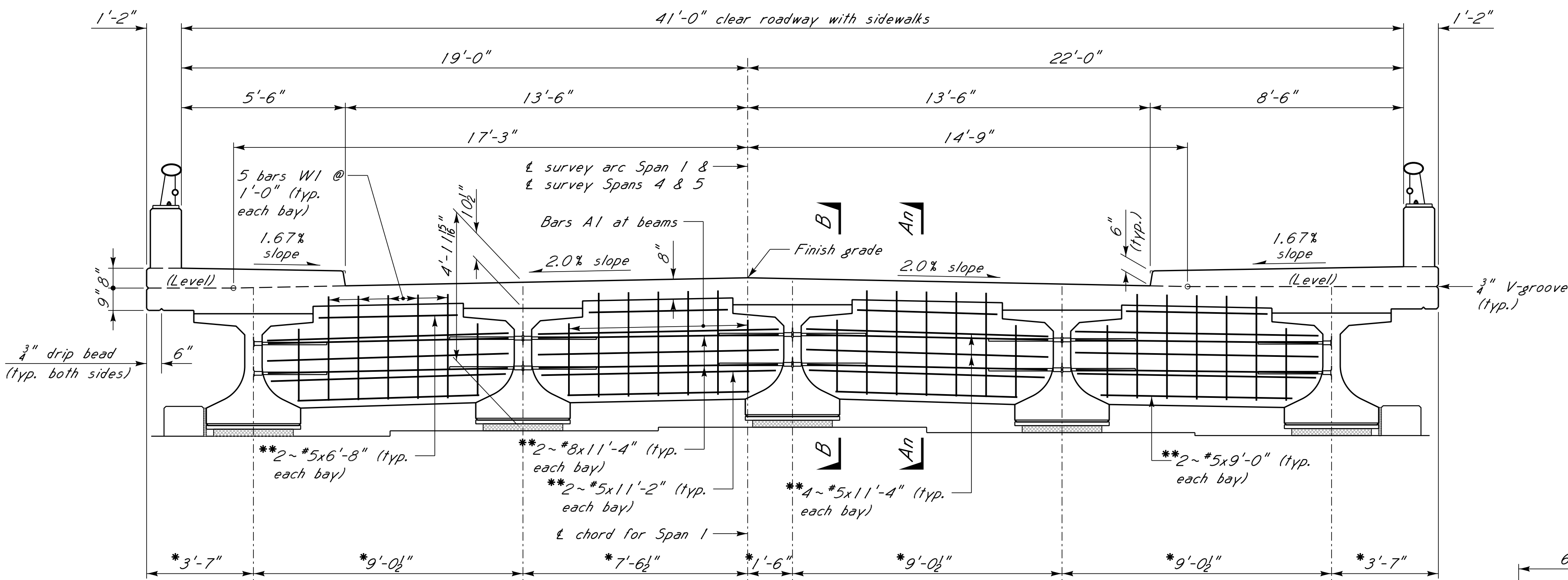
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			DSGN: RJB	DATE: 06/2022
			DRWN: RJB	DATE: 06/2022
			CHKD: BKC	DATE: 08/2022
			QA/QC:	DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-13-Typical Section Spans 1, 4 & 5.dgn
DATE: 8/12/2022 TIME: 1:42:59 PM USER: RJB



(1) NOTE: Spans 1: 60'-0" & 19'-0" with staggered 1'-8" min. lap splice each line
Spans 4 & 5: 60'-0" & 46'-7" with staggered 1'-8" min. lap splice each line

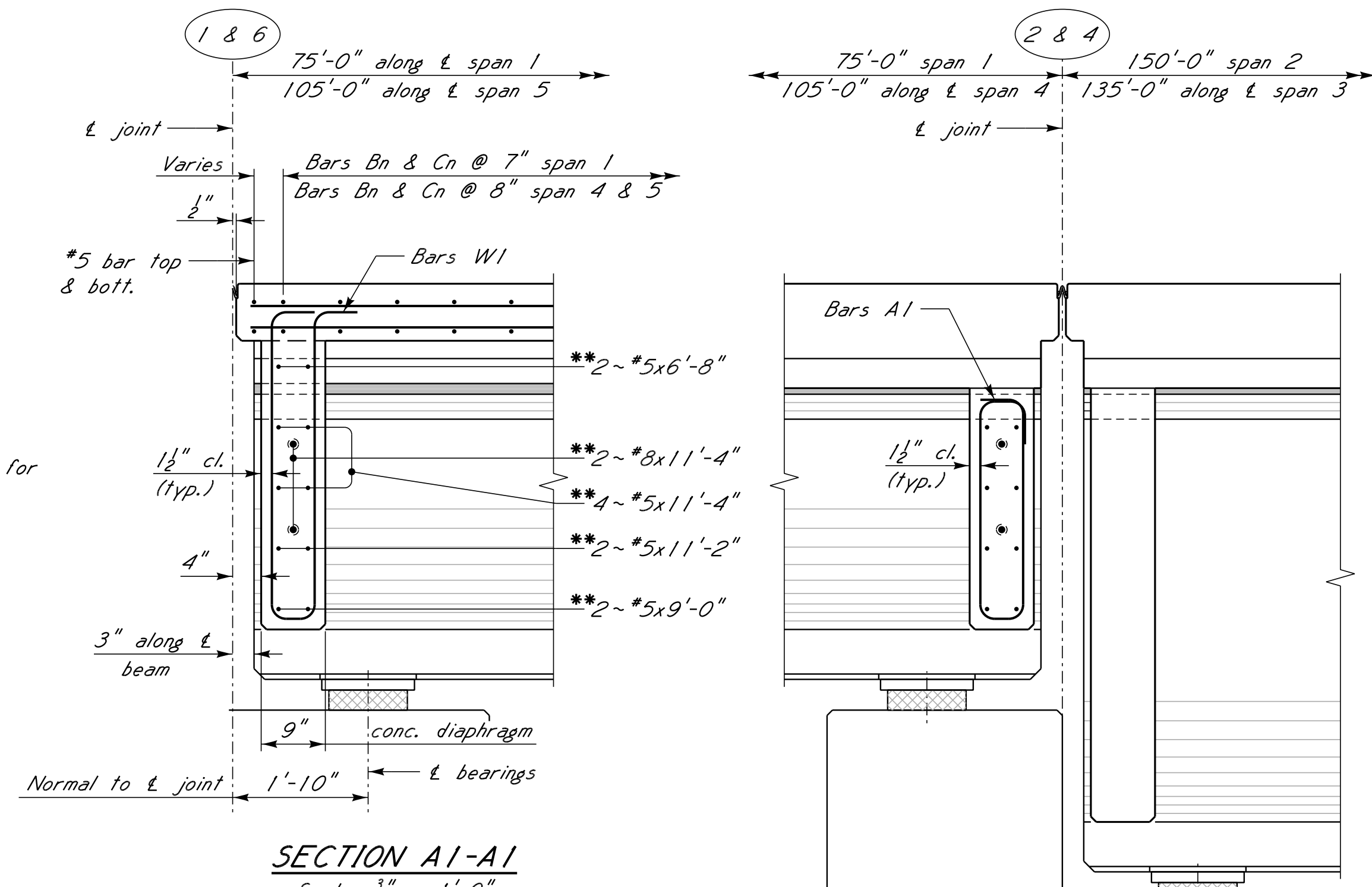
TYPICAL SECTION NEAR MIDSPAN
Showing slab reinforcing. Drawn for Span 1. Spans 4 & 5 have normal fillets.
Scale: $\frac{3}{8}$ " = 1'-0"



TYPICAL SECTION NEAR END OF SPAN
Showing end diaphragm reinforcing for spans 4 and 5.
Scale: $\frac{3}{8}$ " = 1'-0"

" " BEAM LAYOUT NOTES:
Span 1 (curved):
Exterior beams are placed 3'-7" from $\perp$ beam to edge of deck at the $\perp$ bearing.
Interior beams are placed parallel to the $\perp$ survey chord to the $\perp$ joint.
Spans 4 & 5 (tangent):
All beams are offset parallel to $\perp$ survey.

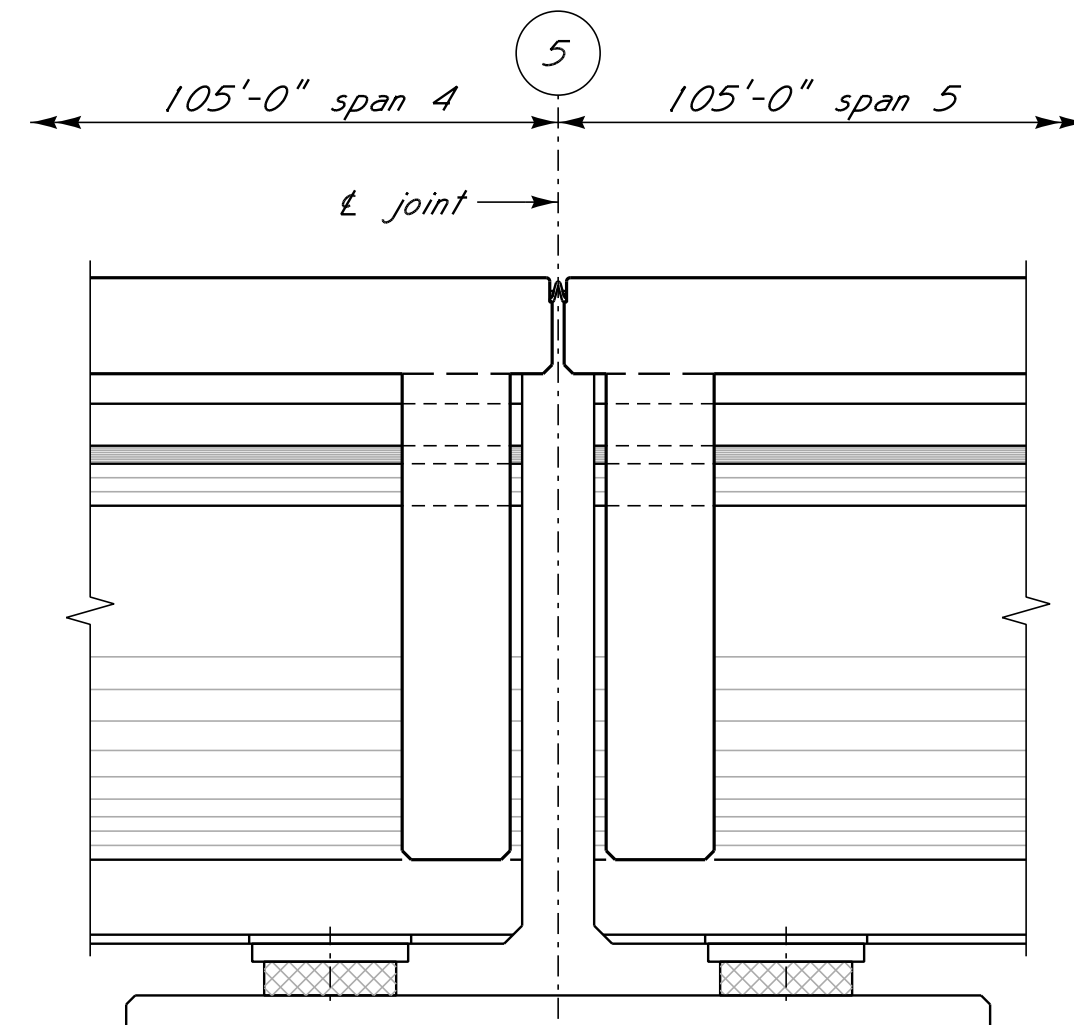
** SPAN 1 END DIAPHRAGM BAR LENGTHS						
Bar Row (measured from top)	Bent 1			Bent 2		
	Bay 1	Bay 2 & 3	Bay 4	Bay 1	Bay 2 & 3	Bay 4
Row 1	2 ~ *5x4'-10"	2 ~ *5x5'-11"	2 ~ *5x4'-10"	2 ~ *5x7'-5"	2 ~ *5x5'-11"	2 ~ *5x7'-6"
Row 2 & 4	4 ~ *5x9'-3"	4 ~ *5x10'-4"	4 ~ *5x9'-2"	4 ~ *5x11'-10"	4 ~ *5x10'-4"	4 ~ *5x11'-10"
Row 3 & 5	2 ~ *8x9'-3"	2 ~ *8x10'-4"	2 ~ *8x9'-2"	2 ~ *8x11'-10"	2 ~ *8x10'-4"	2 ~ *8x11'-10"
Row 6	2 ~ *5x9'-1"	2 ~ *5x10'-1"	2 ~ *5x8'-11"	2 ~ *5x11'-8"	2 ~ *5x10'-1"	2 ~ *5x11'-7"
Row 7	2 ~ *5x7'-3"	2 ~ *5x8'-4"	2 ~ *5x7'-2"	2 ~ *5x9'-10"	2 ~ *5x8'-4"	2 ~ *5x9'-10"



SECTION A1-A1
Scale: $\frac{3}{4}$ " = 1'-0"

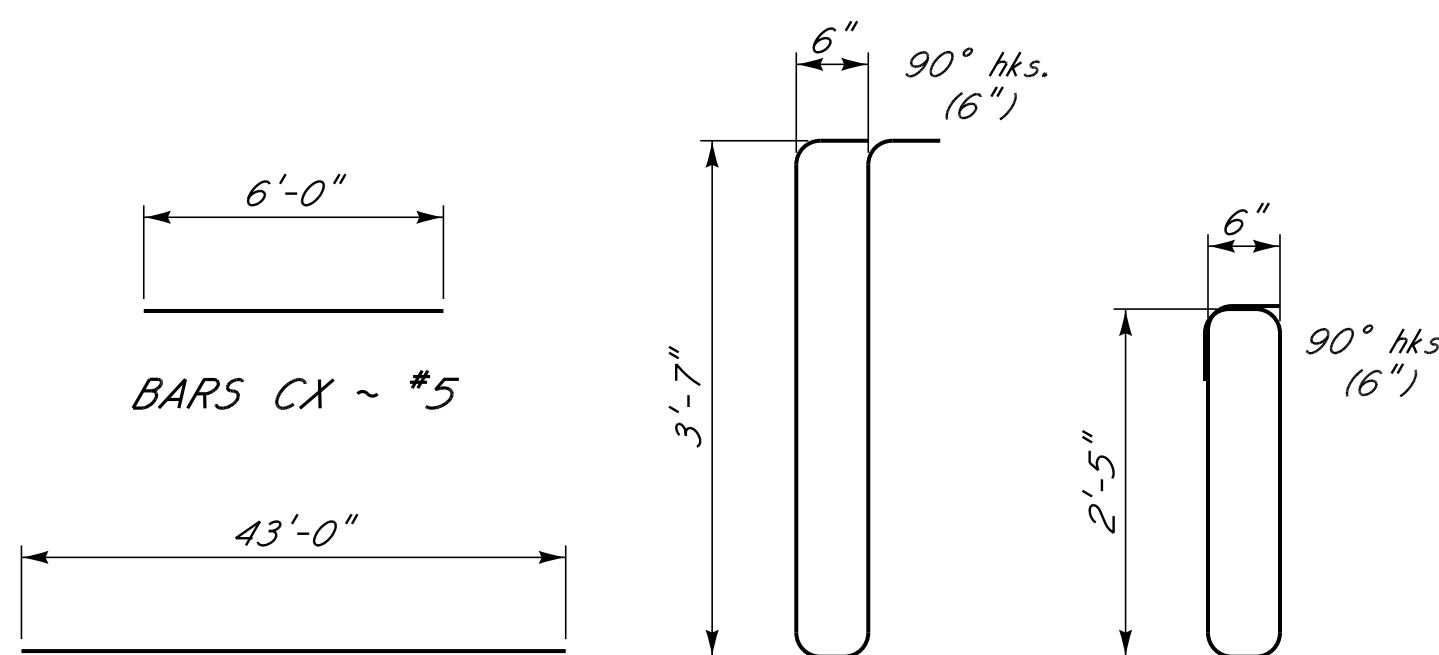
SECTION B-B
Scale: $\frac{3}{4}$ " = 1'-0"

NOTE: See Section A1-A1 for elements not labeled.



SECTION A2-A2
Scale: $\frac{3}{4}$ " = 1'-0"

NOTE: See Section A1-A1 and B-B for reinforcement.



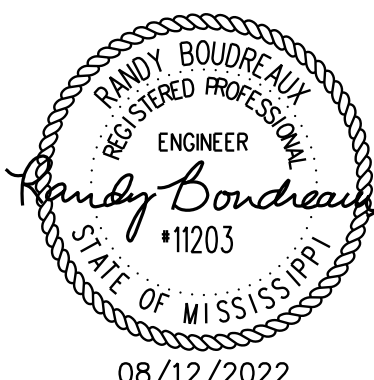
BAR BENDING DETAILS
Dimensions are out to out.

FILLET NOTE:
Due to the profile grade vertical curve, the theoretical fillet depth near mid span for an average beam camber will be 6"± on Span 1.

DESIGN DATA:
Specifications A.A.S.H.T.O., LRFD 2020
Traffic Loading HL-93
Pedestrian Loading 75 lbs/sf on sidewalks
S.I.P. Forms 18 lbs/sf between flanges
Rail Concrete Class "AA" (4,000 psi)
Bridge Deck Concrete Class "BD" (4,000 psi)
Prestressed Beam Concrete Class "F" (5,000 psi) Span 1
Class "FX" (6,000 psi) Spans 4 & 5
Reinforcing A.S.T.M. A615 grade 60 (Fy=60 ksi)

NOTES:
The volume of concrete in the fillets between the bottom of nominal slab and top of the beams has been estimated by using the average fillet height of 4 1/2" along the beam for Span 1 and the normal fillet height of 2 1/2" along the beam for Spans 4 and 5 times the top flange width for the full length of the beam. This volume shall be used for final pay quantity. Any additional concrete required in the fillet resulting from an unexpected camber in the beam will not be directly paid for and shall be considered an absorbed item. For GENERAL NOTES, railing details and other typical span details, see sht. nos. 1, 14 to 18, 25 and 27. For prestressed beam details, see sht. nos. 28 to 33.

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TYPICAL SECTION
SPANS 1, 4 & 5

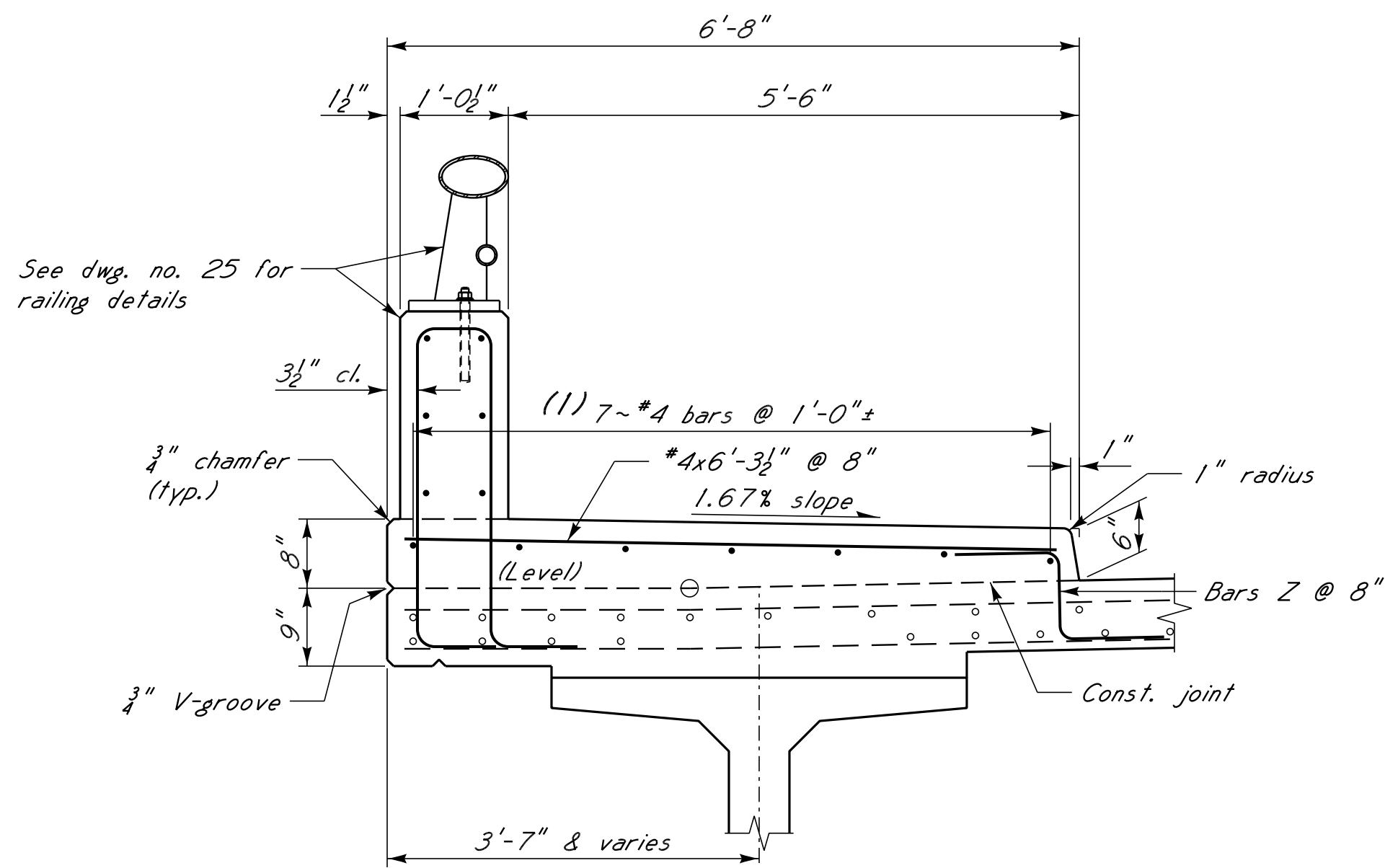
WORKING NUMBER:
13 OF 59

DRAWING NUMBER:
8015

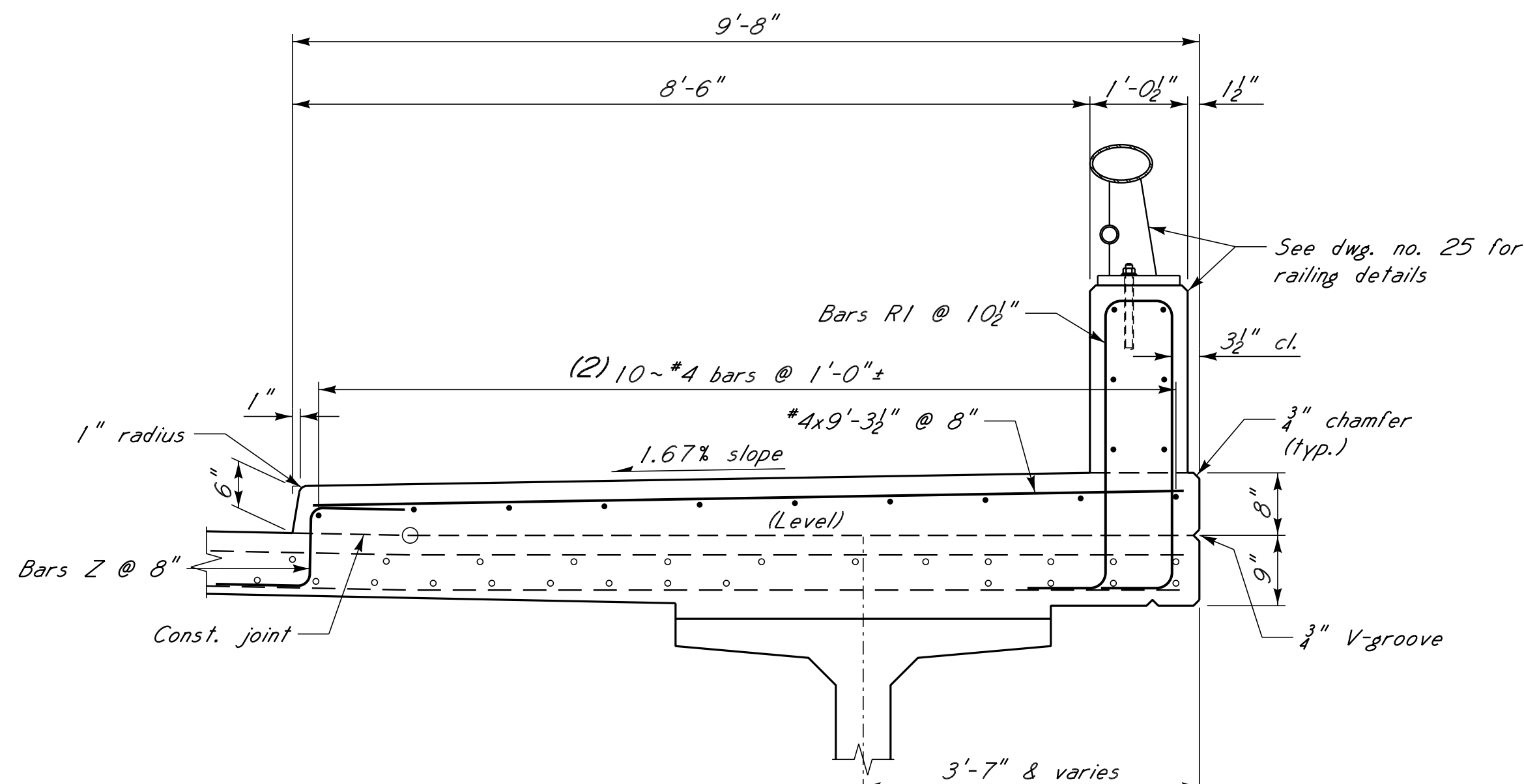
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				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

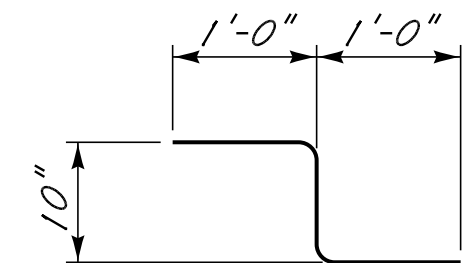
FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-15-Sidewalk Typical Sections & Plan of Raised Sidewalk Span 1.dgn
DATE: 8/12/2022 TIME: 1:43:00 PM USER: RJB



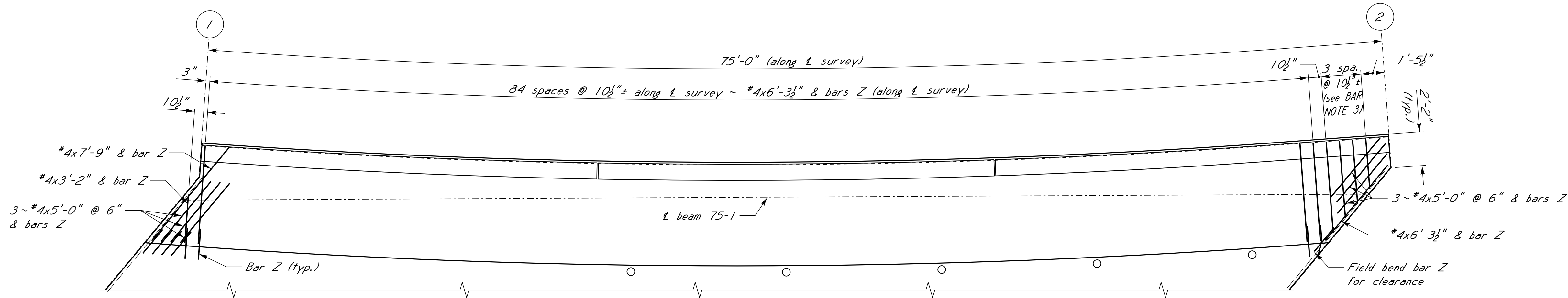
LEFT SIDEWALK DETAIL
Scale: 3/4" = 1'-0"



RIGHT SIDEWALK DETAIL
Scale: 3/4" = 1'-0"

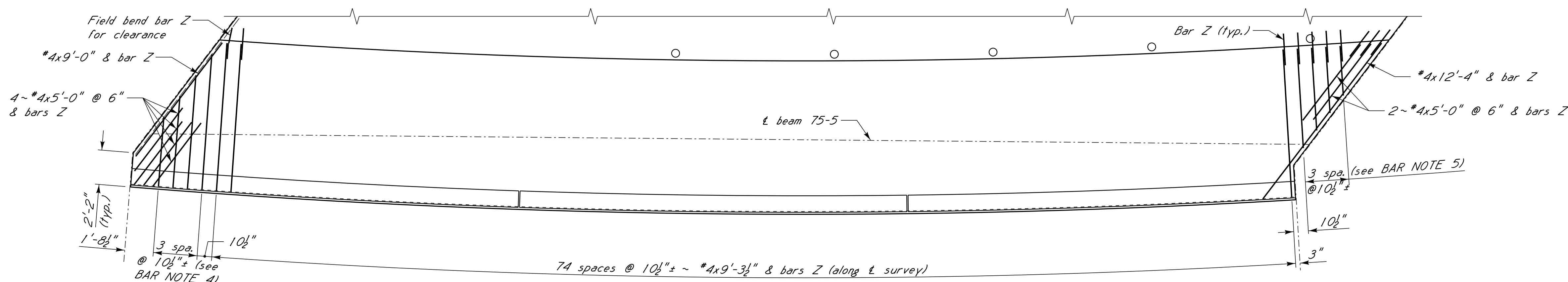


BAR BENDING DETAILS
Dimensions are out to out.



PLAN OF LEFT SIDEWALK ~ SPAN 1
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: 1/4" = 1'-0"

BAR NOTE 3:
Varies #4x3'-3" to #4x5'-10"



BAR NOTE 4:
Varies #4x4'-4 1/2" to #4x8'-6 1/2"

PLAN OF RIGHT SIDEWALK ~ SPAN 1
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: 1/4" = 1'-0"

BAR NOTE 5:
Varies #4x3'-2" to #4x6'-3" & bars Z

BAR NOTE 1:
Spans 1: 60'-0" & 18'-0" with staggered 1'-8" min.
lap splice each line
Span 2: 2 @ 60'-0" & 32'-0" with 2 staggered 1'-8" min.
lap splices each line
Span 3: 2 ~ 60'-0" & 18'-3" with 2 staggered 1'-8" min.
lap splices each line
Spans 4 & 5: 60'-0" & 46'-7" with staggered 1'-8" min.
lap splice each line

BAR NOTE 2:
Spans 1: 60'-0" & 15'-2" with staggered 1'-8" min.
lap splice each line
Span 2: 2 @ 60'-0" & 32'-0" with 2 staggered 1'-8" min.
lap splices each line
Span 3: 2 ~ 60'-0" & 18'-3" with 2 staggered 1'-8" min.
lap splices each line
Spans 4 & 5: 60'-0" & 46'-7" with staggered 1'-8" min.
lap splice each line

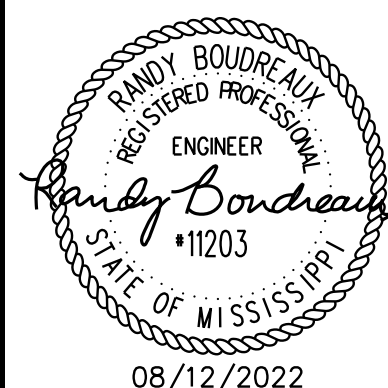
NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 13.
For plan of span, see sht. no. 14.

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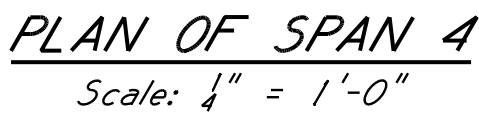
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



**TYPICAL SIDEWALK SECTIONS
& PLAN OF SIDEWALKS
SPAN 1**

WORKING NUMBER:
15 OF 59

DRAWING NUMBER:
8017



RAILING BARS	
Mark	Quantity
R1	248

NOTES:
 For GENERAL NOTES, see sht. no. 1.
 For typical sections of span, see sht. no. 13.
 For plan of sidewalks, see sht. no. 18.
 For railing details, see sht. no. 25.
 For misc. span details, see sht. no. 27.
 For prestressed beam details, see sht. nos. 28,
 to 33.

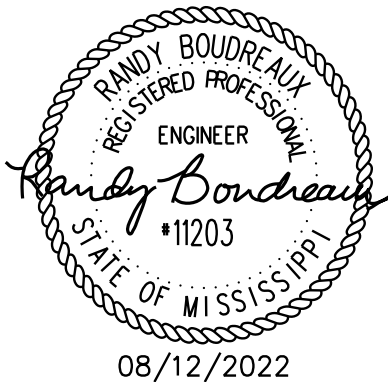
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DATE: 8/12/2022 TIME: 1:43:00 PM USER: RJB

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				DRWN: RJB	DATE: 06/2022
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CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI

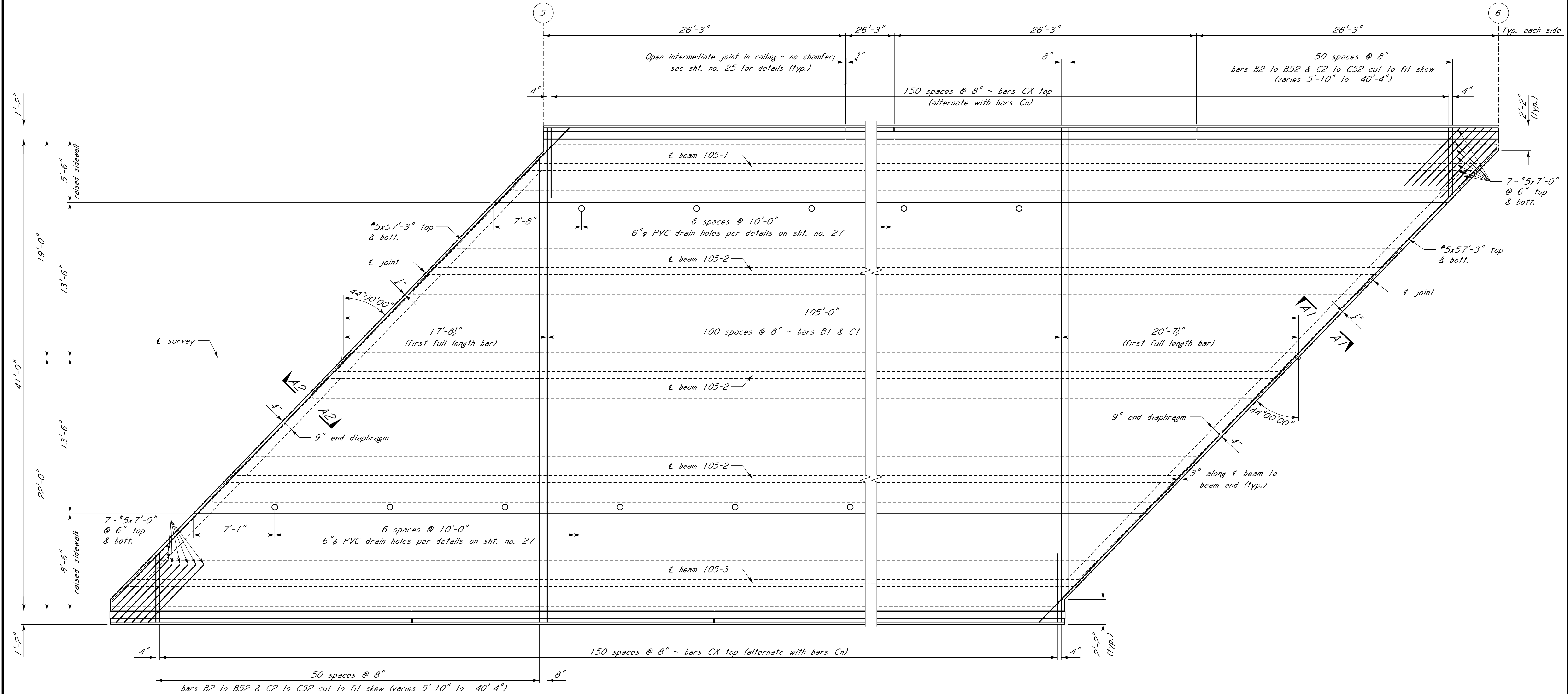


PLAN OF SPAN 4

WORKING NUMBER
16 OF 59

DRAWING NUMBER:
8018

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-17-Plan of Span 5.dgn
DATE: 8/12/2022 TIME: 1:43:00 PM USER: RJB



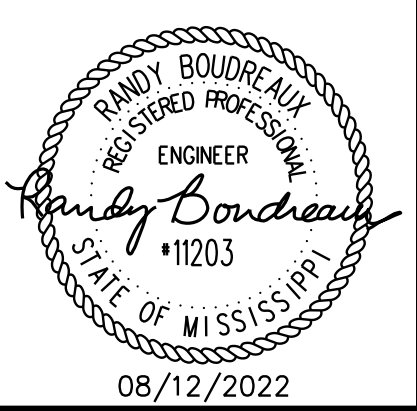
PLAN OF SPAN 5
Scale: 1/4" = 1'-0"

RAILING BARS	
Mark	Quantity
R1	248

NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 13.
For plan of sidewalks, see sht. no. 18.
For railing details, see sht. no. 25.
For misc. span details, see sht. no. 27.
For prestressed beam details, see sht. nos. 28 to 33.

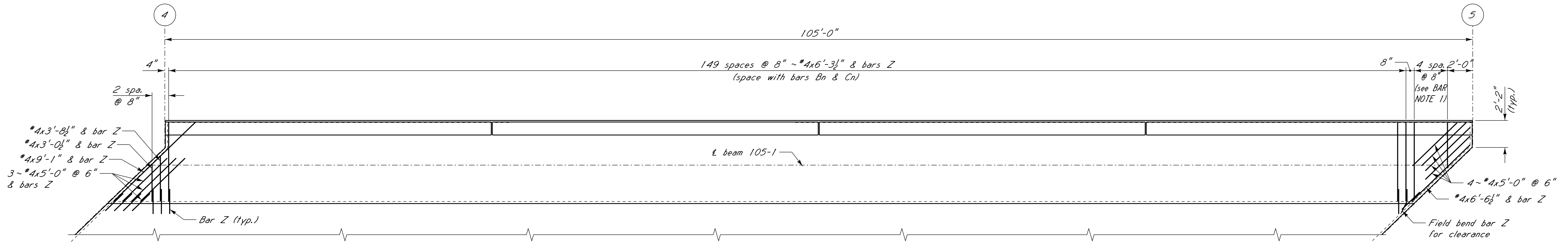
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				CHKD: BKC		DATE: 08/2022	
				QA/QC:		DATE:	

HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



PLAN OF SPAN 5	
WORKING NUMBER: 17 OF 59	DRAWING NUMBER: 8019

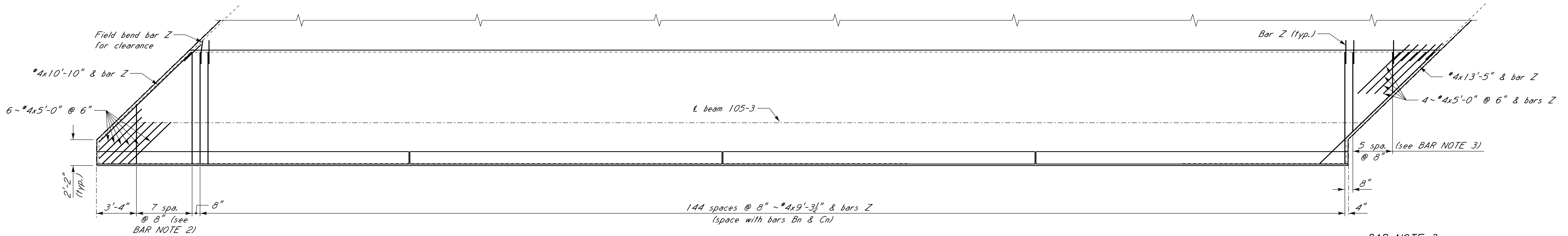
FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-18-Plan of Raised Sidewalk Spans 4 & 5.dgn
DATE: 8/12/2022 TIME: 1:43:00 PM USER: RJB



PLAN OF LEFT SIDEWALK ~ SPAN 4

Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Span 5 is similar.
Scale: $\frac{1}{4}$ " = 1'-0"

BAR NOTE 1:
Varies #4x3'-8" to #4x6'-3"



PLAN OF RIGHT SIDEWALK ~ SPAN 4

Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Span 5 is similar.
Scale: $\frac{1}{4}$ " = 1'-0"

BAR NOTE 3:
Varies #4x3'-6" to #4x6'-8"
& bars Z

BAR NOTE 2:
Varies #4x4'-11 1/2" to #4x9'-4"

NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 13.
For plan of spans, see sht. nos. 16 and 17.
For typical sidewalk sections, see sht. no. 15.

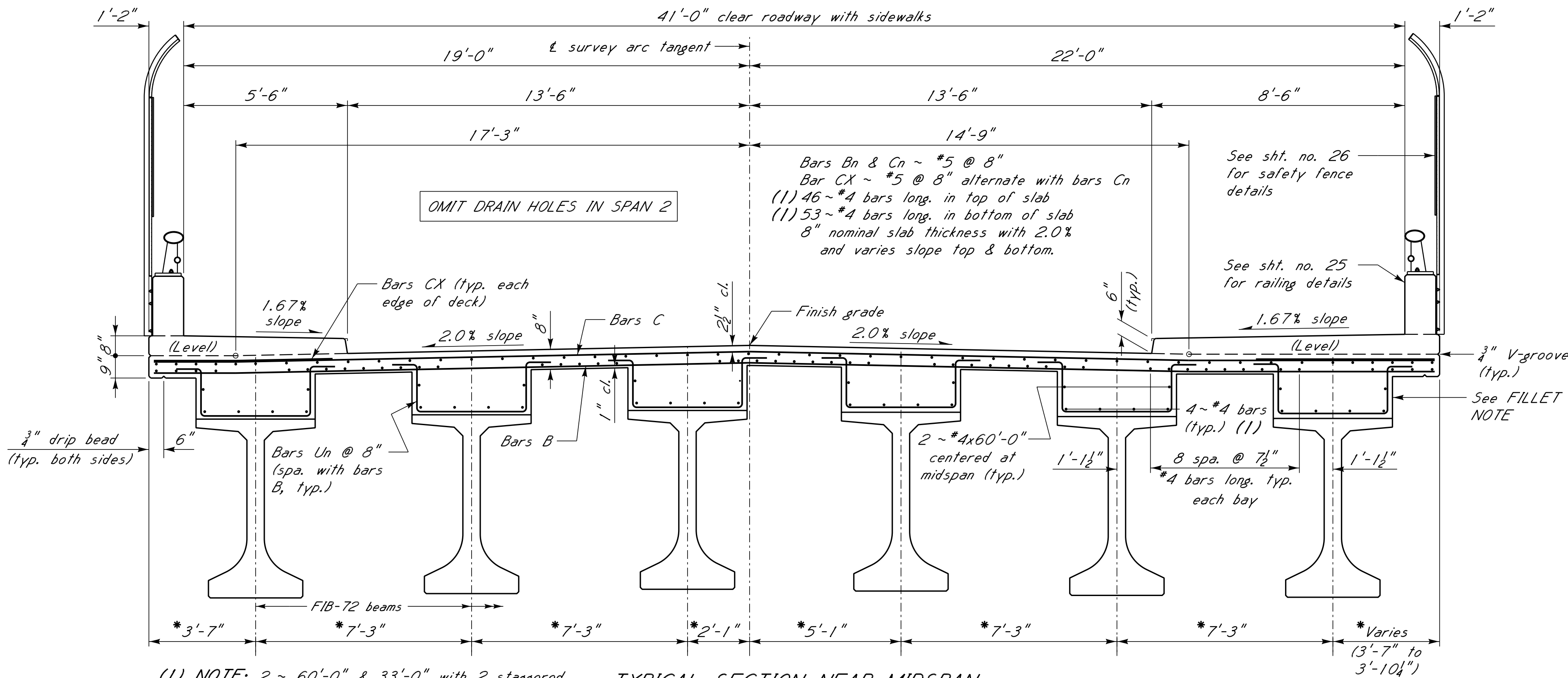
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



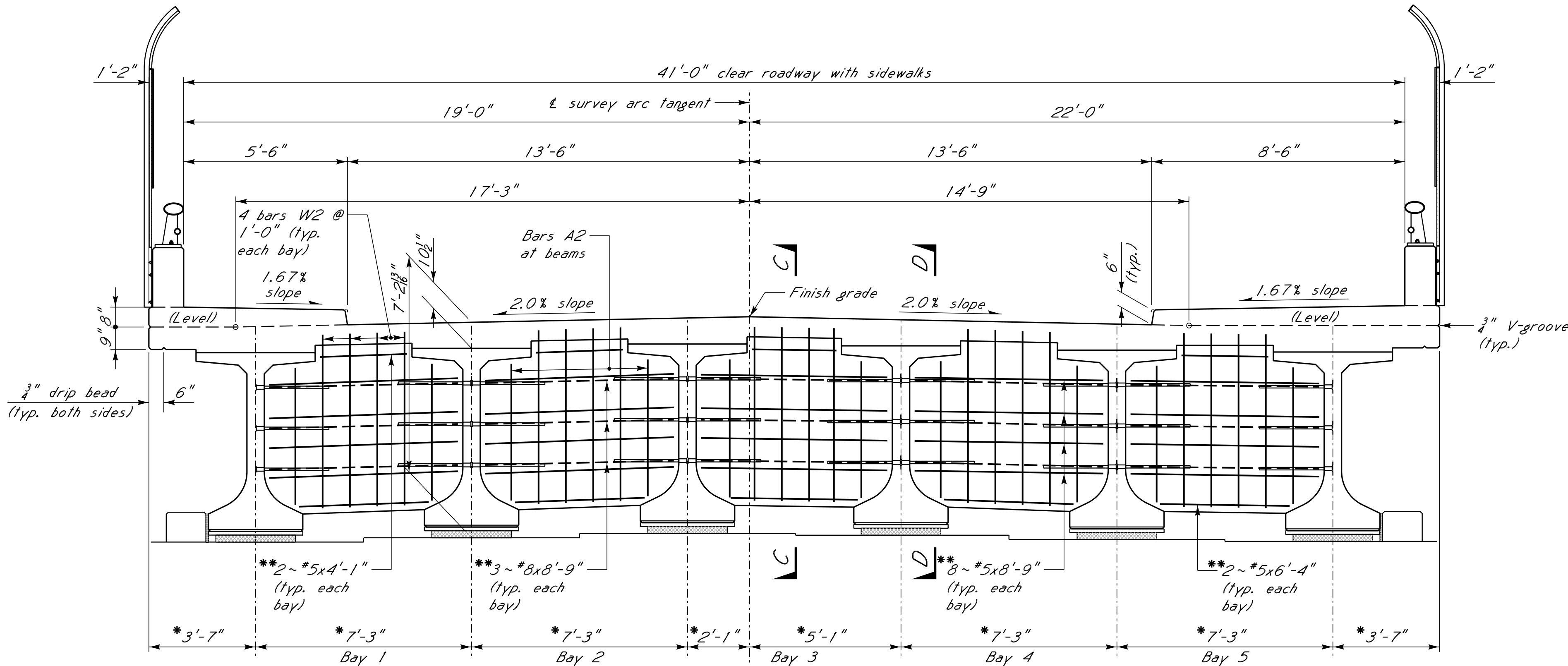
PLAN OF SIDEWALKS SPANS 4 & 5	
WORKING NUMBER: 18 OF 59	DRAWING NUMBER: 8020

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-19-Typical Section Span 2.dgn
DATE: 8/12/2022TIME: 1:43:00 PM USER: RJB



TYPICAL SECTION NEAR MIDSPAN

Showing slab reinforcing.
Scale: 3/8" = 1'-0"



TYPICAL SECTION NEAR END OF SPAN

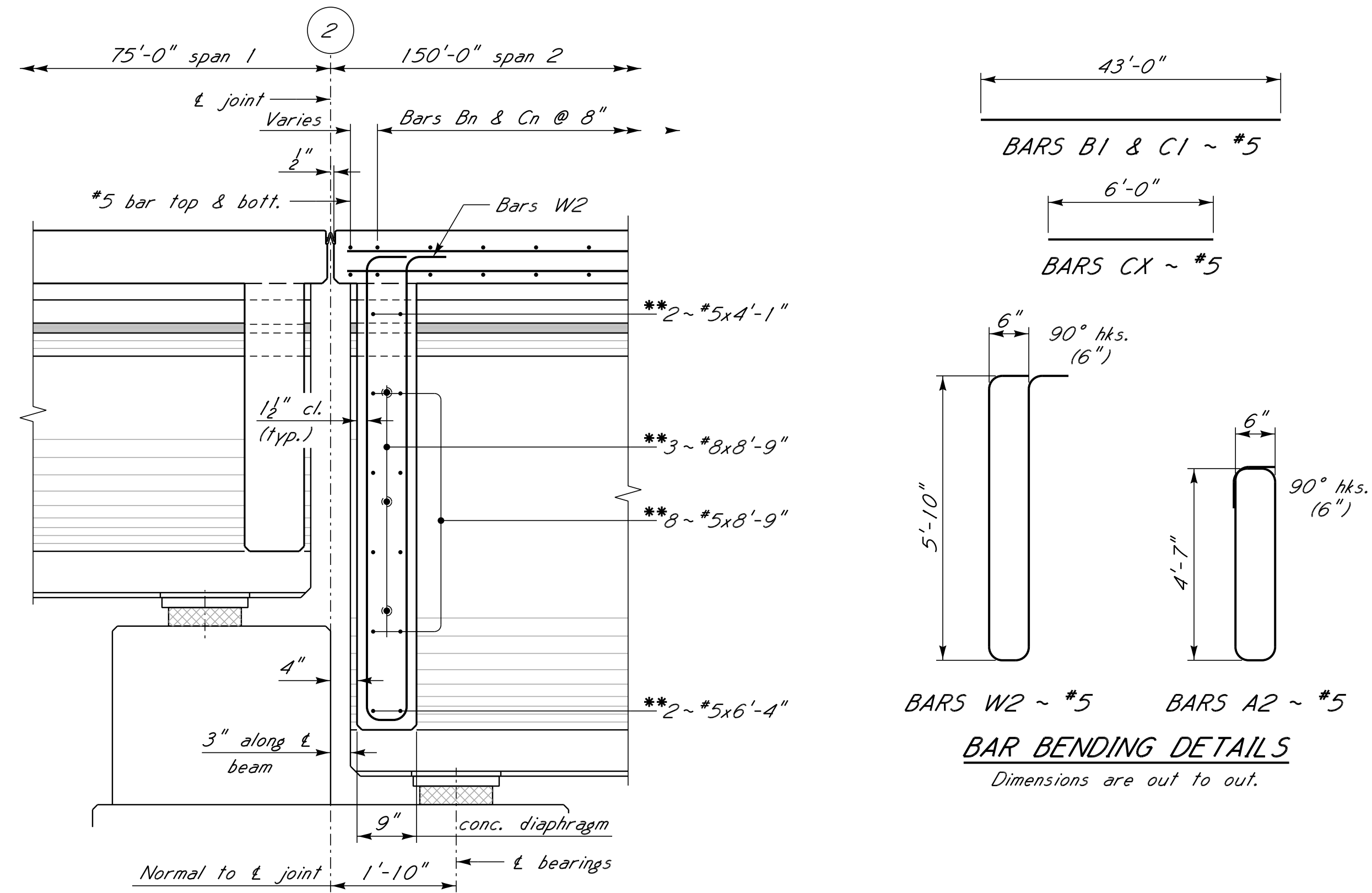
Showing end diaphragm reinforcing.
Scale: 3/8" = 1'-0"

"*" BEAM LAYOUT NOTES:

Exterior beams are placed 3'-7" from $\perp$ beam to edge of deck at the $\perp$ bearing.
Interior beams are placed parallel to a line connecting the $\perp$ joint at the $\perp$ survey at bents 2 and 3.

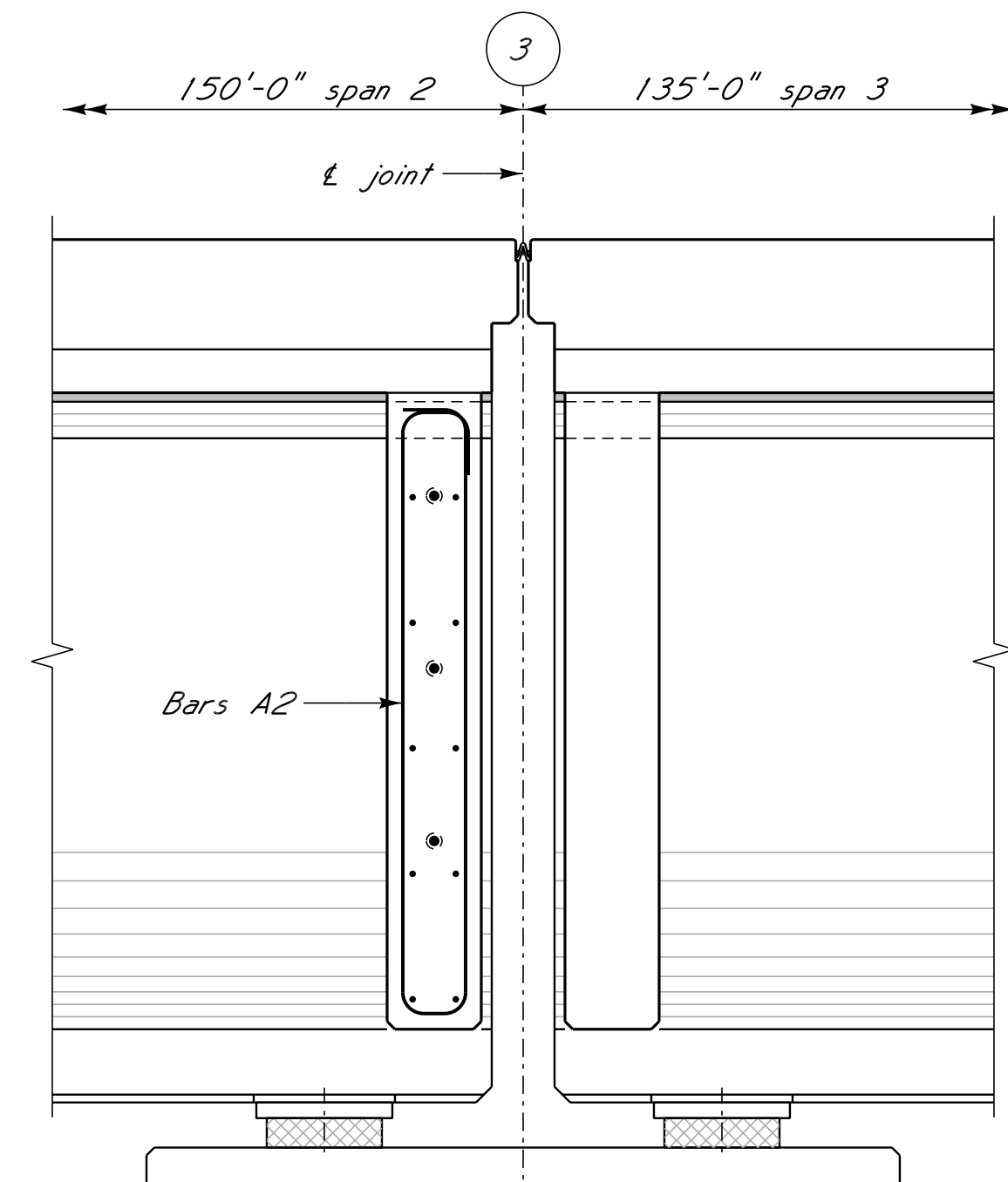
"**" DIAPHRAGM REINFORCEMENT NOTES:

Lengths shown are for all bays except Bay 5 at Bent 2. See BAY 5 END DIAPHRAGM BAR LENGTHS AT BENT 2 table this sheet.



SECTION C-C

Scale: 3/4" = 1'-0"



SECTION D-D

Scale: 3/4" = 1'-0"

NOTE: See Section C-C for elements not labeled.

FILLET NOTE:

Due to the profile grade vertical curve, theoretical fillet depth near mid span for an average beam camber will be 1'-6 1/2".

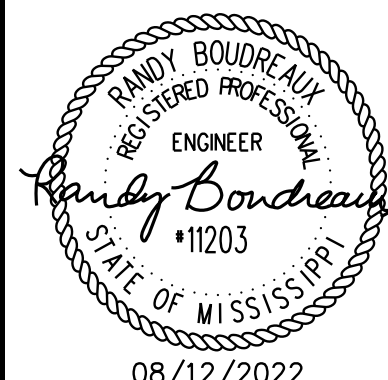
DESIGN DATA:

Specifications A.A.S.H.T.O., LRFD 2020
Traffic Loading HL-93
Pedestrian Loading 75 lbs/sf on sidewalks
S.I.P. Forms 18 lbs/sf between flanges
Rail Concrete Class "AA" (4,000 psi)
Bridge Deck Concrete Class "BD" (4,000 psi)
Prestressed Beam Concrete Class "FX" (9,300 psi)
Reinforcing A.S.T.M. A615 grade 60 (Fy=60 ksi)

NOTES:

The volume of concrete in the fillets between the bottom of nominal slab and top of the beams has been estimated by using the average fillet height of 10" along the beam times the top flange width for the full length of the beam. This volume shall be used for final pay quantity. Any additional concrete required in the fillet resulting from an unexpected camber in the beam will not be directly paid for and shall be considered an absorbed item.
For GENERAL NOTES, railing details and other typical span details, see sht. nos. 1, 20 to 21, 25 to 27.
For prestressed beam and bars Un details, see sht. nos. 28 to 33.

HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TYPICAL SECTION
SPAN 2

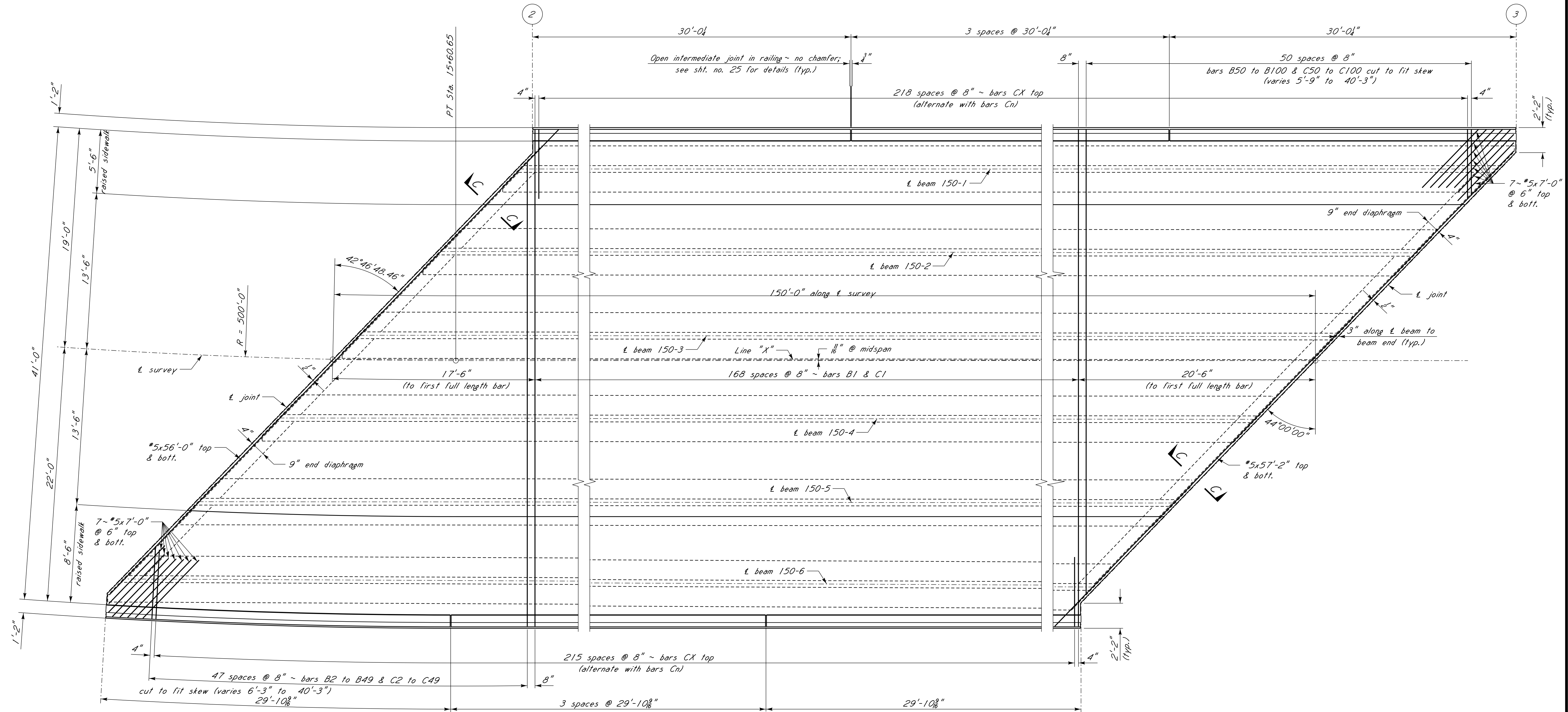
WORKING NUMBER:
19 OF 59

DRAWING NUMBER:
8021

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Exterior beams are placed 3'-7" from $\perp$ beam to edge of deck at the $\perp$ bearing.
Interior beams are placed parallel to a Line "X" connecting the $\perp$ joint at the $\perp$ survey at bents 2 and 3.

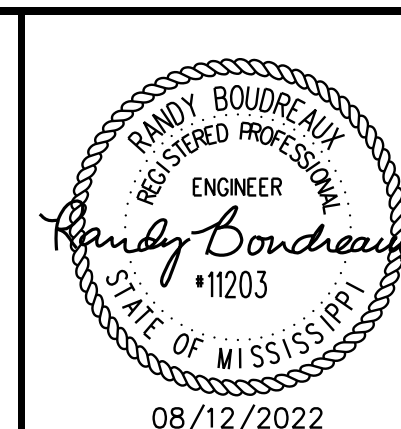
Scale: $\frac{1}{4}" = 1'-0"$

RAILING BARS	
Mark	Quantity
R1	350

For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 19.
For plan of sidewalks, see sht. no. 21.
For railing details, see sht. no. 25.
For misc. span details, see sht. nos. 26 and 27.
For prestressed beam details, see sht. nos. 28
to 33.
For typical sidewalk sections, see sht. no. 15.

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, INC., HEREAFTER 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	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214-000	
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					SCALE:	
					SURVEYED BY:	
					DSGN: RJB	DATE: 06/2022
					DRWN: RJB	DATE: 06/2022
					CHKD: BKC	DATE: 08/2022
					QA/QC:	DATE:

**HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI**

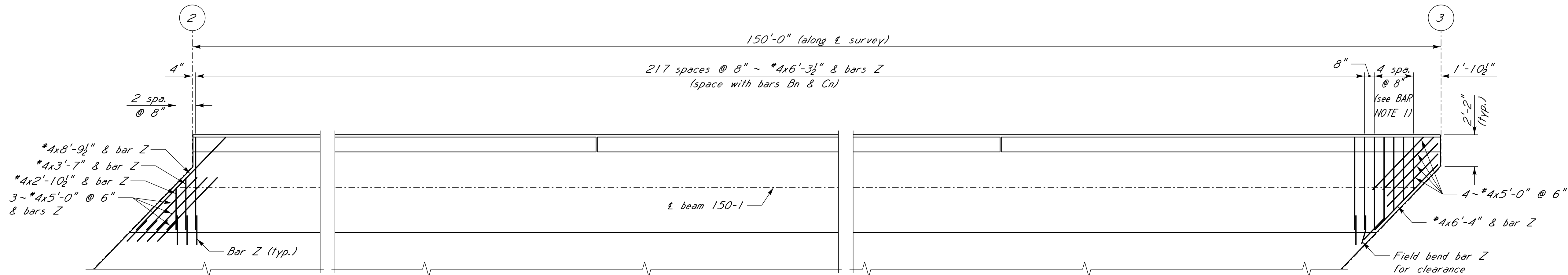


PLAN OF SPAN 2

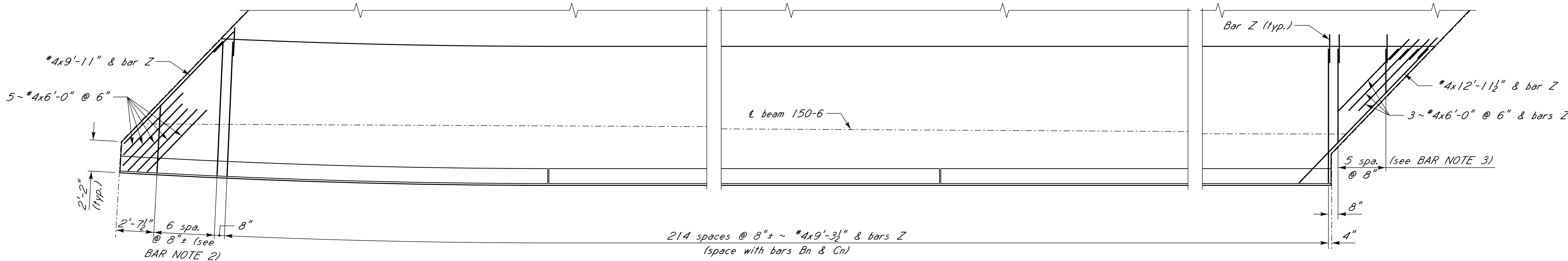
WORKING NUMBER:
20 OF 59

DRAWING NUMBER:
8022

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-21-Plan of Raised Sidewalk- Span 2.dgn
DATE: 8/12/2022 TIME: 1:43:01 PM USER: RJB



PLAN OF LEFT SIDEWALK ~ SPAN 2
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: 1/4" = 1'-0"



BAR NOTE 2:
Varies #4x4'-8" to #4x9'-4"

PLAN OF RIGHT SIDEWALK ~ SPAN 2
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: 1/4" = 1'-0"

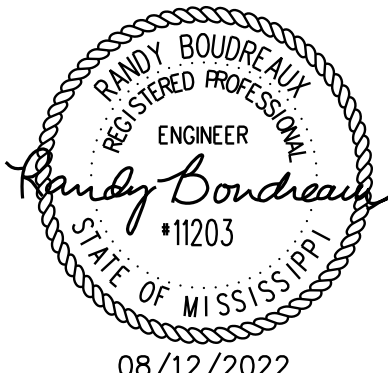
BAR NOTE 3:
Varies #4x3'-1 1/2" to #4x6'-7" & bars Z

NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 19.
For plan of span, see sht. no. 20.

NOTICE TO DRAWING HOLDER
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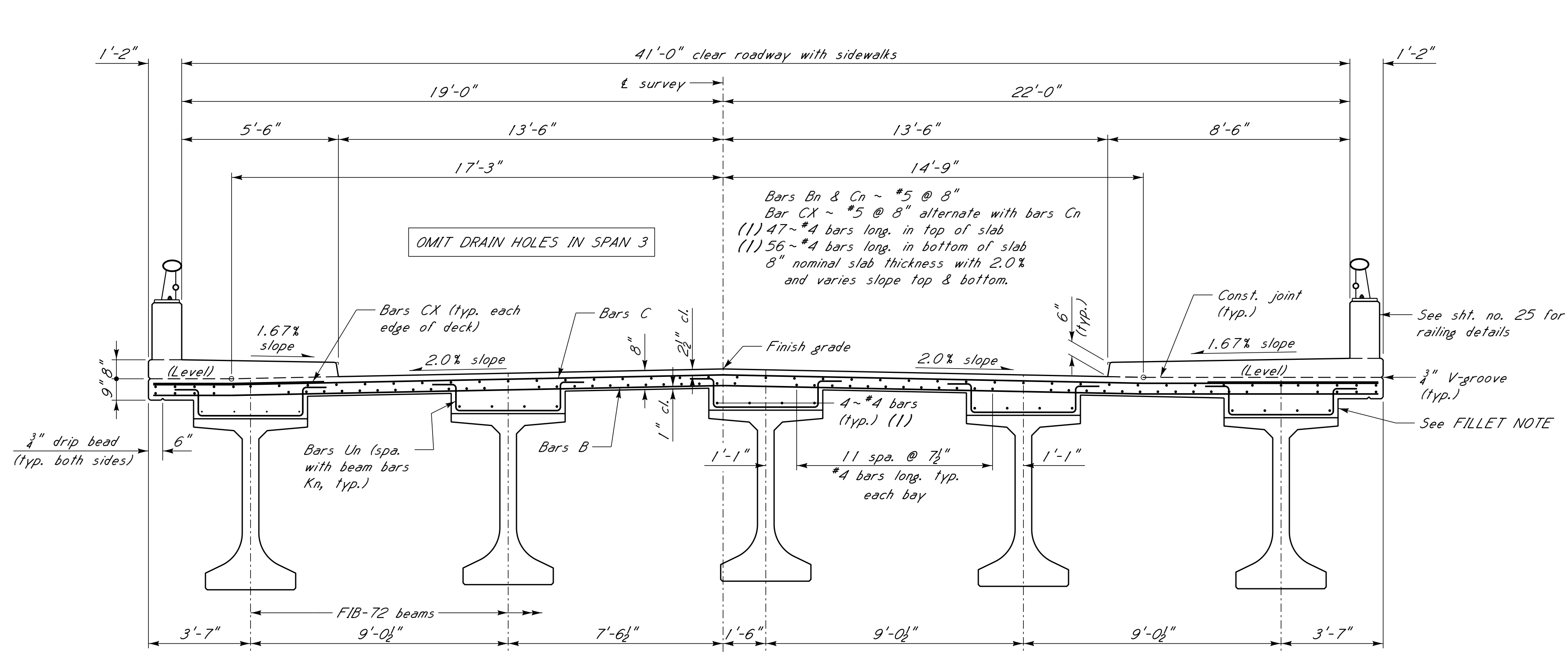
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NO.	DATE	BY	DESCRIPTION	
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			DSGN: RJB	DATE: 06/2022
			DRWN: RJB	DATE: 06/2022
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HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
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HATTIESBURG, MISSISSIPPI



PLAN OF SIDEWALKS SPAN 2	
WORKING NUMBER: 21 OF 59	DRAWING NUMBER: 8023

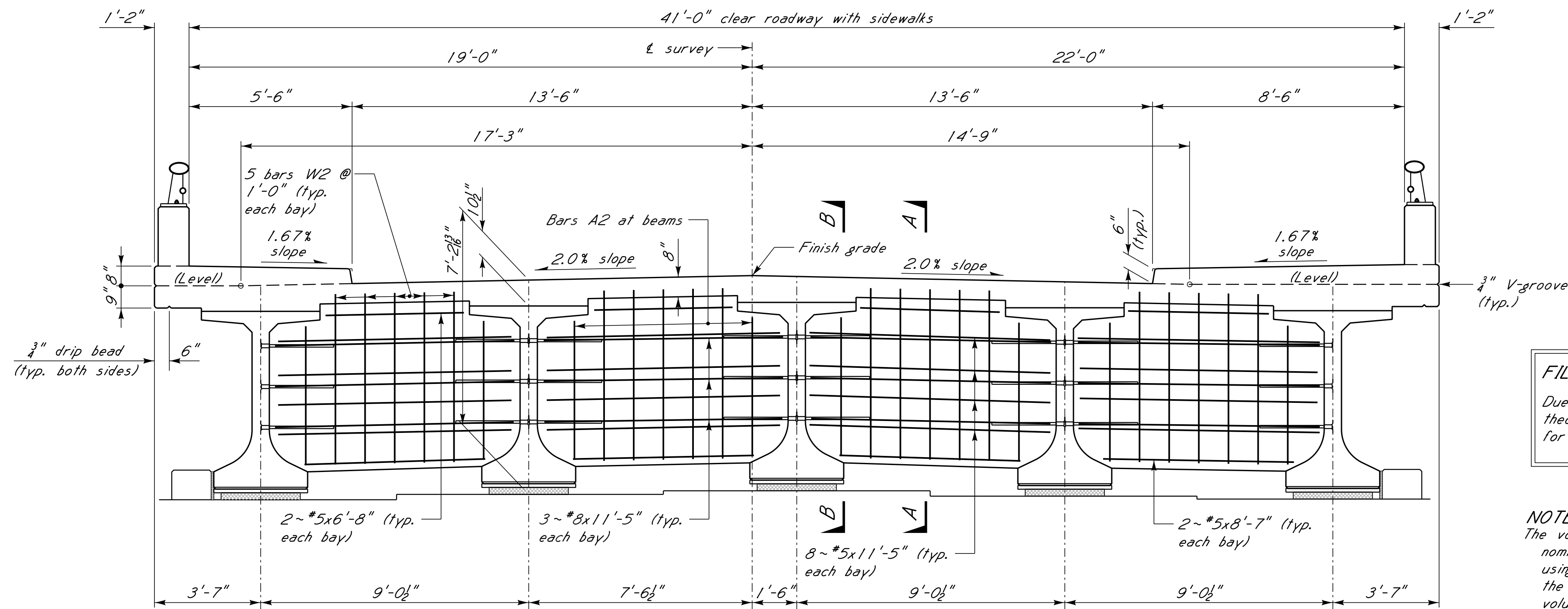
FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-22-Typical Section Spans 3.dgn
DATE: 8/12/2022 TIME: 1:43:01 PM USER: RJB



(1) NOTE: 2 ~ 60'-0" & 18'-8" with 2 staggered
1'-8" min. lap splices each line

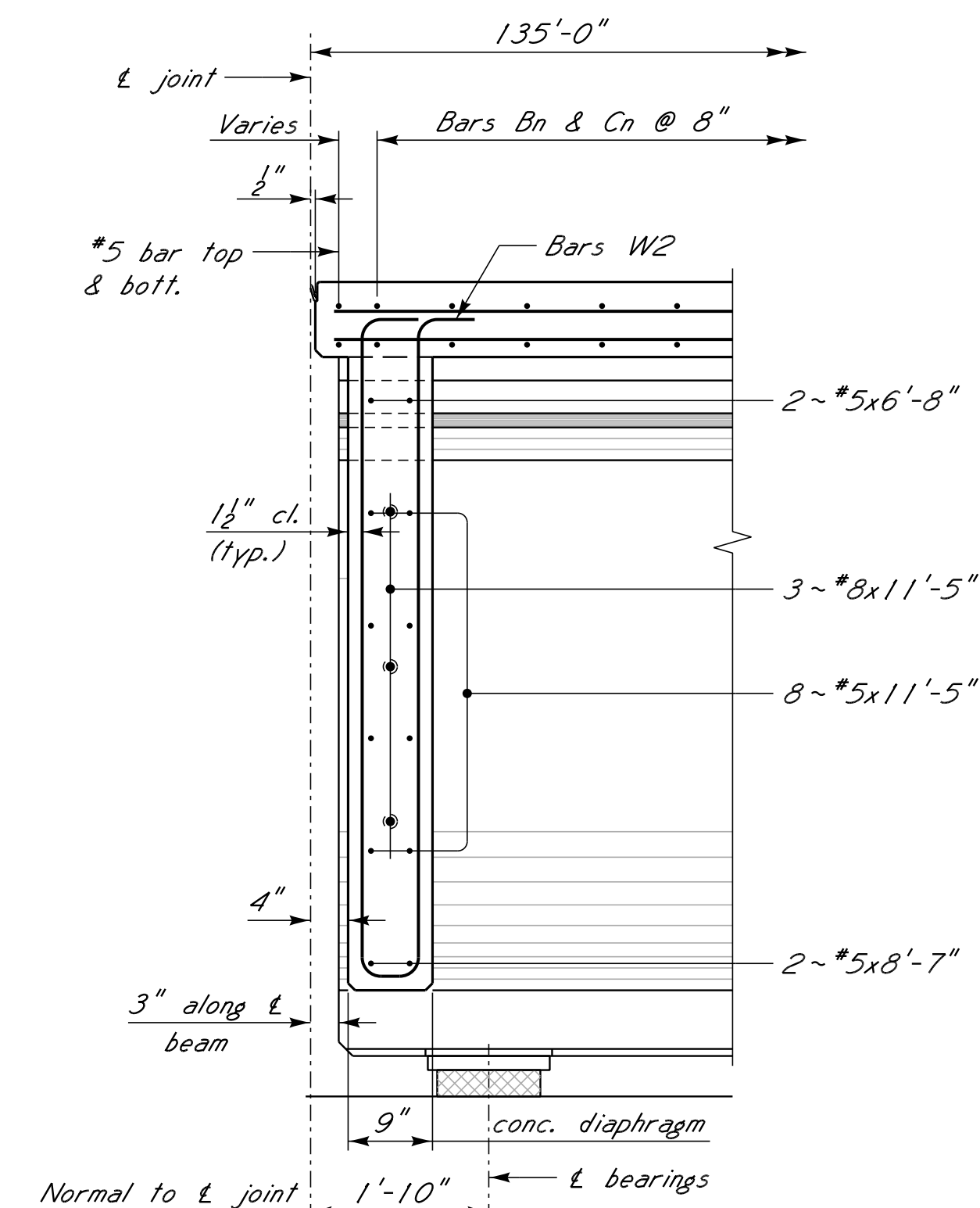
TYPICAL SECTION NEAR MIDSPAN

Showing slab reinforcing.
Scale: $\frac{3}{8}" = 1'-0"$



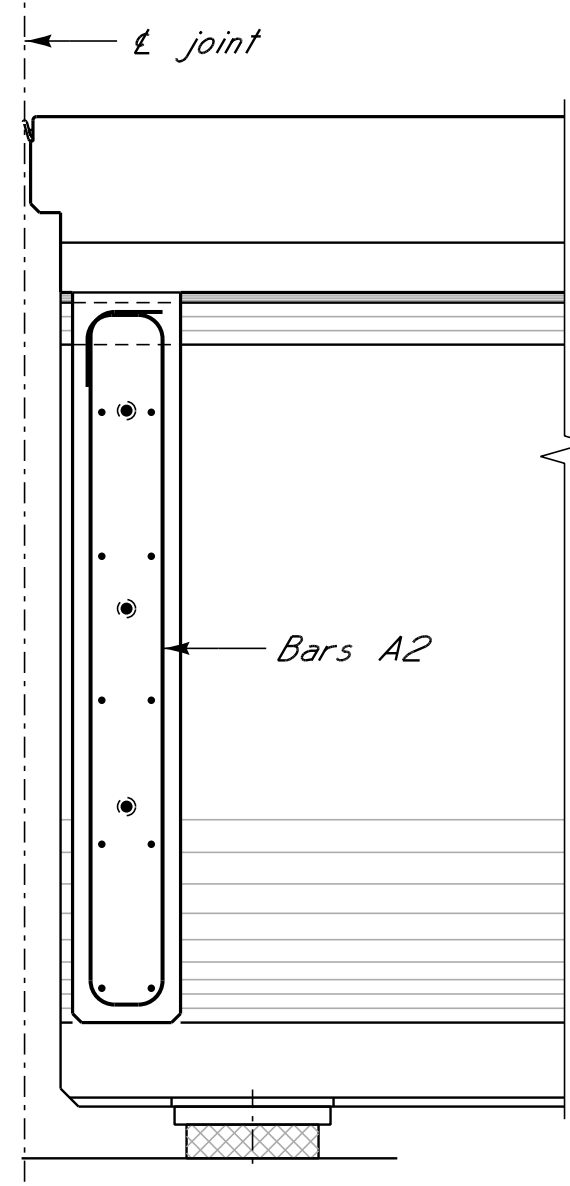
TYPICAL SECTION NEAR END OF SPAN

Showing end diaphragm reinforcing.
Scale: $\frac{3}{8}" = 1'-0"$



SECTION A-A

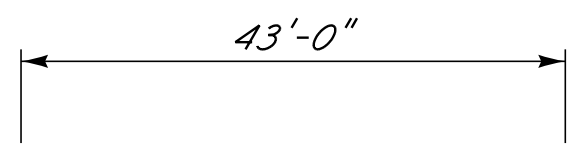
Scale: $\frac{3}{4}" = 1'-0"$



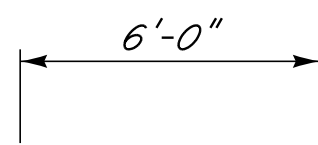
SECTION B-B

Scale: $\frac{3}{4}" = 1'-0"$

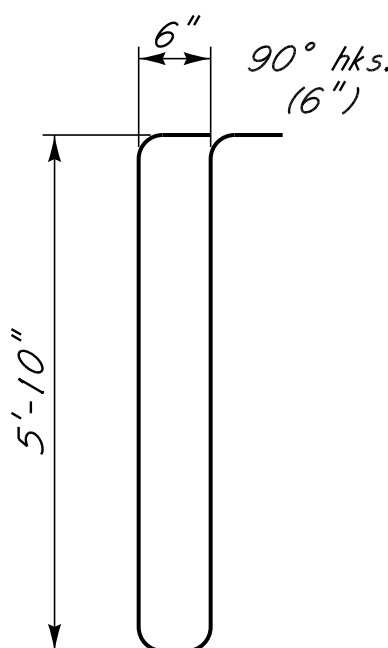
NOTE: See Section A-A for elements
not labeled.



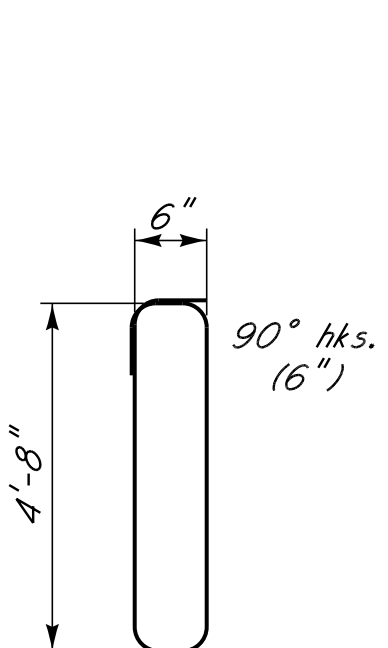
BARS B1 & C1 ~ #5



BARS CX ~ #5



BARS W2 ~ #5



BARS A2 ~ #5

BAR BENDING DETAILS

Dimensions are out to out.

FILLET NOTE:

Due to the profile grade vertical curve,
theoretical fillet depth near mid span
for an average beam camber will be 9"±.

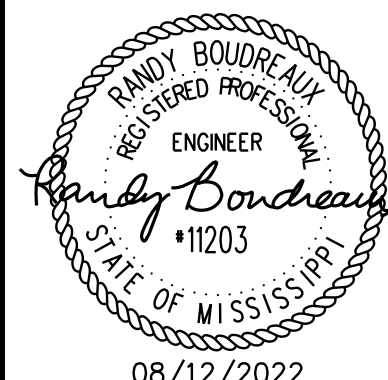
NOTES:

The volume of concrete in the fillets between the bottom of nominal slab and top of the beams has been estimated by using the average fillet height of 6" along the beam times the top flange width for the full length of the beam. This volume shall be used for final pay quantity. Any additional concrete required in the fillet resulting from an unexpected camber in the beam will not be directly paid for and shall be considered an absorbed item.
For GENERAL NOTES, railing details and other typical span details, see sht. nos. 1, 23 to 25 & 27.
For prestressed beam and bars Un details, see sht. nos. 28 to 33.

DESIGN DATA:

Specifications A.A.S.H.T.O., LRFD 2020
Traffic Loading HL-93
Pedestrian Loading 75 lbs/sf on sidewalks
S.I.P. Forms 18 lbs/sf between flanges
Rail Concrete Class "AA" (4,000 psi)
Bridge Deck Concrete Class "BD" (4,000 psi)
Prestressed Beam Concrete Class "FX" (6,500 psi)
Reinforcing A.S.T.M. A615 grade 60 (Fy=60 ksi)

HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TYPICAL SECTION
SPAN 3

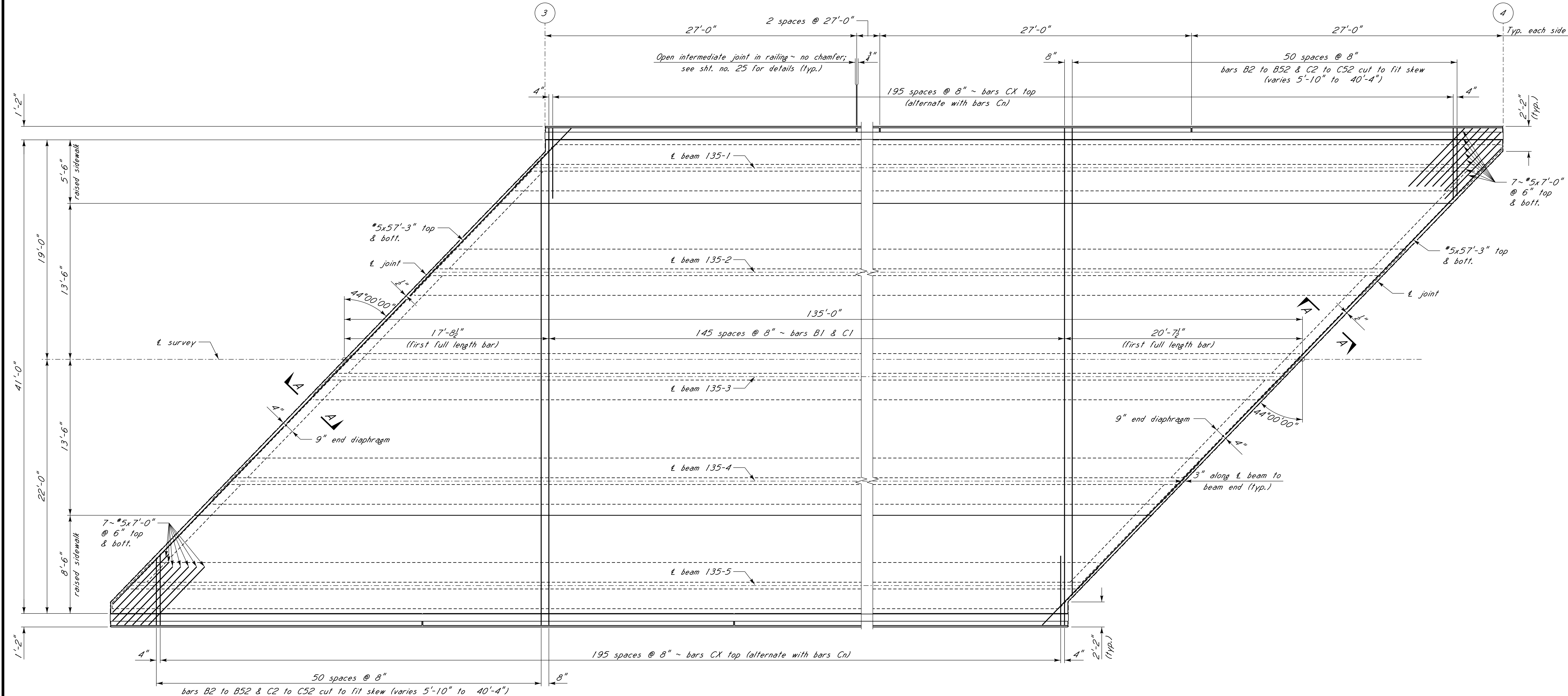
WORKING NUMBER:
22 OF 59

DRAWING NUMBER:
8024

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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-23-Plan of Span 3.dgn
DATE: 8/12/2022 TIME: 1:43:01 PM USER: RJB



PLAN OF SPAN 3
Scale: $\frac{1}{4}" = 1'-0"$

RAILING BARS	
Mark	Quantity
RI	320

NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 22.
For plan of sidewalks, see sht. no. 24.
For railing details, see sht. no. 25.
For misc. span details, see sht. no. 27.
For prestressed beam details, see sht. nos. 28 to 33.

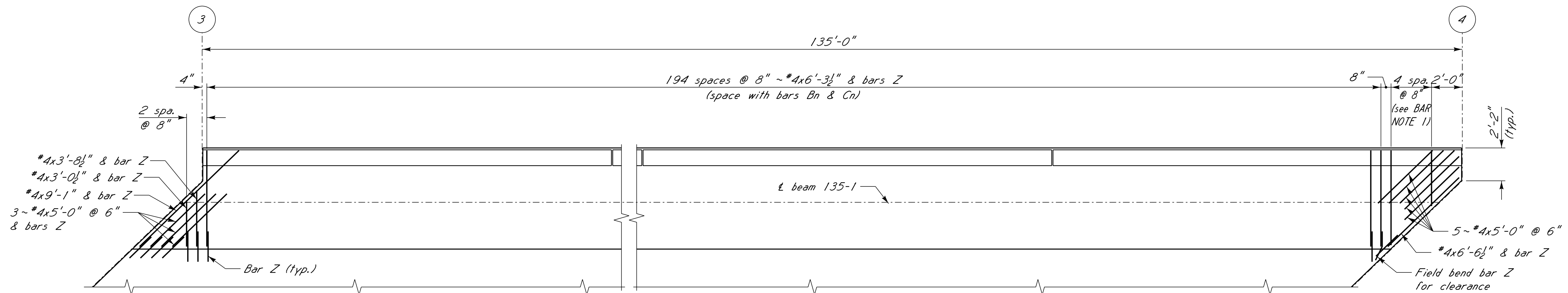
NOTICE TO DRAWING HOLDER				REVISIONS		DRAWING INFORMATION	
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				QA/QC:		DATE:	

HALL AVENUE WEST - PHASE 2
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FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



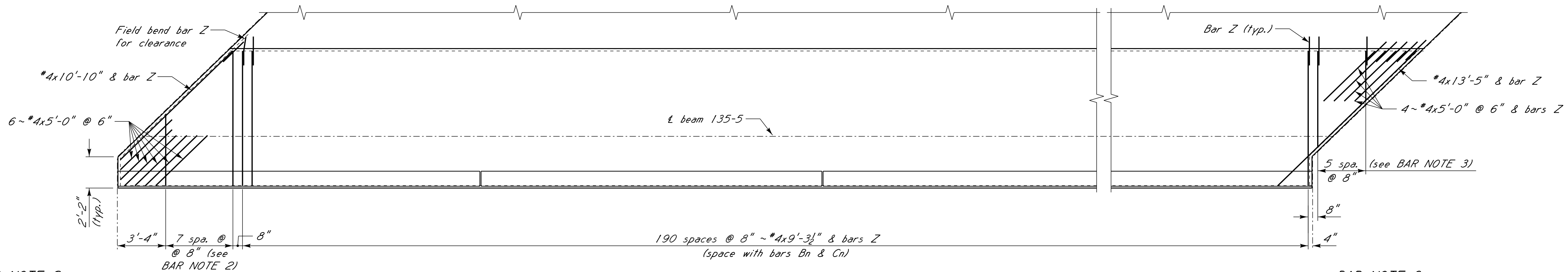
PLAN OF SPAN 3	
WORKING NUMBER: 23 OF 59	DRAWING NUMBER: 8025

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-24-Plan of Raised Sidewalk Span 3.dgn
DATE: 8/12/2022 TIME: 1:43:02 PM USER: RJB



PLAN OF LEFT SIDEWALK ~ SPAN 3
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: $\frac{1}{4}$ " = 1'-0"

BAR NOTE 1:
Varies #4x3'-8" to #4x6'-3"



BAR NOTE 2:
Varies #4x4'-11 1/2" to #4x9'-4"

PLAN OF RIGHT SIDEWALK ~ SPAN 3
Showing transverse reinforcing. Longitudinal reinforcing & steel railing not shown for clarity.
Scale: $\frac{1}{4}$ " = 1'-0"

BAR NOTE 3:
Varies #4x3'-6" to #4x6'-8" & bars Z

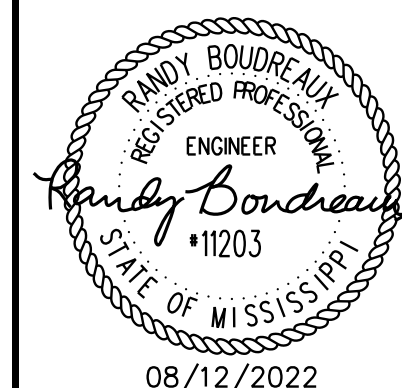
NOTES:
For GENERAL NOTES, see sht. no. 1.
For typical sections of span, see sht. no. 22.
For plan of span, see sht. no. 23.
For typical sidewalk sections, see sht. no. 15.

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HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

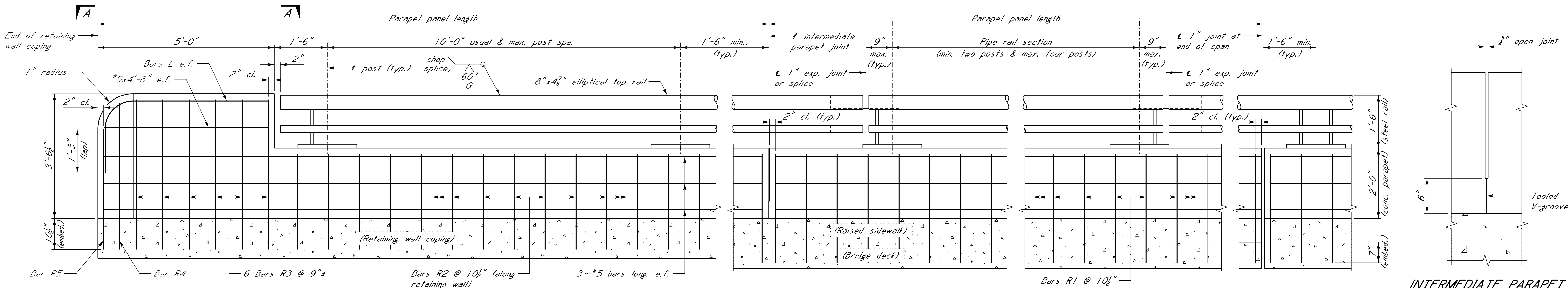


**PLAN OF SIDEWALKS
SPAN 3**

WORKING NUMBER:
24 OF 59

DRAWING NUMBER:
8026

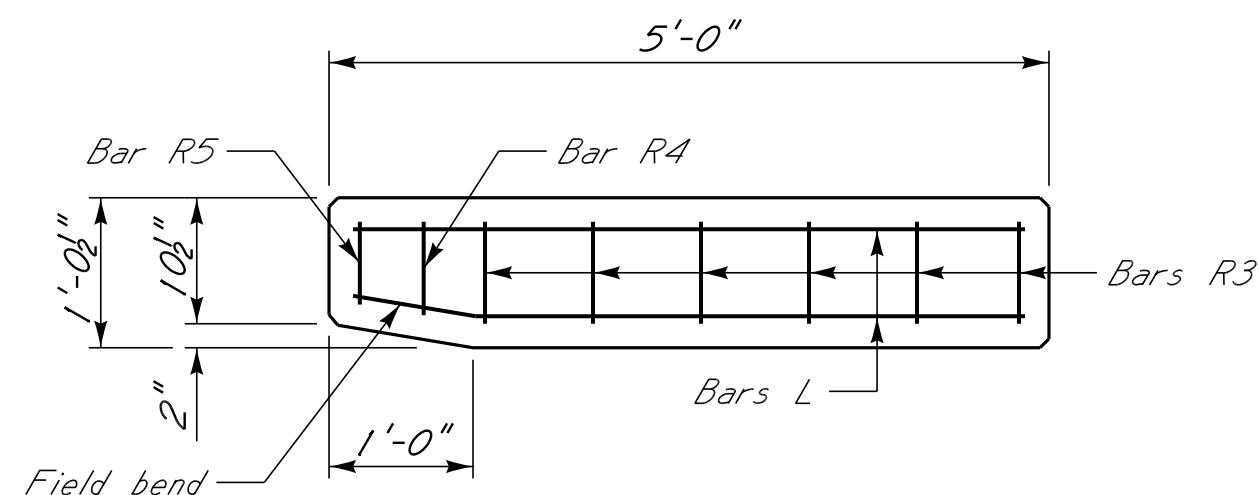
FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-25-Railing Details.dgn
DATE: 8/12/2022 TIME: 1:43:02 PM USER: RJB



AT END OF RETAINING WALL

PARTIAL ROADWAY ELEVATION OF RAIL

Scale: 3/4" = 1'-0"



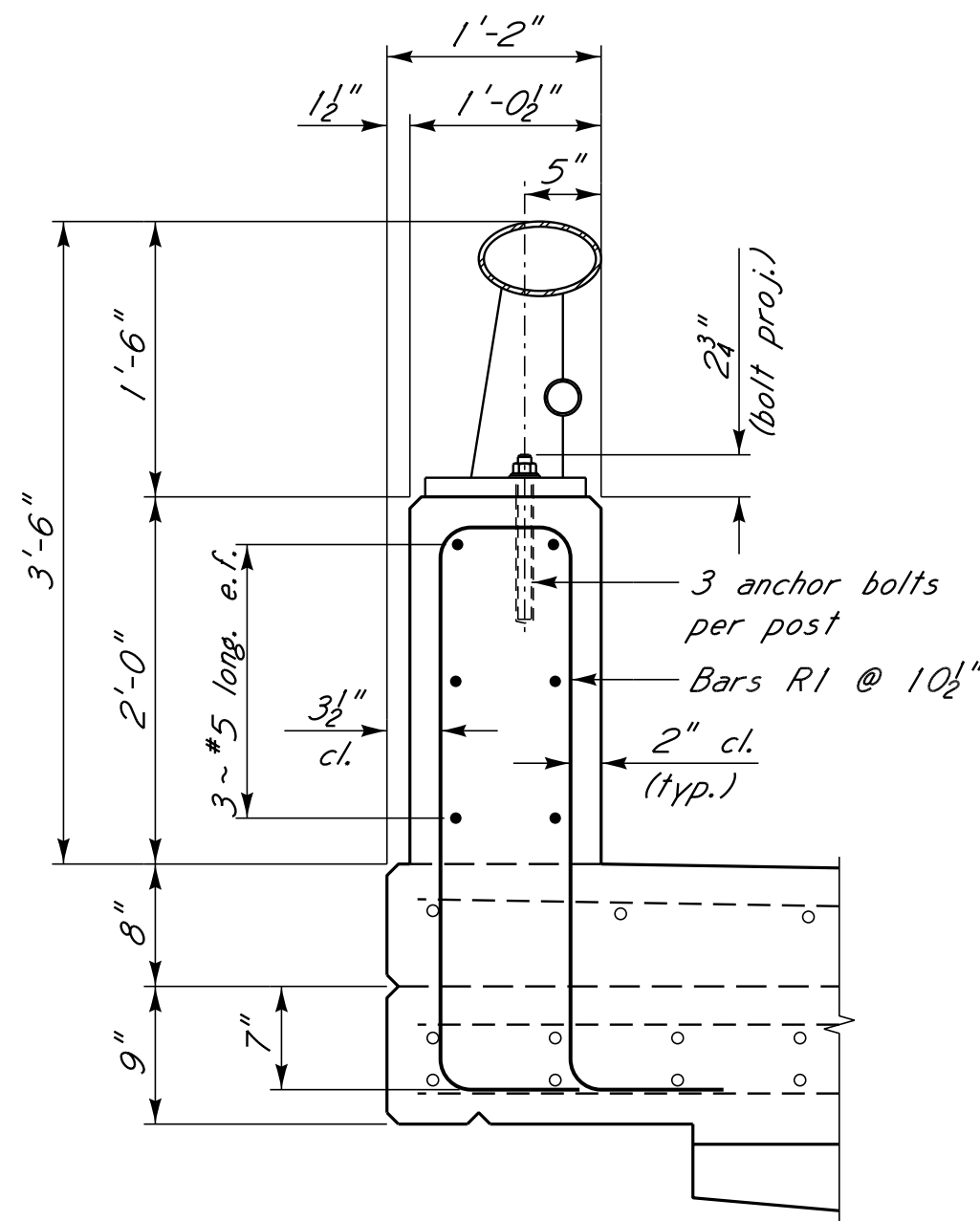
PLAN A-A
Scale: 3/4" = 1'-0"

NOTES:

This rail may be slipformed if approved by the Engineer when adhesive anchor bolts are used.
At the Contractor's option anchor bolts may be cast with the parapet. See "Material Notes".
Slipforming parapet is not allowed if anchor bolts are cast with parapet wall.
If rail is slipformed, apply a heavy epoxy bead 1" behind toe of traffic side of rail to concrete deck just prior to slip forming. Provide a 3" width x 1/4" tall heavy epoxy bead with Type III, Class C or a Type V epoxy.
Rail parapet must be plumb unless otherwise approved. Steel posts must be square to the top of parapet. Use Type VIII epoxy mortar under post base plates if gaps larger than 1/8" exist.
Cap all ends of tubular steel sections at parapet.
Pipe rail sections must have at least two posts but not more than four.
Round or chamfer all exposed edges of steel components 1/8" by grinding prior to painting.
Chamfer all exposed concrete corners 3/4".
Railing shall be cleaned and then shop painted with one coat of inorganic zinc primer, one intermediate coat of acrylic latex and one topcoat of acrylic latex per Section 814 of the Specifications. Color shall be semi-gloss black.

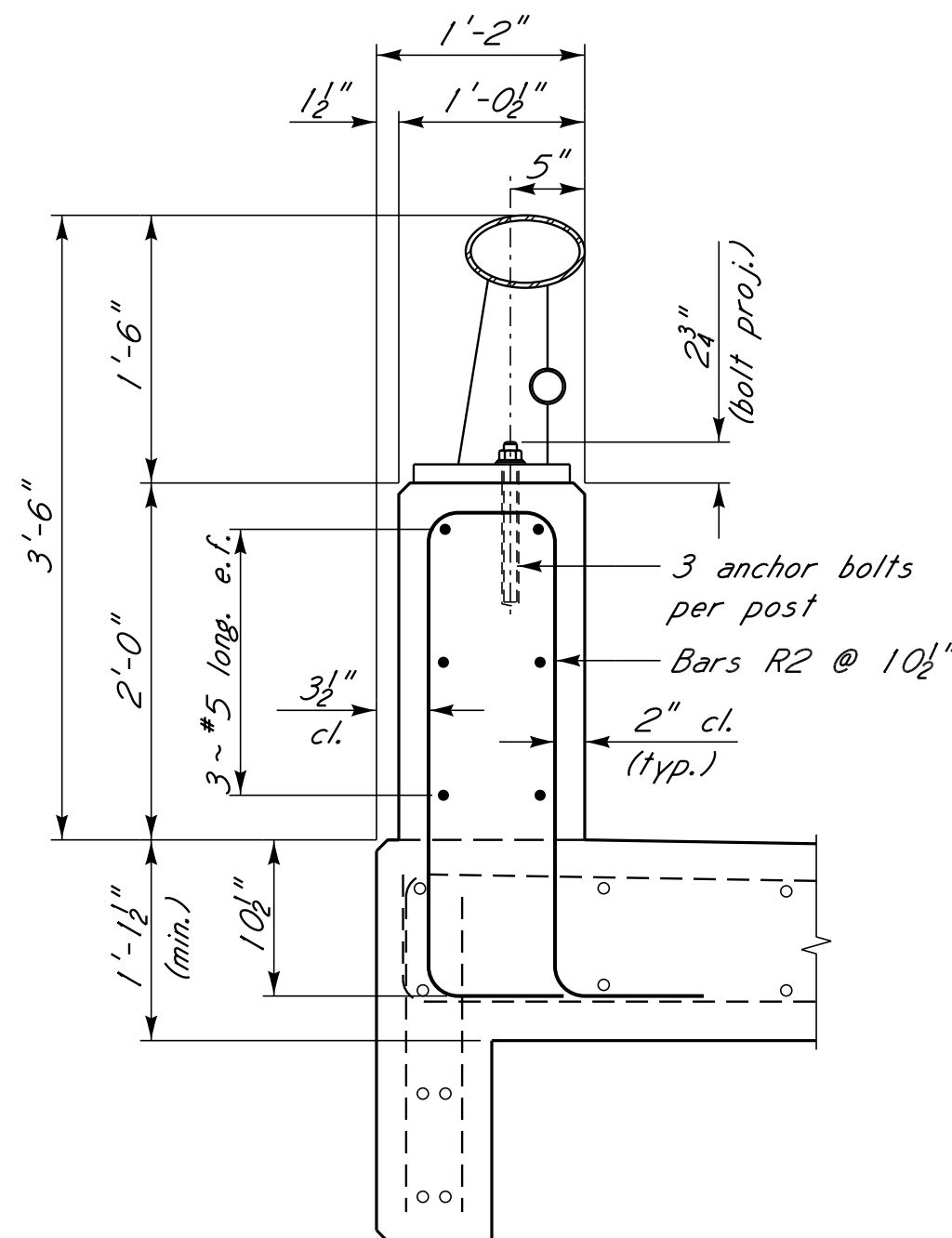
MATERIAL NOTES:

Sleeve members and anchor bolts must receive galvanization prior to installation and only field paint after installation unless directed otherwise by Engineer.
Anchor bolts must be 3/8" Dia ASTM A193 Gr B7 fully threaded rods with heavy hex nuts, one hardened steel washer (ASTM F436), and one (2 1/4" O.D.) steel washer each. Nuts must conform to ASTM A563 requirements. Embed fully threaded rods into parapet wall with a Type III, Class C, D, E, or F anchor adhesive. Minimum adhesive anchor embedment depth is 8". Anchor adhesive chosen must be able to achieve a nominal bond strength in tension of a single anchor, Na, of 17 kips (edge distance must be accounted for). Submit signed and sealed calculations or the manufacturer's published literature showing the proposed anchor adhesive's ability to develop this load to the Engineer for approval prior to use. Anchor installation, including hole size, drilling, and clean out, must be in accordance with Manufacturer's recommendations.
Optional cast-in-place anchor bolts must be 3/8" Dia ASTM F3125 Gr A325 or A449 bolts (or A193 Gr B7 or F1554 Gr 105 threaded rods with one tack welded heavy hex nut each) with one heavy hex nut and one hardened steel washer ASTM F436 plus one (2 1/4" O.D.) steel washer at each bolt. Nuts must conform to ASTM A563 requirements.
Concrete shall be class "AA".
Reinforcing steel shall be grade 60.
Provide bar laps, where required, as follows: *5 = 2'-0".



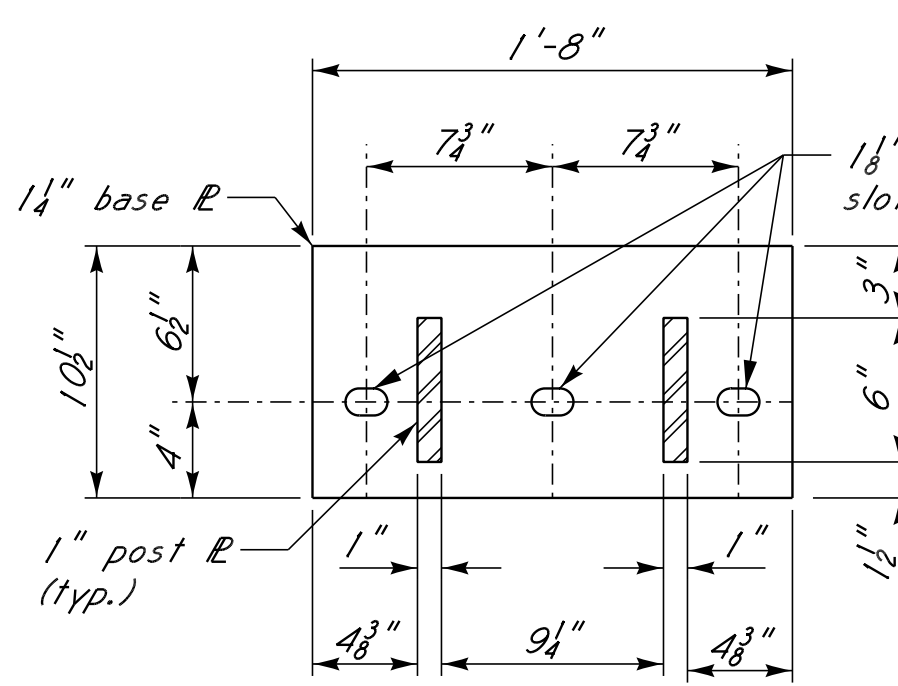
SECTION THROUGH RAIL
AT BRIDGE DECK

Scale: 1" = 1'-0"



SECTION THROUGH RAIL AT
RETAINING WALL COPING

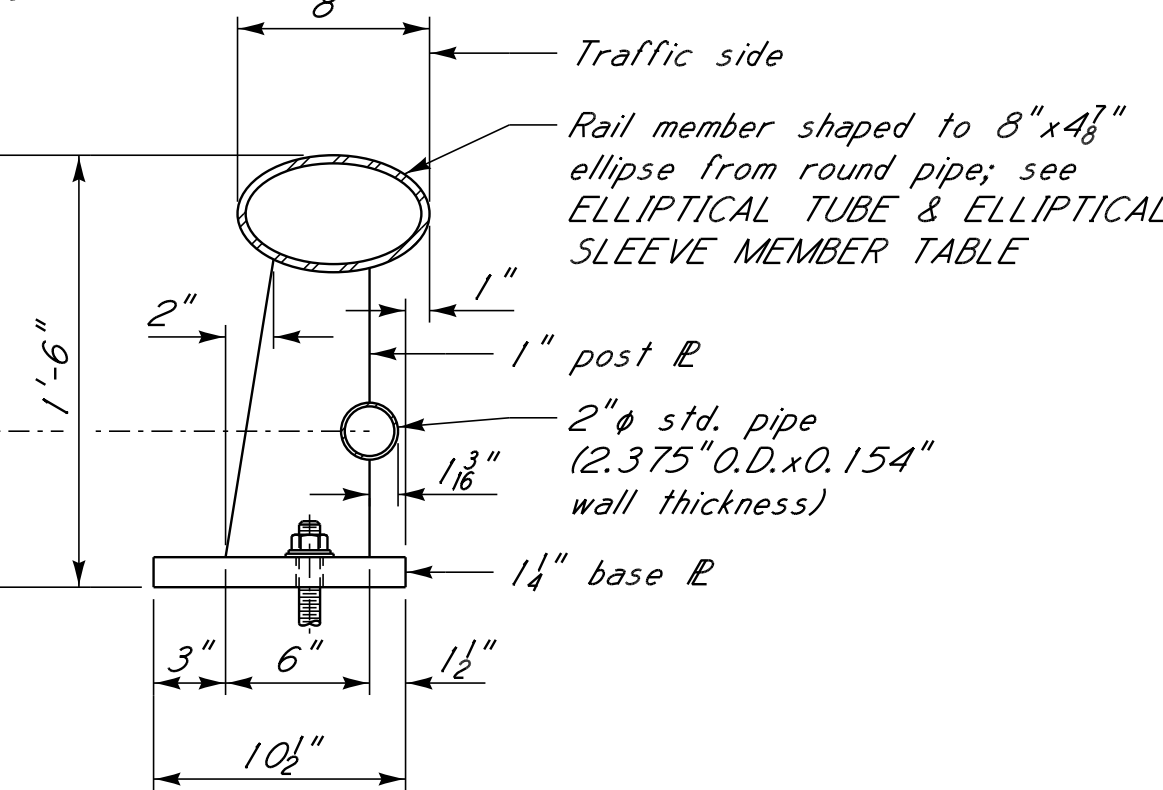
Scale: 1" = 1'-0"



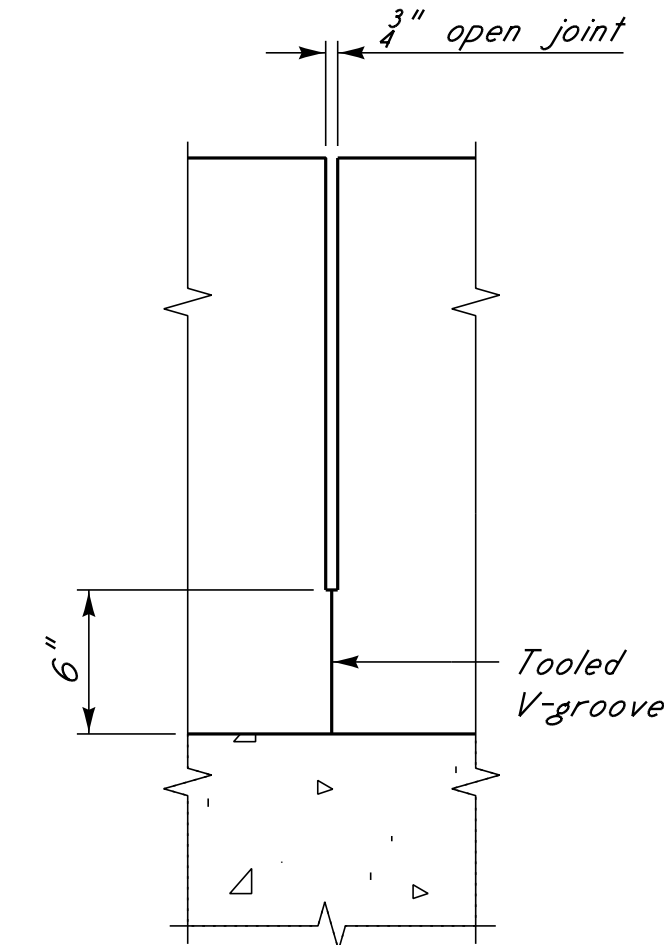
SECTION THRU POST

ELEVATION
STEEL RAIL & POST DETAILS

Scale: 1 1/2" = 1'-0"

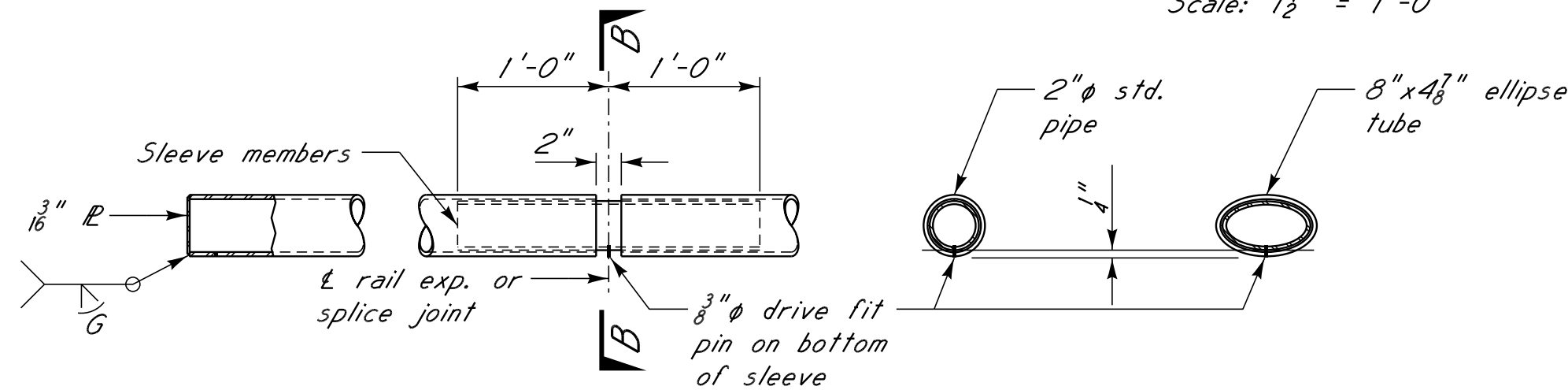


SECTION THRU RAIL



INTERMEDIATE PARAPET
JOINT DETAIL

Scale: 1 1/2" = 1'-0"



AT RAIL ENDS

AT SPLICES OR
EXP. JOINTS

SECTION B-B
(Showing round pipe)

SECTION B-B
(Showing ellipse tube)

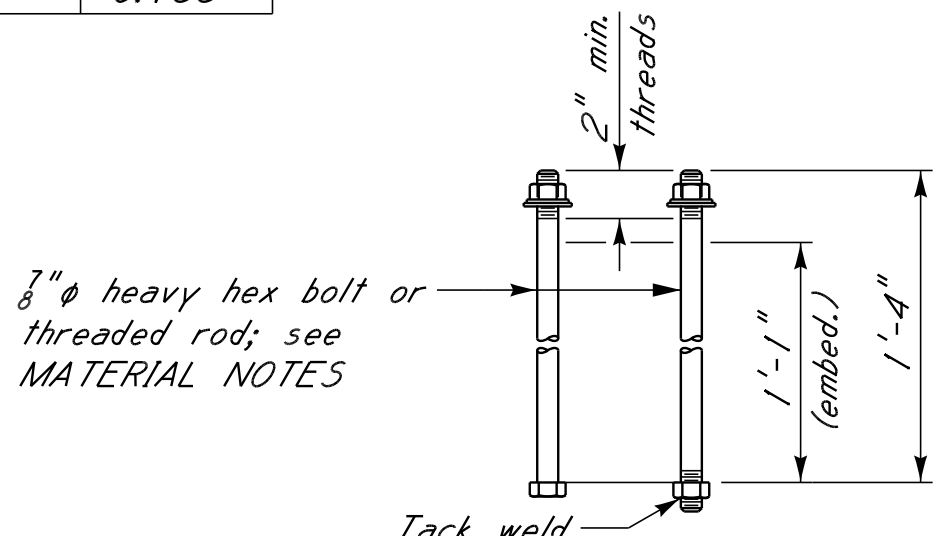
TUBE FABRICATION DETAILS

N.T.S.

ELLIPTICAL TUBE & SLEEVE MEMBER		
8"x4 1/8" Ellipse	Elliptical Sleeve Member	
Material	Material	Thickness
6" std. pipe ASTM A53 E or S Gr. B	ASTM A53 Gr. B	0.353"
	ASTM A36 or A500 Gr. B	0.339"
	API-5LX52	0.224"
6 3/8" O.D. pipe x 0.188" wall API-5LX52	ASTM A53 Gr. B	0.339"
	ASTM A36 or A500 Gr. B	0.325"
	API-5LX52	0.188"

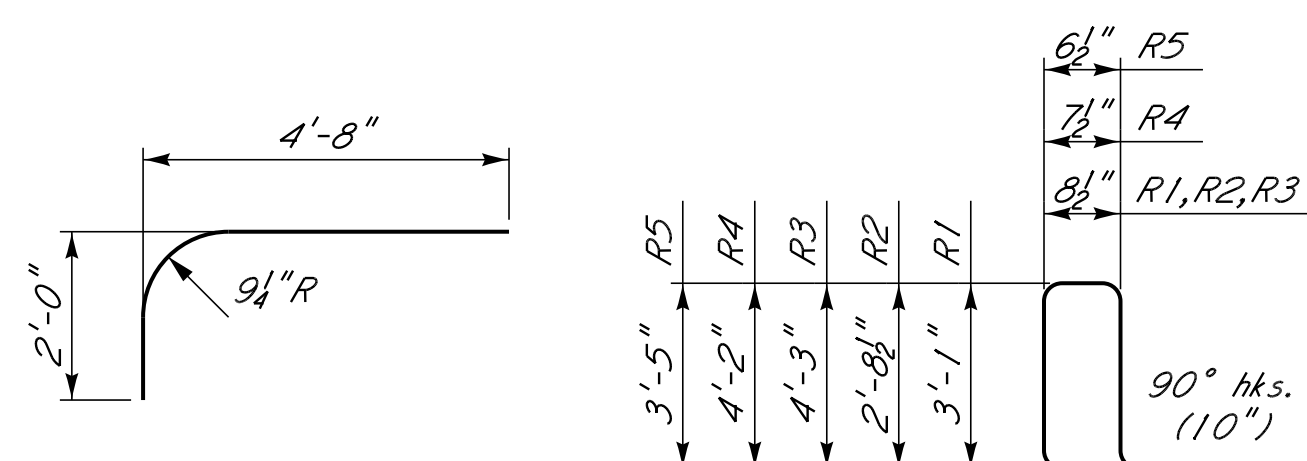
NOTES:

Other sections of equal or greater strength are acceptable for elliptical sleeves. The major and minor diameters may vary ±0.1875" from plan dimensions. However, the difference between the outside diameter of the sleeve and the inside diameter of the rail member must not exceed 0.25".
The sleeve member for the 2" pipe rail shall be a 1 1/2" std. pipe (1.90" O.D. x 0.154" wall thickness).



CAST-IN-PLACE ANCHOR BOLT OPTION

N.T.S.



Bars L ~ #5

BARS Rn BENDING DETAILS

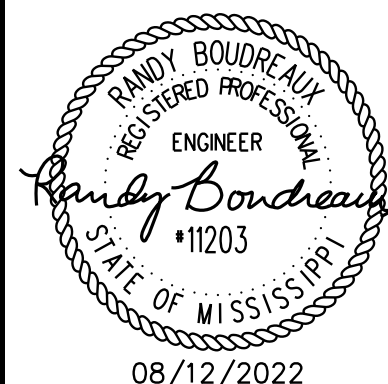
Dimensions are out to out.

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HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

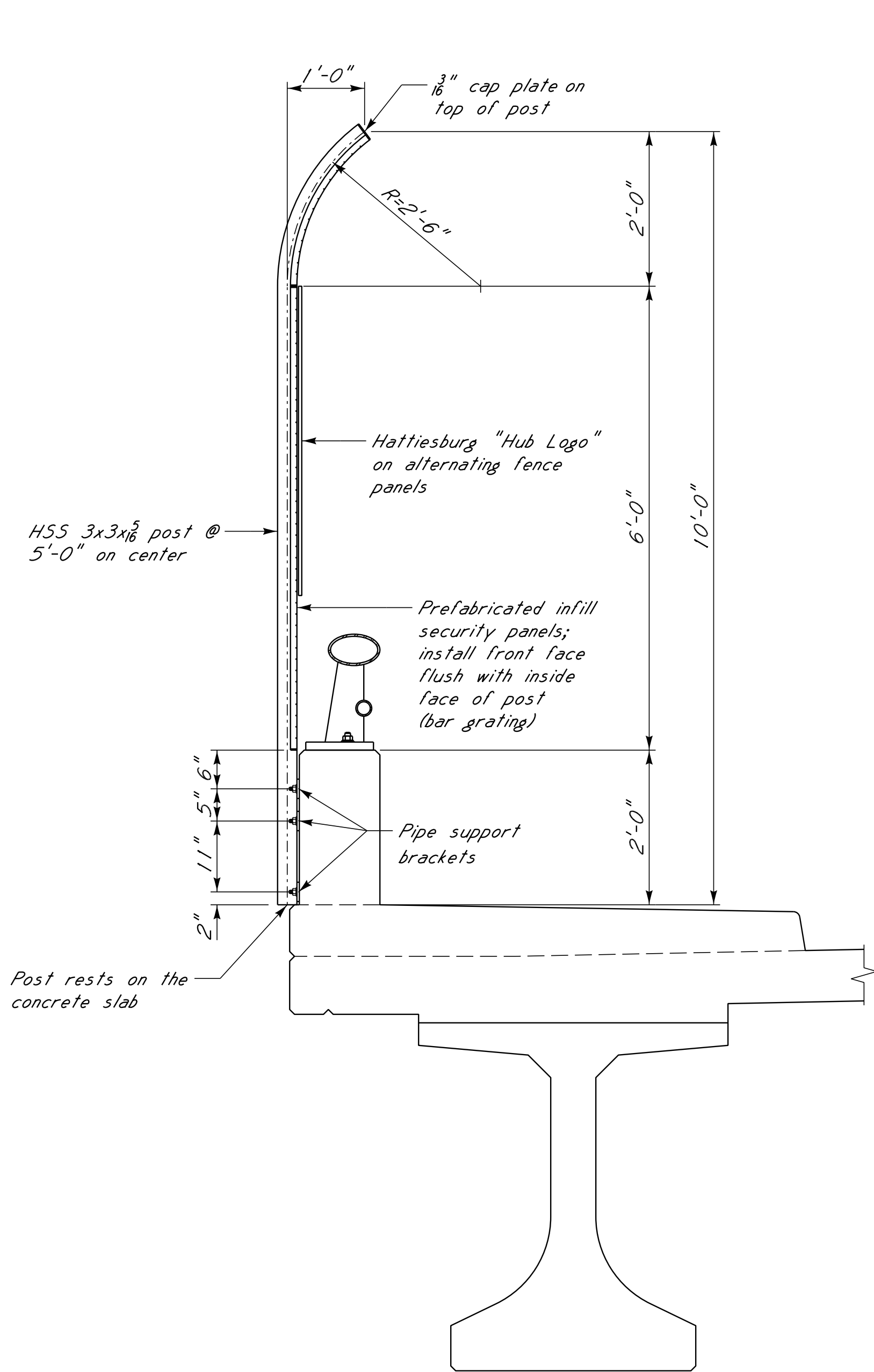


RAILING DETAILS

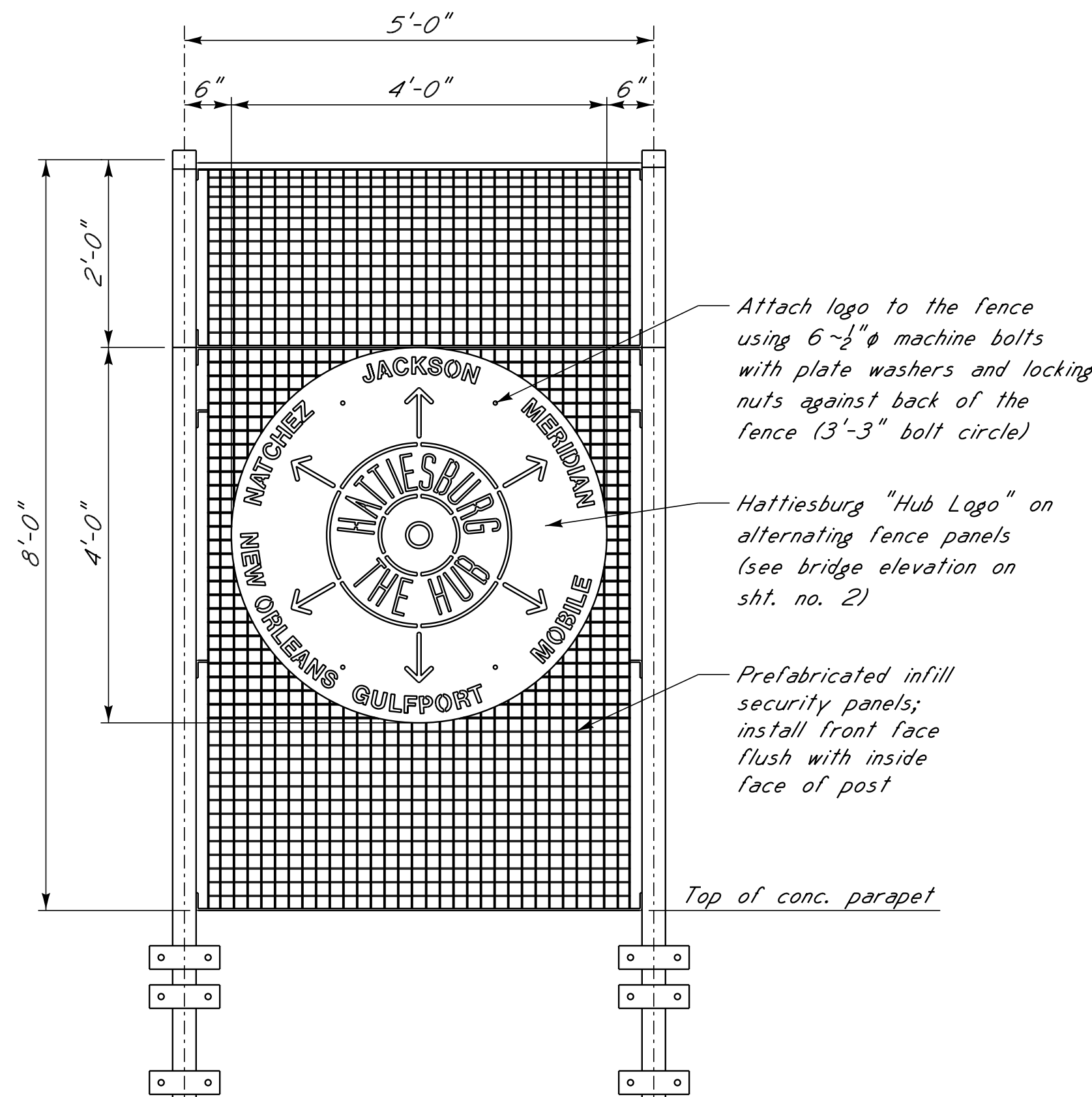
WORKING NUMBER:
25 OF 59

DRAWING NUMBER:
8027

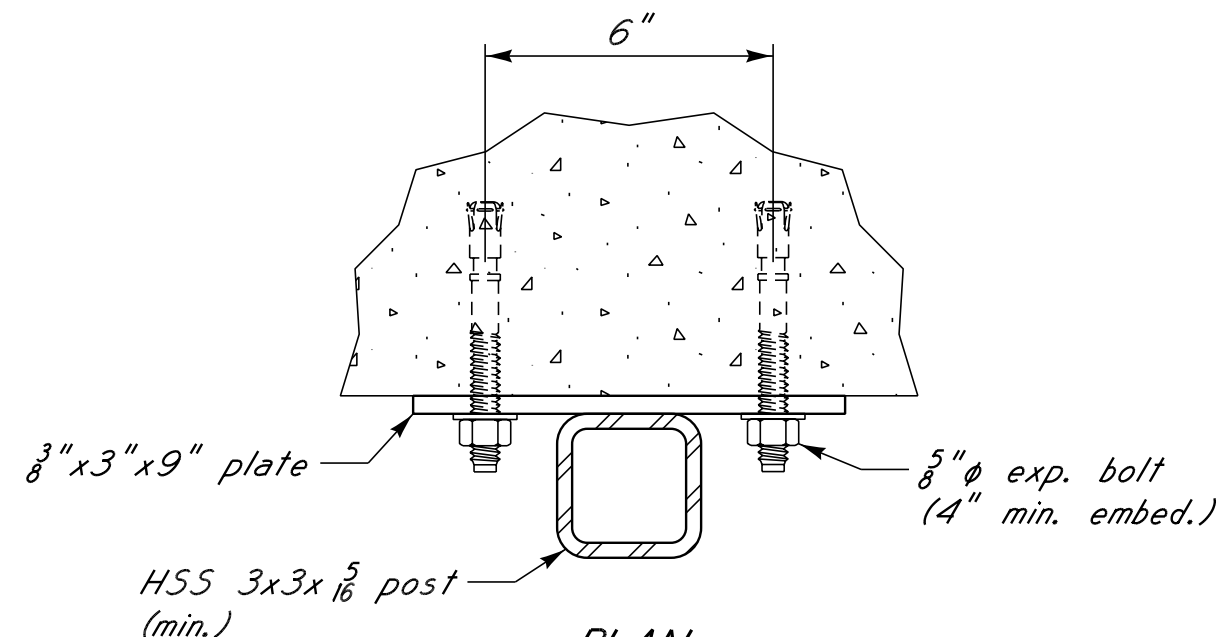
FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-26-Safety Fencing Details.dgn
DATE: 8/12/2022 TIME: 1:43:02 PM USER: RJB



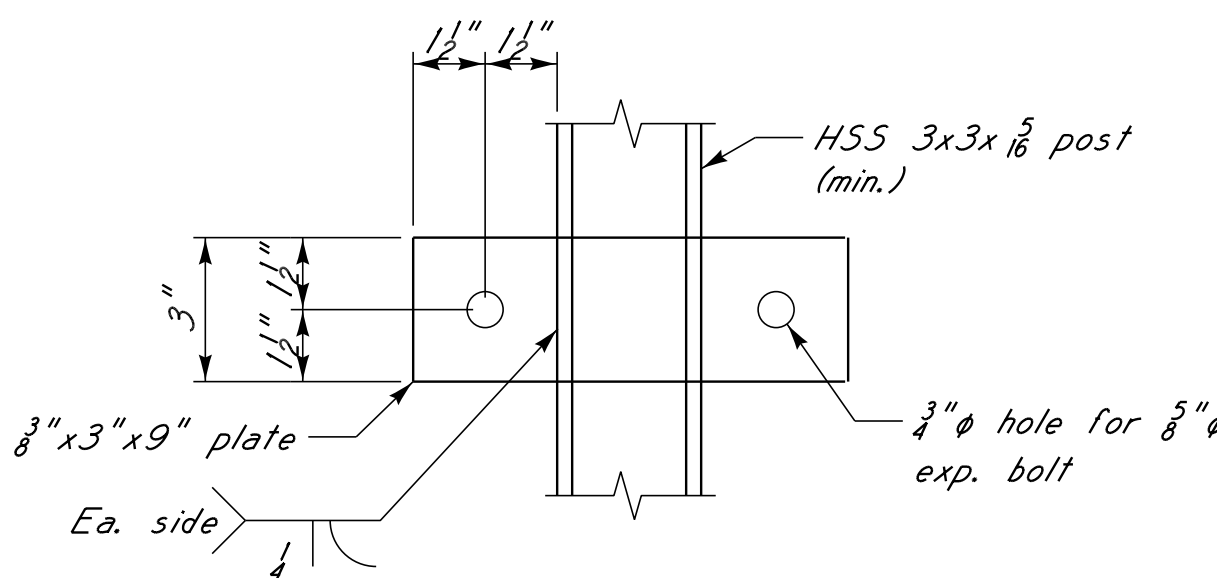
SAFETY FENCING TYPICAL SECTION
Scale: 1 1/2" = 1'-0"



SAFETY FENCE TYPICAL ELEVATION
Looking at the inside face.
Scale: 1 1/2" = 1'-0"

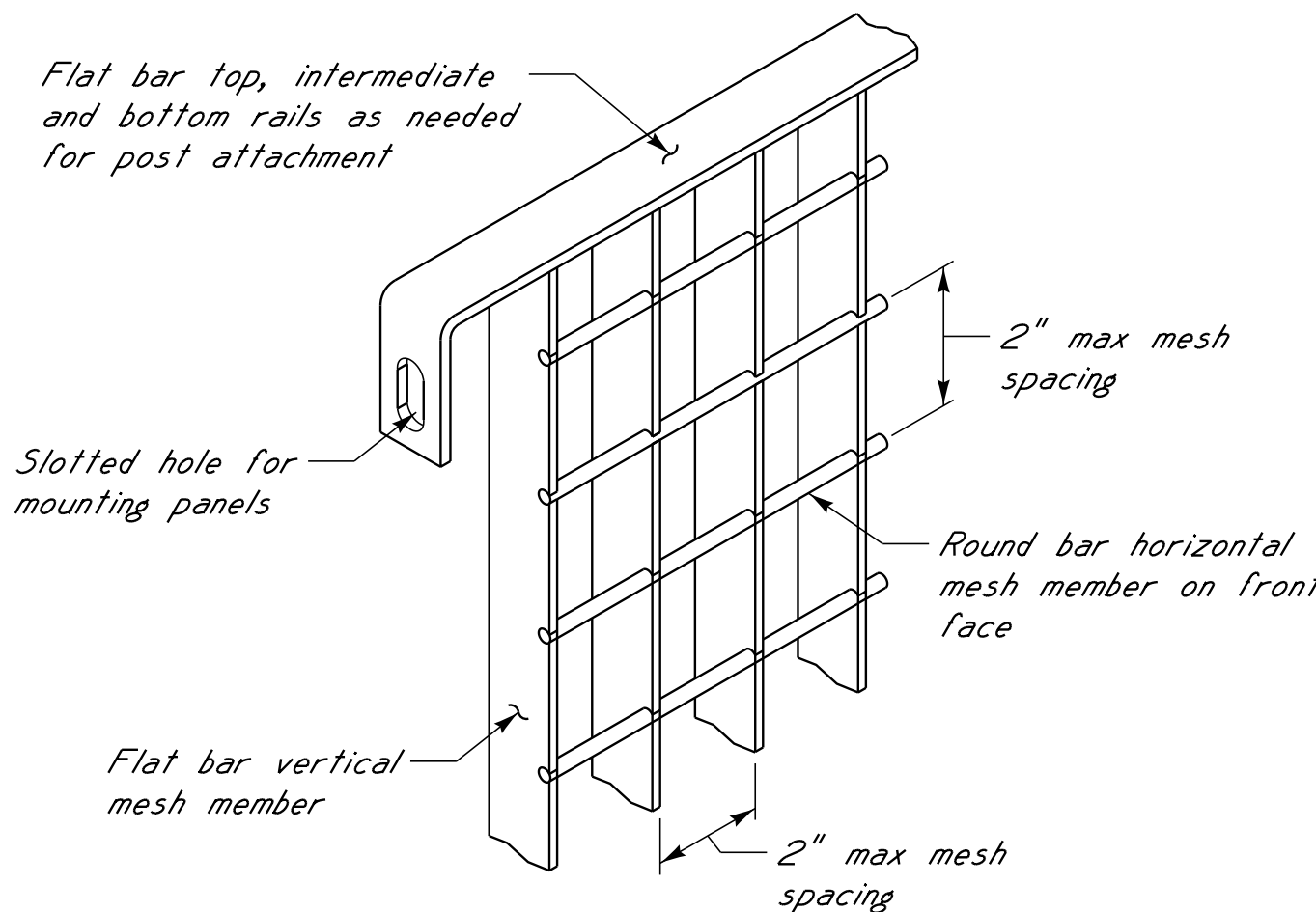


PLAN



ELEVATION

POST SUPPORT BRACKET DETAIL
N.T.S.



SCHEMATIC FENCE DETAIL
N.T.S.

NOTES:

The safety fence shall be the Shield Design by AMETO Manufacturing Corporation, or equal, with a 2"x2" maximum mesh spacing.
The safety fence shall be designed to resist a Strength III factored horizontal wind pressure of 58 psf and additional factored vertical dead load of 55 plf in accordance with AASHTO LRFD design specifications, 2020. The wind area shall be assumed to be a solid surface.
For limits of safety fence, see sht. no. 2.
Expansion bolts shall have a minimum design strength $\phi N_n = 7.415$ kips and be hot dipped galvanized.
All fencing components shall be painted black to match the steel bridge railing.
The "Hub Logo" shall be cut from 3/8" steel plate. A CAD drawing of the logo will be provided for fabrication.
All costs associated with design, shop drawings, furnishing and installing the safety fence shall be included in the Safety Fence pay item.

NOTICE TO DRAWING HOLDER				
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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

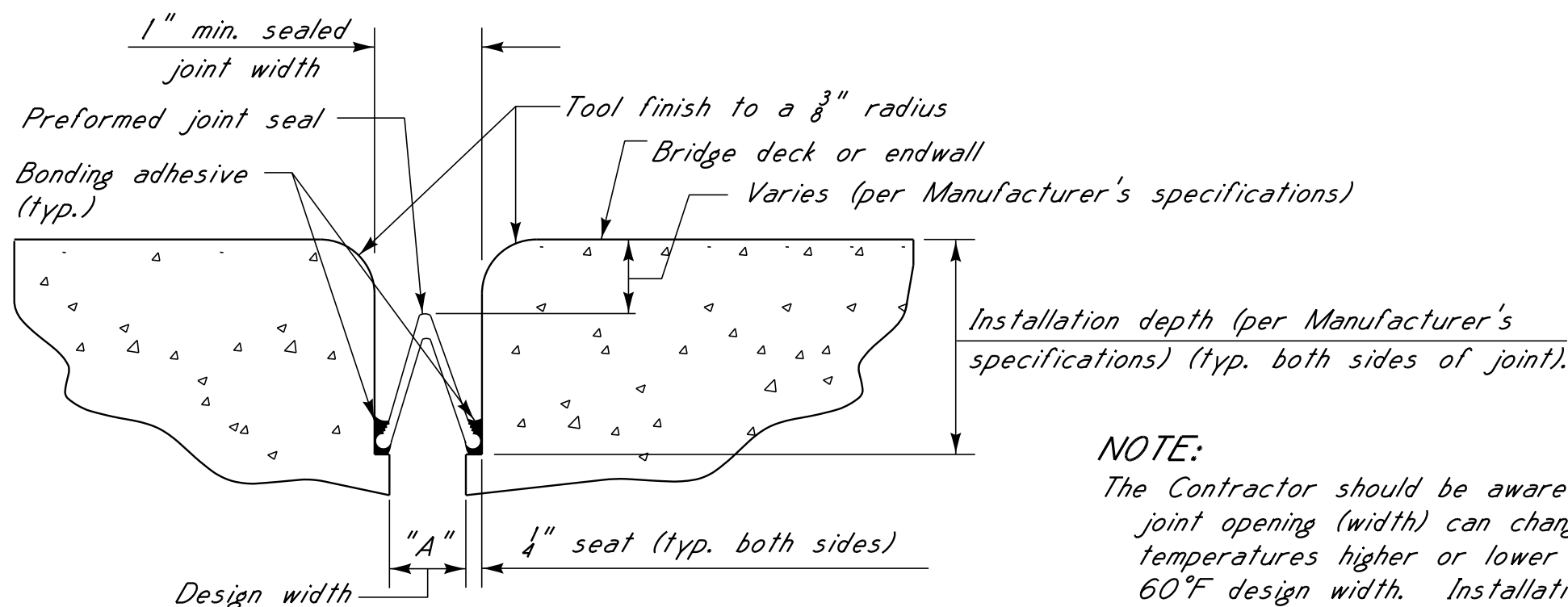
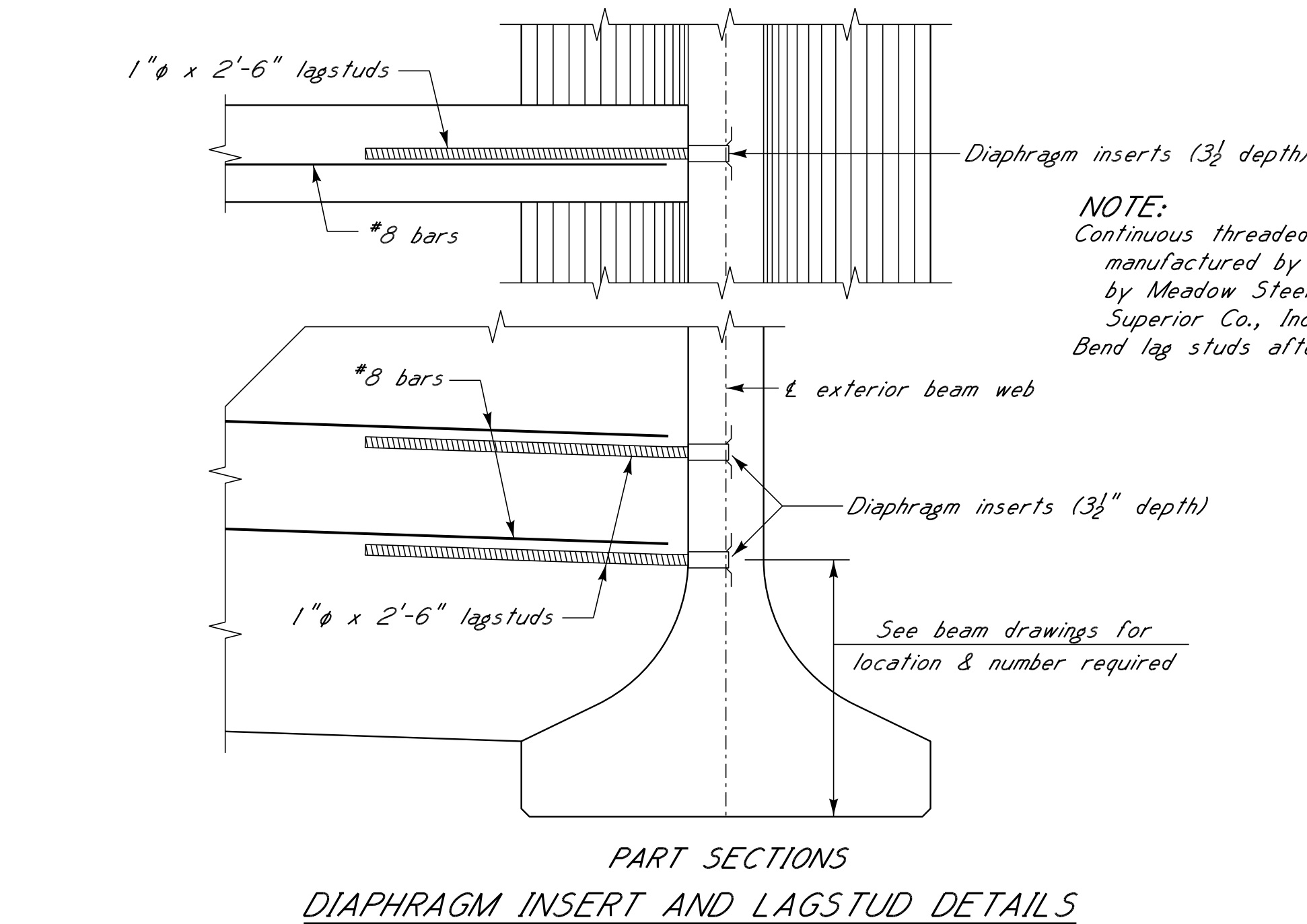


**SAFETY FENCING
DETAILS**

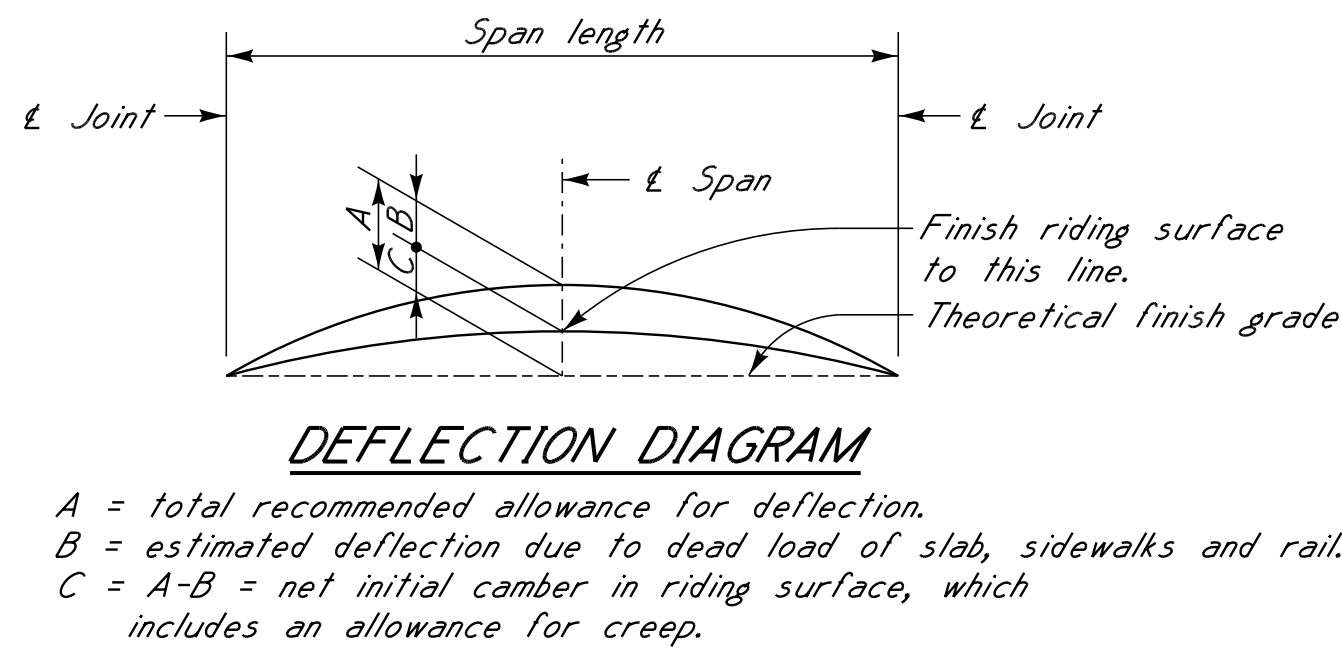
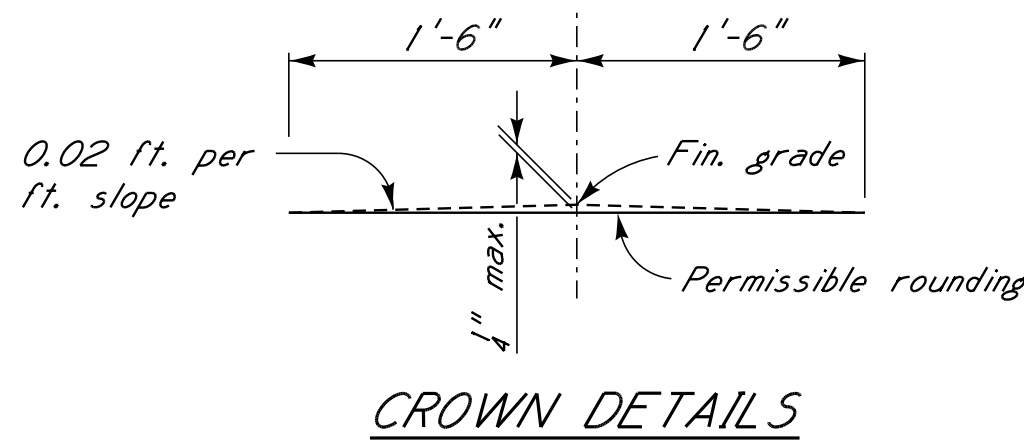
WORKING NUMBER:
26 OF 59

DRAWING NUMBER:
8028

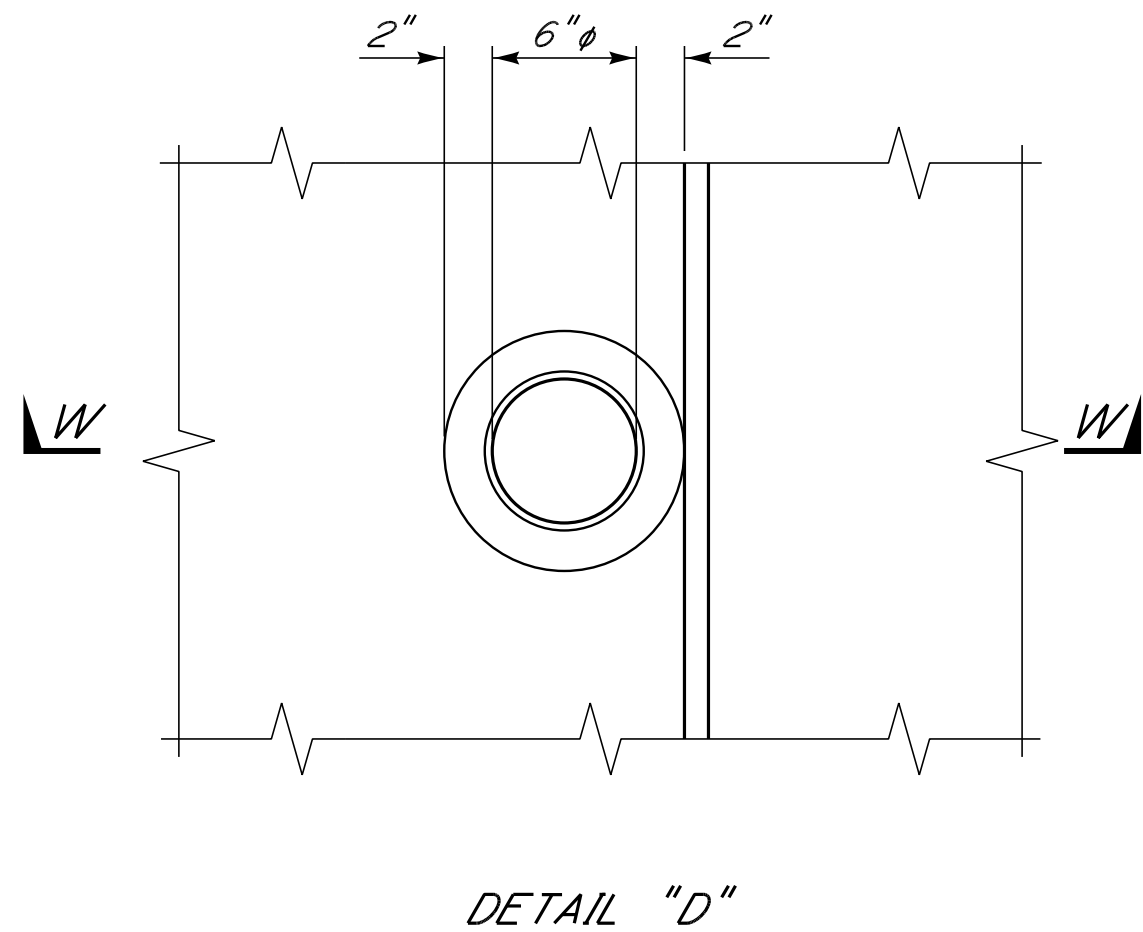
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DATE: 8/12/2022 TIME: 1:43:03 PM USER: RJB



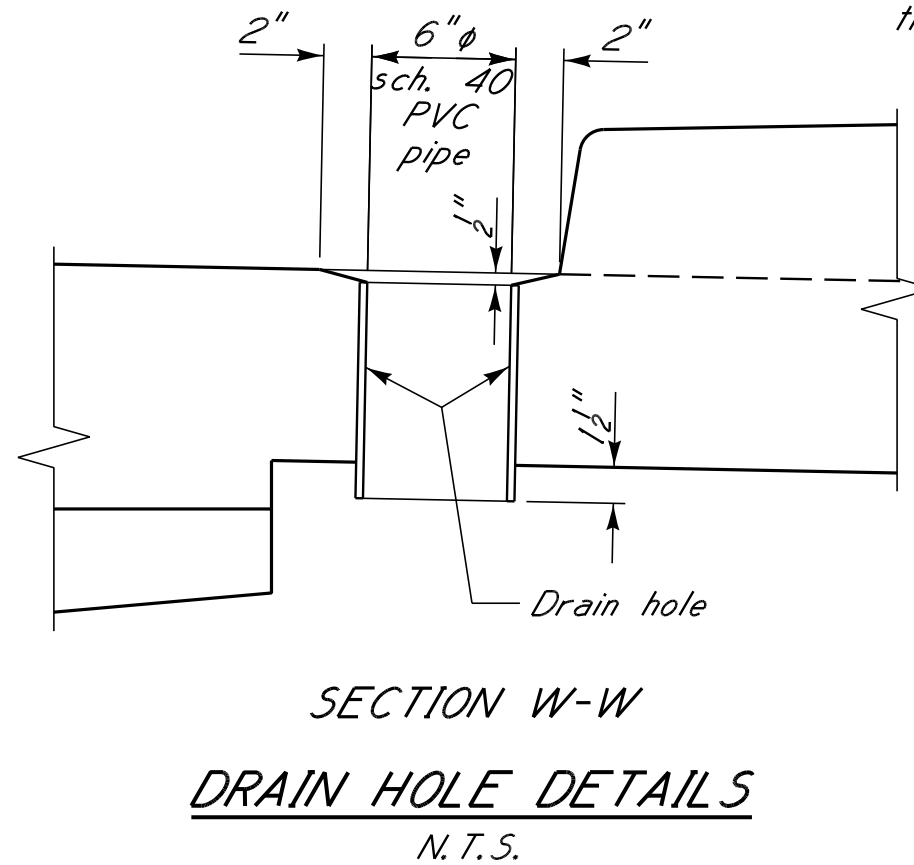
- NOTES:
- The preformed joint seal shall be one of the following, installed according to the Manufacturer's specifications:
 - Silicoflex Joint Sealing System, manufactured by R.J. Watson, Inc.
78 John Glenn Drive, Amherst, N.Y. 14228 (716-691-3301)
www.rjwatson.com
Type I: Model SF-150
Type II: Model SF-225
 - Wabo SPS Joint System, manufactured by Watson Bowman Acme Corporation
95 Pineview Drive, Amherst, N.Y. 14228 (716-691-7556)
www.wbacorp.com
Type I: Model SPS-225
Type II: Model SPS-400
 - V-Seal Expansion Joint System, manufactured by The D.S. Brown Company
300 East Cherry Street, North Baltimore, OH. 45872 (419-257-3561)
www.dsbrown.com
Type I: Model V-300
Type II: Model V-400
 - For estimating purposes, The RJ Watson Silicoflex Joint Sealing System was selected. However, should another supplier be chosen, it is the Contractor's responsibility to ensure that the Manufacturer's recommendations are followed for joint preparation, installation depths and widths, adhesive setting times, and any other variances between the specifications provided by the Manufacturers. A Manufacturer representative shall be present at the time joint sealing begins to ensure that the Contractor is properly schooled in installation of the joint material. All open joints shall be sealed at their design widths, dimension "A", as indicated on the end bent and span details.
 - Dimension "A" is defined as the design width of the joint opening, which does not account for the $\frac{1}{4}$ " seat required on both sides of the joint. Preformed Joint Seal, Type I, shall be used for design widths less than 2". Preformed Joint Seal, Type II, shall be used for design widths greater than or equal to 2", with the maximum design width being 2 $\frac{1}{2}$ ". In cases where design widths are greater than 2 $\frac{1}{2}$ ", another type of expansion material shall be required as directed by the Director of Structures, State Bridge Engineer.
 - Joints in newly constructed bridge decks shall be protected from damage until accepted for maintenance by the State. Damaged joints shall be repaired at no additional cost to the State.



NOTE:
For values of A, B & C, see beam detail sheets.

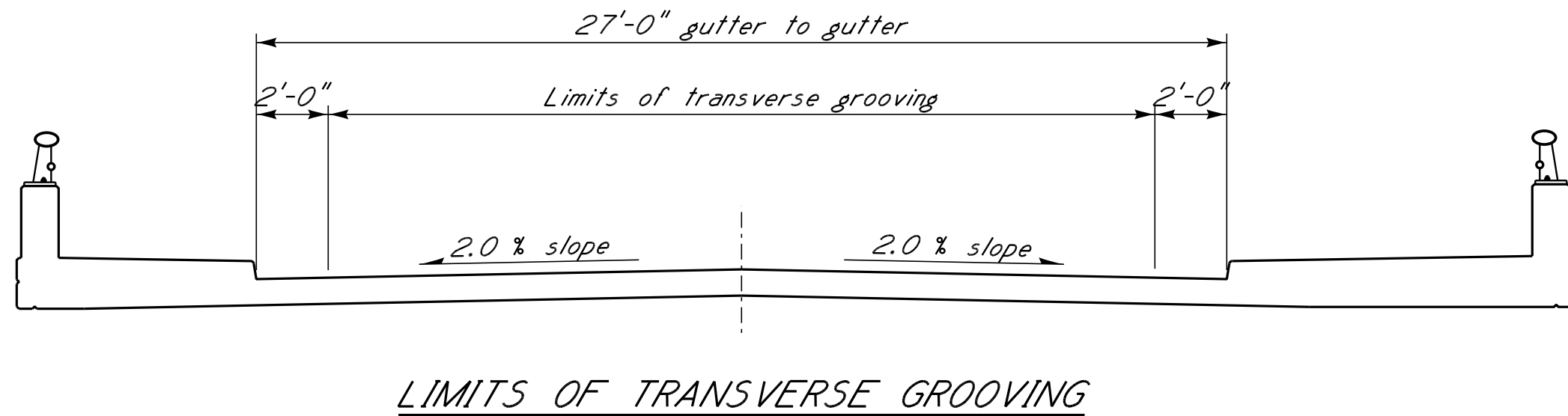


NOTE: Drain holes shall be located so that bars B & C will not be cut.

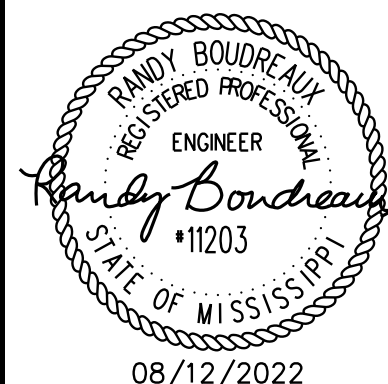


NOTE:
The girder deflection diagrams shown in these plans were prepared and intended for design and estimation purposes only. Actual bridge girder deflections may differ from the deflection diagrams shown in these plans. It is the Contractor's responsibility to construct the bridge to meet the requirements of the plans and Specifications including, but not limited to, the requirements for bridge deck smoothness.
Prior to formwork construction, the Contractor shall submit three (3) copies of a proposed BRIDGE SUPERSTRUCTURE CONSTRUCTION PLAN to the Engineer for review, through the Project Engineer. This submittal shall include all calculations, assumptions and parameters used by the Contractor to determine bridge girder deflections and form grade elevations. This submittal shall also include an erection and construction procedure that addresses the construction means and methodologies used by the Contractor and shall consider effects including, but not limited to, construction phasing, pouring schedules, applied permanent and construction loading, and shall include calculations and details of temporary girder bracing systems used to ensure girder stability and to counter the effects of girder tilt. Should the Contractor elect to utilize a slab closure pour between phases, it should be poured at no additional cost to the State
After girder erection and prior to construction, the Contractor shall submit deck thickness verification calculations for each girder. These calculations shall include A comparison of the erected girder top flange profiles versus the plan deck grade elevations over each girder plus the anticipated girder deflection due to applied permanent dead load and creep. Three (3) copies of the deck thickness verification calculations and any proposed remediation measures to correct for thin deck areas shall be submitted to the Engineer for review, through the Project Engineer. The BRIDGE SUPERSTRUCTURE CONSTRUCTION PLAN and the deck thickness verification calculations shall be prepared and stamped by a Mississippi Registered Professional Engineer.

NOTES:
All concrete in deck and diaphragms shall be class "BD".
Chamfer all edges $\frac{3}{8}$ " unless otherwise noted.
See general notes drawing for finishing of concrete surfaces.
Placing dimensions for reinforcing steel to concrete surfaces are clear distances.
To determine the dimension from finish grade to cap, the assumption is made that the compressed thickness of the neoprene pad is as shown on sht. no. 32, and that the original camber of the beams will be within the limits shown on the Beam Detail sheets. The Engineer shall be notified if the cambers are not within these limits.



HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



MISCELLANEOUS SPAN
DETAILS

WORKING NUMBER:
27 OF 59

DRAWING NUMBER:
8029

REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
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FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-28-75 Ft. Beam Details (FIB-45).dgn
DATE: 8/12/2022 TIME: 1:43:03 PM USER: RJB

EPOXY COATING NOTE:
Cut strands flush and weatherproof with limestone colored "Hornflex" (A.C. Horn Products), "Pecora" (Pecora Corp.) or approved equal, meeting the requirements of Federal Specification No. TT-S-00230G, applied according to the manufacturer's direction.

Flanges and strands not shown for clarity.
(End 1 shown, End 2 similar)

NOTE:
4 strands N shall be 0.6" ϕ strands @ 10,000* each

*24 ~ 0.60" ϕ 270 K-LR strands
@ 43,950* = 1,054,800*

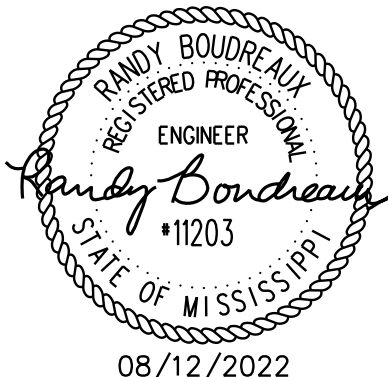
STRAND DEBONDING LEGEND:
 $\triangle$ - Strands debonded 18'-0" from end of beam
 $\bigcirc$ - Strands debonded 21'-6" from end of beam
 $\square$ - Strands debonded 25'-0" from end of beam

BEAM DIMENSIONS

Beam No.	"L"	"M"	"N"
75-1	76'-2 $\frac{3}{4}$ "	3" $\pm$	13
75-2 to 75-4	74'-6 $\frac{3}{4}$ "	5" $\pm$	12
75-5	72'-10 $\frac{1}{4}$ "	6 $\frac{1}{2}$ " $\pm$	11

NOTES:
For GENERAL NOTES, see dwg. no. 1.
For details of bearing assembly and laminated bearing pads, see dwg. no. 32.
For SKEWED BEAM END DETAILS, see sht. no. 32.
For BAR BENDING DETAILS, see dwg. no. 33.
For embedded plate details, see dwg. no. 33.

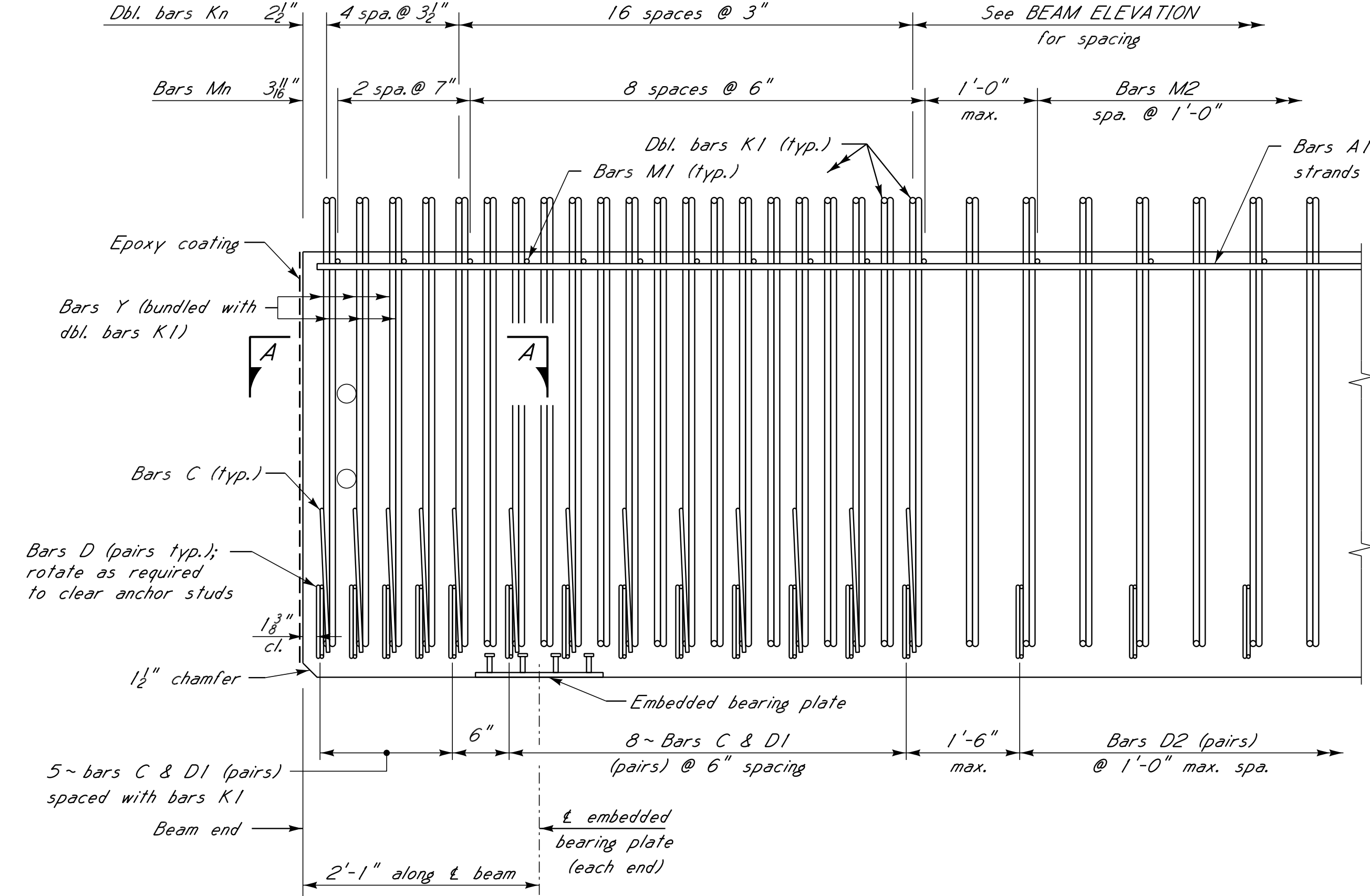
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



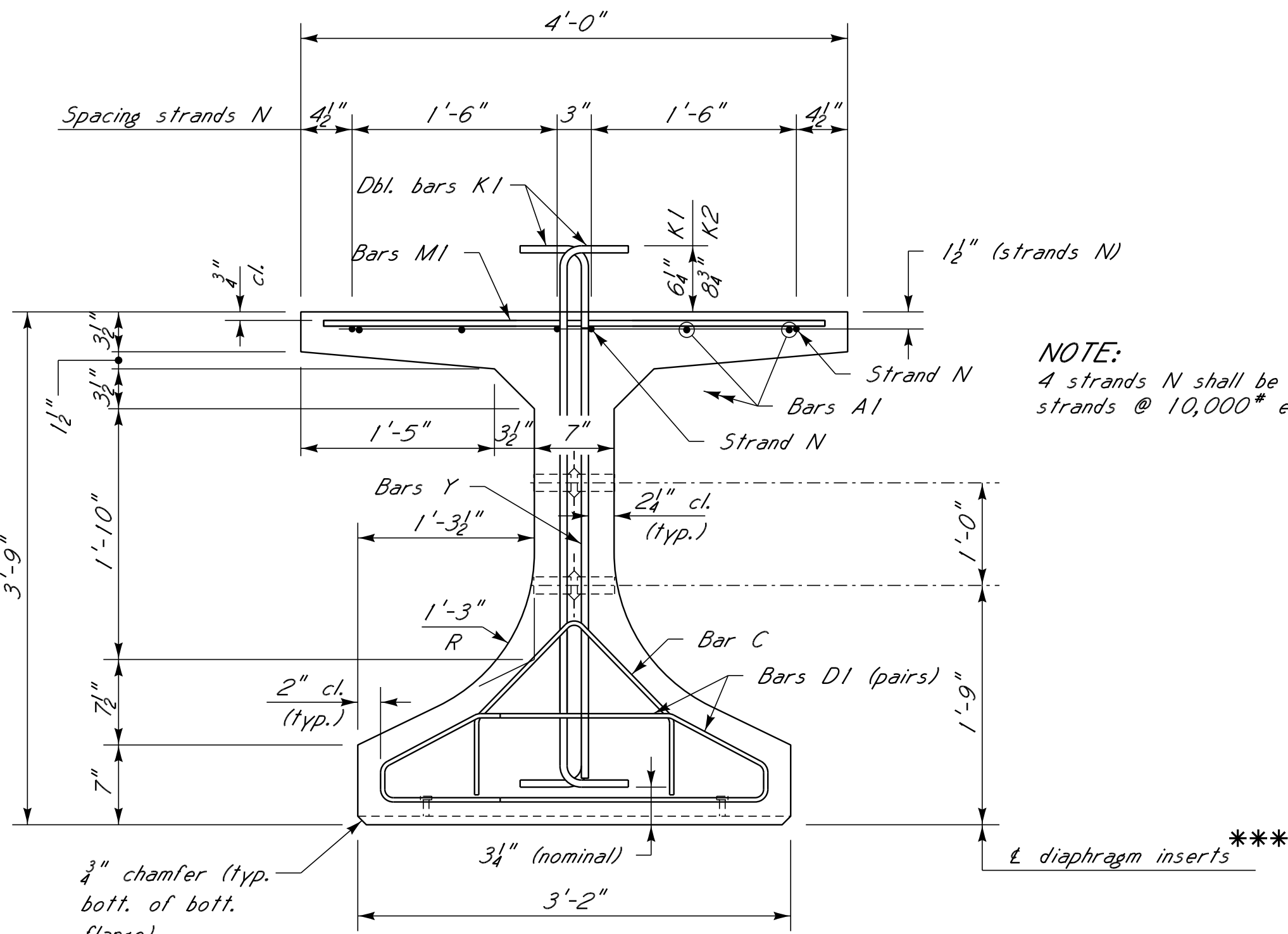
75 FT. BEAM DETAILS
(FIB-45)

WORKING NUMBER:
28 OF 59

DRAWING NUMBER:
8030

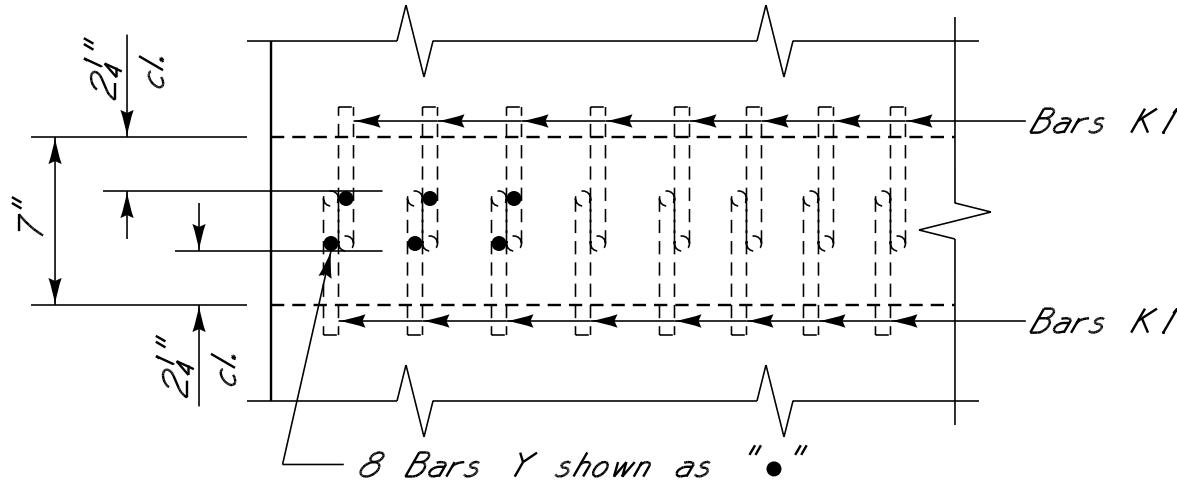


PART ELEVATION



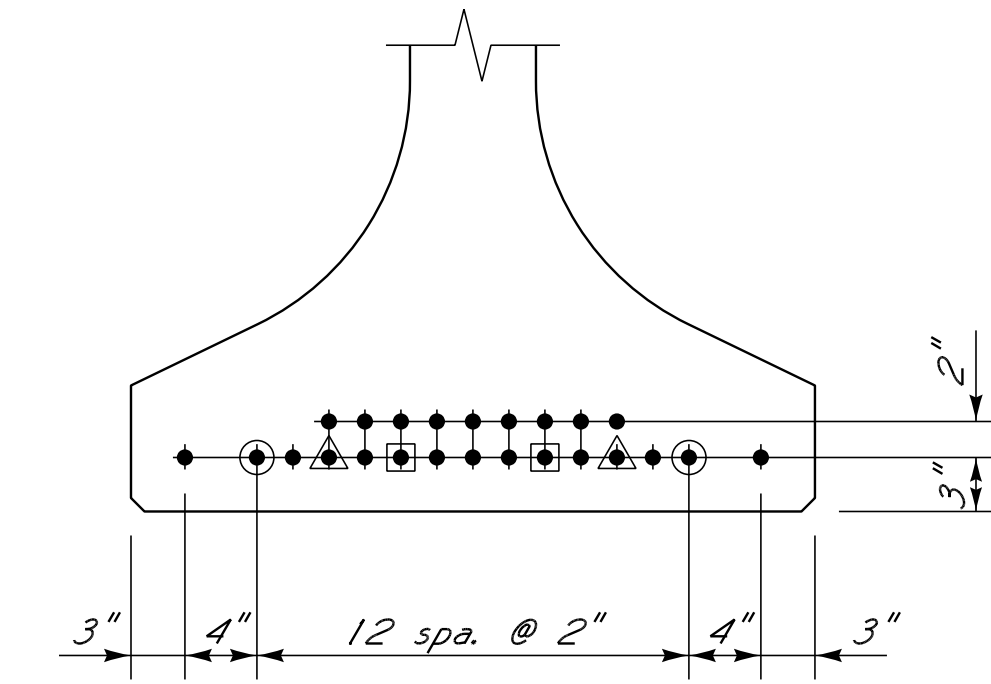
END ELEVATION

***NOTE: Diaphragm inserts required on both sides of web for interior beams and inside face of web for exterior beams. See details on sht. no. 32.

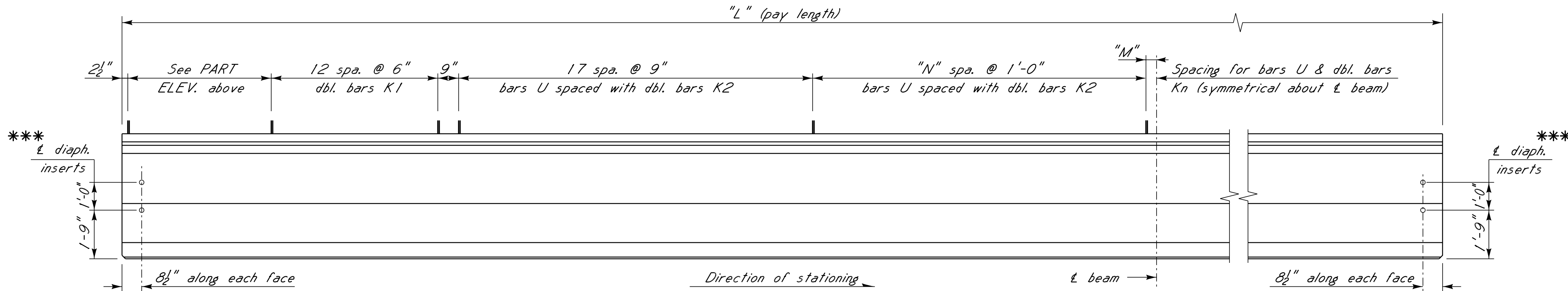


SECTION A-A

Showing only bars K1 and Y



STRAND PATTERN SPACING
AND DEBONDING AT END OF BEAM



BEAM ELEVATION

*NOTE: Number of strands and centroid shown do not include strands N.

PRESTRESS REQUIREMENTS

LR indicates low-relaxation strands

Strand Type	Minimum Breaking Strength Lbs./Strand	Initial Tension Lbs./Strand	Required Number And Location Of Strands						Distance From $\bar{x}$ Span To Hold-Down Point	Camber Limits	Deflection Diagram			Minimum Concrete Strength At Time Of Release	Minimum 28-Day Concrete Strength
			Total Number Strands	Straight Strands	Number Centroid	Draped Strands	Number Centroid	Strands $\bar{x}$ Span Beam End			A	B	C		
0.6" ϕ 270 K-LR	58,590	43,950	*24	*24	*3.75"	N.A.	N.A.	N.A.	N.A.	$\frac{1}{2}$ " to 1 $\frac{3}{4}$ "	$\frac{7}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{8}$ "	4,000 psi	5,000 psi

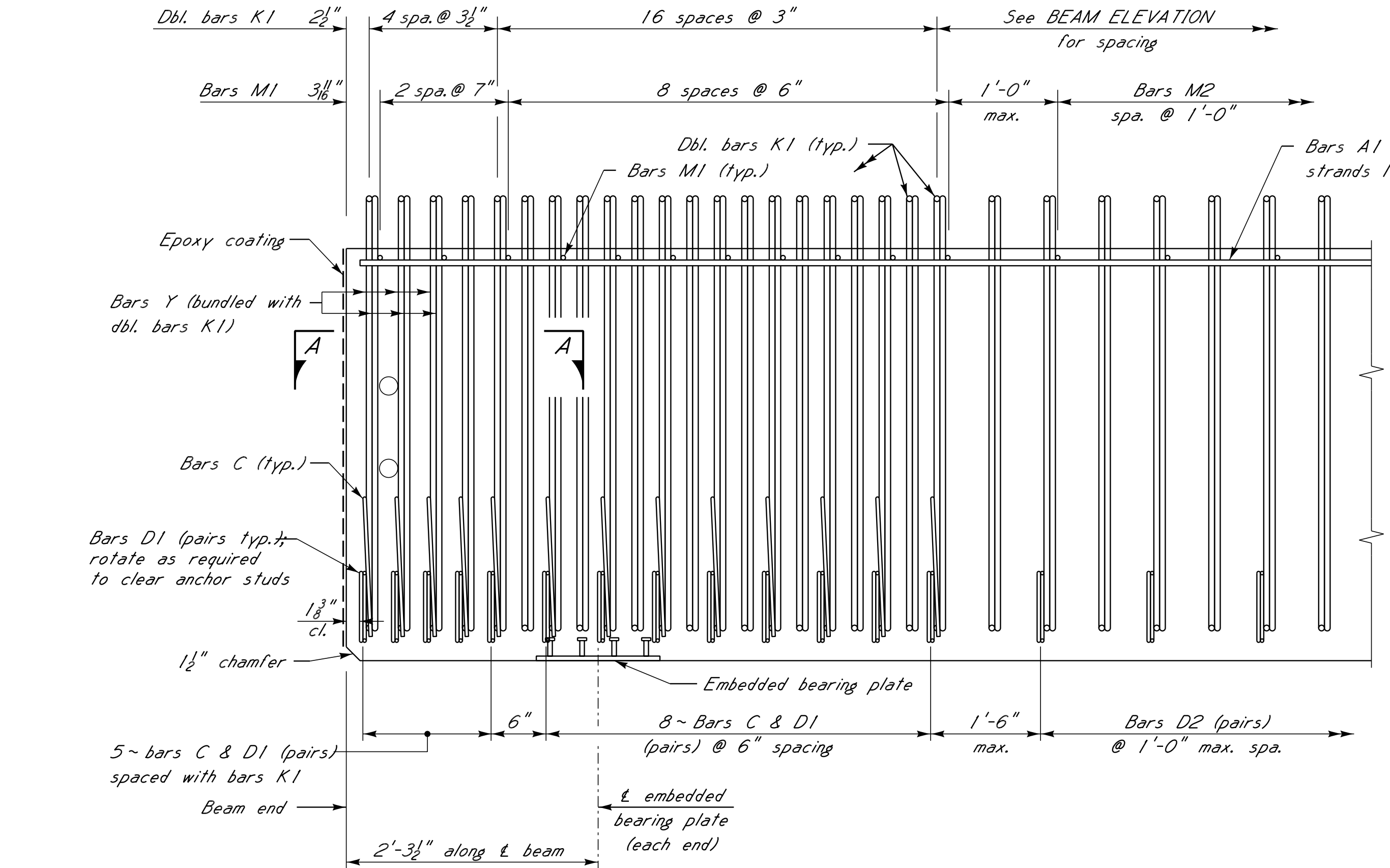
For DEFLECTION DIAGRAM, see misc. span details per dwg. no. 27

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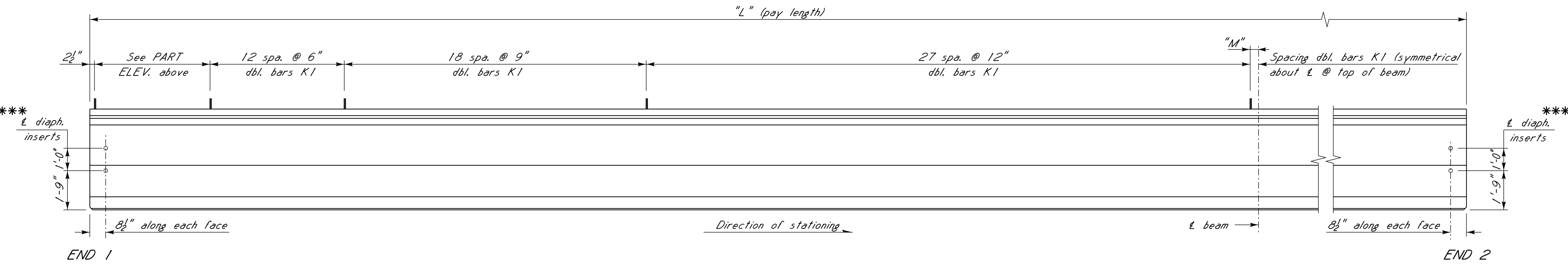
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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-29-105 Ft. Beam Details (FIB-45).dgn
DATE: 8/12/2022 TIME: 1:43:04 PM USER: RJB



EPOXY COATING NOTE:
Cut strands flush and weatherproof with limestone colored "Hornflex" (A.C. Horn Products), "Pecora" (Pecora Corp.) or approved equal, meeting the requirements of Federal Specification No. TT-5-00230G, applied according to the manufacturer's direction.

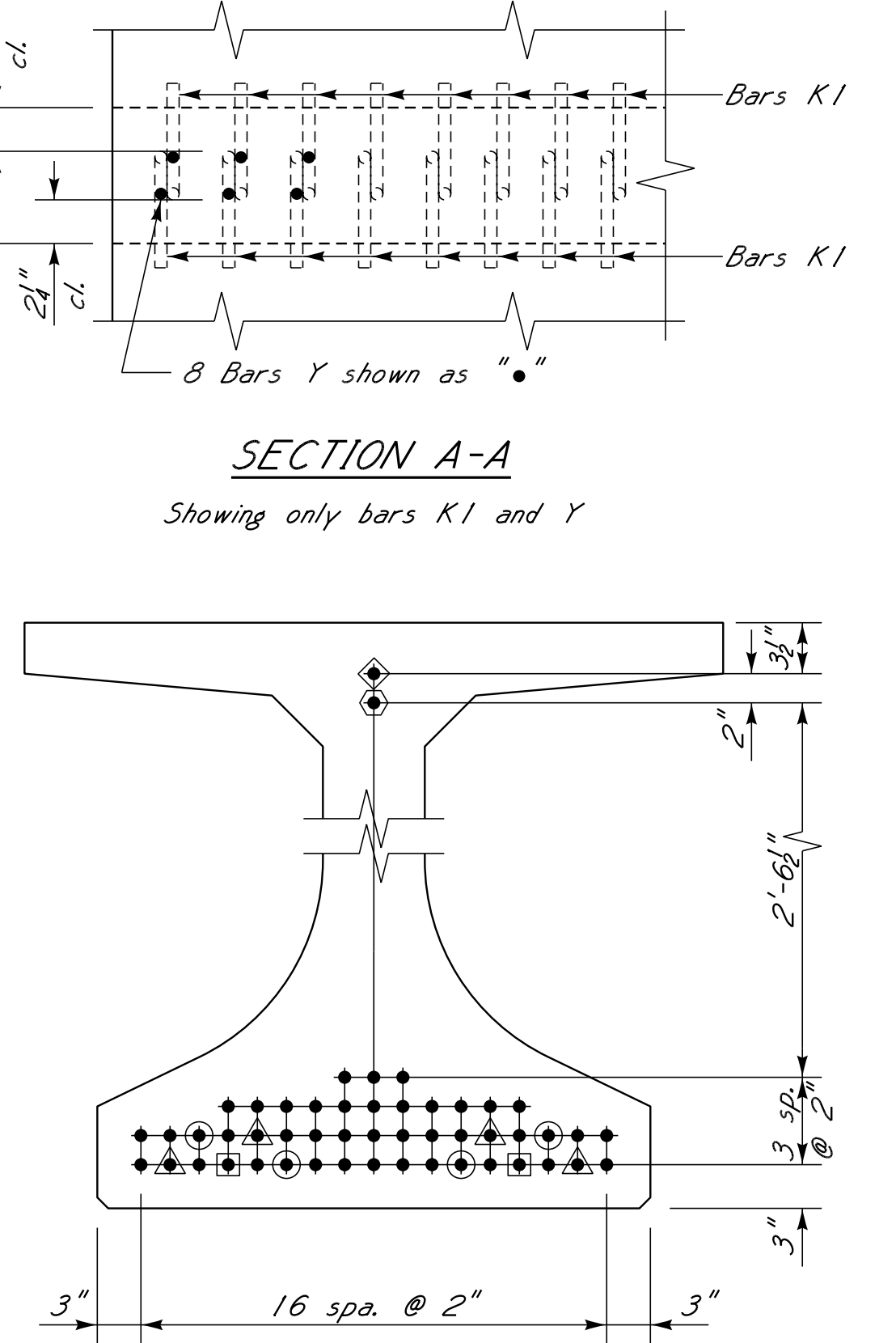
PART ELEVATION
Flanges and strands not shown for clarity.
(End 1 shown, End 2 similar)



***NOTE:** Number of strands and centroid shown do not include strands N.

PRESTRESS REQUIREMENTS									
Strand Type	Minimum Breaking Strength Lbs./Strand	Initial Tension Lbs./Strand	Required Number And Location Of Strands						Distance From End Span To Hold-Down Point
			Total Number Strands	Straight Strands Number	Draped Strands Number	Centroid	Centroid	Centroid	
0.6" 270 K-LR	58,590	43,950	* 50	* 50	* 6.42	N.A.	N.A.	N.A.	N.A.

For DEFLECTION DIAGRAM, see misc. span details per dwg. no. 27.



SECTION A-A
Showing only bars K1 and Y

STRAND PATTERN SPACING AND DEBONDING AT BEAM ENDS AND MIDSPAN

* 50 ~ 0.60" 270 K-LR strands
@ 43,950* = 2,197,500*

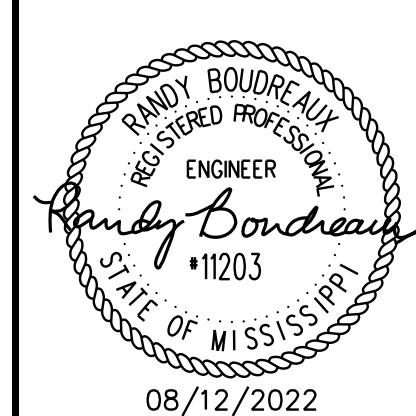
- STRAND DEBONDING LEGEND:**
- △ - Strands debonded 18'-0" from end of beam
 - - Strands debonded 21'-6" from end of beam
 - - Strands debonded 25'-0" from end of beam
 - ◇ - Strands debonded 45'-0" centered at midspan
 - ◇ - Strands debonded 55'-0" centered at midspan

BEAM DIMENSIONS		
Beam No.	"L"	"M"
105-1	104'-8 3/4"	6"±
105-2	104'-8 3/4"	6"±
105-3	104'-8 3/4"	6"±

NOTES:
For GENERAL NOTES, see dwg. no. 1.
For details of bearing assembly and laminated bearing pads, see dwg. no. 32.
For SKEWED BEAM END DETAILS, see sht. no. 32.
For BAR BENDING DETAILS, see dwg. no. 33.
For embedded plate details, see dwg. no. 33.

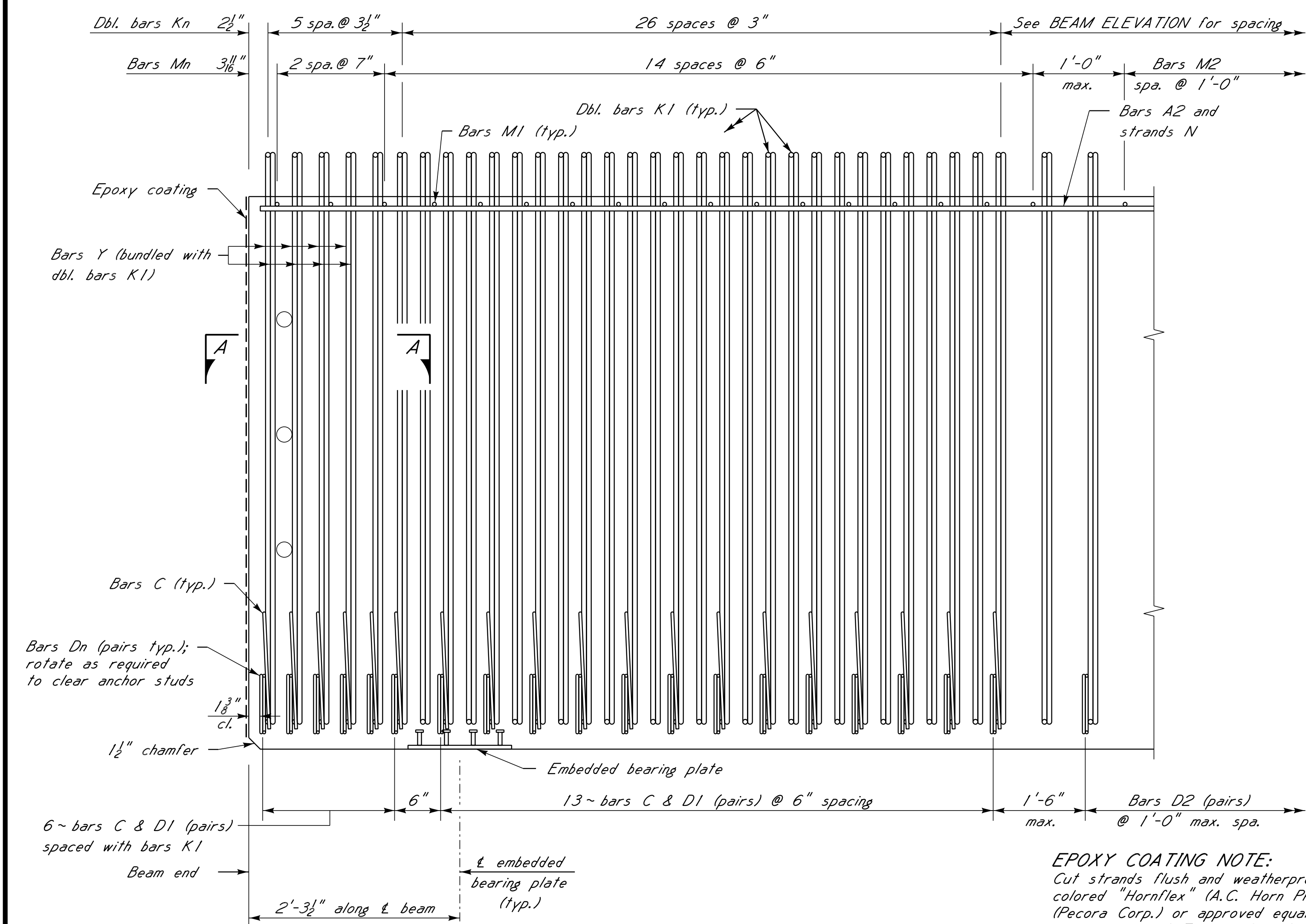
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				DSGN: RJB	DATE: 06/2022	DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022	QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



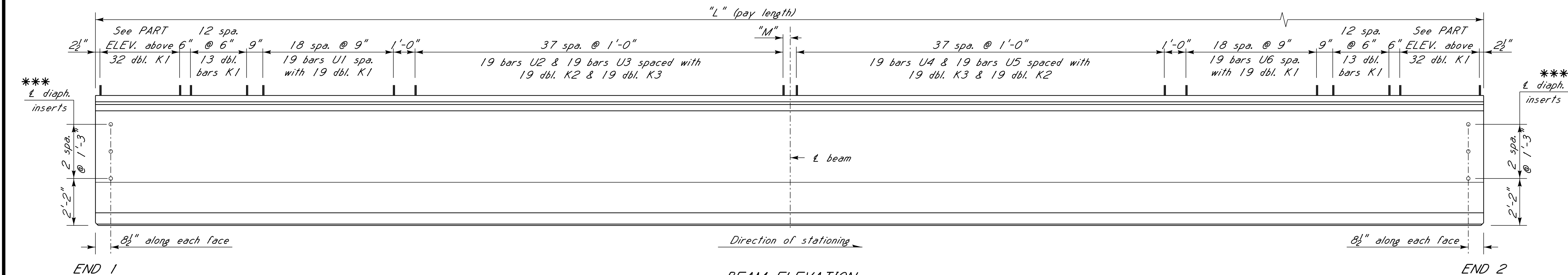
105 FT. BEAM DETAILS (FIB-45)	
WORKING NUMBER: 29 OF 59	DRAWING NUMBER: 8031

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DATE: 8/12/2022 TIME: 1:43:04 PM USER: RJB



PART ELEVATION

Flanges and strands not shown for clarity
(End 1 shown, End 2 similar)



BEAM ELEVATION
N.T.S.

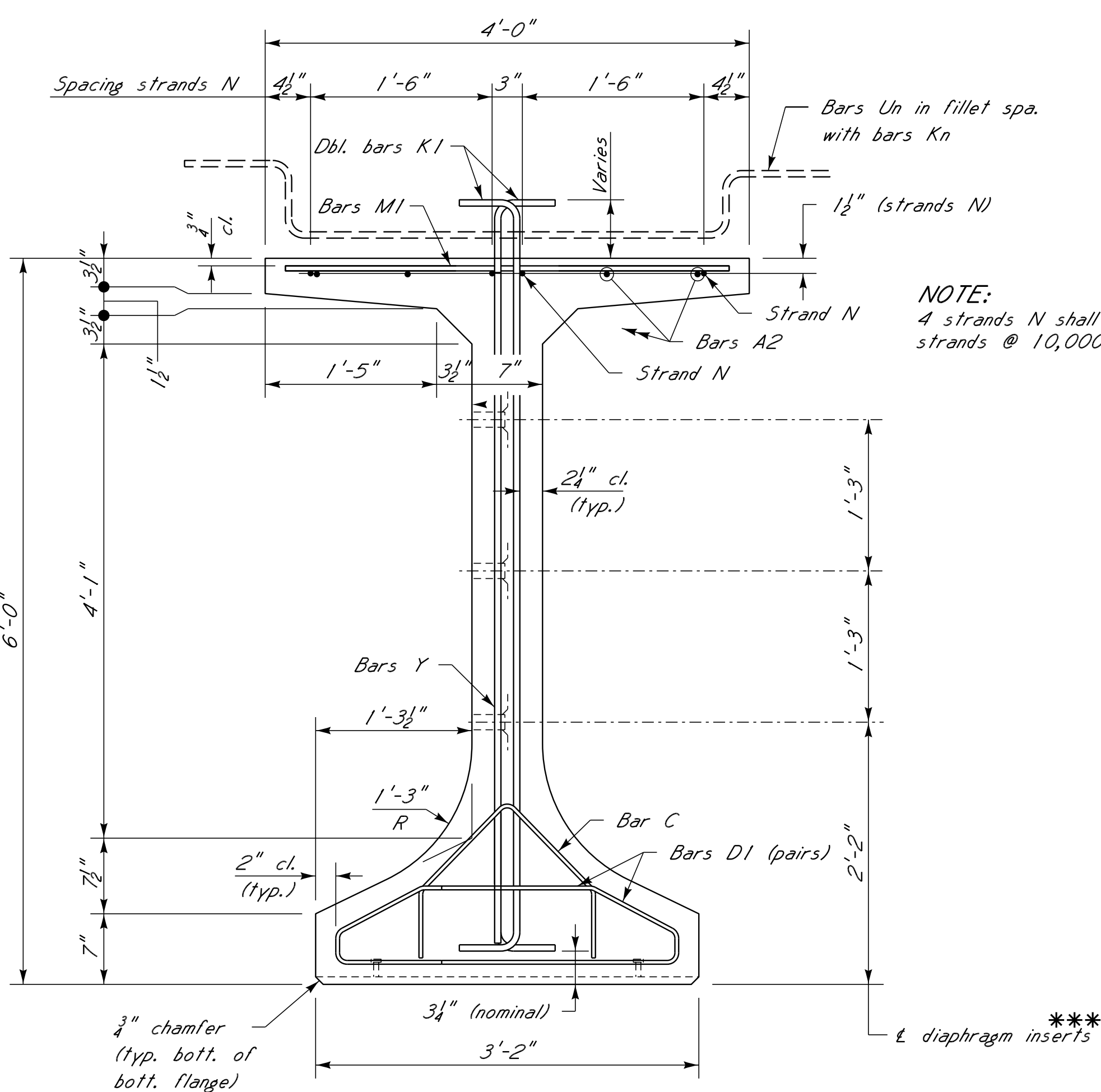
***NOTE:** Number of strands and centroid shown do not include strands N.

LR indicates low-relaxation strands		Initial Tension	PRESTRESS REQUIREMENTS						Distance From $\bar{x}$ Span To Hold-Down Point	Camber Limits	Deflection Diagram			Minimum Concrete Strength At Time Of Release	Minimum 28-Day Concrete Strength
			Total Number Strands	Straight Strands	Centroid	Draped Strands	Centroid	Span Beam End			A	B	C		
0.6" ϕ 270 K-LR	58,590	43,950	* 55	* 55	* 7.89	N.A.	N.A.	N.A.	N.A.	1 1/2" to 4 3/4"	2 5/8"	2 1/2"	1"	5,300 psi	6,500 psi

For DEFLECTION DIAGRAM, see misc. span details per dwg. no. 27.

NOTES:

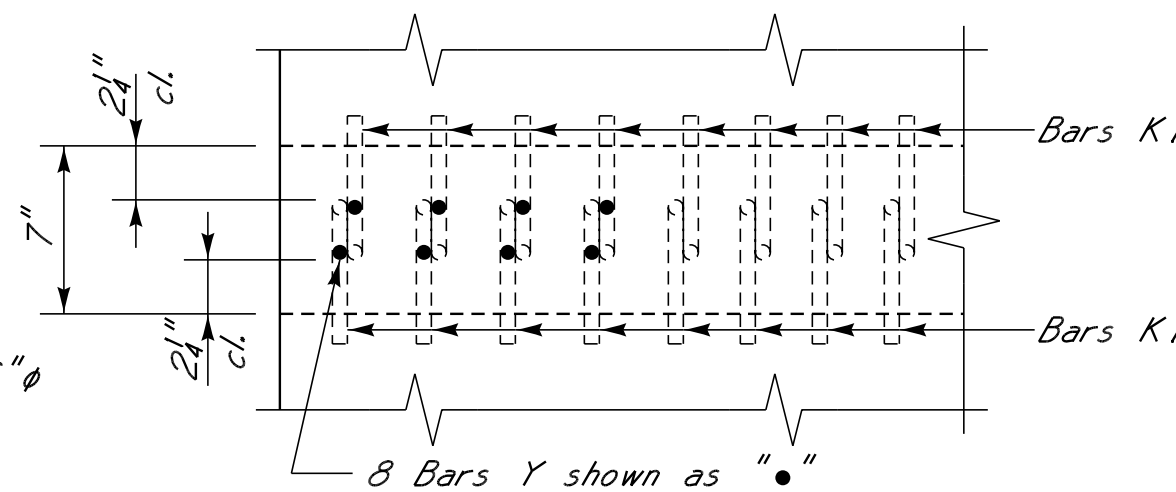
For GENERAL NOTES, see dwg. no. 1.
For details of bearing assembly and laminated bearing pads, see dwg. no. 32.
For SKEWED BEAM END DETAILS, see sht. no. 32.
For BAR BENDING DETAILS, see dwg. no. 33.
For embedded plate details, see dwg. no. 33.



*****NOTE:**

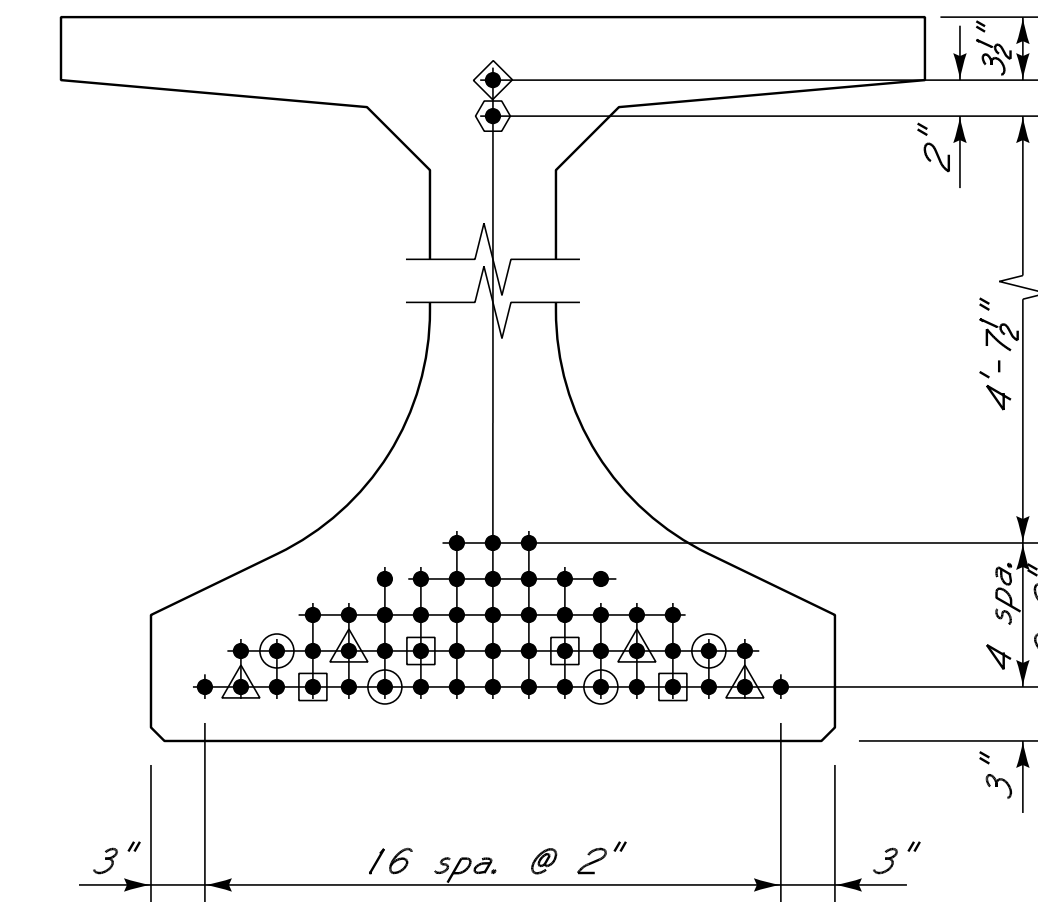
Diaphragm inserts required on both sides of web for interior beams and inside face of web for exterior beams. See details on sht. no. 32.

END ELEVATION



SECTION A-A

Showing only Bars K1 and Y



STRAND PATTERN SPACING AND DEBONDING AT BEAM ENDS AND MIDSPAN

* 55 ~ 0.60" ϕ 270 K-LR strands
@ 43,950# = 2,417,250#

STRAND DEBONDING LEGEND:

- $\triangle$ - Strands debonded 18'-0" from end of beam
- $\square$ - Strands debonded 21'-6" from end of beam
- $\circ$ - Strands debonded 25'-0" from end of beam
- $\diamond$ - Strands debonded 55'-0" centered at midspan
- $\diamond$ - Strands debonded 65'-0" centered at midspan

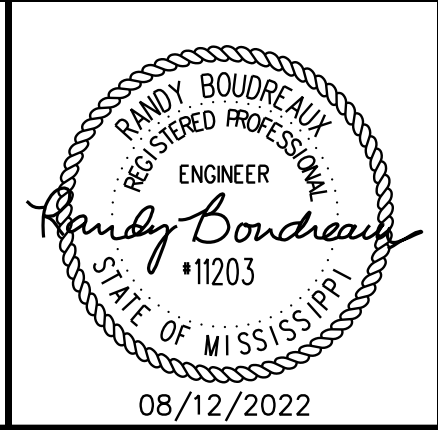
BEAM DIMENSIONS

Beam No.	"L"	"M"
135-1	134'-9"	5 1/2" $\pm$
135-2	134'-9"	5 1/2" $\pm$
135-3	134'-8 3/4"	5 1/2" $\pm$
135-4	134'-8 3/4"	5 1/2" $\pm$
135-5	134'-8 3/4"	5 1/2" $\pm$

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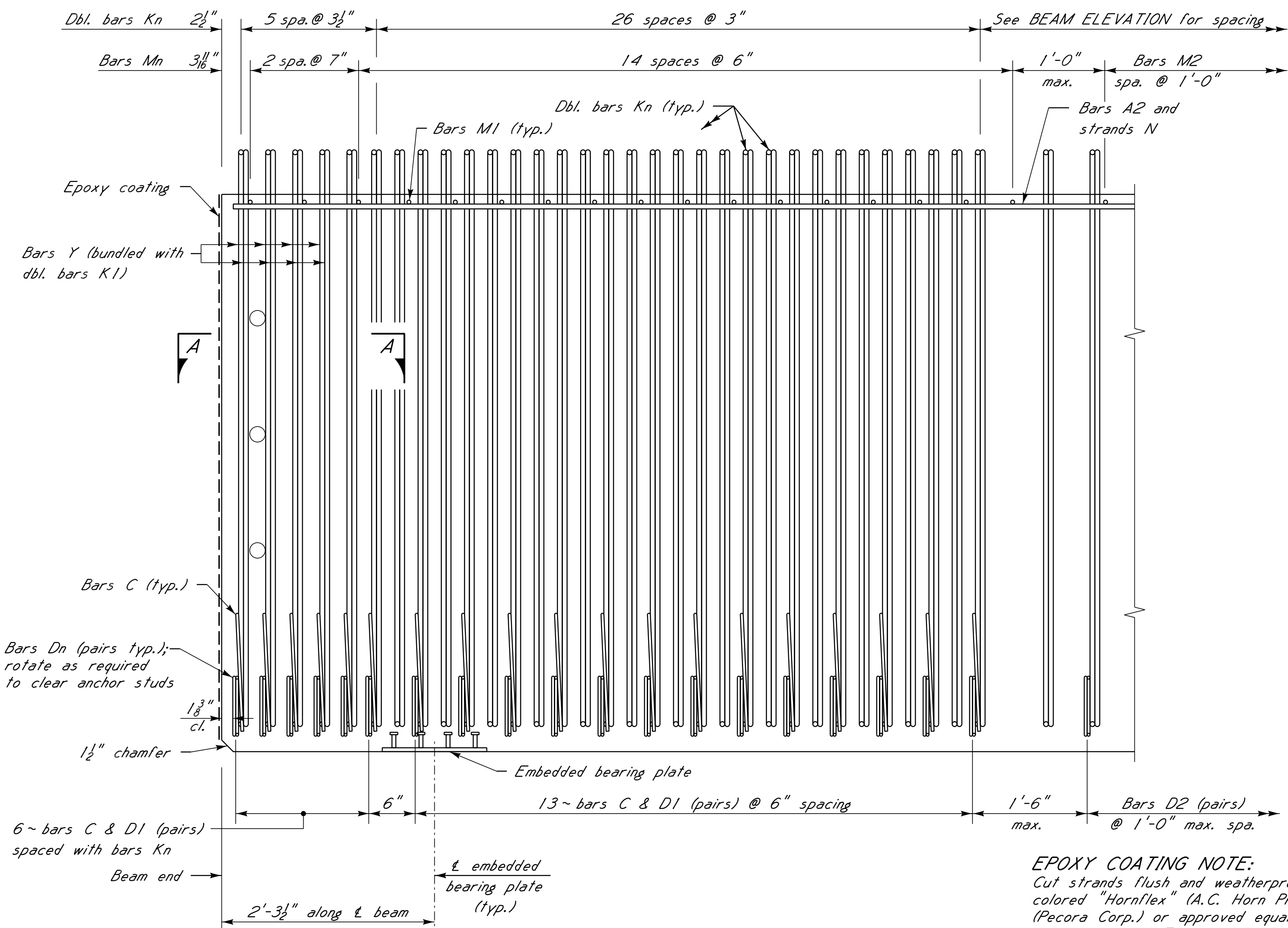
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				DSGN: RJB	DATE: 06/2022	DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022	QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



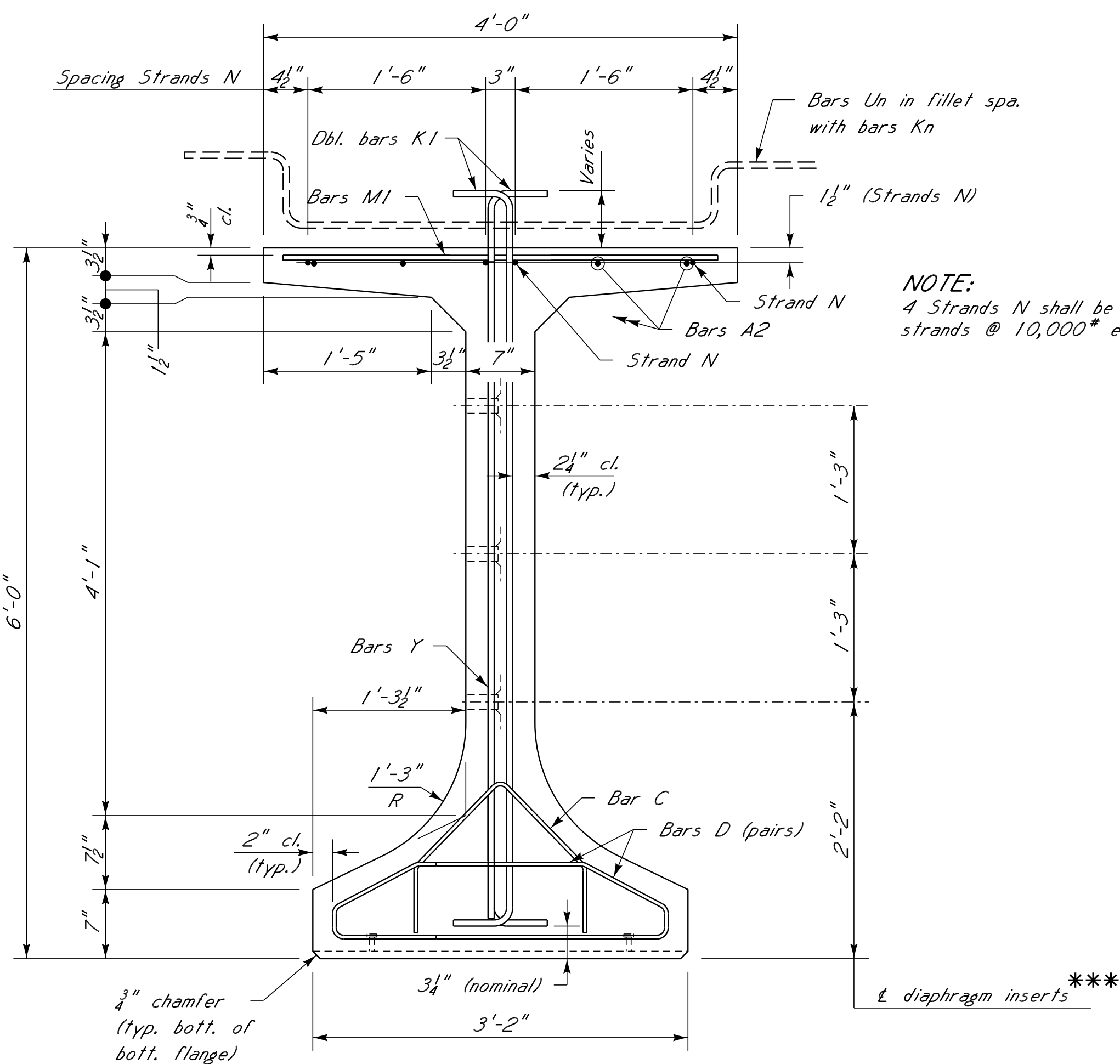
135 FT. BEAM DETAILS (FIB-72)	
WORKING NUMBER: 30 OF 59	DRAWING NUMBER: 8032

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-31-150-1 Beam Details (FIB-72).dgn
DATE: 8/12/2022 TIME: 1:43:05 PM USER: RJB



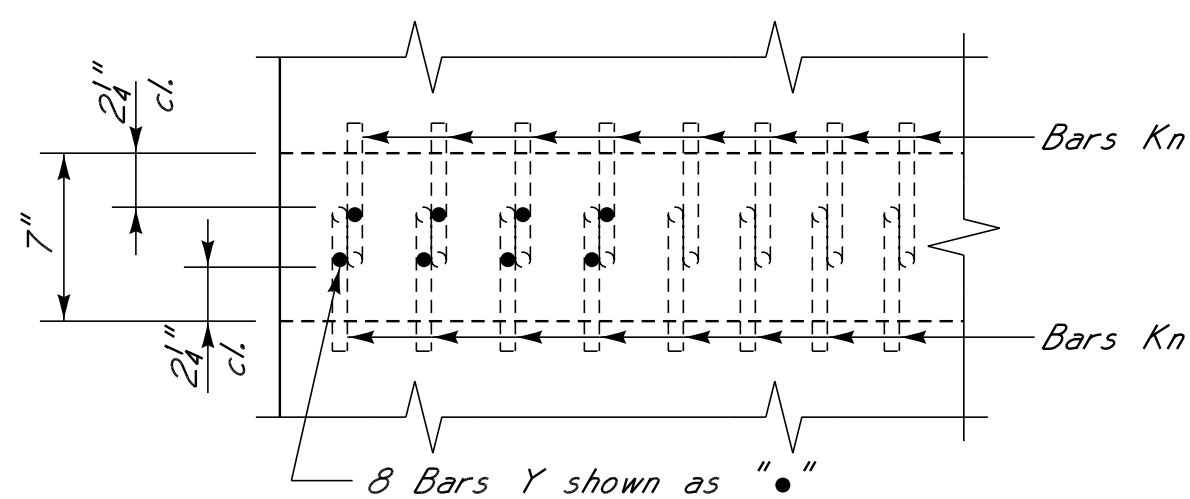
PART ELEVATION
Flanges and strands not shown for clarity
(End 1 shown, End 2 similar)

EPOXY COATING NOTE:
Cut strands flush and weatherproof with limestone colored "Hornflex" (A.C. Horn Products), "Pecora" (Pecora Corp.) or approved equal, meeting the requirements of Federal Specification No. TT-S-00230C, applied according to the manufacturer's direction.

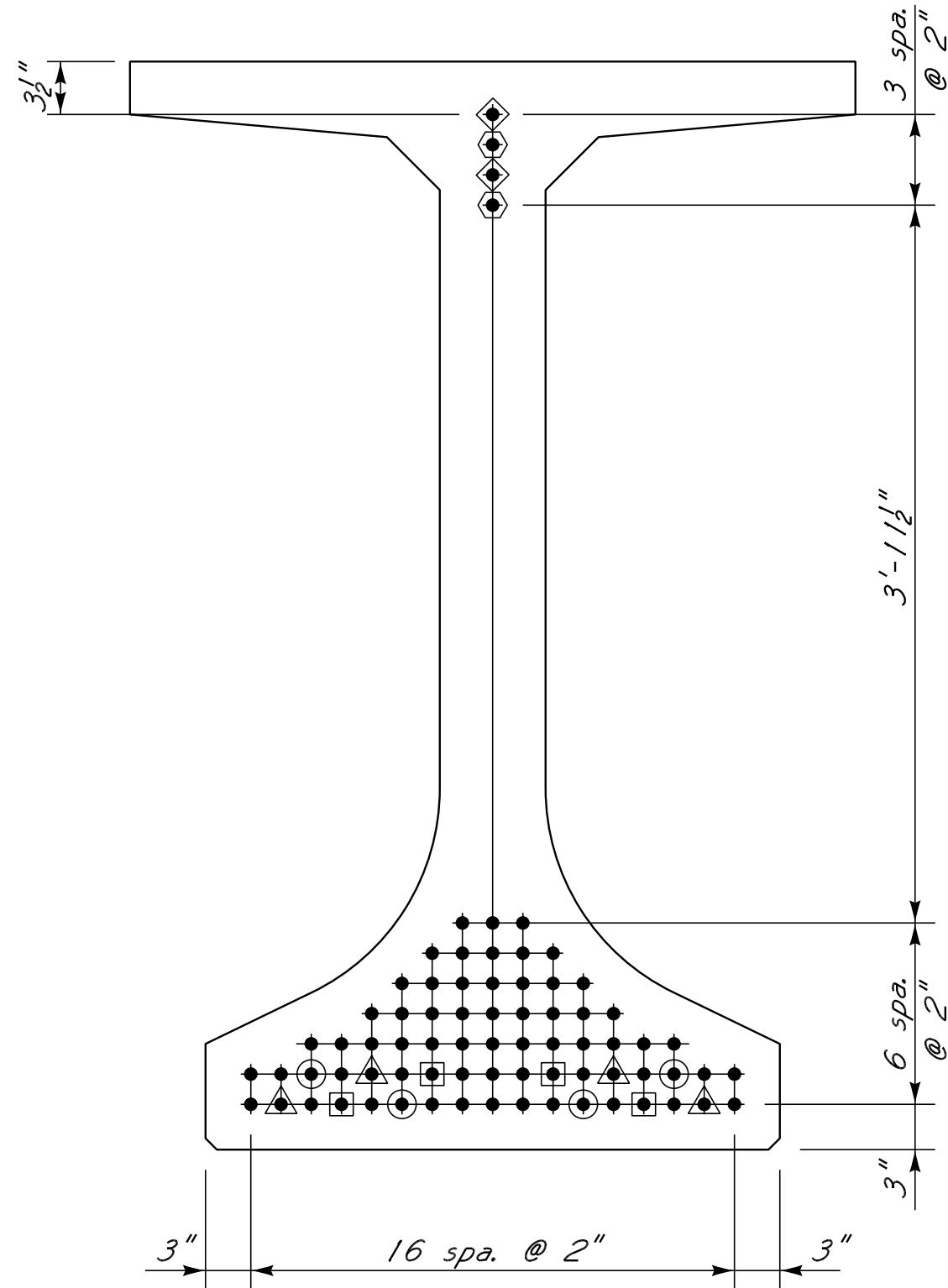


*****NOTE:**
Diaphragm inserts required on both sides of web for interior beams and inside face of web for exterior beams. See details on sht. no. 32.

END ELEVATION



SECTION A-A
Showing only Bars Kn and Y



STRAND PATTERN SPACING AND DEBONDING AT BEAM ENDS AND MIDSPAN

*75 ~ 0.60" 270 K-LR strands
@ 43,950* = 3,296,250*

STRAND DEBONDING LEGEND:

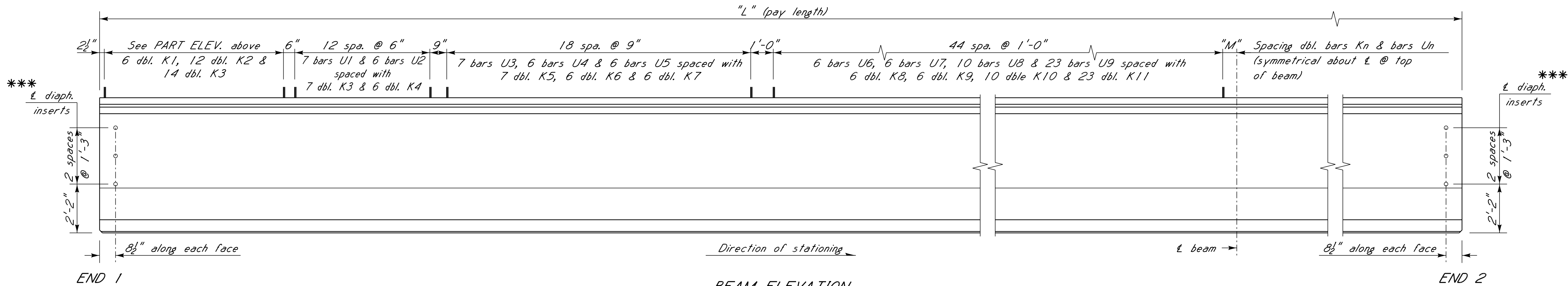
- △ - Strands debonded 18'-0" from end of beam
- - Strands debonded 21'-6" from end of beam
- - Strands debonded 25'-0" from end of beam
- ◇ - Strands debonded 65'-0" centered at midspan

BEAM DIMENSIONS

Beam No.	"L"	"M"
150-1	149'-7 1/4"	11"±
150-2 to 150-5	149'-6"	10"±
150-6	148'-10"	6"±

NOTES:

For General Notes, see dwg. no. 1.
For details of bearing assembly and laminated bearing pads, see dwg. no. 32.
For SKEWED BEAM END DETAILS, see sht. no. 32.
For Bar Bending Details, see dwg. no. 33.
For embedded plate details, see dwg. no. 33.



BEAM ELEVATION

*NOTE: Number of strands and centroid shown do not include strands N.

LR indicates low-relaxation strands

PRESTRESS REQUIREMENTS

For DEFLECTION DIAGRAM, see misc. span details per dwg. no. 27.

Strand Type	Minimum Breaking Strength	Initial Tension	Required Number And Location Of Strands						Distance From $\bar{x}$ Span To Hold-Down Point	Camber Limits	Deflection Diagram			Minimum Concrete Strength At Time Of Release	Minimum 28-Day Concrete Strength
			Total Number Strands	Straight Strands		Draped Strands		A			B	C			
				Number	Centroid	Number	Centroid								
	Lbs./Strand	Lbs./Strand													
0.6" 270 K-LR	58,590	43,950	* 75	* 75	* 10.09"	N.A.	N.A.	N.A.	N.A.	2 1/4" to 6"	3 15/16"	3 13/16"	1"	7,200 psi	9,300 psi

NOTICE TO DRAWING HOLDER

NEEL-SCHAFFER, 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.:	16214.000
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

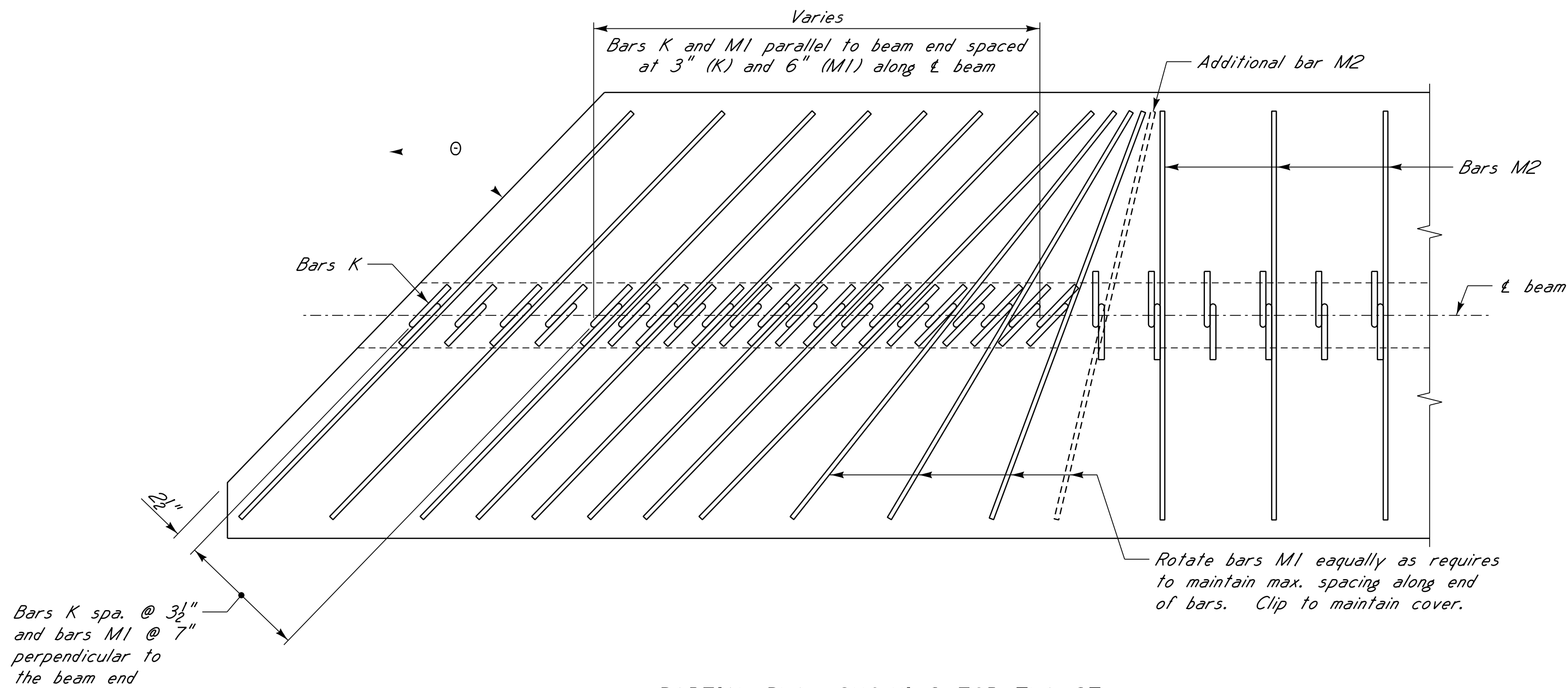


150 FT. BEAM DETAILS
(FIB-72)

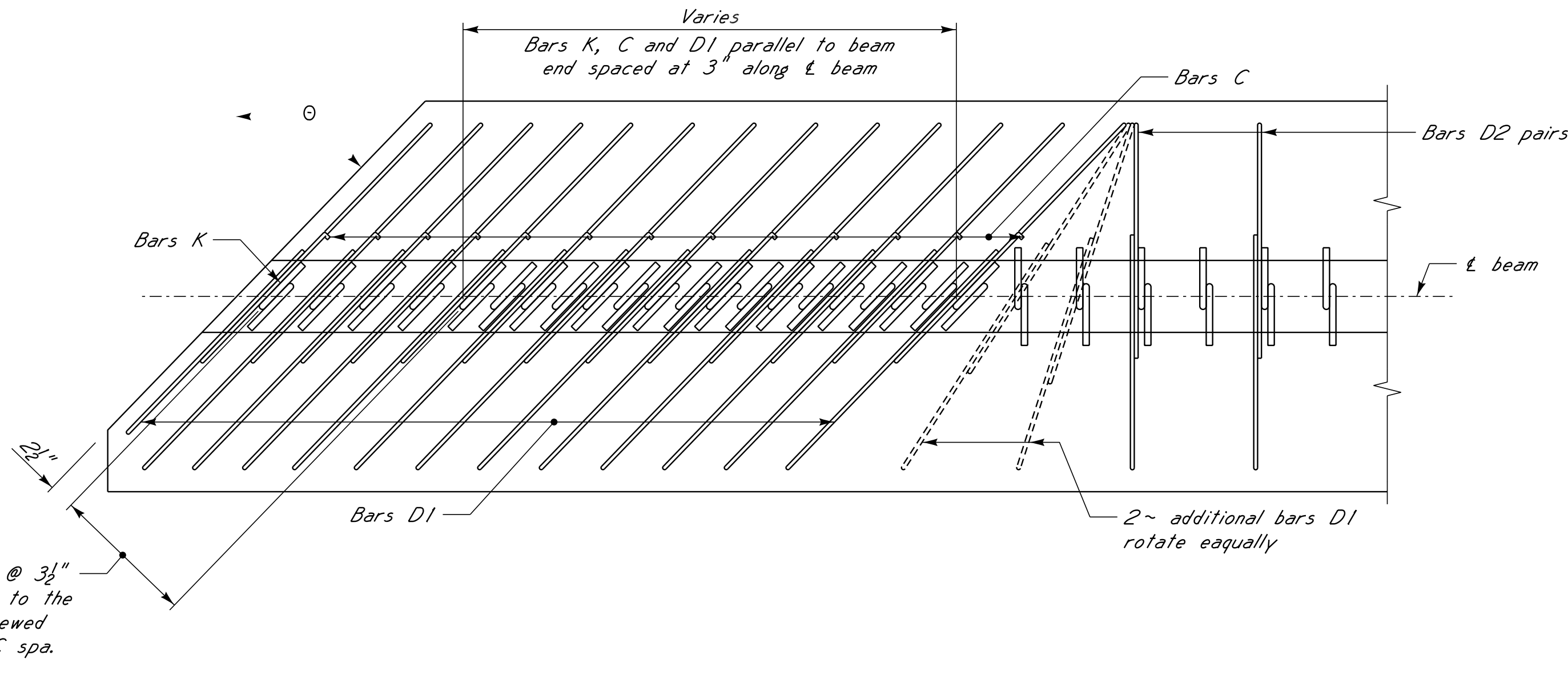
WORKING NUMBER:
31 OF 59

DRAWING NUMBER:
8033

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DATE: 8/12/2022 TIME: 1:43:05 PM USER: RJB

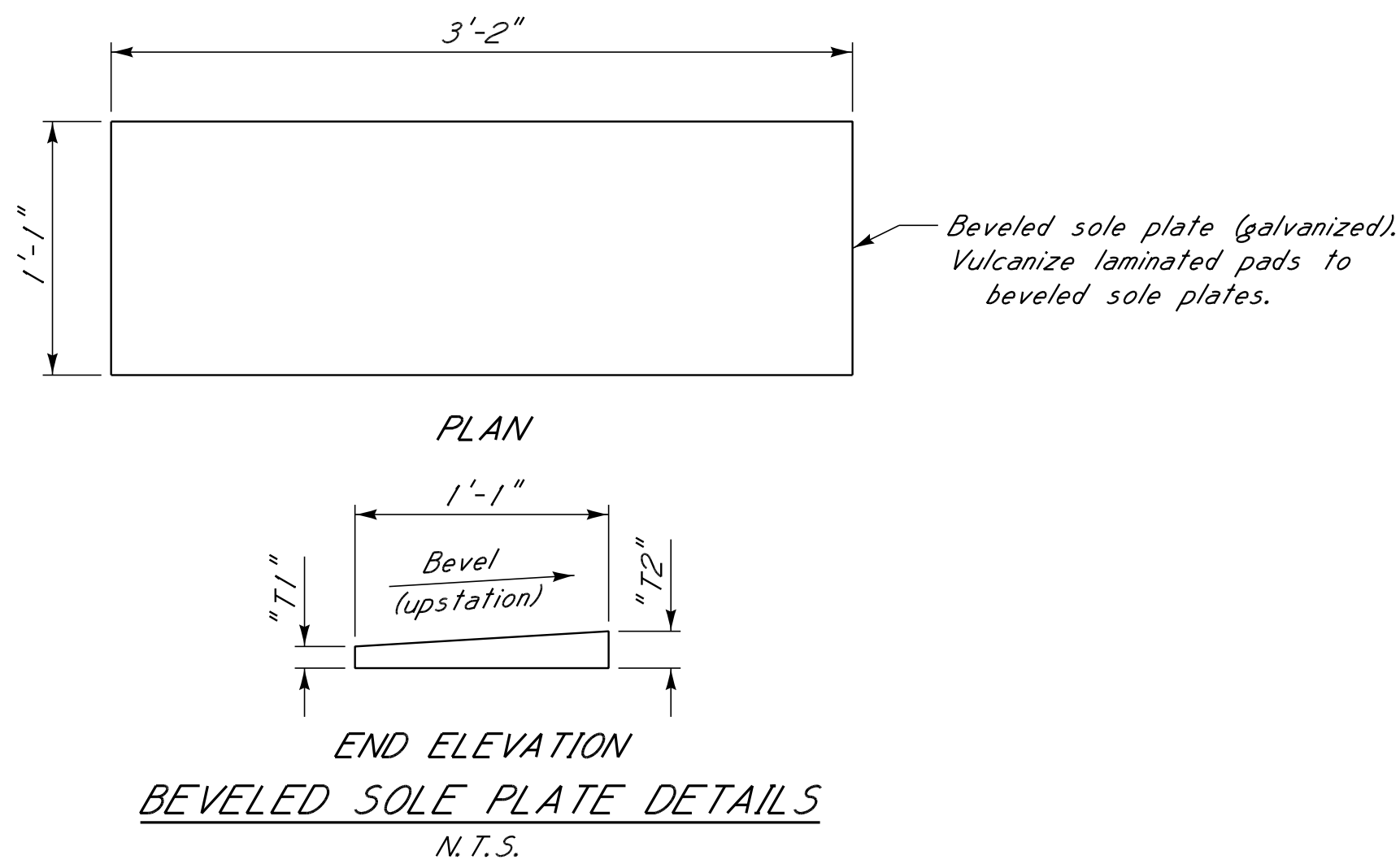


PARTIAL PLAN SHOWING TOP FLANGE
Bars A, Y and strands N not shown for clarity.
(End 1 shown, End 2 similar)



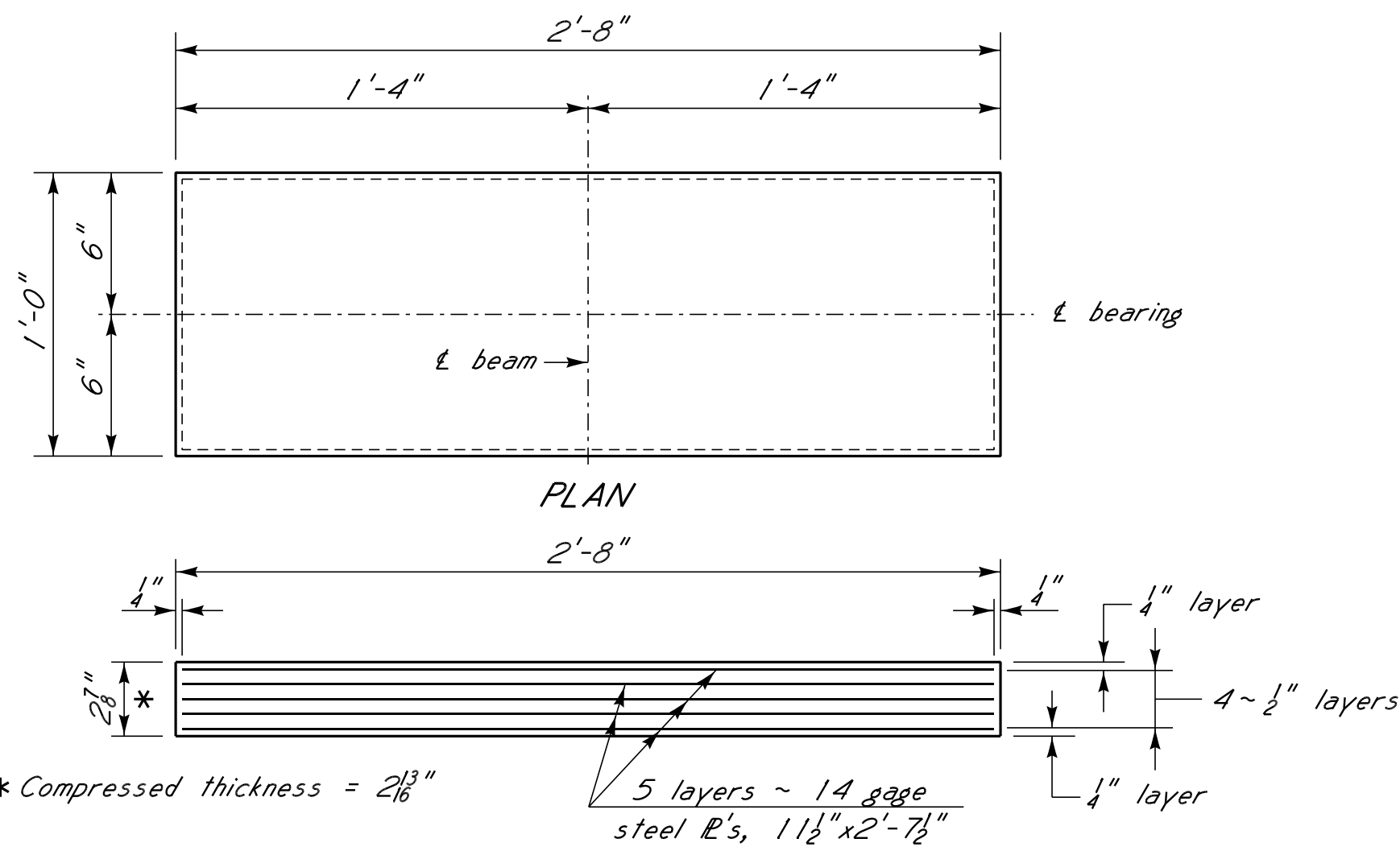
PARTIAL SECTION THRU WEB SHOWING BOTTOM FLANGE
Bars Y, strands and bearing plate not shown for clarity.
(End 1 shown, End 2 similar)

SKewed BEAM END DETAILS
N.T.S.



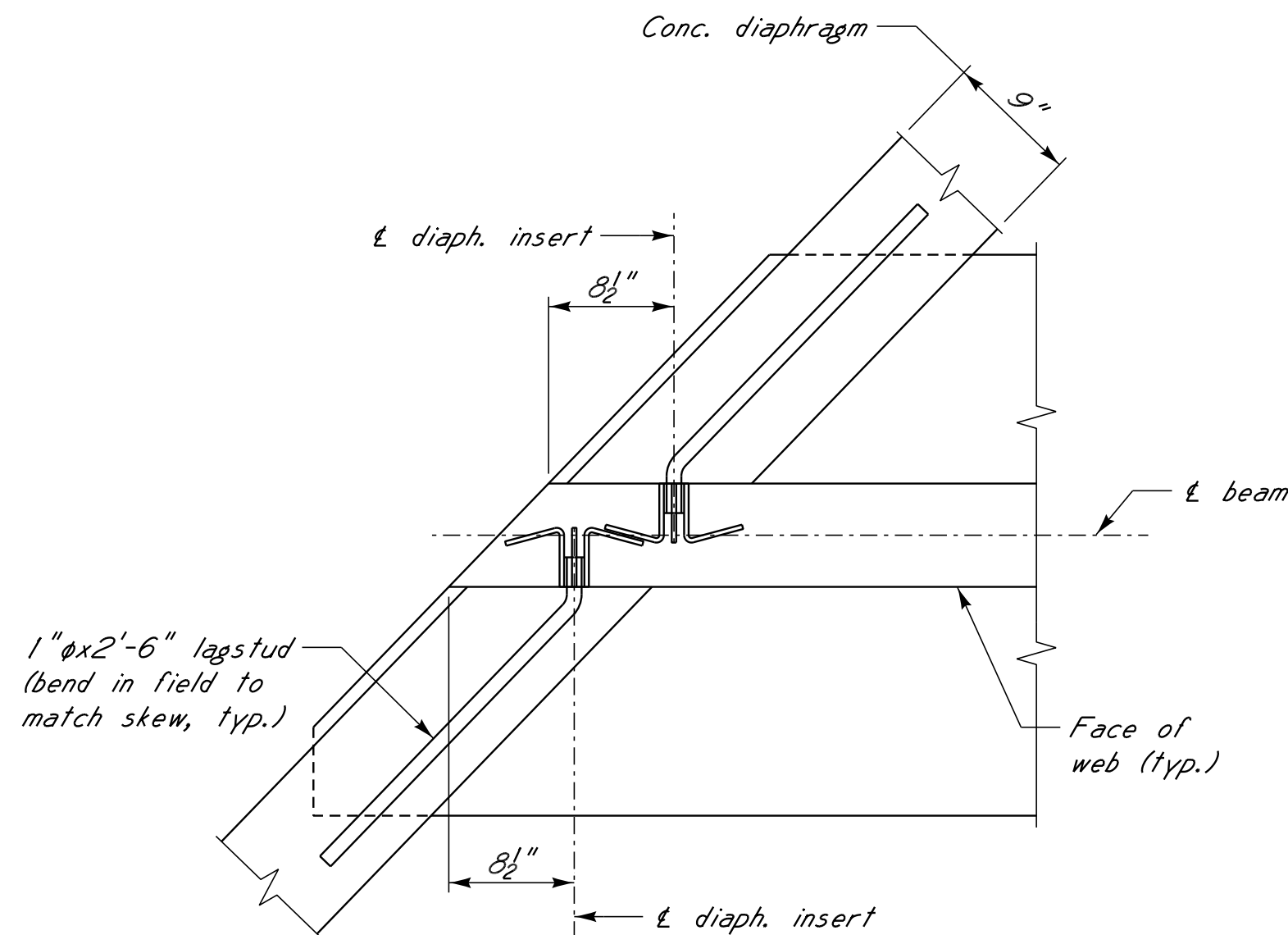
BEVELED SOLE PLATE DETAILS
N.T.S.

BEVELED SOLE PLATE DIMENSION TABLE			
Span	Bent	All Beams "T1"	"T2"
1	1 & 2	1 1/8"	1 1/8"
2	2 & 3	1 1/2"	1 1/2"
3	3 & 4	1 3/8"	1 3/8"
4	4 & 5	1 5/8"	1 5/8"
5	5 & 6	1 5/8"	1 5/8"



LAMINATED PAD DETAILS
N.T.S.

LAMINATED PAD NOTES:
In no case shall pads be field cut.
Testing acceptance procedure shall be in accordance
with section 714.10.6 of the Specifications.
Elastomer shall have a minimum shear modulus
of 120 p.s.i. at 73°F.
Bearing area on top of cap shall be cast smooth
and true to grade.
Pad thickness shown includes total elastomer
thickness and steel plate thickness.
Vulcanize laminated pads to beveled sole plates.

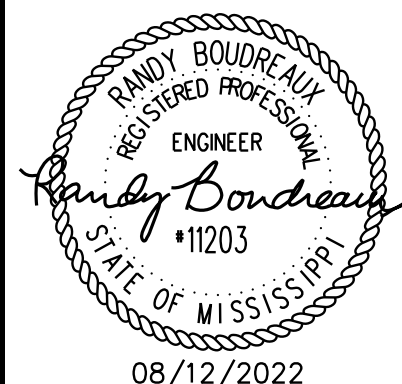


PART PLAN SHOWING DIAPHRAGM INSERTS LOCATIONS
End 1 Interior beam shown, End 2 similar. Inserts
required on inside of exterior beams only.

NOTES:
For General Notes, see sht. no. 1.
For beam details, see sht. nos. 28 to 31.

NOTICE TO DRAWING HOLDER				REVISIONS				DRAWING INFORMATION			
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.				NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000			
								FILENAME:			
								SCALE:			
								SURVEYED BY:			
								DSGN: RJB DATE: 06/2022			
								DRWN: RJB DATE: 06/2022			
								CHKD: BKC DATE: 08/2022			
								QA/QC: DATE:			

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



MISCELLANEOUS BEAM DETAILS (1 OF 2)	
WORKING NUMBER: 32 OF 59	DRAWING NUMBER: 8034

GENERAL BEAM NOTES:

Beams shall be manufactured in accordance with Mississippi Standard Specification for Road & Bridge Construction, 2017.

The tops of beams shall be rough floated. At approximately the time of initial set, the entire tops of beams shall be scrubbed transversely with a coarse wire brush to remove all laitance and to produce a roughened surface with a minimum amplitude of ¼" for bonding slab. Other surfaces shall be finished per specifications.

The Engineer shall be notified if the camber of the beam is not within the limits shown in the table on sht. nos. 28 to 31.

Strand pattern detailed is for 0.60"Ø 270 K-LR strands. Shop drawings of prestressed beams shall include the type and location of all strands.

Concrete shall be Class "F" and "FX" and:

- (a) shall have a 28-day cylinder strength as follows:
- (1) 5,000 p.s.i. for span 1 (75ft FIB-45)
 - (2) 9,300 p.s.i. for span 2 (150ft FIB-72)
 - (3) 6,500 p.s.i. for span 3 (135ft FIB-72)
 - (4) 6,900 p.s.i. for spans 4 & 5 (105ft FIB-45).
- (b) at transfer of the tensioning load, the cylinder strength of the concrete shall be as shown in table on sht. nos. 28 to 31.

If any cylinder tests below the above strenghts, the beam represented will be held on the yard until the 28-day strength is determined and acceptance or rejection has been established.

Beam fabricator shall provide camber data at release and immediately prior to shipping. The Contractor shall provide camber data after erection. the Contractor should be aware that the deflection diagram may be modified based on the provided camber data. Therefore, deck grades should be set only after notification from the Engineer.

All prestressed concrete beam shop drawing submittals shall include, but not be limited to, the following:

- a. Plan views of each span noting bent numbers, beam numbers, beam types, pay lengths & bearing types
- b. Horizontal bed lengths and dimensions
- c. Number of beams per bed including detailed drawings of pour and fabrication sequence
- d. Beam dimensions
- e. Bar bending details
- f. Bar spacings
- g. Strand types, strand patterns, strand paths, strand pull, hold up/hold down (if any) & centroids
- h. Diaphragm insert locations and details
- i. Handling and storage details
- j. Bearing types
- k. Locations and details of anchors for Stay-in-Place metal forms
- l. Elongation calculations

Beam Fabricator shall have an adequate number of forms to ensure that they can pour all beams in a single bed in a continuous operation as shown in the detail in the submittal. Forms shall not be removed until all beams in a bed in the indicated pour are cured. Fabricator shall provide notes in the shop drawings to reflect this.

The Contractor is responsible for all beams during shipping, handling, storage & erection operations. The stability of the beams during these processes shall be accounted for by the contractor to ensure a satisfactory product at the end of construction.

DESIGN DATA:

Specifications A.A.S.H.T.O., LRFD 2020

Loading HL-93

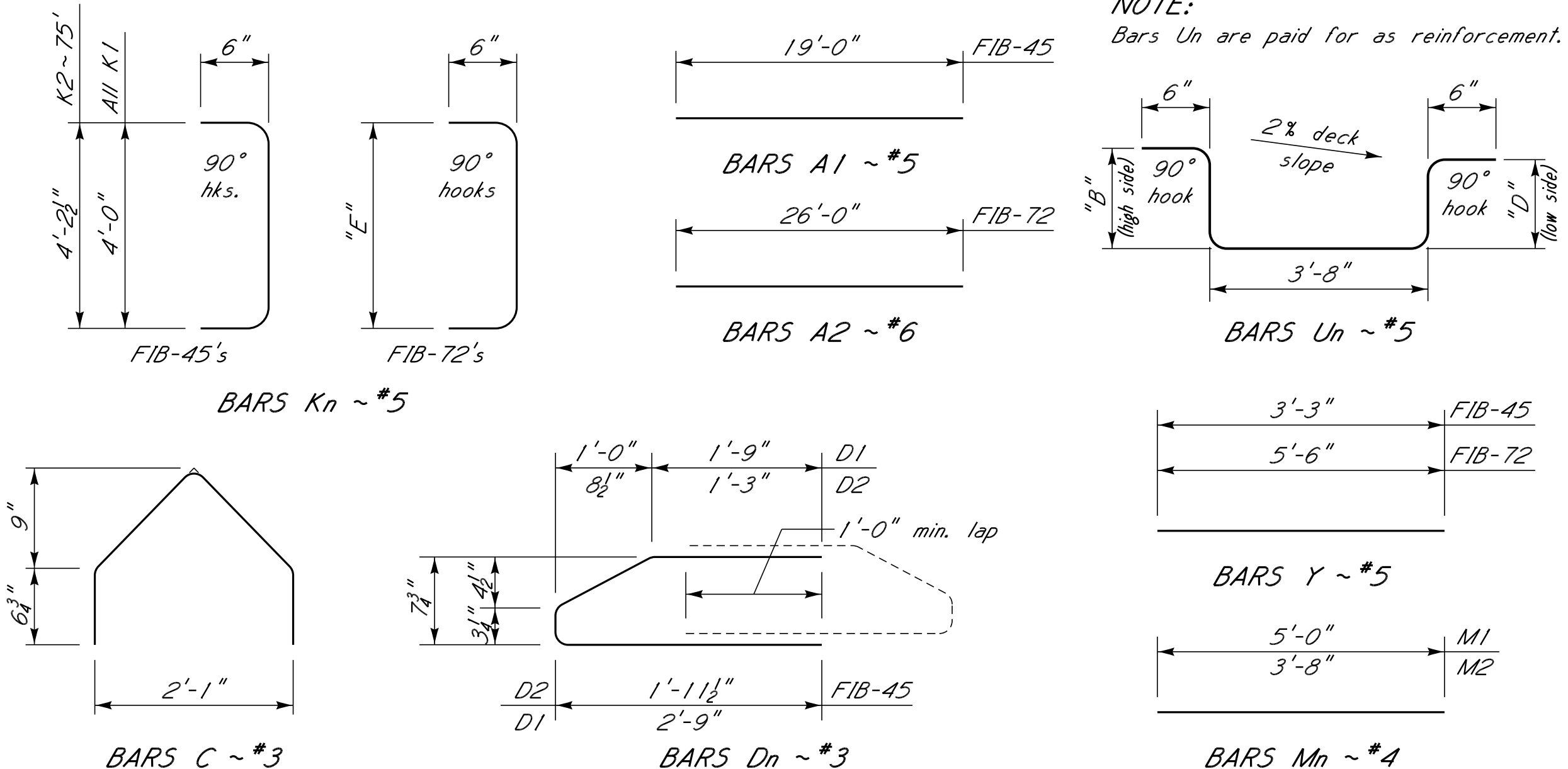
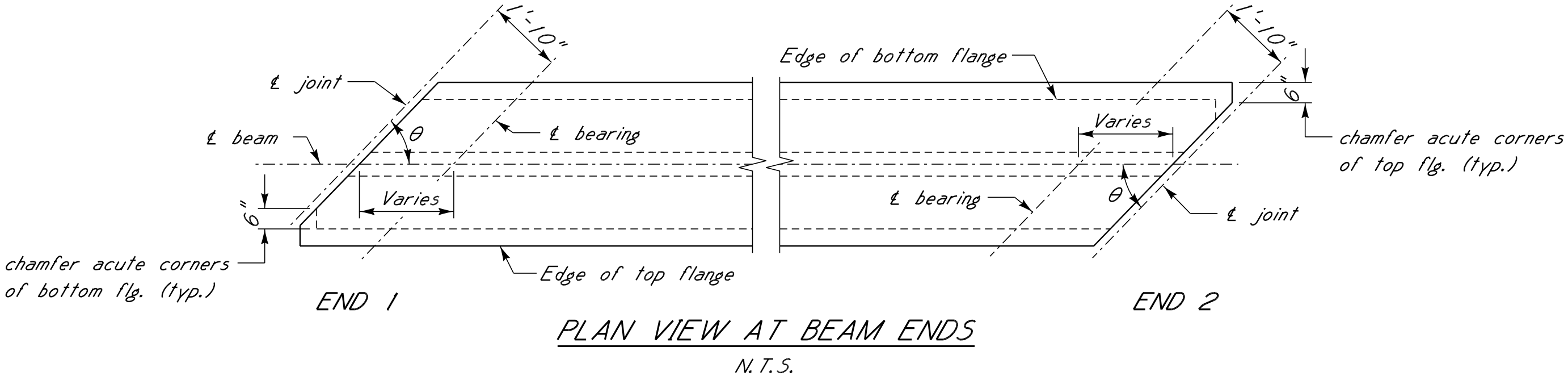
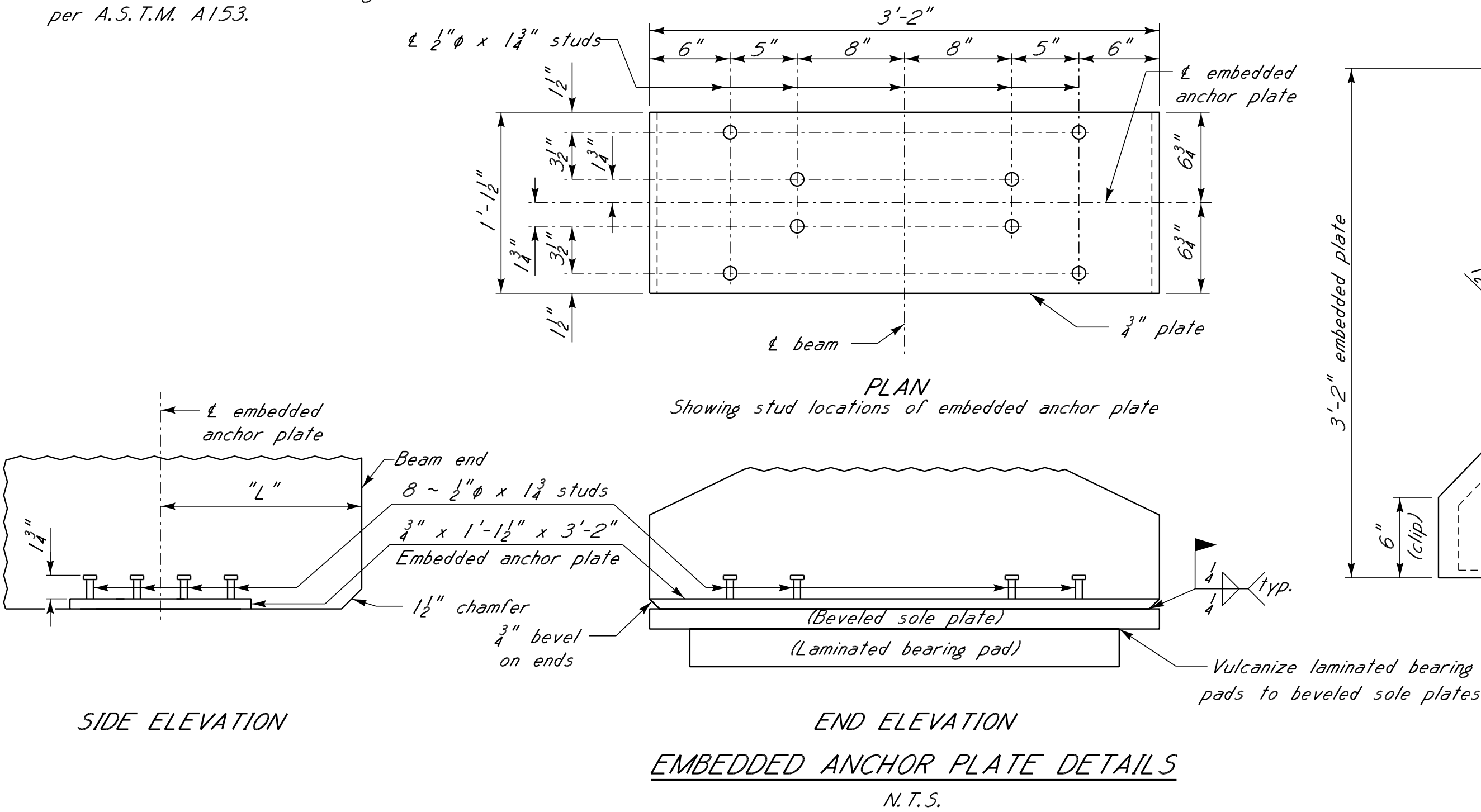
Stay-In-Place Metal Forms . . . 18 lbs/sf between flanges

NOTE:

Steel plates shall be A.S.T.M. A709

Grade 36 or 50 and shall be galvanized

per A.S.T.M. A153.



BAR Kn DIMENSIONS		
Mark	"E"	
	135' Span	150' Span
K1	6'-3"	6'-3"
K2	6'-5"	6'-4 1/2"
K3	6'-7"	6'-5 1/2"
K4	--	6'-6 1/2"
K5	--	6'-8 1/2"
K6	--	6'-10"
K7	--	6'-11"
K8	--	7'-0 1/2"
K9	--	7'-2"
K10	--	7'-3 1/2"
K11	--	7'-5"

75' SPAN BAR Un DIMENSIONS		
Mark	"B" (high side)	"D" (low side)
U	7 1/2"	5 1/2"

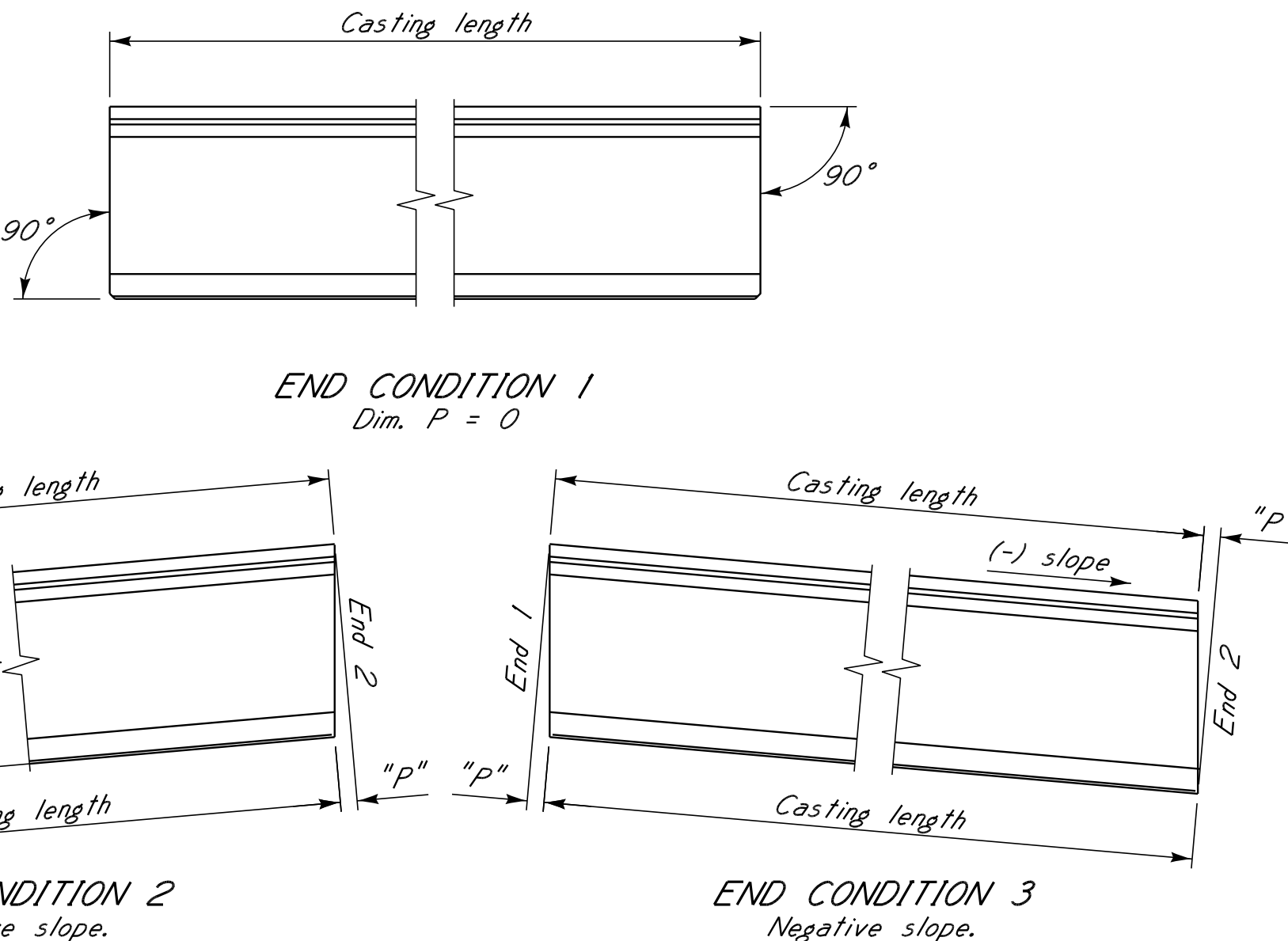
135' SPAN BAR Un DIMENSIONS		
Mark	"B" (high side)	"D" (low side)
U1	8 1/2" - 0.20 C	7 1/2" - 0.20 C
U2	1'-1" - 0.30 C	1'-0" - 0.30 C
U3	1'-2 1/2" - 0.50 C	1'-1 1/2" - 0.50 C
U4	1'-1" - 0.50 C	1'-0" - 0.50 C
U5	10" - 0.70 C	9" - 0.70 C
U6	7 1/2" - 0.80 C	6 1/2" - 0.80 C

150' SPAN BAR Un DIMENSIONS		
Mark	"B" (high side)	"D" (low side)
U1	8 1/2" - 0.10 C	7 1/2" - 0.10 C
U2	10" - 0.10 C	9" - 0.10 C
U3	11 1/2" - 0.20 C	10 1/2" - 0.20 C
U4	1'-2" - 0.20 C	1'-1" - 0.20 C
U5	1'-3 1/2" - 0.20 C	1'-2 1/2" - 0.20 C
U6	1'-5" - 0.30 C	1'-4" - 0.30 C
U7	1'-7" - 0.30 C	1'-6" - 0.30 C
U8	1'-8 1/2" - 0.30 C	1'-7 1/2" - 0.30 C
U9	1'-10 1/2" - 0.50 C	1'-9 1/2" - 0.50 C

BEAM DATA TABLE				
Beam No.	Beam End	Bevel	"L"	θ
	End	Cond.		
75-1 to 75-3	2	2 1/2"	2'-1"	51°
75-4 & 75-5	2	2 1/2"	2'-1"	51°
150-1 to 150-3	1	0"	2'-3 1/2"	46°
150-4 & 150-5	2	1"	2'-3 1/2"	46°
150-6	2	1"	2'-3 1/2"	46°
135-1 to 135-3	3	4"	2'-3 1/2"	44°
105-1 to 105-3	3	3"	2'-3 1/2"	44°

LEGEND:

0.5C = beam camber after erection at 0.5 of beam length



NOTES:

For General Notes, see sht. no. 1.

For beam details, see sht. nos. 28 to 31.

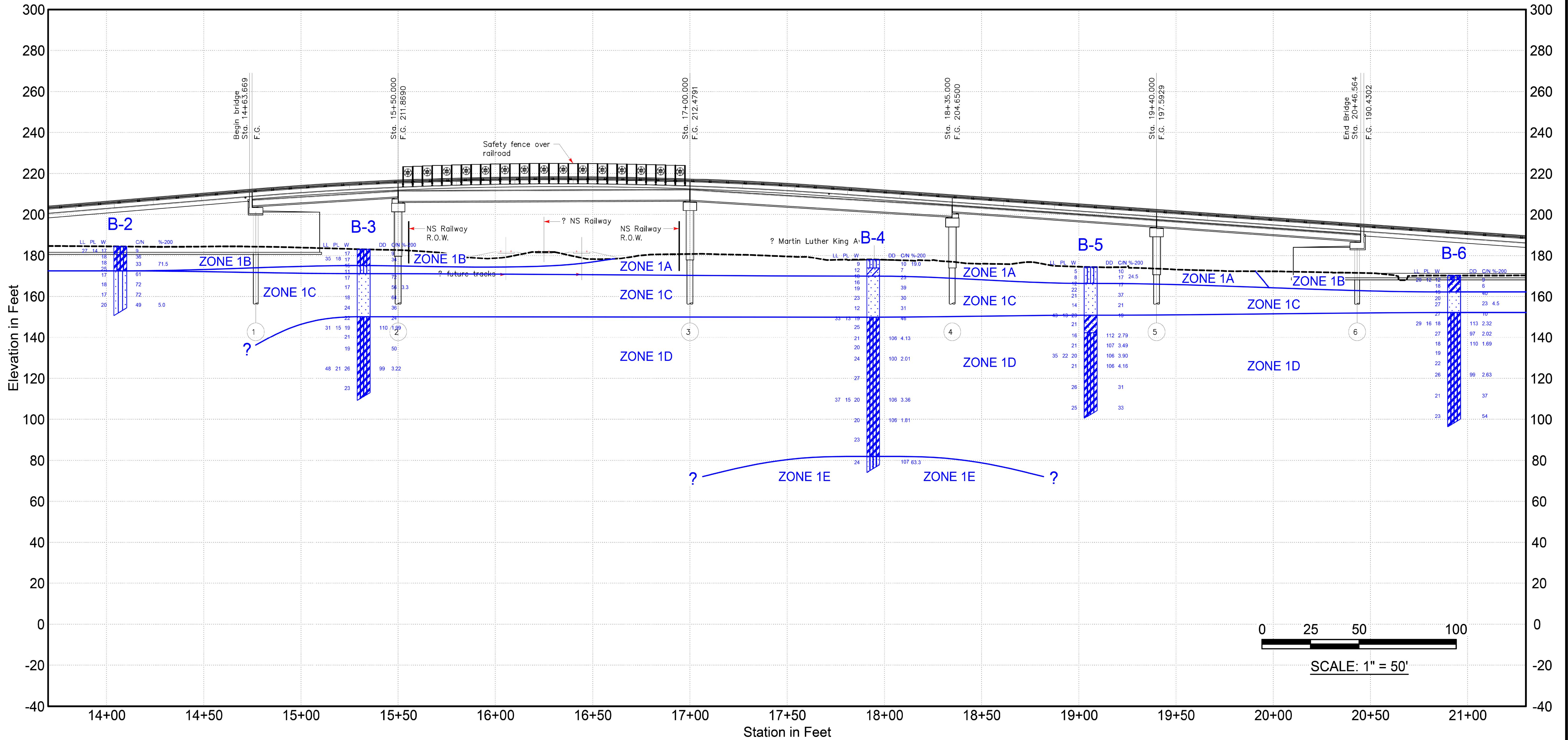
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI



MISCELLANEOUS
BEAM DETAILS
(2 OF 2)

WORKING NUMBER:
33 OF 59

DRAWING NUMBER:
8035



ZONE 1 - HATTIESBURG/PASCAGOULA FORMATION

- 1A - LOOSE TO MEDIUM DENSE SAND (SM, SC) AND CLAYEY SILT (ML)
- 1B - MEDIUM STIFF TO HARD SILTY CLAY (CL) AND SANDY CLAY (CL)
- 1C - MEDIUM DENSE TO VERY DENSE SAND (SP, SM & SP-SM)
- 1D - VERY STIFF TO HARD SILTY CLAY (CL), SANDY CLAY (CL) AND CLAY (CH)
- 1E - VERY DENSE SANDY SILT (ML)

NOTICE TO CONTRACTOR:

- THE GENERALIZED SOIL PROFILE SHOWN WITH ITS VARIOUS SOIL ZONE DESCRIPTIONS AND INDICATED BOUNDARIES IS BASED UPON AN ENGINEERING AND GEOLOGICAL INTERPRETATION OF ALL AVAILABLE GEOTECHNICAL INFORMATION AND MAY NOT NECESSARILY REFLECT THE ACTUAL VARIATION IN SUBSURFACE CONDITIONS BETWEEN BORINGS AND SAMPLES. DETAILED DATA AND FIELD INTERPRETATION OF CONDITIONS ENCOUNTERED IN INDIVIDUAL BORINGS ARE SHOWN ON THE BORING LOGS.
- SOUND ENGINEERING JUDGEMENT WAS EXERCISED IN PREPARING THE SUBSURFACE INFORMATION PRESENTED ON THIS SHEET. THIS INFORMATION WAS PREPARED AND IS INTENDED FOR DESIGN AND ESTIMATE PURPOSES. ITS PRESENTATION ON THE PLANS OR ELSEWHERE IS FOR THE PURPOSE OF PROVIDING INTENDED USERS WITH ACCESS TO THE SAME INFORMATION AVAILABLE TO THE DESIGNERS. THIS SUBSURFACE INFORMATION INTERPRETATION IS PRESENTED IN GOOD FAITH AND IS NOT INTENDED AS A SUBSTITUTE FOR PERSONAL INVESTIGATION, INDEPENDENT INTERPRETATIONS OR JUDGEMENT BY OTHERS.
- ALL STRUCTURAL DETAILS SHOWN ON THIS SHEET ARE FOR ILLUSTRATIVE PURPOSES ONLY AND MAY NOT BE INDICATIVE OF THE FINAL DESIGN CONDITIONS SHOWN ELSEWHERE IN THE CONTRACT PLANS.

Bridge Profile

HALL AVENUE - WEST
OVERPASS AT NORFOLK SOUTHERN RAILWAY
HATTIESBURG, MISSISSIPPI

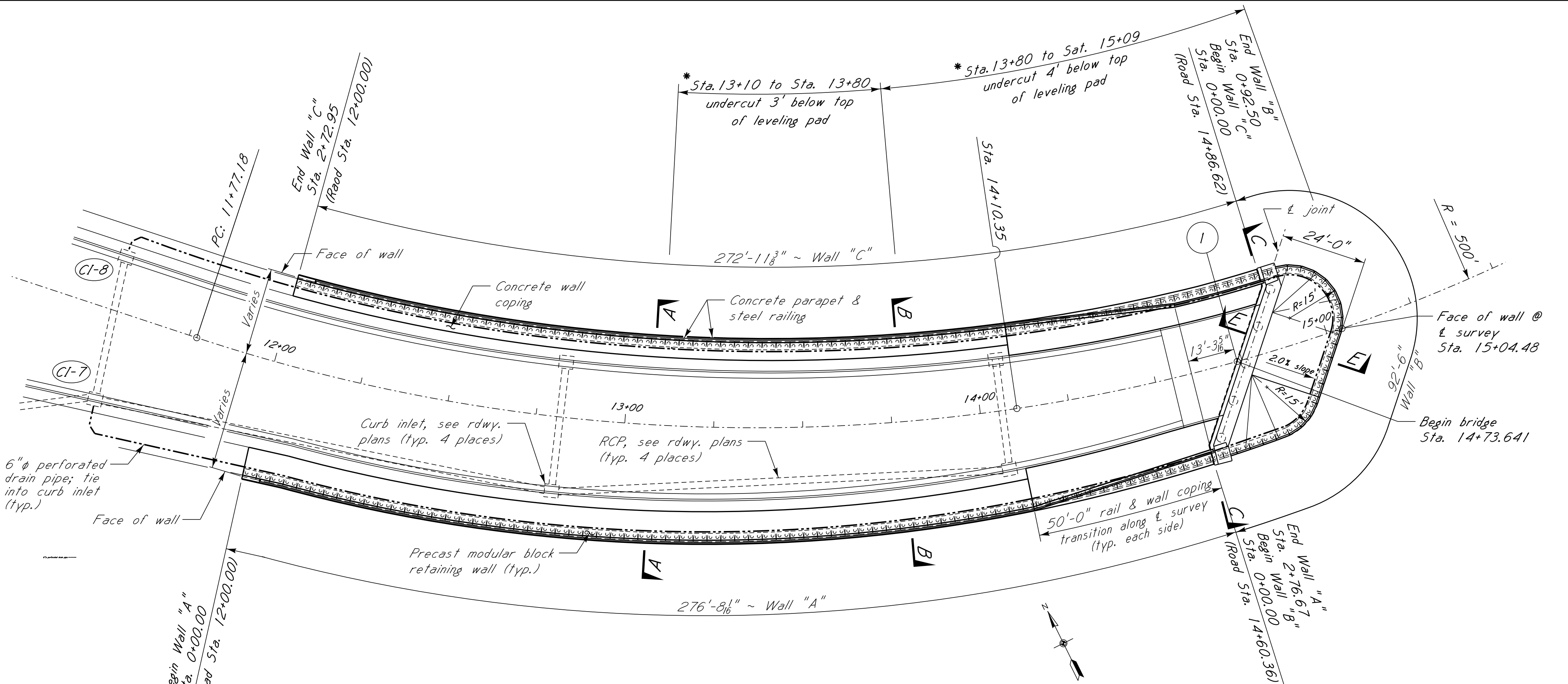
BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 210533

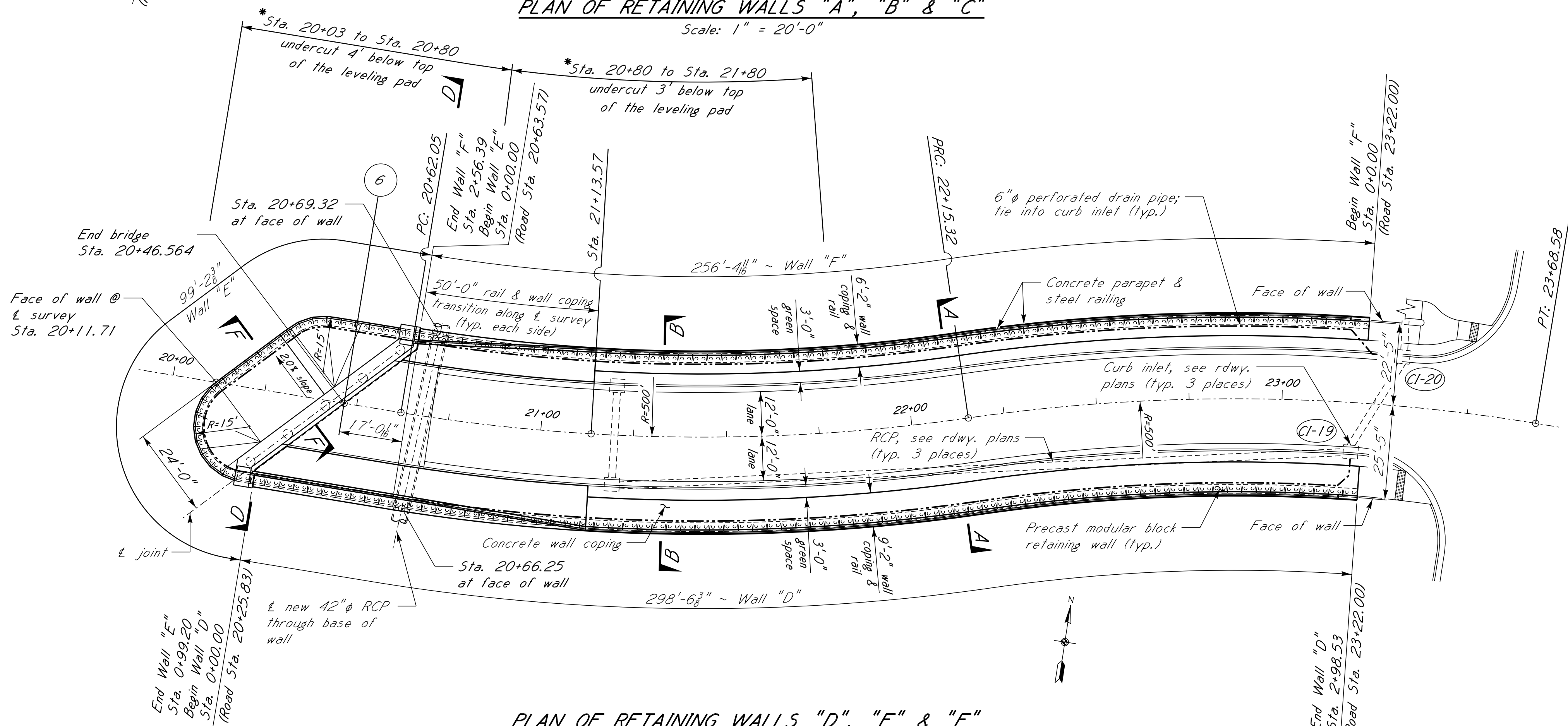
WORKING NUMBER:
34 OF 59

DRAWING NUMBER:
8056

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DATE: 8/12/2022 TIME: 1:45:40 PM USER: RJB



PLAN OF RETAINING WALLS "A", "B" & "C"
Scale: 1" = 20'-0"



PLAN OF RETAINING WALLS "D", "E" & "F"
Scale: 1" = 20'-0"

Wall "A" Layout Data	
Station	Offset to Face of Wall (ft.)
12+00.00	33.53
12+10.53	33.04
12+25.00	33.18
12+50.00	33.25
12+75.00	33.10
13+00.00	32.72
13+25.00	32.11
13+50.00	31.29
13+75.00	30.25
14+00.00	28.99
14+10.35	28.41
14+25.00	27.53
14+50.00	26.05
14+60.36	25.41

Wall "C" Layout Data	
Station	Offset to Face of Wall (ft.)
12+00.00	24.46
12+25.00	24.54
12+50.00	24.56
12+75.00	24.53
13+00.00	24.45
13+25.00	24.30
13+50.00	24.10
13+75.00	23.85
14+00.00	23.54
14+10.35	23.39
14+25.00	23.17
14+50.00	22.76
14+60.36	22.57
14+75.00	22.42
14+86.62	22.42

Wall "D" Layout Data	
Station	Offset to Face of Wall (ft.)
20+25.83	25.42
20+50.00	25.42
20+63.57	25.42
20+75.00	25.42
21+00.00	25.42
21+13.57	25.42
21+25.00	25.42
21+50.00	25.42
21+75.00	25.42
22+00.00	25.42
22+15.32	25.42
22+25.00	25.42
22+50.00	25.42
22+75.00	25.42
23+00.00	25.42
23+22.00	25.42

Wall "F" Layout Data	
Station	Offset to Face of Wall (ft.)
20+63.57	22.42
20+75.00	22.42
21+00.00	22.42
21+13.57	22.42
21+25.00	22.42
21+50.00	22.42
21+75.00	22.42
22+00.00	22.42
22+15.32	22.42
22+25.00	22.42
22+50.00	22.42
22+75.00	22.42
23+00.00	22.42
23+22.00	22.42

NOTES:
For GENERAL NOTES, See sht. no. 1.
The retaining wall design was performed by Burns Cooley Dennis, Inc. geotechnical engineers. The retaining wall layout and details were prepared by Neel-Schaffer, Inc. The retaining walls are designed per Special Provision 907-807-1 in the contract documents.
The wall design and construction details are based on a reinforced precast modular block wall system by Redi-Rock International. Alternate wall systems are not acceptable.
The precast blocks shall be either 28 PC top or middle blocks units as shown in the plans with a LedgeStone face surface texture and a natural concrete grey color. Blocks shall measure 18" high, 28" deep and 46 1/2" long with 0° setback. Half blocks and/or cut blocks may be required.
Geogrid reinforcement shall be either Miragrid BXT, 20XT or 24XT by Tencate Geosynthetics as shown in the plans. Longitudinal wall dimensions are along the face of wall. For elevations of retaining walls, see sht. nos. 37 and 43. For typical wall sections, see sheet. nos. 49 to 53. For wall coping plan, sections and details, see sht. nos. 54 to 57.

***" UNDERCUT NOTES:**
Actual limits and depth of undercut shall be determined by the Geotechnical Engineer during construction.
Undercuts shall extend 3' beyond the edge of the leveling pad.
Backfill undercuts with concrete sand meeting the requirements of Section 703.02 of the MDOT Standard Specification.
Under cut backfill shall be placed and compacted in accordance with the specifications for the reinforced backfill.

HALL AVENUE WEST - PHASE 2
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CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



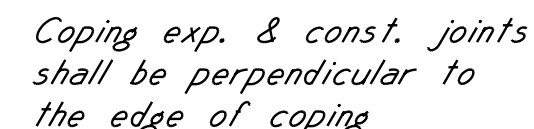
RETAINING WALL
LAYOUT

WORKING NUMBER:
35 OF 59

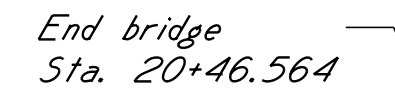
DRAWING NUMBER:
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NOTICE TO DRAWING HOLDER
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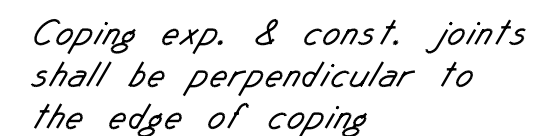
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:



Scale: $\frac{1}{8}'' = 1'-0''$

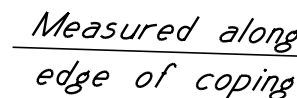


Scale: $\frac{1}{8}'' = 1'-0''$



Scale: $\frac{1}{8}'' = 1'-0''$

NOTE: The edges of coping are not parallel to the $\perp$ survey for walls "A" and "C".



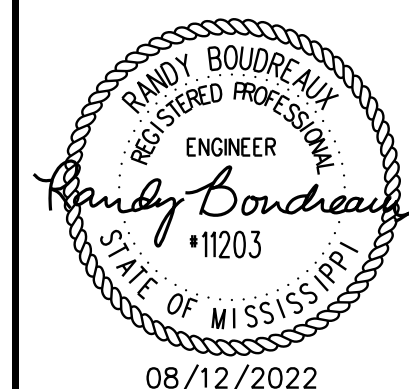
Scale: $\frac{1}{8}'' = 1'-0''$

NOTE: The edges of coping are parallel to the $\pm$ survey for walls "D" and "F".

NOTES:
 For GENERAL NOTES, See sht. no. 1.
 For retaining wall layout, see sht. no. 35.
 For location of additional coping expansion and construction joints, see wall elevations on sht. nos. 37 and 43.
 For wall coping sections and details, see sht. no. 55 to 57.

<u>NOTICE TO DRAWING HOLDER</u> NEEL-SCHAFFER, 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	
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					DSGN: RJB	DATE: 06/2022
					DRWN: RJB	DATE: 06/2022
					CHKD: BKC	DATE: 08/2022
					QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI

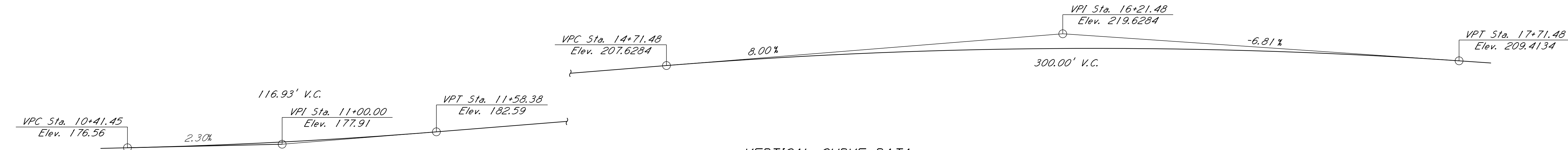


WALL COPING & RAIL TRANSITION DETAILS

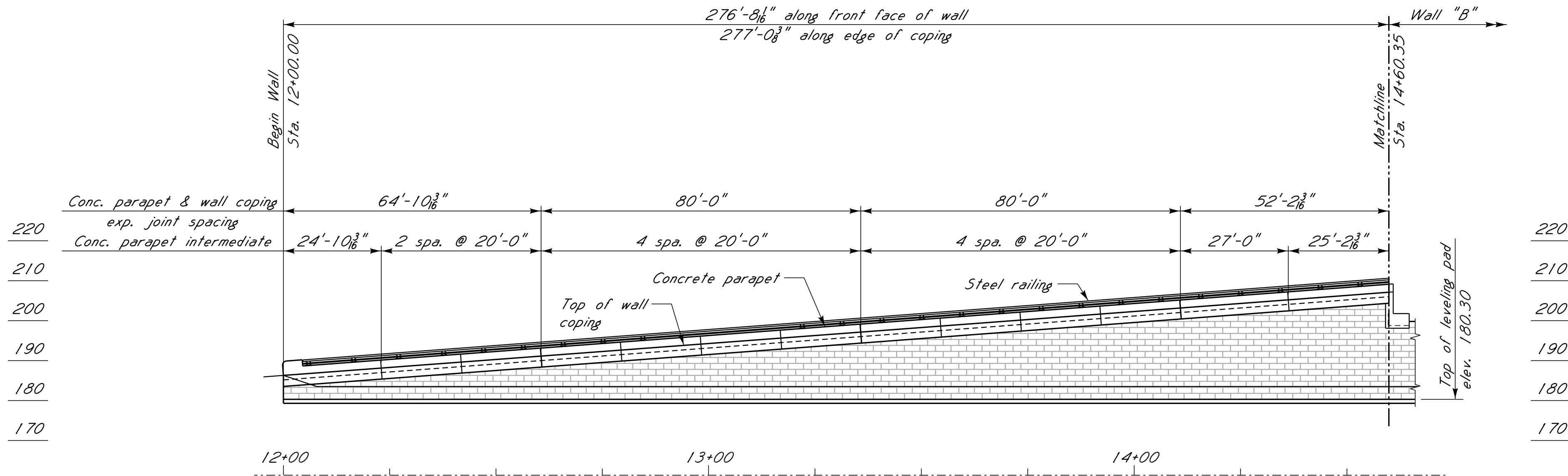
WORKING NUMBER:
36 OF 59

DRAWING NUMBER:
8038

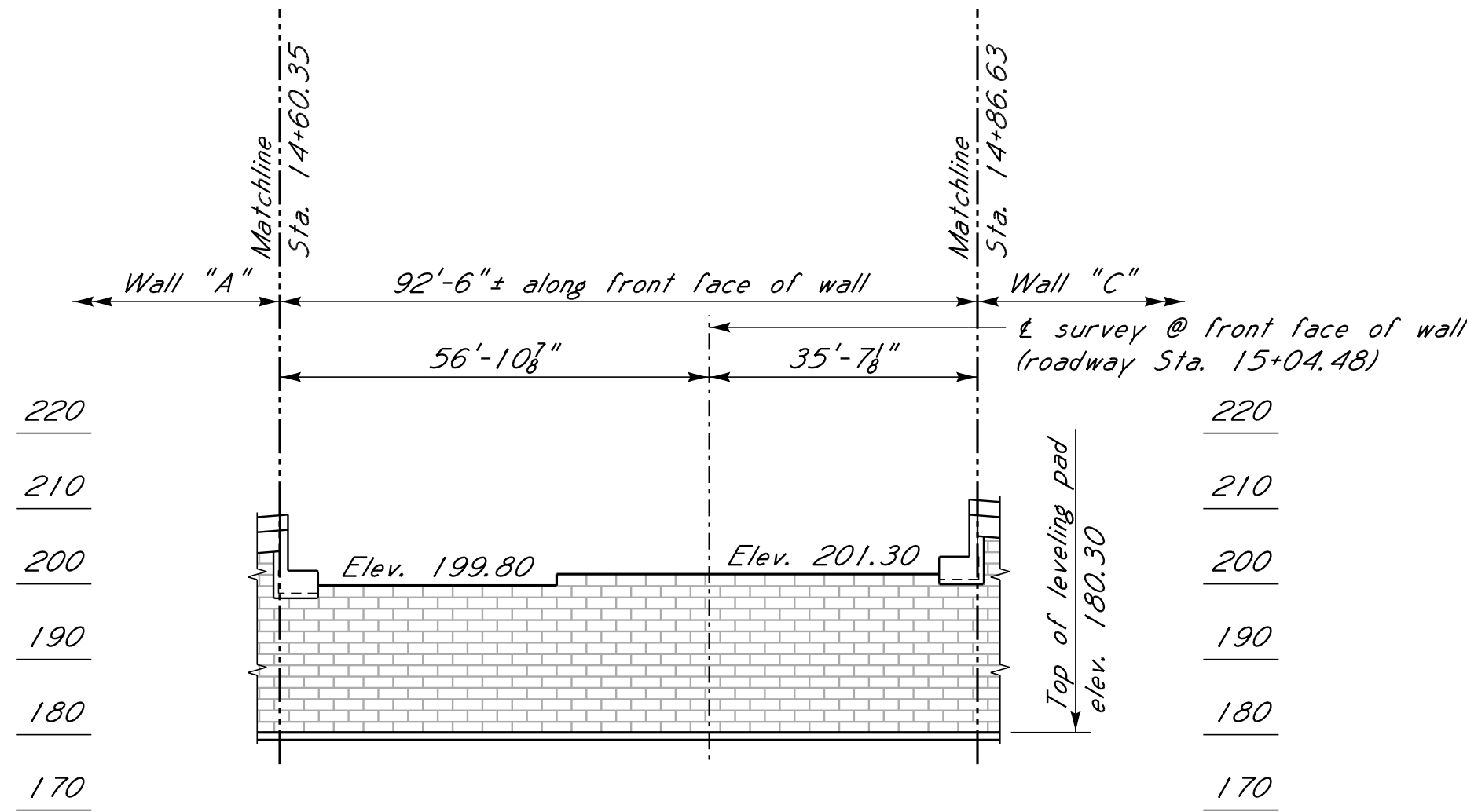
FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-4-37-Elevation of Retaining Walls A, B & C.dgn
DATE: 8/12/2022 TIME: 1:45:41 PM USER: RJB



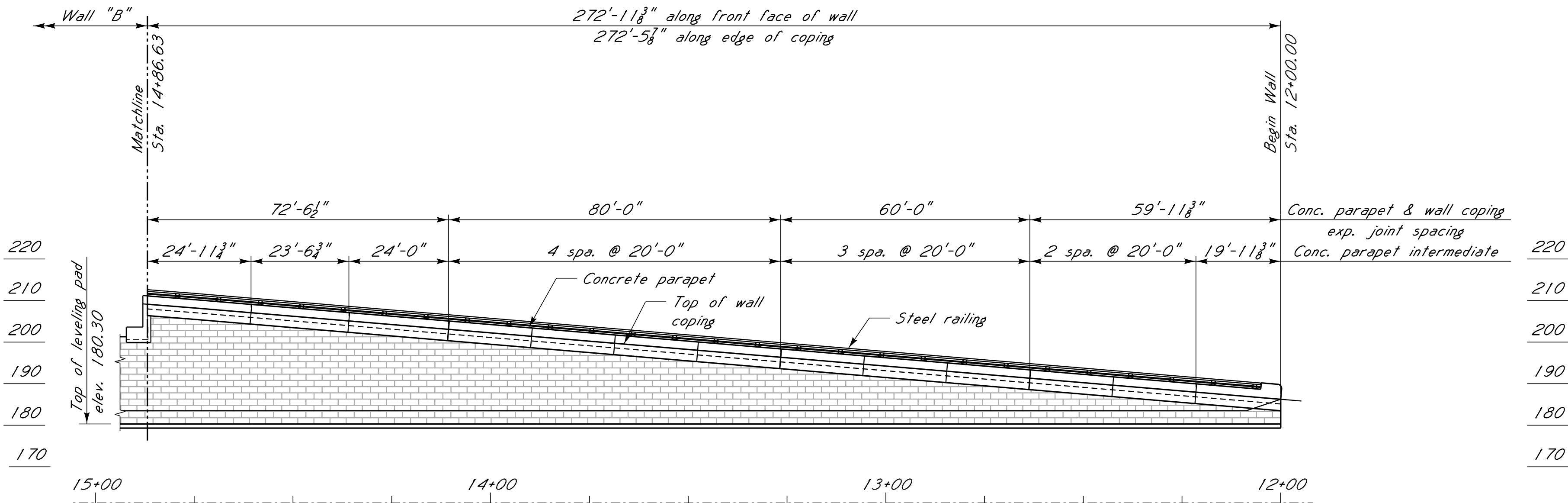
VERTICAL CURVE DATA
Drawn for wall "A". Wall "C" is a mirror image of the vertical curve.



ELEVATION WALL "A"
Drawn along the curved face of wall.
Scale: 1" = 20'-0"



ELEVATION WALL "B"
Drawn along the curved face of wall.
Scale: 1" = 20'-0"

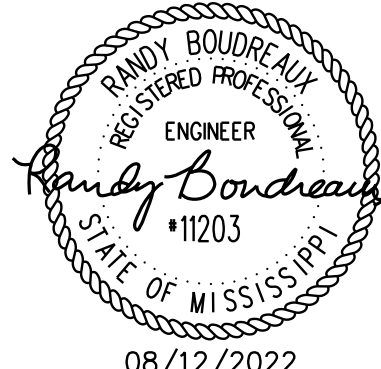


ELEVATION WALL "C"
Drawn along the curved face of wall.
Scale: 1" = 20'-0"

TOP OF WALL COPING ELEVATIONS			
Wall "A"		Wall "C"	
Station	Elev.	Station	Elev.
12+00.00	186.17	12+00.00	186.24
12+25.00	188.18	12+25.00	188.24
12+50.00	190.18	12+50.00	190.24
12+75.00	192.18	12+75.00	192.24
13+00.00	194.10	13+00.00	194.24
13+25.00	196.20	13+25.00	196.24
13+50.00	198.22	13+50.00	198.25
13+75.00	200.24	13+75.00	200.25
14+00.00	202.26	14+00.00	202.26
14+10.35	203.10	14+10.35	203.09
14+25.00	204.27	14+25.00	204.26
14+50.00	206.28	14+50.00	206.24
14+60.35	207.11	14+60.35	207.06
		14+75.00	208.23
		14+86.63	209.11

NOTES:
For GENERAL NOTES, See sht. no. 1.
Stations are along centerline survey.
Distances are along edge of coping unless noted otherwise.
For enlarged wall elevations showing wall construction details, see sheet nos. 38 to 42.
For elevations of retaining walls "D", "E" and "F", see sht. no. 43.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad elevations shown are based on a block height of 1'-6".
For railing details, see sht. no. 25.

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



ELEVATION OF RETAINING
WALLS "A", "B" & "C"

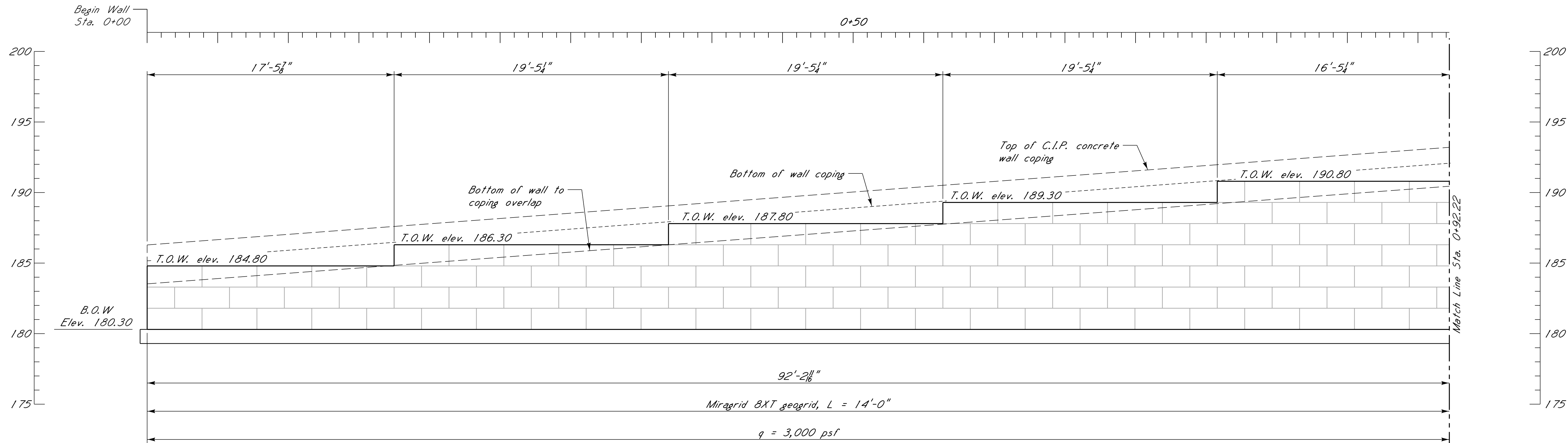
WORKING NUMBER:
37 OF 59

DRAWING NUMBER:
8039

NOTICE TO DRAWING HOLDER
NEEL-SCHAFFER, 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.

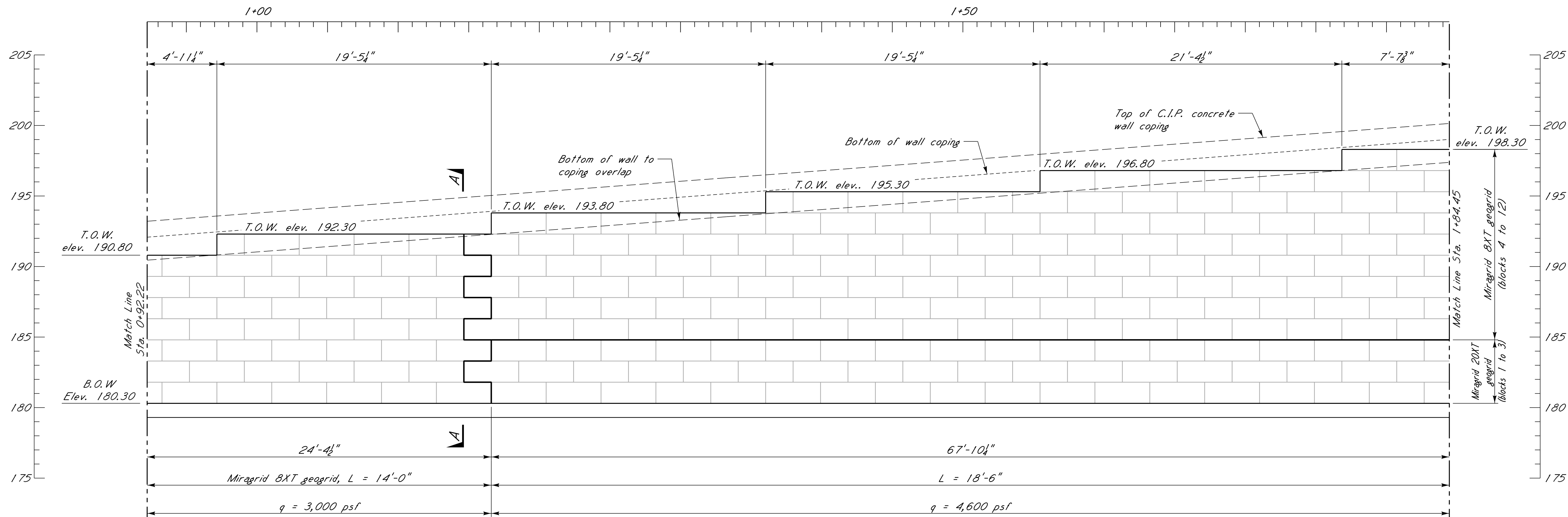
REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	FILENAME:
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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-38-Retaining Wall A Details (1 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:41 PM USER: RJB



PARTIAL ELEVATION WALL "A" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$



PARTIAL ELEVATION WALL "A" ~ PRECAST MODULAR BLOCK DETAILS

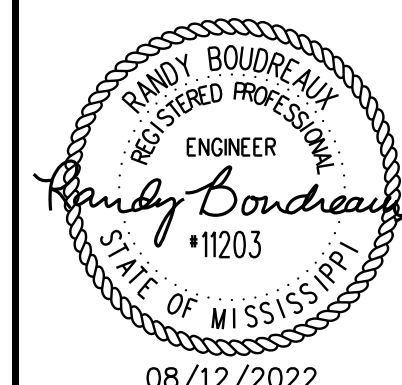
Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$

LEGEND:
T.O.W. = top of wall
B.O.W. = bottom of wall
L = geogrid reinforcement length measured from back face of precast blocks
q = factored maximum applied bearing pressure

NOTES:
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet, nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

NOTICE TO DRAWING HOLDER		REVISIONS			DRAWING INFORMATION	
NEEL-SCHAFER, INC., HERINAFTER 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.		NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000
						FILENAME:
						SCALE:
						SURVEYED BY:
						DSGN: RJB DATE: 06/2022
						DRWN: RJB DATE: 06/2022
						CHKD: BKC DATE: 08/2022
						QA/QC: DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

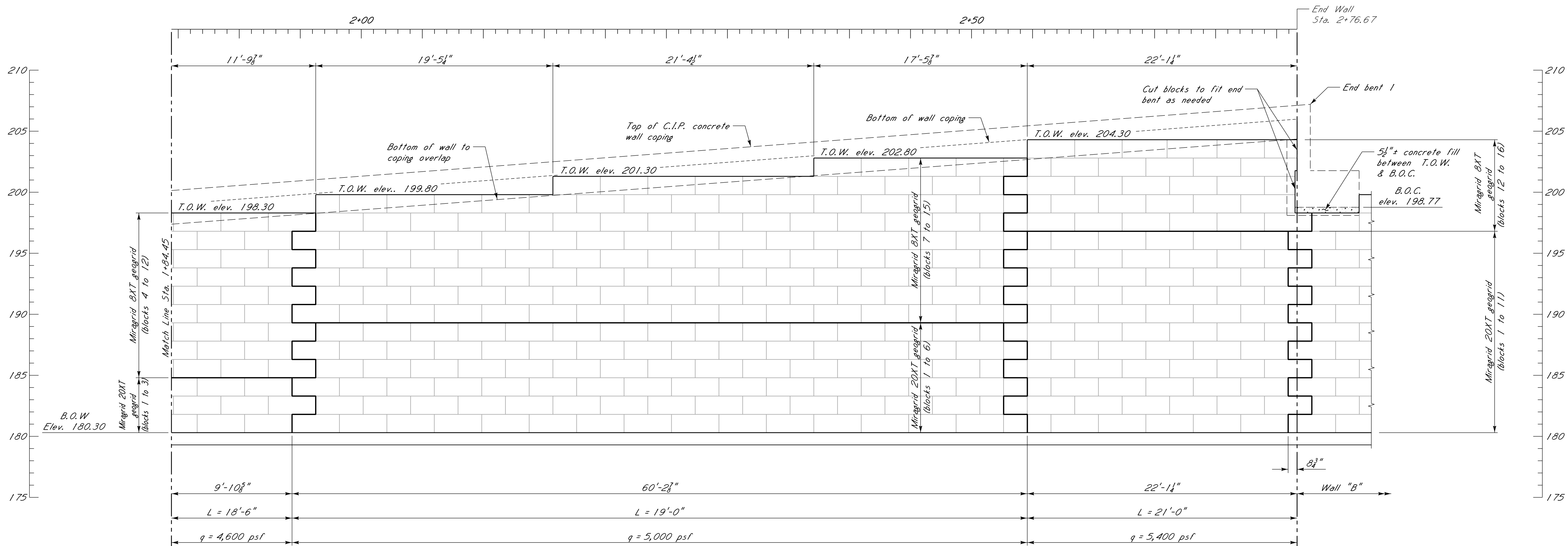


RETAINING WALL "A" DETAILS
(SHEET 1 OF 2)

WORKING NUMBER:
38 OF 59

DRAWING NUMBER:
8040

FILE: s: Projects\16214.000 Hall Avenue West Project\ Over Norfolk Southern Railroad Drawings\16214-39-Retaining Wall A Details (2 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:42 PM USER: RJB



PARTIAL ELEVATION WALL "A" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
B.O.C. = bottom of cap
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

NOTES:

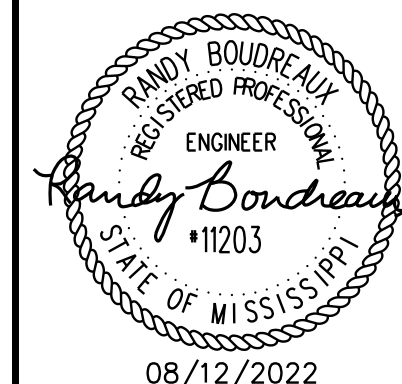
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

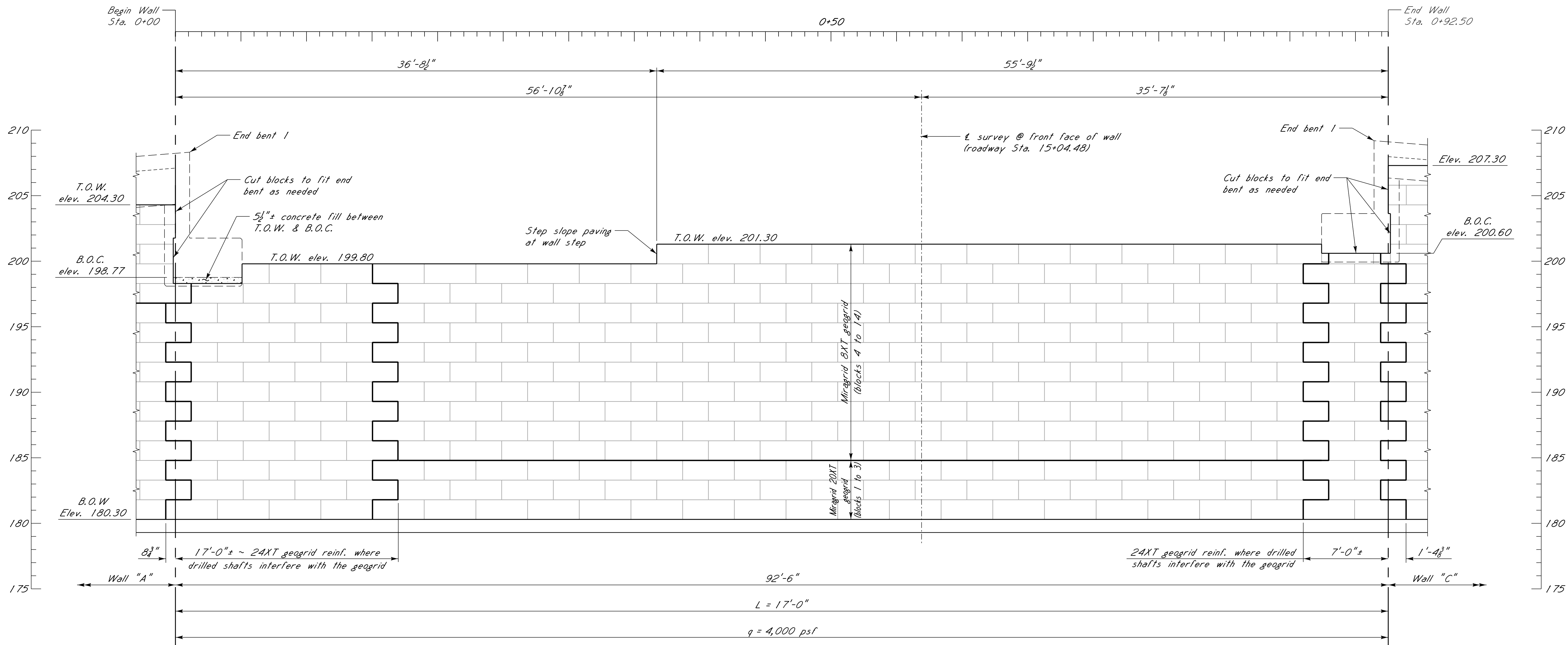


RETAINING WALL "A" DETAILS
(SHEET 2 OF 2)

WORKING NUMBER:
39 OF 59

DRAWING NUMBER:
8041

FILE: s: Projects\16214.000 Hall Avenue West Project\ Over Norfolk Southern Railroad Drawings\16214-40-Retaining Wall B Details.dgn
DATE: 8/12/2022 TIME: 1:45:42 PM USER: RJB



ELEVATION WALL "B" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall.
Scale: 1/4" = 1'-0"

LEGEND:
T.O.W. = top of wall
B.O.W. = bottom of wall
B.O.C. = bottom of cap
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

NOTES:
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

NOTICE TO DRAWING HOLDER
NEEL-SCHAFER, INC., HERINAFTER 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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

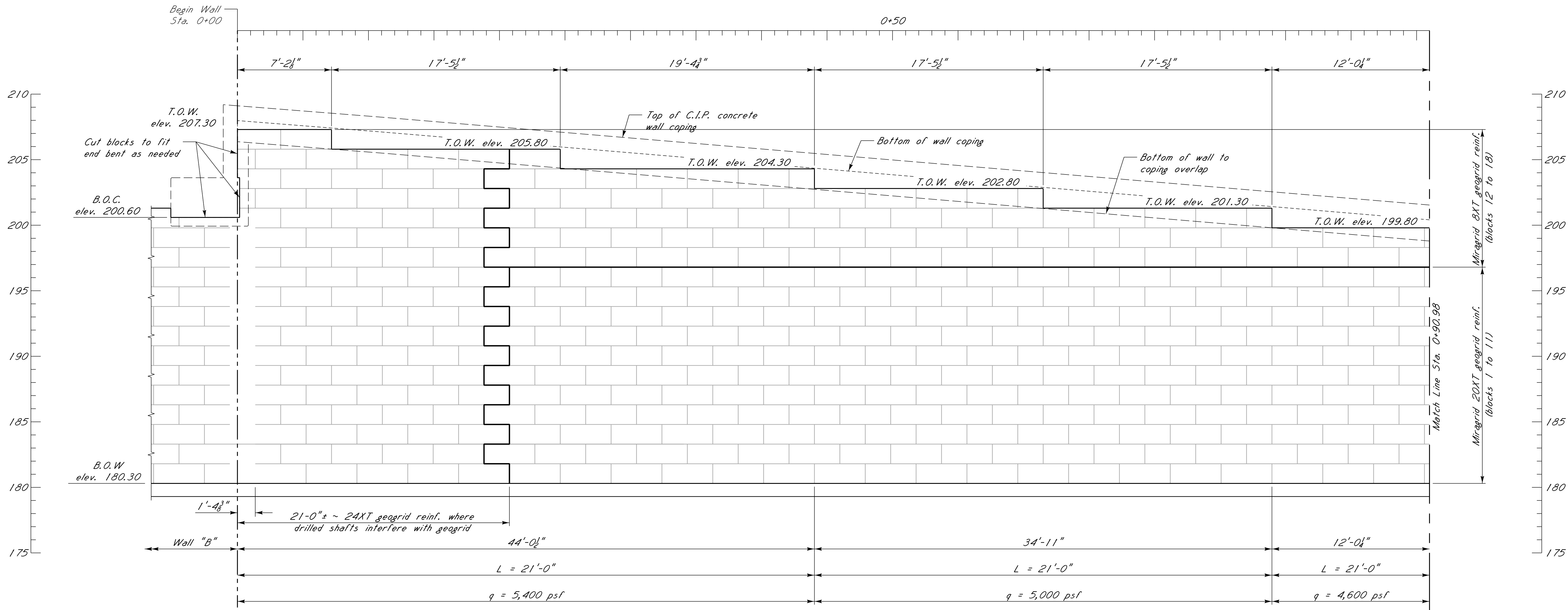


RETAINING WALL "B" DETAILS

WORKING NUMBER:
40 OF 59

DRAWING NUMBER:
8042

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-41-Retaining Wall C Details (1 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:42 PM USER: RJB



PARTIAL ELEVATION WALL "C" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
B.O.C. = bottom of cap
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

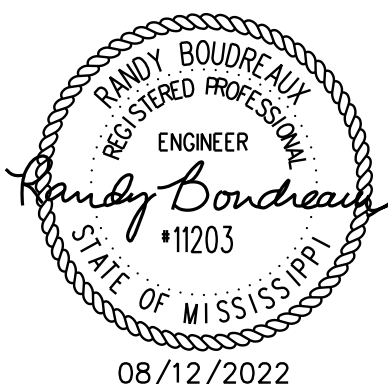
NOTES:

For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet, nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

NOTICE TO DRAWING HOLDER
NEEL-SCHAFFER, 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	
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			DSGN: RJB	DATE: 06/2022
			DRWN: RJB	DATE: 06/2022
			CHKD: BKC	DATE: 08/2022
			QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

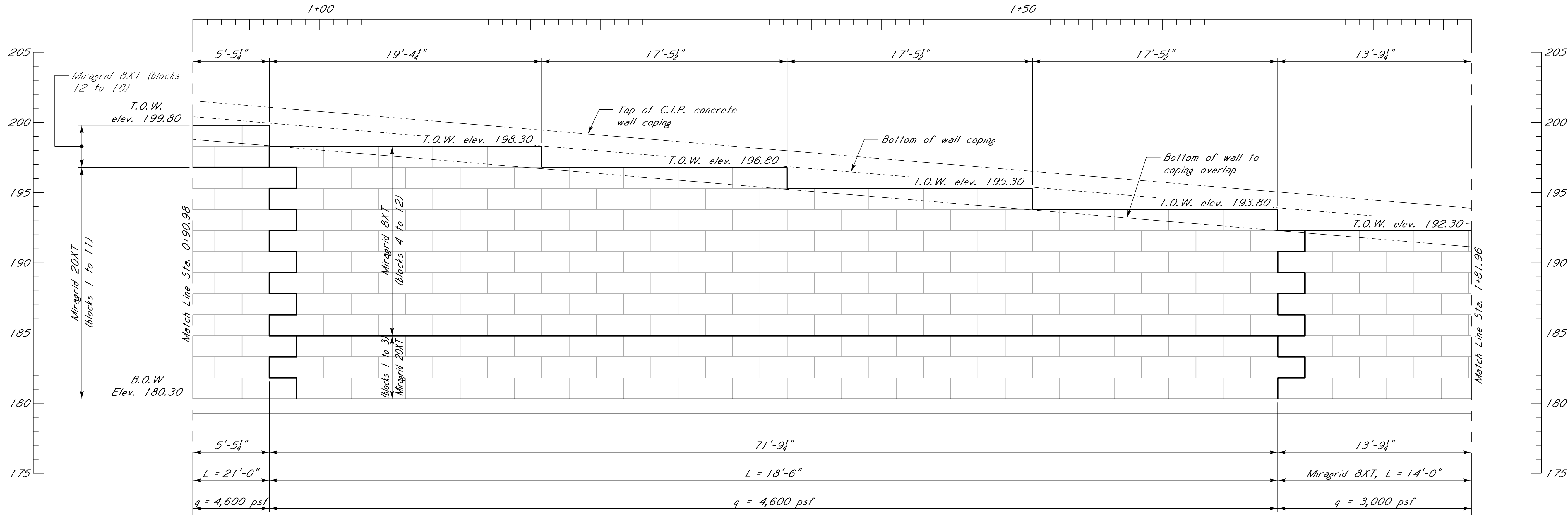


RETAINING WALL "C" DETAILS
(SHEET 1 OF 2)

WORKING NUMBER:
41 OF 59

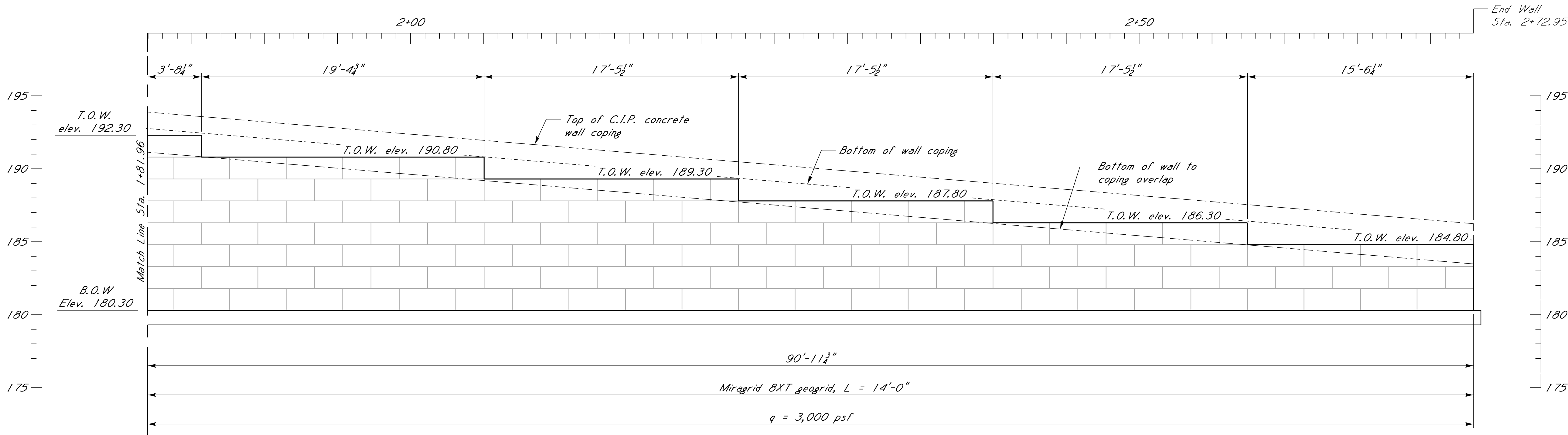
DRAWING NUMBER:
8043

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-42-Retaining Wall C Details (2 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:42 PM USER: RJB



PARTIAL ELEVATION WALL "C" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: 1/4" = 1'-0"



PARTIAL ELEVATION WALL "C" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: 1/4" = 1'-0"

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

NOTES:

For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet, nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

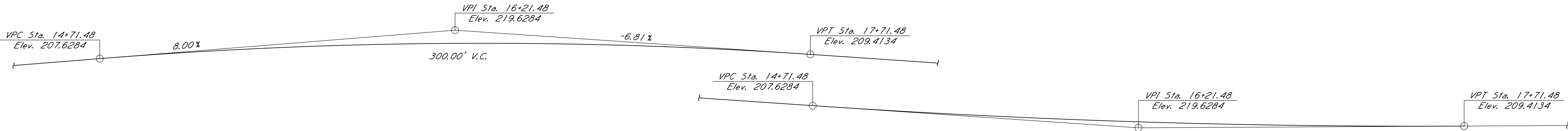


RETAINING WALL "C" DETAILS
(SHEET 2 OF 2)

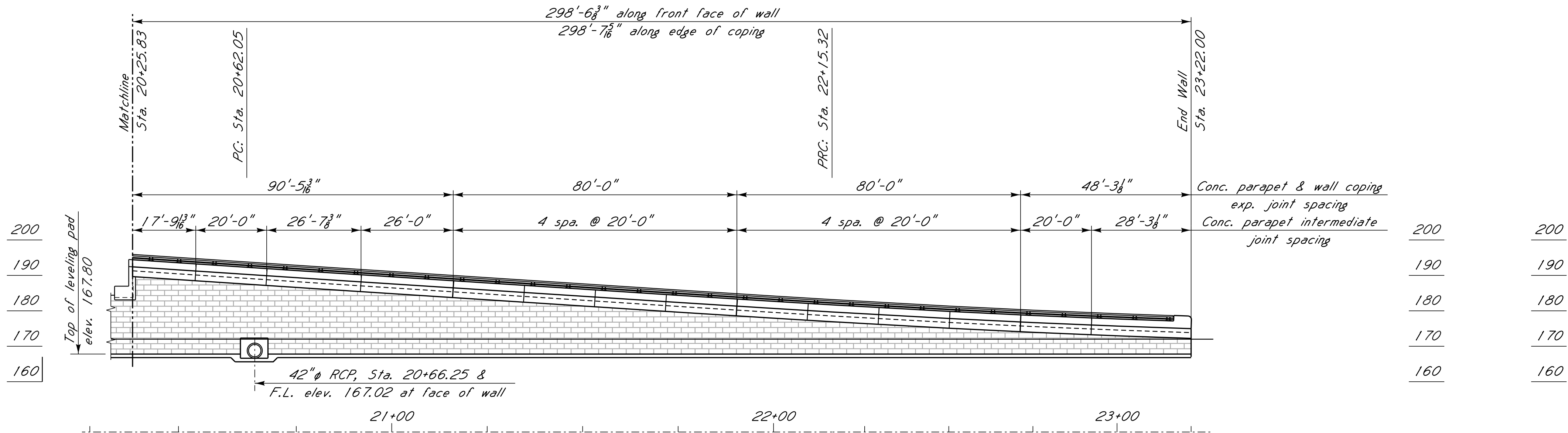
WORKING NUMBER:
42 OF 59

DRAWING NUMBER:
8044

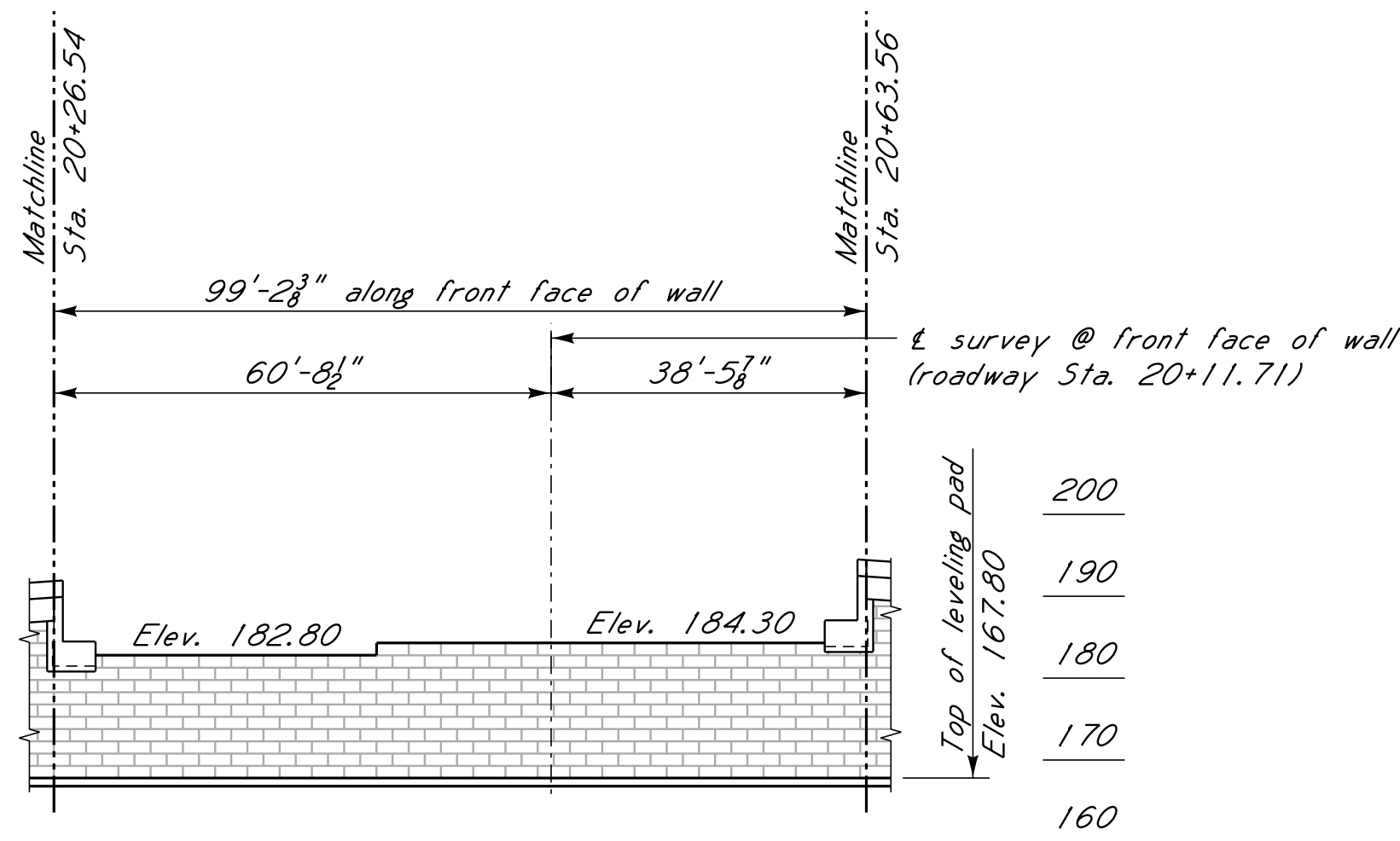
FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-43-Elevation of Retaining Walls D, E & F.dgn
DATE: 8/12/2022 TIME: 1:45:43 PM USER: RJB



VERTICAL CURVE DATA
Drawn for wall "D". Wall "F" is a mirror image of the vertical curve.



ELEVATION WALL "D"
Drawn along the curved face of wall.
Scale: 1" = 20'-0"



ELEVATION WALL "E"
Drawn along the curved face of wall.
Scale: 1" = 20'-0"

TOP OF WALL COPING ELEVATIONS			
Wall "D"		Wall "E"	
Station	Elev.	Station	Elev.
20+25.83	192.47	20+63.56	189.85
20+50.00	190.82	20+75.00	189.09
20+63.56	189.90	21+00.00	187.41
20+75.00	189.12	21+13.57	186.49
21+00.00	187.44	21+25.00	185.71
21+13.57	186.54	21+50.00	184.01
21+25.00	185.76	21+75.00	182.31
21+50.00	184.06	22+00.00	180.66
21+75.00	182.36	22+16.09	179.72
22+00.00	180.71	22+25.00	179.17
22+15.32	179.77	22+50.00	177.84
22+25.00	179.22	22+75.00	176.69
22+50.00	177.89	23+00.00	175.70
22+75.00	176.74	23+22.00	174.97
23+00.00	175.75		
23+22.00	175.02		

NOTES:
For GENERAL NOTES, See sht. no. 1.
Stations are along centerline survey.
Distances are along edge of coping unless noted otherwise.
For enlarged wall elevations showing wall construction details, see sheet nos. 44 to 48.
For elevations of retaining walls "A", "B" and "C", see sht. no. 37.
For plan layout of retaining walls, see sht. no. 35.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".
For railing details, see sht. no. 25.

NOTICE TO DRAWING HOLDER		REVISIONS		DRAWING INFORMATION	
NEEL-SCHAFFER, 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.		NO.	DATE	BY	DESCRIPTION
				N-S PROJECT NO.: 16214.000	
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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

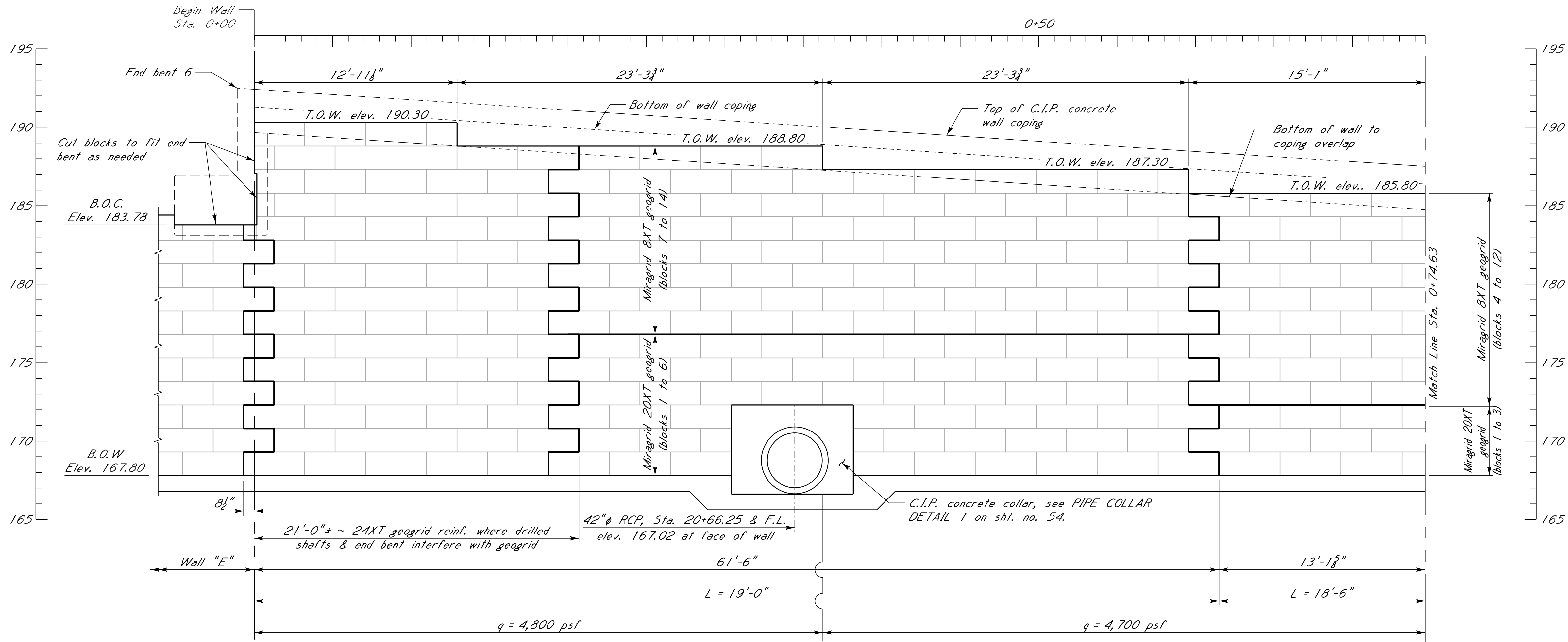


ELEVATION OF RETAINING WALLS "D", "E" & "F"

WORKING NUMBER:
43 OF 59

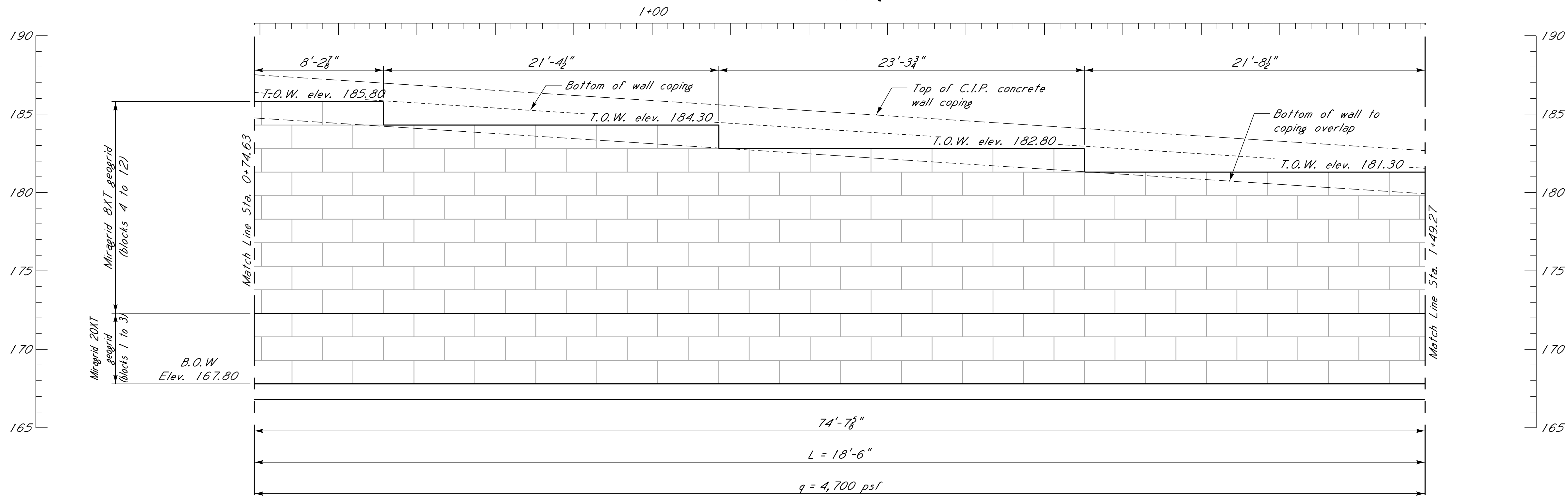
DRAWING NUMBER:
8045

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-44-Retaining Wall D Details (1 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:43 PM USER: RJB



PARTIAL ELEVATION WALL "D" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$



PARTIAL ELEVATION WALL "D" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
B.O.C. = bottom of cap
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

NOTES:

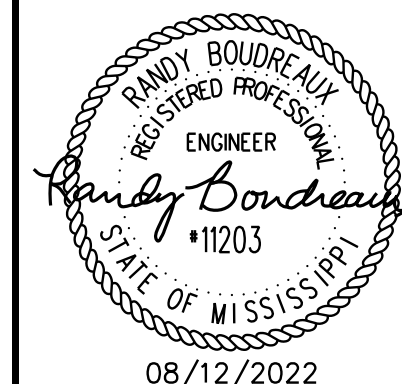
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout and elevation of retaining walls, see sht. no. 43.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

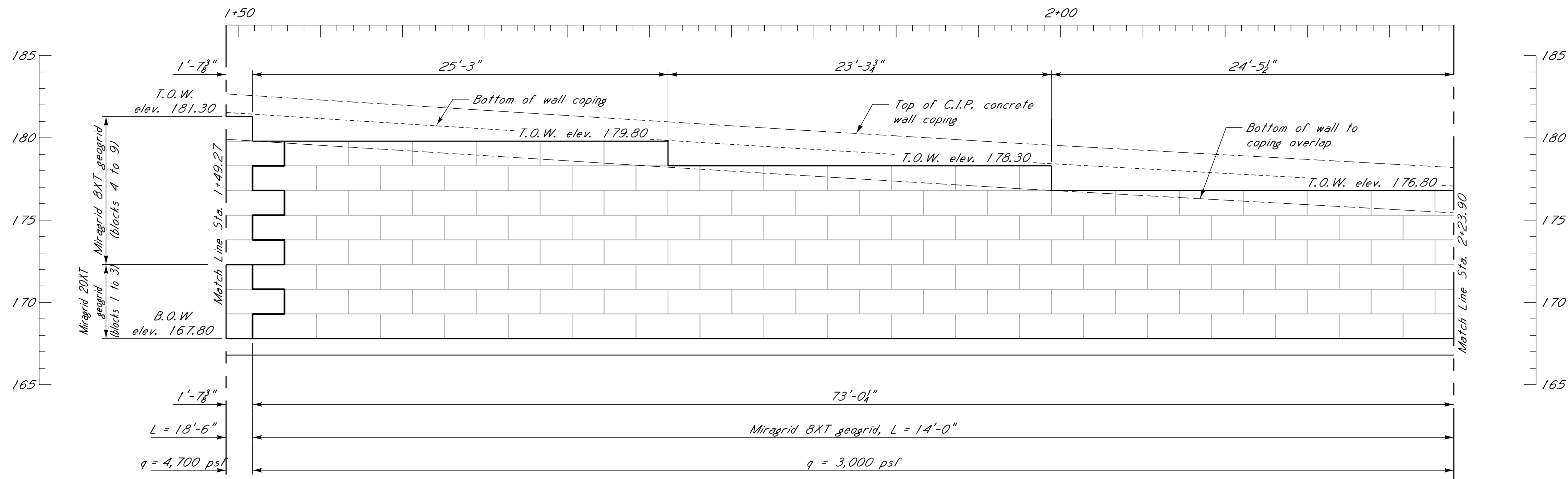


RETAINING WALL "D" DETAILS
(SHEET 1 OF 2)

WORKING NUMBER:
44 OF 59

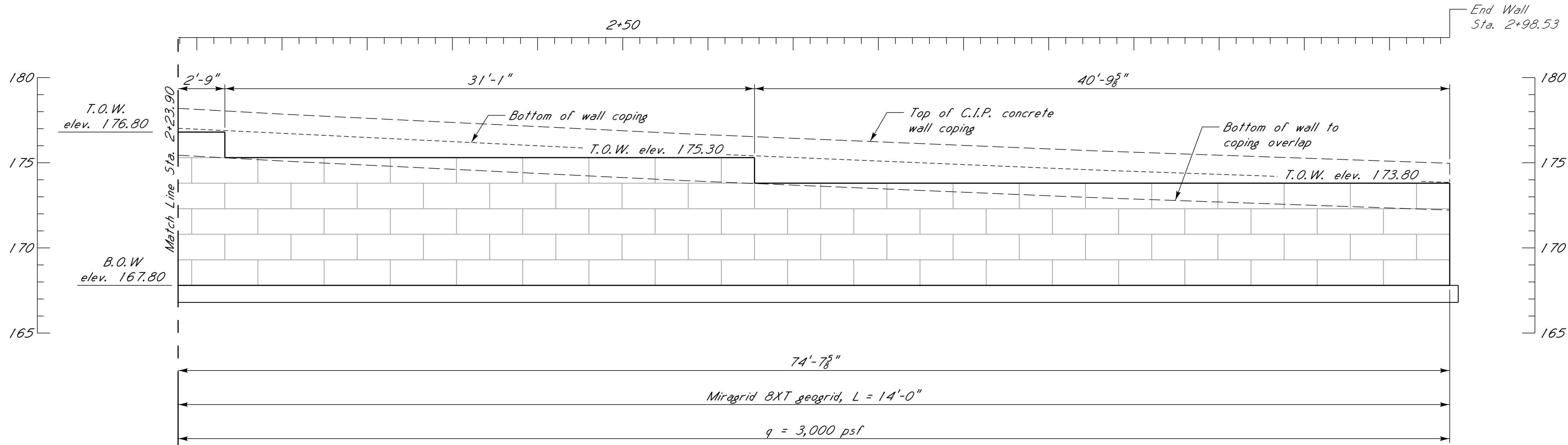
DRAWING NUMBER:
8046

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-45-Retaining Wall D Details (2 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:43 PM USER: RJB



PARTIAL ELEVATION WALL "D" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$



PARTIAL ELEVATION WALL "D" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: $\frac{1}{4}" = 1'-0"$

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

NOTES:

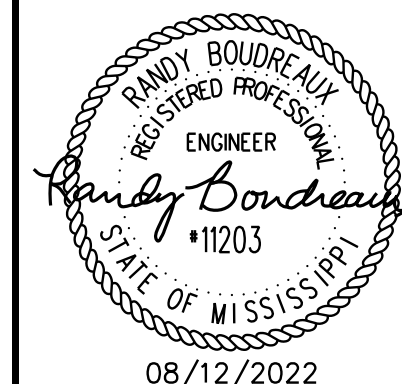
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout and elevation of retaining walls, see sht. no. 43.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

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				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

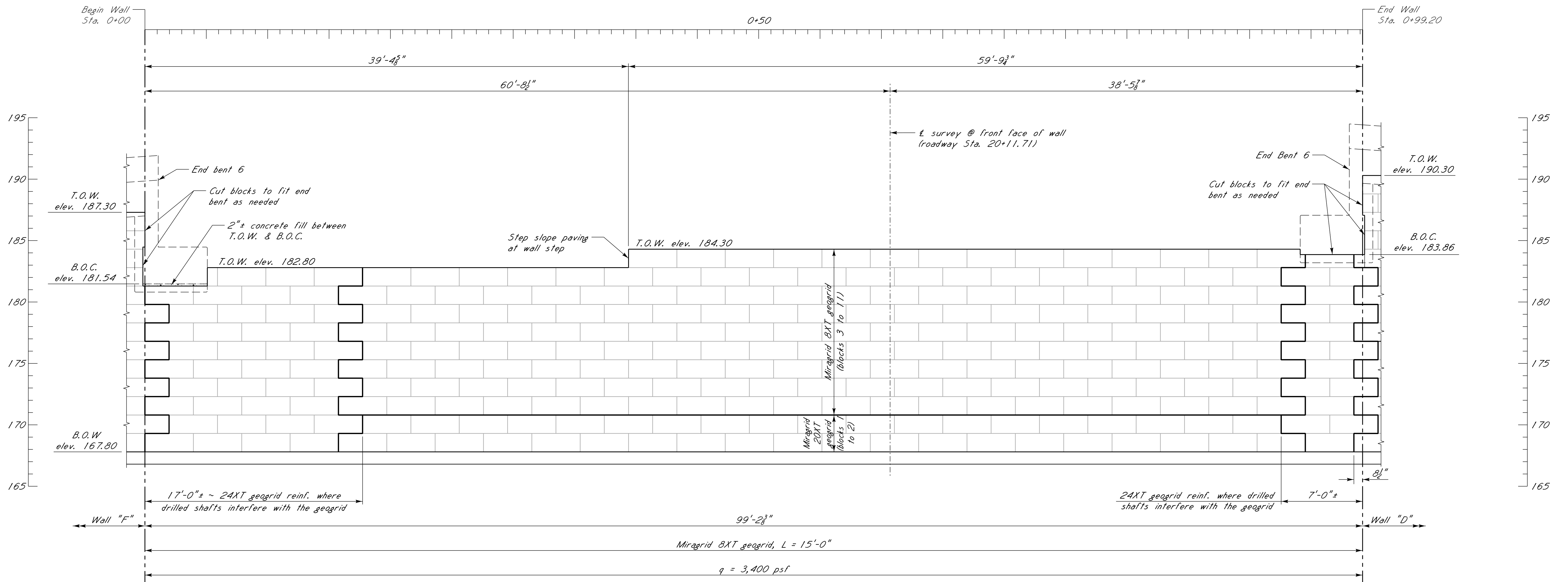


RETAINING WALL "D" DETAILS
(SHEET 2 OF 2)

WORKING NUMBER:
45 OF 59

DRAWING NUMBER:
8047

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-46-Retaining Wall E Details.dgn
DATE: 8/12/2022 TIME: 1:45:43 PM USER: RJB



ELEVATION WALL "E" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall.
Scale: $\frac{1}{4}$ " = 1'-0"

LEGEND:

T.O.W. = top of wall
B.O.W. = bottom of wall
B.O.C. = bottom of cap
L = geogrid reinforcement length measured from back of precast blocks
q = factored maximum applied bearing pressure

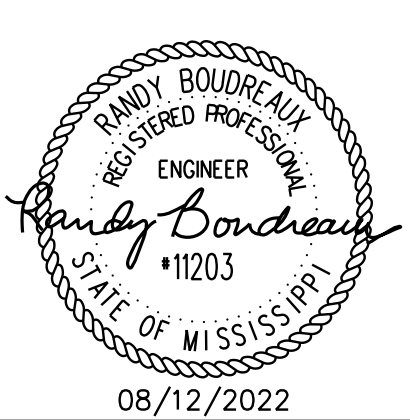
NOTES:

For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout and elevation of retaining walls, see sht. no. 43.
For typical wall sections, see sheet. nos. 49 to 53.
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				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

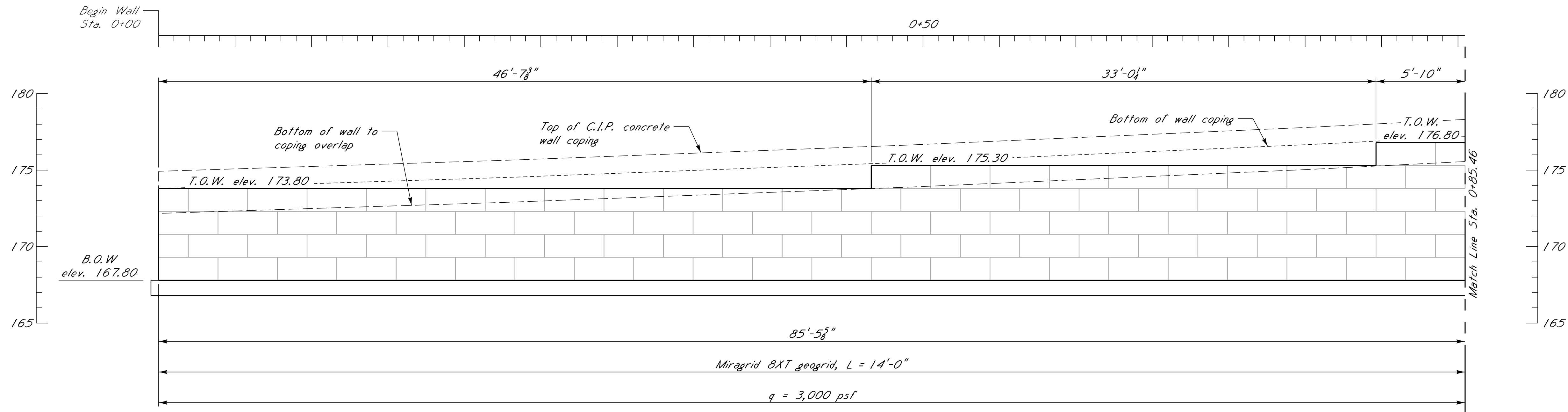


RETAINING WALL "E" DETAILS

WORKING NUMBER:
46 OF 59

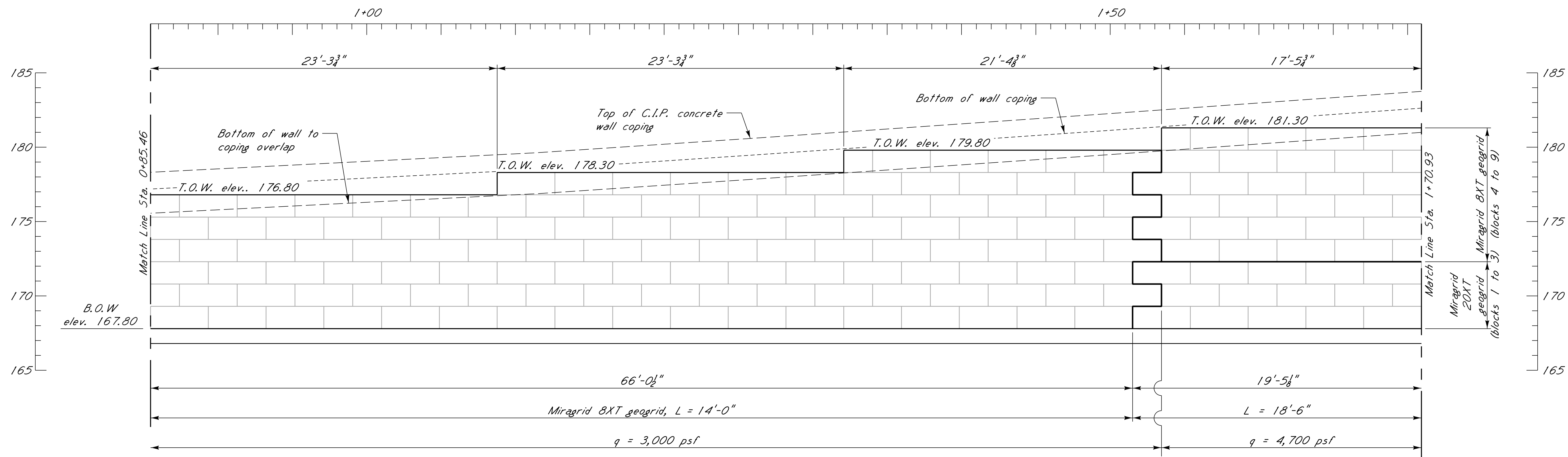
DRAWING NUMBER:
8048

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-47-Retaining Wall F Details (1 of 2).dgn
DATE: 8/12/2022 TIME: 1:45:43 PM USER: RJB



PARTIAL ELEVATION WALL "F" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: 1/4" = 1'-0"



PARTIAL ELEVATION WALL "F" ~ PRECAST MODULAR BLOCK DETAILS

Drawn along the curved face of wall. Railing not shown for clarity.
Scale: 1/4" = 1'-0"

LEGEND:
T.O.W. = top of wall
B.O.W. = bottom of wall
L = geogrid reinforcement length measured from back of precast blocks

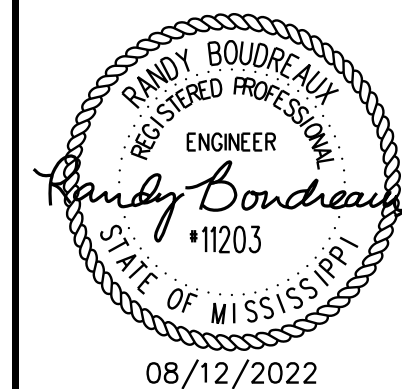
NOTES:
For GENERAL NOTES, See sht. no. 1.
Stations and distances are along front face of wall unless noted otherwise.
For plan layout and elevation of retaining walls, see sht. no. 43.
For typical wall sections, see sheet. nos. 49 to 53.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

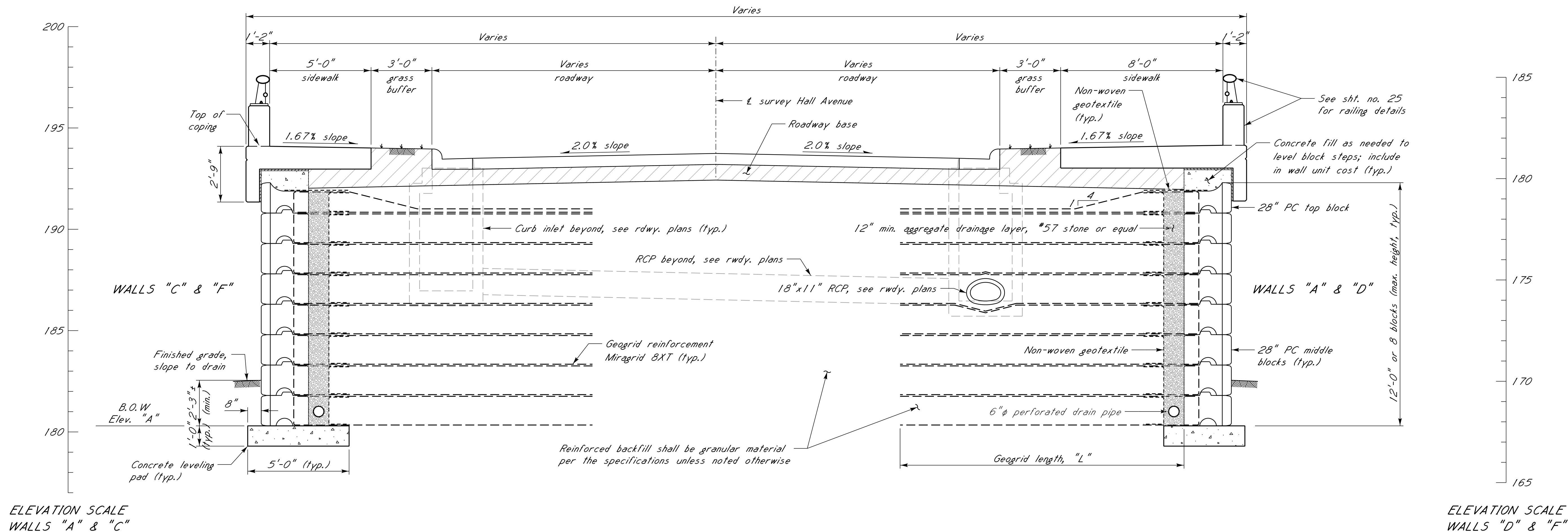


**RETAINING WALL "F" DETAILS
(SHEET 1 OF 2)**

WORKING NUMBER:
47 OF 59

DRAWING NUMBER:
8049

FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-49-Retaining Wall Section A-A.dgn
DATE: 8/12/2022 TIME: 1:45:44 PM USER: RJB



NOTICE TO DRAWING HOLDER				REVISIONS		DRAWING INFORMATION	
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				N-S PROJECT NO.: 16214.000			
				FILENAME:			
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				SURVEYED BY:			
				DSGN:	RJB	DATE:	06/2022
				DRWN:	RJB	DATE:	06/2022
				CHKD:	BKC	DATE:	08/2022
				QA/QC:		DATE:	

HALL AVENUE WEST - PHASE 2

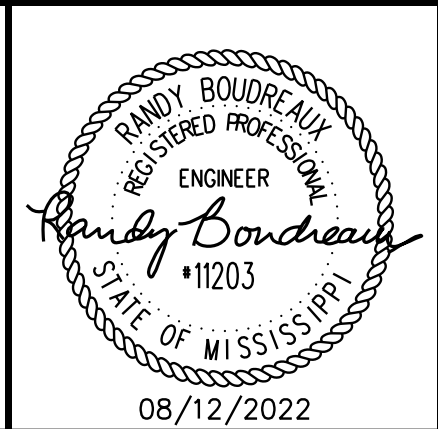
WEST PINE STREET TO COURT STREET

FEDERAL AID PROJECT NO.

FBLD-8769-00(001)LPA / 108639-802000

CITY OF HATTIESBURG - FORREST COUNTY

HATTIESBURG, MISSISSIPPI

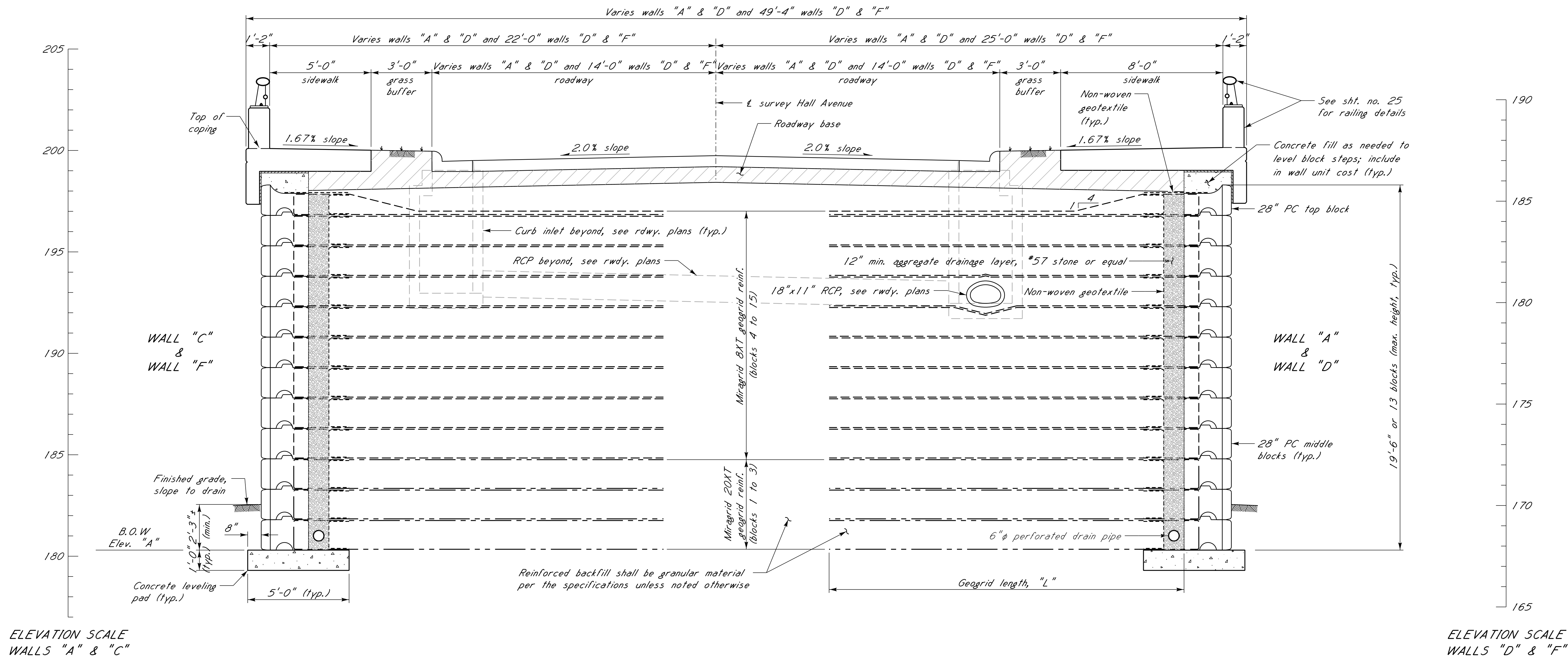


NEEL-SCHAFFER

Solutions you can build upon

RETAINING WALL SECTION A-A	
WORKING NUMBER:	DRAWING NUMBER:
49 OF 59	8051

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-50-Retaining Wall Section B-B.dgn
DATE: 8/12/2022 TIME: 1:45:44 PM USER: RJB



RETAINING WALL SECTION B-B
Scale: $\frac{1}{8}" = 1'-0"$

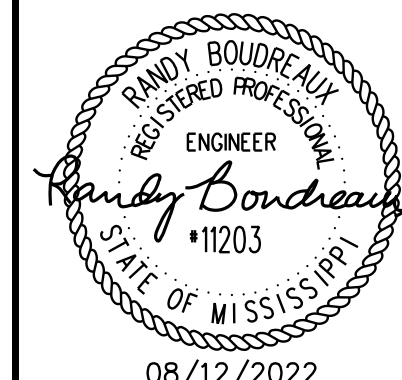
WALL DATA			
Wall	Station Range (along wall)	"A"	"L"
"A"	1+17 to 1+96	180.30	18'-6"
"C"	0+96 to 1+68	180.30	18'-6"
"D"	0+61 to 1+51	167.80	18'-6"
"F"	1+53 to 2+56.39	167.80	18'-6"

BACKFILL NOTE:
All backfill between the walls shall be treated as reinforced backfill and shall be included in the pay item Retaining Wall System, Mechanically Stabilized. Unless noted otherwise, reinforced backfill shall meet the requirements of Section 703.02 of the MDOT Standard Specifications and the additional requirement of 0% to 5% material passing a #200 sieve.

LEGEND:
PC = precast modular block

NOTES:
For GENERAL NOTES, See sht. no. 1.
For location of sections, see sht. no. 35
For plan layout and elevation of retaining walls, see sht. nos. 35, 37 and 43.
For retaining wall details, see sheet. nos. 38 to 42 and 44 to 48.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



RETAINING WALL
SECTION B-B

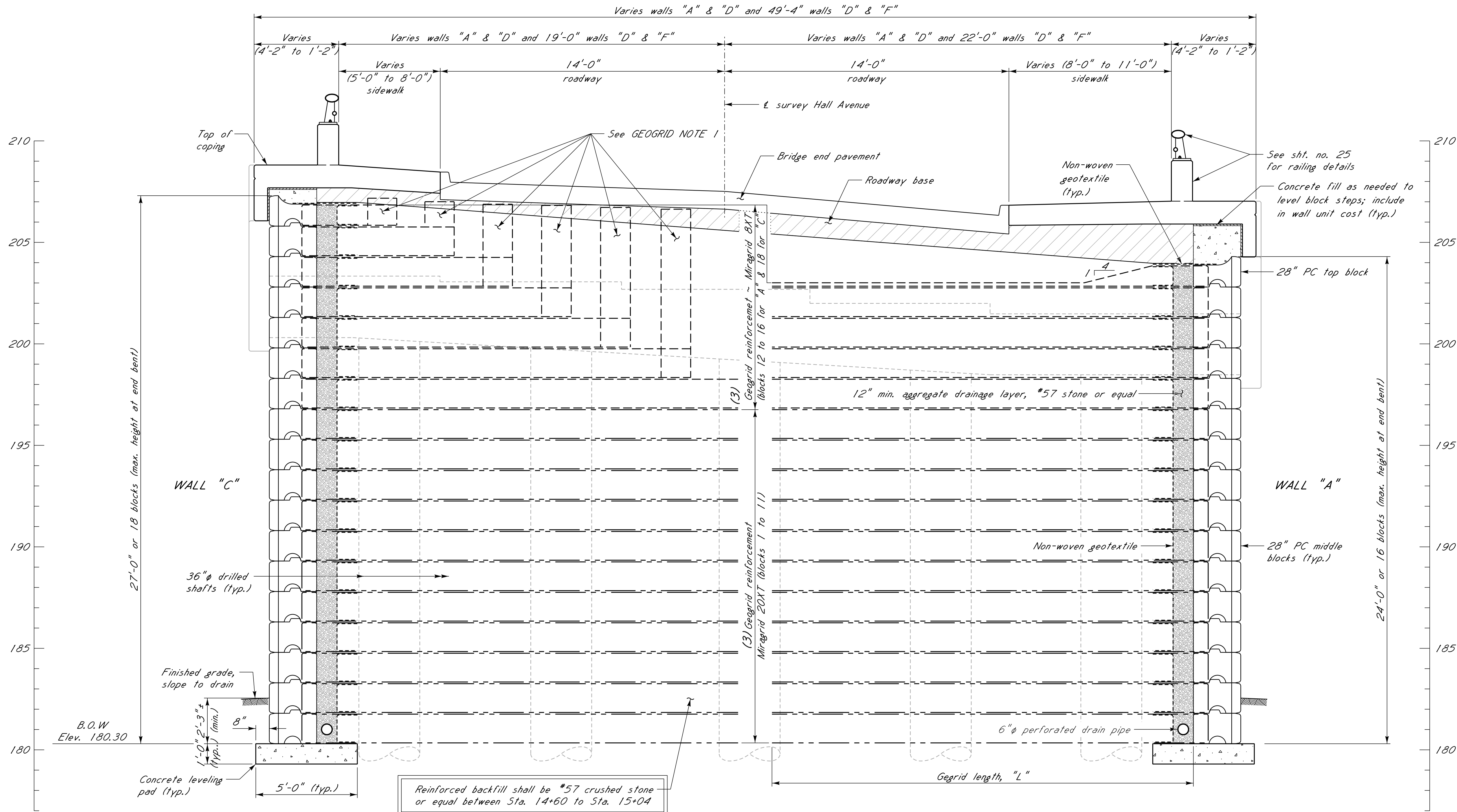
WORKING NUMBER:
50 OF 59

DRAWING NUMBER:
8052

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	
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				FILENAME:
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				SURVEYED BY:
				DSGN: RJB DATE: 06/2022
				DRWN: RJB DATE: 06/2022
				CHKD: BKC DATE: 08/2022
				QA/QC: DATE:

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-51-Retaining Wall Section C-C.dgn
DATE: 8/12/2022 TIME: 1:45:45 PM USER: RJB



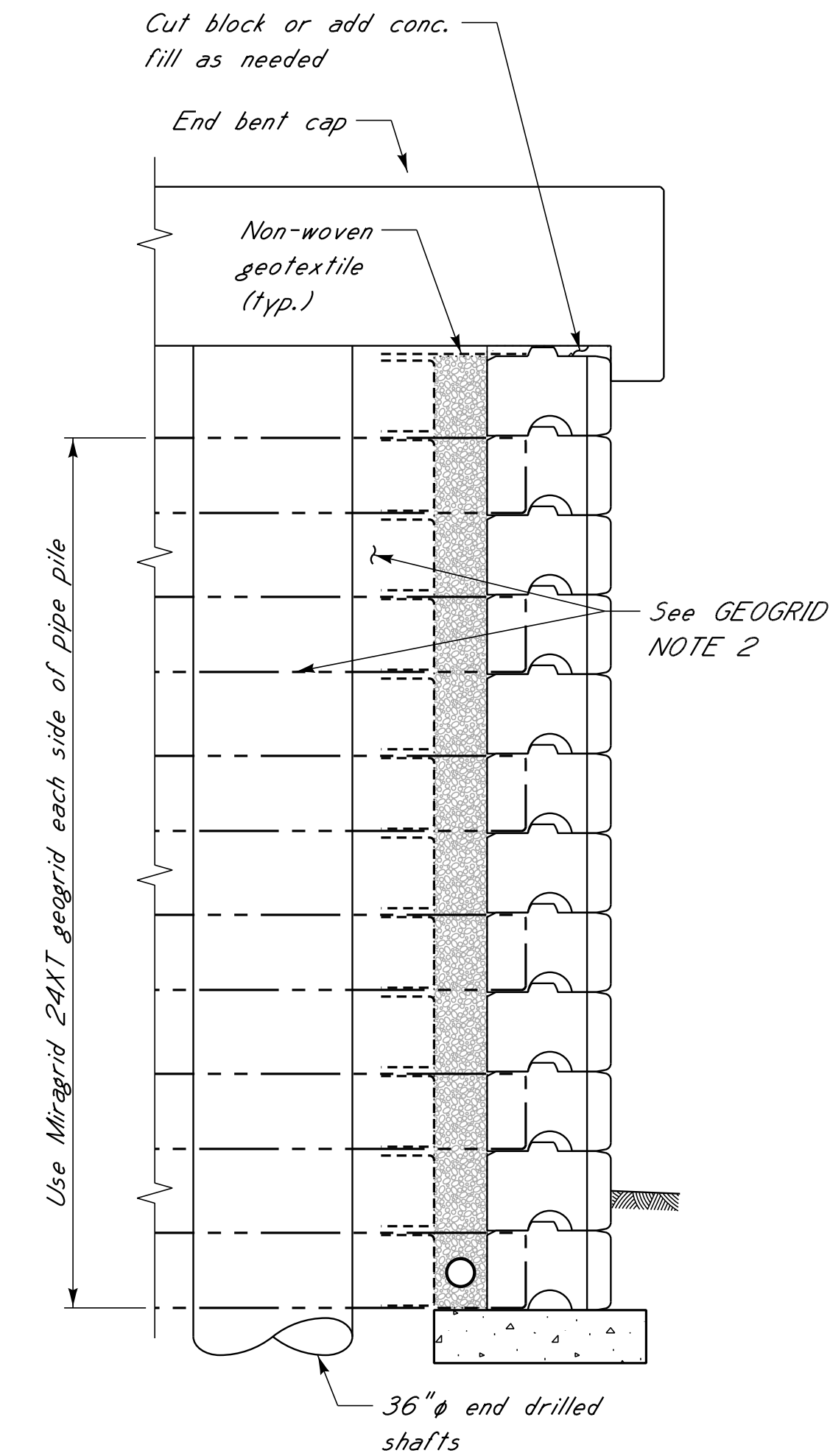
GEOGRID NOTE 1:
At locations where geogrid intersects the end bent cap and backwall, extend the geogrid up the concrete face as high as practical prior to placing the reinforced fill.

GEOGRID NOTE 3:
On Wall "C" between Sta. 0+00 and 0+21 where the drilled shafts and end bent interfere with the placement of the geogrid reinforcement, use Miragrid 24XT geogrid reinforcement on all precast blocks

RETAINING WALL SECTION C-C
Typical dimensions at end bent 1 normal to $\perp$ roadway.
Scale: $\frac{3}{8}" = 1'-0"$

WALL DATA		
Wall	Station Range	"L"
"A"	1+96 to 2+76.67	21'-0"
"C"	0+00 to 0+96	21'-0"

BACKFILL NOTE:
All backfill between the walls shall be treated as reinforced backfill and shall be included in the pay item Retaining Wall System, Mechanically Stabilized. Unless noted otherwise, reinforced backfill shall meet the requirements of Section 703.02 of the MDOT Standard Specifications and the additional requirement of 0% to 5% material passing a #200 sieve.



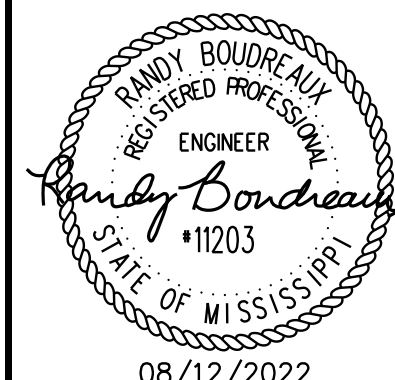
RETAINING WALL PARTIAL SECTION C-C
Drawn at drilled shafts.
Scale: $\frac{3}{8}" = 1'-0"$

GEOGRID NOTE 2:
Geogrid strips along each side of the drilled shafts shall be diverted around the pile as needed while maintaining 3" of clearance between the pile and the edge of the strips. Omit geogrid strips in line with the face of the end drilled shafts. Geogrid strips in line with the face of the interior drilled shafts shall be turned up the drilled shafts 3'-0" or as high as possible. For additional details, see sht. no. 54.

LEGEND:
PC = precast modular block

NOTES:
For GENERAL NOTES, See sht. no. 1.
For location of sections, see sht. no. 35.
For plan layout and elevation of retaining walls, see sht. nos. 35, 37 and 43.
For retaining wall details, see sheet. nos. 38 to 42 and 44 to 48.
Top of leveling pad and top of wall elevations shown are based on a block height of 1'-6".

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



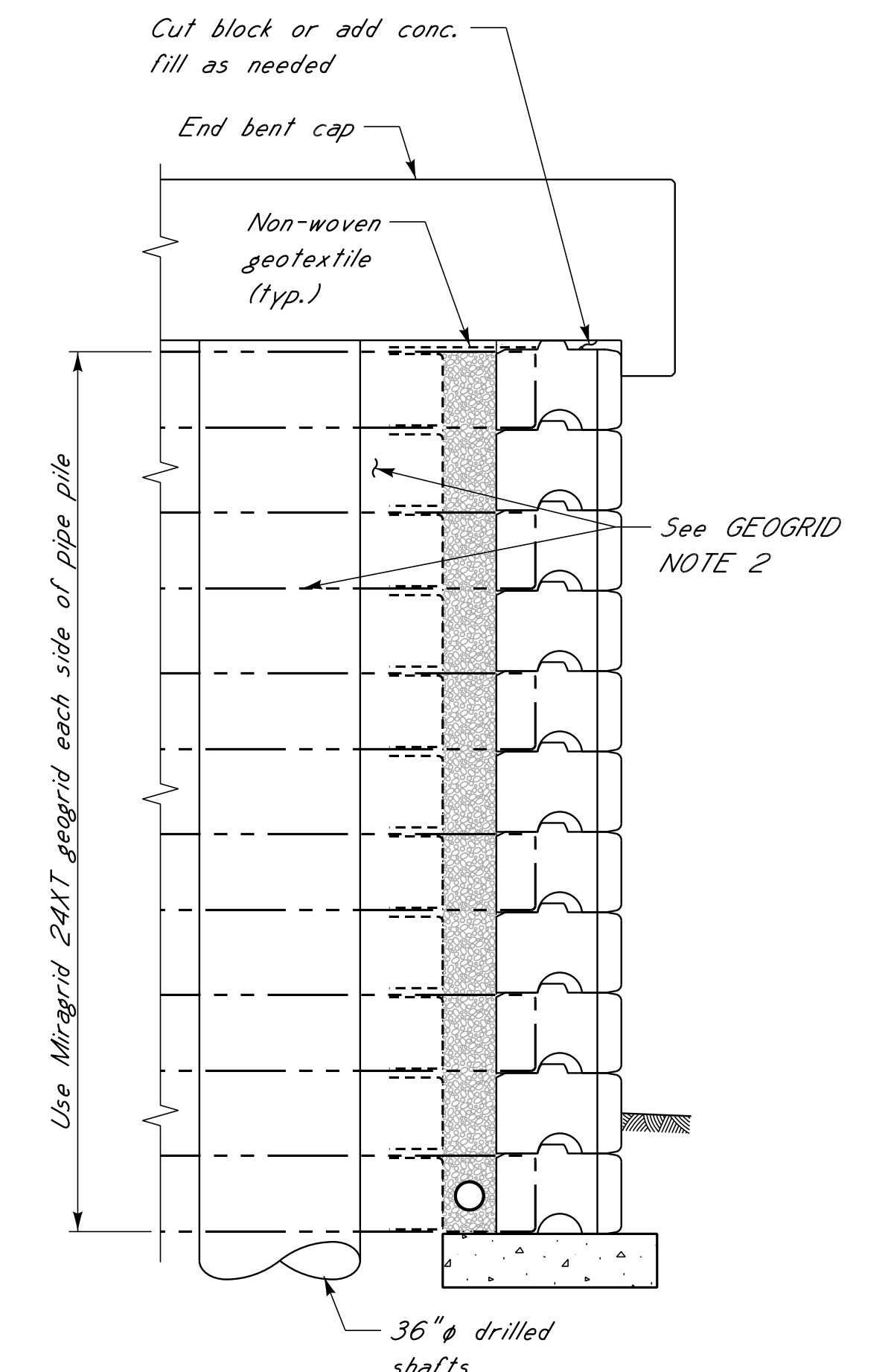
RETAINING WALL
SECTION C-C

WORKING NUMBER:
51 OF 59

DRAWING NUMBER:
8053

NOTICE TO DRAWING HOLDER
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				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

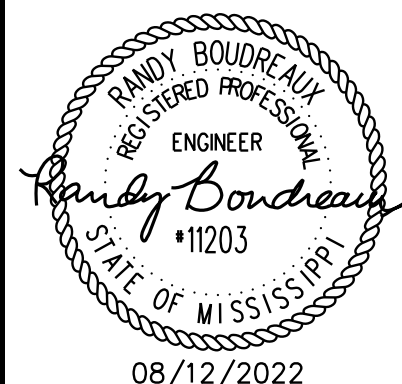


GEOGRID NOTE 2:
Geogrid strips along each side of the drilled shafts shall be diverted around the pile as needed while maintaining 3" of clearance between the pile and the edge of the strips.
Omit geogrid strips in line with the face of the end drilled shafts.
Geogrid strips in line with the face of the interior drilled shafts shall be turned up the drilled shafts 3'-0" or as high as possible.
For additional details, see shf. no. 54.

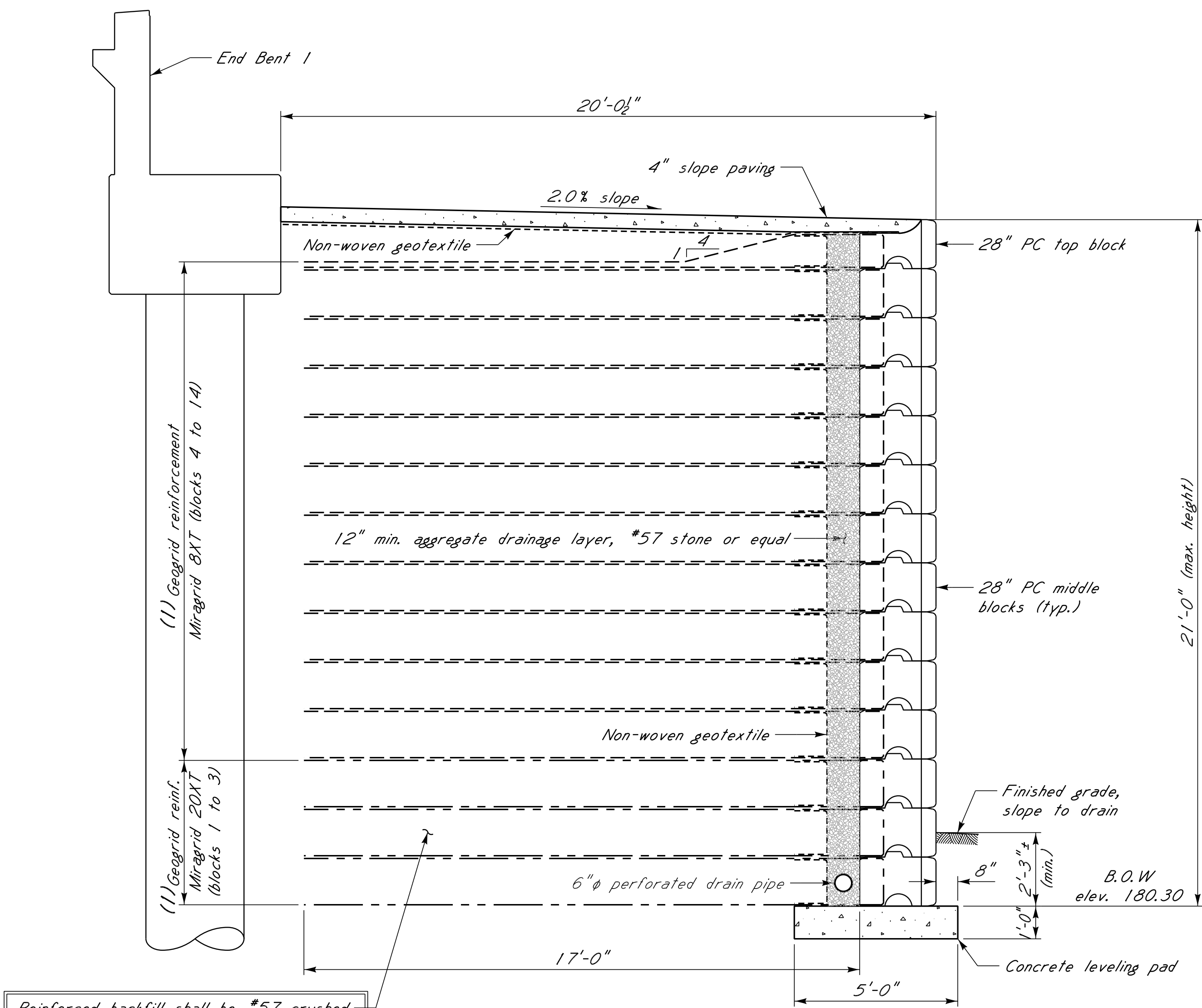
NOTES:
For GENERAL NOTES, See sht. no. 1.
For location of sections, see sht. no. 35
For plan layout and elevation of retaining walls, see
sht. nos. 35, 37 and 43.
For retaining wall details, see sheet. nos. 38 to 42
and 44 to 48.
Top of leveling pad and top of wall elevations shown
are based on a block height of 1'-6".

WALL DATA		
Wall	Station Range Along Wall	"L"
"D"	0+00 to 0+60	19'-0"
"F"	2+39 to 2+56.39	19'-0"

BACKFILL NOTE:
All backfill between the walls shall be treated as reinforced backfill and shall be included in the pay item Retaining Wall System, Mechanically Stabilized. Unless noted otherwise, reinforced backfill shall meet the requirements of Section 703.02 of the MDOT Standard Specifications and the additional requirement of 0% to 5% material passing a #200 sieve.

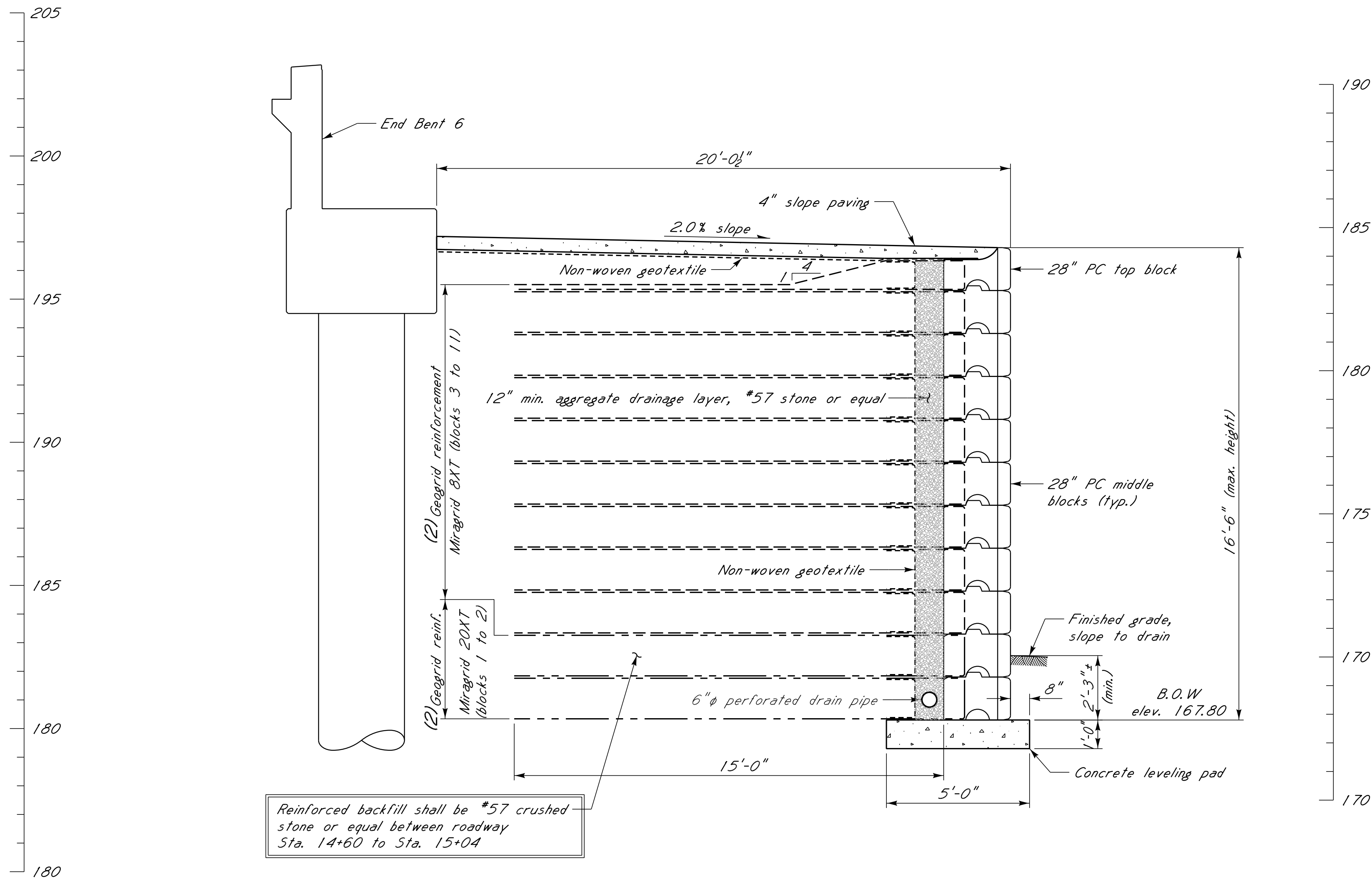


FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-53-Retaining Wall Sections E-E & F-F.dgn
DATE: 8/12/2022 TIME: 2:01:16 PM USER: RJB



RETAINING WALL SECTION E-E ~ WALL "B"
Scale: 3/8" = 1'-0"

GEOGRID NOTE 1:
For Sta. 0+00 to Sta. 0+17 and Sta. 0+85.50 to Sta. 0+92.50 where the drilled shafts interfere with the placement of the geogrid reinforcement, use Miragrid 24XT geogrid reinforcement on all precast blocks



RETAINING WALL SECTION F-F ~ WALL "E"
Scale: 3/8" = 1'-0"

GEOGRID NOTE 2:
For Sta. 0+00 to Sta. 0+17 and Sta. 0+92.20 to Sta. 0+99.20 where the drilled shafts interfere with the placement of the geogrid reinforcement, use Miragrid 24XT geogrid reinforcement on all precast blocks

LEGEND:
PC = precast modular block

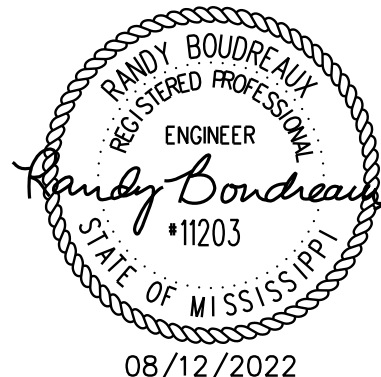
BACKFILL NOTE:
All backfill between the walls shall be treated as reinforced backfill and shall be included in the pay item Retaining Wall System, Mechanically Stabilized.

NOTES:
For GENERAL NOTES, See sht. no. 1.
For location of sections, see sht. no. 35
For plan layout and elevation of retaining walls, see sht. nos. 35, 37 and 43.
For retaining wall details, see sheet. nos. 38 to 42 and 44 to 48.
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				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

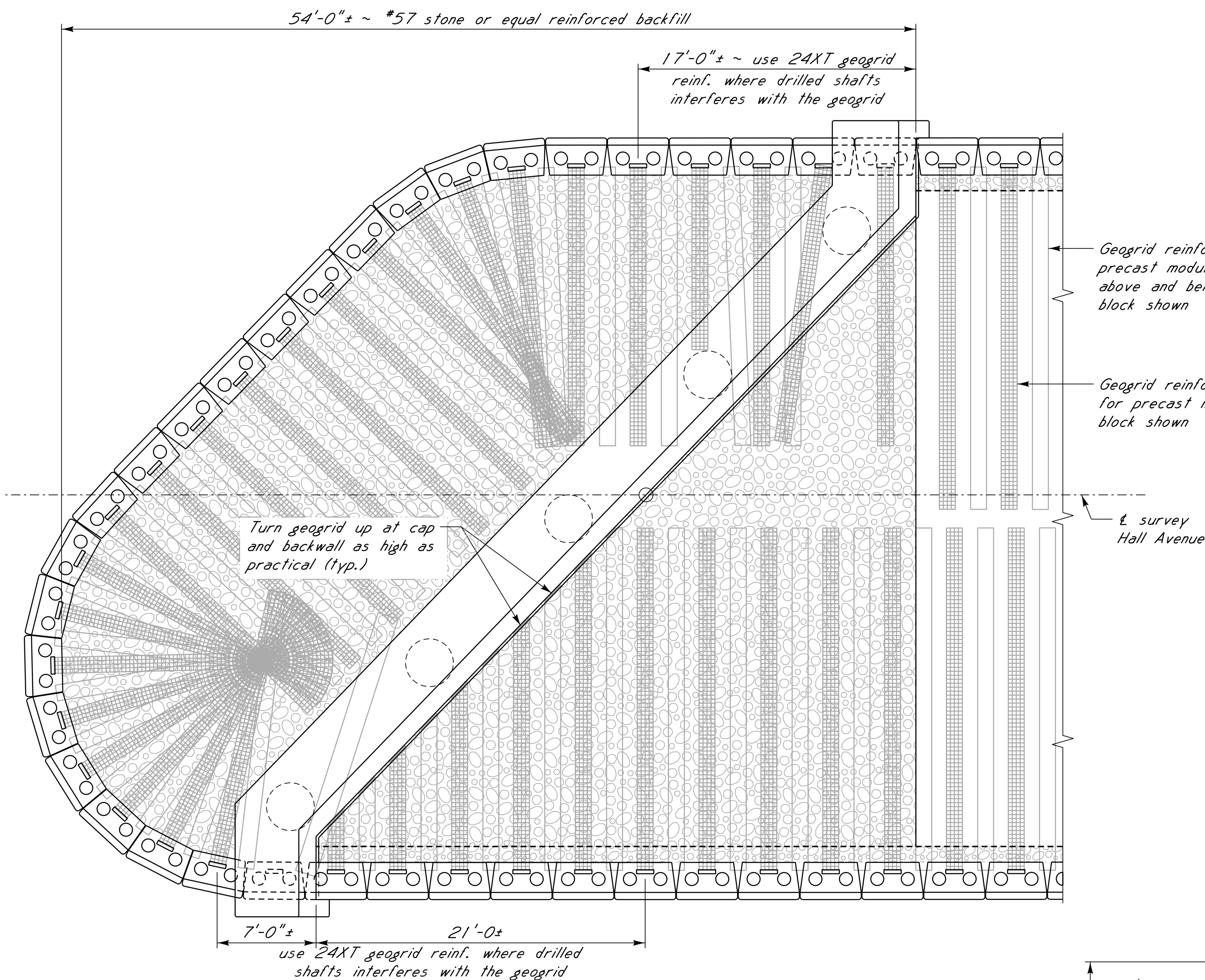
HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



RETAINING WALL
SECTIONS E-E & F-F

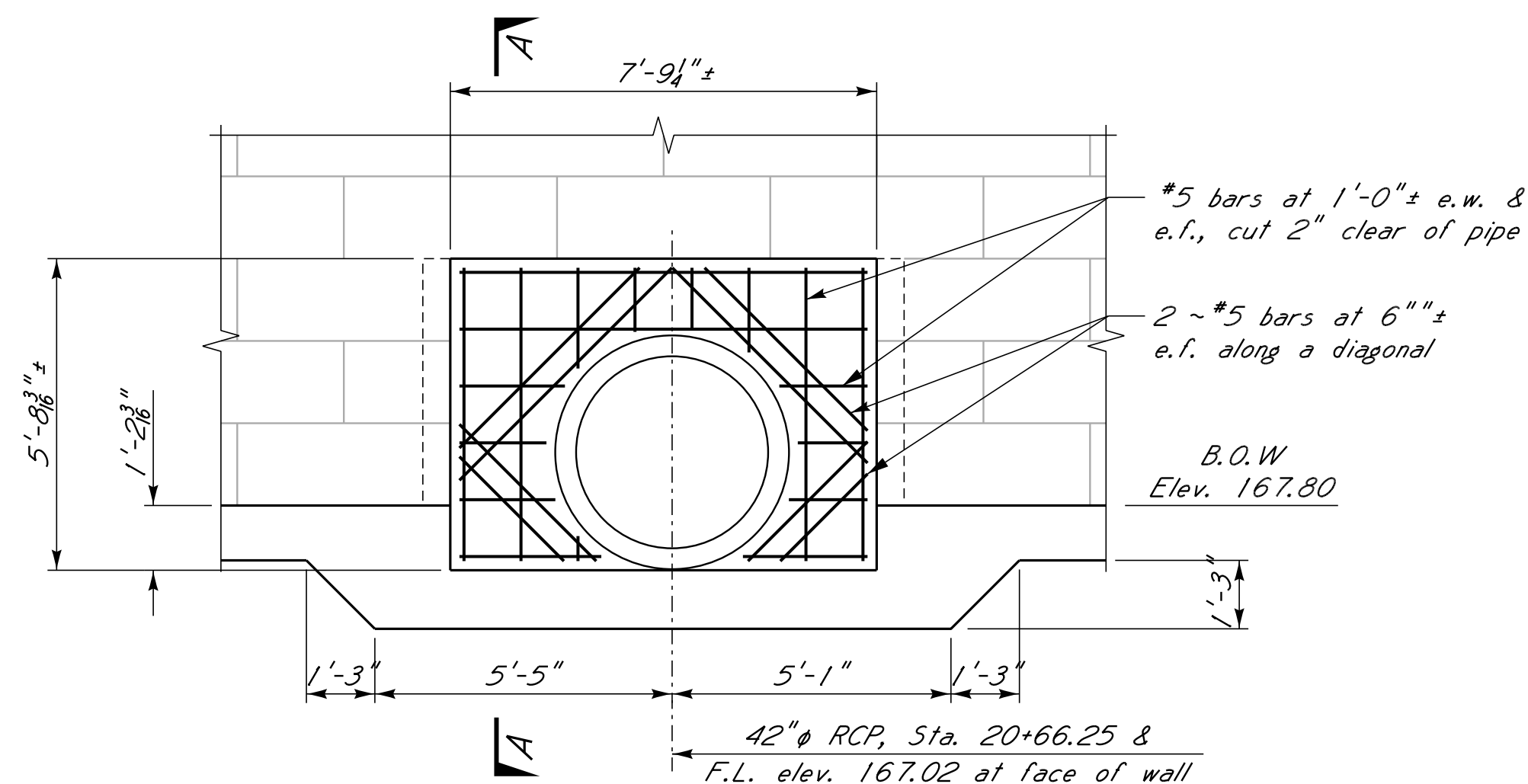
WORKING NUMBER: 53 OF 59	DRAWING NUMBER: 8055
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FILE: S: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-54-Misc. Retaining Wall Details.dgn
DATE: 8/12/2022 TIME: 1:45:46 PM USER: RJB



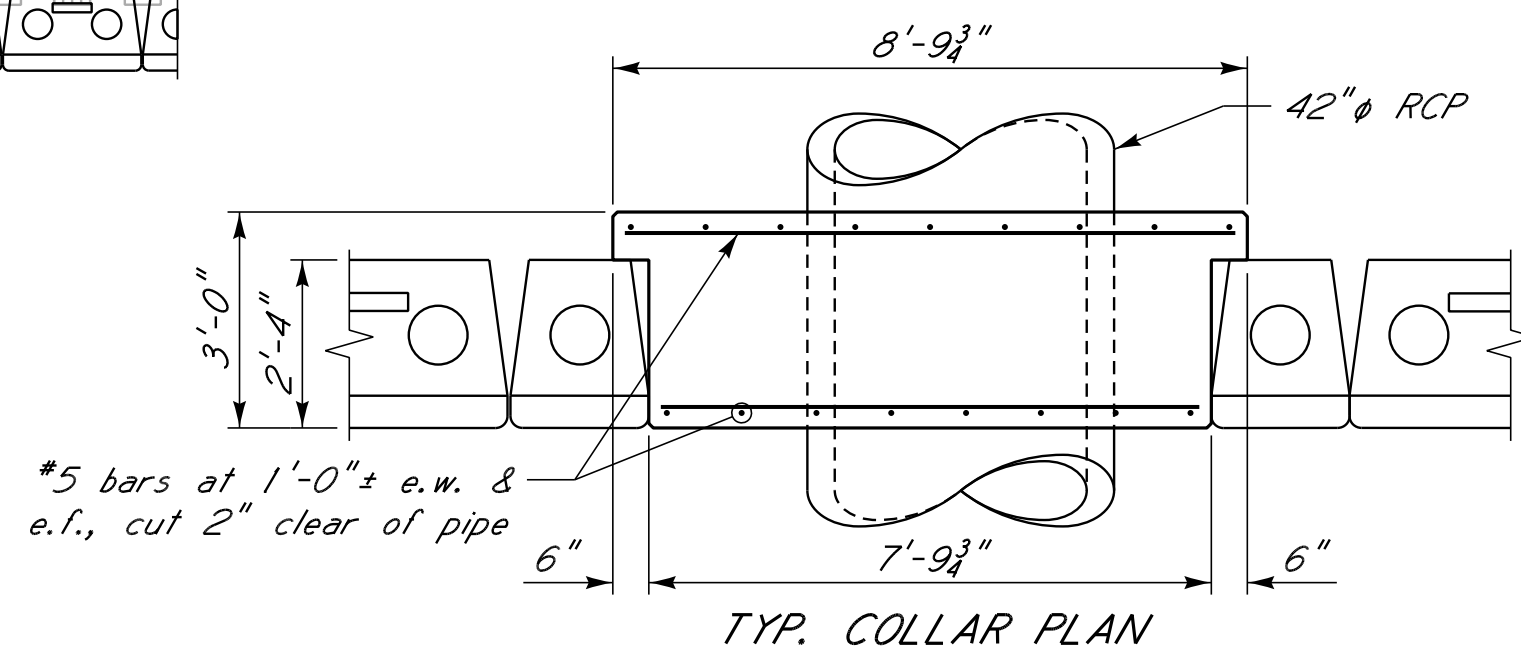
**RETAINING WALL GEOGRID REINFORCEMENT
PARTIAL PLAN DETAIL AT ACUTE WALL CORNERS**

Drawn for end bent 6. End bent 1 is similar.
Scale: $\frac{1}{8}$ " = 1'-0"

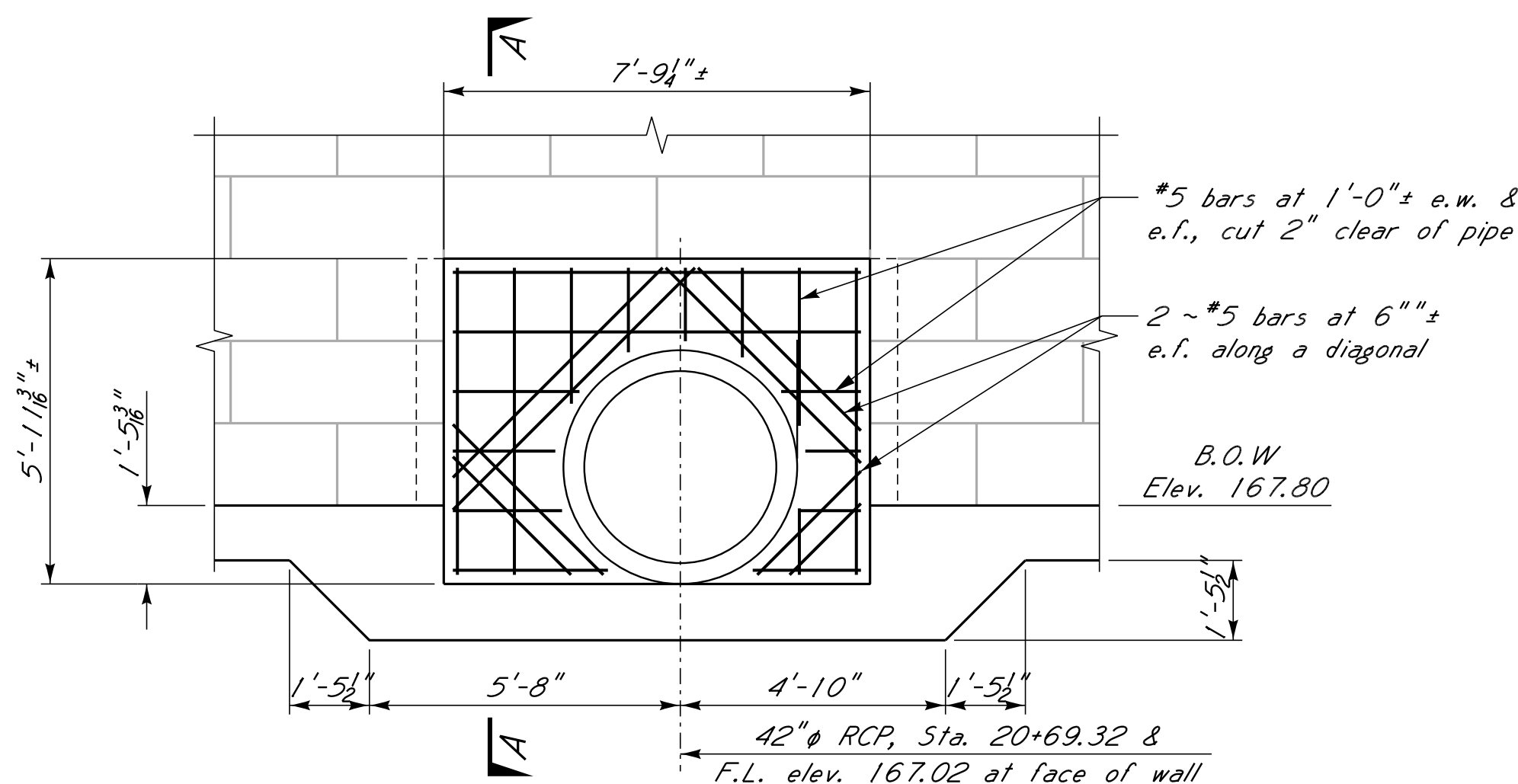


PIPE COLLAR DETAIL 1

Wall "D".
Scale: $\frac{3}{4}$ " = 1'-0"

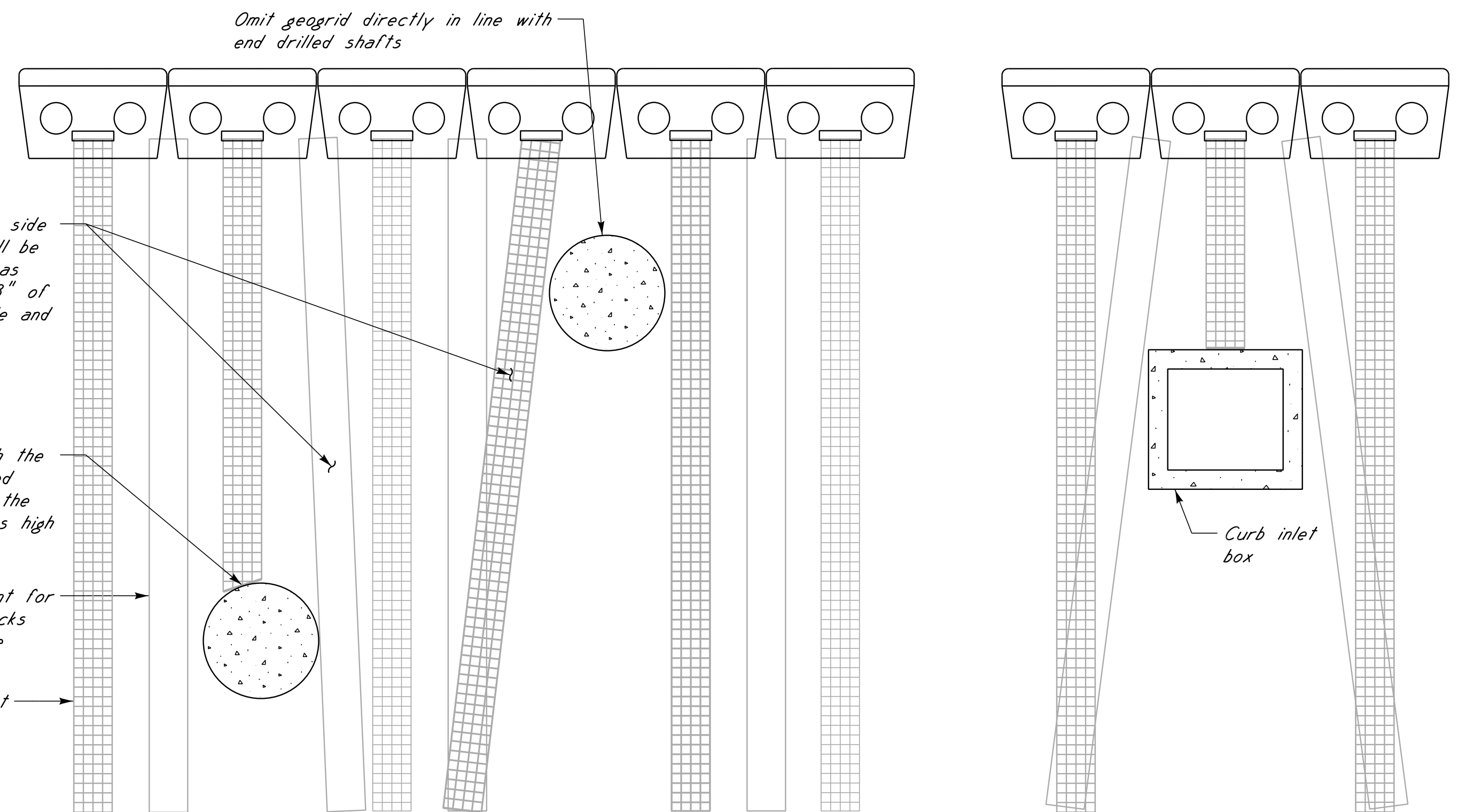


TYP. COLLAR PLAN



PIPE COLLAR DETAIL 2

Wall "F".
Scale: $\frac{3}{4}$ " = 1'-0"

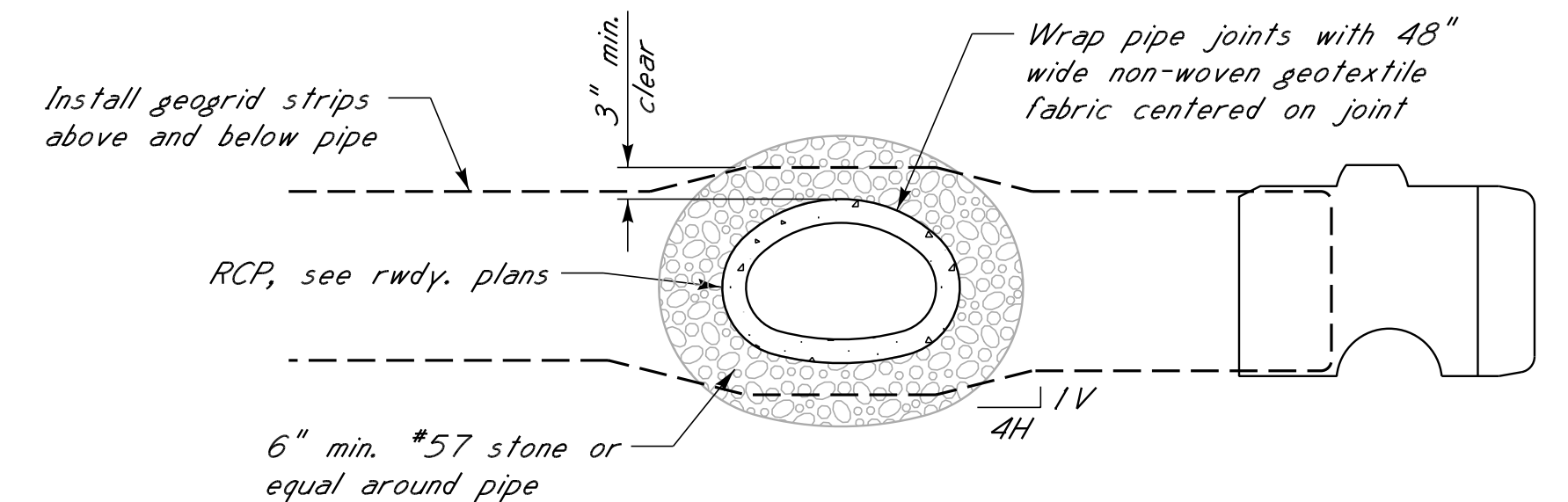


**RETAINING WALL GEOGRID REINFORCEMENT
PARTIAL PLAN DETAIL AT DRILLED SHAFTS**

Scale: $\frac{3}{8}$ " = 1'-0"

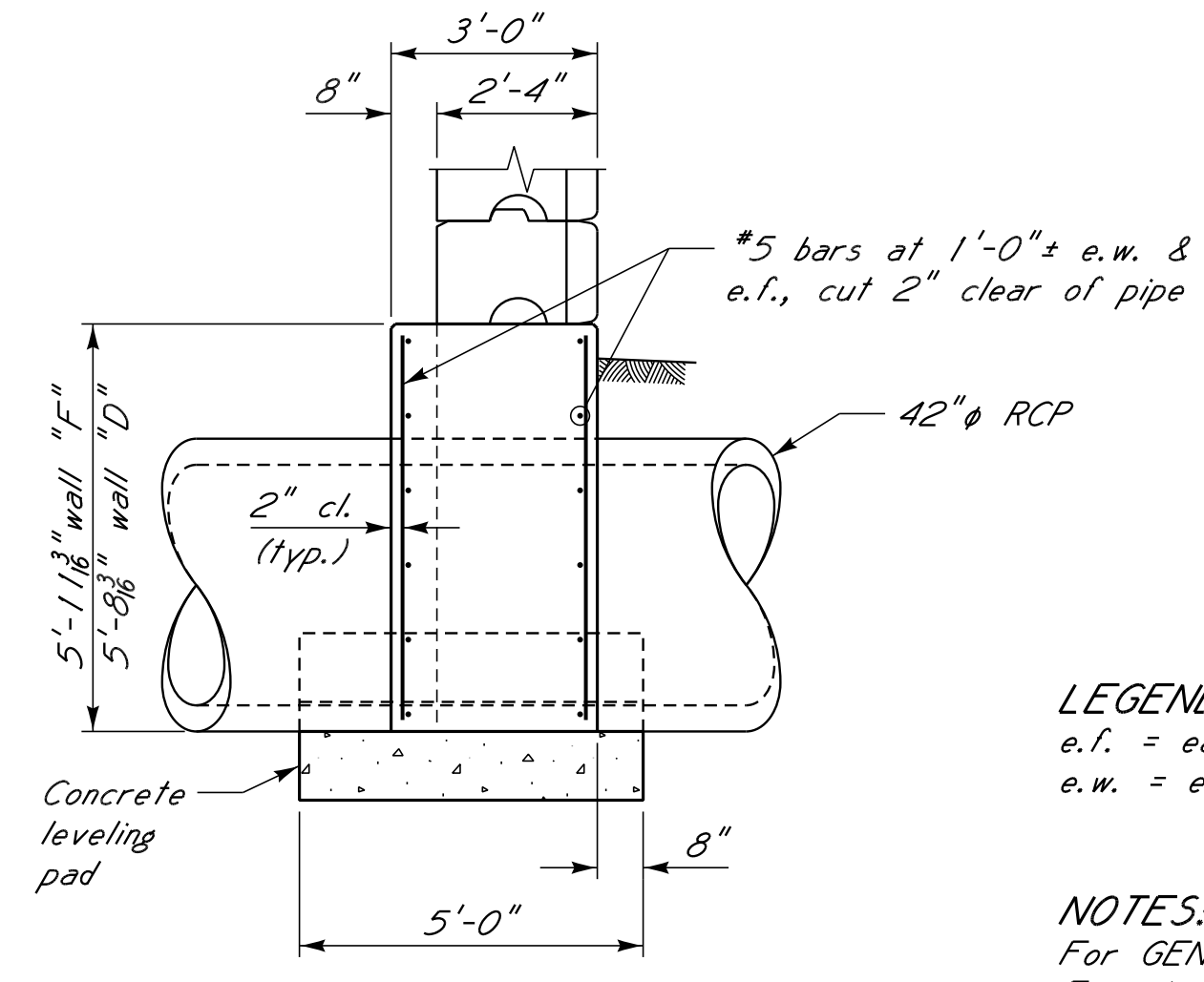
**RETAINING WALL GEOGRID REINFORCEMENT
PARTIAL PLAN DETAIL AT CURB INLETS**

See notes for drilled shaft interference with geogrid.
Scale: $\frac{3}{8}$ " = 1'-0"



GEOGRID REINFORCEMENT DETAIL UTILITIES

Scale: $\frac{3}{4}$ " = 1'-0"



SECTION A-A

Scale: $\frac{3}{4}$ " = 1'-0"

LEGEND:
e.f. = each face
e.w. = each way

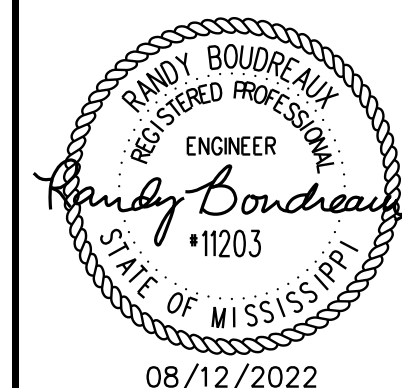
NOTES:
For GENERAL NOTES, See sht. no. 1.
For plan layout and elevation of retaining walls,
see sht. nos. 35, 37 and 43.
For retaining wall details, see sheet. nos. 38
to 42 and 44 to 48.

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	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	FILENAME:
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

**HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI**

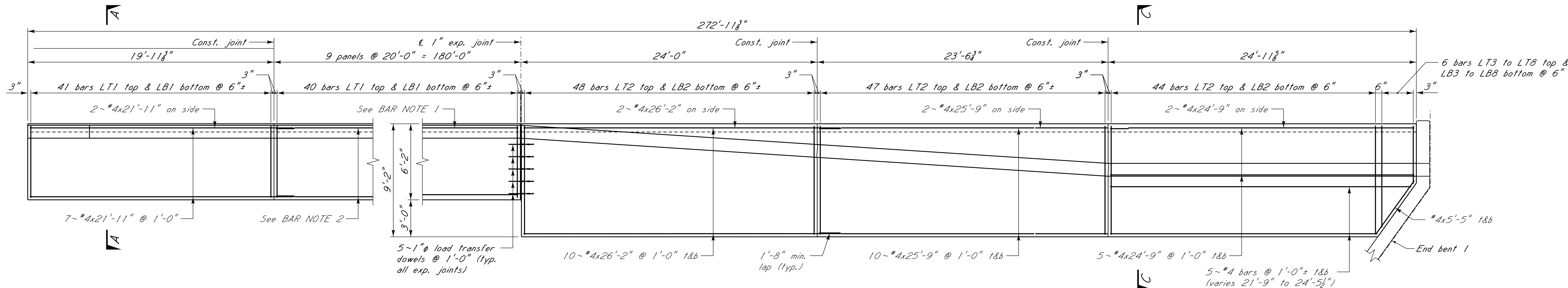


**MISC. RETAINING
WALL DETAILS**

WORKING NUMBER:
54 OF 59

DRAWING NUMBER:
8056

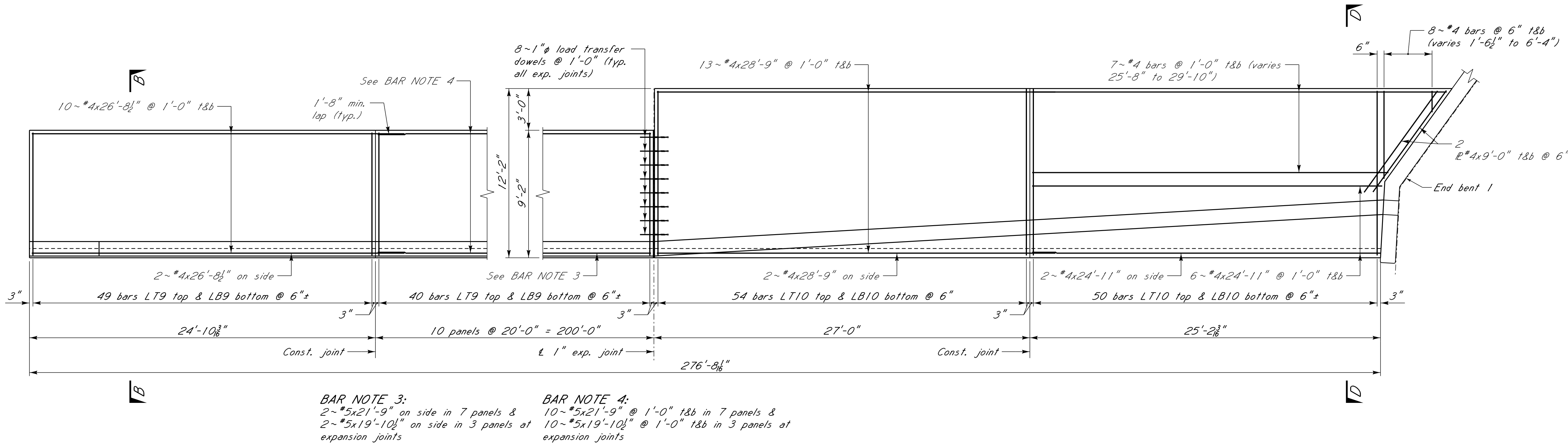
FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-55-Retaining Walls A & C Coping Partial Plan.dgn
DATE: 8/12/2022 TIME: 2:02:30 PM USER: RJB



BAR NOTE 1:
2~#4x22'-0" on side in 6 panels &
2~#4x19'-11" on side in 3 panels at
the expansion joints

BAR NOTE 2:
7~#4x22'-0" @ 1'-0" t&b in 6 panels &
7~#4x19'-11" @ 1'-0" t&b in 3 panels at
the expansion joints

PARTIAL PLAN OF RETAINING WALL "C" COPING
Showing reinforcement. Drawn straight for clarity.
Scale: 1/4" = 1'-0"



BAR NOTE 3:
2~#5x21'-9" on side in 7 panels &
2~#5x19'-10 1/2" on side in 3 panels at
expansion joints

BAR NOTE 4:
10~#5x21'-9" @ 1'-0" t&b in 7 panels &
10~#5x19'-10 1/2" @ 1'-0" t&b in 3 panels at
expansion joints

PARTIAL PLAN OF RETAINING WALL "A" COPING
Showing reinforcement. Drawn straight for clarity.
Scale: 1/4" = 1'-0"

LEGEND:
t&b = top & bottom

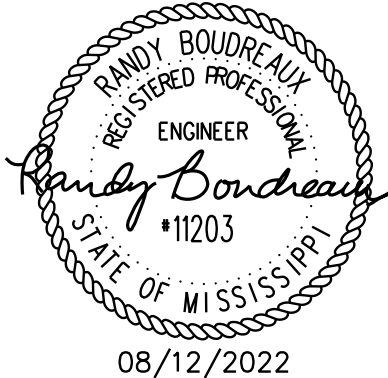
NOTES:
For GENERAL NOTES, See sht. no. 1.
For plan layout of retaining walls, see sht. no. 35.
For wall coping sections and details, see sht. no. 57.
All longitudinal dimensions are measured horizontal along
the edge of the coping.

REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

NOTICE TO DRAWING HOLDER

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HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI

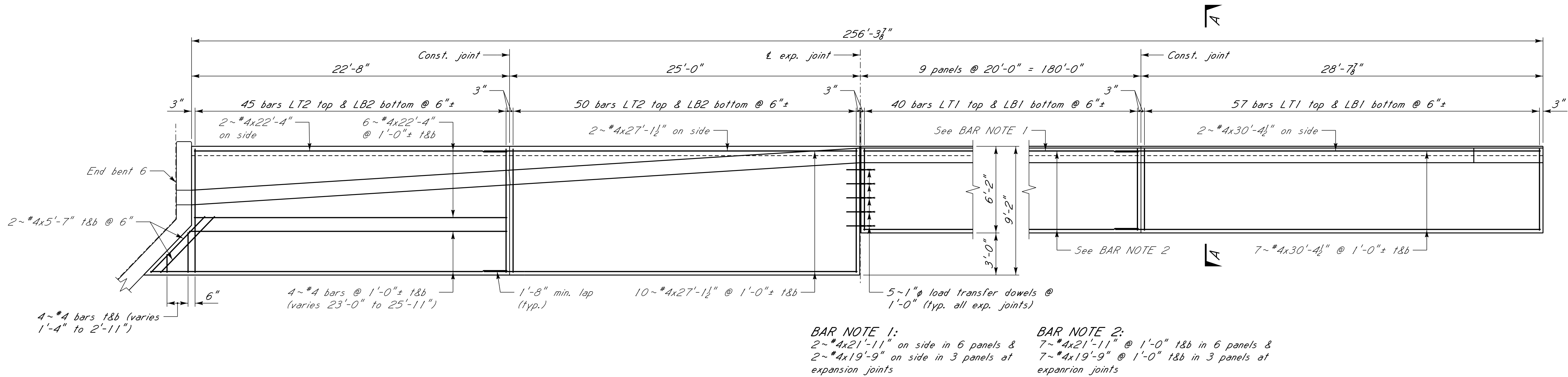


RETAINING WALLS "A" & "C"
COPING PARTIAL PLAN

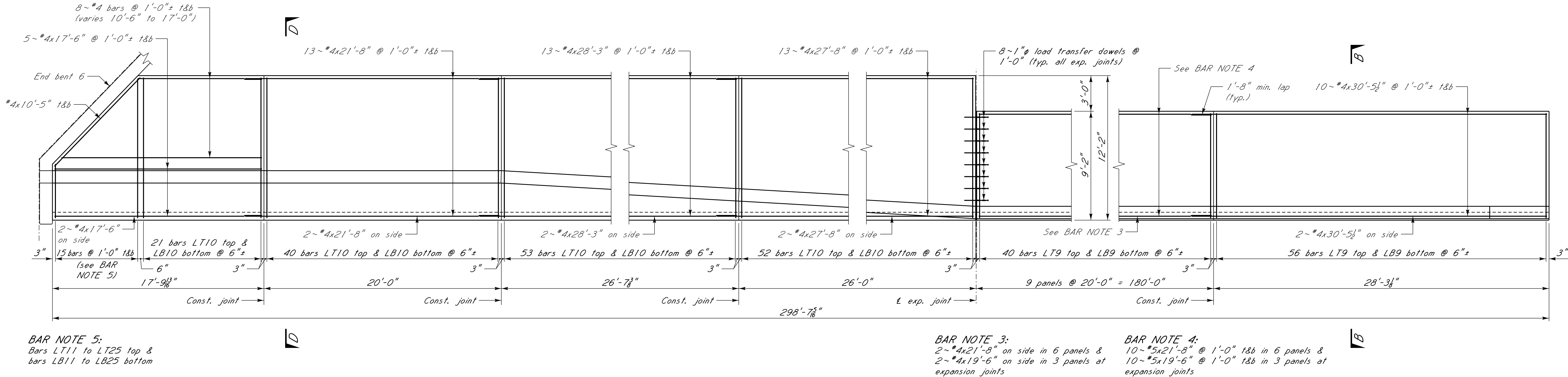
WORKING NUMBER:
55 OF 59

DRAWING NUMBER:
8057

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-56-Retaining Walls D & F Coping Partial Plan.dgn
DATE: 8/12/2022 TIME: 1:45:47 PM USER: RJB



PARTIAL PLAN OF RETAINING WALL "F" COPING
Showing reinforcement. Drawn straight for clarity.
Scale: $\frac{3}{8}$ " = 1'-0"



PARTIAL PLAN OF RETAINING WALL "D" COPING
Showing reinforcement. Drawn straight for clarity.
Scale: $\frac{3}{8}$ " = 1'-0"

NOTES:
For GENERAL NOTES, See sht. no. 1.
For plan layout of retaining walls, see sht. no. 35.
For wall coping sections and details, see sht. no. 57.
All longitudinal dimensions are measured along the edge of coping.

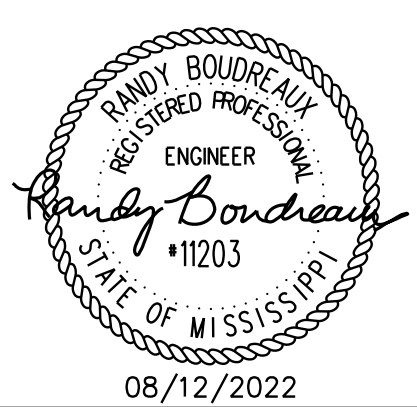
LEGEND:
t&b = top & bottom

REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
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				SURVEYED BY:	
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				DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022
				QA/QC:	DATE:

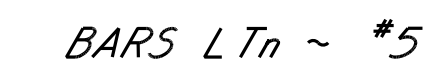
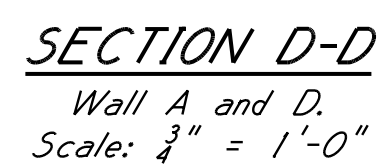
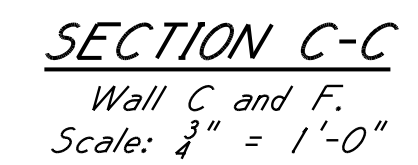
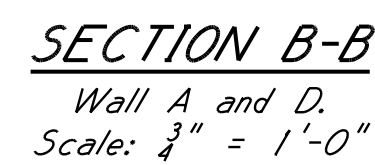
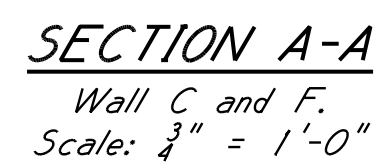
NOTICE TO DRAWING HOLDER

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HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



RETAINING WALLS "D" & "F" COPING PARTIAL PLAN	
WORKING NUMBER: 56 OF 59	DRAWING NUMBER: 8058



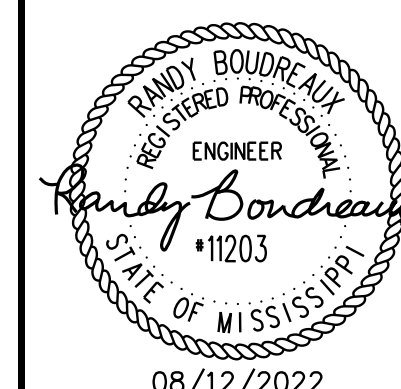
BAR BENDING DETAILS
Dimensions are out to out.

NOTES:
 For GENERAL NOTES, See sht. no. 1.
 For plan layout of retaining walls, see sht. no. 35.
 For plan of coping, see sht. nos. 55 and 56.

LEGEND:
t&b = top & bottom

NOTICE TO DRAWING HOLDER NEEL-SCHAFFER, 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	
	NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO: 16214.000	
					FILENAME:	
					SCALE:	
					SURVEYED BY:	
					DSGN: RJB	DATE: 06/2022
					DRWN: RJB	DATE: 06/2022
				CHKD: BKC	DATE: 08/2022	
				QA/QC:	DATE:	

**HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG – FORREST COUNTY
HATTIESBURG, MISSISSIPPI**



RETAINING WALL COPING SECTIONS & DETAILS

WORKING NUMBER:
57 OF 59

DRAWING NUMBER:
8059

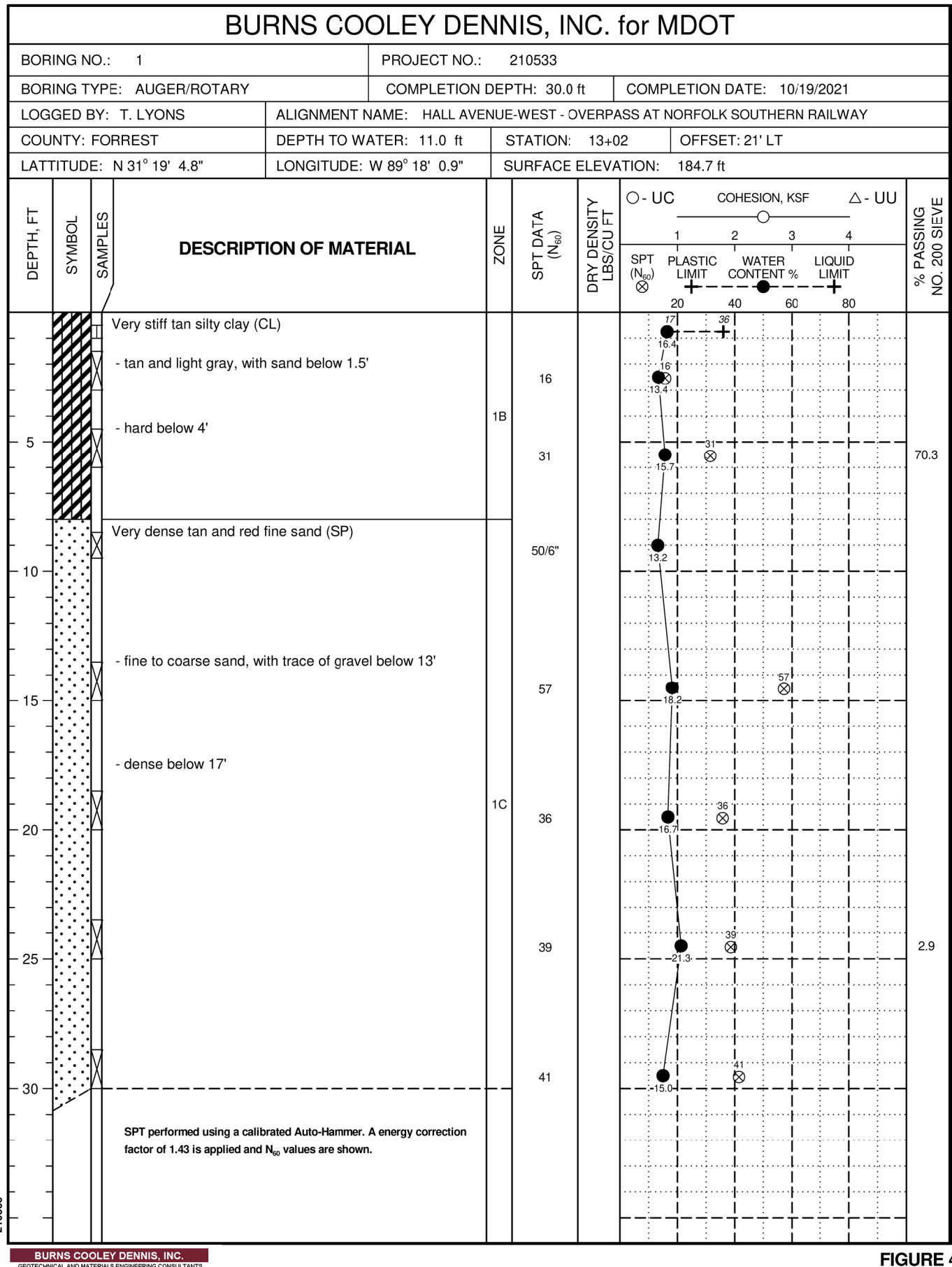


FIGURE 4

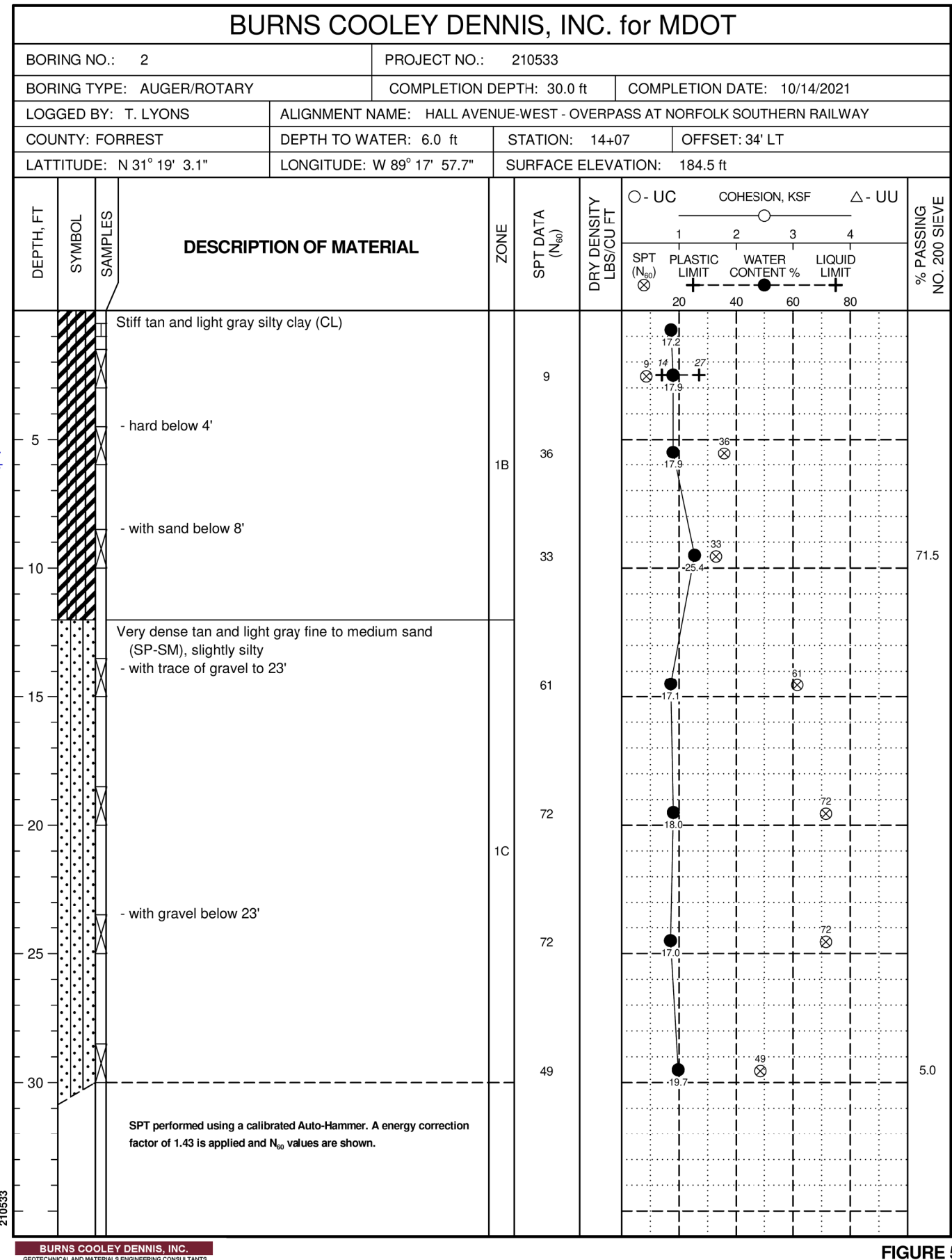


FIGURE 5

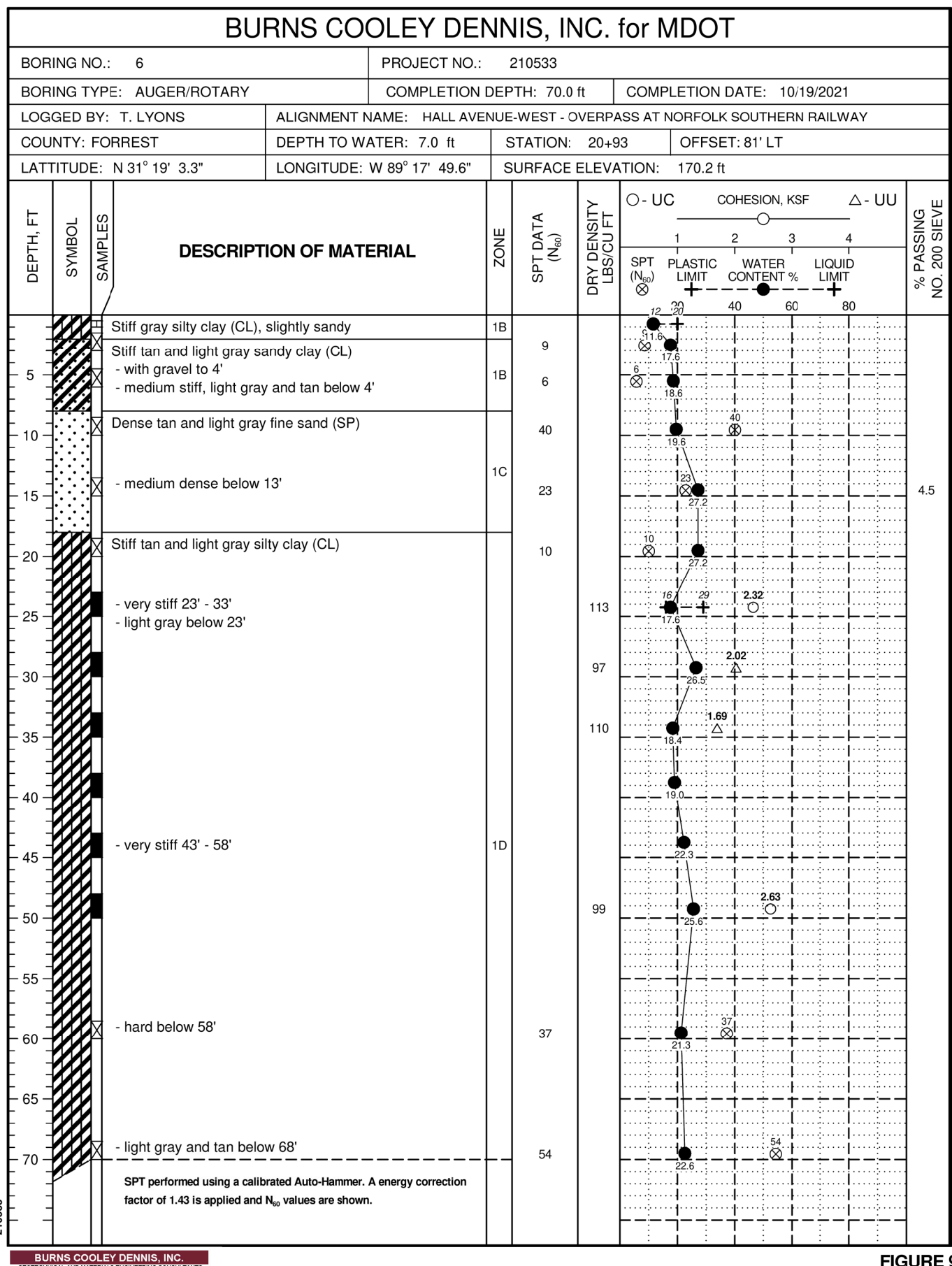


FIGURE 9

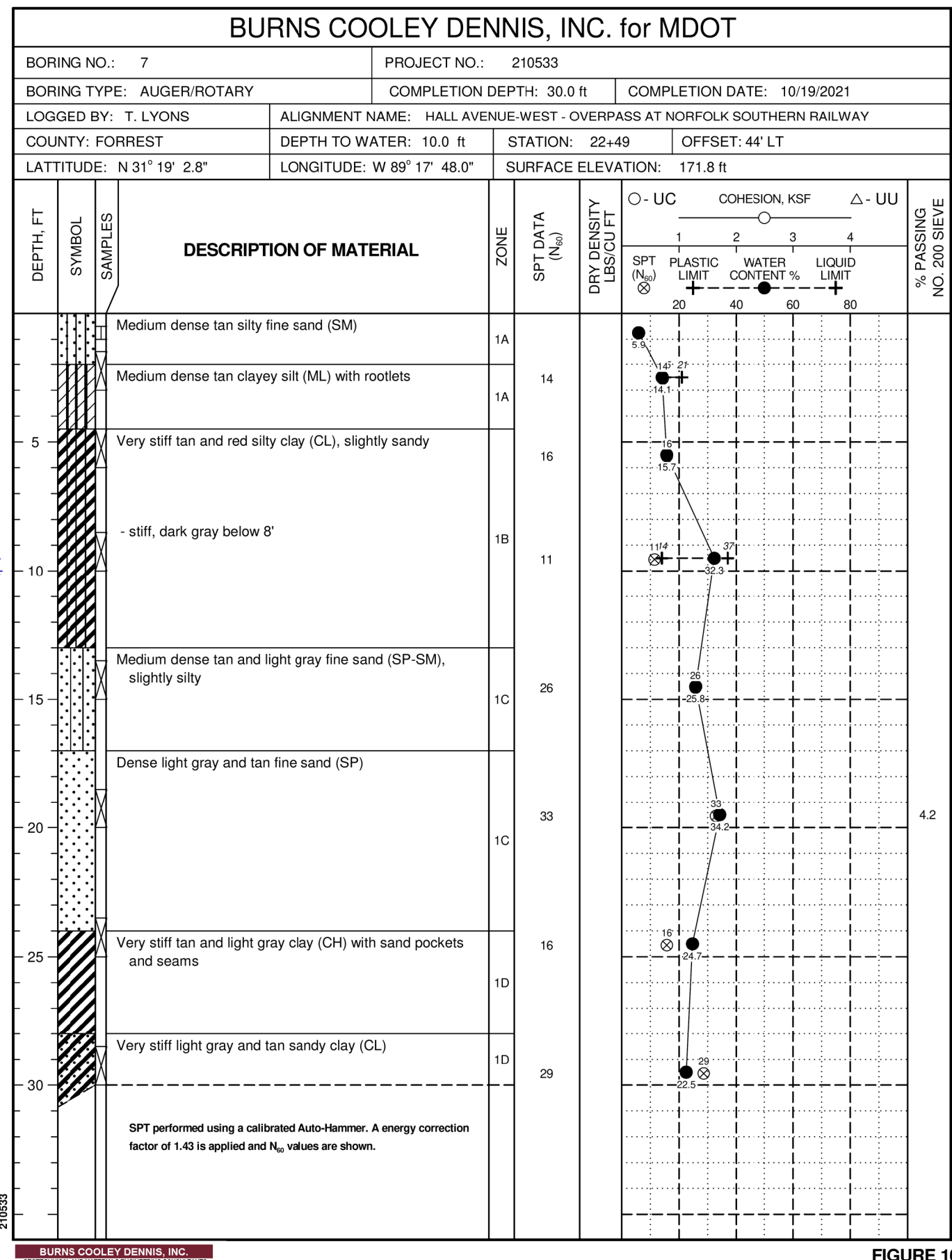


FIGURE 10

Retaining Wall Soil Boring Logs

HALL AVENUE – WEST
OVERPASS AT NORFOLK SOUTHERN RAILWAY
HATTIESBURG, MISSISSIPPI

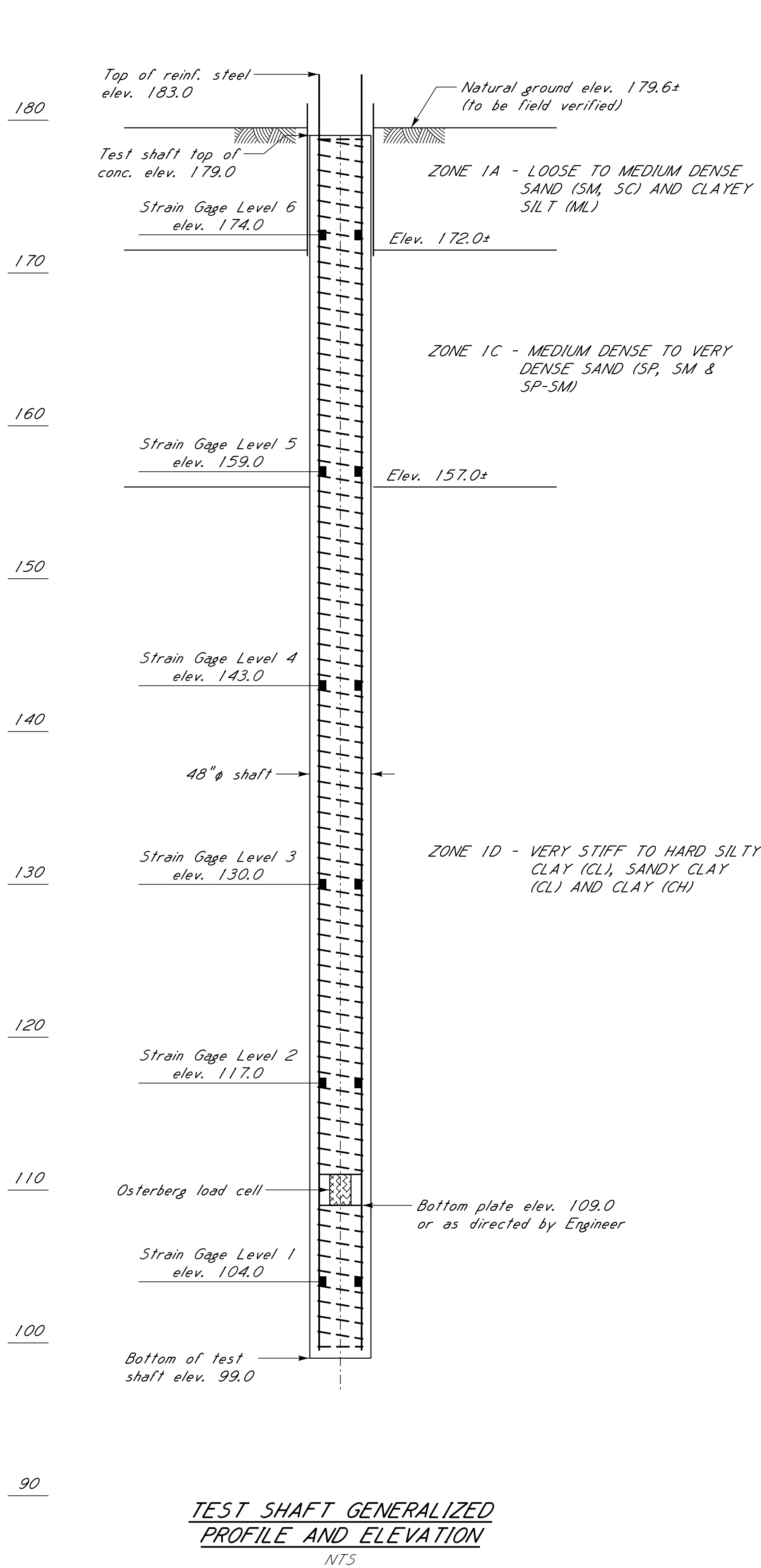
BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 210533

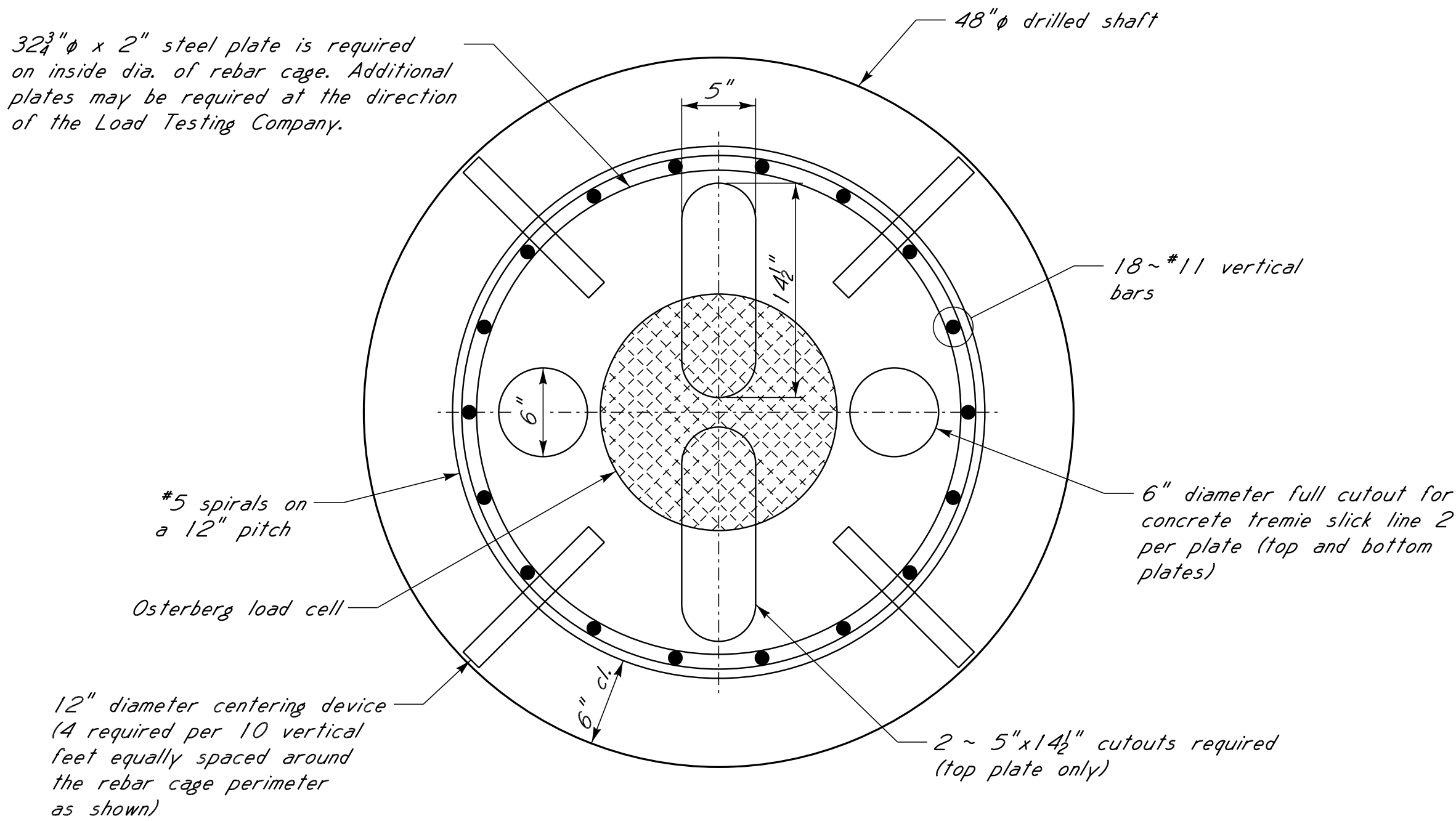
WORKING NUMBER:
58 OF 59

DRAWING NUMBER:
8060

FILE: s: Projects\16214.000 Hall Avenue West Project Over Norfolk Southern Railroad Drawings\16214-59-Test Shaft Details.dgn
DATE: 8/12/2022 TIME: 1:46:40 PM USER: RJB



**TEST SHAFT GENERALIZED
PROFILE AND ELEVATION**
NTS



**PLAN
REINFORCING STEEL DETAIL &
OSTERBERG CELL DETAIL**
N.T.S.

NOTE:
The size and/or location of all plate cuts are to be made at the direction of the Load Test Contractor. Additional cutouts may be required. Details and dimensions are for general information only. Actual dimensions are to be determined by Load Testing Company.

TRIAL SHAFT SPECIFICATIONS		
Diameter	Shaft Tip Elevation	Top of Shaft Elev.
48 inches	99.0 feet	179.0 feet

NOTE:
The rebar configuration of the Trial Shaft shall be the same as the production shafts for Bent 3 (18 ~ #11 bars with #5 spirals @ 12" pitch)

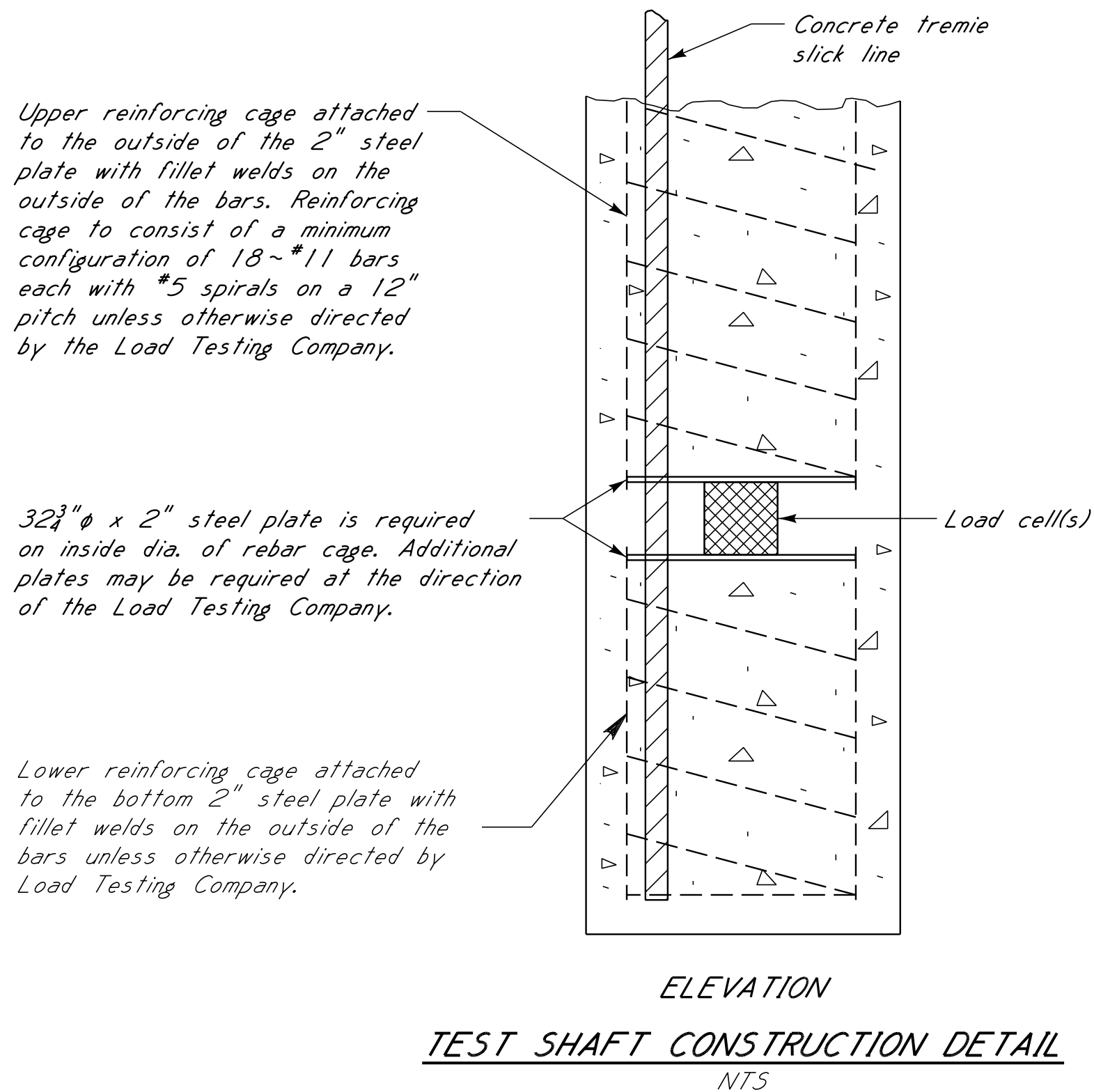
TEST SHAFT SPECIFICATIONS		
Diameter	Shaft Tip Elevation	Top of Shaft Elev.
48 inches	99.0 feet	179.0 feet

ANTICIPATED FAILURE LOADS	
Side Friction	End Bearing
596 Tons *	199 Tons **

* Above the bottom plate of the load cell
** Includes tons of skin friction below the bottom plate of the load cell

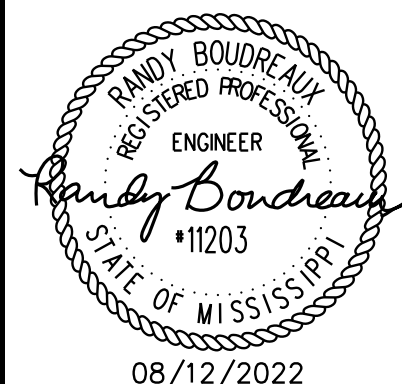
STRAIN GAGE TABLE	
Strain Gage Level	Elevation
1	104.0
2	117.0
3	130.0
4	143.0
5	159.0
6	174.0

NOTES:
The rebar configuration of the Trial Shaft is to be identical to the production shaft steel for Bent 3.
The Trial Shaft rebar cage shall require 12" diameter type centering devices or equivalent type that can be mounted on #5 spiral on a 12" pitch (4 required per 10 vertical feet equally spaced around the circumference of the rebar cage).
For the rebar configuration of the Test Shaft, see the ELEVATION TEST SHAFT CONSTRUCTION DETAIL and PLAN LOAD CELL PLATE DETAIL. Rebar steel is not continuous over the load cell. There is a lower and upper reinforcing cage. The spiral and main reinforcing steel configuration shown are minimums and the actual amount and configuration are to be determined by the Load Testing Company.
A rebar cage below the load cell is required and both the upper and lower cages will require strain gages.
Strain gages and tell tales are required to monitor performance of the Test Shaft. Strain gage locations may be changed after excavation of the Test Shaft with the joint approval of the Engineer and the Load Testing Company.
The size and/or location of all plate cuts are to be made at the direction of Load Testing Company. Additional cutouts may be required. Details and dimensions are for general information only. actual dimensions are to be determined by the Load Testing Company.
Some details of load cell construction are subject to change by the Load Testing Company with approval of the Engineer.
Upon completion of the Trial and Test Shafts and upon acceptance of the Trial and Test shafts by the Engineer, the Contractor is to remove the Trial and Test shafts 2 feet or greater below the ground line, unless directed otherwise by the Engineer.



NOTE: Test shaft data provided by Burns, Cooley Dennis, Inc.

HALL AVENUE WEST - PHASE 2
WEST PINE STREET TO COURT STREET
FEDERAL AID PROJECT NO.
FBLD-8769-00(001)LPA / 108639-802000
CITY OF HATTIESBURG - FORREST COUNTY
HATTIESBURG, MISSISSIPPI



TEST SHAFT DETAILS

WORKING NUMBER:
59 OF 59

DRAWING NUMBER:
8061

NOTICE TO DRAWING HOLDER
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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: 16214.000	
				FILENAME:	
				SCALE:	
				SURVEYED BY:	
				DSGN: RJB	DATE: 06/2022
				DRWN: RJB	DATE: 06/2022
				CHKD: MR	DATE: 08/2022
				QA/QC:	DATE:

		STATE	PROJECT NO.	
		MISS	FBLD-8769-00(001)	

SUMMARY OF QUANTITIES (SHEET 1)					
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000		
			Prelim	Final	
201-A001	Clearing and Grubbing	LS	1		④
202-B019	Removal of Box Culvert	LF	15		①
202-B023	Removal of Bridge	EA	1		①
202-B052	Removal of Concrete Driveways, All Depths	SY	1,235		①
202-B063	Removal of Concrete Paved Ditch	SY	346		①
202-B080	Removal of Concrete Sidewalk	SY	1,165		①
202-B092	Removal of Curb, All Types	LF	8,582		①
202-B126	Removal of Fence, All Types	LF	1,967		②
202-B163	Removal of Inlet Tops	EA	1		
202-B164	Removal of Inlet and Junction Box, All Types & Sizes	EA	27		
202-B188	Removal of Pavement, All Types and Depths	SY	11,271		①
202-B191	Removal of Pipe, 8" And Above	LF	1,558		
202-B219	Removal of Sign, Ground Mounted with Posts	EA	33		
202-B244	Removal of Trees	EA	37		③
203-A001	Unclassified Excavation, FM, AH	CY	2,500		
203-EX012	Borrow Excavation, AH, FME, Class B3	CY	3,900		⑥
203-EX020	Borrow Excavation, AH, FME, Class B9	CY	4,100		
203-G001	Excess Excavation, FM, AH	CY	8,000		
206-A001	Structure Excavation	CY	3,300		
206-B001	Select Material for Undercuts, Contractor Furnished, FM	CY	250		⑨
209-A005	Geotextile Stabilization, Type V, Non-Woven	SY	16,250		
211-A001	Topsoil for Slope Treatment, From Right-of-Way	SY	1,000		
211-B001	Topsoil for Slope Treatment, Contractor Furnished	CY	2,500		⑤
211-C001	Topsoil for Plant Holes, Contractor Furnished	CY	385		
216-B002	Solid Sodding, Centipede	SY	19,500		
219-A001	Watering	KGAL	390		
220-A001	Insect Pest Control	ACRE	4		
223-A001	Mowing	ACRE	16		
226-A001	Temporary Grassing	ACRE	1		
227-A001	Hydroseeding	ACRE	1		
230-A042	Shrub Planting, Dwarf Yaupon Holly	EA	5		
230-A051	Shrub Planting, Giant Liriope	EA	500		
230-A055	Shrub Planting, Goldstrum Black Eyed Susan	EA	30		
230-A100	Shrub Planting, Parsons Juniper	EA	770		
230-B027	Tree Planting, Crape Mytle 'Watermelon Red'	EA	93		
230-B032	Tree Planting, Drake Chinese Elm	EA	22		
230-B050	Tree Planting, Live Oak	EA	9		
230-D001	Bed Preparation	SF	5,600		
232-A003	Fertilizer for Woody Plant Material, Tablet, 21 gram	K	3		
233-A003	Tree Bark Mulch, Type III	CY	18		⑦
233-A004	Tree Bark Mulch, Type IV	CY	18		⑦
907-234-A001	Temporary Silt Fence	LF	5,500		
237-A002	Wattles, 20"	LF	1,200		
907-242-A002	Installation of Chain Link Fence, Per Plans	LF	325		⑧

① Includes Saw Cutting

② Includes posts, footings, and gates

③ Includes Stump Removal. For Trees Greater than 6".

④ Includes Trees and Shrubs 6" and Below

⑤ To be used once pay item 211-A001 has been depleted

⑥ Used for additional undercut material for retaining wall if required by the Engineer beyond the undercut requirements shown in the plans.

⑦ Used for Trees and Shrubs outside of bed area

⑧ Includes fence, posts, gates, mounting hardware, and footings

⑨ Size 57 Washed Gravel if required for storm drainage pipe.

	By	SUMMARY OF QUANTITIES	
Date	PROJ NO: FBLD-8769-00(001) COUNTY: FORREST FILENAME: SQS	NOT FOR CONSTRUCTION	
	Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Working Number SQ-1	Sheet Number 11

			STATE	PROJECT NO.
			MISS	FBLD-8769-00(001)
SUMMARY OF QUANTITIES (SHEET 2)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-242-A002	Installation of Wood Privacy Fence, Per Plans	LF	235	③
907-242-A003	Installation of Spread Footing, Lighting Foundation	EA	3	
246-B002	Rockbags	LF	1,000	
907-258-K001	Bollard Removable	EA	2	
907-259-F001	Weatherproof GFCI Receptacle	EA	10	
907-262-A005	Utility Work - Water, 6" Insertion Valve	EA	2	
907-262-A006	Utility Work - Water, 6" Ductile Iron Water Main	LF	200	
304-G001	Size 3/4" and Down Crushed Stone Base, AEA	CY	3,500	
	OR			
304-G002	Size 610 Crushed Stone Base, AEA	CY	3,500	
	OR			
304-G003	Size 825B Crushed Stone Base, AEA	CY	3,500	
308-A001	Cement	TON	50	
308-B002	Soil-Cement-Water Mixing, Optional Mixers, Base	SY	4,000	
403-A002	12.5-mm, MT, Asphalt Pavement	TON	1,700	
403-A005	19-mm, MT, Asphalt Pavement	TON	2,550	
403-A014	9.5-mm, MT, Asphalt Pavement	TON	6,000	
403-B011	9.5-mm, MT, Asphalt Pavement, Leveling	TON	800	
406-D001	Fine Milling of Bituminous Pavement, All Depths	SY	6,975	
407-A001	Asphalt for Tack Coat	GAL	3,500	
413-D003	Cleaning and Filling Joints in PCC Pavement	LF	3,000	
907-417-A001	Polymer Cement Surface System	SY	480	
501-K001	Transverse Grooving	SY	1,456	
502-A001	Reinforced Cement Concrete Bridge End Pavement	SY	113	
601-A001	Class "B" Structural Concrete	CY	380	
601-B001	Class "B" Structural Concrete, Minor Structures	CY	149	②
602-A001	Reinforcing Steel	LBS	76,285	
603-CA001	12" Reinforced Concrete Pipe, Class III	LF	32	①
603-CA004	15" Reinforced Concrete Pipe, Class III, Rubber Type Gaskets	LF	24	①
603-CA072	42" Reinforced Concrete Pipe, Class V	LF	80	①
603-CB002	15" Reinforced Concrete End Section	EA	2	①
603-CE001	18" x 11" Concrete Arch Pipe, Class A III	LF	1,688	①
603-CE003	22" x 13" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	848	①
603-CE009	29" x 18" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	256	①
603-CE014	36" x 23" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	1,256	①
603-CE019	44" x 27" Concrete Arch Pipe, Class A III, Flexible Plastic Gaskets	LF	88	
603-PE009	8" Corrugated Polyethylene Pipe	LF	10	①
603-SB023	22" x 13" Branch Connections, Stub into Box Culvert	EA	3	
603-SB032	29" x 18" Branch Connections, Stub into Box Culvert	EA	3	
604-A001	Castings	LBS	30,907	
604-B001	Gratings	LBS	17,634	
907-607-PP001	Safety Fence	LF	290	
608-A001	Concrete Sidewalk, Without Reinforcement	SY	5,084	
608-B001	Concrete Sidewalk, With Reinforcement	SY	75	④

① Includes Select Bedding and Backfill
② Includes Manhole Ring, Cover, Riser Rings, and Steps for Junction Box Access
③ Includes fence, posts, gates, mounting hardware, and footings
④ 8" Reinforced Concrete Sidewalk as shown on Working No. ID-9

	By	SUMMARY OF QUANTITIES	
Revision		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST FILENAME: SQS	NOT FOR CONSTRUCTION
			Working Number SQ-2
Date		Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Sheet Number 12

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 3)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
609-B002	Concrete Curb, Header	LF	30	
609-D004	Combination Concrete Curb and Gutter Type 2 Modified	LF	306	
609-D009	Combination Concrete Curb and Gutter Type 3A Mod1	LF	3,398	
609-D010	Combination Concrete Curb and Gutter Type 3A Mod2	LF	8,932	
612-B001	Flowable Fill, Non-Excavatable	CY	50	
613-D005	Adjustment of Manhole	EA	12	
613-D009	Adjustment of Utility Appurtenance Fire Hydrant	EA	5	
613-D010	Adjustment of Water Meter	EA	28	
613-D011	Adjustment of Water Valve	EA	13	
614-B003	Concrete Driveway, With Reinforcement, 6-inch Thickness	SY	1,741	
907-616-C001	Colored and Imprinted Concrete Median and Island Pavement, 10-inch Thickness	SF	1,005	
618-A001	Maintenance of Traffic	LS	1	
619-A2003	Temporary Traffic Stripe, Continuous Yellow, Paint	LF	2,951	
619-A3004	Temporary Traffic Stripe, Skip White, Paint	LF	1,440	
619-A5002	Temporary Traffic Stripe, Detail, Paint	LF	2,986	
619-A6003	Temporary Traffic Stripe, Legend, Paint	SF	88	
619-A6004	Temporary Traffic Stripe, Legend, Paint	LF	1,693	
619-D1001	Standard Roadside Construction Signs, Less than 10 Square Feet	SF	353	
619-D2001	Standard Roadside Construction Signs, 10 Square Feet or More	SF	103	
619-G4001	Barricades, Type III, Double Faced	LF	18	
619-G4005	Barricades, Type III, Single Faced	LF	240	
619-G5001	Free Standing Plastic Drums	EA	141	
619-G7001	Warning Lights, Type "B"	EA	4	
620-A001	Mobilization	LS	1	
626-A003	6" Thermoplastic Traffic Stripe, Skip White	LF	1,440	
626-E003	6" Thermoplastic Traffic Stripe, Continuous Yellow	LF	6,266	
626-G002	Thermoplastic Detail Stripe, White	LF	1,758	
626-G003	Thermoplastic Detail Stripe, Yellow	LF	1,704	
626-H004	Thermoplastic Legend, White	SF	804	
626-H005	Thermoplastic Legend, White	LF	2,782	
627-J001	Two-Way Clear Reflective High Performance Raised Markers	EA	12	
627-K001	Red-Clear Reflective High Performance Raised Markers	EA	103	
627-L001	Two-Way Yellow Reflective High Performance Raised Markers	EA	296	
630-A001	Standard Roadside Signs, Sheet Aluminum, 0.080" Thickness	SF	48	
630-A005	Standard Roadside Signs, Sheet Aluminum, 0.1" Thickness	SF	255	
630-C003	Steel U-Section Posts, 3.0 lb/ft	LF	518	
907-632-A007	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller	EA	1	
907-634-A230	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 30' & 40' Arm	EA	1	
907-634-A254	Traffic Signal Equipment Pole, Type III(L), 30' Shaft, 40' & 40' Arm	EA	1	
907-634-A545	Traffic Signal Equipment Pole, Type VI, 8' Shaft	EA	1	
907-634-C001	Pole Foundations, Class "B" Concrete	CY	9	
635-A059	Traffic Signal Head, Type 1	EA	8	
635-A065	Traffic Signal Head, Type 2 FYA	EA	2	
635-A076	Traffic Signal Head, Type 6	EA	4	

- ① Includes pedestrian safety fencing.
- ② Includes Reinforced Concrete Pad

	By	SUMMARY OF QUANTITIES		
Revision		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION	
			Working Number SQ-3	
Date		FILENAME: SQS	Sheet Number	
Design Team		Neel-Schaffer, Inc.	Checked	Date 08/12/2022
				13

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 4)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-636-B003	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	165	
907-636-B014	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	415	
907-636-B016	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	315	
907-636-B028	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor	LF	10	
907-636-D001	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 10, 2 Conductor	LF	80	
907-636-D006	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	40	
907-636-D008	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	205	
907-637-A002	Pullbox Enclosure, Type 2	EA	2	
907-637-A003	Pullbox Enclosure, Type 3	EA	1	
907-637-C028	Traffic Signal Conduit, Underground, Type 4, 2"	LF	35	
907-637-C030	Traffic Signal Conduit, Underground, Type 4, 3"	LF	30	
907-637-D003	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"	LF	130	
907-639-B001	Type 1 Optical Detector	EA	3	
907-639-C001	Type 1 Optical Detector Cable	LF	455	
907-639-D001	Multimode Phase Selector	EA	1	
907-643-A003	Video Vehicle Detection Sensor, Type 3	EA	1	
907-643-B001	Video Vehicle Detection Cable	LF	60	
907-645-B001	Accessible Pedestrian Detection Assembly	EA	4	
647-A001	Removal of Existing Traffic Signal Equipment	LS	1	
907-653-B001	Street Name Sign	SF	24	
907-663-A001	Network Switch, Type A	EA	1	
682-A010	Underground Branch Circuit, AWG 10, 3 Conductor	LF	5,630	
682-A018	Underground Branch Circuit, AWG 2, 3 Conductor	LF	1,145	
682-A034	Underground Branch Circuit, AWG 6, 3 Conductor	LF	3,115	
682-A039	Underground Branch Circuit, AWG 8, 3 Conductor	LF	1,060	
682-B010	Underground Branch Circuit, Jacked or Bored, AWG 10, 3 Conductor	LF	275	
682-B016	Underground Branch Circuit, Jacked or Bored, AWG 2, 3 Conductor	LF	175	
682-B032	Underground Branch Circuit, Jacked or Bored, AWG 6, 3 Conductor	LF	121	
682-B037	Underground Branch Circuit, Jacked or Bored, AWG 8, 3 Conductor	LF	60	
682-C015	Structure Mounted Branch Circuit, AWG 2, 3 Conductor	LF	1,165	
682-C028	Structure Mounted Branch Circuit, AWG 6, 3 Conductor	LF	25	
682-D002	Structure Mounted Pull Box	EA	24	
682-F001	Secondary Power Controller	EA	3	
684-A004	Pole Foundation, 30" Diameter	CY	82	
699-A001	Roadway Construction Stakes	LS	1	
699-B001	Bridge Construction Stakes	LS	1	
803-K004	Drilled Shaft, 36" Diameter	LF	675	
803-K006	Drilled Shaft, 48" Diameter	LF	1,425	
803-L002	Test Shaft, 48" Diameter	EA	1	
803-M005	Trial Shaft, 48" Diameter	LF	80	
803-N001	Exploration	LF	300	
803-O005	Permanent Casing, 36" Diameter	LF	220	
803-O018	Temporary Casing, 48" Diameter	LF	200	
907-804-A002	Bridge Concrete, Class AA	CY	1,072	

- ① Paid as dimension shown in the plans.
No additional payment for bores
extending beyond the lines shown in the
plans.
- ② Includes Hydroexcavation if Required
- ③ See Working No. TSI-3 in the Plans for
Demolition and Salvage Notes.

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	By	SUMMARY OF QUANTITIES	
	Revision		
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION
			Working Number SQ-4
Date	FILENAME: SQS		Sheet Number
Design Team <u>Neel-Schaffer, Inc.</u> Checked			14
Date 08/12/2022			

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 5)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-804-A004	Bridge Concrete, Class BD	CY	1,101	
804-C184	150' Prestressed Concrete Beam, Type FIB-72	LF	898	
804-C236	105' Prestressed Concrete Beam, Type FIB-45	LF	1,048	
804-C260	75' Prestressed Concrete Beam, Type FIB-45	LF	373	
804-C261	135' Prestressed Concrete Beam, Type FIB-72	LF	674	
805-A001	Reinforcement	LBS	366,644	
907-809-A002	Retaining Wall System, Gravity Type	SF	5,300	
907-809-A003	Retaining Wall System, Mechanically Stabilized	SF	19,494	
813-B001	Concrete-Steel Railing	LF	2,253	
815-D001	Concrete Slope Paving	CY	229	
907-899-A001	Railway-Highway Provisions	LS	1	
L00011: 230-B500	Tree Planting, Teddy Bear Magnolia	EA	45	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 30-1-3-100, Bridge Mounted	EA	4	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 32.5-1-3-100, Bridge Mounted	EA	6	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 14-1-0-100	EA	11	
L00016: 683-B500	Lighting Assembly, Low Mast, LED, Type 25-1-0-100	EA	55	
L00018: 907-258-PP502	Handrail, Per Plans	LF	35	
L00052: 907-262-A504	Ductile Iron Fittings	LBS	2,400	
L00076: 230-A500	Shrub Planting, Drift Rose "Peach"	EA	300	
	Non-Participating			
907-632-A007	Solid State Traffic Cabinet Assembly, Type III Cabinet, Type 1 Controller	EA	1	
907-634-A365	Traffic Signal Equipment Pole, Type III, 17' Shaft, 30' & 40' Arms	EA	1	
907-634-A374	Traffic Signal Equipment Pole, Type III, 17' Shaft, 35' & 40' Arms	EA	1	
907-634-A545	Traffic Signal Equipment Pole, Type VI, 8' Shaft	EA	2	
907-634-C001	Pole Foundations, Class "B" Concrete	CY	9	
635-A059	Traffic Signal Head, Type 1	EA	8	
635-A065	Traffic Signal Head, Type 2 FYA	EA	1	
635-A076	Traffic Signal Head, Type 6	EA	8	
907-636-B014	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	410	
907-636-B016	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	300	
907-636-B028	Electric Cable, Underground in Conduit, IMSA 20-1, AWG 8, 3 Conductor	LF	15	
907-636-D006	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 5 Conductor	LF	72	
907-636-D008	Electric Cable, Aerial Supported in Conduit, IMSA 20-1, AWG 14, 8 Conductor	LF	197	
907-637-A002	Pullbox Enclosure, Type 2	EA	3	
907-637-A003	Pullbox Enclosure, Type 3	EA	1	
907-637-C028	Traffic Signal Conduit, Underground, Type 4, 2"	LF	65	
907-637-C030	Traffic Signal Conduit, Underground, Type 4, 3"	LF	40	
907-637-D003	Traffic Signal Conduit, Underground Drilled or Jacked, Rolled Pipe, 3"	LF	200	
907-639-B001	Type 1 Optical Detector	EA	4	
907-639-C001	Type 1 Optical Detector Cable	LF	480	
907-639-D001	Multimode Phase Selector	EA	1	
907-643-A003	Video Vehicle Detection Sensor, Type 3	EA	1	
907-643-B001	Video Vehicle Detection Cable	LF	110	

- ① 135' Prestressed Concrete Beam, Type FIB-135
- ② 150' Prestressed Concrete Beam, Type FIB-150

	By	SUMMARY OF QUANTITIES	
	Revision		
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION
		FILENAME: SQS	Working Number SQ-5
Date		Design Team Neel-Schaffer, Inc. Checked Date 08/12/2022	Sheet Number 15

STATE	PROJECT NO.
MISS	FBLD-8769-00(001)

SUMMARY OF QUANTITIES (SHEET 6)				
PAY ITEM NO.	PAY ITEM	UNIT	FORREST : 108639-802000	
			Prelim	Final
907-645-B001	Accessible Pedestrian Detection Assembly	EA	8	
907-653-B001	Street Name Sign	SF	23	

	By	SUMMARY OF QUANTITIES	
	Revision		
		PROJ NO: FBLD-8769-00(001) COUNTY: FORREST	NOT FOR CONSTRUCTION
			Working Number SQ-6
Date		FILENAME: SQS Design Team <u>Neel-Schaffer, Inc.</u> Checked Date <u>08/12/2022</u>	Sheet Number 16



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, September 6, 2022

Re: Approve specifications and authorize publication of an advertisement for one (1) or more newer buses for Mass Transit.
File Number: 2022-606
Minute Book #

Summary

Recommendation Statement

Please place this on the September 6, 2022 City Council meeting for consideration.

Bus, Class A Transit, Accessible, Low Floor, Mid-Size, Gasoline, ADA Fixed Route

Bus, accessible, 14 passenger, gasoline-fueled, meeting all Federal requirements for ADA Fixed Route, new and of the current model, equipped as advertised by the manufacturer, to meet or exceed the following **MINIMUM** specifications:

Bus Proposed:

Manufacturer: _____ Model: _____

Class: _____ Total GVWR: _____

Ambulatory seating capacity **with no** wheelchair (*exclusive of driver*): _____

Ambulatory seating capacity **with two** wheelchairs (*exclusive of driver*): _____

Scope:

The purpose of these specifications is to set forth **minimum** requirements for a commercially produced accessible Class A, steel cage, low floor, commercial bus designed for use in transit applications, meeting FTA (Federal Transit Administration) and ADA (Americans with Disabilities Act) standards and regulations, capable of seating a minimum of 14 ambulatory forward-facing passengers (Ten (10) fixed seats and Two (2) double foldout seats), with a minimum GVWR (Gross Vehicle Weight Rating) of 14,200 pounds. The vehicle shall be equipped to accommodate two wheelchair positions. The vehicle shall be fully tested at the Pennsylvania State bus testing facility in Altoona, Pennsylvania, according to the applicable FTA minimum service life requirement.

Federal, State, and Automobile Manufacturers' Association (AMA) laws, regulations, standards, and specifications concerning the production of utility vehicles or components thereof as related to environment protection and safety in operations as are in effect on the date of Request for Quote Formal (RFQF) shall be construed to form a part of these specifications.

Vehicle components, assemblies, and accessories shall be standard production items unless otherwise specified herein. The vehicles and all allied equipment shall be designed to permit ready accessibility for maintenance purposes with minimal disturbance of other components or assemblies. The term "heavy-duty" is used to quantify quality or capacity that is normally supplied with the standard production item. All vehicles supplied under this specification shall be in full compliance with applicable FMVSS (Federal Motor Vehicle Safety Standards) as established by the U.S. Department of Transportation.

**Non-Restrictive
Clause:**

Any use of the brand name or equal within this specification is to be considered a reference for the purpose of describing the standard of quality, performance, and characteristics desired. It is not intended to limit or restrict competition.

SPECIFICATIONS

Van Cut-Away Chassis

Wheelbase: 165" minimum

Wheelbase: _____

Engine: The engine furnished shall be at minimum 6.0L, gasoline-fueled, electric fuel injection. The engine shall meet the current Federal regulations and EPA emissions standards. It shall be the manufacturer's low compression type as recommended for operation on unleaded or low lead gasoline.

Horsepower – 342 at 5,400
RPM, minimum Torque – 373
at 4,400 RPM, minimum

Engine description and horsepower:

Transmission: Transmission shall be heavy-duty 6-speed automatic with auxiliary cooler. The transmission shall be the heaviest duty truck-type model provided by the manufacturer valued to the engine horsepower and GVWR of the vehicle. Gear ratios shall provide "near even splits" for jerk-free operation and shall be ideally matched to the performance curve of the particular engine.

Transmission: _____

**Axles and
Suspensions:**

Both the front and rear axles shall be load rated for design distribution so that they are capable of carrying the loads upon them during all conditions of transit operation. The vehicle shall be designed to carry a maximum transit load (GVWR), which shall include the curb weight of the bus, a full load of passengers, and the driver (calculation of passengers' weight averaged at 150 pounds each). Bidder shall indicate a maximum number of passengers that the vehicle can carry.

Bidder shall furnish with Statement of Qualifications (SOQ) full signed certification along with supporting documentation on the ability to meet the said specifications and shall indicate certified curb weight and GVWR load rating based on axles, suspension system, shock absorbers, and tires.

The front axle shall be of standard heavy-duty design. The rear wheel bearings shall be oil lubricated.

Axle ratio shall be such as to provide at least 70 MPH road speed with a full load on a level surface (mechanical governor not acceptable).

Driveshaft shall be capable of transmitting maximum torque generated by the engine and transmission to the rear axle. A guard for the shaft is required.

Two (2) heavy-duty shock absorbers shall be provided on the front axle, one on each end of the front axle. Two (2) heavy-duty shock absorbers shall be provided on the rear axle, one on each end of the rear axle.

The suspension system shall be designed to maximize control and roll, and prevent excessive body lean-in turns. Front stabilizer bar shall be furnished (if available from chassis manufacturer). Springs shall have the following capacities:

- a. Front axle rating – 4,600 lbs. (minimum)
- b. Rear-axle rating – 9,600 lbs. (minimum)
- c. GVWR weight – 14,200 lbs. (minimum)
- d. Standard axle ratio – 4.10 (minimum)

Axle rating/capacity:

Front: _____

Rear: _____

Axle type:

Front: _____

Rear: _____

Gear ratio:

Road speed:

Cooling System:

The radiator shall be heavy-duty and have sufficient capacity to properly cool the engine in heavy, rural-type transit service without the addition of coolant throughout a normal day's operation. Engine fan may be driven by gears from the engine camshaft.

The cooling system shall be of a pressurized type. Manufacturer's standard OEM hosing or approved equal shall be used throughout the cooling system. All-weather type coolant shall be utilized to protect to a minimum of -20°F.

Radiator or filler neck shall be equipped with a safety pressure release cap and shall be positioned to readily permit checking and adding coolant from outside the vehicle.

Exhaust System:

The exhaust system must be heavy duty, leak proof, and designed and constructed to minimize fire hazard. All parts must be made of corrosion resistant materials. Flexible tubing may not be used between engine and muffler. Exhaust system must meet or exceed FMVSS and EPA (Environmental Protection Agency) noise level and exhaust emission requirements.

Exhaust hangers shall be OEM standard equipment and welded to the frame. Exhaust U-bolts shall be used in connections with thread orientation directed upward. The system shall be securely fastened and routed to protect components from hazards. There shall be a galvanized steel heat shield between exhaust system and floor.

Fuel System:

The fuel tank(s) shall have a minimum capacity of forty (40) gallons for gasoline fuel. The tank(s) shall be made of heavy-gauge steel, treated to prevent rusting throughout the life of the vehicle. The filler pipe or neck shall be free of any obstructions and meet industry standards.

The fuel system shall be internally baffled to prevent surging, and shall be rigidly supported and arranged for easy removal. The fuel system must meet Federal standards.

Capacity per tank: _____

Number of tanks: _____

Electrical System:

The electrical system shall be a heavy-duty 12-volt system with a 12-volt starting motor and have an alternator with a minimum rating of 160 amps. Minimum of two (2) full-size commercial transit type heavy-duty 12-volt batteries, of equal size and capacity, having a combined total minimum 1,540 CCA. One or both batteries shall be mounted in a pull-out tray. All material used in the electrical system shall be of the highest available quality. The battery system shall be adequate for all electrical loads and demands. Alternator must have sufficient capacity to charge above the demand rate with full load, air conditioning, wheelchair lift, and other equipment operating when engine is at idle.

All cable in the vehicle shall be of sufficient size to carry the required currents without excessive voltage drop. All wiring shall be SXL/GXL wiring covered with split loom, convoluted tubing to protect wiring from chaffing and other mechanical damage. Wiring shall be color and function coded. All wire connectors shall be OEM type (or equivalent) locking plastic moldings with brass or copper terminals. All circuits, including main power feed, shall be protected by manual reset circuit breakers. Entire harness system and mating electrical components shall be plug- connected with lock tab connectors; all terminals are machine crimped; all harnesses shall be covered in high temp conduit and all exterior under body/under hood connectors are IP67 rated sealed connectors.

All body wiring shall be run inside the body in a protected area. All wiring shall be in a loom and secured for maximum protection. Clamps shall be rubber or plastic coated to prevent them from cutting the wiring insulation.

When routing wiring under vehicle all wiring shall be encased in a loom and attached to the frame and sub-floor structure with proper fasteners and shall not be bundled with hoses. The harness shall run in straight lines as close to chassis frame rails as possible. Any harness that goes over the rear suspension shall be encased in a conduit fixture securely fastened to the sub-floor rails or routed inside the frame rails.

All fuses and relays (other than chassis OEM) shall be placed in an Electrical Panel. The panel shall be accessible through a non-locking door. Connection to OEM electrical system shall be accomplished through connectors supplied by chassis manufacturer using locking mating connectors.

A schematic shall be affixed inside the master panel, identifying which breaker controls which component or fixture (for bus body).

All cable and wiring diagrams are to be marked showing the codes used.

Two (2) heavy-duty, 12-volt electric horns shall be provided and installed in a location protected from wheel wash.

Electrical devices, switches, and gauges shall be located such that they will not create a fire hazard during normal operation or in the event of failures. All electrical motors, with the exception of the starter, shall be readily accessible for service including directional lights, defroster, and door buzzer.

The vehicle shall be equipped with a disconnect switch that removes 12V battery power from all bodybuilder loads while not interfering with OEM chassis electrical circuits.

Alternator:

a. Manufacturer:

b. Amperage rating:

Battery size and capacity – each: _____combined: _____

Steering:

Steering mechanism shall be equipped with an integral power steering constructed to allow the operator to easily steer the bus and to minimize road shock and vibration.

Brakes:

Brakes shall be heavy-duty disc with four-wheel anti-lock system, complying with the latest motor vehicle standards in effect. Wearable brake parts (drum shoes, linings, pads, etc.) shall be heavy-duty and shall be designed to be compatible with axles, tires, other suspension components, and GVWR requirements.

The parking brake may be either combined with the emergency spring braking system or mechanically operated by the driver. The system shall be adequate to hold a fully loaded bus on a 20% grade.

Bidder shall furnish with SOQ full information and specifications of braking system.

Wheels and Tires:

Wheels and tires shall be sized according to OEM chassis specifications. Tires shall be all season, tubeless, steel-belted radial ply. There shall be single wheels on the front and dual wheels on the rear. All wheels and tires shall be interchangeable, of equal size and rating. The combined load rating of wheels and tires shall meet or exceed the minimum GVWR of the vehicle. One spare tire and rim shall be provided, mounted (if possible) to the vehicle, and shall be identical in size and manufacture to other tires. A valve stem extender on the inner wheels shall be provided so the tire pressure can be easily checked and adjusted. Mud flaps shall be provided behind both sets of rear wheels.

Tire size (including load index and speed rating):

Lubrication:

Full and complete lubrication as furnished in regular commercial production units shall be provided. High-pressure hydraulic fittings shall be provided where needed. Fittings shall be located to permit ease of access.

All exposed lubrication fittings shall be masked or otherwise protected at the time of painting and undercoating.

Body, Interior, and Accessories

General Dimensions: Overall width (excluding mirrors) – 95" minimum, 102" maximum
Overall height – 115" maximum (excluding roof hatch and/or roof-mounted air conditioning units) Rear overhang – less than 33% of the overall bus length

Length: _____ Width: _____ Height: _____

Rear overhang: _____

Interior Dimensions: Passenger Compartment:

Width 90" minimum Height – 72" minimum
Center aisle width – 15" minimum
Hip-to-knee space – 27" minimum

Width: _____ Height: _____

Center aisle width: _____ Hip-to-knee space: _____

Wheel Housing: Wheel housing shall be constructed of 16-gauge (minimum) one-piece steel, adequately reinforced to prevent deflection. Wheel housing construction shall provide ample clearance of front wheels while steering, and of all tires under full load, whether operating on smooth or rough terrain. Wheel housing and fenders must be constructed so as to permit removal of wheel hub assemblies as a unit. Wheel housing shall be protected against corrosion and sound with undercoating.

Bumper and Tow Hooks:

Standard OEM front and rear bumpers shall be provided.

A minimum of two (2) rear tow hooks shall be provided and securely attached to the vehicle's understructure. Tow hooks shall be located so that no damage occurs to the vehicle when in tow.

Hood: Shall have lock release from inside the vehicle, easily accessible to the driver. If tilt-type design, hood must have some form of external locking device.

Body Structure: Fiberglass reinforced plastic (FRP) may be used in combination with steel cage construction. The passenger compartment shall be a full steel cage structure. The proposed vehicle shall have met both, FMVSS 214 Side Impact Crash Testing and FMVSS 301 Fuel System Integrity Crash Testing.

A detailed structural drawing of the cage construction shall be submitted with the SOQ. The drawing will include the size, gauge, and spacing of all structural components.

Structure shall include the following or engineer-certified equivalent:

- One (1) 1 ½" x 2 ½" horizontal 16-gauge steel tube at the top forming the edge of wall
- One (1) row of 1 ½" x 1 ½" horizontal 16-gauge steel tube below window line
- One (1) row of 1 ½" x 2 ½" horizontal 16-gauge steel tube at floor level
- One (1) row of 14-gauge c-channel at top of side wall
- One (1) row of 1 ½" x 1 ½" horizontal 16-gauge steel tube at bottom forming edge of wall
- Vertical steel ribs shall consist of 1 ½" x 2" 16-gauge steel tubes located at sides of each window
- One (1) 1 ½" x 1 ½" 16-gauge steel tube shall be welded vertically at the midpoint of each window with a width greater than 24", connecting the horizontal tubes below window and the horizontal tube welded at the floor line
- Two (2) 1 ½" x 1 ½" 16-gauge steel tubes at the front of the sidewall to form the front and rear of the door opening
- Rear walls shall have 14-gauge plates with holes to allow the wall to be fastened to the sidewalls
- Roof bows shall be 1 ½" x 1 ½" 16-gauge tubes, bent to the radius of the roof. Traditional roof bows with or without capped top covers are not acceptable.
- Two (2) roof bows welded together at front of roof structure
- All roof cross members shall be a minimum of 16-gauge steel
- One (1) row of 1 ½" x 1 ½" 16-gauge steel tubing shall be installed to form the center longitudinal members, front-to-rear of roof structure
- One (1) 1 ½" x 1 ½" 16-gauge steel tube installed at bottom of roof bow on each side of roof structure

Roof construction shall be of sufficient strength and stiffness to prevent vibration, drumming, or flexing in service, and shall be equivalent to the strength of the bus side wall. The roof shall be constructed of welded galvanized steel or a single-piece FRP skin laminated to the substrate and roof steel with urethane adhesive. The bus body shall be constructed of welded walls, subfloors, roof framing and rear steel structure, forming an integrated steel cage around the passenger compartment.

All exterior joints and seams shall be protected by an application of caulking compound of zinc- chromate type or similar material. Exterior FRP composite of roof shall be secured to side walls with seam being covered by a rain gutter. Exterior seams are allowed only at the junction of the front cap and rear cap. Other seams on the exterior of the roof are not acceptable. The body and roof shall be thoroughly water-tested and made tight to prevent leakage.

Before assembly, all metal body parts shall receive a thorough multiple state anti-corrosion treatment.

The entire body frame understructure of the vehicle is to be fully undercoated, in compliance with EPA regulations, with nonflammable resin type polyolefin material or equivalent, applied at time of manufacture. Automotive quality undercoating is not satisfactory.

Adequate insulation shall be provided throughout the roof and sidewall area together with engine heat riser for efficient management of heat and noise reduction. Insulation must be fire resistant.

Floor Structure and

Floor/ Ramp Covering: Steel subfloor structure shall be isolated from chassis with OEM rubber isolation mounts and bolted through these mounts to chassis frame rails. Steel sub floor cross members shall be 2" x 2" 14- gauge steel tubing. Sides of subfloor shall be 14-gauge c-channel that will overlap the 1.5" x 2.5" 16-gauge floor line tubing in the side walls. Floor decking shall be constructed of minimum 5/8" marine plywood, six ply, APA certified exterior grade AB, suitably treated with rot proofing and flame-retardant materials. Underside of floor decking shall be sprayed with an undercoating prior to installation to the subfloors. Flooring shall be securely attached to frame members. All edges shall be properly sealed to prevent entrance of moisture.

The entire wooden floor shall be properly prepared for application of rubber floor covering material having anti-skid properties. The entire area shall be covered with rubber cement before application of floor covering. Flooring material shall be transit-grade quality rubber covering. The color is to be coordinated with the interior color scheme.

Cab flooring shall be OEM insulated floor covering.

Ramp area, interior flooring, and lower walls shall be seamless, sprayed with protective coating. A sealant shall be used in body-to-floor corners to provide a water-resistant seal. All interior floor coverings, ceilings, and walls shall be color coordinated with the interior color scheme.

Composite thickness: _____

Flooring description,
including manufacturer(s):

Floor covering:

All interior walls and doors shall be paneled and covered with an easily maintained material. All panels shall be the same color and coordinated with the interior colors of the vehicle.

The dash and instrument panel shall be finished to coordinate with the interior color scheme of the vehicle.

Stanchions and Grab Rails:

Stanchions and grab rails shall be 1.25" diameter, stainless steel tubing. Fittings shall be constructed of stainless steel, cast aluminum, or approved equal corrosion resistant material. Fittings should be

constructed in such a manner as to prevent rattling.

A vertical stanchion shall be mounted from the floor and/or seat level to the ceiling grab rail at the right rear of the driver's seat with a horizontal guard also being provided.

Vertical stanchion shall be mounted from floor and/or seat level to the ceiling grab rail at the inside corner of entry ramp with a horizontal hand rail extended from the stanchion to the body side. A right-hand grab rail shall be provided forward of the entrance door.

A modesty panel shall be installed in front of the right passenger seat.

A partition made of acrylic panel glass shall be installed behind the driver's seat.

All sharp edges, protruding fasteners, brackets, etc. that can cause injury or damage clothing must be eliminated.

Doors:

Chassis shall include driver door, but passenger door shall be omitted. Passenger compartment shall include front entry door on the right side of the vehicle. The door will be double-opening split entrance type built on a tubular steel or aluminum frame welded together with a full exterior facing of tinted safety glass. Door shall have a minimum horizontal opening of 39", a minimum height of 56" from highest point of entry ramp to top of door opening, and must be operated through the use of an electric door mechanism. Clear horizontal opening with handles shall be a minimum of 35". If removed from driver's area, door will be electro-mechanical. Pneumatic is not acceptable. All doors shall be equipped with a locking device when closed. For emergency situations, a manual door release control shall be provided over the top of the door, and shall be designed to permit simple operations to override the electric door operator. Door shall be pocket-type to provide optimal seal. A soft rubber cushion at least 2" in width shall be attached to the meeting edges. Assist handles shall be mounted on both sides of the entry ramp. Doors, door wells, and seals are to be constructed to prevent drafts and entry of water, to the extent practical. Doors and door openings shall comply with current Federal regulations.

Emergency exits complying with FMVSS 217 shall be provided. These exits may be push-out windows, rear emergency door, and/or roof exit.

Front entry door

Horizontal opening width: _____

Vertical opening width: _____

Clear horizontal opening width (with handles): _____

Method of operation (manual, electro-mechanical): _____

Windows:

Windshield is to be fixed-type 1/4" tinted, laminated safety plate glass (FMVSS 205-compliant) set in heavy rubber channels.

All windows, including emergency escape windows, shall be designed and

installed in compliance with FMVSS 217.

Passenger side windows shall be of transit design. School bus type windows will not be accepted. Passenger side windows shall be sealed-type. Each side window shall be glazed with 1/8" minimum tempered safety glass.

Side and rear windows (including emergency exit windows) shall be tinted a neutral color, complementary to the exterior color scheme. Maximum solar energy transmittance will not exceed 37%, as measured by ASTM E424, and luminous transmittance will be no more than 31%, as measured by ASTM D1003.

A minimum of two (2) hinged emergency escape windows shall be provided on each side of the bus. A rear emergency escape window shall be provided. Each emergency escape window shall be clearly labeled with 1" letters (minimum), be marked with a red light above the window, and have operating instructions clearly visible. Each emergency window shall have an audible alarm which will activate when the emergency latch is released.

Side window dimensions shall be 660 square inches, minimum.

Passenger side window dimensions:

Emergency escape side window dimensions:

Emergency escape rear window dimensions:

**Heating and Defrosting
System:**

The heating system shall consist of a minimum of two (2) units; one front unit located in the driver's area, and one rear unit (35,000 BTU minimum) so located as to uniformly heat the bus.

The front unit shall have one large heater core and two (2) heavy-duty blowers to provide sufficient heated air for defrosting of the windshield and for heating the bus. Circulation blowers shall be controlled by a three-position switch (off, low, high) on the driver's control panel.

The heating units shall be located per manufacturer's recommendations so as to provide 65°F inside temperature in an empty bus, evenly distributed, at 0°F ambient temperature. All controls should be located on the driver's control panel.

Combustion-type heaters shall not be permitted.

The manufacturer shall add the required amount of permanent all-weather coolant after heaters have been connected to protect the cooling system to - 20°F.

**Air Conditioning and
Ventilation:**

A complete air conditioning system shall be of a size capable of providing adequate cooling and dehumidifying capacity for passenger comfort. The system must be capable of maintaining a 75°F interior temperature with a full load of passengers, with an ambient temperature of 95°F and 60% relative

humidity. Vehicle must have factory installed front air conditioning system.

A minimum 85,000 BTU air conditioning system shall be provided. The air conditioning system shall be equal to or better than, in standard quality, design, and performance, a system consisting of the following: one (1) GEN V EM-3 evaporator, two (2) excel CM-2 condensers, and one (1) each OEM and TM-21 compressor for a combined minimum displacement of 19 cubic inches. Hose and hose fittings shall be in compliance with SAE standard J-2064.

Bus shall be equipped with an automatic fast idle system with manual override and time-out canceling.

Multiple cool air outlets shall be provided to evenly distribute cool air for passenger and operator comfort.

All controls for air conditioning shall be located on the driver's control panel.

Bidder shall furnish complete details of the air conditioning system proposed for this vehicle with the SOQ.

Air Conditioning

BTU:

Front description:

Rear description:

Interior Lighting: Standard OEM lighting shall be provided in the instrument panels and overhead in the driver's area.

The entry ramp shall be adequately illuminated by an overhead door light and lights along each side of the ramp to illuminate the entry floor/ramp according to ADA standards. The entry lighting should automatically engage when entrance doors are opened and turned off when doors are closed.

Adequate lighting shall be provided to illuminate the center aisle. Interior lighting shall activate when entrance doors are opened and turned off when doors are closed. Controls shall be provided in the operator area for manual activation of interior lights with or without ignition activation.

Exterior Lighting: All exterior lighting must comply with Federal and State regulations. Exterior lighting shall include the following, at a minimum:

- a. Sealed beam headlights with high and low beam
- b. Front and rear directional signals, operated by a lever on the left side of the steering column and of the self-canceling type
- c. Two (2) white or clear backup lights in the rear of the vehicle
- d. Rear-mounted red combination braking and tail lights
- e. Rear center-mounted red brake light located on the center line of the bus below or above rear window

- f. Single white rear license plate light
- g. Front and rear clearance lights
- h. Minimum of six (6) reflectors: two red on rear, one red near rear of each side, one amber near front of each side
- i. Front and rear identification markers, amber front and red rear
- j. All marker and clearance lights shall have armor or

protective material Brake, tail, rear signal, marker, and

clearance lights shall be LED.

A switch shall be provided to operate all directional signals simultaneously as an emergency warning signal.

Seating:

Driver-only seating in the cab portion of the chassis. All passenger seating is to be within the passenger compartment.

Passenger seats and restraints shall meet or exceed all applicable Federal Motor Vehicle Safety Standards, including FMVSS 207, 209, and 210 requirements. A minimum of ten (10) forward facing fixed passenger seats shall be provided. Two (2) double foldout seat with seatbelt shall be provided as additional ambulatory passenger seating in the wheelchair securement area. Each double foldaway seat shall cover a single wheelchair position. Seating shall be mid-back, upholstered with Level III vinyl. Each seat shall have a steel frame construction with legs, seat belt anchorage, and attachment hardware.

Certified test reports for the specific model of seat being used shall be submitted with the SOQ.

The seat bottom foam cushion shall be a minimum of 4" thick at the front edge, tapering to a minimum of 3" at the rear of the cushion. The seat back foam will be a minimum of 2" thick. All seat covering material and foam shall be fire retardant and low toxicity meeting minimum requirements of FMVSS 302. Double seats shall not be less than 35" wide, single seats shall not be less than 17.5" wide, and rear bench seat shall extend the full interior width of the vehicle.

Seat cushion depth shall be a minimum of 16 ¾". Seat suspension shall be 'no-sag' or 'flex-o-lator' type system.

Seats shall be track mounted with the track welded to the vehicle frame, or bolted directly to the floor/steel structure to provide clean floor surfaces without breaks in floor seal. Seat pedestal shall be offset a minimum of 5" inboard of the seat aisle side edge to eliminate potential tripping hazard. The pedestal shall be anchored in accordance with the seat manufacturer's recommendation.

All passenger seats shall be mounted with a minimum of 27" hip-to-knee spacing. School bus seats are not acceptable.

A seat belt shall be provided for each seated passenger.

The driver's seat shall be of standard manufacture transportation quality with retractable seat belt and full range of adjustments. The seat cushion and back shall contain spring supports and foam padding. The seat shall be upholstered in OEM transportation grade vinyl. Seat frame and pedestal are to be covered

with non-reflective paint. Fixed passenger seats:

Manufacturer:

Size:

Arrangement (**must attach diagram or photo**):

Double foldout seat:

Manufacturer:

Size:

Arrangement (**must attach diagram or photo**):

Mirrors:

Heated, remote controlled, fully adjustable exterior rearview mirrors, complying with all FMVSS, shall be installed on each side of the vehicle. Each mirror shall be constructed with a retractable frame designed to prevent damage by vehicle washing equipment.

In addition to the standard OEM interior rearview mirror, a rectangular rear mirror shall be installed for the driver's view of the bus interior.

All mirror mountings shall be sufficiently rigid to prevent distortion from vibration.

Accessories and Equipment:

All standard equipment including, but not limited to:

Four (4) complete sets of keys

shall be provided 12-volt DC

power receptacles, minimum

two (2)

Sun visor – manufacturer's standard, adjustable for the windshield in front of the driver and for the driver's side window

Windshield wipers/washer – two (2) heavy-duty, self-parking, electrically operated windshield wipers; windshield washers with a one gallon (minimum) reservoir; system located for easy inspection, maintenance, filling, and removal

Emergency equipment – manufacturer shall furnish a safety kit with the vehicle that includes, at a minimum, the following equipment:

- a. One 5 lb. fire extinguisher
- b. One seat belt cutter

- c. One 25-unit first aid kit
- d. Three triangle safety reflectors
- e. Body fluid clean-up kit
- f. CPR kit to contain gloves, gown, eye shield, face mask, disposable bag, viral towelettes

All emergency equipment shall be mounted to the vehicle so that it is easily accessible by the driver, and will not interfere with passenger movement or comfort when not in use.

Backup and side view camera system – This system shall be complete with a crystal clear color digital 7" TFT-LCD (thin-film-transistor liquid-crystal display) monitor with distance grid lines and mirror image capability, two side CCD cameras with 120° viewing angle and 50' infra-red night vision, one heavy-duty CCD 130° angle backup camera with 18 built-in infra-reds, and all wires, connectors, and mounts to make the system operational. The system shall be completely weather proof with an IP68 rating, shock resistant, a 20G impact rating, and a full one-year warranty (minimum).

Backup warning alarm – smart alarm system which is activated upon reverse movement of the vehicle, is audible above normal outdoor sounds, and meets Federal requirements

Exterior Finish and Color:

Cab and body shall be manufacturer's standard white. After final assembly, all surfaces requiring paint shall be thoroughly cleaned and primed. Application shall be in accordance with the procedure recommended by the paint manufacturer. The finished surface shall be free of dirt, runs, and other imperfections.

Photo:

A photo of the vehicle shall be provided with the SOQ. A brochure is acceptable.

ADA Fixed Route Accessibility

100% ADA Fixed

Route Accessibility: Bus shall comply with all ADA fixed route requirements as outlined by Federal Regulation CFR 49 Part 38.

Wheelchair/Restraint System Lock-Down:

Vehicle shall be equipped with two (2) forward facing wheelchair securement and occupant restraint systems. The wheelchair lock-down securement/occupant restraint system shall be Retractable Type with L track; or approved equal. Storage shall be provided when wheelchair securement/occupant restraint systems are not in use.

A storage box or pouch for the lock-down devices and seat belts, when not in use, shall be provided and mounted close to the wheelchair locations, but not in an area that would interfere with passenger traffic.

Wheelchair lock-down/restraint system:

Manufacturer: _____ Model: _____

Capacity: _____ Dimensions: _____

Fare Box: A transit-type fare box shall be installed, and shall readily handle paper currency as well as coins.
Fare box shall include an extra vault.

Fare Box Manufacturer: _____

Chime System: Pull cord or touch strip

PA System: Public address system to include a minimum of two inside and one outside speakers

Destination Signs: Front and boarding side destination signs will be electronic, LED, providing adequate daytime and nighttime visibility and easily programmable for multiple locations, such as Twin Vision, Tran sign, Hanover, or approved equal. The purchasing entity will furnish readings (6 Maximum) at time of order to be pre-programmed by the vendor. The manufacturer's name and model number must be shown and must meet ADA fixed route requirements.

Manufacturer: _____ Model: _____

Description: _____

**Additional ADA Fixed
Route Equipment:**

List and describe additional equipment included to make the bus 100% ADA fixed route accessible:

ADDITIONAL REQUIREMENTS

Service: Vehicle is to be delivered to a licensed Mississippi dealer (see note toward end of the Additional Requirements section) fully assembled and ready to operate.

Factory or factory trained dealer representative is to check equipment on delivery and demonstrate to project personnel operational, service, and preventive maintenance requirements.

Final vehicle assembly records and quality control assurances shall be supplied upon delivery.

Acknowledge Yes/No: _____

Authorized Local Dealer:

Authorized dealer within the State of Mississippi (include dealer name, contact person, address, and telephone number):

Acknowledge Yes/No: _____

Workmanship:

Workmanship throughout the vehicle shall conform to the highest standard of commercially accepted practice for the class of work and shall result in a neat and finished appearance. The design of the body and equipment which the manufacturer proposes to furnish must provide a vehicle of substantial and durable construction in all respects.

Welding procedures, welding materials, and qualifications of operators shall be in accordance with standards of the American Society of Testing Materials and the American Welding Society. All welds visible to the public shall be ground smooth after the welding to present a smooth, workman- like appearance. Where metal is welded to metal, the contact surface shall be neatly finished.

All exposed surfaces and edges shall be smooth, free from burrs and other projections, and shall be neatly finished. All exposed bolts shall be covered or protected in some manner.

All parts shall be new. Used, reconditioned, or obsolete parts will not be accepted.

Manufacturer shall submit with the Statement of Qualifications (SOQ) a detailed description and specifications of the frame structure, roof structure, and side sheathing, with particular reference to materials used. All vehicles procured through this contract shall be exact duplicates in design, manufacture, and construction.

Acknowledge Yes/No: _____

Replacement Parts: A supply of replacement parts for the vehicles purchased must be guaranteed by the bidder for a minimum of five years from the date of purchase. Bidder shall keep parts books and manuals up-to-date for a minimum of five years from date of purchase by issuing revised pages or otherwise notifying the State of new or superseding parts and maintenance practices.

Acknowledge Yes/No: _____

**Motor Vehicle
Standards:**

The manufacturer shall certify that the bus complies with all U.S. Department of Transportation safety standards for buses and Interstate Commerce requirements for motor buses operated in interstate commerce that are applicable as of the date of manufacture.

The bus shall comply with all requirements of the laws of the State of Mississippi as to lighting equipment and all warning and safety devices.

The manufacturer shall certify that the bus conforms to the air pollution control standards set by the Federal Transit Administration for motor vehicles to be used on FTA projects.

Acknowledge Yes/No: _____

Tests and Testing: The complete vehicle and all working and moving parts and operating devices shall be thoroughly tested and put in operating condition by the manufacturer.

The roof, windows, windshield, and compartment doors of all vehicles shall be water tested in an approved manner, and any leaks found shall be repaired in a workman like manner.

The manufacturer/vendor shall not attach any dealer identification, advertising, or similar material to the vehicle.

Prior to acceptance of vehicle by City Of Hattiesburg, the manufacturer shall service and adjust vehicle for operation to include, as a minimum the following:

- a. Focusing lights
- b. Tuning engine
- c. Adjusting accessories
- d. Checking electrical, braking, and suspension systems
- e. Charging battery(s)
- f. Inflating tires
- g. Balancing all wheels, including spare
- h. Completely lubricating engine, chassis, and operating mechanisms with recommended grades of lubricants for the ambient temperature at point of delivery
- i. Servicing cooling system with permanent type antifreeze and summer coolant for -20°F
- j. Servicing windshield washer with fluid and approved additives
- k. Filling of fuel tank upon delivery

Acknowledge Yes/No: _____

Warranty: Chassis warranty shall be a minimum of 36 months or 36,000 miles on the mechanical components of the vehicles, and a minimum of 12 months warranty on the alternator. Body warranty shall be a minimum of 12 months or 12,000 miles.

Clearly stated terms and conditions of all manufacturer warranties shall be included with the SOQ. Any and all materials, specialty equipment, or accessories that prove defective in normal operation within the warranty period shall be replaced or repaired by the manufacturer free of any and all cost to the vehicle operator, including all material, labor, and transportation costs. Warranty replacement and/or repairs shall be furnished promptly by the successful bidder within a time period not to exceed thirty days. **The bidder shall provide written assurance with the SOQ regarding warranty repairs.**

The delivering dealer will have sole warranty responsibility (all components) for the first ninety days after acceptance of vehicle.

The manufacturer shall provide, with the SOQ, a list of warranty service locations within the State of Mississippi for all components of the vehicle (A/C, body, chassis, electrical, wheelchair ramp, wheelchair tie downs, etc.) which may need warranty repair beyond the first ninety days.

Acknowledge Yes/No: _____

Inspection: City of Hattiesburg reserves the right to inspect all material and workmanship at all times during the process of vehicle assembly.

Final inspection and acceptance of the vehicle(s) covered by these specifications shall be made by City of Hattiesburg.

Acknowledge Yes/No: _____

Delivery: Based on reasonable production time and with due consideration to unforeseen circumstances, the COH shall expect that delivery on initial unit(s) covered by these specifications will be made within one hundred twenty (120) days of placement of purchase order and the remainder of the units one hundred eighty (180) days, unless otherwise specified in the Request for Quotes formal (RFQF).

Acknowledge Yes/No: _____

FOB Point: For RFQF purposes, all vehicles shall be delivered FOB Mississippi dealer. "Caravan" or "driveway" deliveries straight from the manufacturer will not be accepted. A pre-delivery in-service inspection shall be performed by the vendor before delivery to COH. Each unit shall be delivered completely assembled and ready to operate.

Acknowledge Yes/No: _____

Documents: Each vehicle shall be delivered with completed Certificate of Origin, tag application, warranty, and any other necessary credentials.

Final vehicle assembly records and quality control assurances shall be supplied upon delivery.

Acknowledge Yes/No: _____

Literature:

Technical manuals: The following **shall be provided upon delivery** for each vehicle delivered. These items shall be provided "as built" for each individual unit delivered. Each of these items shall be kept up-to-date for a minimum of five years.

- a. Operator's manual
- b. Service/maintenance manual
- c. Parts book
- d. Parts interchange manual
- e. Wiring schematic diagram
- f. Schematics/drawings for all accessories and equipment not listed in operator's manual

Acknowledge Yes/No: _____

NOTE:

Any company manufacturing, up-fitting, and/or selling a finished motor vehicle in the State of Mississippi must be in compliance with the rules and regulations of the Mississippi Motor Vehicle Commission (MMVC) prior to the SOQ review.

A copy of licenses as required by the MMVC should be supplied with SOQ. Licenses will be verified prior to award.

Mississippi Dealer's License Number: _____

MMVC Manufacturer's License Number (where applicable):

Application and contact information may be attained through the MMVC website: <https://www.mmvc.ms.gov/>

Acknowledge Yes/No: _____

=====

Vehicle Title or

Certificate of Origin: To be assigned to the receiving project with applicable name and address

Lienholder: The following shall be listed as the **1st Lienholder on the Title Application:**

City of Hattiesburg Hub City Transit
1001 South Tipton Street
Hattiesburg, MS 39401

To be mailed to:

Hub City Transit
1001 South Tipton Street
Hattiesburg, MS 39401

Acknowledge Yes/No: _____

NOTICE TO BIDDERS

NOTICE is hereby given that the Mayor and Council of the City of Hattiesburg, Mississippi will receive bids for

ONE (1) OR MORE NEWER BUSES FOR MASS TRANSIT

in the following manner:

Unpriced Proposals will be accepted until 10:00a.m. local time on Thursday, September 29, 2022, by electronic bid submission at www.hattiesburgmsbids.com or in sealed envelopes at the Office of the City Clerk, 200 Forrest Street, Hattiesburg, MS 39401.

The bid response documents should be filled out and uploaded by the date and time stated above.

Specifications and procedures can be downloaded from www.hattiesburgmsbids.com. All responses must comply with the specifications provided. The City of Hattiesburg reserves the right to amend the specifications, as necessary.

Response submissions will be evaluated and vendors submitting acceptable offers will be invited to submit priced bids via reverse auction. Electronic bids and/or reverse auction bids can be submitted at www.hattiesburgmsbids.com. For any questions relating to the electronic process, please call PH Bidding at (662) 407-0193.

Qualified bidders will be invited to participate in a reverse auction, which will take place on October 6, 2022, at 10:30a.m. local time.

The lowest and best bid received will be accepted, subject to the provisions of Section 31-7-13 of the Mississippi Code of 1972, Annotated as Amended, and other applicable State law; but the Council reserves the right to reject any or all bids received and to waive informalities.

PUBLISHED by Order of the Council on this, the 6th day of September 2022.

CITY OF HATTIESBURG, MISSISSIPPI

BY: Kermas Eaton/s/
CITY CLERK

Publish 9-8-22 & 9-15-22



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Wiley Quinn, Code Enforcement Division Manager
cc: Kermas Eaton, City Clerk
Date: Tuesday, September 6, 2022
Re: Approve and authorize publication of Notice for Request for Qualifications for Qualified Eligible Contractors for the City of Hattiesburg's CDBG/HOME Programs {Entitlement}
File Number: 2022-644
Minute Book #

Summary

Approve and authorize publication of Notice for Request for Qualifications for Qualified Eligible Contractors for the City of Hattiesburg's CDBG/HOME Programs {Entitlement}

Recommendation Statement

I recommend approval of this item.

Please place this on the September 6, 2022 City Council meeting for consideration.

**APPLICATION FOR ELIGIBILITY FOR QUALIFIED
CDBG/HOME PROGRAM GENERAL CONSTRUCTION CONTRACTOR**

General Construction Contractors/Remodelers who are interested in participating in CDBG/HOME Programs should answer the questions below and submit the information as noted.

By completing this application and providing the information requested it is understood that any/all information will be verified and references will be checked.

Date of application: _____

1. Name of Company: _____

Name of owner/owners: _____

Address: _____

Telephone No. _____ Fax No: _____ E-mail address: _____

Name of Responsible Individual: _____

Address: _____

Telephone No: _____ Fax No: _____ E-mail address: _____

2. Have you ever been or are you currently an employee of the City of Hattiesburg? _____

If yes, please give the date(s) of employment _____

3. Please list all major equipment owned by you or your company.

- [illegible]

- A. Subcontractor Information (Please provide three subcontractor references).

-

Page 2 of 6

2. Name of Subcontractor: _____

Type of work Subcontractor Performs: _____

Address: _____

Telephone: _____ Fax: _____

3. Name of Subcontractor: _____

Type of work Subcontractor Performs: _____

Address: _____

Telephone: _____ Fax: _____

B. Material Suppliers (Please provide two material supply references).

1. Name of Supplier: _____

Address: _____

Telephone: _____ Fax: _____

Type of Supplies: _____

2. Name of Supplier: _____

Address: _____

Telephone: _____ Fax: _____

Type of Supplies: _____

C. *Prior Job References:

1. Owner of Property: _____

Address: _____

Telephone: _____ Fax: _____

Description of work Performed: _____

2. Owner of Property: _____

Address: _____

Telephone: _____ Fax: _____

Description of work Performed: _____

3. Owner of Property: _____

Address: _____

Telephone: _____ Fax: _____

Description of work Performed: _____

*Note: If no local jobs, please provide copies of pictures of prior jobs for our file.

CONTRACTOR'S APPLICATION CHECKLIST

Please include the following information with your application:

- ☐ Copy of Privilege Tax License
- ☐ Copy of State Contractor's License
- ☐ Copy of Liability Insurance
- ☐ Completed Permit Authorization Form (attached)
- ☐ Copy of Performance and Payment Bond, if applicable
- ☐ Copy of Workmen's Compensation **OR** a letter from your insurance agent that your company is not required to carry Workmen's Compensation Insurance

Applicant should NOT assume that previous submission of this information to the Department of Urban Development Community Development Division or any other city department is acceptable. Failure to include all requested documentation accompanying this application will constitute an incomplete application, and will be denied.

AUTHORIZATION FOR RELEASE OF INFORMATION

By my signature below I authorize the release of information by all subcontractors, references and others from the information supplied herein to the City of Hattiesburg Department of Urban Development – Community Development Division.

Company Name

Authorized Representative Signature

Printed Name of Authorized Signatory

Date

**CITY OF HATTIESBURG
DEPARTMENT OF URBAN DEVELOPMENT
COMMUNITY DEVELOPMENT DIVISION**

**INSTRUCTIONS TO RESPONDENTS FOR CDBG AND HOME
PROGRAM SERVICES**

BID FORM

PROPOSAL FOR: Qualified Eligible Contractors for the purposes of housing rehabilitation, housing repair, housing reconstruction and related activities as needed for a period ending December 31, 2024 for the Department of Urban Development - Community Development Division.

Statements of Qualifications will be received until 10 a.m. Thursday, September 29, 2022, in the City Clerk's Office in the Hattiesburg City Hall located at 200 Forrest Street, P. O. Box 1898, Hattiesburg, MS 39403-1898. SOQs will be opened beginning at 10 a.m., Thursday, September 29, 2022.

For questions or clarifications, respondents should contact:

City Clerk
P. O. Box 1898
200 Forrest Street
Hattiesburg, MS 39403-1898
(601) 545-4552

The undersigned Respondent agrees to comply with and provide the following services to the City of Hattiesburg:

Respondent shall furnish contracting or construction services associated with CDBG housing rehabilitation, HOME housing rehabilitation, CDBG Emergency Repair, HOME Reconstruction and related activities.

Successful respondents shall furnish and supervise any personnel needed to perform any necessary activities related to said services.

Successful respondents shall furnish all tools and equipment necessary to perform said services. Respondents shall provide a detailed equipment list as part of the QEC Application and Checklist.

Respondents must be licensed contractors with the State of Mississippi and the City of Hattiesburg by the deadline for submitting qualifications and must provide all the information indicated on the attached QEC Application and Checklist.

Responses will be reviewed by committee. Incomplete responses, failure to provide minimally required information, or evidence of ineligibility will result in a finding of non-qualification. For the respondents

with completed applications that meet basic eligibility requirements, the committee will check references and review examples of work for work standards and quality of workmanship.

Successful respondents will be placed on a list of Qualified Eligible Contractors for the City's CDBG and HOME programs. For each related residential rehabilitation, repair or reconstruction project, contractors must submit bids based on a work write-up completed by the Department of Urban Development - Community Development Division staff. Only contractors on the list of Qualified Eligible Contractors may bid on these CDBG and HOME projects.

If there is no available contractor from the list, the City may use some other objective method of identifying contractors to complete the various related projects. Further, the City may use an alternative objective method of selecting contractors from the established list of QECs.

Successful respondents agree to comply with all federal, state, and city laws in performing the work contracted or assigned as a result of being placed on the City's list of QECs.

Successful respondents shall coordinate all work and related activities with the City's Department of Urban Development – Community Development Division. **Contractors must perform work as written on work write-ups. Changes to work write-ups will be made only by permission of Community Development staff. Any additional work completed without prior permission and proper inspection by Community Development staff will not be eligible for Change Order.**

Successful respondents agree to hold harmless and indemnify City from any and all liability and damages of any kind whatsoever resulting from participation in its CDBG and HOME programs.

It is understood that contractors may be removed from the list of QECs for failure to comply with terms and conditions herein or any other violation of any federal, state or local law and/or regulation.

Respondents shall provide all company information identified on the attached form and must include all required supporting documentation where requested.

NAME OF COMPANY

STREET/P.O. BOX ADDRESS

CITY/STATE & ZIP CODE

PHONE NUMBER (DAY AND NIGHT)

FAX NUMBER

DATE OF BID

COMPANY OFFICIAL'S NAME & TITLE

COMPANY OFFICIAL'S SIGNATURE

SOCIAL SECURITY OR EMPLOYER ID NUMBER

DUNS NUMBER (required)

OFFICIAL'S SIGNATURE – I hereby acknowledge receipt of all bid instructions and agree, if selected, to abide by all program guidelines. I additionally acknowledge that *Housing Rehabilitation/Reconstruction and Housing Repair Grants Program Manual (Amended September 2022)* has been made available as a public record through the City of Hattiesburg's City Clerk's Office, and I am fully prepared to abide by the guidelines, policies, and procedures contained therein.

NOTICE TO BIDDERS

NOTICE is hereby given that the City of Hattiesburg, Mississippi will receive Statements of Qualifications until 10:00 A.M., Thursday, September 29, 2022, in the City Clerk's Office in the City Hall for the following:

Qualified Eligible Contractors for the purposes of housing rehabilitation, housing repair, housing reconstruction and related activities as needed for a period ending December 31, 2024 for the Department of Urban Development – Community Development Division.

The above shall be delivered as per detailed specifications on file in the Office of the Clerk, P.O. Box 1898, 200 Forrest Street, Hattiesburg, Mississippi, 39403-1898, (601) 545-4552, which may be obtained upon request. Technical assistance is available to all interested parties by calling (601) 554-1006.

Each PROPOSAL must be received in a sealed envelope which is marked in the lower left-hand corner with the words "Request for Qualifications – Qualified Eligible Contractors" and the DATE OF BID OPENING ("September 22, 2022").

The purpose of this solicitation is to establish a list of Qualified Eligible Contractors for participation in the City's CDBG and HOME programs. Respondents meeting the established criteria will be placed on a list of QECs in accordance with the City's Housing Rehabilitation/Reconstruction, and Housing Repair Grants Manual. Notwithstanding, the Council reserves the right to reject any or all bids received and to waive formalities.

PUBLISHED by Order of the Council on this, the 6th day of September 2022.

CITY OF HATTIESBURG, MISSISSIPPI

BY: Kermas Eaton
CITY CLERK

(SEAL)

Toby Barker, Mayor

PUBLISH Twice in the Legal Section: Thursday, September 15, 2022, Thursday, September 22, 2022



Memorandum

To: Mayor Toby Barker and Members of City Council
From: Chris McGee, Director of Parks and Recreation
cc:
Date: Tuesday, September 6, 2022
Re: Approve the sale of grave spaces, per attached Memo's, Receipts and deeds.
File Number: 2022-641
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 September 6, 2022 City Council meeting for consideration.

To: CITY COUNCIL

From: Deborah Bourne, Division Manager of Cemeteries

Date: August 15, 2022

Don Grubbs

(1) Space \$ 175.00

North Half (N ½) of the Southwest Quarter (SW ¼)

Lot 86, Section 38, Highland Cemetery

Don Grubbs

(2) Spaces \$ 350.00

Northwest Quarter (NW ¼)

Lot 86, Section 38, Highland Cemetery

Walter Rupert

(1) Space \$ 175.00

South Half (S ½) of the Northwest Quarter (NW ¼)

Lot 116, Section 23, Highland Cemetery

Charles Gregg

(2) Spaces \$ 350.00

Southwest Quarter (SW ¼)

Lot 78, Section 38, Highland Cemetery

Joan Marie Montague

(8) Spaces \$ 1,400.00

Entire Lot 15, Section 39, Highland Cemetery

To: CITY COUNCIL

From: Deborah Bourne, Division Manager of Cemeteries

Date: August 17, 2022

Austin Townes, Jr

(1) Space \$ 175.00

South Half (S ½) of the Northeast Quarter (NE ¼)

Lot 31, Section 34, Highland Cemetery

To: CITY COUNCIL

From: Deborah Bourne, Division Manager of Cemeteries

Date: August 29, 2022

Otanell Clayton

(1) Space \$ 175.00

South Half (S ½) of the Southeast Quarter (SE ¼)

Lot 100, Section 38, Highland Cemetery

Bobby Ray James

(1) Space \$ 175.00

South Half (S ½) of the Southeast Quarter (SE ¼)

Lot 43, Section 28, Highland Cemetery

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 08-10- 2022

SOLD TO:

Mr. Mrs. Miss Don Grubbs

ADDRESS 208 Greenwood Place Hattiesburg, MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

N $\frac{1}{2}$ SW $\frac{1}{4}$ Lot No. 86 Section No. 38 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.00

Price Received \$ 175.00

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

CK#1774

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 08-10- 2022

SOLD TO:

Mr. Mrs. Miss Don Grubbs

ADDRESS 208 Greenwood Place Hattiesburg, MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

1/2 NW $\frac{1}{4}$ Lot No. 86 Section No. 38 in Highland Cemetery

Number of grave spaces 2 Price per grave space \$ 175.00

Price Received \$ 350.00

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 08-10- 2022

SOLD TO:

Mr. Mrs. Miss Charles Gregg

ADDRESS 3110 Innesstown Rd. Hattiesburg, MS 39402

desires to purchase the grave space described below, subject to Cemetery regulations.

1/2 SW $\frac{1}{4}$ Lot No. 78 Section No. 35 in Highland Cemetery

Number of grave spaces 2 Price per grave space \$ 175.00

Price Received \$ 250.00

CITY OF HATTIESBURG, MISSISSIPPI

D...

**CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES**

Hattiesburg, Miss., 08-09- 2022

SOLD TO:

Mr. Mrs. Miss Walter Rupert

ADDRESS 1506 Pecan Drive Hattiesburg, MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

S 1/2 NW 1/4 Lot No. 116 Section No. 23 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., 08/05/ 2022

SOLD TO:

Mr. Mrs. Miss Jean Marie Montague

ADDRESS 5157 W. 4th St. Hattiesburg, MS. 39402

desires to purchase the grave space described below, subject to Cemetery regulations.

Entire Lot 1/2 Lot No. 15 Section No. 39 in Highland Cemetery

Number of grave spaces 8 Price per grave space \$ 175.00

Price Received \$ 1,400.00

ck # 6421

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 08-24- 2022

SOLD TO:

Mr. Mrs. Miss Bobby Ray James

ADDRESS 4761 Sylvan Drive Savannah, GA 31405

desires to purchase the grave space described below, subject to Cemetery regulations.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Lot No. 43 Section No. 28 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.⁰⁰

Price Received \$ 175.⁰⁰

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

CK# 406352

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss. 08-25- 2022

SOLD TO:

Mr. Mrs. Miss Stanell Clayton

ADDRESS 2512 Plymouth St. Hattiesburg, MS 39401

desires to purchase the grave space described below, subject to Cemetery regulations.

S $\frac{1}{2}$ SE $\frac{1}{4}$ Lot No. 100 Section No. 38 in Highland Cemetery

Number of grave spaces 1 Price per grave space \$ 175.⁰⁰

Price Received \$ 175.⁰⁰

CITY OF HATTIESBURG, MISSISSIPPI

By [Signature]
Supt. of City Cemeteries

Card

CITY OF HATTIESBURG
PURCHASE OF CEMETERY GRAVE SPACES

Hattiesburg, Miss., 08/15/ 2022

SOLD TO:

Mr. Mrs. Miss

Austin Townes, Jr.

ADDRESS

P.O. Box 583, Hattiesburg, MS. 39403

desires to purchase the grave space described below, subject to Cemetery regulations.

S $\frac{1}{2}$ NE $\frac{1}{4}$ Lot No. 31 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

Debrah Boame

Supt. of City Cemeteries

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 THOUSAND FOUR HUNDRED AND NO/100 Dollars (\$1,400.00), 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 Joan Marie Montague, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

LOT 15

Section Number: 39

according to the Cemetery Survey of the City of Hattiesburg, Mississippi known as Highland Cemetery, and containing

eight (8) 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 6th day of September, 2022.

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 6th day of September, 2022.

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 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, Charles Gregg, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

Southwest Quarter (SW¹/₄)

Lot Number 78 Section Number 38

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 6th day September, 2022.

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 6th day of September, 2022

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 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, Don Grubbs, subject to the reservations and restrictions hereinafter set out and subject to rules and regulations now or hereafter adopted, the following described grave spaces:

Northwest Quarter (NW¼)

Lot Number 86 Section Number 38

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 6th day September, 2022.

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 6th day of September, 2022

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 Walter Rupert, 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 116 Section 23

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 6th day of September, 2022.

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 6th day of September, 2022.

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 Don Grubbs, 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 (N¹/₂) of the Southwest Quarter (SW¹/₄)

Lot 86 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 6th day of September, 2022.

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 6th day of September, 2022.

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 Austin Townes, 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:

South Half (S½) of the Northeast Quarter (NE¼)

Lot 31 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 6th day of September, 2022.

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 6th day of September, 2022.

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 Otanell Clayton, 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 100 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 6th day of September, 2022.

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 6th day of September, 2022.

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 Bobby Ray James, 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 43 Section 28

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 6th day of September, 2022.

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 6th day of September, 2022.

My Commission Expires:

NOTARY PUBLIC



Memorandum

To: Mayor Toby Barker and Members of City Council

From:

cc:

Date: Tuesday, September 6, 2022

Re: Approve claims docket for the period ending August 31, 2022.
File Number: 2022-605
Minute Book #

Summary

Recommendation Statement

Please place this on the September 6, 2022 City Council meeting for consideration.

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
BALANCE SHEET											
001000											
001000	0520EM	D/F EMER.MGMT.DISTRICT									
002158	AT&T	601M818327001	7/22	0	2022	11	INV	P	3,542.45	083122	292473 JULY 2022 PHONE SER
ACCOUNT TOTAL									3,542.45		
001000	0520LB	D/F LIBRARY									
002158	AT&T	601M818327001	7/22	0	2022	11	INV	P	7,029.75	083122	292473 JULY 2022 PHONE SER
ACCOUNT TOTAL									7,029.75		
001000	060100	GAS/LUBRICANT-CITY BARN									
003497	MAPLES GAS COMPANY	235610		229220	2022	11	INV	P	29,298.23	083122	292628 GAS FOR FUEL STATIO
003497	MAPLES GAS COMPANY	235930		229332	2022	11	INV	P	19,455.58	083122	292628 GAS FOR FUEL STATIO
003497	MAPLES GAS COMPANY	236525		229433	2022	11	INV	P	30,378.54	083122	292628 GAS FOR FUEL STATIO
									79,132.35		
003918	PINE BELT OIL COMPAN	INV 102551		229335	2022	11	INV	P	12,824.19	083122	292679 DIESEL FOR FUEL STA
ACCOUNT TOTAL									91,956.54		
ORG 001000 TOTAL									102,528.74		
REVENUES											
001001	BUILDING PERMIT/INSPECTION										
001001	222100	2022 11 INV P									
049096	BEST CHOICE ROOFING	PERMIT 0822017766	0						168.00	083122	292482 REFUND PERMIT FOR 3
ACCOUNT TOTAL									168.00		
001001	231100	JUST.-BYRNE GRANTS									
002851	FORREST CTY SUPERVIS	8/11/22	0		2022	11	INV	P	8,125.00	083122	292549 REIMB FC FOR 2021 B
ACCOUNT TOTAL									8,125.00		
001001	332000	POLICE FINES									
004271	SOUTHERN FINANCIAL S	CMCHAT 7/18/22	0		2022	11	INV	P	18.00	083122	292715 POLICE FINE COLLECT
004271	SOUTHERN FINANCIAL S	CMCHAT2 7/1-7/18/22	0		2022	11	INV	P	137.90	083122	292715 POLICE FINES COLLEC
004271	SOUTHERN FINANCIAL S	CMCHAT2 7/19-7/31/22	0		2022	11	INV	P	5.00	083122	292715 POLICE FINES COLLEC
004271	SOUTHERN FINANCIAL S	CMCHAT3 7/1-7/18/22	0		2022	11	INV	P	338.02	083122	292715 POLICE FINES COLLEC
004271	SOUTHERN FINANCIAL S	CMCHAT3 7/19-7/31/22	0		2022	11	INV	P	244.00	083122	292715 POLICE FINES COLLEC
									742.92		
ACCOUNT TOTAL									742.92		
ORG 001001 TOTAL									9,035.92		
CITY COUNCIL											
001003	TELEPHONE AND TELEGRAPH										
001003	606000	2022 11 INV P									
002160	AT&T MOBILITY	287273578351X080822	0						473.58	083122	292474 MB2016-287/WIRELESS

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL									473.58		
ORG 001003 TOTAL									473.58		
CITY COURT											
001015						MINOR OFFICE EQUIP/FURN.					
001015	502000					229195	2022	11	INV	P	
049086	MISKELLY FURNITURE	8152022							1,979.97	083122	292642 COURT OFFICE FURNIT
ACCOUNT TOTAL									1,979.97		
OTHER OPER.MATLS-FULL R											
001015	559100					0	2022	11	INV	P	
003985	PUBLIC HEALTH MANAGE	SI00050713							1,250.00	083122	292685 BHC ANNUAL RANT LIC
ACCOUNT TOTAL									1,250.00		
OTHER PROF.-VICTIM'S ADV.GRANT											
001015	604800					0	2022	11	INV	P	
003917	PINE BELT MENTAL HEA	2022-06							15,663.42	083122	292678 GR#1H79TI081923-01
003917	PINE BELT MENTAL HEA	2022-07				0	2022	11	INV	P	
									30,703.21		
ACCOUNT TOTAL									30,703.21		
TELEPHONE AND TELEGRAPH											
001015	606000					0	2022	11	INV	P	
002160	AT&T MOBILITY	287273578351X080822							471.97	083122	292474 MB2016-287/WIRELESS
ACCOUNT TOTAL									471.97		
ORG 001015 TOTAL									34,405.15		
MAYOR/ADMIN.											
001020	604900					0	2022	11	INV	P	
001020	FEDERAL EXPRESS	7-861-83530							23.56	083122	292543 CERTIFIED LETTER MA
ACCOUNT TOTAL									23.56		
TELEPHONE AND TELEGRAPH											
001020	606000					0	2022	11	INV	P	
002160	AT&T MOBILITY	287273578351X080822							172.30	083122	292474 MB2016-287/WIRELESS
ACCOUNT TOTAL									172.30		
DUES AND MEMBERSHIPS											
001020	684000					0	2022	11	INV	P	
047851	NATIONAL LEAGUE OF C	179587							4,106.00	083122	292658 DIRECT MEMBER DUES
ACCOUNT TOTAL									4,106.00		
ORG 001020 TOTAL									4,301.86		
MUNICIPAL CLERK											
001040	501000					229047	2022	11	INV	P	
003809	OFFICE DEPOT INC	256727326001							84.84	083122	292663 OFFICE SUPPLIES - O
003809	OFFICE DEPOT INC	256727326002				229047	2022	11	INV	P	
									2.78		
									292663 OFFICE SUPPLIES - O		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11										
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
003809	OFFICE DEPOT INC	256727334001	229047	2022 11	INV	P		25.49 083122		292663 OFFICE SUPPLIES - 0
003809	OFFICE DEPOT INC	257576914001	229047	2022 11	INV	P		22.32 083122		292663 OFFICE SUPPLIES - 0
								135.43		
ACCOUNT TOTAL								135.43		
001040	684500									
002440	CENTER FOR GOVERNMENT	FALL MUNICIPAL CLERK 0		2022 11	INV	P		175.00 083122		292504 2022 FALL MUNICIPAL
ACCOUNT TOTAL								175.00		
ORG 001040 TOTAL								310.43		
001080										
001080	500500									
002294	BOURNE BROTHERS	PRIN 83730	228320	2022 11	INV	P		495.00 083122		292486 PRINTED FORMS
ACCOUNT TOTAL								495.00		
001080	501000									
003810	OFFICE PRODUCTS PLUS	971922-1	0	2022 11	INV	P		146.30 083122		292665 PO#226826 Backorder
003810	OFFICE PRODUCTS PLUS	971922-2	0	2022 11	INV	P		34.99 083122		292665 PO#226826 Backorder
003810	OFFICE PRODUCTS PLUS	971922-3	0	2022 11	INV	P		14.58 083122		292665 PO#226826 Backorder
								195.87		
ACCOUNT TOTAL								195.87		
ORG 001080 TOTAL								690.87		
001081										
001081	570000									
048827	CARQUEST	14758-8342	226965	2022 11	INV	P		515.47 083122		292502 REPLACEMENT PARTS F
ACCOUNT TOTAL								515.47		
001081	606000									
002160	AT&T MOBILITY	287273578351X080822	0	2022 11	INV	P		96.84 083122		292474 MB2016-287/WIRELESS
ACCOUNT TOTAL								96.84		
ORG 001081 TOTAL								612.31		
001090										
001090	508000									
002383	C D W GOVERNMENT	CG63609	229422	2022 11	INV	P		788.22 083122		292495 ADOBE SUBSRIPTIONS
ACCOUNT TOTAL								788.22		
001090	604900									
048727	ORION PLANNING	3623	0	2022 11	INV	P		5,390.00 083122		292667 AUG2022 SERVICES -M

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION		
				ACCOUNT TOTAL			5,390.00				
001090	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0	2022	11	INV P	301.67	083122	292474	MB2016-287/WIRELESS	
				ACCOUNT TOTAL			301.67				
001090	615000			ADVERTISING							
002477	CLARION LEDGER (ADVE INV0004813698		0	2022	11	INV P	88.18	083122	292512	CITY WIDE ADS & NOT	
				ACCOUNT TOTAL			88.18				
001090	641000			OFFICE EQUIPMENT RENT							
004050	RICOH CORP	36934115	0	2022	11	INV P	232.90	083122	292695	COPIER PAYMENT JULY	
				ACCOUNT TOTAL			232.90				
				ORG 001090 TOTAL			6,800.97				
INFO TECHNOLOGY											
001091	500300			PAPER							
001091	500300			PAPER							
004356	STRICKLAND PAPER COM BH903891-00		228970	2022	11	INV P	789.65	083122	292725	PAPER SUPPLIES FOR	
				ACCOUNT TOTAL			789.65				
001091	508000			COMPUTER SUPPLIES							
002383	C D W GOVERNMENT	BR94396	229063	2022	11	INV P	915.70	083122	292495	COMPUTER SUPPLIES -	
002383	C D W GOVERNMENT	BS04210	229063	2022	11	INV P	57.72	083122	292495	COMPUTER SUPPLIES -	
002383	C D W GOVERNMENT	X319698	0	2022	11	INV P	95.37	083122	292495	OVERSHIPMENT - PO 2	
							1,068.79				
003721	MULTITECH OFFICE MAC	22080309	229251	2022	11	INV P	2,168.95	083122	292655	INK CARTRIDGES - IT	
				ACCOUNT TOTAL			3,237.74				
001091	546000			MINOR EQUIPMENT							
004256	SOLAR SUPPLY INC	3456552	229388	2022	11	INV P	94.50	083122	292714	THERMOSTAT FOR COMP	
				ACCOUNT TOTAL			94.50				
001091	603500			DATA PROCESSING							
002383	C D W GOVERNMENT	CG63609	229422	2022	11	INV P	3,599.00	083122	292495	ADOBE SUBSRIPTIONS	
				ACCOUNT TOTAL			3,599.00				
001091	604900			OTHER PROFESSIONAL SERV.							
002158	AT&T	0598 7.8.22	0	2022	11	INV P	6,790.00	083122	292472	INTERACT SUPPORT -	
002158	AT&T	0598 8.8.22	0	2022	11	INV P	13,580.00	083122	292471	INTERACT SUPPORT -	
							20,370.00				

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11												
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION		
002160	AT&T MOBILITY	287273578351X080822	0	2022 11	INV	P	161.05	083122	292474	MB2016-287/WIRELESS		
003912	PILEUM CORPORATION	P80458	0	2022 11	INV	P	1,640.00	083122	292676	BILLABLE TIME - IT		
003912	PILEUM CORPORATION	P81649	0	2022 11	INV	P	2,671.25	083122	292676	BILLABLE TIME - IT		
							4,311.25					
004482	TYLER TECHNOLOGIES IN	045-384396	0	2022 11	INV	P	4,200.00	083122	292742	MUNIS IMPLEMENTATIO		
ACCOUNT TOTAL							29,042.30					
001091	606800	NETWORK										
002384	C SPIRE (MEGAGATE)	205876-68	0	2022 11	INV	P	431.38	083122	292497	NETWORK/INTERET - M		
002384	C SPIRE (MEGAGATE)	205876-69	0	2022 11	INV	P	425.00	083122	292497	NETWORK/INTERET - M		
002384	C SPIRE (MEGAGATE)	683013-58	0	2022 11	INV	P	15,475.26	083122	292497	NETWORK/INTERET - M		
							16,331.64					
ACCOUNT TOTAL							16,331.64					
001091	606900	NETWORK WIRELESS										
003583	METRIX SOLUTIONS	M82098	229087	2022 11	INV	P	6,258.88	083122	292640	TWO QUOTE - MERAKI		
ACCOUNT TOTAL							6,258.88					
001091	636500	OFFICE EQUIPMENT R&M										
003342	KRONOS INCORPORATED	11944045	0	2022 11	INV	P	3,984.52	083122	292616	PAYROLL SUPPORT - I		
003583	METRIX SOLUTIONS	M81894	0	2022 11	INV	P	1,780.00	083122	292640	OFFICE 365 LICENSES		
003583	METRIX SOLUTIONS	M82049	226712	2022 11	INV	P	3,042.90	083122	292640	VMWARE RENEWAL - IT		
							4,822.90					
004050	RICOH CORP	5064716982	0	2022 11	INV	P	278.79	083122	292695	CHARGES FOR PRODUCT		
004050	RICOH CORP	5065211115	0	2022 11	INV	P	260.37	083122	292695	CHARGES FOR PRODUCT		
							539.16					
ACCOUNT TOTAL							9,346.58					
ORG 001091 TOTAL							68,700.29					
001092	GEN.GOV'T.BLDG											
001092	560000	BUILDING MATERIALS & SPLV										
003543	MCELHANEY PLUMBING I	293350	229414	2022 11	INV	P	149.50	083122	292637	FILTERS FOR CITY HA		
ACCOUNT TOTAL							149.50					
001092	604900	OTHER PROFESSIONAL SERV.										
003905	PIERCE PLUMBING INC	608304	0	2022 11	INV	P	702.11	083122	292675	SERVICE CALL TO REP		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
						ACCOUNT TOTAL			702.11		
001092	630500						ELECTRICITY				
003700	MS POWER COMPANY	E2022-11-AUG	0	2022	11	INV	P	494.83	083122	292651	MISSISSIPPI POWER-V
003700	MS POWER COMPANY	E2022-2 AUG	0	2022	11	INV	P	2,876.08	083122	292651	MISSISSIPPI POWER-V
									3,370.91		
						ACCOUNT TOTAL			3,370.91		
						ORG 001092 TOTAL			4,222.52		
001093				INTERMODAL FAC O&M							
001093	560000				BUILDING MATERIALS & SPLV						
002802	FERGUSON ENTERPRISES	3684274	229415	2022	11	INV	P	54.36	083122	292544	MATERIAL FOR REPAIR
						ACCOUNT TOTAL			54.36		
001093	635000				BUILDING R&M						
003905	PIERCE PLUMBING INC	608260	0	2022	11	INV	P	917.11	083122	292675	WALL HYDRANT REPAIR
						ACCOUNT TOTAL			917.11		
						ORG 001093 TOTAL			971.47		
001094				METRPLTN PLANG.							
001094	604900				OTHER PROFESSIONAL SERV.						
002160	AT&T MOBILITY	287273578351X080822	0	2022	11	INV	P	37.23	083122	292474	MB2016-287/WIRELESS
						ACCOUNT TOTAL			37.23		
						ORG 001094 TOTAL			37.23		
001095				G/G INS.OTH SER							
001095	602500				LEGAL						
003090	HICKS LAW FIRM, LLC	10576	0	2022	11	INV	P	700.00	083122	292564	HATTIESBURG ELECTIO
003090	HICKS LAW FIRM, LLC	10577	0	2022	11	INV	P	560.00	083122	292564	PLAAS INCORPORATED
003090	HICKS LAW FIRM, LLC	10578	0	2022	11	INV	P	860.00	083122	292564	JAY RIELS V CIVIL S
									2,120.00		
003608	MILLS & SCANLON, P.A	45	0	2022	11	INV	P	87,459.83	083122	292641	2016 ANNEXATION
003944	POPE & POPE, PA	2272	0	2022	11	INV	P	7,015.00	083122	292681	UDC V CITY OF HATTI
003944	POPE & POPE, PA	2274	0	2022	11	INV	P	837.85	083122	292681	GENERAL OUT OF POCK
003944	POPE & POPE, PA	2275	0	2022	11	INV	P	2,637.50	083122	292681	COMMUNITY CONNECTIO
									10,490.35		
						ACCOUNT TOTAL			100,070.18		
001095	602701	MEDICAL ANALYSIS-EMP CLINIC									

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
003576	MEDICAL ANALYSIS-GHV	10841			0	2022 11	INV	P	29,652.58	083122	292639 7/22 EMPLOYEE CLINI
	ACCOUNT TOTAL								29,652.58		
001095	604900							OTHER PROFESSIONAL SERV.			
002523	COMCAST CABLEVISION	08.11.22-09.14.22			0	2022 11	INV	P	308.36	083122	292519 COMCAST BUSINESS-CI
002807	USI CONSULTING	1089171			0	2022 11	INV	P	10,000.00	083122	292748 GASB 75 ACTUARIAL V
	ACCOUNT TOTAL								10,308.36		
001095	606000							TELEPHONE AND TELEGRAPH			
002158	AT&T	L2022 8.13			0	2022 11	INV	P	200.16	083122	292471 AT&T 601.583.2859 &
	ACCOUNT TOTAL								200.16		
001095	625000							FIRE & EXTENDED COVERAGE			
004307	SOUTHGROUP (HATTIESB	218419			0	2022 11	INV	P	1,778.00	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218588			0	2022 11	INV	P	3,009.00	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218630			0	2022 11	INV	P	367,331.25	083122	292721 INSURANCE PREMIUM C
004307	SOUTHGROUP (HATTIESB	218632			0	2022 11	INV	P	93,462.00	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218634			0	2022 11	INV	P	65,216.44	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218635			0	2022 11	INV	P	65,216.44	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218636			0	2022 11	INV	P	28,957.50	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218639			0	2022 11	INV	P	50,943.75	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218640			0	2022 11	INV	P	19,036.88	083122	292721 INSURANCE PREMIUM -
004307	SOUTHGROUP (HATTIESB	218641			0	2022 11	INV	P	15,605.00	083122	292721 INSURANCE PREMIUM -
									710,556.26		
	ACCOUNT TOTAL								710,556.26		
	ORG 001095 TOTAL								850,787.54		
001096								FED PROG ADMIN			
001096	611000							TRAVEL EXPENSE			
048574	FARVE, DEMETRIA	9483			0	2022 11	INV	P	112.50	083122	292542 MILEAGE TO JACKSON,
	ACCOUNT TOTAL								112.50		
001096	684500							REGISTRATION FEE/TUITION			
003677	MS DEPARTMENT OF ENV	229305			0	2022 11	INV	P	225.00	083122	292647 SUPERVISOR CERTIFIC
	ACCOUNT TOTAL								225.00		
	ORG 001096 TOTAL								337.50		
001100								POLICE/PUB.SFTY			
001100	501000							OTHER EXPENDABLE OFF.SPL			
003809	OFFICE DEPOT INC	259275452001			229321	2022 11	INV	P	157.83	083122	292664 TONER FOR JAIL-HPD
003810	OFFICE PRODUCTS PLUS	976795-1			227454	2022 11	INV	P	185.10	083122	292665 OFFICE SUPPLIES & P

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
003810	OFFICE PRODUCTS PLUS	978156-0	227608	2022 11	INV	P			192.78	083122	292665 TONER FOR MUSTER-HP
003810	OFFICE PRODUCTS PLUS	989720-0	229290	2022 11	INV	P			1,536.26	083122	292665 OFFICE SUPPLIES
									1,914.14		
004356	STRICKLAND PAPER COM	BH903891-00	228970	2022 11	INV	P			62.50	083122	292725 PAPER SUPPLIES FOR
									ACCOUNT TOTAL	2,134.47	
001100	501200								EXPENDABLE OFF.SPL-LIFE		
003810	OFFICE PRODUCTS PLUS	980934-1	229213	2022 11	INV	P			151.02	083122	292665 PAPER & OFFICE SUPP
003810	OFFICE PRODUCTS PLUS	989034-0	229213	2022 11	INV	P			76.10	083122	292665 PAPER & OFFICE SUPP
									227.12		
									ACCOUNT TOTAL	227.12	
001100	508000								COMPUTER SUPPLIES		
002383	C D W GOVERNMENT	CG63609	229422	2022 11	INV	P			429.08	083122	292495 ADOBE SUBSRIPTIONS
									ACCOUNT TOTAL	429.08	
001100	511200								SUPPLIES-DOJ CORONA VIR		
003810	OFFICE PRODUCTS PLUS	990843-0	229457	2022 11	INV	P			660.00	083122	292665 CLOROX DISINFECTANT
									ACCOUNT TOTAL	660.00	
001100	525000								GAS AND OIL		
002869	FUELMAN OF MS	NP62739674	0	2022 11	INV	P			36.85	083122	292551 FUELMAN CHARGE
									ACCOUNT TOTAL	36.85	
001100	535500								WEARING APPAREL		
002769	EXPRESS PRESS	46649-BO	225995	2022 11	INV	P			146.00	083122	292541 POLO'S FOR OTHER DE
									ACCOUNT TOTAL	146.00	
001100	546000								MINOR EQUIPMENT		
002714	ECONOMY SUPPLY CO	081486	229255	2022 11	INV	P			532.84	083122	292534 MATERIAL FOR CHANGE
002901	GILKEY ELECTRIC SUPP	360626	229382	2022 11	INV	P			197.00	083122	292552 LIGHTS FOR CHANGE R
003742	N & H ELECTRONIC DIS	05557	229333	2022 11	INV	P			88.47	083122	292656 ZIP TIES FOR EVIDEN
004593	WATCH GUARD VIDEO	8281376781	226725	2022 11	INV	P			734.25	083122	292764 VISTA REPAIR PARTS-
									ACCOUNT TOTAL	1,552.56	
001100	570000								MTR VEHICLE REP. PTS/SPL		
002060	ADVANCE AUTO PARTS	5604222176979	229256	2022 11	INV	P			436.76	083122	292460 REPAIR PARTS FOR UN
002060	ADVANCE AUTO PARTS	5604222277000	229268	2022 11	INV	P			155.99	083122	292460 BATTERY FOR UNIT#19
002060	ADVANCE AUTO PARTS	5604222477054	229319	2022 11	INV	P			471.69	083122	292460 REPAIR PARTS FOR VA

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002060	ADVANCE	AUTO PARTS	5604222777107	229337	2022	11	INV	P	303.21	083122	292460 REPAIR PARTS FOR UN
002060	ADVANCE	AUTO PARTS	5604223577250	229430	2022	11	INV	P	202.22	083122	292460 REPAIR PARTS FOR VA
002060	ADVANCE	AUTO PARTS	5604223577251	229431	2022	11	INV	P	32.04	083122	292460 REPAIR PARTS FOR UN
002060	ADVANCE	AUTO PARTS	5604223577252	229434	2022	11	INV	P	51.30	083122	292460 GASKET MAKER-SHOP-H
002060	ADVANCE	AUTO PARTS	5604223777324	229486	2022	11	INV	P	565.23	083122	292460 REPAIR PARTS FOR VA
									2,218.44		
002342	BRUCE	AUTO RECYCLING	512635	228983	2022	11	INV	P	45.00	083122	292492 TAIL LAMP FOR UNIT#
003818	O'REILLY	AUTO PARTS	0943-413364	0	2022	11	INV	P	56.70	083122	292662 ACTIVATOR SHOP
003818	O'REILLY	AUTO PARTS	0943-413464	0	2022	11	INV	P	157.82	083122	292662 A/C CONDENSER UNIT#
									214.52		
003915	PINE BELT	CDJR, INC	68308	229221	2022	11	INV	P	62.48	083122	292677 REPAIR PARTS FOR UN
004514	UNIVERSITY TIRE & SE	INV201273		229477	2022	11	INV	P	882.00	083122	292747 TIRES FOR STOCK-HPD
ACCOUNT TOTAL									3,422.44		
001100	604900	OTHER PROFESSIONAL SERV.									
002610	D P S	CRIME LAB	90120945	0	2022	11	INV	P	180.00	083122	292528 ANALYTICAL FEES
002750	EQUIFAX	INFORMATION	2052897252	0	2022	11	INV	P	181.39	083122	292539 ONLINE INVESTIGATIO
003220	JACKSON	COMMUNICATIO	166876	228669	2022	11	INV	P	3,075.00	083122	292569 RADIO REPAIRS-HPD
047055	INTERPRETERS & TRANS	173325		0	2022	11	INV	P	98.45	083122	292567 MAY 2022 INTERPREIN
047187	FOUR SEASONS	LAWN	13308	228078	2022	11	INV	P	3,550.00	083122	292550 RELOCATE MEMORIAL-H
ACCOUNT TOTAL									7,084.84		
001100	606000	TELEPHONE AND TELEGRAPH									
002158	AT&T		L2022-08/08	0	2022	11	INV	P	197.28	083122	292471 AT&T -POLICE DISPAT
002158	AT&T		L2022-08/15	0	2022	11	INV	P	45.03	083122	292471 POLICE DISPATCH0563
002158	AT&T		T2020-08/08	0	2022	11	INV	P	94.00	083122	292471 AT&T -601M26-491400
002158	AT&T		T2022-08/08	0	2022	11	INV	P	54.54	083122	292471 AT&T CLUB SERVICE-0
									390.85		
002160	AT&T	MOBILITY	287273578351X080822	0	2022	11	INV	P	1,639.90	083122	292474 MB2016-287/WIRELESS
ACCOUNT TOTAL									2,030.75		
001100	611000	TRAVEL EXPENSE									
004210	SIMS, JULIUS	HARDY	7.29.22-8.3.22SIMS	0	2022	11	INV	P	342.38	083122	292711 TRAVEL REIMBURSEMEN
ACCOUNT TOTAL									342.38		
001100	612000	FREIGHT									

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002138	APPLIED CONCEPTS INC	405842	229173	2022 11	INV	P	9.90 083122	292469	CABLES FOR HARLEY B
004593	WATCH GUARD VIDEO	8281376781	226725	2022 11	INV	P	14.25 083122	292764	VISTA REPAIR PARTS-
ACCOUNT TOTAL							24.15		
001100	630000			GAS					
004321	SPIRE	G2022-9/AUG	0	2022 11	INV	P	1,334.02 083122	292723	SPIRE-VARIOUS DEPAR
ACCOUNT TOTAL							1,334.02		
001100	630500			ELECTRICITY					
003700	MS POWER COMPANY	E2022-11-AUG	0	2022 11	INV	P	3,769.28 083122	292651	MISSISSIPPI POWER-V
003700	MS POWER COMPANY	E2022-2 AUG	0	2022 11	INV	P	6,420.76 083122	292651	MISSISSIPPI POWER-V
							10,190.04		
ACCOUNT TOTAL							10,190.04		
001100	635500			ELECTRICAL R&M					
002901	GILKEY ELECTRIC SUPP	360494	229320	2022 11	INV	P	288.00 083122	292552	LIGHTS FOR CHANGE R
ACCOUNT TOTAL							288.00		
001100	638400			MOTOR VEHICLE EQ. R&M					
002035	AAMCO TRANSMISSION (	I144196	225356	2022 11	INV	P	301.08 083122	292454	REPAIRS TO UNIT#178
002035	AAMCO TRANSMISSION (	I144823	228133	2022 11	INV	P	500.00 083122	292454	REPAIR TO UNIT#1820
002035	AAMCO TRANSMISSION (	I144955	228779	2022 11	INV	P	2,608.34 083122	292454	REPAIRS TO UNIT#178
002035	AAMCO TRANSMISSION (	I145076	226423	2022 11	INV	P	250.00 083122	292454	TRANSMISSION SERVIC
							3,659.42		
002066	AFFORDABLE EMERGENCY	1579	229266	2022 11	INV	P	665.00 083122	292461	REPAIRS TO UNIT#167
002109	AMERICAN PRINTING &	9453	228345	2022 11	INV	P	250.00 083122	292466	STRIPPING OF UNIT#2
002109	AMERICAN PRINTING &	9612	229355	2022 11	INV	P	40.00 083122	292466	STRIPPING OF UNIT#1
							290.00		
002138	APPLIED CONCEPTS INC	405842	229173	2022 11	INV	P	1,022.04 083122	292469	CABLES FOR HARLEY B
002169	AUTOMOTIVE GLASS SPE	I251317	228865	2022 11	INV	P	310.00 083122	292477	WINDSHIELD REPAIR 1
002169	AUTOMOTIVE GLASS SPE	I251453	229101	2022 11	INV	P	175.00 083122	292477	WINDOW REPAIR UNIT#
							485.00		
003861	PATTERSON AUTO ELECT	81555	229356	2022 11	INV	P	680.12 083122	292671	REPAIRS TO UNTI#171
004514	UNIVERSITY TIRE & SE	INV195511	227964	2022 11	INV	P	74.95 083122	292747	TIRES FOR UNIT#1820
004514	UNIVERSITY TIRE & SE	INV196075	228144	2022 11	INV	P	74.95 083122	292747	ALIGNMENT FOR UNIT#
004514	UNIVERSITY TIRE & SE	INV200766	229359	2022 11	INV	P	129.95 083122	292747	TIRES FOR UNIT#1832

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11				ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
										279.85			
ACCOUNT TOTAL										7,081.43			
001100	639800					TOW IN CHARGES							
003389	LARRY'S WRECKER SERV	10014	0	2022 11	INV P	55.00	083122	292619	TOWING OF UNIT#2042				
003389	LARRY'S WRECKER SERV	9429	0	2022 11	INV P	55.00	083122	292619	TOWING OF UNIT#1832				
003389	LARRY'S WRECKER SERV	9430	0	2022 11	INV P	55.00	083122	292619	TOWING OF UNIT#1711				
003389	LARRY'S WRECKER SERV	9432	0	2022 11	INV P	213.00	083122	292619	TOWING OF UNIT#2046				
003389	LARRY'S WRECKER SERV	9444	0	2022 11	INV P	65.00	083122	292619	TOWING OF UNIT#1664				
										443.00			
ACCOUNT TOTAL										443.00			
001100	684500					REGISTRATION FEE/TUITION							
003694	MS MUNICIPAL LEAGUE	34790	0	2022 11	INV P	300.00	083122	292650	MML 2022 ANNUAL CON				
ACCOUNT TOTAL										300.00			
001100	739900					OTHER EQUIPMENT							
004593	WATCH GUARD VIDEO	1411000716	228344	2022 11	INV P	49,140.00	083122	292764	LICENSE & 1ST YEAR				
004593	WATCH GUARD VIDEO	8281438329	228344	2022 11	INV P	1,000.00	083122	292764	LICENSE & 1ST YEAR				
										50,140.00			
047101	MOTOROLA SOLUTIONS	8281394887	228338	2022 11	INV P	2,250.00	083122	292645	WATCHGUARD FOR 10 N				
ACCOUNT TOTAL										52,390.00			
ORG 001100 TOTAL										90,117.13			
001131	JOINT P&F TRNG.												
001131	501000					OTHER EXPENDABLE OFF.SPL							
002383	C D W GOVERNMENT	CB89897	229275	2022 11	INV P	137.16	083122	292495	P/F EXTERNAL 1TB HA				
002527	COMMERCIAL STATIONER	460609-0	229343	2022 11	INV P	872.77	083122	292520	P/F SUPPLIES				
002527	COMMERCIAL STATIONER	460625-0	229343	2022 11	INV P	44.64	083122	292520	P/F SUPPLIES				
002527	COMMERCIAL STATIONER	460682-0	229401	2022 11	INV P	329.63	083122	292520	P/F OFFICE SUPPLIES				
										1,247.04			
ACCOUNT TOTAL										1,384.20			
001131	511500					FOOD							
002500	COCA COLA BOTTLING C	19873224809	229259	2022 11	INV P	288.00	083122	292518	P/F POWER AID FOR R				
004081	ROSE'S QUIK STOP	1	229342	2022 11	INV P	195.86	083122	292698	P/F LUNCH SEMINAR 0				
ACCOUNT TOTAL										483.86			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP S	WARRANT	CHECK	DESCRIPTION	
001131	5460PO			MINOR EQUIPMENT-POLICE					
048659	BROWNELLS INC	2022410029389	227367	2022 11	INV P	50.88 083122		292491	P/F MINOR EQUIPMENT
048659	BROWNELLS INC	2022410055707	227275	2022 11	INV P	30.59 083122		292491	P/F MINOR EQUIPMENT
						81.47			
ACCOUNT TOTAL						81.47			
001131	559000			OTHER OPERATING MATL/SPLY					
002203	BARNEY'S INC	832922	229289	2022 11	INV P	552.00 083122		292481	P/F SIMUNITION ROUN
ACCOUNT TOTAL						552.00			
001131	559100			OTHER OPER.MATLS-FULL R					
002274	BLOSSMAN GAS INC	21198043	0	2022 11	INV P	24.90 083122		292484	P/F PROPANE USED FO
ACCOUNT TOTAL						24.90			
001131	599000			OTHER REPAIR/MAINT. SPL.					
047017	VERGE ENTRANCE SOLUT	5961	228340	2022 11	INV P	12,580.00 083122		292751	P/F REPAIRS TO FIRE
ACCOUNT TOTAL						12,580.00			
001131	6110FR			MINOR EQUIPMENT-FIRE					
048982	STRINGER SHEA	9501	0	2022 11	INV P	50.00 083122		292726	P/F RETEST FOR STRI
048982	STRINGER SHEA	9502	0	2022 11	INV P	1,288.00 083122		292726	P/F TRAV FOR ACADEM
						1,338.00			
ACCOUNT TOTAL						1,338.00			
001131	612000			FREIGHT					
002203	BARNEY'S INC	832922	229289	2022 11	INV P	50.00 083122		292481	P/F SIMUNITION ROUN
ACCOUNT TOTAL						50.00			
001131	630500			ELECTRICITY					
003700	MS POWER COMPANY	E2022-11-AUG	0	2022 11	INV P	2,016.38 083122		292651	MISSISSIPPI POWER-V
ACCOUNT TOTAL						2,016.38			
001131	635000			BUILDING R&M					
047017	VERGE ENTRANCE SOLUT	5961	228340	2022 11	INV P	7,600.00 083122		292751	P/F REPAIRS TO FIRE
ACCOUNT TOTAL						7,600.00			
001131	639400			DISINFECT./EXTERMINATION					
003040	HAVARD PEST CONTROL	1970399	0	2022 11	INV P	50.00 083122		292563	havard pest control
ACCOUNT TOTAL						50.00			
001131	644900			OTHER RENT					

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
004682 WOOLWINE LLC DBA DEA 23713					0	2022	11	INV P	190.02	083122	292773 P/F VAN RENTAL FOR
ACCOUNT TOTAL									190.02		
ORG 001131 TOTAL									26,350.83		
001160 FIRE DIVISION											
001160 510000					CLEANING/JANITORIAL SPLY						
002472 CINTAS FIRST AID J71 4128270951					0	2022	11	INV P	27.85	083122	292511 HFD JANITORIAL AND
002472 CINTAS FIRST AID J71 4128944108					0	2022	11	INV P	27.85	083122	292511 HFD JANITORIAL AND
									55.70		
ACCOUNT TOTAL									55.70		
001160 525000					GAS AND OIL						
002083 ALLBRITTON CHAIN SAW 92817					229441	2022	11	INV P	169.13	083122	292463 HFD TWO CYCLE OIL F
ACCOUNT TOTAL									169.13		
001160 560000					BUILDING MATERIALS & SPLY						
002714 ECONOMY SUPPLY CO 079260					228759	2022	11	INV P	450.00	083122	292534 HFD STATION 5 BUILD
002714 ECONOMY SUPPLY CO 081648					229304	2022	11	INV P	13.45	083122	292534 HFD STATION 3 EPOXY
002714 ECONOMY SUPPLY CO 081763					229340	2022	11	INV P	30.95	083122	292534 HFD STATION 5 BUILD
									494.40		
ACCOUNT TOTAL									494.40		
001160 570000					MTR VEHICLE REP. PTS/SPL						
002194 BARDING GENERATOR & 7241					229301	2022	11	INV P	74.95	083122	292479 HFD STATION 7 LAWN
002194 BARDING GENERATOR & 7242					229299	2022	11	INV P	74.95	083122	292479 HFD STATION 5 LAWN
									149.90		
002733 EMERGENCY EQUIPMENT 473396					229339	2022	11	INV P	635.79	083122	292536 HFD UNIT # 18099 RE
002739 EMPIRE TRUCK SALES(J CE006198966:01					229111	2022	11	INV P	168.75	083122	292537 HFD UNIT # 18100 RE
002739 EMPIRE TRUCK SALES(J CE006199037:01					229229	2022	11	INV P	255.06	083122	292537 HFD UNIT # 18099 SE
002739 EMPIRE TRUCK SALES(J CE006199383:01					229386	2022	11	INV P	140.70	083122	292537 HFD UNIT # 20919 RE
									564.51		
002805 FERRARA FIRE APPARAT INV000W0033405					229303	2022	11	INV P	45.98	083122	292546 HFD UNIT # 20919 RE
003818 O'REILLY AUTO PARTS 0943-412261					229248	2022	11	INV P	232.65	083122	292662 HFD SHOP SUPPLIES F
003818 O'REILLY AUTO PARTS 0943-413896					229439	2022	11	INV P	259.98	083122	292662 HFD MECHANIC SHOP E
									492.63		
004499 UNDERWOOD OUTDOOR PO 115481					229376	2022	11	INV P	24.99	083122	292745 HFD STATION 1 WEEDE

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION		
ACCOUNT TOTAL							1,913.80				
001160	604900			OTHER PROFESSIONAL SERV.							
048975	A & B MECHANICAL DIA	081122-08	229281	2022 11	INV	P	100.00	083122	292452	HFD CUMMINS	SOFTWARE
ACCOUNT TOTAL							100.00				
001160	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0	2022 11	INV	P	215.06	083122	292474	MB2016-287/WIRELESS	
ACCOUNT TOTAL							215.06				
001160	611000			TRAVEL EXPENSE							
049081	JONALYN WALLACE	94370T	0	2022 11	INV	P	184.00	083122	292603	HFD JONALYN	ATTENDING
049083	KIMBA SIMMONS	94670T	0	2022 11	INV	P	336.00	083122	292613	HFD KIMBA	ATTENDING
ACCOUNT TOTAL							520.00				
001160	612000			FREIGHT							
002733	EMERGENCY EQUIPMENT	473396	229339	2022 11	INV	P	33.98	083122	292536	HFD UNIT # 18099	RE
002739	EMPIRE TRUCK SALES(J	CE006198966:01	229111	2022 11	INV	P	20.00	083122	292537	HFD UNIT # 18100	RE
002739	EMPIRE TRUCK SALES(J	CE006199037:01	229229	2022 11	INV	P	15.00	083122	292537	HFD UNIT # 18099	SE
							35.00				
002805	FERRARA FIRE APPARAT	INV000W0033405	229303	2022 11	INV	P	18.00	083122	292546	HFD UNIT # 20919	RE
ACCOUNT TOTAL							86.98				
001160	630000			GAS							
004321	SPIRE	G2022-16 AUG	0	2022 11	INV	P	90.46	083122	292723	SPIRE-VARIOUS DEPT-	
004321	SPIRE	G2022-23 AUG	0	2022 11	INV	P	153.73	083122	292723	SPIRE-23 AUG	
004321	SPIRE	G2022-9/AUG	0	2022 11	INV	P	52.62	083122	292723	SPIRE-VARIOUS DEPAR	
							296.81				
ACCOUNT TOTAL							296.81				
001160	630500			ELECTRICITY							
003700	MS POWER COMPANY	E2022-11-AUG	0	2022 11	INV	P	477.40	083122	292651	MISSISSIPPI POWER-V	
003700	MS POWER COMPANY	E2022-2 AUG	0	2022 11	INV	P	2,258.92	083122	292651	MISSISSIPPI POWER-V	
							2,736.32				
004282	SOUTHERN PINE ELECTR	E2022-08/19/22	0	2022 11	INV	P	100.91	083122	292717	SOUTHERNPINE ELECTR	
ACCOUNT TOTAL							2,837.23				
001160	635000			BUILDING R&M							
002567	COURTNEY'S RESTAURAN	14900	229322	2022 11	INV	P	450.00	083122	292525	HFD STATION 8 ICE M	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT/VENDOR									
003824 OVERHEAD DOOR CO OF	200765		221527	2022 11	INV	P	2,685.00	083122	292669 HFD STATION 6 BAY D
049070 MADDEN JIMMY R	1		229171	2022 11	INV	P	3,500.00	083122	292626 HFD STATION 5 BUILD
		ACCOUNT TOTAL					6,635.00		
001160 638000		FIXED EQUIPMENT R&M							
002957 GROVER BROS RESTAURA	35441		229167	2022 11	INV	P	4,700.00	083122	292555 HFD STATION 8 ICE M
		ACCOUNT TOTAL					4,700.00		
001160 639000		COMMUNICATION EQ. R&M							
002535 COMSOUTH	201673		228298	2022 11	INV	P	3,500.00	083122	292521 HFD RADIO REPAIR FO
		ACCOUNT TOTAL					3,500.00		
001160 641000		OFFICE EQUIPMENT RENT							
004050 RICOH CORP	36934030		0	2022 11	INV	P	192.00	083122	292695 HFD FIRE ADMIN COPI
		ACCOUNT TOTAL					192.00		
001160 642500		CYLINDER RENT							
002071 AIRGAS USA LLC (NORD 9990177630			0	2022 11	INV	P	42.18	083122	292462 HFD LARGE OXYGEN BO
		ACCOUNT TOTAL					42.18		
001160 684000		DUES AND MEMBERSHIPS							
003669 MS ASSN OF CODE ENFO 310			229001	2022 11	INV	P	75.00	083122	292646 HFD INSPECTOR ROBER
003669 MS ASSN OF CODE ENFO 310-1			229058	2022 11	INV	P	75.00	083122	292646 HFD WHITAKER ASSN O
							150.00		
		ACCOUNT TOTAL					150.00		
001160 684500		REGISTRATION FEE/TUITION							
003669 MS ASSN OF CODE ENFO 310-2			229129	2022 11	INV	P	125.00	083122	292646 HFD INSPECTOR ROBER
003669 MS ASSN OF CODE ENFO 310-3			229130	2022 11	INV	P	125.00	083122	292646 HFD INSPECTOR WHITA
							250.00		
		ACCOUNT TOTAL					250.00		
		ORG 001160 TOTAL					22,158.29		
001180		LAND DEVEL.ADM.							
001180 500300		PAPER							
004356 STRICKLAND PAPER COM BH903891-00			228970	2022 11	INV	P	544.64	083122	292725 PAPER SUPPLIES FOR
		ACCOUNT TOTAL					544.64		
001180 601300		DEMOLITION							

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002201	BARNETT CONCRETE	WOR MB 2021-351	DEMO		229274	2022 11	INV	P	28,500.00	083122	292480 MB 2021-351/DEMO 10
003718	MSP ENTERPRISES, LLC	080822-1			0	2022 11	INV	P	6,738.64	083122	292654 MB: 2021-340 DEMO -
ACCOUNT TOTAL									35,238.64		
001180	601800						LOT	CLEARING			
003718	MSP ENTERPRISES, LLC	080222-1			0	2022 11	INV	P	363.54	083122	292654 MB: 2021-340 LOT CL
003718	MSP ENTERPRISES, LLC	081622-0			0	2022 11	INV	P	237.50	083122	292654 MB 2021-340 EXP LOT
003718	MSP ENTERPRISES, LLC	081622-1			0	2022 11	INV	P	231.00	083122	292654 MB 2021-340 - EXP L
									832.04		
ACCOUNT TOTAL									832.04		
001180	606000						TELEPHONE AND TELEGRAPH				
002160	AT&T MOBILITY	287273578351X080822			0	2022 11	INV	P	928.11	083122	292474 MB2016-287/WIRELESS
ACCOUNT TOTAL									928.11		
001180	611000						TRAVEL EXPENSE				
003694	MS MUNICIPAL LEAGUE	34986			0	2022 11	INV	P	300.00	083122	292650 MML 2022 ANNUAL CON
ACCOUNT TOTAL									300.00		
001180	638400						MOTOR VEHICLE EQ. R&M				
004514	UNIVERSITY TIRE & SE	200817			229381	2022 11	INV	P	464.55	083122	292747 UNIT # 14697 TUNE U
ACCOUNT TOTAL									464.55		
001180	684000						DUES AND MEMBERSHIPS				
002934	GREATER HATTIESBURG	7041			0	2022 11	INV	P	470.00	083122	292554 2022 GHBA MEMBERSH
003526	MCBOA-MS COAST BLDG	2022 MCBOA - K BATES			0	2022 11	INV	P	40.00	083122	292636 2022 MCBOA MEMBERSH
ACCOUNT TOTAL									510.00		
ORG 001180 TOTAL									38,817.98		
001190							P/S CONTRAC.SER				
001190	681500						JAIL EXPENSE				
002851	FORREST CTY SUPERVIS	07.01.22-07.30.22			0	2022 11	INV	P	74,869.16	083122	292548 HOUSING OF INMATES
ACCOUNT TOTAL									74,869.16		
ORG 001190 TOTAL									74,869.16		
001191							TRAFFIC MAINT.				
001191	500300						PAPER				
003772	NEWELL PAPER COMPANY	4136652			229150	2022 11	INV	P	92.09	083122	292660 TRAFFIC PAPER, WHI
003772	NEWELL PAPER COMPANY	4136653			229189	2022 11	INV	P	102.36	083122	292660 TRAFFIC PAPER

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
									194.45		
ACCOUNT TOTAL									194.45		
001191	510000				CLEANING/JANITORIAL SPLY						
003772	NEWELL PAPER COMPANY	4136890		229231	2022 11	INV	P	182.49	083122	292660	TRAFFIC GARBAGE BAG
ACCOUNT TOTAL									182.49		
001191	511000				HOUSEHOLD SUPPLIES						
003772	NEWELL PAPER COMPANY	4136890		229231	2022 11	INV	P	65.66	083122	292660	TRAFFIC GARBAGE BAG
ACCOUNT TOTAL									65.66		
001191	546000				MINOR EQUIPMENT						
004504	UNITED FENCE COMPANY	2342		225961	2022 11	INV	P	96.00	083122	292746	TRAFFIC GATE REMOTE
ACCOUNT TOTAL									96.00		
001191	554000				TRAFFIC CONTROL EQ. SPLY.						
004412	TEMPLE INC		inv0221210	227971	2022 11	INV	P	4,854.00	083122	292729	TRAFFIC ALUMINUM PO
004412	TEMPLE INC		INV0221310	227975	2022 11	INV	P	21,342.00	083122	292729	TRAFFIC SCHOOL FLAS
									26,196.00		
004452	TRAFFIC SAFETY WAREH	75182A		228261	2022 11	INV	P	4,511.69	083122	292736	TRAFFIC SPEED HUMP
ACCOUNT TOTAL									30,707.69		
001191	554500				TRAFFIC SIGNS						
004316	SPEEDY PRINTING & SI	30541		229190	2022 11	INV	P	360.00	083122	292722	TRAFFIC STREET MARK
004316	SPEEDY PRINTING & SI	30566		229267	2022 11	INV	P	148.00	083122	292722	PARKING SIGNS
004316	SPEEDY PRINTING & SI	30569		229272	2022 11	INV	P	94.50	083122	292722	STREET MARKERS
004316	SPEEDY PRINTING & SI	30622		229475	2022 11	INV	P	144.00	083122	292722	STREET MARKERS
									746.50		
004555	VULCAN SIGNS		R22197	227142	2022 11	INV	P	3,951.50	083122	292753	TRAFFIC BLANK STRE
ACCOUNT TOTAL									4,698.00		
001191	570000				MTR VEHICLE REP. PTS/SPL						
002168	AUTO ZONE		0139233353	229084	2022 11	INV	P	55.46	083122	292476	TRAFFIC UNIT 11428
003389	LARRY'S WRECKER SERV	9818		229146	2022 11	INV	P	160.00	083122	292619	TRAFFIC TOWING UNIT
003389	LARRY'S WRECKER SERV	9830		229147	2022 11	INV	P	160.00	083122	292619	TRAFFIC TOWING UNIT
									320.00		
003915	PINE BELT CDJR, INC	520337		228966	2022 11	INV	P	3,429.81	083122	292677	TRAFFIC UNIT #20552
003915	PINE BELT CDJR, INC	521210		228925	2022 11	INV	P	1,870.39	083122	292677	TRAFFIC UNIT 18603

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
003915	PINE BELT CDJR, INC	521439	229137	2022 11	INV	P			507.75	083122	292677 TRAFFIC UNIT 20052
									5,807.95		
				ACCOUNT TOTAL					6,183.41		
001191	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0	2022 11	INV	P			71.61	083122	292474 MB2016-287/WIRELESS
				ACCOUNT TOTAL					71.61		
001191	630000			GAS							
004321	SPIRE	G2022-9/AUG	0	2022 11	INV	P			41.45	083122	292723 SPIRE-VARIOUS DEPAR
				ACCOUNT TOTAL					41.45		
001191	638400			MOTOR VEHICLE EQ. R&M							
002535	COMSOUTH	201351	227400	2022 11	INV	P			4,901.00	083122	292521 TRAFFIC UNIT 18603,
				ACCOUNT TOTAL					4,901.00		
001191	643000			UNIFORM RENT							
002471	CINTAS CORPORATION # 4128268960		0	2022 11	INV	P			25.00	083122	292510 TRAFFIC UNIFORM SC
002471	CINTAS CORPORATION # 4128942410		0	2022 11	INV	P			25.00	083122	292510 TRAFFIC UNIFORM SC
									50.00		
				ACCOUNT TOTAL					50.00		
001191	643500			MOP-MAT-RAG RENT							
002471	CINTAS CORPORATION # 4128268714		0	2022 11	INV	P			7.70	083122	292510 TRAFFIC MATS SC/8
002471	CINTAS CORPORATION # 4128942011		0	2022 11	INV	P			7.70	083122	292510 TRAFFIC MATS SC/820
									15.40		
				ACCOUNT TOTAL					15.40		
				ORG 001191	TOTAL				47,207.16		
001201				STREET DIV.							
001201	510000			CLEANING/JANITORIAL SPLY							
003772	NEWELL PAPER COMPANY 4137003		229241	2022 11	INV	P			514.59	083122	292660 BLACK CAN LINERS 38
				ACCOUNT TOTAL					514.59		
001201	540000			ASPHALT & ASPHALT PROD.							
004586	WARREN PAVING INC	61767	0	2022 11	INV	P			176.15	083122	292760 ASPHALT
004586	WARREN PAVING INC	63016	0	2022 11	INV	P			274.02	083122	292760 ASPHALT
004586	WARREN PAVING INC	63185	0	2022 11	INV	P			287.75	083122	292759 ASPHALT
004586	WARREN PAVING INC	63402	0	2022 11	INV	P			218.35	083122	292760 ASPHALT
004586	WARREN PAVING INC	63534	0	2022 11	INV	P			134.05	083122	292760 ASPHALT
004586	WARREN PAVING INC	64279	0	2022 11	INV	P			296.39	083122	292759 ASPHALT

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11													
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION	
004586	WARREN	PAVING	INC	64321	0	2022 11	INV	P	739.49	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64390	0	2022 11	INV	P	219.69	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	64398	0	2022 11	INV	P	296.39	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64409	0	2022 11	INV	P	435.65	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64659	0	2022 11	INV	P	300.11	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64682	0	2022 11	INV	P	450.54	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64687	0	2022 11	INV	P	96.81	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	64716	0	2022 11	INV	P	294.16	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64774	0	2022 11	INV	P	147.45	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	64783	0	2022 11	INV	P	275.54	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	64978	0	2022 11	INV	P	566.15	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65030	0	2022 11	INV	P	299.34	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65069	0	2022 11	INV	P	327.69	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65080	0	2022 11	INV	P	514.45	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65141	0	2022 11	INV	P	316.84	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65162	0	2022 11	INV	P	405.22	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65170	0	2022 11	INV	P	205.11	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65177	0	2022 11	INV	P	292.65	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65233	0	2022 11	INV	P	155.92	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65327	0	2022 11	INV	P	240.97	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65337	0	2022 11	INV	P	445.24	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65365	0	2022 11	INV	P	366.87	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65416	0	2022 11	INV	P	266.81	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65568	0	2022 11	INV	P	225.13	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65714	0	2022 11	INV	P	240.97	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65820	0	2022 11	INV	P	774.59	083122	292759	ASPHALT	
004586	WARREN	PAVING	INC	65845	0	2022 11	INV	P	243.47	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	65918	0	2022 11	INV	P	165.09	083122	292760	ASPHALT	
004586	WARREN	PAVING	INC	67682	0	2022 11	INV	P	450.54	083122	292759	ASPHALT	
									11,145.59				
ACCOUNT TOTAL									11,145.59				
001201	559000	OTHER OPERATING MATL/SPLY											
003543	MCELHANEY	PLUMBING	I	293198	229397	2022 11	INV	P	31.90	083122	292637	SNAKE AWAY	
003543	MCELHANEY	PLUMBING	I	293348	229403	2022 11	INV	P	11.85	083122	292637	DOOR SWEEPS	
									43.75				
ACCOUNT TOTAL									43.75				
001201	560500	ELECTRICAL SUPPLIES											
002901	GILKEY	ELECTRIC	SUPP	361010	229459	2022 11	INV	P	88.00	083122	292552	OUTLET W/TELEPHONE/	
ACCOUNT TOTAL									88.00				
001201	570000	MTR VEHICLE REP. PTS/SPL											
002166	AUTO	ARMATURE	SERVIC	28940	229261	2022 11	INV	P	139.95	083122	292475	UNIT 19292 STARTER	
002166	AUTO	ARMATURE	SERVIC	29013	228364	2022 11	INV	P	118.95	083122	292475	UNIT 16238 ALERNATO	
002166	AUTO	ARMATURE	SERVIC	29014	228365	2022 11	INV	P	159.95	083122	292475	UNIT 16239 MTP65 BA	
002166	AUTO	ARMATURE	SERVIC	29015	228783	2022 11	INV	P	189.95	083122	292475	UNIT 15514 MT27 BAT	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11										
ACCOUNT/VENDOR			INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
								608.80		
002169	AUTOMOTIVE GLASS SPE	W251126	228694	2022 11	INV	P	325.00	083122	292477	UNIT 21732 DOOR LAM
002252	BIG IRON DIESEL REPA	R04954	227845	2022 11	INV	P	504.99	083122	292483	UNIT 16083 TROUBLE
002304	BRACKMAN MOWER WAREH	27163	229008	2022 11	INV	P	250.72	083122	292488	FOR MOWERS W/A CAST
003380	LANCASTER'S MACHINE	25250	228974	2022 11	INV	P	125.00	083122	292618	REMOVE & INSTALL NE
004316	SPEEDY PRINTING & SI	30501	229030	2022 11	INV	P	240.00	083122	292722	LETTERS FOR UNIT 21
004585	WARREN INC	WI-0084657	229240	2022 11	INV	P	53.92	083122	292758	PART/UNIT #16007
048827	CARQUEST	14758-14563	0	2022 11	INV	P	18.70	083122	292502	HYDRAULIC
048827	CARQUEST	14758-15223	229416	2022 11	INV	P	177.33	083122	292502	PART FOR UNIT 16237
								196.03		
ACCOUNT TOTAL								2,304.46		
001201	575500			AGRICLTR	REPAIR	PTS/SPL				
003843	PARISH TRACTOR (HATT	02-206286	0	2022 11	INV	P	264.66	083122	292670	PARTS/UNIT 15999
ACCOUNT TOTAL								264.66		
001201	604900			OTHER	PROFESSIONAL	SERV.				
048836	PAYTON, RAY A.	9845	0	2022 11	INV	P	2,000.00	083122	292672	LAWN SERVICE FOR OL
048966	MARTINEZ DAVID J	100	0	2022 11	INV	P	1,300.00	083122	292632	WEEKLY CUT & MAINTA
048966	MARTINEZ DAVID J	101	0	2022 11	INV	P	5,000.00	083122	292632	SERVICES ON INTERST
								6,300.00		
ACCOUNT TOTAL								8,300.00		
001201	636099			LONG RANGE	PAVING	PLAN				
048682	JOE AULTMAN	A647	228999	2022 11	INV	P	4,800.00	083122	292602	STRIPING WALNUT STR
ACCOUNT TOTAL								4,800.00		
001201	638400			MOTOR VEHICLE	EQ.	R&M				
002035	AAMCO TRANSMISSION (	I145073	229418	2022 11	INV	P	505.90	083122	292454	PARTS/UNIT 17018
ACCOUNT TOTAL								505.90		
ORG 001201 TOTAL								27,966.95		
001202	STREET LIGHTS									
001202	630500			ELECTRICITY						
003700	MS POWER COMPANY	E2022-11 AUG	0	2022 11	INV	P	117.75	083122	292651	MISSISSIPPI POWER E

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11												
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
003700	MS	POWER COMPANY		E2022-11-AUG	0	2022	11	INV	P	2,381.40	083122	292651 MISSISSIPPI POWER-V
003700	MS	POWER COMPANY		E2022-2 AUG	0	2022	11	INV	P	3,487.79	083122	292651 MISSISSIPPI POWER-V
										5,986.94		
003873	PEARL RIVER VALLEY	E	2022-18 AUG		0	2022	11	INV	P	16.78	083122	292673 PEARL RIVER VALLEY
003873	PEARL RIVER VALLEY	E	2022-4-AUG		0	2022	11	INV	P	1,288.95	083122	292673 PEARL RIVER VALLEY
003873	PEARL RIVER VALLEY	E	2022-AUG 18		0	2022	11	INV	P	1,204.41	083122	292673 PEARL RIVER VALLEY
										2,510.14		
004282	SOUTHERN PINE ELECTR	E	2022-08/19/22		0	2022	11	INV	P	66.46	083122	292717 SOUTHERNPINE ELECTR
ACCOUNT TOTAL										8,563.54		
ORG 001202 TOTAL										8,563.54		
001203	ENGR/PUBLIC SER											
001203	501000				OTHER EXPENDABLE		OFF.SPL					
003810	OFFICE PRODUCTS PLUS	980670-0			0	2022	11	INV	P	77.67	083122	292665 OFFICE SUPPLIES - E
003810	OFFICE PRODUCTS PLUS	988742-0			229126	2022	11	INV	P	163.66	083122	292665 OFFICE SUPPLIES - E
003810	OFFICE PRODUCTS PLUS	988742-1			229126	2022	11	INV	P	20.08	083122	292665 OFFICE SUPPLIES - E
										261.41		
ACCOUNT TOTAL										261.41		
001203	508000	COMPUTER SUPPLIES										
002383	C D W GOVERNMENT	CG63609			229422	2022	11	INV	P	359.14	083122	292495 ADOBE SUBSRIPTIONS
ACCOUNT TOTAL										359.14		
001203	599000	OTHER REPAIR/MAINT. SPL.										
003543	MCELHANEY PLUMBING I	293141			229260	2022	11	INV	P	10.00	083122	292637 RESTROOM REPAIRS -
ACCOUNT TOTAL										10.00		
001203	601500	ENGINEERING										
004197	SHOWS DEARMAN & WAIT	22871			0	2022	11	INV	P	5,062.50	083122	292710 MB 2012-1/34 GENERA
ACCOUNT TOTAL										5,062.50		
001203	604900	OTHER PROFESSIONAL SERV.										
004489	U S GEOLOGICAL SURVE	91002872			0	2022	11	INV	P	6,980.00	083122	292743 MB 2021-387 FLOOD M
ACCOUNT TOTAL										6,980.00		
001203	606000	TELEPHONE AND TELEGRAPH										
002160	AT&T MOBILITY	287273578351X080822			0	2022	11	INV	P	214.68	083122	292474 MB2016-287/WIRELESS
ACCOUNT TOTAL										214.68		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001203	684500										
003694	MS MUNICIPAL LEAGUE	33040			0	2022 11	INV	P	305.00	083122	292650 MML REGISTRATION -
REGISTRATION FEE/TUITION											
ACCOUNT TOTAL									305.00		
ORG 001203 TOTAL									13,192.73		
001204											
001204	525000										
004592	WASTE OIL COLLECTORS	0026036			229203	2022 11	INV	P	80.00	083122	292763 P/U USED OIL/PW SHO
GAS AND OIL											
ACCOUNT TOTAL									80.00		
001204	630500										
003700	MS POWER COMPANY	E2022-11-AUG			0	2022 11	INV	P	1,779.96	083122	292651 MISSISSIPPI POWER-V
ELECTRICITY											
ACCOUNT TOTAL									1,779.96		
001204	643000										
002471	CINTAS CORPORATION # 4128942311				0	2022 11	INV	P	61.89	083122	292509 UNIFORM RENTAL/PW S
002471	CINTAS CORPORATION # 44128269013				0	2022 11	INV	P	61.89	083122	292509 UNIFORM RENTAL/PW S
UNIFORM RENT											
ACCOUNT TOTAL									123.78		
ORG 001204 TOTAL									1,983.74		
001205											
001205	501000										
004634	WHEELER'S JANITORIAL	10425			229296	2022 11	INV	P	540.00	083122	292768 INK JET CARTRIDGE I
OTHER EXPENDABLE OFF.SPL											
ACCOUNT TOTAL									540.00		
001205	604900										
048825	MCKINNEY EQUIPMENT	0104186-IN			0	2022 11	INV	P	470.50	083122	292638 LABOR AND FUEL CHAR
OTHER PROFESSIONAL SERV.											
ACCOUNT TOTAL									470.50		
ORG 001205 TOTAL									1,010.50		
001206											
001206	604900										
004197	SHOWS DEARMAN & WAIT	22851			0	2022 11	INV	P	700.00	083122	292710 MB 2012-1/24 ELAINE
DRAINAGE DIV.											
OTHER PROFESSIONAL SERV.											
ACCOUNT TOTAL									700.00		
001206	606000										
002160	AT&T MOBILITY	287273578351X080822			0	2022 11	INV	P	483.35	083122	292474 MB2016-287/WIRELESS
TELEPHONE AND TELEGRAPH											
ACCOUNT TOTAL									483.35		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11				ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
001206	729500							OTHER IMPROVEMENTS					
002803	FERGUSON	WATERWORKS	0752679	228905	2022	11	INV	P	555.45	083122	292545	2	QUOTE 105 SHADY L
002803	FERGUSON	WATERWORKS	0752679-1	0	2022	11	INV	P	11,000.00	083122	292545	REF PO 228905	105 S
									11,555.45				
ACCOUNT TOTAL									11,555.45				
ORG 001206 TOTAL									12,738.80				
001207	CONSTRUCTION												
001207	545000							HAND TOOLS					
004499	UNDERWOOD	OUTDOOR	PO 11579	229377	2022	11	INV	P	408.43	083122	292745	PRESSURE WASHER	TOO
ACCOUNT TOTAL									408.43				
001207	560000							BUILDING MATERIALS & SPLY					
002901	GILKEY	ELECTRIC	SUPP 314011	229463	2022	11	INV	P	294.66	083122	292552	MATERIAL FOR TWIN	F
002901	GILKEY	ELECTRIC	SUPP 347671	225750	2022	11	INV	P	13.00	083122	292552	ELECTRICAL TOOLS	FO
									307.66				
ACCOUNT TOTAL									307.66				
001207	560500							ELECTRICAL SUPPLIES					
002901	GILKEY	ELECTRIC	SUPP 347671	225750	2022	11	INV	P	430.05	083122	292552	ELECTRICAL TOOLS	FO
ACCOUNT TOTAL									430.05				
001207	561000							PLUMBING SUPPLIES					
002714	ECONOMY	SUPPLY CO	081845	229334	2022	11	INV	P	102.00	083122	292534	METAL SHOVELS/CONST	
003772	NEWELL	PAPER COMPANY	4137807	229420	2022	11	INV	P	67.46	083122	292660	DIAL GEL/CONST	DEPT
ACCOUNT TOTAL									169.46				
001207	570000							MTR VEHICLE REP. PTS/SPL					
002565	COURTESY	MOTORS INC	543699	229449	2022	11	INV	P	110.95	083122	292524	FAN BLOWER MOTOR/UN	
004576	WALT MASSEY	CHEVROLE	304084	229385	2022	11	INV	P	183.52	083122	292756	CABLE KIT FOR UNIT#	
ACCOUNT TOTAL									294.47				
001207	606000							TELEPHONE AND TELEGRAPH					
002160	AT&T	MOBILITY	287273578351X080822	0	2022	11	INV	P	123.22	083122	292474	MB2016-287/WIRELESS	
ACCOUNT TOTAL									123.22				
001207	643000							UNIFORM RENT					
002471	CINTAS	CORPORATION #	4128268925	0	2022	11	INV	P	51.33	083122	292509	UNIFORM RENTAL/SC#8	
002471	CINTAS	CORPORATION #	4128942180	0	2022	11	INV	P	51.33	083122	292509	UNIFORM RENTAL/CONS	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11										
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
							102.66			
ACCOUNT TOTAL							102.66			
ORG 001207 TOTAL							1,835.95			
001220 SANITATION DIV.										
001220	501000									
004575	WALMART STORES INC	446377599	228804	2022 11	INV	P	46.46	083122	292755	USB DRIVER FOR R. P
ACCOUNT TOTAL							46.46			
001220 559001 OTHER OPERATING SPLY-RECYCLING										
004316	SPEEDY PRINTING & SI	30540	229187	2022 11	INV	P	265.00	083122	292722	KEEP H`BEAUTIFUL -H
ACCOUNT TOTAL							265.00			
001220 570000 MTR VEHICLE REP. PTS/SPL										
002739	EMPIRE TRUCK SALES(J	CE006198808:01	229159	2022 11	INV	P	171.26	083122	292537	PARTS UNIT 20074
002739	EMPIRE TRUCK SALES(J	CE006199141:01	229271	2022 11	INV	P	221.54	083122	292537	UNIT 20073- AIR CON
							392.80			
004120	SANSOM EQUIPMENT CO	P03321	229362	2022 11	INV	P	413.27	083122	292704	COLOR MONITOR FOR 2
004139	SCOTTS HYDRAULIC SER	51419	229292	2022 11	INV	P	1,159.89	083122	292706	UNIT 20068 CYLINDER
004139	SCOTTS HYDRAULIC SER	51513	229383	2022 11	INV	P	77.98	083122	292706	UNIT 20072 STEEL ME
							1,237.87			
ACCOUNT TOTAL							2,043.94			
001220 604900 OTHER PROFESSIONAL SERV.										
002485	CLARKE POWER SERVICE	S108026247	228536	2022 11	INV	P	1,612.98	083122	292514	TEAR DOWN & REPAIR
049197	OTTO ENVIRONMENTAL S	INV-44626	228546	2022 11	INV	P	18,225.00	083122	292668	TWO QUOTE 95 MIL CA
ACCOUNT TOTAL							19,837.98			
001220 612000 FREIGHT										
002739	EMPIRE TRUCK SALES(J	CE006198808:01	229159	2022 11	INV	P	25.00	083122	292537	PARTS UNIT 20074
004120	SANSOM EQUIPMENT CO	P03321	229362	2022 11	INV	P	24.52	083122	292704	COLOR MONITOR FOR 2
049197	OTTO ENVIRONMENTAL S	INV-44626	228546	2022 11	INV	P	2,179.25	083122	292668	TWO QUOTE 95 MIL CA
ACCOUNT TOTAL							2,228.77			
001220 630500 ELECTRICITY										
003700	MS POWER COMPANY	E2022-11-AUG	0	2022 11	INV	P	671.21	083122	292651	MISSISSIPPI POWER-V

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT TOTAL									671.21		
001220	638400				MOTOR VEHICLE EQ. R&M						
002252	BIG IRON DIESEL REPA	r05055	0	2022	11	INV	P	759.98	083122	292483	SEERVICE CALL UNIT
002485	CLARKE POWER SERVICE	S108026247	228536	2022	11	INV	P	10,518.59	083122	292514	TEAR DOWN & REPAIR
004120	SANSOM EQUIPMENT CO	P03343	229205	2022	11	INV	P	1,747.23	083122	292704	ARM KITS/HARNESS/PR
004120	SANSOM EQUIPMENT CO	W01921	0	2022	11	INV	P	767.07	083122	292704	SERVICE CALL UNIT 2
004120	SANSOM EQUIPMENT CO	W01925	0	2022	11	INV	P	465.00	083122	292704	SERVICE CALL-UNIT 2
									2,979.30		
004465	TRUCKPRO LLC	039-0706978	229279	2022	11	INV	P	2,446.11	083122	292738	BRAKE KITS FOR SANI
ACCOUNT TOTAL									16,703.98		
001220	643000				UNIFORM RENT						
002471	CINTAS CORPORATION #	4128268631	0	2022	11	INV	P	36.78	083122	292509	SC8200044758-SANITA
002471	CINTAS CORPORATION #	4128269271	0	2022	11	INV	P	217.74	083122	292509	SC 8200044758-SANIT
002471	CINTAS CORPORATION #	4128942614	0	2022	11	INV	P	229.98	083122	292509	SC8200044758-SANIT
002471	CINTAS CORPORATION #	418942024	0	2022	11	INV	P	36.78	083122	292509	SC8200044758- SANIT
									521.28		
ACCOUNT TOTAL									521.28		
001220	688000				TIPPING FEES						
002007	98 WASTE LLC	4477	0	2022	11	INV	P	2,254.00	083122	292451	MB 2016-322/ CODE E
004591	WASTE MANAGEMENT OF	0013336-2526-5	0	2022	11	INV	P	3,252.26	083122	292762	MB2003-5/484 SANIT.
ACCOUNT TOTAL									5,506.26		
ORG 001220 TOTAL									47,824.88		
001250	HEALTH DIVISION										
001250	570000				MTR VEHICLE REP. PTS/SPL						
002166	AUTO ARMATURE SERVIC	28931	229249	2022	11	INV	P	164.95	083122	292475	BATTERY/UNIT 18891
002304	BRACKMAN MOWER WAREH	23868	228264	2022	11	INV	P	278.00	083122	292488	MOWERS PULLEY DRIVE
004466	TRUCKS PLUS AUTO ACC	44707	229366	2022	11	INV	P	1,055.00	083122	292739	PARTS/UNIT 21880
ACCOUNT TOTAL									1,497.95		
001250	575500				AGRICLTRL REPAIR PTS/SPL						
002166	AUTO ARMATURE SERVIC	28932	229249	2022	11	INV	P	164.95	083122	292475	BATTERY/UNIT 18891
002304	BRACKMAN MOWER WAREH	I145073	229405	2022	11	INV	P	505.90	083122	292488	LAWN MOWER PARTS
002484	CLARKE MOSQUITO CONT	5102028	229025	2022	11	INV	P	72.49	083122	292513	PART/UNIT 11201

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002484	CLARKE MOSQUITO CONT	5102148	229060	2022 11	INV	P			2,596.09	083122	292513 CONSOLE/UNIT 17874
									2,668.58		
002577	CRAIN TRACTOR & EQUI	CT04444	229212	2022 11	INV	P			1,026.43	083122	292526 PARTS UNIT #15514
	ACCOUNT TOTAL								4,365.86		
001250	643000										
	UNIFORM RENT										
002471	CINTAS CORPORATION # 4128268872		0	2022 11	INV	P			44.38	083122	292509 UNIFORM SC 82000447
002471	CINTAS CORPORATION # 4128268895		0	2022 11	INV	P			56.51	083122	292509 UNIFORM SC 82000447
002471	CINTAS CORPORATION # 4128269043		0	2022 11	INV	P			104.80	083122	292509 UNIFORM SC 82000447
002471	CINTAS CORPORATION # 4128269046		0	2022 11	INV	P			52.81	083122	292509 UNIFORM SC 82000447
									258.50		
	ACCOUNT TOTAL								258.50		
	ORG 001250 TOTAL								6,122.31		
001280											
	HUMAN/SOC.ASST										
001280	604900										
003031	HATTIESBURG ALLIANCE HAPA		0	2022 11	INV	P			10,000.00	083122	292561 2022 PUBLIC ART CON
003653	MORRIS AND MCDANIEL, 22.520		0	2022 11	INV	P			17,500.00	083122	292644 PROMOTIONAL PROCESS
004652	WILLIAMS & ASSOCIATE W1703-03		0	2022 11	INV	P			6,287.20	083122	292771 PROFESSIONAL SERVIC
	ACCOUNT TOTAL								33,787.20		
	ORG 001280 TOTAL								33,787.20		
001402											
	ECONOMIC DEV.										
001402	604900										
047025	POWERS OF MISSISSIPP HPSC #12		0	2022 11	INV	P			11,250.00	083122	292684 MB 2020-139 PUBLIC
	ACCOUNT TOTAL								11,250.00		
001402	7150LP										
002287	BONDED LIGHTNING PRO 843644		0	2022 11	INV	P			9,998.00	083122	292485 MB 2019-292 PUBLIC
	ACCOUNT TOTAL								9,998.00		
	ORG 001402 TOTAL								21,248.00		
001551											
	AIRPORT DIV.										
001551	604900										
003681	MS FIRE & SAFETY OF 78663		0	2022 11	INV	P			459.00	083122	292649 ANNUAL FIRE EXTINGU
	ACCOUNT TOTAL								459.00		
001551	630500										
	ELECTRICITY										

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
003700	MS POWER COMPANY	E2022-11-AUG			0	2022 11	INV	P	1,685.46	083122	292651 MISSISSIPPI POWER-V
							ACCOUNT TOTAL		1,685.46		
						ORG 001551	TOTAL		2,144.46		
001553				CEMETERY DIV							
001553	501000			OTHER EXPENDABLE OFF.SPL							
003809	OFFICE DEPOT INC	259348294001			229200	2022 11	INV	P	113.95	083122	292664 523914-HP61 BLACK I
							ACCOUNT TOTAL		113.95		
001553	535500			WEARING APPAREL							
004012	RED BUD SUPPLY INC	179832			229474	2022 11	INV	P	251.55	083122	292694 RAIN SUITS FOR WORK
							ACCOUNT TOTAL		251.55		
001553	544000			HORT./LANDSCAPING SPLY.							
002083	ALLBRITTON CHAIN SAW	92671			229358	2022 11	INV	P	182.97	083122	292463 CHAINSAW BAR & CHAI
							ACCOUNT TOTAL		182.97		
001553	570000			MTR VEHICLE REP. PTS/SPL							
003034	HATTIESBURG HYDRAULI	96305			229331	2022 11	INV	P	101.65	083122	292562 6G26FJX90S 6G2 HOS
004597	WATERS INTERNATIONAL	08P835443			229324	2022 11	INV	P	183.64	083122	292766 PARTS FOR DUMP TRUC
048827	CARQUEST	14758-14898			229293	2022 11	INV	P	368.50	083122	292502 CFI 85344 LUBE
048827	CARQUEST	14758-15016			229330	2022 11	INV	P	56.56	083122	292502 BEP U1-3 BATTERY-L
									425.06		
							ACCOUNT TOTAL		710.35		
001553	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0			2022 11	INV	P	160.75	083122	292474 MB2016-287/WIRELESS
							ACCOUNT TOTAL		160.75		
001553	611000			TRAVEL EXPENSE							
003702	MS RECREATION AND PA	3627			229404	2022 11	INV	P	80.00	083122	292653 MRPA- CONFERENCE- R
049193	BOURNE DEBORAH	9496-OT			0	2022 11	INV	P	462.94	083122	292487 MRPA CONF 10/10-10/
							ACCOUNT TOTAL		542.94		
001553	612000			FREIGHT							
004012	RED BUD SUPPLY INC	179832			229474	2022 11	INV	P	30.00	083122	292694 RAIN SUITS FOR WORK
							ACCOUNT TOTAL		30.00		
001553	638400			MOTOR VEHICLE EQ. R&M							

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR TYP S	WARRANT	CHECK	DESCRIPTION
004297	SOUTHERN TIRE MART (	2520102655		229503	2022 11 INV P	475.00 083122	292718	REPLACE TWO TIRES O
					ACCOUNT TOTAL	475.00		
001553	638600				CONSTRUCTION EQUIP R&M			
004139	SCOTTS HYDRAULIC SER	51425		229295	2022 11 INV P	6,252.29 083122	292706	REPAIRS TO UNIT #16
					ACCOUNT TOTAL	6,252.29		
001553	638700				AGRICULTURAL EQ. R&M			
003986	PUCKETT MACHINERY CO	P05C5748859		229408	2022 11 INV P	147.71 083122	292686	IGNITION SWITCH FOR
					ACCOUNT TOTAL	147.71		
001553	684500				REGISTRATION FEE/TUITION			
003702	MS RECREATION AND PA	3627		229404	2022 11 INV P	175.00 083122	292653	MRPA- CONFERENCE- R
					ACCOUNT TOTAL	175.00		
					ORG 001553 TOTAL	9,042.51		
001560					PARKING OPER.			
001560	640200				PARKING GARAGE/LOT RENT			
003789	NORFOLK SOUTHERN COR	92752196		0	2022 11 INV P	2,291.90 083122	292661	LEASE FOR RR PKG LO
004530	V F W OF THE US	INV092022		0	2022 11 INV P	75.00 083122	292749	PARKING LEASE AT V
					ACCOUNT TOTAL	2,366.90		
					ORG 001560 TOTAL	2,366.90		
FUND 001 REVENUES					TOTAL:	1,573,565.40		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002300											PKS/REC-RECREATION MAINT. DIV.
002300	510000										CLEANING/JANITORIAL SPLY
048909	BRADY COMPANIES, LLC	7372419	228249	2022 11	INV	P			1,189.36	083122	292489 P&R GRNDS JANITORIA
048909	BRADY COMPANIES, LLC	EL481405	227426	2022 11	INV	P			1,413.65	083122	292489 P&R GRNDS JANITORIA
048909	BRADY COMPANIES, LLC	EL48140501	227426	2022 11	INV	P			38.34	083122	292489 P&R GRNDS JANITORIA
048909	BRADY COMPANIES, LLC	EL483408	227732	2022 11	INV	P			45.44	083122	292489 P&R GRNDS MAINT-CLE
									2,686.79		
									ACCOUNT TOTAL	2,686.79	
002300	525500										LUBRICANTS
002304	BRACKMAN MOWER WAREH	28809	229368	2022 11	INV	P			206.40	083122	292488 P&R GRNDS MAINT-LUB
048554	TWO RIVERS OUTDOORS	900294	229223	2022 11	INV	P			936.00	083122	292741 P&R GRNDS MAINT-FIE
									ACCOUNT TOTAL	1,142.40	
002300	546000										MINOR EQUIPMENT
002492	CLEMTS HARDWARE	129294	229144	2022 11	INV	P			193.50	083122	292515 P&R GRNDS MAINT-MIN
004547	VESELY'S NURSERY	00229400	229400	2022 11	INV	P			262.50	083122	292752 P&R MOBILE ST-PLANT
									ACCOUNT TOTAL	456.00	
002300	551000										RECREATIONAL SUPPLIES
048554	TWO RIVERS OUTDOORS	900294	229223	2022 11	INV	P			380.00	083122	292741 P&R GRNDS MAINT-FIE
									ACCOUNT TOTAL	380.00	
002300	559000										OTHER OPERATING MATL/SPLY
002642	DEERE & COMPANY	P81607	229451	2022 11	INV	P			74.65	083122	292530 P&R GATOR-BELT
									ACCOUNT TOTAL	74.65	
002300	560500										ELECTRICAL SUPPLIES
003208	IRBY, STUART C CO	S012898667.001	227105	2022 11	INV	P			2,194.50	083122	292568 P&R TATUM TENNIS-CO
									ACCOUNT TOTAL	2,194.50	
002300	565000										PAINT AND PAINTING SPLY.
004176	SHERWIN-WILLIAMS COM	9336-6	229312	2022 11	INV	P			1,887.50	083122	292709 P&R TATUM SOCCER-BA
									ACCOUNT TOTAL	1,887.50	
002300	570000										MTR VEHICLE REP. PTS/SPL
002166	AUTO ARMATURE SERVIC	28862	229308	2022 11	INV	P			199.95	083122	292475 P&R TRK UNIT 18560-
003246	JERRY'S AUTOMOTIVE R	21873	229327	2022 11	INV	P			180.90	083122	292600 P&R TRK UNIT 18561-
004299	SOUTHERN TIRE MART L	2520100422	229141	2022 11	INV	P			620.00	083122	292719 P&R TRK UNIT 18559-

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
004299	SOUTHERN TIRE MART L	2520101049	229283	2022 11	INV	P			15.95 083122	292719	P&R TRK UNIT 9603-B
									635.95		
				ACCOUNT TOTAL					1,016.80		
002300	575500			AGRICLTRL REPAIR	PTS/SPL						
002083	ALLBRITTON CHAIN SAW	12582	229253	2022 11	INV	P			88.43 083122	292463	P&R GRNDS MAINT WEE
002304	BRACKMAN MOWER WAREH	28405	229309	2022 11	INV	P			513.51 083122	292488	P&R MOWER 14980-SER
002304	BRACKMAN MOWER WAREH	28406	229285	2022 11	INV	P			270.51 083122	292488	P&R MOWER 20822-SER
002304	BRACKMAN MOWER WAREH	28407	229286	2022 11	INV	P			122.46 083122	292488	P&R MOWER 21451-SER
002304	BRACKMAN MOWER WAREH	28809	229368	2022 11	INV	P			432.50 083122	292488	P&R GRNDS MAINT-LUB
									1,338.98		
003515	MAULDIN COMPANY	58631	229158	2022 11	INV	P			107.17 083122	292635	P&R BUSHHOG-REPAIR
003515	MAULDIN COMPANY	58779	229372	2022 11	INV	P			246.79 083122	292635	P&R BUSHHOG-REPL TI
									353.96		
004299	SOUTHERN TIRE MART L	2520099993	229098	2022 11	INV	P			107.20 083122	292719	P&R UNIT 21755-TIRE
				ACCOUNT TOTAL					1,888.57		
002300	599000			OTHER REPAIR/MAINT.	SPL.						
003843	PARISH TRACTOR (HATT	P02339	229367	2022 11	INV	P			23.66 083122	292670	P&R TRACTOR 21788-W
				ACCOUNT TOTAL					23.66		
002300	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0	2022 11	INV	P			508.73 083122	292474	MB2016-287/WIRELESS
				ACCOUNT TOTAL					508.73		
002300	612000			FREIGHT							
004281	SOUTHERN ON SITE STO	I1318	228984	2022 11	INV	P			63.00 083122	292716	P&R EASTSIDE PARK-R
				ACCOUNT TOTAL					63.00		
002300	630500			ELECTRICITY							
003700	MS POWER COMPANY	E2022-2 AUG	0	2022 11	INV	P			56.54 083122	292651	MISSISSIPPI POWER-V
				ACCOUNT TOTAL					56.54		
002300	638000			FIXED EQUIPMENT R&M							
003242	JEFCOAT FENCE OF HAT	0023389	0	2022 11	INV	P			250.00 083122	292597	P&R DOG PARK-EMER S
				ACCOUNT TOTAL					250.00		
002300	638400			MOTOR VEHICLE EQ. R&M							
002166	AUTO ARMATURE SERVIC	29019	229409	2022 11	INV	P			189.95 083122	292475	P&R TRK UNIT 21327-

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11										
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
002169	AUTOMOTIVE GLASS SPE	I252044	229480	2022 11	INV	P	340.00 083122	292477	P&R TRK UNIT	18560-
003246	JERRY'S AUTOMOTIVE R	21873	229327	2022 11	INV	P	847.58 083122	292600	P&R TRK UNIT	18561-
004299	SOUTHERN TIRE MART L	2520099851	229104	2022 11	INV	P	19.95 083122	292719	P&R TRK UNIT	21613-
004299	SOUTHERN TIRE MART L	2520100422	229141	2022 11	INV	P	107.00 083122	292719	P&R TRK UNIT	18559-
004299	SOUTHERN TIRE MART L	2520100557	229170	2022 11	INV	P	301.42 083122	292719	P&R TRK UNIT	21613-
004299	SOUTHERN TIRE MART L	2520101049	229283	2022 11	INV	P	100.00 083122	292719	P&R TRK UNIT	9603-B
							528.37			
ACCOUNT TOTAL							1,905.90			
002300	638700	AGRICULTURAL EQ. R&M								
002304	BRACKMAN MOWER WAREH	28405	229309	2022 11	INV	P	180.00 083122	292488	P&R MOWER	14980-SER
002304	BRACKMAN MOWER WAREH	28406	229285	2022 11	INV	P	220.00 083122	292488	P&R MOWER	20822-SER
002304	BRACKMAN MOWER WAREH	28407	229286	2022 11	INV	P	65.65 083122	292488	P&R MOWER	21451-SER
002304	BRACKMAN MOWER WAREH	28724	229328	2022 11	INV	P	1,015.81 083122	292488	P&R MOWER UNIT	2074
002304	BRACKMAN MOWER WAREH	28725	229369	2022 11	INV	P	79.58 083122	292488	P&R MOWER	21597-SER
							1,561.04			
003843	PARISH TRACTOR (HATT	P02339	229367	2022 11	INV	P	84.57 083122	292670	P&R TRACTOR	21788-W
004299	SOUTHERN TIRE MART L	2520099993	229098	2022 11	INV	P	20.00 083122	292719	P&R UNIT	21755-TIRE
ACCOUNT TOTAL							1,665.61			
002300	639000	COMMUNICATION EQ. R&M								
002535	COMSOUTH	201432	229284	2022 11	INV	P	136.50 083122	292521	P&R RADIO UNIT	1506
ACCOUNT TOTAL							136.50			
002300	643000	UNIFORM RENT								
002471	CINTAS CORPORATION #	4128023417	0	2022 11	INV	P	169.17 083122	292509	P&R REC MAINT UNIFO	
002471	CINTAS CORPORATION #	4128699592	0	2022 11	INV	P	169.17 083122	292509	P&R GRNDS MAINT- UN	
002471	CINTAS CORPORATION #	4129381348	0	2022 11	INV	P	170.50 083122	292509	P&R GRNDS MAINT UNI	
							508.84			
ACCOUNT TOTAL							508.84			
002300	644900	OTHER RENT								
002471	CINTAS CORPORATION #	4128023008	0	2022 11	INV	P	24.25 083122	292510	P&R REC MAINT MAT R	
002471	CINTAS CORPORATION #	4128699293	0	2022 11	INV	P	24.25 083122	292510	P&R GRNDS MAINT MAT	
002471	CINTAS CORPORATION #	4129380941	0	2022 11	INV	P	29.11 083122	292509	P&R GRNDS MAINT MAT	
							77.61			
004281	SOUTHERN ON SITE STO	I1318	228984	2022 11	INV	P	250.00 083122	292716	P&R EASTSIDE PARK-R	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT/VENDOR									
047043	PORTABLE TOILETS	97244	225799	2022 11	INV	P	1,885.00 083122	292682	P&R TSP-TWO QUOTE P
						ACCOUNT TOTAL	2,212.61		
002300	684500					REGISTRATION FEE/TUITION			
003702	MS RECREATION AND PA 9500		0	2022 11	INV	P	255.00 083122	292653	P&R MRPA REGISTRATI
						ACCOUNT TOTAL	255.00		
002300	699900					SERVICES NOT SPECIFIED			
002567	COURTNEY'S RESTAURAN 14929		229483	2022 11	INV	P	809.41 083122	292525	P&R TATUM GRNDS OFF
002905	GILLILANDS ELECTRONI 8655		229310	2022 11	INV	P	90.00 083122	292553	P&R TATUM REC OFFIC
003681	MS FIRE & SAFETY OF 78678		0	2022 11	INV	P	438.00 083122	292649	P&R GRNDS MAINT EXT
004281	SOUTHERN ON SITE STO 97256		229211	2022 11	INV	P	240.00 083122	292716	P&R CHAIN PARK-PORT
						ACCOUNT TOTAL	1,577.41		
						ORG 002300 TOTAL	20,891.01		
002315						PKS/REC-REC.ADMIN/COM.REL.			
002315	551000					RECREATIONAL SUPPLIES			
003921	PINE BELT TROPHY 000 NET 10		229051	2022 11	INV	P	120.00 083122	292680	SOFTBALL ANDKICKBAL
003975	MS PRISON INDUST 125353		228747	2022 11	INV	P	4,738.00 083122	292652	PARK BENCHES AND RE
004575	WALMART STORES INC 457931222		228552	2022 11	INV	P	268.56 083122	292755	WALMART CARD NOT TO
						ACCOUNT TOTAL	5,126.56		
002315	603400					OFFICIALS			
004221	SMITH, CARLTON L 8.19.22		0	2022 11	INV	P	75.00 083122	292712	HPR CONTRACT LABOR
004416	TERRELL, WINSTON 8.19.22		0	2022 11	INV	P	175.00 083122	292731	HPR CONTRACT LABOR
004432	THOMPSON, JESSE 8.19.22		0	2022 11	INV	P	225.00 083122	292734	HPR CONTRACTR LABOR
004460	TROTTER, COREY 8.19.22		0	2022 11	INV	P	225.00 083122	292737	HPR CONTRACT LABOR
047595	MARTIN DERRICAS 8.19.22		0	2022 11	INV	P	225.00 083122	292630	HPR CONTRACT LABOR
048590	CRAWFORD OTTO 8.19.22		0	2022 11	INV	P	150.00 083122	292527	HPR CONTRACT LABOR
048772	LEE ANTHONY 8.19.22		0	2022 11	INV	P	175.00 083122	292620	HPR CONTRACT LABOR
						ACCOUNT TOTAL	1,250.00		
002315	604900					OTHER PROFESSIONAL SERV.			
002540	CONNER, TOBARRA 8.19.22		0	2022 11	INV	P	90.00 083122	292522	HPR CONTRACT LABOR

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION	
002965	GUTHRIE, JONI S	8.19.22	0	2022 11	INV	P	180.00	083122	292556	HPR CONTRACT	LABOR
003313	KETTLEY, ANNETTE	8.19.22	0	2022 11	INV	P	90.00	083122	292611	HPR CONTRACT	LABOR
003508	MARTIN, MAGDALINE	8.19.22	0	2022 11	INV	P	96.00	083122	292631	HPR CONTRACT	LABOR
003958	POWELL, RANDY	8.19.22	0	2022 11	INV	P	270.00	083122	292683	HPR CONTRACT	LABOR
047494	WISEMAN ERIC	8.19.22	0	2022 11	INV	P	70.00	083122	292772	HPR CONTRACT	LABOR
048422	RAY NANCY REBEKAH	8.19.22	0	2022 11	INV	P	150.00	083122	292692	HPR CONTRACT	LABOR
049069	CASPER JOSHUA J	8.19.22	0	2022 11	INV	P	40.00	083122	292503	HPR CONTRACT	LABOR
ACCOUNT TOTAL							986.00				
002315	604919			OTH PROF SERV-ART CENTER							
047117	ABIGAIL L ALLEN	08222022	0	2022 11	INV	P	225.00	083122	292455	HPR FREE ART CLASSE	
047971	BRETT CUMMINS	08222022	0	2022 11	INV	P	700.00	083122	292490	ART CLASSES INSTRU	
ACCOUNT TOTAL							925.00				
002315	611000			TRAVEL EXPENSE							
049131	ARMSTRONG KORI	8/16/22	0	2022 11	INV	P	1,291.70	083122	292470	TRAVEL ADVANCE FOR	
ACCOUNT TOTAL							1,291.70				
002315	612000			FREIGHT							
003975	MS PRISON INDUST	125353	228747	2022 11	INV	P	150.00	083122	292652	PARK BENCHES AND RE	
ACCOUNT TOTAL							150.00				
002315	630000			GAS							
004321	SPIRE	G2022-9/AUG	0	2022 11	INV	P	26.31	083122	292723	SPIRE-VARIOUS DEPAR	
ACCOUNT TOTAL							26.31				
002315	630500			ELECTRICITY							
003700	MS POWER COMPANY	E2022-11-AUG	0	2022 11	INV	P	6,182.41	083122	292651	MISSISSIPPI POWER-V	
003700	MS POWER COMPANY	E2022-2 AUG	0	2022 11	INV	P	1,379.23	083122	292651	MISSISSIPPI POWER-V	
							7,561.64				
ACCOUNT TOTAL							7,561.64				
ORG 002315 TOTAL							17,317.21				
FUND 002 PARKS & RECREATION FUND							TOTAL:	38,208.22			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
009660											
009660	501000										
		003721	MULTITECH	OFFICE	MAC	22080098	229114	2022 11 INV P	72.95	083122	292655 OFFICE SUPPLIES WAT
		003721	MULTITECH	OFFICE	MAC	22080260	229114	2022 11 INV P	72.95	083122	292655 OFFICE SUPPLIES WAT
									145.90		
		003772	NEWELL	PAPER	COMPANY	4136435	229112	2022 11 INV P	39.81	083122	292660 MINOR OFFICE SUPPLI
		004327	STANDARD	OFFICE	SUPP	H07452-00	229244	2022 11 INV P	287.99	083122	292724 OFFICE SUPPLIES WAT
		004327	STANDARD	OFFICE	SUPP	H07453-00	229244	2022 11 INV P	147.76	083122	292724 OFFICE SUPPLIES WAT
		004327	STANDARD	OFFICE	SUPP	H07454-00	229244	2022 11 INV P	36.94	083122	292724 OFFICE SUPPLIES WAT
		004327	STANDARD	OFFICE	SUPP	H07553-00	229244	2022 11 INV P	175.80	083122	292724 OFFICE SUPPLIES WAT
									648.49		
		004495	ULINE			152510956	229288	2022 11 INV P	432.78	083122	292744 OFFICE EQUIPMENT AN
								ACCOUNT TOTAL	1,266.98		
009660	502000										
		002442	CENTRAL	PIPE	SUPPLY	S100291468.001	227322	2022 11 INV P	482.92	083122	292505 MINOR EQUIPMENT WAT
		003809	OFFICE	DEPOT	INC	260633381001	229246	2022 11 INV P	549.33	083122	292664 MINOR OFFICE FURNIT
		003809	OFFICE	DEPOT	INC	260633383001	229246	2022 11 INV P	979.97	083122	292664 MINOR OFFICE FURNIT
									1,529.30		
								ACCOUNT TOTAL	2,012.22		
009660	546000										
		003004	HARBOR	FREIGHT	TOOLS	991760	229345	2022 11 INV P	263.94	083122	292560 MINOR EQUIPMENT WAT
		048827	CARQUEST			14758-15042	229347	2022 11 INV P	82.29	083122	292502 MOTOR VEHICLE SUPPL
								ACCOUNT TOTAL	346.23		
009660	604900										
		002100	AMERICAN	AIR	SPECIAL	115763	0	2022 11 INV P	627.83	083122	292465 REPAIR TO A/C WATER
		002166	AUTO	ARMATURE	SERVIC	28897	229380	2022 11 INV P	164.95	083122	292475 REPAIR TO UNIT 2044
		002181	BADGER	METER	INC	80104666	0	2022 11 INV P	3,039.03	083122	292478 MB 2018-832 BEACON
		002442	CENTRAL	PIPE	SUPPLY	S100287878.001	226895	2022 11 INV P	4,042.50	083122	292505 BADGER INTERFACE CO
		002442	CENTRAL	PIPE	SUPPLY	S100305045.001	229115	2022 11 INV P	300.00	083122	292505 MOBILE USER WATER B
									4,342.50		
		002471	CINTAS	CORPORATION	#	4128943790	0	2022 11 INV P	39.20	083122	292509 S/C 8200044758 UNIF

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002665	DIXIE COMMUNITY UTIL	DX	081122		0	2022 11	INV	P	420.00 083122	292531	SEWER READS JULY 22
003861	PATTERSON AUTO ELECT		81569		229410	2022 11	INV	P	832.09 083122	292671	REPAIR TO UNIT 2044
004003	RAWLS SPRINGS UTILIT	RS	072022		0	2022 11	INV	P	208.00 083122	292691	SEWER READS JULY 22
004316	SPEEDY PRINTING & SI		3055		229236	2022 11	INV	P	120.00 083122	292722	2022 FORD MAVERICK
004466	TRUCKS PLUS AUTO ACC		44687		229237	2022 11	INV	P	578.00 083122	292739	TOOL BOXES UNIT 218
004594	WATER COMPANY OF AME		19		0	2022 11	INV	P	19,249.21 083122	292765	REVIEW OF UNBILLED
047562	ENCO UTILITY		23111		0	2022 11	INV	P	601.89 083122	292538	MB 2020-835 RT 2 BI
048973	NAVIGATION ELECTRONI		0087012-IN		228839	2022 11	INV	P	2,650.00 083122	292659	TRIMBLE YEARLY SUBS
ACCOUNT TOTAL									32,872.70		
009660	606000					TELEPHONE AND TELEGRAPH					
002160	AT&T MOBILITY		287273578351X080822		0	2022 11	INV	P	591.72 083122	292474	MB2016-287/WIRELESS
ACCOUNT TOTAL									591.72		
009660	607000					POSTAGE					
047562	ENCO UTILITY		23111		0	2022 11	INV	P	1,470.23 083122	292538	MB 2020-835 RT 2 BI
047562	ENCO UTILITY		INC55393		0	2022 11	INV	P	1,567.42 083122	292538	MB 2020-835 RT 2 BI
047562	ENCO UTILITY		INV55260		0	2022 11	INV	P	3,059.08 083122	292538	MB 2020-835 RT 1 BI
									6,096.73		
ACCOUNT TOTAL									6,096.73		
009660	620000					PRINTING					
047562	ENCO UTILITY		INC55393		0	2022 11	INV	P	603.01 083122	292538	MB 2020-835 RT 2 BI
047562	ENCO UTILITY		INV55260		0	2022 11	INV	P	1,157.06 083122	292538	MB 2020-835 RT 1 BI
									1,760.07		
ACCOUNT TOTAL									1,760.07		
009660	630000					GAS					
004321	SPIRE		G2022-16 AUG		0	2022 11	INV	P	21.26 083122	292723	SPIRE-VARIOUS DEPT-
ACCOUNT TOTAL									21.26		
009660	630500					ELECTRICITY					
003700	MS POWER COMPANY		E2022-11-AUG		0	2022 11	INV	P	779.38 083122	292651	MISSISSIPPI POWER-V
ACCOUNT TOTAL									779.38		
009660	643000					UNIFORM RENT					
002471	CINTAS CORPORATION #		4128270567		0	2022 11	INV	P	39.20 083122	292509	S/C 8200044758 UNIF

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
					ACCOUNT TOTAL			39.20			
					ORG 009660 TOTAL			45,786.49			
009672 W&S O&M-WATER TRANSMISSION DIV											
009672 541500 SAND,CLAY,GRVL,FILL DIRT											
004586 WARREN PAVING INC 66178				229363	2022	11	INV	P	253.17	083122	292760 HOT MIX ASPHALT FOR
					ACCOUNT TOTAL			253.17			
009672 545000 HAND TOOLS											
003380 LANCASTER'S MACHINE 25269				229046	2022	11	INV	P	600.00	083122	292618 FABRICATE TOOLS --
					ACCOUNT TOTAL			600.00			
009672 561000 PLUMBING SUPPLIES											
002442 CENTRAL PIPE SUPPLY S100289184-001				227315	2022	11	INV	P	8,206.00	083122	292505 BADGER METERS READE
002442 CENTRAL PIPE SUPPLY S100305809-001				229235	2022	11	INV	P	526.41	083122	292505 WAREHOUSE STOCK FOR
002442 CENTRAL PIPE SUPPLY S10032912-002				228908	2022	11	INV	P	31.41	083122	292505 WAREHOUSE STOCK FOR
								8,763.82			
002559 CORE & MAIN (HD SUPP R323223				229044	2022	11	INV	P	1,554.42	083122	292523 WAREHOUSE STOCK FOR
002559 CORE & MAIN (HD SUPP R337358				229140	2022	11	INV	P	485.52	083122	292523 WAREHOUSE STOCK FOR
								2,039.94			
					ACCOUNT TOTAL			10,803.76			
009672 570000 MTR VEHICLE REP. PTS/SPL											
002700 EAGLE TIRE AND SERVI INV066492				229243	2022	11	INV	P	149.75	083122	292533 TIRE FOR UNIT # 204
048827 CARQUEST 14758-12888				0	2022	11	INV	P	50.84	083122	292502 PO# 228558
048827 CARQUEST 14758-13153				0	2022	11	INV	P	33.84	083122	292502 BRAKE PADS 6/30 PO#
048827 CARQUEST 14758-14678				0	2022	11	INV	P	46.37	083122	292502 PO# 229199
048827 CARQUEST 14758-15038				229302	2022	11	INV	P	22.58	083122	292502 REPAIR PARTS FOR UN
048827 CARQUEST 14758-15100				229326	2022	11	INV	P	128.50	083122	292502 REPAIR PARTS FOR UN
								282.13			
					ACCOUNT TOTAL			431.88			
009672 599000 OTHER REPAIR/MAINT. SPL.											
003987 PUCKETT RENTS 912069				229426	2022	11	INV	P	328.70	083122	292687 REPAIR STIHL TS420
003987 PUCKETT RENTS 915521-0001				229473	2022	11	INV	P	399.98	083122	292687 CHOPSAW BLADES FOR
								728.68			
					ACCOUNT TOTAL			728.68			
009672 604900 OTHER PROFESSIONAL SERV.											

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002380	BYRD, WADE J.	BYRD082022		0	2022 11	INV	P	3,000.00	083122	292494 OPERATOR OF RECORD,
002471	CINTAS CORPORATION # 4128271109			0	2022 11	INV	P	278.30	083122	292509 SC#8200044758- UNIF
ACCOUNT TOTAL								3,278.30		
009672	636000									STREETS & STRUCTURES R&M
003649	C J MORGAN INC	2022031		0	2022 11	INV	P	219,887.56	083122	292496 MB2020-179:WATER RE
003649	C J MORGAN INC	2022034		0	2022 11	INV	P	127,600.76	083122	292496 MB2020-179:WATER RE
003649	C J MORGAN INC	2022041		0	2022 11	INV	P	214,406.45	083122	292496 MB2020-179:WATER RE
								561,894.77		
ACCOUNT TOTAL								561,894.77		
009672	638400									MOTOR VEHICLE EQ. R&M
002700	EAGLE TIRE AND SERVI	INV066492		229243	2022 11	INV	P	20.00	083122	292533 TIRE FOR UNIT # 204
ACCOUNT TOTAL								20.00		
ORG 009672 TOTAL								578,010.56		
009673										W&S O&M-WATER PLANT DIVISION
009673	559000									OTHER OPERATING MATL/SPLY
002901	GILKEY ELECTRIC SUPP	360705		229373	2022 11	INV	P	84.00	083122	292552 14WATT LED BULBS FO
ACCOUNT TOTAL								84.00		
009673	570000									MTR VEHICLE REP. PTS/SPL
002166	AUTO ARMATURE SERVIC	28930		229232	2022 11	INV	P	199.95	083122	292475 BATTERY FOR UNIT #
002700	EAGLE TIRE AND SERVI	INV066084		229036	2022 11	INV	P	2,145.62	083122	292533 TIRES, BRAKES,CNTL
004316	SPEEDY PRINTING & SI	30568		229273	2022 11	INV	P	60.00	083122	292722 LETTERING FOR UNIT
ACCOUNT TOTAL								2,405.57		
009673	599000									OTHER REPAIR/MAINT. SPL.
003348	L & A CONTRACTING CO	727-2022		229003	2022 11	INV	P	755.20	083122	292617 CRUSHED CONCRETE (I
ACCOUNT TOTAL								755.20		
009673	604900									OTHER PROFESSIONAL SERV.
002471	CINTAS CORPORATION # 4128270735			0	2022 11	INV	P	23.31	083122	292510 SC#8200044758- MOPS
002471	CINTAS CORPORATION # 4128943871			0	2022 11	INV	P	23.31	083122	292510 SC#8200044758- MOPS
002471	CINTAS CORPORATION # 4128944504			0	2022 11	INV	P	326.44	083122	292509 SC#8200044758- UNIF
								373.06		
ACCOUNT TOTAL								373.06		
009673	630000									GAS

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
004321	SPIRE		G2022-9/AUG		0	2022 11	INV	P	26.31	083122	292723 SPIRE-VARIOUS DEPAR
ACCOUNT TOTAL									26.31		
009673	630500							ELECTRICITY			
003700	MS POWER COMPANY		E2022-11-AUG		0	2022 11	INV	P	28,283.64	083122	292651 MISSISSIPPI POWER-V
003700	MS POWER COMPANY		E2022-2 AUG		0	2022 11	INV	P	27,363.15	083122	292651 MISSISSIPPI POWER-V
									55,646.79		
003873	PEARL RIVER VALLEY E		2022-4-AUG		0	2022 11	INV	P	90.47	083122	292673 PEARL RIVER VALLEY
ACCOUNT TOTAL									55,737.26		
009673	638400							MOTOR VEHICLE EQ. R&M			
002035	AAMCO TRANSMISSION (		I143911		0	2022 11	INV	P	1,363.08	083122	292454 PO#222422- REPAIRS
002700	EAGLE TIRE AND SERVI		INV066084		229036	2022 11	INV	P	946.84	083122	292533 TIRES, BRAKES,CNTL
ACCOUNT TOTAL									2,309.92		
009673	639400							DISINFECT./EXTERMINATION			
003040	HAVARD PEST CONTROL		1994386		0	2022 11	INV	P	250.00	083122	292563 HAVARD PEST CONTROL
ACCOUNT TOTAL									250.00		
ORG 009673 TOTAL									61,941.32		
009676								W&S O&M-SEWER DIVISION			
009676	561000							PLUMBING SUPPLIES			
004300	SOUTHERN WATERWORKS		91795		229370	2022 11	INV	P	4,941.49	083122	292720 WAREHOUSE STOCK FOR
ACCOUNT TOTAL									4,941.49		
009676	570000							MTR VEHICLE REP. PTS/SPL			
002166	AUTO ARMATURE SERVIC		28948		229239	2022 11	INV	P	69.95	083122	292475 BATTERY FOR ASSET #
003861	PATTERSON AUTO ELECT		81550		229297	2022 11	INV	P	53.26	083122	292671 REPAIRS TO UNIT # 1
003861	PATTERSON AUTO ELECT		81551		229300	2022 11	INV	P	68.06	083122	292671 REPAIRS TO UNIT # 2
									121.32		
048827	CARQUEST		14758-15450		229460	2022 11	INV	P	165.28	083122	292502 REPAIR PARTS FOR UN
ACCOUNT TOTAL									356.55		
009676	599000							OTHER REPAIR/MAINT. SPL.			
003543	MCELHANEY PLUMBING I		293376		229428	2022 11	INV	P	83.40	083122	292637 WASP SPRAY FOR SEWE
003772	NEWELL PAPER COMPANY		4136864		229201	2022 11	INV	P	172.26	083122	292660 38X58 BLK 1.7MIL LI
ACCOUNT TOTAL									255.66		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION	
009676	630500	ELECTRICITY									
003700	MS POWER COMPANY	E2022-11-AUG		0	2022	11	INV P	4,923.84	083122	292651	MISSISSIPPI POWER-V
003700	MS POWER COMPANY	E2022-2 AUG		0	2022	11	INV P	691.22	083122	292651	MISSISSIPPI POWER-V
								5,615.06			
004282	SOUTHERN PINE ELECTR	E2022-08/19/22		0	2022	11	INV P	731.83	083122	292717	SOUTHERNPINE ELECTR
ACCOUNT TOTAL								6,346.89			
009676	636000	STREETS & STRUCTURES R&M									
004058	RJM MCQUEEN CONTRACT	2653		0	2022	11	INV P	78,662.70	083122	292696	MB2020-179:SEWER RE
004058	RJM MCQUEEN CONTRACT	2664		0	2022	11	INV P	109,177.48	083122	292696	MB2020-179:SEWER RE
004058	RJM MCQUEEN CONTRACT	2665		0	2022	11	INV P	5,636.80	083122	292696	MB2020-179:SEWER RE
004058	RJM MCQUEEN CONTRACT	2666		0	2022	11	INV P	4,153.00	083122	292696	MB2020-179:SEWER RE
004058	RJM MCQUEEN CONTRACT	2667		0	2022	11	INV P	7,902.30	083122	292696	MB2020-179:SEWER RE
004058	RJM MCQUEEN CONTRACT	2668		0	2022	11	INV P	8,473.30	083122	292696	MB2020-179:SEWER RE
								214,005.58			
ACCOUNT TOTAL								214,005.58			
009676	638400	MOTOR VEHICLE EQ. R&M									
003861	PATTERSON AUTO ELECT	81550		229297	2022	11	INV P	427.50	083122	292671	REPAIRS TO UNIT # 1
003861	PATTERSON AUTO ELECT	81551		229300	2022	11	INV P	332.50	083122	292671	REPAIRS TO UNIT # 2
								760.00			
ACCOUNT TOTAL								760.00			
009676	638600	CONSTRUCTION EQUIP R&M									
002083	ALLBRITTON CHAIN SAW	13555		228857	2022	11	INV P	642.56	083122	292463	REPAIRS TO ASSET #
002083	ALLBRITTON CHAIN SAW	13667		229142	2022	11	INV P	555.00	083122	292463	REPAIRS TO ASSET #
002083	ALLBRITTON CHAIN SAW	13743		229204	2022	11	INV P	478.50	083122	292463	REPAIRS TO ASSET #
002083	ALLBRITTON CHAIN SAW	13772		229338	2022	11	INV P	62.99	083122	292463	REPAIRS TO STIHL HT
002083	ALLBRITTON CHAIN SAW	13826		229389	2022	11	INV P	96.83	083122	292463	REPAIRS ASSET # 209
002083	ALLBRITTON CHAIN SAW	13827		229391	2022	11	INV P	73.31	083122	292463	REPAIRS ASSET # 202
002083	ALLBRITTON CHAIN SAW	13833		229390	2022	11	INV P	76.66	083122	292463	REPAIRS ASSET # 216
002083	ALLBRITTON CHAIN SAW	13837		229393	2022	11	INV P	68.66	083122	292463	REPAIRS ASSET # 216
002083	ALLBRITTON CHAIN SAW	13838		229392	2022	11	INV P	96.83	083122	292463	REPAIRS TO EXMARK L
								2,151.34			
004499	UNDERWOOD OUTDOOR PO	114771		0	2022	11	INV P	56.75	083122	292745	CHOPSAW REPAIRS FOR
ACCOUNT TOTAL								2,208.09			
ORG 009676 TOTAL								228,874.26			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
009677											
009677	513000										
		002443	CERTIFIED LABORATORI	7898356	229138	2022	11	INV P	31,525.00	083122	292506 EMERGE, CHERRYFLO, DR
		002443	CERTIFIED LABORATORI	7898969	229262	2022	11	INV P	10,731.60	083122	292506 E-100 FOR TREATMENT
									42,256.60		
									ACCOUNT TOTAL		
									42,256.60		
009677	630500										
		003700	MS POWER COMPANY	E2022-11-AUG	0	2022	11	INV P	44,816.90	083122	292651 MISSISSIPPI POWER-V
		003700	MS POWER COMPANY	E2022-2 AUG	0	2022	11	INV P	17,279.29	083122	292651 MISSISSIPPI POWER-V
									62,096.19		
		003873	PEARL RIVER VALLEY E	2022-18 AUG	0	2022	11	INV P	50.00	083122	292673 PEARL RIVER VALLEY
		003873	PEARL RIVER VALLEY E	2022-4-AUG	0	2022	11	INV P	235.94	083122	292673 PEARL RIVER VALLEY
		003873	PEARL RIVER VALLEY E	2022-AUG 18	0	2022	11	INV P	212.11	083122	292673 PEARL RIVER VALLEY
									498.05		
									ACCOUNT TOTAL		
									62,594.24		
009677	638000										
		003348	L & A CONTRACTING CO	483-220	0	2022	11	INV P	50,252.93	083122	292617 MB2016-64: LAGOONS
		003348	L & A CONTRACTING CO	483-221	0	2022	11	INV P	42,577.50	083122	292617 MB2016-64: LAGOONS A
									92,830.43		
									ACCOUNT TOTAL		
									92,830.43		
									ORG 009677	TOTAL	
									197,681.27		
									FUND 009	WATER & SEWER OPERATION/MAINT.	
									TOTAL:		1,112,293.90

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION		
011000											WATER & SEWER BALANCE SHEET		
011000	114000										METER SECURITY DEPOSITS		
002720	EDWARDS	PROPERTY MGM	114266	80937	0	2022	11	INV P	33.60	083122	292535	METER DEP REF	80937
003439	LONDON & STETELMAN	R	118959	85409	0	2022	11	INV P	18.00	083122	292623	METER DEP REF	85409
004539	VARNADO, DEWANNA		119465	85897	0	2022	11	INV P	18.00	083122	292750	METER DEP REF	85897
004620	WESLEY BRELAND REALT		86424	86050	0	2022	11	INV P	18.00	083122	292767	METER DEP REF	86020
047994	HALLMAN	PROPERTY	119882	86300	0	2022	11	INV P	75.00	083122	292557	METER DEP REF	86300
047996	REALTY STAR NETWORK		118520	84988	0	2022	11	INV P	18.00	083122	292693	METER DEP REF	84988
048305	PICASSO	ESTATES	115634	85774	0	2022	11	INV P	57.00	083122	292674	METER DEP REF	85774
048388	HALLMAN	PROPERTY MGM	119884	86302	0	2022	11	INV P	18.00	083122	292558	METER DEP REF	86302
048388	HALLMAN	PROPERTY MGM	120034	86449	0	2022	11	INV P	75.00	083122	292558	METER DEP REF	86449
									93.00				
048394	LONDON & STETELMAN		119150	85592	0	2022	11	INV P	18.00	083122	292622	METER DEP REF	85592
049097	RAISING CANES USA		76346	46966	0	2022	11	INV P	100.00	083122	292690	METER DEP REF	46966
049099	KAREN SIMMONS		83907	53689	0	2022	11	INV P	18.00	083122	292607	METER DEP REF	53689
049100	CHARLES BLANCHARD		91037	60040	0	2022	11	INV P	75.00	083122	292507	METER DEP REF	60040
049101	SUZANNAH PATTERSON		95747	642121	0	2022	11	INV P	75.00	083122	292727	METER DEP REF	64212
049102	THOMAS W INGRAM		95630	64101	0	2022	11	INV P	75.00	083122	292732	METER DEP REF	64101
049103	ERIN O'NEAL		105342	72863	0	2022	11	INV P	12.00	083122	292540	METER DEP REF	72863
049104	2018 HARDY ST		106997	743191	0	2022	11	INV P	300.00	083122	292450	METER DEP REF	74319
049105	RACHEL JACOBSON		107379	74660	0	2022	11	INV P	75.00	083122	292689	METER DEP REF	74660
049106	CAROL Y HOUSTON		108558	75738	0	2022	11	INV P	18.00	083122	292500	METER DEP REF	75738
049107	KEVIN GRACE		108629	75801	0	2022	11	INV P	18.00	083122	292612	METER DEP REF	75801
049109	KRISTOPHER ROBERTS		108653	75824	0	2022	11	INV P	18.00	083122	292615	METER DEP REF	75824
049110	JAMES RILEY		108744	75905	0	2022	11	INV P	75.00	083122	292570	METER DEP REF	75905
049111	YUANCHUN YANG		108852	76011	0	2022	11	INV P	75.00	083122	292775	METER DEP REF	76011
049112	AMBER NORRIS		109451	76564	0	2022	11	INV P	75.00	083122	292464	METER DEP REF	76564

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
ACCOUNT/VENDOR	INVOICE							
049113 AAA STORAGE PLC	109643 76756	0	2022 11	INV	P	8.60 083122	292453	METER DEP REF 76756
049114 SELETA ALDOUS	111149 78158	0	2022 11	INV	P	12.00 083122	292707	METER DEP REF 78158
049115 CAITLYN WEAVER	11033 77313	0	2022 11	INV	P	18.00 083122	292498	METER DEP REF 77313
049116 SAMANTHA MCSPARRIN	110975 77994	0	2022 11	INV	P	3.76 083122	292703	METER DEP REF 77994
049117 OLIVIA NICHOLSON	112184 79050	0	2022 11	INV	P	75.00 083122	292666	METER DEP REF 79050
049118 JERRY CASE	112457 79280	0	2022 11	INV	P	12.00 083122	292599	METER DEP REF 79280
049119 THOMAS W PATTERSON	112610 79421	0	2022 11	INV	P	75.00 083122	292733	METER DEP REF 79421
049120 SAM STINSON	112657 79465	0	2022 11	INV	P	75.00 083122	292702	METER DEP REF 79465
049121 KATHRINE MOORE	113034 79815	0	2022 11	INV	P	18.00 083122	292608	METER DEP REF 79815
049122 SARAH WESLEY	115353 81943	0	2022 11	INV	P	75.00 083122	292705	METER DEP REF 81943
049123 CARLEE MCNEALY	115600 82179	0	2022 11	INV	P	35.00 083122	292499	METER DEP REF 82179
049124 KRISTOPHER FIELDS	115682 82265	0	2022 11	INV	P	75.00 083122	292614	METER DEP REF 82265
049125 DEANNA RAYMOND	115709 82289	0	2022 11	INV	P	18.00 083122	292529	METER DEP REF 82289
049126 ANDREW MORRISON	116078 82626	0	2022 11	INV	P	18.00 083122	292468	METER DEP REF 82626
049127 ZIBEI CHEN	116329 82855	0	2022 11	INV	P	18.00 083122	292776	METER DEP REF 82855
049128 WILLIAM COUGHLIN	115944 82499	0	2022 11	INV	P	75.00 083122	292770	METER DEP REF 82499
049129 CAROLINE RHETT	116196 82733	0	2022 11	INV	P	75.00 083122	292501	METER DEP REF 82733
049130 COASTAL COMMERCIAL	117428 83919	0	2022 11	INV	P	8.60 083122	292517	METER DEP REF 83919
049134 MORGAN HOUGH	117619 84108	0	2022 11	INV	P	75.00 083122	292643	METER DEP REF 84108
049135 CLYDE MCARN	117662 84150	0	2022 11	INV	P	75.00 083122	292516	METER DEP REF 84150
049136 LUCAS SOMERS	117474 83965	0	2022 11	INV	P	75.00 083122	292625	METER DEP REF 83965
049137 MADDOX POOLE	117672 84159	0	2022 11	INV	P	18.00 083122	292627	METER DEP REF 84159
049138 JB PACE PROPERTIES	117880 84356	0	2022 11	INV	P	75.00 083122	292572	METER DEP REF 84356
049139 JB PACE PROPERTIES	117881 84357	0	2022 11	INV	P	75.00 083122	292573	METER DEP REF 84357
049140 JB PACE PROPERTIES	117882 84358	0	2022 11	INV	P	75.00 083122	292574	METER DEP REF 84358
049141 JB PACE PROPERTIES	117883 84359	0	2022 11	INV	P	75.00 083122	292575	METER DEP REF

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION		
049142	JB PACE PROPERTIES	117884	84360	0	2022	11	INV	P	75.00	083122	292576	METER DEP REF	84360
049144	JB PACE PROPERTIES	117885	84361	0	2022	11	INV	P	75.00	083122	292577	METER DEP REF	84361
049145	JB PACE PROPERTIES	117887	84362	0	2022	11	INV	P	75.00	083122	292578	METER DEP REF	84362
049146	JB PACE PROPERTIES	117889	84365	0	2022	11	INV	P	75.00	083122	292579	METER DEP REF	84365
049147	JB PACE PROPERTIES	117890	84366	0	2022	11	INV	P	75.00	083122	292580	METER DEP REF	
049148	JB PACE PROPERTIES	117891	84367	0	2022	11	INV	P	75.00	083122	292581	METER DEP REF	84367
049149	JB PACE PROPERTIES	117892	84368	0	2022	11	INV	P	75.00	083122	292582	METER DEP REF	84368
049150	JB PACE PROPERTIES	117893	84369	0	2022	11	INV	P	75.00	083122	292583	METER DEP REF	84369
049151	JB PACE PROPERTIES	117894	84370	0	2022	11	INV	P	75.00	083122	292584	METER DEP REF	84370
049152	JB PACE PROPERTIES	117895	84371	0	2022	11	INV	P	75.00	083122	292585	METER DEP REF	84371
049153	JB PACE PROPERTIES	117896	84372	0	2022	11	INV	P	75.00	083122	292586	METER DEP REF	84372
049154	JB PACE PROPERTIES	117897	84373	0	2022	11	INV	P	75.00	083122	292587	METER DEP REF	
049155	JB PACE PROPERTIES	117898	84374	0	2022	11	INV	P	75.00	083122	292588	METER DEP REF	84374
049156	JB PACE PROPERTIES	117899	84375	0	2022	11	INV	P	75.00	083122	292589	METER DEP REF	84375
049157	JB PACE PROPERTIES	117900	84376	0	2022	11	INV	P	75.00	083122	292590	METER DEP REF	84376
049158	JB PACE PROPERTIES	117901	84377	0	2022	11	INV	P	75.00	083122	292591	METER DEP REF	84377
049159	JB PACE PROPERTIES	117902	84378	0	2022	11	INV	P	75.00	083122	292592	METER DEP REF	84378
049160	JB PACE PROPERTIES	117903	84379	0	2022	11	INV	P	75.00	083122	292593	METER DEP REF	84379
049161	JB PACE PROPERTIES	117904	84380	0	2022	11	INV	P	75.00	083122	292594	METER DEP REF	84380
049162	JB PACE PROPERTIES	117905	84831	0	2022	11	INV	P	75.00	083122	292595	METER DEP REF	84381
049163	JB PACE PROPERTIES	117906	84382	0	2022	11	INV	P	75.00	083122	292596	METER DEP REF	84382
049164	WILLIAM BARKER	117939	84418	0	2022	11	INV	P	75.00	083122	292769	METER DEP REF	84418
049165	MARY PARKER	118304	84777	0	2022	11	INV	P	18.00	083122	292633	METER DEP REF	84777
049166	JOSHUA HOLDER	118626	85090	0	2022	11	INV	P	18.00	083122	292604	METER DEP REF	85090
049167	HANNAH DENNIS	118731	85188	0	2022	11	INV	P	18.00	083122	292559	METER DEP REF	85188
049168	LELY MAREK	118809	85266	0	2022	11	INV	P	75.00	083122	292621	METER DEP REF	85266

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11													
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR	TYP	S	WARRANT		CHECK	DESCRIPTION		
049169	TRUSTED HOMES	118879	85333	0	2022	11	INV	P	18.00	083122	292740	METER DEP REF	85333
049170	JULIA BERRY	119123	85565	0	2022	11	INV	P	18.00	083122	292605	METER DEP REF	85565
049171	ROBERT S SATCHER	119348	85782	0	2022	11	INV	P	18.00	083122	292697	METER DEP REF	85782
049172	TENISHA COLEMAN	119380	85814	0	2022	11	INV	P	18.00	083122	292730	METER DEP REF	85814
049173	JANINA MATTUS	119590	86019	0	2022	11	INV	P	9.76	083122	292571	METER DEP REF	86019
049175	NATALIE GRINER	119615	86043	0	2022	11	INV	P	75.00	083122	292657	METER DEP REF	8604
049176	JEFFREY W SMITH	119770	86193	0	2022	11	INV	P	18.00	083122	292598	METER DEP REF	86193
049177	ADELINE PROPERTY LLC	119782	86205	0	2022	11	INV	P	75.00	083122	292458	METER DEP REF	86205
049178	SHELLY ANN BROWN	119838	86257	0	2022	11	INV	P	18.00	083122	292708	METER DEP REF	
049178	SHELLY ANN BROWN	119838	86258	0	2022	11	INV	P	18.00	083122	292708	METER DEP REF	86258
									36.00				
049179	ADRIENNE R MCPHAUL	119843	86262	0	2022	11	INV	P	18.00	083122	292459	METER DEP REF	86262
049180	KATHRYN E ANTHONY	119957	86373	0	2022	11	INV	P	18.00	083122	292609	METER DEP REF	86373
049181	LONDON AND STETELEMA	109477	86381	0	2022	11	INV	P	75.00	083122	292624	METER DEP REF	86381
049182	RYLEE DEVELOPMENT	120148	86561	0	2022	11	INV	P	2.64	083122	292700	METER DEP REF	86561
049183	RYLEE DEVELOPMENT	120162	86575	0	2022	11	INV	P	35.00	083122	292701	METER DEP REF	86575
049184	KAYLA PUGH	119957	86633	0	2022	11	INV	P	18.00	083122	292610	METER DEP REF	86633
049185	YSHENKIA L HAYNES	120266	86676	0	2022	11	INV	P	75.00	083122	292774	METER DEP REF	86676
049186	DR DOROTHY L GILLES	30077	126291	0	2022	11	INV	P	25.00	083122	292532	METER DEP REF	12629
049187	JESSICA HAWTHORNE	115045	816571	0	2022	11	INV	P	75.00	083122	292601	METER DEP REF	81657
049188	IMELDA CONCEPCION	95792	64249	0	2022	11	INV	P	75.00	083122	292566	METER DEP REF	64249
049189	TAMARA ALLEN	103913	71563	0	2022	11	INV	P	75.00	083122	292728	METER DEP REF	71563
049190	MATIAS LOPEZ	117578	84068	0	2022	11	INV	P	38.00	083122	292634	METER DEP REF	84068
049191	RUBY PAYTON	118190	84664	0	2022	11	INV	P	35.00	083122	292699	METER DEP REF	84664
049192	MARITZA LOPEZ	119087	85530	0	2022	11	INV	P	18.00	083122	292629	METER DEP REF	85530
ACCOUNT TOTAL									5,242.96				
011000	115000	COLLECTION FEES											

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
002058	ADELA INC	040201490000	7/31	0	2022 11	INV	P		809.76 083122	292457	WATER COLLECTIONS F
ACCOUNT TOTAL									809.76		
ORG 011000 TOTAL									6,052.72		
011660	WATER & SEWER-CUST.ACCT.DIV.										
011660	6835WT	WATER RELATED REFUND									
049101	SUZANNAH PATTERSON	95747	64212	0	2022 11	INV	P		126.00 083122	292727	OVERPAYMENT 64212
049104	2018 HARDY ST	106997	74319	0	2022 11	INV	P		22.58 083122	292450	OVERPAYMENT 74319
049186	DR DOROTHY L GILLES	30077	12629	0	2022 11	INV	P		245.31 083122	292532	OVERPAYMENT 12629
049187	JESSICA HAWTHORNE	115045	81657	0	2022 11	INV	P		50.99 083122	292601	OVERPAYMENT 81657
ACCOUNT TOTAL									444.88		
ORG 011660 TOTAL									444.88		
FUND 011 WATER & SEWER FUND									TOTAL:	6,497.60	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
019100								POL.FORFEITURES-POLICE DIV.	
019100	559200							OTHER OPER.MATLS-D.A.R.E.	
004446	TOSHIBA BUSINESS SOL 5432427	0	2022	11	INV P	261.48	083122	292735	MB#2018-164 COMMUNI
ACCOUNT TOTAL						261.48			
ORG 019100 TOTAL						261.48			
FUND 019 POLICE FORFEITURES FUND						TOTAL:	261.48		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION	
039551				AIRPORT IMPR.-AIRPORT DIV							
039551 729502				AIRPORT IMP-FAA							
002843	FORD ENGINEERING	SER 210206P	0	2022	11	INV	P	1,236.20	083122	292547	MB 2021-31 RUNWAY 1
002843	FORD ENGINEERING	SER 211116I	0	2022	11	INV	P	13,801.28	083122	292547	MB 2021-306 TAXIWAY
								15,037.48			
ACCOUNT TOTAL								15,037.48			
ORG 039551 TOTAL								15,037.48			
FUND 039 AIRPORT IMPROVEMENT FUND								TOTAL:	15,037.48		

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR					INVOICE	PO	YEAR/PR TYP S		WARRANT	CHECK	DESCRIPTION
072201						MUN.ROAD&BRIDGE-STREET DIV					
072201 601500						ENGINEERING					
004197	SHOWS	DEARMAN & WAIT	22867		0	2022	11	INV P	562.50	083122	292710 MB 2021-267 N 28TH
ACCOUNT TOTAL									562.50		
072201 636000						STREETS & STRUCTURES R&M					
047056	WARREN	PAVING INC	227739.1		227739	2022	11	INV P	10,744.03	083122	292761 PAVE CRESTWOOD DRIV
047056	WARREN	PAVING INC	227743.1		227743	2022	11	INV P	38,184.97	083122	292761 PAVE SHADOW RIDGE R
047056	WARREN	PAVING INC	227769.1		227769	2022	11	INV P	40,426.48	083122	292761 PAVE CANAL DRIVE
047056	WARREN	PAVING INC	228957.1		228957	2022	11	INV P	29,954.77	083122	292761 PAVE KING ROAD
047056	WARREN	PAVING INC	228963.1		228963	2022	11	INV P	24,414.19	083122	292761 PAVING WAVERLY COUR
									143,724.44		
ACCOUNT TOTAL									143,724.44		
072201 723014						LAMAR BLVD-REGIONS					
004197	SHOWS	DEARMAN & WAIT	22861		0	2022	11	INV P	8,322.50	083122	292710 MB 2020-114 LAMAR B
ACCOUNT TOTAL									8,322.50		
072201 723025						CTRY.CLUB RD. INTERSECTN.					
004197	SHOWS	DEARMAN & WAIT	22911		0	2022	11	INV P	12,225.53	083122	292710 MB 2021-171 COUNTRY
ACCOUNT TOTAL									12,225.53		
072201 723043						MDOT-MARTIN LUTHER KIN					
004197	SHOWS	DEARMAN & WAIT	22852		0	2022	11	INV P	2,227.50	083122	292710 MB 2018-41 MARTIN L
ACCOUNT TOTAL									2,227.50		
ORG 072201 TOTAL									167,062.47		
FUND 072 MUNICIPAL ROAD & BRIDGE									TOTAL:	167,062.47	

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
073570	MASS TRANSIT-TRANSPORTATION										
073570	501000			OTHER EXPENDABLE OFF.SPL							
002527	COMMERCIAL STATIONER	460348-0		229247	2022 11	INV	P	347.81	083122	292520	COMPUTER AND PRINTE
ACCOUNT TOTAL								347.81			
073570	508000			COMPUTER SUPPLIES							
002527	COMMERCIAL STATIONER	460286		229247	2022 11	INV	P	83.50	083122	292520	COMPUTER AND PRINTE
002527	COMMERCIAL STATIONER	460348-0		229247	2022 11	INV	P	262.88	083122	292520	COMPUTER AND PRINTE
								346.38			
ACCOUNT TOTAL								346.38			
073570	511100			SUPPLIES - COVID 19							
002527	COMMERCIAL STATIONER	460785-0		229448	2022 11	INV	P	644.78	083122	292520	JANITORIAL SUPPLIES
ACCOUNT TOTAL								644.78			
073570	525000			GAS AND OIL							
004583	WARING OIL CO (GULFP	130857		227295	2022 11	INV	P	989.00	083122	292757	ANTIFREEZE FOR BUSE
ACCOUNT TOTAL								989.00			
073570	599000			OTHER REPAIR/MAINT. SPL.							
002527	COMMERCIAL STATIONER	460286		229247	2022 11	INV	P	40.48	083122	292520	COMPUTER AND PRINTE
002527	COMMERCIAL STATIONER	460348-0		229247	2022 11	INV	P	131.44	083122	292520	COMPUTER AND PRINTE
								171.92			
ACCOUNT TOTAL								171.92			
073570	606000			TELEPHONE AND TELEGRAPH							
002160	AT&T MOBILITY	287273578351X080822	0		2022 11	INV	P	178.83	083122	292474	MB2016-287/WIRELESS
ACCOUNT TOTAL								178.83			
073570	630500			ELECTRICITY							
003700	MS POWER COMPANY	E2022-11-AUG	0		2022 11	INV	P	851.07	083122	292651	MISSISSIPPI POWER-V
ACCOUNT TOTAL								851.07			
ORG 073570 TOTAL								3,529.79			
FUND 073 MASS TRANSIT FUND								TOTAL:	3,529.79		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION			
075695								W&S CONSTR.-CAPITAL PROJECTS			
075695	601500							ENGINEERING			
004197	SHOWS DEARMAN & WAIT 22862	0	2022 11	INV	P	8,200.00	083122	292710	MB	2018-288	INFRAS
004197	SHOWS DEARMAN & WAIT 22864	0	2022 11	INV	P	12,925.42	083122	292710	MB	2020-137	MLK ARE
004197	SHOWS DEARMAN & WAIT 22868	0	2022 11	INV	P	1,917.00	083122	292710	MB	2021-337	ARCADIA
004197	SHOWS DEARMAN & WAIT 22869	0	2022 11	INV	P	4,903.20	083122	292710	MB	2021-338	HBG HIG
004197	SHOWS DEARMAN & WAIT 22870	0	2022 11	INV	P	9,917.50	083122	292710	MB	2021-386	HBG HIG
						37,863.12					
						ACCOUNT TOTAL					
						37,863.12					
075695	722002										
004197	SHOWS DEARMAN & WAIT 22863	0	2022 11	INV	P	7,815.00	083122	292710	MB	2019-237	LONGLEA
						ACCOUNT TOTAL					
						7,815.00					
075695	722005										
004197	SHOWS DEARMAN & WAIT 22865	0	2022 11	INV	P	3,030.00	083122	292710	MB	2020-138	MIDTOWN
						ACCOUNT TOTAL					
						3,030.00					
						ORG 075695 TOTAL					
						48,708.12					
FUND 075 WATER&SEWER CONSTRUCTION FUND						TOTAL:					
											48,708.12

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR TYP S	WARRANT	CHECK	DESCRIPTION
077650				COMMUNITY CTR-ADMIN/GENERAL					
077650	560500			ELECTRICAL SUPPLIES					
004256	SOLAR SUPPLY INC	3456045	228636	2022 11 INV P	652.00	083122	292714		MATERIAL TO REPLACE
				ACCOUNT TOTAL	652.00				
077650	570000			MTR VEHICLE REP. PTS/SPL					
048827	CARQUEST	14758-14729	229315	2022 11 INV P	26.78	083122	292502		LATCH CABLE FOR UNI
				ACCOUNT TOTAL	26.78				
077650	600100			PROF SERVICES - COVID 19					
002472	CINTAS FIRST AID J71	5120478622	0	2022 11 INV P	55.53	083122	292511		SERVICE TO FIRST AI
002472	CINTAS FIRST AID J71	5120478644	0	2022 11 INV P	76.07	083122	292511		SERVICE TO FIRST AI
					131.60				
				ACCOUNT TOTAL	131.60				
077650	604900			OTHER PROFESSIONAL SERV.					
004234	SMITH, JIM SERVICES	0000092114	0	2022 11 INV P	862.08	083122	292713		REPLACED CONDENSATE
				ACCOUNT TOTAL	862.08				
077650	606000			TELEPHONE AND TELEGRAPH					
002160	AT&T MOBILITY	287273578351X080822	0	2022 11 INV P	61.51	083122	292474		MB2016-287/WIRELESS
				ACCOUNT TOTAL	61.51				
077650	611000			TRAVEL EXPENSE					
002042	ACKER, REBECCA	9495	0	2022 11 INV P	462.94	083122	292456		P&R-MRPA CONFERENCE
				ACCOUNT TOTAL	462.94				
077650	630000			GAS					
004321	SPIRE	G2022-16 AUG	0	2022 11 INV P	60.18	083122	292723		SPIRE-VARIOUS DEPT-
				ACCOUNT TOTAL	60.18				
077650	630500			ELECTRICITY					
003700	MS POWER COMPANY	E2022-2 AUG	0	2022 11 INV P	5,919.53	083122	292651		MISSISSIPPI POWER-V
				ACCOUNT TOTAL	5,919.53				
077650	684500			REGISTRATION FEE/TUITION					
003702	MS RECREATION AND PA	12120436	0	2022 11 INV P	255.00	083122	292653		P&R MRPA CONF.REG.F
				ACCOUNT TOTAL	255.00				
				ORG 077650 TOTAL	8,431.62				

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR		INVOICE		PO	YEAR/PR TYP S		WARRANT	CHECK	DESCRIPTION
FUND 077		COMMUNITY CENTERS' FUND			TOTAL:		8,431.62		

YEAR/PERIOD: 2022/11 TO 2022/11													
ACCOUNT/VENDOR				INVOICE		PO	YEAR/PR TYP S			WARRANT		CHECK	DESCRIPTION
082285 CDBG-ENTITLEMENTS													
082285	546000					MINOR EQUIPMENT							
004327	STANDARD	OFFICE	SUPP	HO07132-00	229131	2022	11	INV	P	92.97	083122	292724	PENDAFLEX PRESSBOAR
ACCOUNT TOTAL									92.97				
082285 641000						OFFICE EQUIPMENT RENT							
004327	STANDARD	OFFICE	SUPP	HO7482-00	0	2022	11	INV	P	49.17	083122	292724	CLASSIFICATION FOLD
ACCOUNT TOTAL									49.17				
082285 684500						REGISTRATION FEE/TUITION							
003677	MS	DEPARTMENT OF	ENV	94530TREV	0	2022	11	INV	P	200.00	083122	292648	ABESTOS/ASSESSMENT
ACCOUNT TOTAL									200.00				
ORG 082285						TOTAL			342.14				
FUND 082						COMMUNITY DEVELOP. BLOCK GRANT			TOTAL:		342.14		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR	INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION	
086300								SPEC SALES TAX/RECREATION MAIN	
086300	729506							HBURG AMERICAN ARTS CENTER	
002120	ANDERSON RETAIL INC	168689	228725	2022	11	INV	P	1,443.06	083122 292467 HATTIESBURG ARTS CE
								ACCOUNT TOTAL	1,443.06
086300	7295PR							CAPITAL PROJECTS	
002350	BUCKHAULTS ELECTRIC	EAST SIDE PARK #1	0	2022	11	INV	P	278,255.00	083122 292493 MB 2021-339 EAST SI
049196	JW CHAIN CONTRACTORS	JAYCEE PARK FIELD #1	0	2022	11	INV	P	182,908.11	083122 292606 MB 2021-518 JAYCEE
								ACCOUNT TOTAL	461,163.11
								ORG 086300	TOTAL 462,606.17
FUND 086 SPEC SALES TAX P&R/UNIV IMPROV						TOTAL:		462,606.17	

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11		ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP	S	WARRANT	CHECK	DESCRIPTION
087601						INDUSTRIAL PK-G.O.ACQUISITIONS					
087601	602500					LEGAL					
	047720	HOWDESHELL, PITTMAN	1021		0	2022 11	INV	P	950.30	083122	292565 INDUSTRIAL PARK LEG
						ACCOUNT TOTAL			950.30		
087601	604900					OTHER PROFESSIONAL SERV.					
	004557	W GEOTECHNICAL AND T	5453		0	2022 11	INV	P	9,980.00	083122	292754 PROJECT G-1184 GEOT
						ACCOUNT TOTAL			9,980.00		
087601	639902					RAIL SPURS MAINTENANCE					
	002464	CHOCTAW RAILS CONSTR	7708		0	2022 11	INV	P	26,707.00	083122	292508 INSTALL SWITCHES &
						ACCOUNT TOTAL			26,707.00		
						ORG 087601	TOTAL		37,637.30		
FUND 087 INDUSTRIAL PARK DEVELOPMENT						TOTAL:			37,637.30		

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11											
ACCOUNT/VENDOR				INVOICE	PO	YEAR/PR TYP S			WARRANT	CHECK	DESCRIPTION
088603 PUBLIC SAFETY/REC CONSTRUCTION											
088603 710022 POLICE DEPARTMENT											
003810	OFFICE PRODUCTS PLUS	953023-0		223471	2022 11	INV	P	21,692.35	083122	292665	2-QUOTE COURTROOM B
004197	SHOWS DEARMAN & WAIT	22872		0	2022 11	INV	P	5,855.00	083122	292710	MB 2012-1/34 SITE P
047187	FOUR SEASONS LAWN	HPSC #6		0	2022 11	INV	P	51,086.92	083122	292550	MB 2021-326 HPSC LA
ACCOUNT TOTAL								78,634.27			
088603 729501 HALL AVENUE OVERPASS											
048667	R & J CONSTRUCTION	HALL AVE EAST #5		0	2022 11	INV	P	484,730.97	083122	292688	MB 2021-325 HALL AV
ACCOUNT TOTAL								484,730.97			
ORG 088603 TOTAL								563,365.24			
FUND 088 PUBLIC SAFETY/REC CONSTRUCTION						TOTAL:		563,365.24			

INVOICE LIST BY GL ACCOUNT

YEAR/PERIOD: 2022/11 TO 2022/11									
ACCOUNT/VENDOR		INVOICE	PO	YEAR/PR	TYP S	WARRANT	CHECK	DESCRIPTION	
097201			INFRA IMPROVE-INTRNT	SALES TAX					
097201	723099			OTHER STREET IMPR.					
004197	SHOWS DEARMAN & WAIT	22866	0	2022 11	INV P	2,542.50	083122	292710 MB	2021-323 HIGHWAY
ACCOUNT TOTAL						2,542.50			
ORG 097201 TOTAL						2,542.50			
FUND 097 INFRA IMPROVE-INTRNT SALES TAX TOTAL:						2,542.50			

** END OF REPORT - Generated by Sherry Jackson **

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City of Hattiesburg, MS
A/P CASH DISBURSEMENTS JOURNAL

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JOURNAL ENTRIES TO BE CREATED

FUND	DUE TO	DUE FR
001 General Fund		1,573,565.40
002 PARKS & RECREATION FUND		38,208.22
009 WATER & SEWER OPERATION/MAINT.		1,112,293.90
011 WATER & SEWER FUND		6,497.60
019 POLICE FORFEITURES FUND		261.48
039 AIRPORT IMPROVEMENT FUND		15,037.48
072 MUNICIPAL ROAD & BRIDGE		167,062.47
073 MASS TRANSIT FUND		3,529.79
075 WATER&SEWER CONSTRUCTION FUND		48,708.12
077 COMMUNITY CENTERS' FUND		8,431.62
082 COMMUNITY DEVELOP. BLOCK GRANT		342.14
086 SPEC SALES TAX-P&R/UNIV IMPROV		462,606.17
087 INDUSTRIAL PARK DEVELOPMENT		37,637.30
088 PUBLIC SAFETY/REC CONSTRUCTION		563,365.24
097 INFRA IMPROVE-INTRNT SALES TAX		2,542.50
801 CLAIMS FUND		
	4,040,089.43	
TOTAL	4,040,089.43	4,040,089.43

** END OF REPORT - Generated by Sherry Jackson **

**A RESOLUTION LEVYING AD VALOREM TAXES ON
ALL OF THE TAXABLE PROPERTY WITHIN THE
CITY OF HATTIESBURG, MISSISSIPPI, FOR THE PURPOSE
OF RAISING REVENUE FOR SAID CITY FOR THE FISCAL YEAR
BEGINNING OCTOBER 1, 2022, AND ENDING SEPTEMBER 30, 2023**

WHEREAS, the governing authorities of the City of Hattiesburg, Mississippi, are required by Section 21-33-45 of the Mississippi Code of 1972 at a meeting held on September 6, 2022 to levy the municipal ad valorem taxes for the fiscal year next succeeding, and are required to fix this rate or levy for the municipality and the municipal separate school district and to express the rates or levies therefore in mills or a decimal fraction of a mill; and

WHEREAS, the governing authorities have fully, carefully and maturely considered the requirements of the various funds of the City of Hattiesburg and of Hattiesburg Municipal Separate School District; and

WHEREAS, the Council does now find, determine and adjudge that the tax rates or levies appearing hereinafter for the said City of Hattiesburg, in order to raise funds required to meet the expenses of said City of Hattiesburg and for municipal purposes and the expense of said school district:

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE COUNCIL OF THE CITY OF HATTIESBURG, MISSISSIPPI, that the following ad valorem tax rates or levies be and the same are hereby fixed, imposed and levied for the current fiscal year 2022-2023 of said City upon said assessed value of all of the taxable property in the City of Hattiesburg, Forrest and/or Lamar Counties, Mississippi, and in said municipal separate school district, as said property is now assessed and listed, and as it may be hereafter assessed and listed upon the assessment rolls of said City of Hattiesburg, as of January 1, 2022, and the said rates or levies expressed in mills or a decimal fraction of a mill and determining the ad valorem taxes to be collected upon each dollar of valuation upon the assessment rolls of the City of Hattiesburg, Mississippi, and upon each dollar or valuation for the municipal separate school district as shown upon the assessment rolls of said City, being fixed, imposed, and levied as follows, to wit:

TAX LEVY FOR FISCAL YEAR 2022-2023
CITY OF HATTIESBURG

For General Revenue Purposes and General Improvements: General Fund Section 27-39-307, Code of 1972	41.65 Mills
For Parks and Recreation Purposes: Parks and Recreation Fund Section 21-37-43, Code of 1972	2.00 Mills
For Library Purposes: Library Fund Section 39-3-7, Code of 1972	1.95 Mills
For Municipal Bonds and Interest: For General Municipal Bonds and Interest Section 21-33-87, Code of 1972	5.00 Mills
For Disability and Relief: For Police and Firemen's Disability And Relief Section 21-29-117, Code of 1972	2.03 Mills
For Hattiesburg Mass Transit System SB No. 2841-MS Legislative Session Of 1975	0.50 Mills
TOTAL EXCLUSIVE OF SCHOOLS	<u>53.13 Mills</u>
For School Purposes and Maintenance of Schools: District Maintenance, Section 37-57-1	58.33 Mills
For School Bonds and Interest: Section 37-59-23	4.19 Mills
For School Notes and Certificates of Indebtedness: Section 37-59-107	3.00 Mills
For Costs of Collection: Section 37-57-105(1)	.56 Mills
TOTAL LEVY FOR SCHOOL PURPOSES	<u>66.08 Mills</u>
TOTAL LEVY FOR ALL PURPOSES UPON EACH DOLLAR ASSESSED VALUATION	<u>119.21 Mills</u> =====

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

YEAS:

NAYS:

The President thereby declared the motion carried and the Resolution adopted, this the 6th day of September, 2022.

(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 6th day of September, 2022.

ATTEST:

APPROVED:

CITY CLERK

MAYOR