Board of Adjustment Agenda

August 5, 2025 at 3:30 PM

Jackie Dole Sherrill Community Center (Dining Room)

220 W Front Street

I. Business Meeting

1. Review and approval of August's meeting agenda
2. Review and approval of the minutes of the May and June meetings
3. Planning Report
4. Chair's Report
5. Introductions

II. Public Hearing

1. Presentation of Petitions for Public Hearing

A. Larry Albert, Applicant, requests a variance from the 10ft minimum side setback requirement to allow for 1ft for a R-1A zoned property located at 701 Adeline Street (PPIN 19452, Forrest County, Ward 4).

B. Clearpoint Engineers, Applicant, request a variance from the R-3 district residential density maximum of 7 dwelling units to allow for 9 (LDC Table 6.1) for a property zoned R-3 located at 3200 Montague Blvd (PPIN 22975 & 22976, Forrest County, Ward 1).

C. Laron Smith, Applicant, requests a variance from the residential buffer requirement of 30ft to allow for 0ft for a B-3 (BCO) zoned property located at 1209 Corrine Street (PPIN21809 & 21810, Forrest County, Ward 4).

D. United Fence, Applicant, requests a variance from the fence height requirement of a maximum of 4ft in a front yard to instead allow for 7ft for an I-1 zoned property located at 6892 Hwy 49 (PPIN 27559, Forrest County, Ward 1).

III. Other Business

IV. Adjournment

MINUTES OF THE

REGULAR MEETING OF THE

HATTIESBURG BOARD OF ADJUSTMENT

May 6th, 2026

Board Members Roll Call:

Members Present:

1. Sandi Boykins
2. Herman Dungan
3. John Eye
4. Bernard Green, Vice Chair
5. Shawn Harris, Chair
6. Stacey Ready, Secretary

Members Absent

1. Richard Conville
2. Ronda Norris
3. Brandon Williams
4. Jessica Cathey
5. James Hughes

Staff Present:

1. Cory Long, Planning Manager
2. Nathan Satcher, Senior Planner
3. David Miller, Esq.
4. Meridian McDaniel, Planner I

Shawn Harris, Chair, declared the Hattiesburg Board of Adjustment meeting open and in session at 3:42 pm.

AGENDA REVIEW

The May 2026 agenda was reviewed.

Motion:

Herman Dungan motioned to approve the agenda.

Second:

Bernard Green.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		

Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan	X		
John Eye	X		
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

MINUTES REVIEW

The minutes from the March and April meeting was reviewed.

Motion:

Stacey Ready motioned to approve both March and April's meeting minutes.

Second:

Herman Dungan.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan	X		
John Eye	X		
Bernard Green	X		
Shawn Harris	X		

James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

BUSINESS MEETING

1. Planning Report:
2. Chair's Report:

INTRODUCTIONS

Commissioners and staff introduced themselves.

PUBLIC HEARING – Board of Adjustment

Item A:

Jeffrey Mack, Applicant, requests the following variances for a proposed subdivision and house construction for an R-1C zoned property on the corner of Miller Street and Stadium Drive (PPIN 26645, Ward 4, Forrest County):

A. Lot 1 (north)
   a. Variance from the minimum lot size requirement of 5000sqft to allow 2100sqft
   b. Variance from the minimum front setback requirement of 20ft to allow for 17ft
   c. Variance from the minimum side setback requirement of 10ft to allow for 2.5ft
   d. Variance from the minimum side setback requirement of 10ft to allow for 2.5ft
   e. Variance from the minimum rear setback requirement of 25ft to allow for 20.5ft
   f. Variance from the maximum impervious surface lot coverage requirement of 50% to allow for 52%

B. Lot 2 (south)
   a. Variance from the minimum lot size requirement of 5000sqft to allow 2100sqft
   b. Variance from the minimum front setback requirement of 20ft to allow for 17ft
   c. Variance from the minimum front setback requirement of 20ft to allow for 2.5ft
   d. Variance from the minimum side setback requirement of 10ft to allow for 2.5ft
   e. Variance from the maximum impervious surface lot coverage requirement of 50% to allow for 52%

Discussion and Vote :

The planning staff introduced the case.

- **Presented by:**
  - Jeffrey Mack

- **Proponents:**
  - None
- **Opponents:**
  - None

Motion:

Stacey Ready motioned to recommend approval for all the requested variances.

Second:

Bernard Green.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan		X	
John Eye		X	
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

Motion to recommend approval of the requested variance passed with a 4-2 vote.

Item B:

Pedesco, Inc/Perry Doleac, Property Owner/Applicant, requests the following variances at a B-5 zoned property located at 1725 Byron Street (PPIN 23329, Forrest County, Ward 5):

A. A variance from the fence height requirement of a maximum of 4ft in a front yard to instead allow for 8ft.

B. A variance from the requirement of the maximum outdoor equipment storage space of 50% of the side and rear lot area to instead allow for 100%.

Discussion and Vote :

The planning staff introduced the case.

- **Presented by:**
  - Perry Doleac
- **Proponents:**
  - None
- **Opponents:**
  - None

Motion:

Herman Dungan motioned to recommend approval of all the requested variances.

Second:

Stacey Ready.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan	X		
John Eye		X	
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

Motion to recommend approval of the requested variance passed with a 5-1 vote.

Item C:

Felicia McIntyre, Applicant/Property Owner, requests a variance from the minimum lot size requirement for an A-2 zoned property of 43,560 sqft (1 acre) to allow for 21,780 (0.5 acre) for a property located on N Hattiesburg Avenue (PPIN 47150, Forrest County, Ward 5).

Discussion and Vote :

The planning staff introduced the case.

- **Presented by:**
  - Felicia McIntyre
- **Proponents:**
  - None
- **Opponents:**
  - None

Motion:

Stacey ready motioned to recommend approval contingent upon the approval of the zoning change to A-2.

Second:

Bernard Green.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan		X	
John Eye	X		
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

Motion to recommend approval of the requested variance passed with a 5-1 vote.

Item D:

John Anglin, Applicant, requests a variance from the maximum two-way driveway width of 24ft

to allow for 50ft for a property located at 4879 Hwy 49 (PPINs 27634, 27635, 27636, Forrest County, Ward 5).

Discussion and Vote :

The planning staff introduced the case.

- **Presented by:**
  - John Anglin
- **Proponents:**
  - None
- **Opponents:**
  - None

Motion:

Sandi Boykins motioned to recommend approval of both variance requests.

Second:

Herman Dungan.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan	X		
John Eye	X		
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

Motion to recommend approval of the requested variance passed with a 6-0 vote.

BUSINESS MEETING

- Nominating committee will meet before the June meeting.

Adjournment:

The meeting was adjourned at 5:23pm.

Motion:

Stacey Ready motioned to adjourn.

Second:

Herman Dungan.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville			ABSENT
Herman Dungan	X		
John Eye	X		
Bernard Green	X		
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris			ABSENT
Stacey Ready	X		
Brandon Williams			ABSENT

_____

Rebekah Ray, Secretary

_____

Cory Long, AICP, Planning Division Manager

MINUTES OF THE

REGULAR MEETING OF THE

HATTIESBURG BOARD OF ADJUSTMENT

June 3rd, 2026

Board Members Roll Call:

Members Present:

1. Sandi Boykins
2. John Eye
3. Shawn Harris, Chair
4. Stacey Ready, Secretary
5. Richard Conville
6. Ronda Norris
7. Brandon Williams (virtual)

Members Absent

1. Jessica Cathey
2. James Hughes
3. Bernard Green, Vice Chair
4. Herman Dungan
5.

Staff Present:

1. Cory Long, Planning Manager
2. Nathan Satcher, Senior Planner
3. David Miller, Esq.
4. Meridian McDaniel, Planner I

Shawn Harris, Chair, declared the Hattiesburg Board of Adjustment meeting open and in session at 3:42 pm.

AGENDA REVIEW

The June 2026 agenda was reviewed.

Motion:

Stacey Ready motioned to approve the agenda.

Second:

Sandi Boykins.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		

Jessica Cathey			ABSENT
Richard Conville	X		
Herman Dungan			ABSENT
John Eye	X		
Bernard Green			ABSENT
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris	X		
Stacey Ready	X		
Brandon Williams	X		

MINUTES REVIEW

The minutes from the May and June meeting will be reviewed at the next BOA meeting

BUSINESS MEETING

1. Planning Report:
2. Chair's Report:

INTRODUCTIONS

Commissioners and staff introduced themselves.

PUBLIC HEARING – Board of Adjustment

Item A: Bill and Ute Benge, Applicants, request a variance from the maximum floor area requirement for structures accessory to residential uses of 33% of the primary structure to instead allow for 102% for a R-1B zoned property located at 217 N 23rd Avenue (PPIN 16123, Forrest County, Ward 4).

Discussion and Vote :

The planning staff introduced the case.

Presented by:

1. Ute Benge

Proponents:

1. Shelby Smith

Opponents:

1. None

Motion:

John Eye motioned to recommend denial of the request.

Second:

Ronda Norris.

Board Member	Yea	Nay	Other
Sandi Boykins		X	
Jessica Cathey			ABSENT
Richard Conville		X	
Herman Dungan			ABSENT
John Eye	X		
Bernard Green			ABSENT
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris	X		
Stacey Ready		X	
Brandon Williams		X	

The motion to recommend denial failed with a 3-4 vote.

Motion:

Sandi Boykins motioned to recommend approval of the request.

Second:

Stacey Ready

Board Member	Yea	Nay	Other

Sandi Boykins	X		
Jessica Cathey			ABSENT
Richard Conville	X		
Herman Dungan			ABSENT
John Eye		X	
Bernard Green			ABSENT
Shawn Harris		X	
James Hughes			ABSENT
Ronda Norris		X	
Stacey Ready	X		
Brandon Williams	X		

The motion to recommend approval passed with a 4-3 vote.

BUSINESS MEETING

- Nominating committee will meet before the July meeting.

Adjournment:

The meeting was adjourned at 4:48pm.

Motion:

Richard Conville motioned to adjourn.

Second:

Stacey Ready.

Vote:

Board Member	Yea	Nay	Other
Sandi Boykins	X		
Jessica Cathey			ABSENT

Richard Conville	X		
Herman Dungan			ABSENT
John Eye	X		
Bernard Green			ABSENT
Shawn Harris	X		
James Hughes			ABSENT
Ronda Norris	X		
Stacey Ready	X		
Brandon Williams	X		

_____

Rebekah Ray, Secretary

_____

Cory Long, AICP, Planning Division Manager

URBAN DEVELOPMENT
PLANNING DIVISION

Quick Facts:

Applicant:

Larry Albert

Address:

701 Adeline Street

Zoning:

R-1A (Single-Family Residential)

Future Land Use:

Neighborhood Conservation District 1

Historic District:

Oaks Historic

Overlay District(s):

N/A

Flood Zone:

X

Ward:

4

County:

Forrest

PPIN Number(s):

19452

Parcel Number(s):

2-029N-09-131.00

Hattiesburg Board of Adjustment
Planning Division
Item A - Staff Report
August 5th, 2026



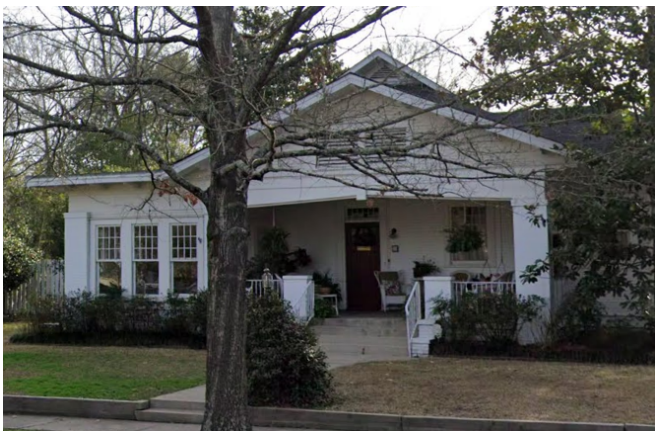
Property Image- From Adeline Street

Applicant's Requests:
Larry Albert, Applicant, requests a variance from the 10ft minimum side setback requirement to allow for 1ft for a R-1A zoned property located at 701 Adeline Street (PPIN 19452, Forrest County, Ward 4).



Property Image- From 2nd Avenue

Background and History



Surrounding Area Image

The staff met with the applicant in a pre-application meeting to discuss the proposed project for an addition onto the existing home that would make the home more ADA accessible. The applicants knew that the garage was encroaching into the side setback minimum and wanted to get information on the next steps for the process to move forward. The staff advised the applicants that they could apply for a variance from the minimum side setback. The applicants also have completed the Certificate of Appropriateness process with the Hattiesburg Historic Conservation Commission, where they received approval on the project contingent upon the approval of the variance request for the side setback minimum requirement.

Future Land Use:

Neighborhood Conservation District 1 – Downtown/Historic Neighborhoods: This Neighborhood Conservation District is primarily a residential district located adjacent to Downtown Hattiesburg and in older, established neighborhoods east of U.S. Highway 49. In this district, predominantly residential land uses may be found that exhibit certain types of development patterns.



Surrounding Area Image

District Characteristics: The characteristics of this district include the following: moderate-density single-family residences or residential lands along the city's original street system; certain two-family and multi-family uses constructed to the character of the surrounding neighborhood; buildings with shallow front and side yards; certain neighborhood business land uses that are compatible in design to the surrounding residential areas; and a higher overall density of development than modern or suburban neighborhoods.

District Land Uses: The following land uses should be found in this district: single-family residential uses; certain two–family and multi-family residences, subject to use, density, and design guidelines;

public and quasi-public uses, such as churches and schools; and small offices and retail uses clustered along collector streets or at the edges of neighborhoods and constructed to the same character as the surrounding residences.

Codes and Regulations

SECTION 5: Use Regulations

5.4.2.5. Structures accessory to residential uses (except for agricultural buildings located in agricultural districts) shall have a combined floor area (aggregate of all detached accessory structures) of no more than 33% of the total floor area of the principal structure.

SECTION 6: Dimensional Standards

Table 6.1 Dimensional Standards

District	Minimum Lot Size in SF/ Width at Setback	Max. Dwelling Units	Max. Floor Area Ratio	Setbacks in feet				Max. Height*	Max. Impervious Surface Lot Coverage	Buffer in Feet
				Min. Front	Max. Front	Min. Side	Min. Rear			
A-1	130,680 / 100	1 per lot	-	25	-	15	25	35 feet or 3 stories	35%	-
A-2	43,560 / 100	1 per lot	-	25	-	15	25	35 feet or 3 stories	50%	-
R-1A	10,000/ 50	1 per lot	-	30	-	10	25	35 feet or 3 stories	50%	-

Considerations and Basis for Approval

Option:

Recommend approval or denial of a variance from the 10ft minimum side setback requirement to allow for 1ft for a R-1A zoned property located at 701 Adeline Street (PPIN 19452, Forrest County, Ward 4).

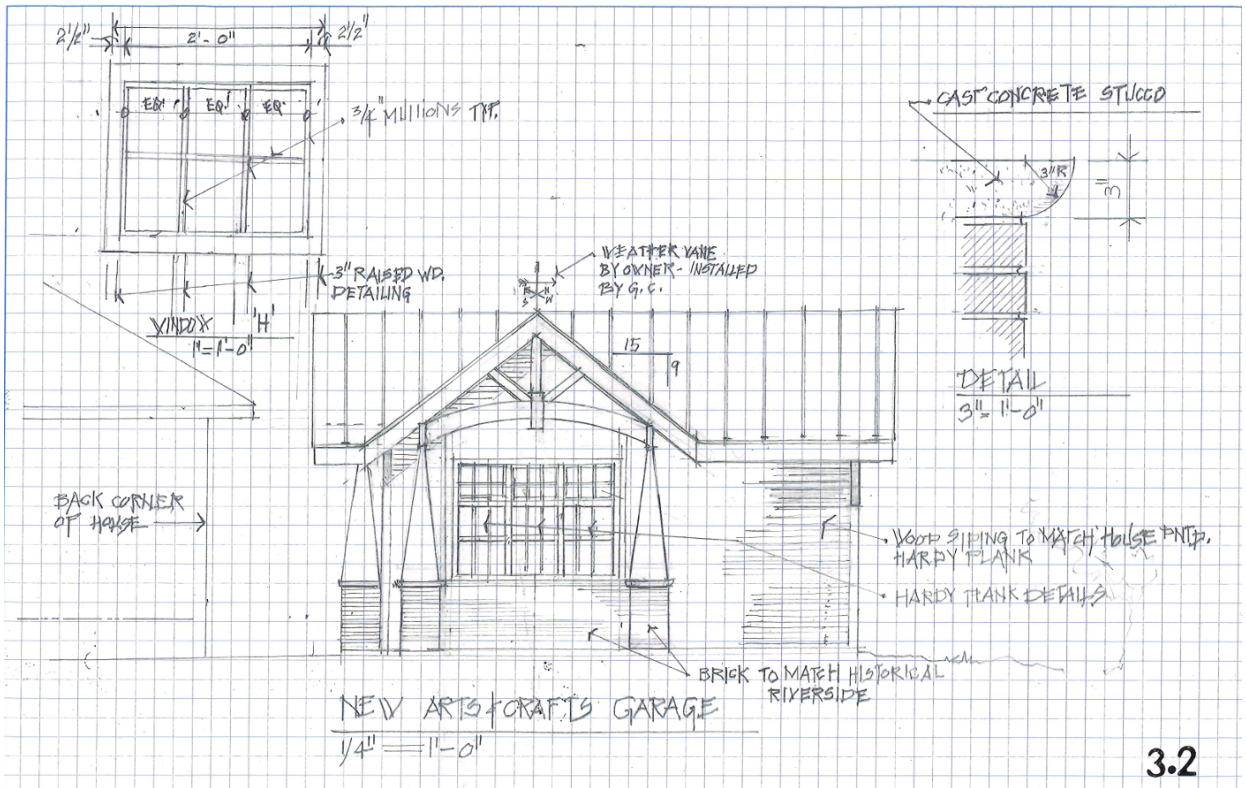
Basis for Approval:

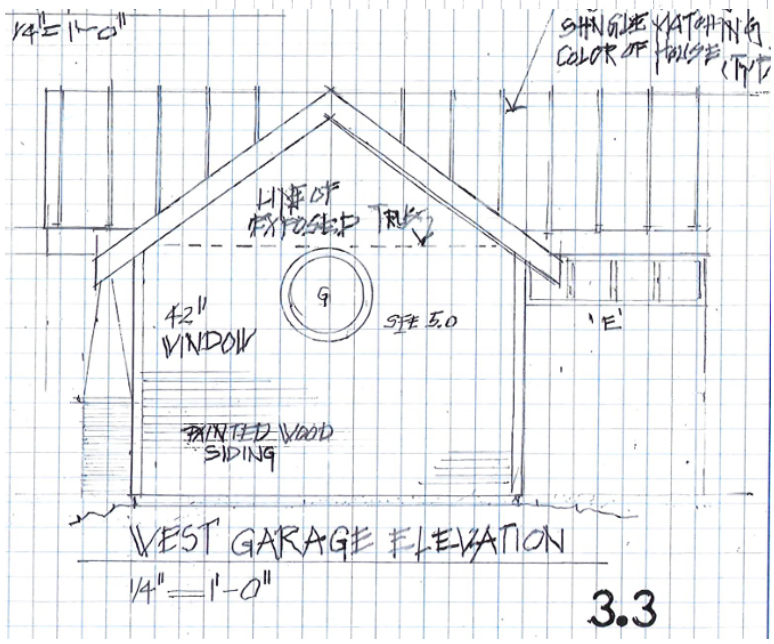
1. Hardship.
    a. The hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant.
    b. There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.
2. Special Privilege.

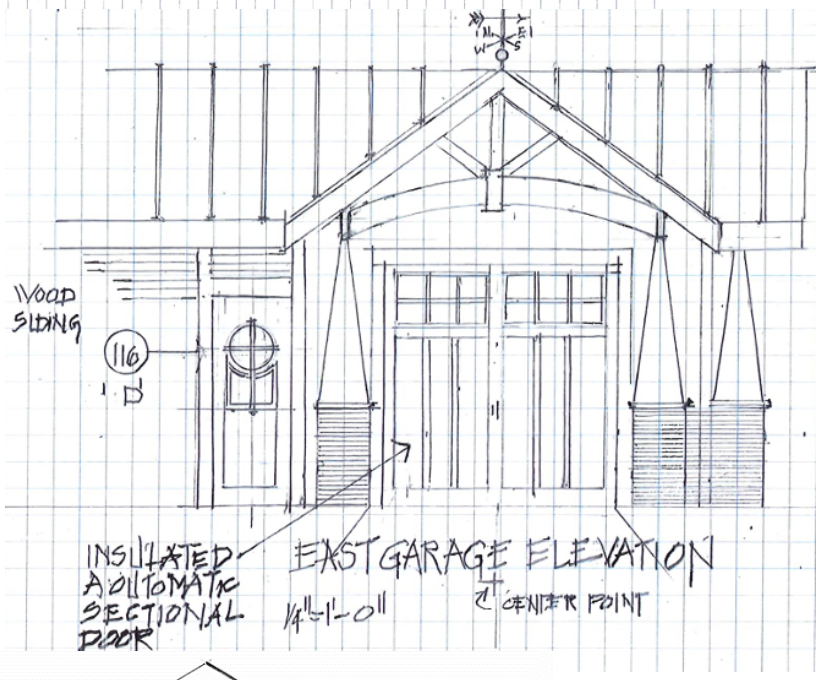
a. A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.

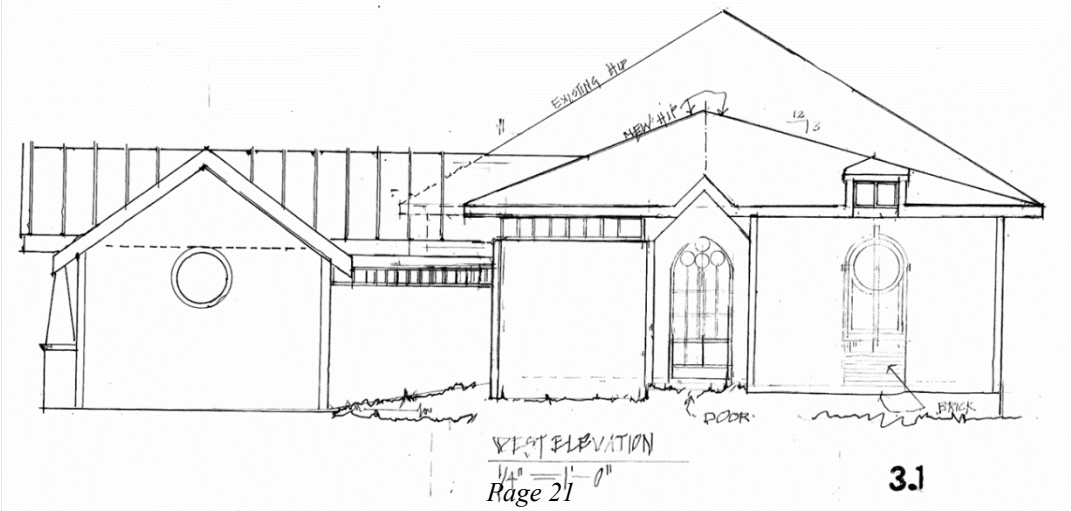
3. Literal Interpretation.
   a. The literal interpretation of the provisions of the regulations would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant
4. Reasonable Use.
   a. The applicant cannot make reasonable use of the property without the requested variance.
5. Minimum Required.
   a. The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.
6. Conformance with the Purposes of this Code.
   a. The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

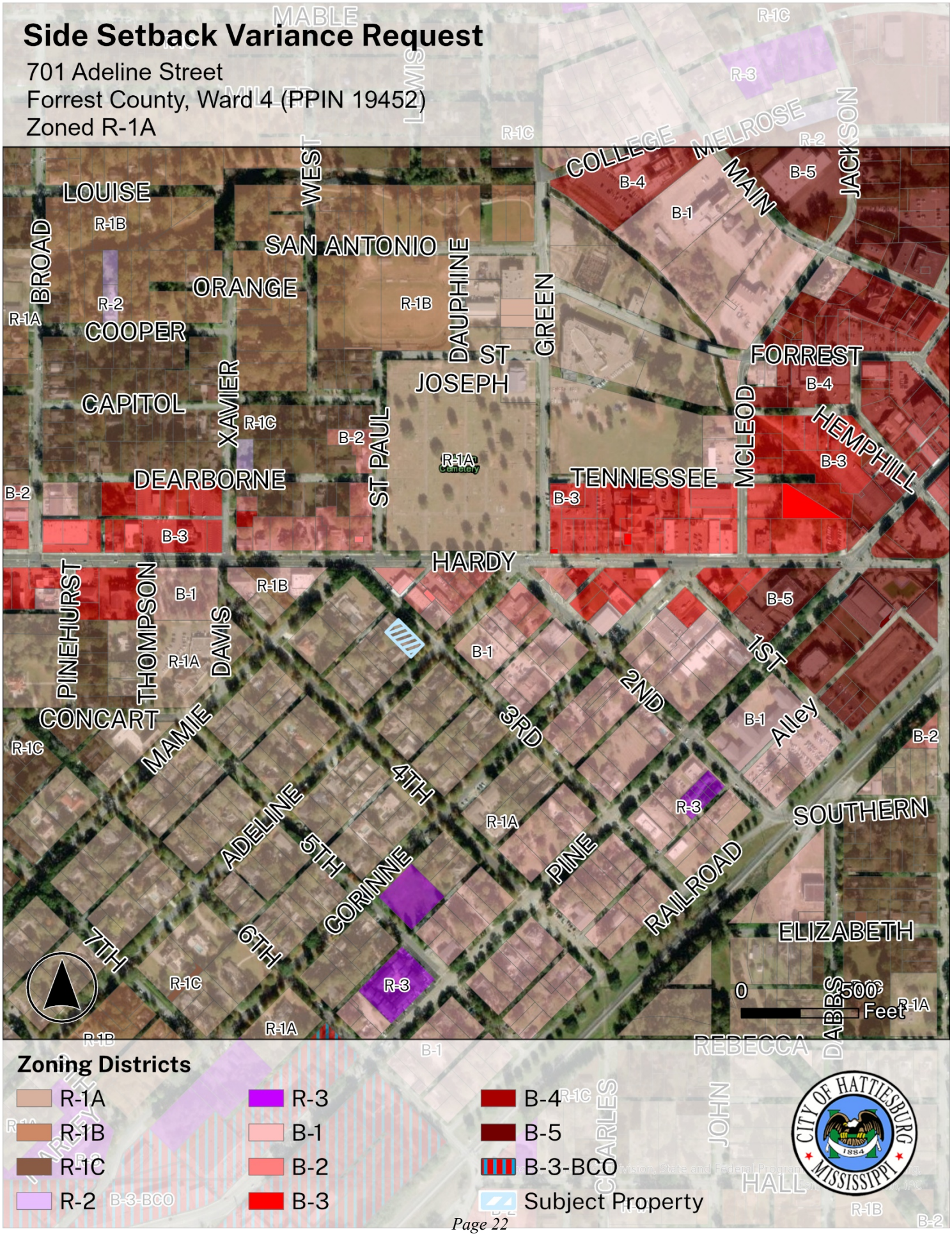

Landarc Consulting Group, Inc. Landscape Architecture & Site Planning 601 582-1198
May, 2026
Albert Residence
Adeline Street
Hattiesburg, Mississippi
Alley (20')
N 44° 48' 08" E 75' (APS)
N 45° 06' 06" W 50.11' (APS)
50.04' (APS)
GUEST HOUSE
AC
Shed
Ex. Gazebo (To be Removed)
PP
70.6'
38.6'
3.37'
15.19'
Carport
Ex. 42" Live Oak
N 44° 42' 40" W 149.86' (APS)
AC
RESIDENCE
New Conc. Drive
Ex. Oak
14'
Ex. Drive
N 45° 07' 00" E
3rd Avenue
15.32'
38.52'
200.17' (APS)
Bco
S 44° 57' 48" W 75.2' (APS)
Ex. Oak
Ex. Oak
30'
30'
Sight Triangle
WM
ADELINE STREET
Looking West from 3rd Avenue
Looking Southeast from Guest House
Site Plan
Scale: 1" = 16'
Legend
Existing Building
Proposed Addition
Walk
Renovate/Addition
Addition contingent on Variance
NOTE:
Site Plan generated from a Boundary Survey performed by:
Shows Dearman & Waits, Engineering
301 2nd Avenue
Hattiesburg, MS
PH 601 544-1821
1

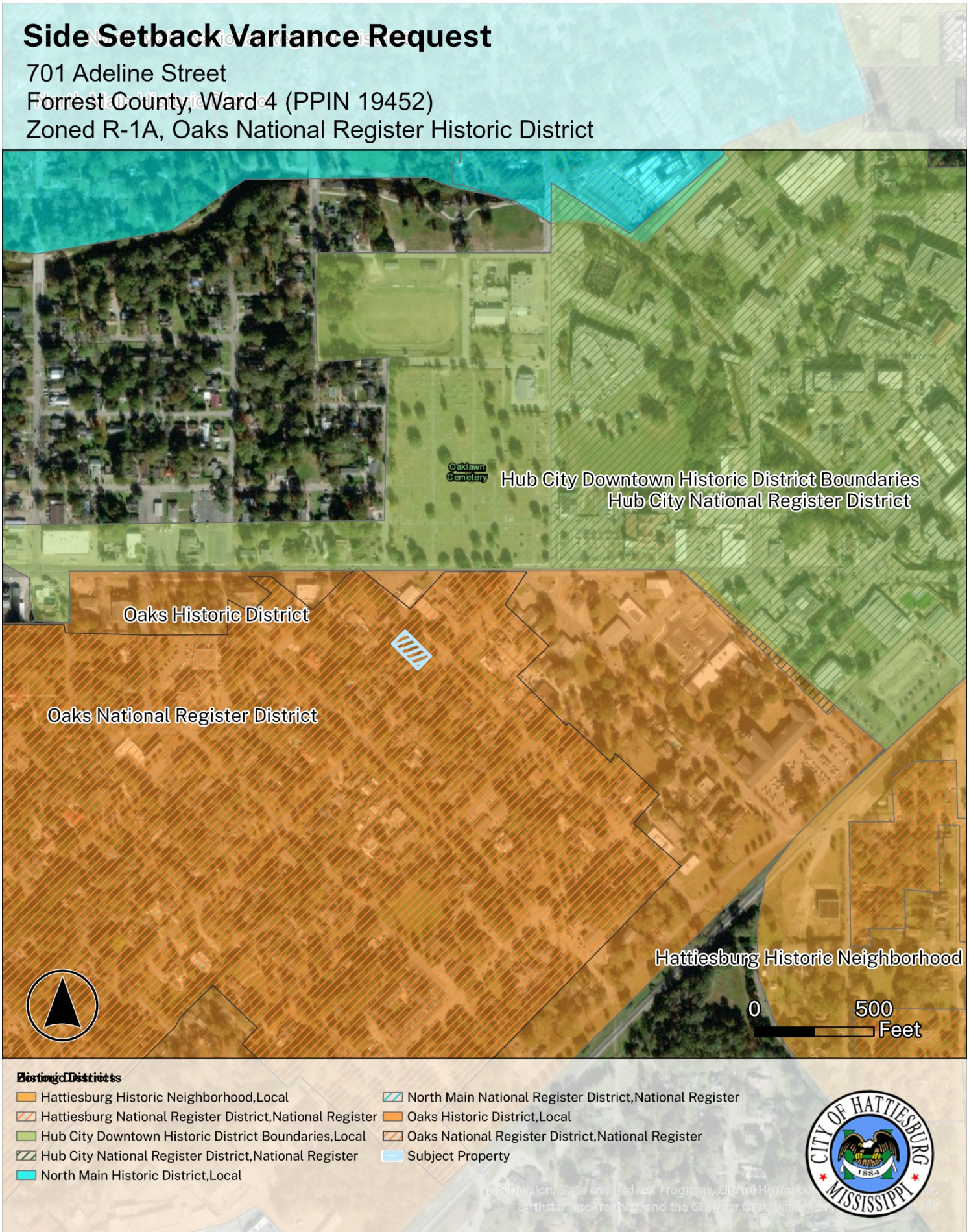

2½"
2'-0"
2½"
EQ.
EQ.
EQ.
¾" MULLIONS TYP.
3" RAISED WD. DETAILING
WINDOW 'H'
1"=1'-0"
WEATHER VANE BY OWNER - INSTALLED BY G.C.
15
9
CAST CONCRETE STUCCO
3½R
DETAIL
3"=1'-0"
BACK CORNER OF HOUSE
WOOD SIDING TO MATCH HOUSE PNTD. HARDY PLANK
HARDY PLANK DETAILS
BRICK TO MATCH HISTORICAL RIVERSIDE
NEW ARTS+CRAFTS GARAGE
1/4"=1'-0"
3.2

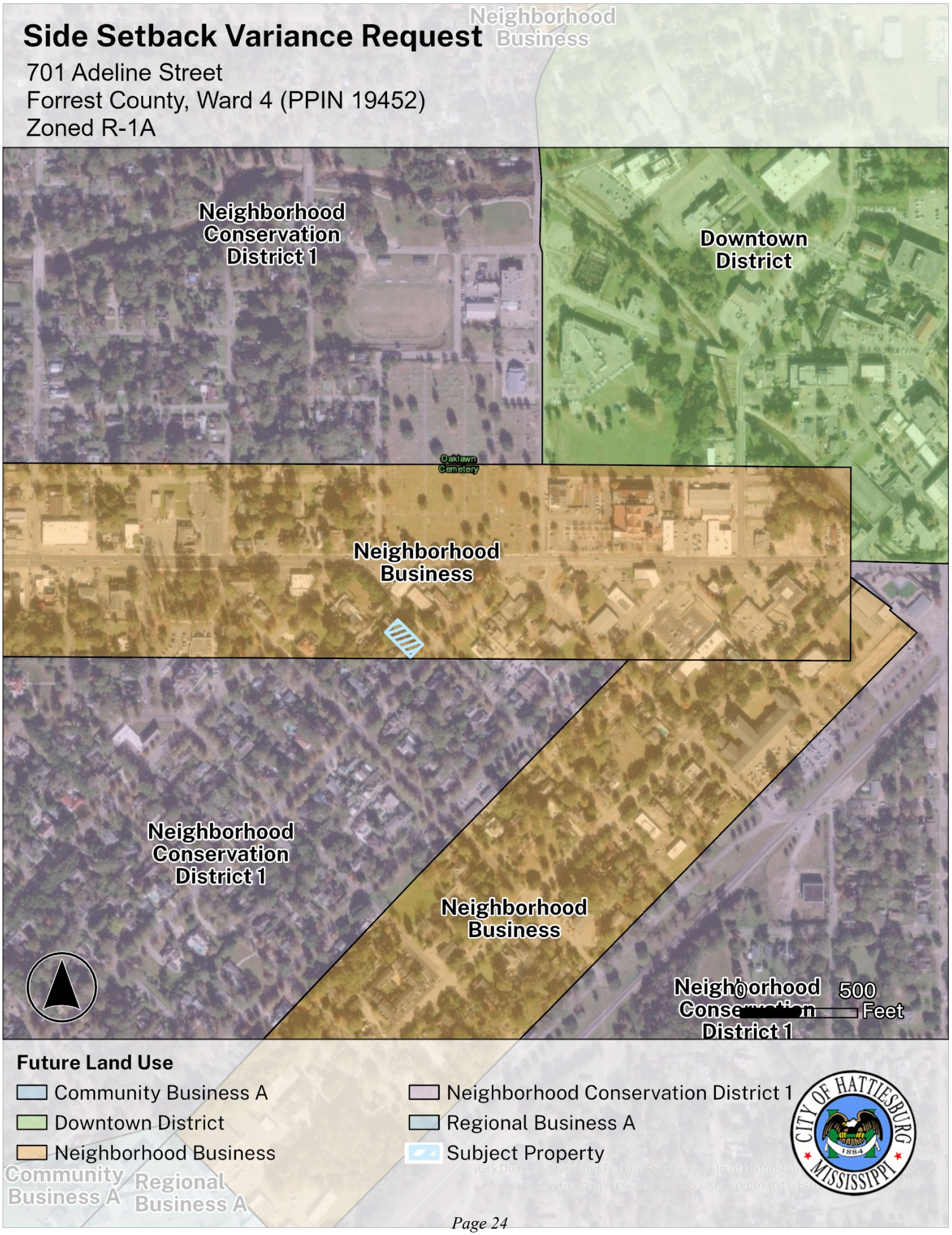

1/4"=1'-0"
SHINGLE MATCHING COLOR OF HOUSE (TYP.)
LINE OF EXPOSED TRUSS
42" WINDOW
9
SEE 5.0
'E'
PAINTED WOOD SIDING
WEST GARAGE ELEVATION
1/4"=1'-0"
3.3


WOOD SIDING
116
'B'
INSULATED AUTOMATIC SECTIONAL DOOR
EAST GARAGE ELEVATION
1/4"=1'-0"
'C' CENTER POINT


EXISTING HIP
NEW HIP
12/3
DOOR
BRICK
WEST ELEVATION
1/4"=1'-0"
3.1


Side Setback Variance Request
701 Adeline Street
Forrest County, Ward 4 (PPIN 19452)
Zoned R-1A
LOUISE
BROAD
WEST
SAN ANTONIO
ORANGE
COOPER
CAPITOL
XAVIER
DAUPHINE
GREEN
ST JOSEPH
ST PAUL
DEARBORNE
HARDY
COLLEGE
MELROSE
MAIN
JACKSON
FORREST
MCLEOD
HEMPHILL
TENNESSEE
PINEHURST
THOMPSON
DAVIS
CONCART
MAMIE
ADELINE
4TH
5TH
6TH
7TH
CORINNE
1ST
2ND
3RD
Alley
PINE
RAILROAD
SOUTHERN
ELIZABETH
REBECCA
DABBS
0
500
Feet
Zoning Districts
R-1A
R-1B
R-1C
R-2
R-3
B-1
B-2
B-3
B-4
B-5
B-3-BCO
Subject Property
CITY OF HATTIESBURG MISSISSIPPI 1884


Side Setback Variance Request
701 Adeline Street
Forrest County, Ward 4 (PPIN 19452)
Zoned R-1A, Oaks National Register Historic District
Oaklawn Cemetery
Hub City Downtown Historic District Boundaries
Hub City National Register District
Oaks Historic District
Oaks National Register District
Hattiesburg Historic Neighborhood
0
500
Feet
Hattiesburg Historic Neighborhood,Local
Hattiesburg National Register District,National Register
Hub City Downtown Historic District Boundaries,Local
Hub City National Register District,National Register
North Main Historic District,Local
North Main National Register District,National Register
Oaks Historic District,Local
Oaks National Register District,National Register
Subject Property
CITY OF HATTIESBURG
1884
MISSISSIPPI


Side Setback Variance Request
701 Adeline Street
Forrest County, Ward 4 (PPIN 19452)
Zoned R-1A
Neighborhood Business
Neighborhood Conservation District 1
Downtown District
Oaklawn Cemetery
Neighborhood Business
Neighborhood Conservation District 1
Neighborhood Business
Neighborhood Conservation District 1
0 500 Feet
Future Land Use
Community Business A
Downtown District
Neighborhood Business
Neighborhood Conservation District 1
Regional Business A
Subject Property
CITY OF HATTIESBURG MISSISSIPPI 1884
Community Business A
Regional Business A

Application for Public Hearing

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

NOTE:

- **Fill this application out IN FULL with what applies to your application**
- Refer to the hattiesburgms.com/planning for Land Development Code and GIS map. Access via link or QR code

Applicant Information

Name Applicant: LARRY A Albert **Project Name:** Resident

Municipal Address of Site: 701 ADELINE ST. **PPIN #:** 19452

Parcel Number(s): 2-029N-09-131.00

Type of Public Hearing	Additional Information Needed:
☑ Variance	☐ Sign ☑ Setback ☐ Off-Site Parking ☐ Lot Width ☐ Lot Coverage Area ☐ Buffer ☐ Open Space ☐ Other: _____
☐ Rezoning	Existing Zoning: _____ Proposed Zoning: _____
☐ Conditional Use	☐ Automotive Filling Station ☐ Digital Billboard, New ☐ Digital Billboard, Replacement ☐ Telecommunications ☐ Restaurant ☐ Solar Farm ☐ Other: _____
Other Application types: ☐ Subdividing of lot, Parcel, or Tract ☐ Street or Alley Renaming ☐ Vacating Street or Alley	 ☐ Minor/Major Subdivision ☐ Overlay District ☐ Planned Mixed-Use District (PMU)

For Staff Only:			
Zoning:	**Historic District:**	**Flood Zone:**	**Ward:** ☐1 ☐2 ☐3 ☐4 ☐5
Project Number:		**Received:**	
PPIN # or Parcel #:			

Updated Version 12/04/24

Application for Site Plan Review

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

The following fees are an excerpt from Ordinance No. 2977, adopted January 22, 2008, as amended.

Public Hearing Fees	
Public Hearing Type	Fees Associated
Variance Variance applications include one Concept Site Plan Review and one Variance request	**$175.00** per application. **$50.00** for each additional variance.
Street / Alley Naming or Re-Naming	**$300.00** per application. **$100.00** per required street name sign if approved* (*Fees for replacement street signs shall be paid after City Council approval but prior to the effective date.)
Street / Alley Closing	**$300.00** per application.
Conditional Use	**$200.00** per application.
Zoning Change	**$400.00** per application. *see PUD or PRD & zoning package rate)
Planned Unit Development (PUD) or Planned Residential Development (PRD) with zoning change package	**$600.00** per package.
Subdivision of Land (Preliminary Plats) Note: Final Plats should be submitted to the governing body for approval within 12 months of approval of preliminary plats.	**$225.00** per application. **$10.00** per each additional created lot (** see PUD or PRD & Subdivision of Land package rate)
Planned Unit Development (PUD) or Planned Residential Development with Subdivision of Land Package**	**$500.00** per application. **$10.00** per each additional created lot (** see PUD or PRD & Subdivision of Land package rate)
Change in Land Development Code Text	**$200.00** per application.
Appeal Fees for Proponent or Opponent appeals to City Council *Exempt from fees – Established Neighborhood Association*	**$50.00** per appeal.
Cancellation/Re-notification fee on any public hearing process (Planning Commission or City Council) that is tabled or cancelled at the owner/developer's Request	**$50.00** (per each 100 mailing labels)

OTHER PROCESSES MAY HAVE ADDITIONAL FEES
Make all checks payable to the City of Hattiesburg

I hereby certify that I have completed and attached the above-required documents, information, and fees.

Print Name: _____ **Signature:** _____

Updated Version 05/22/2025

OWNER AFFIDAVIT PAGE

THIS PAGE MUST BE SIGNED IN FRONT OF A NOTARY, BY THE OWNER(S) OF THE SUBJECT PROPERTY

WITNESS THE SIGNATURES of the **OWNER(s)** of the subject property located at

701 ATHELINE ST. HATTIESBURG MS.

Street Address City State

on this the 29 day of JUNE, 2026.

In the matter of this request, the property owner further authorizes the following named person(s) to represent them at the public hearing on this petition.

SALLY HUGHES

on this the 29 day of JUNE, 2026

LARRY S. ALBERTALS

Property Owner (Print)

Property Owner (Signature)

STATE OF Mississippi

COUNTY OF Forrest

Personally came and appeared before me, the within named

Larry Albert,

who signed and delivered the above and foregoing instrument as and for their free act and deed on the day and year therein mentioned, and who acknowledge to me that they are the owner(s) of the subject property as described in this Public Hearing Application.

GIVEN UNDER MY HAND AND OFFICIAL SEAL OF OFFICE, this the 29 day of June, 2026.

NOTARY PUBLIC

My Commission Expires:

March 10, 2028

STATE OF MISSISSIPPI NOTARY PUBLIC ID # 198695 KIMBERLY ATKINS Commission Expires March 10, 2028 FORREST COUNTY

FOR VARIANCE APPLICANTS:

The Board of Adjustment has the responsibility to hear and make recommendation on requests for variances to the requirements of this Code (per Section 11.4). Section 12.4.1 Variances are departures from the standards of the Land Development Code, except land use, which will not be contrary to the public interest and where, owing to conditions peculiar to the property and not as a result of the action of the applicant, a literal enforcement of this Code would result in unnecessary and undue hardship.

The following conditions must be met before a variance can be recommended.

Approval Criteria.
A variance is not a right, but a privilege that property owners meeting the following criteria may request. These criteria are to be used to consider all variance requests. It shall be the burden of the applicant to prove that the request meets these criteria. Use this worksheet or format your own to demonstrate the following criteria.

1. **Hardship.** (a) the hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant. (b) There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.

   MAKING MY HOUSE ADA ACCESSIBLE AND PROVIDE SAFETY WITH A CLOSED-IN GARAGE

2. **Special Privilege.** A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.

   THE HOUSE ON THE CORNER OF ADELINE & 3RD HAS A GARAGE CLOSER TO 3RD AVE THAN WE HAVE PLANED

3. **Literal Interpretation.** The literal interpretation of the provision of the regulation would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant.

   YES, THERE ARE MANY HOUSES IN THE OAKS DISTRICT WITH GARAGES CLOSE TO THE STREET OUR GARAGE WILL BE 30' FROM 3RD WITH THIS VARIANCE

4. **Reasonable Use.** The applicant cannot make reasonable use of the property without the requested variance.

   See Sheet 8a

5. **Minimum Required.** The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.

See Sheet 8a

6. **Conformance with Purpose of this Code.** The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

See Sheet 8a

12.4.1.2 Conditions of Approval. In recommending the granting of a variance, the Board of Adjustment may require appropriate conditions and safeguards in conformity with this Code. Violation of such conditions and safeguards, when made a part of the terms under which a variance is granted, shall be deemed a violation of the Code. The recommendation of the Board Adjustment shall be presented to the City Council for final action.

4. Reasonable Use. The applicant cannot make reasonable use of the property without the requested variance.

The requested variance is necessary to accommodate the property owner's accessibility needs while maintaining reasonable use of the property within the context of the surrounding neighborhood. The owner is handicapped and requires a detached garage placement that allows safe, convenient, and weather-protected access between the residence and garage. Locating the garage closer to the side property line minimizes the travel distance exposed to rain and other weather conditions, which is an important consideration for the owner's mobility and personal safety.

The zoning ordinance requires accessory structures to maintain a minimum 10-foot side setback; however, strict application of this requirement creates an unnecessary hardship in this specific case due to the functional accessibility needs of the homeowner. The requested variance would permit the garage to be located approximately 1 foot from the side property line.

5. Minimum Required. The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.

The request is therefore both reasonable and minimal in nature, representing the least variance necessary to provide the owner with safe and practical accessibility accommodations while remaining compatible with the historic residential character of the neighborhood.

6. Conformance with Purpose of this Code. The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

Importantly, the adjoining public right-of-way along this side of the property is approximately 81 feet in width, which is substantially wider than the typical rights-of-way found throughout the surrounding residential areas and approximately 21 feet wider than the city standard commonly present in similar neighborhoods. As a result, the reduced setback will not create the same visual or spatial impact that might otherwise occur on a typical residential lot. The unusually wide right-of-way preserves open space, maintains neighborhood character, and lessens any potential adverse effect on adjacent properties.

URBAN DEVELOPMENT
PLANNING DIVISION

PRE-APPLICATION MEETING SUMMARY NOTES
Meeting Date: Thursday, May 21, 2026
Pre-App Number: 0426-1158

Staff Present: Nathan Satcher (Senior Planner), Kevin Bates (Building Official), Nick Bishop (Fire Inspector), Jerald Little (Engineering Technician), Meridian McDaniel (Planner I), Noah Gower (Engineering Technician), Russell Archer (Historic Planner)

STATUS: **SUBMIT PUBLIC HEARING APPLICATIONS (BOARD OF ADJUSTMENT AND HISTORIC)**

Project: ADU

Address: 701 Adeline Street

Presented by: Larry Albert and Sally Hughes

Use Designation: Single Family Residential

PPIN: 19452

Flood Zone: X

Historic District: Oaks Historic

Elevation Certificate Required: No

County: Forrest

Ward: 4

Construction type: Addition

Zoning: R-1A

Estimated Cost: $100,000

Project Summary:

- Applicant Summary
  - Wanting to widen the driveway so it is easier to make the turn. Also creating an addition on the side of the home to make it more accessible.
  - Wanting to collapse both parcels into one.
- Planning
  - Historic
    - Addition will require a public hearing with the Hattiesburg Historic Conservation Commission
      - June Hearing Date- June 10th, 2026 at 12:00 pm
      - June Application Deadline- June 1st, 2026 at 5:00 pm
    - Historic Guidelines
      - Placement is good
      - Exterior finishes will need to be complementary to the existing home
  - Side setback
    - LDC 6.3.2
      - Setbacks in Historic Districts. "Setback requirements for dwellings shall not apply on any lot in a designated historic district where the average setback of existing buildings located on the same side of the street in the same block and, in the case of rear setbacks, on lots abutting rear lot lines, is less or greater than the minimum required setback. In such cases, the setbacks on such lot shall be established as the average of the setbacks of the existing buildings but in no case shall be less than five feet."
    - Minimum side setback required is 10ft
    - Garage is encroaching on the setback

Pre-application meeting notes are provided as a courtesy by staff during pre-application meetings.
These notes are not exhaustive. All Land Development Codes and City Ordinances apply, even if not listed during a pre-application meeting.

- Will require a variance with the Board of Adjustment
    - July Hearing Information
        - July Hearing Date- July 1st, 2026 at 3:30 pm
        - Just Application Deadline: May 26th, 2026 at 5:00 pm
- Building
    - No comments at this meeting.
- Engineering
    - No comments at this meeting.
- Fire
    - No comments at this meeting.

NEXT STEPS:

- Additional information
    - Board of Adjustment: July Hearing Information
        - July Hearing Date- July 1st, 2026, at 3:30 pm
        - Just Application Deadline: May 26th, 2026, at 5:00 pm
    - Historic Conservation Commission
        - June Hearing Date- June 10th, 2026, at 12:00 pm
        - June Application Deadline- June 1st, 2026, at 5:00 pm
- Permits
    - Apply for permits indicated below

APPLICATIONS REQUIRED:

☐	Site Plan Review Checklist and Application	☐	Conditional Use Application
☒	Public Hearing Application	☐	Street/Alley Closing
☒	Variance Application	☐	Major Subdivision
☐	Rezone Application	☐	Minor Subdivision
☒	Certificate of Appropriateness (Historic)	☐	Building Permit Application
☐	Privilege Tax License	☐	Sign Permit

Pre-application meeting notes are provided as a courtesy by staff during pre-application meetings.
These notes are not exhaustive. All Land Development Codes and City Ordinances apply, even if not listed during a pre-application meeting.

ALBERT & ASSOCIATES ARCHITECTS

Gall Albert [redacted]

Garage project

1 message

Griffith, Dr Charles [redacted]
To: [redacted]

Sun, Jun 28, 2026 at 10:16 AM

To whom it may concern:

I have been informed that Larry and Gall Albert have petitioned the city to build a garage on their Adeline property on the third Avenue side. I am very happy to support them in this project and have no concerns related to my own property or the neighborhood in general. I am at 102 Mamie St. Feel free to reach out to me directly if there is anything further I need to clarify. My cell is 601-[redacted]

Respectfully,
Charles R. Griffith, MD

URBAN DEVELOPMENT
PLANNING DIVISION

Quick Facts:

Applicant:

Clearpoint Engineers and the USM Wesley Foundation

Address:

3200 Montague Blvd

Zoning:

R-3 (Multi-Family Residential)

Future Land Use:

University/College District

Historic District:

N/A

Overlay District(s):

N/A

Flood Zone:

X

Ward:

1

County:

Forrest

PPIN Number(s):

22975 & 22976

Parcel Number(s):

2-028K-07-004.00 & 2-028K-07-005.00

Hattiesburg Board of Adjustment
Planning Division
Item B - Staff Report
August 5th, 2026



Property Image

Applicant's Requests:
Clearpoint Engineers, Applicant, request a variance from the R-3 district residential density maximum of 7 dwelling units to allow for 9 (LDC Table 6.1) for a property zoned R-3 located at 3200 Montague Blvd (PPIN 22975 & 22976, Forrest County, Ward 1).



Background and History

The applicants met with staff in various pre-application and site plan review meetings to discuss their plans to demolish the existing Wesley Foundation building and construct a new Wesley Foundation facility at 3200 Montague Boulevard on the University of Southern Mississippi campus. The proposed development is a mixed-use building that includes dwelling units, a coffee shop, and a place of assembly. During the pre-application process, staff informed the applicants that the property's R-3 zoning district did not permit mixed-use development or a coffee shop as proposed and that amendments to the Land Development Code would be necessary. Staff also explored options for incorporating the coffee shop as an accessory use to the primary place of assembly.

Following those discussions, in November of 2025, the applicants pursued a text amendment to the Land Development Code to allow cafés/coffee shops as an accessory use to a "Place of Assembly," recognizing that coffee shops are commonly integrated into similar institutional and religious facilities. The Planning Commission and City Council subsequently approved the requested Land Development Code text amendment, allowing the proposed use. The applicants also received conditional use approval for the mixed-use development and place of assembly. The property also had previously received a variance in February 2018 permitting up to 69% impervious surface coverage, an increase from the code's maximum of 50%. As the project design evolved, the applicants requested an additional variance to allow for 80% impervious surface coverage. Because variances run with the land, the previously approved variance remained in effect but was insufficient to accommodate the revised site plan. The requested variance for 80% impervious surface coverage has since been approved, allowing the proposed development to proceed as designed.

Following approval of the Land Development Code text amendment, conditional use permits, and impervious surface variance, the applicants proceeded through the Site Plan Review process with staff. During review of the site plan, staff identified that the proposed development contains nine (9) dwelling units. The Land Development Code limits mixed-use developments in the R-3 zoning district to a maximum of seven (7) dwelling units for their property size (17 per acre), since the lot is approximately 0.41 acres. To accommodate the proposed site design, the applicants are requesting a variance to increase the maximum



Surrounding Area Image



Surrounding Area Image

number of permitted dwelling units from seven (7) to nine (9). The remainder of the proposed development remains consistent with the plans previously approved by the Planning Commission and City Council.

Future Land Use:

University Districts This includes properties owned or controlled by colleges or universities, both public and private.

Codes and Regulations

SECTION 6: Dimensional Standards and Measurements

Table 6.1 Dimensional Standards

District	Minimum Lot Size in SF/ Width at Setback	Max. Dwelling Units	Max. Floor Area Ratio	Setbacks in feet				Max. Height*	Max. Impervious Surface Lot Coverage	Buffer in Feet
				Min. Front	Max. Front	Min. Side	Min. Rear			
A-1	130,680 / 100	1 per lot	-	25	-	15	25	35 feet or 3 stories	35%	-
A-2	43,560 / 100	1 per lot	-	25	-	15	25	35 feet or 3 stories	50%	-
R-1A	10,000/ 50	1 per lot	-	30	-	10	25	35 feet or 3 stories	50%	-
R-1B	7,500/ 50	1 per lot	-	25	-	10	25	35 feet or 3 stories	50%	-
R-1C	5,000/ 50	1 per lot	-	20	-	10	25	35 feet or 3 stories	50%	-
R-2	4,000/ 40	2 per lot	-	20	-	10	20	35 feet or 3 stories	50%	-
R-3	7,500/ 40	17 per acre	-	20	-	5	20	35 feet or 3 stories	50%	-

Considerations and Basis for Approval

Option:

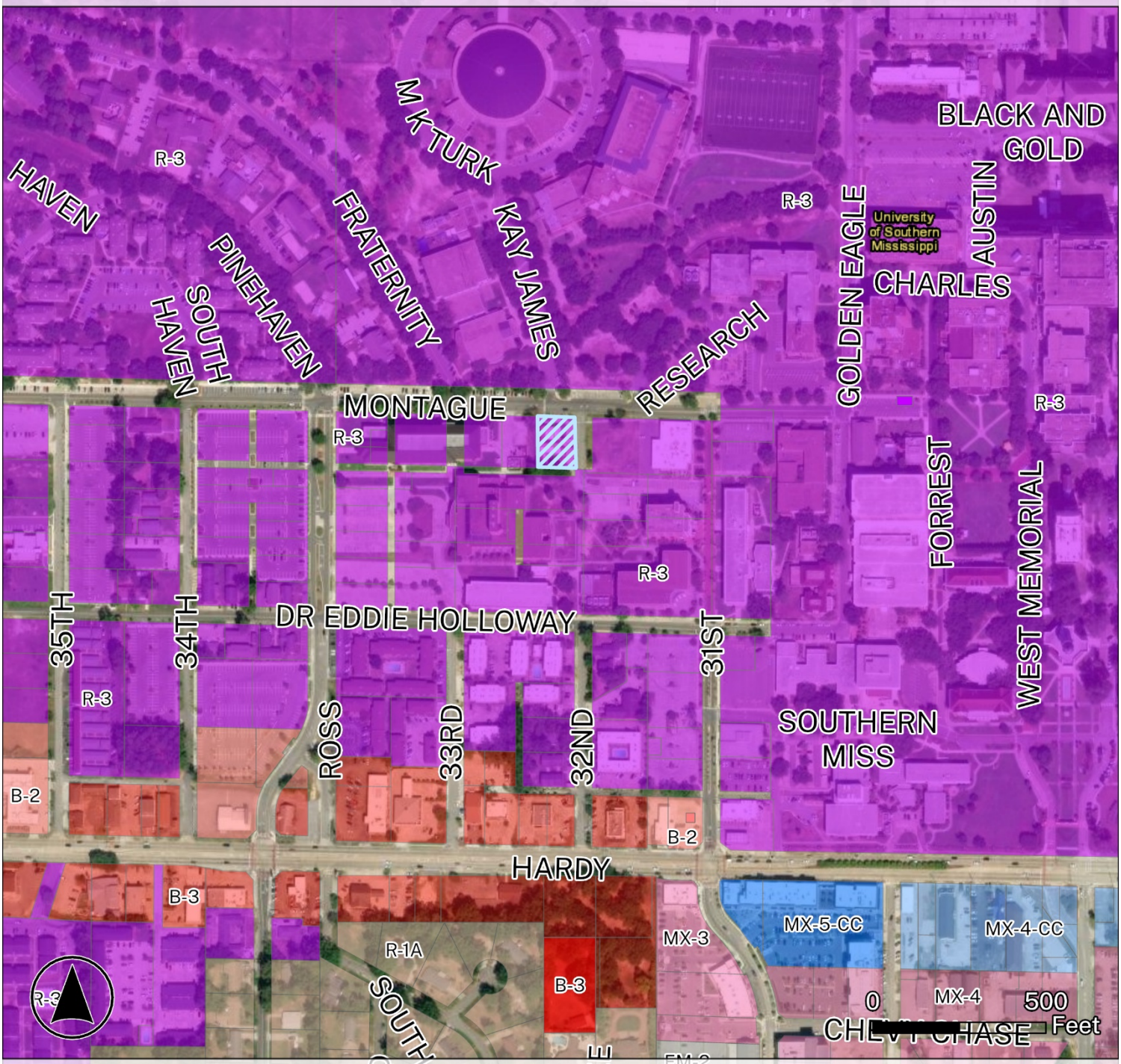
Recommend approval or denial of a variance from the R-3 district residential density maximum of 7 dwelling units to allow for 9 (LDC Table 6.1) for a property zoned R-3 located at 3200 Montague Blvd (PPIN 22975 & 22976, Forrest County, Ward 1).

Basis for Approval:

1. Hardship.
    a. The hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant.
    b. There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.
2. Special Privilege.
    a. A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.
3. Literal Interpretation.
    a. The literal interpretation of the provisions of the regulations would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant
4. Reasonable Use.
    a. The applicant cannot make reasonable use of the property without the requested variance.
5. Minimum Required.
    a. The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.
6. Conformance with the Purposes of this Code.
    a. The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

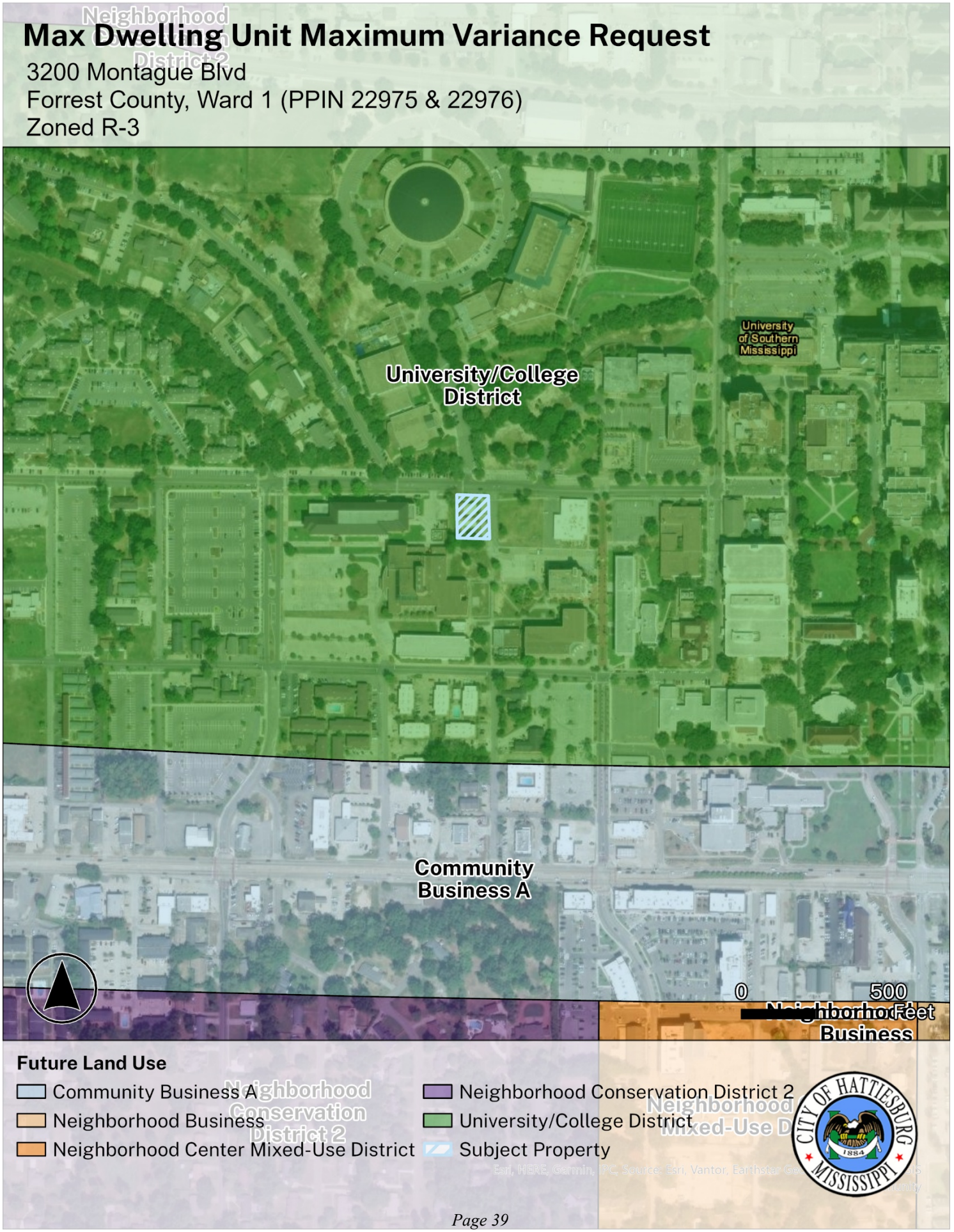
Max Dwelling Unit Maximum Variance Request

3200 Montague Blvd
Forrest County, Ward 1 (PPIN 22975 & 22976)
Zoned R-3



Zoning Districts

R-1A	B-3	MX-4-CC
R-1B	RD-2	MX-5-CC
R-2	RA-3	EM-2
R-3	MX-3	OS
B-2	MX-4	Subject Property


Max Dwelling Unit Maximum Variance Request
3200 Montague Blvd
Forrest County, Ward 1 (PPIN 22975 & 22976)
Zoned R-3
University of Southern Mississippi
University/College District
Community Business A
0
500
Feet
Future Land Use
Community Business A
Neighborhood Business
Neighborhood Center Mixed-Use District
Neighborhood Conservation District 2
University/College District
Subject Property
CITY OF HATTIESBURG
1884
MISSISSIPPI

Site Aerial


Ross Blvd
Pearl St
Montague Blvd
Montague Blvd @ CuBard School
Pinehaven Cir
Fraternity Dr
Kay Jaines Dr
N 32nd Ave
N 31st Ave
Research Dr
Golden Eagle Ave

NOTE: Submit application today Mon 6/29/26, to meet submittal deadline, per Nathan.
$175.00 fee to be dropped off before the hearing date.

Application for Public Hearing

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

NOTE:

- **Fill this application out IN FULL with what applies to your application**
- Refer to the hattiesburgms.com/planning for Land Development Code and GIS map. Access via link or QR code

Applicant Information

Name Applicant: Clearpoint Engineers- John Anglin/Shelby Murray **Project Name:** NEW USM WESLEY FOUNDATION BUILDING

Municipal Address of Site: 3200 Montague Blvd, Hattiesburg (on USM campus) **PPIN #:** 22975 / 22976

Parcel Number(s): 2-08K-004 / 2-028K-005

Type of Public Hearing	Additional Information Needed:
■ Variance (fill out pages 7 & 8)	☐ Sign ☐ Setback ☐ Off-Site Parking ☐ Lot Width ☐ Lot Coverage Area ☐ Buffer ☐ Open Space ■ Other: Number of residential units allowance
☐ Rezoning (fill out page 11)	Existing Zoning: _____ Proposed Zoning: _____
☐ Conditional Use (fill out pages 9 & 10)	☐ Automotive Filling Station ☐ Digital Billboard, New ☐ Digital Billboard, Replacement ☐ Telecommunications ☐ Restaurant ☐ Solar Farm ☐ Other: _____

Other Application types:

☐ Subdividing of a lot, Parcel, or Tract (fill out page 12)
☐ Street or Alley Renaming (fill out pages 13 & 14)
☐ Vacating Street or Alley (fill out pages 13 & 14)
☐ Text Amendment
☐ Overlay District
☐ Planned Mixed-Use District (PMU)

For Staff Only:			
Zoning:	**Historic District:**	**Flood Zone:**	**Ward:** ☐1 ☐2 ☐3 ☐4 ☐5
Project Number:		**Received:**	
PPIN # or Parcel #:			

Updated Version 05/22/25

Application for Public Hearing

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

Public Hearing Petitioner Information:

Deadline for applicant to file petition: Mon, June 29, 2026
Hattiesburg Planning Commission Meeting Date: Wed, Aug 5, 2026
Hattiesburg Board of Adjustment Meeting Date: _____
City Council Agenda Review Date – (you or your representative should attend): _____
City Council Meeting (Vote) Date – (you or your representative may attend): _____

- There is a 10-day appeal period, required by State Law, between the Planning Commission Meeting and/or Board of Adjustment Meeting and the City Council Meeting – appeals must be filed within this 10-day period.
    - There is an additional 10-day appeal period, required by State Law, after the City Council Meeting, for all Variances and Conditional Use Permit which ends _____ and a 30-day wait period for Zoning or Street closing/re-naming, PMUs, PRDs, PUDs which ends _____.
- So, if approved by the City, no final site plan review approvals or building permits could be issued prior to these dates.

*Dates and times are subject to change. If an appeal is filed or the petition is tabled for any reason at any stage, the above-listed dates would need to be revised. *

Public Hearing Application Checklist

The following paperwork MUST be attached to this application:

☐ Site Diagram (11" x 17" preferred size): Drawing to scale prepared by professional engineer/surveyor showing lot dimensions, existing/proposed building, signs, parking areas, etc. (Different standards may be accepted only per approval from staff)
☐ Site & Design Review Committee, if needed
☐ Copy of entire Warranty Deed (filed and recorded at the courthouse) with legal description granting title to the current owner. (If the Warranty Deed covers a larger piece of property than the current project, a legal description for this project site only may also be required)
☐ Electronic/Digital copy of legal description REQUIRED for all public notices, saved as Word or text document OR emailed to planning@hattiesburgms.com
☐ An affidavit (pages 3 & 4) attesting that the applicant or representing party (if other than the owner) is acting on behalf of the owner(s) of record. The affidavit must be sworn to before a notary public or other appropriate official. (Included in owners signature page, or may be a separate document).
☐ **Variance application only:** A letter of approval/denial from all adjoining property owners must be obtained and submitted with the application
☐ Other documents needed (if relevant):
☐ Maps of digital billboard removal sites
☐ Maps of digital billboard replacement sites
☐ Documentation on measurements
☐ Other: _____
☐ Payment to the City of Hattiesburg for filing a public hearing application in the amount of $_____

Application for Site Plan Review

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

The following fees are an excerpt from Ordinance No. 2977, adopted January 22, 2008, as amended.

Public Hearing Fees	
Public Hearing Type	Fees Associated
Variance Variance applications include one Concept Site Plan Review and one Variance request	**$175.00** per application. **$50.00** for each additional variance.
Street / Alley Naming or Re-Naming	**$300.00** per application. **$100.00** per required street name sign if approved* (*Fees for replacement street signs shall be paid after City Council approval but prior to the effective date.)
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Cancellation/Re-notification fee on any public hearing process (Planning Commission or City Council) that is tabled or cancelled at the owner/developer's Request	**$50.00** (per each 100 mailing labels)

OTHER PROCESSES MAY HAVE ADDITIONAL FEES
Make all checks payable to the City of Hattiesburg

I hereby certify that I have completed and attached the above-required documents, information, and fees.

Print Name: Stacey Odom, Admin _____ **Signature:** _____

Updated Version 05/22/2025

FOR VARIANCE APPLICANTS:

The Board of Adjustment has the responsibility to hear and make recommendation on requests for variances to the requirements of this Code (per Section 11.4). Section 12.4.1 Variances are departures from the standards of the Land Development Code, except land use, which will not be contrary to the public interest and where, owing to conditions peculiar to the property and not as a result of the action of the applicant, a literal enforcement of this Code would result in unnecessary and undue hardship.

The following conditions must be met before a variance can be recommended.

Approval Criteria.
A variance is not a right, but a privilege that property owners meeting the following criteria may request. These criteria are to be used to consider all variance requests. It shall be the burden of the applicant to prove that the request meets these criteria. Use this worksheet or format your own to demonstrate the following criteria.

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2. **Special Privilege.** A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.

   This should not cause any special privilege due to the fact that there are now residential units in the current building and there are no other dwellings in close proximity which are comparable.

3. **Literal Interpretation**. The literal interpretation of the provision of the regulation would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant.

   The majority of the site plan would need to be revised and completely redrawn to remedy the 8 unit allowance as opposed to the 9 units. All other provisions have been provided with parking to accommodate for each resident.

4. **Reasonable Use.** The applicant cannot make reasonable use of the property without the requested variance.

   Reasonable use, again, has been substantiated in the previous submitted site plan drawings. Ample site layout and parking have been equally provided

5. **Minimum Required.** The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.

Granting this variance makes sense, in that the use of this structure reaches full utilization of the second floor square footage for the requested units. This also leaves substantial living space for the ADA unit on the first floor.

6. **Conformance with Purpose of this Code.** The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

It is unclear what intent is being fulfilled in omitting a full unit. It seems that the option of consolidating to 8 units, yet keeping all beds, would not remedy the square footage per acre issue since the usable space would be the same.

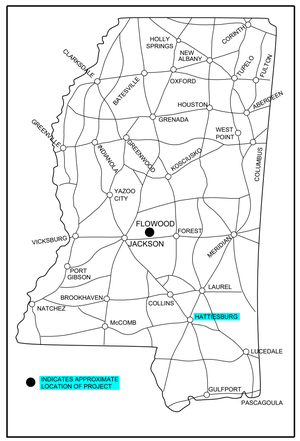
12.4.1.2 Conditions of Approval. In recommending the granting of a variance, the Board of Adjustment may require appropriate conditions and safeguards in conformity with this Code. Violation of such conditions and safeguards, when made a part of the terms under which a variance is granted, shall be deemed a violation of the Code. The recommendation of the Board Adjustment shall be presented to the City Council for final action.

USM WESLEY FOUNDATION
MIXED USE BUILDING
3200 MONTAGUE BLVD

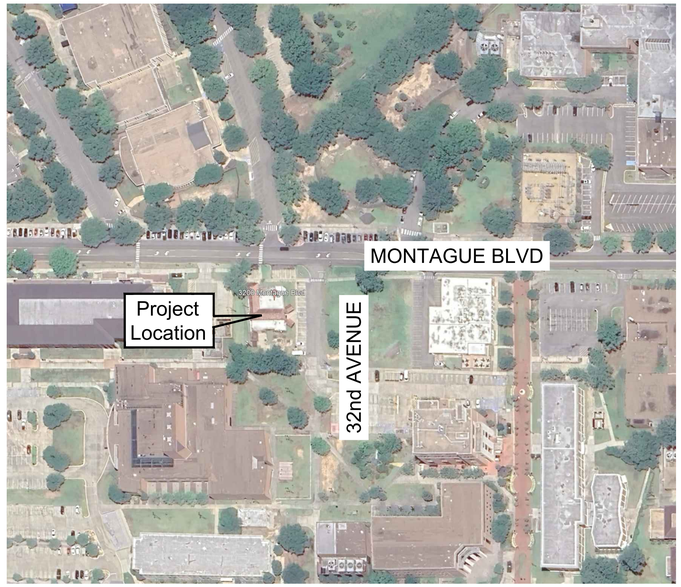
For

Vertikal Collaboration
Hattiesburg, MS

June 4, 2026



LOCATION MAP



VICINITY MAP

NOT TO SCALE

DRAWING INDEX	
Sheet No.	Description
C1.0	Title Sheet
C1.1	Notes, Legend, and Abbreviations
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C2.2	Site Plan
C2.3	Grading and Drainage Plan
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Utility Notes:

- The location of utilities are approximate only. Excavation near utilities shown should be done with caution. The Mississippi One-Call Network (1-800-227-6477) should be notified prior to commencing with excavation activities.
- Additional underground utilities may exist. Lacking excavation, however, the exact location of underground utilities cannot be accurately, completely, and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary.

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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Title Sheet

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C1.0

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 11-7-25

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

GENERAL NOTES:

1. The location of utilities shown is based on field surveys of utility markings and/or information provided by utility company personnel. Their location should be considered as approximate only, and other utilities may exist that are not shown on these drawings. Excavation near utilities shown should be done with caution. Prior to construction operations, the Contractor shall verify the location of existing utilities on the project site, and at the Contractor's expense, shall promptly repair those which are damaged by his construction operations. The Mississippi One-Call Network (1-800-227-5477) should be notified prior to commencing with excavation activities.

2. Specifications for all materials and construction methods for street, driveway, or parking lot construction shall conform to the applicable provisions of the Mississippi Standard Specifications for State Aid Road and Bridge Construction, Latest Edition.

3. The Contractor must have written approval from the City Engineer and/or Project Engineer of record before any change in the design is made.

4. All requirements specified in the technical specifications, the Storm Water Pollution Prevention Plan (SWPPP), all MDOT permit(s), and the geotechnical report shall be considered to be included within the Contractor's scope of work for the project, and the Contractor shall be responsible for full compliance therein.

5. The Contractor shall warrant all materials and labor for a period of one (1) year for all work performed by the Contractor and Sub-contractor(s).

6. Contractor shall provide a minimum 24 hour notice to the engineer prior to commencing any construction operations, sampling, or testing.

7. Contractor shall provide all necessary fittings and appurtenances necessary for complete installation of all items whether specifically indicated or not.

8. Any local, state, or federal permitting required for construction shall be the responsibility of the Contractor to obtain.

9. CONSTRUCTION SAFETY IS A PROJECT REQUIREMENT. The Contractor shall be responsible for providing safety equipment and/or methods necessary for the safe prosecution of the work by his personnel and the personnel of any Sub-contractors, as well as providing safe access and site conditions to all elements of the project for the Owner, Engineer and their representatives. Such safety requirement shall meet OSHA guidelines.

10. The Contractor shall assign a competent, experienced, and employed superintendent to be on site at all times during all phases of construction. Work on the project site shall cease if the superintendent is not on site for an extended period of time.

11. It is the responsibility of the Contractor to protect existing structures and utilities that are to remain such as pipes, inlets, paved ditches, gas pipelines, water mains, sewer mains, underground power/fiber, etc. from damage which might occur during construction. The Contractor shall replace or repair, as directed by the Engineer, any structures damaged during the life of the Contract. No payment to Contractor will be made for replacement or repair of damaged items.

12. All existing signs, fences, mailboxes, and other incidental structures located with the project construction limits shall be temporarily removed and reestablished as required by construction activities. Any damaged items shall be replaced at the Contractor's expense.

13. To prevent damage to adjacent properties, Contractor shall properly establish the property boundaries of the subject property site prior to any construction activities within the subject property. The Contractor shall not enter upon or cause damage to adjacent properties without written permission from adjacent property owner(s).

14. Contractor shall seed, fertilize, and mulch all areas (not proposed as paved or under roof) disturbed by construction activities and insure a complete stand of grass. Apply per seasonal limitations.

15. The Contractor shall be responsible for completing all sampling and testing of materials incorporated into the project and for submission of same to the Engineer for review. All phases of testing, including but not limited to sampling, transporting, and testing of materials, must be performed by a certified testing laboratory. Prior use test results, manufacturer's certificates, or proposed mix designs shall be submitted to the Engineer for review before incorporation into the project. This shall include embankment, back fill, seed, and all other items specified by the Engineer. Quality control/testing shall be the responsibility of the Contractor.

16. Construction staking shall be provided by the Contractor.

17. Contractor shall provide proper traffic control (signs, barricades, flagmen, etc.) when working within highway or county right-of-way. Appropriate personnel shall be notified at least 48 hours prior to commencing any construction operations within highway right-of-way. All traffic control materials and procedures shall be in full compliance with the latest version of the Manual on Uniform Traffic Control Devices (MUTCD). Contractor shall also ensure that access to existing residences and businesses is maintained during all phases of construction, and shall be responsible for all related coordination.

18. Material submittals shall be made to the Owner through the Engineer prior to use, for approval. All materials shall be new; used materials shall not be installed.

19. The Contractor is required to remove all spoil material on a daily basis.

20. The Contractor is responsible for coordinating with existing residences or businesses regarding temporary interruption of access and/or utility service, if required, and shall sequence construction operations as necessary to ensure that said interruption of access and/or utility service is kept to a minimum.

21. The Contractor is responsible for coordinating with the power company regarding establishment of temporary and permanent power, and shall include all required connection and meter fees in their bid.

22. No construction activities shall commence until all approvals and permits have been obtained from governing authorities, including but not limited to those required by the City, County, MS Department of Health, MS Department of Environmental Quality, Mississippi Department of Transportation (MDOT), Corps of Engineers, Utility Associations). Any work performed prior to obtaining said permits and approvals shall occur at the risk of the Contractor and/or Owner.

23. Contractor shall provide minimum 48 hours to M.D.O.T. personnel prior to performing any working within highway right-of-way. Contractor shall keep a copy of the MDOT permit on site at all times (if required).

24. All costs associated with dewatering (if required) shall be absorbed by the Contractor. Contractor shall employ dewatering methods as required for complete installation of storm drainage and utilities. Prior to bid, it is the Contractor's responsibility to consult the geotechnical report and make site visits necessary in order to determine costs required for dewatering effort.

25. At project completion, the Contractor shall provide as-built "markup" drawings to the Engineer, based on field measurements, that accurately show the location of all subsurface utility and drainage improvements (i.e. roof drain/downspout collection, water mains/service lines, sewer service lines, sewer force mains, irrigation, power, communication, gas, etc.).

26. Existing conditions and topography shown on these construction drawings are representative of conditions on October 17, 2023, and may not be representative of existing conditions as of the date of these drawings. Prior to execution of a contract, the Contractor is responsible for visiting the site to determine the scope of work.

27. Prior to construction layout of proposed building(s), the architectural drawings shall be used to verify the building dimensions shown on civil drawings. Should discrepancies exist between architectural drawings and civil drawings, then architectural drawings shall control.

SEWER NOTES:

1. Construction and materials for sanitary sewer improvements shall conform to the specifications of the Mississippi Department of Environmental Quality and the local sewer service provider.

2. All sanitary sewer mains and services shall be PVC SDR-26. Sewer services shall be 6" in diameter, and shall be installed on a minimum 1% slope.

3. Bedding material shall be required beneath all sanitary sewer mains, and beneath all sanitary sewer services located under roadways and paved areas. Bedding material shall be a gravel-sand mixture, all of which passes a 1 1/2 inch sieve, not more than 30 percent of which passes a No. 4 sieve, and not more than 5 percent of which passes a No. 200 sieve.

4. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill sewer pipe trenches.

5. A manhole drop connection is required if the vertical distance between an influent sanitary sewer main or service and the bottom of the manhole exceeds two feet.

6. Sewer mains and services must be buried a minimum of 36" below finished grade.

7. Locator wire (14 gage copper) shall be placed along and attached to all new sewer mains.

8. The Contractor shall verify location, size, and invert elevation of existing sewer mains and/or manholes prior to commencing connection operations. The Contractor shall coordinate with the Engineer regarding any necessary adjustments to new sewer lines as necessary to allow for proper connection and installation.

9. Contractor shall refer to mechanical / plumbing drawings to verify locations and sizes of sewer services prior to installation. Adjustments to sewer service location(s) and invert elevation(s); and grease trap locations (if required) shown on these drawings shall be made as necessary through coordination with the Project Engineer. For sewer services, the scope of these drawings terminates at a location five feet (5') outside of the exterior building wall. Refer to mechanical / plumbing drawings for continuation into the building.

10. The Contractor is responsible for coordinating with the utility service provider prior to connecting to existing sewer or relocation of existing sewer (if required). The Contractor is responsible for ensuring that utility service personnel are present during critical phases of installation (i.e. connection, relocation, testing, etc.). Cost of connection fees shall be responsibility of the Contractor.

11. Prior to being placed into service, all new sewer mains must be tested according to the specifications.

12. The Contractor shall be responsible for providing minimum 48 hours notice to the sewer service provider during critical phases of sewer installation (i.e. connections, relocations, pressure tests, etc.) to allow opportunity for on-site observation.

GRADING AND DRAINAGE NOTES:

1. All available topsoil within the construction limits shall be stripped, stockpiled in a designated area to be approved by the Engineer, and replaced on slopes or as directed by the Engineer. Upon completion of grading, the Contractor shall place a sufficient quantity of topsoil (4" minimum) to insure grass growth on the designated area. Topsoil shall be used to achieve final grades on roadway slopes and on slopes outside of paving limits. Any excess topsoil shall remain stockpiled for future use by the Owner.

2. Finished contours are intended to show a general representation of drainage patterns and slopes after paving, grading, replacement of topsoil, and/or placement of sod. Regardless of the level of grading detail shown on these drawings, Contractor shall take whatever steps necessary to ensure that positive drainage occurs on all areas of project site, specifically away from buildings. Prior to final grading, Contractor shall make allowances for placement of sod and landscape beds to ensure final design grades are achieved and that these areas are free of debris. Contractor shall coordinate with landscaping personnel to ensure that landscape beds are placed sufficiently below building finished floor elevations and that they do not trap water against buildings. Where roof drains are discharged onto the surface, Contractor shall extend downspouts along finished grade beyond landscape areas as needed for free discharge.

3. At the expense of the Contractor, the Contractor shall maintain existing drainage patterns and construct temporary structures, embankments, and culverts as required to maintain the drainage system and capacity in the work area. Any and all temporary structures, embankments, and culverts constructed during the progress of work shall be removed and the area restored to its original condition.

4. The Contractor shall furnish, place, and maintain all sheeting, shoring, and bracing required to support the sides of the required trench excavations. The Contractor shall be responsible for the sufficiency of any such supports to prevent any movement which can in any way damage or delay the work; endanger or cause damage to adjacent pavements, buildings, or other structures; or create undue hazards to workmen.

5. Existing ground elevations are a general representation of existing ground topography prior to demolition operations.

6. In cases where adjacent grades are higher than the building finished floor elevations, then Contractor shall coordinate with the architect regarding special design accommodations and waterproofing.

7. Contractor shall notify Engineer of any conflicts between civil drawings and architectural drawings regarding proposed grading at doorways and entrances.

8. Spot elevations shown adjacent to curb and gutter and/or adjacent to sidewalk are referenced to edge of pavement. Where shown along edge of sidewalks, add 6" for adjacent top of sidewalk elevation.

9. A.D.A. REQUIREMENTS:
- For handicap spaces and aisles, finished grade slopes shall not exceed 1.5% in any direction.
- Longitudinal slopes along sidewalks and handicap accessible routes shall not exceed 4.5%.
- Transverse slopes across sidewalks and handicap accessible routes shall not exceed 1.5%.

10. A geotechnical report for the project has been prepared by W GEOTECHNICAL AND TESTING, INC. DATED MAY 15, 2024. Refer to said report for a description of in-situ soils and all phases of site preparation and testing requirements. It is highly recommended that a representative of Terracon Consultants be present during earthwork operations to ensure the buffer requirements are met and to ensure proper compaction of backfill. If any discrepancies are found between previously mentioned GEOTECHNICAL REPORT and construction plans, the geotechnical report shall govern.

11. Structural design of retaining walls, including backfill and drainage requirements, is not included within the scope of these construction drawings. Structural design of retaining walls shall be provided by the Contractor, and the Contractor is responsible for coordinating with the Owner and Landscape Architect regarding colors, block styles, etc. Retaining wall design shall be performed by a Professional Engineer registered in the State of Mississippi.

12. See sheet C3.5 for bedding requirements for High Performance (HP) storm drainage pipe.

13. With the exception of curb inlet tops, drainage structures may be pre-cast or cast-in-place. Brick or block inlets are not allowed. Curb inlet or grate inlet tops shall conform to the longitudinal top of curb grade and must be cast-in-place. Precast curb inlet tops are not permitted. For curb inlets on longitudinal grade, precast tops are not permitted. Curb inlet top elevations shown are referenced to the top of curb elevation at the center of the curb inlet box. Where located adjacent to curb and gutter, grate inlet tops shall be set equal to flowline elevation of gutter.

14. All sizes of flared end sections may be furnished with either bell and spigot or tongue and groove joints.

15. The Contractor shall verify location, size, and invert elevation of existing storm drainage pipes, structures, and ditches prior to commencing connection operations. The Contractor shall provide necessary adjustments to new storm drainage lines as necessary to allow for connection and installation.

16. Any accumulated sediment inside new or existing storm drain lines within project construction limits shall be flushed prior to completion of project.

17. No slopes shall be constructed steeper than 3:1, unless specifically noted on drawings.

18. Prior to placement of fill and sub-base course, areas which are at final subgrade or are to receive fill should be proof-rolled with a loaded tandem axle truck to demonstrate stability.

19. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill storm drainage trenches.

20. The Contractor is responsible for field-verifying existing invert elevations or existing ground elevations prior to connecting to existing drainage structures, existing drainage pipes, or existing ground.

WATER NOTES:

1. Construction and materials for the water distribution system shall conform to the specifications of the Mississippi Department of Health and the local water service provider.

2. Water mains and services shall be installed at least 10 feet horizontally and 18 inches vertically from any sewer main or service or sewer manhole. The bottom of the water pipe shall be at least 18 inches from the top of the sewer pipe. Water mains/services shall always be constructed above sewer mains/services. Where local conditions prevent adequate horizontal and vertical separation, the Bureau of Water Supply may allow the water main/service to be laid closer to the sewer main/service if supported by adequate design data from the design engineer. Each situation will be reviewed by the Bureau of Water Supply on a case by case basis. A detailed drawing shall be included in the plans for water line construction submitted to the Bureau of Water Supply for review and approval. Where adequate horizontal and/or vertical separation cannot be maintained, the following requirements shall apply:

- If the 10 foot horizontal separation between water and sewer pipes cannot be maintained then the water pipe should be ductile iron with the water pipe joints located at the maximum distance possible from sewer pipe joints. PVC pipe may be used if it is protected by steel casing. Also, the water and sewer pipes must be in separate trenches with adequate space for maintenance. In some cases, special sewer pipe construction procedures may be required.
- Where the 10 foot horizontal and 18 inch vertical separation cannot be maintained, condition 1 above must be met and the sewer pipe shall be constructed according to water main standards.
- NOTE: Where water pipes cross sewer pipes, the above requirements will be waived if pipe segments are centered to provide a maximum spacing of the joints of both water and sewer pipes and a vertical separation of at least 18 inches (water over sewer) is maintained.

3. Location and size of existing water mains are based on information provided by others and by MS One-Call. The Contractor shall verify location and size of existing water mains prior to commencing boring or connection operations, and shall provide necessary adjustments to both new and existing water lines to allow for connection and installation.

4. Contractor shall refer to mechanical / plumbing drawings to verify locations and sizes of fire and domestic services prior to installation. Adjustments to fire services; domestic services and post indicator valves; and remote fire department connections shown on these drawings shall be made as necessary through coordination with the Project Engineer. For domestic and fire services, the scope of these drawings terminates at a location five feet (5') outside of the exterior building wall. Refer to mechanical / plumbing drawings for continuation into the building.

5. Water mains and services must be buried a minimum of 36" below finished grade.

6. All water pipe shall be PVC C-900, Class 235 (DR 18) pipe, and all service pipe shall be C.T.S. tubing. All fittings shall be ductile iron mechanical joint (MJ) fittings. Concrete thrust blocking and Megalug fittings are required at all bends and tees. All water mains and services located under roadways shall be encased in Schedule 40 PVC casing.

7. All items shown on water lines (i.e. hydrants, valves, fittings) are shown in general locations only and may be slightly adjusted in the field as warranted by installation requirements. Where possible, valves and hydrants are to be installed in unpaved locations.

8. Locator wire (12 gage copper) shall be placed along and attached to all new water mains. Tracer wire to be a minimum of 3 feet in all valve boxes.

9. A ductile iron cap is required at the end of all water mains.

10. Backflow prevention measures for fire services are to be installed within the buildings (see architectural / mechanical drawings).

11. The Contractor is responsible for coordinating with the utility service provider prior to connecting to existing water or relocation of existing water (if required). The Contractor is responsible for ensuring that utility service personnel are present during critical phases of installation (i.e. connection, relocation, testing, etc.). Cost of connection fees and meters shall be responsibility of the Contractor.

12. Prior to being placed into service, all new water mains must be pressure tested and disinfected according to the specifications. A pressure test shall be conducted using a minimum of 150 psi or 1.5 times the working pressure, whichever greater, for two (2) hours under the inspection of an Engineer's representative. Using samples obtained by the water service provider 24 hours apart, two (2) consecutive bacteriological tests are required to be determined as satisfactory by a laboratory certified by the Mississippi State Department of Health.

13. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill water pipe trenches.

ABBREVIATIONS

AC	ACRES	F.G.	FINISHED GROUND	PM	PLAN MEASURE
AEA	AVERAGE END AREA	FL	FLOW LINE	PMH	PROPOSED MANHOLE
AH	ABSORBED HAUL	FM	FINAL MEASURE	POB	POINT OF BEGINNING
APR	AS PER RECORD	FME	FINAL MEASURE EMBANKMENT	POC	POINT OF COMMENCEMENT
APS	AS PER SURVEY	GA	GAUGE	PRC	POINT OF REVERSE CURVATURE
BC-1	BRANCH CONNECTION	GP	GROUP	PROP.	PROPOSED
C.B.	CHORD BEARING	H.D.	HEAVY DUTY	PT	POINT OF TANGENCY
C.L.	CHORD LENGTH	HP	HIGH POINT	R	CURVE RADIUS
CL	CLASS	HYD	HYDRANT	R.D.	ROOF DRAIN
CMP	CORRUGATED METAL PIPE	INV.	INVERT	R.O.W.	RIGHT-OF-WAY
CONT.	CONTINUOUS	IPF	IRON PIN FOUND	RCAP	REINFORCED CONCRETE ARCH PIPE
CP	CONTROL POINT	IPS	IRON PIN SET	RCP	REINFORCED CONCRETE PIPE
CPP	CORRUGATED PLASTIC PIPE	L	CURVE LENGTH	REQ'D	REQUIRED
CY	CUBIC YARDS	LB	POUNDS	RT	RIGHT
DS	DOWNSTREAM	LF	LINEAR FEET	SF	SQUARE FOOT
E=	EASTING	LP	LOW POINT	STA.	STATION
E.W.	EACH WAY	LS	LUMP SUM	SY	SQUARE YARD
EA.	EACH	LT	LEFT	TEMP.	TEMPORARY
E.G.	EXISTING GROUND	MPF	METAL PIPE FOUND	T.O.C.	TOP OF CURB
ELEV.	ELEVATION	N=	NORTHING	TYP.	TYPICAL
EMH	EXISTING MANHOLE	O.A.	ON CENTER	U.G.	UNDERGROUND
EX.	EXISTING	OS	OFFSET	US	UPSTREAM
F.B.	FLAT BOTTOM	PC	POINT OF CURVATURE	V.C.	VERTICAL CURVE
FCM	FOUND CONCRETE MARKER	PC-1	PIPE COLLAR	VF	VERTICAL FOOT
FES	FLARED END SECTION	PKF	PINE KNOT FOUND	WV	WATER VALVE

LEGEND

	TEMPORARY STRAW WATTLES		SUBJECT PROPERTY BOUNDARY
	PROP. REMOTE FIRE DEPT. CONNECTION		PROP. RIGHT-OF-WAY OR EASEMENT
	PROP. FIRE HYDRANT WITH VALVE		EX. RIGHT-OF-WAY OR EASEMENT
WV	PROP. GATE VALVE		PUBLIC LAND SYSTEM (40/SECTION) LINES
	EX. FIRE HYDRANT		PROP. CENTERLINE
WV	EX. GATE VALVE		PROP. TEMPORARY SILT FENCE
WM	EX. WATER METER		CENTERLINE OF DITCH OR SWALE
PV	PROP. PUMP STATION & VALVE PIT	295	PROP. CONTOUR
S	PROP. SEWER MANHOLE	295	EX. MAJOR TOPOGRAPHIC CONTOUR
	PROP. SEWER CLEAN-OUT	294	EX. MINOR TOPOGRAPHIC CONTOUR
	PROP. GREASE TRAP		PROP. SETBACKS
W	PROP. DOMESTIC WATER SERVICE		PROP. CONSTRUCTION LIMITS
F	PROP. FIRE PROTECTION SERVICE		RAILROAD TRACKS
S	PROP. SEWER SERVICE		WOOD FENCE
PV	EX. PUMP STATION WITH VALVE PIT		EX. CHAIN LINK FENCE
S	EX. SEWER MANHOLE		EX. BARBED-WIRE FENCE
	EX. SEWER CLEAN-OUT		EX. TREE LINE
	PROP. LIGHT POLE		EX. EDGE OF PAVEMENT
	EX. LIGHT POLE		EX. 100 YEAR FLOODPLAIN BOUNDARY (*PLOTTED FROM FIRM*)
	EX. UTILITY POLE		PROP. ROADWAY DAYLIGHT LINE
	EX. GUY WIRE		PROP. STORM DRAINAGE PIPE WITH F.E.S.
T	EX. POWER TRANSFORMER		EX. STORM DRAINAGE PIPE WITH F.E.S.
	PROP. HEAVY-DUTY GRATE INLET		PROP. WATER LINE (WITH SIZE)
	PROP. LIGHT-DUTY YARD INLET		PROP. GRAVITY SEWER MAIN (WITH SIZE)
	PROP. JUNCTION BOX	4"FM / 4"FM	PROP. FORCE MAIN (WITH SIZE)
	PROP. CURB INLET WITH EXTENSION		EX. WATER MAIN (WITH SIZE)
	EX. HEAVY-DUTY GRATE INLET		EX. GRAVITY SEWER MAIN (WITH SIZE)
	EX. LIGHT-DUTY YARD INLET		EX. SEWER FORCE FORCE MAIN (WITH SIZE)
	EX. JUNCTION BOX		EX. GAS LINE (WITH SIZE)
	EX. CURB INLET WITH EXTENSION		EX. HIGH PRESSURE GAS LINE
260.40	FINISHED GRADE SPOT ELEVATION		EX. OVERHEAD POWER LINE
	DIRECTION OF SURFACE FLOW		EX. UNDERGROUND POWER LINE
	HORIZONTAL/VERTICAL CONTROL POINT		EX. OVERHEAD TELEPHONE
	BURIED FIBER OPTIC MARKER		EX. UNDERGROUND TELEPHONE LINE
	BENCHMARK		EX. UNDERGROUND FIBER OPTIC LINE
	HANDICAP		EX. BURIED CABLE (UNKNOWN)
	STORM AND SEWER FLOW DIRECTION		PROP. IRRIGATION SLEEVE
	ROADWAY SIGN		HEAVY DUTY PAVEMENT
	BORE HOLE		LANDSCAPED SURFACE
	CONCRETE RIGHT-OF-WAY MARKER		CONCRETE SURFACE
	PROPERTY CORNER		RIP-RAP SURFACE
	HVAC UNIT		FLEXAMAT SURFACE
	FLAG POLE		
	WHEEL STOP		

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REVISIONS			
NO.	DATE	DESCRIPTION	BY

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Notes, Legend, and Abbreviations

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C1.1

PROJ. NO: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

15" RCP
Outfall Unknown
24" RCP
Existing Drain Inlet
Top = 212.40
Inv. Out = 204.40
Existing Inlet
Existing Drain Inlet
Top = 206.10
Inv. = 203.10
12" CPP
EX. CURB INLET
EX. SIDEWALK
AIR CONDITIONERS AND CONCRETE PADS (TO BE REMOVED)
DECK (TO BE REMOVED)
N00°02'48"W 169.80' APS
SOUTH 170.1' APR
EXISTING POLE (TO BE REMOVED)
EXISTING TREE TO BE REMOVED
EXISTING TREE
IPF
EX. WATER VALVE
EXISTING POLE (TO BE REMOVED)
CONCRETE SIDEWALK (TO BE REMOVED)
ASPHALT ON CITY RIGHT OF WAY (TO BE REMOVED)
EX. SEWER SERVICE
CONCRETE (TO BE REMOVED)
WATER SERVICE (TO BE REMOVED AND RELOCATED)
GAS SERVICE (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 211.80 INV. = 207.30 (TO BE REMOVED)
EXISTING OVERHEAD ELECTRIC (TO BE REMOVED)
SEWER CLEANOUTS (2) (TO BE REMOVED)
EX. WATER SERVICE
EX. LIGHT (TO BE REMOVED)
1 STORY BRICK (TO BE REMOVED WITH ALL RELATED ITEMS) Min. FFE= 208.34' ± Max. FFE= 212.49 ±
EXISTING STORM PIPES (TO BE REMOVED)
N88°19'59"W 110.18 APS
EAST 110.00 APR
SIDEWALK (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 212.15 INV. = 211.50 (TO BE REMOVED)
6" PVC (TO BE REMOVED)
4" PVC (TO BE REMOVED)
CONCRETE SIDEWALK (TO BE REMOVED)
S88°41'46"E 110.08' APS
EAST 110.00' APR
EXISTING OVERHEAD ELECTRIC (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 211.30 INV. = 206.00 (TO BE REMOVED)
ASPHALT ON CITY RIGHT OF WAY (TO BE REMOVED)
EXISITNG SIGNS (8) (TO BE REMOVED)
EXISTING BIKE RACK (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
EX. CONCRETE FLUME
CONCRETE PAVEMENT TO BE REMOVED
136 LINEAR FEET OF CURB TO BE REMOVED
EX. CONCRETE SIDEWALK TO BE REMOVED
REMOVE AND REPLACE EXISTING 6" PIPES
SIGN (TO BE MOVED TO CENTER ISLAND ON MONTAGUE STREET)
MONTAGUE (80' R.O.W.) (ASPHALT)
S00°04'17"E 170.69' APS
SOUTH 170.2' APR
EX. FIRE HYDRANT
EX. SEWER MANHOLE
EX. DRAINAGE INLET
1' WIDE ASPHALT REMOVAL SAWCUT EXISTING ASPHALT 135 LINEAR FEET OF ASPHALT TO BE REMOVED
32nd AVENUE (50' R.O.W.) (ASPHALT)
EX. WATER VALVE
EX. DRAINAGE INLET
N
GRAPHIC SCALE
10 0 5 10
(IN FEET)

NOTE: REMOVAL OF ALL ITEMS WITHIN CONSTRUCTION LIMITS AS REQUIRED TO COMPLETE THE CONSTRUCTION OF PROPOSED IMPROVEMENTS, WHETHER SPECIFICALLY INDICATED ON THIS PLAN OR NOT.

DRAFT FOR REVIEW

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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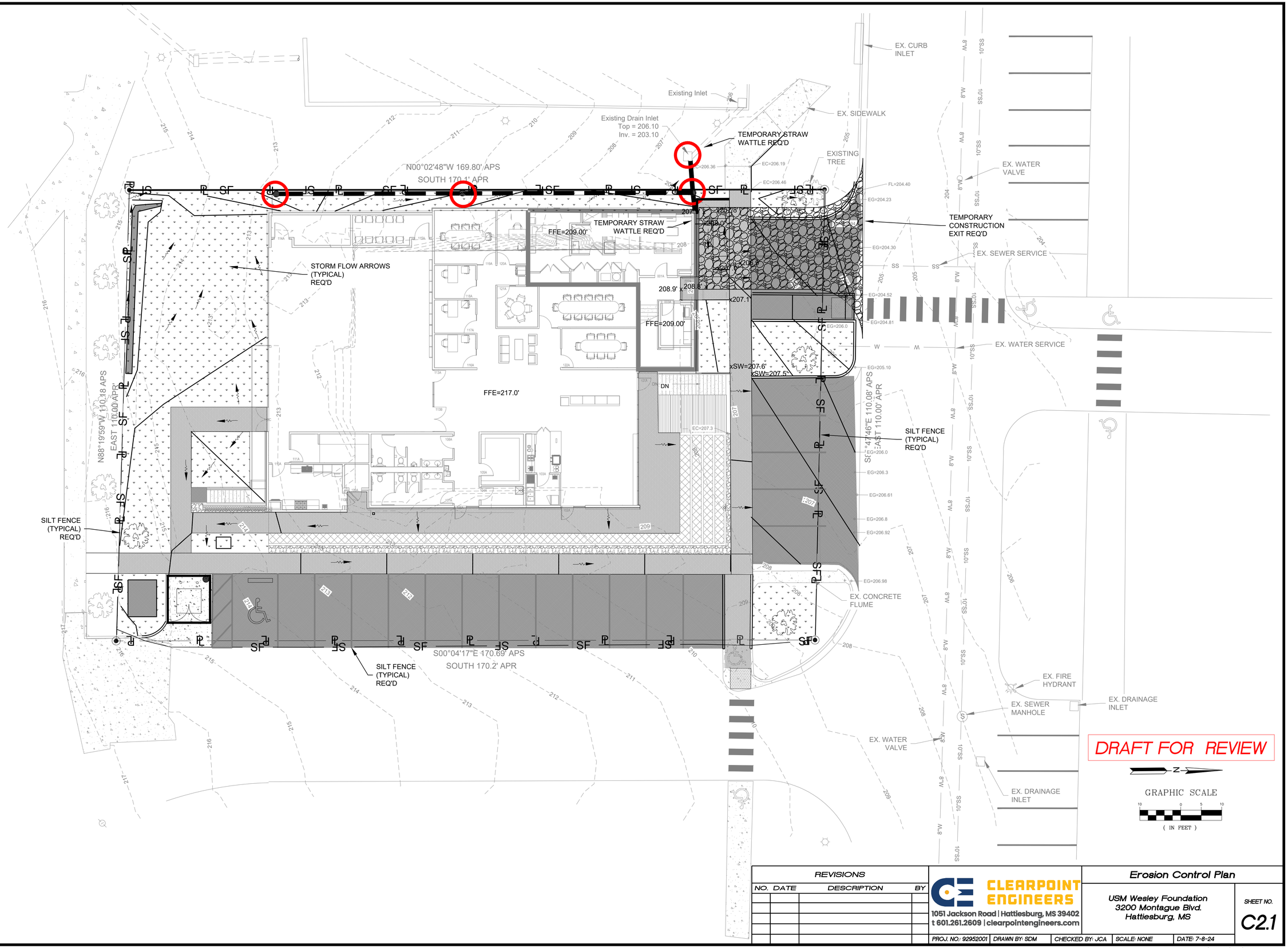
Demolition Plan

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C1.2

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg



REVISIONS			
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Erosion Control Plan

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C2.1

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 7-8-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

15" RCP

Outfall Unknown

24" RCP

Existing Drain Inlet
Top = 212.40
Inv. Out = 204.40

12" CPP

REQUEST 10% VARIANCE FROM 5' BUILDING SETBACK

REQUEST 10% VARIANCE FROM 8' LANDSCAPE BUFFER

LARGE TREE REQ'D (TYP) (REFER TO LANDSCAPE PLAN)

GREEN 5=120 SF

GREEN 4=613 SQUARE FEET

N00°02'48"W 169.80' APS
SOUTH 170.1' APR

5' SIDE SETBACK

BLDG
FFE=209.0'

REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 5" THICK CONCRETE MINIMUM 4000 PSI REQ'D

5'x5' TRUNCATED DOMES ADA LANDING REQ'D

GREEN 7=320 SF

LARGE TREE REQ'D (TYP) (REFER TO LANDSCAPE PLAN)

6" CURB REQ'D

GREEN 3=2500 SQUARE FEET

20' REAR SETBACK

BLDG
(SEE ARCH.)
FFE=217.0'

GREEN 6 =138 SQUARE FEET

20' FRONT SETBACK

GREEN 2 =200 SQUARE FEET

N88°19'59"W 110.18' APS
EAST 110.00' APR

S88°47'46"E 110.08' APS
EAST 110.00' APR

REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 5" THICK CONCRETE MINIMUM 4000 PSI REQ'D

CONCRETE JOINTS AT 10' MAXIMUM SPACING REQ'D

BICYCLE RACK REQ'D (SEE ARCH.)

GREEN 1=170 SQUARE FEET

SIDEWALK CONNECTION BY USM

7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D

WHEEL STOP REQ'D

5' SIDEWALK SEE DETAIL ON SHEET C3.2 REQ'D

135.4'

5' SIDE SETBACK

S00°04'17"E 170.69' APS
SOUTH 170.2' APR

GREEN 8=215 SF

MONTAGUE BLVD. (80' R.O.W.) (ASPHALT)

LARGE TREE REQ'D (TYP) (REFER TO LANDSCAPE PLAN)

5'x5' TRUNCATED DOMES ADA LANDING REQ'D

DUMPSTER PAD 11' x 11' RAISED 4" ABOVE ADJACENT CONCRETE REQ'D

DUMPSTER ENCLOSURE (SEE ARCH.)
DUMPSTER PAD REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 8" THICK CONCRETE MINIMUM 4000 PSI REQ'D

NEW ADA SPACE, ACCESS AISLE AND SIGN REQ'D

4" WHITE PAINT STRIPE OVER EXISTING (TYPICAL) REQ'D

REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 5" THICK CONCRETE MINIMUM 4000 PSI REQ'D

32nd AVENUE (50' R.O.W.) (ASPHALT)

PROPOSED PERVIOUS AREAS SUMMARY

LOCATION	GREEN AREA (SF)
1	170
2	200
3	2500
4	613
5	120
6	138
7	320
8	215
TOTAL PERVIOUS AREAS	4,276=23%
TOTAL SITE AREA	18,742 SF
TOTAL IMPERVIOUS AREA	14,383=77%

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GRAPHIC SCALE
10 0 5 10
(IN FEET)

5" PORTLAND CEMENT CONCRETE PAVEMENT (4000 PSI)
8" MDOT SIZE NO. 610 STONE OR CRUSHED CONCRETE (COMPACTED TO 100% STD. PROCTOR DENSITY)
COMPACTED SUBGRADE (SEE GEOTECHNICAL REPORT)

SECTION FOR DUMPSTER PAD PAVING

5" PORTLAND CEMENT CONCRETE PAVEMENT (4000 PSI)
8" MDOT SIZE NO. 610 STONE OR CRUSHED CONCRETE (COMPACTED TO 100% STD. PROCTOR DENSITY)
COMPACTED SUBGRADE (SEE GEOTECHNICAL REPORT)

SECTION FOR CONCRETE PAVING

NOTE: CRUSHED STONE SUBBASE SHALL EXTEND 12" BEYOND BACK OF CURB.

REFER TO GEOTECHNICAL REPORT FOR CONCRETE STRENGTH, MIX DESIGN, AND JOINT CONSTRUCTION.

REVISIONS

NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1051 Jackson Road | Hattiesburg, MS 39402
t 601.261.2609 | clearpointengineers.com

Site Plan

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C2.2

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 7-10-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

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15" RCP

Outfall Unknown

24" RCP

Existing Drain Inlet
Top = 212.40
Inv. Out = 204.40

Existing Inlet

Existing Drain Inlet
Top = 206.10
Inv. = 203.10

12" CPP

EX. INLET

EX. SIDEWALK

PRIOR TO CONTRACTOR PLACING STORM DRAIN PIPE ON ADJACENT PROPERTY AND CONNECTING TO EXISTING DRAIN INLET, AN EASEMENT SHALL BE OBTAINED BY OWNER FOR A 15" HP STORM DRAIN PIPE (20 LINEAR FEET) FOR FOUNDATION DRAINAGE (SEE ARCH.) TO TIE TO THE INLET SHOWN ON UNIVERSITY PROPERTY

COORDINATE WITH ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR STORM DRAINAGE PIPE CONNECTION AT BUILDING

CONTRACTOR SHALL TAKE ALL PRECAUTION TO PROTECT THE EXISTING DRAIN INLET AND STORM PIPE DURING CONSTRUCTION AND PREVENT ANY SEDIMENT FROM ENTERING THE EXISTING STORM PIPES

TIE 15" STORM PIPE TO EXISTING INLET 2" ABOVE EXISTING INVERT

24" NYLOPLAST DRAIN BASIN
TOP=212.5'
15" INV.=209.0

24" NYLOPLAST DRAIN BASIN
TOP=206.7'
15" INV.=204.0'

24" NYLOPLAST DRAIN BASIN
TOP=209.7'
15" INV.=205.5

STAINLESS STEEL PLATE IN SIDEWALK FOR UNDERDRAIN REQ'D (SEE DETAIL C3.2)

24" HIGH BERM REQ'D WITH TOE DITCH ALONG HIGH SIDE GRADE AS REQ'D REQ'D FOR SOUTH OFFSITE DRAINAGE TO BYPASS SOUTHERN EDGE OF SITE

FFE=209.00'

8' x 5' LANDING ELEVATION=207.9' REQ'D

ADA RAMP, WALLS, AND RAILS HERE 8.0% SLOPE (SEE ARCH.)

4' x 4' LANDING ELEVATION=207.0' REQ'D

4 RISERS (SEE ARCH.) REQ'D

FFE=209.00'

FFE=217.0'

STORM FLOW ARROWS (TYPICAL) REQ'D

5' SIDEWALK FLUSH CONNECTION REQ'D

25 L.F. VERTICAL TRANSITION REQ'D

ADA RAMP AND RAILS HERE 8.0% SLOPE

5' SIDEWALK FLUSH WITH GRASS AREA REQ'D

5' SIDEWALK SEE DETAIL ON SHEET C3.2 REQ'D

5' x5' LANDING ELEVATION=216.0' REQ'D

CONCRETE LANDING PAD 215.3' REQ'D

STAIRS REQ'D SEE ARCH.

TIERED PLANTER WALLS (SEE ARCHITECTURAL)

5' x5' LANDING ELEVATION=215.5' REQ'D

5' x 5' LANDING ELEVATION=214.9' REQ'D

5' x 5' LANDING ELEVATION=209.0' REQ'D

STAINLESS STEEL PLATE IN SIDEWALK FOR UNDERDRAIN REQ'D (SEE DETAIL C3.2)

7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D

SIDEWALK FLUSH WITH ADA AND ACCESS AISLE REQ'D

BEGIN TRANSITION TO FULL DEPTH SIDEWALK

END TRANSITION TO FULL DEPTH SIDEWALK

5' SIDEWALK SEE DETAIL ON SHEET C3.2 REQ'D

24" NYLOPAST DRAIN BASIN
TOP=214.65'
6" INV.=210.0'
REQ'D

32nd AVENUE (50' R.O.W.) (ASPHALT)

MONTAGUE BLVD. (80' R.O.W.) (ASPHALT)

EX. CONCRETE FLUME

EX. SEWER SERVICE

EX. WATER SERVICE

EX. FIRE HYDRANT

EX. SEWER MANHOLE

EX. WATER VALVE

EX. DRAINAGE INLET

EX. DRAINAGE INLET

DRAFT FOR REVIEW

N

GRAPHIC SCALE
10 0 5 10
(IN FEET)

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
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t 601.261.2609 | clearpointengineers.com

Grading Plan

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C2.3

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 7-8-24

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EX. CURB INLET

Existing Inlet

EX. SIDEWALK

Existing Drain Inlet
Top = 206.10
Inv. = 203.10

EXISTING TREE

GREASE WASTE INTERCEPTOR
MIN. 500 GALLON
(SEE PLUMBING PLAN) REQ'D

EX. WATER VALVE

N00°02'48"W 169.80' APS
SOUTH 170.1' APR

6" PVC SDR-26 SEWER SERVICE
@1.0% MINIMUM SERVICE TIE TO
EXISTING SEWER SERVICE
(CONTRACTOR TO VERIFY EXISTING
SEWER SERVICE LOCATION)
REQ'D

EX. SEWER SERVICE

SEE PLUMBING
DRAWINGS FOR
CONTINUATION

SEWER
CLEANOUT
INV.=204.0'
REQ'D

2" DOMESTIC WATER METER AND BYPASS ASSEMBLY
2" IRRIGATION METER
8" FIRE SERVICE
TO BE PROVIDED BY CITY OF HATTIESBURG CONTACT
CITY FOR PRICING AND COORDINATION
TIE TO EXISTING WATER LINE (CONTRACTOR TO
VERIFY WATER SERVICE LOCATION)

3" C-900, CL235 PVC
DOMESTIC SERVICE REQ'D
(SEE PLUMBING DRAWINGS
FOR CONTINUATION)

EX. WATER SERVICE

YARD-TYPE POST
INDICATOR
VALVE REQ'D

REMOTE FIRE DEPARTMENT
CONNECTION REQ'D

6" PVC SDR-26 SEWER SERVICE
@1.0% MINIMUM SERVICE
REQ'D

4" C-900, CL235 PVC
DRY LINE REQ'D
FOR REMOTE FIRE DEPT CONNECTION
(SEE PLUMBING DRAWINGS
FOR CONTINUATION)

6" C-900, CL235 PVC
FIRE SERVICE REQ'D

SEE PLUMBING
DRAWINGS FOR
CONTINUATION

N88°19'59"W 110.18' APS
EAST 110.00' APR

S88°47'46"E 110.08' APS
EAST 110.00' APR

¾"SCHEDULE 40 PVC WATER
SERVICE (HOT) REQ'D

¾"SCHEDULE 40 PVC WATER
SERVICE (COLD) REQ'D

6" C-900, CL235 PVC
FIRE SERVICE REQ'D

4" C-900, CL235 PVC
FIRE SERVICE REQ'D

4" C-900, CL235 PVC
FIRE SERVICE REQ'D

6" PVC SDR-26 SEWER SERVICE
@1.0% MINIMUM SERVICE
REQ'D

4" C-900, CL235 PVC
FIRE SERVICE REQ'D

EX. CONCRETE
FLUME

SEWER MANHOLE
RIM=209.0'
INV.=205.0'
REQ'D

18" NYLOPAST DRAIN BASIN
TOP=214.7'
6" INV.=210.0'
REQ'D

S00°04'17"E 170.69' APS
SOUTH 170.2' APR

EX. FIRE
HYDRANT

EX. SEWER
MANHOLE

EX. DRAINAGE
INLET

EX. WATER
VALVE

EX. DRAINAGE
INLET

GRAPHIC SCALE
10 0 5 10
(IN FEET)

DRAFT FOR REVIEW

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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Utility Plan

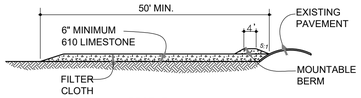
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C2.4

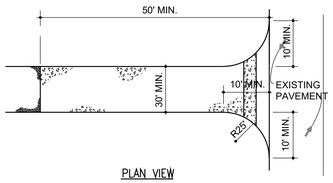
PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 7-8-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

610 LIMESTONE IS NOT REQUIRED
FOR CONSTRUCTION EXIT



PROFILE



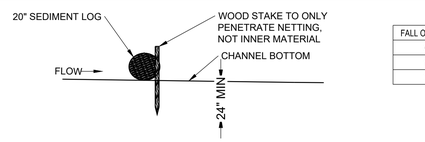
PLAN VIEW

STABILIZED CONSTRUCTION EXIT

1. STONE SIZE - USE #2 STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. DEPTH - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - THIRTY (30) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

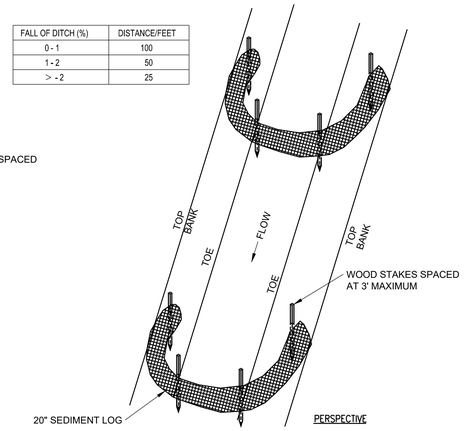
1 TEMPORARY CONSTRUCTION EXIT

SCALE: NOT TO SCALE



CROSS SECTION

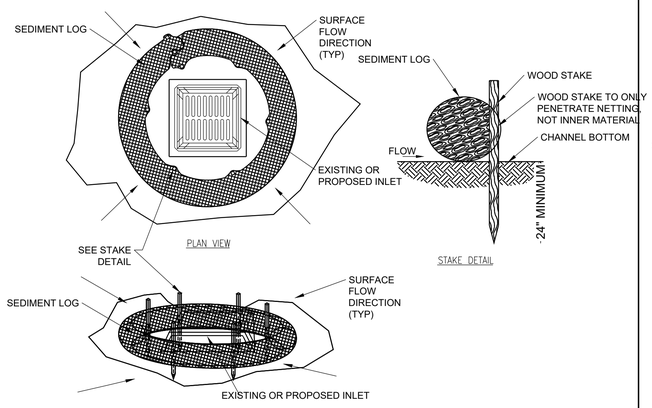
FALL OF DITCH (%)	DISTANCE/FEET
0 - 1	100
1 - 2	50
> - 2	25



PERSPECTIVE

2 SEDIMENT LOG DITCH CHECK

SCALE: NOT TO SCALE

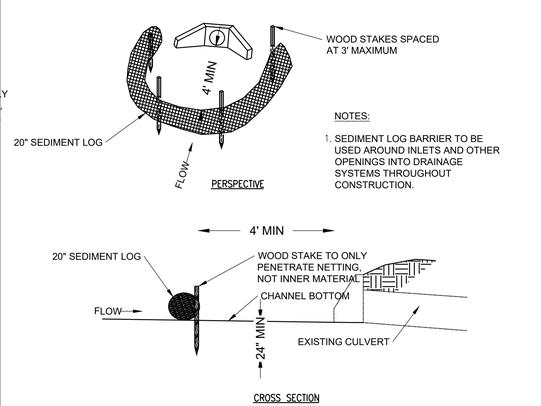


PLAN VIEW

STAKE DETAIL

3 SEDIMENT LOG INLET PROTECTION

SCALE: NOT TO SCALE



NOTES:

1. SEDIMENT LOG BARRIER TO BE USED AROUND INLETS AND OTHER OPENINGS INTO DRAINAGE SYSTEMS THROUGHOUT CONSTRUCTION.

CROSS SECTION

4 SEDIMENT LOG CULVERT SEDIMENT BARRIER

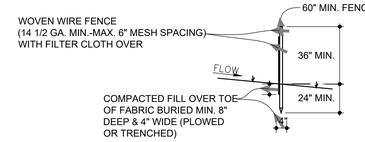
SCALE: NOT TO SCALE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

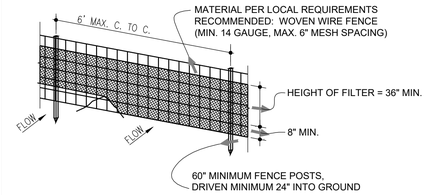
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO SILT FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY (6) INCHES AND FOLDED.
4. LOCATE POSTS DOWNSLOPE OF FABRIC FOR FENCE SUPPORT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

   POSTS: STEEL EITHER "T" OR "U" TYPE
   POSTS: LOCATED MAXIMUM 6' O. C.
   FENCE: PER LOCAL REQUIREMENTS OR WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
   FILTER CLOTH: FILTER X, MIRAFI 100X, STABI-LINKA T140N OR APPROVED EQUAL.
   PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

6. INDICATED ON EROSION CONTROL PLANS AS "—SF——SF—"



WIRE BACKING NOT REQUIRED ON SILT FENCE.



7 SILT FENCE EROSION PROTECTION

SCALE: NOT TO SCALE

1. ALL NEWLY CUT AND/OR FILLED AREAS LACKING ADEQUATE VEGETATION SHALL BE SEEDED, FERTILIZED, MULCHED AND/OR SODDED AS REQUIRED TO EFFECTIVELY PREVENT SOIL EROSION.
2. SILT FENCES AND HAY BALES SHALL BE USED AS SHOWN AND AS DIRECTED BY THE ENGINEER TO CONTROL SOIL EROSION.
3. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN EROSION CONTROL DURING CONSTRUCTION BY THE PLACEMENT OF SILT FENCES AND/OR HAY BALES WHERE NECESSARY TO PREVENT DOWNSTREAM SILTATION OF ANY DITCHES, PIPES, DRAINAGE STRUCTURES, OR ADJACENT PROPERTIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL EROSION CONTROL AS NEEDED OR AS DIRECTED BY THE ENGINEER.
4. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE STATE OF MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) OFFICE OF POLLUTION CONTROL (OPC) STORM WATER CONSTRUCTION GENERAL PERMIT FOR ALL EROSION CONTROL DURING CONSTRUCTION ACTIVITIES.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES AND REPORTING ANY MAINTENANCE AS REQUIRED BY THE STATE OF MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) OFFICE OF POLLUTION CONTROL (OPC) STORM WATER CONSTRUCTION GENERAL PERMIT DURING CONSTRUCTION ACTIVITIES.
6. PROVISIONS SHALL BE MADE TO PROTECT DOWNSTREAM WATERCOURSES (I.E., STORM SEWER SYSTEMS, DITCHES, WETLANDS, ETC.) FROM SEDIMENT RUNOFF DEVELOPED FROM THE CONSTRUCTION PROCESS. PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, STRUCTURAL CONTROLS SUCH AS SILT FENCING, GEOTEXTILE FABRIC PROTECTION OF STORM SEWERS, HAY BALES, DIKES AND SANDBAG BERMS; AND/OR VEGETATION CONTROLS SUCH AS SEEDING OR EXISTING VEGETATIVE BUFFER STRIPS (MINIMUM 25 FEET WIDE).
7. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATIONS SHOWN ON PLANS.
8. CONTRACTOR SHALL PERFORM DAILY STREET CLEANING ON ROADS AND STREETS ADJACENT TO THE PROJECT WHICH ARE USED AS ACCESS ROUTES FOR CONSTRUCTION TRAFFIC IF DIRT AND MUD IS NOT ADEQUATELY REMOVED FROM VEHICLES AT THE STABILIZED CONSTRUCTION EXITS.
9. LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORMWATER CONVEYANCE SYSTEMS. USE A MINIMUM 60 MIL POLYETHYLENE LINER UNDER ABOVE GROUND STORAGE TANKS. USE 2 FOOT HIGH BERMS AROUND FUEL STORAGE AREAS.
10. CONTRACTOR WILL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TAKEN TO REMEDY THE PROBLEM.
11. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL ENVIRONMENTAL LAWS.
12. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF FUELS, MATERIALS AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.
13. CONTRACTOR SHALL INSPECT ALL STRUCTURAL CONTROLS WITHIN 24 HOURS AFTER ANY STORM EVENT THAT MEETS OR EXCEEDS 0.5 INCHES OF RAINFALL IN A 24 HOUR PERIOD. DURING PROLONGED RAINFALL EVENTS, CONTRACTOR SHALL INSPECT STRUCTURAL CONTROLS ON A DAILY BASIS. AT A MINIMUM, STRUCTURAL CONTROLS SHOULD BE INSPECTED ONCE EVERY 14 CALENDAR DAYS. A QUALIFIED REPRESENTATIVE OF THE CONTRACTOR, AS APPROVED BY THE OWNER, SHALL PROVIDE THESE INSPECTIONS. SHOULD CONTROLS BECOME INEFFECTIVE, NECESSARY REPAIRS SHALL BE PERFORMED TO RETURN THE INTEGRITY OF THE STRUCTURAL CONTROLS. REMOVE ALL SEDIMENT IF IT ACCUMULATES TO 1/3 THE HEIGHT OF THE SILT FENCE.
14. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT, NO SEPARATE PAY.
15. CONTRACTOR WILL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS AND OTHER POTENTIALLY TOXIC MATERIALS.
16. EQUIPMENT STAGING AREA TO BE DESIGNATED BY CONTRACTOR AND APPROVED BY OWNER PRIOR TO CONSTRUCTION.
17. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEMS BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
18. CONTRACTOR SHALL SOLID SOD DISTURBED AREAS IMMEDIATELY AFTER REACHING FINAL GRADE.

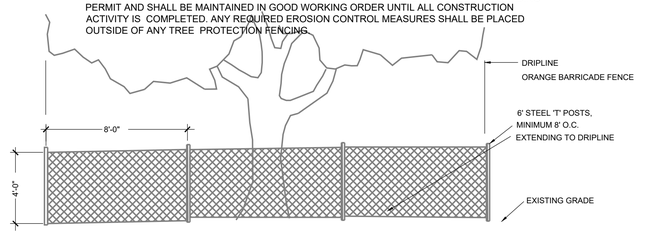
5 EROSION CONTROL NOTES

SCALE: NOT TO SCALE

TREE PROTECTION NOTES:
1. THE CRITICAL ROOT AREA OF THE TREES THAT ARE INDICATED TO REMAIN MUST BE PROTECTED, AT A MINIMUM, BY A PROTECTIVE FENCE LOCATED AT A RADIUS MEASURED 1.25 FEET FOR EVERY INCH IN DIAMETER OF THE TREE, OR AT THE DRIP LINE, WHICHEVER IS GREATER. FOR A GROUP OF TREES, A PROTECTIVE FENCE SHALL BE PLACED OUTSIDE THE CRITICAL ROOT RADIUS OF ALL TREES IN THE GROUP.

2. AFTER THE AREAS TO BE SELECTIVELY CLEARED ARE COMPLETED, THE CONTRACTOR SHALL INSTALL THE TREE BARRIER AS INDICATED AROUND THOSE AREAS.

3. ALL TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO THE ISSUANCE OF A GRADING PERMIT AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED. ANY REQUIRED EROSION CONTROL MEASURES SHALL BE PLACED OUTSIDE OF ANY TREE PROTECTION FENCING.



6 TREE PROTECTION - ORANGE BARRIER DETAIL

SCALE: NOT TO SCALE

DRAFT FOR REVIEW

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1051 Jackson Road | Hattiesburg, MS 39402
t 601.261.2609 | clearpointengineers.com

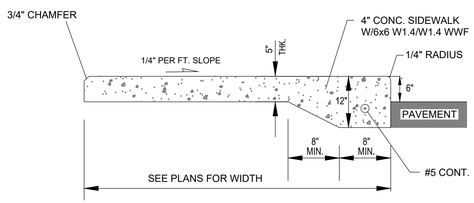
Erosion Control Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.1

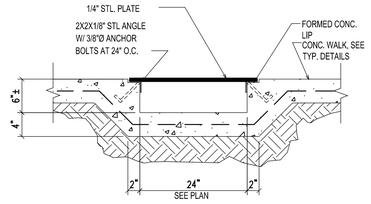
PROJ. NO: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg



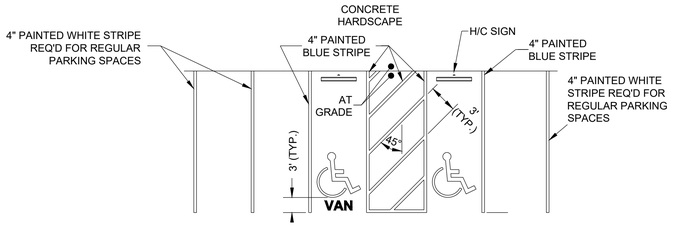
NOTES:
1. PROVIDE CONTRACTION JOINTS AT 5'-0" O.C. MAX
2. ALL SIDEWALK SLOPES AND WIDTHS SHALL MEET ADA REQUIREMENTS

SIDEWALK DETAIL



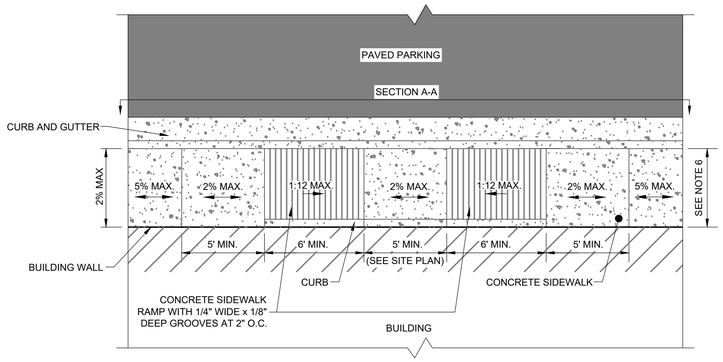
STAINLESS STEEL SIDEWALK DRAIN

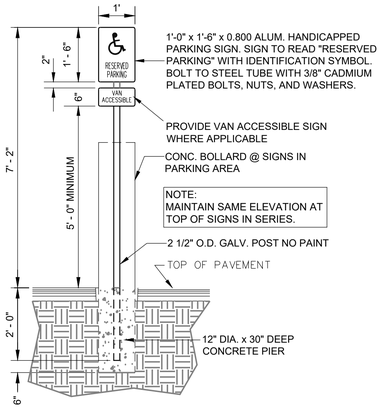
NOTE:
1. FOR HANDICAP SPACES AND AISLES, FINISHED GRADE SLOPES SHALL NOT EXCEED 2.0% IN ANY DIRECTION.
2. SEE PLAN FOR PARKING SPACE DIMENSIONS.



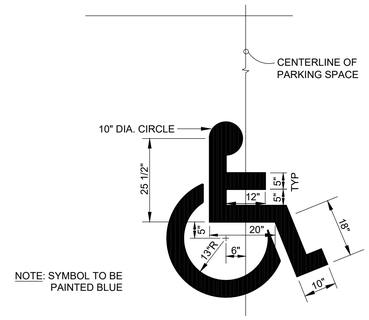
TYPICAL PARKING STRIPING DETAIL

NOTES:
1. LOCATIONS AND TYPES OF CURB RAMPS SHALL BE AS SHOWN ON CIVIL/SITE PLANS.
2. THE CURB RAMP SHALL BE PAID FOR AS SIDEWALK.
3. THE THICKNESS OF THE CURB RAMP SHALL MATCH THAT OF THE SURROUNDING SIDEWALK (SEE DETAIL).
4. ALL RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1 FOR A MAXIMUM ELEVATION INCREASE OF 0.5 FEET.
5. HANDICAP RAMPS CONNECTING TO PUBLIC STREETS SHALL HAVE TRUNCATED DOME SURFACE IN ACCORDANCE WITH ADA REGULATIONS.
6. CURB RAMP WIDTH SHALL CONFORM TO SIDEWALK WIDTH SHOWN ON SITE PLAN.



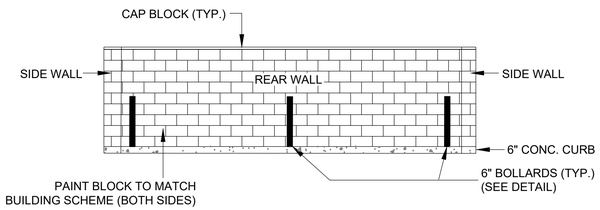


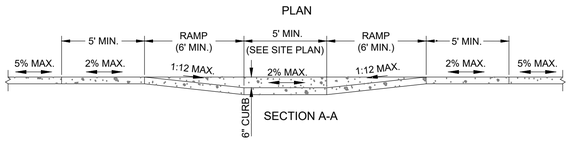
HANDICAP PARKING SIGN DETAIL



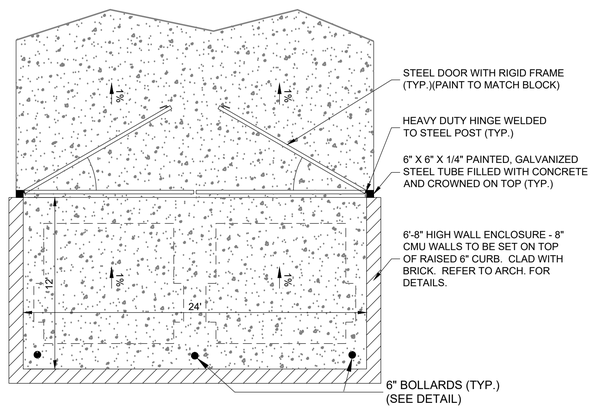
NOTE: SYMBOL TO BE PAINTED BLUE

INTERNATIONAL SYMBOL OF ACCESS

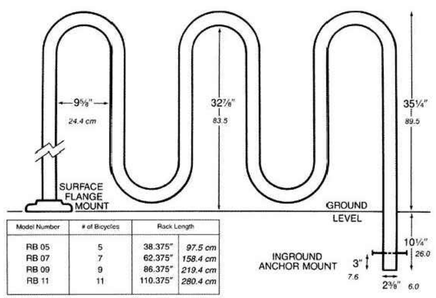




HANDICAP SIDEWALK RAMP DETAIL

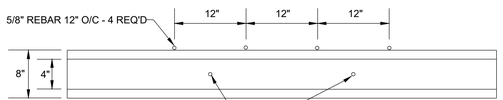


DUMPSTER ENCLOSURE DETAIL
(REFER TO ARCH. DRAWINGS FOR DETAILS)

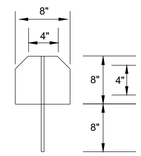


Model Number	# of Bicycles	Rack Length	
RB 05	5	38.375"	97.5 cm
RB 07	7	62.375"	158.4 cm
RB 09	9	86.375"	219.4 cm
RB 11	11	110.375"	280.4 cm

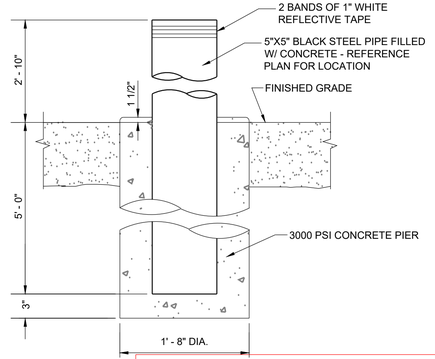
BICYCLE PARKING RACK DETAIL



CONCRETE WHEEL STOP (PLAN VIEW)
(6'L X 8"W X 6"H)



(PROFILE VIEW)
(6'L X 8"W X 6"H)



EXTERIOR PIPE BOLLARD DETAIL

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REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1051 Jackson Road | Hattiesburg, MS 39402
t 601.261.2609 | clearpointengineers.com

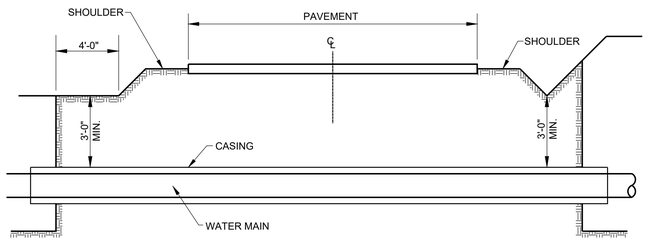
Site Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.2

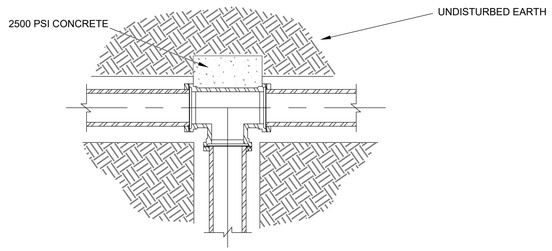
PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

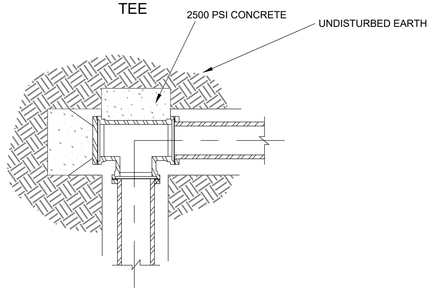


**SEE PLAN FOR WATER MAIN & CASING MATERIAL AND SIZES.

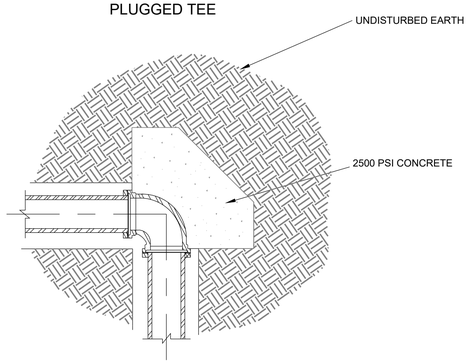
BORED & CASED WATER MAIN



TEE

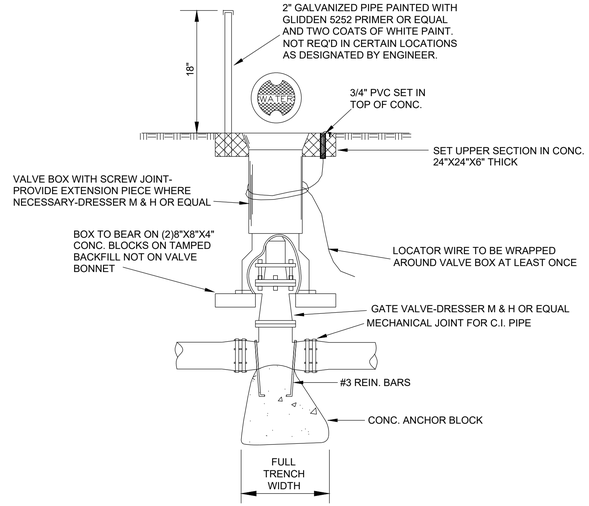


PLUGGED TEE

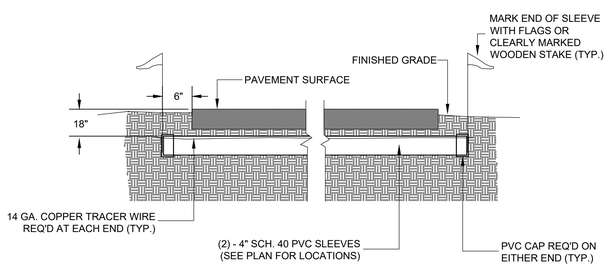


90° BEND

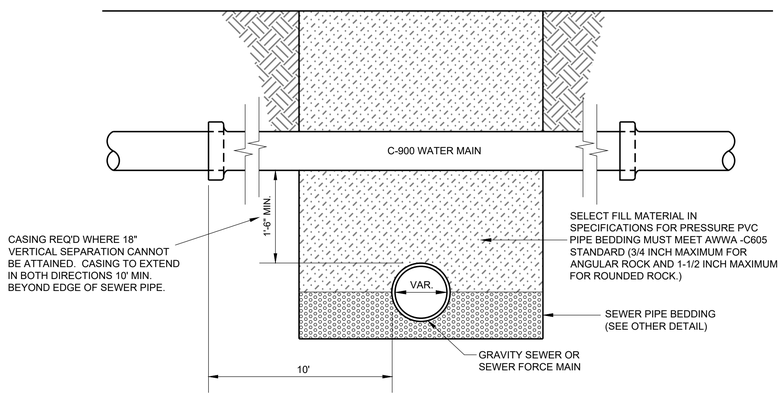
TYPICAL BLOCKING DETAILS



GATE VALVE DETAIL FOR MAINS 2" DIA. & OVER



IRRIGATION SLEEVING DETAIL



WATER-SEWER SEPARATION

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REVISIONS			
NO.	DATE	DESCRIPTION	BY

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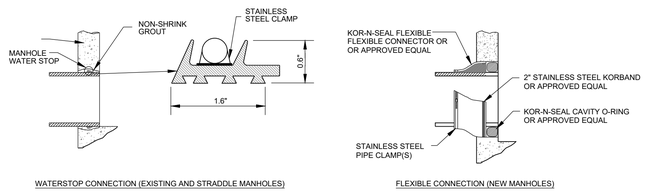
Water Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.3

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

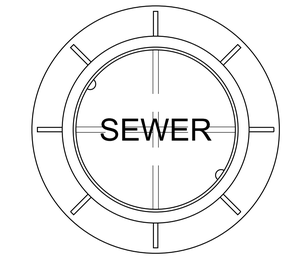


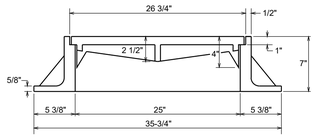
WATERSTOP CONNECTION (EXISTING AND STRADDLE MANHOLES)

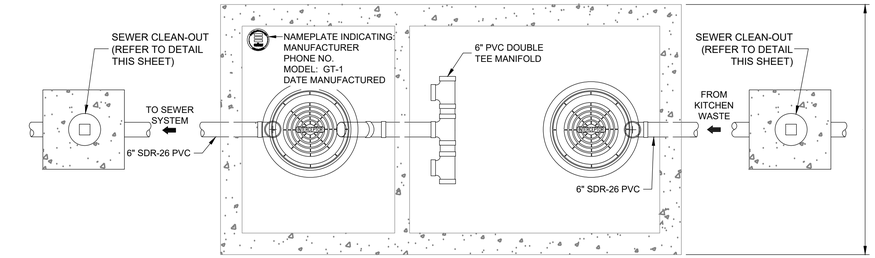
FLEXIBLE CONNECTION (NEW MANHOLES)

PIPE CONNECTION TO MANHOLE DETAILS

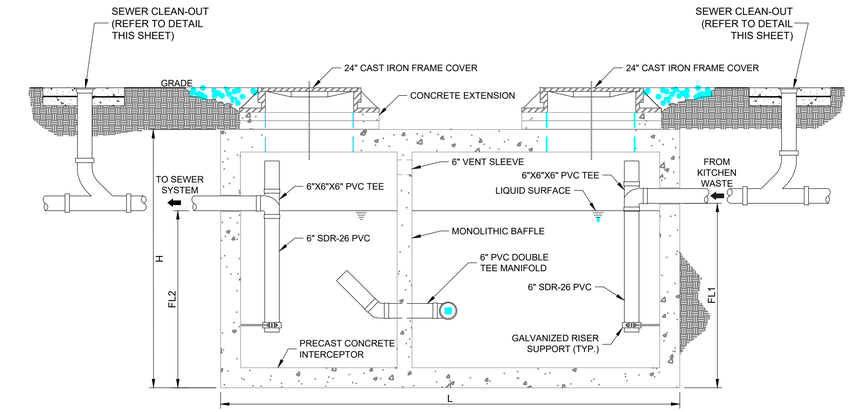
NOTE: MANHOLE RING & COVER TO RATED FOR HEAVY DUTY TRAFFIC LOADING AND SHALL CONFORM TO LOCAL MUNICIPALITY STANDARDS.







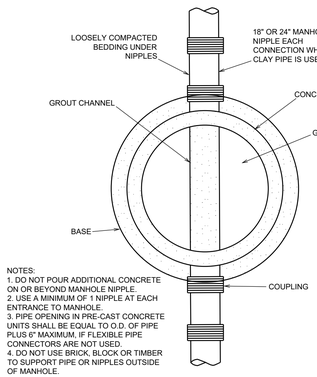
PLAN VIEW



ELEVATION VIEW

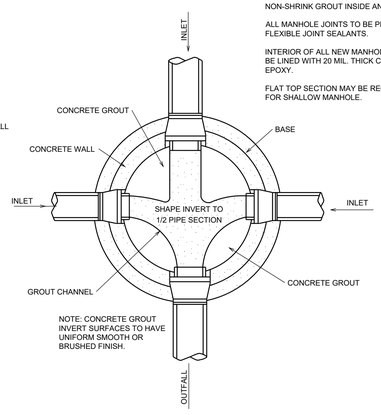
GREASE INTERCEPTOR SCHEDULE								
I.D.	CAPACITY USGal	GREASE CAP. (LBS)	EMPTY WT (LBS)	LENGTH L	WIDTH W	HEIGHT H	INLET FL1	OUTLET FL2
GT-1	500	1,200	9,500	7'-10"	4'-4"	4'-6"	3'-3"	3'-0"

GREASE TRAP DETAIL



NOTES:
1. DO NOT POUR ADDITIONAL CONCRETE ON OR BEYOND MANHOLE NIPPLE.
2. USE A MINIMUM OF 1 NIPPLE AT EACH ENTRANCE TO MANHOLE.
3. PIPE OPENING IN PRE-CAST CONCRETE UNITS SHALL BE EQUAL TO O.D. OF PIPE PLUS 6" MAXIMUM, IF FLEXIBLE PIPE CONNECTORS ARE NOT USED.
4. DO NOT USE BRICK, BLOCK OR TIMBER TO SUPPORT PIPE OR NIPPLES OUTSIDE OF MANHOLE.

TYPICAL PIPE CONNECTION TO MANHOLE



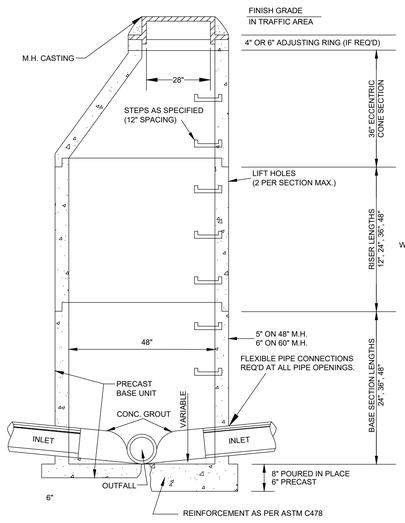
NOTES:
ALL LIFT HOLES ON EACH SECTION SHALL BE SEALED WATERTIGHT WITH NON-SHRINK GROUT INSIDE AND OUTSIDE.

ALL MANHOLE JOINTS TO BE PREFORMED FLEXIBLE JOINT SEALANTS.

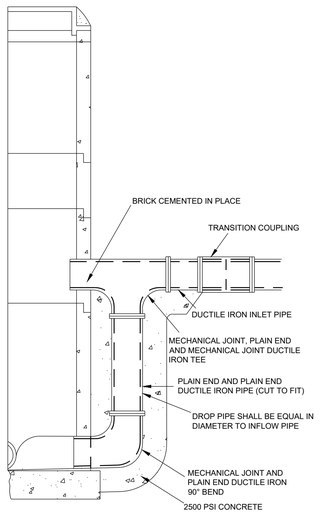
INTERIOR OF ALL NEW MANHOLES SHALL BE LINED WITH 20 MIL. THICK COAL TAR EPOXY.

FLAT TOP SECTION MAY BE REQUIRED FOR SHALLOW MANHOLE.

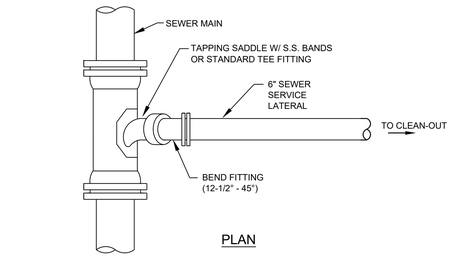
MANHOLE FLOW CHANNELS DETAIL



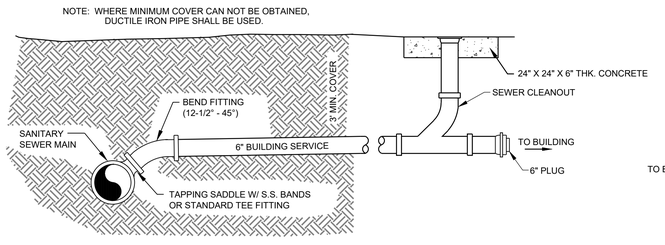
PRECAST CONCRETE MANHOLE



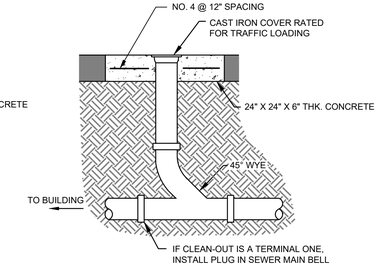
MANHOLE WITH DROP CONNECTION



PLAN

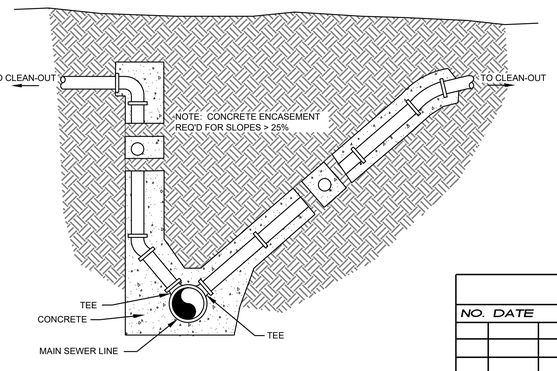


SEWER SERVICE CONNECTION DETAILS



SEWER CLEAN-OUT DETAILS

N.T.S.



SEWER SERVICE DETAILS FOR DEEP SEWERS

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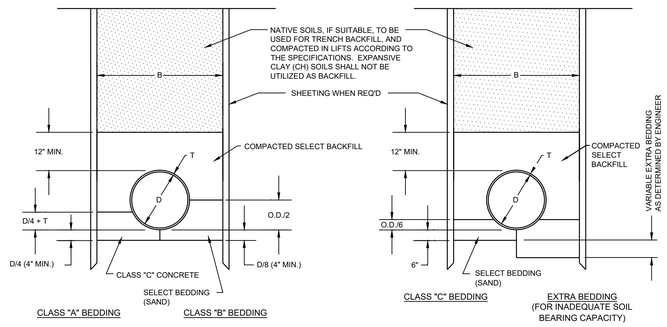
MANHOLE CASTING DETAILS



PIPE BEDDING DETAILS

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
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t 601.261.2609 | clearpointengineers.com

Sewer Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.4

PROJ. NO: 92952001	DRAWN BY: SDM	CHECKED BY: JCA	SCALE: NONE	DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg

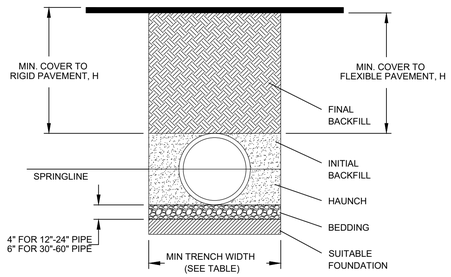
Table 5-2
Classes of Embedment and Backfill Materials

ASTM D2321(A) (CSA B182.11) Class Description		ASTM D2487 Notation	ASTM D2487 Description	AASHTO M43 Notation	AASHTO M145 Notation	BNQ 2560	ASTM Dm 2321 (A) (CSA B182.11) Percentage Passing Sieve Sizes 1 ½ in. (40mm)	3/8" (9.5mm)	No. 4 (4.75mm)	No. 200 (0.075 mm)	Atterberg Limits LL	PI	Coefficients Cu	Cc
I(B)	Crushed rock, angular	N/A	Angular crushed stone or rock, crushed gravel, crushed slag; large voids with little or no fines	5, 56, 57(D), 6, 67(D)	N/A		100%	≤25%	≤15%	<12%	Non Plastic		N/A	
II	Clean, coarse-grained soils	GW	Well-graded gravel, gravel-sand mixtures; little or no fines	5, 6	A1, A3	CG-14 , MG-20	100%		<50% of "Coarse Fraction"	<5%	Non Plastic		>4	1 to 3
		GP	Poorly-graded gravels, gravel-sand mixtures; little or no fines	56, 57, 67									<4	<1 or >3
		SW	Well-graded sands, gravelly sands; little or no fines						>50% of "Coarse Fraction"				>6	1 to 3
		SPF	Poorly-graded sands, gravelly sands; little or no fines										<6	<1 or >3
	Coarse- Grained Soils, borderline clean to w/fines	GW- GC, SP-SM	Sands and gravels which are borderline between clean and with fines	N/A			100%		Varies	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
III	Coarse-grained soils with fines	GM	Silty gravels, gravel-sand-silt mixtures	Gravel & sand with <10% fines	A-2-4, A-2-5, A-2-6, or A-4 or A-6 soils with more than 30% retained on #200 sieve		100%		<50% of "Coarse Fraction"	12% to 50%	N/A	<4 or <"A" Line	N/A	
		GC	Clayey gravels, gravel-sand-clay mixtures									<7 & >"A" Line		
		SM	Silty sands, sand-silt mixtures						>50% of "Coarse Fraction"			>4 or <"A" Line		
		SC	Clayey sands, sand- clay mixtures									>7 & >"A" Line		
	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity						100%	> 30% (Retained)	<50	<4 or <"A" Line		
		CL	Inorganic clays of low to medium plasticity; gravelly, sandy, or silty clays; lean clays							> 30% (Retained)		>7 & >"A" Line		
IV(E)	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity	N/A	A-2-7 or A-4 or A-6 soils with 30% or less retained on #200 sieve		100%		100%	< 30% (Retained)	<50	<4 or <"A" Line	N/A	
		CL	Inorganic clays of low to medium plasticity; gravelly, sandy, or silty clays; lean clays	N/A								>7 & >"A" Line		
V (G)	Inorganic fine-grained soils	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	N/A	A5, A7		100%		100%	>50%	>50	<"A" Line	N/A	
		CH	Inorganic clays of high plasticity, fat clays	N/A								>"A" Line		
	Organic soils or Highly organic soils	OL	Organic silts and organic silty clays of low plasticity	N/A			100%		100%	>50%	<50	<4 or <"A" Line	N/A	
		OH	Organic clays of medium to high plasticity, organic silts	N/A							>50	<"A" Line		
		PT	Peat and other high organic soils	N/A										

ADS, Inc. Drainage Handbook

Notes:
A) Refer to ASTM D2321 / CSA B182.11/ BNQ 2560 for more complete soil descriptions.
B) Class I materials allow for a broader range of fines than previous versions of D2321 / B182.11. When specifying class I material for infiltration systems, the engineering shall include a requirement for an acceptable level of fines.
C) All particle faces shall be fractured.
D) Assumes less than 25% passes the 3/8" sieve.
E) Class IV materials require a geotechnical evaluation prior to use and should only be used as backfill under the guidance of a qualified engineer.
F) Uniform fine sands (SP) with more than 50% passing a 100 sieve behave like silts and should be treated as Class III soils if allowed.
G) Class V materials shall not be permitted as bedding and backfill material.

ADS, Inc., August 2016



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS". LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IVB MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE; 6" (150mm) FOR 30"-60" (750mm-900mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS; CLASS I OR II MATERIAL COMPACTED TO 85% SPD AND CLASS III COMPACTED TO 90% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1200mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

TABLE 2, MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	24" (600mm)	60" (1500mm)

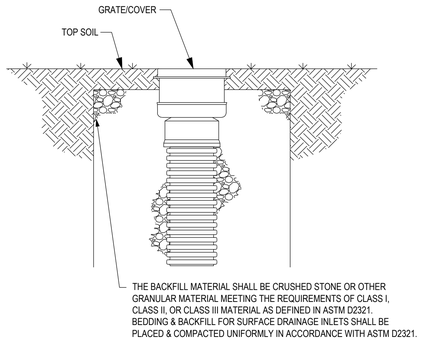
* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

TABLE 3, MAXIMUM COVER FOR ADS HP STORM PIPE, ft

	CLASS I	CLASS II			CLASS III		CLASS IV
PIPE DIA	COMPACTED	95%	90%	85%	95%	90%	95%
12" (300mm)	41 (12.5m)	29 (8.8m)	21 (6.4m)	10 (3.0m)	22 (6.7m)	12 (3.7m)	11 (3.4m)
15" (375mm)	44 (13.4m)	30 (9.1m)	22 (6.7m)	10 (3.0m)	23 (7.0m)	13 (4.0m)	12 (3.7m)
18" (450mm)	38 (11.6m)	26 (7.9m)	19 (5.8m)	9 (2.7m)	20 (6.1m)	12 (3.7m)	11 (3.4m)
24" (600mm)	32 (9.8m)	23 (7.0m)	16 (4.9)	9 (2.7m)	17 (5.2m)	11 (3.4m)	10 (3.0m)
30" (750mm)	35 (10.7m)	25 (7.6m)	18 (5.5m)	9 (2.7m)	18 (5.5m)	12 (3.7m)	11 (3.4m)
36" (900mm)	31 (9.5m)	22 (6.7m)	15 (4.6m)	9 (2.7m)	16 (4.9m)	11 (3.4m)	10 (3.0m)
42" (1050mm)	33 (10.1m)	23 (7.0m)	17 (5.2m)	8 (2.4m)	17 (5.2m)	11 (3.4m)	10 (3.0m)
48" (1200mm)	31 (9.5m)	22 (6.7m)	15 (4.6m)	8 (2.4m)	16 (4.9m)	11 (3.4m)	10 (3.0m)
60" (1500mm)	36 (11.0m)	25 (7.6m)	17 (5.2m)	8 (2.4m)	18 (5.5m)	11 (3.4m)	10 (3.0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE
UNIT WEIGHT OF SOIL (γs) = 120 PCF

HIGH PERFORMANCE (H.P.) STORM PIPE BEDDING DETAILS & SPECIFICATIONS



NON-TRAFFIC INLINE DRAIN INSTALLATION

Section 2722

Engineered Surface Drainage Products

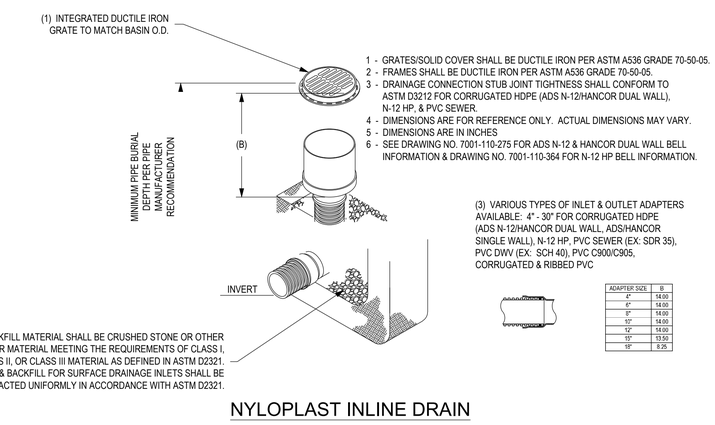
GENERAL
PVC surface drainage inlets shall be of the inline drain type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The inline drain required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the furnished configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the inline drain body by use of a **swage mechanical joint**. The raw material used to manufacture the pipe stock that is used to manufacture the inline drain body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

The grates furnished for all surface drainage inlets shall be ductile iron grates for sizes 8", 10", 12", 15", 18", 24" and 30" shall be made specifically for each fitting so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for inline drains shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrian areas. 12" and 15" square grates will be hinged to the frame using pins. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

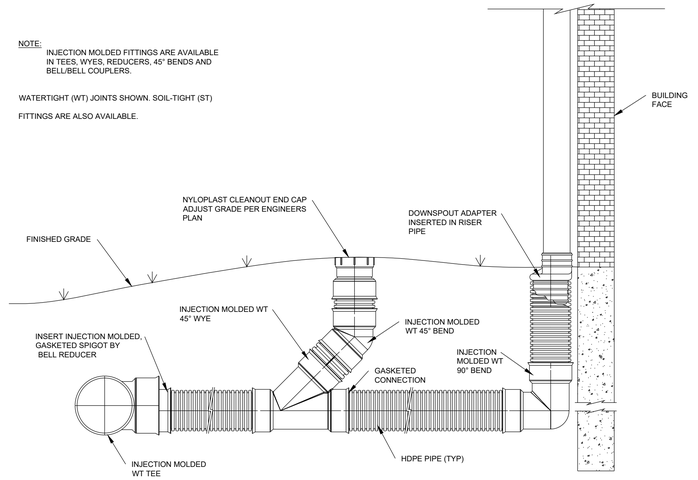
INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

8 IN - 30 IN INLINE DRAIN SPECIFICATIONS



ADAPTER SIZE	B
4"	14.00
6"	14.00
8"	14.00
10"	14.00
12"	14.00
15"	13.50
18"	8.25

NYLOPLAST INLINE DRAIN



ROOF DRAIN INLET DETAIL

DRAFT FOR REVIEW

REVISIONS NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1051 Jackson Road | Hattiesburg, MS 39402
t 601.261.2609 | clearpointengineers.com

STORM Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.5

PROJ. NO: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: S:\92952001\DWG\92952001-Civil.dwg



RENDERING (FOR REFERENCE ONLY)



LOCATION MAP

A. THE ARCHITECT DISCLAIMS RESPONSIBILITY FOR ANY EXIST CONDITIONS - INCLUDING THE EXIST STRUCT, SITE CONDITIONS OR OTHER EXIST CONST. ELEMENTS (NOW AVAILABLE) AND FOR ANY DWGS OR OTHER DOCUMENTS RELATED TO THE PROJECT WHICH DO NOT BEAR THE ARCHITECT'S SEAL AND SIGNATURE. SERVICES ARE PROVIDED SOLELY FOR THE ARCHITECT'S CLIENT - NO OBLIGATION OR RESPONSIBILITY IS ASSUMED FOR THE BENEFIT OF ANY OTHER ENTITY INVOLVED IN THE CONST WORK.
B. PROVIDE (FURNISH & INSTALL) ALL PRODUCTS, MATERIALS, EQUIP OR ACCESSORIES REQD FOR PROPER OPERATION AND USE IN ACCORDANCE W/ MANUFACTURERS, EXCEPT AS NOTED. OTHER RELATED DOCUMENTS AFFECTING THE WORK DESCRIBED IN THESE DWGS MAY INCLUDE GEOTECHNICAL RECOMMENDATIONS, MANUF PRODUCT DATA, AND INSTALL, REGD, SHOP DWGS AND COORD REQS.
C. STUDY AND COMPARE THE CDS AND OTHER RELATED DOCUMENTS W/ THE EXIST CONDITIONS AND VERIFY EXIST DIMS BEFORE STARTING CONST WORK. REPORT ERRORS, INCONSISTENCIES OR OMISSIONS DISCOVERED FOR CLARIFICATION. WORK PERFORMED BY CONTRACTOR IN EXCESS OF THAT REQD FOR PERFECTION IS NOT POSSIBLE AS EVERY POSSIBLE CONDITION OR CONTINGENCY CANNOT BE ANTICIPATED OR FULLY SHOWN WITH THE CDS. FAILURE TO REVIEW OTHER DOCUMENTS DOES NOT AFFECT ANY CONTRACTUAL OBLIGATION TO PROVIDE COMPLETE OR OTHERWISE FUNCTIONAL AND OPERABLE BLDG COMPONENTS OR A USEABLE BLDG FACILITY.
D. COMPLY W LAWS, CODES & ORDINANCES OF AN AND W REGS OF THE CLIENT, OWNER, DEVELOPER OR LANDLORD AS APPLICABLE.
E. DO NOT SCALE THESE DWGS.
F. APPLICATION OF A MATERIAL OR EQUIP ITEM TO WORK INSTALLED BY OTHERS CONSTITUTES ACCEPTANCE OF THAT WORK AND ASSUMPTION OF RESPONSIBILITY FOR SATISFACTORY PERF BY ALL.
G. PROVIDE GA SUB-CONTRACTOR W/ A COMPLETE SET OF ELECTRONIC CDS FOR THEIR USE AND REFERENCE AND VERIFY THEIR RECEIPT UPON REQUEST.
H. FILL & PATCH EXPOSED HOLES OR CRACKS IN FLR OR WALL SURFACES AND FIN LEVEL, SMOOTH AND FLUSH W ADJACENT SURFACES.
I. COORD AND VERIFY CLEARANCES REQD OF PRODUCTS AND EQUIP FOR DELIVERY, INSTALL, USE AND OPERATION.
J. MAINTAIN DIMS INDICATED AS "HOLD" ACCURATELY AS NOTED.
K. BRACE PARTITIONS, CEILINGS, SOFFITS, PLATFORMS, RESTRAINTS, CONTE AND SIM ELEMENTS TO STRUCT ELEMENTS - EVEN IF NOT INDICATED. DO NOT BRACE TO THE ROOF DECK, PLUMB OR SPRINKLER PIPES, DUCTWORK, ELECT CONDUITS OR SIM ELEMENTS.
L. INSTALL FRAMING AND FURRING TO AVOID CONFLICTS OR INTERFERENCES W/ CONCEALED OR RECESSED MEP OR CONTROL COMPONENTS.
M. ALIGN TOP OF NEW CONC AS EXIST AS APPLICABLE.
N. PROVIDE BAT SCREEN CONC SEALER ON EXPOSED INT CONC FLRS, UNO.
O. TROWEL-IN TOP & SIDES, CAST INSIDE CORNERS AND EASE OUTSIDE CORNERS OF CONC PADS OR EQUIP BASES.
P. VERIFY FLATNESS AND LEVELNESS OF CONC SLABS OR ELEVATED FLRS BEFORE APPLICATION OF FIN. PROVIDE SELF-LEVELING TOPPING OR UNDERLAYMENT AS NEW CONC SLAB FIN GRADE INSTALLED SUCCESSFULLY ALIGNED ON UNDERLYING SLABS.
Q. RE TO FIN MATERIAL COLOR SCHED FOR EXPOSED TRIM OF BLDG MATERIALS, WALLS, FLRS, CLG, DRS, TRIM, CASEWORK, COUNTERTOPS AND SIM CONST ELEMENTS.
R. PROVIDE CONCEALED WOOD BLOCKING W/IN DRYWALL CONST FOR SECURE ANCHORAGE OF CASEWORK CABINETS, WALL-MOUNTED SHELVES, GRAB BARS, DR STOPS, WD FRAMES AND SIM ELEMENTS.
S. PROVIDE FIRE-RETARDANT TREATED (FRT) WD BLOCKING WHEN CONCEALED W/IN DRYWALL PARTITIONS AND WHEN CONCEALED ABOVE CLGS (NON-COMBUSTIBLE CONST).
T. PROVIDE PRESERVATIVE-TREATED WD BLOCKING WHEN IN CONTACT W/ MASONRY OR CONC OR WHEN ASSOCIATED W/ ROOFING OR FLASHING WORK.
U. PROVIDE MIN 1/2" THICK TREE-RETARDANT TREATED PLYWD AT ELECT OR PHONE/DATA ENCL.
V. PROVIDE AN APPROVED FIRESTOPPING SYS AT TOP AND AT PENETRATIONS OF FIRE-RATED CONST.
W. PROVIDE IT SEALS TO MAINTAIN A PERMANENT, AIR-TIGHT, VERMIN AND WATERPROOF BLDG ENCLOSURE T-ROUGHOUT THE PROJECT. PROVIDE FIRE-SEALANTS AT FIRE-RATED PARTITIONS AND ACOUSTICAL SEALANTS AT SOUND-RATED PARTITIONS, AS APPLICABLE.
X. PROVIDE DR HARDWARE AT FA SWINGING DR TO INCLUDE 3 HINGES, LVR/LOCKSET, 3 PHASE SILENCERS AND A WALL STOP MTL UNO.
Y. INSTALL HOUSE/OWN CLRS AT CEILING PANELS W/IN 20' OF AIR/VISTIBULE OR ENTRANCE VESTIBULE DR.
Z. LOCATE FLR TRANSITIONS AND TRANSITIONS UNDER CTS OF DRS.
AA. PT FIN ALL EXPOSED SURFACES THROUGHOUT THE BLDG UNLESS PREFIN OR INTEGRALLY FIN OR WHERE A NATURAL FINIS INDICATED.
AB. PT FIN ELECT & CONTROL PNLS WHEN NOT LOCATED W/IN ELECT OR MECH RMS, COLOR PER ARCHITECT.

GENERAL NOTES & REQUIREMENTS

USM - WESLEY

3200 MONTAGUE BLVD
HATTIESBURG, MS 39401

100% CONSTRUCTION DOCUMENTS

G002	CODE REVIEW, PROJECT INFO, EGRESS PLANS, & GENERAL NOTES
G011	ABBREVIATIONS AND ACCESSIBILITY NOTES
G012	STANDARD ACCESSIBILITY REFERENCE DIAGRAMS
G013	STANDARD ACCESSIBILITY REFERENCE DIAGRAMS
G014	STANDARD ACCESSIBILITY REFERENCE DIAGRAMS
G015	STANDARD ACCESSIBILITY REFERENCE DIAGRAMS
G101	ARCHITECTURAL SPECIFICATIONS
G102	ARCHITECTURAL SPECIFICATIONS
G103	ARCHITECTURAL SPECIFICATIONS
G104	ARCHITECTURAL SPECIFICATIONS
G105	ARCHITECTURAL SPECIFICATIONS
G106	ARCHITECTURAL SPECIFICATIONS
G107	ARCHITECTURAL SPECIFICATIONS
G108	ARCHITECTURAL SPECIFICATIONS
G109	ARCHITECTURAL SPECIFICATIONS
C1.1	NOTES, LEGEND, AND ABBREVIATIONS
C1.2	DEMOLITION PLAN
C2.1	EROSION CONTROL PLAN
C2.2	SITE PLAN
C2.3	GRADING PLAN
C2.4	UTILITY PLAN
C3.1	EROSION CONTROL DETAILS
C3.2	SITE DETAILS
C3.3	WATER DETAILS
C3.4	SEWER DETAILS
C3.5	STORM DETAILS
LS.1	LANDSCAPE PLAN
LS.2	LANDSCAPE DETAILS & VEGETATION SCHEDULE
S0.1	NOTES
S0.2	3D VIEWS
S0.3	3D VIEWS
S1.1	OVEREXCAVATION PLAN
S1.2	FOUNDATION PLAN - LOWER LEVEL
S1.3	1ST FLOOR FRAMING PLAN
S1.4	2ND FLOOR FRAMING PLAN
S1.5	ROOF FRAMING PLAN
S2.1	BUILDING ELEVATIONS
S2.2	BUILDING ELEVATIONS
S2.3	BUILDING ELEVATIONS
S2.4	BUILDING ELEVATIONS
S2.5	BUILDING SECTIONS
S2.6	BUILDING SECTIONS
S2.7	BUILDING SECTION
S3.1	FOUNDATION DETAILS
S3.2	FOUNDATION DETAILS
S3.3	FOUNDATION DETAILS
S3.4	DETAILS
S3.5	2ND FLOOR DETAILS
S3.6	ROOF DETAILS
S4.1	SPECIFICATIONS
S4.2	SPECIFICATIONS
A001	ARCHITECTURAL SITE PLAN
A002	ARCHITECTURAL SITE DETAILS
A101	FLOOR PLAN - LEVEL 1
A102	FLOOR PLAN - LEVEL 2
A121	REFLECTED CEILING PLAN - LEVEL 1
A122	REFLECTED CEILING PLAN - LEVEL 2
A151	ROOF PLAN
A201	EXTERIOR ELEVATIONS
A202	EXTERIOR ELEVATIONS
A301	BUILDING SECTIONS
A302	BUILDING SECTIONS
A321	WALL SECTIONS
A322	WALL SECTIONS
A323	WALL SECTIONS
A324	WALL SECTIONS
A351	VERTICAL CIRCULATION
A352	VERTICAL CIRCULATION
A401	ENLARGED PLANS & ELEVATIONS
A402	ENLARGED PLANS & ELEVATIONS
A421	ENLARGED UNIT PLANS & ELEVATIONS - 1 BED
A422	ENLARGED UNIT PLANS & ELEVATIONS - 2 BED
A423	ENLARGED UNIT PLANS & ELEVATIONS - 1 BED - TYPE A
A451	INTERIOR ELEVATIONS
A452	INTERIOR DETAILS
A501	EXTERIOR DETAILS
A502	EXTERIOR DETAILS
A503	EXTERIOR DETAILS
A504	EXTERIOR DETAILS
A505	EXTERIOR DETAILS
A511	PLAN DETAILS
A601	WALL TYPES
A602	HORIZONTAL ASSEMBLIES
A610	FINISH FLOOR PLANS
A612	FINISH INDEX & FINISH SCHEDULE
A631	DOOR SCHEDULE, FRAMES AND TYPES
A632	DOOR DETAILS
A651	INTERIOR GLAZING ELEVATIONS
A652	STOREFRONT AND WINDOW ELEVATIONS
A653	STOREFRONT DETAILS
A654	WINDOW DETAILS
M001	MECHANICAL LEGEND, ABBREVIATIONS & NOTES
M002	MECHANICAL SPECIFICATIONS
M003	MECHANICAL SPECIFICATIONS
M004	MECHANICAL SPECIFICATIONS
MZ101	FIRST FLOOR HVAC ZONING PLAN
MZ102	SECOND FLOOR HVAC ZONING PLAN
M101	OVERALL FIRST FLOOR AND MAIL ROOM HVAC PLAN
M102	OVERALL SECOND FLOOR HVAC PLAN
M103	OVERALL ROOF HVAC PLAN
M104	OVERALL FIRST FLOOR AND MAIL ROOM REFRIGERANT PIPING PLAN
M105	OVERALL SECOND FLOOR REFRIGERANT PIPING PLAN
M106	OVERALL ROOF REFRIGERANT PIPING PLAN
M501	MECHANICAL DETAILS
M502	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
M602	MECHANICAL SCHEDULES
M603	MECHANICAL SCHEDULES
E000	ELECTRICAL LEGEND
E001	ELECTRICAL ONE LINE
E002	ELECTRICAL SITE PLAN
E003	ELECTRICAL PANEL SCHEDULES
E004	ELECTRICAL PANEL SCHEDULES
E005	ELECTRICAL SPECS
E006	ELECTRICAL SPECS
E007	ELECTRICAL SPECS
E008	ELECTRICAL SPECS
E009	ELECTRICAL SPECS
E100	ELECTRICAL LIGHTING PLAN
E101	ELECTRICAL LIGHTING PLAN
E200	ELECTRICAL POWER PLAN
E201	ELECTRICAL POWER PLAN
E202	ELECTRICAL POWER PLAN
E203	ELECTRICAL POWER PLAN
E300	ELECTRICAL MECHANICAL PLAN
E301	ELECTRICAL MECHANICAL PLAN
E302	ELECTRICAL MECHANICAL PLAN
P001	PLUMBING LEGEND, ABBREVIATIONS & NOTES
P002	PLUMBING SPECIFICATIONS
P003	PLUMBING SPECIFICATIONS
P101	FIRST FLOOR SANITARY PLUMBING PLAN
P102	SECOND FLOOR SANITARY PLUMBING PLAN
P103	ROOF SANITARY PLUMBING PLAN
P104	FIRST FLOOR SUPPLY PLUMBING PLAN
P105	SECOND FLOOR SUPPLY PLUMBING PLAN
P106	ROOF SUPPLY PLUMBING PLAN
P601	PLUMBING DETAILS
P602	PLUMBING DETAILS
P603	PLUMBING DETAILS
P801	PLUMBING SCHEDULES
P802	PLUMBING SCHEDULES
FP001	FIRE PROTECTION LEGEND, ABBREVIATIONS & NOTES
FP002	FIRE PROTECTION SPECIFICATIONS
FP003	FIRE PROTECTION SPECIFICATIONS
FP101	FIRST FLOOR FIRE PROTECTION PLAN
FP102	SECOND FLOOR FIRE PROTECTION PLAN
FP501	FIRE PROTECTION DETAILS
FP601	FIRE PROTECTION SCHEDULES

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100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2025

PROJ. A_2406

Issued For	Date	#
100% CONSTRUCTION DOCUMENTS	01.16.2025	0

COVER

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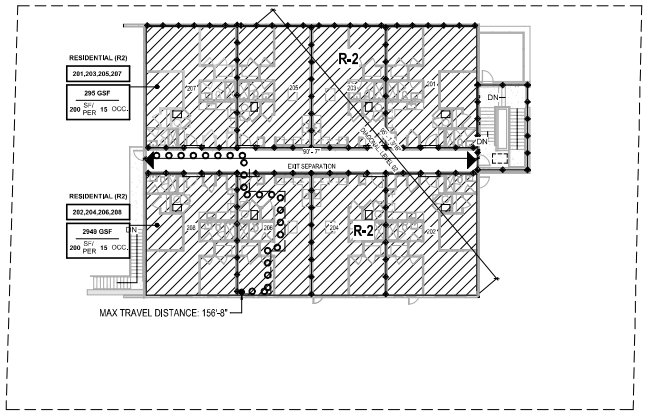

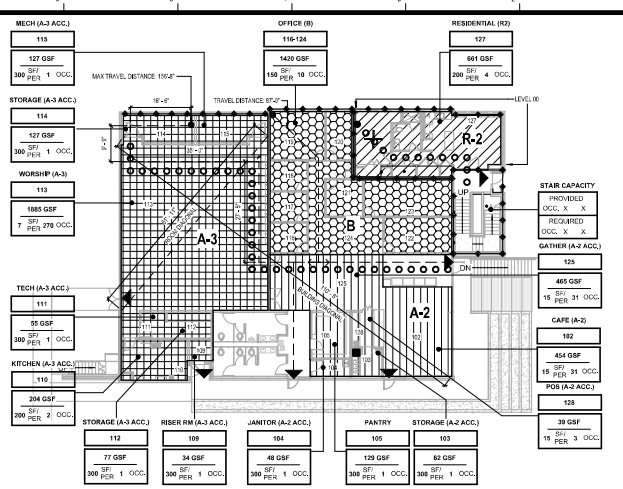

REVISION REFERENCE & DELTA
ENLARGED DETAIL REFERENCE
SIM
BUILDING SECTION
WALL SECTION
EXISTING DOOR
NEW DOOR
XXX KEY NOTE TAG
ROOM NAME 101 ROOM NAME/NUMBER
GLAZING TYPE
SPOT ELEVATION
WALL TYPE
ELEVATION
GRID REFERENCE
101 DOOR TAG
CENTERLINE

STANDARD SYMBOLS 13E

EGRESS PLAN - LEVEL 02 7E
1/16" = 1'-0"

EGRESS PLAN - LEVEL 00-01 1E
1/16" = 1'-0"

AUTHORITY HAVING JURISDICTION:
HATTIESBURG, MISSISSIPPI

APPLICABLE CODES:
2024 IBC
2024 IEBC
2024 IFC
2024 IPC
2024 IMC
2024 IFGC
2024 IFGC
2024 IPMC
2024 IPSDC
2024 UPC
2024 NEC

PROJECT DESCRIPTION:
THE PROPOSED PROJECT IS THE NEW CONSTRUCTION OF A MIXED USE CAMPUS MINISTRY BUILDING WITH ADJOINING RETAIL AND RESIDENTIAL COMPONENTS. THE 3 STORY BUILDING INCLUDES A WORSHIP SPACE, A CAFE AND SUPPORT KITCHEN, A VARIETY OF MEETING ROOMS, AND ASSOCIATED BUILDING STORAGE AND UTILITY SPACE. THE RESIDENTIAL COMPONENT RESIDES PRIMARILY ON THE SECOND LEVEL WITH A TYPE A ACCESIBLE UNIT ON THE FIRST FIRST.

OCCUPANCY:
A-2(PRIMARY): CAFE + ACCESSORY
A-3: WORSHIP + ACCESSORY
B: BUSINESS - OFFICES AND CONFERENCING
R-2: APARTMENTS

CODE APPROACH:
ONE BUILDING, 3 STORIES, NON SEPERATED MIXED USE OCCUPANCY, THE MORE RESTRICTIVE A-2 OCCUPANCY REQUIREMENTS WILL BE APPLIED THROUGHOUT THE BUILDING. 1 HR SEPARATION PROVIDED WALL AND HORIZONTAL ASSEMBLIES SEPERATING DWELLING UNITS FROM OTHER OCCUPANCIES OR ACCESSORY AREAS (PER 420.2 & 420.3), FULLY SPRINKLERED PER NFPA 13.

BUILDING AREA TABULATION:

	INTERIOR
LEVEL 1	7,193 GSF
LEVEL 2	7,105 GSF
TOTAL	14,298 GSF

TYPE OF CONSTRUCTION:
CONSTRUCTION: TYPE V-B

PRIMARY STRUCTURAL FRAME:	0 HOURS
BEARING WALLS - EXTERIOR:	0 HOURS
BEARING WALLS - INTERIOR:	0 HOURS
NON-BEARING WALLS - INTERIOR:	0 HOURS
FLOOR CONSTRUCTION:	0 HOURS (PER 601)
	1 HOUR PER (711.2.4.1 & 508.4)
ROOF CONSTRUCTION:	0 HOURS
SHAFT WALLS:	1 HOURS (PER 713.4)

TYPE OF CONSTRUCTION (CONT.):
MAX. ALLOWABLE AREA: 18,000 GSF (SM, A-2 ASSEMBLY PER TABLE 508.2) **ACTUAL:** 14,298 GSF

MAX- ALLOWABLE BULDING HEIGHT: 60' (S. A ASSEMBLY PER TABLE 504.3) **ACTUAL:** 33'-6"

MAX. ALLOWABLE STORIES: 2 STORIES (S. A-2 ASSEMBLY PER TABLE 504.4) **ACTUAL:** 2 STORIES

OCCUPANCY:
OCCUPANT LOAD FACTORS
ASSEMBLY W/OUT FIXED SEATING (UNCONC, TABLES AND CHAIRS): **15 NET**
ASSEMBLY W/OUT FIXED SEATING (CONCENTRATED): **7 NET**
BUSINESS AREA: **150 GROSS**
KITCHEN: **200 GROSS**
RESIDENTIAL: **200 GROSS**

OCCUPANT LOADS
(SEE EGRESS PLAN FOR CALCULATIONS)

	INTERIOR
LEVEL 1:	355
LEVEL 2:	30
TOTAL OCCUPANTS:	385

ACTIVE FIRE PROTECTION:
SPRINKLERED PER NFPA 13 STANDARD

EXITING:

EXITING SIZES:
STAIRWAY MINIMUM WIDTH (1005.3.1):
EGRESS FACTOR OF 0.3 INCH PER OCCUPANT, ONLY THE OCCUPANT LOAD OF EACH STORY CONSIDERED IN/MD/JACENT SHALL BE USED IN THE CALCULATION.

OTHER EGRESS COMPONENTS (1005.3.2):
EGRESS FACTOR OF 0.2 INCH PER OCCUPANT, ONLY THE OCCUPANT LOAD OF EACH STORY CONSIDERED IN/MD/JACENT SHALL BE USED IN THE CALCULATION.

WIDTH AND CAPACITY (1011.2)
MIN. WIDTH OF STAIRWAY SHALL NOT BE LESS THAN 44".
MIN. WIDTH OF STAIRWAY SERVING LESS THAN 50 OCCUPANTS SHALL NOT BE LESS THAN 36"

CODE ANALYSIS 13A

A. RE: 2024 INTERNATIONAL FIRE CODE (IFC) SECTIONS 505.1 & 506.1.1.
B. MAIN ENTRANCES: PROVIDE FLUSH MOUNTED EMERGENCY KEY ACCESS BOX & KEY AT MAIN ENTRANCES OF EA BLDG AND DRS ACCESSING FIRE CONTROL VALVE EQUIP.
C. ELEVATORS: PROVIDE FLUSH MOUNTED EMERGENCY KEY ACCESS BOX & KEY IN THE ELEVATOR LOBBY NEXT TO THE LOWEST POINT OF FIRE DEPARTMENT ACCESS.
D. MOUNT 5'-6" ABOVE FIN GRADE / FLR, CONSULT AHJ FOR FINAL INSTALL LOCATIONS, AND NOTIFY ARCHITECT PRIOR TO INSTALL.

EMERGENCY KEY ACCESS BOX NOTES 9C

ENERGY EFFICIENCY - CLIMATE ZONE 3

	REQUIRED	PROVIDED
ROOF		
INSULATED ABOVE DECK:	R-25 CI	POLYISO RIGID INSULATION, R-25 MIN.
WALLS ABOVE GRADE		
WOOD FRAMED	R-20	FIBERGLASS BATT INSULATION, R-20 MIN.
WALLS BELOW GRADE:		
MASS	NOT REQUIRED	N/A
FLOORS		
JOIST FRAMING	R-30	FIBERGLASS BATT INSULATION, R-30 MIN.
SLAB ON GRADE FLOORS		
UNHEATED SLABS:	NOT REQUIRED	N/A
OPAQUE DOORS		
SWINGING DOORS:	(A)1.27	METAL HOLLOW DOORS: R-16 MINIMUM
FENESTRATION (U-VALUE & SHGC)		
FIELD FENESTRATION:	(A)1.28 / SHGC=0.25	1" INSULATED ALUMINUM STOREFRONT: U = .37 / SHGC = 0.30
ENTRANCE DOORS:	(A)1.28 / SHGC=0.23	1" INSULATED ALUMINUM STOREFRONT DOORS: U = .39 / SHGC = 0.20

1. ENVELOPE REQS BASED ON 2024 IECC TABLES C402.1.2, C402.1.3 AND C402.5, CI = CONTINUOUS INSULATION
2. ALL STOREFRONTS AND DRS WILL MEET CLIMATE ZONE 3 REQS.

ENERGY EFFICIENCIES DATA 9A

LEVEL 1
MALE: 178 OCCUPANTS

WATER CLOSET	2 REQUIRED	2 PROVIDED
LAVATORY	1 REQUIRED	2 PROVIDED
URINAL		1 PROVIDED

FEMALE: 178 OCCUPANTS

WATER CLOSET	3 REQUIRED	3 PROVIDED
LAVATORY	1 REQUIRED	2 PROVIDED

ACCESSORIES: 385 OCCUPANTS

DRINKING FOUNTAINS	1 REQUIRED	1 PROVIDED
SERVICE SINK	1 REQUIRED	1 PROVIDED

*RESIDENTIAL UNITS ON LEVELS 0 AND 2 SELF SATISFY REQUIREMENTS FOR "R" OCCUPANCY, 1 LL, 1 WATER CLOSET, 1 LAVATORY, 1 BATH/TUB SHOWER PER DWELLING UNIT SLEEPING UNIT.

PLUMBING FIXTURE COUNTS 5C

A. URINALS MAY BE USED FOR UP TO 67% OF THE WATER CLOSETS IN ASSEMBLY OTHERWISE URINALS MAY BE USED FOR UP TO 50% OF THE WATER CLOSETS (2024 IPC SECTION 424.3).
B. URINAL PARTITIONS REQD (2024 IPC SECTION 424.3.5).
C. THE PARTITION SHALL START AT A HT OF 12" ABOVE THE FLR AND EXTEND TO 60" ABOVE THE FLR.
D. THE PARTITION SHALL EXTEND FORM THE WALL SURFACE AT EA SIDE OF THE URINAL A MIN DISTANCE OF 18" OR 8" BEYOND THE OUTERMOST FRONT LIP OF THE URINAL MEASURED FROM THE BACK WALL SURFACE, WHICHEVER IS GREATER.
E. LOCATION OF TOILET FACILITIES - WITH BOD AND 140 DRY (IPC SECTION 403.2.3).

PLUMBING FIXTURE GENERAL NOTES 5B

A. RE: GOOD FOR CODE ANALYSIS.
B. RE: ABH FOR WALL TYPES.
C. PLACEMENT / ALIGNMENT OF ALL DEVICES TO BE COORD W/ ARCHITECT PRIOR TO INSTALL.
D. PROVIDE FIRE EXTINGUISHER IN ADJC. SINK CABINET AT KITCHEN IN ALL DWELLING UNITS AS WELL AS PROVIDE FIRE EXTINGUISHERS AND CABINETS AS INDICATED BY DWGS. FINAL LOCATIONS SHALL BE COORD W/ AHJ. INFORM ARCHITECT OF ALL FIRE MARSHAL'S LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
E. ALL SPRINKLER HEADS IN GYP BD WALLS AND HARD LID CLGS SHALL BE CONCEALED TYPE.
F. PROVIDE FIRE BLOCKING VERT AT CLG & FLR, AND HORIZ AT INTERVALS NOT EXCEEDING 10' AT UNIT DEMISING WALLS.

EGRESS PLAN GENERAL NOTES 5A

ASSEMBLY GROUP A-2
ASSEMBLY GROUP A-3
"ACCESSORY OCCUPANCIES NOT EXCEEDING 10% OF FLOOR AREA PER 303.1.4 & 508.2
RESIDENTIAL GROUP R-2
BUSINESS GROUP B
COMMON PATH OF TRAVEL
MAXIMUM EXIT ACCESS TRAVEL DISTANCE
1-HOUR FIRE RATING
PROPERTY LINE
EXIT
EXIT WIDTH
PROVIDED X OCC.
REQUIRED X OCC.
PROVIDED EXIT CAPACITY
REQUIRED EXIT CAPACITY
REQUIRED EXIT WIDTH
PROVIDED EXIT WIDTH
STAIR CAPACITY
PROVIDED X OCC.
REQUIRED X OCC.
PROVIDED STAIR CAPACITY
REQUIRED STAIR CAPACITY
REQUIRED STAIR WIDTH
PROVIDED STAIR WIDTH
ROOM TAG
XXX ROOM NAME
XXX ROOM NUMBER
XXX ROOM AREA
SF/PER X OCC. OCCUPANT LOAD PER SPACE
OCCUPANT LOAD FACTOR

EGRESS SYMBOLS LEGEND 1A

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100% CONSTRUCTION DOCUMENTS

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100% CONSTRUCTION DOCUMENTS	01.16.2025	0

CODE REVIEW, PROJECT INFO, EGRESS PLANS, & GENERAL NOTES

G002

GENERAL REQUIREMENTS

THE FOLLOWING NOTES ARE FOR RE ONLY AND MAY NOT BE ALL INCLUSIVE OF INDIVIDUAL PROJECT REQS. RE ALL PROJECT DWGS AND CURRENT VERSION OF ADA AND ANSI GUIDELINES FOR ADDITIONAL REQS.

MIN REQS ARE INDICATED, RE TO PROJECT DWGS FOR ACTUAL LAYOUTS AND DIMS.

COMPLY W THE US DOJS AMERICANS WITH DISABILITIES (ADA) ACT '2010 ADA STANDARDS' AND ANSI A117.1 AS RE BY THE LOCAL CODE, APPLICABLE STATE ACCESSIBILITY REGS AND AS INDICATED ON THE DWGS.IN CASE OF DISCREPANCY, THE MOST STRINGENT REQS WILL APPLY.

STATE OR LOCAL OFFICIALS ARE NOT AUTHORIZED TO ENFORCE OR WAIVE REQS OF THE ADA - AND THERE IS NO FEDERAL INSPECTION ENTITY SUCH AS AN OSHA INSPECTOR, ENFORCEMENT OF THE ADA IS VIA PRIVATE CASE-IN-CHIEF LAWSUITS AND DOJ INVESTIGATION/ENFORCEMENT IN RESPONSE TO COMPLAINTS. STATE OR LOCAL OFFICIALS MAY WAIVE OR ALTER ACCESSIBILITY REQS OF STATE OR LOCAL ACCESSIBILITY REQS.

PUBLIC & COMMERCIAL FACILITIES: ADA'S TITLE III PROHIBITS DISCRIMINATION AGAINST PERSONS W/ DISABILITIES IN PLACES OF PUBLIC ACCOMODATION AND COMMERCIAL FACILITIES.

PUBLIC ACCOMMODATION: A PRIVATE ENTITY THAT OWNS, OPERATES, LEASES OR LEASES TO A PLACE OF PUBLIC ACCOMMODATION, INCLUDING:

- PLACES OF LODGING (INNS, HOTELS, MOTELS) EXCEPT FOR OWNER OCCUPIED FACILITIES RENTING FEWER THAN 6 RMS.
- FACILITIES SERVING FOOD OR DRINK (RESTAURANTS OR BARS)
- EXHIBITION OR ENTERTAINMENT FACILITIES (THEATERS, CONCERT HALLS, STADIUMS).
- PUBLIC GATHERING PLACES (AUDITORIUMS, CONVENTION CENTERS, LECTURE HALLS)
- SALES OR RENTAL FACILITIES (BAKERIES, GROCERY STORES, HARDWARE STORES AND SHOPPING CENTERS)
- SERVICE ESTABLISHMENTS (LAUNDROMATS, DRY-CLEANERS, BANKS, BARBER SHOPS, TRAVEL SERVICES, FUNERAL PARLORS, GAS STATIONS, OFFICES OF ACCOUNTANTS OR LAWYERS, PHARMACIES, INSURANCE OFFICES, PROFESSIONAL OFFICES OF HEALTH CARE PROVIDERS, HOSPITALS)
- PUBLIC TRANSPORTATION TERMINALS (DEPOTS, STATIONS) - DOES NOT INCLUDE AIRPORTS
- PLACES FOR PUBLIC DISPLAY (MUSEUMS, LIBRARIES, GALLERIES)
- PLACES OF RECREATION (PARKS, ZOOS, AMUSEMENT PARKS)
- PLACES OF EDUCATION (NURSERY SCHOOLS, ELEMENTARY, SECONDARY, UNDERGRADUATE OR POST-GRADUATE PRIVATE SCHOOLS)
- SOCIAL SERVICE CENTERS (DAY CARE, SENIOR CITIZEN CENTERS, HOMELESS SHELTERS, FOOD BANKS, ADOPTION AGENCIES)
- PLACES OF EXERCISE OR RECREATION (GYMNASIUMS, HEALTH SPAS, BOWLING ALLEYS, GOLD COURSES)

EXEMPT FACILITIES INCLUDE PRIVATE CLUBS AND RELIGIOUS ORGANIZATIONS AND RESIDENTIAL PRIVATE APARTMENTS (UNI) AND HOMES UNLESS A DOCTOR'S OFFICE OR DAY CARE CENTER IS LOCATED WITH A PRIVATE RESIDENCE - THEN THOSE PORTIONS USED FOR THAT PURPOSE MUST COMPLY.

PUBLIC ACCOMMODATIONS MUST:

- PROVIDE GOODS AND SERVICES IN AN INTEGRATED SETTING, UNLESS SEPARATE OR DIFFERENT MEASURES ARE NECESSARY TO ENSURE EQ OPPORTUNITY.
- ELIMINATE UNNECESSARY ELIGIBILITY STANDARDS OR RULES THAT DENY INDIVIDUALS W/ DISABILITIES AN EQ OPPORTUNITY TO ENJOY THE GOODS AND SERVICES OF A PLACE OF PUBLIC ACCOMMODATION.
- MAKE REASONABLE MODIFICATION IN POLICIES, PRACTICES AND PROCEDURES THAT DENY EQ ACCESS TO INDIVIDUALS W DISABILITIES UNLESS A FUNDAMENTAL ALTERATION WOULD RESULT IN THE NATURE OF THE GOODS AND SERVICES PROVIDED.
- ENSURE EFFECTIVE COMMUNICATION THROUGH THE USE OF AUXILIARY AIDS AND SERVICES WHEN NECESSARY UNLESS AN UNDUE BURDEN OR FUNDAMENTAL ALTERATION WOULD RESULT.
- REMOVE ARCH AND STRUCT BARRIERS IN EXIST FACILITIES WHEN READILY ACHIEVABLE AND PROVIDE GOODS AND SERVICES THROUGH ALTERNATIVE MEASURES WHEN REMOVAL OF BARRIERS IS NOT READILY ACHIEVABLE.
- MODIFY POLICIES, PRACTICES OR PROCEDURES TO PERMIT USE OF A SERVICE ANIMAL BY AN INDIVIDUAL W A DISABILITY (BUT NOT SUPERVISION OR CARE OF THE SERVICE ANIMAL).

ACCESSIBLE ROUTE

- PROVIDE AN ACCESSIBLE ROUTE ON ACCESSIBLE WALKING SURFACES FROM ACCESSIBLE PARKING, PASSENGER LOADING OR PUBLIC TRANSPORTATION STOPS TO BUILDING ENTRANCES AND CONNECT TO ALL SPACES OR PORTION OF A BLDG AND ITS ACCESSIBLE ELEMENTS SUCH AS DRS, GATES, ELEVATORS, PLATFORM LIFTS AND TOILET FIXTURES.
- AN ACCESSIBLE ROUTE MAY BE LOCATED AT SIDEWALKS, AISLES, HALLWAYS, CORRIDORS OR TUNNELS.
- THE ACCESSIBLE ROUTE MAY NOT PASS THROUGH KITCHENS, STORAGE RMS, CLOSETS OR SIM SPACES.
- CONST EMPLOYEE WORK AREAS, SPACES AND ELEMENTS SO INDIVIDUALS W DISABILITIES ARE ABLE TO APPROACH, ENTER AND EXIT THE WORK AREA EXCEPT AS INDICATED BELOW.
- PROVIDE ACCESSIBLE ROUTES AT ALL COMMON-USE CIRCULATION PATHS WHEN EMPLOYEE WORK AREAS WITHIN THE WORK AREA IS LESS THAN 300 SF AND IS DEFINED BY PERMANENTLY INSTALLED PARTITIONS, COUNTERS, CASEWORK OR FURNISHINGS.
- PROVIDE AN ACCESSIBLE ROUTE CONNECTING ALL ACCESSIBLE SPACES AND ELEMENTS, INCLUDING WALKING SURFACES, RAMPS & CURB-RAMPS (EXCLUDING THE FLARED SIDES), DRS & DRWAYS AND / OR ELEVS & PLATFORM LIFTS. AN ACCESSIBLE ROUTE MAY BE LOCATED AT EXT WALKS, AISLES, HALLS, CORRIDORS, SKYWALKS OR TUNNELS.
- ACCESSIBLE WALKING SURFACES: PROVIDE STABLE, FIRM & SLIP-RESISTANT SURFACE FREE OF SURFACE OPENINGS (GRATINGS) NOT TO PERMIT PASSAGE OF A ½" DIA SPHERE - W/ LONGEST DIM PERP TO DIRECTION OF TRAVEL.
- MIN WHEELCHAIR TURNING SPACE DIM INCLUDE ALLOWABLE FIXTURE KNEE & TOE CLEARANCES UNO, OR SWINGS ARE PERMITTED TO OVERLAP TURNING SPACE/DIMS.

EXEMPT SPACES - AN ACCESSIBLE ROUTE AND ACCESSIBILITY ARE NOT REQD:

- SPACES W/ LIMITED AREAS OF ACCESS AND MACHINERY SPACES.
- SERVICE ONLY AREAS INCLUDING: CATWALKS, CRAWL SPACES, FREIGHT (NON-PASSENGER) ELEV, ELEV PITS, MECH OR ELECT PENTHOUSES.
- EMPLOYEE WORK AREAS OR PORTIONS THEREOF LESS THAN 300 SF AND ELEVATED ON A PLATFORM 7" OR MORE ABOVE THE GROUND OR FIN FLR WHERE THE HEIGHT IS ESSENTIAL TO THE FUNCTION OF THE SPACE.
- COMMON USE CIRCULATION PATHS WITH EMPLOYEE WORK AREAS LESS THAN 1,000 SF AND ARE DEFINED BY PERMANENTLY INSTALLED PARTITIONS, COUNTERS, CASEWORK OR FURNISHINGS ARE EXEMPT INCLUDING KITCHENS IN QUICK SERVICE RESTAURANTS, COCKTAIL BARS AND THE EMPLOYEE SIDE OF SERVICE COUNTERS ARE TYP COVERED BY THIS EXCEPTION. IN SUCH AREAS, HAND RAILS ARE NOT REQD ON RAMPS, PROVIDED THEY CAN BE ADDED IN THE FUTURE.
- COMMON USE CIRCULATION PATHS WITH EMPLOYEE WORK AREAS THAT ARE AN INTEGRAL COMPONENT OF EQUIP, MACHINERY AND EQUIP MAY REDUCE THE CLEAR WIDTH OF COMMON USE CIRCULATION PATHS WHEN THE REDUCTION IS ESSENTIAL TO THE FUNCTION OF THE WORK PERFORMED INCLUDING BOTH CLEARANCE AND EQUIP THAT MUST BE PLACED & CENTERED ON WAY TO WORK PROPERLY OR FOR ERGONOMICS OR TO PREVENT WORKPLACE INJURIES.
- COMMON USE CIRCULATION PATHS WITH LARGE PIECES OF EQUIP IN FACTORIES, ELECT POWER PLANTS AND AMUSEMENT RIDES.
- COMMON USE CIRCULATION PATHS WITH EXT EMPLOYEE WORK AREAS THAT ARE FULLY EXPOSED TO THE WEATHER INCLUDING FARMS, RANCHES AND OUTDOOR MAINTENANCE FACILITIES.

ACCESSIBLE BLDG ENTRANCES

- PROVIDE 60% MIN (PER BIC - 50% PER ADA) OF ALL PUBLIC BLDG ENTRANCES (EXCL. LOADING OR SERVICE USE) FROM ACCESSIBLE PARKING, PUBLIC TRANSPORTATION STOP OR FROM A PASSENGER LOADING ZONE (AS APPLICABLE) W/O STEPS OR ABRUPT CHANGES IN LEVEL.
- PROVIDE 1 MIN ACCESSIBLE BLDG ENTRANCE AT THE GROUND FLR LEVEL AND 1 MIN ACCESSIBLE ENTRANCE TO EA PROPOSED TENANT SPACE IN MULTI-TENANT BLDGS.
- PROVIDE ACCESSIBLE ENTRANCE AT SERVICE OR LOADING ENTRANCES (NOT INTENDED FOR USE BY THE PUBLIC) IF THAT IS THE ONLY ENTRANCE TO A SPACE OR BLDG.
- MULTI-LEVEL BLDGS: PROVIDE 1 MIN ACCESSIBLE ROUTE (INCL AN ELEV OR PLATFORM) TO CONNECT EA BLDG LEVEL (OR MEZZANINES) ABOVE OR BELOW THE ACCESSIBLE ENTRANCE LEVEL UNLESS THE FLR AREA IS LESS THAN 3,000 SF AND DOES NOT INCLUDE S OR MORE PLANNED MULTIPLE MERCANTILE GROUP M TENANTS OR THE OFFICES OF HEALTH CARE PROVIDERS.

ACCESSIBLE OPERABLE PARTS

- PROVIDE ACCESSIBLE OPERABLE PARTS AT ALL CONTROLS AND OPERATING MECHANISMS INCLUDING BUT NOT LIMITED TO: OR HARDWARE, WDW OPERATORS, DISPENSERS, LIGHT SWITCHES, CONVENIENCE OUTLETS, T-STATS, ALARM CONTROLS AND SIM ELEMENTS.
- PROVIDE AN ACCESSIBLE CLEAR FLR SPACE AT ALL OPERATIONAL PARTS.
- ACCESSIBLE OPERABLE PARTS MUST BE OPERABLE BY USE OF 1 HAND IN A SINGLE OPERATION W/O TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
- MAX OPERATIONAL FORCE: 5 LBS
- ALLOWABLE HT LIMITS:
  1. MIN HT AFF OR GRADE: 15"
  2. MAX HT AFF OR GRADE: 48"

ACCESSIBLE DOOR & GATE REQS

- REVOLVING DRS OR GATES ARE NOT ACCESSIBLE.
- SECURITY & SIMILAR TURNSTILES: ACCESS DRS DO NOT NEED TO COMPLY W ACCESSIBILITY REQS.
- DOUBLE-LEAF DRS OR GATES: ONLY 1 LEAF MIN MUST COMPLY W ACCESSIBILITY REQS.
- RECESSED DRS: PROVIDE FORWARD APPROACH CLEARANCE W ANY OBSTRUCTION W/ IN 18" OF LATCH-SIDE OF DRWAY PROJECTING MORE THAN 8" BEYOND THE FACE OF DR MEASURED PERP TO FACE OF DR.
- DR SURFACES: PROVIDE SMOOTH SURFACE W/IN 10" AFF ON PUSH-SIDE EXTENDING FULL WIDTH OF DR. W MIN 1/16" BETWEEN SURFACE PLANE AND ANY PARTS (INCRPLATE), CAP CAVITIES FORMED BY MOUNTING EXCEPT AT SLIDING DRS. TEMPERED GLASS DRS W/O SIDE STILES W/ NO RAIL W/ITS TOP EDGE SLOPED 90° FROM HORIZ OR MORE OR AT DRS NOT EXTENDING TO 0'-10" AFF.
- SIDE STILES OR PANELS AT DRS: SIDE STILES ADJACENT DRS 90° OR MORE GLAZING PVL'S PERMITTING VIEWING, PROVIDE 60° EDGE OF AT LEAST 1 PVL ON EITHER THE DR OR THE ADJACENT SIDELITE AT 43" MAX AFF, EXCEPT AT VISION LITES (ONLY) W/ THE LOWEST PART MORE THAN 58" AFF.

ACCESSIBLE AUTOMATIC DOORS OR GATES

- REFERENCED STANDARDS: COMPLY W ANSI / BHMA A156.10 AND FOR POWER-ASSIST AND LOW-ENERGY DRS, COMPLY W ANSI / BHMA A156.19 (UNLESS DRS OR GATES ARE DESIGNED TO BE OPERATED ONLY BY SECURITY PERSONNEL).
- COMPLY W ACCESSIBLE CLEAR FLR SPACE, THRESHOLD / FLR SURFACE AND DOORS IN SERIES REQS.
- MANUAL CONTROLS: COMPLY W "OPERABLE PARTS" REQS W/ THE CLEAR FLR SPACE ADJACENT TO THE CONTROL SWITCH LOCATED BEYOND THE DR / GATE SWING.

ACCESSIBLE WINDOWS

- PROVIDE OPERATIONAL PARTS LOCATED PER "OPERABLE PARTS" REQS W/ MIN ACCESSIBLE CLEAR FLR SPACE ADJACENT TO THE WDW.
- SPECIAL ACCESS: PLATFORM LIFTS (INT OR EXT): COMPLY W ASME A17.1 SAFETY CODE FOR ELEVS AND ESCALATORS. APPLICABLE SECTION (A) ACCESSIBLE KEYED CONTROL S IF LIFT TRAVEL AREA IS NOT ENCLOSED, AND AS FOLLOWS:
  1. MAX TRAVEL HT: 60'
  2. MIN CAPACITY: 400 LBS
  3. MIN PLATFORM SIZE: 30 X 52"
  4. MAX SPEED: 20 FPM

ACCESSIBLE ROUTE W/IN BLDG

- SPACES W/IN BLDG: PROVIDE AN ACCESSIBLE ROUTE TO EA SPACE OR PORTION W/IN A BLDG, TO ACCESSIBLE BLDG ENTRANCES - NOT PASSING THROUGH KITCHENS, STORAGE ROOMS, RESTRMS, CLOSETS OR SIM SPACES (IF ONLY 1 ACCESSIBLE ROUTE IS PROVIDED).
- CONST EMPLOYEE WORK AREA, SPACES AND ELEMENTS SO INDIVIDUALS W DISABILITIES CAN APPROACH, ENTER AND EXIT THE WORK AREA (EXCEPT AT WORK AREAS LESS THAN 150 SF AND ELEVATED 7" OR MORE ABOVE GROUND OR FIN FLR - WHEN THE RAISED EL IS ESSENTIAL TO THE FUNCTION OF THE WORK AREA - PER BIC).
- PROVIDE ACCESSIBLE ROUTES AT COMMON-USE CIRC PATHS W/IN EMPLOYEE WORK AREAS UNLESS WORK AREA IS LESS THAN 300 SF AND DEFINED BY PERMANENTLY INSTALLED PARTITIONS, COUNTERS, CASEWORK OR FURNISHINGS.
- ACCESSIBILITY NOT REQD W/IN A BLDG TO NON-OCCUPIABLE SPACES ON TO SERVICE-ONLY AREAS INCL CATWALKS, CRAWL-SPACES, FREIGHT (NON-PASSENGER) ELEVS, ELEV PITS OR TO MECH PENTHOUSES.

PROTRUDING OBJECTS

- DO NOT ALLOW PROTRUDING OBJECTS TO REDUCE THE MIN CLEAR WIDTH REQD ALONG ACCESSIBLE ROUTES OR WALKING SURFACES.
- PROJECTION LIMIT: 4" MAX INTO CIRCULATION PATH FROM 27-80" AFF OR ABOVE GRADE EXCEPT AS FOLLOWS:
  1. HANDRAILS: 4 1/2" MAX
  2. DR CLOSERS AND STOPS: 70" MIN AFF
- PROTRUDING OBJECTS W/ THE LOWEST EDGE BELOW 27" AFF OR ABOVE GRADE MAY PROTRUDE ANY AMOUT BUT CANNOT LIMIT THE REQ WIDTH AND HT OF THE ACCESSIBLE ROUTE.
- PROVIDE GUARDS OR OTHER PERMANENT BARRIERS W/ A LEADING EDGE 27" AFF OR ABOVE GRADE WHEN PUNCHING IS NOT W/IN THE ABOVE LIMITS.

ACCESSIBLE DOOR HARDWARE

- ACCESSIBLE DR OR GATE HARDWARE: PROVIDE LIMITS W/ AN EASY-TO-GRASP SHAPE FOR USE W/ 1 HAND THAT OPERATES W/ A SINGLE EFFORT - W/O TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST (LEVERS PUSH PULLS OR PANIC DEVICES ARE ACCEPTABLE).
- ACCEPTANCE: 5 LBF BETWEEN 3-48" AFF OR GRADE.
- ACCESSIBLE SLIDING OR HARDWARE: OPERATING LIMITS MUST BE EXPOSED AND USABLE FROM BOTH SIDES WHEN DR IS FULLY OPEN.
- ACCESSIBLE DR CLOSERS: ADJUST UNIT TO PROVIDE A 5 SECOND MIN TIME TO MOVE FROM A 90-DEG OPEN POSITION TO A 12-DEG POSITION.
- ACCESSIBLE SPRING HINGES: ADJUST TO PROVIDE A 1.5" SECOND MIN TIME TO MOVE DR FROM A 70-DEG OPEN POSITION TO A FULLY CLOSED POSITION.
- DR OPERATING FORCE FOR PUSHING OR PULLING DRS OR GATES OPEN (EXCEPT AT FIRE DRS WHICH ARE FIRE-CODE): (AH) REQS):
  1. 5 LBS FOR INTERIOR SLIDING OR FOLDING DRS OR GATES.
  2. NOT APPLICABLE TO LATCH BOLT RETRACTION FORCE.
- ACCESSIBLE DR SURFACES: TO ALLOW PUSH-OPERATION OF DRS USING A CANE, CRUTCH, WALKER OR THE FOOTREST OF A WHEELCHAIR, PROVIDE A SMOOTH SURFACE W/IN 10" OF FLOOR ON THE PUSH-SIDE OF MANUAL DRS - EXTENDING THE FULLER WIDTH (LESS 2") W A MAX 1/16" DIFFERNTIAL BETWEEN SURFACE PLANE BETWEEN DIFFERENT PARTS. CAP ALL CAVITIES IN SURFACE BY PROVIDING INCRPLATES EXCEPT AT THE FOLLOWING:
  1. AUTOMATIC OPERATING SWINGING DRS.
  2. SLIDING DRS.
  3. TEMPERED GLASS DRS W/O SIDE STILES AND W/ A HOT RAIL W/ THE TOP EDGE SLOPED 90-DEG FROM HORIZ OR MORE.
  4. DRS NOT EXTENDING TO 10" AFF (SUCH AS TOILET PARTITION DRS).
  5. REVOLVING DRS (WHICH ARE NOT ACCESSIBLE - A SEPARATE SWINGING DR IS REQ).
  6. AT DOUBLE-LEAF DRS & GATES - 1 LEAF MUST BE ACCESSIBLE.
  7. SECURITY AND MAINTENANCE DRS (INCL SERVICE-ACCESS DRS OR PNLS) INTENDED FOR USE BY SECURITY OR MAINTENANCE PERSONNEL ONLY.
- ACCESSIBLE DR SIDELITES & WDW LITES: AT DRS AND SIDELITES ADJACENT TO DRS W/ 1 OR MORE GLAZING PNLS PERMITTING VIEWING, PROVIDE BOT EDGE OF AT LEAST 1 PVL ON EITHER THE DR OR THE ADJACENT SIDELITE AT 43" MAX AFF, EXCEPT AT VISION LITES W/ THE LOWEST PART MORE THAN 58" AFF.

ACCESSIBLE ROUTE W/IN BLDG

- ACCESSIBLE ROUTES MAY CONSIST OF 1 OR MORE OF THESE COMPONENTS:
  1. WALKING SURFACES
  2. RAMPS
  3. DRS AND DOORWAYS
  4. ELEVATORS OR PLATFORM LIFTS
- MIN CORRIDOR WIDTH: 3'-6"
- MIN CLEAR WIDTH AT DOORWAYS: 3'-0" EXCEPTIONS: 3'-0" MIN AT DOORWAYS SERVING ONE SPACE AND NOT SERVING AN ELEVATOR.
- CARPETED WALKING SURFACES: BROADLOOM OR CARPET-TILE W/ FIRM CUSHION / PAD (OR W/O CUSHION & PAD) W/ LEVEL LOOP, TEXTURED LOOP, LEVEL CUT OR LEVEL CUT/UNCUT PILE TEXTURE W/ 1/2" MAX PILE HT, SECURELY ATTACH TO SUBSTRATE AND PROVIDE BEVELED EDGE-TRIM AT CHANGES IN THICKNESS OR AT EXPOSED EDGE PER ABOVE.

AREA-OF-RESCUE ASSISTANCE

- PROVIDE AN "AREA-OF-RESCUE ASSISTANCE" AT NON-ACCESSIBLE EXIT / EXIT ACCESS DRS - EXCEPT IN BLDGS W/ A SUPERVISED AUTOMATIC FIRE-SUPPRESSION SYS.
- SIZE: PROVIDE MIN OF 2 EA 2'-6" X 4'-0" AREAS OR 1 EA PER 200 OCCUPANTS PER STORY SERVED NOT ENCROACHING ON ANY REQD EXIT WIDTH.

ACCESSIBLE TOILET ROOMS OR COMPARTMENTS

- UNISEX TOILET RM: PROVIDE AN ACCESSIBLE FACILITY W A SINGLE WATER-CLOSET AND LAVATORY IN ANY MERCANTILE OCCUPANCY W/ OCCUPANCIES WHERE A TOTAL OF 6 OR MORE MALE AND FEMALE WATER-CLOSETS ARE REQD (PER BOC).
- PROVIDE UNISEX AND SINGLE-USE TOILET RMS W/ OR LOCKING FROM INSIDE.
- WATER-CLOSET COMPARTMENTS: PROVIDE A MIN OF 1 WHEELCHAIR-ACCESSIBLE COMPARTMENT AND WHEN OVER 6 WATER-CLOSETS + WHEELCHAIR-ACCESSIBLE COMPARTMENTS ARE PROVIDED IN A TOILET RM, PROVIDE 1 TO BE AMBULATORY-ACCESSIBLE IN ADDITION TO THE WHEELCHAIR-ACCESSIBLE UNIT.
- SINKS: PROVIDE NO LESS THAN 1 ACCESSIBLE SINK (OR 5% OF TOTAL) WHERE PROVIDED (MOP OR SERVICE-SINKS ARE NOT REQUIRED TO BE ACCESSIBLE).

ACCESSIBLE DRINKING FOUNTAINS

- IF ONLY DRINKING FOUNTAIN IS PROVIDED IN A SPACE OR BLDG, PROVIDE A "DUAL-HI-LOW" TYPE UNIT ACCESSIBLE TO BOTH WHEELCHAIR USERS AND TO PERSONS W/ DIFFICULTY BENDING OR STOOPING (STANDARD HT UNIT) OR OTHER MEANS TO ACHIEVE EQUIVALENT ACCESSIBILITY FOR BOTH (PROVIDING AN ACCESSIBLE WATER COOLER, FOR EXAMPLE).
- PROVIDE DRINKING FOUNTAINS IN ALCOVE OUT OF COMMON PATH OF TRAVEL.
- SPACING BETWEEN DRINKING FOUNTAINS: 27' MIN.

ACCESSIBLE ELEVATORS

- MINIMUM CAR SIZE:
  - DEPTH: 4'-5" TO FRONT WALL + 6'-0" TO DR;
  - WIDTH: 50 CM WORD; OCCUPANTS: 6'-0" MIN (STRETCHER TYPE).
  - UNDER 50 OCCUPANTS: 4'-0" MIN.,
- MIN DOOR WIDTH: 50 OR MORE OCCUPANTS: 3'-0" MIN.
  - UNDER 50 OCCUPANTS: 2'-10" MIN.
- HANDRAIL AT REAR: LOCATE BETWEEN 2'-6" TO 2'-10" AFF.
- ELEVATOR CONTROLS: LOCATE BETWEEN 2'-10" MIN AND 4'-0" AFF MAX
- HALL-CALL BUTTONS: CTR AT 3'-6" AFF;
- HALL LANTERNS: 6'-0" AFF + VISUAL AND AUDIBLE.
- FLOOR INDICATOR SIGNS: 2"-I-H CONTRASTING LETTER SIGN W BRAILLE ON SIDE OF DR JAMB AT 60" AFF.

ACCESSIBLE SEATING

- WHEN PROVIDED AT FIXED OR BUILT-IN TABLES, COUNTERS OR WORK SURFACES, PROVIDE 5% MIN BUT NO LESS THAN 1 ACCESSIBLE SEATING, DISTRIBUTED THROUGHOUT.
- POINT-OF-SALE (POS) OR SERVICE COUNTERS: PROVIDE NO LESS THAN 1 UNIT TO BE ACCESSIBLE DISPERSED THROUGHOUT IF COUNTERS ARE DISPERSED.

ACCESSIBLE SIGNAGE

- REQD ACCESSIBLE SIGNS (MIN) (EXCEPT AT BLDG ENTRANCES, MENU BDS OR TEMP SIGNS) PROVIDE ACCESSIBLE SIGNS AS FOLLOWS:
- ACCESSIBLE ENTRANCES: PROVIDE A SIGN AT ACCESSIBLE ENTRANCES NOT SERVING AN ACCESSIBLE PUBLIC ENTRANCE DRS CREATE AT 60" AFF.
- NON-ACCESSIBLE PUBLIC ENTRANCES: PROVIDE DIRECTIONAL SIGNS INDICATING LOCATION OF NEAREST ACCESSIBLE ENTRANCE.
- NON-ACCESSIBLE TOILET RMS: PROVIDE DIRECTIONAL SIGNS INDICATING LOCATION OF NEAREST ACCESSIBLE UNISEX TOILET RM OR SPACE; SIGNS (INCL TOILET RMS) PROVIDE RAISED PICTOGRAMS, TACTILE CHARACTERS AND BRAILLE TEXT.
- ACCEPTABLE CHARACTERS: UPPER-CASE, LOWER-CASE OR A COMBINATION OF BOTH IN A SANS-SERIF CONVENTIONAL STYLE AND ITALIC, OBLIQUE, SCRIPT, HIGHLY DECORATIVE OR OTHER UNUSUAL FORMS.
- FIN & CONTRAST: NON-GLARE WITH EITHER LIGHT CHARACTERS ON DARK BACKGROUND OR DARK CHARACTERS ON LIGHT BACKGROUND.
- ILLUMINATION LEVELS: AT ACCESSIBLE SIGNS, MIN 1 FOOTCANDLES AND WAVES. INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS OR PROVIDE CLEAR FLR AREA OF 18X18" CTRD ON TACTILE CHARACTER SIGNS BEYOND ARC OF DR SWING FROM CLOSED TO 45 DEG OPEN POSITION.
- MOUNTING LOCATIONS AND HEIGHTS: (1) INSTALLATION OF AN APPROACHABLE LETTER ONLY BEFORE THE FIRST WORD OF SENTENCES, PROPER NOUNS AND NAMES, INDIVIDUAL LETTERS OF THE ALPHABET, INITIALS OR ACRONYMS.

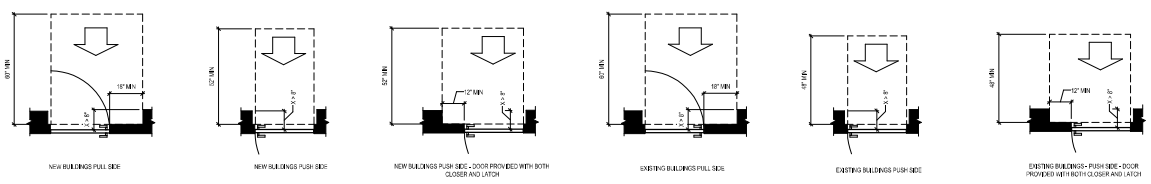
ALARMS

- IF EMERGENCY WARNING SYS ARE PROVIDED, PROVIDE BOTH AUDIBLE AND VISUAL ALARMS IN ANY COMMONUSE AREAS, (INCLUDING BUT NOT LIMITED TO RESTRMS, MEETING RMS, HALLWAYS AND LOBBIES), PERMANENTLY CONNECT ALARM SYS TO THE BLDG ELECT POWER AND LIGHTING SYS AS APPROPRIATE.
- IF AUDIBLE ALARMS ARE PROVIDED, THEY MUST PRODUCE SOUND EXCEEDING THE PREVAILING EQUIVALENT SOUND LEVEL OF A SPACE BY AT LEAST 15 DB OR EXCEED ANY MAX SOUND LEVEL W A DURATION OF 60 SECONDS BY 5 DB. WHEREVER BLDGER (NOT EXCEEDING 110 DBA).
- IF VISUAL ALARMS ARE PROVIDED, PROVIDE UNFILTERED OR CLEAR-FILTERED WHITE XENON-STROBE TYPE LAMPS OR EQ. W 0.2 SECOND MAX PULSE DURATION AND MAX DUTY CYCLE OF 40%. PROVIDING A MIN BRIGHTNESS INTENSITY OF 75 CANDELA W A FLASH RATE BETWEEN 1 AND 3 HZ. LOCATE LIMITS NO MORE THAN 6'-0" (AT) AFF OR IF BELOW CLG W/IN SUCH SPACES (IF LOWER), LOCATE SO MAY FROM ANY POINT W/IN A SPACE OR COMMON CORRIDOR OR IN LARGE SPACES OVER 100' ACROSS W/O OBSTRUCTIONS IF AFF, LOCATE AROUND RM PERIMETER AT MAX 100' CTRS.

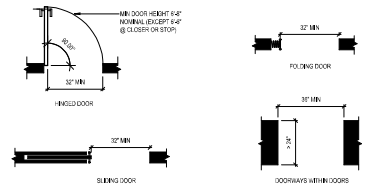
ABBREVIATION DESCRIPTION

SYMBOLS

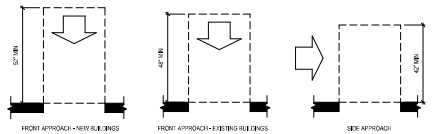
+/- or ±	PLUS OR MINUS	ENT	ENTRY, ENTRANCE	M		S	
#	NUMBER / POUND	EQ	EQUAL	MGMT	MANAGEMENT	S	SOUTH
&	AND	EQUIP	EQUIPMENT	MAS	MASONRY	SS	STAINLESS STEEL
(E)	EXISTING	EW	EACH WAY	MAX	MAXIMUM	SAS	TRMSH SURFACED ON 4 SIDES
@	AT	EXH	EXHAUST	MB	MARKER BOARD	SAN	SANITARY
		EXIST	EXISTING	MDF	MEDIUM-DENSITY FIBERBOARD	SC	SOLID CORE
A		EXP	EXPANSION	MDP	MAIN DISTRIBUTION PANEL	SCHED	SCHEDULE / SCHEDULED
AC	AIR CONDITIONING	EXT	EXTERIOR	MECH	MECHANICAL	SD	SMOKE DAMPER
AV	AUDIO / VISUAL			MEP	MECHANICAL, ELECTRICAL & PLUMBING	S-DISP	SOAP DISPENSER
AB	ANCHOR BOLT	F		MEZZ	MEZZANINE	SECT	SECTION
AC	ALTERNATING CURRENT	FACP	FIRE ALARM CONTROL PANEL	MFR	MANUFACTURER, MANUFACTURED	SF	SQUARE FOOT (FEET)
ACOUST	ACOUSTIC, ACOUSTICAL	FBD	FIBERBOARD	MH	MANHOLE	SFRM	SPRAYED FIRE-RESISTIVE
ACP	ACOUSTICAL CEILING PANEL	FCBD	FIBER-CEMENT BOARD	MIN	MINIMUM		MATERIAL
ACT	ACOUSTICAL CEILING TILE	FCO	FLOOR CLEANOUT	MIR	MIRROR	SH	SHOWER
AD	AREA DRAIN	FD	FLOOR DRAIN	MISC	MISCELLANEOUS	SHPO	STATE HISTORIC PRESERVATION OFFICE
ADA	AMERICANS W/ DISABILITIES ACT	FDN	FOUNDATION	MLD	MOULDING	SHT	SHEET
ADH	ADHESIVE	FE	FIRE EXTINGUISHER	MO	MASONRY OPENING	SHTH	SHEATHING
ADJ	ADJUSTABLE	FEC	FIRE EXTINGUISHER CABINET	MOV	MANUFACTURED STONE VENEER	SIM	SIMILAR
AFF	ABOVE FINISHED FLOOR	FFE	FIXTURES, FURNITURE & EQUIPMENT	MTD	MOUNTED	SJ	SAWN JOINT
AHJ	AUTHORITY HAVING JURISDICTION	FGL	FIBER-GLASS	MTG HT	MOUNTING HEIGHT	SM	SHEET METAL
AHU	AIR HANDLING UNIT	FH	FIRE HOUSE	MTL	METAL	SP	SPACING
ALT	ALTERNATE	FHC	FIRE HOSE CABINET	MUL	MULLION	SPEC	SPECIFICATION
ALUM	ALUMINUM	FIN	FINISH / FINISHED FINISHING FINISHES			SPKR	SPEAKER
AMP	AMPERES (ELECTRICAL)	FIXT	FIXTURE	N		SQ	SQUARE
ANOD	ANODIZED	FLASH	FLASHING	N	NORTH	SS	SANITARY SEWER
AP	ACCESS PANEL	FLR	FLOOR, FLOORING	NA	NOT APPLICABLE	SSK	SERVICE SINK
APROX	APPROXIMATE	FLUOR	FLUORESCENT	NEC	NATIONAL ELECTRICAL CODE	STC	SOUND TRANSMISSION CLASS
ARCH	ARCHITECTURAL	FOF	FACE OF FINISH	NIC	NOT IN CONTRACT	STD	STANDARD
AR-GWB	ABUSE RESISTANT GWB	FOS	FACE OF STUD (FRAMING)	NO	NUMBER	STL	STEEL
ASPH	ASPHALT	FRM	FRAME	NOM	NOMINAL	STO	STORAGE
AVG	AVERAGE	FRP	FIBER REINFORCED PLASTIC	NPS	NATIONAL PARK SERVICE	STRUCT	STRUCTURE / STRUCTURAL
		FRT	FIRE RETARDANT TREATED	NT-DISP	FEMININE HYGIENE DISPENSER	SUSP	SUSPENDED
B		FS	FLOOR SINK	NTS	NOT TO SCALE	SY	SQUARE YARD(S)
BD	BOARD	FSE	FOOD SERVICE EQUIPMENT	NT-WR	FEMININE NAPKIN WASTE RECEPTACLE	SQ	SQUARE
BFF	BELOW FINISHED FLOOR	FT	FOOT, FEET			SYM	SYMMETRICAL
BFG	BELOW FINISHED GRADE	FTG	FOOTING			SYS	SYSTEM
BK	BRICK	FURR	FURRING	O			
BLDG	BUILDING	FV	FIELD VERIFY	OA	OUTSIDE AIR	T	
BLKG	BLOCKING			OA	OVERALL	T	TREAD
BM	BEAM	G		OC	ON CENTER(S)	T&B	TOP AND BOTTOM
BO	BOTTOM OF	GA	GAGE (GAUGE)	OCC	OCCUPANT(S)	T&G	TONGUE AND GROOVE
BOF	BOTTOM OF FOOTING	GALV	GALVANIZED	OD	OUTSIDE DIAMETER / DIMENSION	T-BAR	TOWEL BAR
BOT	BOTTOM	GB	GRAB BAR	OH	OVERHEAD	TEL	TELEPHONE
BRG	BEARING	GBM	GRADE BEAM	OPNG	OPENING	TEMP	TEMPERED / TEMPORARY / TEMPERATURE
BRKT	BRACKET	GC	GENERAL CONTRACTOR	OPT	OPTIONAL		
BSMT	BASEMENT	GFRC	GLASS FIBER REINFORCED CONCRETE	ORD	OVERFL



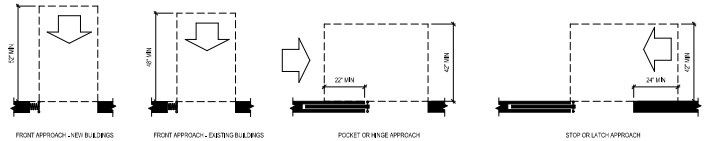
CLEARANCES AT RECESSED DOORS & GATES **6H**



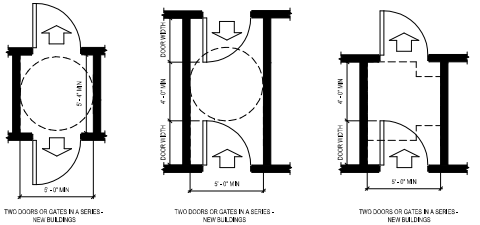
CLEAR WIDTH OF DOORWAYS **1H**



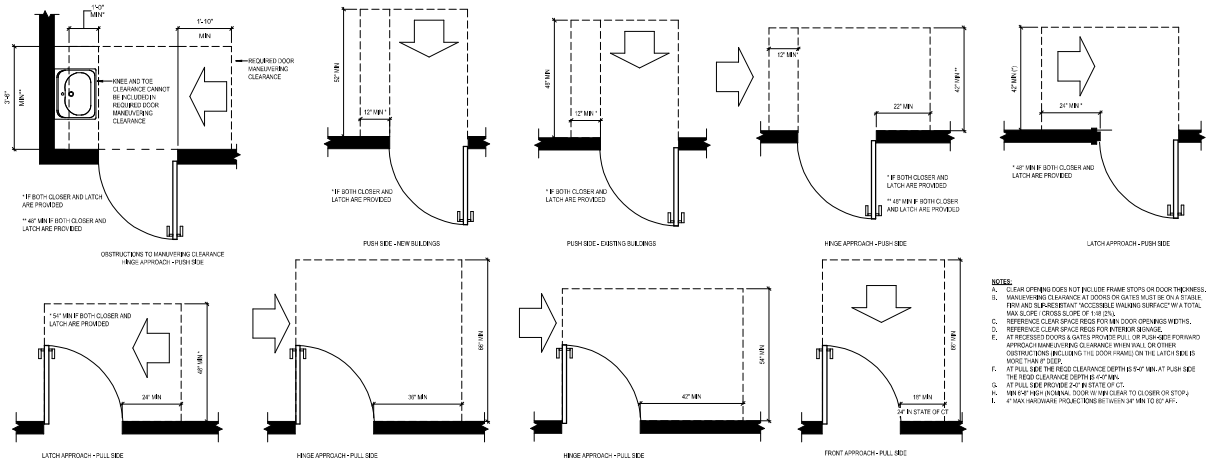
CLEARANCES FOR DOORWAYS W/O DOORS **13F**



CLEARANCES AT SLIDING & FOLDING DOORS **6F**

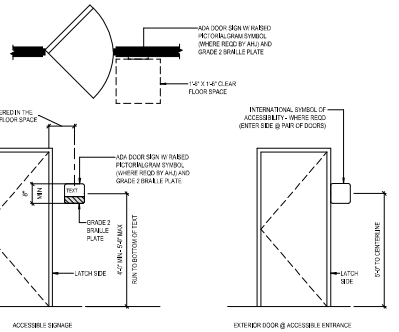


APPROACH - DOORS & GATES IN SERIES **1E**



NOTES:
A. CLEAR OPENING DOES NOT INCLUDE FRAME STOPS OR DOOR THICKNESS.
B. MANUVERING CLEARANCE AT DOORS OR GATES MUST BE ON A STABLE, FIRM AND SLIP-RESISTANT ACCESSIBLE WALKING SURFACE W/ A TOTAL MAX SLOPE (CROSS SLOPE OF 1:48 (2%).
C. REFERENCE CLEAR SPACE REQS FOR MIN. DOOR OPENINGS WIDTHS.
D. REFERENCE CLEAR SPACE REQS FOR INTERIOR SIGNAGE.
E. AT RECESSED DOORS & GATES PROVIDE PULL OR PUSH-SIDE FORWARD APPROACH MANEUVERING CLEARANCE WHEN WALL OR OTHER OBSTRUCTIONS (INCLUDING THE DOOR FRAME) ON THE LATCH SIDE IS MORE THAN 8" DEEP.
F. AT PULL SIDE THE REQD CLEARANCE DEPTH IS 5'-0" MIN. AT PUSH SIDE THE REQD CLEARANCE DEPTH IS 4'-0" MIN.
G. AT PULL SIDE PROVIDE 2'-0" IN STATE OF CT.
H. MIN 6'-8" HIGH (NOMINAL DOOR W/ MIN CLEAR TO CLOSER OR STOP.)
I. 4" MAX HARDWARE PROJECTIONS BETWEEN 34" MIN TO 80" AFF.

CLEARANCES AT MANUAL SWINGING DOORS **6A**



DOOR SIGNAGE REQUIREMENTS **1A**

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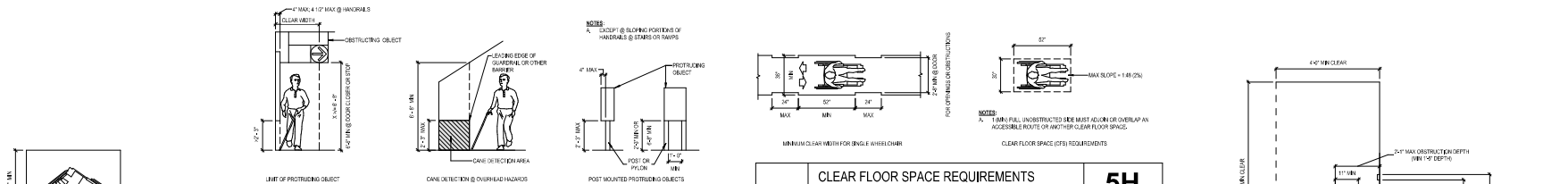
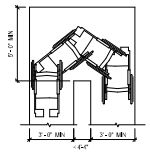
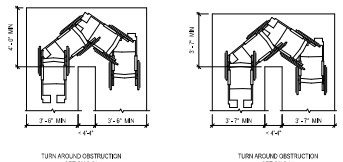
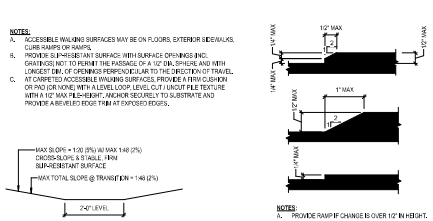


PROTRUDING OBJECT CLEARANCES — 13G

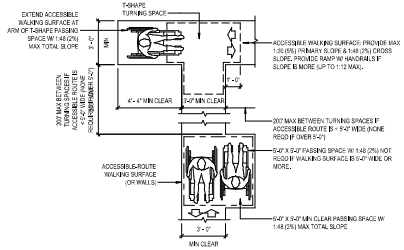


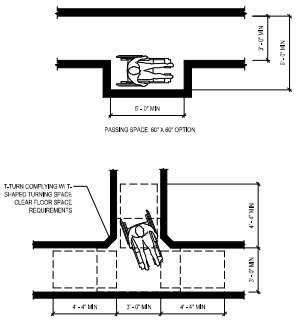


OBJECT TURNAROUND CLEARANCES — 13E



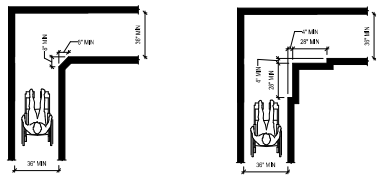
MAX ALLOWABLE FLOOR LEVEL CHANGES — 9E

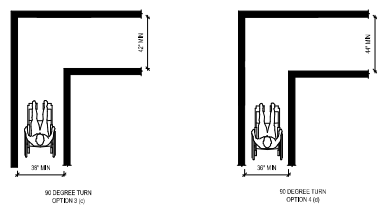




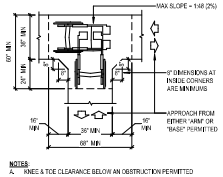
PASSING SPACES @ ACCESSIBLE ROUTE — 13A

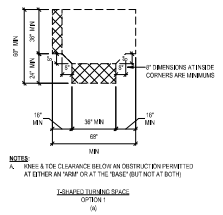
PASSING SPACE OPTIONS — 9A





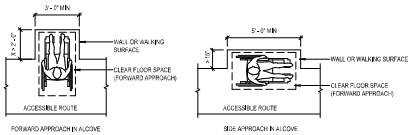
90 DEGREE TURN — 5A



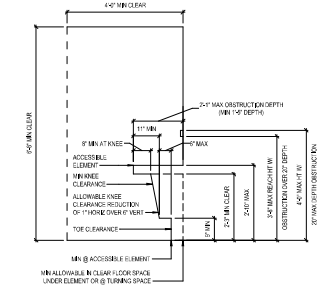


CLEAR TURNING SPACE REQUIREMENTS — 1A

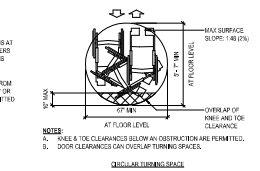
CLEAR FLOOR SPACE REQUIREMENTS — 5H

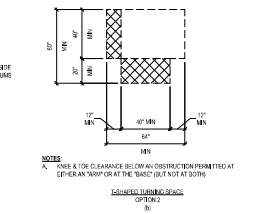


ACCESSIBLE ALCOVE APPROACHES — 5F



KNEE AND TOE CLEARANCES — 1F





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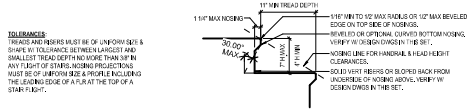
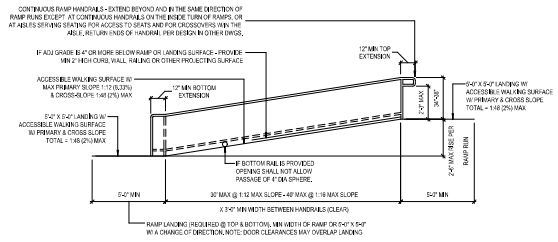


TOLERANCES:
TREADS AND RISERS MUST BE OF UNIFORM SIZE & SHAPE W/ TOLERANCE BETWEEN LARGEST AND SMALLEST TREAD DEPTH NO MORE THAN 3/8" IN ANY FLIGHT OF STAIRS. NOSING PROJECTIONS MUST BE OF UNIFORM SIZE & PROFILE INCLUDING THE LEADING EDGE OF A FLR AT THE TOP OF A STAIR FLIGHT.

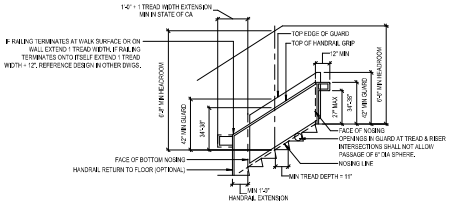
NOTES:
A. INT OR EX - FOR COMMERCIAL USE ONLY - NOT FOR RESIDENTIAL.
B. DIMS EXCLUDE FINAL FLR FIN.
C. RISERS SHALL BE SOLID VERT OR SLOPED BACK FROM UNDERSIDE OF NOSING ABOVE, VERIFY W/ DESIGN DWGS IN THIS SET.
D. NO OPEN RISERS* UNLESS STAIR IS NOT PART OF ANY ACCESSIBLE MEANS OF EGRESS* AND THEN ONLY W/ THE OPENING NOT PERMITTING PASSAGE OF A 4" DIA SPHERE OR AT GROUP I-3 F, R OR S OCCUPANCIES NOT ACCESSIBLE TO THE PUBLIC (W/O RESTRICTIONS ON OPENING SIZE).

STAIR TREADS & RISERS



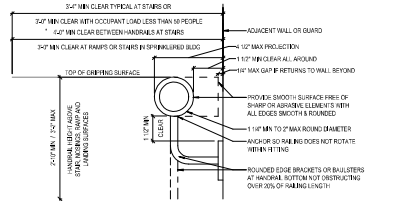
NOTES:
A. ABOVE DIAGRAM IS FOR ADA COMPLIANCE ONLY. ACTUAL FINAL DESIGN, MATERIALS AND RETURNS USED FOR RAILINGS PER OTHER DWGS IN THIS SET.
B. OPEN RAILING ENDS NOT PERMITTED.
C. PROVIDE 12"-W SURFACE BEYOND HANDRAIL OR BOTTOM RAIL AT OPEN-SIDED RAMPS, TYP.

ACCESSIBLE RAMPS (INTERIOR OR EXTERIOR)



NOTES:
A. ABOVE DIAGRAM IS FOR ADA COMPLIANCE ONLY. ACTUAL FINAL DESIGN, MATERIALS AND RETURNS USED FOR RAILINGS PER OTHER DWGS IN THIS SET.
B. PROVIDE UNIFORM RISERS HEIGHTS & TREAD WIDTHS THROUGHOUT STAIR RUN, TYP. 3/8"S & 3/4"S IN TOLERANCE BETWEEN LARGEST AND SMALLEST TREAD DEPTH NOT MORE THAN 3/8" WITHIN ANY FLIGHT OF STAIRS.
C. CONST EXT STAIRS, LANDINGS AND APPROACHES TO SLOPE SO WATER WILL NOT ACCUMULATE.
D. ACCESSIBLE WALKING SURFACES SHALL HAVE A TOTAL MAX SLOPE (IN ALL DIRECTIONS) OF 1:48 (2%).
E. STAIR VT SHALL BE 12'-0" MAX RUN BETWEEN LANDINGS.
F. OPENINGS IN GUARDS SHALL NOT ALLOW PASSAGE OF 4" DIA SPHERE.
G. PROVIDE CLOSED RISERS ONLY - OPEN NOT PERMITTED.
H. PROVIDE HANDRAILS ON BOTH SIDES OF STAIRS, CONT FOR THE FULL LENGTH OF FLIGHTS W/O INTERRUPTION BY POSTS EXCEPT FOR ROUNDED-EDGE BRACKETS OF BALUSTERS ON BOT. OF HANDRAIL THAT DOES NOT OBSTRUCT MORE THAN 20% OF HANDRAIL LENGTH AND W/ HORIZ BRACKET SUPPORT PROJECTIONS 1 1/2" MIN BELOW THE BOT OF HANDRAIL.
I. OPEN RAILING ENDS NOT PERMITTED.
J. NOSINGS: 1/2" MAX RADIUS AT TOP LEADING EDGE, W/ 1 1/2" MAX PROJECTION - PROVIDE SLOPED RISER OR STRAIGHT W/ UNDERSIDE OF NOSING AT TOP ANGLED 60 DEG OR MORE FROM HORIZ W/ SMOOTH UNDERSIDE FINISH (NOT ABRUPT).
K. FIXED GUARDS AT OPEN-SIDED WALKING SURFACES & STAIRS TO BE PROVIDED WHERE MORE THAN 30" AFF OR BELOW GRADE.

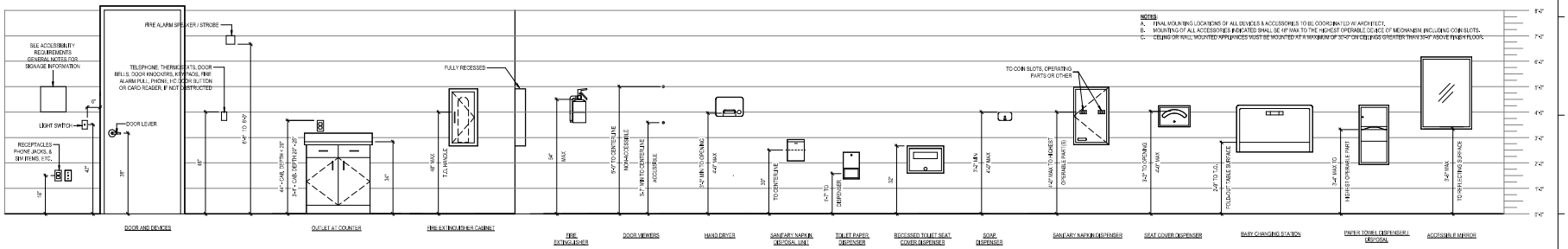
ACCESSIBLE STAIRS WITH HANDRAIL AND GUARD - INTERIOR OR EXTERIOR (FOR COMMERCIAL USES (NOT FOR RESIDENTIAL USES)



NOTES:
A. ABOVE DIAGRAM IS FOR ADA COMPLIANCE ONLY. ACTUAL FINAL DESIGN, MATERIALS AND RETURNS USED FOR RAILINGS PER OTHER DWGS IN THIS SET.
B. HANDRAIL STRUCTURAL CAPACITY: 250LB MIN LOAD AT ANY POINT OR 50LB MIN LOAD PER LINEAR FOOT
C. HANDRAIL PROFILES SHALL BE 1 1/4" MIN TO 2" MAX (IN ROUND OR RECTANGULAR HANDRAIL W/ 4" MIN TO 6 1/4" MAX PERIMETER & W/ CROSS-SECTIONAL DIM BETWEEN 1" TO 2 1/4" MAX.
D. PROVIDE HANDRAILS AT BOTH SIDES OF STAIRS OR RAMPS (EXCEPT IF RAMP IS LESS THAN 6" VERT RISE OR 6'-0" HORZ RUN) PROVIDE CONT HANDRAILS W/IN THE FULL LENGTH OF EA STAIR FLIGHT OR RAMP RUN AND ON THE INSIDE OF SWITCHBACK OR DOGLEG RAMPS OR STAIRS BETWEEN FLIGHTS OR RUNS (EXCEPT W/ HANDRAILS IN AISLES SERVING SEATING).
E. PROVIDE HANDRAIL SURFACES & EDGES SMOOTH AND FREE OF SHARP OR ABRASIVE ELEMENTS. EASE ALL SQ EDGES, TYP.
F. PROVIDE A MIN 12" CLEAR ABOVE AND 1 1/2" BELOW HANDRAIL EXCEPT AT SUPPORT BRACKETS.
G. DIMS ARE EXCLUSIVE OF CARPETS, RUGS OR RUNNERS.

RAMP & STAIR HANDRAILS - INTERIOR OR EXTERIOR - IBC TYPE I INDICATED (TYPE II) PERMITTED ONLY IN GROUP R-2 OR R-3 OCCUPANCIES)

	RAMP & STAIR REQUIREMENTS	1E



NOTES:
A. FINAL MOUNTING LOCATIONS OF ALL DEVICES & ACCESSORIES TO BE COORDINATED W/ ARCHITECT.
B. MOUNTING OF ALL ACCESSORIES INDICATED SHALL BE 48" MAX TO THE HIGHEST OPERABLE DEVICE OF MECHANISM (INCLUDING COIN SLOTS.
C. CEILING OR WALL MOUNTED APPLIANCES MUST BE MOUNTED AT A MAXIMUM OF 30"-0" ON CEILINGS GREATER THAN 30"-0" ABOVE FINISH FLOOR.

	ACCESSORY MOUNTING HEIGHTS	1A

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STANDARD ACCESSIBILITY REFERENCE DIAGRAMS

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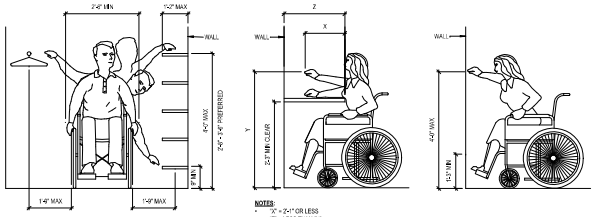
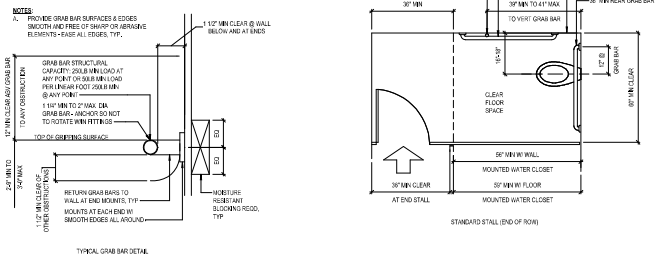
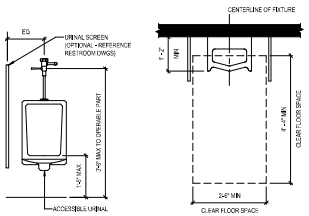
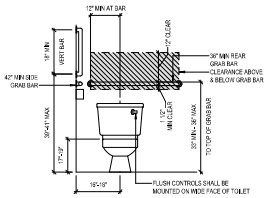


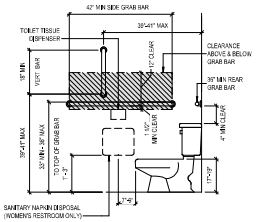
REACHABILITY REQUIREMENTS — 10G



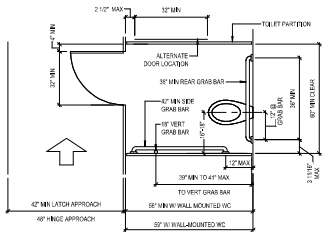


URINAL CLEARANCES — 10D

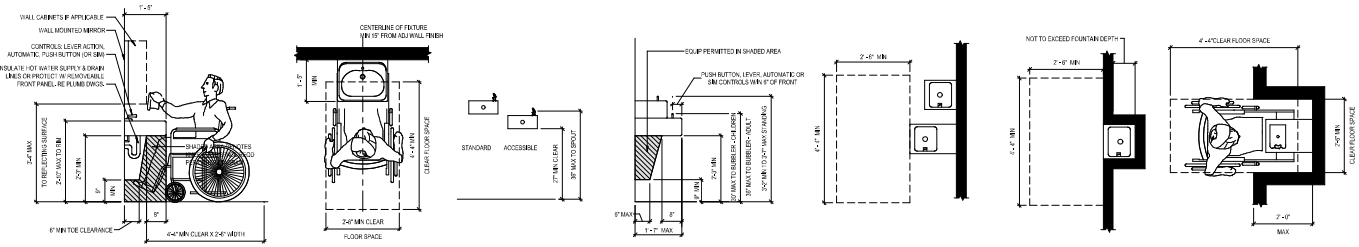




RESTROOM ACCESSORIES REQUIREMENTS — 5D



STANDARD STALL CLEARANCES — 1D



DRINKING FOUNTAIN & LAV CLEARANCES — 5A

ACCESSIBILITY PLUMBING GENERAL NOTES :

A. WATER CLOSET CONTROLS SHALL BE OPERABLE W/ 1 HAND, AND SHALL NOT REQ TIGHT GRASPING, PINCHING OR TWISTING OF THE WRIST.
B. CONTROLS FOR FLUSHING OF WATER CLOSETS AND URINALS SHALL BE MOUNTED ON THE WIDE SIDE OF THE TOILET AREAS, NO MORE THAN 42" AFF.
C. THE FORCE REQD TO ACTIVATE CONTROLS SHALL BE NO GREATER THAN 5 LBS.
D. IF SELF-CLOSING VALVES ARE USED, THEY SHALL REMAIN OPEN FOR AT LEAST 10 SECONDS.
E. FAUCET CONTROLS AND OPERATING MECHANISMS SHALL NOT BE OF THE TYPE REQ TIGHT GRASPING, PINCHING, OR TWISTING OF THE WRIST.
F. INSULATE ALL PLUMB LINES AND DRAINS AT LAVATORIES.

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STANDARD ACCESSIBILITY REFERENCE DIAGRAMS

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DIVISION 00: PROCUREMENT AND CONTRACTING REQUIREMENTS
SECTION 00 52 00 – AGREEMENT FORM
AGREEMENT FORM: AIA Document A104 – 2017 Edition; "Standard Form of Agreement between Owner and Contractor for a Project of Limited Scope", which includes General Conditions Articles 1 through 21 inclusively.

SECTION 00 73 00 – SUPPLEMENTARY CONDITIONS
THE FOLLOWING "SUPPLEMENTARY CONDITIONS" modify the "General Conditions" as if originally written therein. Where a portion of the General Conditions is modified or deleted by these Supplementary Conditions, the unaltered portions of the General Conditions will remain in full effect. The General Conditions may also be modified elsewhere in the Contract Documents by provisions located in other Sections of the Specifications.

ADD to 1.1, the following:
1.1.9 "FURNISH": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
1.1.10 INDICATED: Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents, Other terms including 'shown', 'noted', 'scheduled', and 'specified' have the same meaning as 'indicated'.
1.1.11 INSTALL: Operations at the Project Site including but not limited to: unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.
1.1.12 PROJECT SITE (or SITE): The designated interior-space or land-area upon which construction activities will be performed. The extent of the Project Site may not be identical to the legal description of the lane on which Project is to be built.
1.1.13 PROVIDE: Furnish and install, complete and ready for the intended use.

ADD to 1.1.8, the following:
"The Initial Decision Maker" will be the Architect."

ADD to 1.2, the following:
1.2.4 Although the Construction Documents have been prepared with due care and diligence, perfection is not guaranteed. Design and construction are complex, consequently every possible field condition cannot be anticipated or indicated. The Drawings may be diagrammatic and all components required for complete installation may not be fully indicated.
1.2.5 Unless otherwise indicated within the Construction Documents, all notes written in the imperative mood refer to action(s) to be performed by the Contractor - the words 'the Contractor shall' (or must) are always implied."
1.2.6 Figured dimensions and marked data will take precedence over scaled measurements, and details will take precedence over smaller scale general drawings of which they are intended to amplify. Details or conditions indicated for a portion of the Work but not carried out fully for other portions will apply throughout to similar portions of the Work, except as specifically noted.
1.2.7 In case of conflict in or between requirements of the Contract Documents (including General and Supplementary Conditions, Division-01 General Requirements, Drawings and Specifications) or with manufacturer's product requirements, the Contractor will be deemed to have agreed to provide the greater quantity and better quality of materials and Work.

ADD to 1.5, the following:
1.5.3 Electronic media data (EMD) of the Contract Documents are the Architect 's 'Instruments of Service', who retains all common law, statutory law and other rights, including their copyrights. No representation is made regarding the accuracy or completeness of EMD.
1.5.4 If EMD files are transferred from the Architect to the Contractor, the Contractor will not use them for any purpose other than the generation of shop drawings, coordination drawings, or for Record Drawings of this Project. The Contractor agrees not to transfer the EMD to any party not involved in the construction Work without the express written permission of the Architect.
1.5.5 The Contractor further agrees to waive all claims against the Owner and the Architect, resulting in any way from any use of the use of EMD. Use of EMD does not relieve or minimize in any way the responsibility of the Contractor to field measurements, check dimensions, and to coordinate with other construction Work at the Project Site.

ADD to 3.2.1, the following:
Execution of the Contract by the Contractor is a representation that the Contractor has carefully examined and understood the intent of the Contract Documents, No claims will be approved for additional time or costs resulting from the Contractor's lack of familiarization of the requirements of the Construction Contract.

ADD to 3.5, the following:
3.5.3 Equipment, material or services provided by the Contractor that fail to receive approval by A/U representatives are immediately rejected and constitute Contract default. The Contractor must correct such failure as expeditiously as possible in a manner acceptable to the A/U and to the Owner within thirty (30) days of notice from the A/U. If the Contractor does not correct such rejected Work within that period, the Owner may make the required corrections, and deduct all costs incurred plus ten percent (10%) administrative fee or $500 (whichever is greater) from the Contract Sum.

ADD to 3.10, the following:
3.10.4 If the Contractor fails to adhere to the Construction Schedule, the Contractor will furnish additional labor and/or services or work sufficient overtime as may be necessary to make construction progress conform to the Construction Schedule, at no additional cost to the Owner, Failure to adhere to the schedule, or failure to take steps to regain the schedule, will constitute Contract default.

ADD to 3.12.10, the following:
3.12.10.3 The Contractor will require that any entity engaged to provide Professional Design Services will maintain Professional Liability Insurance with minimum limits of $1,000,000 per claim and annual aggregate. Insurance coverage must be maintained not less than one (1) year after Substantial Completion. Provide the Architect with a Certificate of Insurance evidencing coverage prior to performing any services.

ADD to Article 4, the following:
4.1.1.3 ARCHITECT'S LIMITED-SCOPE CONSTRUCTION ADMINISTRATION SERVICES: The Architect's services during construction may be "limited" to a specific hourly maximum, or only on an "as-used" basis upon the Owner's request. As the services of the Architect are intended solely for the benefit of the Owner, the Contractor may not rely upon performance of Architect's services. When the Architect is not involved in such instances, REVISE Article 4 from Paragraph 4.2. through Paragraph 4.8 inclusive, by substituting the word "Owner", wherever the word "Architect" is used.

ADD to 4.2.10, the following:
4.2.10.1 The Architect's review does not constitute approval of safety provisions or procedures, and approval of any construction means, methods, techniques, sequences or procedures, unless specifically agreed to in writing and signed by the Architect, with specific reference to the submittal.

ADD to 5.1, the following:
5.1.2 The Contractor is not responsible for the control or management of the Owner 's separate contractors, and the Owner releases this Contractor from any liabilities related to Work performed by separate contractors. Separate contractors will be required to comply with all safety requirements instituted by this Contractor (as applicable) and will not be allowed to interfere with this Contractor's construction operations.

ADD to 8.3, the following:
8.3.4 The Owner may direct Contractor to work overtime, and to accelerate the Work, and if so instructed, Contractor agrees to work overtime and accelerate the Work. If such direction is not due to causes within the Contractor's control, the Owner agrees to pay for overtime and accelerated Work, but only for added overtime charges which will consist of the premium or extra hourly wage incurred by the Contractor only. No insurance, taxes, overhead or profit will be paid by Owner based on any premium wage paid. Minimum overtime may be required of overtime charges must be received by the Contractor from the Owner in writing prior to performing the Work.
8.3.5 Normal inclement weather and associated site conditions will not be considered as a valid cause for delay of the Work, as it is assumed that the Contractor will estimate sufficiently for work stoppages due to reasonably anticipated inclement weather within the Construction Schedule.
8.3.6 Notwithstanding the foregoing, if Contractor is delayed in the performance or progress of the Work by Abnormal Weather Conditions (as defined herein) then the Contractor will be entitled to an extension of the completion date for the impacted portion of the Work provided the Contractor makes claim not more than seven (7) days after the cause of the delay begins, "Abnormal Weather Conditions" are hereby defined as: temperature and precipitation that are abnormal for the location of the Work as determined by the National Climatic Data Center, Asheville, North Carolina, based on the previous ten (10) year mean for the Work location. Abnormal Weather Conditions and causes beyond the control of the Contractor which delay the work, including but not limited to catastrophic weather events, fire or vandalism, theft, actions or stoppages by public officials, will extend the completion date by equal periods of time as the delay impacts the critical path of the Construction Schedule, provided the Contractor makes claim not more than seven (7) days after the cause of the delay begins and provides proof of impact on the critical path Work, which is not concurrent with a Contractor-caused delay.
8.3.7 To qualify as an adverse weather day, weather conditions or related site conditions must prevent Work on critical path activities for 50 percent or more of the Contractor's scheduled work day.

ADD to 9.3.1, the following:
9.3.1.3 Unless otherwise indicated in the Owner – Contractor Agreement Form, the Owner will retain ten percent (10%) of the amount of each progress payment application until Substantial Completion is obtained.
9.3.1.4 Upon Substantial Completion, and with the concurrence of the Architect and the Contractor's surety (if the Contractor's coverage may be reduced to an amount not less than 100% of the value of the Work remaining to be completed, including defective work not yet remedied (whether covered by a warranty or not) and Work yet to be performed or completed, plus an amount sufficient to protect the Owner for liquidated damages or other charges, liens or offsets due the Owner.

ADD to 9.3, the following:
9.3.4 LIENS
9.3.4.1 If the Contractor has received payment for labor or materials and if a lien is subsequently filed by any Subcontractor claiming an interest in that labor or materials, and if same has not been released or insured over by the Owner 's title company or bonded over by the Contractor within ten (10) days following the recording or filing of such Lien, the Contractor hereby authorizes and consents to an automatic deduction from the Contract Sum ("Lien Deduct Amount") in the sum of 150% of the Lien Amount. Following such automatic Lien Deduct Amount, the Contractor acknowledges and agrees that the Owner may, at the Owner 's sole option and discretion, have the right to: (a) place all or a portion of the Lien Deduct Amount in escrow with its title company and subsequently pay the Lien to the Lien claimant, including all accrued interest and penalties, or (b) the Lien claimant.
9.3.4.2 The Contractor will have the right to contest and defend the Owner at the Contractor's sole expense, from and against any Lien which the Contractor contests in good faith, if the Contractor identifies qualified legal counsel to provide such defense and specifies the good faith reason to dispute the Lien, then the Owner agrees to hold the Lien Deduct Amount in escrow and not to exercise the Owner's right to pay the Lien pending resolution of such Lien claim and dispute. The Lien Deduct Amount is for the Owner's sole protection and is not for the benefit of the Contractor or any surety. The Owner may apply the Lien Deduct Amount in whole or in part to offset Owner's legal costs and to protect itself against the risk of paying twice for the Work for which Contractor has been paid, and for improper claims asserted by Lien claimants.
9.3.4.3 The Contractor agrees and acknowledges that the Lien Deduct Amount, including any amount above the Lien amount paid, including all interest and penalties, will be retained by Owner until satisfactory resolution of such Lien without risk to the Owner or the Owner's property. If such Lien is determined valid, bonded or insured, and not fully and successfully defended by Contractor, the Owner may accept the full Lien Deduct Amount as liquidated damages. The parties recognize and agree that it would be extremely difficult to ascertain the extent of actual costs, expenses, time and damages associated with the recording of a mechanic's lien and the Owner's title policy and surety, The Owner may apply the Lien Deduct Amount, including any and all interest and penalty, represents as fair an approximation of the actual cost, expense, time and damage associated with resolving any Lien issues as the parties can now determine.

ADD to Paragraph 9.6.1:
9.11 OWNER'S DIRECT PAYMENT TO SUBCONTRACTORS AND MATERIAL SUPPLIERS
9.11.1 The Owner reserves the right to make direct payments to any subcontractor or material supplier when such entities have filed notice with the Contract Sum due to the Contractor or to make payments jointly to the Contractor and to the Subcontractor as the Owner deems necessary to protect the Owner's interests.
9.11.2 The Owner is not obligated to make any direct payments to a Subcontractor or material supplier, and the Owner does not create any obligation to make further payments to any Subcontractor or material supplier.

ADD to 11.1.1, the following:
11.1.1 Liability insurance must include all major divisions of coverage and must be on a comprehensive basis with no specific limits listed below maintained specifically for this project, Coverages are to include: Personal Injury Liability with Employment Exclusion deleted, Contractual, including specific provisions for Contractor's obligation under Paragraph 3.18, Owner's and Contractor's Protective, Motor vehicles, and Broad Form Property Damage coverage, Premises-Operations, Independent Contractor's Protective, Products and Completed Operations, Explosion and Collapse Designers Protective Liability, and Broad Form Property Damage coverage, Property Damage Liability coverage must provide X, C, and U coverages, with Completed Operations and Products Liability coverage maintained for three (3) years after final payment. Include a "separation of insured" endorsement to provide cross-liability coverage. The following minimum limits are applicable to each incident/ occurrence as well as for the total annual aggregates - which must be dedicated to this project only. Minimum coverage amounts must be as listed below, or as required by law, whichever is greater:
Prime Trade Contractor and Sub-Contractors (Each)
- Workers Comp & General Employer's Liability: Statutory & $500,000.00

Comprehensive General Liability, Owners & Contractor's Protective Liability and Independent Contractors Protective Liability:
- Property Damage: $1,000,000.00
- Bodily Injury: $1,000,000.00

Contractual Liability:
- Property Damage: $1,000,000.00
- Bodily Injury: $1,000,000.00

Comprehensive Automobile Liability:
- Property Damage: $1,000,000.00
- Bodily Injury: $1,000,000.00

Owners and Contractors' protective liability:
- Each Occurrence & Annual Aggregate: $1,000,000.00
- Umbrella Excess Liability Insurance: $3,000,000.00

ADD to 11.1.3, the following:
11.1.3.1 All certificates of insurance required herein must name the Owner and the Architect as additional insured.

DELETE 11.3.1.2 and ADD:
11.3.1.2 Owner's "All Risk" property insurance on the Work of this Contract within the Contract Sum, in accordance with requirements of Paragraph 11.3. Such insurance will include reasonable compensation for the Owner's and Architect's services and expenses required as a result of such insured loss.

MODIFY 12.2.2.1 by DELETING the second to the last sentence that begins: "During the one-year period . . . and ADD:
The "reasonable time" allowed for Correction of Work by the Contractor will be no more than thirty (30) days.

ADD to 15.1.5.1, the following:
Extensions of time for adverse weather conditions will not be considered justification for additional compensation to the Contractor for administrative or other "office overhead" expenses.

DIVISION 01 - GENERAL REQUIREMENTS
THESE SECTIONS APPLY TO ALL CONST - INCLUDING FIRE-PROTECTION AND MEP WORK - WHEN MORE SPECIFIC REQS ARE INDICATED ON DWGS OR IN SPEC SECTIONS, THOSE SECTIONS TAKE PRECEDENCE OVER THE "GENERAL REQUIREMENTS" - SPECS ARE CONTINUED ON THE NEXT DWG SHEETS UNLESS NOTED AS "END OF ARCH SPECS".

SECTION 01 11 00 – SUMMARY OF WORK
1. GENERAL WORK DESCRIPTION: Briefly and w/o force and effect upon the contract documents, the Work of this Contract is summarized to include the following, as indicated in the drawings:
   - SELECTIVE DEMO, to include removal and legal disposal of select, exist, const elements as req'd for install of new work and is not utilized w/in the new construction;
   - SITEWORK, to include, as indicated, all demo, site prep, and pavement, curbs and sitework appurtenances, install or modification of site utilities, and new landscape and landscape irrigation sys, work throughout the project site.
   - NEW BUILDING CONSTRUCTION to include general const, and fin., w/ associated struct, mech, elect and plumb (MEP) sys, and final MEP sys. connections to equipment, controls, sound, security or data sys., as applicable.
   - OWNER'S SEPARATE CONTRACTS: The owner MAY award separate contracts for specific portions of the project (such as casework, furnishings, security). Cooperate fully w/ the separate contractors as work on those contracts can be carried out smoothly, w/o interfering w/ or delaying work of this contract.
   - SPEC FORMAT: Organization or numbering of the dwgs or these specs does effect or limit the contractor in dividing the work among subcontractors or in establishing the extent of work to be performed by any trade.

SECTION 01 14 19 – USE OF SITE
1. For this project, items referring to existing conditions are relevant to existing utilities, roadways, and public right-of-way.
2. EXIST BLDG MAY BE OCCUPIED by the owner during the entire period of const. Perform the work so it will not interfere w/ the owner's occupancy, to the greatest extent feasible.
3. MAINTAIN EXIST BLDG in a safe and weather tight condition throughout const.
4. PROTECT EXIST FIN from damage and keep exist areas free from accumulation of waste materials, rubbish or const debris.
5. TAKE ALL PRECAUTIONS NECESSARY to protect the bldg and to keep the occupants safe during const.
6. MAINTAIN EXIST MEANS OF EGRESS and exits during const and repair damage to the exist bldg caused by const.
7. DO NOT ADD ANY TEMP or permanent load on the exist struct except as indicated w/in the dwgs, Certs and duties used must have rubber tires – do not transport wet concr through exist fin spaces w/o extensive protection.
8. MAINTAIN EXIST SERVICES, including plumb/water or gas, HVAC, elect, phone/internet, elect controls and security/alarm sys (if applicable) in full and unrestricted operation to the greatest extent possible.
9. KEEP PAST DRIVEWAYS clear and unobstructed at all times. School deliveries to minimize reqs for storage of materials. Limit stockpiling of materials to areas approved for use by the owner. Contractor is responsible for repair and pay for such storage areas off-site.

SECTION 01 25 00 – SUBSTITUTION PROCEDURES
1. THIS SECTION includes administrative and procedural reqs for substitutions of products, sys, equip, or install methods and product options.
2. WHEN PRODUCTS, SYS OR EQUIP are identified in the CDs, they are identified for the purpose of establishing a standard of req'd function, availability, physical properties, dim, color, appearance, quality, in-service performance, operation and maintenance.
3. BASIS-OF-DESIGN PRODUCT SPECS: Where a specific product is named and accompanied by the words "Basis Of Design" or "B.O.D.", including make or model # or other designation, that product establishes the significant qualities related to type, function, dim, in-service performance, physical properties, appearance and other characteristics that eq or exceed those of a specified product.
4. NAMED PRODUCTS: Items identified by manu/ product name, including make, model # or other designation shown listed in manuf published product literature, current per date of CDs.
5. SUBSTITUTION: Change in products, materials, equip or methods of const from those req'd by the CDs as proposed by GC.
6. SUBSTITUTIONS FOR CAUSE: Changes proposed by the contractor that are req'd due to changed project conditions, such as unavailability of a product, regulatory changes or unsuitability of req'd warranty terms.
7. SUBSTITUTIONS FOR CONVENIENCE: Changes proposed by GC or owner that are not req'd to meet other project reqs but that may offer advantage to either the contractor or to the owner.
8. NO SUBSTITUTION OF MANUFACTURER'S options: Where CDs indicate a specific product (sys or equip), manu/supplier (by reference to a manuf or supplier 's name or product name, make or model #, or other designation), provide only the indicated product, complete w/ indicated opt, if multiple manu/vendors are indicated, provide product only by 1 of the listed manu/ vendors. Treated lumber: ASTM C 946, Part ASTM 5516, for products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to meet levels specified before shipment to project site.
9. (SD) SHOP DWGS: Provide shop dwgs when product data is not sufficient to indicate reqs of the work and / or does not provide basis for review.
   - Shop dwgs shall include layouts, spacings, dims, fastening, anchorage & assembly methods of components for project specific locations. Include dim drwgs, elevations, details, sections, dim strings, and keyboards, locations and dits of eq and qty items applicable.
   - Indicate spacings, blocking, bonding, furring, hanging strips, rent channels, opening framing, supplemental framing, strapping, bracing, bridging, splices, corners, closures, terminations and other details.
   - Indicate materials, fin, fire-ratings, component profiles, ill dits, accessory listings, fastening patterns, reqd clearances, wts, weathersproofing and flashings.
   - Note how new work adjoins related and adjacent const (whether new or exist to remain). Clearly indicate where shop or field assembly is required. Distinguish between factory- and field-assembled work.
   - Provide setting dwgs where cutouts are req'd in other work, including templates, substrate prep instructions and directions for preparing cutouts and installing anchorage devices. PROVIDE SCHED of all items requiring action and information and submittal of proposed fin and color samples for review of work by the owner and A/U.
6. MAINTAIN EXIST UTILITIES indicated to remain and protect against potential damage during demolition operations. Do not interrupt existing utilities serving occupied facilities, except when authorized by the owner. When necessary, provide temp services during interruptions of exist utility services according to requirements indicated.
7. CUT, MOVE OR REMOVE ITEMS as necessary for access to alteration & renovation work. Replace & repair adjacent work as required. Remove unsalvable material not marked for salvage, such as rotted wd, corroded mtls and deteriorated masonry & conc. Replace materials as specified for in such instances or if not specified, with new materials that match exist adjacent materials.
8. COORD ALTERATION & RENOVATION WORK to expedite completion and in req sequences of or to maintain indicated sequences of construction, as applicable. Remove, cut and patch work in a manner to minimize damage and to provide restoring products and fin to original and or specified condition. Refinish visible exist surfaces to remain in renovated rooms and spaces. to specified condition for as material w/ neat transition to adjacent fin. Restore exist operational MEP sys to full operational condition, when exists. Recover and refinish mech and elect work that is exposed accidentally during the work. Install products and fin materials as indicated w/in individual spec sections.
9. TRANSITIONS: Where mew work abuts or aligns w/ exist const, perform a smooth and even transition. Where new work is to match exist adjacent work in texture and appearance, When fin surfaces are cut so a smooth transition w/ new work is not possible, terminate the exist surface along a straight line at a natural line or corner of the area.
10. ADJUSTMENTS: Where removal of partitions or walls result in adjacent spaces becoming one, rework fin, walls and clg surfaces to a smooth plane w/o breaks, steps or bulkheads. Provide smooth transitions between new work and exist. Patch as req'd when exist dits are removed to clear new fin. Refinish trim as req'd. Fit work at penetrations of surfaces to be flush and non-dithering.
11. PATCH OR REPLACE EXIST SURFACES that are damaged, discolored or show imperfections, as necessary to achieve uniform appearance.
12. FIN SURFACES as indicated for new work. Fin patches to produce uniform fin and texture over entire area. When fin cannot be matched, refinish entire surface to nearest intersection or change of plane.

SECTION 01 35 91 – VOLUNTARY SUSTAINABLE GOALS
1. CONST MGMT: Most of the section regarding sustainable concepts of the project are provided submittal docs and reports to verify conformance w/ the owner 's voluntary sustainability goals.
2. ECC 2024 "ERI" reports are compliant by being designed for HERS 52 or better as all-electric properties.
3. All units comply with CS singl-family v3.2 as reflected on the unit-specific energy checklists.
4. Contractor is required to review Energy Compliance Reports provided in the drawings for full energy requirements per unit type.
5. Contractor responsible for scheduling all inspections with Energy Logic of the A/U. Contractor to provide a Manual J,DS report for each master unit type along with an Energy Star HVAC Design Report Reviewed by the designer for the Energy Star field inspections at the time of duct testing and insulation inspections.
6. MAX VOLATILE ORGANIC COMPOUND: For all field-applied applications inside the bldg envelope, provide products that do not exceed the following values, in accordance w/ Federal Standard 40 CFR 59, Subpart D: Wet Glazes: 250 g/L; Fill to Mill adhesives: 30 g/L; Adhesives for Porous Materials (Except Wd): 50 g/L; Subfloor Adhesives: 50 g/L; Plastic Foam Adhesives: 50 g/L; Carpet Adhesives: 50 g/L; Carpet Pad Adhesives: 50 g/L; VCT and Asphalt Tile Adhesives: 50 g/L; Drywall and Panel Adhesives: 50 g/L; Cove Base and Wall Adhesives: 50 g/L; Rubber Flr Adhesives 60 g/L; Ceramic Tile Adhesives: 65 g/L; Multipurpose Const Adhesives: 70 g/L; Fiberglass Adhesives: 80 g/L; Contact Adhesive: 80 g/L; Structl Glazing Adhesives: 100 g/L; Wd Flr Adhesive:100 g/L; Structl Wd Member Adhesive: 140 g/L; Top and Trim Adhesive: 250 g/L; Plastic Cement Welding Compounds: 250 g/L; ABS Welding Compounds: 325 g/L; CPVC Welding Compounds: 490 g/L; PVC Welding Compounds: 510 g/L; Adhesive Primer for Plastic: 550 g/L; Adhesive Primer for Porous: 250 g/L; Arch Sealants: 250 g/L; Nonmembrane Roof Sealants: 300 g/L; Single-Ply Roof Membrane Sealants: 450 g/L; Other Sealants: 420 g/L; Sealant Primers for Nonporous Substrates: 250 g/L; Sealant Primers for Porous Substrates: 775 g/L; Modified Bituminous Sealant Primers: 500 g/L; Other Sealant Primers: 750 g/L; Flat Flrs. Coatings and Primers: 50 g/L; Nonflat Flrs. Coatings and Primers: 150 g/L; Clear Wd Flrs. Varnishes: 350 g/L; Clear Wd Fin. Lacquers: 550 g/L; Flr Coatings: 100 g/L; Shellacs, Clear: 730 g/L; Shellacs, Pigmented: 550 g/L; Primers, Sealers and Undercoats: 200 g/L; Dry-Fog Coatings: 400 g/L; Zero-VOC Industrial Maintenance Primers: 340 g/L.
7. Special Purpose Contact Adhesive used to bond melamine covered bd. mtl. unsupported vinyl, Teflon, plastic-high-molecular wt polyethylene, rubber or wd veneer 1/10" or less in thickness to any surface): 250 g/L.
   - Aerosol Adhesives, General Purpose Mist Spray: 65% by weight.
   - Aerosol Adhesive, General Purpose Web Spray: 55% by weight.
   - Special Purpose Aerosol Adhesive (All Types): 70% by weight.
8. AROMATIC COMPOUNDS: Pts and coatings must not contain more than 1.0% by wt total aromatic compounds (hydrocarbon compounds containing 1 or more benzene rings).
9. RESTRICTED COMPONENTS: Do not provide any materials in the project containing the following: Acrolein, Acrylonitrile, Antimony, Benzene, Butyl benzyl phthalate, Cadmium, Di (2-ethylhexyl) phthalate, Di-n-butyl phthalate, Di-n-octyl phthalate, 1,2-dichlorobenzene, Diethyl phthalate, Dimethyl phthalate, Ethylbenzene, Formaldehyde, Hexavalent chromium, Hexachlorobenzene, Lead, Mercury, Methylene chloride, Methyl ethyl ketone, Methyl isobutyl ketone, Methyl-tert-butyl ether, Monochlorobenzene, Naphthalene, Toluene (methylbenzene), 1, 1, 1-trichloroethane, Vinyl chloride.
10. DO NOT USE: CORROSIVE WD or agrifiber products or adhesives that contain any urea-formaldehyde resin.

EXECUTION
1. CONST INDOOR-AIR-QUALITY MGMT: Comply w/ "SMACNA IAQ Guideline for Occupied Buildings under Construction."
2. If the Owner authorizes use of permanent HVAC sys during const period, provide filter media having a MERV 8 rating per ASHRAE 52.2 at no return-air inlet for the as-handling sys used during const. Replace all air filters immediately prior to occupancy.

SECTION 01 43 39 – MOCK-UPS
1. THIS SECTION INCLUDES administrative and procedural reqs of the contractor, for temp const and owner of mockups at the Project Site. Provide mock-ups as indicated in 01 33 00.
2. MOCK-UPS are full-size physical assemblies constructed on-site, to verify color and fin selections made, to demonstrate the full range of visual qualities, effects and workmanship and to indicate qualities of material fin and application or execution; to review const, testing, or operation; to show interface between dissimilar materials; and to demonstrate compliance w/ specified install tolerances. Mock-ups are not samples, UNO indicated, approved mock-ups establish the standard by which the work will be judged.
3. CONST MOCK-UPS using the same workers to be used during the const of the work and w/ the same supervisory personnel.
4. CONST MATERIAL MOCK-UPS when req'd by other "technical" sections at locations on-site approved by the owner and A/U.
5. TIME: Const mock-ups as soon as contract is awarded, once contractor is available at the project site and mock-up design is determined by Architect. Note no "hard-#" approval of mock-ups will be provided – the mock-up must be complete w/ all indicated fin, materials and colors as indicated before approval will be granted.
6. NOTIFY ARCHITECT in writing no fewer 7 days in advance of dates and times when mock-up will be const and ready for review.
7. OBTAIN ARCHITECT'S APPROVAL OF MOCK-UPS before starting any work, fabrication or const of fin indicated w/in the mock-up.
8. MAINTAIN MOCK-UPS DURING CONST in an undisturbed condition as a standard for judging the completed work.
9. APPROVAL OF MOCK-UP DOES NOT CONSTITUTE approval of deviations from the CDs unless such deviations are specifically approved by architect in writing.
10. DEMO AND REMOVE MOCK-UPS before substantial completion, except as otherwise permitted to remain as a part of the work.

SECTION 01 45 00 – QUALITY CONTROL
1. COORD w/ the owner's independent testing and inspection lab to verify compliance of the work w/ the CDs. Specific tests are req'd in other sections of the specifications.
2. COORD w/ the owner's "special inspector" in accordance w/ reqs of A/HJ reps. The "special inspector" will be responsible for submitting quality control test reports prepared by the testing lab rep/ above, to the A/HJ, when necessary.
3. SHOP CERTIFICATION: Special inspections are not req'd when the work is done on the premises of a fabricator registered and approved to perform such work w/o special inspections, in accordance w/ reqs of the bldg code.
4. THE GC IS NOT RELIEVED of responsibility for compliance w/ all specified reqs of the CDs by owner/ DSA/ owner services.
5. RE-TEST RESPONSIBILITY: The owner's cost for re-tests and repeat-inspections for items not meeting the reqs of the CDs will be deducted from the contract sum. Retesting and re-inspection must cont until satisfactory results are obtained, at no additional cost to the owner.
6. SCHED & COORD timing of tests req'd, to comply w/ the progress of the work. When changes of const sched are necessary, notify testing lab in advance of operations for reassignment of req'd personnel. Facilitate inspections and tests, cooperate w/ lab personnel and provide adequate quantities of representative samples of materials to be tested. Provide such auxiliary services as are reasonably requested, including, but not limited to taking samples or assistance w/ taking samples, delivery of samples to testing labs and security and protection of samples and test equip at the project site.
7. UPON COMPLETION of inspection, testing, sample-taking & sim services, repair damaged work & restore substrates & fins to eliminate deficiencies, including deficiencies in the visual qualities of exposed fins. Comply w/ other sections of these specs pertaining to repairing. Protect work exposed by or for quality control service activities & protect repaired work.
8. REMOVE & REPLACE non-complying materials & re-test until satisfactory tests are accomplished.

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS
1. PROVIDE TEMP CONST FACILITIES and controls and remove upon completion of the work. Locate fac offices, storage sheds, sanitary facilities and other temp const and support facilities where approved by the owner.
2. INCLUDE ALL COSTS for temp utilities, temp facilities and temp controls w/in the contract sum. Pay all costs of install, maintenance, fuel, operation and removal.
3. OPERATE temp services and facilities in a safe & efficient manner. Do not overload temp services/facilities and do not permit them to interfere w/ the progress of the work. Do not allow sanitary conditions, public nuisances or unsightly conditions to develop or persist at the site.
4. TEMP ELECT POWER: Provide weatherproof, grounded elect power service and distribution sys w/ overload protection of sufficient size, capacity and power characteristics to accommodate const operations req power, use of power tools, elect heating, lighting and start-up testing of permanent elect-powered equip prior to its permanent connection in elect sys. Include meters, transformers, overload protection and disconnects, auto ground-fault interrupters and main distribution switch gear.
5. TEMP LIGHTING: Whenever overhead fin or roof work is installed, provide temp lighting w/ local switching, w/o operating the entire sys and to provide adequate illumination for const operations and traffic conditions.
6. POTABLE WATER: Provide potable containers of potable water for const operations, except when specifically authorized to utilize the owner 's exist sys.
7. SANITARY FACILITIES: Provide on-site toilet facilities, hand wash facilities and drinking water fixtures for the use of workmen on the job site. Provide toilet tissue, paper towels, paper cups and sim disposable materials, w/ a covered waste container.
8. PROVIDE TEMP HEAT & VENTILATION to facilitate progress of the work, to meet specified min conditions for the install and proper curing of materials, to protect materials and fins from damage due to temp or humidity and to prevent hazardous accumulations of dust, fumes, vapors or gases.
9. TEMP SITE SECURITY FENCE: Before const operations begin, install a site enclosure fence around the entire project area (or portions thereof) as required to prevent unauthorized const operations) as approved by the owner, to prevent people and animals from easily entering (except at gates) and to prevent unauthorized entrance, vandalism, theft and sim violations. At partially completed work, provide lockable entrances and lock entrances at end of ea work day. Do not remove temp site security fencing until bldg is permanently secured, to satisfaction of the owner.
10. PROGRESS CLEANING: At all times, keep the project site free from accumulation of waste materials or rubbish caused by const operations. Provide suitable waste receptacles for trash and const debris, and arrange for transportation and legal disposal of materials off site. Clean the site daily, as applicable.
11. ENGAGE THE LOCAL UTILITY COMPANIES to install temp services, when necessary. Arrange w/ the company and exist users, when applicable, for a time when service can be interrupted to make connections for new services.
12. ENVIRONMENTAL PROTECTION: Provide protection and operate temp facilities in ways and by methods that comply w/ environmental regulations and that will minimize the possibility that air, waterways and subsoil could be contaminated or polluted. Avoid use of solvents and equip which produce loud noise – restrict their use to hrs that will minimize complaints from persons near the site.
13. PROVIDE TEMP EROSION & SEDIMENTATION CONTROL measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties, according to reqs of local A/U. Inspect, repair and maintain control measures during const until permanent vegetation is established. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
14. DEWATERING: Provide & operate drainage and pumping equip, const drainage ditches as req'd & maintain excavations and the entire site free of standing water at all times.

SECTION 01 60 00 – PRODUCT REQUIREMENTS
1. NO SUBSTITUTIONS are allowed when products or equip items are indicated by a single, named manuf, unless indicated as "or eq" or when reviewed in advance by the architect or owner.
- **Membrane Roofing System: PD, SD, SM**
- **Sheet Metal Roofing: PD, SD, SM, MU**
- **Sheet Metal Flashing and Trim: PD, SD, SM, MU**
- **Flexible Flashing: PD**
- **Manufactured Gutters & Downspouts: PD, SD**
- **Snow Guards: PD, SD**
- **Firestopping: PD, SD, AHJ** - Include firestop design designation of testing and inspecting agency acceptable to AHJ that shows compliance w/ reqs for aa condition indicated.
- **Joint Sealants: PD, SM**
- **Metal Doors and Frames: PD, SD**
- **Wood Doors: PD, SD, SM**
- **Access Doors and Panels: PD** - Provide shop drawings if PD does not demonstrate actual size, spec, finish, and installation required for project.
- **Sectional Doors: PD, SD**
- **Vinyl Windows and Doors: PD, SD, SM**
- **Door Hardware: PD, SD**
- **Glazing: PD, SM**
- **Louvers and Vents: PD**
- **Moisture Vapor Emission Control: PD**
- **Gypsum Board Assemblies: PD**
- **Tiling: PD, SD, SM, MU**
- **Wood Flooring: PD, SM, MU**
- **Resilient Floor and Base: PD, SM, MU**
- **Carpeting: PD, SM, MU**
- **Painting: PD, SM, MU** - Provide certification by the manuf that products supplied comply w/ local regulation reqs controlling use of VOCs.
- **Exterior Staining and Finishing: PD, SM, MU**
- **Residential Accessories: PD, SD, SM**
- **Shower Enclosures and Doors: PD, SD, SM**
- **Fire Protection Specialties: PD, SD**
- **Residential Appliances: PD**
- **Countertops: PD, SD, SM**
- **Plumbing: PD, SD**
- **Heating, Ventilating and Air Conditioning (HVAC): PD, SD**
- **Electrical: PD, SD**
- **Storm Water Engineering: PE, AHJ** - Submit to AHJ evaluation support sys layout dwgs and other data as req'd.
- **Stormwater Management: PD** - Submit certification at completion, signed by GC and fin drainage sys installer that installed materials conform to/meet specified reqs and the sys was installed in accordance w/ the approved and tested proposal for design and drainage **Ill**.

SECTION 01 35 16 – ALTERATION PROJECT PROCEDURES
1. For this project, this section is relevant to conditions at existing utilities, roadways, and public right-of-way.
2. PERFORM DISRUPTIVE, NOISE OR DUST PRODUCING WORK in occupied facilities only w/ the owner's advance approval of the sched for performance.
3. JOB CONDITIONS: With respect to the owner's occupation, the exist conditions, including site access, the nature & composition of const elements, materials and equip & other salient characteristics affecting the work should be fully regarded when estimates indicated on the dwgs does not imply other conditions will not be discovered or encountered in performance of the work. Perform alterations during periods of reasonable owner convenience, install temp obstructions affecting the work whether completely indicated or described in the dwgs.
4. PERFORM WORK in occupied and unoccupied areas is restricted and to maintain the owner's ongoing use to the greatest extent feasible.
5. CAREFULLY REMOVE & REPLACE EXIST CONST indicated to remain upon completion, but which req removal to complete the work. Match condition of const prior to the start of the work unless otherwise reqd. Carefully remove and store items indicated for relocations in new work or to be salvaged for the owner's use and storage. Thoroughly clean and re-install as indicated or as directed. Protect and store items identified for reuse. Deliver salvaged items to a facility as directed by the owner. Comply w/ 10 mils of damage.
6. MAINTAIN EXIST UTILITIES indicated to remain and protect against potential damage during alteration operations. Do not interrupt existing utilities serving occupied facilities, except when authorized by the owner. When necessary, provide temp services during interruptions of exist utility services according to requirements indicated.
7. CUT, MOVE OR REMOVE ITEMS as necessary for access to alteration & renovation work. Replace & repair adjacent work as required. Remove unsalvable material not marked for salvage, such as rotted wd, corroded mtls and deteriorated masonry & conc. Replace materials as specified for in such instances or if not specified, with new materials that match exist adjacent materials.
8. COORD ALTERATION & RENOVATION WORK to expedite completion and in req sequences of or to maintain indicated sequences of construction, as applicable. Remove, cut and patch work in a manner to minimize damage and to provide restoring products and fin to original and or specified condition. Refinish visible exist surfaces to remain in renovated rooms and spaces. to specified condition for as material w/ neat transition to adjacent fin. Restore exist operational MEP sys to full operational condition, when exists. Recover and refinish mech and elect work that is

2. SUPPLY PRODUCTS COMPLETE w/ all standard devices, trim fin and all accessories indicated in the latest edition of the manufacturer's catalog or brochure published at the date of the award of the contract, Furnish such items complete w/ component parts necessary for the obvious and intended use and install, whether or not descriptions or catalog it contain all supplemental info and/or # of such components.
3. NAMEPLATES & LABELS: Provide permanent nameplates on as item of service connected or power operated equip. Indicate manuf, product name, model #, serial #, capacity, speed, rating & sim essential operating data. Locate nameplates on Accessible surface. Locate read labels & stamps on Accessible surface which, in occupied spaces, is not conspicuous.
4. MANUF INSTRUCTIONS: Whenever products are regd to be installed and/or perform in accordance w a specified manuf instruction or procedure, procure, distribute and maintain at the site copies of info. No allowance or consideration will be made for claimed ignorance as to what a cited standard contains, as trademark is considered to be experienced and familiar w/ the published standards of quality and workmanship for its own trade.
5. STORE PRODUCTS in accordance w/ manuf instructions, maintaining sensitive materials with temps & humidity ranges regd by manuf. For ext storage of fabricated products, place on elipped supports above ground. Cover products subject to deterioration w/ impervious sht covering; w/ ventilation to avoid condensation. Provide storage access for inspection.

SECTION 01 71 23 – FIELD ENGINEERING

1. NEW BLDG LAYOUT: Engage a registered licensed land surveyor to perform the initial new bldg layout and to set new benchmarks and other control points at the site.
2. IDENTIFY exist benchmarks, control points & property line corner stakes. Verify layout info indicated on the drgs, in relation to property survey & exist benchmarks, before proceeding to lay out the work. Protect & preserve exist benchmarks & control points during const.
3. BENCHMARKS: Establish and maintain a min of 2 permanent benchmarks on the site, referenced to data established by survey control points. Promptly replace lost or destroyed benchmarks, Base replacements on the original survey control points. Establish benchmarks & markers to set lines & levels at ea story of const & wherever as needed to locate ea element of the project. Calculate & maintain established or required lines & levels. Locate & protect.
4. BLDG LINES & LEVELS: Locate and lay out batter bds for structures, fdns, col grids & levels and control lines and levels.
5. TAKE FIELD MEASUREMENTS as need to fit the work properly. Recheck measurements before installing ea product. Where portions of the work are indicated to fit to other const, verify dims of other const by field measurements before fabrication. Coord fabrication schedule w/ const progress to avoid delaying the work.
6. MARK CASEWORK & FIXTURE locations w/ dig light fixtures temp marked on the flr before const of any partitions. Coord w/ casework or fixture shop drgs for size of units and alignment to fit the space as indicated.
11. MAINTAIN A RECORD or "Surveyor's Log" of control and other survey work. Record deviations from regd lines and levels which are discovered before proceeding with the next phase of const. Calculate & maintain indicated or accepted locations of elements, noting all deviations from the design.
13. SITE IMPROVEMENTS: Verify & document actual locations of site improvements, incl pavements, stakes for grading, fill and topsoil placement, utility stubes and invert els.

SECTION 01 73 00 – EXECUTION

1. INSTALLERS INSPECTION OF SUBSTRATE CONDITIONS: Before instal, inspect substrate material and the conditions under which the work will be performed.
2. DO NOT PROCEED W/ INSTALL until unsatisfactory conditions have been corrected in such a manner that all warranties will remain in force.
3. Application of a material or equip to a substrate shall be construed as acceptance of that work and assumption of responsibility for satisfactory install.
4. Inspect ea item of material/equip immediately prior to install. Reject damaged & defective items.
5. PERFORM INSTALL WORK by persons qualified to produce workmanship of specified quality, in accordance w/ manuf printed install recommendations and regs. Install work during conditions of temp, humidity, exposure and weather in accordance w/ the manuf regs for proper completion which will ensure the best possible results for ea unit of work.
6. PROVIDE ATTACHMENT & CONNECTION devices & methods, as need for securing the work properly as it is installed, true to line & level and aligned w/ adj elements as appropriate.
7. Adjust ea unit of work for proper operation, as regd to ensure best deterioration.
8. MAKE ALLOWANCE FOR EXP, contraction and bldg movements.
9. COORD CLOSING-IN of work w/ regd inspections and tests, so as to minimize the necessity of uncovering completed work.
10. BRACE PARTITIONS, suspend dgs or soffits and brace platforms, suspended items or sim conc only to steel elements. – even if not specifically noted, Do not brace elements to the roof deck, plumb/sprinkler pipes, ductwork, elect conduit or sim elements.
11. AT PROJECTIONS OF FIN SURFACES, not plasterer or thickened walls, return all exposed surface fin back to the primary surface even if not specifically noted.
12. ALIGN SURFACES of new flr at exist flr where exist flr is in reasonable conditions, UNO, Patch exist surfaces and refinish to match adjacent exist surfaces, as applicable.
13. VISUAL EFFECT: Provide uniform appearance work, consistent with the best possible visual effect. Recheck measurements and dims of the work, as an integral step of starting ea install. Re questionable measurements before proceeding. Make adjustments accordingly.
14. MOUNTING HTS: Mount units at industry-recognized standard hts for applications indicated. Re questionable mounting hi choices to architect for final decision.
15. ADJUST OPERATIONAL UNITS for function smoothly, easily, and free from binding or malfunctions throughout its entire operational range.
16. CLEAN PRODUCTS after install, according to manuf instructions.
17. CLEAN SPILLAGE & SOILING caused by install from adjacent const using cleaning agents and procedures recommended by manuf of affected const.
17. PROVIDE TEMP PROTECTION and coverings to protect installed products from damage from traffic & const operations for dur of const – until final inspection. Provide protection and maintain conditions to ensure products are w/o damage or deterioration at time of successful completion.
18. REPAIR & REPLACE DAMAGED ITEMS at no additional cost to the owner, Additional time read to secure replacements and to make repairs will not be considered as justification for an extension of time to complete the work.

SECTION 01 73 29 – CUTTING AND PATCHING

1. PER AIA DOCUMENT G701 & A107 - 2007.

SECTION 01 74 19 – CONSTRUCTION WASTE MANGEMENT AND DISPOSAL

1. SUMMARY OF WORK: As a part of achieving sustainability for const operations, this section includes administrative and procedural reqs for salvaging, recycling and disposing of non-hazardous const waste and debris.
2. DEVELOP A WASTE MGMT PLAN that will salvage and recycle as much non-hazardous const waste as possible. Haul off-site and transfer to the following: CONST WASTE: Base, clearing waste, masonry, CMU, lumber, wd sht materials, wd trim, mtls, rfg, insul, ppr bd, piping and elect conduit, PACKAGING: Cardboard, recycle 100% of the following unscontaminated packaging materials: paper, cardboard, boxes, plastic sht and film, polystyrene packaging, wd crates and pallets subs.
3. SUBMIT WASTE MGMT PLAN, w/in 15 days of date for commencement of the work.
4. REGULATORY REQS: Comply w/ hauling and disposal regulations of AHJ.
5. WASTE MGMT CONFERENCING: Manage and administer periodic conferences at the project site for review of methods and procedures related to waste mgmt.

THE WASTE MGMT PLAN must include the following:

1. WASTE IDENTIFICATION: anticipated types and quantities of site-clearing and const waste generated by the work, estimated quantities and assumptions for estimates.
2. WASTE REDUCTION WORK PLAN: A listing of ea type of waste and whether it will be salvaged, recycled or disposed of in landfill or incinerator, including points of waste generation, total quantity of ea type of waste, quantity for ea means of recovery and handling and transportation procedures.
   - Salvaged Materials for Reuse: materials to be salvaged and reused in this project, including methods for prep salvaged materials before incorporation into the work,
   - Salvaged Materials for Sale: materials to be sold to individuals and organizations, including a listing of their names, addresses and telephone #s.
   - Salvaged Materials for Donation: materials to be donated to individuals and organizations, include a listing of their names, addresses and telephone #.
   - Recycled Materials: A listing of local receivers and processors and type of recycled materials ea will accept, including names, addresses and telephone #.
   - Disposed Materials: Indicating how and where materials will be disposed of, including name, address and telephone # of ea landfill and incinerator facility.
   - Handling and Transportation Procedures: Indicating methods to be used for separating recyclable waste including sizes of containers, container labeling and designated location on project site where materials separation will be located.

PLAN IMPLEMENTATION:

1. IMPLEMENT WASTE MGMT PLAN, providing handling, containers, storage, signage, transportation and other items regd during the entire duration of the contract, Comply w/ Div-01 for operation, termination and removal regs.
2. TRAIN WORKERS, SUBCONTRACTORS & SUPPLIERS on proper waste mgmt procedures, as appropriate for the work occurring at project site.
3. DISTRIBUTE WASTE MGMT PLAN to all entities when they first begin work on-site. Review plan procedures and requirements with entire const & shop drawing and design.

SITE ACCESS & TEMP CONTROLS:

1. CONDUCT WASTE MGMT OPERATIONS to ensure min interference w/ roads, streets, walks, walkways and other adjacent occupied and used facilities.
2. DESIGNATE & LABEL SPECIFIC AREAS ON PROJECT SITE necessary for separating materials that are to be salvaged, recycled, reused, donated and sold.
3. COMPLY W/ Div-01 for controlling dust and dirt, environmental protection and noise control.

RECYCLING CONST WASTE:

1. Recycling: Provide appropriate containers used by on-site workers.
2. PROCEDURES: Separate recyclable waste from other waste materials and trash.
3. Separate recyclable waste by type at project site to the max extent practical.
   - Provide containers with identification of labels or bins for containing recyclable waste until they are removed from project site,
   - Include LED procedures on identifying and unacceptable materials at ea container and bin,
   - Inspect containers and bins for contamination & remove contaminated materials if found,
   - Stockpile processed materials on-site w/o intermixing w/ other materials. Place, grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.
   - Stockpile materials away from const area. Do not store w/in drip line of remaining trees.
   - Store components off the ground and protect from the weather.
   - Remove recyclable waste off owner's property & transport to recycling receiver or processor.

RECYCLING CONST WASTE:

PACKAGING:

1. Cardboard and Boxes: Break down packaging into flat shts. Bundle and store in a dry location.
2. Polyethylene Packaging: Separate and bag materials.
3. Pallets: As much as possible, reg deliveries using pallets to remove pallets from project site. No pallets that remain on-site, break down pallets into components and secure and comply w/ regs for recycling wd.
4. Crates: Break down crates into component wd pieces and comply w/ regs for recycling wd.
5. Site-Clearing Wastes: Chip brush, branches and trees at landfill facility.

WD MATERIALS:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain paint, varnish or stain.
3. Gyp Bd: Stack large clean pieces on wd pallets and store in a dry location.
4. Clean Gyp Bd: Grind scraps of clean gyp bd using small mobile chipper or hammer mill. Screen out paper after grinding.

DISPOSAL OF WASTE:

1. Except for items/materials to be salvaged, recycled or otherwise reused, remove waste materials from project site & legally dispose of them in a landfill/incinerator acceptable to AHJ.
2. UNO, Do not dispose of waste into sewers or drainage systems.
3. Remove and transport debris in a manner to prevent spillage on adjacent surfaces and areas. Burning is not an option under any circumstances.
5. Dispose of Transport waste materials off owner's property and legally dispose of them.

SECTION 01 77 00 – CLOSEOUT PROCEDURES

FINAL CLEANING: Prior to occupancy, clean all surfaces and site for use by the owner, Employ experienced workers or professional cleaners for final cleaning. Clean ea surface or unit to condition expected from a normal, commercial bldg cleaning and maintenance program. Comply w/ the manuf instructions for operations.

SUBSTANTIAL COMPLETION PROCEDURES:

1. SET ALL TIME-BASED DEVICES: including programmable x-scans to current.
2. AFTER FINAL CLEANING operations have been completed and when the project is ready for owner occupancy, request the occupancy permit on behalf of the owner and approval by any other AHJ over the project.

PREREQUISITES TO FINAL COMPLETION:

1. COMPLETE ALL INCORRECT OR UNCOMPLETED WORK ITEMS as fast as possible. Advise owner of items when the bldg is not occupied, if necessary. Coord w/ the owner and perform the work so it will not interfere w/ the owner's occupancy.
2. OWNERS INSTRUCTIONS: After completion of all testing of sys. instruct the owner in operation, adjustment and maintenance of MEP, fire protection and monitoring sys provided.
3. PERMANENT TEMP SUPPLY: Remove temp utilities, equip and sys provided for the project use, along w/ const tools, field office, mockups and sim elements.
4. OPERATION & MAINTENANCE DATA: Include the following types of info in O+M manuals: emergency instructions, spare parts listings, copies of warranties, wiring diagrams, inspection procedures, shop drgs and product data.

FINAL CLOSEOUT SUBMITTALS REQ'D SUBMITTAL REQS:

1. ELECTRONIC CLOSEOUT SUBMITTALS: Provide 2 separate sets of the following documents on recorded onto USB flash drives or CD-ROMs, one set to include all files and submit to the owner:
   - FINAL OCCUPANCY PERMIT and other legal releases.
   - PRODUCT WARRANTIES, maintenance agreements, final product certifications & sim docs,
   - MARKED-UP RECORD DWGS, product data and shop-dwgs, O+M manuals, damage or settlement survey and sim final record info,
   - A FINAL, UNCONDITIONAL ACCORDANCE and material suppliers used on the project,
   - AN UPDATED FINAL STATEMENT accounting for additional changes (additions and deductions) to the contract sum, incorporating amounts for change orders, deductions for uncorrected work, deductions for reinspection payments and previous payments.
   - SUBMIT A FINAL, UNCONDITIONAL RELEASE and final unconditional lien releases from all subcontractors and material suppliers and other supporting documentation not previously submitted or accepted.
   - SUBMIT THE FINAL LIEN RELEASE contingent only upon receipt and bank clearance of final payment amount.
   - SUBMIT THE FINAL AIA (EJ) w/ the GC's signed statement indicating all items have been completed or otherwise resolved for acceptance.
   - CONTINUING MAINTENANCE: Maintain const to fulfill written certificate that: 1. CDs have been reviewed, 2. Work has been inspected for compliance w/ the CDs, 3. Work has been completed in accordance w/ the CDs, 4. Equip and sys have been tested and are operational and 5. Work is completed, ready for a final review.

DIVISION 02: EXISTING CONDITIONS

SECTION 02 32 00 – EXISTING CONDITIONS ASSESSMENT

1. PRIOR TO COMMENCEMENT OF WORK, verify exist conditions, control points, principal lines and els, the presence of underground utilities, at or related to the site and the exist bldg, and elec service upon which the work depends, as indicated on the const documents.
2. SURVEY THE EXIST BLDG (when applicable) prior to the start of const, to document any exist defects. This survey will form a basis for determination of subsequent damage resulting from the contractor's operations at the site.
3. IN THE EVENT OF DISCREPANCY or conflict, between exist conditions and the CDs, immediately notify the architect of the inconsistency or conflict. Do not undertake any phase of the work affected by the inconsistency or conflict pending the issuance of supplemental instructions by the architect.
4. IF HAZARDOUS MATERIALS ARE DISCOVERED, PROVIDE PROPOSED WORK PLANS for the removal, abatement or remediation of materials, for review & approval by the owner, as a change in scope to the const contract. Outline in the work plan, a description of proposed means & methods to be used & an assessment of alternative methods, costs & logistics, including steps to perform site fencing & follow-up monitoring for residual contaminates, as applicable.
5. ELS OF EXIST GRADES, trs, tops of walls, parapets, beams and locations of exist cols, walls and sim elements are based on data provided at the exist bldg and other verifications by the architect. However, the architect or owner assumes no responsibility for the accuracy of that info. It is the intent of the CDs to integrate new work w/ the exist work and the GC must verify and confirm the actual bldg conditions.
6. REVIEW EXIST FLR SUBSTRATE els and conditions to verify if any of the following exist and notify the architect if they do: variation of over 1/2" or more over entire flr area, Slopes of over 1/8" in 12" in any area, Rough or unstable flr substrates reg extensive repair.
7. REVIEW CONDITIONS of other exist const elements to be reused in the new const, Verify they will provide an acceptable substrate for new materials and for installed.
8. REPORT all unacceptable substrate or exist materials to the architect in writing.

SECTION 02 41 00 – SELECTIVE DEMOLITION

1. WORK INCLUDES removal and legal disposal of exist const items specified to be removed herein, noted to be removed with the drgs, or as otherwise regd to be removed to facilitate const activities.
2. EXIST CONDITIONS: The owner assumes no responsibility for the actual condition of items or structures to be demo'd.
3. SALVAGEABLE ITEMS of value must be removed from the site as work progresses - storage or sale of removed items on site is not permitted. The owner reserves the right to retain salvageable items.
4. INSPECT areas in which work will be performed prior to start of demo work.
5. LOCATE, IDENTIFY, STUB-OFF AND DISCONNECT exist utility and service lines not to remain, Provide by pass connections as regd to maintain continuity of service to other areas of the bldg, if necessary.
6. IF UNANTICIPATED UTILITIES, struct elements, etc, are encountered, Investigate and measure both nature and extent of the conflict. Submit report to the owner in writing, accurate dtl. Pending receipt of directive from the owner, rearrange selective demo sched as necessary to continue demo operations as widely.
7. PERFORM demo work in a systematic manner, Use such methods as req to complete the work regd in accordance w/ the const documents & regulations. Provide shoring, bracing or support to prevent movement, settlement or collapse of adj const to remain, Conduct operations by means & methods to prevent injury to persons or damage to adj bldgs, structures, other facilities. Repair damage caused to adj const at no cost to the owner.
8. DEMO & REMOVE EXIST CONST only to the extent req'd by new const or as indicated. Use methods regd to complete work w/in limitations of governing regulations and as follows:
   - NEATLY CUT OPENINGS & HOLES plumb, sq & true to dims regd, Use cutting methods least likely to damage const to remain or adj const, To min disturbance of adj surfaces, use hand or small power tools designed for sawing or grinding, not hammering & chopping, Temp cover openings to remain,
   - CUT OR DRILL FROM THE EXPOSED OR FIN SIDE into concealed surfaces to avoid marring exist fin surfaces, Do not use cutting torches until work area is cleared of flammable materials, At concealed spaces, such as duct and pipe intrs, verify condition and contents of hidden spaces before starting cutting /burning operations. Maintain portable fire-suppression devices during flame-cutting operations. Maintain adequate ventilation when using cutting torches.
   - REMOVE DECAYED, vermin-infested or otherwise dangerous or unsuitable materials and promptly dispose of offsite,
   - RETURN ELEMENTS OF CONST & SURFACES TO REMAIN to condition exist before start of demo operations.
   - REMOVE EXIST FLR & WALL COVERINGS and replace w/ new materials, if necessary, to achieve uniform color and appearance.
   - DEMO CONC & MASONRY in whole sections. Cut conc & masonry at junctures w/ const to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools, UNO, remove all New-type const starting full time, flgs & pavement as applicable,
   - REMOVE AC EQUIP w/o releasing refrigerants.

PATCHING AND REPAIRING:

1. PROMPTLY PATCH & REPAIR holes and damaged surfaces caused to adjacent const by selective demo operations. Where possible, match adj const, patch to produce surfaces suitable for new materials.
2. RESTORE EXPOSED FIN of patched areas and extend fin restoration into adj const to remain in a manner that eliminates evidence of patching & refinishing.
3. PATCH, EXTEND FUR & WALL SURFACES in the new space where demo walls or partitions extend one fin area into another, Provide a flush and even surface of uniform color and appearance, Match exist texture and fin of exist adjacent surface, Patch w/ durable seams that are as invisible as possible.
4. WHERE PATCHING SMOOTH PTD SURFACES, extend fin of ea new entire unbroken surface plane as required to achieve uniform appearance, Feather edges of patch to blend into exist surface.
5. DISPOSAL OF DEMO MATERIALS: Promptly dispose of demo materials, Do not allow demo materials to accumulate on-site, Transport demo materials off-site, Transport demo materials off the property and legally dispose of them.
6. CHANGER FILTERS AND AHU EQUIP on completion of adjective demo operations.

DIVISION 03: CONCRETE

SECTION 03 30 00 – CAST-IN-PLACE CONCRETE

Where any requirements specified in this architectural specification is in conflict with information provided in the structural drawings, the structural drawings shall take precedence,

SUBSTANTIAL COMPLETION OF CONCRETE WORK:

WORK INCLUDED: Provide cast in place conc slabs, fl slabs, pavement where indicated on the dwgs and as specified herein for a complete install.

REFER TO architectural drawings for locations of structural, civil, and landscape dwgs in addition to these specifications. Where there is conflict in information or instruction, confirm expectations with the Architect. Where moisture vapor control and the finish appearance of concrete is concerned, design intent as outlined in the architectural specifications and architectural drawings is to be maintained where possible, as long as it does not conflict with the engineering, structural integrity, code requirements, or the like of the engineering dwgs.

REFERENCED STANDARDS: Comply w/ applicable provisions of the following codes, specs & standards except where more stringent reqs are specified: ACI 117, ACI 318, ACI 347, ACI 347.3R, ACI 301, ACI 302, ACI 304, ACI 305, ACI 306, ACI 310, CRSI's "Manual of Standard Practice"

QUALITY ASSURANCES:

1. INSTALLER QUALIFICATIONS: An experienced installer who has completed conc work sim in material, design and extent to that indicated for this project and whose work has resulted in construction w/ a record of successful in-service performance.
2. READY-MIX MANUF QUALIFICATIONS: A firm experienced in manuf ready-mixed conc products and complying w/ ASTM C 94 requirements.
3. SOURCE LIMITATIONS: Obtain ea type or class of cementitious material of the same brand from the same manuf plant, ea aggregate from 1 source & ea admixture from the same manuf,
4. RETAIN A TESTING LAB to perform material evaluation tests and to design conc mixes. Materials and mixes shall not be changed w/o testing and resetting, as directed by owner, at any time during progress of work, Allow free access to material stockpiles and facilities, Remove & replace work found to be defective if tests indicate it does not comply w/ specs.

FORM MATERIALS:

1. FURNISH LARGEST practicable sizes to min jts & to conform to jts shown on dwgs, Provide material w/ sufficient thickness to withstand pressure of placed conc w/o bowing/deflection,
2. FORMS FOR UNEXPOSED CONC: Plywood, lumber, mill or other material, Provide lumber dressed on at least 2 edges and 1 side for tight fit,
3. FORMS FOR EXPOSED CONC: High-density overlay plywd of Class 1 or better, mill faced pnls or sim smooth faced undamaged ppr type material that will provide conc free, true, straight and smooth surfaces w/o evidence of wd grain and per regs of ACI 347.3D,
4. FORM COATINGS: Commercial formulation form coating compounds that will not bond w/ stain nor adversely affect conc surfaces and will not impair subsequent treatments of conc surfaces.
5. FORMS FOR CONSTRUCTION JOINTS: Solid or tongue-and-groove plastic tubes, Provide units w/ sufficient wall thickness to resist wet conc loads w/o deformation. Forms will be capable of remaining in accordance w/ the CDs, 4, Equip and sys have been tested and are operational and 5, Work is completed, ready for a final review.

REINF MATERIALS:

1. Per sht steel dwgs & specs.

CONC MATERIALS:

1. PORTLAND CEMENT: ASTM C 150, Type II/I, Use only one brand throughout project,
2. FLY ASH: ASTM C 618, Class C or F, limited to 25% of tot cementitious materials by wt.,

NORMAL-WT AGGREGATE: ASTM C 33 and as follows: CLASS: Severe weathering region, but no fine aggregates,

NON MAX AGGREGATE SIZE:

1. Typ 4 slabs-on-grade: 1-1/2" combined aggregate gradation (ie below) w/ 1 1/4" max or 1/3 slab thickness if thicker than 4" (to reduce water content and shrinkage),
2. Typ 3 slabs: 1" max,
3. All other conc: 3/4" max,
4. COMBINED AGGREGATE GRADATION: Well graded from coarsest to finest w/ not more than 18% and not less than 8% retained on an individual sieve, except that less than 8% may be retained on coarsest sieve and on No. 50 sieve and not more than 5% may pass through sieves finer than No. 50,
5. FINE AGGREGATES: Natural washed hard sand varying from fine to particles passing a 3/8" screen of which at least 12% must pass a 50 mesh screen,
6. WATER: Potable and complying w/ ASTM C 94,

ADMIXTURES: Provide certified by manuf to contain not more than 0.1% water-soluble chloride ions by mass of cementitious material and to be compatible w/ other admixtures and cementitious materials, Do not use admixtures containing calcium chloride,

1. Adhere to ASTM C 260; ASTM C 494, Type A; ASTM C 494, Type F; ASTM C 494, Type E; ASTM C 494, Typ D; Federal spec, TT S 00230C, Type II, Class A,
2. STRIP-TOP FLI FILLER: Preformed strips of asphalt saturated fiberboard, complying w/ ASTM D-1751 w/ pre-cut or perforated, removable top edge for install of sealant material after placing slabs,
3. VAPOR BARRIER (under slab-on-grade): 10 mil thk sht meeting ASTM E 1745 - Class A, eq to Vapor Block 10" by Raven, "VaporCheck 10" by Viper or eq product of W.R Meadows or Fortifiber; complete as manuf recommended 4 " w seaming tape (to seal to exist barrier) and vapor-providing mastic for its & penetrations,
4. MOISTURE RETARDING COVER: Waterproof paper or polyethylene film or polyethylene coated burlap, meeting ASTM C 171,

CONC MIXES: UNO indicated on the const drgs, prep design mixes for ea type and strength of conc determined by either lab trial mix or field test data/records. Proportion normal-wt conc according to ACI 211.1 and ACI 301,

13. Use a qualified independent testing agency for prep and reporting proposed mix designs for the lab trial mix basis,
14. SLAG-ON-GRADE: compressive strength at 28 days (design strength – mix design is actually higher), w min 520 pounds/cubic yard of cementitious materials content w/ %-slash, max water/cement ratio = 0.44 and 4" +/- 1" natural slump (or 6" max slump for conc w/ high-range water-reducing admixture added to 2+ to 4" natural slump conc. The intent of this mix design is to minimize overall water content w/in the slab, by maximizing aggregate and cementitious materials.
15. FTGS, GRADE BEAMS, FDN WALLS: compressive strength (28 days), max water/cement ratio = 0.50 & 4" +- 1" natural slump or 8" max slump for conc w/ high-range water-reducing admixture added to 2+ to 4" natural slump conc
16. EXT CURBS, GUTTERS & PAVEMENT: compressive strength (28 days), max water/cement ratio = 0.50 and 4" +- 1" natural slump or 6" max slump for conc w/ high-range water-reducing admixture added to 2+ to 4" natural slump conc and w/ 6% air entrainment.
17. CONC EXPOSED TO DEICERS: Limit cementitious materials other than Portland cement by % of wt according to ACI 301 regs,
18. AIR CONTENT: Provide air-entraining admixture at manuf prescribed rate to result in conc at point of placement having an air content as follows with a tolerance of + 1 or - 1.5%, to provide 6% air content for 1" nom max aggregate size, Do not air entrain conc or trowel-fin int fls and suspended slabs, Do not allow entrapped air content to exceed 3%,
19. LIMIT WATER-SOLUBLE, CHLORIDE-ION CONTENT in hardened conc to 0.15% by wt of cement,
20. H2K ADJUSTMENTS: may be made by the GC at no additional cost to the owner. Lab test data for revised mix design & strength results must be submitted to & accepted by the owner before using in the work, At GC's option, wtihout adj to 3.12 gals of water per cubic yd of conc. Add water/cement ratio adjustment prior to discharge but only after 1 mins of mixing time has elapsed,
21. AGGREGATE PROPORTIONING: The vol of fine aggregate must not be less than 35% of the total vol of the conc aggregates when measured in loose dry vol & not more than 50% before fine-suppression devices during flame-cutting operations. Maintain adequate ventilation when using cutting torches.
22. ADMIXTURES: Use according to manuf written instructions. Chlorides in any form or components must not be added to any conc,
23. USE WATER-REDUCING ADMIXTURE or high-range water-reducing admixture (superplasticizer) in conc, as regd, for placement and workability,
24. USE WATER-REDUCING & RETARDING ADMIXTURE when regd by high temps, low humidity or other adverse placement conditions,
25. USE WATER-REDUCING ADMIXTURE in pumped conc, conc for heavy-use industrial slabs and parking struct slabs, conc regd to be watertight and conc w/ a water-cementitious materials ratio below 0.50,
26. SLUMP LIMITS: Design mixes to result in conc slump at point of placement as follows: RAMPS, SLABS & WALLS: Not less than 2", slump limit 4", PUMP FILLING: Not less than 4" and not more than 4", CONC CONTAINING PLASTICIZER: Not more than 8" after addition of plasticizer to conc at slump not less than 2",

PATCHING MORTAR: Dry-pack mortar mix,

1. PROMPTLY PATCH & REPAIR holes and damaged surfaces caused to adjacent const by selective demo operations. Where possible, match adj const, patch to produce surfaces suitable for new materials.
2. RESTORE EXPOSED FIN of patched areas and extend fin restoration into adj const to remain in a manner that eliminates evidence of patching & refinishing.
3. PATCH, EXTEND FUR & WALL SURFACES in the new space where demo walls or partitions extend one fin area into another, Provide a flush and even surface of uniform color and appearance, Match exist texture and fin of exist adjacent surface, Patch w/ durable seams that are as invisible as possible.
4. WHERE PATCHING SMOOTH PTD SURFACES, extend fin of ea new entire unbroken surface plane as required to achieve uniform appearance, Feather edges of patch to blend into exist surface.
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NO PETTABANDING AT EXPOSED CONCRETE WORK:

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REFER TO architectural drawings for locations of structural, civil, and landscape dwgs in addition to these specifications. Where there is conflict in information or instruction, confirm expectations with the Architect. Where moisture vapor control and the finish appearance of concrete is concerned, design intent as outlined in the architectural specifications and architectural drawings is to be maintained where possible, as long as it does not conflict with the engineering, structural integrity, code requirements, or the like of the engineering dwgs.

REFERENCED STANDARDS: Comply w/ applicable provisions of the following codes, specs & standards except where more stringent reqs are specified: ACI 117, ACI 318, ACI 347, ACI 347.3R, ACI 301, ACI 302, ACI 304, ACI 305, ACI 306, ACI 310, CRSI's "Manual of Standard Practice"

QUALITY ASSURANCES:

1. INSTALLER QUALIFICATIONS: An experienced installer who has completed conc work sim in material, design and extent to that indicated for this project and whose work has resulted in construction w/ a record of successful in-service performance.
2. READY-MIX MANUF QUALIFICATIONS: A firm experienced in manuf ready-mixed conc products and complying w/ ASTM C 94 requirements.
3. SOURCE LIMITATIONS: Obtain ea type or class of cementitious material of the same brand from the same manuf plant, ea aggregate from 1 source & ea admixture from the same manuf,
4. RETAIN A TESTING LAB to perform material evaluation tests and to design conc mixes. Materials and mixes shall not be changed w/o testing and resetting, as directed by owner, at any time during progress of work, Allow free access to material stockpiles and facilities, Remove & replace work found to be defective if tests indicate it does not comply w/ specs.

FORM MATERIALS:

1. FURNISH LARGEST practicable sizes to min jts & to conform to jts shown on dwgs, Provide material w/ sufficient thickness to withstand pressure of placed conc w/o bowing/deflection,
2. FORMS FOR UNEXPOSED CONC: Plywood, lumber, mill or other material, Provide lumber dressed on at least 2 edges and 1 side for tight fit,
3. FORMS FOR EXPOSED CONC: High-density overlay plywd of Class 1 or better, mill faced pnls or sim smooth faced undamaged ppr type material that will provide conc free, true, straight and smooth surfaces w/o evidence of wd grain and per regs of ACI 347.3D,
4. FORM COATINGS: Commercial formulation form coating compounds that will not bond w/ stain nor adversely affect conc surfaces and will not impair subsequent treatments of conc surfaces.
5. FORMS FOR CONSTRUCTION JOINTS: Solid or tongue-and-groove plastic tubes, Provide units w/ sufficient wall thickness to resist wet conc loads w/o deformation. Forms will be capable of remaining in accordance w/ the CDs, 4, Equip and sys have been tested and are operational and 5, Work is completed, ready for a final review.

REINF MATERIALS:

1. Per sht steel dwgs & specs.

CONC MATERIALS:

1. PORTLAND CEMENT: ASTM C 150, Type II/I, Use only one brand throughout project,
2. FLY ASH: ASTM C 618, Class C or F, limited to 25% of tot cementitious materials by wt.,

NORMAL-WT AGGREGATE: ASTM C 33 and as follows: CLASS: Severe weathering region, but no fine aggregates,

NON MAX AGGREGATE SIZE:

1. Typ4 slabs-on-grade: 1-1/2" combined aggregate gradation (ie below) w/ 1 1/4" max or 1/3 slab thickness if thicker than 4" (to reduce water content and shrinkage),
2. Typ 3 slabs: 1" max,
3. All other conc: 3/4" max,
4. COMBINED AGGREGATE GRADATION: Well graded from coarsest to finest w/ not more than 18% and not less than 8% retained on an individual sieve, except that less than 8% may be retained on coarsest sieve and on No. 50 sieve and not more than 5% may pass through sieves finer than No. 50,
5. FINE AGGREGATES: Natural washed hard sand varying from fine to particles passing a 3/8" screen of which at least 12% must pass a 50 mesh screen,
6. WATER: Potable and complying w/ ASTM C 94,

ADMIXTURES: Provide certified by manuf to contain not more than 0.1% water-soluble chloride ions by mass of cementitious material and to be compatible w/ other admixtures and cementitious materials, Do not use admixtures containing calcium chloride,

1. Adhere to ASTM C 260; ASTM C 494, Type A; ASTM C 494, Type F; ASTM C 494, Type E; ASTM C 494, Typ D; Federal spec, TT S 00230C, Type II, Class A,
2. STRIP-TOP FLI FILLER: Preformed strips of asphalt saturated fiberboard, complying w/ ASTM D-1751 w/ pre-cut or perforated, removable top edge for install of sealant material after placing slabs,
3. VAPOR BARRIER (under slab-on-grade): 10 mil thk sht meeting ASTM E 1745 - Class A, eq to Vapor Block 10" by Raven, "VaporCheck 10" by Viper or eq product of W.R Meadows or Fortifiber; complete as manuf recommended 4 " w seaming tape (to seal to exist barrier) and vapor-providing mastic for its & penetrations,
4. MOISTURE RETARDING COVER: Waterproof paper or polyethylene film or polyethylene coated burlap, meeting ASTM C 171,

CONC MIXES: UNO indicated on the const drgs, prep design mixes for ea type and strength of conc determined by either lab trial mix or field test data/records. Proportion normal-wt conc according to ACI 211.1 and ACI 301,

7. CONSOLIDATE PLACED CONC by mech vibrating equip supplemented by hand spading, rodding/tamping, in accordance w/ ACI recommended practices, Install & withdraw vibrators wet at uniformly spaced locations no farther than visible effectiveness of machine,
8. PLACE VIBRATORS to rapidly penetrate placed layer and at least 6" into preceding layer, Do not invert vibrators into lower layers of conc that have begun to set, At ea insertion, limit duration to time necessary to consolidate & complete embedment of reinf & embedded items w/o causing segregation of mix, Do not use vibrators to transport conc inside forms, Do not vibrate forms or reinf, Do not subject conc to any procedure which will cause segregation, Maintain reinf in proper position during placement and consolidation,

PLACING CONC SLABS:

1. DEPOSIT & CONSOLIDATE conc slabs in a cont operation, w/in the limits of cjs, until the placing of a prt or section is completed, Consolidate conc so it is thoroughly worked around reinf and other embedded items and into corners, Bring slab surfaces to the correct level w/ a straight edge and then strike off, Use bull floats or curbles to smooth surface, leaving it free from bumps and hollows,
2. DO NOT sprinkle water on plastic surface, Do not disturb slab surface prior to start of fin operations,

HOT-WEATHER CONC PLACING:

1. COMPLY w/ ACI 305 and as regd herein, When air temp is between 85+ deg F, reduce mixing and delivery time from 90 to 75 mins, when air temp is above 90 deg F, reduce mixing and delivery time to 60 mins,
2. USE CHILLED WATER OR ICE to maintain conc temp at time of placement below 80 deg, provided the water wg of the ice is reduced in the total allowable amount of water,
3. COVER EXIST STL w/ wet burlap so that surface of the stl becomes cool, but slip temp must not exceed ambient air temp, Wet forms thoroughly prior to placement of conc, Fog spray forms, reinf and adjacent exposed subgrade before conc is placed,
4. USE WATER REDUCING RETARDING ADMIXTURE when reqd by high temps, low humidity or other adverse placement conditions,

FIN FORMED CONC SURFACES:

1. ROUGH-FORMED FIN: applies to conc only at surfaces not exposed to view): As cast conc texture imparted by form-facing material w/ tie holes and defects repaired and patched and per ACI 347.3R CSC1 surface category, Remove fins and other projections that exceed 1/4",
2. SMOOTH-FORM FIN (at concealed surfaces to be covered w/ a coating material complying w/ the manuf's printed instructions, waterproofing, or other coatings, at exposed fin walls of less than 1' exposure and at exposed conc w/ limited visibility - such as w/in unfinished basement spaces): As-cast conc texture imparted by form-facing material per ACI 347.3R and CSC2, Repair holes and defective areas, Remove fins and other projections exceeding 1/8"+/-,
3. TYP EXPOSED-CONC FIN (typ conc fin UNO and at conc surfaces to receive a smooth-finish coating or to be exposed to view): Smooth-form finish per ACI 347.3R and CSC3, Repair holes and defective areas per

2. VERT ALIGNMENT OF EXPOSED HEAD JTS do not vary from plumb by more than 1/4" in 10'; not 1/2" max.
3. CONSPICUOUS HORIZ LINES such as exposed lintels, sills, parapets and reveals do not vary from level more than 1/4" in 20'; not 1/2" max.
4. EXPOSED BED JTS, do not vary from thickness indicated more than +/- 1/8", w a max thickness limited to 1/2". Do not vary from bed-jt thickness of adj courses more than 1/8".
5. FOR EXPOSED HEAD JTS do not vary from thickness indicated by more than +/- 1/8". Do not vary from adjacent bed-jt and head-jt thicknesses more than 1/8".

LAYING MASONRY WALLS:

1. LAY OUT WALLS in advance for accurate spacing of surface bond patterns w/ uniform jt thicknesses & for accurate location of openings, movement-type jts, returns & offsets. Avoid using less-than-half-size units, particularly at corners, jambs & where possible, at other locations.
2. BOND PATTERN for exposed masonry: Lay exposed masonry in the bond pattern indicated in the dwgs + do not use units w/ less than 4" nom horiz face dims at corners or jambs.
3. STOPPING & RESUMING WORK: In ea course, rack back 1/2 unit length for 1/2 if running bond or 1/3 unit length for 1/3 running bond; do not toothe. Clean exposed surfaces of set masonry, wet clay masonry units lightly if req'd and remove loose masonry units and mortar before laying fresh masonry.
4. WHERE BUILT-IN ITEMS ARE TO BE EMBEDDED in cores of hollow masonry units, place a layer of mtr bdg on the bed jt below and rod mortar or grout into core.

MORTAR BEDDING & JOINTING:

1. LAY HOLLOW MASONRY UNITS w/ full mortar coverage on horiz and vert face shells. Bed webs in mortar in starting course on fdn and in all courses of piers, cells and pilasters and where adjacent to cells or cavities to be filled w/ grout. For starting course on fdn where units are not grouted, spread out full mortar bed, including areas under webs.
2. LAY SOLID bed-jt masonry units w/ completely filled bed & head jts; butter ends w/ sufficient mortar to fill head jts & adhere to adjacent units. Do not deeply furrow bed jts that will be exposed in finished masonry. Slush head jts & shove into place. Bed jts of brick-to-concrete and brick-to-steel shall be filled solidly with mortar. Buttering corners of units or shoving units to adjacent units to obtain bond will not be permitted.
3. SET STONE & CAST-STONE TRIM UNITS in full bed of mortar w/ full vert jts. Fill anchor, anchor and slot holes. Clean bottom surfaces of window, door & louver units & soap powder and rinse thoroughly w/ clean water. Wet jt surfaces thoroughly before applying mortar.
4. TOOL EXPOSED JTS SLIGHTLY CONCAVE when thumbprint is hard, using a jointer larger than the jt thickness, UNO.
5. CUT JTS FLUSH FOR MASONRY WALLS to receive plaster or other direct-applied fin, UNO.

FLASHING, WEEPS & CAVITY DRAINAGE:

1. INSTALL EMBEDDED FLASHING & WEEP HOLES in masonry at shaft angles, lintels, ledges & other obstructions to downward flow of water in wall and where indicated.
2. PREP MASONRY SURFACES so they are smooth and free from projections that could puncture flashing. Where flashing is w/ in mortar jt, place thru-wall flashing on bed of mortar and cover w/ mortar. Before covering w/ mortar, seal penetrations in flashing w/ adhesive, sealant or tape as recommended by flashing mfr.
3. AT MULTI-WYTHE MASONRY WALLS including cavity walls, extend flashing through outer wythe, turned up a min of 8" and through inner wythe w/ 1/2" of the flashing turned up in exposed masonry. Where inst of wall is to receive furring or framing, carry flashing completely through inner wythe and turn flashing up against face of wall.
4. AT MASONRY-VENEER WALLS extend flashing through veneer, across air space behind veneer and up face of sheathing at least 8", or upper edge tucked under tabs, paper or felsg wrap or behind cut sheathing bd when bldg paper does not exist. Lap flashings at least 4".
5. INSTALL INTERIOR THROUGH-WALL FLASHING STRIPS in strict accordance w/ manuf instructions & recommendations. Install mtl drip edges beneath flexible flashing at ext face of wall. Stop flexible flashing 1" back from outside face of wall & adhere flexible flashing to top of mtl drip edge. Install cavity-wall mortar dams as shown on dwgs. Install cavity-wall and other flashing material. Place mtl drip-edge in a bed of urethane sealant & apply flashing material to top of drip-edge starting 1" from outside edge of masonry. Apply flashing material to the face of glass-mat gyp sheathing psts w/ the flashing manuf primer & extend up face of sheathing at least 8". Seal top edge w/ manuf flashing mastic per manuf.
6. AT LINTELS & SHELF ANGLES extend flashing a min of 6" into masonry at ea end. At heads & sills, extend flashing 6" at jambs & where jambs are 2" or less, extend full width.
7. INSTALL WEEPS in the head jts in ext wythes of the first course of masonry immediately above embedded flashing. Space weeps 24" O.C. Place cavity drainage material immediately above flashing in cavities at ea weep.
8. INSTALL CAVITY VENTS in the head jt (excluding re-bars) at the top of all cavity spaces at same spacing as weep vents.
9. INSTALL RECLETS & NAILERS for flashing and other related const where they are shown to be built into masonry.
10. MASONRY JT REINF: Par struct dwgs & specs.

DIVISION 05: METALS

SECTION 05 12 00 – STRUCTURAL STEEL

1. WORK INCLUDED: Provide structural steel where indicated on the Drawings, as specified herein, and as necessary for complete installation.

ENGINEERING DESIGN SERVICE:

1. Provide services of a Structural Engineer licensed in the state in which the Project is located to design connections required, and to supervise preparation of structural steel shop drawings.
2. INCLUDE SHOP CERTIFICATION TESTING AND INSPECTION as a part of the Work of this Section.

DEFINITION - STRUCTURAL STEEL:

1. Elements of structural-steel frame, as classified by AISC's "Code of Standard Practice for Steel Buildings and Bridges," that support design loads.

PERFORMANCE REQUIREMENTS FOR CONNECTIONS:

1. Provide details of simple shear connections required by the Contract Documents to be selected or completed by structural-steel fabricator to withstand ASD-service loads indicated and comply with other information and restrictions indicated.

SUBMITTALS

1. PRODUCT DATA: For each type of product indicated.
2. SHOP DRAWINGS: Show fabrication of structural-steel components, include details of cuts, connections, splices, camber, holes, and other pertinent data. Include erection drawings and indicate welds by standard AWS symbols, distinguishing between shop and field welds, and show size, length, and type of each weld. Indicate type, size, and length of bolts, distinguishing between shop and field bolts, holes required by the Work, and identify pretensioned, direct-tension, or tensioned shear/bearing connections.
3. WELDING CERTIFICATES: For welding procedures to be employed in the Work have satisfactorily passed AWS qualification tests.
4. QUALIFICATION DATA: For fabricator and for professional engineer.

COORDINATION

1. FURNISH ANCHORAGE ITEMS TO BE EMBEDDED in or attached to other construction without delaying the work. Provide setting diagrams, sheet metal templates, instructions, and directions for installation.

MATERIALS

1. WASHERS: High-Strength, Low-Alloy Columbium-Vanadium Steel: ASTM A 992, Grade 50, F.
2. CHANNELS, ANGLES, PLATE, BARS AND SHAPES: ASTM A 36
3. RECTANGULAR STEEL TUBING: ASTM A 500, Grade B, structural tubing.
4. ROUND STEEL TUBING: ASTM A 500, Grade B or Grade C, structural tubing.
5. THREADED ROD, NUTS & WASHERS: ASTM A 36 carbon steel, hot-dipped zinc finish.
6. WELDING ELECTRODES: E70XX, unless indicated otherwise on structural drawings, per AWS requirements.
7. HIGH-STRENGTH BOLTS, NUTS, AND WASHERS: ASTM A 325, Type 1, heavy hex steel structural bolts; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain finish.
8. DIRECT-TENSION INDICATORS: ASTM F 959, Type 490, compressible-washer type, plain.
9. TENSION-CONTROL, HIGH-STRENGTH BOLT ASSEMBLIES: ASTM F 1852, Type 1, heavy hex or round head steel structural bolts with splined ends; ASTM A 563 heavy hex carbon-steel nuts; and ASTM F 436 hardened carbon-steel washers, plain finish.
10. UNHEADED ANCHOR RODS: ASTM F 1554, Grade 36 or ASTM F 1554, Grade 55, cut thread-only, weldable as required, straight configuration unless otherwise indicated.
11. CLEVISES AND TURNBUCKLES: ASTM A 108, Grade 1035, cold-finished carbon steel.
12. EYE BOLTS AND NUTS: ASTM A 108, Grade 1030, cold-finished carbon steel.
13. PRIMER: Fabricator's standard lead- and chromate-free, non-asphaltic, rust-inhibiting primer.
14. NONMETALLIC, SHRINKAGE-RESISTANT GROUT: ASTM C 1107, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

FABRICATION

1. FABRICATE AND ASSEMBLE structural steel in shop to greatest extent possible. Fabricate according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and AISC's "Specification for Structural Steel Buildings-36-Allowable Stress Design and Plastic Design." Camber structural-steel members where indicated. Identify high-strength structural steel according to ASTM A 6 and maintain markings until structural steel has been erected. Mark and match-mark materials for field assembly. Complete structural-steel assemblies, including welding of units, before starting shop-painting operations.
2. THERMAL CUTTING: Perform thermal cutting by machine to greatest extent possible. Plane thermally cut edges to be welded to comply with requirements in AWS D1.1.
3. FINISHING: Accurately finish ends of columns and other members transmitting bearing loads. CLEAN AND PREPARE STEEL SURFACES that are to remain unpainted according to SSPC-SP 2, "Hand Tool Cleaning."
5. HOLES: Provide holes required for securing other work to structural steel and for passage of other work through steel framing members. Cut, drill, or punch holes perpendicular to steel surfaces. Cut, drill, mechanically thermal cut, or punch base-plate holes perpendicular to steel surfaces. Weld threaded nuts to framing and other specialty items indicated to receive other work.

SHOP CONNECTIONS

1. HIGH-STRENGTH BOLTS: Shop install high-strength bolts according to RCSC's "Specification for Structural Joints using ASTM A 325 or A 490 Bolts" for type of bolt and type of joint specified.
2. WELD CONNECTIONS: Comply with AWS D1.1 for welding procedure specifications, tolerances, appearance, and quality of welds and for methods used in correcting welding work. Remove backing bars or runoff tabs, back gouge, and grind steel smooth.
3. ASSEMBLE AND WELD BUILT-UP SECTIONS by methods that will maintain true alignment of axes without exceeding tolerances of AISC's "Code of Standard Practice for Steel Buildings and Bridges" for mill material.
4. VERIFY THAT WELD SIZES, lubrication sequence, and equipment used for architecturally exposed structural steel will limit distortions to allowable tolerances. Prevent weld show-through on exposed steel surfaces. Grind butt welds flush. Grind or fill exposed fillet welds to smooth profile. Dress exposed welds.

SHOP PRIMING

1. SHOP PRIME STEEL SURFACES typically except at the following:
   A. Surfaces embedded in concrete or mortar beyond 2" depth
   B. Surfaces to be field-welded.
   C. Galvanized surfaces.
2. SURFACE PREPARATION: Clean surfaces to be painted. Remove loose rust and mill scale and spatter, slag, or flux deposits. Prepare surfaces according to the following specifications and standards: SSPC-SP 2, "Hand Tool Cleaning."
3. PRIMING: Immediately after surface preparation, apply primer according to manufacturer's written instructions and at rate recommended by SSPC to provide a dry film thickness of not less than 1.5-mils. Use priming methods that result in full coverage of joints, corners, edges, and exposed surfaces. Stripe paint corners, crevices, bolts, welds, and sharp edges. Apply two coats of shop paint to inaccessible surfaces after assembly or erection. Change color of second coat to distinguish it from first.

PAINTING: Apply paint by brush, roller, or pneumatic sprayer complying with SSPC-PS Guide 7.00, "Painting System Guide 7.00: Guide for Selecting One-Coat Shop Painting Systems," to provide a dry film thickness of not less than 1.5-mils.

HOT-DIP GALVANIZED FINISH:

1. Apply zinc coating by the hot-dip process to structural steel according to ASTM A 123. Fill vent holes and grind smooth after galvanizing. For galvanized steel members, provide galvanized finished fasteners. Galvanize structural steel where indicated on the Drawings and as follows:
   A. Structural steel framing within exterior CMU walls.
   B. Lintels and shelf angles within exterior walls attached to the structural-steel frame.
   C. Exterior steel assemblies located outside of the building 's weather-resistant barrier (WRB) including support and associated attachments and brackets.

SOURCE QUALITY CONTROL:

1. ENGAGE an independent testing and inspecting agency to perform shop tests and inspections and prepare test reports. Provide testing agency with access to places where structural-steel work is being fabricated or produced to perform tests and inspections. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from requirements.
2. CORRECT DEFICIENCIES in Work that test reports and inspections indicate does not comply with the Contract Documents.
3. TESTS INCLUDE, but are not limited to:
   A. Bolted Connections: Shop-bolted connections will be inspected according to RCSC's "Specification for Structural Joints Using ASTM A 325 or A 490 Bolts."
   B. Welded Connections: In addition to visual inspection, shop-welded connections will be tested and inspected according to AWS D1.1 and the following inspection procedures, at testing agency's option:
   C. Liquid Penetrant Inspection: ASTM E 165.
   D. Magnetic Particle Inspection: ASTM E 709, performed on root pass and on finished weld. Cracks or zones of incomplete fusion or penetration will not be accepted.
   E. Ultrasonic Inspection: ASTM E 164.
   F. Radiographic Inspection: ASTM E 94.

EXECUTION

1. PREPARATION: Provide temporary shores, guys, braces, and other supports during erection to keep structure stable and aligned during erection. Limit sway, deflections, and misalignment to comply with tolerances and loads equal in intensity to design loads. Procedure for installation of temporary bracing should follow AISC Steel Design Guide Series 28 "Stability Bracing of Lowe Rise Structural Steel Buildings." Remove temporary supports when permanent structural steel, connections, and bracing are in place and final welding and bolting are completed.

ERECTION

1. SET STRUCTURAL STEEL ACCURATELY in locations and to elevations indicated and according to AISC's "Code of Standard Practice for Steel Buildings and Bridges" and "Specification for Structural Steel Buildings—Allowable Stress Design and Plastic Design."
2. BASE AND BEARING PLATES: Clean concrete- and masonry-bearing surfaces of bond-reducing materials, and roughen surfaces prior to setting base and bearing plates. Clean bottom surface of base and bearing plates. Set base and bearing plates for structural members on wedges, shims, or setting nuts as required. Snug-tighten anchor rods after supported members have been positioned and plumbed. Do not remove wedges or shims but, if protruding, cut off flush with edge of base or bearing plate before packing with grout. Promptly pack grout solidly between bearing surfaces and base or bearing plates so no voids remain. Neatly finish exposed surfaces; protect grout and allow to cure. Comply with manufacturer's written instructions for shrinkage-resistant grouting.
3. MAINTAIN ERECTION TOLERANCES of structural steel and architecturally exposed structural steel within AISC's "Code of Standard Practice for Steel Buildings and Bridges."
4. ALIGN AND ADJUST VARIOUS MEMBERS forming part of complete frame or structure before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact with members. Perform necessary adjustments to compensate for discrepancies in elevations and alignment. Level and plumb individual members of structure. Make allowances for difference between temperature at time of erection and mean temperature when structure is completed and in service.
5. SPLICE MEMBERS only where indicated.
6. REMOVE ERECTION BOLTS on welded, architecturally exposed structural steel. Fill holes with plug welds, and smooth welds at exposed surfaces.
7. DO NOT USE THERMAL CUTTING during erection unless approved by Architect. Finish thermally cut surfaces of nonstructural items in AWS D1.1. Do not enlarge unfair holes in members by burning or using drift pins. Ream holes that must be enlarged to admit bolts.

SECTION 05 31 00 – STEEL DECKING

SECTION INCLUDES

1. Composite floor deck.

RELATED REQUIREMENTS

1. Section 033000 "Cast-in-Place Concrete" for normal-weight and lightweight structural concrete fill over steel deck.
2. Section 051200 "Structural Steel Framing" for shop- and field-welded shear connectors.
3. Section 055000 "Metal Fabrications" for framing deck openings with miscellaneous steel shapes.

ACTION SUBMITTALS

1. Product Data: For each type of REFERENCE STRUCTURAL DRAWINGS for each type of Product indicated. Provide as required in general notes.

SHOP DRAWINGS

1. Include layout and types of deck panels, anchorage details, reinforcing channels, pans, cut deck openings, accessories, and attachments to other construction.

INFORMATIONAL SUBMITTALS

1. Welding certificates.
2. Product Certificates: For each type of steel deck.
3. Test and Evaluation Reports

   A. Product Test Report: For tests performed by a qualified testing agency, indicating that each of the following complies with requirements:
      a. Powder-actuated fastenings.

5. Qualification Statements: For welding personnel and testing agency.

QUALITY ASSURANCE

1. Welding Qualifications: Qualify procedures and personnel in accordance with SDI QA/QC and the following welding codes:
   A. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
   B. AWS D1.3, "Structural Welding Code - Sheet Steel."

DELIVERY, STORAGE, AND HANDLING

1. Protect steel deck from corrosion, deformation, and other damage during delivery, storage, and handling.
2. Store products in accordance with SDI MOC3; Stack steel deck on platforms or pallets and slope to provide drainage. Protect with a waterproof covering and ventilate to avoid condensation.
   A. Protect and ventilate acoustical cellular roof deck with factory-installed insulation to maintain insulation free of moisture.

PRODUCTS

PERFORMANCE REQUIREMENTS

1. ARB Specifications: Comply with calculated structural characteristics of steel deck in accordance with ASI S100.
2. Fire-Resistance Ratings: Comply with ASTM E119 testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   A. Indicate design designations from UL's "Fire Resistance Directory" or from listings of another qualified testing agency.

COMPOSITE FLOOR DECK

1. Fabrication of Composite Floor Deck: Fabricate panels, with integrally embossed or raised pattern ribs and interlocking side laps, to comply with SDI C with the minimum section properties indicated, and with the following as SDI: Structural specifications take precedent, refer to structural.
   A. Galvanized-Steel Sheet: ASTM A653, Structural Steel (SS), Grade 33, with G60 zinc coating.
   B. Profile Depth: as indicated on the Structural Drawings.
   C. Design Uncoated-Steel Thickness: 0.0295-inch (22 gage) minimum, or thicker, as indicated on the Structural Drawings.
   D. Span Condition: As indicated in structural drawings.
   E. BASIS-OF-DESIGN: 1.5VI, GR 50 composite decking by Nucor / Vulcraft, or approved equal.

ACCESSORIES

1. Provide manufacturer's standard accessory materials for deck that comply with requirements indicated; REFERENCE STRUCTURAL DRAWINGS.

EXECUTION

1. Examine supporting frame and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION, GENERAL

1. Install deck panels and accessories in accordance with SDI C, SDI NC, and SDI RD, as applicable, and manufacturer's written instructions; and requirements in this Section.
2. REFERENCE STRUCTURAL DRAWINGS FOR INSTALLATION REQUIREMENTS
3. Install temporary shoring before placing deck panels if required to meet deflection limitations.
4. Locate deck bundles to prevent overloading of supporting members.
5. Place deck panels on supporting frame and adjust to final position with ends accurately aligned and bearing evenly on supporting members before being permanently fastened. Do not stretch or contract side-lap interlocks.
6. Place deck panels flat and square and fasten to supporting frame without warp or deflection.
7. Cut and neatly fit deck panels and accessories around openings and other work projecting through or adjacent to deck.
8. Provide additional reinforcement and closure pieces at openings as required for strength, continuity of deck, and support of other work.
9. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds, and methods used for correcting welding work.
10. Shear Stud Connectors: Prepare steel surfaces as recommended by manufacturer of shear connectors, Weld using end welding of headed-stud shear connectors in accordance with AWS D1.1/D1.1M and manufacturer's written instructions.

REPAIR

1. Galvanizing Repairs: Prepare and repair damaged galvanized coatings on both surfaces of deck with galvanized repair paint in accordance with ASTM A780/A780M and manufacturer's written instructions.
2. Repair Painting:
   A. Wire brush, clean and dean rust spots, welds, and abraded areas on both surfaces of prime-painted deck immediately after installation, and apply repair paint.
   B. Apply repair paint, of same color as adjacent shop-primed deck, to bottom surfaces of deck exposed to view.
   C. Wire brushing, cleaning, and repair painting of bottom deck surfaces, and rust spots, welds, and abraded areas are included in Section 099113 "Exterior Painting" and Section 099123 "Interior Painting."

FIELD QUALITY CONTROL

1. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
2. Tests and Inspections:
   A. Special inspections and qualification of welding special inspectors for cold-formed steel floor and roof deck in accordance with quality-assurance inspection requirements of SDI QA/QC.
      a. Field welds will be subject to inspection.
3. Steel decking will be considered defective if it does not pass tests and inspections.
4. Shear Stud Connectors: In addition to visual inspection, test and inspect field-welded shear connectors in accordance with requirements in AWS D1.1/D1.1M for stud welding and as follows:
   A. Perform bend tests if visual inspections reveal either a less-than-continuous 360-degree weld or welding repairs to any shear connector.
   B. Conduct tests in accordance with requirements in AWS D1.1/D1.1M or additional shear connectors if weld fracture occurs on shear connectors that are already tested.

SECTION 05 50 00 – METAL FABRICATIONS

SECTION INCLUDES

1. Miscellaneous framing and supports.
2. Miscellaneous steel trim.

PRODUCTS FURNISHED, BUT NOT INSTALLED, UNDER THIS SECTION INCLUDE THE FOLLOWING:

1. Steel weld plates and angles for casting into concrete for applications where they are not specified in other Sections.
2. Anchor bolts and steel pipe sleeves, slotted-channel inserts, and wedge-type inserts indicated to be cast into concrete or built into unit masonry.

RELATED REQUIREMENTS

1. Section 042200 "Unit Masonry" for installing loose lintels, anchor bolts, and other items built into unit masonry.
2. Section 051200 "Structural Steel Framing" for steel framing, supports, elevator machine beams, hoist beams, divider beams, door frames, and other steel items attached to the structural-steel framing.

COORDINATION

1. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written instructions to ensure that shop primers and topcoats are compatible with one another.
2. Coordinate installation of metal fabrications that are anchored to or that receive other work. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

ACTION SUBMITTALS

1. Product Data:
   A. Fasteners.
   B. Shop primers.
2. Shop Drawings: Show fabrication and installation details. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items. Provide Shop Drawings for the following:
   A. Miscellaneous framing and supports for applications where framing and supports are not specified in other Sections.
   B. Shelf angles.
   C. Miscellaneous steel trim including steel edgings.
   D. Loose steel lintels.

INFORMATIONAL SUBMITTALS

1. Mill Certificates: Signed by stainless steel manufacturers, certifying that products furnished comply with requirements.
2. Welding certificates.
3. Research Reports: For post-installed anchors.
4. Qualification data: For welding procedures and welding operators.

QUALITY ASSURANCE

1. Welding Qualifications: Qualify procedures and personnel in accordance with the following welding codes:
   A. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
   B. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
   C. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."
   D. Certify that each welder has satisfactorily passed AWS qualifications tests for welding processes involved and if pertinent, has undergone requalification.
2. Fabricator Qualifications: A firm experienced in producing metal fabrications similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

FIELD CONDITIONS

1. Field Measurements: Verify actual locations of walls, floor slabs, decks, and other construction contiguous with metal fabrications by field measurements before fabrication.
2. Establish dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

PRODUCTS / PERFORMANCE REQUIREMENTS

1. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.
2. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

METALS

1. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.
2. Steel Plates, Shapes, and Bars: ASTM A36/A36M.
3. Stainless Steel Sheet, Strip, and Plate: ASTM A240/A240M or ASTM A666, Type 304.
4. Stainless Steel Bars and Shapes: ASTM A276/A276M, Type 304.
5. Rolled-Steel Floor Plate: ASTM A786/A786M, rolled from plate complying with ASTM A36/A36M or ASTM A283/A283M, Grade C or D.
6. Rolled-Stainless Steel Floor Plate: ASTM A793.
7. Steel Tubing: ASTM A500/A500M, cold-formed steel tubing.
8. Steel Pipe: ASTM A53/A53M, Standard Weight (Schedule 40) unless otherwise indicated.
9. Cast Iron: Either gray iron, ASTM A48/A48M, or malleable iron, ASTM A47/A47M, unless otherwise indicated.
10. Aluminum Plate and Sheet: ASTM B209, Alloy 6061-T6.
11. Aluminum Extrusions: ASTM B221, Alloy 6063-T6.

FASTENERS

1. General: Unless otherwise indicated, provide Type 304 stainless steel fasteners for exterior use and zinc-plated fasteners for dry, interior locations. Provide bolts, nuts, and washers complying with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, at exterior walls. Select fasteners for type, grade, and class required.
   A. Provide stainless steel fasteners for fastening aluminum, stainless steel,or nickel silver.
   B. Provide bronze fasteners for fastening bronze.
2. Steel Bolts and Nuts: Regular heavegon-head bolts, ASTM A307, Grade A; with hex nuts, ASTM A563; and, where indicated, flat washers.
3. High-Strength Bolts, Nuts, and Washers: ASTM F3125/F3125M, Grade A325, Type 3, heavy-hex steel structural bolts; ASTM A563, Grade DH3, heavy-hex carbon-steel nuts; and where indicated, flat washers.
4. Stainless Steel Bolts and Nuts: Regular hexagon-head and serrated stainless steel bolts, ASTM F593, with hex nuts, ASTM F594, Alloy Group 1; and, where indicated, flat washers. Alloy Group 1 or Group 2.
5. Anchor Bolts: ASTM F1554, Grade 36, of dimensions indicated; with nuts, ASTM A563; and, where indicated, flat washers.
   A. Provide hot-dip galvanized or mechanically deposited, zinc coating where item being fastened is indicated to be galvanized.
6. Cast-in-Place Anchors in Concrete: Either threaded or wedge type unless otherwise indicated. Galvanized fastenings, either ASTM A47/A47M malleable iron or ASTM A27/A27M cast steel, hex nuts, washers, and shims as needed, of hot-dip galvanized per ASTM F2329/F2329M.
7. Post-Installed Anchors: Torque-controlled expansion anchors.
   A. Material for Interior Locations: Carbon-steel components zinc plated to comply with ASTM B633 or ASTM F1941/F1941M, Class Fe/Zn 5, unless otherwise indicated.
   B. Material for Exterior Locations: Stainless Steel bolts, ASTM F593 and nuts, ASTM F594, stainless steel bolts, ASTM F593, and nuts, ASTM F594.

MISCELLANEOUS MATERIALS

1. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting." Section 099123 "Interior Painting" and with SSPC-PS Guide 12.00, "Guide for Selecting Zinc Coatings."
2. Water-Based Primer: Emulsion type, anticorrosive primer for mildly corrosive environments and is resistant to flash rusting. Provide primer that complies with MPI#107 and compatible with topcoat.
3. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.
   Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.
4. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
5. Nonshrink Grout: Premixed, nonmetallic, noncorrosive, nonstaining, mixture complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.
6. Concrete: Comply with requirements in Section 033000 "Cast-in-Place Concrete" for normal-weight, air-entrained concrete with a minimum 28-day compressive strength of 3000 psi.

FABRICATION, GENERAL

1. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
2. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
3. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
4. Form exposed work with accurate angles and surfaces and straight edges.
5. Weld corners and seams continuously to comply with the following:
   A. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   B. Obtain fusion without undercut or overlap.
   C. Remove welding flux immediately.
   D. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
6. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.
7. Fabricate seams and other connections that are exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
8. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
9. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
10. Where units are indicated to be cast in concrete or built into masonry, equip with integrally welded steel strap anchors, 1/8 by 1-1/2 inches, with a minimum 6-inch embedment and 2-inch hook, not less than 8 inches from ends and corners of units and 24 inches o.c., unless otherwise indicated.

MISCELLANEOUS FRAMING AND SUPPORTS

1. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
2. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated.Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
   A. Fabricate units from slotted channel framing where indicated.
   B. Furnish inserts for units installed after concrete is placed.

Prime miscellaneous framing and supports with primer specified in Section 099600 "High-Performance Coatings" where exposed to view.

SHELF ANGLES

1. Furnish shelf angles from steel angles of sizes indicated and for attachment to concrete framing. Provide horizontally slotted holes to receive 3/4-inch bolts, spaced not more than 6 inches from ends and 24 inches o.c., unless otherwise indicated.
   A. Provide mitered and welded units at corners.
   B. Provide open joints in shelf angles at expansion and control joints. Make open joint approximately 1 inch larger than expansion or control joint.
2. For cavity walls, provide vertical channel brackets to support angles from backup masonry and concrete.
3. Galvanize and prime) shelf angles located in exterior walls.
4. Prime shelf angles located in exterior walls with primer specified in Section 099600 "High-Performance Coatings."
5. Furnish wedge-type concrete inserts, complete with fasteners, to attach shelf angles to cast-in-place concrete.

MISCELLANEOUS STEEL TRIM

1. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
2. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.
   A. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
3. Galvanize and prime exterior miscellaneous steel trim.
   Prime exterior miscellaneous steel trim with primer specified in Section 099600 "High-Performance Coatings."

STEEL WELD PLATES AND ANGLES

1. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.

GENERAL FINISH REQUIREMENTS

1. Finish metal fabrications after assembly.
2. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.

FINISHES:

1. COMPLY WITH NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal fabrications after assembly.
2. PREPARATION FOR SHOP PRIMING: Prepare uncoated ferrous-metal surfaces to comply with minimum requirements indicated below for SSPC surface-preparation specifications and environmental exposure conditions of indicated coating system.
   A. Exterior, (SSPC Zone 1B): SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
   B. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
3. APPLY SHOP PRIMER to uncoated surfaces of metal fabrications, except those that are shop finished, units with galvanized finishes, at units intended to be embedded in concrete or masonry, or covered with sprayed-on fireproofing, unless otherwise indicated. Comply with SSPC-PA 1, "Paint Application Specification No. 1," for shop painting. Stripe paint corners, crevices, bolts, welds, and sharp edges.
4. HOT-DIP GALVANIZED FINISH: Apply zinc coating by the hot-dip process to comply with ASTM A 123, for steel and iron products, or ASTM A 153 for steel and iron hardware. Fill vent holes and grind smooth after galvanizing. Galvanize all exterior steel assemblies, including associated attachments and brackets.

EXECUTION

1. FASTENING TO IN-PLACE CONSTRUCTION: Provide anchorage devices and fasteners where necessary for securing metal fabrications to in-place construction. Include those needed for coordinating work with the following:
   A. Cast-in-Place Concrete: Furnish templates as required for setting anchors.
   B. Concrete and Masonry: Furnish inserts and anchoring devices.
   C. Wood: Fasten to wood framing with countersunk bolts.
2. CUTTING, FITTING, AND PLACEMENT: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation, with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
3. FIT EXPOSED CONNECTIONS accurately together to form hairline joints. Weld connections that are not to be exposed as indicated and that cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.
4. FIELD WELDING. Comply with the following requirements:
   A. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
   B. Obtain fusion without undercut or overlap.
   C. Remove welding flux immediately.
   D. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
5. SETTING BEARING AND LEVELING PLATES: Clean concrete and masonry bearing surfaces of bond-reducing materials, and roughen to improve bond to surfaces. Clean bottom surface of plates. Set bearing plates for structural members on wedges or leveling nuts. After bearing members have been positioned and plumbed, tighten anchor bolts. Do not remove wedges or shims but, if protruding, cut off flush with edge of bearing plate before packing with grout. Use non-shrink, non-metallic grout unless otherwise indicated. Pack grout solidly between bearing surfaces and plates to ensure that no voids remain.
6. INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS: Install framing and supports to comply with requirements of items being supported, including manufacturer's written instructions and requirements indicated on Shop Drawings. If any, Support steel girders on solid grouted hollow-masonry, concrete, or steel pilasters and columns. Secure girders with anchor bolts embedded in grouted masonry or concrete or with bolts through top plates of pipe columns. Where grout voids occur under bearing plates in indicated at girders supported on concrete or masonry, install as specified above for setting and grouting bearing and leveling plates.
7. INSTALL PIPE COLUMNS on concrete footings with grouted baseplates. Position and grout column baseplates as specified above for setting and grouting bearing and leveling plates. Do not grout baseplates of columns supporting steel girders until girders are installed and connected.
8. INSTALL METAL STAIRS by welding stair framing to steel structure or to weld plates cast into concrete, unless otherwise indicated.

CLEANING & PROTECTION

1. TOUCH-UP PAINTING: Immediately after erection, clean field welds, bolted connections,

STL STAIRS (INT):
1. PROVIDE COMPLETE STAIR ASSEMBLIES, including mill framing, hangers, struts, handrails, railings, clips, brackets, bearing plates and other components necessary to support and anchor stairs and platforms on supporting struct. Join components by welding, UNO. Use connections that maintain struct value of joined pieces. Fabricate treads and platforms of ext stairs as finished walking surfaces slope to drain.
2. PRESASSEMBLE STAIRS IN SHOP to greatest extent possible to min field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated install.
3. STAIR FRAMING: Fabricate stringers of struct-sl channels, plates or a combination of both, as indicated. Provide closures for exposed ends of stringers. Cont platforms of struct-sl channel headers and misc framing members as indicated. Bolt or weld headers to stringers; bolt or weld framing members to stringers and headers. If using bolts, fabricate and join so bolts are not exposed on fin surfaces.
4. INT CONC-FILLED MTL-PAN STAIR TREADS & PLATFORMS: Form risers, sub-tread pans, and sub-platforms from uncoated cold-rolled sl sht of thickness needed to comply w/ performance req's - but no less than 0.067" (14 ga). Directly weld mtl pans to stringers. Locate welds on top of sub-treads where they will be concealed by conc fill. Do not weld risers to stringers. Shape mtl pans to include nosing integral w/ riser, unless nosings are indicated otherwise. Attach abrasive nosings to risers, when indicated.

FIN:
1. COMPLY W/ NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating fin. Fin mtl fabrications after assembly.
2. SEE 09 90 00 HIGH PERFORMANCE COATINGS for all exterior steel finishes.

EXECUTION
1. FASTENING TO IN-PLACE CONST: Provide anchorage devices and fasteners where necessary for securing mtl fabrications to in-place const. Include threaded fasteners for conc and masonry inserts, toggle bolts, through-bolts, lag bolts, wd screws and other connectors.
2. CUTTING, FITTING & PLACEMENT: Perform cutting, drilling & fitting reqd for installing mtl fabrications. Set mtl fabrications accurately in location, alignment and al, w/ edges and surfaces level, plumb, true and free of rack; and measured from established lines and levels. Provide temp bracing or anchors in formwork for items to be built into conc, masonry or sim const.
3. FIT EXPOSED CONNECTIONS accurately together to form hairline js. Weld connections that are not to be left as exposed js but cannot be shop welded because of shipping size limitations. Do not weld, cut or abrade surfaces of sol units that have been hot-dip galv after fabrication and are for bolted or screwed field connections.
4. FIELD WELDING: Comply w/ the following req's:
   A. Use materials and methods that min distortion and dev-alop strength and corrosion resistance of base mtls. Obtain fusion w/o undercut or overlap.
   B. Remove welding flux immediately.
   C. At exposed connections, fin exposed welds & surfaces smooth and blended so no roughness shows after fin & contour of welded matches that of adjacent surface.
5. SETTING BEARING & LEVELING PLATES: Clean conc & masonry bearing surfaces of bond-reducing material & roughen to improve bond to surfaces. Clean bot surface of plates. Set bearing & leveling plates on wedges, shims or leveling nuts. After bearing members have been positioned & plumbed, tack weld plate to top of conc or masonry. Where leveling nuts are used, fill, if protruding, cut off flush w/ edge of bearing plate before packing w/ grout. Use non-shrink, non-metallic grout, UNO. Pack grout solidly between bearing surfaces & plates to ensure no voids remain.
6. INSTALL MISC FRAMING & SUPPORTS: Install framing and supports to comply w/ reqs of items being supported, including manuf written instructions and reqs contained in the following:
   If any, Support mtl grates on solid grouted masonry, conc or sl pipe coln. Secure grates w/ anchor bolts embedded in grouted masonry or w/ bolts to conc or sl framing. Do not grout baseplates of columns supporting sl girders until girders are installed and leveled.
7. FILL BOLLARDS solidly w/ conc, mounding top surface and fin smooth.
8. INSTALL MTL STAIRS by welding stair framing to sl struct or weld plates cast into conc, UNO.
10. FIELD WELDING: Comply w/ applicable AWS spec for procedures of manual shielded metal arc welding, for appearance & quality of welds & for methods used in correcting welding work. Weld connections not to be left as exposed js but cannot be welded because of shipping size limitations. Grind exposed welded js smooth and restore fin to match fin of adjacent surfaces.

SECTION 05 73 00 – DECORATIVE METAL RAILINGS

1. WORK INCLUDED: Provide decorative railings and gates, where indicated on the dwgs, as specified herein, and as necessary for complete install.
2. CONTROL OF CORROSION: Prevent galvanic action and other forms of corrosion by insulating mtls and other materials from direct contact w/ incompatible materials.

PRODUCTS:
1. COLD-ROLLED STEEL with welded joints. Shapes, sizes, configurations, and finishes per drawings.
2. POWDER-COATED STEEL with welded joints. Shapes, sizes, configurations, and finishes per drawings.

MTL MATERIALS: W smooth surfaces, w/o seam marks, roller marks, rolled trade names, stains, discolorations or blemishes.
1. S/S: Type 304 min.
2. FERROUS MTLS: Sl Plates, Shapes and Bars: ASTM A 36
3. CAST IRON: A 653, G90 coating
4. ALUM: Provide alloy and temper as recommended by manuf for type of use and fin indicated and w/ strength and durability properties for each form and for use where alloy and temper designated below.
5. Extruded bars and shapes (including extruded tubing): ASTM B 221 – Alloy 6063-T5/T52
6. Drawn Seamless Tubing: ASTM B 210 – Alloy 6063-T832
7. Plate and Sht: ASTM B 209 – Alloy 6061-T6

FASTENERS:
1. Alum Components: Type 304 s/s fasteners.
2. S/S Components: Type 304 s/s fasteners.
3. Uncoated Sl Components: Heavy-hex fasteners complying w/ ASTM B 633, Class FeZn 25 for electrodeposited zinc coating, where installed. Type 304 s/s fasteners where exposed.
4. Dissimilar Mtls: Type 304 s/s fasteners.
5. Provide tamper-resistant flat-countersunk machine screws for exposed fasteners, UNO.
6. ANCHORS: Provide cast-in place or torque-controlled exp anchors, fabricated from corrosion-resistant materials w/ capability to develop, w/o failure, 4 times the load imposed when installed in conc, as determined by testing per ASTM E 488 conducted by a qualified independent testing agency.
7. NATURAL ALUM (MECH) FIN: AA-M30 (mech fin; as specified); sand mill surfaces in 1 direction only, parallel to length of member, w/ 120- and 150-grit abrasives. After install, polish members w/ No. 0 sisal mmnwood in paste wax, then rub to a luster w a soft dry cloth.

EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ reqs of AHJ.

DIVISION 06: WOOD, PLASTICS AND COMPOSITES

SECTION 06 10 00 – ROUGH CARPENTRY

1. PROVIDE wd framing, sheathing, blocking, backing and plywd which is generally not exposed to view, as reqd for completion of the work, where noted on the dwgs and specified herein.
2. LUMBER: Comply w/ PS 20 of American Softwood Lumber Standard and w/ applicable grading rules of inspection agencies certified by the ALSC board of Review. Provide dressed lumber, S4S typ, seasoned or kiln dried to max moisture content of 19% for 2" or less.
3. WD & TIMBER FRAMING: Douglas fir-larch, No. 2 or better grade, UNO.
4. BLOCKING / LUMBER for support of plumbing fixtures, panel, railings, rooftop equip bases & support curbs, blocking, carts, nailers, furring and grounds, provide dim lumber of const, stud, or No. 2 grade w/ 19% max moisture content and of any of the following species: Mixed southern pine; SPIB; Hem-fir or hem-fir (north); NLGA, WCLIB, or WWPA. Spruce-pine-fir (south) or spruce-pine-fir; NeLMA, NLGA, WCLIB or WWPA. Eastern softwoods: NeLMA, Northern species: NLGA, Western woods: WCLIB or WWPA.
5. ELECT EQUIP BACKING PNLS: DOC PS 1, Exposure 1, C-D Plugged, fire-retardant treated, in thickness indicated or if not indicated, not less than 3/4" thick.
6. PROVIDE ENGINEERED WD FRAMING UNITS per struct dwgs & specs.
7. LAMINATED VENEER LUMBER (LVL) per struct dwgs & specs.
8. PARALLEL-STRAND LUMBER (PSL) per struct dwgs & specs.
9. PREFABRICATED WD I-JOIST (TJI) per struct dwgs & specs.

WD-PRESERVATIVE-TREATED MATERIALS:
1. PRESERVATIVE TREATMENT BY PRESSURE PROCESS: AWPA C2 (lumber) and AWPA C9 (plywd), except lumber not in contact w/ the ground and is cont protected from liquid water may be treated according to AWPA C21 w/ inorganic borons. Use preservative chemicals acceptable to AHJ and containing no arsenic or chromium and 1 of the following: Ammoniacal or amine, copper quat, Copper bis, Ammoniacal copper citrate, Copper azole, Type A, Cxine copper in a light petroleum solvent.
2. FOR EXPOSED ITEMS PRESERVATIVE ITEMS noted to receive a stained or natural fin, use chemical formulations that do not req incising, contain colorants, bleed through or otherwise adversely affect fin.
3. KILN-DRY MATERIAL AFTER TREATMENT to a max moisture content of 19% for lumber & 15% for plywd. Do not use material that is warped or does not comply w/ reqs for untreated material. Mark as treated item w/ the treatment quality mark of an inspection agency approved by the American Lumber Standards Committee Board of Review.
4. TREAT ITEMS INDICATED on dwgs and the following: Wd cants, nailers, curbs, equip support bases, blocking, stripping etc. in connection w/ roofing, flashing, vapor barriers and waterproofing. Wd sills, sleepers, blocking, furring, stripping and sim concealed members in contact w/ masonry or conc.
5. FASTENERS: of size and type indicated that comply w/ following reqs of material & manuf. Where rough carpentry is exposed to weather, in ground contact or in area of high relative humidity, provide fasteners w/ hot-dip zinc coating complying w/ ASTM A 153/A 153M.
   - Nails, Brads and Staples: ASTM F 1667.
   - Power-Driven Fasteners: CABO NER-272.
   - Wd Screws: ASME B18.6.1.
   - Screws for Fastening to Cold-Formed Mtl Framing: ASTM C 954, except w/ wafer heads and reamer wings, length per screw manuf for material being fastened.
   - Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).
   - Bolts: Sl bolts complying w/ ASTM A 307, Grade A (ASTM F 568M); w/ ASTM A 563 (ASTM A 563M) hex nuts and where indicated, flat washers.
6. EXP ANCHORS: Anchor bolt & sleeve assembly of material indicated below w/ capability to sustain, w/o failure, a load eq to 4x the load imposed when installed in unrt masonry assemblies and eq to 4xs the load imposed when installed in conc as determined by ASTM E 488 conducted by a qualified independent agency. Material: Carbon-sl components, zinc plated per ASTM A 153/A 153M.
7. PROVIDE MTL FRAMING ANCHORS made from mtl indicated, of struct capacity, type and size indicated and as follows: Provide products acceptable to AHJ and for which noted code research/evaluation reports exist that show compliance of mtl framing anchors for application indicated w/ bldg code in effect for project. Allowable Design Loads: Provide products w/ allowable design loads, as published by manuf that meet or exceed those indicated. Manuf published values must be based on testing and analysis by qualified engineering agency and demonstrated by comprehensive testing performed by a qualified independent testing agency. Galv Sht Stl: Hot-dip, zinc-coated sl sht complying w/ ASTM A 653, G60 coating designation, B,O,D: "Simpson Strong Tie Co.:
8. SILL SEALER: Provide sill sealer at bot wall plate abutting conc: Closed-cell neoprene foam, 1/4" thick, in width to match bot plate width.

EXECUTION
1. SET ROUGH CARPENTRY to reqd levels and lines, w/ members plumb, true to line, and cut, fitted, Fit rough carpentry to other const; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, etc to comply w/ reqs for attaching other units.
2. DO NOT USE MATERIALS w/ defects that impair quality of rough carpentry or pieces that are too small or improper for application. Use materials of max sizes and minimum number of pieces to fit arrangement.
3. APPLY FIELD TREATMENT complying w/ AWPA M4 to cut surfaces of preservative-treated lumber & plywd.
4. SECURELY ATTACH ROUGH CARPENTRY WORK to substrate by anchoring and fastening indicated, complying w/ "Fastening Schedule," in IRCs IBC.
5. USE COMMON WIRE NAILS, UNO. Select fasteners size that will not fully penetrate members where opposite side will be exposed or covered w/ wall-mounted fin materials. Make tight connections. Install fasteners w/o splitting wd - predrill as reqd.

WD ASSEMBLIES, as indicated & as reqd for complete install:
1. INSTALL WHERE INDICATED and where reqd for attaching other work. Form to shapes indicated and cut as reqd for true line and level of attached work.
2. ATTACH ITEMS TO SUBSTRATES to support applied loading. Recess bolts & nuts flush w/ surfaces, UNO. Build anchor bolts into masonry during install of masonry work. Where possible, anchor bolts to bottom flanges of struct sl framing.
3. PROVIDE PERMANENT GROUNDS of dressed, pressure-preservative-treated, key-beveled lumber not less than 1 1/2" w and of thickness required to bring face of ground to exact thickness of fin material. Remove temp grounds when no longer reqd.

WD FRAMING, GENERAL:
1. PROVIDE FRAMING MEMBERS of sizes and on spacing shown, and frame openings as shown or if not shown, as required by recommendations of "Manual for Wood Framing" of National Forest Products Association. Do not splice struct members between supports.
2. ANCHOR & NAIL as shown & to comply w/ "Recommended Nailing Schedule" of "Manual for House Framing" & National Design Specifications for Wood Construction" published by NFPA.

STUD FRAMING:
1. GENERAL: Provide framing of size and spacing indicated or, UNO of the following sizes and spacing: Average grade of stud for use of a peg to direction of wall or partition and narrow face is parallel. Provide single hdr plate and double top plates using 2" thick members w widths as studs; except use single plate over openings. Use 3" thick members for non-load-bearing partitions. Add or another plates to supporting const.
2. CONST CORNERS and intersections w/ not less than 3 studs. Provide misc blocking & framing as shown & as reqd for support of facing materials, fixtures, specialty items and trim.
3. FRAME OPENINGS over doors, windows and louvers, Provide nailed header members of thickness eq to width of studs. Set headers on edge and support on jamb studs.
4. FOR NONBEARING PARTITIONS, 1 1/4"w x 6" (nom) studs and headers not less than 4" deep for openings 3' and less in width and not less than 6"-sl for wider openings.
5. FOR LOAD-BEARING partitions, provide studs for openings 6' and less in width and triple-jamb studs for wider openings. Provide headers of depth shown.
6. PROVIDE FIRESTOPS no less than 2" nom thickness and no less in width than the enclosed spaces w/ material permitting free movement of framing members due to shrinkage.

PROVIDE FRAMING WHERE INDICATED for partitions & for support of sheathing, backing or other const as indicated.

DEFINITIONS:
- EXPOSED FRAMING: Framing not concealed by other const.
- DIM LUMBER: Lumber of 2" nom or greater but less than 5" nom in least dim.
- TIMBERS: 5" nom or greater in least dim.

1. LUMBER GRADING AGENCIES and the abbreviations to reference them, include:
   a. NeLMA: Northeastern Lumber Manufacturers Association.
   b. NLGA: National Lumber Grades Authority.
   c. RIS: Redwood Inspection Service.
   d. SPIB: The Southern Pine Inspection Bureau.
   e. WCLIB: West Coast Lumber Inspection Bureau.
   f. WWPA: Western Wood Products Association.
2. QUALITY ASSURANCE - TESTING AGENCY QUALIFICATIONS: For testing agency providing classification marking for fire retardant treated material, an inspection agency acceptable to AHJ that periodically performs inspections to verify the material bearing the classification marking is representative of material tested.
3. DELIVERY, STORAGE & HANDLING: Stack lumber flat w/ spacers beneath and between ea layer to provide air circulation. Protect lumber from weather by covering w/ water-proof sheeting, securely anchored. Provide for adequate ventilation.

PRODUCTS:
1. LUMBER STANDARD: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies w/ the applicable rules of any rules writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   - Factory mark ea piece of lumber w/ grade stamp of grading agency.
   - Where mm moisture content is specified, provide lumber that has been kiln dried to max moisture content specified. Where actual sizes are indicated, they are mm dressed sizes for dry lumber.
   - Max Moisture Content of Lumber: 19%, UNO.
2. WD FURRING: Provide strips for installing plywd or paneling, select lds w/ no knots capable of producing bow-over nails and damage to pnls.

DIM LUMBER FRAMING:
1. NON-LOAD-BEARING INT PARTITIONS: Stud grade, of any of the following:
   - Hem-fir (north): NLGA,
   - Mixed southern pine; SPIB.
   - Spruce-pine-fir: NLGA,
   - Hem-fir: WCLIB or WWPA.
   - Spruce-pine-fir (south): NeLMA, WCLIB or WWPA.
   - Northern species: NLGA.
   - Eastern softwds; NeLMA,
   - Western wds: WCLIB or WWPA.
2. LOAD-BEARING (STRUCT WD FRAMING, WALLS OR PARTITIONS (ext walls or int load-bearing partitions): Any species w/ the following min design values, unless greater values are indicated in the struct dwgs:
   - STUD GRADE: Modulus of elasticity = 1,200,000psi. Allowable Fiber Stress in Compression = 675 psi
   - NO. 2 GRADE: Modulus of elasticity = 1,400,000psi. Allowable Fiber Stress in Compression = 900 psi
   - JOISTS, RAFTERS & OTHER FRAMING not specified: Any species & grade w/ a modulus of elasticity of at least 1,800,000 psi & an allowable fiber stress in bending of 900psi.
3. MAX WID-STUD LATERALLY-UNSUPPORTED HT LIMITS (IRC Table 2308.9.1) or w/ the most restrictive reqs of the struct dwg limits (whichever is more stringent).
4. PLYWOOD SUBFLOOR UNDERLAYMENTS
   - SPAN RATING: per struct
   - THICKNESS: not less than 3/4" nom.
   - EDGE DTL: Tongue and groove.
5. SHEAR WALL PNLS: Provide wd-framed units consisting of a prefabricated assembly of sl perimeter framing, tie downs and Struct I plywd or OSB sheathing.

FASTENERS:
1. PROVIDE FASTENERS OF SIZE & TYPE INDICATED that comply w/ reqs specified in this article for material and manuf. Provide nails or screws, in sufficient length, to penetrate not less than 1-1/2" inches into wood substrate. Where rough carpentry is exposed to weather, in ground contact or in area of high relative humidity, provide fasteners w/ hot-dip zinc coating complying w/ ASTM A 153/A 153M.
   - Nails, Brads and Staples: ASTM F 1667.
   - Power-Driven Fasteners: CABO NER-272.
   - Wd Screws: ASME B18.6.1.
   - Screws for Fastening to Cold-Formed Mtl Framing: ASTM C 954, except w/ wafer heads and reamer wings, length per screw manuf for material being fastened.
   - Lag Bolts: ASME B18.2.1. (ASME B18.2.3.8M).
   - Bolts: Sl bolts complying w/ ASTM A 307, Grade A (ASTM F 568M), Property Class 4.6, w/ ASTM A 563 (ASTM A 563M) hex nuts and where indicated, flat washers.
2. EXP ANCHORS: Anchor bolt and sleeve assembly of material indicated below w/ capability to sustain, w/o failure, a load eq to 4xs the load imposed when installed in unrt masonry assemblies and eq to 4xs the load imposed when installed in conc as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.
3. MATERIAL: Carbon-sl components zinc plated to comply w/ ASTM B 633, Class FeZn 5, Mtl FRAMING ANCHORS: Provide units made from mtl indicated, of struct capacity, type and size indicated and as follows:
   PROVIDE PRODUCTS ACCEPTABLE TO AHJ and for which model code research / evaluation reports exist that show compliance of mtl framing anchors, for application indicated, w/ bldg code in effect for project.
2. ALLOWABLE DESIGN LOADS: Provide products w/ allowable design loads, as published by manuf that meet or exceed reqd loads. Manuf published values must be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by qualified independent testing agency.
3. MANUF: The CDs are based on the use of products manuf by "Simpson Strong Tie Co. " Pending comparable products approved by AHJ, the following manuf are also acceptable:
   a. Cleveland Steel Specialty Co.
   b. KC Metals Products, Inc.
   c. Phoenix Metal Products, Inc.
   d. USP Structural Connectors.

MTL FRAMING ANCHORS, GENERAL:
1. For int locations: Hot-dip, zinc-coated sl sht complying w/ ASTM A 653, G60 (Z180) coating designation.
2. At wd-preservative-treated (TRT) lumber and where indicated: Heavy-galvanized sl sht complying w/ ASTM A 653 - struct sl, high-strength, low-alloy sl Type A (HSLAS Type A) or high-strength low-alloy sl Type B (HSLAS Type B); G185 (Z550) coating designation; and no less than 0.043" thick.
3. JOIST HANGERS: U-shaped joist hangers w/ 2"-least and 1 1/4"-w nailing flanges at least 85% of joist depth.
4. I-JOIST HANGERS: U-shaped joist hangers w/ 2"4 seat and 1 1/4"-w nailing flanges full depth of joist, w/ bearing flange to provide bsld support at joist top chord - thickness: 0.062".
5. TOP FLANGE HANGERS: U-shaped joist hangers, full depth of joist, formed from mtl strap w/ tabs bent to extend over & be fastened to supporting member. Strap Width: 2"; thickness: 0.062",
6. BRIDGING: Rigid, V-section, nail-less type, 0.255" thick, length to suit joist size and spacing.
7. POST BASES: Adjustable-post type for bolting to piers w/ standoff plate to raise post 1" above base and w/ 2" min side cover, socket 0.062" thick and standoff and adjustment plates 0.108" thick.
8. JOIST TIES: Flat straps, w/ holes for fasteners, for tying joists together over supports - Width: 1-1/4"; thickness: 0.062"; Length: 16".
9. FLR-TO-FLR TIES: Flat straps, w/ holes for fasteners, for tying upper fl wall studs to band joists and lower fl studs, 1 1/4"-w by 0.097" thick by 30"-l.
10. WALL BRACING: Either T-shaped bracing made for letting into studs in saw kerf, 1 1/8"-w by 18"-l by 0.042" thick w/ formed edges or angle bracing made for letting into studs in saw kerf, 15/16" x 15/16" by 0.040" thick w/ hemmed edges.

FRAMING ACCESSORY MATERIALS:
1. SILL SEALER: Glass-fiber resilient insul fabricated in strip form, 1" nom thickness compressible to 1/32" thick or closed-cell neoprene foam of 1/4" thick, selected from manuf standard widths to suit width of all members indicated.
2. ADHESIVES FOR GLUING FURRING & SLEEPERS TO CONC MASONRY: Formulation complying w/ ASTM D 3498 that is approved for use indicated by adhesive manuf.
3. WATER-REPELLENT PRESERVATIVE: NWWDA-tested and accepted formulation containing 3-iodo-2-propynyl butyl carbamate combined w/ an insecticide containing chlorpyrifos as its active ingredient.

EXECUTION INSTALLATION
1. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.
2. Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry accurately to other construction. Locate nailers, blocking, and similar supports to comply with requirements for installing other construction.
3. Install plywood backing panels by fastening to studs; coordinate locations with utilities requiring backing panels. Install fiberboard plywood backing panels with concealed edges and backing material of testing agency exposed to view.
4. Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.
5. Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty items, and trim.
   A. Provide blocking for fastening gypsum board or bith at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.
6. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.
7. Use inorganic boron for items that are continuously protected from liquid water.
   B. Use copper naphthenate for items not continuously protected from liquid water.
8. Where wood-preservative-treated lumber is in contact w/ masonry or concrete, install continuous flexible flashing separator between wood and metal decking.
9. Securely attach rough carpentry to substrates by anchoring and fastening as indicated, complying with the following:
   A. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code (IBC).

INSTALLATION OF WOOD BLOCKING AND NAILERS
1. Install where indicated and where required for attaching other work. Form to shapes indicated and cut as required for true line and level of attached work. Coordinate locations with other work involved.

INSTALLATION OF WOOD FURRING
1. Install furring and grounds with clearance strips at edges and openings. Shim with wood as required for tolerance of finish work.

PROTECTION
1. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

SECTION 06 16 00 – SHEATHING WITH INTEGRAL WRB

SECTION INCLUDES
1. Wall sheathing.
2. Gypsum wall sheathing.
3. Sheathing joint-and-penetration treatment materials.

ACTION SUBMITTALS
1. Product Data Submittals: For each type of process and factory-fabricated product. Include component materials and dimensions and include construction and application details.
2. Shop Drawings: For air-barrier and water-resistant glass-mat gypsum sheathing assemblies.
   A. Show locations and extent of sheathing, accessories, and assemblies specific to Project conditions.
   A. Include details for sheathing joins and cracks, counterlaboring strips, penetrations, inside and outside corners, terminations, and tie-ins with adjoining construction.
   B. Include details of interfaces with other materials that form part of air barrier.

INFORMATIONAL SUBMITTALS
1. Evaluation Reports: For the following, from ICC-ES.
   A. Wood-structural-panel sheathing.
   B. Fire-exterior-treated plywood.
2. Sheathing manufacturer's warranties.

DELIVERY, STORAGE, AND HANDLING
1. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PROJECT CONDITIONS
PERFORMANCE REQUIREMENTS
1. Fire-Resistance Ratings: As listed according to ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
   A. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

PLYWOOD WITH INTEGRAL WRB
1. GENERAL: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

BASES OF DESIGN
1. ZIP System sheathing by Huber Engineered Woods, LLC.
2. Panel Thickness: 5/8" UNO or drawings.

WALL SHEATHING
1. Gypsum Sheathing: Exterior Gtsmac Sheathing with Integral Weather-Resistive Barrier.
   A. Basis of Design: Securock ExoAir 430 - 5/8-inch Fireode X panel.

FASTENERS
1. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacturer.
   A. For wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS
1. Sealant for Paper-Surfaced Gypsum Sheathing: Elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated and complying with requirements for elastomeric joint sealants specified in Section 079200 "Joint Sealants."

EXECUTION / INSTALLATION
1. Do not use materials with defects that impair quality of sheathing or pieces that are too small or too to use with minimum number of joints or optimum joint arrangement. Arrange joins so that pieces of the largest size are used where possible and in locations of least stress.
2. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.
3. Securely attach to substrate by fastening as indicated, complying with the following:
   A. Table 2304.9.1, "Fastening Schedule," in the ICC's International Building Code.
   B. ICC-ES evaluation report for fastener.
4. Coordinate wall-sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.
5. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

GYPSUM SHEATHING INSTALLATION
1. Comply with GA-253 and with manufacturer's written instructions.
   A. Fasten gypsum sheathing to wood-frame framing w/ nails or screws.
   B. Fasten gypsum sheathing to cold-formed metal framing with screws.
   C. Install gypsum sheathing with 3/8-inch gap where non-load-bearing construction abuts structural elements.
   D. Install gypsum sheathing with 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.
2. Seal sheathing joints according to sheathing manufacturer's written instructions.
   A. Apply elastomeric sealant to joints and fasteners and trowel bd. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
   B. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel sealant to embed tape. Apply second coat of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

06 40 00 – ARCHITECTURAL WOODWORK

1. WORK INCLUDED: Provide arch woork ms quality, expert craftsmanship and joinery skills, where indicated on the dwgs, as specified herein as necessary for complete install.
2. PRIMING & FIN: Note all wdwork must be sealed on all surfaces before install - incl the back-or concealing side, for priming edges and all field-cut ends, w/o exception. Re Div-09 for materials & application of shop and/or field applied fin.
3. QUALITY STANDARDS: Comply w/ "Custom Grade" standards of applicable provisions of the Architectural Woodwork Institute (AWI)'s "Architectural Woodwork Quality Standards" for grades, fin and other requ.
4. DO NOT DELIVER INT WDWORK until bldg is enclosed, wet work is complete and HVAC sys is operating and maintaining temp and relative humidity at occupancy levels during the remainder of the construction period. Deliver wdwork only after wet finishes, conc, plaster, mstwk and terrazzo finishing operations are complete in areas where environmental conditions comply w/ reqs herein.
5. MISC WD MATERIALS: Provide units that comply w/ reqs of AWI quality standard for ea type of wdwork/quality grade indicated and w/ reqs of the following referenced product standards: typ hardboard: AWI A135.4, medium-density fiberboard: ANSI A208.2, Grade MD, particleboard: ANSI A208.1, Grade M-2, solid plywd: DOC PS 1, Medium Density Overlay, Int hardwd plywd and WWPA HP-1.
6. EXT APPLICATIONS: Softwd Plywd: DOC PS 1 - Ext type, Medium-density overlay plywd: ext grade w/ MDO surface both sides.
7. EXT TRIM FOR OPAQUE (PT) FIN: Pinfin cement floor or cellular PVC units in sizes and profiles indicated and in lengths available to min field jts and splices, in smooth fin, UNO, to be of wd-grain textured fin: cement-fiber trim by "HardieTrim"; Cellular PVC par: "Azek Trimboards"; "Fypon Cellular PVC Trim."
8. WD SPECIES & FIN FOR INTERIOR STAINED (STAINED) FIN: Re dwgs – smooth surfaced fin typ on all sizes UNO to be "rough" or "textured" as exposed face surface.
9. WD MATERIAL FOR INT HIGH-GLOSS ENAMEL FIN: Waterproof MDF eg to "Medex" by SierraPine Composite Solutions.
10. WD GRADING: Nonstructural defects are acceptable, but face knots and knot holes, chipped edge knots, short end splits, planer burns, etc, are not acceptable.

INSTALL MATERIALS:
1. Ext nails or screws: Type 304 s/s.
2. At int framing supports, provide self-drilling screws mtl-framing manuf.
3. Anchors: Select material, type, size and fin reqd for ea substrate for secure anchorage, penetrating a min of 1 1/4" into wd substrate materials. Provide toothed-sd or load-cap sleeves for drilled-in-place anchors.
4. Power nailing sys are permitted using fasteners w/ eq or greater performance characteristics of typ nails.

FABRICATION: Provide and maintain units w/ 7 to 12% moisture content typ. Comply w/ AWI Section 300 custom grade, UNO or other AWI rank as applicable.
1. Fabricate wdwork to dims, profiles and dtls indicated.
2. Backout or groove backs of wdwork members and backs of other wide, flat members, except at ends exposed in fin work.
3. At int trim members, provide a min 10 deg positive slope on horiz surfaces to provide positive drainage & to prevent moisture accumulation on trim members.
4. At tapered members, provide full length, non-available lumber, use veneered const - do not glue units for reqd width.
   Typ, new edges to min 1/16" except, UNO,
6. Complete fab, including assembly, fin & hardware application, to max extent possible, before shipment to project. Mark units for reassembly according to schedule or system indicated for shipment and install.
7. Where necessary for fitting at site, provide allowance for scribing, trimming and fitting.

FAB OF NATURAL-FIN INT WD PNL & WAINSCOTS: Comply w/ AWI Section 500-Custom Grade reqs, w/ solid-wd lumber frames and edges matching of adjacent veneer faces; back-match. Vert matching of adjacent veneer leaves; match. Veneer matching w/in pnl face; cir match. Prin-match panels within pnls in ea separate area using premanuf sets used full width.
   A. PLAM SHELVES: 3/4" thick thermoset decorative pnl exposed to bot surface w/ NEMA LD-3 grade high-pressure PLAM fin on top surface – sdr-edged w/ 3-mil PVC tape matching PLAM.

SHOP PRIMING:
1. WDWORK FOR TRANSPARENT FIN: Shop seal wdwork for transparent fin w/ stain (if reqd), other reqt pretreatments and first coat of fin as specified.
2. PREP FOR FIN: Comply w/ referenced quality standard for sanding, filling countersunk fasteners, grain-filling and sealing, and edge preparation to comply w/ requirements for indicated fin.
3. PROVIDE A SMOOTH, UNIFORM SURFACE FOR TRANSPARENT FIN: Comply w/ AWI Section 400, Custom Grade and as follows: AWI type of cabinet const: frameless style, flush overlay, UNO, Grain-matching and A-matching grain vary for drawer fronts, doors and fixed pnls, UNO, Matching of veneer leaves: book match, Vert matching of veneer leaves: end match.
4. TYP FABRICATION OF WD CABINETS FOR OPAQUE FIN: Comply w/ AWI Section 400, Custom Grade reqs for wd cabinets and as follows: AWI type of cabinet const: frameless (face frame) w/ flush overlay, UNO, WD PNLS for drs, drawers, cabinet sides and other exposed surfaces: sealed MDF.
5. PLASTIC-LAMINATE (PLAM) CABINETS: Comply w/ AWI Section 400 – Custom Grade reqs for PLAM cabinets.
6. AWI type of cabinet const: frameless w/ flush overlay.

SHOP FINISHING:
1. WDWORK FOR TRANSPARENT FIN: Shop seal wdwork for transparent fin w/ stain (if reqd), other reqt pretreatments and first coat of fin as specified.
2. PREP FOR FIN: Comply w/ referenced quality standard for sanding, filling countersunk fasteners, grain-filling and sealing, and edge preparation to comply w/ requirements for indicated fin.
3. PROVIDE A SMOOTH, UNIFORM SURFACE FOR TRANSPARENT FIN: Comply w/ AWI Section 400, Custom Grade and as follows: AWI type of cabinet const: frameless (face frame) w/ flush overlay, UNO, WD PNLS for drs, drawers, cabinet sides and other exposed surfaces: sealed MDF.
7. PLASTIC-LAMINATE (PLAM) CABINETS: Comply w/ AWI Section 400 – Custom Grade reqs for PLAM cabinets.
8. AWI type of cabinet const: frameless w/ flush overlay.

SHOP FINISHING:
1. WDWORK FOR TRANSPARENT FIN: Shop seal wdwork for transparent fin w/ stain (if reqd), other reqt pretreatments and first coat of fin as specified.

INSTALL MATERIALS:
1. Ext nails or screws: Type 304 s/s.
2. At int framing supports, provide self-drilling screws mtl-framing manuf.
3. Anchors: Select material, type, size and fin reqd for ea substrate for secure anchorage, penetrating a min of 1 1/4" into wd substrate materials. Provide toothed-sd or load-cap sleeves for drilled-in-place anchors.
4. Power nailing sys are permitted using fasteners w/ eq or greater performance characteristics of typ nails.

FABRICATION: Provide and maintain units w/ 7 to 12% moisture content typ. Comply w/ AWI Section 300 custom grade, UNO or other AWI rank as applicable.
1. Fabricate wdwork to dims, profiles and dtls indicated.
2. Backout or groove backs of wdwork members and backs of other wide, flat members, except at ends exposed in fin work.
3. At int trim members, provide a min 10 deg positive slope on horiz surfaces to provide positive drainage & to prevent moisture accumulation on trim members.
4. At tapered members, provide full length, non-available lumber, use veneered const - do not glue units for reqd width.
   Typ, new edges to min 1/16" except, UNO,
6. Complete fab, including assembly, fin & hardware application, to max extent possible, before shipment to project. Mark units for reassembly according to schedule or system indicated for shipment and install.
7. Where necessary for fitting at site, provide allowance for scribing, trimming and fitting.

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2. WATERPROOFING MEMBRANE: Provide self-adhering, modified bituminous sht mo ess thon 60-mil thick, consisting of 56 mils of rubberized asphalt laminated to a 4-mil-thick, polyethylene film at a release liner on the adhesive side. Subject to compliance wi reqs. Products that may be incorporated into the work include:
   - Carlisle Coatings & Waterproofing Inc.; CCW MiraDRI 860/861
   - Grace, W. R. & Co.; Bituthene 3000
   - Henry Company; Blueskin WP 200
   - Meadows, W., R., Inc.; Sml Light MA-Rol
   - Pecora Corporation; Duramem 700-SM
3. CONC WATERSTOPS: "Volclay" Waterstop # RX 101, 1"w by .75"d, self-adhering ebtonite/thermorte material as manuf by the American Colloid Company. Provide manuf special adhesive and 2" conc cut nails at all jts.
4. INSULATION / DRAINAGE PNL (at below-grade walls w/o occupied space or perimeter insul): Prib consisting of a nonwoven, needle-punched geotextile facing laminated to side w/ a polymeric film bonded in the other side of a nonbiodegradable, multiple-plastic-drainage core. Acceptable products include but are not limited to the following:
   - Carlisle's "CCW MiraDRAIN 6200" and "CCW MiraDRAIN 6200XL" – 0.040" thick
   - Grace's "Hydroduct 220" (vert) or "Hydroduct 660" (horiz) – 0.44" thick
5. PROTECTION BD: Premolded, semirigid asphaltfiber composition bd, 1/4" thick, formed under heat and pressure of standard sizes.
6. INSULATED PROTECTION / DRAINAGE PNLS: Re Div-07.
7. WATERPROOFING & FLASHING ACCESSORIES: Provide sealants, pourable sealers, cone and vent flashings, inside and outside corner flashings, termination reglets and other accessories recommended by waterproofing manuf for intended use and as follows:
   - PRIMERS: Provide conc primer recommended by the manuf of sht waterproofing material for applications reqd.
   - ADHESIVES: Adhesive compounds and tapes recommended by waterproofing sht manuf, for waterproof sealing of seams in membrane and for waterproof sealing of jts between membrane and flashings, adj surfaces and projections through membrane.
   - TERMINATION BARS: Manuf standard alum or formed polymer bars, approximately ⅛" w, prepunched for anchors w/ nonc-corrosive s/s anchors.

EXECUTION: Per 07 13 00, manuf written instructions, referenced standards and in compliance w/ any regs of AHJ.

SECTION 07 21 00 – THERMAL INSULATION

ACTION SUBMITTALS
1. Product Data: Provide insulation work, as shown on the drawings, as specified herein, and as needed to meet the requirements of the construction shown in the Contract Documents. Applications of insulation specified in this section include the following:
   A. Exhaust polystyrene foam-plastic board insulation.
   B. Polyisocyanurate foam-plastic board insulation.
   C. Glass-fiber blanket insulation.

DELIVERY, STORAGE, AND HANDLING
1. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
2. Protect foam-plastic board insulation as follows:
   A. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
   B. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site until just before installation time.
   C. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

QUALITY ASSURANCE
1. Fire-test-response characteristics
   A. Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency qualified to perform testing and representatives. Identify materials with appropriate markings of applicable testing and inspecting agency.
   B. Surface-Burning Characteristics: ASTM E 84.
   C. Fire-Resistance Ratings: ASTM E 119.
   D. Combustion Characteristics: ASTM E 136.

PRODUCTS
PERFORMANCE REQUIREMENTS
1. PROTECT INSULATION MATERIALS from physical damage and from deterioration by moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.
2. Protect plastic insulation as follows:
   A. Do not expose to sunlight, except to extent necessary for period of installation and concealment.
   B. Protect against ignition at all times. Do not deliver plastic insulating materials to Project site before installation time.

GENERAL
1. PROVIDE PREFORMED UNITS, sized to fit applications indicated; selected from manufacturer's standard thicknesses, widths, and lengths, as appropriate for conditions of use indicated.

UNFACED BATT or BLANKET INSULATION
1. Provide formaldehyde free, un-faced batts or blankets (without kraft-paper facings) consisting of fiberglass, or rock-wool meeting ASTM C 665, Type I (blankets without membrane facing) with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, passing ASTM E 136 for combustion characteristics. Subject to compliance with requirements, available manufacturers include but are not limited to:
   A. GLASS-FIBER INSULATION:
   B. CertainTeed Corporation.
   C. Guardian Building Products, Inc.
   D. Johns Manville Corporation.
   E. Knauf Fiber Glass.
   F. Owens Corning

PROTECTION BOARD
1. Preformed, semirigid asphaltfiber composition board, 1/4-inch-thick, formed under heat and pressure, of standard sizes.

EXTRUDED-POLYSTYRENE INSULATION (continuous insulation – ci)
1. Extruded-polystyrene (XPS) board insulation per ASTM C 578 – Type IV (1.60 PCF – compressive strength of 25 PSI) with insulation value of R-5 per-inch, maximum flame-spread and smoke-developed indexes of 75 and 450, respectively. Acceptable Manufacturers include: RMAX, DiversiFoam Products, Owens Corning, or Pactiv Building Products Division.

EXECUTION / PREPARATION
1. Clean substrates of substances that are harmful to insulation, including removing projections capable of puncturing insulation or vapor retarders, or that interfere with insulation attachment.

INSTALLATION, GENERAL
1. Comply with insulation manufacturer's written instructions applicable to products and applications.
2. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.
3. Install insulation with manufacturer's R-value label exposed after insulation is installed.
4. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.
5. Provide sizes to fit applications and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation unless multiple layers are otherwise shown or required to make up total insulation thickness.

INSTALLATION OF INSULATION IN FRAMED CONSTRUCTION
1. Blanket Insulation: Install in cavities formed by framing members according to the following requirements:
   A. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
   B. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
   C. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.

MISCELLANEOUS VOIDS
1. Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
   A. Closed-Cell Polyurethane
   B. Do not apply insulation until installation of pipes, ducts, conduits, wiring, and electrical outlets in walls is completed and windows, electrical boxes, and other items not indicated to receive insulation are installed.
   C. After insulation is applied, make flush with face of studs by using method recommended by insulation manufacturer.

PROTECTION
1. Protect installed insulation from damage due to harmful weather exposures, physical abuse, and other causes.
2. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

SECTION 07 21 19 – FOAMED-IN-PLACE INSULATION

1. WORK INCLUDED: Provide concealed, foamed-in-place polyurethane foam insul where indicated on the dwgs and as necessary for complete install.

QUALITY ASSURANCE:
1. INSTALLER QUALIFICATIONS: A firm or individual certified, licensed by material manuf as experienced and w sufficient trained staff to install manuf products according to specified reqs. A manufacturer's agreement to sell to sprayed fire-resistive materials to an entity does not in itself confer qualification on the installer.
2. SOURCE LIMITATIONS: Obtain materials through 1 source from a single manuf.
3. DELIVERY, STORAGE & HANDLING: Deliver in manuf original containers clearly labeled w/ manuf name, product ID, safety info, net wt of contents & expiration date. Store in a safe manner & where the temps are within the limits specified by the material manuf. Remove empty containers must be removed from site on a daily basis. Store and dispose of solvent-based materials and materials used w/ solvent-based materials, in accordance w/ reqs of local AHJ.
4. PROJECT CONDITIONS: Maintain environmental conditions w/in limits recommended by manuf for optimum results. Do not install products under environmental conditions outside manuf absolute limits. Ventilate area to receive insul to maintain safe working conditions. Protect workers as recommended by standards and manuf recommendations. Protect adjacent surfaces, wires, equip and site areas from damage of overspray.

PRODUCTS
1. CLOSED-CELL SPRAY POLYURETHANE FOAM INSULATION
   A. Closed-Cell Spray Polyurethane Foam: ASTM C1029, Type II, minimum density of 1.5 lbs/cu ft, w/ minimum aged R-value per 1-inch thickness of 6.2 deg F x h x sq ft/Btu at 75 deg F.
   B. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. Carlisle Spray Foam Insulation
      b. Gaco Western Building Envelope
      c. Henry Company; a Carlisle company
      d. Huntsman Building Solutions
      e. Johns Manville; a Berkshire Hathaway company
      f. Master Builders Solutions; brand of MBCC Group
      g. NCFI Polyurethanes; a division of Barnhardt Manufacturing Company
      h. SES Foam LLC
      i. Specialty Products Company
      j. Thermoseal USA
      k. Venture Foam, Inc.
   C. Surface-Burning Characteristics: Comply with ASTM E84; testing by a qualified testing agency. Identify insulation with appropriate markings of applicable testing agency.
      a. Flame-Spread Index: 25 or less.
      b. Smoke-Developed Index: 450 or less.
      c. Fire Propagation Characteristics: Passes NFPA 285 and NFPA 276 testing as part of assembly.

EXECUTION:
1. EXAMINE SUBSTRATES, areas and conditions, w/ Installer present, for compliance w/ reqs for substrates and other conditions affecting performance of work. A substrate is in satisfactory condition if it complies w/ SWI:
   - Substrates are free of oil, grease, incompatible primers, dirt or other foreign substances capable of impairing bond of materials w/ substrates
   - Objects penetrating foundation-wall surfaces, including clips, hangers, support sleeves and sim items, are securely attached to substrates.
   - Substrates are not broken, spalled, or have pockets, voids, equip and other suspended const that will interfere w/ applying material.
   - Concrete surfaces to receive insul are sufficiently cured.
2. PREP: Cover other work subject to damage from overspray of materials during application. Clean substrates of substances that could impair bond, including dirt, oil, grease, release agents and incompatible primers, grs or other coatings.
3. COMPLY W/ MANUF WRITTEN INSTRUCTIONS for mixing materials, application procedures and types of equip used to mix, convey and spray on material, as applicable to the particular conditions of install and as required to maintain warranties. Install & adhere insul to substrates as follows:
   - EXTEND MATERIAL IN FULL THICKNESS over the entire area of ea substrate, UNO in writing by material manuf, install body of insul in a single course.
   - REMOVE & REPLACE APPLICATIONS of material that does not comply w/ manuf install reqs or of material characteristics indicated above.
   - APPLY ADDITIONAL MATERIALS per manuf written instructions where application thickness does not comply w/ specified reqs.

SECTION 07 25 00 – SHEET-TYPE WEATHER RESISTIVE BARRIER (WRB)

1. WORK INCLUDES: Provide WRB behind exterior sys where indicated on the dwgs as specified herein and as necessary for complete install. The work of this section includes the primary barrier as well as flashings, sealants, primers, sealant & adhesive tapes, and flexible membrane flashings and jt treatments necessary to bridge and seal the following air leakage pathways and locations: Jts and gaps in substrate materials; Jts and gaps between substrate and between dissimilar bldg envelope materials. Connections of the walls to the roof air barrier. Connections of the walls to the bldg fdns. Seismic, ejs and cjs in the substrate material. Openings and penetrations at wall, floor and roof assemblies, storefront and curtainwall. Piping, conduit, duct and sim penetrations through the substrate. Ties, screws, bolts, anchorages and sim penetrations for subsequent insul and fin. Other air-leakage pathways into the bldg envelope.

REFERENCED STANDARDS:
1. ASTM D882: Test Method for Tensile Properties of Thin Plastic Sheeting
2. ASTM D1117: Standard Guide for Evaluating Non-woven Fabrics
3. ASTM E84: Test Method for Surface Burning Characteristics of Building Materials
4. ASTM E96: Test Method for Water Vapor Transmission of Materials
5. ASTM E1677: Specification for Air Retarder Material or System for Framed Building Walls
6. ASTM E2178: Test Method for Air Permeance of Building Materials
7. AATCC (American Association of Textile Chemists and Colorists): Test Method 127 Water Resistance: Hydrostatic Pressure Test
8. TAPPI (Technical Association of the Pulp and Paper Industry): Test Method T-410: Grams of Paper and Paperbd (Wt per Unit Area). Test Method T-460, Air Resistance (Gurley Hill Method)

PERFORMANCE REQS:
1. Vapor-permeable (breathing) membrane sys allowing water-vapor to pass through but being impervious to liq water, and a cont vapor-sprse acting to direct incidental liquid-water from condensation and infiltration to be discharged to the bldgs ext. The WRB must be capable of accommodating movement at substrate jts and gs, at changes in sheathing substrate materials, at penetrations including wke and dr openings through the sheathing surface and at terminations/transitions of sheathing w/o deterioration or moisture leakage exceeding the indicated limits.

QUALITY ASSURANCE:
1. SOURCE LIMITATIONS: Provide WRB and accessory materials produced by single manuf or utilizing recomd, qty materials specified for use by WRB manuf.
2. INSTALLER QUALIFICATIONS: Entity w/ no less than 3 yrs of successful experience in install of sht WRB assemblies sim to the reqs for this project, acceptable to the manuf of the primary products specified, as verified by a current written recommendation by manuf.
3. INSTALL PROCEDURES must be in full accordance w/ WRB manuf install guidelines and recommendations.

QUALITY ASSURANCE:
4. PRE-INSTALL CONFERENCE: Per reqs of manuf warranty program, arrange for a pre-install conference to be held at project site prior to the start of work and prior to the install of the work of this section. Req attendance by the const superintendent, const project manager, installer and manuf rep. Review WRB install procedures, manuf's written install instructions, material compatibility and substrate, status of substrate work and prep, areas of potential conflict and interface, availability of WRB and accessory materials, installer training reqs, equip, scaffolding and scaffolding and coord methods, procedures and sequencing reqs for full and proper install, integration and protection.

DELIVERY, STORAGE & HANDLING
1. DELIVER MATERIALS in original packages, containers or bundles bearing brand name and identification of manuf or supplier.
2. STORE MATERIALS in their original undamaged packaging, inside under cover and keep dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, const traffic and other damage. Store rolled materials according to manuf written instructions – stack flat materials to prevent sagging. Store liquid materials in their original undamaged packages in a clean, dry, protected location and with temp range rept by manuf – remove and replace liquid materials that cannot be applied w/in their stated shelf life.
3. ENVIRONMENTAL LIMITATIONS - APPLY AIR-BARRIER materials w/in the range of ambient and substrate temps recommended by air barrier manuf. Protect substrates from environmental conditions that affect performance of air barrier. Do not apply air barrier to a damp or wet substrate or during damp or wet.
4. SCHEDULING - REVIEW REQS FOR SEQUENCING of install of WRB assembly w/ install of windows, doors and storefront, through-wall flashings and other assemblies. Schedule install of WRB materials and air cladding w/in 9 months of WRB assembly install.

WARRANTY:
1. SPECIAL MANUF WARRANTY: Provide WRB manuf "material performance" warranty, indicating the installed sys as provided by the manuf will conform to the air- and water-penetration resistance properties indicated throughout the warranty period.
2. WARRANTY PERIOD: 10 yrs from date of substantial completion.

PRODUCTS:
1. WRB: ASTM E 1677, Type I air retarder; w/ flame-spread and smoke-developed indexes of less than 25 and 450, respectively, when tested according to ASTM E 84. UV stabilized and as acceptable to AHJ.
2. Air Penetration: 0.001 CFM / sf at 75 Pa, when tested per ASTM E 2178 Type I per ASTM E 1677.
3. Water-Vapor Transmission: 28 perms max, when tested per ASTM E 96, Method B.
4. Water Penetration Resistance: 280 cm when tested per AATCC Test Method 127.
5. Air Resistance: air infiltration at >1500 seconds, when tested in accordance w/ TAPPI Test Method T-460.
6. Tensile Strength: 38/35 lbs/in, when tested per ASTM D 882, Method A.
7. Tear Resistance: 12/10 lbs, when tested per ASTM D 1117.
8. Surface Burning Characteristics: Class A, when tested per ASTM E 84: flame Spread: 10, Smoke Developed: 10.
9. Allowable UV exposure time: No less than 3 months.
10. BLOCD.: "Tyvek CommercialWrap D" by Dupont.
11. ACCEPTABLE ALTERNATIVE MANUF: Subject to compliance w/ reqs, products that may be incorporated into the work include, but are not limited to, the following: Dow Chemical Company; Styrofoam Weathermate Plus Brand Housewrap, Ravel Industries Inc.; Rufco-Wrap.

ACCESSORY MATERIALS:
1. SILL SEALER: Durable and compressible sill sealer strip, Subject to compliance w/ reqs.
2. FLEXIBLE FLASHING: Provide flexible flashing at openings for the work, but are not limited to, the following: Protecto Wrap Premium Energy Sill Sealer.
3. JT SEAMING TAPE: 2"w min pressure-sensitive tape as recommended by WRB manuf for sealing jts and penetrations in WRB membrane.
4. FASTENERS: WRB manuf standard recommended corrosion-resistant fasteners for securing membrane to sheathing, consisting of a thermal cap, standard washer and shaft attachments and fastener capable of penetrating through sheathing and into framing as indicated below; selected for properties of pullout, tensile and shear strength regd to resist loads of application indicated and of the following description: For attachment to st studs from 0.033 to 0.112" thick (20 ga to 14 ga), provide sht-met screw complying w/ ASTM C 954. For attachment to wd framing members, provide #14 galv sd nails.
5. WRB MEMBRANE FLASHING: Composite, self-adhesive, flashing product as recommended for use by the WRB membrane manuf, consisting of a pliable, rubberized-asphalt compound, bonded to a high-density cross-laminated polyethylene film to produce an overall thickness of not less than 0.040". BLOCD.: DuPont's "StraightFlash" flexible, but not "formable" - typ for straight joint conditions & openings; for flashing of penetrations through sheathing) or Dupon's "FlexWrap" ("formable" for use at all or head flashing conditions and other locations that material must be bent or wrapped onto adjacent surfaces or for other custom shapes.
6. WRB FLASHING PRIMER: Provide flashing manuf recommended primer to assist in adhesion between substrates and membrane flashing and flashing material. Acceptable products include, but are not limited to: 3M High Strength 90; Dense Bulp Spray; SIA 855; Permagrip 105; ITW TACC Star Pry N Spray.
7. WRB SEALANT: Provide sealants that comply w/ ASTM C920, elastomeric polymer sealant to maintain watertight conditions. Acceptable products include, but are not limited to: Liquid Nails LN-109; Polybilt 236; Dap 33; Titebond Liquid; 3M High Strength 90; SIA 855.

EXECUTION
1. Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any regs of AHJ.

SECTION 07 42 13 – FORMED METAL WALL PANELS

RELATED DOCUMENTS
1. Drawings and general provisions of the contract, including General and Supplementary Conditions and Divisions 01 apply to this section

SECTIONS INCLUDED
1. Concealed fastener interlocking solid metal wall panels.

REFERENCES
1. Reference is made to the following:

ACTION SUBMITTALS
1. Product Data for each product
   A. Include construction details, materials descriptions, dimensions of individual components and profiles, and finishes for each type of panel and accessory.
2. Shop Drawings
   A. Include fabrication and installation layouts of metal panels; details of edge conditions, joints, panel profiles, corners, anchorages, attachment system, trim, flashings, closures, and accessories; and special details.
   B. Include details of the flashing, trim, and anchorage systems, at a scale of not less than 1-1/2" per foot.
3. Samples for Initial Selection: For each type of metal panel indicated with factory-applied color finishes, include Samples of trim and accessories involving color selection.

CLOSEOUT SUBMITTALS
1. Maintenance Data: For metal panels to be included in maintenance manuals.

QUALITY ASSURANCE
1. Installer Qualifications: Installer certified by the manufacturer and the work to be supervised by a person having successfully completed a manufacturer training program regarding proper installation of the specified product.
2. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

DELIVERY, STORAGE, AND HANDLING
1. Deliver components, metal panels, and other manufactured items in manufacturer 's original, unopened, undamaged packaging with identification labels intact so as not to be damaged or deformed. Package metal panels for protection during transportation and handling.
2. Unload, store, and erect metal panels in a manner to prevent bending, warping, twisting, and surface damage.
3. Store wall panel materials on dry, level, firm and clean surface, elevate one end of bundle to allow moisture to run off; cover and ventilate to allow air circulation. Do not store metal panels in contact with other materials that might cause staining, denting, or other surface damage.
4. Retain strippable protective covering on metal panels during installation.

FIELD CONDITIONS
1. Weather Limitations: Proceed with installation only when current and forecasted weather conditions permit. Assembly of metal panels to be performed in accordance with manufacturers' written instructions and warranty requirements.

COORDINATION
1. Coordinate metal panel installation with rain drainage work, flashing, trim, construction of soffits, and other adjoining work to provide a leakproof, secure, and noncorrosive installation.

WARRANTIES
1. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of metal panel systems that fail in materials or workmanship within specified warranty period.
   A. Failures include, but are not limited to, the following:
      a. Structural failures including rupturing, cracking, or puncturing.
      b. Deterioration of metals and other components beyond normal weathering.
   B. Warranty Period: 2 years from date of Substantial Completion.
2. Special Warranty on Finishes: Manufacturer's standard form in which manufacturer agrees to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period.
   A. Finish Warranty Period: 20 years from date of Substantial Completion.

PERFORMANCE REQUIREMENTS
1. Structural Performance: Provide metal panel systems capable of withstanding the effects of the following loads, based on testing in accordance with ASTM E1592:
   A. Wind Loads: As indicated on Drawings.
   B. Other Design Loads: As indicated on Drawings
2. Fire Performance Characteristics: Assembly shall meet the NFPA 285 test method with steel panels.
3. Air Infiltration: Air leakage of not more than 0.002 cfm/sq. ft. (0.3 L/s per sq. m) when tested in accordance with ASTM E283 at the following test-pressure difference:
   A. Test-Pressure Difference: 1.57 lbf/sq. ft. (75 Pa).
4. Water Penetration under Static Pressure: No water penetration when tested in accordance with ASTM E331 at the following test-pressure difference:
   A. Test-Pressure Difference: [Minimum 1.57 lbf/sq. ft. (75 Pa)] [Calculume 6.24 lbf/sq. ft. (300 Pa)]
5. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes by preventing buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
   A. Temperature Change (Range): [120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces]

CONCEALED-FASTENER, INTERLOCKING METAL WALL PANELS
1. GENERAL: Provide factory-formed metal panels designed to be field assembled by interconnecting side edges of adjacent panels and mechanically attaching panel clip to supports using concealed fasteners [and factory-applied sealant] in side laps.
2. INTERLOCKING NON-SYMMETRICAL RIBBED CONCEALED FASTENER PROFILE , [Solid], Metal Wall Panels M-1: Formed with trapezoidal major ribs; with reveal joint between the panels.
   A. Basis-of-Design Product: Subject to compliance with requirements, provide Morin by Kingspan; Morin Integrity Series, XAB-16
   B. Panel Coverage: [16"].
   C. Panel Depth: [1.875"].

MISCELLANEOUS MATERIALS
1. MISCELLANEOUS METAL SUBFRAMING AND FURRING : ASTM C645, cold-formed, metallic-coated steel sheet, ASTM A653/A653M, G90 (Z275 hot-dip galvanized) coating designation or ASTM A792/A792M, Class AZ50 (Class AZ150) aluminum-zinc-alloy coating designation unless otherwise indicated. Provide manufacturer's standard sections as required for support and alignment of metal panel systems.
2. PANEL ACCESSORIES: Provide components required for a complete, weathertight panel system including trim, copings, fascia, mullions, sills, corner units, clips, flashings, sealants, gaskets, fillers, closure strips, and similar items. Match material and finish of metal panels unless otherwise indicated.
   A. Closures: Provide closures as required, fabricated of same metal as metal panels.
   B. Closure Strips: Closed-cell, expanded, cellular, rubber or crosslinked, polyolefin foam or closed-cell laminated polyethylene; minimum 1-inch (25-mm) thick, flexible closure strips; cut or premolded to match metal panel profile. Provide closure strips where indicated or necessary to ensure weathertight construction.
   C. Extrusions: Manufacturer's standard extruded aluminum trim.
   D. Mineral Corners: Structurally bonded horizontal outside or inside stainless corners matching metal wall panel material, profile and factory applied finish fabricated by metal wall panel manufacturer.
      a. Welded, riveted or field fabricated corners are not acceptable.
      b. Basis-of-Design Morin; Milcreast Corners.
      c. Size: 24" by 24" inches standard size, Contact manufacturer for option sizes or U-Shape.
3. FLASHING AND TRIM: Provide flashing and trim formed from same material as metal panels as required to seal against weather and to provide finished appearance. Locations include, but are not limited to, bases, drips, rake, jambs, corners, endwalls, flames openings, reglets, fascia, parapet caps, soffits, reveals, and fillers. Finish flashing and trim with same finish system as adjacent metal panels.
4. PANEL SEALANTS: Provide sealant type recommended by manufacturer that are compatible with panel materials, substrates, remaining, and do not damage panel finish.
   A. Sealant Tape: Pressure-sensitive, 100 percent solids, gray polyisobutylene compound sealant tape with integral spacer strip. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
   B. Joint Sealant: ASTM C920, elastomeric polyurethane or silicone sealant of type, grade, class, and use class locations required to seal joints in metal panels and remain weathertight; and as recommended in writing by metal panel manufacturer.
   C. Butyl-Rubber-Based, Solvent-Release Sealant: ASTM C1311.

FABRICATION
1. GENERAL: Fabricate and finish metal panels and accessories at the factory, by manufacturer's standard procedures and processes, as necessary to fulfill indicated performance requirements demonstrated by laboratory testing. Comply with indicated profiles and with dimensions and structural requirements.
2. Fabricate metal panel joints with factory-installed captive gaskets or separator strips that provide a weathertight seal and prevent metal-to-metal contact, and that minimize noise from movements.
3. Sheet Metal Flashing and Trim: Fabricate flashing and trim to comply with manufacturer's recommendations and industry standard practices. Fabricate sheet metal flashing and trim from the same material as metal panels, unless otherwise indicated.
   A. Form exposed sheet metal accessories that are without excessive oil canning, buckling, and tool marks and that are true to line and levels indicated, with exposed edges folded back to form hems.
   B. Seams for Aluminum: Fabricate nonmoving seams with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.
   C. Sealed Joints: Form nonexpansion joints in flashing and trim to accommodate sealant and to comply with SMACNA standards.
   D. Conceal fasteners from view locations where possible. Exposed fasteners are not allowed on faces of accessories exposed to view.
   E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal recommended in writing by metal panel manufacturer.
      a. Size: As recommended by SMACNA's "Architectural Sheet Metal Manual" or metal panel manufacturer for application but not less than thickness of metal being secured.

FINISHES
1. PROTECT MECHANICAL AND PAINTED FINISHES on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.
2. APPEARANCE OF FINISHED WORK: Variations in appearance of abutting or adjacent pieces are acceptable if they are within one-half of the range of approved Samples. Noticeable variations in same piece are not acceptable. Variations in appearance of other components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

EXECUTION
EXAMINATION
1. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances, metal panel support system, and other conditions affecting performance of the Work.
   A. Examine wall sheathing to verify that sheathing joints are supported by framing or blocking and that installation is within tolerances required by metal wall panel manufacturer.
      a. Verify that air-water-resistive barriers have been installed over sheathing or backing substrate to prevent air and moisture penetration.
   B. Examine roofing system for components and systems penetrating metal panels to verify actual locations of penetrations relative to seam locations of metal panels before installation.
   C. Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION
1. Miscellaneous Supports: Install subframing, furring, and other miscellaneous panel support members and anchorages in accordance with ASTM C754 and metal panel manufacturer's written recommendations.

METAL PANEL INSTALLATION
1. General: Install metal panels in accordance with manufacturer's written instructions in orientation, sizes, and locations indicated on Drawings. Install panels perpendicular to supports unless otherwise indicated. Allow provisions in the assembly for thermal and structural movement.
   A. Shim or otherwise plumb substrates receiving metal panels.
   B. Flash and seal metal panels at perimeter of all openings. Fasten with self-tapping screws. Do not install metal panels that are damaged or have lost their paint finish; replace them with new panels.
   C. Locate and align wall panel units vertical and horizontal alignment.
   D. Install flashing and trim as metal panel work proceeds.
   E. Locate panel splices over, but attached to, structural supports. Stagger panel splices and end laps to avoid a four-panel lap splice condition.
   F. Align bottoms of metal panels and fasten with blind rivets, bolts, or self-tapping screws. Fasten flashings and trim around openings and similar elements with self-tapping screws.
   G. Provide weathertight escutcheons for pipe and conduit penetrations.
2. Fasteners:
   A. Steel Panels: Use stainless steel or plated fasteners.
   B. Aluminum Panels: Use stainless steel fasteners.
3. Metal Protection: Where dissimilar metals contact each other or corrosive substances, protect against galvanic action as recommended in writing by metal panel manufacturer.
4. Interlocking Metal Panel Installation: Attach metal panels to supports with clips and fasteners at each interlocking joint with a spacing recommended by manufacturers.
5. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Provide concealed fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that are permanently watertight.
   A. Install exposed flashing and trim that is without buckling and tool marks, and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and achieve watertight performance.
   B. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim. Space movement joints at a maximum of 10 ft. (3 m) with no joints allowed within 24 inches (610 mm) of corner or intersection. Where frequent expansion provisions cannot be used or would not be sufficiently waterproof, form expansion joints of interlocking hooked flanges, not less than 1 inch (25 mm) deep, filled with mastic sealant (concealed within joint).

FIELD QUALITY CONTROL
1. Testing Agency: Engage a qualified testing agency to perform tests and inspections.
2. Water-Spray Test: After installation, test area of assembly for water penetration in accordance with AAMA 501.2.

CLEANING AND PROTECTION
1. Remove temporary protective coverings and strippable films, if any, as metal panels are installed, unless otherwise indicated in manufacturer's written installation instructions. On completion of metal panel installation, clean finished surfaces as recommended by metal panel manufacturer. Maintain in a clean condition during construction.
2. After metal panel installation, clear weep holes and drainage channels of obstructions, dirt, and debris.
3. Replace metal panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

SECTION 07 46 46 – FIBER-CEMENT SIDING

SECTIONS INCLUDED
1. Fiber cement plank lap siding

REFERENCE STANDARDS
1. ASTM C1186, Standard Test Methods for Sampling and Testing Fiber-Cement Flat Sheet, Roofing and siding Shingles, and Clapboards: 2023.
2. ASTM C1186, Standard Specification for Flat Fiber-Cement Sheets: 2022, with 2023 Editorial Revision.
3. ASTM D3359, Standard Test Methods for Rating Adhesion by Tape Test: 2023.
4. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials: 2020.
5. ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials: 2024.
6. ASTM E136, Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750 Degrees C: 2022.
7. ASTM E330/E330M, Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference: 2021.
8. ICC-ES Evaluation Reports ESR-2290 and ESR-2273 (IBC, IRC, CBC, CRC), Current Editions.

SUBMITTALS
1. See Section 01 30 00, Administrative Requirements.
2. Product Data:
   A. Manufacturer's product data sheets.
   B. Manufacturer's storage and handling requirements.
   C. Manufacturer's preparation instructions.
   D. Manufacturer's installation instructions.
   E. Manufacturer's operation and maintenance instructions.
3. Shop Drawings:
   A. Provide detailed drawings showing dimensions, layout, joints, construction details, and attachments.
   B. Indicate atypical non-standard applications outside of manufacturer 's standard details and applications.
4. Selection Samples:
   A. Provide samples of complete sets of color strips representing manufacturer 's full range of available colors and patterns for each finish product specified.
5. Installers qualification statement.
6. Warranty:
   A. Manufacturer's sample warranty.
   B. Manufacturer's executed written warranty, completed in Owner's name and registered with manufacturer.

QUALITY ASSURANCE
1. Installer Qualifications: Company specializing in work specified in this section with a minimum of 5 years of experience with installation of products of this type.

DELIVERY, STORAGE, AND HANDLING
1. Deliver and store products in manufacturer 's unopened packaging with labels intact until ready for installation.
2. Store siding flat on a smooth level surface and carry on its side.
3. Protect edges and corners from chipping.
4. Store materials in dry, waterproof, well-ventilated cover, elevated above grade, and kept dry prior to installation.
5. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with manufacturer 's instructions and applicable requirements of the Authorities Having Jurisdiction.
6. Protect materials from damage, dust, or other detrimental conditions.

FIELD CONDITIONS
1. Maintain environmental conditions including temperature, humidity, and ventilation in accordance with the limits indicated in the manufacturer 's written instructions.
2. Do not install products in conditions outside of the manufacturer 's stated limits.

WARRANTY
1. Manufacturer's Limited, Non Pro-rated Product Warranty:
   A. Plank, Soffit, and Trim: 30-year Warranty.
   B. Color-Plus Finish: 15-year Warranty.
   C. Provided that product is installed and maintained in accordance with manufacturer 's written requirements, warranty for 15-years from date of purchase covering peeling, cracking, and chipping.
2. Installer Warranty: Owner Approved warranty provided by installer.

PRODUCTS
MANUFACTURERS
1. Basis-of-Design Product: James Hardie Building Products, Inc.; Hardie Plank Siding; www.jameshardie.com.
2. Substitutions: In accordance with the requirements of Division 01, General Requirements.

FIBER CEMENT – LAP SIDING
1. Fiber Cement Siding:
   A. Type A, Grade II, ASTM C1186.
   B. Non-combustible Material, ASTM E136.
   C. Flame Spread Index: 0, ASTM E84.
   D. Smoke Developed Index: <5, ASTM E84.
2. Type:
   A. Lap Siding:
      - Smooth.
      - 7-1/4 inches (184 mm) with 6-inches (152 mm) exposure.
3. Color:
   A. Farmhouse White
4. Finish:
   A. Factory-Applied: Hardie Plank Siding
5. Thickness:
   a. 5/16 inch (8 mm).
6. Seam Tape: HardieWrap; www.jameshardie.com.

TRIM
1. Fiber Cement Trim Boards: www.jameshardie.com:
   A. Type A, Grade I, ASTM C1186.
   B. Flame Spread Index: 0, ASTM E84.
   C. Smoke Developed Index: <5, ASTM E84.
   D. 4/4 Boards:
      a. 3-1/2 inch (89 mm) width.
   E. 5/4 Boards:
      a. 3-1/2 inch (89 mm) width.
   F. Color:
      a. Farmhouse White
   G. Texture:
      a. Smooth.
   H. Length: 12-feet (3658 mm)
   I. Thickness:
      a. 1 inch.
2. Seam Tape: HardieWrap; www.jameshardie.com.

ACCESSORIES
1. HardiWrap Flashing Tape; www.jameshardie.com.
2. HardiWrap Weather-resistant sheets for pipe and conduit penetrations.
3. Fasteners:
   A. Wood Framing Fasteners:
      a. 4d common corrosion resistant nails.
      b. 6d common corrosion resistant nails.
      c. 8d box ring shank corrosion resistant nails.
      d. 0.099-inch (2.2 mm)

e. Single-Ply Roof Membrane Sealants: 450 g/L.
f. Nonmembrane Roof Sealants: 300 g/L.
g. Sealant Primers for Nonporous Substrates: 250 g/L.
h. Sealant Primers for Porous Substrates: 775 g/L.
i. Other Adhesives and Sealants: 250 g/L.

2. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils (1.4 mm) thick, minimum, of same color as TPO sheet.
3. Bonding Adhesive: Manufacturer's standard.
4. Slip Sheet: Manufacturer's standard, of thickness required for application.
5. Miscellaneous Accessories: Provide metal termination bars, metal battens, pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reagents, and other accessories.

AIR BARRIER
1. ASTM D 4397 polyethylene sheet, 6-mils-thick minimum, with maximum permeance rating of 0.13 perm, applied over entire deck surface before insulation application.

ROOF INSULATION
1. Provide preformed roof insulation boards that comply with primary roofing membrane manufacturer's requirements and referenced standards, selected from manufacturer's standard sizes.
2. Tapered insulation: Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where required for positive slope to drain. Fabricate for minimum 1/4-inch slope per foot when installed.

COVER BOARD
1. Provide minimum 1/2 inch thick High-Density Polyiso Roof Cover board above insulation boards as a membrane substrate, installed per manufacturer 's recommendations with joints staggered, above tapered insulation.
2. ROOF WALKWAY PADS
   A. 30 by 30-inch reinforced white thermoplastic walkway pad with textured surface finish.

ROOF PROTECTION PADS
1. Provide pads consisting of a minimum 60 mil membrane matching primary roofing material and color, approved for use by membrane roofing system manufacturer, intended either for heat-welded or self-sticking application to the roof membrane, and as approved for use by membrane roofing system manufacturer, with factory-formed or field-cut with corners trimmed to a 2" radius minimum.
2. At walkway pads provide 36-inch-wide continuous strips below walkway pads.
3. At piping supports: size to extend 6-inch outside of all piping support units.

ROOFING INSTALLATION, GENERAL
EXAMINATION
1. Examine substrates, areas, and conditions, with installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
2. Verify that roof openings and penetrations are in place and set and that roof and flat roof drains are securely clamped in place.
3. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
4. Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION
1. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
2. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
3. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
4. Install roofing system according to roofing system manufacturer's written instructions.
5. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.
6. Install roofing and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition.

INSULATION INSTALLATION
1. Coordinate installing membrane roofing system components, so insulation is not exposed to precipitation or left exposed at the end of the workday.
2. Comply with membrane roofing system manufacturer's written instructions for installing roof insulation.
3. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
4. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards, Fill gaps exceeding 1/4-inch with insulation. Cut and fit insulation within 1/4-inch of nailers, projections, and penetrations.

COVER BOARD INSTALLATION
1. Install cover boards over insulation with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below insulation a minimum of 6 inches in each direction. Loosely butt cover boards together and fasten to roof deck. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof

MECHANICALLY FASTENED ROOFING MEMBRANE INSTALLATION
1. Mechanically fasten all roofing membrane securely at terminations, penetrations, and perimeter of roofing, and seal all flashing. Space fasteners for "Grams-2" metal deck-unless otherwise indicated, Spread sealant or mastic bed over drain-flanges at deck-drains and securely seal membrane in place with clamping ring,
2. Full-weld seams: Clean entire seam areas, overlap roofing membrane, and hot-air weld full-surface of seams according to manufacturer's written instructions to ensure a watertight seam installation. Probe all seams after welds have cooled to verify seam weld continuity. Apply lap sealant to seal cut edges of roofing membrane.
3. Verify field strength of seams a minimum of twice daily and repair seam sample areas.
4. Repair tears, voids, and lapped areas in roofing membrane that does not meet requirements.
5. In-splice attachment: secure one edge of roofing membrane using fastening plates or metal battens centered within membrane splice and mechanically fasten roofing membrane to roof deck. Field-splice seam.
6. Through-membrane attachment: Secure roofing membrane using fastening plates or metal battens and mechanically fasten roofing membrane to roof deck. Cover battens and fasteners with a continuous Cover strip.
7. Install protection pads by cleaning roofing of dirt and debris prior to installation. Apply pads securely to surface of roofing membrane, by heat welding to substrate or adhere with roofing system Manufacturer 's approved compatible adhesive per their written instructions.
   A. Walkway pads: Provide at all traffic concentration points and where indicated on the Drawings, Place individual units with 6-inch minimum space between each pad, installed over roof protection sheet, Install at the following locations:
      a. Around all sides of HVAC equipment mounted on roof
      b. Around all sides of skylights, roof hatches or access doors.
      c. Provide path from roof hatch / access ladder to all HVAC equipment requiring periodic service.
   B. Piping supports: Install below piping support units provided by others for rooftop mounted electrical conduits, gas piping, or for condensate piping, if provided. Coordinate with other trades for locations required.

BASE FLASHING INSTALLATION
1. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.
2. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.
3. Flash penetrations and field-formed inside and outside corners with cured or uncured sheet flashing.
4. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.
5. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars.

PROTECTING AND CLEANING
1. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
2. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
3. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

SECTION 07 62 00 –SHEET METAL FLASHING AND TRIM
1. PROVIDE SHT MTL FLASHING and shit mtl trim, where indicated on the dwgs, as specified herein and as req'd for the prevention of water penetration into the bldg.
2. COMPLY W all pertinent recommendations contained in "Architectural Sheet Metal Manual," current edition of SMACNA.
3. COORD INSTALL of sht mtl flashing and trim w/ interfacing and adjoining const to provide a leakproof, secure, and noncombustive install.

PRODUCTS
1. TYP SHT MTL: PREFIN ALUM SHT: ASTM B 209, Alloy 3003, 3004, 3105 or 5005, Temper suitable for forming and struct performance req'd, but no less than H14, Fin as follows:
   Fluoropolymer AA-Coat System: Manu' standard 3-coat, fluoropolymer sys consisting of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70% polyvinylidene fluoride resin by wt; complying w/ AAMA 2605. Color: as indicated on dwgs
UNDERLAYMENT MATERIALS
1. TYP UNDERLAYMENT: 15-mil thick polyethylene sht complying w/ ASTM D 4397.
2. FELTS: ASTM D 226, Type I (No. 30), asphalt-saturated organic felt, nonperforated.
3. SLIP SHT: Rosin-sized paper, min 3 lb/100 sq ft.

MISC MATERIALS
1. PROVIDE MATERIALS & TYPES OF FASTENERS, solder, welding rods, protective coatings, accessories, sealants and other misc items as req'd for complete sht mtl flashing and trim install.
2. FASTENERS: Wd screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts and other suitable fasteners designed to withstand design loads. At exposed fasteners, provide heads matching color of sht mtl by means of plastic caps or factory-applied coating. At flashing and trim, provide blind fasteners of high-strength alum or s/s or web-stiffing screws, gasketed, w/ hex washer head.
3. SEALING TAPE: Preformed, nonvolatile, 100% solids, polyisobutylene compound sealing tape w/ release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape.
4. ELASTOMERIC SEALANT: ASTM C 920, of type, grade, class and use classifications req'd to seal it in an sht mtl flashing and trim unit from weathertight.
5. BUTYL SEALANT: ASTM C 1311, polyisobutylene plasticized, finely divided for hooked-type e/p w/ limited movement.
6. BITUMINOUS COATING: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components and other deleterious impurities.

FABRICATION - GENERAL
1. CUSTOM FABRICATE SHT MTL flashing and trim to comply w/ recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dims, mtl and other characteristics of item indicated. Shop fabricate items where practicable.
2. FABRICATE SHT MTL flashing and trim to thicknesses or wt needed to comply w/ performance reqs, but no less than specified for ea application and mtl. Fabricate sht mtl flashing and trim w/ no exposed solder, welding rod, tool marks and true to line and levels indicated, w/ exposed edges folded back to form hems.
3. TYP SEALED JTS: Form non-exp but movable jts in mtl to accommodate elastomeric sealant to comply w/ SMACNA recommendations.
4. EXP PROVISIONS: Where lapped or bayoneted/exp-jt provisions in the work cannot be used, form exp jts of sht mtl flashing and trim as shown in SMACNA's "Arch Sheet Metal Manual," not less than 3" filled w/ elastomeric sealant concealed within jts.
5. CONCEAL FASTENERS & EXP PROVISIONS where possible on exposed-to-view sht mtl flashing and trim, UNO.
6. FABRICATE GUTTER & ATTACHMENT DEVICES from same material as accessory being anchored or from compatible, noncorrosive mtl. Fabricate in thickness as recommended by SMACNA's "Architectural Sheet Metal Manual" and RMG Low-Pressure Data Sheet- 1-49 for app but no less than thickness of mtl being secured.
7. PROTECTIVE COATINGS: Protect exposed surfaces from damage by applying a shippable, temp protective covering before shipping.

FABRICATED ITEMS
1. THROUGH-WALL FLASHINGS (typ at openings in masonry or frame const): Fabricate in sections not exceeding 12' (min 8'-4 pc const units) at shelf angles in masonry const, at head and sill openings and cavities in long sections of openings, lap self-adhering flashing material over by no less than 3", Fabricate discontinuous lintel, sill and sim flashings to extend a min of 4" beyond ea side of wall openings and 2"-4" bent at ends where flashing is discontinuous, Fabricate w/ drip edge, by extending flashing 1/2" out from wall, w/ outer edge bent down 30 deg, Fabricate w/ preformed corners at all turns in flashing, with end dams of same material as flashing, Fabricate discontinuous lintel, sill and sim flashings to extend a min of 4" beyond ea side of wall openings and 2"-4" bent at ends where flashing is discontinuous, Fabricate w/ drip edge, by extending flashing 1/2" out from wall, w/ outer edge bent down 30 deg, Fabricate w/ preformed corners at all turns in flashing, with end dams of same material as flashing, Fabricate as applicable, Fabricate from 0.016" thick (26 ga) min s/s sht meeting ASTM A 240 or ASTM A 666, Type 304, Dead soft, fully annealed, in 20 (full coil) and 60 (CR) finish.
2. FABRICATE GUTTER UNITS from prefin .032 alum, to cross-section indicated on the dwgs, complete w/ end pieces, outlet tubes and other accessories as req'd, Stiffen outer edge w/ hemmed return and fabricate outer edge 1/2" below back edge, Fabricate in min 96" sections, Provide 1/4" x 2" prefin solid alum gutter brackets bent to match shape of gutter profile. Furnish two-piece gutter expansion joints with continuous cover plate over each joint, constructed of SMACNA but not less than twice the gutter thickness, Fabricate as, w/ covers, gutter bead reinf formed from the same metal as that used for the gutters, Provide all gutters w/ cover screen of 1/4" alum hardware cloth in alum frame.
3. DOWNSPOUTS (DS): Fabricate 4" w x 3" d rectangular units min or in larger size as indicated on dwgs, Fabricate from min 0.032 prefin alum, Provide fabricated, telescoping elbows as req'd by bldg profile, Provide 1 1/4" x 1/4" hem at top and bottom edges, Provide w/ end-cap edges folded back and hemmed, at no more than 8' ctrs vert, matching color of ds material.

EXECUTION
1. INSTALL SHT MTL, RF FLASHING & TRIM to comply w/ SMACNA's "Architectural Sheet Metal Manual" and other requirements shown here and/or on dwgs, as req'd for sht mtl flashing and trim units indicated. Install work w/ laps, jts and seams that will be permanently watertight.
2. ANCHOR SHT MTL FLASHING and trim units of the various types indicated securely in place, w/ provisions for thermal and struct movement. Use fasteners, protective coatings, separations, sealants and other misc items as req to complete sht mtl flashing and trim system. Form cutting of sht mtl flashing and trim is not permitted.
3. UNDERLAYMENT: Where installing sht flashing directly on cementitious or wd substrates, install a course of underlayment and cover w/ a slip sht or install a course of polyethylene underlayment, Bed flanges in thick coat of asphalt rfg cement where req'd for waterproof performance.
4. INSTALL EXPOSED SHT MTL FLASHING & TRIM w/o excessive oil canning, buckling, and tool marks, Install and fit flashing and trim true to line and levels indicated, Provide uniform, neat seams w/ min exposure of sealant, Install sht mtl flashing and trim to fit substrates and to result in weathertight closures but not restrict thermal movement. Use concealed flashing anchors where possible and seal the top edge of flashing above the termination bar with mastic/sealant.
5. INSTALL CONT CLEATS anchored at 12" ctrs min at toes.
6. EXP PROVISIONS: Provide for thermal exp of exposed flashing and trim, by spacing jts at a max of 10' w/ no jts allowed w/in 24" of corner or intersection. Where lapped or bayoneted-type exp provisions cannot be used or will not be watertight, form exp jts of intermeshing hooked flanges, not less than 1" wide, filled w/ elastomeric sealant concealed w/in jts.
7. FASTENERS: Use fasteners of sizes that will penetrate substrate not less than 1 1/4" for nails and no less than 3/4" for sid screws. W/ alum and mtl, use alum or s/s fasteners.
8. SEAL JTS W/ ELASTOMERIC SEALANT as req'd for watertight service. Where sealant=filled jts are used, embed hooked flanges of jt members not less than 1" into sealant. Form jts to completely conceal sealant. When ambient temp at time of install is moderate, between 40-70 deg F, set jt members for 50% movement either way. Adjust setting proportionately for install at higher ambient temps, Do not install sealants at temps below 40 deg F, Prep jts and apply sealants to comply w/ req's in Div-07. Rivet or weld jts in uncoated alum where necessary for strength.

ROOF FLASHING INSTALL
1. INSTALL SHT MTL RF FLASHING & TRIM to produce a complete roof drainage sys and to comply w/ SMACNA's "Architectural Sheet Metal Manual" as applicable. Provide concealed fasteners where possible, set units true to line and level as indicated. Install work w/ laps, jts and seams that will be permanently watertight. Cooperate w/ roofing crew during install of roof drainage sys items.
2. ROOF-PENETRATION FLASHING: Seal units w/ elastomeric sealant and clamp flashing to pipes penetrating roof except for lead flashing on vent piping.
3. PIPE OR POST COUNTERFLASHING: Fabricate counterflashing umbrella w/ close-fitting collar w/ top edge flared for elastomeric sealant, extending a min of 4" over base flashing. Install s/s counterflashing sleeve.
4. COUNTERFLASHING: Coord install of counterflashing w/ install of base flashing. Insert counterflashing in reglets or recesses and lap flashing by at least 3", Extend counterflashing 4" over base flashing. Lap counterflashing 3" a min of 4" and seal w/ elastomeric sealant.
5. HANGING GUTTERS: Join gutter sections w/ riveted and soldered s/s or w/ lapped jts sealed w/ elastomeric sealant; Provide for thermal exp. Attach gutters at eave or fascia to firmly anchored gutter brackets at/ace spaced not more than 36" apart. Provide end closures and seal watertight w/ sealant. Slope gutters 1/4" per 10' toward outlets. Fasten gutter sections to brackets and seal watertight as req'd for leak-free performance. Anchor gutter brackets and other supports to roof deck and w/ cleats spaced not more than 24" apart. Anchor gutter w/ soldered and females spaced not more than 24" apart. Install gutter w/ ogee at locations indicated but not exceeding 50' apart. Install w/ caps. Install cont gutter screens on gutters w/ noncorrosive fasteners, removable for cleaning gutters.
4. INSTALL DF DS: Telescope upper sections into lower section 1 1/2" min, rivet and seal. Allow ds away from bldg at bldg offsets and toward bldg, installed below gutter connection. Attach to wall w/ ss/ss anchors at ea bo, bot, horiz jts and at 10' max ctrs, Secure straps to wall at masonry walls, and to wd nailers at wd construction. Install w/ top end underlapped drainage sys, when indicated.

WALL FLASHING INSTALL
1. INSTALL SHT MTL WALL FLASHING to intercept and exclude penetrating moisture according to SMACNA recommendations and as indicated, Coord install of wall flashing w/ install of wall opening components such as wdws, drs and louvers.

SECTION 07 65 00 – FLEXIBLE FLASHING
1. PROVIDE flexible, concealed through-wall flashing, where indicated on the dwgs and as specified herein, The work of this section includes flexible flashings in association w/ the following bldg components: dampproofing and waterproofing sys, Openings at wall sheathing, including ext drs, storefront / curtainwall sys and wdw unit heads and sills, Fire-protection and mtl penetrations at fire-wall locations, Perimeter connections between ext wall sheathing and other ext materials, as indicated on the dwgs.
2. QUALITY ASSURANCE - MANUF QUALIFICATIONS: Provide flexible materials by a single manu' w/ no less than 25 yrs of experience in manuf flexible flashing products.
3. MANUF CERTIFICATION OF COMPATIBILITY: Provide certification flexible flashing products to be provided are compatible w/ other associated substrate, sheathing and WRB materials.

WARRANTY:
1. Manu' standard form agreeing to provide replacement materials to replace materials that do not comply w/ performance and other reqs noted.
2. WARRANTY TERM: Life of the install.

PRODUCTS:

MATERIAL PERFORMANCE REQS:
1. Tensile Strength of mtl greater than 90,000 PSI min.
2. Puncture resistance of mtl, greater than 2,500 pe average.
3. Resistant to growth of mold pursuant to test method ASTM D 3273.
4. Fire resistance: Rated Class A per ASTM E 84, w/ Flame Spread less than 25 and fuel contributed less than 200.
5. When used w/ spray polyurethane foam insul, flashing material must withstand 300 deg F temp w/o impairing its long-term performance and life expectancy.

FLEXIBLE FLASHING:
1. Self-adhering flashing material, consisting of a min 2 mil thick s/s foil facing material w/ a min 8 mil thick butyl/rubber co-polymer adhesive backing w/ a silicon/ized release film, in manuf standard width rolls as req'd for project conditions.
2. Acceptable Products include the following: B.O.D.; York Manufacturing, Inc.; York-304 SS; Illmes Products, Inc.; PCG/ Sel-Ad Flexible Stainless Steel; STS Coatings, Inc.; Gutter Flash SS peel & stick butyl; TK Products, Inc.; TK Self-Adhering Stainless Steel TWF; Vapro Shield, Inc.; Vapro Shield Flashing SA.

FLEXIBLE FLASHING ACCESSORIES:
1. POLYETHER SEALANT: Flexible flashing manuf product, eq to: SPLICE TAPE: Flexible flashing manuf approved product, eq to: York 304 SS, by York; Sel-Adhering Stainless-Steel Flashing, by RPCS.
2. CORNER & END DAMS: Form in field from flexible flashing material or use 26 ga s/s pre-manuf units.
3. PREFABRICATED PVC SILL FLASHINGS (contractor 's option to flexible flashing at dr and window sills): molded PVC fabrication w/ end dams, for level window or dr support w/ integral slope to drain, minimum 6" projection to the wall ext, up to 120°-ex, and w/ manuf' 10 yr limited warranty, B.O.D.: "Sloped Sill Pan" as manuf by Sure-Sill.

ACCESSORIES:
1. MASTIC/SEALANT: Manu' recommended material consisting of a 1-part, 100% solids, solvent-free urethane/polymer/ polyether sealant meeting ASTM C 920-11, Type S, Grade NS, Class 50. Acceptable products include: UniverSeal US-100 by York; GreatSeal LT-100 by STS Coatings; H-Guard Joint Seam Sealer by Protecto Wrap.
2. TERMINATION BAR: Manuf standard 1"-s/s-mtl w/ a sealant catch lip of rigid PVC composite material and 1/4" holes at 8" ctrs for attachment to substrate or as item by York.
3. PRE-FORMED END DAMS: Manuf standard units fabricated from min 0.018" thick (26 ga) s/s sht mtl,
4. ANCHORS & FASTENERS: Units as recommended by flexible flashing manuf as applicable for intended use.

EXECUTION: Comply w/ Sct 01 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ.

FLEXIBLE FLASHING INSTALL AT SHEATHING W/ FRAMING SUBSTRATE:
1. JT SPLICES: Typ provide a single, cont length of flexible flashing at head and sill conditions. If its operation is required in long extents of openings, lap self-adhering flashing material over by no less than 3",
2. PROVIDE SHT MTL THROUGH-WALL FLASHING per Div-07 at the following locations: where the underside of head flashing will be exposed to view, provide s/s, copper or other prefin sht mtl flashing material formed w/ an integral drip w/ end-dams of same material as flashing, anchored to be compatible w/ adjacent fin, Induce pre-formed outside corners when applicable, At internal wall spaces at sill conditions exceeding max width permitted by flexible flashing manuf, provide sht mtl flashing to bridge condition or other cases.
3. DEPTH OF FLASHING MATERIAL: As req'd to extend to the outside face of the ext wall finish, through the fin assembly and, under normal conditions, up onto sheathing material surface (above limit, when applicable) by not less than 3", At sill conditions, cover entire depth of wall thickness at the head to bridge to the sill and provide as appropriate.
4. AT HEAD CONDITIONS Extend flexible flashing no less than 6" beyond the rough-opening width/ onto sheathing surfaces, At ends of horiz framing members, fold ends to form an end-dam or use pre-manuf units. Press self-adhered flashing material onto the horiz substrate support material (primed where required) to build up onto sheathing material surface, Terminate top edge by anchoring a termination bar through the sheathing into the substrate framing members and sealing the top edge of flashing above the termination bar with mastic/sealant.
5. CORNER FLEXIBLE FLASHING MATERIAL: w/in 7 days of install to protect from damage & sunlight. Repair & replace flexible flashing that has been left unprotected, punctured or torn.

SECTION 07 76 16 ROOF DECKING PAVERS
WORK INCLUDED
1. Provide roof decking decking system where indicated on the drawings, as specified herein, and as necessary for complete installation.

SUBMITTALS
1. SUBMIT PRODUCT DATA for decking planks, pedestal supports and miscellaneous accessories, Include construction details, material description, dimensions of individual components and profiles, and storage, handling, and installation requirements and recommendations.
2. SUBMIT WARRANTY: specified in this section

INSTALLER QUALIFICATIONS
1. MINIMUM of three (3) years prior experience in installation of similar products.

MATERIAL STORAGE
1. STORE materials off the ground: if stored on the roof, do not exceed structural capacity of the deck.

LAYOUT AND INSTALLATION
1. COORDINATE layout of pavers with roofing system to maintain a leakproof, weathertight, secure, and noncorrosive installation. Work to be performed by factory-trained, authorized installers of roof decking system.

PAVER PROTECTION SYSTEM
1. INTEGRATED system consisting of adjustable height units and wood joist adapter provided by manufacturer.
   A. HEIGHT ADJUSTMENT RANGE: RE: drawings for MIN. and MAX.
   B. BASIS-OF-DESIGN: "SkyJack SS-All Adjustable Pedestal" by SkyDeck USA.

PROTECTION & DRAINAGE COURSE
1. (above roofing membrane): Nonwoven polyester mat or insulation board meeting requirements of roof membrane manufacturer.

EXECUTION
1. EXAMINE SUBSTRATES, area, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of work. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored and is ready to receive roof decking pavers.
   DO NOT BEGIN INSTALLATION until roofing work is completed, including work penetrating waterproof plane, Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION
1. CLEAN ROOF SURFACES thoroughly prior to installation.
2. PLAN SEQUENCE OF TRANSPORTING and placing pavers to avoid damage to membrane and already installed pavers, Correct any roof deficiencies (i.e., membrane drainage) prior to commencement.
3. PERIMETER CONTAINMENT: Provide "boxing-in" of any area of the pedestal decking that is not fully contained by a parapet or foundation wall. Install perimeter framing and edging boards on the outside of the deck perimeter to provide restraint.

INSTALLATION (PEDESTAL)
1. COMPLY with manufacturers Instruction for Installation of roof decking pedestals and paver planks.
2. GENERAL LAYOUT OF PEDESTAL SYSTEM in a square grid pattern with joints parallel and perpendicular to building walls and other lines unless noted otherwise in the Drawings. Pedestal spacing 24" O.C. or per manufacturer spacing requirements.
3. ENSURE base pedestal protectors (eco adapter mat secure per manufacturer instructions.
4. INSTALL 2x treated wood joist (sizing per manufacturer) parallel

PLANK INSTALLATION
1. PLACE planks in a traditional pattern, perpendicular (per Plans) to wood joists.

PROTECTION
1. PROTECT installed wood deck until completion of project. Prohibit construction traffic unless adequate precautions are taken. Do not allow loads in excess of normal foot traffic on roof decking.
2. REPAIR or replace damaged deck planks, pedestal or adapters.

SECTION 07 84 00 – FIRESTOPPING
1. THIS SECTION INCLUDES firestop sys for sys terminations and penetrations through the fire-resistance-rated assemblies, including both empty openings and openings containing penetrating items.

PERFORMANCE REQS:
1. PROVIDE FIRESTOP SYS produced and installed to resist spread of fire according to reqs indicated, resist passage of smoke and other gases and maintain original fire-resistance rating of assembly penetrated.
2. F-RATED SYS: Provide through-penetration firestop sys w/ F-ratings indicated, as determined per ASTM E 814, but no less than that eq to or exceeding fire-resistance rating of const penetrated.
3. FOR PIPING PENETRATIONS for plumb and wet-pipe sprinkler sys, provide moisture-resistant through-penetration firestop sys. For penetrations involving insul piping, provide through-penetration firestop sys not req removal of insul.

QUALITY ASSURANCE
1. INSTALLER QUALIFICATIONS: An experienced installer who has completed through-penetration firestop sys sim in material, design and extent indicated for this project and whose work has resulted in const w/ a record of successful in-service performance.
2. SOURCE LIMITATIONS: Obtain through-penetration firestop sys, for as kind of penetration and const condition indicated, from a single manuf.
3. FIRE-TEST-RESPONSE CHARACTERISTICS: Provide through-penetration firestop sys that comply w/ the following reqs and those specified in "Performance Reqs" above: Firestopping sys are guaranteed free by qualified testing and inspection agency. As qualified testing and inspecting agency that is UL or another agency performing testing and follow-up inspection services for firestop sys acceptable to authorities having jurisdiction. Firestop sys are identical to those tested per ASTM E 814. Provide rated sys complying w/ the following reqs: Through-penetration firestop sys products bear classification marking of qualified testing and inspecting agency. Through-penetration firestop sys are compatible w/ one another, w/ substrates forming openings and w/ penetrating items installed in openings w/ fill, void or cavity materials, and other joint sealants used in fireproofing and firestopping applications, as determined by firestop sys manuf and approved by the qualified testing and inspecting agency for firestop sys indicated. Fireproofing and firestopping sys do not include but are not limited to:
   - Permanent forming/damming/backing materials, including: Slag-/rock-wool-fiber insul. Sealants used in combination w/ other forming/damming/backing materials to prevent leakage of fill materials in liquid state, Fire-rated form bd, Fillers for sealants, Temp forming materials, Substrate primers, Collars, Sil sleeves.

FIRESTOPPING MATERIALS
1. GENERAL: Provide through-penetration firestop sys containing the types of fill materials indicated for the types of materials described in this artic. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void or cavity materials.
2. LATEX SEALANTS: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
3. FIRESTOP DEVICES: Factory-assembled collars formed from galv sht steel and lined w/ intumescent material sized to fit specific dia of penetrant.
4. INTUMESCENT PUTTIES: Non-hardening dielectric, water-resistant putties containing no solvents, inorganic fibers or silicone compounds.
5. INTUMESCENT WRAP STRIPS : Single-component intumescent elastomeric strips w/ alum foil on one surface.

FIRESTOPPING MATERIALS
1. GENERAL: Provide through-penetration firestop sys containing the types of fill materials indicated for the types of materials described in this artic. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void or cavity materials.
2. LATEX SEALANTS: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
3. FIRESTOP DEVICES: Factory-assembled collars formed from galv sht steel and lined w/ intumescent material sized to fit specific dia of penetrant.
4. INTUMESCENT PUTTIES: Non-hardening dielectric, water-resistant putties containing no solvents, inorganic fibers or silicone compounds.
5. INTUMESCENT WRAP STRIPS : Single-component intumescent elastomeric strips w/ alum foil on one side.
6. MORTARS: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers and lightweight aggregate formulated for mixing w/ water at project site to form a non-shrinking, homogeneous mortar.
7. SILICONE FOAMS: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, non-shrinking foam.
8. SILICONE SEALANTS: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below. Designed to be used w/ backing material where required.
9. CASTA-FACE PLASTER PATCHES: Factory-assembled devices for use in cast-in-place conc fits and consisting of an outer metallic sleeve lined w/ an intumescent strip, a radial reinforced flange attached to one end of the sleeve for fastening to conc formwork and a neoprene gasket.
10. PILLOWS/BAGS: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled w/ a combination of mineral-fiber, water-insoluble exp agents and fire-retardant additives. Where exposed, cover openings w/ sil-cone/ wire mesh to protect pillows/bags from being easily removed.
11. MINING: For those products req mining before application, comply w/ penetration firestopping manuf written instructions for accurate proportioning of materials, water (if req'd), type of mixing equip, selection of mixer speeds, mixing containers, mixing time and other items or procedures needed to produce products of uniform quality w/ optimum performance characteristics for application indicated.
12. WEEPS: Absorbent, UV-resistant synthetic fiber rope, 3/8" min dia, in length req'd to produce weep action indicated, to prevent accumulation of water (if req'd) behind backing into the internal drainage plane.

EXECUTION: Per Pt 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ.

DIVISION 08: OPENINGS
SECTION 08 11 00 – METAL DOORS AND FRAMES
1. PROVIDE mtl dr frames and hollow mtl drs, where noted and specified herein, Comply w/ applicable reqs of Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames."
2. SUBMIT PRODUCT DATA for each type of dr and frame specified, include dtls of core materials, dims, hardware prep, core, steel gauge/thickness, sound ratings, profiles and fin.
3. SUBMIT DR SCHED indicating drs & frames w/ the same reference #s for dtls and openings as those on DWs, Indicate coord of glazing frames and stops w/ glass and glazing reqs ,

PRODUCTS
1. MANUF: Subject to compliance w/ reqs, manuf offering products that may be incorporated into the work include, but are not limited to the following: A/D Fire Protection Systems Inc, Grace Construction Products, Hilti, Inc., Johns Manville, Nelson Firestop Products, NUCO Inc, Passive Fire Protection Partners, RectorSeal Corporation, Specified Technologies Inc, 3M Fire Protection Products, Tremco, Inc., Tremco Fire Protection Systems Group, USG Corporation, DAP Inc.
2. COMPATIBILITY: Provide through-penetration firestop sys compatible w/ one another, w/ the substrates forming openings and w/ the items, if any, penetrating through-penetration firestop sys, under conditions of service and application, as demonstrated by through-penetration firestop sys manuf based on testing and field experience.
3. ACCESSORIES: Provide components for ea through-penetration firestop sys needed to install fill materials and to comply w/ "Performance Reqs". Use only components specified by through-penetration firestop sys manuf and approved by the qualified testing and inspecting agency for firestop sys indicated. Accessories include, but are not limited to:
   - Permanent forming/damming/backing materials, including: Slag-/rock-wool-fiber insul. Sealants used in combination w/ other forming/damming/backing materials to prevent leakage of fill materials in liquid state, Fire-rated form bd, Fillers for sealants, Temp forming materials, Substrate primers, Collars, Sil sleeves.

FIRESTOPPING MATERIALS
1. GENERAL: Provide through-penetration firestop sys containing the types of fill materials indicated by reference to the types of materials described in this artic. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void or cavity materials.
2. LATEX SEALANTS: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.
3. FIRESTOP DEVICES: Factory-assembled collars formed from galv sht steel and lined w/ intumescent material sized to fit specific dia of penetrant.
4. INTUMESCENT PUTTIES: Non-hardening dielectric, water-resistant putties containing no solvents, inorganic fibers or silicone compounds.
5. INTUMESCENT WRAP STRIPS : Single-component intumescent elastomeric strips w/ alum foil on one side.
6. MORTARS: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers and lightweight aggregate formulated for mixing w/ water at project site to form a non-shrinking, homogeneous mortar.
7. SILICONE FOAMS: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, non-shrinking foam.
8. SILICONE SEALANTS: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below. Designed to be used w/ backing material where required.
9. CASTA-FACE PLASTER PATCHES: Factory-assembled devices for use in cast-in-place conc fits and consisting of an outer metallic sleeve lined w/ an intumescent strip, a radial reinforced flange attached to one end of the sleeve for fastening to conc formwork and a neoprene gasket.
10. PILLOWS/BAGS: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled w/ a combination of mineral-fiber, water-insoluble exp agents and fire-retardant additives. Where exposed, cover openings w/ sil-cone/ wire mesh to protect pillows/bags from being easily removed.
11. MINING: For those products req mining before application, comply w/ penetration firestopping manuf written instructions for accurate proportioning of materials, water (if req'd), type of mixing equip, selection of mixer speeds, mixing containers, mixing time and other items or procedures needed to produce products of uniform quality w/ optimum performance characteristics for application indicated.
12. WEEPS: Absorbent, UV-resistant synthetic fiber rops, 3/8" min dia, in length req'd to produce weep action indicated, to prevent accumulation of water (if req'd) behind backing into the internal drainage plane.

EXECUTION: Per Pt 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ.

SECTION 08 31 00 – ACCESS DOORS AND PANELS
1. WORK INCLUDED: Provide access drs and pnls as specified herein and as necessary for complete install. Provide units for both wall access and for dg access at the following locations and at locations indicated on the dwgs
   - Access to valves, controls, prfs and other concealed/ser items req maintenance,
   - Provide fire-rated units when located w/in fire-rated partitions

PRODUCTS
1. STORE DRS & FRAMES at bldg site under cover, Place units on min 4"-h wd blocking, Avoid using non-vented plastic or canvas shelters that could create a humidity chamber, If cardboard wrappers on drs become wet, remove cartons immediately, Provide min 1/4" spaces between stacked drs to promote air circ,
2. Hot-Rolled Sct Shts and Strip: Commercial-quality carbon sil, pick

PRODUCTS - MATERIALS
1. Bar Plates, Shapes and Bars: ASTM A 36.
2. Hot-Rolled Sill Shts: ASTM A 569, Commercial Std, Type B, free of scale, pitting and surface defects; pickled and oiled; w/ min thickness indicated representing specified nom thickness according to ASTM A 568.
3. Cold-Rolled Sill Shts: ASTM A 366, Commercial Std or ASTM A 620, Deep Sill, Type B; stretcher-leveled standard of flatness; w/ min thickness indicated representing specified nom thickness according to ASTM A 568, electrolytic zinc-coated sill sht, complying w/ ASTM A 591, Class C coating, may be substituted at fabricator's option.
4. SHOP PRIMER FOR FERROUS MTL: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying w/ performance req in FS TT-P-664, selected for good resistance to normal atmospheric corrosion, compatibility w/ fin pt sys indicated and capability to provide a sound bsf for field-applied topcoats despite prolonged exposure.
5. FIBERGLASS REINF POLYESTER (FRP) COMPONENTS: .315 to .625"-thick Class A, Flame retardant; promised thickness; polyester resin formed fr layers w/ 75% glass fiber mat and "chop" by PPG or Owens/Corning and 25% matrix resin fiber for body of components, into components meeting ASTM E-84 flame spread rating of 25 or less.
6. CAST GLNG ACCESS PNLS: Pregrade FRP molded, sprayed Zapbase trim-ring unit w/ tapered edges to accept drywall jt treatment w/ matching crn-fl flush faced pnl w/ no more than 1/8" gap all around, Pnl and edge trim fin ready for field application of primer and pt fin:
   - B.O.D: Standard Access Panel by Moonlight Molds Inc.
   - Typ size for soffit / dg access: # AP-24, 24x24". UNO.
7. WALL ACCESS SNS: 0.067" (14 ga) flush sill w/ bolt slot flange of 0.052" (16 ga) box return frame and w/ 0.024 (24 ga) x 1"w perforated galv mtl flange all around in electrostatic baked enamel fin over rust-inhibiting phosphate treated sit.
8. B.O.D: Williams Bros. Corporation # WB-200

FABRICATION
1. PROVIDE WALL ACCESS DR ASSEMBLIES manuf as integral units ready for install. For mtl surfaces exposed to view in the completed work, provide materials w/ smooth, fin surfaces w/o blemishes. Do not use materials w/ exposed pitting, seam marks, roller marks, rolled trade names or roughness. Grind exposed welds smooth and flush w/ adj surfaces. Furnish attachment devices and fasteners of type req'd to secure access pnls.
2. FLUSH ACCESS DRS & FRAMES: Fabricated from sit sht.
   - Dr: min 0.068" (14 ga) thick sht mtl, w/ flush w/ flange of frame.
   - Trimless frame: 0.068" (14 ga) thick min sheet mtl w/ drywall bead flange.
   - Hinges: concealed spring hinges.
   - Fire-Resistance Rating (when applicable): no less than that indicated of adjacent, associated wall or partition.
   - Latch: primary screwdriver operated "slam latch" w/ additional screwdriver operated cam-latch mechanisms as req'd to hold dr in flush, smooth-plane when closed, all w/ int release.
3. TYP SIZE FOR WALL ACCESS: 36x36" min, UNO.
4. FIN - APPLY SHOP PRIMER to unpainted surfaces of mtl fabrications. Comply w/ SSPC-PA 1, "Paint Application Specification No. 1," for shop pg.

EXECUTION
1. For 01 73 00, manuf written instructions, referenced standards and in compliance w/ any recs of AHJ, to operate easily, free from warp, twist, or distortion and fitting weathertight for entire perimeter.

SECTION 08 41 13 ALUMINUM ENTRANCES & STOREFRONT

SECTION INCLUDES
1. Aluminum-framed entrance and storefront systems,

DEFINITIONS
1. Product Data:
   A. Aluminum-framed entrance and storefront systems.
2. Product Data Submittals: For each product.
   A. Construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   B. Operating characteristics, electrical characteristics, and furnished accessories.
3. Shop Drawings:
   A. Plans, elevations, sections, full-size details, and attachments to other work.
   B. Details of provisions for assembly expansion and contraction and for draining moisture occurring within the system to the exterior. Full-size isometric details of each type of vertical-to-horizontal intersection of aluminum-framed entrance and storefront systems, showing the following:
      a. Joinery, including concealed welds.
      b. Anchorage.
      c. Expansion provisions.
      d. Glazing.
      e. Flashing and drainage.
4. Connection to and coordination with adjacent thermal, weather, air, and vapor barriers.
5. Points-to-point wiring diagrams showing the following:
   A. Power requirements for each electrically operated door hardware.
   B. Location and types of switches, signal device, conduit sizes, and number and size of wires.
6. Signed and sealed by the qualified professional engineer responsible for their preparation.

SAMPLES FOR INITIAL SELECTION
1. Manufacturer's standard color sheets, showing full range of available colors or each type of exposed finish.

ENTRANCE DOOR HARDWARE SCHEDULE
1. Prepared by or under supervision of supplier, detailing fabrication and assembly of entrance door hardware, as well as procedures and diagrams. Coordinate final entrance door hardware schedule with doors, frames, and related work to ensure proper size, thickness, hand, function, and finish of entrance door hardware.

INFORMATIONAL SUBMITTALS
1. Energy Performance Certificates: For aluminum-framed entrance and storefront systems, accessories, and components, from manufacturer.
   A. Basis for Certification: NFRC-certified energy performance values for each aluminum-framed entrance and storefront system.
2. Product Test Reports: For aluminum-framed entrance and storefront systems, for tests performed by a qualified testing agency or manufacturer and witnessed by a qualified testing agency.

CLOSEOUT SUBMITTALS
1. Operation and Maintenance Data: For aluminum-framed entrance and storefront systems.
2. Maintenance Data for Structural Sealant: For structural-sealant-glazed storefront, include ASTM C1401 recommendations for post-installation-phase quality-control program.

QUALITY ASSURANCE
1. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by manufacturer.
2. Product Options: Information on Drawings and in Specifications establishes requirements for aesthetic effects and performance characteristics of assembled units. Aesthetic effects are indicated by dimensions, arrangements, alignment, and profiles of components and assemblies as they relate to sightlines, to one another, and to adjoining construction.
   A. Do not change intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If changes are proposed, submit comprehensive explanatory data to Architect for review.
3. Structural-Sealant Glazing: Comply with ASTM C1401 for design and installation of storefront systems that include structural glazing.

WARRANTY
1. Special Warranty: Manufacturer agrees to repair or replace components of aluminum-framed entrances and storefronts that do not comply with requirements or that fail in materials or workmanship within specified warranty period.
   A. Warranty Period: 10 years from date of Substantial Completion.
2. Special Finish Warranty: Standard form in which manufacturer agrees to repair finishes or replace aluminum that shows evidence of deterioration of factory-applied finishes within specified warranty period.
   A. Warranty Period: 20 years from date of Substantial Completion.

PRODUCTS
1. Obtain all components of aluminum-framed entrance and storefront system, including framing spandrel panels and accessories, from single manufacturer.

ENERGY EFFICIENCY
1. In accordance with the 2021 International Energy Conservation Code (IECC)
2. For Seed fenestration
   A. U-value: U-0.26 maximum.
   B. Solar Heat Gain Coefficient: SHGC-0.36 maximum.
3. For entrance doors:
   A. U-value: U-0.83 maximum.

ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS
1. Manufacturers: Subject to compliance with requirements, provide products by the following Basis of design Manufacturers:
   A. EFCO Corporation
2. Framing Members: Manufacturer's extruded- or formed-aluminum framing members of thickness required and reinforced as required to support imposed loads.
   A. Construction: Thermally broken.
   B. Glazing System: Retained mechanically with gaskets on four sides with butt-glazed intermediate mullions at north and west ground level installations.
   C. Glazing Plane: Front.
   D. Finish: Clear anodized aluminum.
   E. Fabrication Method: Field-fabricated stick system.
   F. Aluminum: Alloy and temper recommended by manufacturer for type of use and finish indicated.
   G. Steel Reinforcement: As required for strength.
3. Backer Plates: Manufacturer's standard, continuous backer plates for framing members, if not integral, where framing members receive concealed fasteners.
4. Brackets and Reinforcements: Manufacturer's standard high-strength aluminum with nonstaining, nonferrous shims for aligning system components.
5. Entrance Doors: Manufacturer's standard glazed entrance doors for manual-swing operation.
   A. Door Construction: 1-3/4-inch (44.5-mm) overall thickness, with minimum 0.125-inch- (3.2-mm-) thick, extruded-aluminum tubular rail and stile members. Mechanically fasten corners with reinforcing brackets that are deeply penetrated and filet welded or that incorporate concealed tie rods.
   B. Door Design: Wide stile, 5-inch (127-mm) nominal width.
   C. Glazing Stops and Gaskets: Beveled, snap-on, extruded-aluminum stops and preformed gaskets.
   D. Provide nonremovable glazing stops on outside of door.

ENTRANCE DOOR HARDWARE
1. Entrance Door Hardware: Hardware not specified in this Section is specified in Section 087100 "Door Hardware."
2. General: Provide entrance door hardware and entrance door hardware sets indicated in door and frame schedule and entrance door hardware sets indicated in "Entrance Door Hardware Sets" Article to comply with entrance door hardware sets indicated and the following requirements:
   A. References to BHMA Standards: Provide products complying with these standards and requirements for description, quality, and function.
4. Butt Hinges: BHMA A156.1, Grade 1, unless noted.
   A. Non-removable Pins: Provide non-rising pins for hinges barrel that, when tightened into a groove in hinge pin, prevents removal of pin while entrance door is closed.
   B. Exterior Hinges: Provide the following:
      a. For doors up to 87 inches (2210 mm) high, three hinges per leaf.
      b. For doors more than 87 and up to 120 inches (2210 and up to 3048 mm) high, four hinges per leaf.
5. Mortise Auxiliary Locks: BHMA A156.5, Grade 1.
6. Auxiliary and Self-Latching Bolts: BHMA A156.3, Grade 1.
7. Panic Exit Devices: BHMA A156.3, Grade 1, listed and tested by a testing and inspecting agency acceptable to authorities having jurisdiction, based on testing current product(s), based on testing according to UL 305.
8. Cylinders: As specified in Section 087101 "Door Hardware." BHMA A156.5, Grade 1.
9. Strikes: Provide strike with black-plastic dust box for each latch or lock bolt; fabricated for aluminum frames.
10. Operating Trim: BHMA A156.6.
11. Closers: BHMA A156.4, Grade 1, with accessories required for a complete installation, sized as required by door size, exposure to weather, and anticipated frequency of use; adjustable to comply with field conditions and requirements for opening force.

GLAZING
1. Glazing: Comply with Section 088000 "Glazing."
2. Glazing Gaskets: Manufacturer's standard compression wedge-corner pressure-glazing system of black, resilient elastomeric glazing gaskets, setting blocks, and shims or spacers.
3. Glazing Sealants: As recommended by manufacturer.

FABRICATION
1. Form concealed aluminum shapes before finishing.
2. Weld in concealed locations to greatest extent possible to minimize distortion or discoloration of finish. Remove weld spatter and welding oxides from exposed surfaces by descaling or grinding.
3. Fabricate components that, when assembled, have the following characteristics:
   A. Profiles that are sharp, straight, and free of defects or deformations.
   B. Accurately fitted joints with ends coped or mitered.
   C. Physical and thermal isolation of glazing from framing members.
   D. Accommodations for thermal and mechanical movements of glazing and framing to maintain required glazing edge clearances.
   E. Provisions for field replacement of glazing from exterior.
   F. Fasteners, anchors, and connection devices that are concealed from view to greatest extent possible.
4. Mechanically Glazed Framing Members: Fabricate for flush glazing without projecting stops.
5. Entrance Door Frames: Reinforce as required to support loads imposed by door operation and for installing entrance door hardware.
6. Entrance Door Sills: Reinforce as required for installing entrance door hardware.
7. Entrance Door Hardware Installation: Factory install entrance door hardware to the greatest extent possible. Cut, fit, drill, and tap for factory-installed units. Deliver template and hardware before applying finishes.

FINISHES
1. After fabrication, clearly mark components to identify their locations in Project according to Shop Drawings.

ALUMINUM FINISHES
1. Black Anodized Aluminum.

EXECUTION
EXAMINATION
1. Examine areas, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION OF ALUMINUM-FRAMED ENTRANCE AND STOREFRONT SYSTEMS
1. Comply with manufacturer's written instructions.
2. Do not install damaged components.
3. Fit joints to produce hairline joints free of burrs and distortion.
4. Rigidly secure nonmovable joints.
5. Install anchors with separators and isolators to prevent metal corrosion and electrolytic deterioration and to prevent noise from metal-to-metal contact.
6. Seal perimeter and other joints watertight unless otherwise indicated.
7. Metal Protection:
   A. Where aluminum is in contact with dissimilar metals, protect against galvanic action by painting contact surfaces with materials recommended by manufacturer for this purpose or by installing nonconductive spacers.
   B. Where aluminum is in contact with concrete or masonry, protect against corrosion by painting contact surfaces with bituminous paint.
8. Set continuous sill members and flashing in full sealant bed, as specified in Section 079200 "Joint Sealants."
9. Seal joints, to produce weathertight installation.
10. Install glass as specified in Section 088000 "Glazing."
11. Install components plumb and true in alignment with established lines and grades.
12. Install entrance doors to produce smooth operation and tight fit at contact points.
   A. Exterior Doors: Install to produce weathertight enclosure and tight fit at weather stripping.
   B. Field-Installed Entrance Door Hardware: Install surface-mounted entrance door hardware in accordance with entrance door hardware manufacturers' written instructions using concealed fasteners to greatest extent possible.
13. Install glazing as specified in Section 088000 "Glazing."

FIELD QUALITY CONTROL
1. Testing Agency: Engage a qualified testing agency to perform tests.
2. Tests: Perform the following tests on representative areas of aluminum-framed entrance and storefront systems:
   A. Water-Spray Test: Before installation of interior finishes has begun, areas designated by Architect to be tested in accordance with AAMA 501.2 and to not evidence water penetration.
   a. Perform a minimum of two tests in areas as directed by Architect.

SECTION 08 53 00 – VINYL WINDOWS AND DOORS

1. WORK INCLUDED: Provide vinyl sashes where indicated on the dwgs, as specified herein and as necessary for complete install. The work of this section includes: Factory installed glazing and glazing sealants. Insect screens at operating units.
2. ENVIRONMENTAL CONDITIONS: Air temp during installs must be at least 40° F and rising, and the wind light or still. Work areas and materials must be dry and free of ice and snow. Ensure ambient and surface temps and jt conditions are suitable for install of materials.

WARRANTY:
1. SPECIAL PROJECT WARRANTY: Provide written warranty executed by the manuf agreeing to repair or replace units that fail in materials or workmanship with the following specified warranty periods. Failures include, but are not limited to: Failure to meet performance requ. Broad failures including excessive deflection, water leakage and air infiltration. Faulty operation of movable sash and hardware. Deterioration of materials and fin beyond normal weathering. Failure of insulating glass.
2. Warranty Periods: Withe & Dris. 10 yrs from date of substantial completion. Glazing Units: 20 yrs from date of substantial completion.

PRODUCTS:
1. SYS DESIGN: Manu is responsible for design of refer units, including anchorage to struct sys and necessary modifications to meet spec and maintain visual design concepts.
2. Wall openings: Accommodate allowable bldg wall cons' tolerances and moisture-caused masonry swell w/o stressing or deforming units or overstressing anchorage.
3. Moisture changes: Accommodate shrinking and swelling caused by ambient conditions at the project, w/o stressing wdw units, overstressing anchorage, causing sash to bind or exceeding air/water entry limits.

PERFORMANCE REQS - GENERAL:
1. WINDBORNE-DEBRIS RESISTANCE: Capable of resisting impact from windborne debris based on testing described in the standard in those specified, according to ASTM E 1886 and testing info in ASTM E 1996 and reqs of AHJ.
2. STRUCT RESIS: When tested in accordance w/ ASTM E330 at 150% of design pressure, no failure/permanent deflection in excess of 0.033 of any member's span after removing the imposed load, for a positive (inward) & negative (outward) design pressure no less than 30 PSF.

VINYL WDWS: Provide units meeting the following:
1. FIN: Manufacturer's standard "black" color. Provide standard "white" in color. Provide: QUAKER "V300" Series in gdo.

PERFORMANCE REQS:
1. WINDBORNE-DEBRIS RESISTANCE: Capable of resisting impact from windborne debris based on testing described in the standard in those specified, according to ASTM E 1886 and testing info in ASTM E 1996 and reqs of AHJ.
2. STRUCT RESIS: When tested in accordance w/ ASTM E330 at 150% of design pressure, no failure/permanent deflection in excess of 0.033 of any member's span after removing the imposed load, for a positive (inward) & negative (outward) design pressure no less than 30 PSF.
3. INSULATING GLASS (IG) UNITS: Manu's standard, 3/4" thick sealed insulating glass units (or thicker if req'd per wind-loading) w/ both panes tempered at cr units and at wdw units when w/in 5' of crs or w/in 18" of a flr, deck or pavement fin, factory welded/glued into a rebated, precessed and fastener-shielded sash frame, meeting reqs of Dw88 and the following:
   a. min U-factor: 0.29; Solar Heat Gain Coefficient (SHGC): 0.33; Visible Light Transmittance (VT): 0.26; CR: 0.23; Condensation Resistance: 71 (when tested per AAMA/WDMA/CSA 101/I.S.2/A440 reviewed eq;
4. INSECT SCREENS (at all operating sh or wdw sash units): 18x16 fiberglass mesh in a 5/16 x 3/4" roll-formed alum screen frame matching color of wdw or dr unit, per ANSI/AAMA 1004, fastened to sash. Provide at manufacturer's option.

FABRICATION:
1. Fabricate units in sizes indicated and in strict accordance w/ manuf tested assemblies. Include a complete sys for install and anchoring wdws. Glazed units must be miter-cut, fusion-welded and reinforced as req'd for rigidity and resistance to the req. Stationary pnl is to be direct set w/ glazing tape or silicon sealant into the main frame. Glaze wdws in the factory. Weather strip as operable sash to provide weathertight install.
2. Mullions: Provide mullions, matching wdw units, complete w/ anchors for support to struct and install of wdw units. Allow for erection tolerances and provide for movement of wdw units due to thermal exp and bldg deflections. Provide mullions and cover plates capable of withstanding design wind loads of wdw units. Complete fabrication, assembly, fin, hardware application and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and install. Allow for scribing, trimming and fitting at project site.
3. EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ. REQ QUALITY CONTROL: A qualified, independent testing agency may be engaged by the owner to perform field tests and inspections of installed wdw and dr units. The testing and inspecting agency will prepare and submit test data and state in its report whether the tested work complies w/ or deviates from the reqs indicated herein.
4. Testing Methodology: Testing of wdws for air infiltration and water resistance must be performed according to AAMA 502.
5. Min Extent of Testing: 2 wdws and 2 drs min of ea type, as recommended by the testing and inspecting agency. Additional units may be tested at manufacturer's option.
6. Test Reports: Prep according to AAMA 502.

SECTION 08 71 00 – DOOR HARDWARE

1. WORK INCLUDED: Provide hardware throughout the work as indicated in the dwgs, as specified herein and as req'd for a complete install.
2. FASTENERS: Provide necessary screws, bolts and other fasteners of suitable size and type to anchor hardware in position for long life under hard use, Provide concealed fasteners for hardware units which are exposed when dr is closed.
3. PROVIDE CONCEALED FASTENERS for hardware units are exposed when dr is closed except to the extent no standard units of type specs are available or specified herein. Do not use thru-bolts for install where bolt head or nut on opp face is exposed in other work unless their use is the only means of rmtr the work adequately to fasten the hardware securely. Where thru-bolts are used, countersink the heads, except where shown or req'd to be of the type with screw fasteners.
4. HINGES: Provide for hinges installed entirely (both leaves) into wd drs and frames, provide only template-produced units w/ Phillips flat-head screws: for mtl drs & frames, install machine screws into drilled & tapped holes. Fin screw heads to match surface of hinges or pivots. Hinge pins: non-removable typ w/ flat button tips and matching plug, fin to match leaves, # of hinges: provide # of hinges indicated (not less than 3) per dr leaf and as follows: over 84"-ht, add 1 hinge per ea 30" or added ht. Over 36"-w, add 1 hinge (up to 48 "-w).

LOCKS, LATCHES & BOLTS
1. STRIKES: Manuf standard wrought box strike for ea latch or lock bolt, with curved lip extended to protect frame, fin to match hardware set.
2. Provide extra long strike lips for locks on frames w/ applied wd casing trim.
3. Provide recess type strikes for bolts locking into head frames.
4. Provide mortised strikes for fast doors, except where threshold const provides non-recessed strike for bolt.
5. MIN BOLT THROW: Provide 5/8" min throw of latch on pairs of drs. Provide 1/2" min throw of latch for other bored and preassembled types of locks and 3/4" min throw of latch for mortise locks. Provide 1" min throw for exit devices.
6. FLUSH BOLT MATERIAL: Min of 1/2" dia rods of brass, bronze or stls w/ min 1/2" long rod for drs up to 84" ht. Provide longer rods for doors exceeding 84" in ht.
7. PUSHPULLS, DR TRIM & FLATGOOD UNITS: Provide manuf standard exposed fasteners for pl trim units consisting of machine screws or self-tapping screws, thru-bolted for matched pairs but not for single units. Fabricate edge trim of sts to fit dr thickness in standard lengths or to match ht of protector plates.
8. DR SEAL & THRESHOLDS: Provide cont weatherstripping on ext drs typ. Provide non-corrosive fasteners at ext. Provide solid thresholds where shown. Set thresholds in full bed of sealant, as req'd for weathertight conditions.
9. Weatherstripping at Jambs and Heads: Provide bumper-type resilient insert and rod retainer strip, mortised in wdwheads.
10. WEATHERSTRIPPING AT DR BOT: Provide threshold consisting of contact-type resilient insert and mtl housing.
11. DR STOPS: Fin wall stop is indicated but is not possible or feasible to install, provide an "invisible" wall stop or eq.
12. FRAME SILENCERS: Provide frame-mounted resilient bumpers at all dr frames where weatherstripping or other dr seals are not provided. 3 ea at single drs, 2 ea dr pairs.
13. INSTALL hardware items at hts as recommended by the Door and Hardware Institute, except as specifically req'd to comply w/ local codes. Install hardware in compliance w/ the manuf instructions and recommendations. Set units level, plumb and true. Consult w/ owner as to fining instructions.
14. MIN DR HARDWARE (typ per dr leaf, UNO): 3 ea butt hinges. Lockset (entry function to be verified w/ owner before ordering). Wall stop (fl stop when req'd), 3 ea frame silencers.
15. HARDWARE SCHED: Re dwgs. Specific hardware units and manuf indicated take precedence over general descriptions and acceptable manuf indicated.

SECTION 08 80 00 – GLAZING

1. WORK INCLUDED: Provide glass and glazing as shown on the dwgs, as specified herein and as needed to meet the reqs of the const.
2. WATERTIGHT & AIRTIGHT INSTALL of wdw glass product is req'd. UNO, Ea install must withstand normal temp changes, wind loading, impact loading, w/o failure including loss or breakage of glass, failure of sealants or gaskets to remain watertight and airtight, deterioration of glazing materials and other defects in the work.

REFERENCED STANDARDS:
1. GLAZING STANDARD: Comply w/ published recommendations of glass product manu'l and organizations below, UNO, Re publications for glazing terms not otherwise defined in this section or in referenced standards.
2. GANA Publications: GANA'S "Glazing Manual" and "Laminated Glass Design Guide."
3. SAFETY GLAZING STANDARDS: Where safety glass is req'd by code or AHJ, provide type of products indicated which comply w/ ANSI Z97.1 and testing reqs of 16 CFR Part 1201 for category II materials.
4. WARRANTY ON HERMETIC SEALS: Provide insulating glass manu'l written warranty, agreeing to, w/in specified warranty period, furnish FOB project site, replacement units for insulating units which have defective hermetic seals (excluding glass breakage); defined to include intrusion of moisture or dirt, internal condensation at temp above -20 deg F, deterioration of internal glass coating & other visual evidence of seal failure or performance failure, provide manuf instructions for handling, install, protection and maintenance have been adhered to during warranty period. WARRANTY PERIOD: 10 yrs after seal date perm imprinted on unit, but < than 5 yrs after date of substantial completion.

PRODUCTS: MANUF'S SOURCE LIMITATIONS: For ea glass type and glazing accessory, obtain from a single manuf, Approved manuf of glass include: AGC, Cardinal, Guardian, Viro and Vitro.

PERFORMANCE REQS:
1. GLASS DESIGN REQS: Glass thicknesses indicated are min and for detailing only. Confirm glass thicknesses by analyzing project loads and in-service conditions. Provide glass for various size openings in nom 1/4" increments, but no less than thicknesses and in strengths (annealed or heat treated) req'd to meet or exceed the following criteria. Select min glass thicknesses to comply w/ ASTM E 1300, according to the following reqs: Specified Design Wind Load for Esl Class: Determine design wind loads applicable to project from basic wind speed indicated on the dwgs in mile/hr at 33' above grade, according to ASCE 7. Section 6.4.2 based on mean roof hts above grade → w/ a min uniform pressure loading of 25 PSF inward and 25 psf outward. Probability of Breakage for Vert Glazing: Max per 1000 lites set at no more than 15 psg off vert and under design load. Load Duration: 60 sec or less.
2. THERMAL MOVEMENTS: Provide glazing that allows for thermal movements resulting from the following max change in ambient and surface temps acting on glass framing members and glazing components. Temp Change: 120 deg F, ambient; 180 deg F, inside glass surface; and nighttime-sky heat loss. Temp Change: 120 deg F, ambient; 180 deg F, exposed surfaces.
3. FLOAT/PLATE GLASS: Type I, Quality q3, clear, UNO.
4. SAFETY GLASS: Provide "category II" materials complying w/ testing reqs in 16 CFR 1201 and ANSI Z97.1. Subject to compliance w/ reqs, permanently mark safety glass w/ certification label of Safety Glazing Certification Council or another certification agency acceptable to AHJ.
5. TEMPERED GLASS: Provide prime glass of color and type indicated, edge-seamed (ground) and heat treated by horiz (roller hearth) process with uniform color and high degree in bending to not less than 4.5 times annealed strength. Temper glass horiz - visible tong marks or other distortions are not acceptable. Provide safety glass permanently marked w/ certification label of Safety Glazing Certification Council or other acceptable to AHJ.
6. GLASS FOR "ALL-GLASS" INT STOREFRONT: Provide fully tempered, ultraclear (low-iron) glass meeting ASTM 1048, Kind FT, Condition A, Type I, Class 1, Quality-Q3, w/ visible light transmission of not less than 91%, tested for surface and edge compression per ASTM C 1048 and for impact strength per 16 CFR 1201 for Category II materials and as follows: Pair glazing pnls for read fittings and hardware before tempering, when applicable. Polish all edges exposed in the fin work after cutting to size and before temper.

FABRICATION:
1. FABRICATE GLASS as indicated and in strict accordance w/ manuf tested assemblies. Include a complete sys for install and anchoring wdws. Glazed pnls must be miter-cut, fusion-welded and reinforced as req'd for rigidity and resistance to the req. Stationary pnl is to be direct set w/ glazing tape or silicon sealant into the main frame. Glaze wdws in the factory. Weather strip as operable sash to provide weathertight install.
2. Mullions: Provide mullions, matching wdw units, matching wdw units, complete w/ anchors for support to struct and install of wdw units. Allow for erection tolerances and provide for movement of wdw units due to thermal exp and bldg deflections. Provide mullions and cover plates capable of withstanding design wind loads of wdw units. Complete fabrication, assembly, fin, hardware application and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and install. Allow for scribing, trimming and fitting at project site.
3. EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ. REQ QUALITY CONTROL: A qualified, independent testing agency may be engaged by the owner to perform field tests and inspections of installed wdw and dr units. The testing and inspecting agency will prepare and submit test data and state in its report whether the tested work complies w/ or deviates from the reqs indicated herein.
4. Testing Methodology: Testing of wdws for air infiltration and water resistance must be performed according to AAMA 502.
5. Min Extent of Testing: 2 wdws and 2 drs min of ea type, as recommended by the testing and inspecting agency. Additional units may be tested at manufacturer's option.
6. Test Reports: Prep according to AAMA 502.

SECTION 08 80 00 – LOUVERS AND VENTS

1. WORK INCLUDED: Provide arch louvers and vents where indicated on the dwgs, as specified herein and as necessary for complete install.
2. ROOF WALL SLOPES: Provide units for flat slopes.

DIVISION 09 FINISHES

SECTION 09 08 00 – MOISTURE VAPOR EMISSION CONTROL

PROVIDE an alkaline-resistant, moisture-vapor emission control-fx treatment under new fl fin (except at sealed concrete floors) or over concrete substrates (herein after referred to as "conc"), as indicated herein and as follows:
   - Provide only those products that is installed w/in 1 yr prior to fl application
   - Provide on exist conc fl surfaces when moisture vapor testing indicates the exist moisture content in the concrete is higher than the amount recommended by the fl manuf for install of their products.
   - Applicable fl fin includes but are not limited to ceramic/porcelain tile, resilient vinyl composition tile, sheet vinyl fl, carpeting, rubber & wd based fl (including laminate wd fls).

QUALITY ASSURANCE:
1. VERIFY COMPATIBILITY of materials including surface sealers, if any, w/ indicated vapor mitigation fl treatment and w/ the fl products, including adhesives.
2. INSTALLER must be trained, certified or otherwise specifically approved as an applicator by the product manuf for writing.
3. PROJECT CONDITIONS: Do not install material below 50° F surface & air temp and maintain during & for 48 hrs after install. Install per manuf recommendations if substrate is warm.

PRODUCT: MVE FLR TREATMENT: Pourable, single-coat, 100% solids, high-quality 2 component epoxy based coating specifically formulated to reduce moisture vapor transmission to less than 3 lbs when applied to correct thickness of material and prepared ready w/in 5 to 6 hrs of application at 73 deg F.
   - B.O.D: CMVC by Custom Building Products. - In 15 mils dry film thickness min
   - Eq acceptable products - pending compliance w/ indicated characteristics of B.O.D:
     - MC Rapid by Ardex – 10 mil DMT min
     - Supercap Moisture Vapor Control by Laticrete – 12 mil DMT min
     - Planiseal VS Fast by Mapei – 10 mils DMT min
     - Dural RH+00 by USG – 13 mils DMT min
     - LiquiDam Penetrating Moisture Vapor Barrier (213) by TEC/H&I Fuller: 150 SF/gal typ

EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any recs of AHJ.

SECTION 09 22 16 NON-STRUCTURAL METAL FRAMING

WORK INCLUDED
1. Framing systems
2. Suspension Systems
3. Grid suspension systems

ACTION SUBMITTALS
1. Product Data: For each type of product. Sustainable Design Submittals:

INFORMATIONAL SUBMITTALS
1. Product Certificates: For each type of code-compliance certification for studs and tracks.

DELIVERY, STORAGE, AND HANDLING
1. Notify manufacturer of damaged materials received prior to installation.
2. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
3. Protect cold-formed metal framing from corrosion, deformation, and other damage during delivery, storage, and handling as required by ASI S202, "Code of Standard Practice for Cold-Formed Steel Structural Framing."

PRODUCTS

PERFORMANCE REQUIREMENTS
1. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, in accordance with ASTM E119 by an independent testing agency.
2. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated on Drawings, in accordance with ASTM E90 and classified in accordance with ASTM E413 by an independent testing agency.
3. Seismic framing systems in accordance with AISI S220, "North American Specification for the Design of Cold-Formed Steel Framing - Nonstructural Members," unless otherwise indicated.
4. Design Loads: As indicated on architectural Drawings or in Table, R, minimum as required by the IBC.
5. Deflection Limits: Design framing systems to withstand deflection of primary building structure and construction tolerances and to withstand design loads with a maximum deflection of 1-1/2 inches.

FRAMING SYSTEMS
1. Framing Members, General: Comply with ASTM C 754 for conditions indicated.
   A. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
   B. Protective Coatings: ASTM A 653/A 653M, G40 (Z120) hot-dip galvanized unless otherwise indicated.
2. Studs and Runners: ASTM C645.
   A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. ClarkDietrich
      b. James Industries
      c. MM Steel Framing, LLC
   B. Minimum Base-Metal Thickness: As required by performance requirements for horizontal deflection
   C. Depth: As indicated on Drawings.
3. Slip-Type Head Joints: Where indicated, provide one of the following:
   A. Clip System: Clips designed for use in head-of-wall deflection conditions that provide a positive attachment of studs to runners while allowing 1-1/2-inch (38-mm) minimum vertical movement.
   B. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.
4. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.
   A. Minimum Base-Metal Thickness: 0.0296 inch (0.752 mm), UNO.
5. Cold-Rolled Channel Bridging: Steel, minimum 0.0538-inch (1.367-mm) minimum base-metal thickness, with minimum 1/2-inch- (13-mm-) wide flanges.
   A. Depth: 1-1/2 inches (38 mm), UNO.
   B. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38 by 38 mm), 0.068-inch- (1.72-mm-) thick, galvanized steel.
6. Hat-Shaped, Rigid Furring Channels: ASTM C 645.
   A. Minimum Base-Metal Thickness: As indicated on Drawings.
   B. Depth: 7/8 inch (22.2 mm), UNO.
7. Resilient Furring Channels: 1/2-inch- (13-mm-) deep, steel sheet members designed to reduce sound transmission
   A. Configuration: Asymmetrical

SUSPENSION SYSTEMS
1. WIRE: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.062-inch- diameter wire, or double strand of 0.048-inch- diameter wire.
2. Hanger Attachments to Concrete:
   A. Expansion Anchors: Fabricated from corrosion-resistant materials, with allowable load or strength design capacities calculated according to ICC-ES AC193 and ACI 318 greater than or equal to the design load, as determined by testing per ASTM E 488/E 488M conducted by a qualified testing agency.
   B. Power-Actuated Anchors: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with allowable load capacities calculated according to ICC-ES AC70, greater than or equal to the design load, as determined by testing per ASTM E 1190 conducted by a qualified testing agency.
3. Wire Hangers: ASTM A641/A641M, Class 1 zinc coating, soft temper, 0.16 inch in diameter.
4. Carrying Channels (Main Runners): Cold-rolled, commercial-steel sheet with a base-steel thickness of 0.0538 inch and minimum 1/2-inch- wide flanges.
   A. Depth: As indicated on Drawings.
5. Furring Channels (Furring Members)
   A. Hat-Shaped, Rigid Furring Channels: ASTM C 645. 7/8 inch (22 mm) deep.
      a. Minimum Base-Metal Thickness: As indicated on Drawings.
   B. Resilient Furring Channels: 1-1/4-inch- (15-mm-) deep members designed to reduce sound transmission.
      a. Configuration: Asymmetrical.

GRID SUSPENSION SYSTEMS
1. Grid Suspension Systems for Gypsum Board Ceilings: ASTM C645, direct-hung system composed of main beams and cross-furring members that interlock.
   A. Manufacturers: Subject to compliance with requirements, provide products by the following:
      a. As indicated in Drawings

AUXILIARY MATERIALS
1. General: Provide auxiliary materials that comply with referenced installation standards.
   A. Fasteners for steel framing: of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.
2. Isolation strip at exterior walls: Provide one of the following:
   A. Asphalt-Saturated Organic Felt: ASTM D226/D226M, Type I (No. 15 asphalt felt), perforated.
   B. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement. 1/8 inch thick, in width to suit steel stud size.

EXECUTION
EXAMINATION
1. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.
2. Proceed with installation only after unsatisfactory conditions have been corrected.

INSTALLATION, GENERAL
1. Installation Standard: ASTM C754,
   A. Gypsum Board Assemblies: Also comply with requirements in ASTM C840 that apply to framing installation.
2. Install framing and accessories plumb, square, and true to line, with connections securely fastened.
3. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.
4. Install bracing at terminations in assemblies.
5. Do not bridge building control and expansion joints with non-load-bearing steel framing members.

2. Metal Stud Framing
   A. Provide ASTM C 645 metal studs of 0.015 minimum steel thickness (26 gage) with double-hole ribbing (ClarkDietrich UltraSteel or equivalent) or 0.0179-inch thickness (25 gage) for typical flat-faced steel units x 3-5/8 " depth unless otherwise noted. Provide runners matching studs, of type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall work at other work. Provide studs in stud size as indicated on the Drawings, and in compliance with the Steel Stud Manufacturer's Association (SSMA)'s limiting heights table for L/360 deflection at 5 PSF load, as summarized below:
3. MAXIMUM STUD SYSTEM FRAMING HEIGHT PER UNIT SIZE, APPLICATION & SPACING
   A. Non-wind-pressure Drywall Assemblies (w/ gyp. bd. short of wall top & w/ studs braced at 48" OC vertical max)
   B. 3-5/8-inch x 25 gage studs at 12-inch centers: 12' – 6"
   C. 3-5/8-inch x 25 gage studs at 16-inch centers: 11' – 4" (max allowable stud spacing)
   D. 3-5/8-inch x 25 gage studs at 24-inch centers: 10' – 10"
   E. 3-5/8-inch x 20 gage studs at 16-inch centers: 13' – 6" (max allowable stud spacing)
4. COMPOSITE DRYWALL ASSEMBLIES (with gypsum board full height each side to top of wall)
   A. 3-5/8-inch x 25 gage studs at 12-inch centers: 14'-7"
   B. 3-5/8-inch x 25 gage studs at 16-inch centers: 13' – 3" (max allowable stud spacing)
   C. 3-5/8-inch x 20 gage studs at 12-inch centers: 16' – 4"
   D. 3-5/8-inch x 20 gage studs at 16-inch centers: 14' 10" (max allowable stud spacing)
   E. 6-inch x 25 gage studs at 12-inch centers: 19' – 11"
   F. 6-inch x 25 gage studs at 16-inch centers: 18' – 1" (max allowable stud spacing)
   G. 6-inch x 20 gage studs at 12-inch centers: 23' – 8"
   H. 6-inch x 20 gage studs at 16-inch centers: 21' – 6" (max allowable stud spacing)
5. DRYWALL FURRING CHANNELS
   A. 7/8-inch minimum deep ASTM C 645 hat-shaped rigid units of 0.0312 inch (20 gage) minimum commercial steel sheet with manufacturer's standard corrosion-resistant zinc coating. Provide stud manufacturer's standard clips, shoes, ties, reinforcements, fasteners and other accessories as needed for a complete stud system.
6. TOP-OF-WALL DEFLECTION TRACK
   A. Provide at all interior non-load bearing partitions to prevent compression of stud framing or cracking of gypsum board resulting from deflection of the structure above. Provide ASTM C 645 steel-sheet top-runner units in base metal thickness of next thicker available metal thickness than metal thickness indicated for the partition. In steel framing members, Track units must provide not less than 1-inch vertical movement of the structural framing system.
7. TYPICAL NON-FIRE RATED DEFLECTION TRACK
   A. Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:
      a. The Steel Network, Inc., VertiTrack VTD Series.
      b. Dietrich Metal Frame & Supply, Inc.; Superior Flex Track System (SFT).
      c. MetalLink, Inc.; Slotted Track.
      d. ClarkDietrich Steel-Slotted Deflection Track
8. DEFLECTION TRACK WITH GYPSUM BOARD EXTENDING TO DECK and at fire-rated top-of-wall assemblies
   A. Units manufactured to maintain continuity of fire-resistance-rated assemblies without cracking gypsum board, Products that may be incorporated into the Work include, but are not limited to, the following:
      a. MetalLink, Inc.; The System,
      b. Fire Trak Corp.; Shadowline
      c. The Steel Network, Inc.; VertiClip SLD Series or VertiTrack VTD Series,
9. SUSPENDED CEILING / SOFFIT FRAMING
   A. Comply with ASTM C 754 for conditions indicated, using steel members noted above, and as follows:
      a. SUSPENSION WIRE (typical between hangers or structural steel framing units above to CRC): Size complying with ASTM A 641/A soft-tempered carbon steel wire with Class 1 galvanized zinc coating, pre-stretched, with yield-stress load of at least four (4) times load of suspended materials, but not less than 0.1620 inch-diameter (#8 ASWG) wire minimum (for up to 210 lbs, material load per wire) – space not more than four (4) feet centers to Deck.
      b. SPLAY-WIRE BRACES: ASTM A 641/A soft-tempered carbon steel wire with Class 1 galvanized zinc coating, pre-stretched, not less than # 12 ASWG) wire minimum at not more than 45-degree angles from compression stud braces,
      c. COMPRESSION STRUTS: Provide at exterior suspension framing typically and at interior seismic braces, when indicated, Assembly from minimum 3-5/8-inch x 0.0312-inch (20 gage) drywall stud minimum parallel with # S suspension wire, and with four (4) each spay wires secured to structure above, to resist up/ wind or seismic pressures
      d. COLD ROLLED CHANNELS (CRC'S): 0.0538-inch bare steel thickness (16 gage), with minimum 1/2-inch-wide flange, 1-1/2-inch-deep or greater if indicated, suspended from structure at four (4) 's below,
      e. TIE WIRE: ASTM A 641/A (to connect CRC's to furring units), Class 1 zinc coating, soft temper, 0.0625-inch-diameter (# 16 ASWG) wire minimum, or double strand of 0.0475-inch-diameter (# 18 ASWG) wire minimum.
      f. FURRING CHANNELS (for edge support): at 16-inch centers maximum, except where otherwise indicated, or where indicated to be resilient furring channels at acoustical ceiling assemblies.
      g. ACOUSTICAL CEILING HANGERS (for suspended drywall ceilings): Refer to Division-13 "Sound and Vibration Control Components " Section for required products,
      h. ACOUSTICAL BATT INSULATION: ASTM C 665, Type I (blankets without membrane facing) produced by combining fire-resisting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
10. Steel Drill Screws: ASTM C 1002 unless otherwise indicated,
    A. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0,84 to 2,84 mm) thick,
    B. For fastening cementitious backer units, use screws of type and size recommended by panel manufacturer.
11. Sound-Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.
    A. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.
12. Acoustical Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.
    A. Sealant shall have a VOC content of 250 g/L or less.
13. Thermal Insulation: As specified in Section 072100 "Thermal Insulation."
14. Vapor Retarder: As specified in Section 072600 "Vapor Retarders."
15. Special Acoustic Blankets: at locations indicated in drawings
    A. Owens-Corning SelectSound Black Acoustic Blanket, 2 " thickness.
    B. Installation instructions per manufacturer.

TILE BACKING PANELS

1. Cementitious Backer Units: ANSI A118.9 and ASTM C1288 or ASTM C1325, with manufacturer's standard edges.
   A. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
      a. USG Corporation
      b. C-Cure
      c. Custom Building Products
   B. Thickness: As required by drawings and adjacent materials.
   C. Mold Resistance: ASTM D 3273, score of 10 as rated in accordance with ASTM D3274.
2. Mold-Resistant Gypsum Board (Where indicated): ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.
   A. Core: 5/8 inch or As required by drawings and adjacent materials.
   B. Long Edges: Tapered.
   C. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

EXECUTION

EXAMINATION

1. Examine area and substrates including wetted hollow-metal frames and support framing, with installers present, for compliance with requirements and other conditions affecting performance of the work.
2. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
3. Proceed with installation only after unsatisfactory conditions have been corrected

INSTALLATION AND FINISHING OF PANELS, GENERAL

1. Install panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.
2. Comply with ASTM C 840.
3. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments. Provide 1/4 inch to 1/2 inch (6,4 to 12,7 mm) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.
4. For trim with back flanges for fastening, attach to framing with same fasteners used for panels, otherwise, attach trim according to manufacturer's written instructions.
5. Form control joints and expansion joints at locations indicated and where required by code.
6. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.
7. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840:
   A. Level 1: Ceiling plenum areas, concealed areas, and where indicated.
   B. Level 2: Panels that are substrate for tile.
   C. Level 3: Where indicated on Drawings.
   D. Level 4: At panel surfaces that will be exposed to view unless otherwise indicated.
      a. Primer and its application to surfaces are specified in Section 099123 "Interior Painting."
8. Glass-Mat Gypsum Sheathing Board: Finish according to manufacturer's written instructions for use as exposed soffit board.
9. Glass-Mat Gypsum Panels: Finish according to manufacturer's written instructions.

PROTECTION

1. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.
2. Protect installed products from damage from weather, condensation, direct sunlight, construction, cleaning, and other causes during remainder of the construction period.
3. Remove and replace panels that are wet, moisture damaged, and mold damaged.
   A. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
   B. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

SECTION 09 30 00 – TILING

PROVIDE TILE WORK where indicated on the dwgs, as specified herein, and as needed to meet the regs of the const shown in the CDs,

PRODUCTS:

1. TILE MATERIALS & GROUT COLORS: Re dwgs for tile materials & grout colors,
2. PROVIDE NON-SLIP TILE or non-slip coating at all walking surface areas of tr ilts.
3. TILE TRIM UNITS: Provide units matching characteristics of adjoining flat tile and coord w/ sizes and coursing of adjoining flat tile where applicable. Provide manu' standard shapes, including but not limited to coved base units, wainscot caps, external corner units and other trim units as applicable.

MTL TRIM UNITS:

1. COVE BASE TRIM: "Schluter" DILEX-EHK as cove in size regd to provide flush transition from tile to tile to wall-base fin. Provide manu' standard trim connectors, outside corners and 2-way trim units as applicable to fit wall transitions in floor-service areas, UNO.
2. TILE-EDGE TRIM AT CONC FLR: "Schluter – Rondec – AETVB" (satin anodized alum) in ht req'd to match tile thickness, on re'd 0.79" transition leg. Provide top at edge of tile abutting exposed conc or resilient fir.
3. TYP TILE-EDGE TRIM AT CARPET: "Schluter – Schiene AE" (satin anodized alum) in ht req to match tile thickness. Provide top between tile and carpet.
4. FIBER-CEMENT UNDERLAYMENT: 1/4" thick cement bd meeting ASTM C 1288, in max lengths available to min exit-t-bend butt jts, B.U.O.: HardieBacker Cement Board, by James Hardie Building Products Inc.

MEMBRANES:

1. CRACK-SUPPRESSION MEMBRANE (liquid applied): Waterproof membrane material complying w/ ANSI A118.10, to waterproof tile assembly as spec in ANSI A108.13, B.U.O.: "RedGard Waterproofing and Crack Prevention Membrane," by Custom Building Products.
   FLR WATERPROOFING UNDERLAYMENT (for use on potentially "wet" elevated flrs): Composite wtr membrane made from an alloy of non-s-steelized chlorinated polyethylene wi nonwoven fiber polyester backing both sides, meeting ANSI A118.10 for waterproofing, wi STC of 59 per ASTM E 90 & ASTM E 413, w/ impact insulation Class (IIC) of 62 per ASTM E 492 & ASTM E 989. "Noraseal" by Noraseal specialty-cement mortar; 72" w by 0.055" nom thickness, 3-O.D: "NoraSeal SB5" by the Noble Company.
2. THIN-WATERPROOFING MEMBRANE (for use at thin-set shower pans): Non-plasticized, high-grade chlorinated polyethylene sheet faced on both sides w/ high-strength, nonwoven polyester fabric, meeting ANSI A118.10 and manuf specifically for adhering to latex-Portland cement mortar; in up to 72" w by 0.040" nom thickness. Where applicable, comply w/ manuf recommendations for spanning shower pans over short jts in conc struct, B.O.D: "Chloraloy" as manufd by The Noble Company or eq.
3. ALL WATERPROOFING MEMBRANE (for wet-walls including showers and tub-surrounds): PVC sht w/ polyester fabric laminated to both sides and manuf specifically for adhering to latex-Portland cement mortar at int locations; 72"-w by 0.025" nom thickness, B.O.D: "Wall Seal" as manufd by The Noble Company.

SETTING MATERIALS:

1. ACCEPTABLE MANUF FOR TILE SETTING MATERIALS: Subject to compliance w/ reqs, provide tile-setting products as manuf by one of the following: Custom Building Products, LATICRETE International Inc., MAPEI Corporation,
2. THIN-SET MORTAR: ANSI A118.4 latex modified, Portland cement mortar consisting of precuckaged dry-mortar mix combined w/ acrylic resin liquid-latex additive. For wall applications, provide nonsagging mortar complies w/ Paragraph F-4L.1 in addition to the other reqs in ANSI A118.4, B.O.D: "Porcelain Tile Fortified Thin-Set Mortar ", "VersaBond Flex Fortified Thin-Set Mortar" or "VersaBond-LFT (as applicable), by Custom Building Products.
   CRACK-PREVENTION MORTAR (for use over structural substrates): ANSI A118.4, Premium quality thin-set polymer-modified mortar w/ exceptional flexibility and bond strength for use over difficult surfaces, including wet and plywood substrates. B.O.D: "FlexBond" by Custom Building Products.
   THICK-SET MORTAR: Portland cement Mortar, per ANSI A 108.02, B.O.D: "Thick Bed Bedding Mortar" by Custom Building Products, GROUT (for typ tr or wall surfaces):
   ANSI A118.7, single component stain resistant premixed grout. Provide sanded grout for jts over 1/8" – unsanded grout for jts 1/8" and less, B.O.D: "Fusion Pro" by Custom Building Products.
3. TILE GROUT SEALER: "Aqua-Mix Sealer's Choice 15 Gold" penetrating sealer,

EXECUTION Per 01 73 00, manuf written instructions, referenced standards and in compliance wi any regs of AHJ,

1. TEST EXISTING CONC SUBSTRATES w/o a Moisture Vapor Emission (MVE) treatment to verify rate of MVE does not exceed 4lbs/1,000 sf per 24 hrs when tested using calcium chloride moisture test kit for 72 hrs,
2. COMPLY w/ the Tile Council of North America's "Handbook for Ceramic, Glass, and Stone Tile Installation" as applicable to types of setting and grouting materials used,
3. EXTEND tile work into recesses and under or behind equip and fixtures, to form a complete covering w/o interruptions. UNO. Terminate work neatly at obstructions, edges and corners w/o disrupting pattern or jt alignments,
4. INSTALL WEMBRANES throughout tile install area, per regs of membrane manuf. At waterproofing membrane, overlap sht membrane a min of 2" straight ladder-in direction of water drainage. At sht membranes, install at full coverage of bonding mortar to substrate & fully embed sht membrane into bonding material w/ a trowel. Allow to cure and verify by testing the waterproofing membrane is watertight before installing tile or setting materials over it,
5. JOINTING PATTERN: UNO, lay tile in grid pattern. Align jts w/ed wj tiles on flr, base, walls, and trim are same size. Layout tile work and cfr tile fields in both directions in ea space or on each wall area. Adjust to min tile cutting. Provide uniform j wicths, UNO,
6. APPLICATION OF GROUT SEALER: Provide tile and grout seal coating in full strength in accordance w/ manuf recommendations. Avoid overlapping, over-spraying, puddling and immediately wipe off spills of excess materials. Maintain sealed areas dry for no less than 12 hrs after application,
7. INSTALL SHRED (per TCNA's install methods):
   - INT FLR TILE ON CONC: TCNA Method # F113,
   - INT FLR TILE ON WD: TCNA Method # F155,
   - INT FLR TILE W/ UNDERLAYMENT: TCNA Method # F144,
   - INT RADIANT HEAT FLR TILE ON CONC: TCNA Method # RH115,
   - INT RADIANT HEAT FLR TILE ON WD: TCNA Method # RH130,
   - INT RADIANT HEAT FLR TILE W/ UNDERLAYMENT: TCNA Method # RH135,
   - INT WALL TILE & TILE BASE (at limited-wet areas): TCNA Method # W244,
   - WET-AREA WALL TILE (at tubs and showers): TCNA Method # W246,
   - SHOWER-AREA FLR TILE: (on elevated flrs): TCNA Method # B420,
   - SHOWER-AREA FLR TILE W/ RADIANT HEAT: (on elevated flrs): TCNA Method # B420,

SECTION 09 51 13 ACOUSTICAL PANEL CEILINGS

WORK INCLUDES

1. Acoustical ceiling panels
2. Exposed suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings

PRODUCTS

SYSTEM DESCRIPTION

1. Conform panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

SUBMITTALS

1. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.
2. Samples: Minimum 6-inch x 6-inch samples of specified acoustical panel, 6-inch-long samples of exposed wall molding and suspension system, including main runner and 4-foot cross tees.
3. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with items specified in other sections.

QUALITY ASSURANCE

1. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer to ensure fit and function.
2. Installer Qualifications: Company specializing in performing specified work type, a minimum of three years of documented experience, and approved by the manufacturer.
3. Fire Performance Characteristics: Identify acoustical panels with appropriate markings of applicable testing and inspecting organization.
4. Surface Burning Characteristics: Tested per ASTM E 84 and complying with ASTM E 1264 Classification,

DELIVERY, STORAGE, AND HANDLING

1. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.
2. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.
3. Handle acoustical ceiling units carefully to avoid chipping edges or damaging units in any way.

PROJECT CONDITIONS

1. Space Enclosure:
   A. Humi-Guard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with Humi-Guard Plus performance and not dipped galvanized steel, aluminum or stainless steel suspension system components can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating 24/7. Cannot be used in exterior applications where ponding water is present or where moisture will come in direct contact with the ceiling.

WARRANTY

1. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period.

MAINTENANCE

1. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed, Packaged with protective covering for storage and identified with appropriate labels.
   A. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.
   B. Exposed Suspension System Components: Furnish quantity of each suspension system component equal to 2.0 percent of amount installed.

MANUFACTURERS

1. Ceiling Panels:
   A. Armstrong World Industries, Inc.
2. Suspension Systems:
   A. Armstrong World Industries, Inc.

ACOUSTICAL CEILING UNITS

1. Acoustical Panel Ceilings
   A. Surface Texture: Fine Texture
   B. Composition: Mineral Fiber
   C. Color: White
   D. Size: 24 in x 24 in
   E. Edge Profile: Beveled Tegular, Square Lay-in
   F. Noise Reduction Coefficient (NRC) ASTM C 423 Classified w/ UL label on product carton: 0.70
   G. Ceiling Attenuation Class (CAC): ASTM E1414/E1414M: Classified with UL label on product carton: 35
   H. Articulation Class (AC): ASTM E 1111; Classified with UL label on product carton: 170
   I. Flame Spread: ASTM E 1264: Class A
   J. Light Reflectance (LR) White Panel: ASTM E 1477: 0.85
   K. Dimensional Stability: Standard, Humi-Guard Plus
   L. Recycle Content: Up to 87% total recycled content. (Total recycled content: preconsumer, post-consumer and post-industrial)
   M. Mineral Fiber Board: Factory-applied, water-based, membrane-type coating.
   N. Life Cycle Assessment: Third Party Certified Environmental Product Declaration (EPD)
   O. Indoor Air Quality: Low emitting per ASTM D 5116
   P. USDA Certified Biobased Product
   Q. Basis of Design: ULTIMA Lay-in & Tegular, Item #P1910A as manufactured by Armstrong World Industries, Inc.

METAL SUSPENSION SYSTEMS

1. Components: Main beams and cross tees, base metal and end detail, fabricated from commercial-quality hot dipped galvanized steel complying with ASTM A 653, Main beams and cross tees are double-web steel construction exposed flange design. Exposed surfaces chemically cleaned, capping preinfished galvanized steel in baked polyester paint, Main beams and cross tees shall have rotary stitching.
   A. Structural Classification: ASTM C 635 Intermediate or Heavy Duty.
   B. Color: White to match the actual color of the selected ceiling tile, unless noted otherwise.
   C. Sustainability: Environmental Product Declaration (EPD), Health Product Declaration (HPD).
   D. Basis of Design:
      a. Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc.
   E. Substitutions: Refer to Alternates in Part 1.
2. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct hung unless otherwise indicated.
3. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield strength load of at least three times design load, but not less than 12 gauge.
4. Edge Moldings manufactured by Armstrong World Industries, Inc.
5. AXIOM Trim & Transitions as manufactured by Armstrong World Industries, Inc. www.armstrongceilings.com/axiom

6. Accessories as manufactured by Armstrong World Industries, Inc.

EXAMINATION

1. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

PREPARATION

1. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half-width units at borders and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.
2. Coordination: Furnish layouts for preset inserts, dips, and other ceiling anchors whose installation is specified in other sections.
   A. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

INSTALLATION

1. Follow manufacturer installation instructions.
2. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.
3. Suspend main beam from overhead construction with hanger wires spaced 4 feet on center along the length of the main runner. Install hanger wires plumb and straight.
4. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.
5. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.
6. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees, Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

ADJUSTING AND CLEANING

1. Replace damaged and broken panels.
2. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

SECTION 09 54 23 LINEAR METAL CEILINGS

WORK INCLUDED

1. ENDURE CEILING / WALL PANEL
2. SUSPENSION SYSTEM

DESIGN / PERFORMANCE REQUIREMENTS

1. SUSPENSION SYSTEM: Rigidly secure acoustic ceiling system including integral mechanical and electrical components with max. deflection of 1/360
2. Linear ceilings will undergo changes with variations in the environment. Therefore, all dimensional tolerances are plus or minus 1/8"
3. Fire performance characteristics: Linear strips shall conform to class 1, or A flame spread rating, tested according to ASTM E 84; Flame spread: 25 or less, Smoke developed: 450 or less.

SUBMITTALS

1. Submit under provisions of Section 01 33 00 - Administrative Requirements
2. Product Data: Manufacturer's data sheets on each product to be used, including:
   A. Preparation instructions and recommendations.
   B. Storage and handling requirements and recommendations.
   C. Installation methods.
3. Shop Drawings: Provide layout of linear ceiling and hat channel coordinated with other trades that will penetrate the linear ceiling or interfere with the installation and recessed or surface mounted devices located within the ceiling panels. Indicate method of suspension where interference exists.
4. Selection Samples: For each finish product specified, two complete sets of color brochures representing the manufacturer's full range of available colors and patterns.
5. Verification Samples: Certify products meet or exceed specified requirements.
6. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommended periodic checking and adjustment and periodic cleaning and maintenance of all components.

QUALITY ASSURANCE

1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
2. Installer Qualifications: Minimum 2 years documented experience installing projects of similar size and complexity.
3. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
   A. Finish areas designated by Architect.
   B. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
   C. Refinish mock-up area as required to produce acceptable work.
   D. Accepted mock-up shall be standard for comparison for remaining Work
   E. Pre-Installation Conference: Convene minimum two weeks prior to starting work of this section. Agenda shall include review of site conditions, coordination with work of other trades, and layout of items that penetrate ceilings.

DELIVERY, STORAGE, AND HANDLING

1. Deliver material in the manufacturer's original, unopened, undamaged containers with identification labels intact.
2. Store products off the floor in manufacturer's unopened packaging protected from exposure to harmful environmental conditions and at temperature and humidity conditions as recommended by the manufacturer.
3. A minimum of 72 hours prior to ceiling installation, linear strips shall be stored in the room in which they will be installed. Temperature and humidity of the room during this period shall closely approximate those conditions that will exist when the building is occupied.
4. Handle materials to avoid damage.

SEQUENCING

1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
2. Plenums have been completed and HVAC systems are operational within an excessive buildup of heat in the ceiling areas.
3. Space shall be fully enclosed with all exterior windows and doors in place, glazed, and weather-stripped. Roof is to be watertight, and all wet trades' work is to be completed, and thoroughly dry.
4. Mechanical, electrical, and other utility services above the ceiling plane shall be completed. No materials should rest against, or wrap around, the ceiling suspension components or connecting hangers.
5. Install only when the temperature and humidity closely approximate the interior conditions that will exist when the building is occupied. Heating and cooling systems shall be operating before, during, and after installation, with the humidity of the interior spaces maintained between 25 and 55 percent, and a temperature between 60 to 80 degrees F.

COORDINATION

1. Coordinate layout and installation of the linear ceiling systems with other work penetrating the ceiling including light fixtures, HVAC equipment, and fire suppression system components.

MANUFACTURERS

1. Acceptable Manufacturers: Rulon International, which is located at: 2000 Ring Way Rd.; St Augustine, FL 32092. Toll Free Tel: 800-227-8566. Tel: 904-584-1400. Fax: 904-584-1499. Email: request info (info@rulonco.com); Web:rulonco.com
2. Substitutions: not permitted.
3. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

MATERIALS - GENERAL

1. Linear ceilings will undergo changes with variations in the environment. Therefore, all dimensional tolerances are plus or minus 1/8 inch (3 mm).

ENDURE PANELS

1. Endure sheet metal systems are fabricated with strips that are nearly inert to harsh, moist weather conditions. Strips are completely recyclable.
   A. 400 Series Engineered Polymer Strips
   B. Basis of Design:
      a. Prelude XL 15/16" Exposed Tee as manufactured by Armstrong World Industries, Inc.
   E. Substitutions: Refer to Alternates in Part 1.
2. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct hung unless otherwise indicated.
3. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield strength load of at least three times design load, but not less than 12 gauge.
4. Edge Moldings manufactured by Armstrong World Industries, Inc.
5. AXIOM Trim & Transitions as manufactured by Armstrong World Industries, Inc. www.armstrongceilings.com/axiom

FABRICATION

1. Edges, borders, and perimeter trims shall be indicated on the Drawings in accordance with the manufacturer's standard design details. All linear strips specified shall be supplied by the linear strip ceiling manufacturer.

EXECUTION

EXAMINATION

1. Do not begin installation until substrates have been properly prepared.
2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

PREPARATION

1. Clean surfaces thoroughly prior to installation.
2. Work shall not begin until the space is fully enclosed and glazed and all wet work is completed and dried out to the satisfaction of manufacturer instructions.
3. Temperature shall be at least 65 degrees Fahrenheit during the installation and thereafter.
4. Prepare surfaces using the methods recommended by the manufacturer for achieving the best results for the substrate under project conditions.

INSTALLATION

1. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction, including the following:
   A. Comply with ASTM C 635 and seismic design requirements indicated.
2. Perimeters: Use a laser leveling device to lay out and install the perimeter trim as specified.
3. Furring Strips (vertical application): Install furring strips with weathersproofing as required at 16 " (406 mm) on center perpendicular to strip direction and direct mount the furring strips to existing structure or suspend with rigid.
4. Plywood Backer (horizontal or vertical application): Install OSB or equal with weatherproofing as required attaching at 24" (610 mm) on center to existing structure or suspended rigid.
5. Linear Strips: Use 1/4" 18 Gage 5/8" long Crown Staples and attach through the back of the groove to furring strips on max 16" (406 mm) centers. Apply Loctite PLR 540TM Polyurethane or equal when installing strips to weatherproofed sheathing and use 1/4" 18 Gage 5/8 " long Crown Staples and attach through the back of the groove to furring strips on max 24 " (610 mm) centers
6. Make final adjustments to level or contours as required.

FIELD QUALITY CONTROL

1. Technical Services: Manufacturer shall provide a local Technical Service Representative for on-site training and assistance during the installation process.
2. Environmental Monitoring: Manufacturer shall provide a temperature and humidity sensor to actively monitor the room in which the wood slats shall be installed for a minimum of one week before and up to two weeks after installation has been completed including all of the weeks in between.
3. Upon completion of ceiling installation, the owner's representative shall inspect all finished surfaces to ensure that the work has been completed in a manner satisfactory to the owner. Any deficiencies in the install of the ceiling shall be corrected prior to substantial completion.

SECTION 09 54 26 SUSPENDED WOOD CEILING

WORK INCLUDED

1. Rulon Linear ceiling panels
2. Suspension system

DESIGN / PERFORMANCE REQUIREMENTS

1. Suspension System: Rigidly secure acoustic ceiling system including integral mechanical and electrical components with maximum deflection of 1/360.
2. Wood is a natural product that will undergo changes with variations in the environment. Therefore, all dimensional tolerances are plus or minus 1/8 inch (3 mm).
3. Seismic Design Requirements: Provide suspended wood ceiling system that complies with direct screw attachment to heavy duty grid. Local code requirements should be consulted in order to determine applicable requirements.
4. Fire Performance Characteristics: Suspended wood ceilings shall conform to Class 1, or A flame spread rating, tested according to ASTM E 84; Flame Spread: 25 or less- Smoke Developed: 450 or less.
5. Certified Wood: Suspended wood ceilings shall be certified as "FSC Pure" or "FSC Mixed Credit" according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and FSC STD-40-004, "FSC Standard for Chain of Custody Certification "
6. Build Americas Buy American: Suspended wood ceilings shall conform to the requirements of the Build America Buy America (BABA) provisions as defined in 49 U.S.C. § 5323(j), requiring that all lead BABA products be produced in the United States and their final assembly occurred in the United States.

SUBMITTALS

1. Submit under provisions of Section 01 33 00 - Administrative Requirements.
2. Product Data: Manufacturer's data sheets on each product to be used, including:
   A. Preparation instructions and recommendations.
   B. Storage and handling requirements and recommendations.
   C. Installation methods.
3. Shop Drawings: Provide layout of suspended wood ceiling and T-rails coordinated with other trades that will penetrate the wood ceiling or interfere with the installation and recessed or surface mounted devices located within the ceiling panels. Indicate method of suspension where interference exists.
4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.

QUALITY ASSURANCE

1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum 5 years documented experience.
2. Installer Qualifications: Minimum 2 years documented experience installing projects of similar size and complexity.

DELIVERY, STORAGE, AND HANDLING

1. Deliver material in the manufacturer's original, unopened, undamaged containers with identification labels intact. Handle with care throughout installation.
2. Store products off the floor in manufacturer's unopened packaging protected from exposure to harmful environmental conditions and at temperature and humidity conditions as recommended by the manufacturer.
3. A minimum of 72 hours prior to ceiling installation, linear strips shall be stored in the room in which they will be installed. Temperature and humidity of the room during this period shall closely approximate those conditions that will exist when the building is occupied.
4. Handle materials to avoid damage.

SEQUENCING

1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

PROJECT CONDITIONS

1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
2. Plenums have been completed and HVAC systems are operational within an excessive buildup of heat in the ceiling areas.
3. Space shall be fully enclosed with all exterior windows and doors in place, glazed, and weather-stripped. Roof is to be watertight, and all wet trades' work is to be completed, and thoroughly dry.
4. Mechanical, electrical, and other utility services above the ceiling plane shall be completed. No materials should rest against, or wrap around, the ceiling suspension components or connecting hangers.
5. Install only when the temperature and humidity closely approximate the interior conditions that will exist when the building is occupied. Heating and cooling systems shall be operating before, during, and after installation, with the humidity of the interior spaces maintained between 25 and 55 percent, and a temperature between 60 to 80 degrees F.

COORDINATION

1. Coordinate layout and installation of the linear ceiling systems with other work penetrating the ceiling including light fixtures, HVAC equipment, and fire suppression system components.

MANUFACTURERS

1. Acceptable Manufacturers: Rulon International, which is located at: 2000 Ring Way Rd.; St Augustine, FL 32092. Toll Free Tel: 800-227-8566. Tel: 904-584-1400. Fax: 904-584-1499. Email: request info (info@rulonco.com); Web:rulonco.com
2. Substitutions: not permitted.
3. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

MATERIALS - GENERAL

1. Wood is a natural product that will undergo changes with variations in the environment. Therefore, all dimensional tolerances are plus or minus 1/8 inch (3 mm).

RULON LINEAR CEILING PANELS

1. Linear Open Style: Provided in random lengths with tongue and groove ends or in fixed lengths. Standard lengths are 3 feet to 10 feet.
   A. Module Size:
      a. 4-1/2 inch (114 mm) module, having wood strips 3/4 inch (19 mm) thick by 3-3/4 inch (95 mm) wide, and a 3/4 inch (19 mm) reveal

B. Location:
   a. Interior Areas: Interior ceiling areas shall have a factory-installed fiberfelt spacer between the wood strips, fiberfelt spacer is provided in a standard black color,
C. Trim and Border Treatment: Provide end caps or junction trims as indicated.
D. Wood Species:
   a. Maple
E. Finish:
   a. Match Rulon Natural Maple 413

ACCESSORIES

1. Closet: Attachment clips are spring-steel with phosphate pre-treatment and corrosion

2. LEVELING COMPOUND: Latex type as recommended by carpet manuf compatible w/ adhesive and cushion/backing compound on conc.
3. INSTALL ADHESIVE: Water-resistant, non-staining as recommended by carpet manuf, which complies w/ flammability req's for installed carpet.
4. DOUBLE-STICK CARPET CUSHION ADHESIVE: Use adhesive w/ VOC content less than 50 g/l. (per 40 CFR 59, Subpart D = EPA Method 24), except as otherwise req'd by pad or carpet manuf. "SS-5" (Tuf-N-Set") by Chicago Adhesive Products, Co. "Pinestrom" Dust-Stik DS-802, by Pine-Chem, Inc. "ECO 220"; by Mapei Corp.
5. SEAMING CEMENT: Hot-melt seaming adhesive or heat-activated recommended by carpet manuf, for taping seams and butting cut edges at backing to form secure seams and prevent pile loss at seams.
6. MISC MATERIALS: As recommended by manuf of carpet, cushions and other carpeting products; selected by installer to meet conditions encountered on each individual job.

EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any req's of AHJ.

SECTION 09 91 00 – PAINTING

1. WORK INCLUDES surface prep and qty or fin of surfaces exposed to view, throughout the project and in accordance w/ reqs herein. Except where a natural fin or a material is specifically noted as a surface not to be painted, all surfaces and areas whether or not ptg is designated in the dwgs, Where items or surfaces are not specifically mentioned, pt the same as sim adjacent materials or areas.
2. PTG NOT REQD: UNO, ptg is not reqd on PLAM, prefin sht mtl, plumb fixtures, elect equip (excluding exposed distribution cabinets) or elect devices). Ptg is not reqd on surfaces such as walls or dgs in concealed or inaccessible areas, Mil surfaces of anodized alum, s/s, aluminum plate and slim fin materials will not rec fin ptg, UNO. Do not pt over code reqd labels or equip ID labels.

QUALITY ASSURANCE

PRODUCT STANDARDS: Comply w/ Master Painters Institute (MPI) standards indicated and provide products as listed in "MPI Approved Products List", Provide best quality grade of various types of coatings indicated as regularly manuf by listed pt materials manuf, Materials not displaying manuf identification as a standard, best-grade product will not be acceptable.

1. SOURCE LIMITATIONS: Obtain block fillers, primers and undercoat materials for ea coating sys from the same manuf as the fin coats.
2. PROVIDE PRIMERS and undercoat pts produced by the same manuf as the fin coats. Use only thinners approved by pt manuf and use only with recommended limits.
3. PREP surfaces & apply coatings in strict accordance w/ the coating manuf recommendations.
4. DELIVER MATERIALS to job site in original, new and unopened packages and containers bearing manuf name and label, Store materials not in actual use in tightly covered containers. Maintain containers used in storage of pt in a clean condition, free of foreign materials and residue, Keep storage area well ventilated, Remove rags and waste daily. Take all precautions to ensure workmen and work areas are adequately protected from fire and health hazards resulting from handling, mixing and application of pts.
5. JOB CONDITIONS: Apply pts only when temp of surfaces to be pt and surrounding air temp are w/in recommended range permitted by the pt manuf Limited instructions, Do not apply pt when relative humidity exceeds 85% or to damp surfaces.

PRODUCTS:

1. MATERIAL QUALITY: Provide best quality grade of various types of coatings as regularly manuf by acceptable pt materials manuf, Materials not displaying manuf identification as a standard, best-grade product will not be acceptable.

RE pt materials soled at end of this spec, Provide materials in colors & fin as indicated dwgs.

EXECUTION:

1. SURFACE PREP: Clean surfaces of dirt, rust, scale, grease, moisture or other conditions otherwise detrimental to formation of a durable pt film or finish in accordance w/ pt manuf printed instructions for as particular substrate condition.
2. REMOVE hardware, accessories, plates, lighting fixtures and sim items in place and not to be fin pld or provide surface-applied protection prior to surface prep and ptg operations, Remove, if necessary, for complete pt work and adjacent surfaces, Following completion of ptg of ea space or area, reinstall removed items.
3. CLEAN WD SURFACES of dir, oil and other foreign substances w/ scrapers, mineral spirits and sandpaper as req, Sand smooth areas exposed to view and dust off, Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer, After priming, fill holes and imperfections in fin surfaces w/ putty or elastic wd filler, Sand smooth when dried.
4. PRIME, STAIN OR SEAL WD to be pld immediately upon delivery, Prime edges, ends, faces, undersides and backsides of wd, including cabinets, counters, cases and jmbs, When transparent fin is req'd, backprime with spar varnish, Backprime pnls on int partitions where masonry, plaster or other wet wall const occurs on backside, Seal tops, bot and cutouts of unprimed wd drs w/ a heavy coat of varnish or sealer immediately upon delivery or after install, if unit is out in the field,
5. CLEAN NONSALV FERROUS+MTL SURFACES that have not been shop coated; remove oil, grease, dirt, loose mill scale and other foreign substances w/ scrapers, mineral spirits and sandpaper as req, Sand smooth areas exposed to view and dust off, Scrape and clean small, dry, seasoned knots and apply a thin coat of white shellac or other recommended knot sealer before application of primer, After priming, fill holes and imperfections in fin surfaces w/ putty or elastic wd filler, Sand smooth when dried.
6. TOUCH-UP SHOP-APPLIED PRIME COATS that have been damaged, Wire-brush, clean w/ solvents per manuf and touch up w/ the same primer as the shop coat.
7. MATERIALS PREP: Carefully mix and prep pt materials in accordance w/ manuf directions. Maintain containers used in mixing and application of pt in a clean condition, free of foreign materials and residue, Stir material before application to produce a mixture of uniform density; stir as req during application, Do not stir surface film into material, Remove film and, if necessary, strain material before using, Use only thinners approved by the pt manuf and only w/in recommended limits.
8. APPLICATION: Apply pt in accordance w/ manuf directions, Use applicators and techniques best suited for substrate and type of material being applied, Do not pt over dirt, rust, scale, grease, moisture, scuffed surfaces or conditions detrimental to formation of a durable pt film.
9. SCHED: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prep for ptg as soon as practicable after prep and before subsequent surface deterioration, Allow sufficient time between successive coatings to permit proper drying, Do not recoat until pt has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure and application of another coat does not cause lifting or loss of adhesion of the undercoat,
10. APPLY PT to completely cover previously pld surfaces, to provide an opaque, smooth surface of uniform fin, color, appearance and coverage, Cloudiness, spotting, holidays, lap marks, brush marks, runs, sags, roughness or other surface imperfections will not be acceptable,
11. THE # OF COATS and film thickness req'd is the same regardless of the application method, Do not apply succeeding coats until the previous coat has been permitted to harden or dry to the manuf. Sand between applications where sanding is req'd to produce an even smooth surface in accordance w/ the manuf directions,
12. APPLY ADDITIONAL PT coats when undercoats, stains or other conditions show through final coat of pt, until pt film is of uniform fin, color and appearance, Give special attention to insure surfaces, including edges, corners, crevices and exposed fasteners receive a dry film thickness not to that of flat surfaces,
13. PT INT SURFACES of ducts where visible w/ a flat, nonspecular black pt, Pt back sides of access pnls & removable or hinged covers to match exposed surfaces.
14. MIN COATING THICKNESS: Apply materials no less than the manuf recommendation, Provide a total dry film thickness of the entire sys as recommended by the manuf,
15. PRIME COATS: Before appl of fin coats, apply a prime coat of material as recommended by the manuf to material reqd to be pt or fin & has not been prime coated by others, Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to assure a fin coat w/ no burn through or other defects due to insufficient sealing,
16. PIGMENTED (OPAQUE) FIN: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform fin, color, appearance and coverage, Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, etc., will not be acceptable,
17. APPLY TRANSPARENT STAINS in accordance w/ the stain & substrate manuf recommendations to ensure proper penetration of the stain & to produce an even, consistent, color that enhances the natural characteristics of the substrate material Apply w/ spray & brush applicators using means & techniques best suited for the substrate and the type of stain being applied, Provide consistent application of stain w/ color irregularities, brush marks or other surface irregularities not inherent w/ the substrate material, Stain edges and ends of lids and bndgs and sealer stain that collects in corners, rabbets, moldings or js, as applicable, Do not apply stain on surfaces that are not sufficiently dry or that are in direct sunlight,
18. TRANSPARENT (CLEAR) FIN: Use multiple coats to produce a glass-smooth surface film of even luster, Lightly sand the surface between each successive coat, Provide a fin free of laps, runs, cloudiness, color irregularity, brush marks, orange peel, nail holes or other surface imperfections. Typ, provide satin fin for final coats, UNO.

PAINT MATERIALS SCHEDULE:

(RE for MPI's "Approved Product List" – except as indicated below)

1. EXT NATURAL-FIN W/O: SEMI-TRANSPARENT OIL-ALKYD FIN:
   - 1 Coat of "Cetol SRD" Semi-Transparent Stain by Sikkens,
   - 2 Fin Coats: "Penofin Verde (low VOC); Natural by Sikkens
2. EXT PTD DRY-WALL SOFFITS: FLAT ACRYLIC LATEX:
   - Primer: MPI # 10 X-Green - Primer, Latex for Ext Wd
   - 2 Fin Coats: MPI # 10 - Latex, Ext Flat (MPI Gloss Level 1-2)
3. EXT PTD WD TRIM: SEMI-GLOSS LATEX FIN
   - Primer: MPI # 6 X-Green - Primer, Latex for Ext Wd
   - 2 Fin Coats: MPI # 11 - Latex, Ext Semi-Gloss (MPI Gloss Level 5)
4. EXT CMU WALLS: SEMI-GLOSS/SHEEL ENAMEL:
   - Block Filler: MPI # X-Green - Block Filler, Latex, IntExt
   - Primer: MPI # 6 X-Green - Primer, Latex for Ext Wd
   - 2 Fin Coats: MPI # 15 - Latex, Ext, Low Sheen (MPI Gloss Level 3-4)
5. EXT FERROUS MTL: SEMI-GLOSS ALKYD
   - Primer: MPI # 23 - Primer, Mtl Surface Tolerant (w/ SSPC SP1 w/ SP 2 or SP3 prep)
   - Note: Primer not reqd to be applied in fold on pre-primed items
   - 2 Fin Coats: MPI # 94 – Alkyd, Ext, Semi-Gloss (MPI Gloss Level 5) or
   - MPI # 81 - Alkyd, Quick Dry, Semi-Gloss
6. EXT ZINC-COATED (GALVANIZED) METAL: SEMI-GLOSS ALKYD:
   - Primer: MPI # 134 – Primer, Galv. Water Based
   - 2 Fin Coats: MPI # 94 – Alkyd, Ext, Semi-Gloss (MPI Gloss Level 5) or
   - MPI # 81 - Alkyd, Quick Dry, Semi-Gloss
7. INT DRYWALL EGGSHELL/SATIN LATEX (Class A: 5-5-0)
   - Primer Coat: MPI # 149 X-Green – Primer Sealer, Int, Low Odor/VOC
   - 2 Fin Coats: MPI # 44 X-Green – Latex, Int, (MPI Gloss Level 2)
   - Apply fin coats w/ roller, UNO.
8. INT MTL SEMI-GLOSS ALKYD ENAMEL (Class A: 5-5-0)
   - Prime Coat: MPI # 107 – Primer, Rust-Inhibitive, Water Based
   - Note: Primer not reqd to be applied in fold on pre-primed items
   - 2 Fin Coats: MPI # 94 X-Green – Latex, Int, Semi-Gloss
   - Brush apply fin coats, UNO
9. PTD WD: EGGSHELL ALKYD ENAMEL (Class A: 5-5-0)
   - Prime Coat: MPI # 45 - Int Alkyd Primer Sealer
   - 2 Fin Coats: MPI # 51 – Int Alkyd, Eggshell
   - Brush apply fin coats, UNO
10. INT CMU WALLS: SEMI-GLOSS LATEX (Class A: 5-5-0)
    - Block Filler & Primer Coat: MPI # 4 latex block filler
    - Primer Coat: MPI # 149 X-Green – Primer Sealer, Int, Low Odor/VOC
    - 2 Fin Coats: MPI # 54 X-Green – Latex, Int, Semi-Gloss

SECTION 09 93 13 – EXTERIOR STAINING AND FINISHING

SECTION INCLUDES: Ext coating w/ transparent and semi-transparent fin.

DELIVERY, STORAGE & HANDLING

1. Deliver materials in original containers to the work site, Packaging shall bear the manuf name, label & the following info: product name and type, application & use instructions, surface prep,
2. VOC content, environmental handling, batch date, color number, storage: Store and dispose of solvent-based materials and materials used w/ solvent-based materials, in accordance w/ reqs of AHJ, Store materials in a dry area w/ in the temperature range, per manuf instructions, Protect from freezing, Handling: Maintain a clean, dry storage area, to prevent contamination or damage to the coatings.

PRODUCTS

1. Acceptable Manuf: Sikkens ProLuxe
2. Substitutions: Requests for substitutions will be considered in accordance w/ 01 60 00.

MATERIALS:

1. UNO, provide factory-mixed coatings, When reqd, mix coatings to correct consistency in accordance w/ manuf instructions and recommendations, Arrange for back Postmaster' s approval of installed product at completion.

SUBMIT PRODUCT DATA

1. For opaque fin, tint ea coat including primer coat and intermediate coats, one-half shade lighter than subsequent coat, UNO, w/ fin coat as base color.
2. Primers: Where the manuf offers options on primers for a particular substrate, use primer categorized as "best" for that substrate.
3. The execution of back-priming of wdwork is usually specified in the wdwork section, although the requirement may be repeated here.

ACCESSORIES: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials and sim job- materials reqd, per manuf specs.

EXECUTION: Per 01 73 00, manuf written instructions, referenced standards and in compliance w/ any reqs of AHJ.

DIVISION 10: SPECIALTIES

SECTION 10 14 00 SIGNAGE

WORK INCLUDED

1. Fire ex service, wall partition signs
2. Accessible interior building signs, including
   - A. Room ID signs
   - B. Separate signage work: Owner will arrange for the following through a separate contract:
   - A. Exterior Building Signage
   - B. Interior environmental wall graphics
   - C. Facility room and numbering signage

QUALITY ASSURANCE

1. Comply with applicable requirements of the Americans with Disabilities Act (ADA), requirements of the Building Code, including but not limited to accessibility requirements of ANSI A117.1 (most recent edition), and local regulations or ordinances, Obtain and pay for all exterior signage permits, which may require a separate permit application to the AHJ.
   - A. Obtain approval of governmental AHJ representatives, and obtain approval of the Owner before fabrication of signage, Costs for permits and approval is a part of this Section.
2. Where not specifically required UL labels, do not apply fabricator's identification labels to any exposed surface of signs.

PRODUCTS

CHARACTERISTICS

1. Font Characteristics Proportion: Letters and numbers on signs must have a width-to-height ratio between 3:5 and 1:1 and a stroke width-to-height ratio between 1:5 and 1:10,
2. Height: Characters on signs must be sized according to the viewing distance from which they must be read, with the following minimum character heights, measured using an upper case X:
   - A. Tactile characters: 5/8" minimum, 2" maximum
   - B. Visual characters: 1" minimum
3. Mounting Location and Height: Where tactile signs are required, mount them adjacent to the door latside at a height of 48" above the floor, measured to the centerline of the sign, Where a sign is also required on the door, mount it on the door itself, Where there is no room adjacent to the door latside, mount signs on the nearest adjacent wall, Mount signs so that a person may approach within 3" of the sign without encountering protruding objects or standing within the swing of a door,
4. Finish and Contrast: Characters and their background must be eggshell finish, Characters must contrast with their background - either light characters on a dark background or dark characters on a light background.
5. Raised Characters: Letters and numbers on signs must be raised 1/32 in minimum and be of "sans serif character forms. Raised characters or symbols must be at least 5/8 in high but no higher than 2in,
6. Symbols or pictograms on signs must be raised 1/32 in minimum.
7. Mount accessible door signs as follows per accessibility requirements:
   - A. Horizontally: Centered on the door, 60" above the floor to the center of sign
   - B. Vertically: centered mine 09 inches from the strike side of the door (not from the door leaf)

SIGN MATERIALS

1. Aluminum sheet: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties required in ASTM B 209 for 5052-H32,
2. Aluminum extrusions: Alloy and temper recommended by aluminum producer or finisher for type of use and finish indicated, and with not less than the strength and durability properties required in ASTM B 221 for 6063 T5,
3. Pressure-sensitive vinyl: Vinyl (PVC) Scotchcal" by 3M or equal 2 mil minimum thickness, opaque, non-reflecting, cast PVC film with pressure sensitive adhesive backing sheet, suitable for exterior applications, in colors as selected by Architect from manufacturer 's full range of available colors, or as indicated on the Drawings,

FABRICATED ITEMS

1. Accessible interior wayfinding, directional & room / door signs: Provide tactile accessible sign units with raised letters, raised symbols (when indicated) and with Grade II Braille text meeting requirements of ANSI A117.1 and 2010 ADA Standard for Accessible Design for fabrication and for installation requirements,
2. Composition: Multi-layer, laminated resistant, moisture-resistant, non-glare interior photosensitive photopolymer sheet with minimum 1/8-inch-thick PETG base, with surface burning characteristics as determined by ASTM E 84 not to exceed of 75 and a smoke development of 120 when tested in accordance to UL 723 (ASTM E 84), Provide in "letter" color as selected by Architect from Manufacturer 's full range of available color options,
3. Second surface or "background" surface to be painted with non-glare acrylic paint as recommended by Manufacturer, in a contrasting color to the remaining character surface, in colors (potentially different on each floor) as selected by the Architect from the manufacturer 's full range of available color options,
4. Typical Room Signs: Labels installed on the Drawings, or as selected by Architect
5. Braille characters: Fabricate each accessible sign unit with corresponding Grade II Braille text,

FIRE- OR SMOKE- WALL OR PARTITION SIGNS

1. Within each room or interior space facing a fire or smoke-rated wall or partition, and at any other wall locations required to have fire- or smoke- protected openings or penetrations, provide permanent, adhesive mounted vinyl signs of no less than 11-inch high by 19-inches wide, as follows:
   - A. Locate within 15-feet of each end on both sides, at each change of direction of the wall or partition, and at intervals not exceeding thirty (30)-feet measured horizontally along the length of the wall or partition,
   - B. Locate approximately 6-inches above suspended ceilings or below adjacent ceilings, as applicable, Center units within attic spaces or other concealed areas, as appropriate
   - C. Locate within all concealed spaces, including ceilings, attics, or concealed areas under finished floors (access flooring),
   - D. Lettering: 2-inch minimum height, with 3/8-inch-thick strokes typical, in a contrasting color to the background,
1. Recommended text: "FIRE AND / OR SMOKE BARRIER —PROTECT ALL OPENINGS", or similar wording,
   - A. BASIS-OF-DESIGN: Fire Wall Signs Inc., P: 910-392-4939, website: www.FireWallSigns.com or equal.

MISCELLANEOUS MATERIALS

1. Fasteners: Use concealed fasteners, unless otherwise indicated, which are fabricated from metals and Which are non-corrosive to either sign materials or mounting surface,
2. Anchors and inserts: Use non-ferrous metal or hot-dipped galvanized anchors and inserts for exterior installations and elsewhere as required for corrosion resistance, Use toothed steel or lead expansion bolt devices for drilled in place anchors, Furnish inserts, as required, to be set into concrete or masonry work,
3. Double-stick tape mounting: Provide double sided 1/32-inch-thick mounting tape for attachment of door signs onto space adjacent to door strike jamb,

SIGN SCHEDULE

1. FIRE- OR SMOKE- WALL OR PARTITION SIGNS
   - A. Provide code-compliant signs fabricated in accordance with the requirements of these specifications, Mount on both occupied sides of wall, if located at an interior partition condition,
2. SIGN TYPE 7: Fire-Separation Wall Sign: Indicating separation and designed using standards from basic-of-design company indicated in these specifications,

ACCESSIBLE INTERIOR SIGN UNITS

1. Provide accessible compliant signs fabricated in materials and finishes indicated on the Drawings, with raised, tactile letters and Braille characters, in size as indicated on the Drawings or as otherwise required for the text in the font type and size required, Provide tactile, pictorial images where indicated, typically for restrooms, elevator and at "outside" stair signs, and as follows:
   - A. SIGN TYPE 1: Maximum Occupancy Sign: indicating maximum occupancy of specific, designated rooms

EXECUTION

1. INSTALL signage in accordance with the approved shop drawings, to be level, plumb, and at height indicated, free from distortion or other defects of appearance, Remove and reinstall if not installed properly, or not correctly within these requirements,
2. MOUNT accessible room signs directly onto wall surface centered nine (9)-inches from the strike-side edge of the door, at 5'-0" AFF to center of sign - See double-sided foam tape to mount to smooth non porous surfaces,
3. CLEAN soiled sign surfaces and protect units from damage and Substantial Completion.

SECTION 10 55 00 POSTAL SPECIALTIES

PROVIDE

- postal specialties where indicated in the Drawings, as specified herein, and as required for a complete and proper installation, Arrange for back Postmaster' s approval of installed product at completion.

SUBMIT PRODUCT DATA

- Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of postal specialty.

DELIVERY, STORAGE, AND HANDLING

- Deliver lock keys to Owner by registered mail or overnight package service with a record of each corresponding lock and key number.

COORDINATION

- layout and installation of recessed postal specialties with wall construction.

WARRANTY

- Provide Manufacturer's standard warranty form in which manufacturer agrees to repair or replace components of postal specialties that fail in materials or workmanship within specified warranty period, Failures include, but are not limited to structural failures, faulty operation of hardware, except door locks, and deterioration of metals, metal finishes, and other materials beyond.

MAIL-BOX WARRANTY PERIOD

- Five years from date of Substantial Completion.

MODULAR MAILBOX UNITS:

1. Provide USPS-approved, front-loading, horizontal mailbox units for USPS mail delivery consisting of multiple compartments with front and rear access doors, recessed enclosures in quantity and configuration as indicated on the Drawings, Provide access to compartments for distributing incoming mail from front of unit by unlocking master lock and swinging side-hinged master door open, and for removing mail by unlocking master lock and swinging side-hinged master door open from rear of unit, Provide individual, door-operated compartments for mail delivery, Comply with USPS STD-4C and as follows:
   - A. STANDARD "TENANT" MAIL COMPARTMENTS with doors not less than 13-1/4 wide x 2-1/4 inch high.
   - B. 1 EACH OUTGOING MAIL compartment labeled "Outgoing Mail" per unit
   - C. FRONT-LOADING MASTER DOOR: Fabricated from extruded aluminum and braced and framed to hold compartment doors, with master door lock and concealed, full-length stainless-steel piano hinge on one side, Fabricate master door to remain open while mail is deposited.
   - D. MASTER DOOR LOCK: Prepare master door to receive lock furnished by local postmaster.
   - E. COMPARTMENT DOORS: Fabricated from aluminum sheet reinforced with vertical stiffeners, Equip each compartment door with lock, tenant identification, and concealed, full-length, stainless-steel hinge on one side, Provide one compartment with outgoing mail slot and prepared for master door lock,
   - F. TENANT IDENTIFICATION: 2-inch-wide by 5/8-inch- high, clear-plastic cardholder set in front of each compartment not less than 36 inches above finished floor,

ARRANGE FOR USPS PERSONNEL TO TEST receiving and collection after installation according to USPS regulations, Obtain written final approval from USPS postmaster that authorizes mail collection,

ADJUSTING, CLEANING, AND PROTECTION

1. Remove temporary protective coverings and shippable films, if any, as units are installed, unless otherwise directed by Architect or manufacturer's representative, Adjust doors and locks to operate easily without binding, Verify that integral locking devices operate properly,

ON COMPLETION OF INSTALLATION

1. clean interior and exterior surfaces as recommended by manufacturer, Touch up marred finishes, or replace postal specialties that cannot be restored to factory-finished appearance, Use only materials and procedures recommended or furnished by postal specialty manufacturer, Replace units that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

DIVISION 31: EARTHWORK

SECTION 31 10 00 – SITE CLEARING

1. WORK INCLUDED: Clear the site of all surface vegetation, rubbish and misc manmade objects objectionable to future site improvements,
2. SITE CONDITIONS: Examine the site as to min interference of the surrounding properties, streets, walks, etc, Exist streets must be cleaned of any refuse from this operation, Damage to exist curbs, streets or utilities must be repaired at no added cost to the owner,
3. REMOVE trees, shrubs and plants, including stumps and roots, Remove manmade objects such as conc, mill ance posts, fences, utility lines, asphalt and other materials not intended to remain on the completed site,
4. DO NOT REMOVE TOPSOIL from the site, Stockpile for later distribution on site,
5. REMOVE ALL DEBRIS from this operation to a suitable, legal disposal site,

SECTION 31 20 00 – EARTH MOVING

1. WORK INCLUDED: Excavate, backfill and compact the site to the ele shown on the dwgs, as specified herein and as needed to meet the reco of the conc drawn in the CDs, Earthwork includes but is not limited to the following: DEMO & REMOVE from the site all earthwork materials not utilized in the new const.
   - ENGINEERED FILLS including remediated exist soil materials below new const elements, PROVIDE ADDITIONAL SOIL MATERIALS for fine-grd of lawn and planter areas, if necessary, ROUGH and FIN GRADING of the site to provide positive slope away from the bldgs and to attain indicated fin grades,
2. A GEOTECHNICAL REPORT may be obtained by the owner. Comply w/ recommendations when available, Base earthwork on the following recs until report is available:

MECH & ELEC EARTHWORK: Excavation and backfill reqd in conjunction w/ underground mech & elect utilities and buried mech and elect components must comply w/ specified recs in the following sections, but is not included as a part of the work of this section,

QUALITY ASSURANCES

1. A TEST LAB may be retained to: (1) classify proposed on-site and borrow soils to verify soil materials comply w/ specified reqs for quality control testing; (2) approve earthwork materials and soils; and (3) provide cont observation during placement of all fill materials,
2. COMPACTION DENSITY: Any reference to compaction or density is hereby defined as the density obtained in accordance w/ ASTM Specification D-698, UNO,

JOB CONDITIONS:

1. EXIST UTILITIES: Locate existing underground utilities in areas of work, If utilities are to remain in place, provide adequate means of support and protection during earthwork operations, Should uncharted or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions, Cooperate w/ owner and utility companies in keeping respective services and facilities in operation, Repair damaged utilities to satisfaction of utility owner,
2. DEMO & COMPLETELY REMOVE site exist underground utilities indicated to be removed, Coord w/ utility companies to shutoff services if lines are active,
3. IF BLASTING IS USED FOR ROCK REMOVAL, engage an entity experienced w/ demonstrating successful prior rock-blasting operations similar to the work of this project, Limit peak velocities at the property lines to less than 2" per second, unless local ordinances req more stringent limitations, Prior to blasting, perform a pre-blast survey of adj struct, and provide vibration monitoring during all blasting operations, Bleet w/ smaller amounts of explosives over a # of delays to reduce potential blasting damage,

PRODUCTS:

1. PROVIDE SATISFACTORY BORROW SOIL MATERIALS from off-site when sufficient approved soil materials are not available at the exist site, All fill and backfill materials are subject to the approval of the testing lab,
2. SATISFACTORY FILL MATERIALS are soil or soil-rock mixture free from clay, debris, waste, vegetable and other deleterious matter; complying w/ ASTM D 2487 Soil Classification Groups GI, MI, CL, ML, SP, SC and SM containing not more than 60% passing a No 40 sieve, not more than 50% passing a 200 sieve and "Fine fraction" (passing the 40 sieve) characteristics of: liquid limit: < 45 and plasticity index: < 25,
3. UNSATISFACTORY SOIL MATERIALS contain clay, rock or gravel larger than 3 " in any dim, debris, waste or frozen materials, vegetable and other deleterious matter and are further defined as those complying w/ ASTM D 2487 Soil Classification Groups GC, SC, ML, MH, CH, OL, OH and PT,
4. STRUCT BACKFILL, GRAVEL SURFACING or SUBBASE MATERIAL (under fl slabs): Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, crushed slag and natural or crushed sand, w/ no more than 5% passing a No. 200 sieve, (tunnel rock and crushed conc will not be permitted),
5. DRAINAGE FILL MATERIALS: Clean, graded mixture of crushed stone or crushed or uncrushed gravel, w/ 100% passing a 1 1/2" sieve, no more than 5% passing a No. 4 sieve and no more than 1% passing a No. 200 sieve, (tunnel rock and crushed conc will not be permitted),
6. FILTERING MATERIAL: Evenly graded mixture of natural or crushed gravel or crushed stone & natural sand, w/ 100% passing a 1 1/2" sieve & 0 to 5% passing a No. 50 sieve,
7. IMPERVIOUS FILL: Clayey gravel & sand mixture capable of compacting to a dense state, STRIP TOPSOIL and stockpile it for re-use on site, Provide additional topsoil if quantity is insufficient, from local sources having sim soil characteristics as the project site,
8. TRENCH BACKFILL AT PAVEMENTS: Under and w/in 5' of paved areas, provide a uniformly graded mixture of natural or crushed gravel, crushed stone or crushed slag, w/ 100% passing a No. 4 sieve and not more than 8% passing a No. 200 sieve (tunnel rock and crushed conc will not be permitted),
9. PIPE BEDDING: Provide a uniformly graded mixture of natural or crushed gravel, crushed stone or crushed slag, 1/4" to 3/4" size, meeting ASTM C-33 for soundness and ASTM C-407 for Gradation, Blocking for grade not permitted,
10. HERBICIDE TREATMENT: Commercial chemical compound for weed control, registered by the EPA, in compliance w/ local requirements of AHJ,
11. LIME-CHEMICAL STABILIZATION ADDITIVE: "Cocs L" type lime (locally available calcium oxide or hydrated lime from other than kiln dust), Add water to allow for proper hydration of lime,

FLY-ASH-CHEMICAL STABILIZATION ADDITIVE: ASTM C 618 Class-C fly ash – between 12 to 18% on a dry-wt basis, per approved test recommendations,

1. PROTECT SUBGRADES & FDN SOILS from softening & damage by rain/water accumulation,
2. PROVIDE DRAINAGE TRENCHING during excavation as required to remove pumped water and dispose of all water entering the excavations, Dewater by means which will ensure dry excavations and the preservation of inat lines and grades of bot of excavations,
3. REMOVE SOFTENED SUBGRADE: Where soils have been softened or aerated by flooding or placement during unfavorable weather, remove all softened areas and recompact at no additional cost to the owner,

ENGINEERED FILL: Backfill over-excavations and fill other areas w/ 1 of the following fill sys:

LOW-PLASTIC, CRUSHED, GRADED SOIL MATERIALS:

- CRUSHED LIMESTONE consisting of 1" minus material, drained to daylight or to sump pump,
- LEAN-CONC FILL (if unusual conditions are encountered in exist reqd) or CHEMICALLY-STABILIZED EXIST SOIL material, stabilized by the addition of lime at a rate of 7% or approp fin lime per cubic foot of soil, to produce a material w/ a compressive strength of 100 psi, using the lime into the soil,

1. COMPACT approved soil material in multiple lifts and mech compact to no less than 95% of its max dry density, to the approval of the owner's soils engineer,
2. FTGS ON BEDROCK: If bedrock is encountered w/in a fig excavations, extend the fds down through natural soil so all ftngs bear on sim approved bedrock material, to the approval of the owner's soil engineer, At the GC's option, excavate rock no less than 1' below ftg bearing ell & backfill w/ engineered fill, to form the same conditions of sim subgrade materials,
3. EARTHWORK UNDER BLDG FTGS: Insecticide treatment for termites over approved exist. undisturbed materials,
4. EARTHWORK UNDER BLDG SLAB-ON-GRADE: Insecticide treatment for termites over 4" thick drainage fill material, after compaction and before placement of vapor barriers, over approved engineered-fill materials or undisturbed exist. material, at the top 6" scarified and uniformly moisture conditioned and compacted to not less than 95% of max dry density,
5. EARTHWORK UNDER FLEXIBLE ASPHALT PAVEMENT: Herbicide treatment over crushed stone base, 6" thick at grades w/ a 2% or greater slope and 8" thick at level areas, over approved exist soil materials or compacted fill materials until reqd subgrade is obtained, w/ the top 6" of approved exist materials scarified and uniformly moisture conditioned and compacted to not less than 95% of max dry density,
6. EARTHWORK UNDER LIGHT-DUTY RIGID CONC PAVEMENT (including walks): Herbicide treatment over approved exist soil materials or compacted fill materials until reqd subgrade is obtained, w/ the top 6" scarified and uniformly moisture conditioned and compacted to no less than 95% of max dry density,

EXCAVATION

1. EXCAVATION IS UNCLASSIFIED and includes excavation of subgrade ells indicated, regardless of the character of materials and obstructions encountered,

CLASSIFIED EXCAVATION

1. EXCAVATE to subgrade ells, Material to be excavated will be classified as earth and rock, Do not excavate rock until it has been classified and verified, The Contract Time will be adjusted for rock excavation according to unit prices included in the CDs, Changes in the contract time may be authorized by change order,
2. ROCK EXCAVATION INCLUDES removal and disposal of rock, Remove rock to lines and subgrade ells indicated to permit instal of permanent const w/ excavating the following dims: 4" outside of conc footings, 12" outside of conc forms at ftgs, 6" outside of min reqd dims of conc cast against grade, Outside dims of conc walls indicated to be cast against rock w/o forms or exterior waterproofing treatments, 6" beyond outside dims shown on grade, 6" beneath pipe in trenches and the greater of 24" wider than pipe or 42"-w, 12" below ftgs,
3. EXCAVATION FOR SHOP DRAWINGS: Trench and excavate the rock to a min 1' below the ftg bot, to allow for more consistent bearing conditions, Do not excavate rock until it has been classified & cross sectioned by the owner 's testing & inspection agency,
4. UNAUTHORIZED EXCAVATION consists of removal of materials beyond reqd subgrade ells or dims w/o specific direction, Unauthorized excavation, as well as remedial work, must be at the contractor's expense,
5. STABILITY OF EXCAVATIONS: Slope sides of excavations to comply w/ local codes and ordinances, OSHA and regs of the testing lab, Step and bench all slopes exceeding 5 feets to 1 vert, w/ benches spaced so the ht of the cut on the upper slope and of the bench is less than 8', Shore and brace where sloping is not possible because of space restrictions or stability of the material excavated, Maintain sides and slopes of excavations in a safe condition until completion of backfilling,

EXCAVATION FOR STRUCTURES:

1. CONFORM TO ELS & DIMS SHOWN w/ a tolerance of plus or minus 0.10', Extend excavation to permit placing and removal of conc formwork, install of services, other const and for inspection,
2. PROTECT EXCAVATION bot against freezing when atmospheric temp is less than 35 deg F,
3. EXCAVATE FOR FTGS & FDNS: Do not disturb bot of exist fdn when placing ftgs and grading are complete, Take care not to disturb B.C. excavation, Excavate by hand to final grade just before conc reinf is placed, Trim bot to reqd lines and grades to leave solid base to receive other work,
4. EXCAVATION FOR WALKS & PAVEMENTS: Excavate surfaces under walks and pavements to indicated cross sections, ells and grades,

EXCAVATION FOR UTILITY TRENCHES:

1. EXCAVATE TRENCHES to uniform widths to provide a working clearance of 12" on ea side of pipe or conduit, Excavate trench walls vert from trench bot to 12" higher than top of pipe or conduit, UNO,
2. TRENCH BOT: Excavate and shape trench bot to provide uniform bearing and support of pipes and conduits, Shape subgrade to provide cont support for bells, js and barrels of pipes and for js, fittings and bodies of conduits, Remove stones and sharp objects,
3. FOR PIPES OR CONDUIT LESS THAN 6" in nom size and for flat-bot, multiple-duct conduit units, hand-excavate trench bot and support pipe and conduit on an undisturbed subgrade, FOR PIPES & CONDUIT 6" OR LARGER in nom dia, shape B.O. trench to support bot 90 deg of pipe circumference, fill depressions w/ tamped sand backfill, Where encountering rock or another unyielding bearing surface, carry trench excavation 6" below invert of to receive bedding course,

APPROVAL OF SUBGRADE:

1. NOTIFY TESTING LAB when excavations have reached reqd subgrade,
2. UNPROSSESEN ADDITIONAL EXCAVATION: If testing lab determines unforeseen unsatisfactory soils to prevent, cont excavation and replace w/ compacted backfill or fill material as directed, Unforeseen additional excavation and replacement material will be paid for in accordance w/ the cost contract's provisions for changes in work,
3. RECONSTRUCT SUBGRADES damaged by freezing temps, frost, rain, accumulated water or const activities, as directed by the architect, at no added cost to the owner,

UNAUTHORIZED EXCAVATION

1. FILL UNAUTHORIZED EXCAVATION UNDER FDNS or wall ftgs by extending indicated bot of conc fdn or ftg to excavation bot, w/o altering reqd top el, Lean conc fill may be used to bring ells to proper position when acceptable to the architect,
2. FILL UNAUTHORIZED EXCAVATIONS UNDER OTHER CONST as directed by architect, Where widths of utility trenches are exceeded, provide stronger pipe or special install procedures, as req'd by the architect,

STORAGE OF SOIL MATERIALS:

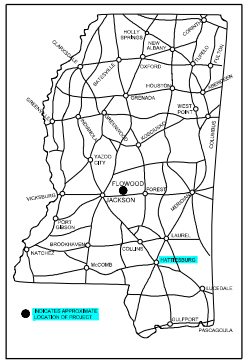
1. STOCKPILE EXCAVATED SOIL MATERIALS acceptable for backfill and fill soil materials, including acceptable borrow materials, Stockpile soil materials w/o intermixing, Place, grade and protect stockpiles to drain surface areas, Control to prevent wind-blown dust,
2. STOCKPILE SOIL MATERIALS away from edge of excavations, Do not store w

USM WESLEY FOUNDATION
MIXED USE BUILDING
3200 MONTAGUE BLVD

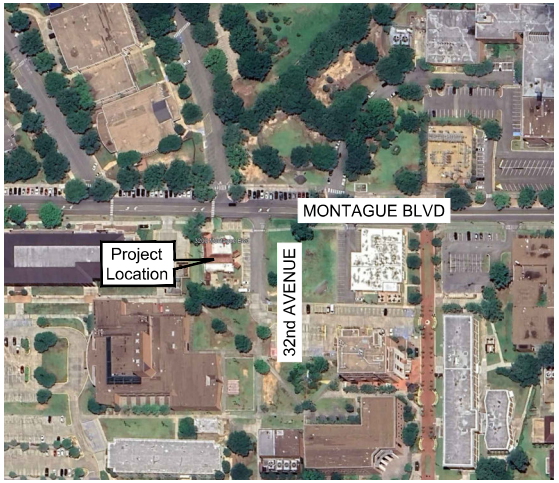
For

Vertikal Collaboration
Hattiesburg, MS

January 16, 2026



LOCATION MAP



VICINITY MAP

NOT TO SCALE

DRAWING INDEX	
Sheet No.	Description
C1.0	Title Sheet
C1.1	Notes, Legend, and Abbreviations
C2.1	Erosion Control Plan
C2.2	Site Plan
C2.3	Grading and Drainage Plan
C2.4	Utility Plan
C3.1	Erosion Control Details
C3.2	Site Details
C3.3	Water Details
C3.4	Sewer Details
C3.5	Storm Details

SHELBY D. MURRAY
ENGINEER
PE-15155
1-16-26
STATE OF MISSISSIPPI

811

Utility Notes:

- The location of utilities are approximate only. Excavation near utilities shown should be done with caution. The Mississippi One-Call Network (1-800-227-6477) should be notified prior to commencing with excavation activities.
- Additional underground utilities may exist. Lacking excavation, however, the exact location of underground utilities cannot be accurately, completely, and reliably depicted. Where additional or more detailed information is required, the client is advised that excavation may be necessary.

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1551 Jackson Road | Hattiesburg, MS 39402
t:601.261.2000 | clearpointengineers.com

Title Sheet

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C1.0

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 11-7-25

Drawing Location: C:\Users\smurray\Desktop\Clearpoint\92952001-Wesley Hattiesburg\DWG\92952001-C1.dwg

GENERAL NOTES:

1. The location of utilities shown is based on field surveys of utility markings and/or information provided by utility company personnel. Their location should be considered as approximate only, and other utilities may exist that are not shown on these drawings. Excavation near utilities shown should be done with caution. Prior to construction operations, the Contractor shall verify the location of existing utilities on the project site, and at the Contractor's expense, shall promptly repair those which are damaged by his construction operations. The Mississippi One-Call Network (1-800-227-5477) should be notified prior to commencing with excavation activities.

2. Specifications for all materials and construction methods for street, driveway, or parking lot construction shall conform to the applicable provisions of the Mississippi Standard Specifications for State Aid Road and Bridge Construction, Latest Edition.

3. The Contractor must have written approval from the City Engineer and/or Project Engineer of record before any change in the design is made.

4. All requirements specified in the technical specifications, the Storm Water Pollution Prevention Plan (SWPPP), all MDOT permit(s), and the geotechnical report shall be considered to be included within the Contractor's scope of work for the project, and the Contractor shall be responsible for full compliance therein.

5. The Contractor shall warrant all materials and labor for a period of one (1) year for all work performed by the Contractor and Sub-contractor(s).

6. Contractor shall provide a minimum 24 hour notice to the engineer prior to commencing any construction operations, sampling, or testing.

7. Contractor shall provide all necessary fittings and appurtenances necessary for complete installation of all items whether specifically indicated or not.

8. Any local, state, or federal permitting required for construction shall be the responsibility of the Contractor to obtain.

9. CONSTRUCTION SAFETY IS A PROJECT REQUIREMENT. The Contractor shall be responsible for providing safety equipment and/or methods necessary for the safe prosecution of the work by his personnel and the personnel of any Sub-contractors, as well as providing safe access and site conditions to all elements of the project for the Owner, Engineer and their representatives. Such safety requirement shall meet OSHA guidelines.

10. The Contractor shall assign a competent, experienced, and employed superintendent to be on site at all times during all phases of construction. Work on the project site shall cease if the superintendent is not on site for an extended period of time.

11. It is the responsibility of the Contractor to protect existing structures and utilities that are to remain such as pipes, inlets, paved ditches, gas pipelines, water mains, sewer mains, underground power/fiber, etc. from damage which might occur during construction. The Contractor shall replace or repair, as directed by the Engineer, any structures damaged during the life of the Contract. No payment to Contractor will be made for replacement or repair of damaged items.

12. All existing signs, fences, mailboxes, and other incidental structures located with the project construction limits shall be temporarily removed and reestablished as required by construction activities. Any damaged items shall be replaced at the Contractor's expense.

13. To prevent damage to adjacent properties, Contractor shall properly establish the property boundaries of the subject property site prior to any construction activities within the subject property. The Contractor shall not enter upon or cause damage to adjacent properties without written permission from adjacent property owner(s).

14. Contractor shall seed, fertilize, and mulch all areas (not proposed as paved or under roof) disturbed by construction activities and insure a complete stand of grass. Apply per seasonal limitations.

15. The Contractor shall be responsible for completing all sampling and testing of materials incorporated into the project and for submission of same to the Engineer for review. All phases of testing, including but not limited to sampling, transporting, and testing of materials, must be performed by a certified testing laboratory. Prior use test results, manufacturer's certificates, or proposed mix designs shall be submitted to the Engineer for review before incorporation into the project. This shall include embankment, back fill, seed, and all other items specified by the Engineer. Quality control/testing shall be the responsibility of the Contractor.

16. Construction staking shall be provided by the Contractor.

17. Contractor shall provide proper traffic control (signs, barricades, flagmen, etc.) when working within highway or county right-of-way. Appropriate personnel shall be notified at least 48 hours prior to commencing any construction operations within highway right-of-way. All traffic control materials and procedures shall be in full compliance with the latest version of the Manual on Uniform Traffic Control Devices (MUTCD). Contractor shall also ensure that access to existing residences and businesses is maintained during all phases of construction, and shall be responsible for all related coordination.

18. Material submittals shall be made to the Owner through the Engineer prior to use, for approval. All materials shall be new; used materials shall not be installed.

19. The Contractor is required to remove all spoil material on a daily basis.

20. The Contractor is responsible for coordinating with existing residences or businesses regarding temporary interruption of access and/or utility service, if required, and shall sequence construction operations as necessary to ensure that said interruption of access and/or utility service is kept to a minimum.

21. The Contractor is responsible for coordinating with the power company regarding establishment of temporary and permanent power, and shall include all required connection and meter fees in their bid.

22. No construction activities shall commence until all approvals and permits have been obtained from governing authorities, including but not limited to those required by the City, County, MS Department of Health, MS Department of Environmental Quality, Mississippi Department of Transportation (MDOT), Corps of Engineers, Utility Associations). Any work performed prior to obtaining said permits and approvals shall occur at the risk of the Contractor and/or Owner.

23. Contractor shall provide minimum 48 hours to M.D.O.T. personnel prior to performing any working within highway right-of-way. Contractor shall keep a copy of the MDOT permit on site at all times (if required).

24. All costs associated with dewatering (if required) shall be absorbed by the Contractor. Contractor shall employ dewatering methods as required for complete installation of storm drainage and utilities. Prior to bid, it is the Contractor's responsibility to consult the geotechnical report and make site visits necessary in order to determine costs required for dewatering effort.

25. At project completion, the Contractor shall provide as-built "markup" drawings to the Engineer, based on field measurements, that accurately show the location of all subsurface utility and drainage improvements (i.e. roof drain/downspout collection, water mains/service lines, sewer service lines, sewer force mains, irrigation, power, communication, gas, etc.).

26. Existing conditions and topography shown on these construction drawings are representative of conditions on October 17, 2023, and may not be representative of existing conditions as of the date of these drawings. Prior to execution of a contract, the Contractor is responsible for visiting the site to determine the scope of work.

27. Prior to construction layout of proposed building(s), the architectural drawings shall be used to verify the building dimensions shown on civil drawings. Should discrepancies exist between architectural drawings and civil drawings, then architectural drawings shall control.

SEWER NOTES:

1. Construction and materials for sanitary sewer improvements shall conform to the specifications of the Mississippi Department of Environmental Quality and the local sewer service provider.

2. All sanitary sewer mains and services shall be PVC SDR-26. Sewer services shall be 6" in diameter, and shall be installed on a minimum 1% slope.

3. Bedding material shall be required beneath all sanitary sewer mains, and beneath all sanitary sewer services located under roadways and paved areas. Bedding material shall be a gravel-sand mixture, all of which passes a 1 1/2 inch sieve, not more than 30 percent of which passes a No. 4 sieve, and not more than 5 percent of which passes a No. 200 sieve.

4. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill sewer pipe trenches.

5. A manhole drop connection is required if the vertical distance between an influent sanitary sewer main or service and the bottom of the manhole exceeds two feet.

6. Sewer mains and services must be buried a minimum of 36" below finished grade.

7. Locator wire (14 gage copper) shall be placed along and attached to all new sewer mains.

8. The Contractor shall verify location, size, and invert elevation of existing sewer mains and/or manholes prior to commencing connection operations. The Contractor shall coordinate with the Engineer regarding any necessary adjustments to new sewer lines as necessary to allow for proper connection and installation.

9. Contractor shall refer to mechanical / plumbing drawings to verify locations and sizes of sewer services prior to installation. Adjustments to sewer service location(s) and invert elevation(s), and grease trap locations (if required) shown on these drawings shall be made as necessary through coordination with the Project Engineer. For sewer services, the scope of these drawings terminates at a location five feet (5') outside of the exterior building wall. Refer to mechanical / plumbing drawings for continuation into the building.

10. The Contractor is responsible for coordinating with the utility service provider prior to connecting to existing sewer or relocation of existing sewer (if required). The Contractor is responsible for ensuring that utility service personnel are present during critical phases of installation (i.e. connection, relocation, testing, etc.). Cost of connection fees shall be responsibility of the Contractor.

11. Prior to being placed into service, all new sewer mains must be tested according to the specifications.

12. The Contractor shall be responsible for providing minimum 48 hours notice to the sewer service provider during critical phases of sewer installation (i.e. connections, relocations, pressure tests, etc.) to allow opportunity for on-site observation.

GRADING AND DRAINAGE NOTES:

1. All available topsoil within the construction limits shall be stripped, stockpiled in a designated area to be approved by the Engineer, and replaced on slopes or as directed by the Engineer. Upon completion of grading, the Contractor shall place a sufficient quantity of topsoil (4" minimum) to insure grass growth on the designated area. Topsoil shall be used to achieve final grades on roadway slopes and on slopes outside of paving limits. Any excess topsoil shall remain stockpiled for future use by the Owner.

2. Finished contours are intended to show a general representation of drainage patterns and slopes after paving, grading, replacement of topsoil, and/or placement of sod. Regardless of the level of grading detail shown on these drawings, Contractor shall take whatever steps necessary to ensure that positive drainage occurs on all areas of project site, specifically away from buildings. Prior to final grading, Contractor shall make allowances for placement of sod and landscape beds to ensure final design grades are achieved and that these areas are free of debris. Contractor shall coordinate with landscaping personnel to ensure that landscape beds are placed sufficiently below building finished floor elevations and that they do not trap water against buildings. Where roof drains are discharged onto the surface, Contractor shall extend downspouts along finished grade beyond landscape areas as needed for free discharge.

3. At the expense of the Contractor, the Contractor shall maintain existing drainage patterns and construct temporary structures, embankments, and culverts as required to maintain the drainage system and capacity in the work area. Any and all temporary structures, embankments, and culverts constructed during the progress of work shall be removed and the area restored to its original condition.

4. The Contractor shall furnish, place, and maintain all sheeting, shoring, and bracing required to support the sides of the required trench excavations. The Contractor shall be responsible for the sufficiency of any such supports to prevent any movement which can in any way damage or delay the work; endanger or cause damage to adjacent pavements, buildings, or other structures; or create undue hazards to workmen.

5. Existing ground elevations are a general representation of existing ground topography prior to demolition operations.

6. In cases where adjacent grades are higher than the building finished floor elevations, then Contractor shall coordinate with the architect regarding special design accommodations and waterproofing.

7. Contractor shall notify Engineer of any conflicts between civil drawings and architectural drawings regarding proposed grading at doorways and entrances.

8. Spot elevations shown adjacent to curb and gutter and/or adjacent to sidewalk are referenced to edge of pavement. Where shown along edge of sidewalks, add 6" for adjacent top of sidewalk elevation.

9. A.D.A. REQUIREMENTS:
- For handicap spaces and aisles, finished grade slopes shall not exceed 1.5% in any direction.
- Longitudinal slopes along sidewalks and handicap accessible routes shall not exceed 4.5%.
- Transverse slopes across sidewalks and handicap accessible routes shall not exceed 1.5%.

10. A geotechnical report for the project has been prepared by W GEOTECHNICAL AND TESTING, INC. DATED MAY 15, 2024. Refer to said report for a description of in-situ soils and all phases of site preparation and testing requirements. It is highly recommended that a representative of Terracon Consultants be present during earthwork operations to ensure the buffer requirements are met and to ensure proper compaction of backfill. If any discrepancies are found between previously mentioned GEOTECHNICAL REPORT and construction plans, the geotechnical report shall govern.

11. Structural design of retaining walls, including backfill and drainage requirements, is not included within the scope of these construction drawings. Structural design of retaining walls shall be provided by the Contractor, and the Contractor is responsible for coordinating with the Owner and Landscape Architect regarding colors, block styles, etc.. Retaining wall design shall be performed by a Professional Engineer registered in the State of Mississippi.

12. See sheet C3.5 for bedding requirements for High Performance (HP) storm drainage pipe.

13. With the exception of curb inlet tops, drainage structures may be pre-cast or cast-in-place. Brick or block inlets are not allowed. Curb inlet or grate inlet tops shall conform to the longitudinal top of curb grade and must be cast-in-place. Precast curb inlet tops are not permitted. For curb inlets on longitudinal grade, precast tops are not permitted. Curb inlet top elevations shown are referenced to the top of curb elevation at the center of the curb inlet box. Where located adjacent to curb and gutter, grate inlet tops shall be set equal to flowline elevation of gutter.

14. All sizes of flared end sections may be furnished with either bell and spigot or tongue and groove joints.

15. The Contractor shall verify location, size, and invert elevation of existing storm drainage pipes, structures, and ditches prior to commencing connection operations. The Contractor shall provide necessary adjustments to new storm drainage lines as necessary to allow for connection and installation.

16. Any accumulated sediment inside new or existing storm drain lines within project construction limits shall be flushed prior to completion of project.

17. No slopes shall be constructed steeper than 3:1, unless specifically noted on drawings.

18. Prior to placement of fill and sub-base course, areas which are at final subgrade or are to receive fill should be proof-rolled with a loaded tandem axle truck to demonstrate stability.

19. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill storm drainage trenches.

20. The Contractor is responsible for field-verifying existing invert elevations or existing ground elevations prior to connecting to existing drainage structures, existing drainage pipes, or existing ground.

WATER NOTES:

1. Construction and materials for the water distribution system shall conform to the specifications of the Mississippi Department of Health and the local water service provider.

2. Water mains and services shall be installed at least 10 feet horizontally and 18 inches vertically from any sewer main or service or sewer manhole. The bottom of the water pipe shall be at least 18 inches from the top of the sewer pipe. Water mains/services shall always be constructed above sewer mains/services. Where local conditions prevent adequate horizontal and vertical separation, the Bureau of Water Supply may allow the water main/service to be laid closer to the sewer main/service if supported by adequate design data from the design engineer. Each situation will be reviewed by the Bureau of Water Supply on a case by case basis. A detailed drawing shall be included in the plans for water line construction submitted to the Bureau of Water Supply for review and approval. Where adequate horizontal and/or vertical separation cannot be maintained, the following requirements shall apply:

- If the 10 foot horizontal separation between water and sewer pipes cannot be maintained then the water pipe should be ductile iron with the water pipe joints located at the maximum distance possible from sewer pipe joints. PVC pipe may be used if it is protected by steel casing. Also, the water and sewer pipes must be in separate trenches with adequate space for maintenance. In some cases, special sewer pipe construction procedures may be required.
- Where the 10 foot horizontal and 18 inch vertical separation cannot be maintained, condition 1 above must be met and the sewer pipe shall be constructed according to water main standards.
- NOTE: Where water pipes cross sewer pipes, the above requirements will be waived if pipe segments are centered to provide a maximum spacing of the joints of both water and sewer pipes and a vertical separation of at least 18 inches (water over sewer) is maintained.

3. Location and size of existing water mains are based on information provided by others and by MS One-Call. The Contractor shall verify location and size of existing water mains prior to commencing boring or connection operations, and shall provide necessary adjustments to both new and existing water lines to allow for connection and installation.

4. Contractor shall refer to mechanical / plumbing drawings to verify locations and sizes of fire and domestic services prior to installation. Adjustments to fire services; domestic services and post indicator valves; and remote fire department connections shown on these drawings shall be made as necessary through coordination with the Project Engineer. For domestic and fire services, the scope of these drawings terminates at a location five feet (5') outside of the exterior building wall. Refer to mechanical / plumbing drawings for continuation into the building.

5. Water mains and services must be buried a minimum of 36" below finished grade.

6. All water pipe shall be PVC C-900, Class 235 (DR 18) pipe, and all service pipe shall be C.T.S. tubing. All fittings shall be ductile iron mechanical joint (MJ) fittings. Concrete thrust blocking and Megalug fittings are required at all bends and tees. All water mains and services located under roadways shall be encased in Schedule 40 PVC casing.

7. All items shown on water lines (i.e. hydrants, valves, fittings) are shown in general locations only and may be slightly adjusted in the field as warranted by installation requirements. Where possible, valves and hydrants are to be installed in unpaved locations.

8. Locator wire (12 gage copper) shall be placed along and attached to all new water mains. Tracer wire to be a minimum of 3 feet in all valve boxes.

9. A ductile iron cap is required at the end of all water mains.

10. Backflow prevention measures for fire services are to be installed within the buildings (see architectural / mechanical drawings).

11. The Contractor is responsible for coordinating with the utility service provider prior to connecting to existing water or relocation of existing water (if required). The Contractor is responsible for ensuring that utility service personnel are present during critical phases of installation (i.e. connection, relocation, testing, etc.). Cost of connection fees and meters shall be responsibility of the Contractor.

12. Prior to being placed into service, all new water mains must be pressure tested and disinfected according to the specifications. A pressure test shall be conducted using a minimum of 150 psi or 1.5 times the working pressure, whichever greater, for two (2) hours under the inspection of an Engineer's representative. Using samples obtained by the water service provider 24 hours apart, two (2) consecutive bacteriological tests are required to be determined as satisfactory by a laboratory certified by the Mississippi State Department of Health.

13. Unsuitable material (i.e. expansive clay, high moisture content) incapable of achieving compaction requirements shall not be used to backfill water pipe trenches.

ABBREVIATIONS

AC	ACRES	F.G.	FINISHED GROUND	PM	PLAN MEASURE
AEA	AVERAGE END AREA	FL	FLOW LINE	PMH	PROPOSED MANHOLE
AH	ABSORBED HAUL	FM	FINAL MEASURE	POB	POINT OF BEGINNING
APR	AS PER RECORD	FME	FINAL MEASURE EMBANKMENT	POC	POINT OF COMMENCEMENT
APS	AS PER SURVEY	GA	GAUGE	PRC	POINT OF REVERSE CURVATURE
BC-1	BRANCH CONNECTION	GP	GROUP	PROP.	PROPOSED
C.B.	CHORD BEARING	H.D.	HEAVY DUTY	PT	POINT OF TANGENCY
C.L.	CHORD LENGTH	HP	HIGH POINT	R	CURVE RADIUS
CL	CLASS	HYD	HYDRANT	R.D.	ROOF DRAIN
CMP	CORRUGATED METAL PIPE	INV.	INVERT	R.O.W.	RIGHT-OF-WAY
CONT.	CONTINUOUS	IPF	IRON PIN FOUND	RCAP	REINFORCED CONCRETE ARCH PIPE
CP	CONTROL POINT	IPS	IRON PIN SET	RCP	REINFORCED CONCRETE PIPE
CPP	CORRUGATED PLASTIC PIPE	L	CURVE LENGTH	REQD	REQUIRED
CY	CUBIC YARDS	LB	POUNDS	RT	RIGHT
DS	DOWNSTREAM	LF	LINEAR FEET	SF	SQUARE FOOT
E=	EASTING	LP	LOW POINT	STA.	STATION
E.W.	EACH WAY	LS	LUMP SUM	SY	SQUARE YARD
EA.	EACH	LT	LEFT	TEMP.	TEMPORARY
E.G.	EXISTING GROUND	MPF	METAL PIPE FOUND	T.O.C.	TOP OF CURB
ELEV.	ELEVATION	N=	NORTHING	TYP.	TYPICAL
EMH	EXISTING MANHOLE	O.A.	ON CENTER	U.G.	UNDERGROUND
EX.	EXISTING	OS	OFFSET	US	UPSTREAM
F.B.	FLAT BOTTOM	PC	POINT OF CURVATURE	V.C.	VERTICAL CURVE
FCM	FOUND CONCRETE MARKER	PC-1	PIPE COLLAR	VF	VERTICAL FOOT
FES	FLARED END SECTION	PKF	PINE KNOT FOUND	WV	WATER VALVE

LEGEND

- TEMPORARY STRAW WATTLES
- PROP. REMOTE FIRE DEPT. CONNECTION
- PROP. FIRE HYDRANT WITH VALVE
- PROP. GATE VALVE
- EX. FIRE HYDRANT
- EX. GATE VALVE
- EX. WATER METER
- PROP. PUMP STATION & VALVE PIT
- PROP. SEWER MANHOLE
- PROP. SEWER CLEAN-OUT
- PROP. GREASE TRAP
- PROP. DOMESTIC WATER SERVICE
- PROP. FIRE PROTECTION SERVICE
- PROP. SEWER SERVICE
- EX. PUMP STATION WITH VALVE PIT
- EX. SEWER MANHOLE
- EX. SEWER CLEAN-OUT
- PROP. LIGHT POLE
- EX. LIGHT POLE
- EX. UTILITY POLE
- EX. GUY WIRE
- EX. POWER TRANSFORMER
- PROP. HEAVY-DUTY GRATE INLET
- PROP. LIGHT-DUTY YARD INLET
- PROP. JUNCTION BOX
- PROP. CURB INLET WITH EXTENSION
- EX. HEAVY-DUTY GRATE INLET
- EX. LIGHT-DUTY YARD INLET
- EX. JUNCTION BOX
- EX. CURB INLET WITH EXTENSION
- 260.40 FINISHED GRADE SPOT ELEVATION
- DIRECTION OF SURFACE FLOW
- HORIZONTAL/VERTICAL CONTROL POINT
- BURIED FIBER OPTIC MARKER
- BENCHMARK
- HANDICAP
- STORM AND SEWER FLOW DIRECTION
- ROADWAY SIGN
- BORE HOLE
- CONCRETE RIGHT-OF-WAY MARKER
- PROPERTY CORNER
- HVAC UNIT
- FLAG POLE
- WHEEL STOP

- SUBJECT PROPERTY BOUNDARY
- PROP. RIGHT-OF-WAY OR EASEMENT
- EX. RIGHT-OF-WAY OR EASEMENT
- PUBLIC LAND SYSTEM (40/SECTION) LINES
- PROP. CENTERLINE
- PROP. TEMPORARY SILT FENCE
- CENTERLINE OF DITCH OR SWALE
- 295 PROP. CONTOUR
- 295 EX. MAJOR TOPOGRAPHIC CONTOUR
- 294 EX. MINOR TOPOGRAPHIC CONTOUR
- PROP. SETBACKS
- PROP. CONSTRUCTION LIMITS
- RAILROAD TRACKS
- WOOD FENCE
- EX. CHAIN LINK FENCE
- EX. BARBED-WIRE FENCE
- EX. TREE LINE
- EX, EDGE OF PAVEMENT
- EX. 100 YEAR FLOODPLAIN BOUNDARY (PLOTTED FROM FIRM)
- PROP. ROADWAY DAYLIGHT LINE
- PROP. STORM DRAINAGE PIPE WITH F.E.S.
- EX. STORM DRAINAGE PIPE WITH F.E.S.
- PROP. WATER LINE (WITH SIZE)
- PROP. GRAVITY SEWER MAIN (WITH SIZE)
- 4"FM PROP. FORCE MAIN (WITH SIZE)
- EX. WATER MAIN (WITH SIZE)
- EX. GRAVITY SEWER MAIN (WITH SIZE)
- EX. SEWER FORCE FORCE MAIN (WITH SIZE)
- EX. GAS LINE (WITH SIZE)
- EX. HIGH PRESSURE GAS LINE
- EX. OVERHEAD POWER LINE
- EX. UNDERGROUND POWER LINE
- EX. OVERHEAD TELEPHONE
- EX. UNDERGROUND TELEPHONE LINE
- EX. UNDERGROUND FIBER OPTIC LINE
- EX. BURIED CABLE (UNKNOWN)
- PROP. IRRIGATION SLEEVE
- HEAVY DUTY PAVEMENT
- LANDSCAPED SURFACE
- CONCRETE SURFACE
- RIP-RAP SURFACE
- FLEXAMAT SURFACE

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1001 Jackson Road | Hattiesburg, MS 39402
t 601.261.2666 | clearpointengineers.com

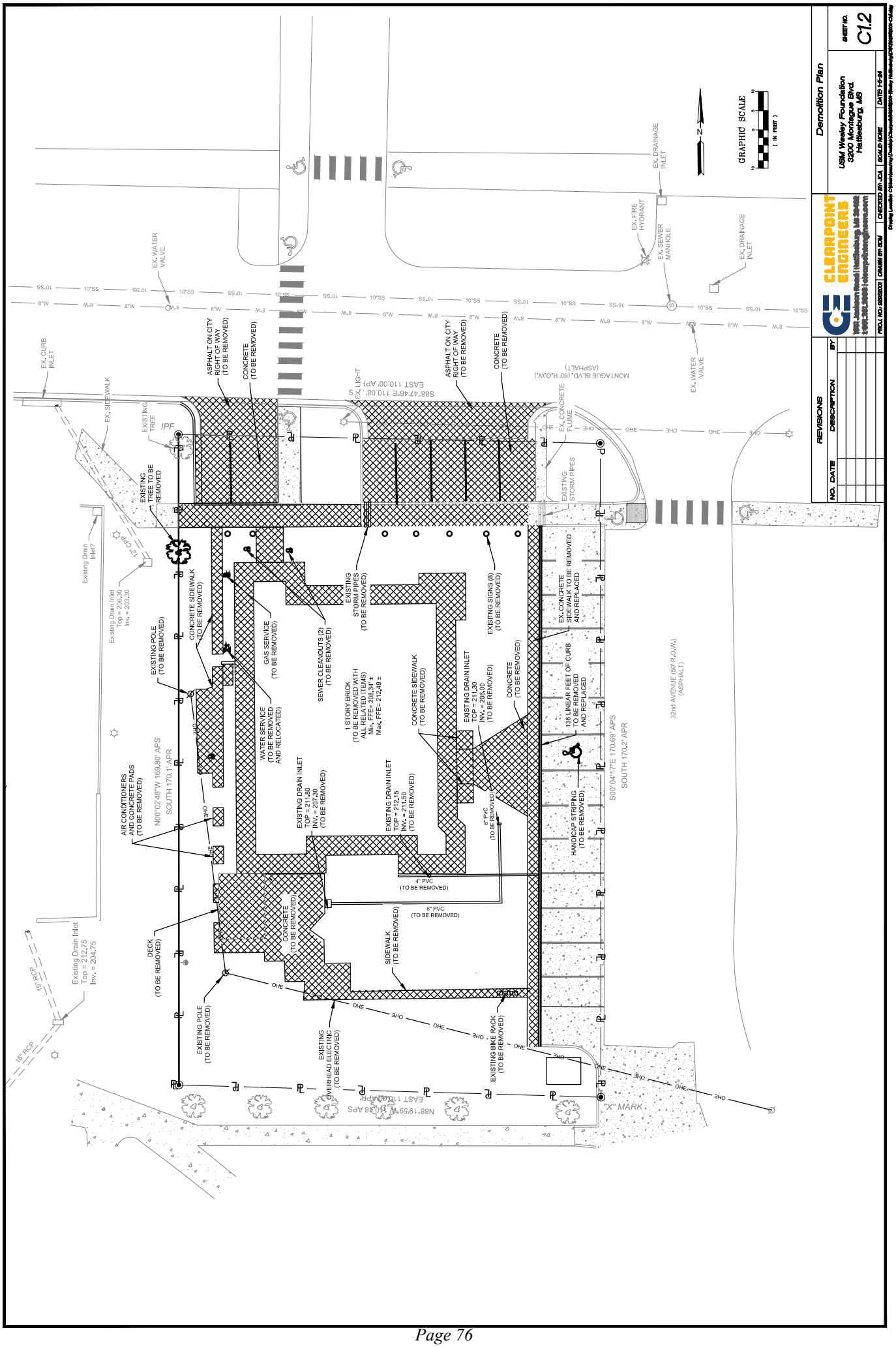
PROJ. NO: 2023200 | DRAWN BY: SCM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

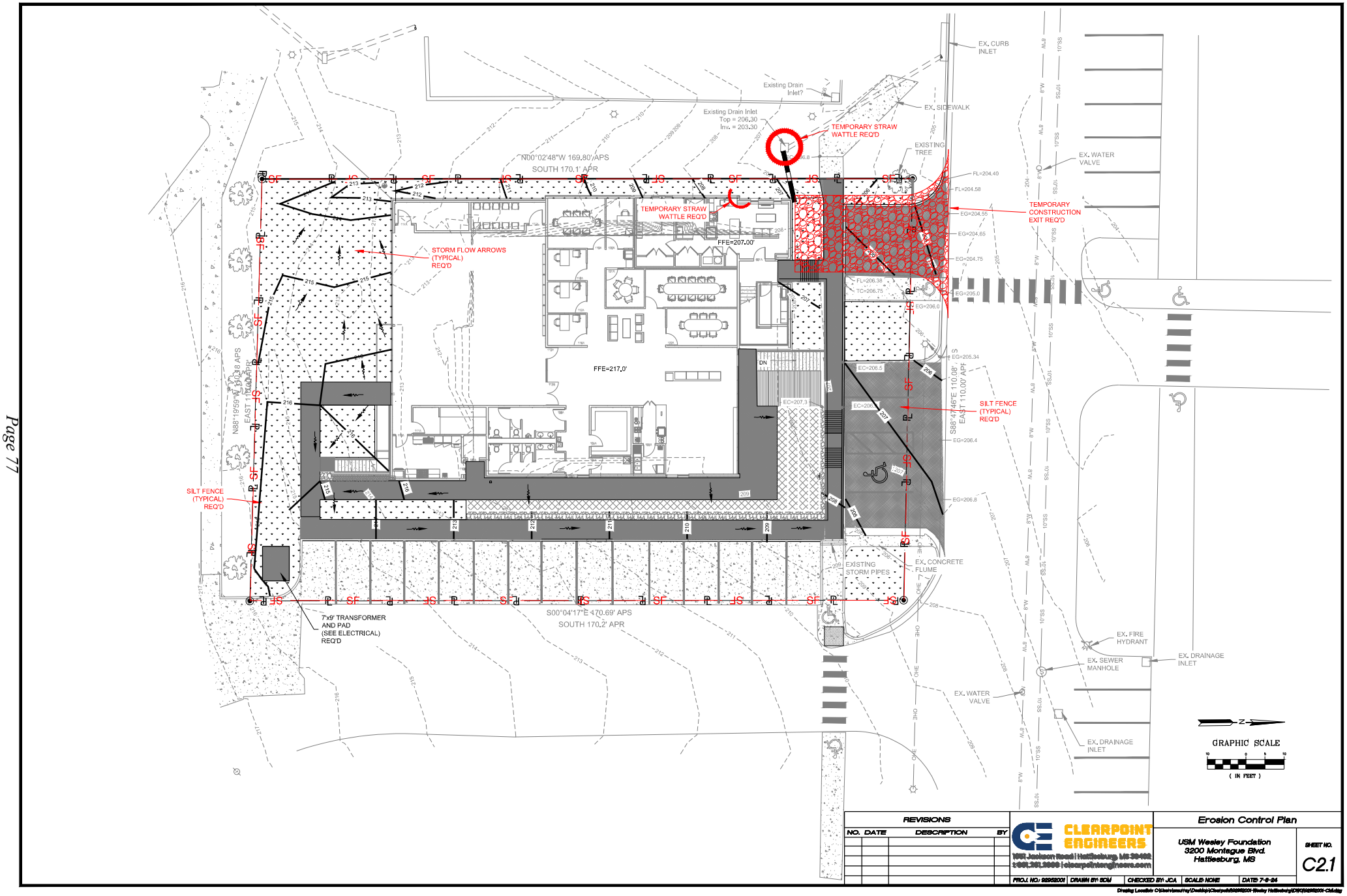
Notes, Legend, and Abbreviations

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

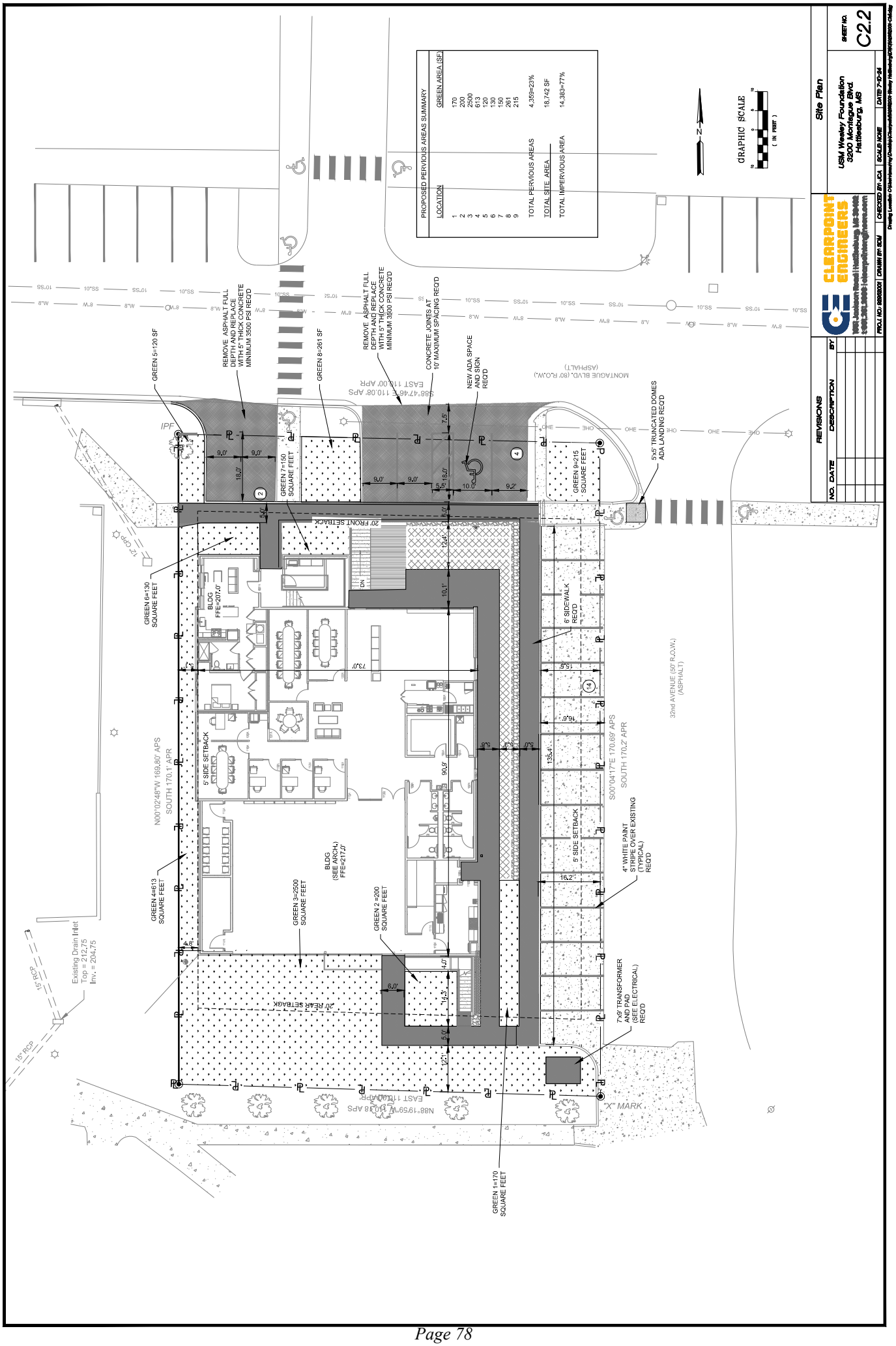
SHEET NO. C1.1

Drawing Location: C:\Users\smurray1\Desktop\Clearpoint\2023200 Wesley Hattiesburg\DWG\2023200-Civil.dwg


Demolition Plan
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS
SHEET NO.
C1.2
CLEARPOINT ENGINEERS
REVISIONS
NO. DATE DESCRIPTION BY
GRAPHIC SCALE
(IN FEET)
EX. DRAINAGE INLET
EX. FIRE HYDRANT
EX. SEWER MANHOLE
EX. WATER VALVE
EX. CURB INLET
EX. SIDEWALK
EXISTING TREE
IPF
EXISTING TREE TO BE REMOVED
ASPHALT ON CITY RIGHT OF WAY (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
EX. LIGHT
S88°47'46"E 110.08' APR
EAST 110.00' APR
MONTAGUE BLVD. (80' R.O.W.) (ASPHALT)
EX. CONCRETE FLUME
EXISTING STORM PIPES
Existing Drain Inlet?
Existing Drain Inlet Top = 206.30 Inv. = 203.30
12" CPP
EXISTING POLE (TO BE REMOVED)
CONCRETE SIDEWALK (TO BE REMOVED)
GAS SERVICE (TO BE REMOVED)
SEWER CLEANOUTS (2) (TO BE REMOVED)
EXISTING STORM PIPES (TO BE REMOVED)
EXISTING SIGNS (8) (TO BE REMOVED)
EX. CONCRETE SIDEWALK TO BE REMOVED AND REPLACED
WATER SERVICE (TO BE REMOVED AND RELOCATED)
1 STORY BRICK (TO BE REMOVED WITH ALL RELATED ITEMS) Min. FFE= 208.34' ± Max. FFE= 212.49 ±
CONCRETE SIDEWALK (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 211.30 INV. = 206.00 (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
136 LINEAR FEET OF CURB TO BE REMOVED AND REPLACED
32nd AVENUE (50' R.O.W.) (ASPHALT)
S00°04'17"E 170.69' APS
SOUTH 170.2' APR
N00°02'48"W 169.80' APS
SOUTH 170.1' APR
AIR CONDITIONERS AND CONCRETE PADS (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 211.80 INV. = 207.30 (TO BE REMOVED)
EXISTING DRAIN INLET TOP = 212.15 INV. = 211.50 (TO BE REMOVED)
6" PVC (TO BE REMOVED)
HANDICAP STRIPING (TO BE REMOVED)
4" PVC (TO BE REMOVED)
6" PVC (TO BE REMOVED)
CONCRETE (TO BE REMOVED)
SIDEWALK (TO BE REMOVED)
DECK (TO BE REMOVED)
Existing Drain Inlet Top = 212.75 Inv. = 204.75
15" RCP
EXISTING POLE (TO BE REMOVED)
EXISTING OVERHEAD ELECTRIC (TO BE REMOVED)
EXISTING BIKE RACK (TO BE REMOVED)
N88°19'59"W 110.18 APS
EAST 110.00 APR
"X" MARK



EX. CURB INLET
Existing Drain Inlet?
EX. SIDEWALK
Existing Drain Inlet
Top = 206.30
Inv. = 203.30
TEMPORARY STRAW WATTLE REQ'D
EXISTING TREE
EX. WATER VALVE
N00°02'48"W 169.80' APS
SOUTH 170.1' APR
TEMPORARY STRAW WATTLE REQ'D
TEMPORARY CONSTRUCTION EXIT REQ'D
STORM FLOW ARROWS (TYPICAL) REQ'D
FFE=207.00'
FFE=217.0'
SILT FENCE (TYPICAL) REQ'D
SILT FENCE (TYPICAL) REQ'D
EXISTING STORM PIPES
EX. CONCRETE FLUME
7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D
S00°04'17"E 170.69' APS
SOUTH 170.2' APR
EX. FIRE HYDRANT
EX. SEWER MANHOLE
EX. DRAINAGE INLET
EX. WATER VALVE
EX. DRAINAGE INLET
GRAPHIC SCALE
(IN FEET)
REVISIONS
NO. DATE DESCRIPTION BY
CLEARPOINT ENGINEERS
Erosion Control Plan
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS
SHEET NO.
C2.1
PROJ. NO.: 92952001
DRAWN BY: SDM
CHECKED BY: JCA
SCALE: NONE
DATE: 7-9-24


PROPOSED PERVIOUS AREAS SUMMARY
LOCATION
GREEN AREA (SF)
1 170
2 200
3 2500
4 613
5 120
6 130
7 150
8 261
9 215
TOTAL PERVIOUS AREAS 4,359=23%
TOTAL SITE AREA 18,742 SF
TOTAL IMPERVIOUS AREA 14,383=77%
GRAPHIC SCALE
(IN FEET)
GREEN 5=120 SF
REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 5" THICK CONCRETE MINIMUM 3500 PSI REQ'D
GREEN 8=261 SF
REMOVE ASPHALT FULL DEPTH AND REPLACE WITH 5" THICK CONCRETE MINIMUM 3500 PSI REQ'D
CONCRETE JOINTS AT 10' MAXIMUM SPACING REQ'D
NEW ADA SPACE AND SIGN REQ'D
MONTAGUE BLVD. (80' R.O.W.) (ASPHALT)
5'x5' TRUNCATED DOMES ADA LANDING REQ'D
GREEN 7=150 SQUARE FEET
GREEN 9=215 SQUARE FEET
20' FRONT SETBACK
GREEN 6=130 SQUARE FEET
BLDG FFE=207.0'
6' SIDEWALK REQ'D
32nd AVENUE (50' R.O.W.) (ASPHALT)
5' SIDE SETBACK
N00°02'48"W 169.80' APS
SOUTH 170.1' APR
S00°04'17"E 170.69' APS
SOUTH 170.2' APR
BLDG (SEE ARCH.) FFE=217.0'
4" WHITE PAINT STRIPE OVER EXISTING (TYPICAL) REQ'D
GREEN 4=613 SQUARE FEET
GREEN 3=2500 SQUARE FEET
GREEN 2 =200 SQUARE FEET
Existing Drain Inlet
Top = 212.75
Inv. = 204.75
15" RCP
20' REAR SETBACK
7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D
"X" MARK
GREEN 1=170 SQUARE FEET
REVISIONS
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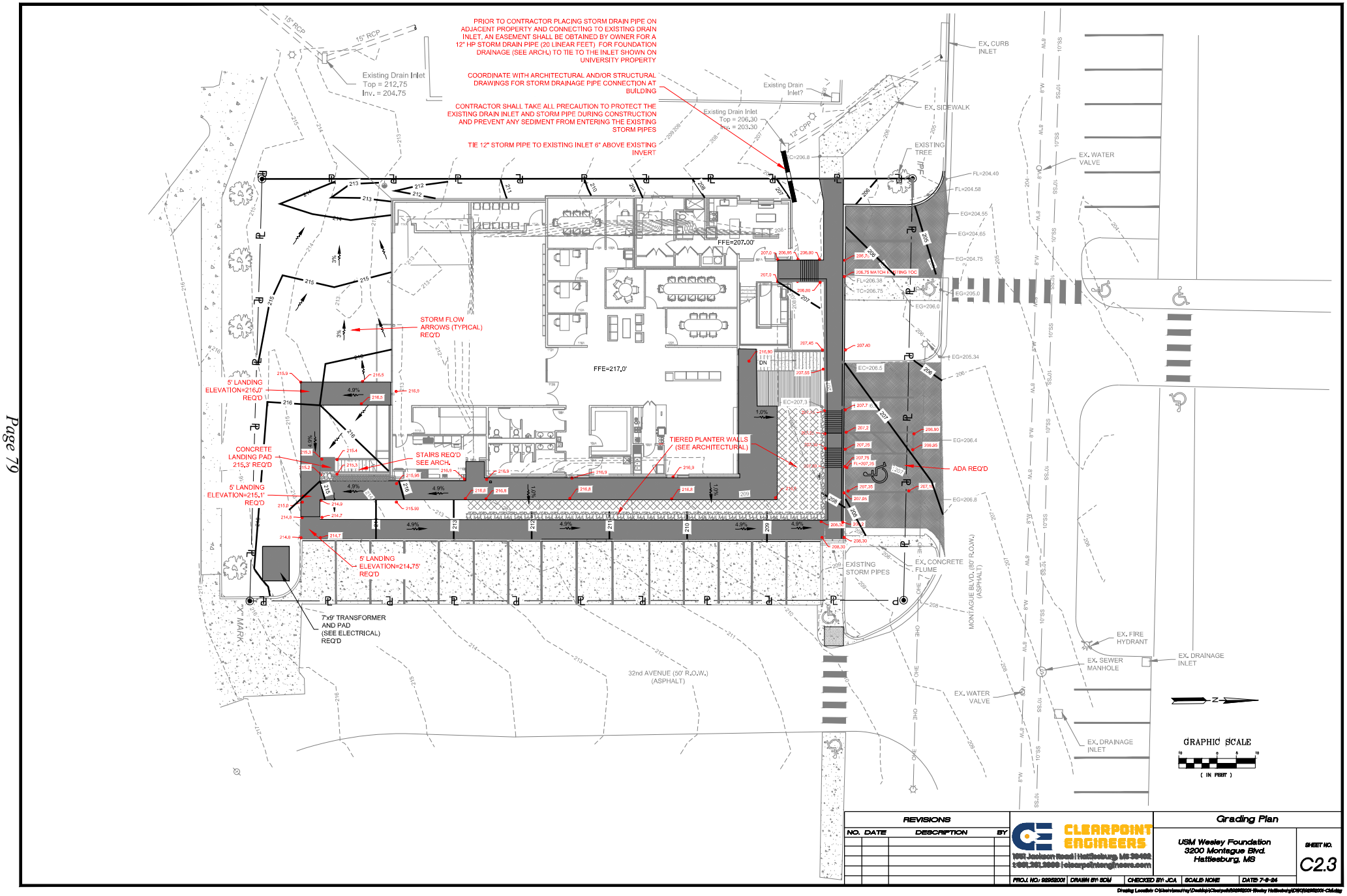
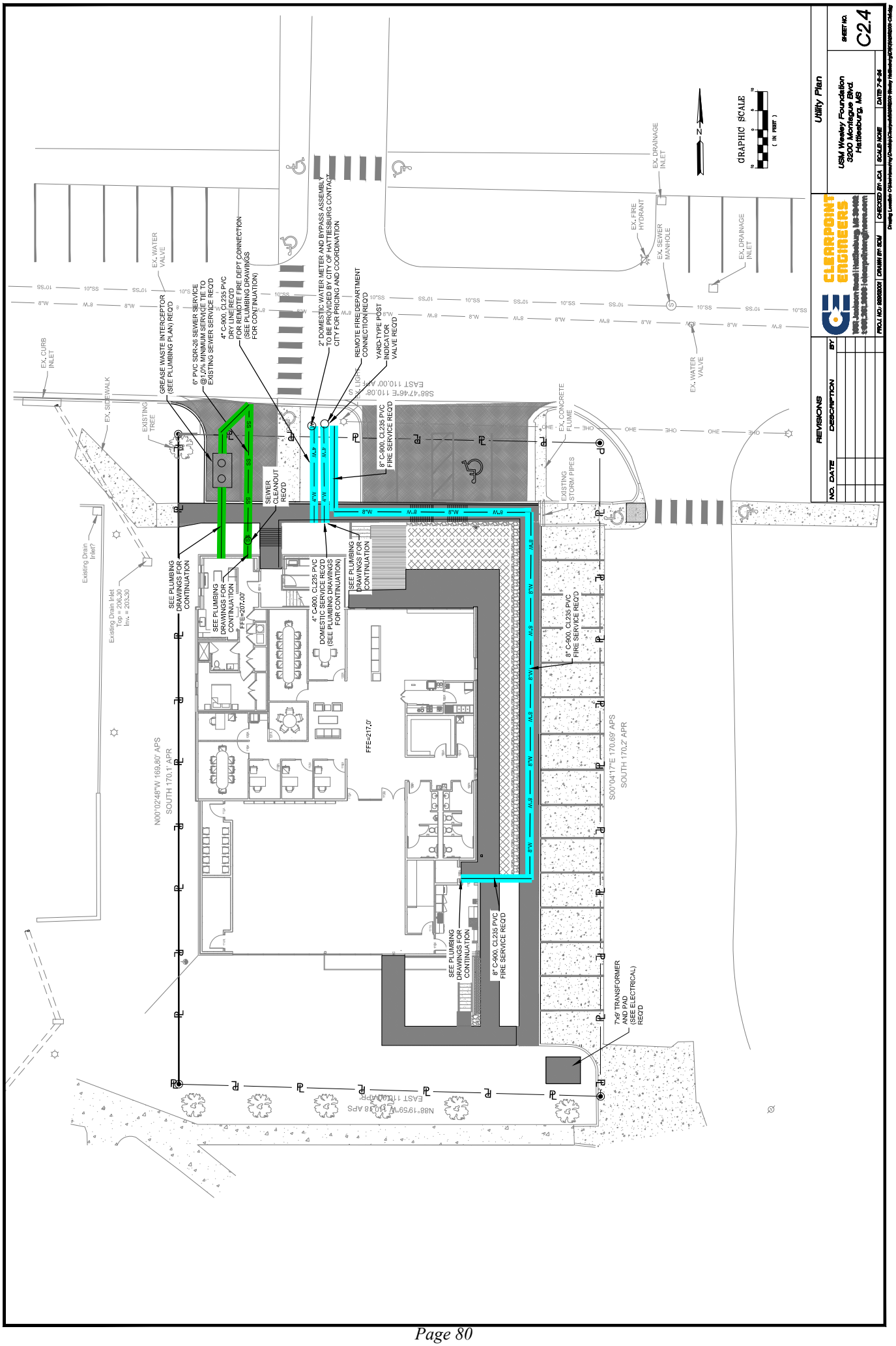
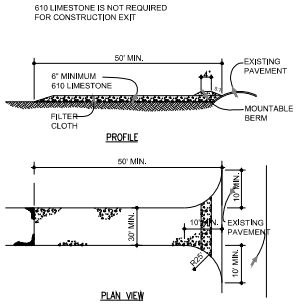
CLEARPOINT ENGINEERS
Site Plan
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS
SHEET NO.
C2.2
DATE 7-10-24
SCALE NONE
CHECKED BY: JCA
DRAWN BY: SCM


PRIOR TO CONTRACTOR PLACING STORM DRAIN PIPE ON ADJACENT PROPERTY AND CONNECTING TO EXISTING DRAIN INLET, AN EASEMENT SHALL BE OBTAINED BY OWNER FOR A 12" HP STORM DRAIN PIPE (20 LINEAR FEET) FOR FOUNDATION DRAINAGE (SEE ARCH.) TO TIE TO THE INLET SHOWN ON UNIVERSITY PROPERTY
COORDINATE WITH ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS FOR STORM DRAINAGE PIPE CONNECTION AT BUILDING
CONTRACTOR SHALL TAKE ALL PRECAUTION TO PROTECT THE EXISTING DRAIN INLET AND STORM PIPE DURING CONSTRUCTION AND PREVENT ANY SEDIMENT FROM ENTERING THE EXISTING STORM PIPES
TIE 12" STORM PIPE TO EXISTING INLET 6" ABOVE EXISTING INVERT
Existing Drain Inlet
Top = 212.75
Inv. = 204.75
15" RCP
Existing Drain Inlet?
Existing Drain Inlet
Top = 206.30
Inv. = 203.30
12" CPP
EX. CURB INLET
EX. SIDEWALK
EXISTING TREE
EX. WATER VALVE
FFE=207.00'
FFE=217.0'
STORM FLOW ARROWS (TYPICAL) REQ'D
5' LANDING ELEVATION=216.0' REQ'D
CONCRETE LANDING PAD 215.3' REQ'D
STAIRS REQ'D SEE ARCH.
5' LANDING ELEVATION=215.1' REQ'D
5' LANDING ELEVATION=214.75' REQ'D
TIERED PLANTER WALLS (SEE ARCHITECTURAL)
ADA REQ'D
EXISTING STORM PIPES
EX. CONCRETE FLUME
MONTAGUE BLVD. (80' R.O.W.) (ASPHALT)
7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D
32nd AVENUE (50' R.O.W.) (ASPHALT)
EX. FIRE HYDRANT
EX. SEWER MANHOLE
EX. DRAINAGE INLET
EX. WATER VALVE
EX. DRAINAGE INLET
GRAPHIC SCALE
(IN FEET)
REVISIONS
NO. DATE DESCRIPTION BY
CLEARPOINT ENGINEERS
Grading Plan
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS
SHEET NO.
C2.3
PROJ. NO.: 92952001
DRAWN BY: SDM
CHECKED BY: JCA
SCALE: NONE
DATE: 7-8-24



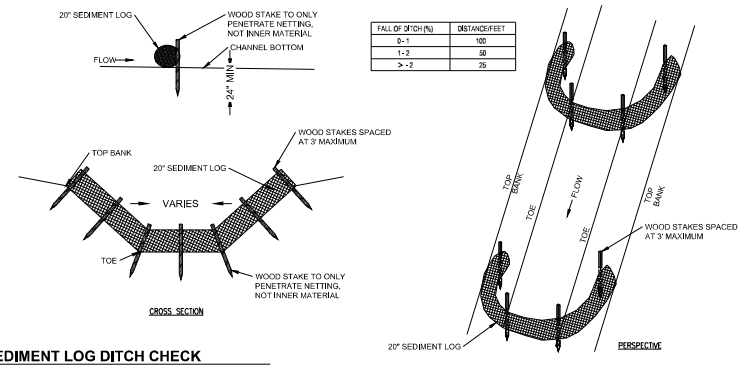
Utility Plan
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS
SHEET NO.
C2.4
CLEARPOINT ENGINEERS
REVISIONS
NO. DATE DESCRIPTION BY
GRAPHIC SCALE
(IN FEET)
EX. DRAINAGE INLET
EX. FIRE HYDRANT
EX. SEWER MANHOLE
EX. WATER VALVE
EX. CURB INLET
EX. SIDEWALK
EXISTING TREE
EX. CONCRETE FLUME
EXISTING STORM PIPES
GREASE WASTE INTERCEPTOR (SEE PLUMBING PLAN) REQ'D
6" PVC SDR-26 SEWER SERVICE @1.0% MINIMUM SERVICE TIE TO EXISTING SEWER SERVICE REQ'D
4" C-900, CL235 PVC DRY LINE REQ'D FOR REMOTE FIRE DEPT CONNECTION (SEE PLUMBING DRAWINGS FOR CONTINUATION)
2" DOMESTIC WATER METER AND BYPASS ASSEMBLY TO BE PROVIDED BY CITY OF HATTIESBURG CONTACT CITY FOR PRICING AND COORDINATION
REMOTE FIRE DEPARTMENT CONNECTION REQ'D
YARD-TYPE POST INDICATOR VALVE REQ'D
8" C-900, CL235 PVC FIRE SERVICE REQ'D
SEWER CLEANOUT REQ'D
SEE PLUMBING DRAWINGS FOR CONTINUATION
SEE PLUMBING DRAWINGS FOR CONTINUATION
FFE=207.00'
4" C-900, CL235 PVC DOMESTIC SERVICE REQ'D (SEE PLUMBING DRAWINGS FOR CONTINUATION)
SEE PLUMBING DRAWINGS FOR CONTINUATION
8" C-900, CL235 PVC FIRE SERVICE REQ'D
FFE=217.0'
8" C-900, CL235 PVC FIRE SERVICE REQ'D
SEE PLUMBING DRAWINGS FOR CONTINUATION
7'x9' TRANSFORMER AND PAD (SEE ELECTRICAL) REQ'D
Existing Drain Inlet?
Existing Drain Inlet Top = 206.30 Inv. = 203.30
N00°02'48"W 169.80' APS
SOUTH 170.1' APR
S00°04'17"E 170.69' APS
SOUTH 170.2' APR
N88°19'59"W 110.18' APS
EAST 110.00' APR
S88°47'46"E 110.08' APS
EAST 110.00' APR



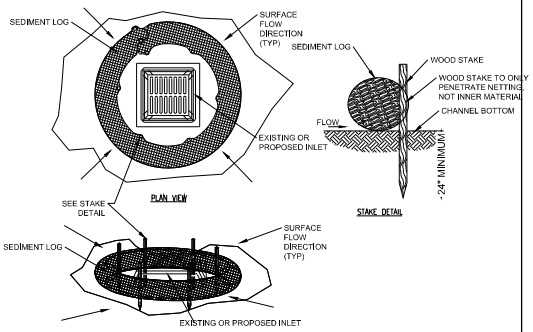
STABILIZED CONSTRUCTION EXIT

1. STONE SIZE - USE #2 STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH - AS REQUIRED, BUT NOT LESS THAN 50 FEET.
3. DEPTH - NOT LESS THAN SIX (6) INCHES.
4. WIDTH - THIRTY (30) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS.
5. FILTER CLOTH - WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER - ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE - THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WASHING - WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHTS-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

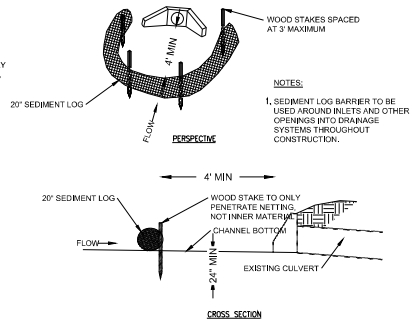
1 TEMPORARY CONSTRUCTION EXIT
SCALE: NOT TO SCALE



2 SEDIMENT LOG DITCH CHECK
SCALE: NOT TO SCALE



3 SEDIMENT LOG INLET PROTECTION
SCALE: NOT TO SCALE



4 SEDIMENT LOG CULVERT SEDIMENT BARRIER
SCALE: NOT TO SCALE

1. ALL NEWLY CUT AND/OR FILLED AREAS LACKING ADEQUATE VEGETATION SHALL BE SEEDED, FERTILIZED, MULCHED AND/OR SODDED AS REQUIRED TO EFFECTIVELY PREVENT SOIL EROSION.
2. SILT FENCES AND HAY BALES SHALL BE USED AS SHOWN AND AS DIRECTED BY THE ENGINEER TO CONTROL SOIL EROSION.
3. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN EROSION CONTROL DURING CONSTRUCTION BY THE PLACEMENT OF SILT FENCES AND/OR HAY BALES WHERE NECESSARY TO PREVENT DOWNSTREAM SILTATION OF ANY DITCHES, PIPES, DRAINAGE STRUCTURES, OR ADJACENT PROPERTIES. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL EROSION CONTROL AS NEEDED OR AS DIRECTED BY THE ENGINEER.
4. THE CONTRACTOR IS RESPONSIBLE FOR COMPLYING TO THE STATE OF MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) OFFICE OF POLLUTION CONTROL (OPC) STORM WATER CONSTRUCTION GENERAL PERMIT FOR ALL EROSION CONTROL DURING CONSTRUCTION ACTIVITIES.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EROSION CONTROL DEVICES AND REPORTING ANY MAINTENANCE AS REQUIRED BY THE STATE OF MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL QUALITY (MDEQ) OFFICE OF POLLUTION CONTROL (OPC) STORM WATER CONSTRUCTION GENERAL PERMIT DURING CONSTRUCTION ACTIVITIES.
6. PROVISIONS SHALL BE MADE TO PROTECT DOWNSTREAM WATERCOURSES (I.E., STORM SEWER SYSTEMS, DITCHES, WETLANDS, ETC.) FROM SEDIMENT RUNOFF DEVELOPED FROM THE CONSTRUCTION PROCESS. PROVISIONS INCLUDE, BUT ARE NOT LIMITED TO, STRUCTURAL CONTROLS SUCH AS SILT FENCING, GEOTEXTILE FABRIC PROTECTION OF STORM SEWERS, HAY BALES, DIKES AND SANDBAG BERMS; AND/OR VEGETATION CONTROLS SUCH AS SEEDING OR EXISTING VEGETATIVE BUFFER STRIPS (MINIMUM 25 FEET WIDE).
7. PRIOR TO START OF CONSTRUCTION, CONTRACTOR SHALL INSTALL EROSION AND SEDIMENTATION CONTROLS AT LOCATIONS SHOWN ON PLANS.
8. CONTRACTOR SHALL PERFORM DAILY STREET CLEANING ON ROADS AND STREETS ADJACENT TO THE PROJECT WHICH ARE USED AS ACCESS ROUTES FOR CONSTRUCTION TRAFFIC IF DIRT AND MUD IS NOT ADEQUATELY REMOVED FROM VEHICLES AT THE STABILIZED CONSTRUCTION EXITS.
9. LOCATE FUEL/MATERIAL STORAGE AREAS AWAY FROM STORMWATER CONVEYANCE SYSTEMS. USE A MINIMUM 60 MIL POLYETHYLENE LINER UNDER ABOVE GROUND STORAGE TANKS. USE 2 FOOT HIGH BERMS AROUND FUEL STORAGE AREAS.
10. CONTRACTOR WILL ADVISE OWNER IMMEDIATELY, VERBALLY, AND IN WRITING, OF ANY FUEL SPILLS ONTO THE PROJECT/CONSTRUCTION AREA AND THE ACTIONS TAKEN TO REMEDY THE PROBLEM.
11. CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL ENVIRONMENTAL LAWS.
12. CONTRACTOR IS RESPONSIBLE FOR DISPOSING OF FUELS, MATERIALS AND CONTAMINATED EXCAVATIONS IN A LEGALLY APPROVED MANNER.
13. CONTRACTOR SHALL INSPECT ALL STRUCTURAL CONTROLS WITHIN 24 HOURS AFTER ANY STORM EVENT THAT MEETS OR EXCEEDS 0.5 INCHES OF RAINFALL IN A 24 HOUR PERIOD. DURING PROLONGED RAINFALL EVENTS, CONTRACTOR SHALL INSPECT STRUCTURAL CONTROLS ON A DAILY BASIS. AT A MINIMUM, STRUCTURAL CONTROLS SHOULD BE INSPECTED ONCE EVERY 14 CALENDAR DAYS. A QUALIFIED REPRESENTATIVE OF THE CONTRACTOR, AS APPROVED BY THE OWNER, SHALL PROVIDE THESE INSPECTIONS. SHOULD CONTROLS BECOME INEFFECTIVE, NECESSARY REPAIRS SHALL BE PERFORMED TO RETURN THE INTEGRITY OF THE STRUCTURAL CONTROLS. REMOVE ALL SEDIMENT IF IT ACCUMULATES TO 1/3 THE HEIGHT OF THE SILT FENCE.
14. CONTRACTOR SHALL MAINTAIN, REPAIR AND/OR REPLACE DAMAGED EROSION AND SEDIMENTATION CONTROL SYSTEMS THROUGHOUT THE DURATION OF THE CONTRACT, NO SEPARATE PAY.
15. CONTRACTOR WILL PROVIDE PROTECTED STORAGE AREAS FOR CHEMICALS, PAINTS, SOLVENTS, FERTILIZERS AND OTHER POTENTIALLY TOXIC MATERIALS.
16. EQUIPMENT STAGING AREA TO BE DESIGNATED BY CONTRACTOR AND APPROVED BY OWNER PRIOR TO CONSTRUCTION.
17. AT COMPLETION OF THE CONTRACT, OWNER AND/OR OWNER'S REPRESENTATIVE WITH THE CONTRACTOR SHALL EXAMINE EROSION AND SEDIMENTATION CONTROL SYSTEMS BEFORE RELIEVING CONTRACTOR OF HIS MAINTENANCE RESPONSIBILITIES.
18. CONTRACTOR SHALL SOLID SOD DISTURBED AREAS IMMEDIATELY AFTER REACHING FINAL GRADE.

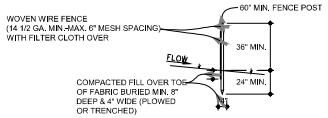
5 EROSION CONTROL NOTES
SCALE: NOT TO SCALE

CONSTRUCTION NOTES FOR FABRICATED SILT FENCE

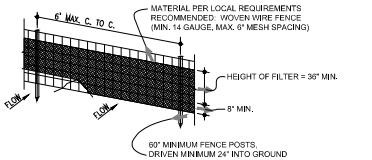
1. WOVEN WIRE FENCE TO BE FASTENED SECURELY TO FENCE POSTS WITH WIRE TIES OR STAPLES.
2. FILTER CLOTH TO BE FASTENED SECURELY TO SILT FENCE WITH TIES SPACED EVERY 24" AT TOP AND MID-SECTION.
3. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY (6) INCHES AND FOLDED.
4. LOCATE POSTS DOWNSLOPE OF FABRIC FOR FENCE SUPPORT.
5. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

POSTS: STEEL EITHER "T" OR "U" TYPE
POSTS: LOCATED MAXIMUM 8' O. C.
FENCE: PER LOCAL REQUIREMENTS OR WOVEN WIRE, 14 GA. 6" MAX. MESH OPENING
FILTER CLOTH: FILTER X, MIRAFI 100X, STABI-LINKA T140N OR APPROVED EQUAL.
PREFABRICATED UNIT: GEOFAB, ENVIROFENCE, OR APPROVED EQUAL.

6. INDICATED ON EROSION CONTROL PLANS AS "SF" "SF"



WIRE BACKING NOT REQUIRED ON SILT FENCE.

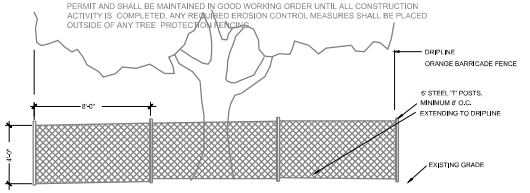


7 SILT FENCE EROSION PROTECTION
SCALE: NOT TO SCALE

TREE PROTECTION NOTES:
1. THE CRITICAL ROOT AREA OF THE TREES THAT ARE INDICATED TO REMAIN MUST BE PROTECTED, AT A MINIMUM, BY A PROTECTIVE FENCE LOCATED AT A RADIUS MEASURED 1.25 FEET FOR EVERY INCH IN DIAMETER OF THE TREE, OR AT THE DRIP LINE, WHICHEVER IS GREATER. FOR A GROUP OF TREES, A PROTECTIVE FENCE SHALL BE PLACED OUTSIDE THE CRITICAL ROOT RADIUS OF ALL TREES IN THE GROUP.

2. AFTER THE AREAS TO BE SELECTIVELY CLEARED ARE COMPLETED, THE CONTRACTOR SHALL INSTALL THE TREE BARRIER AS INDICATED AROUND THOSE AREAS.

3. ALL TREE PROTECTION FENCING SHALL BE IN PLACE PRIOR TO THE ISSUANCE OF A GRADING PERMIT AND SHALL BE MAINTAINED IN GOOD WORKING ORDER UNTIL ALL CONSTRUCTION ACTIVITY IS COMPLETED. ANY REQUIRED EROSION CONTROL MEASURES SHALL BE PLACED OUTSIDE OF ANY TREE PROTECTION FENCING.



6 TREE PROTECTION - ORANGE BARRIER DETAIL
SCALE: NOT TO SCALE

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1001 Jackson Road | Hattiesburg, MS 39402
t:601.261.9966 | clearpointengineers.com

Erosion Control Details

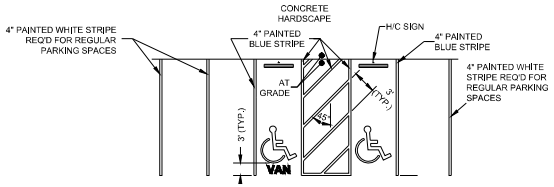
USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.1

PROJ. NO: 2023200I | DRAWN BY: SCM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

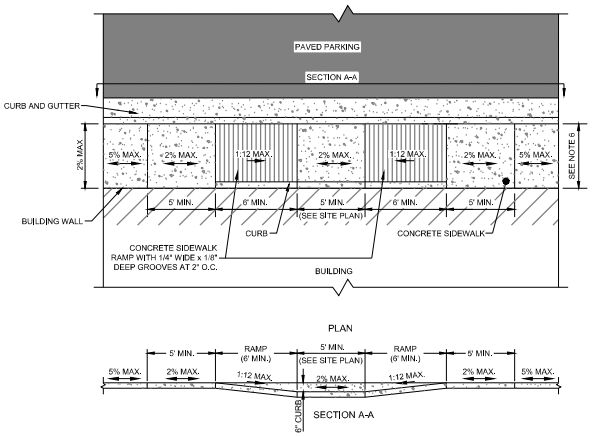
Drawing Location: C:\Users\smurray\Desktop\Clearpoint\2023\2024 Wesley Hattiesburg\DWG\2023200I-Civil.dwg

NOTE:
1. FOR HANDICAP SPACES AND AISLES, FINISHED GRADE SLOPES SHALL NOT EXCEED 2.0% IN ANY DIRECTION.
2. SEE PLAN FOR PARKING SPACE DIMENSIONS.

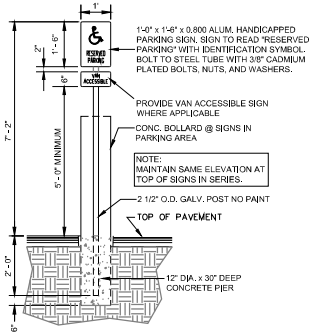


TYPICAL PARKING STRIPING DETAIL

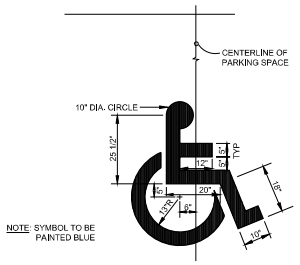
NOTES:
1. LOCATIONS AND TYPES OF CURB RAMPS SHALL BE AS SHOWN ON CIVIL/SITE PLANS.
2. THE CURB RAMP SHALL BE PAID FOR AS SIDEWALK.
3. THE THICKNESS OF THE CURB RAMP SHALL MATCH THAT OF THE SURROUNDING SIDEWALK (SEE DETAIL).
4. ALL RAMP SLOPES SHALL NOT BE STEEPER THAN 12:1 FOR A MAXIMUM ELEVATION INCREASE OF 0.5 FEET.
5. HANDICAP RAMPS CONNECTING TO PUBLIC STREETS SHALL HAVE TRUNCATED DOME SURFACE IN ACCORDANCE WITH ADA REGULATIONS.
6. CURB RAMP WIDTH SHALL CONFORM TO SIDEWALK WIDTH SHOWN ON SITE PLAN.



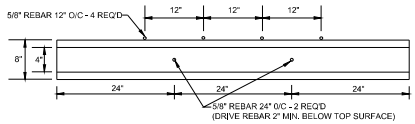
HANDICAP SIDEWALK RAMP DETAIL



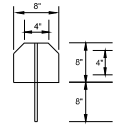
HANDICAP PARKING SIGN DETAIL



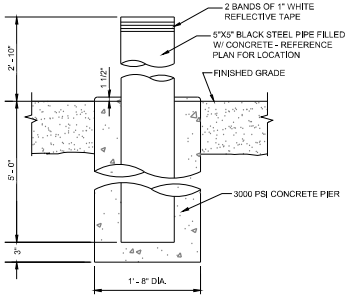
INTERNATIONAL SYMBOL OF ACCESS



CONCRETE WHEEL STOP (PLAN VIEW)
(6'L X 8"W X 6"H)



(PROFILE VIEW)
(6'L X 8"W X 6"H)



EXTERIOR PIPE BOLLARD DETAIL

REVISIONS			
NO.	DATE	DESCRIPTION	BY

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t:601.261.9966 | clearpointengineers.com

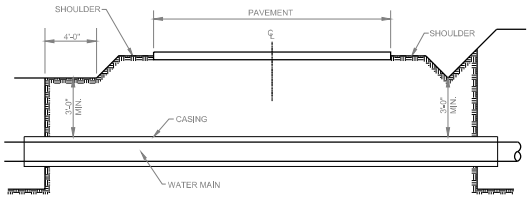
Site Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.2

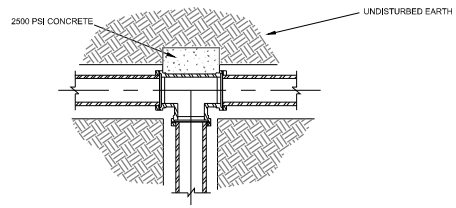
PROJ. NO: 2023-0001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: C:\Users\smurry\Desktop\Clearpoint\2023-0001 Wesley Hattiesburg\DWG\2023-0001-Civil.dwg

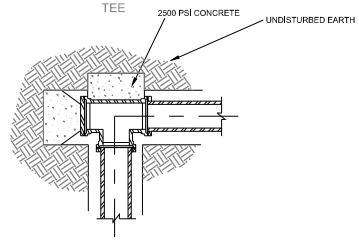


**SEE PLAN FOR WATER MAIN & CASING MATERIAL AND SIZES.

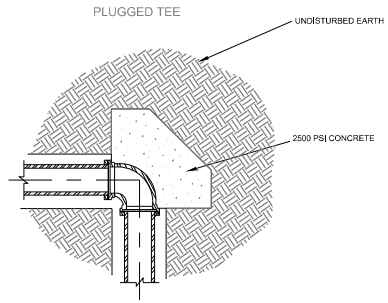
BORED & CASED WATER MAIN



TEE

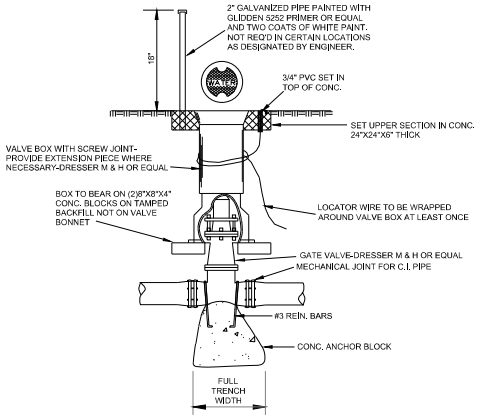


PLUGGED TEE

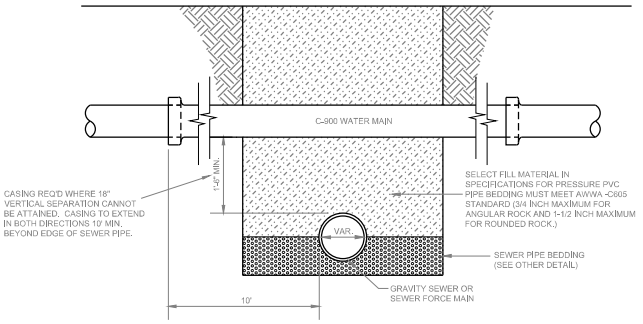


90° BEND

TYPICAL BLOCKING DETAILS



GATE VALVE DETAIL FOR MAINS 2" DIA. & OVER



WATER-SEWER SEPARATION

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
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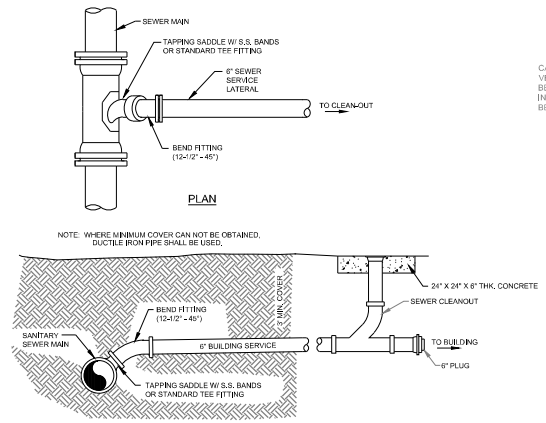
Water Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

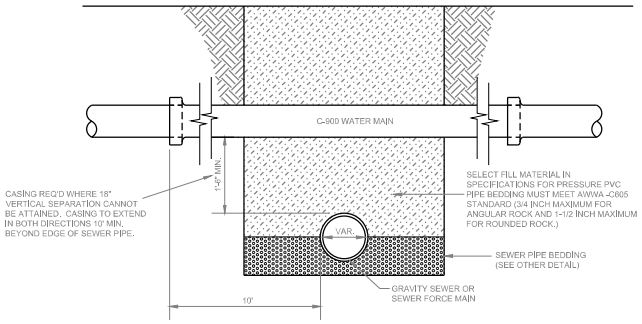
SHEET NO. C3.3

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

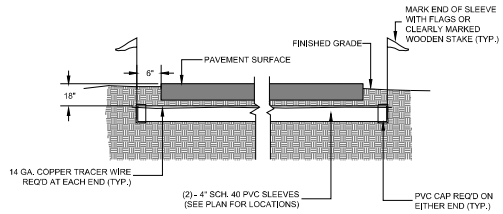
Drawing Location: C:\Users\smurray\Desktop\Clearpoint\92952001-Wesley Hattiesburg\DWG\92952001-C3.dwg



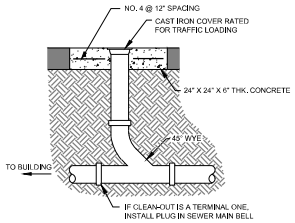
SEWER SERVICE CONNECTION DETAILS



WATER-SEWER SEPARATION

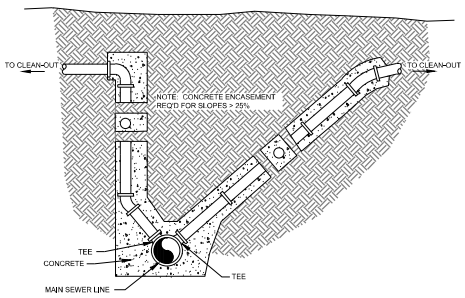


IRRIGATION SLEEVING DETAIL



SEWER CLEAN-OUT DETAILS

N.T.S.



SEWER SERVICE DETAILS FOR DEEP SEWERS

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
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Sewer Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.4

PROJ. NO.: 92952001 | DRAWN BY: SDM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

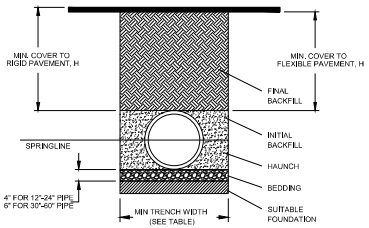
Drawing Location: C:\Users\smurray\Desktop\Clearpoint\92952001-Wesley Hattiesburg\DWG\92952001-C3.dwg

ADS, Inc. Drainage Handbook
Table 5-2
Classes of Embedment and Backfill Materials

ASTM D2321(A) (CSA B182.11) Class	Description	ASTM D2487 Notation	Description	AASHTO M43 Notation	AASHTO M145 Notation	BNQ 2560	ASTM Dm 2321 (A) (CSA B182.11) Percentage Passing Sieve Sizes 1 ½ in. (40mm)	3/8" (9,5mm)	No. 4 (4,75mm)	No. 200 (0,075 mm)	Atterberg Limits LL	PI	Coefficients Cu	Cc
I(B)	Crushed rock, angular	N/A	Angular crushed stone or rock, crushed gravel, crushed slag; large voids with little or no fines	5, 56, 57(D), 6, 67(D)	N/A		100%	≤25%	≤10%	<12%	Non Plastic		N/A	
I	Clean, coarse-grained soils	GW	Well-graded gravel, gravel-sand mixtures; little or no fines	5, 6	A1, A3	CG-14 , MG-20	100%		<50% of "Coarse Fraction"	<5%	Non Plastic		>4	1 to 3
		GP	Poorly-graded gravels, gravel-sand mixtures; little or no fines	56, 57, 67									<4	<1 or >3
		SW	Well-graded sands, gravelly sands; little or no fines						>50% of "Coarse Fraction"				>6	1 to 3
		SPF	Poorly-graded sands, gravelly sands; little or no fines										<6	<1 or >3
	Coarse- Grained Soils; borderline clean to w/fines	GW- GC, SP-SM	Sands and gravels which are borderline between clean and with fines	N/A			100%		Varies	5% to 12%	Non Plastic		Same as for GW, GP, SW and SP	
II	Coarse-grained soils with fines	GM	Silty gravels, gravel-sand-silt mixtures	Gravel & sand with <10% fines	A-2-4, A-3, A-5, A-2-6, or A-4 or A-6 soils with more than 30% retained on #200 sieve		100%		<50% of "Coarse Fraction"	12% to 50%	N/A	<4 or <"A" Line	N/A	
		GC	Clayey gravels, gravel-sand-clay mixtures									<7 & >"A" Line		
		SM	Silty sands, sand-silt mixtures						>50% of "Coarse Fraction"			>4 or <"A" Line		
		SC	Clayey sands, sand- clay mixtures									>7 & >"A" Line		
	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity						100%	> 30% (Retained)	<50	<4 or <"A" Line		
		CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays; lean clays							> 30% (Retained)		>7 & >"A" Line		
IV(E)	Inorganic fine-grained soils	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands, silts with slight plasticity	N/A	A-2-7 or A-4 or A-6 soils with 30% or less retained on #200 sieve		100%		100%	< 30% (Retained)	<50	<4 or <"A" Line	N/A	
		CL	Inorganic clays of low to medium plasticity, gravelly, sandy, or silty clays; lean clays	N/A								>7 & >"A" Line		
V (G)	Inorganic fine-grained soils	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	N/A	A5, A7		100%		100%	>50%	>50	<"A" Line	N/A	
		CH	Inorganic clays of high plasticity, fat clays	N/A								>"A" Line		
	Organic soils or Highly organic soils	OL	Organic silts and organic silty clays of low plasticity	N/A			100%		100%	>50%	<50	<4 or <"A" Line	N/A	
		OH	Organic clays of medium to high plasticity, organic silts	N/A							>50	<"A" Line		
		PT	Peat and other high organic soils	N/A										

ADS, Inc. Drainage Handbook
Notes:
A) Refer to ASTM D2321 / CSA B182.11/ BNQ 2560 for more complete soil descriptions.
B) Class I materials allow for a broader range of fines than previous versions of D2321 / B182.11. When specifying class I material for infiltration systems, the engineering shall include a requirement for an acceptable level of fines.
C) All particle faces shall be fractured.
D) Assumes less than 25% passes the 3/8" sieve.
E) Class IV materials require a geotechnical evaluation prior to use and should only be used as backfill under the guidance of a qualified engineer.
F) Uniform fine sands (SP) with more than 50% passing a 100 sieve behave like silts and should be treated as Class III soils if allowed.
G) Class V materials shall not be permitted as bedding and backfill material.

ADS, Inc., August 2016



NOTES:

1. ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS" LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IVB MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.

2. MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL, WHEN REQUIRED.

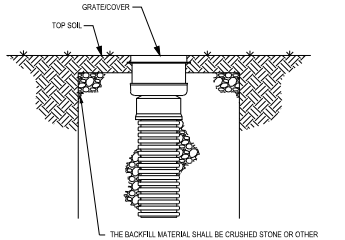
3. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.

4. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE. 6" (150mm) FOR 30"-60" (750mm-900mm) DIAMETER PIPE. THE MIDDLE 1/3 BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

5. INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.

6. MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, CLASS I OR II MATERIAL COMPACTED TO 85% SPD AND CLASS III COMPACTED TO 90% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.

HIGH PERFORMANCE (H.P.) STORM PIPE BEDDING DETAILS & SPECIFICATIONS



NON-TRAFFIC INLINE DRAIN INSTALLATION

TABLE 1, RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM.	MIN TRENCH WIDTH
12" (300mm)	30" (750mm)
15" (375mm)	34" (860mm)
18" (450mm)	39" (990mm)
24" (600mm)	48" (1209mm)
30" (750mm)	56" (1420mm)
36" (900mm)	64" (1620mm)
42" (1050mm)	72" (1830mm)
48" (1200mm)	80" (2030mm)
60" (1500mm)	96" (2440mm)

TABLE 2. MINIMUM RECOMMENDED COVER BASED ON VEHICLE LOADING CONDITIONS

PIPE DIAM.	SURFACE LIVE LOADING CONDITION H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48" (300mm - 1200mm)	12" (300mm)	48" (1200mm)
60" (1500mm)	24" (600mm)	60" (1500mm)

* VEHICLES IN EXCESS OF 75T MAY REQUIRE ADDITIONAL COVER

TABLE 3. MAXIMUM COVER FOR ADS HP STORM PIPE, ft

	CLASS I	CLASS II		CLASS III		CLASS IV
PIPE DIA	COMPACTED	95%	90%	85%	95%	90%	95%
12" (300mm)	41 (12,5m)	29 (8,8m)	21 (6,4m)	10 (3,0m)	22 (6,7m)	12 (3,7m)	11 (3,4m)
15" (375mm)	44 (13,4m)	30 (9,1m)	22 (6,7m)	10 (3,0m)	23 (7,0m)	13 (4,0m)	12 (3,7m)
18" (450mm)	38 (11,6m)	28 (7,9m)	19 (5,8m)	9 (2,7m)	20 (6,1m)	12 (3,7m)	11 (3,4m)
24" (600mm)	32 (9,8m)	23 (7,0m)	16 (4,9)	9 (2,7m)	17 (5,2m)	11 (3,4m)	10 (3,0m)
30" (750mm)	35 (10,7m)	25 (7,6m)	18 (5,5m)	9 (2,7m)	18 (5,5m)	12 (3,7m)	11 (3,4m)
36" (900mm)	31 (9,5m)	22 (6,7m)	15 (4,6m)	9 (2,7m)	18 (4,9m)	11 (3,4m)	10 (3,0m)
42" (1050mm)	33 (10,1m)	23 (7,0m)	17 (5,2m)	8 (2,4m)	17 (5,2m)	11 (3,4m)	10 (3,0m)
48" (1200mm)	31 (9,5m)	22 (6,7m)	15 (4,6m)	8 (2,4m)	16 (4,9m)	11 (3,4m)	10 (3,0m)
60" (1500mm)	36 (11,0m)	25 (7,6m)	17 (5,2m)	8 (2,4m)	18 (5,5m)	11 (3,4m)	10 (3,0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12, LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
NO HYDROSTATIC PRESSURE
UNIT WEIGHT OF SOIL (γs) = 120 PCF

Section 2722

Engineered Surface Drainage Products

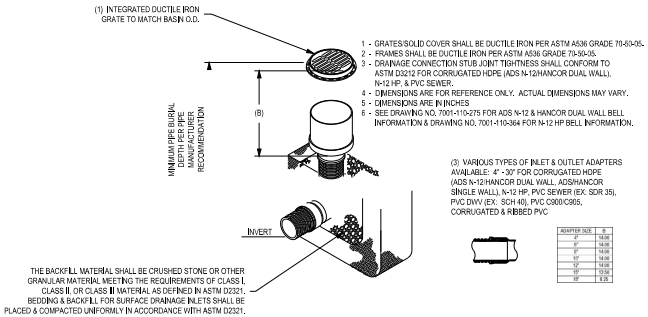
GENERAL
PVC surface drainage inlets shall be of the inline drain type as indicated on the contract drawing and referenced within the contract specifications. The ductile iron grates for each of these fittings are to be considered an integral part of the surface drainage inlet and shall be furnished by the same manufacturer. The surface drainage inlets shall be as manufactured by Nyloplast a division of Advanced Drainage Systems, Inc., or prior approved equal.

MATERIALS
The inline drain required for this contract shall be manufactured from PVC pipe stock, utilizing a thermo-molding process to reform the pipe stock to the furnished configuration. The drainage pipe connection stubs shall be manufactured from PVC pipe stock and formed to provide a watertight connection with the specified pipe system. This joint tightness shall conform to ASTM D3212 for joints for drain and sewer plastic pipe using flexible elastomeric seals. The flexible elastomeric seals shall conform to ASTM F477. The pipe bell spigot shall be joined to the inline drain body by use of a **swage mechanical joint**. The raw material used to manufacture the pipe stock that is used to manufacture the inline drain body and pipe stubs of the surface drainage inlets shall conform to ASTM D1784 cell class 12454.

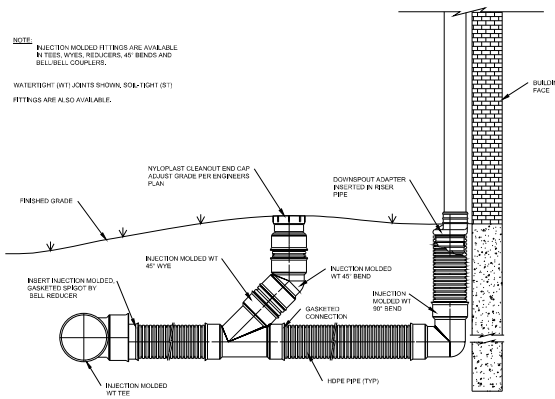
The grates furnished for all surface drainage inlets shall be ductile iron grates for sizes 8", 10", 12", 15", 18", 24" and 30" shall be made specifically for each fitting so as to provide a round bottom flange that closely matches the diameter of the surface drainage inlet. Grates for inline drains shall be capable of supporting H-20 wheel loading for traffic areas or H-10 loading for pedestrian areas. 12" and 15" square grates will be hinged to the frame using pins. Metal used in the manufacture of the castings shall conform to ASTM A536 grade 70-50-05 for ductile iron. Grates shall be provided painted black.

INSTALLATION
The specified PVC surface drainage inlet shall be installed using conventional flexible pipe backfill materials and procedures. The backfill material shall be crushed stone or other granular material meeting the requirements of class 1, class 2, or class 3 material as defined in ASTM D2321. Bedding and backfill for surface drainage inlets shall be well placed and compacted uniformly in accordance with ASTM D2321. The drain basin body will be cut at the time of the final grade. No brick, stone or concrete block will be required to set the grate to the final grade height. For H-20 load rated installations, a concrete ring will be poured under and around the grate and frame. The concrete slab must be designed taking into consideration local soil conditions, traffic loading, and other applicable design factors. For other installation considerations such as migration of fines, ground water, and soft foundations refer to ASTM D2321 guidelines.

8 IN - 30 IN INLINE DRAIN SPECIFICATIONS



NYLOPLAST INLINE DRAIN



ROOF DRAIN INLET DETAIL

REVISIONS			
NO.	DATE	DESCRIPTION	BY

CLEARPOINT ENGINEERS
1001 Jackson Road | Hattiesburg, MS 39402
(601.261.9966 | clearpointengineers.com

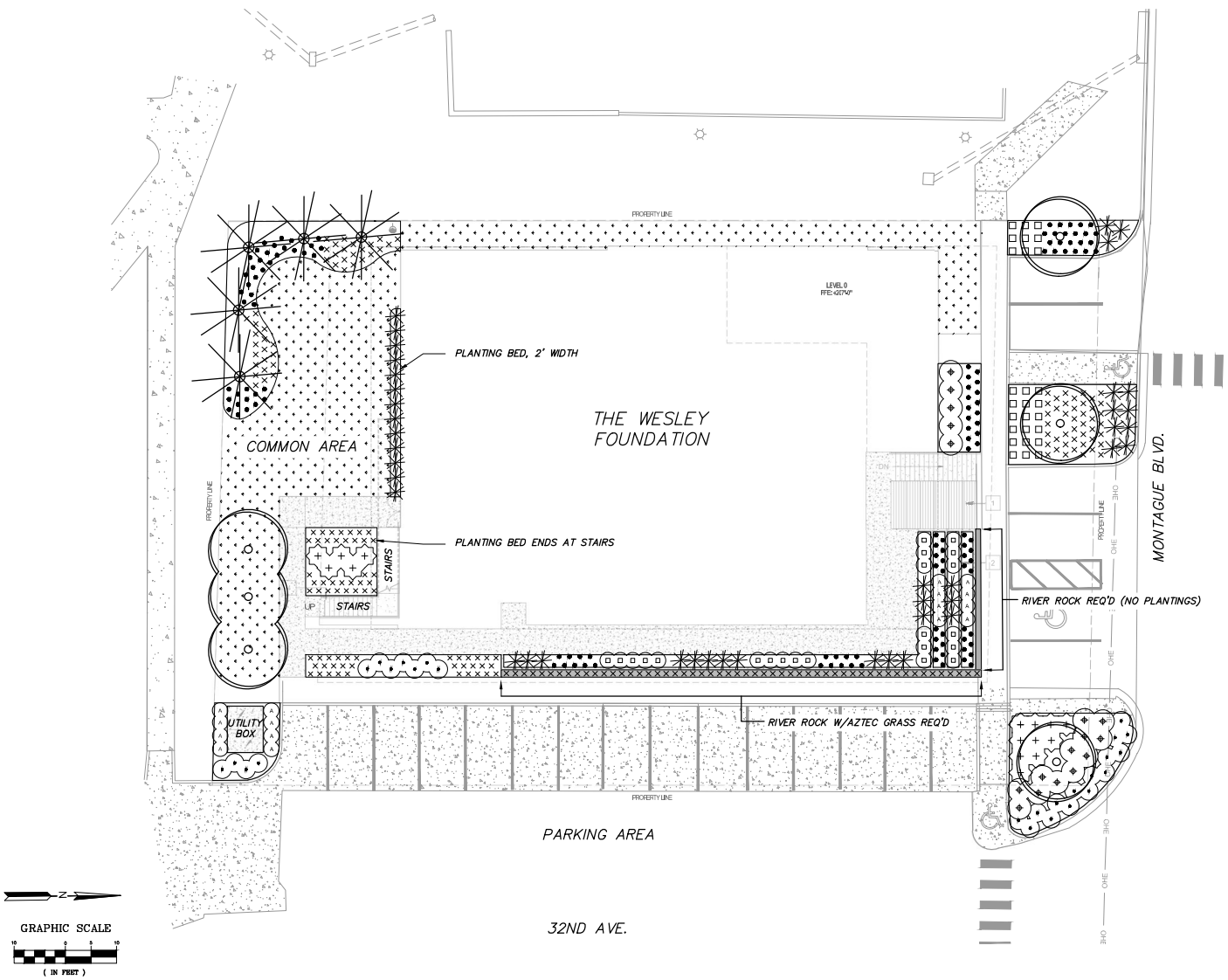
STORM Details

USM Wesley Foundation
3200 Montague Blvd.
Hattiesburg, MS

SHEET NO. C3.5

PROJ. NO: 8888000 | DRAWN BY: SCM | CHECKED BY: JCA | SCALE: NONE | DATE: 1-5-24

Drawing Location: C:\Users\murray\Desktop\Clearpoint\8888000 Wesley Hattiesburg\DWG\8888000-Civil.dwg



LANDSCAPE LEGEND

- 'TEDDY BEAR' MANGOLIA
- 'SHOAL CREEK' CHASTE TREE
- PURPLE PIXIE LOROPETALUM
- DWARF PINK MUHLY GRASS
- 'SHI SHI' CAMELIA
- ROSA CORAL DRIFT
- 'SUNSHINE' LIGUSTRUM
- AZALEA ENCORE 'AUTUMN CORAL'
- RUDBECKIA 'GOLDSTRUM'
- JUNIPER 'BLUE RUG'
- AZTEC GRASS
- SOLID SOD, CENTIPEDE
- RIVER ROCK

NOTE:

TREE BARK MULCH REQ'D AS SURFACE APPLICATION IN ALL PLANTING BEDS UNLESS OTHERWISE NOTED ON THIS SHEET

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REVISIONS

NO.	DATE	BY	DESCRIPTION

DRAWING INFORMATION

N-S PROJECT NO.: NS.18901.000	
FILENAME: LANDSCAPE_FINAL.dwg	
SCALE: 1"=10'	
SURVEYED BY: CLEARPOINT ENG.	
DSGN: DAL	DATE: 11/2025
DRWN: DAL	DATE: 12/2025
CHKD: JDT	DATE: 1/2026
QA/QC: RPB	DATE: 1/2026

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3200 MONTAGUE BLVD.
HATTIESBURG, MISSISSIPPI

REGISTERED LANDSCAPE ARCHITECT DAVID AUSTIN JOHNSON 868 STATE OF MISSISSIPPI
1-19-25

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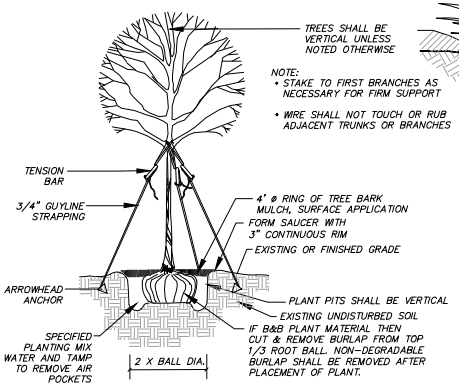
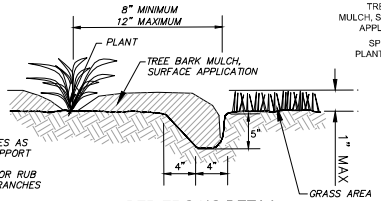
LANDSCAPE PLAN

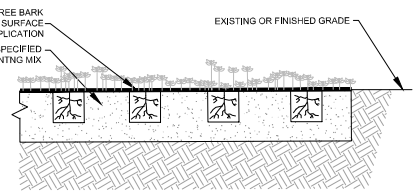
WORKING NUMBER:	DRAWING NUMBER:
LS -1	LS.1



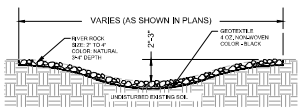
TYPICAL SINGLE-TRUNK TREE PLANTING DETAIL
NOT TO SCALE



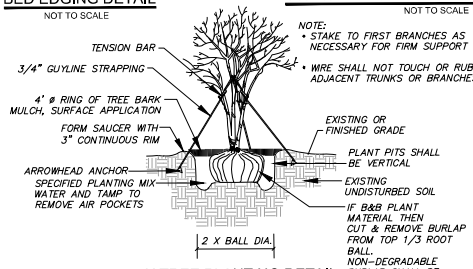
BED EDGING DETAIL
NOT TO SCALE



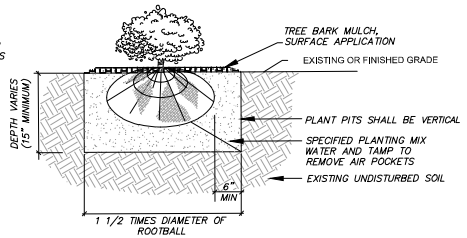
TYPICAL GROUNDCOVER PLANTING DETAIL
NOT TO SCALE



RIVER ROCK DETAIL
NOT TO SCALE



TYPICAL MULTI-TRUNK TREE PLANTING DETAIL
NOT TO SCALE



TYPICAL SHRUB PLANTING DETAIL
NOT TO SCALE

PLANTING NOTES:

1. *CONTRACTOR SHALL MEET THE LICENSE REQUIREMENTS OF THE APPLICABLE LOCAL AND STATE DEPARTMENTS.*
2. *ALL FINISHED GRADES INCLUDING PLANTING BEDS AND LAWN AREAS SHALL BE BELOW (1" MIN) FINISHED FLOOR ELEVATIONS AND/OR WEEP HOLES.*
3. *CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF UTILITY LOCATES THROUGH LOCAL ONE-CALL AND WILL ALSO BE RESPONSIBLE FOR ANY DAMAGE TO UTILITIES AND/OR INFRASTRUCTURE. IF UNDERGROUND OBSTRUCTIONS ARE ENCOUNTERED, ALTERNATE LOCATIONS MAY BE SELECTED BY THE OWNER.*
4. *PLANT MATERIAL STANDARDS SHALL BE BASED ON THE MOST RECENT EDITION OF THE AMERICAN ASSOCIATION OF NURSERYMEN'S AMERICAN STANDARD FOR NURSERY STOCK.*
5. *CONTRACTOR TO MAINTAIN ALL INSTALLED LANDSCAPE PLANTINGS (TREES, SHRUBS, GROUNDCOVERS) IN EXCELLENT HEALTH AND APPEARANCE FROM INSTALLATION UNTIL FINAL PROJECT ACCEPTANCE/RELEASE.*
6. *ALL STANDARDS SHALL BE MET FOR PROPOSED PLANT MATERIAL:*
   - *A. PLANT MATERIAL MEETS SPECIFIED SIZE REQUIREMENTS.*
   - *B. PLANT MATERIAL IS TRUE TO SPECIES/VARIETY SPECIFIED AND IS INDIVIDUALLY LABELED BY NOMENCLATURE.*
   - *C. SINGLE TRUNK – TREE HAS A SINGLE, RELATIVELY STRAIGHT CENTRAL LEADER WITH TAPERED TRUNK, FREE OF CODOMINANT STEMS AND/OR UPRIGHT BRANCHES THAT COMPETE WITH CENTRAL LEADER. CENTRAL LEADER HAS NOT BEEN TOPPED.*
   - *D. MULTI-TRUNK – TREE HAS MULTIPLE LEADERS (3 OR 5) NONE OF WHICH HAVE BEEN TOPPED AND CLEAR TRUNK FREE OF SUCKERS.*
   - *E. PLANTING SITE "HOLE" IS PREPARED 2.5 TIMES THE DIAMETER OF THE ROOTBALL AND ONE INCH LESS IN DEPTH THAN THE ROOTBALL HEIGHT (ROOTBALL HEIGHT SHALL BE THE DISTANCE MEASURED FROM THE BOTTOM OF THE ROOTBALL TO THE ROOT FLARE). THE SIDES OF THE HOLE SHALL EITHER BE SCARIFIED OR TAPER UP TO EXISTING GRADE.*
   - *F. PLANT MATERIAL IS PLACED/CENTERED IN HOLE; ENSURE ROOT FLARE IS ONE INCH ABOVE EXISTING GRADE.*
   - *G. ALL FOREIGN MATERIAL, TO INCLUDE, BINDINGS, STRING, TWINE, WIRE, WRAPPINGS, WIRE BASKETS AND BURLAP ARE REMOVED FROM TRUNK AND ROOTBALL. IF BALL & BURLAP AND BASED ON THE CONDITION OF THE ROOTBALL, APPROVAL MAY BE GIVEN BY THE OWNER TO LEAVE THE BOTTOM ⅓ OF BURLAP AND WIRE BASKET INTACT.*
   - *H. BACKFILL IS TAMPED FIRMLY AROUND THE ROOTBALL TO STABILIZE THE PLANT VERTICAL IN THE HOLE. REMAINING BACKFILL IS ADDED AND TAMPED LIGHTLY. BACKFILL CONSISTS OF EXISTING SOIL MIXED WITH TOPSOIL, APPLIED AS NOTED IN TABLE. COMPLIANCE SHALL BE PROVIDED BY SUFFICIENT QUANTITY OF PRODUCT ON SITE FOR ENTIRE PROJECT PRIOR TO PLANTING. FERTILIZER TABLETS REQUIRED AS NOTED IN TABLE.*
   - *I. PLANT MATERIAL IS THOROUGHLY WATERED DURING INSTALLATION TO SETTLE BACKFILL AND SATURATE THE ENTIRE ROOTBALL. ADDITIONAL BACKFILL AND WATER ARE ADDED AS NECESSARY.*
   - *J. TREES ARE ANCHORED/SUPPORTED BY GUYLINES WITH TENSION BARS AND GROUND ANCHORS. GUYING SYSTEM SHALL CONSIST OF THREE ARROWHEAD GROUND ANCHORS, ADJUSTABLE TENSION BARS, AND ¾" GUYLINE STRAPPING. OWNER SHALL BE RESPONSIBLE FOR FUTURE STAKE REMOVAL.*
   - *K. TREE IS SECURED BY GUYLINE ATTACHMENT WHICH SHALL ENCIRCLE THREE MAJOR TRUNKS USING NON-ABRASIVE, ¾" WIDE POLYPROPYLENE GUYLINE STRAPPING. TENSION BARS SHALL BE USED TO ADJUST GUYLINE TENSION EVENLY ACROSS ALL ANCHOR POINTS. GROUND ANCHORS SHALL BE DRIVEN INTO THE SOIL AT A 45° ANGLE AWAY FROM THE TREE TO A DEPTH OF APPROXIMATELY 18"-24" AND SPACED EQUALLY AROUND THE TREE GROUP. GUYLINES SHALL BE ATTACHED TO ANCHORS PER OWNER DIRECTIVE. EACH TREE WILL REQUIRE APPROXIMATELY 16' OF CONTINUOUS TIE. GUYLINE HEIGHT SHALL BE APPROXIMATELY ⅓ THE HEIGHT OF THE TALLEST TRUNK AND ADJUSTED TO BALANCE SUPPORT ACROSS ALL TRUNKS. NO METAL SHALL CONTACT THE BARK DIRECTLY.*
   - *L. TREE GUYING SYSTEM SHALL BE INSPECTED PERIODICALLY.*

LANDSCAPE QUANTITIES & SCHEDULE

LANDSCAPE ITEMS	QTY	SIZE / UNIT	SEASONAL APPLICATIONS – DATES & RATES				REQUIREMENTS
			SPRING & SUMMER		FALL & WINTER		
			RATES	DATES	RATES	DATES	
SOIL TEST	1		N / A		N / A		REQUIRED TO BE SUBMITTED IN ADVANCE OF ALL LANDSCAPE CONSTRUCTION ITEMS; COST ABSORBED IN BED PREP PAY ITEM
TOPSOIL	65	CU YD	N / A		N / A		2" DEPTH IN BED PREP AREAS (20 CY); 1" DEPTH IN AREAS TO RECEIVE SOLID SOD (8 CY); 24" IN PLANTERS ON NORTH SIDE OF BUILDING (34 CY); 1 CU FT PER TREE PLANTED OUTSIDE A BED AREA (0.3 CY)
TREE PLANTING, 'TEDDY BEAR' MAGNOLIA	5	30 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; SINGLE STRAIGHT TRUNK – BRANCHED TO GROUND; 11'-13' H X 5'-6' S
TREE PLANTING, 'SHOAL CREEK' CHASTE TREE	6	30 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; MULTI-TRUNK TREE FORM – 3-5 TRUNKS; 6'-7' H X 3'-4' S
SHRUB PLANTING, 'PURPLE PIXIE' LOROPETALUM	22	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 3' SPACING
SHRUB PLANTING, DWARF PINK MUHLY GRASS	41	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 2.5' SPACING
SHRUB PLANTING, 'SHI SHI' CAMELIA	12	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 3.5' SPACING
SHRUB PLANTING, ROSA CORAL DRIFT	15	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 4' SPACING
SHRUB PLANTING, 'SUNSHINE' LIGUSTRUM	26	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 3' SPACING
SHRUB PLANTING, AZALEA ENCORE 'AUTUMN CORAL'	16	3 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 2.5' SPACING
GROUNDCOVER, RUDBECKIA 'GOLDSTURM'	128	1 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 24" SPACING
GROUNDCOVER, JUNIPER 'BLUE RUG'	27	1 GAL	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 2.5' SPACING
GROUNDCOVER, AZTEC GRASS	203	4" CONTAINER	BY REQUEST ONLY		OCT 1 – APRIL 30		FULL & HEALTHY PLANT; 24" SPACING
SOLID SOD, CENTIPEDE	275	SQ YD	N / A		N / A		CERTIFICATE REQUIRED FOR APPROVAL IN ADVANCE OF ORDERING & INSTALLATION
BED PREPARATION	2700	SQ FT	N / A		N / A		APPLIED TO AREAS SHOWN IN PLANS TO RECEIVE SHRUB & GROUNDCOVER PLANTING; REMOVE EXISTING GRASS & POOR MATERIAL; ADD TOPSOIL & TREE BARK MULCH, SOIL CONDITIONER, AND ROTO-TILL INTO EXISTING SOIL TO A MINIMUM DEPTH OF 6"
TREE BARK MULCH, SURFACE APPLICATION	20	CU YD	N / A		N / A		2" DEPTH IN BED PREP AREAS; SEE BED PREPARATION REQUIREMENTS
TREE BARK MULCH, SOIL CONDITIONER	20	CU YD	N / A		N / A		2" DEPTH IN BED PREP AREAS; SEE BED PREPARATION REQUIREMENTS
FERTILIZER TABLET, 21 GRAM	474	EACH	N / A		N / A		5 TABLETS PER 30 GALLON (55); 2 TABLETS PER 3 GALLON (264); 1 TABLET PER 1 GALLON (155)
FERTILIZER TABLET, 10 GRAM	203	EACH	N / A		N / A		1 TABLET PER 4" CONTAINER
PRE-EMERGENT HERBICIDE	15	LB	N / A		N / A		2 GRAMS PER SQ FT OF BED PREP AREA
WATERING BAGS	11	EACH	N / A		N / A		INSTALLED ON ALL TREE PLANTINGS DURING MAINTENANCE PERIOD; 1 FILL PER WEEK FOR EACH TREE
RIVER ROCK	3	CU YD	N / A		N / A		2"-4" SIZE; 3"-4" DEPTH; COLOR – NATURAL/LOCALLY SOURCED; 4 OZ. NON-WOVEN GEOTEXTILE REQUIRED (COST ABSORBED); APPLIED TO LANDSCAPE BEDS AS CALLED OUT ON LS-1

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REVISIONS				DRAWING INFORMATION	
NO.	DATE	BY	DESCRIPTION	N-S PROJECT NO.: NS.18901.000	
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				DSGN: DAL	DATE: 11/2025
				DRWN: DAL	DATE: 12/2025
				CHKD: JDT	DATE: 1/2026
				QA/QC: RPB	DATE: 1/2026

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HATTIESBURG, MISSISSIPPI

REGISTERED LANDSCAPE ARCHITECT DAVID AUSTIN CRUTCHFIELD 885 STATE OF MISSISSIPPI
1-19-26

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LANDSCAPE DETAILS & VEGETATION SCHEDULE

WORKING NUMBER:	DRAWING NUMBER:
LS -2	LS.2

1. THE OWNER WILL EMPLOY THE SERVICES OF ONE OR MORE SPECIAL INSPECTORS TO PROVIDE SPECIAL INSPECTIONS DURING CONSTRUCTION FOR THE ITEMS IN THE SPECIAL INSPECTION TABLE BELOW.

2. THE SPECIAL INSPECTORS SHALL BE A QUALIFIED PERSON WHO SHALL DEMONSTRATE COMPETENCE, TO THE SATISFACTION OF THE BUILDING OFFICIAL, AND THE ENGINEER OF RECORD, FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION.

3. DUTIES AND RESPONSIBILITIES OF THE SPECIAL INSPECTOR:
   A. SHALL OBSERVE THE WORK ASSIGNED FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE INSPECTOR MAY NOT ALTER, MODIFY, ENLARGE, OR WAIVE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
   B. SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, THE ENGINEER OF RECORD, AND THE CONTRACTOR, ALL DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION, THEN IF UNCORRECTED, SUBMIT A COMPLETE LIST OF ALL OUTSTANDING DISCREPANCIES ON A WEEKLY BASIS TO THE OWNER, THE BUILDING OFFICIAL, AND THE ENGINEER OF RECORD UNTIL ALL CORRECTIONS HAVE BEEN COMPLETED.
   C. SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER THE WORK REQUIRING SPECIAL INSPECTION WAS TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS & SPECIFICATIONS & THE APPLICABLE WORKMANSHIP PROVISIONS OF THE CODE.

4. WHERE SPECIAL INSPECTION REQUIREMENTS DUPLICATE THE REQUIREMENTS OF A SPECIFIED QUALITY ASSURANCE TESTING PROGRAM, DUPLICATE INSPECTIONS SHALL BE REQUIRED.

SPECIAL INSPECTION	FREQUENCY	REFERENCED STANDARD
SOILS		
1. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE TO ACHIEVE THE BEARING CAPACITY	PERIODIC	GEOTECHNICAL ENGINEERING REPORT
2. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIALS	PERIODIC	
3. PERFORM CLASSIFICATION AND COMPACTION TESTING OF CONTROLLED FILL MATERIALS.	PERIODIC	
4. VERIFY USE OF PROPER MATERIALS, DENSITIES, AND LIFT THICKNESS DURING PLACEMENT AND COMPACTION OF CONTROLLED FILL.	CONTINUOUS	
5. PRIOR TO PLACEMENT OF CONTROLLED FILL, OBSERVE SUBGRADE AND VERIFY THAT SITE HAS BEEN PROPERLY PREPARED	PERIODIC	

CONCRETE		
ISOLATED SPREAD FOOTINGS & CONTINUOUS LINE FOOTINGS ARE INCLUDED. ALL SLABS ON GRADE, GRADEBEAM, RETAINING WALLS ARE INCLUDED PATIOS, DRIVEWAYS, & SIDEWALKS ARE EXCLUDED		
1. INSPECTION OF REINFORCING STEEL , PLACEMENT OF SAME	PERIODIC	ACI 318 3.5, 7.1-7.7
2. INSPECT BOLTS TO BE INSTALLED IN CONCRETE, PRIOR TO & DURING PLACEMENT OF CONCRETE	CONTINUOUS	
3. INSPECT EPOXY SET ANCHORS AND EXPANSION ANCHORS INSTALLED IN HARDENED CONCRETE	CONTINUOUS	PRODUCT ICBO REPORT
4. VERIFYING USE OF REQUIRED DESIGN MIX.	PERIODIC	ACI 318 CH 4, 5.2-5.4
5. SAMPLING FRESH CONCRETE & PERFORMING SLUMP, AIR CONTENT, TEMPERATURE TESTS AT THE TIME OF MAKING SPECIMENS FOR STRENGTH TESTS	CONTINUOUS	ASTM C172, C31 ACI 318 5.6, 5.8
6. INSPECTION OF CONCRETE PLACEMENT FOR PROPER APPLICATION TECHNIQUES	CONTINUOUS	ACI 318 5.9, 5.10
7. INSPECTION FOR MAINTENANCE OF SPECIFIED CURING TEMPERATURE & TECHNIQUES	PERIODIC	ACI 318 5.11-5.13
8. INSPECT FORMWORK FOR SHAPE, LOCATION & DIMENSIONS PRIOR TO PLACING	PERIODIC	ACI 318 6.1.1

STEEL CONSTRUCTION		
1. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS, & WASHERS A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARD REQUIRED. B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.	PERIODIC	APPLICABLE ASTM MATERIAL SPEC. AISC ASD A3.4
2. INSPECTION OF HIGH STRENGTH BOLTING - BEARING TYPE CONNECTION	PERIODIC	AISC 360, M2.5
3. MATERIAL VERIFICATION OF STRUCTURAL STEEL A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARD REQUIRED. B. MANUFACTURER'S CERTIFIED MILL TEST REPORTS REQUIRED.		ASTM A6, A568
4. MATERIAL VERIFICATION OF WELD FILLER MATERIALS A. IDENTIFICATION MARKINGS TO CONFORM TO ASTM STANDARD SPECIFIED B. MANUFACTURER'S CERTIFICATE OF COMPLIANCE REQUIRED.		AISC ASD, A3.6
5. INSPECTION OF WELDING		AWS D1.1
A. COMPLETE & PARTIAL PENETRATION GROOVE WELDS	CONTINUOUS	
B. MULTI-PASS FILLET WELDS	CONTINUOUS	
C. SINGLE PASS FILLET WELDS GREATER THAN 5/16"	CONTINUOUS	
D. SINGLE PASS FILLET WELDS LESS THAN/EQUAL TO 5/16"	PERIODIC	
E. FLOOR & DECK WELDS	PERIODIC	
6. INSPECTION OF STEEL FRAME JOINT DETAILS FOR COMPLIANCE WITH CONTRACT DOCUMENTS		
A. DETAILS SUCH AS BRACING & STIFFENERS	PERIODIC	
B. MEMBER LOCATIONS		
C. APPLICATION OF JOINT DETAILS AT EACH CONNECTION		

WOOD JOISTS		
AS JOIST ERECTION BEGINS, THE FOLLOWING SHALL BE VERIFIED TO ENSURE COMPLIANCE	FREQUENCY	REFERENCED STANDARD
THE INSPECTION PROGRAM SHALL VERIFY:		
A. JOIST HANGERS INSTALLED PROPERLY	PERIODIC	CONTRACT DOCUMENTS
B. WOOD PLATES ARE BOLTED TO STEEL BEAMS	PERIODIC	CONTRACT DOCUMENTS
C. BRACING INSTALLED AT TOP & BOTTOM CHORDS	PERIODIC	CONTRACT DOCUMENTS
D. SHEATHING ATTACHED AT PROPER SPACING	PERIODIC	CONTRACT DOCUMENTS
E. JOISTS INSTALLED PLUMB, STRAIGHT	PERIODIC	CONTRACT DOCUMENTS
F. JOIST MEMBERS NOT DAMAGED DURING ERECTION	PERIODIC	

1 NOTES
12" = 1'-0"

GENERAL NOTES:

1. All concrete shall conform to current ACI specifications and shall be as follows: regular sand and gravel with minimum of 3000 psi compressive strength in 28 days in footings, curbs, piers, walks, and gradebeams. Concrete for floor slabs shall have a minimum 28 day compressive strength of 4000 psi. All concrete shall have 3/4" maximum aggregate size, maximum slump of 5".

2. Provide necessary reinforcing steel accessories to hold bars in proper position.

3. Provide corner bars of same size and number as horizontal bars at all corners of gradebeams and walls.

4. All reinforcing shall be deformed, ASTM 615, Grade 60.

5. All detailing and fabrication of reinforcing bars must follow the ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures."

6. All placing of reinforcing bars in the forms must follow the CRSI "Recommended Practice for Placing Reinforcing Bars."

7. All bars are to be supported in the forms with wire bar supports meeting the requirements of the ACI "Manual of Standard Practice for Detailing Reinforced Concrete Structures".

8. Lap splices as specifically called for, but as least 36 bar diameters (18" min.).

9. Welded wire fabric must have end laps of one full mesh plus 2" and wiring all laps securely together. Welded wire fabric should extend into supporting beams and walls for anchorage.

10. All concrete slabs that are not otherwise provided for shall have reinforcing consisting of 6"x6"-W2.1x W2.1 welded wire fabric.

11. All reinforcing bars shall be securely wired together in the forms. Two-way mats of steel, column ties, and beam stirrups shall be tied sufficiently to hold them securely in place.

12. Provide keys of 2"x4" at all construction joints. Control joints in slab on grade shall be sawed 1-1/4" deep within 8 hours of pouring slab. Seal all joints with sealant.

13. All reinforcing shall have concrete cover as specified in ACI-318.

14. Design live loads for roofs and wind are in accordance with the "International Building Code", 2024 Edition. Loads for:
   - 2nd Floor live load - 40 psf, dead load -10 psf, partition load 15 psf
   - Roof live load is 20 psf, Dead load is 20 psf, Snow load is 5psf

ULTIMATE WIND SPEED = 133 MPH
IW = 1.0
EXPOSURE CATEGORY = C

15. The contractor shall be responsible for the design, placement, and maintenance of any and all shoring, bracing, or tie-backs needed to support any part of the construction during the construction process. It is the contractor's responsibility to ensure the safety and integrity of the structure until the necessary permanent elements are in place.

STRUCTURAL NOTES:

1. Unless shown otherwise, the following loose lintel schedule shall be used.

Clear Spacing	Lintel angle for each 4" masonry thickness
' to 4'-0"	3-1/2"x 3-1/2x 1/4"
4'-1" to 6'-0"	4"x 3-1/2"x 3/8"
6'-1" to 8'-0"	5"x 3-1/2"x 3/8"
8'-1" to 10'-0"	6"x 3-1/2"x 3/8"
over 10'-0"	consult engineer

2. All wide flange beams and columns shall have a minimum yield strength of 50 ksi, and conform to ASTM A-992

3. All structural steel except as noted above shall conform ASTM specification A-36 or ASTM A-500, Grade B, as applicable.

4. No splices in structural steel shall be accepted without approval of the engineer except where shown on the drawings.

5. Bolts for structural steel shall be ASTM A-325-X high-strength bolts. Anchor bolts shall be ASTM F1554 unless otherwise noted.

6. All welding rods used shall be grade 70xx.

7. All structural steel shall be manufactured and erected in accordance with the Ninth Edition of the American Institute of Steel Construction Manual.

8. Where possible, all bolt holes shall be shop drilled. Holes made at the job site shall be mechanically drilled. No burning of holes will be allowed.

DESIGN

BUILDING CODE
INTERNATIONAL BUILDING CODE - 2024 EDITION

DESIGN CODES
ACI 318 - BUILDING REQUIREMENTS FOR REINFORCED CONCRETE

SOIL BEARING PRESSURE
ALLOWABLE BEARING PRESSURE 2000PSF

WIND LOADING NOTES
BUILDING RISK CATEGORY III
IMPORTANCE FACTOR I=1
ULTIMATE WIND SPEED 133 MILES PER HOUR
EXPOSURE CATEGORY C

SEISMIC NOTES
Ss= 16.0% S1=8.0%
Seismic Design Category B

Seismic Site Class D
Sms=0.22 Sm1=0.17
Sds= 0.14 Sd1=0.11

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1/14/2026 3:56:16 PM

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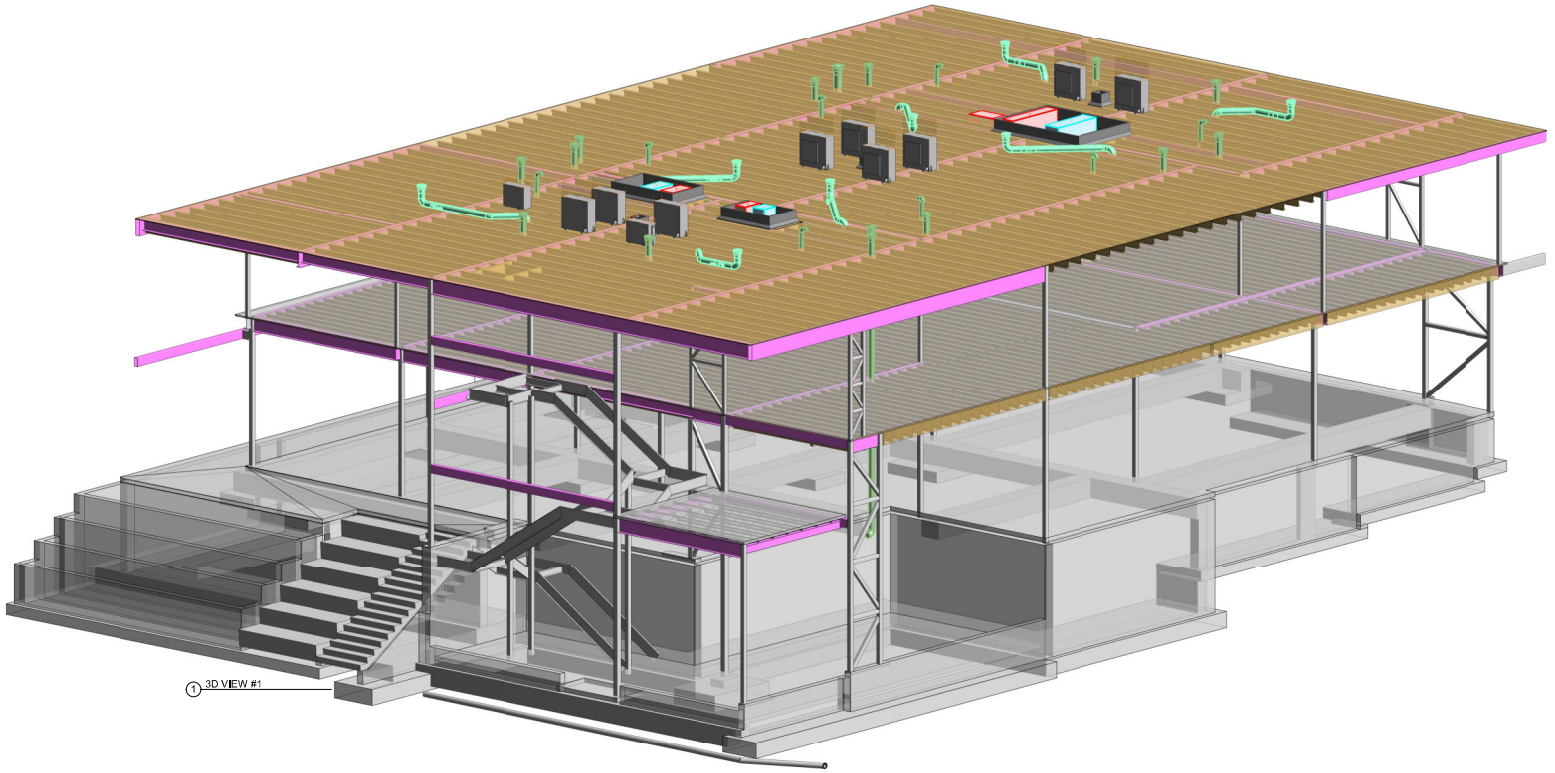
NOTES

S0.1



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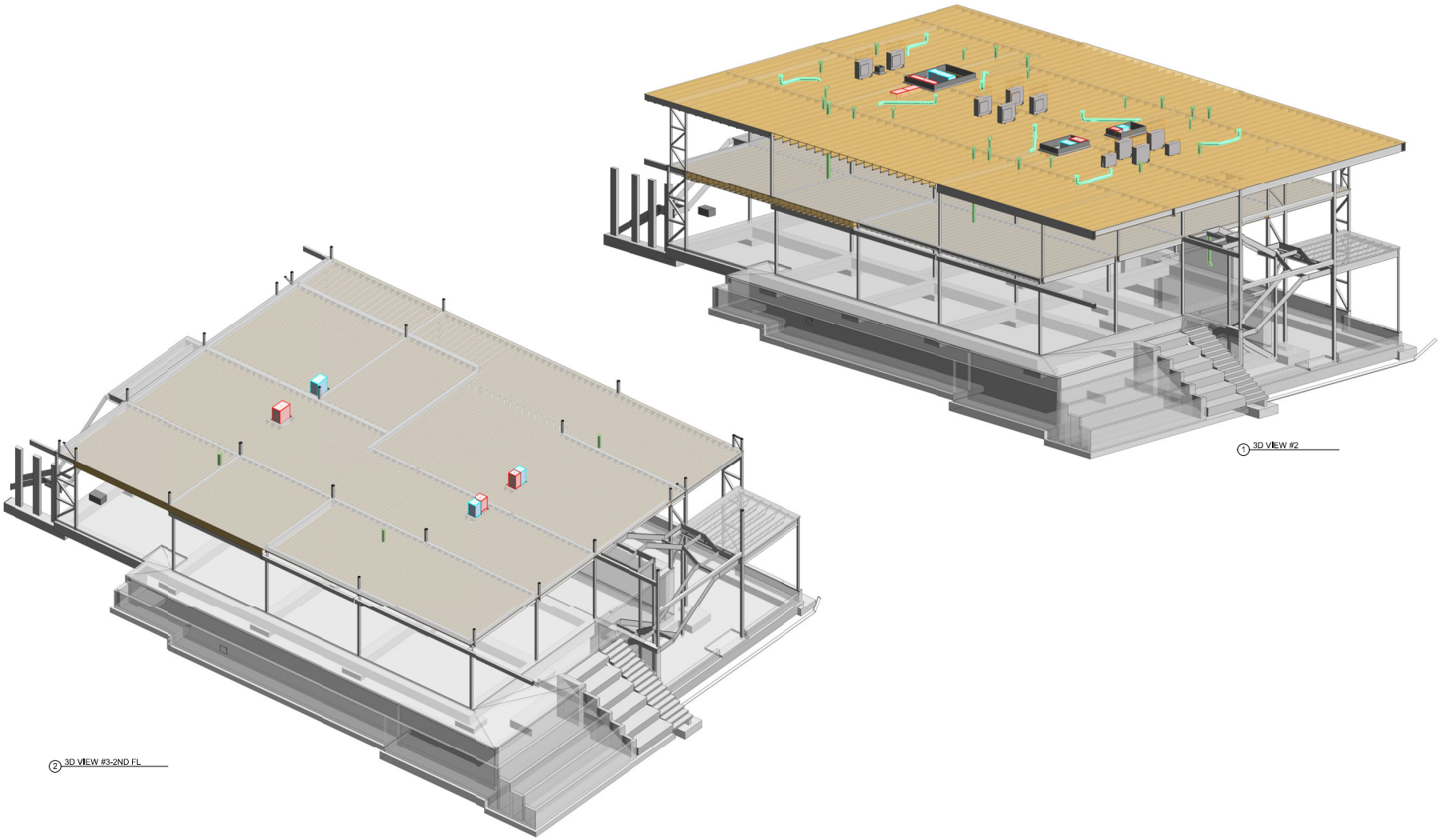
3D VIEWS

S0.2



1 3D VIEW #2

2 3D VIEW #3-2ND FL

1/16/2026 7:55:44 AM

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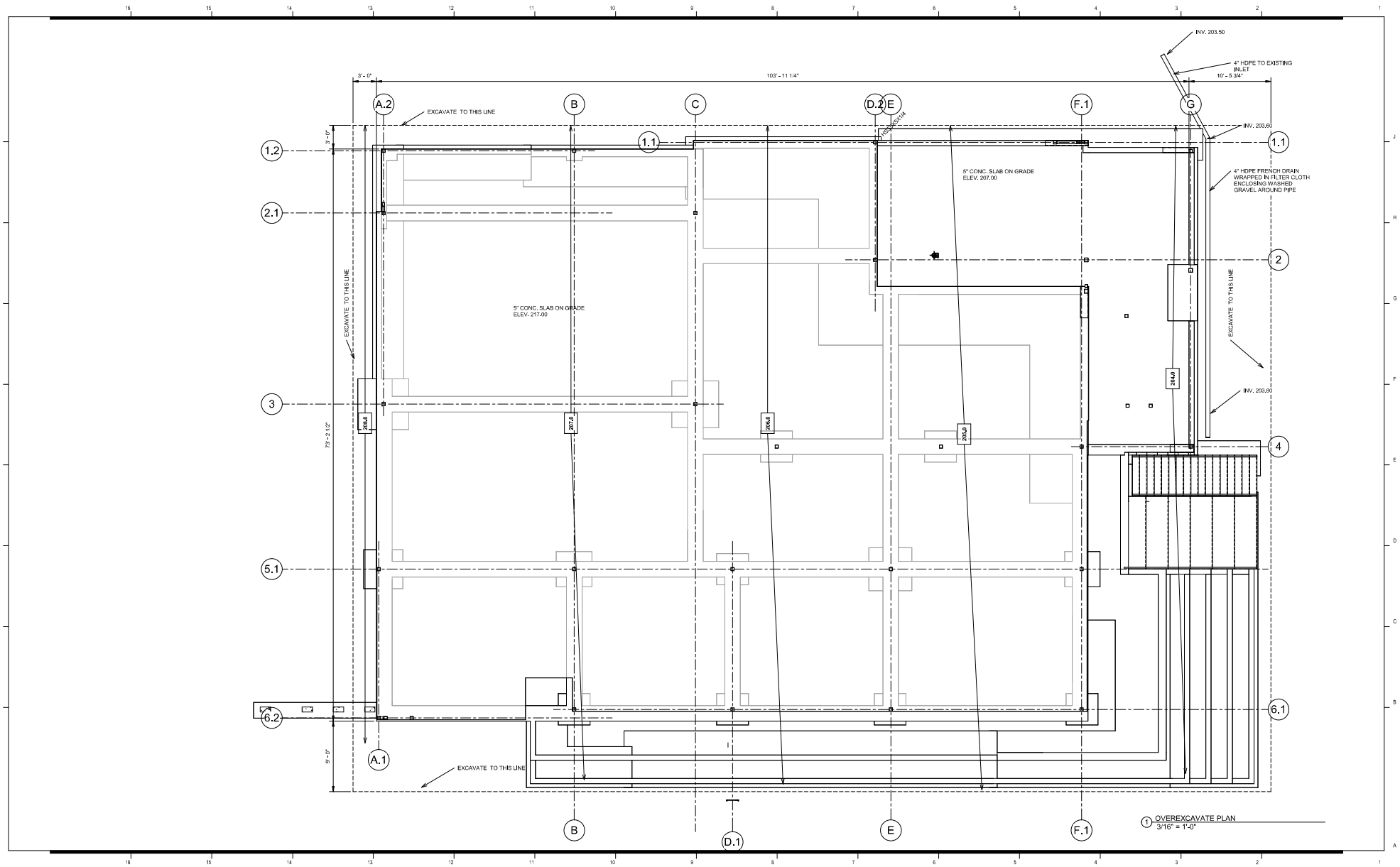
3D VIEWS

S0.3



1 OVEREXCAVATE PLAN
3/16" = 1'-0"

1/16/2026 7:51:57 AM

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OVEREXCAVATION PLAN

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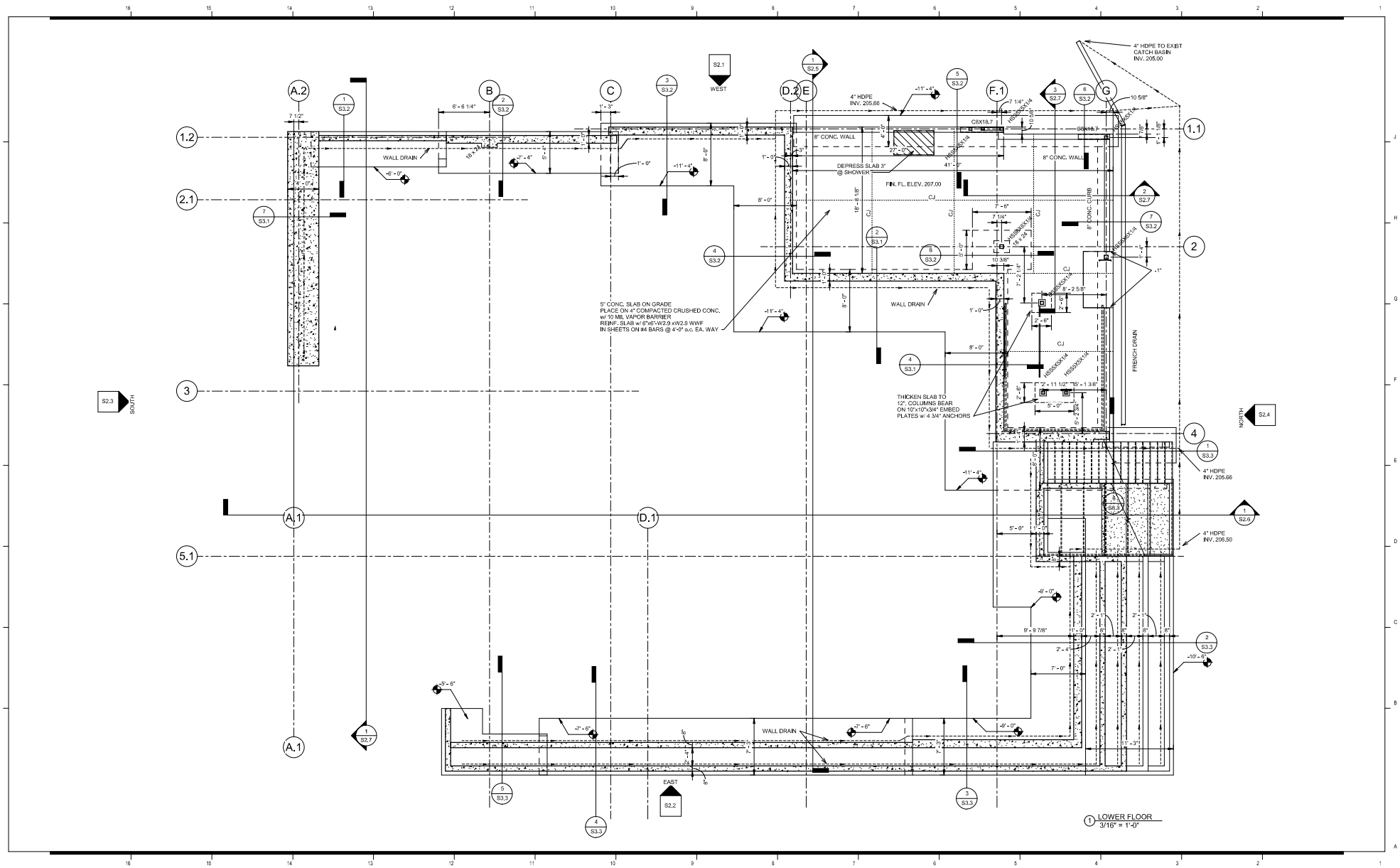

1 LOWER FLOOR
3/16" = 1'-0"

1/16/2026 7:51:58 AM

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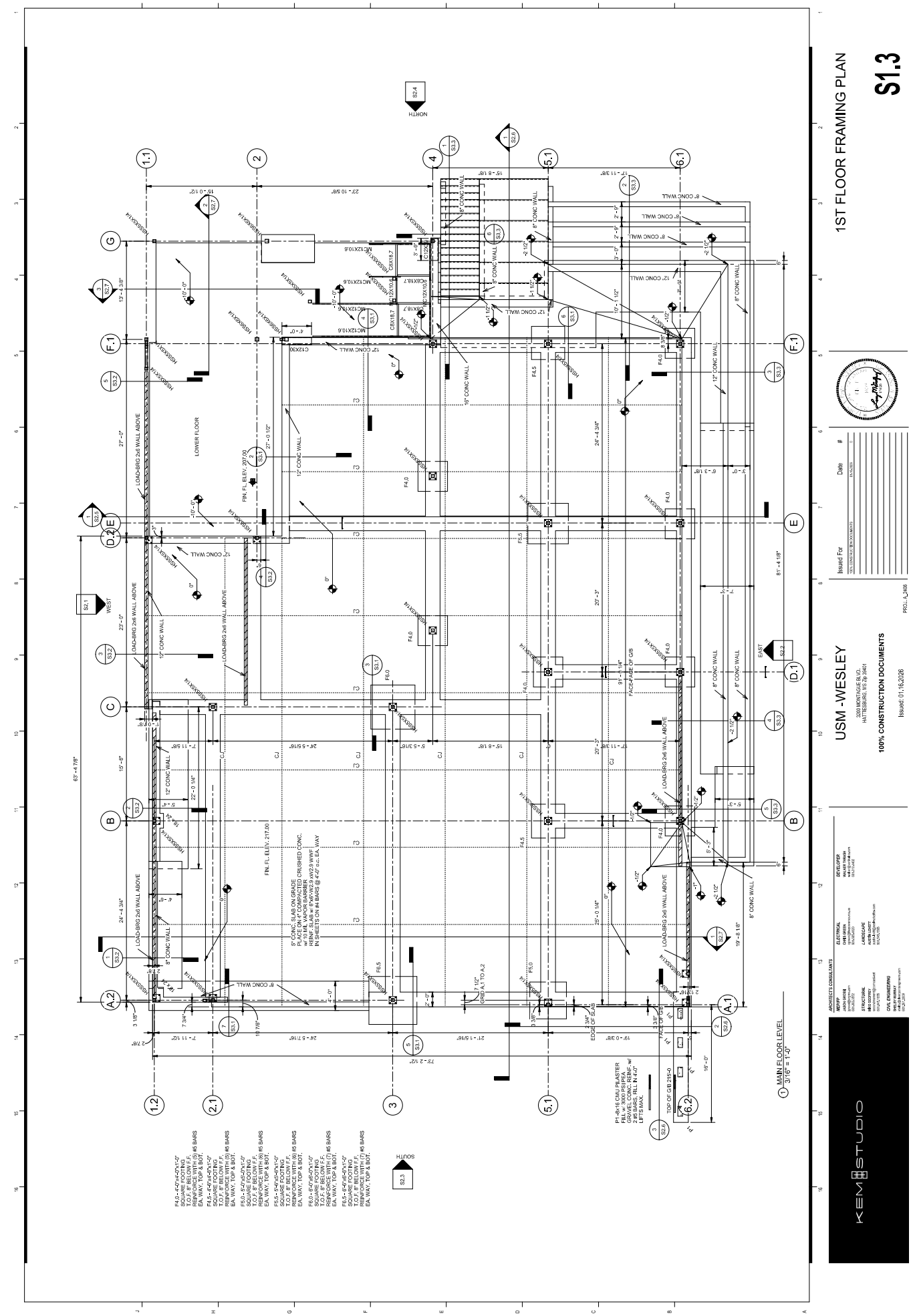
FOUNDATION PLAN -LOWER LEVEL

S1.2


1ST FLOOR FRAMING PLAN
S1.3
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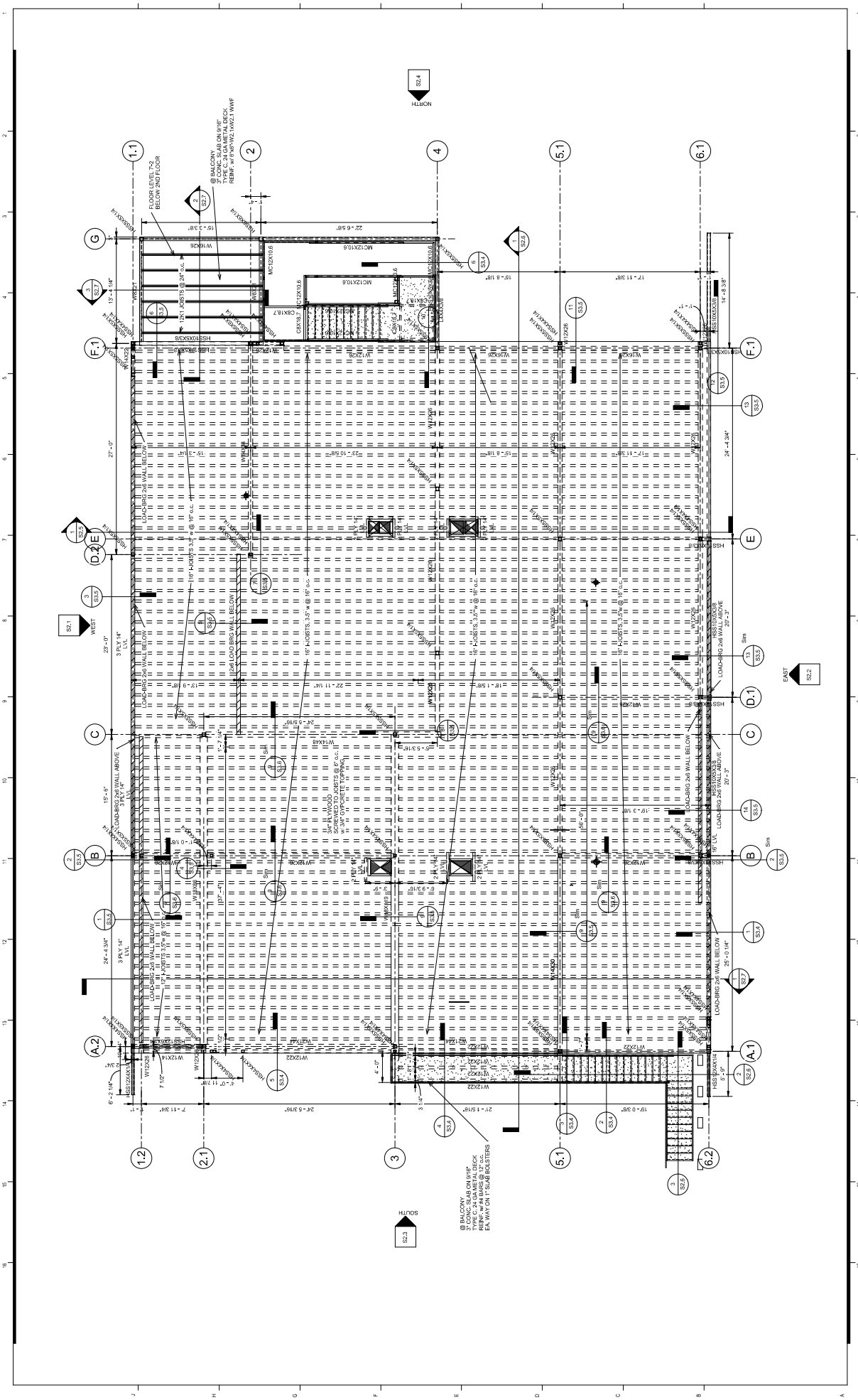
LANDSCAPE
CIVIL ENGINEERING
MAIN FLOOR LEVEL
3/16" = 1'-0"
NORTH
SOUTH
WEST
EAST
LOWER FLOOR
FIN. FL. ELEV. 207.00
FIN. FL. ELEV. 217.00
LOAD-BRG 2x6 WALL ABOVE
12" CONC WALL
8" CONC WALL
16" CONC WALL
5" CONC. SLAB ON GRADE
PLACE ON 4" COMPACTED CRUSHED CONC.
w/ 10 MIL VAPOR BARRIER
REINFORCE WITH 6x6 - W2.9 WWF
IN SHEETS ON #4 BARS @ 4'-0" o.c. EA. WAY
TOP OF GB 215+0
FACE OF GB
EDGE OF SLAB
1/16/2026 7:51:54 AM


2ND FLOOR FRAMING PLAN
S1.4
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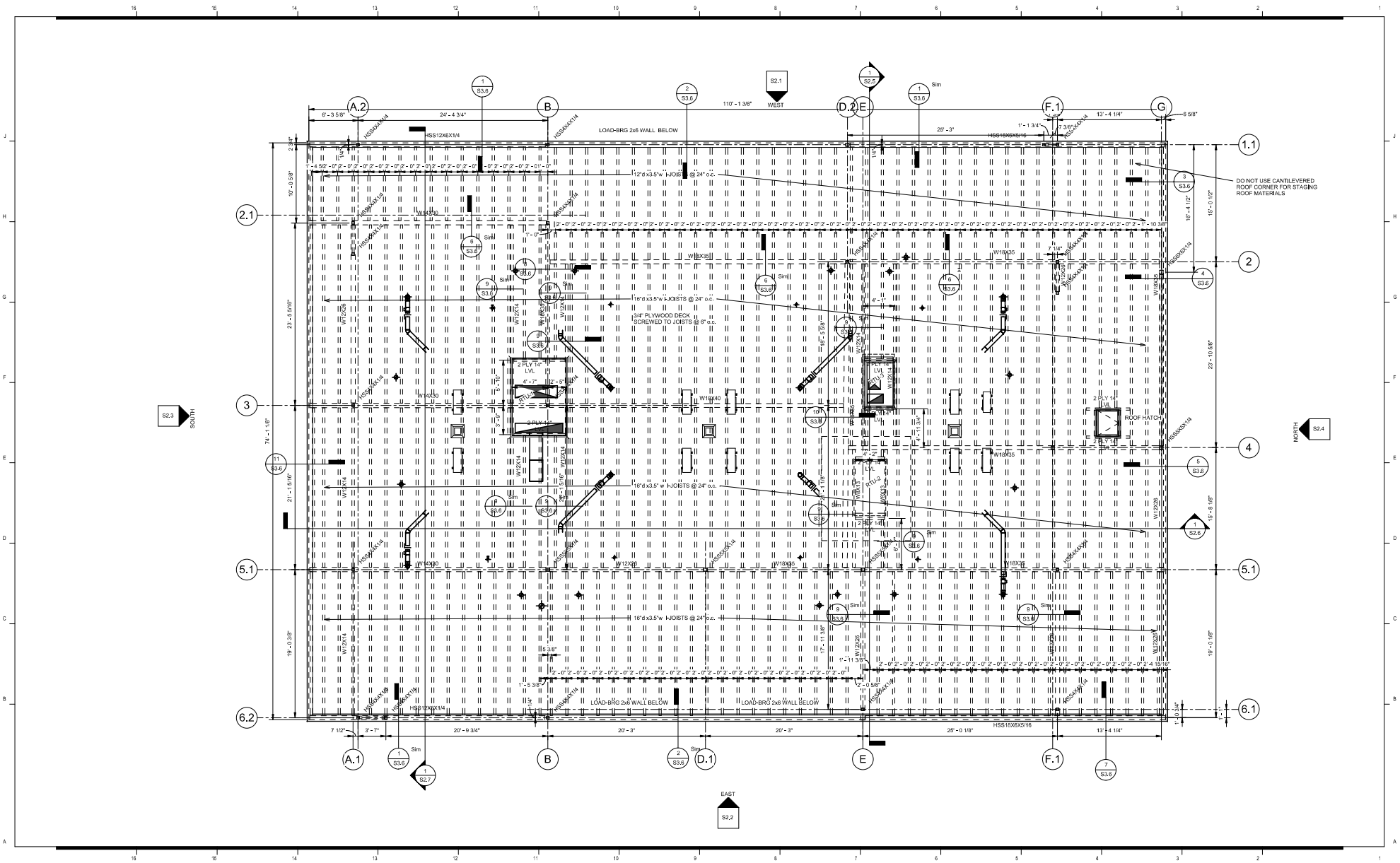
#
KEM STUDIO
NORTH
SOUTH
EAST
WEST



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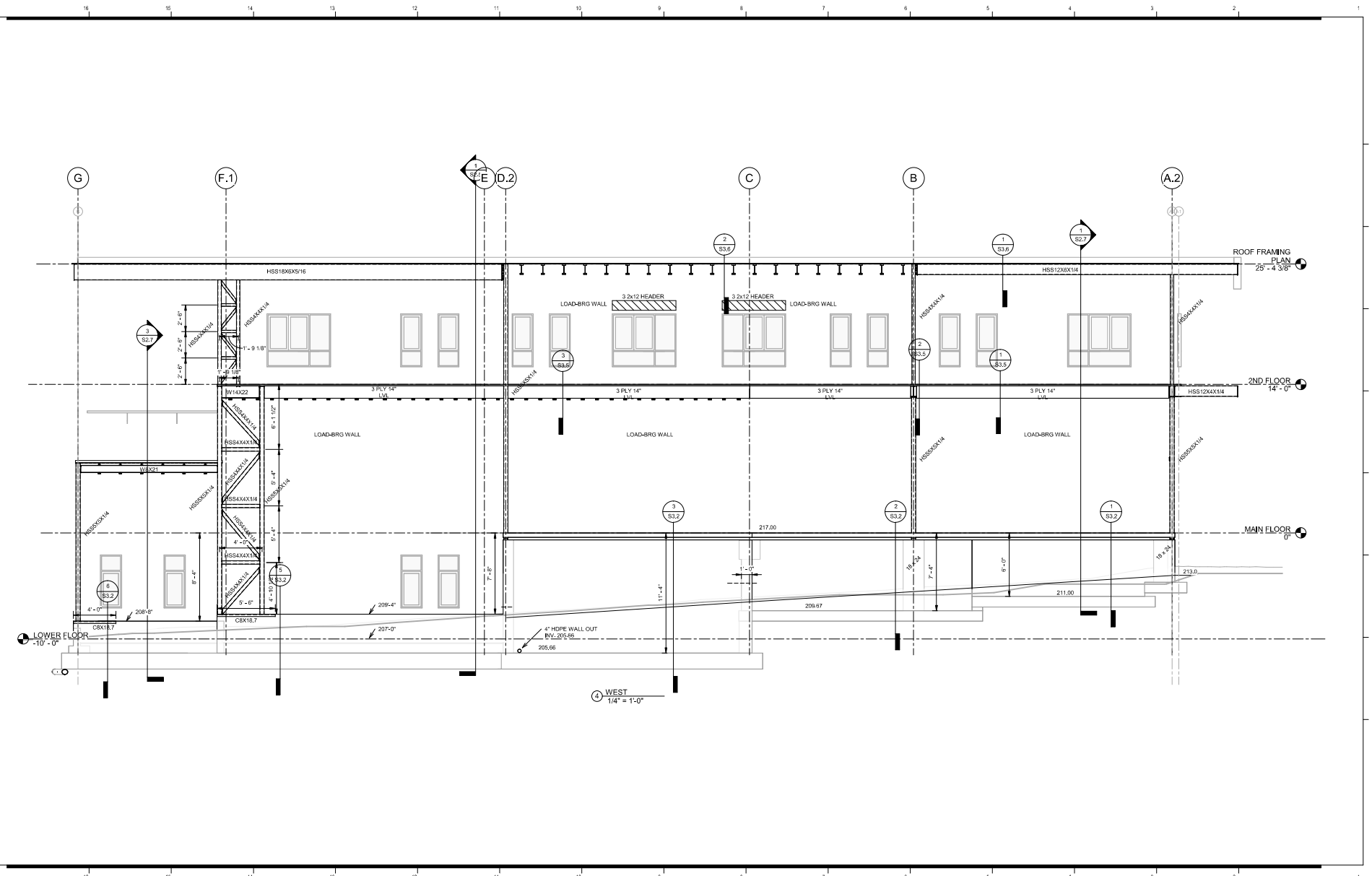
ROOF FRAMING PLAN

S1.5



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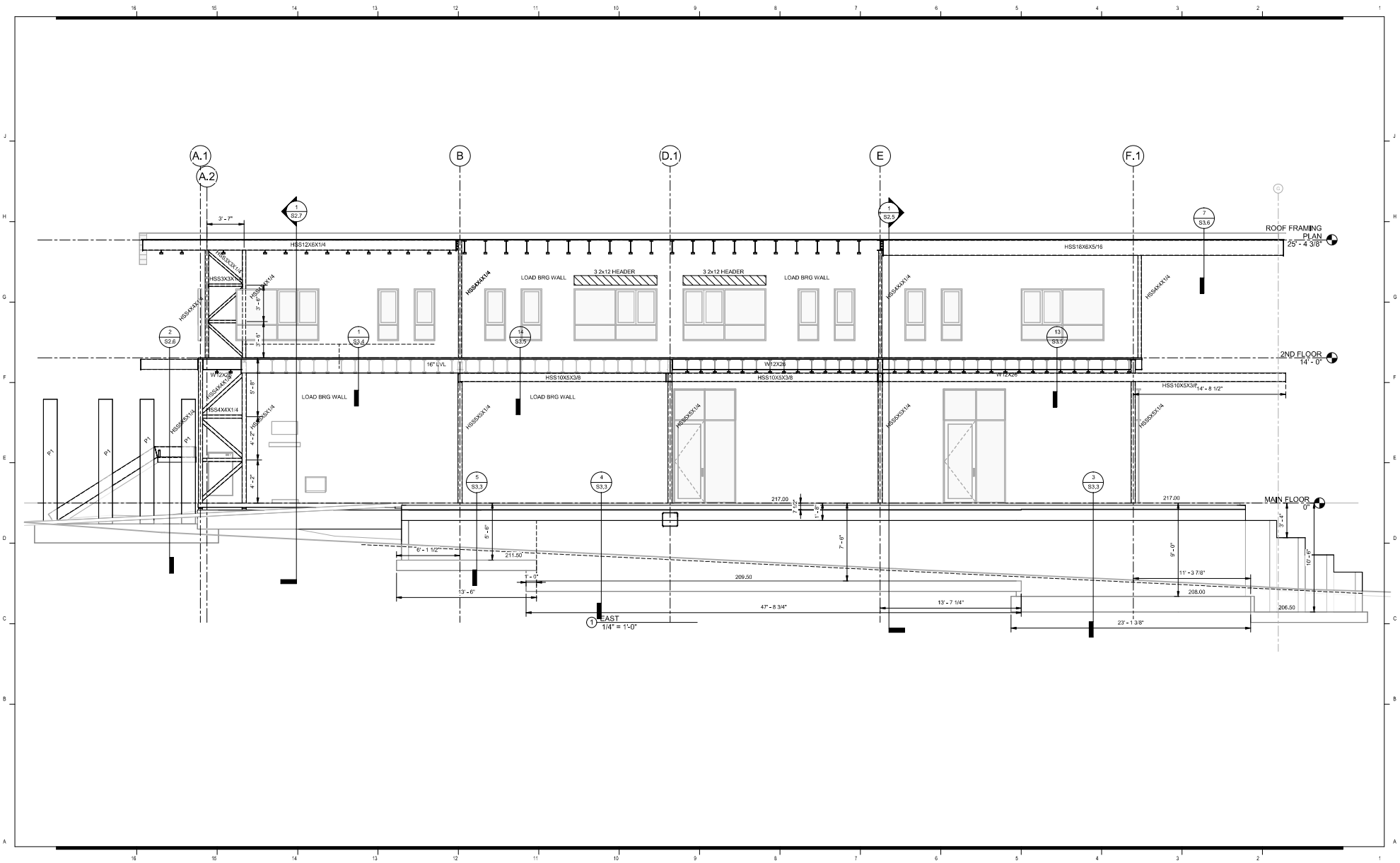
BUILDING ELEVATIONS

S2.1



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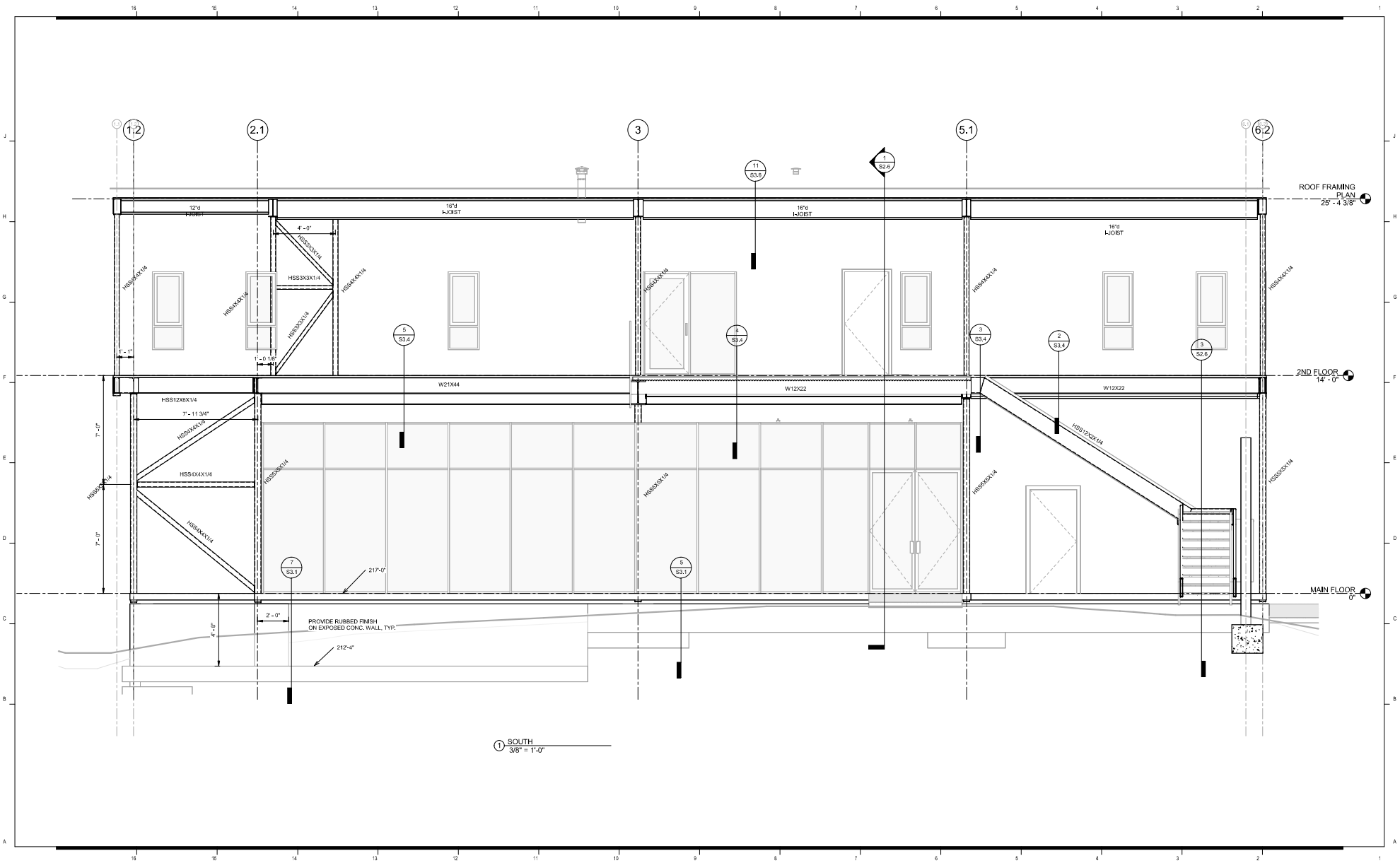
BUILDING ELEVATIONS

S2.2



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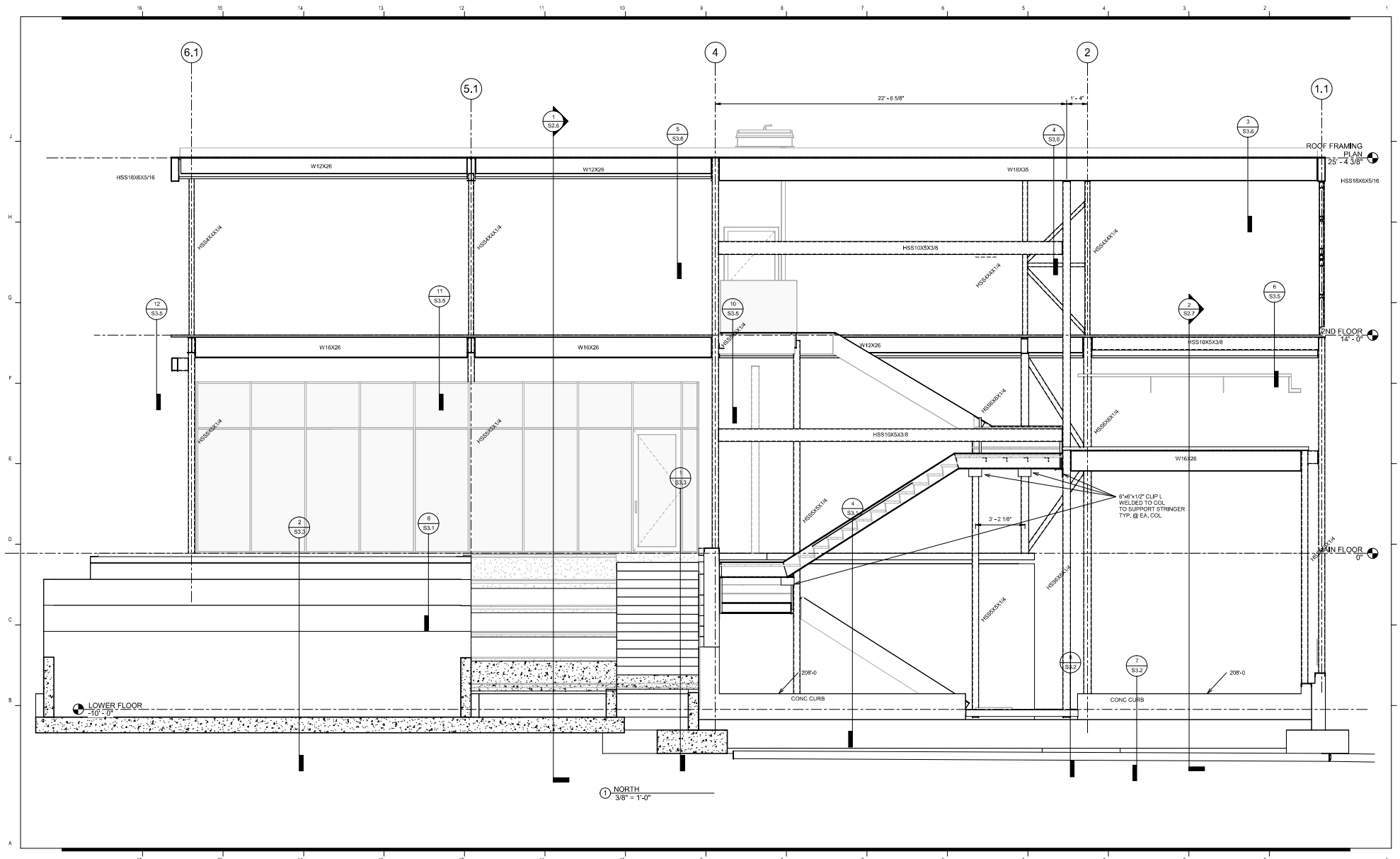
BUILDING ELEVATIONS

S2.3



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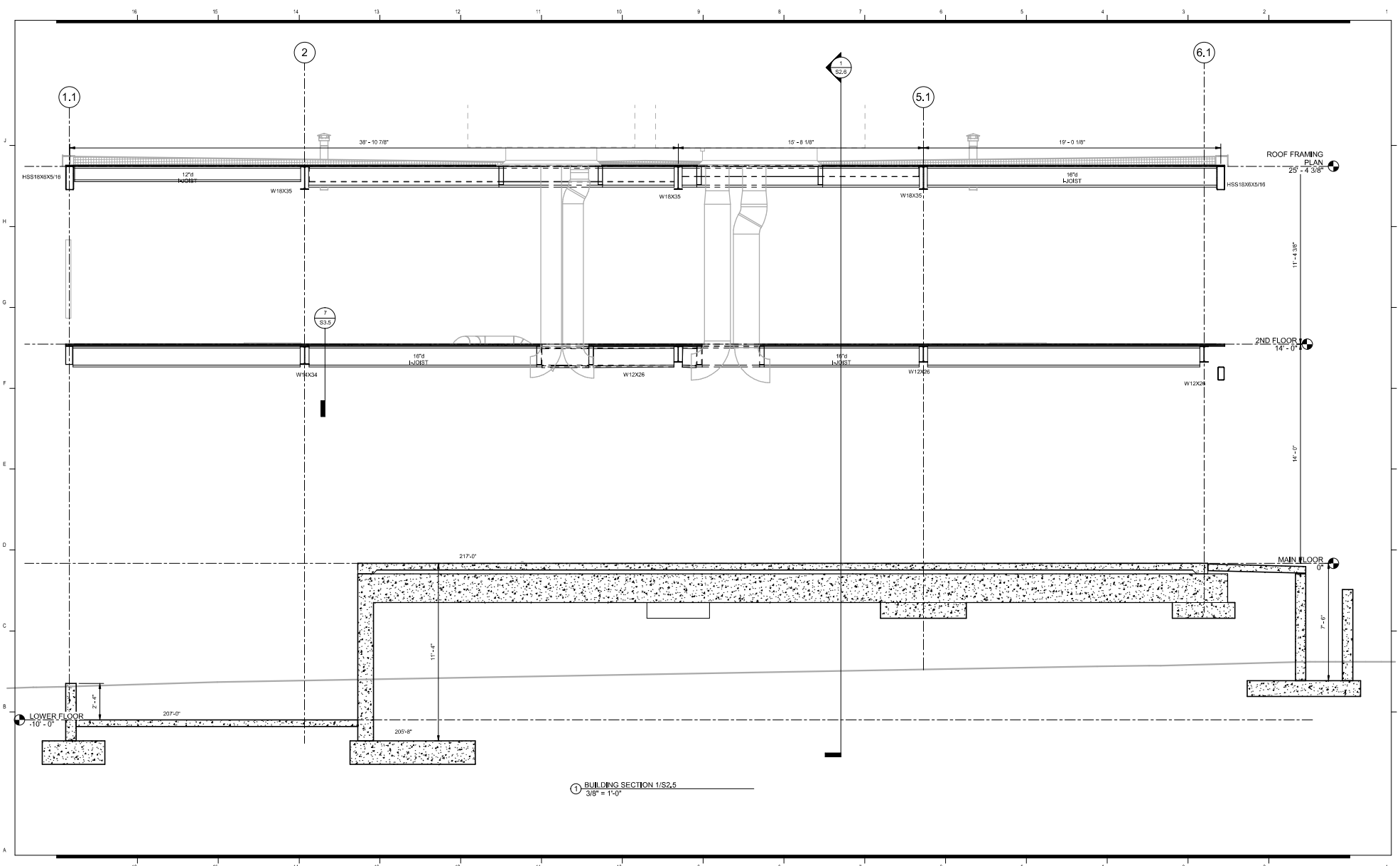
S2.4



1 BUILDING SECTION 1/S2.5
3/8" = 1'-0"

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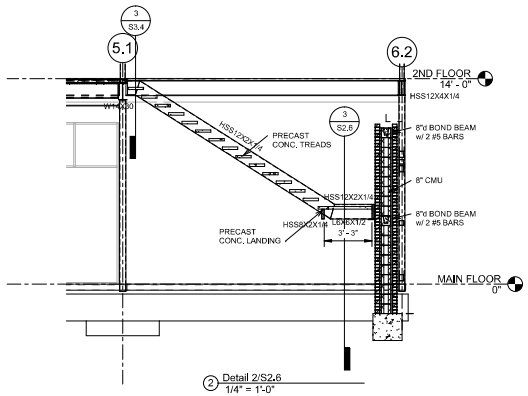
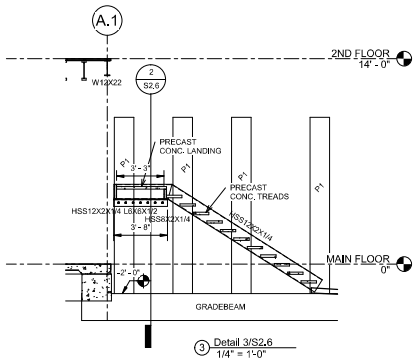
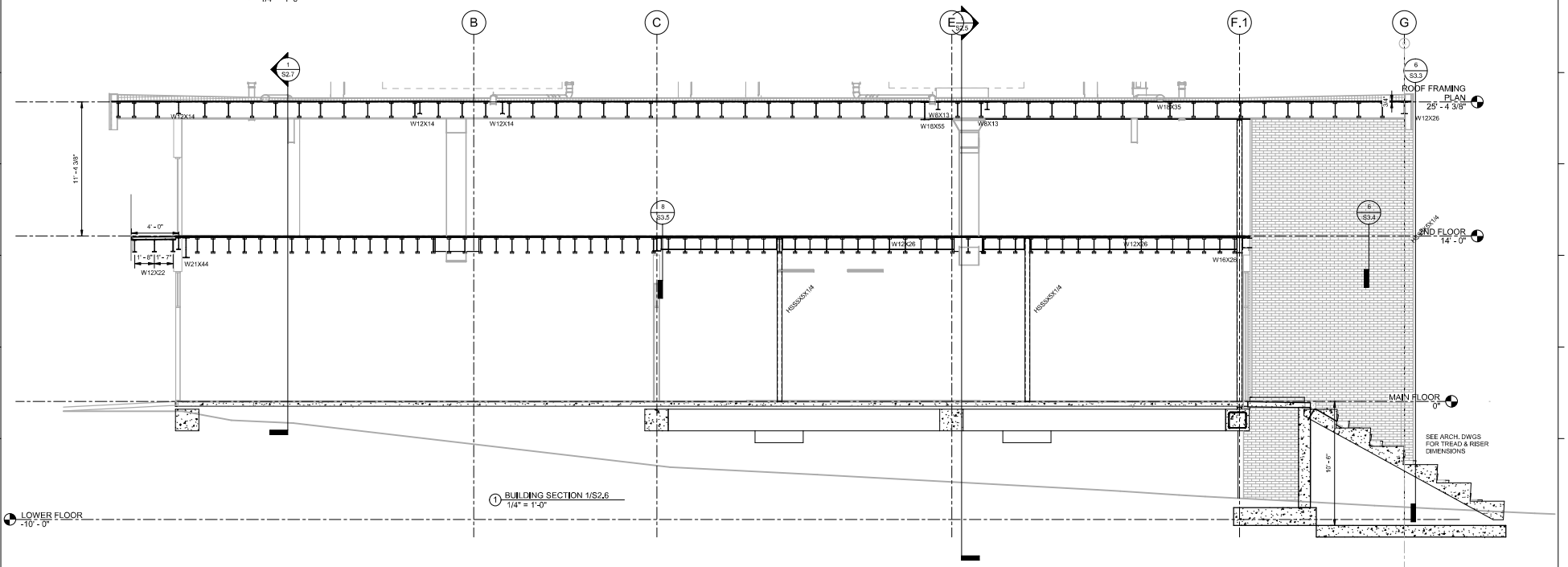
S2.5



② Detail 2/S2.6
1/4" = 1'-0"



③ Detail 3/S2.6
1/4" = 1'-0"



① BUILDING SECTION 1/S2.6
1/4" = 1'-0"

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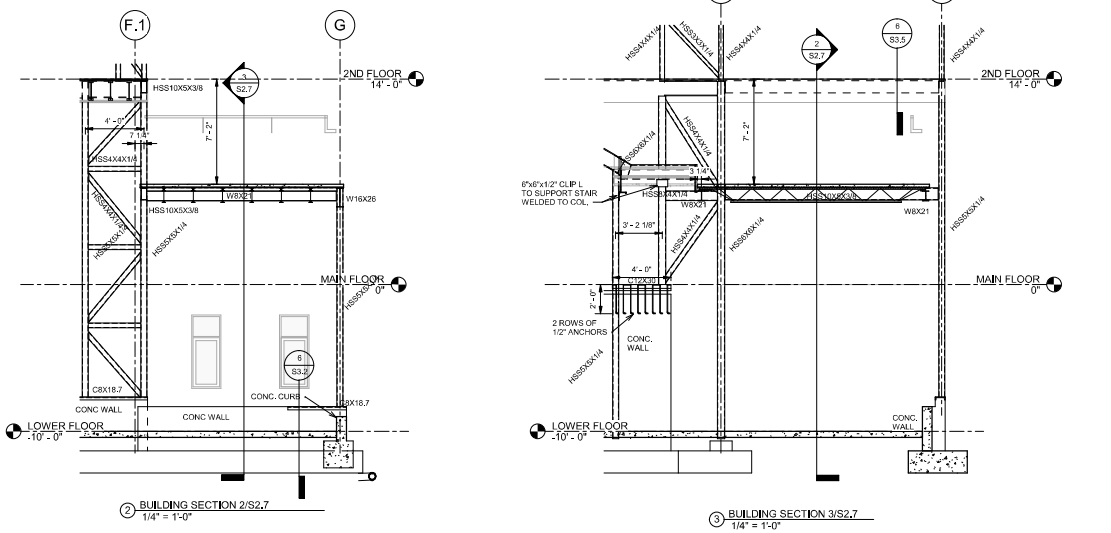
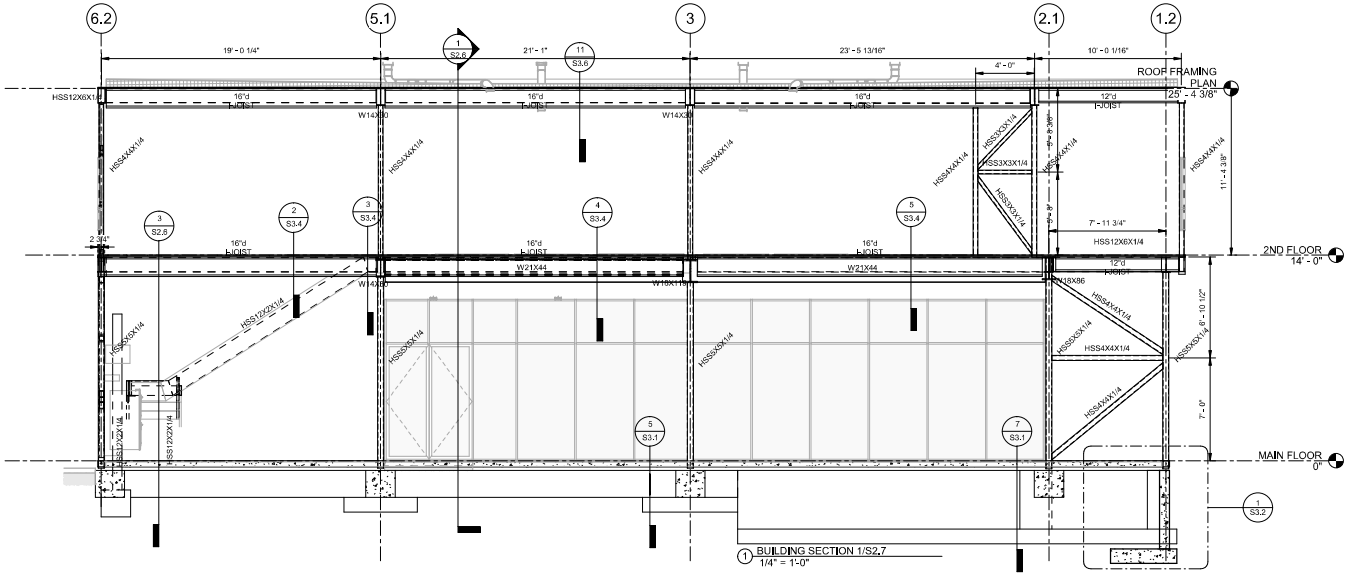
BUILDING SECTIONS

S2.6



2 BUILDING SECTION 2/S2.7
1/4" = 1'-0"

3 BUILDING SECTION 3/S2.7
1/4" = 1'-0"



1 BUILDING SECTION 1/S2.7
1/4" = 1'-0"

1/16/2026 7:52:08 AM

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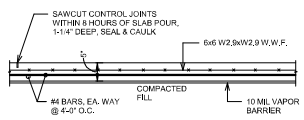
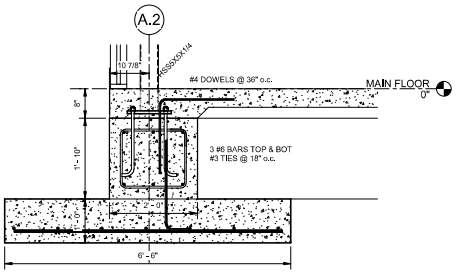
BUILDING SECTIONS

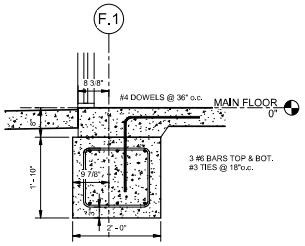
S2.7



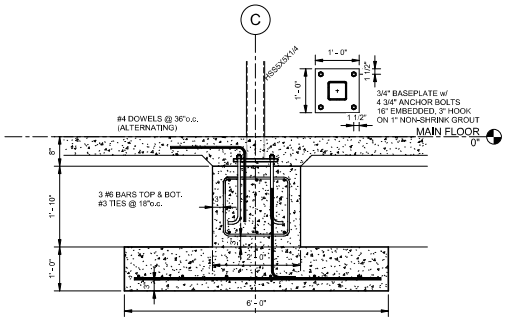
1 TYPICAL SLAB ON GRADE DETAIL
3/4" = 1'-0"



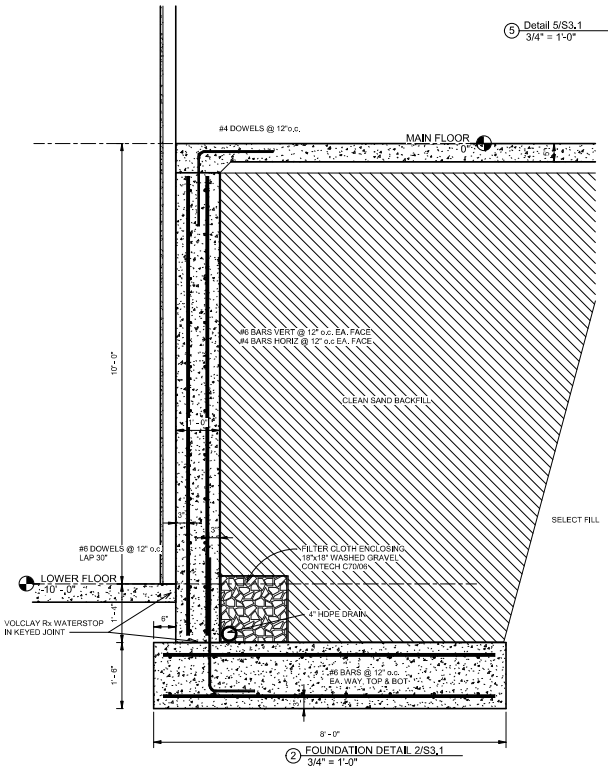
5 Detail 5/S3.1
3/4" = 1'-0"



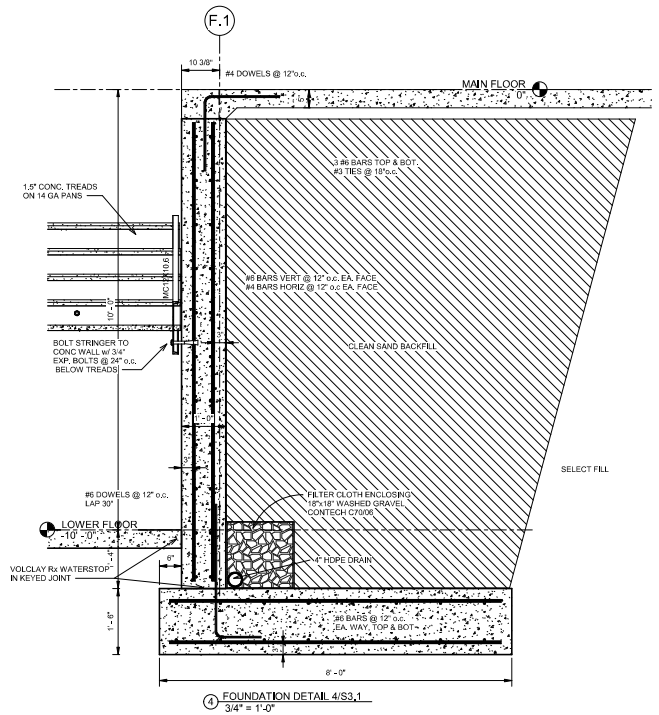
6 FOUNDATION DETAIL 6/S3.1
3/4" = 1'-0"



3 FOUNDATION DETAIL 3/S3.1
3/4" = 1'-0"



2 FOUNDATION DETAIL 2/S3.1
3/4" = 1'-0"



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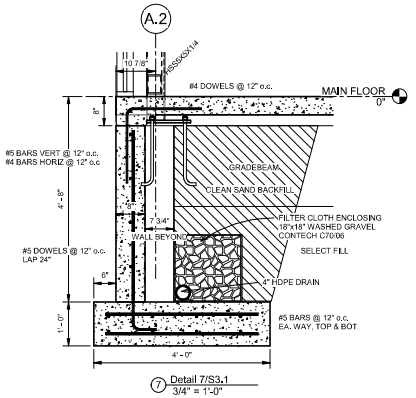

7 Detail 7/S3.1
3/4" = 1'-0"

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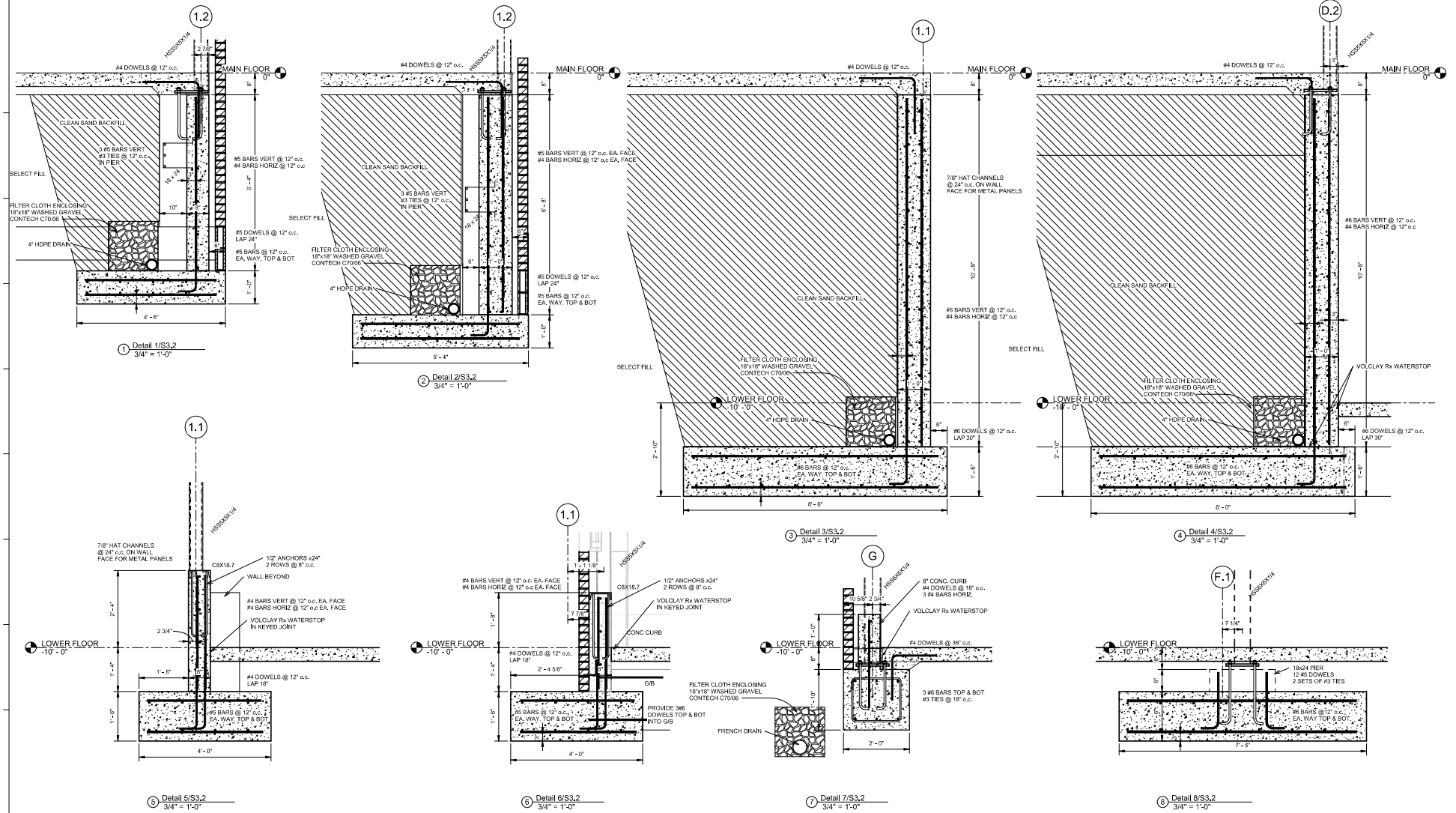
FOUNDATION DETAILS

S3.1



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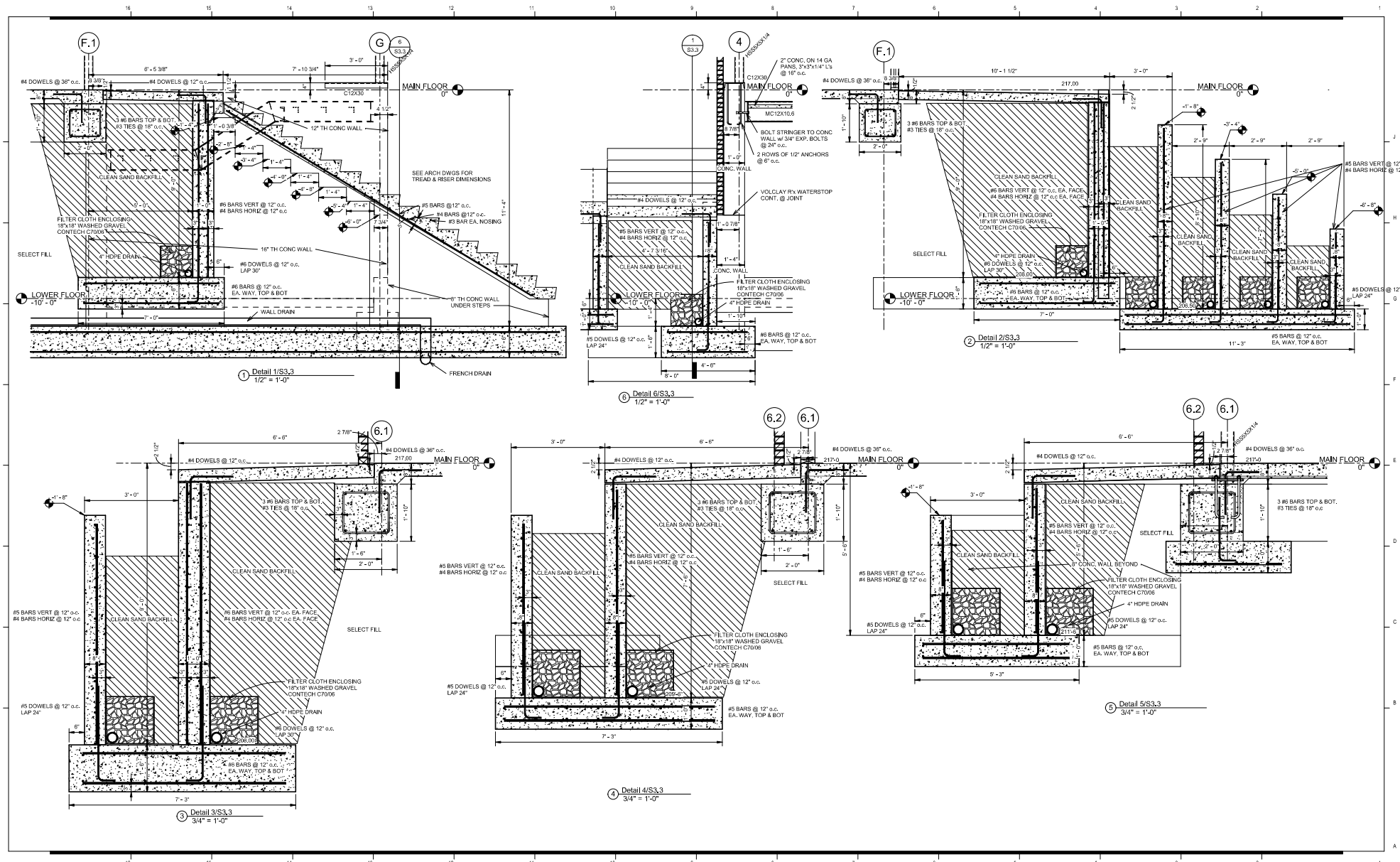
FOUNDATION DETAILS

S3.2



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FOUNDATION DETAILS

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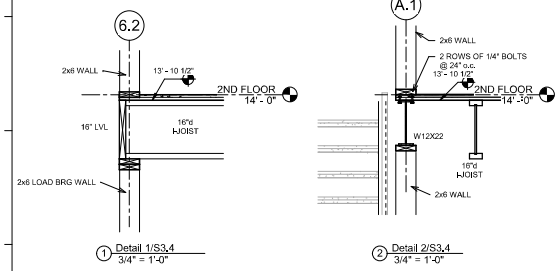

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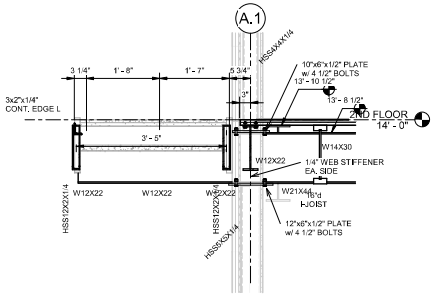
3/4" = 1'-0"



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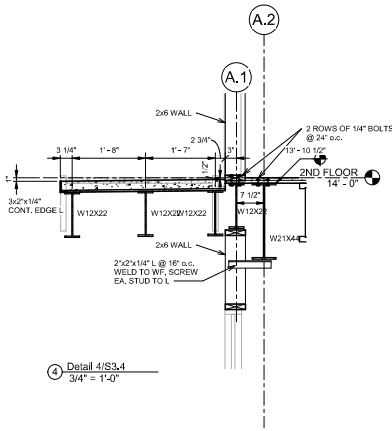

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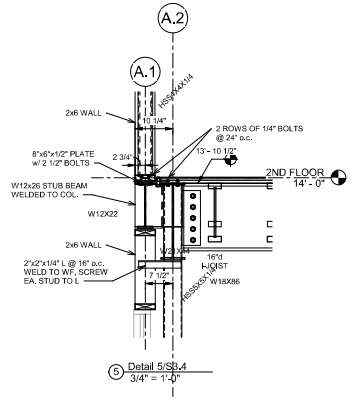

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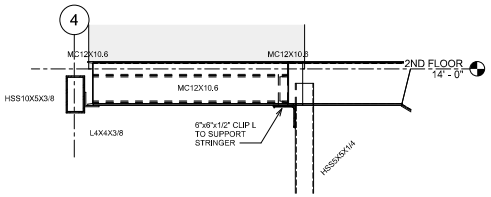

6 Detail 6/S3.4
3/4" = 1'-0"

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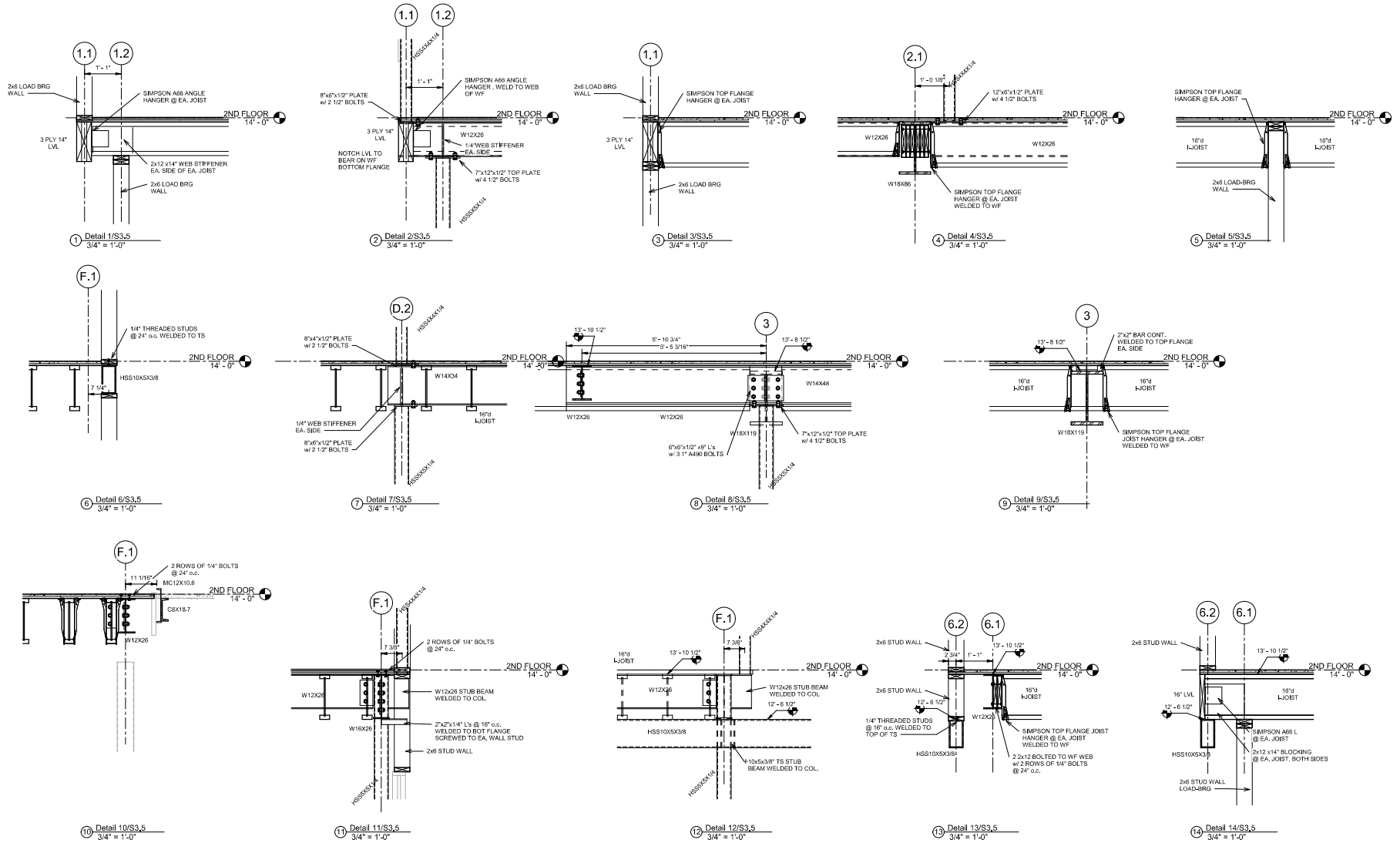
DETAILS

S3.4



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2 Detail 2/S3.5 3/4" = 1'-0"
3 Detail 3/S3.5 3/4" = 1'-0"
4 Detail 4/S3.5 3/4" = 1'-0"
5 Detail 5/S3.5 3/4" = 1'-0"
6 Detail 6/S3.5 3/4" = 1'-0"
7 Detail 7/S3.5 3/4" = 1'-0"
8 Detail 8/S3.5 3/4" = 1'-0"
9 Detail 9/S3.5 3/4" = 1'-0"
10 Detail 10/S3.5 3/4" = 1'-0"
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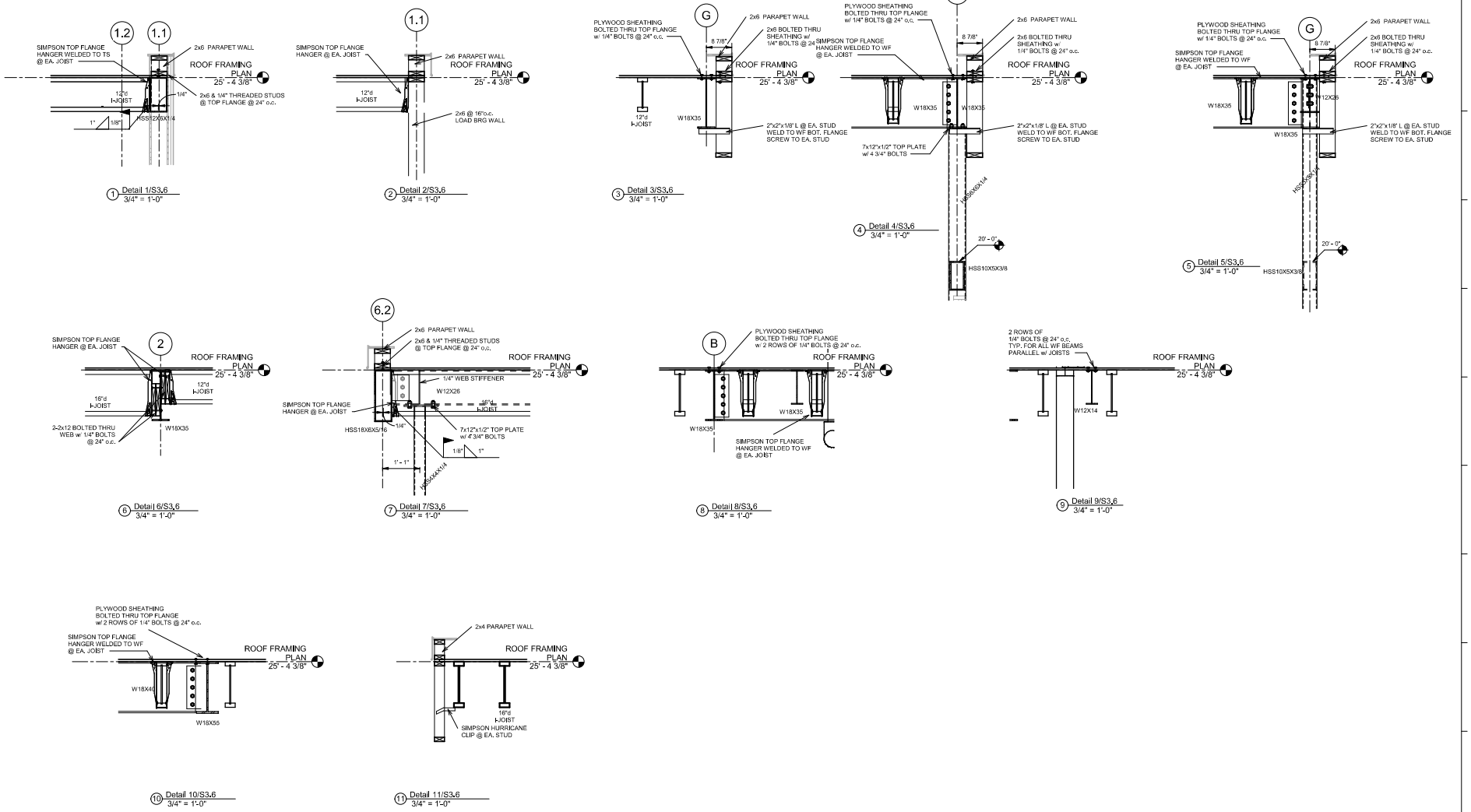
2ND FLOOR DETAILS

S3.5



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ROOF DETAILS

S3.6

SECTION 03 3300 - CONCRETE FORM WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work specified in this section.

1.2 DESCRIPTION OF WORK:

A. Extension for cast-in-place concrete with shoring, bracing and anchorage. Form accessories and stripping items.

1.3 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified.

1. ACI 301 "Specifications for Structural Concrete for Buildings".

2. ACI 347 "Recommended Practice for Concrete Formwork".

3. PS 1 "Construction and Industrial Plywood".

B. Design, engineer, and construct formwork, shoring, and bracing to meet design and code requirements, or Bid-modified concrete construction if required in shape, line and dimension.

C. The design and engineering of the formwork, as well as its construction, shall be the responsibility of the Contractor and shall comply with all applicable OSHA rules.

D. Design formwork for loads, lateral pressures, and allowable stresses outlined in Section 301 and 347 of ACI 347. Recommended Practice for Concrete Formwork and wind loads as specified for the governing building code.

PART 2 - Forms shall conform to the shapes, lines, and dimensions of the members as called for on the drawings and shall be sufficiently tight to ensure that the concrete mortars will conform to the tolerances of ACI 347, Section 205.1.

PART 3 - PRODUCTS

PART 4 - FORM MATERIALS:

A. Lumber: Southern Yellow Pine species, #2 S4S grade with grade stamp clearly visible. Use only on unexposed surfaces.

B. Form for Exposed Finish Concrete: Unless otherwise indicated, construct formwork for exposed finish concrete surfaces with plywood, metal, or other panels, hard board, or tempered paper, plastic materials, to provide continuous, straight, smooth, exposed surfaces. Provide in largest practical sizes to minimize number of joints and to conform symmetrically to pattern shown on drawings. Provide form material with sufficient thickness to withstand pressure of concrete placement without bow or deflection.

C. Use plywood complying with U.S. Product Standard PS-1, "Soft Wood (Construction and Industrial)" Plywood," for concrete formwork, with mill-oiled and edge-sealed, with resin glass bearing highly impervious treatment.

4.2 FORMWORK ACCESSORIES:

A. Form Ties: Removable and Snap-off metal of fixed or adjustable length, 1-1/2 inch back bark minimum. Ties of rubber that will leave holes no larger than recently diameter in concrete surface.

B. Use removable ties for exposed finish surface only.

C. Form Release Agent: Colorless material which will not stain concrete, absorb moisture, or impair natural bonding.

D. Shoring, Bracing, Lag Bolts, Through Bolts, Anchorages: Size as required, of strength and design to safely support construction loads and to comply with OSHA.

PART 3 - EXECUTION

3.1 FORMS:

A. Construct forms to sizes, shapes, lines and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in finished structure. Provide for openings, offsets, sinkages, keyways, recesses, moldings, reinforcing, anchorages, nailing strips, screeding, and bracing required to complete the work. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement and consolidation of concrete. Securely brace forms against vibration and eccentric loads created by placement and consolidation of concrete.

B. Construction joints in grade beams shall form two horizontal rows of keys, of tapered 2x4's, with minimum dimensions of 3" deep by 3" wide, spaced 4' on center, with the first key 2' from each end. Construction joints in retaining wall to shape a horizontal tapered key in the center of the wall.

C. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage cast concrete surfaces. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only. Kerf wood inserts for forming keyways, nights recesses, and the like, to prevent swelling and to stay removed.

D. Provide temporary openings where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement, and for placement and consolidation of concrete. Securely brace openings and set tightly to form exposed face of concrete surface. Locate temporary openings in inconspicuous locations.

E. Chamfer exposed corners and edges as indicated, using wood, metal, PVC, or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.

F. Form Ties: Factory-fabricated, adjustable-length, removable or snap-off metal form ties, designed to prevent form deflection and to prevent spalling concrete surfaces upon removal.

1. Unless otherwise indicated, provide ties so portion remaining within concrete after removal is at least 1" from nearest surface.

2. Unless otherwise shown, provide form ties which will not leave holes larger than 1" diameter in concrete surface.

G. Provisions for Other Trades: Provide openings in concrete formwork to accommodate work of other trades. Determine size and location of openings, recesses and chases from trades providing such items. Accurately place and securely support items built into forms.

H. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt, or other debris just before concrete is placed. Retighten forms and bracing after concrete placement is expired to eliminate mortar leaks and maintain proper alignment.

3.2 INSTALLATION OF EMBEDDED ITEMS:

A. General: Set and build into work anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use templates or other devices designed to position items accurately and to hold them against displacement.

B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain required elevations and contours in finished slab surface. Provide and secure units to support screed strips of screed strips by use of strike-off templates or compacted concreting type screeds.

3.3 PREPARATION OF FORMS SURFACES:

A. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

B. Thin form-coating compounds only with Blanning agent of type, and in amount, and under conditions of application instructions of manufacturer. Do not allow excess form coating to accumulate in forms or to come into contact with concrete surfaces against which finish concrete will be placed. Apply in compliance with manufacturer's instructions.

SECTION 03 3500 - CONCRETE ACCESSORIES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope:

1. CONTRACTOR shall provide all labor, materials, equipment and incidentals as shown, specified and required to furnish and install concrete accessories.

2. Concrete accessories required include the following:

a. Construction joints.

b. Control joints and fillers.

c. Isolation joints.

B. General: All joints subject to hydrostatic pressure shall be provided with continuous water stop.

C. Related Work Specified Elsewhere:

1. Section 033001 - Concrete Formwork.

1.2 QUALITY ASSURANCE

A. Reference Standards: Comply with applicable provisions and recommendations of the following, except where more stringent requirements are shown or specified.

1. ACI 301, Specifications for Structural Concrete for Buildings, Chapter 6, Joints and Embedded Items.

2. ASTM C 94, Standard Specification for Ready-Mixed Concrete.

3. ASTM E 1155, Standard Test Method for Determining Floor Flatness and Floor Levelness Numbers.

4. ASTM E 1745, Standard Specification for Water Vapor Retarders Used in Contact with Soil or Granular Fill Under Concrete Slabs.

B. All manufactured items shall be installed in accordance with manufacturer's instructions.

1.3 SUBMITTALS

A. Samples: Submit for approval the following samples:

1. Curb expansion joint filler.

2. Control joint filler strip.

B. Shop Drawings: Submit for approval the following:

1. Manufacturer's specifications and installation instructions for all materials required.

2. Layout of all construction joints locations prior to the submittal of steel reinforcing drawings.

SECTION 03 3500 - CONCRETE ACCESSORIES

B. Vertical Joints:

1. Apply roughener to the form face & dry, resin film by brush, spray or roller in accordance with the manufacturer's instructions. After roughener is dry, concrete may be placed.

2. When concrete has been placed and the form removed, wash loosened material off with high pressure water jet. Remove laitance to sound aggregate to expose aggregate to AWI#03300.

C. Place two layers of 18 inch thick bonding strips on concrete bonding surface prior to placing concrete slab to provide sliding bonding as shown.

1.5 EXPANSION JOINTS

A. Comply with ACI 301, Chapter 6 and as specified below.

B. Locate and install expansion joints as shown. Install curb filler in accordance with manufacturer's instructions.

1.6 BONDING WITH EPOXY ADHESIVE

A. Use adhesive for the following:

1. Bonding of hydro-concrete to concrete cured at least 28 days or to existing concrete.

2. Bonding of horizontal construction joints where these are required by the Drawings or Specifications, and where concrete is placed against hardened concrete.

B. Handle concrete and place adhesive in compliance with the manufacturer's printed instructions, including safety precautions.

C. Mix the epoxy adhesive in complete accordance with the instructions of the manufacturer.

D. Before placing fresh concrete thoroughly roughen and clean hardened concrete surfaces and coat with epoxy gel not less than 1/4 inch thick. Place fresh concrete while the epoxy gel is still tacky, without removing the keyhole grout coat, and as directed by the epoxy manufacturer.

1.7 WATERSTOPS

A. Install waterstops for all joints indicated on the Drawings. Waterstops shall be continuous around all corners and intersections so that a continuous, water-tight seal is provided.

END OF SECTION

SECTION 03 3500 - CAST IN PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work specified in this section.

B. Vapor Retarder as specified in SECTION 07 2500

C. Concrete Reinforcement is specified in SECTION 03 30 01

D. Concrete Formwork is specified in SECTION 03 30 01

1.2 DESCRIPTION OF WORK:

A. The extent of concrete work shown on drawings.

B. Above Grade

C. Slabs on fill

D. Concrete foundations, walls, and footings.

1.3 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified.

1. American Concrete Institute (ACI)

2. ACI 301 "Specifications for Structural Concrete for Buildings".

3. ACI 347 "Building Code Requirements for Reinforced Concrete".

4. ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures".

5. ACI 347 "Recommended Practice for Concrete Formwork".

6. American Society for Testing & Materials (ASTM)

7. ASTM A 615 "Deformed and Plain Billet-Steel Bar for Concrete Reinforcement".

8. ASTM A 185 "Welded Steel Wire Fabric for Concrete Reinforcement".

9. ASTM C 33 "Concrete Aggregates".

10. ASTM C 94 "Ready-Mixed Concrete".

11. ASTM C 150 "Portland Cement".

12. ASTM C 260 "Air-Entraining Admixtures".

13. ASTM C 309 "Liquid Membrane-Forming Compounds for Curing Concrete".

14. ASTM C 494 "Chemical Admixtures for Concrete".

1.4 CONCRETE TESTING:

A. Quality Control:

1. Installer Qualifications: A qualified installer who employs on Project personnel qualified as ACI-Certified Flatwork Technician and Finisher and a supervisor who is an ACI-certified Concrete Flatwork Technician.

2. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

3. Manufacture certified according to NRMCA's "Certification of Ready Mixed Concrete Production Facilities".

4. Testing Agency Qualifications: An independent agency, acceptable to the Architect, qualified according to ASTM C 1077 and ASTM E29 for testing indicated, as documented according to ASTM E 548.

5. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 2, according to ACI CP-01 or an equivalent certification program.

6. The testing laboratory performing tests shall comply with "Recommended Practice for Laboratories Testing Concrete and Concrete Aggregates." Testing Agency Laboratory inspector must be an ACI-certified Concrete Laboratory Testing Technician - Grade 1.

B. Testing Agency Duties: Provide quality control service to Owner and Contractor. Perform tests and other services specified by each applicable reference standard. Make additional tests, at Contractor's request, to determine adequacy of concrete mixtures that may be proposed for use in the Work.

C. Tests of Concrete: Conduct tests according to ASTM C 172 as follows:

1. Testing Frequency: Obtain one composite sample for each day's pour exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.

2. Slump: ASTM C 143; one test for each concrete load at point of discharge, and one test for each set of compressive strength test specimens.

3. Air Content: ASTM C173, volumetric method for normal weight for each concrete load at point of discharge, and one test for each set of compressive strength test specimens.

4. Concrete Temperature: Test hourly when air temperature is 40 degrees F and below, and when 80 degrees and above, and each time a set of compression test specimens made.

5. When strength of field-cured cylinders is less than 85% of companion laboratory-cured cylinders, Contractor shall evaluate operations and provide corrective procedures for protecting and curing in-place concrete.

6. Test results will be reported in writing to Architect and Contractor on same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, location of concrete batch in Work, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of fracture. Test reports shall be described as that it is exactly determined where and to what extent it is in the project. Design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of fracture. Test reports shall be described as that it is exactly determined where and to what extent it is in the project.

7. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by Architect. Testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed by Architect. Contractor shall pay for additional tests when such additional testing service has reported a low strength/consistency concrete is verified.

1.5 CEMENT SITES

A. Ready-Mix Concrete: Comply with requirements of ASTM ASTM C94, and as herein specified.

B. Concrete Design mix, as to be established to provide concrete of the pattern 20% higher strength than the specified cell strength.

C. CONCRETE STRENGTH FOR VARIOUS COMPONENTS AND LOCATIONS ARE INDICATED BY THE DRAWINGS.

D. Design mixes to provide required strength concrete with the following properties for the:

1. Not older no grade, - as minimum for:

E. Proportions shall be made by weight and shall be uniformly and accurately controlled and supervised by the concrete producer.

F. During hot weather or under conditions contributing to rapid setting of concrete a shorter mixing time than mentioned in ASSOCIATED, the may be imposed.

1.6 SUBMITTALS

A. Product Data: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, admixtures, packing compounds, curing compounds, and design mix proportions.

B. Submit a detailed report of intended shop drawings showing layout, sizes, arrangements, for supports, etc., for reinforcing steel, and identifying by grade/mesh, marks, etc., shall be shown in elevations so as to indicate bar lengths, locations of splices, etc.

C. Submit for review a concrete mix design for each type of concrete used in structural elements.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS:

A. Portland Cement: ASSOCIATED ASTM C 150, Type I.

1. Use one brand of cement throughout project, unless otherwise acceptable to Architect.

B. Aggregates: ASSOCIATED C 33, maximum size one inch (1").

C. Water: Potable, clean free of oil, alkali, or other deleterious substances.

D. Air Entraining Admixture: ASSOCIATED C260.

E. Water-Reducing Admixture: ASSOCIATE C494, Type A and contain not more than 1% chloride ions.

F. Water-Reducing, Accelerator Admixture: C, ASTM C494, Type C or E.

1. Subject to compliance with requirements, provide one of the following:

a. Accelguard 80, Euclid Chemical Co.

b. "Accelar 90", Master Builders.

c. Daraset, W. R. Grace.

d. Sikacrete, Sika Chemical Co.

G. Superplasticizer:

1. Subject to compliance with requirements, provide one of the following:

a. Rheobuild 1000.

b. Master

E. Proportions shall be made by weight and shall be uniformly and accurately controlled and supervised by the concrete producer.

F. During hot weather or under conditions contributing to rapid setting of concrete a shorter mixing time than mentioned in ASSOCIATED, the may be imposed.

H. Admixtures: Certain admixtures may be used only with approval of Architect. Submit data on admixtures proposed for use, indicating effects on concrete properties. Do not use admixtures containing calcium chloride.

2.2 RELATED MATERIALS:

A. Non-Shrink Grout: ASTM C1107, factory pre-mixed grout.

1. Products: Subject to compliance with requirements, provide one of the following:

a. "Crystex", L&M Construction Chemicals.

b. "Masterflow 713", Master Builders.

c. "Euco NS", Euclid Chemical Co.

d. "Five-Star Grout", U.S. Grout Co.

e. "Supreme", W. R. Meadows Co.

B. Curing Membrane, Nonfugitive: ASTM C309, Type 1 clear or translucent, or white pigmented curing compound, free of paraffin or petroleum, and containing no chlorides.

1. Use compound that will not discolor concrete surfaces.

2. Remaining with or architects' option.

3. Contains colorant shall not be released in release of sequestration/color.

4. Use manufacturer's recommendations for quantity per cubic yard not to exceed a charge of 400 sq. ft. per gallon.

K. Shrink Limit: Proportion and design mixes to result in concrete shrin at point of placement to following:

1. Ramp and Shearing Surfaces: Not more than 3".

2. Reinforced Foundation Systems: Not less than 3" and not more than 5".

3. Slab: Not less than 4" nor more than 7".

4. Other Concrete: Not less than 4" and not more than 7".

D. Mix and deliver concrete in accordance with requirements of ASTM C94, and as herein specified.

1. When air temperature is between 85 and 90 degrees F., reduce mixing and delivery time from 1-1/2 hours to 75 minutes, and when air temperature is above 90 degrees F. reduce mixing and delivery time to 60 minutes.

2. To cold weather, concrete operations must be assisted by using hot water or by preheating the aggregates prior to mixing operation or a combination thereof to insure that concrete is maintained at a temperature of 50 degrees or more.

3. Concrete design mixes are to be as noted below indicated on the submitted to the Architect. Do not use concrete until Architect has reviewed the design mix number.

E. Refer to drawings for compressive strength requirements.

PART 3 - EXECUTION

3.1 PREPARATION OF FORM SURFACES:

A. Coat contact surfaces of forms with a form-coating compound before reinforcement is placed.

B. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of application instructions of manufacturer. Do not allow excess form coating to accumulate in forms or to come into contact with concrete surfaces against which finish concrete will be placed. Apply in compliance with manufacturer's instructions.

3.2 CONCRETE PLACEMENT:

A. Pre-placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other trades to perform their work. Maintain a record of inspection. Verify that concrete may be placed from immediately before placing concrete, where form coatings are not used.

B. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.

C. General:

1. Comply with ACI 304, and as herein specified.

2. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete that has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation.

D. Placing Concrete in Forms:

1. Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.

2. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping.

3. Use equipment and procedures for consolidation of concrete in accordance with ACI recommended practices.

4. Do not use vibrators to transport concrete inside forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than visible effectiveness of machine. Place vibrators to rapidly penetrate placed layer and at least 6" into preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion, limit duration of vibration to time necessary to consolidate concrete and prevent formation of voids or pockets of aggregate. Do not vibrate reinforcing steel and embedded items without ensuring adequate bond to concrete.

E. Placing Concrete Slabs:

1. Deposit and consolidate concrete slabs in a continuous operation within limits of construction joints until the placing of a panel or section is completed.

2. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.

3. Screed slab surfaces with a straightedge and strike off to correct elevations and crown. Use bull floats or darbies to smooth surface, free of humps or hollows. Do not sprinkle water on plastic surfaces and do not disturb slab surfaces prior to beginning finishing operations.

4. Maintain reinforcing in proper position during concrete placement operations.

F. Cold Weather Placing:

1. Protect concrete work from physical damage or reduced strength which could be caused by frost, freezing actions, or low temperatures, in compliance with ACI 306 and as herein specified.

2. When air temperature has fallen to or is expected to fall below 40 degrees F., uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F. and not more than 80 degrees F.

3. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.

4. Do not use calcium chloride, salt and other materials containing antifreeze agents or chemical accelerators, unless otherwise accepted in mix designs.

G. Hot Weather Placing:

1. When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305.

2. Cool ingredients before mixing.

3. Use water-reducing retarding admixtures (Type D) when required by high temperatures.

4. If the temperature of concrete mix is 85 degrees F. or above, at time of discharge, or a limit of concrete, the above shall be tested 60 to 90 revolutions at 12 to 15 revolutions per minute after the mixer has been loaded. This limit is shown to be reduced.

3.3 FINISH OF FORMED SURFACES

A. Rough Form Finish:

B. For formed concrete surfaces not exposed-to-view in the finish work or by other construction, provide as-cast rough form finish. Remove fins and loose material. Make all minor repairs as required, and wash as fabric and surfaces to meet approved and patched and fine and other projections exceeding 1/4" in height rubbed down or chipped off.

C. Smooth Form Finish:

1. For formed concrete surfaces exposed-to-view, or that are to be covered with a coating or covering material applied directly to concrete, or a permanent concrete floor finish, provide smooth-form finish. Use plywood, metal, or other panels, hard board, or tempered paper, plastic materials, to provide continuous, straight, smooth, exposed surfaces. Provide panels of largest practicable size to minimize number of joints and to conform symmetrically to pattern shown on drawings. Provide form material with sufficient thickness to withstand pressure of concrete placement without bow or deflection.

2. Moisten concrete surfaces and rub with Carborundum brick or other abrasive until a uniform color and texture is produced. Do not apply cement paste other than the cement used in the finishing process.

D. Rubbed Concrete:

1. Provide rubbed finish to concrete surfaces which are to serve as interior and exterior locations, the plaster walls and any retaining walls supported to be.

2. Remove fins, projections, and other irregularities as soon as forms are struck, and rub with stone to consistency of thick cream. Use of proprietary additives may be used at contractor's option. Dress standard Portland cement and white Portland cement, cement obtained from the same source as that used in the job, and fine sand to provide a finish to match adjacent surfaces.

3. Thoroughly wet concrete surfaces and apply grout to cure surfaces and fill small holes. Rub surfaces with burlap to remove excess grout. Scrub surfaces with clean burlap. Keep damp for not less than 24 hours after rubbing.

E. Rubbed Unformed Surfaces:

1. Finish exposed areas to blend into adjacent concrete. Proprietary patching and floor finishing compounds may be used if approved by Architect.

2. Surface defective areas, except minor pockets, and small voids, by cutting back to firm concrete. Cut perpendicular to concrete surface. Remove defective areas with sides sloped inward at least 1" deep. Dampen concrete surfaces to be patched and apply bonding agent. Place patching mixture before bonding compound has dried. Fill holes and depressions solidly and strike off smooth. Compact mortar in place and remove excess. Keep patched area damp for not less than seven days. Cure in same manner as adjacent concrete.

3. Repair isolated random cracks and single holes not over one inch (1") in diameter by cutting out defective concrete, forming square or rectangular outline with edges perpendicular to surface and at least 1" deep. Clean, dampen with brush-coating of neat cement grout and fill with patching mixture. Fill holes over one inch (1") in diameter in manner specified for patching holes. Use same procedures on exposed aggregate concrete except that cement used for grout shall be a blend of white and gray cement as required to produce color matching surrounding concrete. Provide test patches as required to obtain proper color match. Do not begin rubbing of concrete until surrounding concrete has been in place for at least 14 days. Cure patches in same manner as adjacent concrete.

4. Repair honeycombed areas, voids, and similar areas by cutting out defective concrete to sound concrete. Cut perpendicular to concrete surface. Remove loose material and clean surfaces of dust and debris. Dampen concrete surfaces to be patched and apply bonding agent. Place patching mixture before bonding compound has dried. Fill holes and depressions solidly and strike off smooth. Compact mortar in place and remove excess. Keep patched area damp for not less than seven days. Cure in same manner as adjacent concrete.

5. Repair defective areas, except small pockets, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with sides perpendicular to surface and at least 1" deep. Clean, dampen with brush-coating of neat cement grout and fill with patching concrete. Compact concrete in place and finish to match adjacent surfaces. Keep patched area damp for not less than seven days. Cure in same manner as adjacent concrete.

6. Repair isolated surface cracks and single holes not over one inch (1") in diameter by cutting out defective concrete, forming square or rectangular outline with edges perpendicular to surface and at least 1" deep. Clean, dampen with brush-coating of neat cement grout and fill with patching mixture. Fill holes over one inch (1") in diameter in manner specified for patching holes. Use same procedures on exposed aggregate concrete except that cement used for grout shall be a blend of white and gray cement as required to produce color matching surrounding concrete. Provide test patches as required to obtain proper color match. Do not begin rubbing of concrete until surrounding concrete has been in place for at least 14 days. Cure patches in same manner as adjacent concrete.

7. Repair isolated random cracks and single holes not over one inch (1") in diameter by cutting out defective concrete, forming square or rectangular outline with edges perpendicular to surface and at least 1" deep. Clean, dampen with brush-coating of neat cement grout and fill with patching mixture. Fill holes over one inch (1") in diameter in manner specified for patching holes. Use same procedures on exposed aggregate concrete except that cement used for grout shall be a blend of white and gray cement as required to produce color matching surrounding concrete. Provide test patches as required to obtain proper color match. Do not begin rubbing of concrete until surrounding concrete has been in place for at least 14 days. Cure patches in same manner as adjacent concrete.

8. Repair defective areas, except small pockets, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with sides perpendicular to surface and at least 1" deep. Clean, dampen with brush-coating of neat cement grout and fill with patching concrete. Compact concrete in place and finish to match adjacent surfaces. Keep patched area damp for not less than seven days. Cure in same manner as adjacent concrete.

9. Repair isolated over-spot defects that cannot be cured, subject to acceptance of Architect.

END OF SECTION

SECTION 03 3053 - CONCRETE REINFORCEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification sections apply to work specified in this section.

1.2 DESCRIPTION OF WORK:

A. Reinforcing steel bars, welded and wire fabric for cast-in-place concrete.

B. Support chairs, bolsters, bar supports, spacers, and other devices for supporting reinforcement.

1.3 QUALITY ASSURANCE:

A. Codes and Standards: Comply with provisions of following codes, specifications and standards, except where more stringent requirements are shown or specified.

1. ACI 301 "Specifications for Structural Concrete for Buildings".

2. ACI 315 "Details and Detailing of Concrete Reinforcement".

3. ANSI/ASTM A 615 - "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement".

4. ASTM A615 / "Deformed and Plain Billet-Steel Bars for Concrete Reinforcement".

5. CRSI - "Manual of Practice".

6. CRSI 63 - "Recommended Practice for Placing Reinforcing Bars".

7. CRSI 67 - "Recommended Practice for Placing Bar Supports, Specifications and Nomenclature".

1.4 SUBMITTALS:

A. Shop Drawings, Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup, spacing, diagrams of bent bars, arrangement of concrete reinforcement. Include splice and reinforcement, supports and tiestrips through concrete structure.

B. Submit shop drawings to the Architect that show quantity of the Contractor. The Contractor shall not proceed with the fabrication of any reinforcing steel until the shop drawings have been sought when during preparation of the shop drawings. If it is apparent to the Architect or Structural Engineer that the Contractor has not thoroughly checked the shop drawings prior to submittal, the Contractor will be notified to resubmit so that he has properly checked and the previous submittal will be abandoned. Only complete sets of shop drawings will be reviewed unless an agreement to check partial submittals is obtained prior to the first submittal. Do not fabricate any material until approval of the Architect has been obtained.

1.5 PRODUCT HANDLING:

A. Deliver reinforcing in spiral, tie or bundles marked with metal paper indicating contents of bundle/accord to fabrication schedule.

B. Handle and store materials to prevent contamination and deterioration.

PART 2 - PRODUCTS

2.1 REINFORCING MATERIALS:

A. Reinforcing Steel: ASTM A615, Grade 60, billet-steel deformed bar, uncoated finish.

B. Steel Wire: ASSOCIATE A 82, plain, cold-drawn, steel.

C. Welded Wire Fabric: ASSOCIATE A 185, welded steel wire fabric.

D. Tie Wire: Minimum 16 gage annealed wire.

E. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars and wire fabric in place. Use wire bar type supports complying with CRSI recommendations, unless otherwise indicated. Fabricate bar supports from steel wire.

F. Other Supports: Concrete bricks may not be used as bolsters of earth formed pedestrianways to support reinforcing steel.

2.2 FABRICATION:

A. Fabricate in accordance with ACI 315, providing concrete cover specified in Section 03300.

B. Locate reinforcing bolsters not indicated on Drawings at points of minimum stress. Indicate location of splices on shop drawings.

PART 3 - EXECUTION

3.1 PLACING REINFORCEMENT:

A. Comply with Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for bends and methods of reinforcement placement and supports, and as herein specified.

B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.

C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.

D. Place reinforcement to obtain at least minimum coverages for concrete protection. Arrange, space and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.

E. Install vertical dowel steel before placing concrete. Provide templates to assure proper location and alignment.

F. Refer to Structural Drawings for additional requirements.

END OF SECTION

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100% CONSTRUCTION DOCUMENTS

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SPECIFICATIONS

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SECTION 05 1200 - STRUCTURAL STEEL FRAMING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Structural steel framing members, support members

B. Base plates.

C. Grouting under base plates.

1.02 RELATED REQUIREMENTS

A. Section 05 5000 - Metal Fabrications: Steel fabrications affecting structural steel work.

B. Section 09 9100 - Applied Fireproofing: Fireproof protection in framing.

1.03 REFERENCE STANDARDS

A. AISC DOSO - Steel Construction Manual; American Institute of Steel Construction, Inc.

B. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges; American Institute of Steel Construction, Inc.

C. AISC 348 - Specification for Structural Joints Using ASTM A325 or A490 Bolts.

D. ASTM A1 - Standard Specification for Carbon Steel Tee Rails.

E. ASTM A36 - Standard Specification for Carbon Structural Steel.

F. ASTM A53 - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.

G. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold Finished.

H. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.

I. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

J. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength.

K. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.

L. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

M. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.

N. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.

M. ASTM A992 - Standard Specification for Structural Steel Shapes.

N. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).

O. ASTM E94 - Standard Guide for Radiographic Examination.

P. ASTM E165 - Standard Practice for Ultrasonic Contact Examination of Weldments.

Q. ASTM E709 - Standard Specification for Standard Steel Windows.

R. ASTM F959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners.

S. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105 ksi Yield Strength.

T. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination; American Welding Society.

U. AWS D1.1 - Structural Welding Code - Steel; American Welding Society.

V. SSPC-Paint 15 - Steel Joist Shop Primer; Society for Protective Coatings.

W. SSPC-Paint 29 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic"); Society for Protective Coatings.

X. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc., current edition.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Shop Drawings:
   1. Indicate profiles, sizes, spacing, locations of structural members, openings, attachments, and fasteners.
   2. Connections not detailed.

C. Mill Certificates: Certify welders employed on the Work, verifying AWS qualification within the previous 12 months.

1.05 QUALITY ASSURANCE

A. Fabricate structural steel members in accordance with AISC "Steel Construction Manual".

B. Comply with Section 35 of AISC "Code of Standard Practice for Steel Buildings and Bridges" for architecturally exposed structural steel.

C. Fabricator: Company specializing in performing the work of this section with minimum 5 years of documented experience.

D. Erector: Company specializing in performing the work of this section with minimum 5 years of documented experience.

PART 2 PRODUCTS

2.01 MATERIALS

A. Steel Angles and Plates: ASTM A36.

B. Steel Pipe: ASTM A53, Grade B, Type E or S.

C. Rolled Steel Structural Shapes: ASTM A992.

D. Steel Shapes, Plates, and Bars: ASTM A36.

E. Cold-Formed Structural Tubing: ASTM A500, Grade B.

F. Hot-Formed Structural Tubing: ASTM A501, seamless or welded.

G. High-Strength Bolts, Nuts, and Washers: ASTM A325, Type 1, medium carbon.

H. Unthreaded Anchor Rod: ASTM F1554, Grade 36, plain, with matching ASTM A563 nuts and ASTM F436 Type 1 washers.

I. Load Indicator Washers: Provide washers complying with ASTM F959 at all connections requiring high-strength bolts.

K. Welding Materials: AWS D1.1, type required for materials being welded.

L. Welded Shear Studs: Headed stud type, complying with AWS D1.1/D1.1M and capable of developing a minimum compressive strength of 5,000 psi at 28 days.

M. Shop and Touch-Up Primer: Fabricator's standard.

N. Touch-Up Primer for Galvanized Surfaces: Fabricator's standard.

PART 3 EXECUTION

3.01 FABRICATION

A. Shop fabricate to greatest extent possible.

B. Continuously seal joined members by continuous welds. Grind exposed welds smooth.

C. Fabricate connections for bolt, unit, and washer connectors.

3.02 FINISH

A. Prepare structural component surfaces in accordance with SSPC PA 1/6.

B. Shop prime structural steel members. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high-strength bolted.

3.03 SOURCE QUALITY CONTROL

A. Welded Connections: Visually inspect all shop welded connections and test at least 5 percent of welds in accordance with AWS D1.1.
   1. Radiographic testing performed in accordance with ASTM E94.
   2. Ultrasonic testing performed in accordance with ASTM E164.
   3. Magnetic particle inspection performed in accordance with ASTM E709/E1444.
   4. Dye penetrant inspection performed in accordance with ASTM E165.

PART 4 EXECUTION

4.01 EXAMINATION

A. Verify that conditions are appropriate for erection of structural steel and that the work may properly proceed.

4.02 ERECTION

A. Erect structural steel in compliance with AISC "Code of Standard Practice for Steel Buildings and Bridges".

B. After the erection loads, and provide sufficient temporary bracing to maintain structure safe and plumb during the work. Alignment until completion of erection and installation of permanent bracing.

C. Field weld components indicated on shop drawings.

D. Clean and touch up damaged shop-applied finishes.

E. Shop-apply paint to surfaces abraded or damaged by erection, unless otherwise specifically permitted on shop drawings. Install high-strength bolts in accordance with AISC "Specification for Structural Joints Using ASTM A325 or A490 Bolts".

F. Do not field cut or alter structural members without approval of architect and engineer.

G. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

H. Grout solidly between column plates and bearing surfaces, complying with manufacturer's instructions for nonshrink grout. Trowel grouted surfaces smooth, splaying neatly to 45 degrees.

3.03 TOLERANCES

A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.

B. Maximum Offset From True Alignment: 1/4 inch

3.04 FIELD QUALITY CONTROL

A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000.

B. High-Strength Bolts: Verify that all bolts are in place, tightened, and are of the correct specification.

C. Welded Connections: Visually inspect all field welded connections. Test any suspect connection using one of the following:
   1. Radiographic testing performed in accordance with ASTM E94.
   2. Ultrasonic testing performed in accordance with ASTM E164.
   3. Liquid penetrant inspection performed in accordance with ASTM E165.
   4. Magnetic particle inspection performed in accordance with ASTM E709.

END OF SECTION

SECTION 31 00 01 - CRUSHED CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION

A. CONTRACTOR shall furnish and place crushed concrete, of the type specified at locations shown.

B. Work includes providing a crushed concrete surface on a prepared subgrade as required for building slab.

1.2 SUBMITTALS

A. CONTRACTOR shall furnish representative samples of the crushed concrete and shall advise of the source location.

1.3 QUALITY ASSURANCE

A. Tests:

1. Source Quality Control: CONTRACTOR shall be responsible for payment for all testing necessary to determine acceptability of crushed concrete at the location where the material is obtained.
2. Field Quality Control Testing: The CONTRACTOR shall retain the services of a qualified testing laboratory to make tests and determine acceptability of the crushed concrete upon delivery to the job site.
3. The CONTRACTOR shall give full cooperation to the testing lab personnel so that the required tests can be taken in an efficient and timely manner.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Crushed Concrete (Recycled Concrete) Gradation size shall be the same as that required by no. 8 89 crushed limestone aggregate as specified in Section 703.04.2 of the *Mississippi Standard Specifications for Road and Bridge Construction*", 2004 Edition.

B. CONTRACTOR shall submit sample meeting the above requirements to an approved commercial testing laboratory for analysis. Only after laboratory analysis results shall be approved by the ARCHITECT before any material is ordered.

C. After the materials are delivered to the job site, the ARCHITECT will take two samples from each shipment of material. The CONTRACTOR shall have a sieve analysis performed on these samples by the CONTRACTOR's testing laboratory. If the results of the samples taken in the field do not conform to those previously approved, the material will be rejected and shall be modified or removed from the job site.

PART 3 -EXECUTION

3.1 COMPACTION

A. Crushed concrete sub-base should be compacted with a vibratory plate compactor.

3.2 INSPECTION

A. Examine the subgrade on which the crushed concrete shall be installed and notify the ARCHITECT in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected in a manner acceptable to the ARCHITECT.

END OF SECTION 032223

SECTION 03 30 00 - CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of earthwork is indicated on drawings and described herein.

B. Site grading to elevations indicated on drawings is included as part of this work.

C. Preparation of subgrade for building slabs is included as part of this work.

D. Soil compaction and control is included as a part of this work.

E. Drainage fill course for support of building slabs is included as part of this work.

F. Backfilling of trenches within building lines is included as part of this work.

G. Excavation of Mechanical/Electrical Work: Refer to Divisions 15 and 16 sections for excavation required in connection with underground mechanical and electrical utilities, including excavation for trenches, manholes, pits, and similar structures.

H. Definition: "Excavation" consists of removal of material encountered to subgrade elevations indicated and required for installation of materials reserved.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service: Employ, at contractor's expense, testing laboratory to perform inspection and testing services for quality control testing during earthwork operations.

1.4 DISCONTINUITIES

A. Existing Utilities: Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during excavation work.

B. Should unadvised, or incorrectly charted, piping, or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be at contractor's expense.

D. Under footings, foundation bents, or retaining walls, fill unauthorized excavation by extending adjacent bottom elevations or by concrete as recommended by Architect.

E. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Architect.

F. In areas other than indicated for over-excavation, if unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Architect.

G. Additional Excavation: Where excavation has reached required subgrade elevations, notify Architect who will inspect conditions.

H. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Architect.

I. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions governing changes in the Work.

J. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of materials.

K. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

3.2 SOIL CLEARING AND PROTECTION

A. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

B. Use of Explosives: The use of explosives is not permitted.

C. Protection of Persons and Property: Barricade open excavations occurring as part of this work.

D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral soil movement, mudmovement, vibration, and other hazards created by earthwork operations.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Subsoil fill – delete this: Are required when silty clays (CL) or sandy silts (ML) with a plasticity index (PI) less than 15 and a liquid limit less than 50.

B. Subsoil fill – delete this: Are required when silty clays (CL) or sandy silts (ML) with a plasticity index (PI) less than 15 and a liquid limit less than 50.

C. Building Slab Drainage Course shall be Crushed concrete as specified in SECTION 31 00 02

D. Backfill and Fill Materials: Satisfactory soil must be a Select Fill or Select or Site Material consisting of clean sand, silt, clay, rock, and gravel free of any deleterious debris, toxic materials, vegetable and other deleterious matter.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Earth Excavation includes excavations of pavements and other obstructions visible on ground surface; underground structures, utilities and other items indicated to be demolished and removed; together with soil and other materials encountered that are not classified as rock or unauthorized excavation.

B. See the overexcavation plan for excavation requirements. Remove any unsuitable materials encountered. Where unsuitable materials are encountered, overexcavate and backfill with overexcavating, graded for existing subgrade with a backfill 18 inch with weight along route in the presence of the Architects representative. If the existing subgrade is stable, scarify to a depth of 6 inches, moisture condition, and compact to required depth and percentage of maximum density. Unsuitable soils shall not be used as backfill or fill material. Unsuitable soils shall be removed to an area and/or lifting or the thickness of the soil drainage system. Place fill material in horizontal layers not exceeding 8 inches in loose depth. Do not place fill on surfaces that are frozen or contain frost or ice.

C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be at contractor's expense.

D. Under footings, foundation bents, or retaining walls, fill unauthorized excavation by extending adjacent bottom elevations or by concrete as recommended by Architect.

E. Elsewhere, backfill and compact unauthorized excavations as specified for authorized excavations of same classification, unless otherwise directed by Architect.

F. In areas other than indicated for over-excavation, if unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Architect.

G. Additional Excavation: Where excavation has reached required subgrade elevations, notify Architect who will inspect conditions.

H. If unsuitable bearing materials are encountered at required subgrade elevations, carry excavations deeper and replace excavated material as directed by Architect.

I. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions governing changes in the Work.

J. Stability of Excavations: Slope sides of excavations to comply with local codes and ordinances having jurisdiction. Shore and brace where sloping is not possible because of space restrictions or stability of materials.

K. Maintain sides and slopes of excavations in safe condition until completion of backfilling.

3.2 SOIL CLEARING AND PROTECTION

A. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

B. Use of Explosives: The use of explosives is not permitted.

C. Protection of Persons and Property: Barricade open excavations occurring as part of this work.

D. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral soil movement, mudmovement, vibration, and other hazards created by earthwork operations.

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D. Trench Bottoms: Excavate trenches 4 inches deeper than bottom of pipe or conduit to provide space for bedding course under pipe. Remove rocks, roots, and other hard or sharp objects that may damage pipe or conduit.

E. Trench Backfill: Do not backfill trenches until tests and inspections have been made and backfilling authorized by Architect. Use care in backfilling to avoid damage or displacement of pipe systems.

F. Compaction: After grading, compact subgrade surfaces to the depth and indicated percentage of maximum or relative density for each area classification.

G. If in opinion of Architect based on testing service reports and inspection, subgrade or fills which have been placed are below specified density, provide additional compaction and testing at no additional expense.

3.3 COMPACTION

A. Control soil compaction during construction, providing minimum percentage of density specified for each area classification indicated below:

B. Percentage of Maximum Density Requirements: Compact soil to not less than the following percentages of maximum density:

C. STRUCTURES, BUILDING SLABS, STEPS, AND WALLS:

1. Compact 8" from the for all layers of backfill or fill material at 95% standard proctor (ASTM D-698) within 3% of optimum moisture.

3.4 MOISTURE CONTROL

A. Where subgrade or layer of soil material since by moisture conditioned before compaction, uniformly apply water to surface of subgrade, or layer of soil material, to prevent free water appearing on surface during or after compaction operations.

B. Remove and replace, or scarify and air dry, soil material that is too wet to permit compaction to specified density.

C. Soil material that has been removed because it is too wet to permit compaction may be stockpiled or spread and allowed to dry. Assist drying by discing, harrowing, or pulverizing until moisture content is reduced to satisfactory value.

3.5 BACKFILL AND FILL

A. General

1. Place backfill and fill material in layers in required subgrade elevations, for each area classification indicated.

B. Inside Building Area with Drainage Course

1. Top four inches of material under all building slabs shall be building slab drainage course. Area requiring fill under drainage coverage's within building boundaries shall be backfilled.

C. Outside Building Area

1. Use select excess material against foundation walls, trenches, and paving areas not requiring fill under drainage coverage's or building slabs.

D. Backfill excavations as promptly as work permits, but not until completion of the following:

1. Acceptance of construction below finish grade including, where applicable, dampproofing, and waterproofing.

2. Inspection, testing, approval, and recording locations of underground utilities.

END OF SECTION

C. Trenching: Excavate trenches to depth indicated or required for proper placement and support of pipe, conduit, and related appurtenances. Excavate trenches of sufficient width to provide adequate working space on each side of pipe or conduit.

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END OF SECTION

Meal Deck Units:

1. Epic Metals Corp.
2. United Steel Deck, Inc.
3. Vulcraft Div., Nucor Corp.
4. Wheeling-Corrugating Co.
5. Consolidated Systems

2.2 MATERIALS

A. Steel for Galvanized Metal Deck Units: ASTM A 446, Grade A.

B. Miscellaneous Steel Shapes: ASTM A 36.

C. Sheet Metal Accessories: ASTM A 526, commercial quality, galvanized.

D. Galvanizing: ASTM A 525, G60.

E. Galvanizing Repair Paint: High-zinc dust content paint for repair of damaged galvanized surfaces complying with SSPC-Paint 20, Type I, or ASTM A 780.

F. Fluorine Corbon Paint: Manufacturer's standard weatherproof, closed-cell, synthetic rubber

2.3 FABRICATION

A. General: Form deck units in lengths to span all supports, with flush, interlocking or nested side laps. Fabricate openings, sumps, and other holes required in deck units in accordance complying with SDI "Deck Specifications", of metal thickness, depth and width as shown.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install deck units and accessories in accordance with manufacturer's recommendations and applicable requirements of governing authorities.

B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.

C. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection.

D. Coordinate and cooperate with structural steel erector in locating shoring bundles to prevent overloading of structural members.

E. Do not use floor deck units for storage or working platforms until permanently secured.

F. Fastening Deck Units:

1. Fasten deck units to steel supporting members with self tapping screws. Where deck units are welded to steel supporting members, use arc welds, not less than 1" in average length or fusion of welds - minimum 12" o.c. at ends, and three across the side laps.

2. Use self-tapping No. 8-18 hex-washer-head screws at 6" o.c. for flattening end closures.

3. Mechanically fasten side laps of adjacent deck units between supports, using self-tapping No. 10 hex-washer-head screws.

4. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.

5. Reinforcement at Openings: Provide additional steel reinforcement and closure pieces as required for openings as shown on drawings and as specified in other work shown.

6. Closure Strips: Provide metal closure strips at open sides and ends and edges of roof decking, and at roofs between decking and other construction. Weld into position to provide a complete decking installation.

7. Cants and Flashings: After decking installation, wire brush, clean and paint scarred areas, welds, and rust spots on top surface of decking with rust-inhibitive paint complying with manufacturer's recommendations.
   a. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.
   b. Touch-up painted surfaces with same type of shop paint used on adjacent surfaces.

8. Access where disappointed surfaces are to be exposed, apply touch-up painter blend into adjacent surfaces.

END OF SECTION

SECTION 31 00 00 - EARTHWORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Extent of earthwork is indicated on drawings and described herein.

B. Site grading to elevations indicated on drawings is included as part of this work.

C. Preparation of subgrade for building slabs is included as part of this work.

D. Soil compaction and control is included as a part of this work.

E. Drainage fill course for support of building slabs is included as part of this work.

F. Backfilling of trenches within building lines is included as part of this work.

G. Excavation of Mechanical/Electrical Work: Refer to Divisions 15 and 16 sections for excavation required in connection with underground mechanical and electrical utilities, including excavation for trenches, manholes, pits, and similar structures.

H. Definition: "Excavation" consists of removal of material encountered to subgrade elevations indicated and required for installation of materials reserved.

1.3 QUALITY ASSURANCE

A. Codes and Standards: Perform excavation work in compliance with applicable requirements of governing authorities having jurisdiction.

B. Testing and Inspection Service: Employ, at contractor's expense, testing laboratory to perform inspection and testing services for quality control testing during earthwork operations.

1.4 DISCONTINUITIES

A. Existing Utilities: Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of support and protection during excavation work.

B. Should unadvised, or incorrectly charted, piping, or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

C. Unauthorized excavation consists of removal of materials beyond indicated subgrade elevations or dimensions without specific direction of Architect. Unauthorized excavation, as well as remedial work directed by Architect, shall be at contractor's expense.

D. Under footings, foundation bents, or retaining walls, fill unauthorized excavation by extending adjacent bottom elevations or by concrete as recommended by Architect.

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A. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shut-off of services if lines are active.

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END OF SECTION

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100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2026

Issued For	Date	#
100% CONSTRUCTION DOCUMENTS	01/16/2026	0

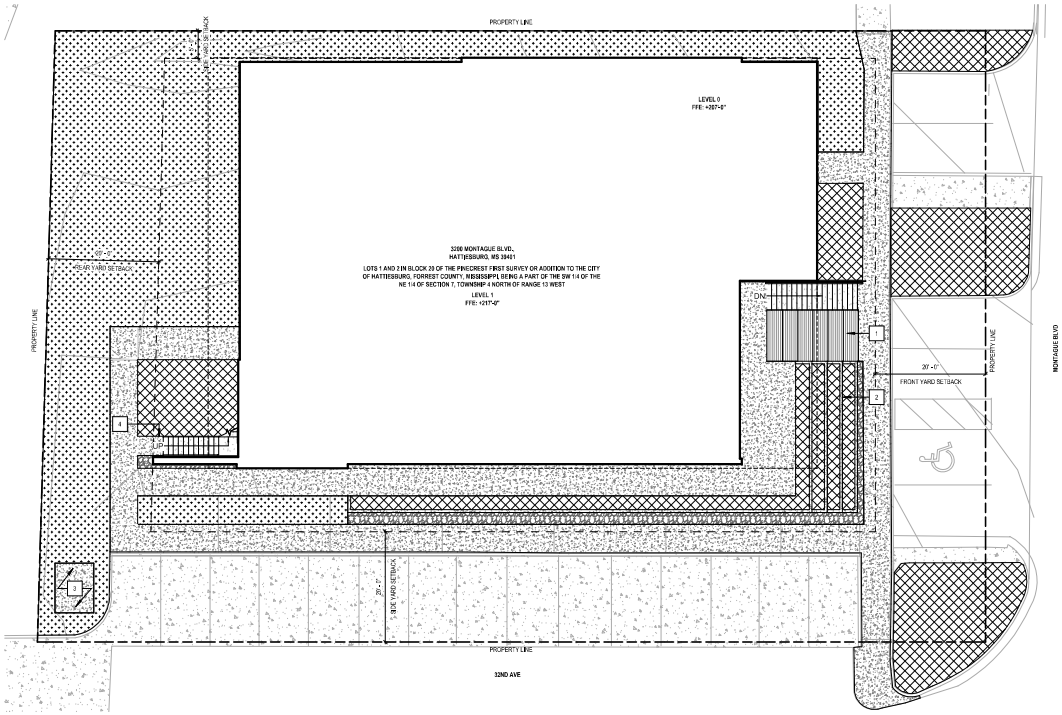
PROJ.: A_2408

SPECIFICATIONS

S4.2

SITE PLAN GENERAL NOTES

A. SITE PLAN IS DIAGRAMMATIC. RE CIVIL DWGS FOR ALL NEW AND EXIST GRADES, UTILITY LOCATIONS, SIDEWALKS, ROADS, CURBS, GUTTERS, PARKING LAYOUT, RAMPS, EASEMENTS, PROPERTY LINES, ETC.
B. RE LANDSCAPE DWGS FOR LANDSCAPE DESIGN.
C. RE CIVIL DWGS FOR PAVEMENT DEMO & BUILD BACK.
D. RE CIVIL DWGS FOR PERVIOUS/IMPERVIOUS AREA CALCULATIONS.



TURF / LANDSCAPE AREA. REFERENCE LANDSCAPE DRAWINGS

CONCRETE

GRAVEL

MULCH

ARCHITECTURAL SITE PLAN LEGEND

NOT TO SCALE

SITE PLAN KEYED NOTES

#	DESCRIPTION
1	STADIUM SEATING
2	MULTI-TIERED PLANTER, C.I.P. CONCRETE SITE WALLS
3	TRANSFORMER PAD
4	EXTERIOR CONCRETE-FILLED METAL PAN EGRESS STAIRS

N

ARCHITECTURAL SITE PLAN
3/32" = 1'-0"

5A

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100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2025

PROJ. A_2406

Issued For	Date	#
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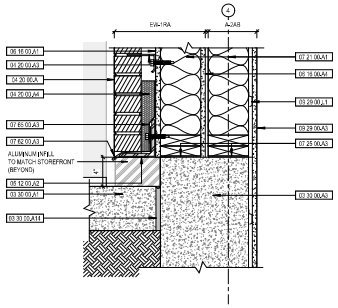
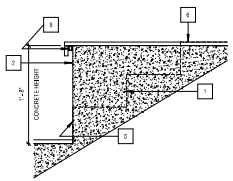
ARCHITECTURAL SITE PLAN

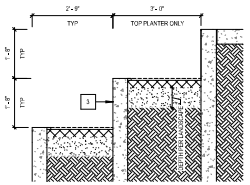
A001



SECTION DETAIL	13F
1 1/2" = 1'-0"	



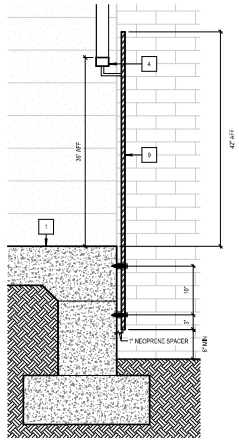
SECTION DETAIL	9F
1" = 1'-0"	



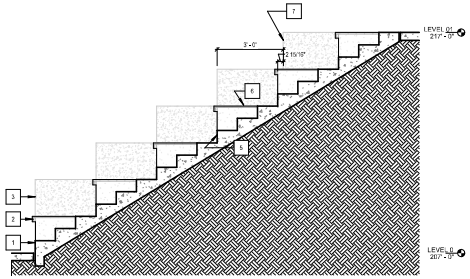
SECTION DETAIL	5F
1/2" = 1'-0"	

STAIR GENERAL NOTES

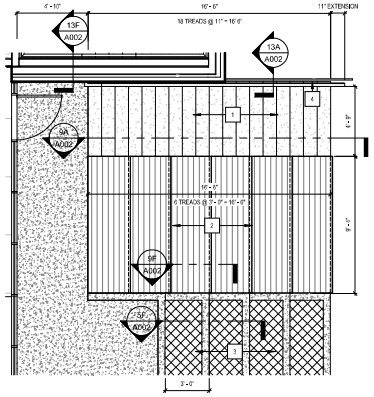
A. FV ALL OPENINGS AND HTS PRIOR TO FABRICATION AND INSTALL.
B. ALL STAIR COMPONENTS MUST BE ADA AND CODE COMPLIANT.
C. ALL RISERS TO BE UNIFORM HT - 7" MAX.
D. ALL TREADS TO BE EQ DEPTH - 11" MIN.
E. PROVIDE 1/2" MAX RADIUS AT ALL STAIR NOSINGS. NOSINGS MUST BE SLIP-RESISTANT.
F. PROVIDE CONCEALED, FIRE TREATED (WHERE REQD) WD BLOCKING FOR HANDRAIL CONNECTIONS AT PARTITION WALLS.
G. RE: STRUCT DWGS FOR SLAB EDGES, STL CONNECTIONS, AND ANCHORAGE.
H. GRIND ALL WELDS AND BLEND ALL EDGES SMOOTH.
I. ALL STL MUST BE PRIMED AND READY FOR PT FIN, UNO.
K. PT ALL EXPOSED STL. COLOR PER ARCHITECT.
L. ALL RISERS SHALL BE CLOSED.
M. WALL "PIPES INDICATED AT STAIR SHAFTS ARE CONT AT EA LEVEL.
N. COORD ALL REQS W/ STRUCT AND MEPFP DWGS & SPECS.



SECTION DETAIL	13A
1" = 1'-0"	



ENLARGED SECTION	9A
3/8" = 1'-0"	



ENLARGED PLAN	5A
1/4" = 1'-0"	

SITE DETAILS KEYED NOTES

#	DESCRIPTION
1	CAST-IN-PLACE CONCRETE STEPS
2	CAST-IN-PLACE STADIUM SEATING W/ WOOD SEAT
3	CAST-IN-PLACE CONCRETE PLANTER
4	RECTANGULAR STEEL HANDRAIL, ANCHORED INTO WALL AT TOP OF STAIRS AND INTO GROUND AT BOTTOM OF STAIRS, INTERMEDIATE WELDED SUPPORTS TO GUARDRAIL, EXTENSIONS PER IBC SEC 1014.
5	ALIGN CONCRETE FACES (BEYOND), TYP..
6	ALIGN CONCRETE STEP TO T.O. WOOD (BEYOND), TYP.
7	OFFSET FACE OF PATIO TO ACHIEVE 36" FALL PROTECTION
8	OUTDOOR LED STRIP LIGHT IN ALUMINUM CHANNEL, CONCEALED BY WOOD SEAT
9	STEEL PLATE GUARDRAIL, POWDERCOATED BLACK. HELD OFF CONCRETE WITH SPACER, FASTENING PER STRUCTURAL.

KEYNOTES

NUMBER	DESCRIPTION
03 30 00.A1	CONCRETE SLAB ON GRADE, RE: STRUCT.
03 30 00.A3	CONCRETE FOUNDATION; RE: STRUCT
03 30 00.A14	CONTINUOUS COMPRESSIBLE FILLER & JOINT SEALANT AT SLAB EDGE
04 20 00.A	BRICK, REF ELEVATIONS
04 20 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
04 20 00.A4	MORTAR NET
05 12 00.A2	STEEL ANGLE, RE: STRUCT
06 16 00.A1	5/8" EXTERIOR GLASS MAT GYPSUM WALL SHEATHING WITH FACTORY APPLIED WEATHER BARRIER
06 16 00.A4	5/8" TYPE X GYPSUM SHEATHING
07 21 00.A1	BATT INSULATION
07 25 00.A3	SILL GASKET
07 62 00.A3	PREFINISHED SHEET METAL FLASHING
07 65 00.A3	FLASHING TAPE
09 29 00.A3	5/8" GWB, PAINTED, RNISH PER SPEC AND LEGEND
09 29 00.L1	RESILIENT CHANNEL

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ARCHITECTURAL SITE DETAILS

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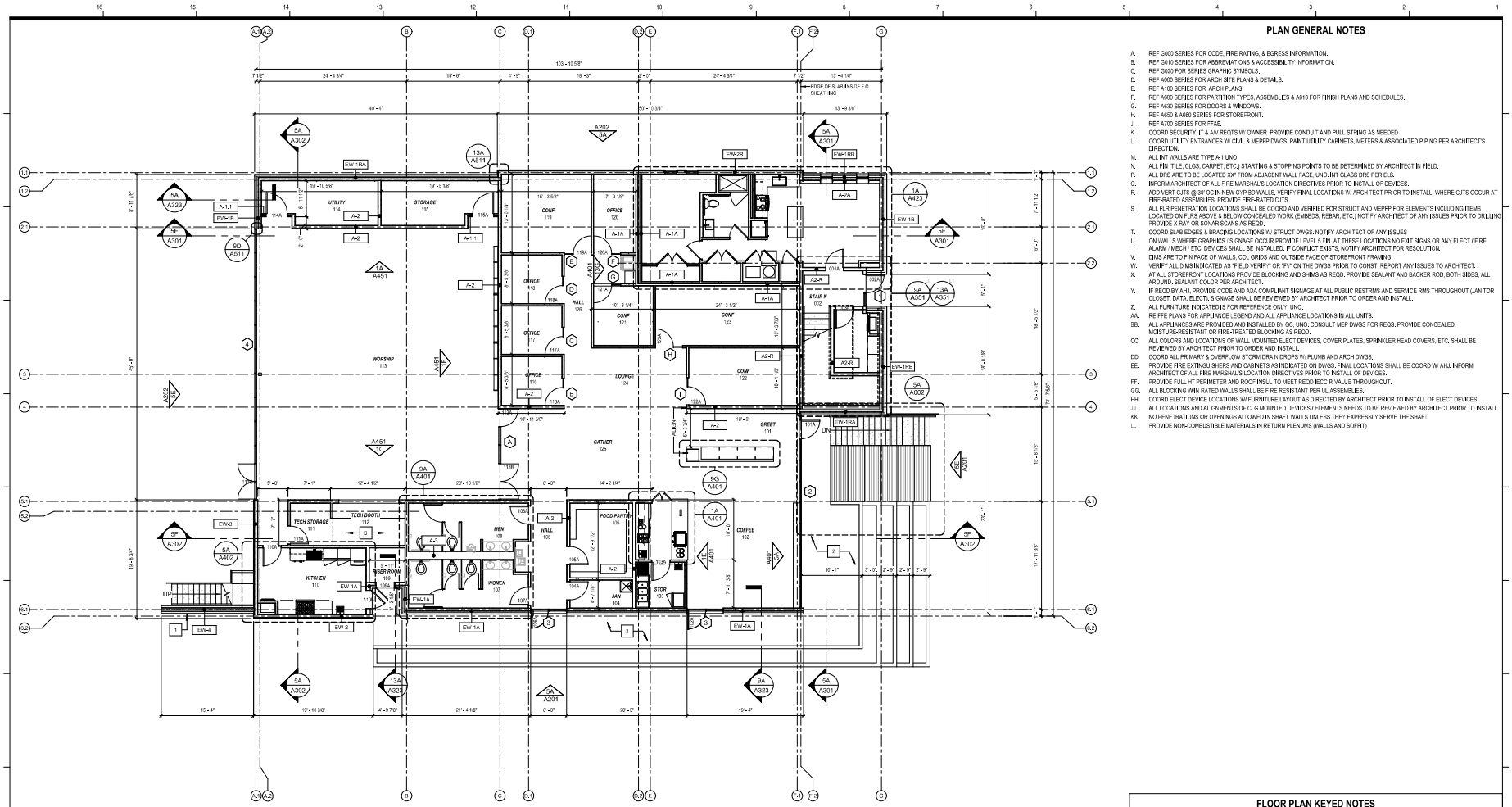

PLAN GENERAL NOTES

A. REF G000 SERIES FOR CODE, FIRE RATING, & EGRESS INFORMATION.
B. REF G010 SERIES FOR ABBREVIATIONS & ACCESSIBILITY INFORMATION.
C. REF G020 FOR SERIES GRAPHIC SYMBOLS.
D. REF A000 SERIES FOR ARCH SITE PLANS & DETAILS.
E. REF A100 SERIES FOR ARCH PLANS
F. REF A600 SERIES FOR PARTITION TYPES, ASSEMBLIES & A610 FOR FINISH PLANS AND SCHEDULES.
G. REF A630 SERIES FOR DOORS & WINDOWS.
H. REF A650 & A660 SERIES FOR STOREFRONT.
J. REF A700 SERIES FOR FF&E.
K. COORD SECURITY, IT & A/V REQTS W/ OWNER. PROVIDE CONDUIT AND PULL STRING AS NEEDED.
L. COORD UTILITY ENTRANCES W/ CIVIL & MEPFP DWGS. PAINT UTILITY CABINETS, METERS & ASSOCIATED PIPING PER ARCHITECT'S DIRECTION.
M. ALL INT WALLS ARE TYPE A-1 UNO.
N. ALL FIN (TILE, CLGS, CARPET, ETC.) STARTING & STOPPING POINTS TO BE DETERMINED BY ARCHITECT IN FIELD.
P. ALL DRS ARE TO BE LOCATED XX" FROM ADJACENT WALL FACE, UNO. INT GLASS DRS PER ELIS
Q. INFORM ARCHITECT OF ALL FIRE MARSHALS LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
R. ADD VERT CJTS @ 30' OC IN NEW GYP BD WALLS. VERIFY FINAL LOCATIONS W/ ARCHITECT PRIOR TO INSTALL. WHERE CJTS OCCUR AT FIRE-RATED ASSEMBLIES, PROVIDE FIRE-RATED CJTS.
S. ALL PLR PENETRATION LOCATIONS SHALL BE COORD AND VERIFIED FOR STRUCT AND MEPFP FOR ELEMENTS INCLUDING ITEMS LOCATED ON FLRS ABOVE & BELOW CONCEALED WORK (EMBEDS, REBAR, ETC.) NOTIFY ARCHITECT OF ANY ISSUES PRIOR TO DRILLING. PROVIDE X-RAY OR SONAR SCANS AS REQD.
T. COORD SLAB EDGES & BRACING LOCATIONS W/ STRUCT DWGS. NOTIFY ARCHITECT OF ANY ISSUES
U. ON WALLS WHERE GRAPHICS / SIGNAGE OCCUR PROVIDE LEVEL 5 FIN. AT THESE LOCATIONS NO EXIT SIGNS OR ANY ELECT / FIRE ALARM / MECH / ETC. DEVICES SHALL BE INSTALLED. IF CONFLICT EXISTS, NOTIFY ARCHITECT FOR RESOLUTION.
V. DIMS ARE TO FIN FACE OF WALLS, COL GRIDS AND OUTSIDE FACE OF STOREFRONT FRAMING.
W. VERIFY ALL DIMS INDICATED AS "FIELD VERIFY" OR "FV" ON THE DWGS PRIOR TO CONST. REPORT ANY ISSUES TO ARCHITECT.
X. AT ALL STOREFRONT LOCATIONS PROVIDE BLOCKING AND SHIMS AS REQD. PROVIDE SEALANT AND BACKER ROD, BOTH SIDES, ALL AROUND. SEALANT COLOR PER ARCHITECT.
Y. IF REQD BY AHJ, PROVIDE CODE AND ADA COMPLIANT SIGNAGE AT ALL PUBLIC RESTRMS AND SERVICE RMS THROUGHOUT (JANITOR CLOSET, DATA, ELECT), SIGNAGE SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
Z. ALL FURNITURE INDICATED IS FOR REFERENCE ONLY, UNO.
AA. RE FFE PLANS FOR APPLIANCE LEGEND AND ALL APPLIANCE LOCATIONS IN ALL UNITS.
BB. ALL APPLIANCES ARE PROVIDED AND INSTALLED BY GC, UNO. CONSULT MEP DWGS FOR REQS. PROVIDE CONCEALED, MOISTURE-RESISTANT OR FIRE-TREATED BLOCKING AS REQD.
CC. ALL COLORS AND LOCATIONS OF WALL MOUNTED ELECT DEVICES, COVER PLATES, SPRINKLER HEAD COVERS, ETC. SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
DD. COORD ALL PRIMARY & OVERFLOW STORM DRAIN DROPS W/ PLUMB AND ARCH DWGS.
EE. PROVIDE FIRE EXTINGUISHERS AND CABINETS AS INDICATED ON DWGS. FINAL LOCATIONS SHALL BE COORD W/ AHJ. INFORM ARCHITECT OF ALL FIRE MARSHALS LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
FF. PROVIDE FULL HT PERIMETER AND ROOF INSUL TO MEET REQD IECC R-VALUE THROUGHOUT.
GG. ALL BLOCKING WITH RATED WALLS SHALL BE FIRE RESISTANT PER UL ASSEMBLIES.
HH. COORD ELECT DEVICE LOCATIONS W/ FURNITURE LAYOUT AS DIRECTED BY ARCHITECT PRIOR TO INSTALL OF ELECT DEVICES.
JJ. ALL LOCATIONS AND ALIGNMENTS OF CLG MOUNTED DEVICES / ELEMENTS NEEDS TO BE REVIEWED BY ARCHITECT PRIOR TO INSTALL.
KK. NO PENETRATIONS OR OPENINGS ALLOWED IN SHAFT WALLS UNLESS THEY EXPRESSLY SERVE THE SHAFT.
LL. PROVIDE NON-COMBUSTIBLE MATERIALS IN RETURN PLENUMS (WALLS AND SOFFIT).

FLOOR PLAN KEYED NOTES

#	DESCRIPTION
1	BRICK SITE WALL
2	CONCRETE PATIO.
3	RAISED FLOOR IN "TECH BOOTH. FRAME AS NEEDED USING 2X WOOD MEMBERS, 24" APF, COVER WITH 3/4" PLYWOOD SHEATHING

LEVEL 1 - FLOOR PLAN
1/8" = 1'-0"

5A

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FLOOR PLAN - LEVEL 1

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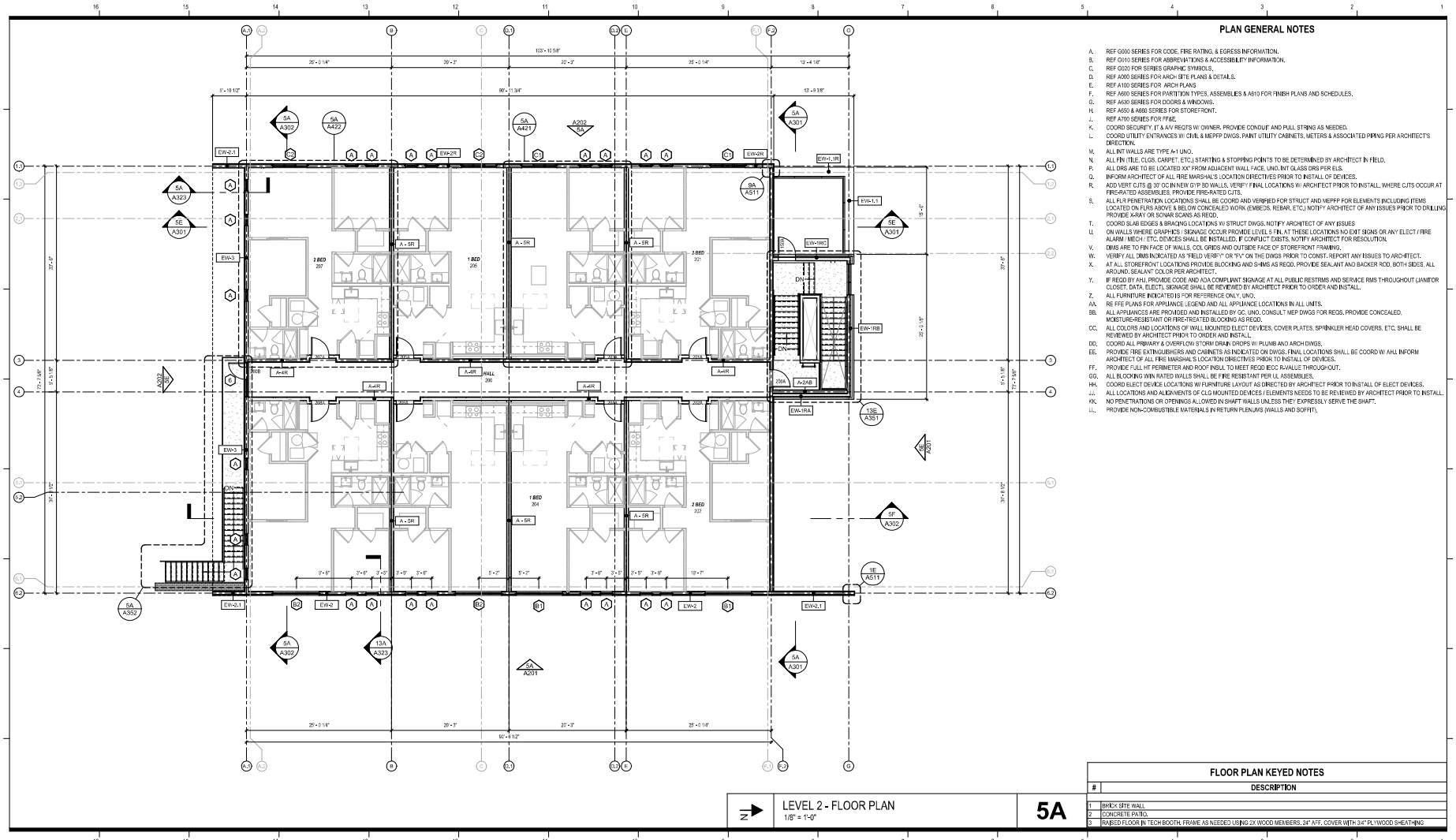

PLAN GENERAL NOTES

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M. ALL INT WALLS ARE TYPE A-1 UNO.
N. ALL FIN (TILE, CLGS, CARPET, ETC.) STARTING & STOPPING POINTS TO BE DETERMINED BY ARCHITECT IN FIELD.
P. ALL DRS ARE TO BE LOCATED XX" FROM ADJACENT WALL FACE, UNO. INT GLASS DRS PER ELS.
Q. INFORM ARCHITECT OF ALL FIRE MARSHALS LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
R. ADD VERT CJTS @ 30' OC IN NEW GYP BD WALLS. VERIFY FINAL LOCATIONS W/ ARCHITECT PRIOR TO INSTALL. WHERE CJTS OCCUR AT FIRE-RATED ASSEMBLIES, PROVIDE FIRE-RATED CJTS.
S. ALL PLR PENETRATION LOCATIONS SHALL BE COORD AND VERIFIED FOR STRUCT AND MEPFP FOR ELEMENTS INCLUDING ITEMS LOCATED ON FLRS ABOVE & BELOW CONCEALED WORK (EMBEDS, REBAR, ETC.) NOTIFY ARCHITECT OF ANY ISSUES PRIOR TO DRILLING. PROVIDE X-RAY OR SONAR SCANS AS REQD.
T. COORD SLAB EDGES & BRACING LOCATIONS W/ STRUCT DWGS. NOTIFY ARCHITECT OF ANY ISSUES
U. ON WALLS WHERE GRAPHICS / SIGNAGE OCCUR PROVIDE LEVEL 5 FIN. AT THESE LOCATIONS NO EXIT SIGNS OR ANY ELECT / FIRE ALARM / MECH / ETC. DEVICES SHALL BE INSTALLED. IF CONFLICT EXISTS, NOTIFY ARCHITECT FOR RESOLUTION.
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X. AT ALL STOREFRONT LOCATIONS PROVIDE BLOCKING AND SHIMS AS REQD. PROVIDE SEALANT AND BACKER ROD, BOTH SIDES, ALL AROUND. SEALANT COLOR PER ARCHITECT.
Y. IF REQD BY AHJ, PROVIDE CODE AND ADA COMPLIANT SIGNAGE AT ALL PUBLIC RESTRMS AND SERVICE RMS THROUGHOUT (JANITOR CLOSET, DATA, ELECT), SIGNAGE SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
Z. ALL FURNITURE INDICATED IS FOR REFERENCE ONLY, UNO.
AA. RE FFE PLANS FOR APPLIANCE LEGEND AND ALL APPLIANCE LOCATIONS IN ALL UNITS.
BB. ALL APPLIANCES ARE PROVIDED AND INSTALLED BY GC, UNO. CONSULT MEP DWGS FOR REQS. PROVIDE CONCEALED, MOISTURE-RESISTANT OR FIRE-TREATED BLOCKING AS REQD.
CC. ALL COLORS AND LOCATIONS OF WALL MOUNTED ELECT DEVICES, COVER PLATES, SPRINKLER HEAD COVERS, ETC. SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
DD. COORD ALL PRIMARY & OVERFLOW STORM DRAIN DROPS W/ PLUMB AND ARCH DWGS.
EE. PROVIDE FIRE EXTINGUISHERS AND CABINETS AS INDICATED ON DWGS. FINAL LOCATIONS SHALL BE COORD W/ AHJ. INFORM ARCHITECT OF ALL FIRE MARSHALS LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
FF. PROVIDE FULL HT PERIMETER AND ROOF INSUL TO MEET REQD IECC R-VALUE THROUGHOUT.
GG. ALL BLOCKING WIN RATED WALLS SHALL BE FIRE RESISTANT PER UL ASSEMBLIES.
HH. COORD ELECT DEVICE LOCATIONS W/ FURNITURE LAYOUT AS DIRECTED BY ARCHITECT PRIOR TO INSTALL OF ELECT DEVICES.
JJ. ALL LOCATIONS AND ALIGNMENTS OF CLG MOUNTED DEVICES / ELEMENTS NEEDS TO BE REVIEWED BY ARCHITECT PRIOR TO INSTALL.
KK. NO PENETRATIONS OR OPENINGS ALLOWED IN SHAFT WALLS UNLESS THEY EXPRESSLY SERVE THE SHAFT.
LL. PROVIDE NON-COMBUSTIBLE MATERIALS IN RETURN PLENUMS (WALLS AND SOFFIT).

FLOOR PLAN KEYED NOTES

#	DESCRIPTION
1	BRICK SITE WALL
2	CONCRETE PATIO.
3	RAISED FLOOR IN TECH BOOTH. FRAME AS NEEDED USING 2X WOOD MEMBERS, 24" AFF. COVER WITH 3/4" PLYWOOD SHEATHING

LEVEL 2 - FLOOR PLAN
1/8" = 1'-0"

5A

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FLOOR PLAN - LEVEL 2

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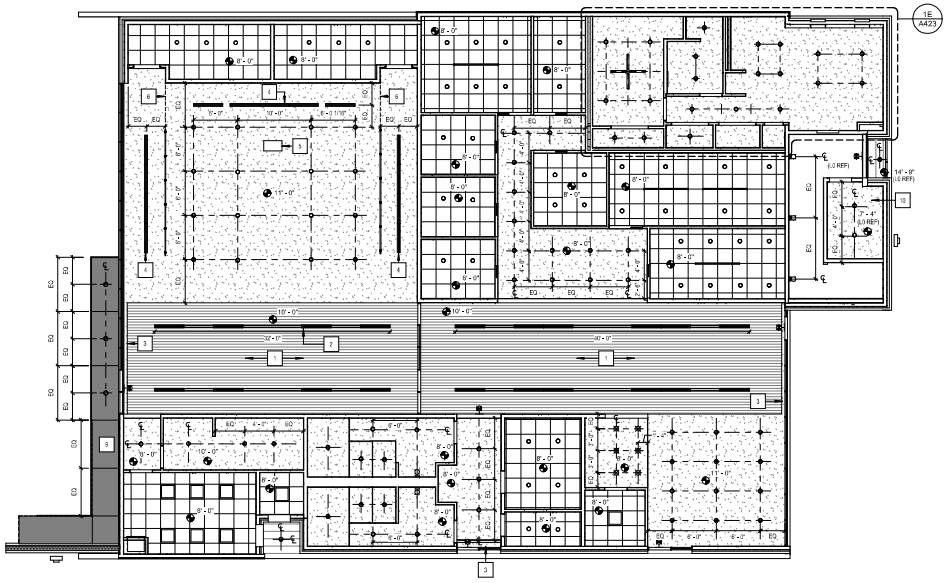

REFLECTED CEILING PLAN GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHED THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. COORD SECURITY, IT & A/V REQS W/ OWNER. PROVIDE CONDUIT AND PULL STRING AS NEEDED, A/V TBD.
C. INFORM ARCHITECT OF ALL FIRE MARSHAL'S LOCATION DIRECTIVES PRIOR TO INSTALL OF DEVICES.
D. ADD HORIZ. CJS @ 30' O.C. IN NEW GYP BD CLGS. VERIFY FINAL LOCATIONS W/ ARCHITECT PRIOR TO INSTALL. WHERE CJTS OCCUR AT FIRE-RATED ASSEMBLIES, PROVIDE FIRE-RATED CJTS.
E. ALL FLR PENETRATION LOCATIONS SHALL BE COORD AND FV FOR STRUCT AND MEPFP FOR ELEMENTS INCLUDING ITEMS LOCATED ON FLRS ABOVE & BELOW CONCEALED WORK (EMBEDS, REBAR, ETC.) NOTIFY ARCHITECT OF ANY ISSUES PRIOR TO DRILLING. PROVIDE X-RAY OR SONAR SCANS AS REQD.
F. ALL INT CLNGS TO BE TYPE 'XXX', UNO.
G. RE A000 SERIES FOR FLR, WALL AND CLG TYPES.
H. RE A600 DWG SERIES FOR FIN SCHED.
J. VERIFY ALL DIMS INDICATED AS "FIELD VERIFY" OR "FV" ON THE DWGS PRIOR TO CONST. REPORT ANY ISSUES TO ARCHITECT.
K. COORD ALL PRIMARY AND OVERFLOW STORM DRAIN DROPS W/ PLUMB AND ARCH DWGS.
L. ALL BLOCKING WIN RATED CLGS SHALL BE FIRE RESISTANT PER UL ASSEMBLIES.
M. NO PENETRATIONS OR OPENINGS ALLOWED IN SHAFT WALLS UNLESS THEY EXPRESSLY SERVE THE SHAFT.
N. PROVIDE NON-COMBUSTIBLE MATERIALS IN RETURN PLENUMS (WALLS AND SOFFIT).
P. ALL FIN (TILE, CLGS, CARPET, ETC.) STARTING & STOPPING POINTS TO BE DETERMINED BY ARCHITECT IN FIELD.
Q. MAINTAIN ALL REQ FIRE RATINGS AT WALLS, DRS, STAIRWELLS, CLG AND FLR ASSEMBLIES WHERE OCCURS.
R. 'OTS' = OPEN TO STRUCTURE. PT PER SCHED.
S. ALL WIRING AND CABLING TO BE IN HARD CONDUIT IN AREAS EXPOSED TO STRUCTURE, MC CABLING NOT ACCEPTABLE.
T. PROVIDE ACOUSTICAL BATT INSUL ABOVE ALL BEDRM, BATHRM, CONFERENCE RMS AND OFFICES (WHERE OCCURS) HARD LID CLGS.
U. ALL GYP BD SOFFITS SHALL BE PTD PER SCHED.
V. ACCESS SHALL BE PROVIDED FOR INSTALL AND MAINTENANCE OF ABOVE CLG ELEMENTS. LOCATIONS AND TYPES OF ACCESS PNLS SHALL BE COORD W/ OTHER TRADES AND REVIEWED BY THE ARCHITECT PRIOR TO ORDER AND INSTALL.
W. SUBMIT A FULLY COORD AND DIN RCP INDICATING THE PLACEMENT OF ALL LIGHT FIXTURES, SPEAKERS, FIRE LIFE SAFETY ELEMENTS, ETC. WHETHER INDICATED ON NOT FOR ARCHITECTS REVIEW. PROVIDE SHOP DWG SHOWING SPECIFIC, DIM LOCATIONS OF EA ITEM.
X. ALL LOCATIONS AND ALIGNMENTS OF CLNG MOUNTED DEVICES / ELEMENTS NEEDS TO BE REVIEWED BY ARCHITECT PRIOR TO INSTALL.
Y. ALL LIGHT FIXTURE DIMS ARE TO THE CTR LINE, UNO.
Z. REMOVE ALL MANUF TAGS FROM FIXTURES. DO NOT REMOVE UL LABELS.
AA. PROVIDE EXIT SIGNS PER ELECT AND ALL ALIGNMENT TO BE VERIFIED W/ ARCHITECT PRIOR TO INSTALL.
BB. ALL SPRINKLER HEADS SHALL BE CONCEALED TYPE WITH HARD LID CLGS. COORD COLOR AND LOCATION W/ ARCHITECT PRIOR TO ORDER AND INSTALL.
CC. CONTACT ARCHITECT IF THERE IS A DISCREPANCY BETWEEN ELECT LIGHTING PLAN AND ARCHITECTURAL RCP.
DD. ALL COLORS OF CLG MOUNTED ELECT DEVICES, COVER PLATES, SPRINKLER HEAD COVERS, ETC. SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL. ALL LIGHTS SHALL BE ACCESSIBLE FOR MAINTENANCE. NOTIFY ARCHITECT OF ANY ISSUES PRIOR TO ORDER AND INSTALL.
EE. ALL PENDANT FIXTURE MOUNTING HTS SHALL BE DETERMINED ON SITE BY THE ARCHITECT. FIXTURE MUST BE WORKING MOCK-UP TO DETERMINE FINAL MOUNTING HT.
FF. RE TO ELECT FOR ALL FIXTURE AND LAMPING SPECS.
GG. ALL PIPING, DUCTING, CONDUIT, FIRE PROTECTION PIPES, ETC, RUNS / LOCATIONS IN EXPOSED CLGS SHALL BE COORD W/ THE ARCHITECT PRIOR TO INSTALL. ALL NEW & EXIST PIPES, CONDUITS, DUCTWORK TO BE PTD, PT COLOR PER ARCHITECT.
HH. CORRIDOR LIGHT FIXTURES SHALL BE CTRD IN CORRIDOR AND ALIGNED PER ARCHITECT PRIOR TO INSTALL.
JJ. MOUNTING HT OF ALL EXPOSED DUCTWORK SHALL BE CONFIRMED W/ ARCHITECT IN FIELD PRIOR TO INSTALL.
KK. CLG FAN (WHERE OCCURS) SHALL BE CTRD IN RM, UNO. PROVIDE BLOCKING AS REQD.
LL. AT ALL LIGHT COVES (WHERE OCCURS) THERE SHALL BE NO VISIBLE OR SHADOW CASTING CONDUIT, DUCTING, PIPING, DEVICES, ETC, LOCATED WITH THEM.
MM. ALL NEW CLG DIFFUSER/ RETURN GRILLE LOCATIONS SHALL BE COORD W/ ARCHITECT PRIOR TO INSTALL. COLOR PER ARCHITECT.
NN. CLG ELS GIVEN REPRESENT APPROXIMATIONS BASED ON EXIST FIN FLR, ACTUAL CLG EL WILL DIFFER FROM LISTED. CONTACT ARCHITECT TO SET FINAL ELS.
PP. ONLY NEW SWITCHING AND ELECT OUTLETS SHOWN IN ARCH RCP. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALL / RELOCATION OF ELECT DEVICES. COORD MOUNTING HTS W/ ARCHITECT PRIOR TO INSTALL.
QQ. COORD LOCATION AND MOUNTING HT OF SUSPENDED PROJECTORS & AUDIO SPEAKERS W/ ARCHITECT PRIOR TO INSTALL. PROVIDE CONCEALED BLOCKING AS REQD.
RR. CIRCUITRY SHOWN FOR REFERENCE ONLY.
SS. DESIGN / BUILD MEPFP CONTRACTOR TO COORD ALL DIFFUSER, GRILLE, EXHAUST, LIGHTING, DEVICE, ETC. LOCATIONS W/ ARCHITECT PRIOR TO ORDER & INSTALL.
TT. DESIGN / BUILD ELECT CONTRACTOR TO REVIEW LIGHTING LAYOUT TO DETERMINE ANY UNDER AND OVER-LIT AREAS. THESE AREAS, IF ANY, TO BE RECONCILED W/ ARCHITECT PRIOR TO ORDER & INSTALL OF ASSOCIATED MATERIALS & FIXTURES.
UU. MAINTAIN ALL PLASTER CLGS, UNO. WHERE PLASTER CANNOT BE RESTORED TO A LIKE NEW CONDITION TO RECEIVE NEW PT FIN, DEMO AND REPLACE W/ CONVENTIONAL GYP BD FRAMED CONST.
VV. PATCH, REPAIR AND CLEAN ALL EXT AND INT LINTELS TO LIKE NEW CONDITION. RE STRUCT DWGS.
WW. MAINTAIN ALL EXISTING HISTORIC PLASTER WALL BASE, WD WDW SILL TRIM, TRANSOM WD TRIM, STAIR WD TRIM AND WD DR FRAMES / THROUGHOUT. WHERE DETERIORATED BEYOND REPAIR, REPLACE IN KIND TO MATCH HISTORIC CONFIGURATION AND PREP TO RECEIVE NEW PT FIN.

LINEAR PENDANT FIXTURE
2 X 2
6" RECESSED CAN
DECORATIVE FIXTURE
WALL MOUNTED EXIT SIGN
EXTERIOR GROUND MOUNTED LINEAR WALL WASH FIXTURE
WALL SURFACE MOUNTED FIXTURE
COVE LIGHT
ACT CEILING 2' X 2'
GYP. CEILING
M-2: PREFINISHED METAL PANEL, ALUCOBOND OR SIM
WD-1C WOOD PLANK SOFFIT (INTERIOR)
WD-2C: WOOD PLANK SOFFIT (EXTERIOR)
MORIN SOFFIT PANEL TO MATCH M-1

REFLECTED CEILING PLAN KEYED NOTES

#	DESCRIPTION
1	WOOD SLATS. WD-1 RE: FINISH LEGEND.
2	RECESSED FIXTURE CONTAINING LIGHT FIXTURES & MECH DIFFUSERS. SLOTS TO BE CENTERED ON SPACE AND WITHIN THE WIDTH OF A FULL WD-1C SOFFIT PANEL. COORDINATE ADDITIONAL DEVICE/FIRE SPRINKLER INTEGRATION IN SHOP DRAWINGS
3	CEILING PULLED 6" AWAY FROM GLASS. RE. DETAILS
4	CONTINUOUS LINEAR DIFFUSERS, RE. MECH FOR TOTAL LINEAR FEET
5	CEILING MOUNTED PROJECTOR
6	ALIGN TRACK LIGHTS WITH DOOR COVES
7	EXTERIOR COVE LIGHT, RE. DETAILS.
8	M-2: ALIGN PANEL JOINTS TO GUARDRAIL JOINTS. RE. ELEVATIONS
9	1-HR RATED ROOM. F-2 ASSEMBLY PER HORIZONTAL ASSEMBLIES
10	ROOF ACCESS

LEVEL 1 - REFLECTED CEILING PLAN
1/8" = 1'-0"

5A

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REFLECTED CEILING PLAN - LEVEL 1

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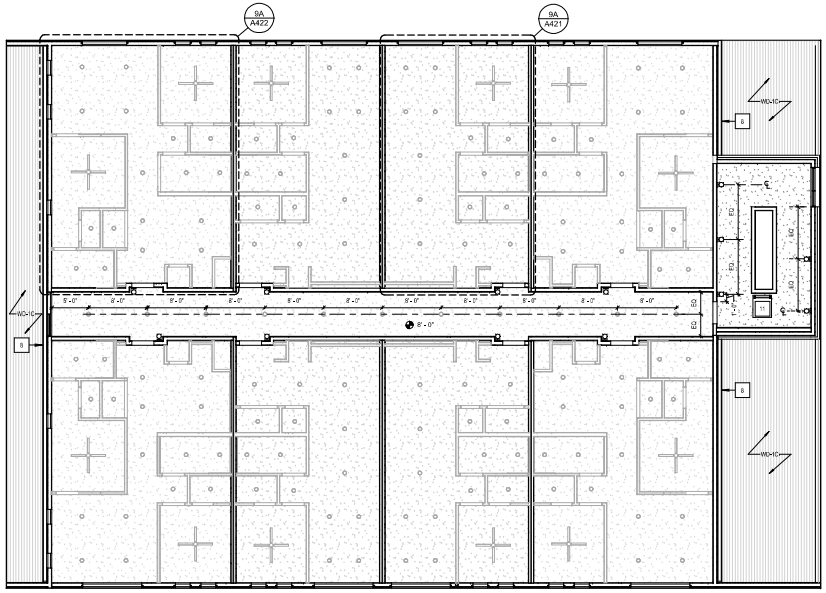
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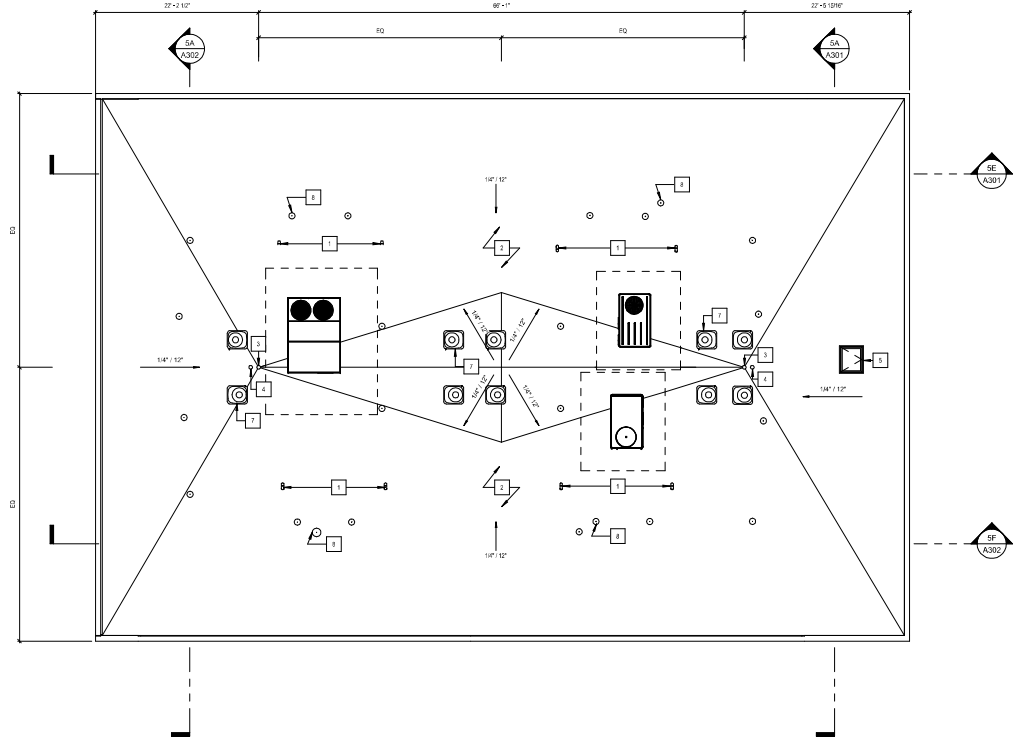

ROOF PLAN GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHED THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. ALL ELEMENTS INDICATED ON THE ROOF ARE DIAGRAMMATIC AND MUST BE COORD W/ MEPFP AND STRUCT ELEMENTS. ALL ROOF PENETRATION LOCATIONS SHALL BE COORD AND VERIFIED FOR STRUCT AND MEPFP ELEMENTS INCLUDING ITEMS LOCATED ON FLRS ABOVE & BELOW AND CONCEALED WORK (EMBEDS, REBAR, ETC.) NOTIFY ARCHITECT OF ANY ISSUES PRIOR TO DRILLING. PROVIDE X-RAY OR SONAR SCANS AS REQD.
C. LOCATE & COORD ALL PRIMARY & OVERFLOW STORM DRAIN DROPS W/ PLUMB DWGS. NOTIFY ARCHITECT OF ANY ROUTING ISSUES.
D. VERIFY ALL DIMS INDICATED AS "FIELD VERIFY" OR "FV" ON THE DWGS PRIOR TO CONST. REPORT ANY ISSUES TO ARCHITECT.
E. ROOFTOP EQUIP AND ELEMENTS REQUIRING MAINTENANCE / ACCESS SHALL NOT BE INSTALLED W/IN 10' OF THE PRIMARY ROOF EDGE. PROPOSED LOCATIONS FOR EQUIP AND OTHER ELEMENTS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW PRIOR TO INSTALL.
F. PROVIDE FLEXIBLE ROOF WALKWAY PADS AT ALL EQUIP AND ELEMENTS REQUIRING MAINTENANCE / ACCESS IN THE FORM OF A SECOND LAYER OF ROOF MEMBRANE IN A COLOR CONTRASTING (UNO) THE PRIMARY MEMBRANE (SUBMIT COLORS FOR REVIEW & SELECTION). PROVIDE 30"-W PATHS AND 48"-W PATHS AROUND EQUIP.
G. COORD UTILITY ENTRANCES W/ CIVIL & MEPFP DWGS.
H. COORD SECURITY, IT & A/V REQS W/ OWNER.
J. COORD SPRINKLER REQS AT CLEAR SPACE BETWEEN ROOF SURFACE AND DECK FRAMING. COORD AND CONFIRM COMPLIANCE OF SPRINKLER SYS W/ LOCAL AHJ AND NFPA 13.
K. PROVIDE FULL HT PERIMETER AND ROOF INSUL TO MEET REQD IECC R-VALUE THROUGHOUT.
L. GUTTER AND DS LOCATIONS TO BE COORD W/ CIVIL, MEP & FLR PLANS.
M. VERIFY SNOWGUARD SPACING AND LOCATION W/ AHJ.
N. VERIFY SLOPE W/ ARCHITECT IN AREAS NOT INDICATED.
P.

ROOF PLAN KEYED NOTES

#	DESCRIPTION
1	DRYER VENTS, RE. MEP
2	RT-1, TPO ROOF, RE. A602
3	INTERNAL ROOF DRAIN, RE. PLUMBING
4	OVERFLOW ROOF DRAIN, RE. PLUMBING
5	ROOF ACCESS HATCH, COORDINATE LOCKING WITH MANUFACTURER.
7	CONDENSING UNITS, RE. MEP
8	MECHANICAL VENTS, RE. MEP

ROOF PLAN
1/8" = 1'-0"

5A

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ROOF PLAN

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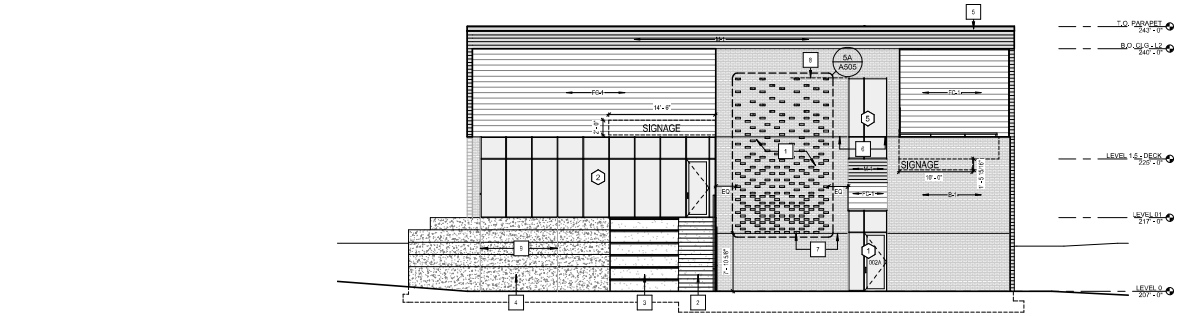
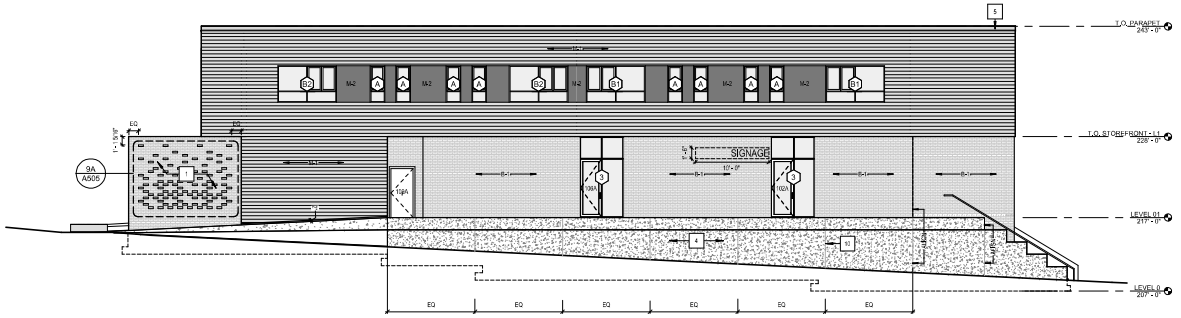


EXTERIOR ELEVATION 5E
1/8" = 1'-0"



EXTERIOR ELEVATION 5A
1/8" = 1'-0"

EXTERIOR ELEVATION GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHEDULE THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. RE TO CIVIL DWGS FOR ALL SITE RELATED FILL AND GRADING REQS.
C. RE A600 SERIES DWGS FOR DOOR, FRAME & HARDWARE SCHED.
D. RE A700 SERIES DWGS FOR WDW & STOREFRONT TYPES.
E. COORD UTILITY ENTRANCES W/ CIVIL & MEP DWGS. PT UTILITY CABINETS, METERS & ASSOCIATED PIPING PER ARCHITECT'S DIRECTION.
F. VERIFY ALL DIMS INDICATED AS "FIELD VERIFY" OR "FV" ON THE DWGS PRIOR TO CONST. REPORT ANY ISSUES TO ARCHITECT.
G. COORD ALL FDN DEPTHS AND LOCATIONS W/ STRUCT DWGS.
H. PROVIDE WATERPROOFING AT ALL AREAS WHERE SLAB IS BELOW GRADE. COORD W/ CIVIL AND STRUCT DWGS & SPECS.
J. ALL LIGHT FIXTURES LOCATED AT EXT OPENINGS WILL BE CTRD OVER THAT OPENING, UNO.
K. PROVIDE KEY ACCESS WALL HYDRANTS (WHERE OCCURS) PER PLUMB DWGS. COORD FINAL MOUNTING LOCATIONS W/ ARCHITECT.
L. PT ALL EXT HOLLOW MTL DRS AND FRAMES TO MATCH ADJACENT WALL MATERIAL, UNO.
M. ALL LOCATIONS AND ALIGNMENTS OF WALL MOUNTED DEVICES / ELEMENTS NEEDS TO BE REVIEWED BY ARCHITECT PRIOR TO INSTALL.
N. ALL FLASHINGS & MTL TRIM COLOR AROUND STOREFRONTS SHALL MATCH STOREFRONT. ALL FLASHINGS & MTL TRIM ADJACENT TO MTL PNL'S (WHERE OCCURS) SHALL MATCH THOSE MTL PNLS. NOTIFY ARCHITECT FOR ANY CLARIFICATIONS.
P. PROVIDE TEMPERED GLAZING WHERE REQD BY CODE.
Q. RE SPECS FOR HAZARDOUS MATERIALS REMEDIATION.
R. RE SPECS FOR HISTORIC TREATMENT PROCEDURES.
S. RE SPECS FOR CUTTING AND PATCHING.
T. SUBMIT EL SHOP DWGS INDICATING ALL PNL JT LAYOUTS.
U. ALL AREAS OF DAMAGED / SPALLED BRICK OR BLOCK (WHETHER SPECIFICALLY INDICATED OR NOT) SHALL BE PATCHED, RE-TUCKPOINTED AND REPLACED TO MATCH EXIST. REPLACMENT BRICKS OR BLOCK SHALL COME FROM SALVAGED STOCK. FULL BRICKS OR BLOCKS ONLY – NO CUT UNITS. ALL INSTALL SHALL BE KEYED IN, CLEAN ALL MASONRY PER SPECS AND AS OUTLINED IN THE NATIONAL PARK SERVICE PRESERVATION BRIEFS AND IN PREP FOR ANY NEW SCHED RIN.
V. GROUT SHALL BE REPLACED WHERE DAMAGED OR MISSING. GROUT MAKE-UP, COLOR AND TUCKPOINT TO MATCH EXIST. PROVIDE COLOR SAMPLES AND MOCK-UP TO ARCHITECT PRIOR TO PROCEEDING W/ INSTALL.
W. WHERE DISSIMILAR MTLS WILL CONTACT ONE ANOTHER OR CORROSIVE SUBSTRATES, PROTECT AGAINST GALVANIC REACTION BY PTG CONTACT SURFACES W/ BITUMINOUS COATING OR BY OTHER PERMANENT SEPARATION AS RECOMMENDED BY FABRICATOR OR MANUF OF DISSIMILAR MATERIALS.
X. WHERE INSTALLING MTL FLASHING DIRECTLY ON CEMENTITIOUS OR WD SUBSTRATES, INSTALL A COURSE OF FELT UNDERLAYMENT AND COVER W/ A SLIP SHT OR INSTALL A POLYETHYLENE UNDERLAYMENT.
Y. INSTALL SHT MTL TRIM W/O OIL CANNING, BUCKLING AND TOOL MARKS.
Z. INSTALL SHT MTL FLASHING AND TRIM TRUE TO LINE AND LEVELS INDICATED, PROVIDE UNIFORM, NEAT SEAMS W/ MIN EXPOSURE OF SOLDER, WELDS AND ELASTOMETRIC SEALANT.
AA. VERIFY PNL JTS W/ ARCHITECT PRIOR TO ORDER AND INSTALL. TRIM TO MATCH ADJACENT MTL PNL COLOR, UNO.
BB. INSTALL SHT MTL FLASHING AND TRIM TO FIT SUBSTRATES AND TO RESULT IN WATERTIGHT PERFORMANCE. VERIFY SHAPES AND DIMS OF SURFACES TO BE COVERED BEFORE FABRICATING SHT MTL..

B-1: STANDARD BRICK: CHEROKEE VELOUR PRIMROSE

M-1: PREFINISHED METAL PANEL SIDING, CONCEALED FASTENER, HORIZONTAL MORIN INTEGRITY XAS-16, 16" PANELS. STANDARD FINISH PER ARCHITECT. 22 GA, ST.L, BEARS COORDINATED WITH ARCHITECT IN SHOP DRAWINGS.

M-2: PREFINISHED METAL PANEL SIDING, ALUCOBLUX OR SIM.

FC-1: FIBER CEMENT SIDING, HORIZONTAL SHIPLAP HARDIE: ARTISAN SERIES, 10.25" PANEL 9" EXPOSURE

WD-HW: WOOD PLANK WALL (EXTERIOR)

EXTERIOR ELEVATION LEGEND

NOT TO SCALE

EXTERIOR BUILDING ELEVATION KEYED NOTES

#	DESCRIPTION
1	BRICK DETAILING. RE DETAILS.
2	CAST-IN-PLACE CONCRETE STAIRS CAST IN ARCHITECTURAL FORMS
3	CAST-IN-PLACE STADIUM SEATING CAST IN ARCHITECTURAL FORMS, W/ WOOD SEAT
4	CAST-IN-PLACE TIERED PLANTERS CAST IN ARCHITECTURAL FORMS
5	PREFINISHED SHEET METAL FLASHING, TO MATCH M-1, RE. DETAILS
6	BRICK CONTROL JOINT TO ALIGN WITH STOREFRONT MULLIONS AND TOP OF BRICK GUARDRAIL
7	BOTTOM OF BRICK TEXTURE TO ALIGN WITH BRICK CONTROL JOINT
8	TOP OF BRICK TEXTURE TO ALIGN WITH TOP OF WINDOW MULLION
9	CONCRETE CONTROL JOINTS, ALIGNED WITH STOREFRONT MULLIONS
10	CONCRETE CONTROL JOINTS

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EXTERIOR ELEVATIONS

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EXTERIOR ELEVATION GENERAL NOTES

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B. RE TO CIVIL DWGS FOR ALL SITE RELATED FILL AND GRADING REQS.
C. RE A800 SERIES DWGS FOR DOOR, FRAME & HARDWARE SCHED.
D. RE A700 SERIES DWGS FOR WDW & STOREFRONT TYPES.
E. COORD UTILITY ENTRANCES W/ CIVIL & MEP DWGS. PT UTILITY CABINETS, METERS & ASSOCIATED PIPING PER ARCHITECT'S DIRECTION.
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K. PROVIDE KEY ACCESS WALL HYDRANTS (WHERE OCCURS) PER PLUMB DWGS. COORD FINAL MOUNTING LOCATIONS W/ ARCHITECT.
L. PT ALL EXT HOLLOW MTL DRS AND FRAMES TO MATCH ADJACENT WALL MATERIAL, UNO.
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P. PROVIDE TEMPERED GLAZING WHERE REQD BY CODE.
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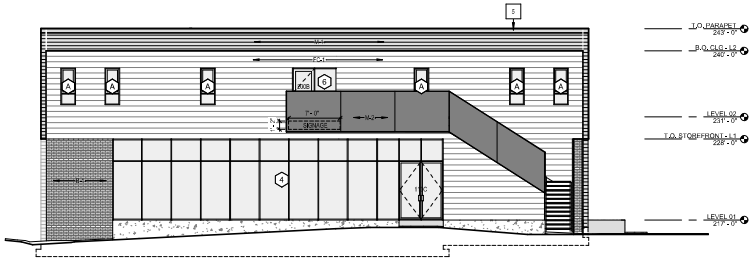
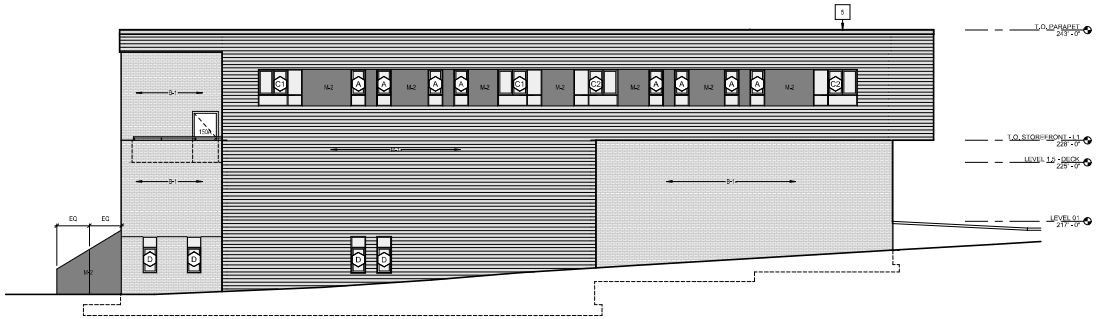


EXTERIOR ELEVATION
1/8" = 1'-0"
5E



EXTERIOR ELEVATION
1/8" = 1'-0"
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M-2: PREFINISHED METAL PANEL SIDING, ALUCOBLUX OR SIM.

FC-1: FIBER CEMENT SIDING, HORIZONTAL SHIPLAP HARDIE: ARTISAN SERIES, 10.25" PANEL, 9" EXPOSURE

WD-HW: WOOD PLANK WALL (EXTERIOR)

EXTERIOR ELEVATION LEGEND

NOT TO SCALE

EXTERIOR BUILDING ELEVATION KEYED NOTES

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7	BOTTOM OF BRICK TEXTURE TO ALIGN WITH BRICK CONTROL JOINT
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9	CONCRETE CONTROL JOINTS, ALIGNED WITH STOREFRONT MULLIONS
10	CONCRETE CONTROL JOINTS

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EXTERIOR ELEVATIONS

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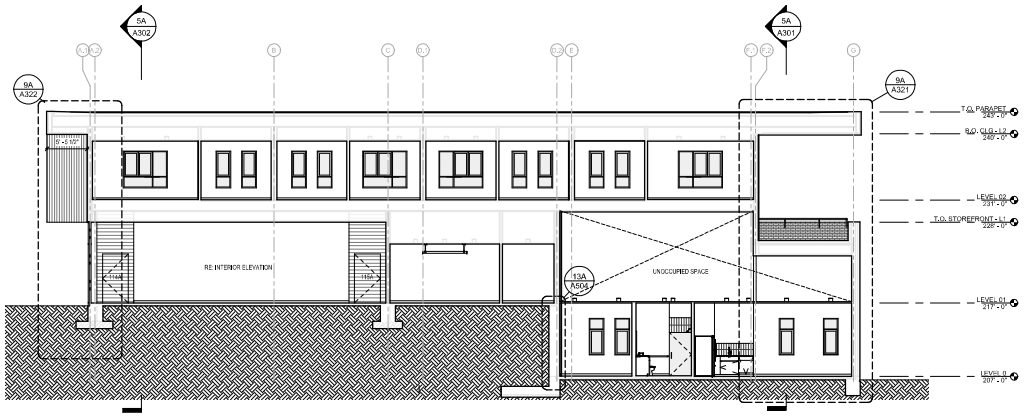
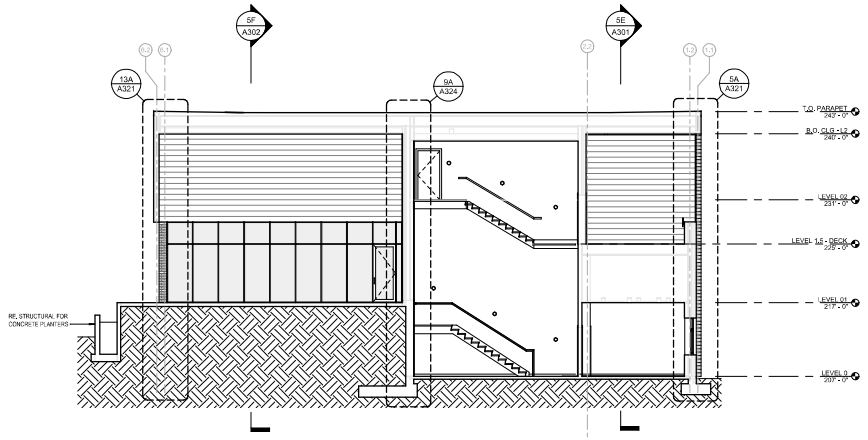


BUILDING SECTION
1/8" = 1'-0"
5E



BUILDING SECTION
1/8" = 1'-0"
5A

BUILDING SECTION GENERAL NOTES

A. ALL EXPOSED STRUCTURE AND SLAB EDGES SHALL HAVE CLEAN EDGES WHERE VISIBLE INSIDE THE FINISHED BLDG / SPACE OR THROUGH EXT GLAZING.
B. ALL CONC WALKS, FIN GRADES AND SLOPES SHALL POSITIVELY DRAIN AWAY FROM THE BLDG (ALL AROUND).
C. RE CIVIL DWGS FOR SITE WORK DESIGN.
D. RE LANDSCAPE DWGS FOR LANDSCAPE DESIGN.
E. RE STRUCT FOR ALL FTGS, FDNS, SLABS AND STL.
F. PROVIDE DRAIN TILE AND FILTER FABRIC AS REQD BY CIVIL, LANDSCAPING AND / OR STRUCT.
G. PROVIDE WATERPROOFING AT ALL FDNS / WALLS WHERE SLAB IS BELOW FIN GRADE. COORD W/ ARCHITECT AND STRUCT ENGINEER.
H. RE EXT ELS FOR INFO ON THE BEYOND CONDITIONS.
J. RE A700 SERIES DWGS FOR WDW & STOREFRONT TYPES.

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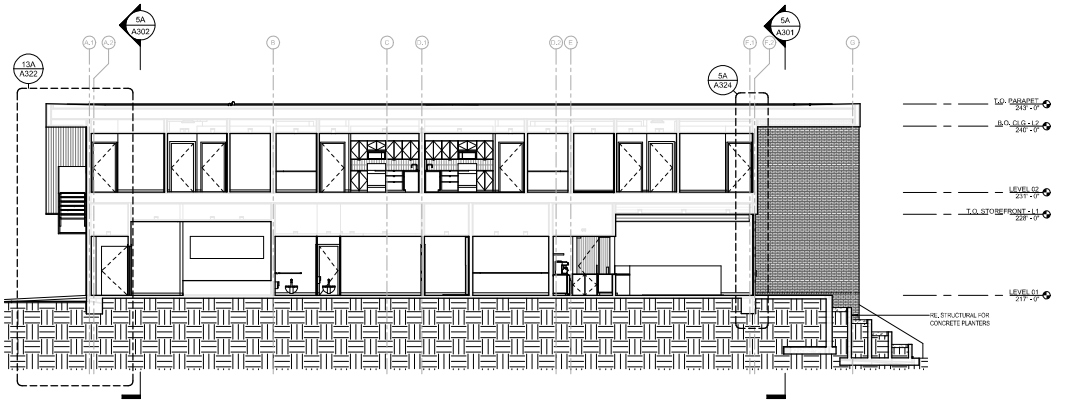
BUILDING SECTIONS

A301



BUILDING SECTION
1/8" = 1'-0"

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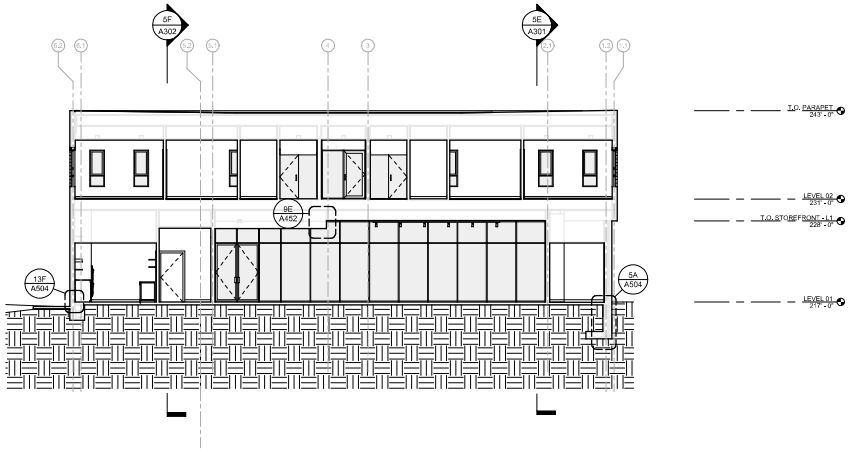

BUILDING SECTION
1/8" = 1'-0"

5A

BUILDING SECTION GENERAL NOTES

A. ALL EXPOSED STRUCTURE AND SLAB EDGES SHALL HAVE CLEAN EDGES WHERE VISIBLE INSIDE THE FINISHED BLDG / SPACE OR THROUGH EXT GLAZING.
B. ALL CONC WALKS, FIN GRADES AND SLOPES SHALL POSITIVELY DRAIN AWAY FROM THE BLDG (ALL AROUND).
C. RE CIVIL DWGS FOR SITE WORK DESIGN.
D. RE LANDSCAPE DWGS FOR LANDSCAPE DESIGN.
E. RE STRUCT FOR ALL FTGS, FDNS, SLABS AND STL.
F. PROVIDE DRAIN TILE AND FILTER FABRIC AS RECD BY CIVIL, LANDSCAPING AND / OR STRUCT.
G. PROVIDE WATERPROOFING AT ALL FDNS / WALLS WHERE SLAB IS BELOW FIN GRADE. COORD W/ ARCHITECT AND STRUCT ENGINEER.
H. RE EXT ELS FOR INFO ON THE BEYOND CONDITIONS.
J. RE A700 SERIES DWGS FOR WDW & STOREFRONT TYPES.

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BUILDING SECTIONS

A302

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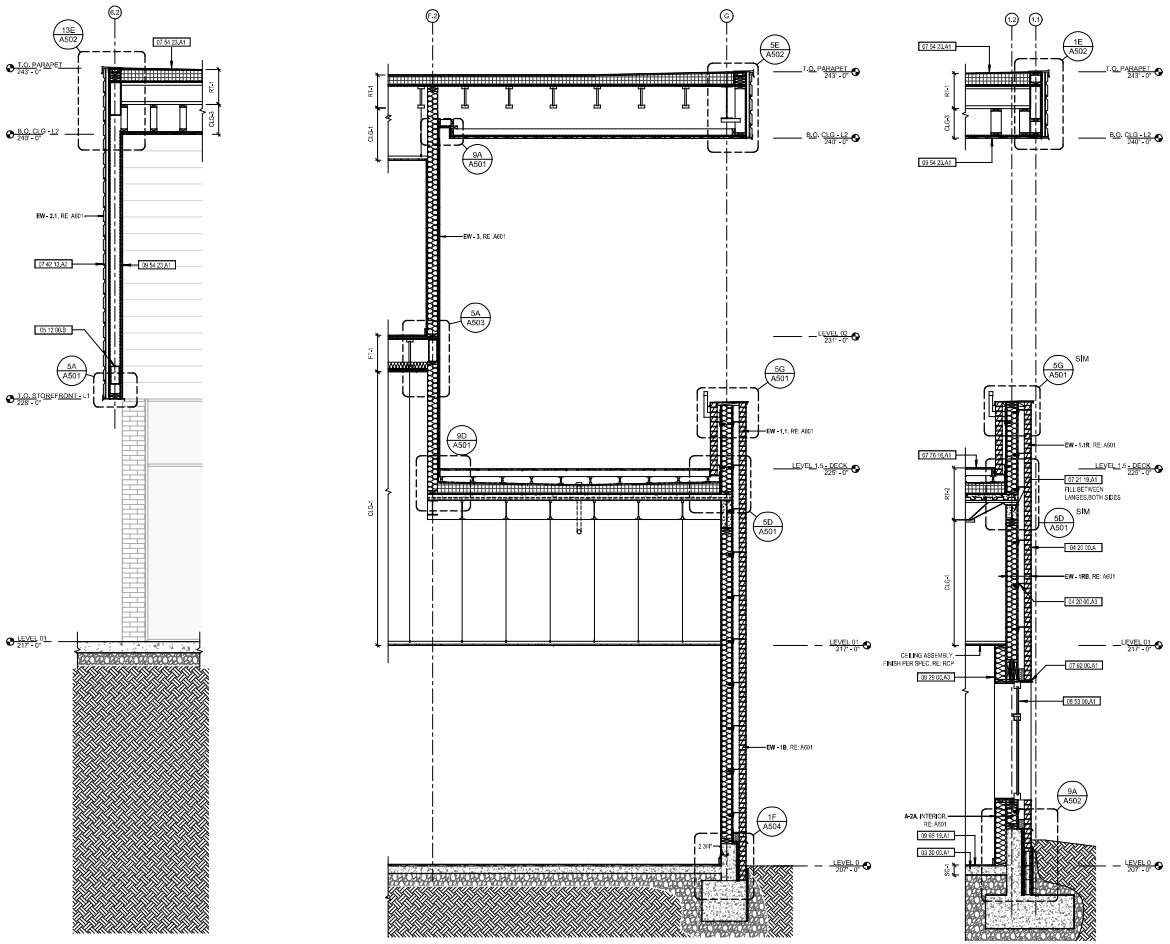

WALL SECTION 3/8" = 1'-0"	13A	WALL SECTION 3/8" = 1'-0"	9A	WALL SECTION 3/8" = 1'-0"	5A

KEYNOTES

NUMBER	DESCRIPTION
03 30 00.A1	CONCRETE SLAB ON GRADE, RE: STRUCT
04 20 00.A	BRICK, REF ELEVATIONS
04 21 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
05 12 00.B	STEEL BEAM, RE: STRUCT
07 21 19.A1	CLOSED CELL SPRAY FOAM INSULATION; RE SPEC
07 42 13.A2	MORIN METAL PANEL, RE, FINISH SCHEDULE AND SPEC
07 54 23.A1	TPO MEMBRANE ROOFING
07 62 00.A1	PREFINISHED SHEET METAL FLASHING, COLOR TO MATCH ADJACENT WINDOWS
07 76 16.A1	DECKING PLANKS ON RAISED PEDESTAL SYSTEM, RE: SPEC
08 53 00.A1	VINYL WINDOW, RE: SCHEDULE & SPEC
09 29 00.A3	5/8" GWB, PAINTED, FINISH PER SPEC AND LEGEND
09 54 23.A1	DIRECT ATTACH LINEAR METAL CEILING PANEL
09 65 19.A1	RESILIENT FLOORING, RE: FINISH PLAN AND LEGEND

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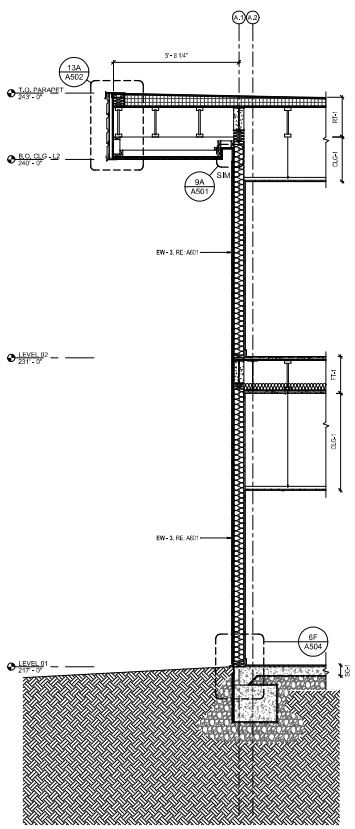
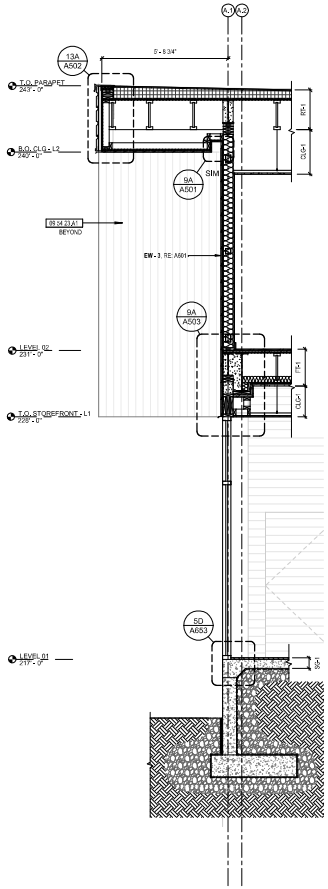
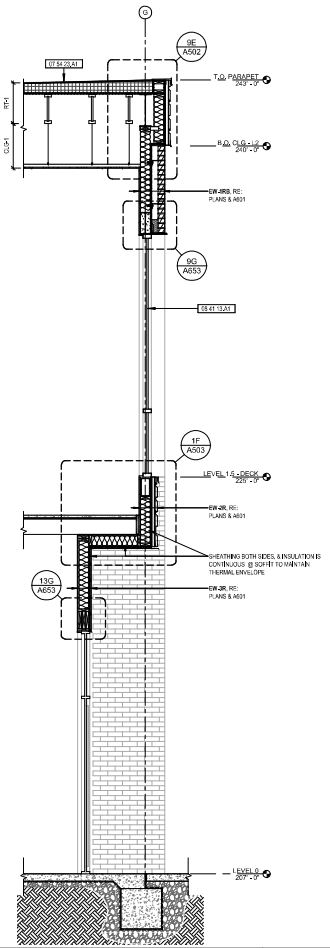
WALL SECTIONS

A321







WALL SECTION 3/8" = 1'-0"	13A	WALL SECTION 3/8" = 1'-0"	9A	WALL SECTION 3/8" = 1'-0"	5A

KEYNOTES

NUMBER	DESCRIPTION
07.54.23.A1	TPO MEMBRANE ROOFING
08.41.13.A1	EXTERIOR STOREFRONT, REF. EXTERIOR ELEVATIONS
09.54.23.A1	DIRECT ATTACH LINEAR METAL CEILING PANEL

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WALL SECTIONS

A322

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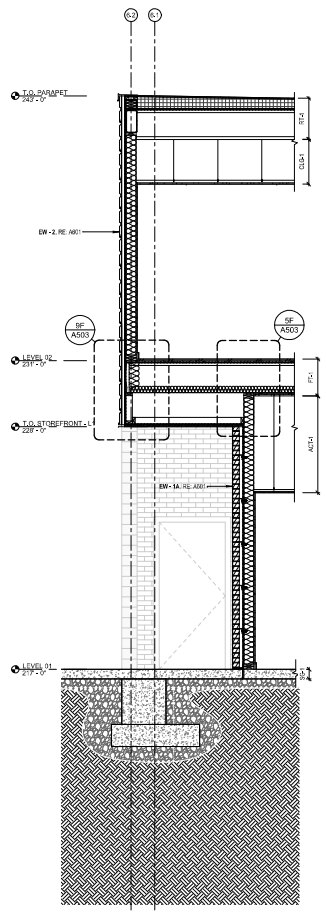
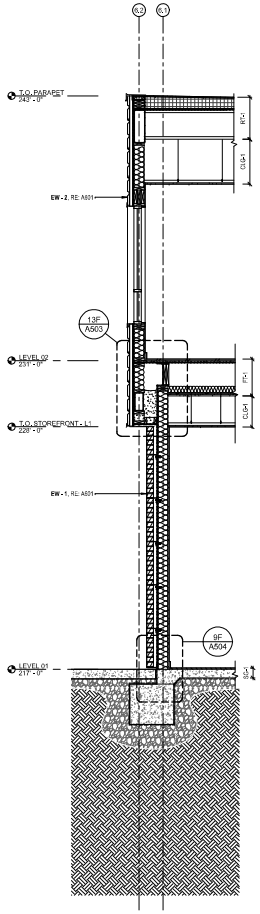


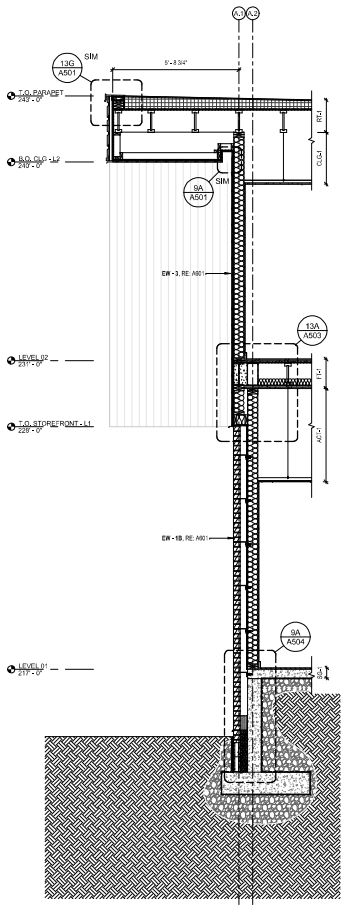
WALL SECTION
3/8" = 1'-0"

13A



WALL SECTION
3/8" = 1'-0"

9A



WALL SECTION
3/8" = 1'-0"

5A

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WALL SECTIONS

A323

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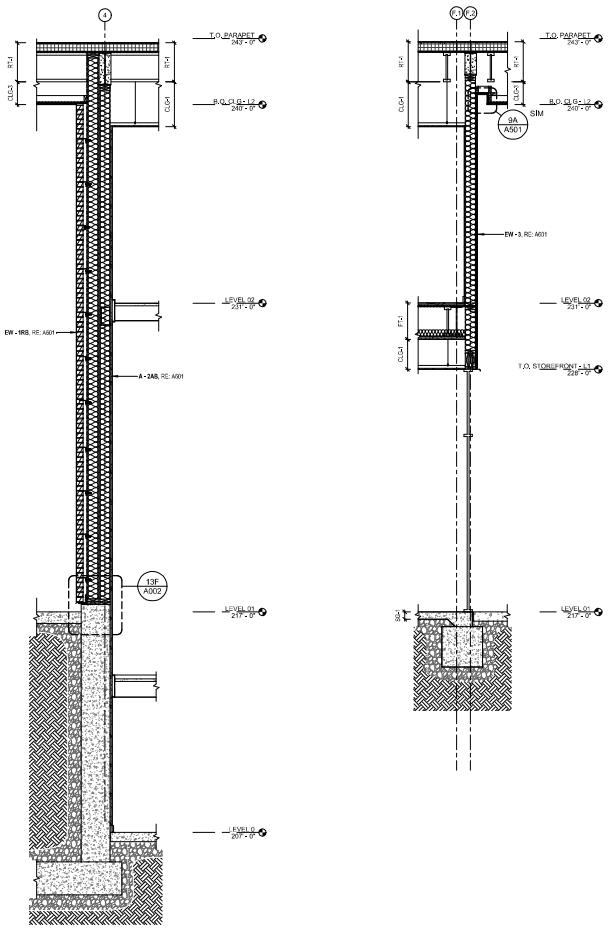

WALL SECTION
3/8" = 1'-0"
9A

WALL SECTION
3/8" = 1'-0"
5A

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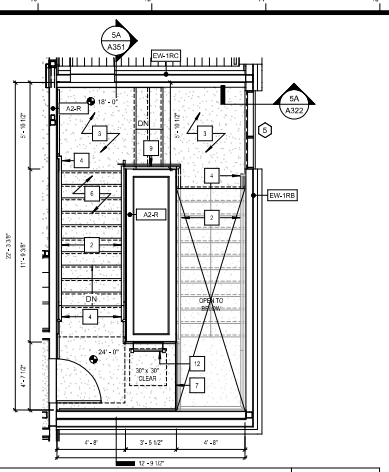
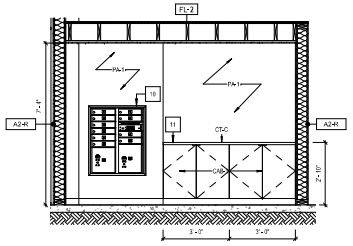
WALL SECTIONS

A324



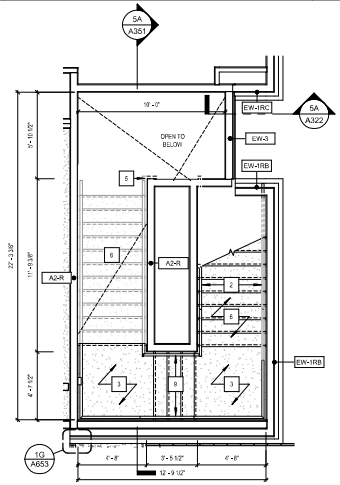
ENLARGED STAIR PLAN - L2
1/4" = 1'-0"
13E



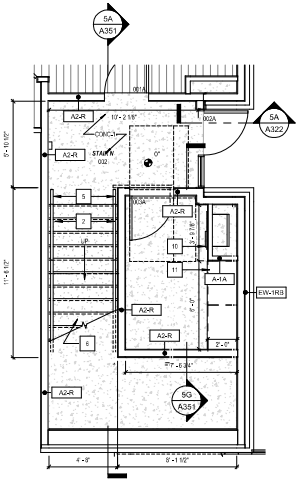
ENLARGED SECTION
3/8" = 1'-0"
5G

STAIR GENERAL NOTES

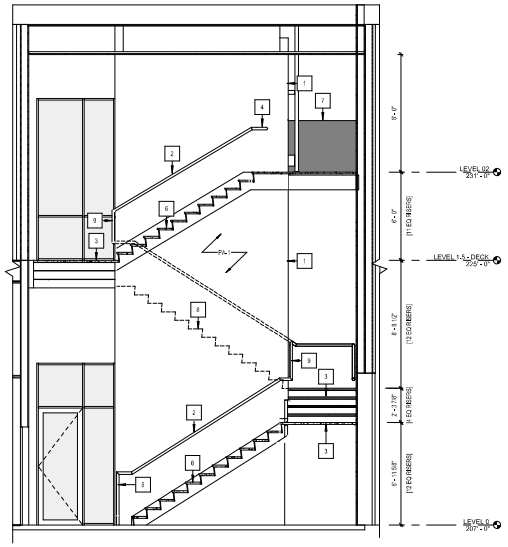
A. FV ALL OPENINGS AND HTS PRIOR TO FABRICATION AND INSTALL.
B. ALL STAIR COMPONENTS MUST BE ADA AND CODE COMPLIANT.
C. ALL RISERS TO BE UNIFORM HT. - 7" MAX.
D. ALL TREADS TO BE EQ DEPTH - 11" MIN.
E. PROVIDE 1/2" MAX RADIUS AT ALL STAIR NOSINGS, NOSINGS MUST BE SLIP-RESISTANT.
F. PROVIDE CONCEALED, FIRE TREATED (WHERE REQD) WD BLOCKING FOR HANDRAIL CONNECTIONS AT PARTITION WALLS.
G. RE: STRUCT DWGS FOR SLAB EDGES, STL CONNECTIONS, AND ANCHORAGE.
H. GRIND ALL WELDS AND BLEND ALL EDGES SMOOTH.
I. ALL STL MUST BE PRIMED AND READY FOR PT FIN, UNO.
K. PT ALL EXPOSED STL. COLOR PER ARCHITECT.
L. ALL RISERS SHALL BE CLOSED.
M. WALL TYPES INDICATED AT STAIR SHAFTS ARE CONT AT EA LEVEL.
N. COORD ALL REQS W/ STRUCT AND MEPFP DWGS & SPECS.



ENLARGED STAIR PLAN - L1
1/4" = 1'-0"
13A



ENLARGED STAIR PLAN - L0
1/4" = 1'-0"
9A



ENLARGED SECTION
1/4" = 1'-0"
5A

STAIR KEYED NOTES

#	DESCRIPTION
1	WALL PER PLANS
2	36" HIGH, 1 1/2" PAINTED STEEL HANDRAIL, WALL MOUNTED, COLOR PER ARCHITECT.
3	INTERMEDIATE STAIR LANDING - FRAMING PER STRUCTURAL
4	RETURN HANDRAIL INTO WALL
5	RETURN HANDRAIL TO FLOOR
6	CONCRETE-FILLED METAL PAN STAIR
7	42" STEEL PLATE GUARDRAIL
8	STAIR RUN BEYOND
9	CONTINUOUS HANDRAIL
10	USPS COMPLIANT FRONT LOAD MAILBOXES
11	MAIL COUNTER & STORAGE; RE: ELEVATION.
12	PROVIDE PERMANENT LADDER AS INDICATED. COORDINATE POSITION AND INSTALLATION WITH ROOF HATCH OVERHEAD FOR ROOF MAINTENANCE ACCESS ONLY.

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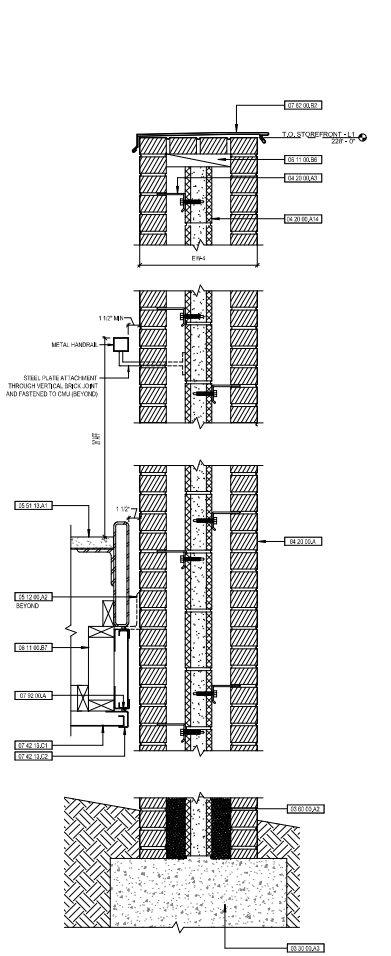
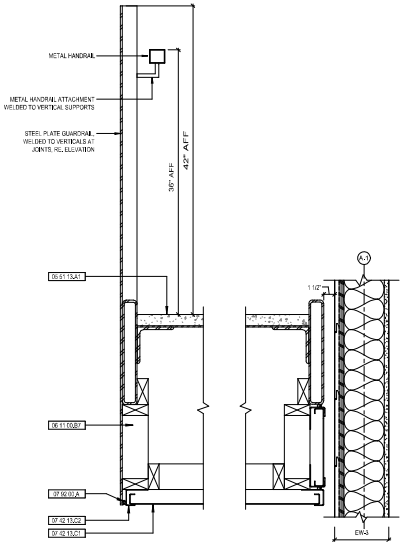
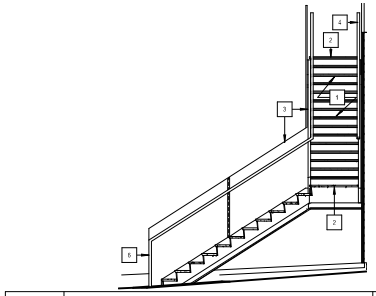
VERTICAL CIRCULATION

A351

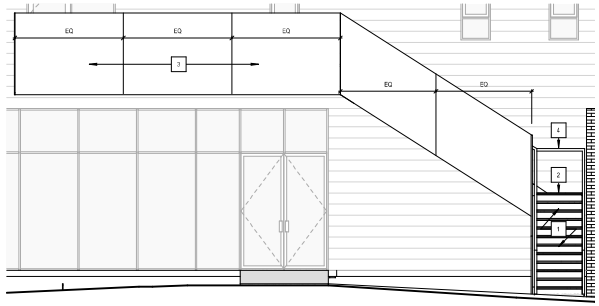


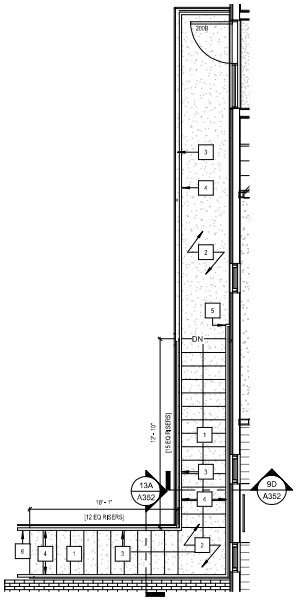


SECTION DETAIL
1 1/2" = 1'-0"
9D



ENLARGED SECTION
1/4" = 1'-0"
5G





KEYNOTES

NUMBER	DESCRIPTION
03 30 00.A3	CONCRETE FOUNDATION; RE: STRUCT
03 60 00.A2	GROUT W/ CAVITY
04 20 00.A	BRICK; REF ELEVATIONS
04 20 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
04 20 00.A14	
05 12 00.A2	STEEL ANGLE; RE: STRUCT
05 51 13.A1	METAL PAN STAIRS WITH CONCRETE FILL; RE: STRUCTURAL
06 11 00.B6	TREATED WOOD NAILER
06 11 00.B7	TREATED WOOD SOFFIT FUR DOWN
07 42 13.C1	ALUCOLUX FLAT METAL PANEL; RE: FINISH SCHEDULE AND SPEC
07 42 13.C2	ALUCOLUX TERMINATION FLASHING; RE: MANUFACTURER
07 62 00.B2	LOW PROFILE, PREFINISHED SHEET METAL COPING, COLOR TO MATCH M-1
07 92 00.A	CONTINUOUS SEALANT AND BACKER ROD

EXT STAIR KEYED NOTES

#	DESCRIPTION
1	METAL PAN STAIR
2	METAL PAN LANDING
3	STEEL PLATE GUARDRAIL, POWDERCOATED BLACK
4	STEEL HANDRAIL, CONTINUOUS AT INSIDE OF LANDING
5	RETURN HANDRAIL INTO WALL
6	RETURN HANDRAIL TO GROUND

SECTION DETAIL
1 1/2" = 1'-0"
13A

ENLARGED SECTION
1/4" = 1'-0"
9A

ENLARGED PLAN
1/4" = 1'-0"
5A

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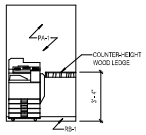
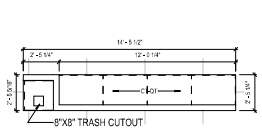
VERTICAL CIRCULATION

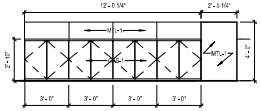
A352



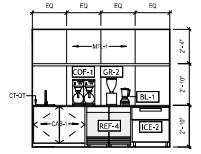
INTERIOR ELEVATION 1/4" = 1'-0"	13G



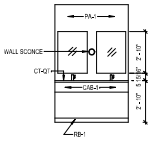
ENLARGED PLAN 1/4" = 1'-0"	9G



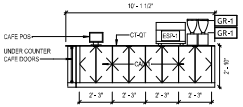
INTERIOR ELEVATION 1/4" = 1'-0"	5G



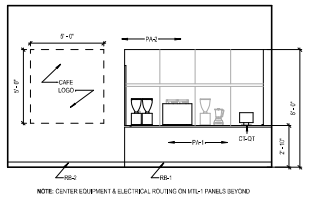
INTERIOR ELEVATION 1/4" = 1'-0"	1G



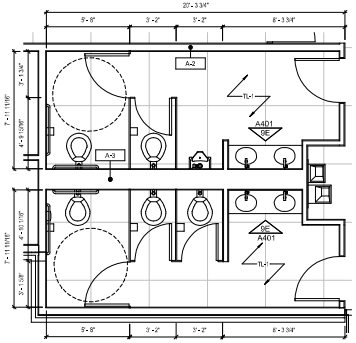
INTERIOR ELEVATION 1/4" = 1'-0"	9E



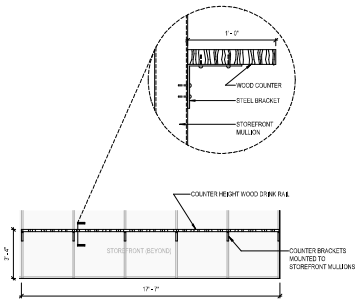
INTERIOR ELEVATION 1/4" = 1'-0"	5E



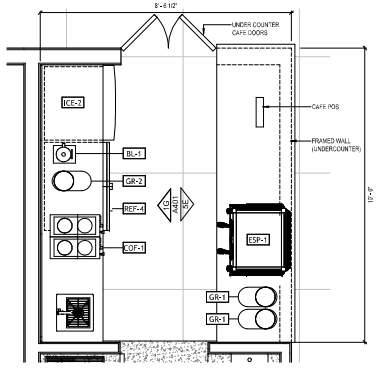
INTERIOR ELEVATION 1/4" = 1'-0"	1E



ENLARGED PLAN - LEVEL 1 RESTROOMS 1/4" = 1'-0"	9A



ENLARGED ELEVATION 1/4" = 1'-0"	5A



ENLARGED PLAN 1/2" = 1'-0"	1A

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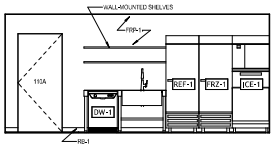
ENLARGED PLANS & ELEVATIONS

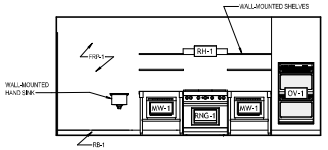
A401

ENLARGED PLAN GENERAL NOTES

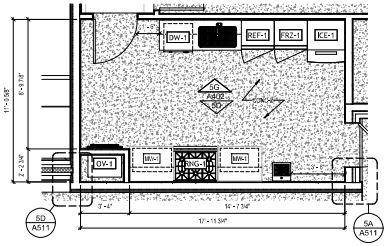
A. CABINETS TO COMPLY W/ THE KITCHEN CABINET MANUFACTURING ASSOCIATION (KCMA) QUALITY STANDARD A161.1 FOR CABINETS.
B. ALL CASEWORK SHALL HAVE CONCEALED HINGES AND SELF CLOSING EPOXY-COATED-MTL DRAWER GUIDES, DESIGNED TO PREVENT REBOUND WHEN DRAWERS ARE CLOSED W/ NYLON-TIRED, BALL-BEARING ROLLERS.
C. RE FIN LEGEND FOR CABINET PULL SELECTIONS.
D. RE PLUM DWGS AND SPECS FOR ALL FIXTURES.
E. FV ALL PLUMB ROUGH IN LOCATIONS FOR POTENTIAL EXIST STRUCT CONFLICTS. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALL.
E. INSTALL BLOCKING WIN BATHRM WALLS FOR FASTENING OF TOWEL BARS, TOILET PAPER HOLDERS, CURTAIN ROD, LIGHT FIXTURES (AS REQD), MIRRORS (AS REQD) AND ACCESSIBLE GRAB BARS.
F. INSTALL OF DEVICES ON TILE SHALL BE CTRD / EVENLY SPACED ON THE TILE IN ALL DIRECTIONS. VERIFY LOCATIONS W/ ARCHITECT PRIOR TO INSTALL.
G. RE FIN LEGEND FOR FIN MATERIALS.
H. ALL ACCESSORIES SHALL BE INSTALLED AND SEALED TO PROTECT STRUCT ELEMENTS FROM MOISTURE.
J. ALL BATHROOM ACCESSORIES SHALL BE CHROME WHERE APPLICABLE.
K. ALL BATHROOM ACCESSORIES SHALL BE BOBRICK OR REVIEWED EQ.
L. RE G000 SERIES FOR STANDARD ADA MOUNTING HTS.
M. ALL EXPOSED TILE EDGES TO RECEIVE AN ANODIZED SCHLUTER SHIENE STRIP PER SPECS.
N. RE INT ELS FOR ACCESSORY LOCATIONS.
P. PROVIDE EQ SPACED FILLER PNLS WHERE APPLICABLE IN EXIST LOCATIONS.



ENLARGED ELEVATION
1/4" = 1'-0"
5G



ENLARGED ELEVATION
1/4" = 1'-0"
5D



ENLARGED PLAN
1/4" = 1'-0"
5A

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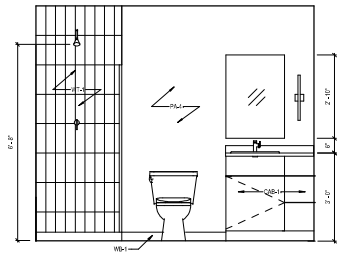
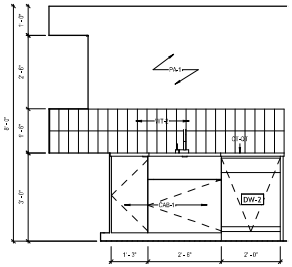
ENLARGED PLANS & ELEVATIONS

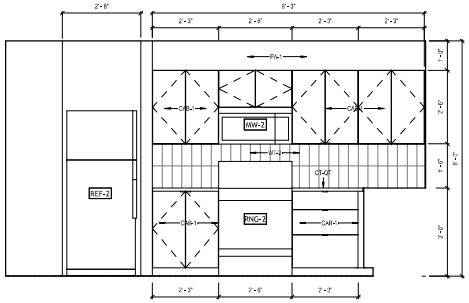
A402



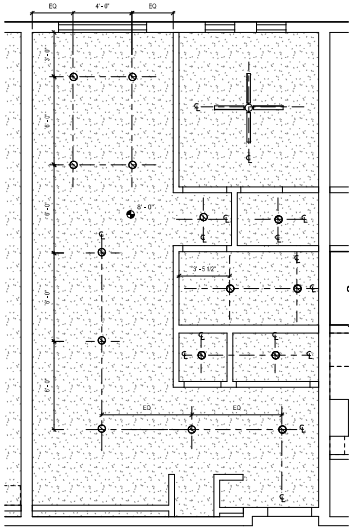
INTERIOR ELEVATION
1/2" = 1'-0"
13G



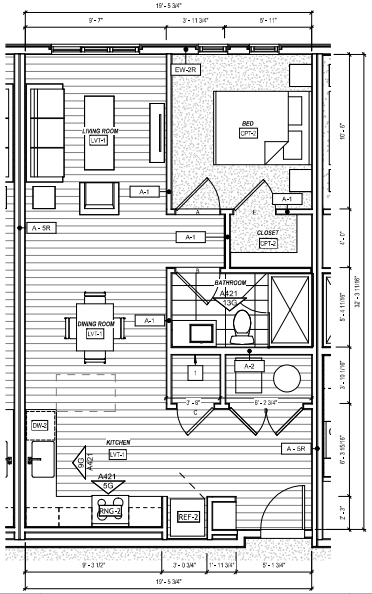
INTERIOR ELEVATION
1/2" = 1'-0"
9G



INTERIOR ELEVATION
1/2" = 1'-0"
5G



ENLARGED RCP
1/4" = 1'-0"
9A



ENLARGED PLAN
1/4" = 1'-0"
5A

UNIT KEYED NOTES	
#	DESCRIPTION
1	WASHER/DRYER HOOKUPS, RE, MEP.

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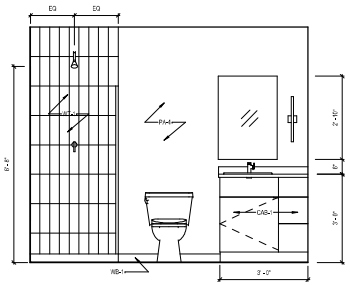
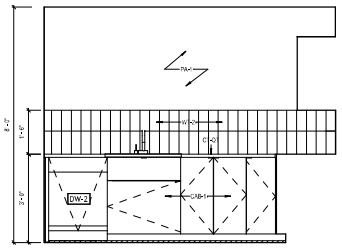
ENLARGED UNIT PLANS &
ELEVATIONS - 1 BED

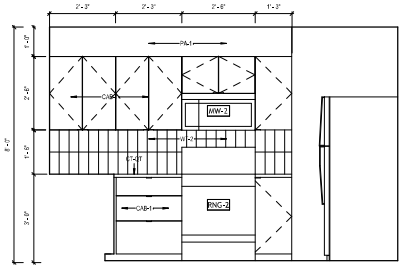
A421



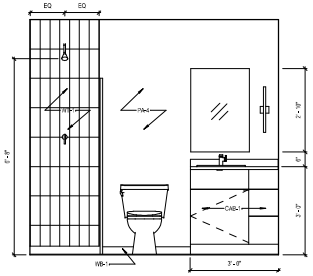
INTERIOR ELEVATION	13G



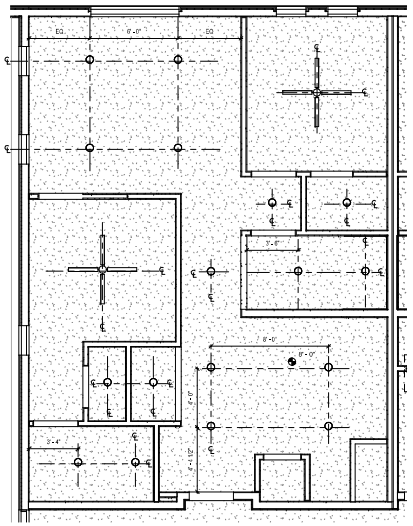
INTERIOR ELEVATION 1/2" = 1'-0"	9G



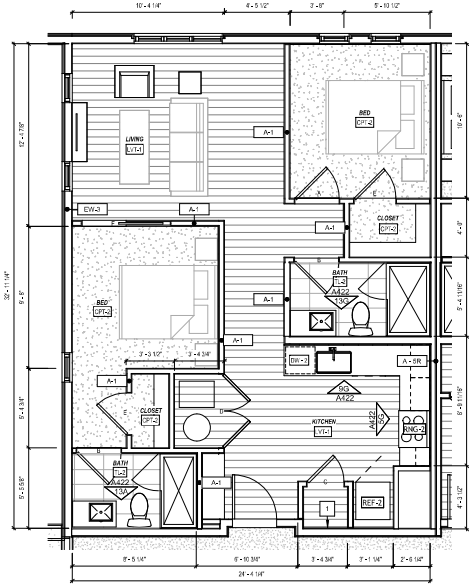
INTERIOR ELEVATION 1/2" = 1'-0"	5G



INTERIOR ELEVATION 1/2" = 1'-0"	13A



ENLARGED RCP 1/4" = 1'-0"	9A



ENLARGED PLAN 1/4" = 1'-0"	5A

UNIT KEYED NOTES	
#	DESCRIPTION
1	WASHER/DRYER HOOKUPS, RE. MEP.

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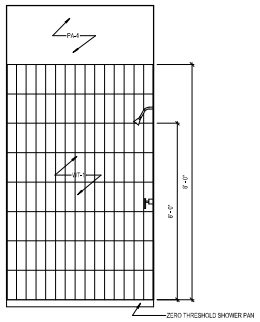
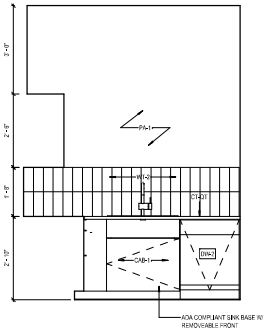
ENLARGED UNIT PLANS & ELEVATIONS - 2 BED

A422

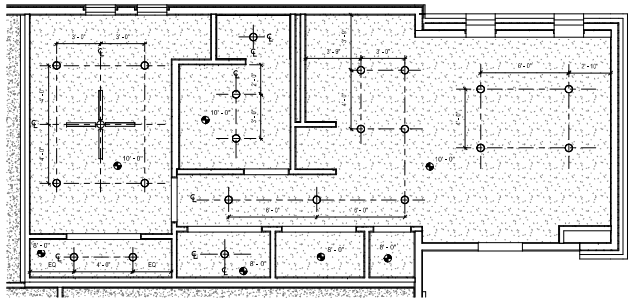
UNIT KEYED NOTES	
#	DESCRIPTION
1	WASHER/DRYER HOOKUPS, RE, MEP.



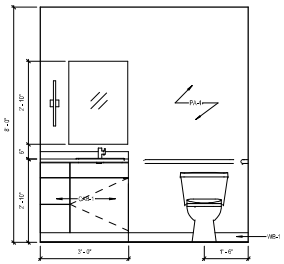
INTERIOR ELEVATION
1/2" = 1'-0"
13E



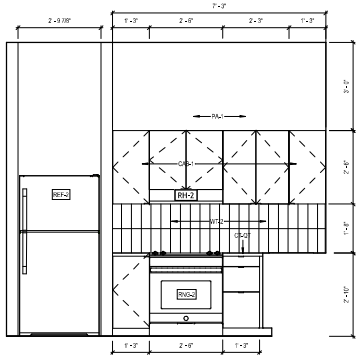
INTERIOR ELEVATION
1/2" = 1'-0"
8E



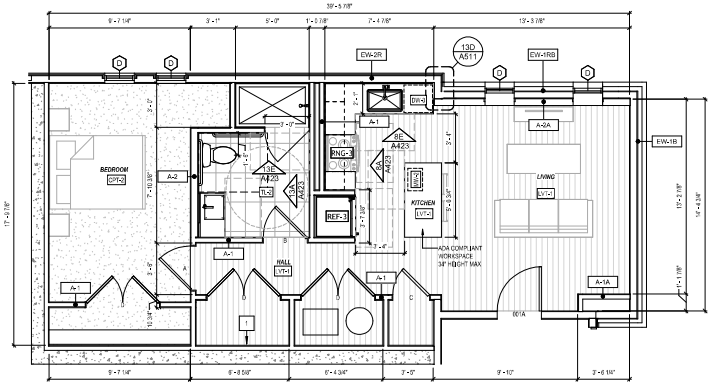
N
ENLARGED RCP
1/4" = 1'-0"
1E



INTERIOR ELEVATION
1/2" = 1'-0"
13A



INTERIOR ELEVATION
1/2" = 1'-0"
8A



N
ENLARGED PLAN
1/4" = 1'-0"
1A

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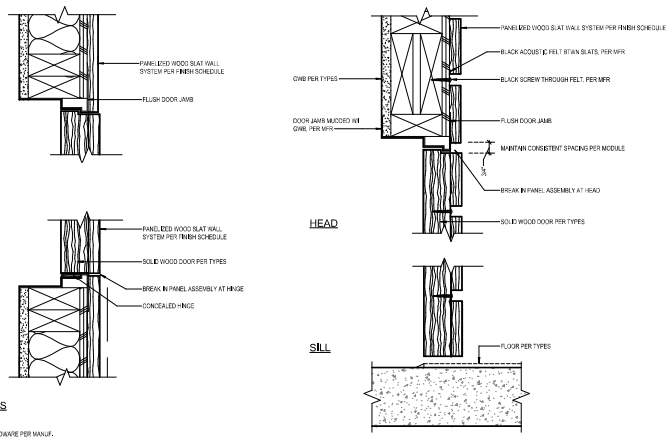
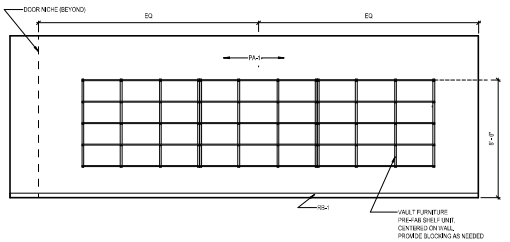
ENLARGED UNIT PLANS & ELEVATIONS - 1 BED - TYPE A

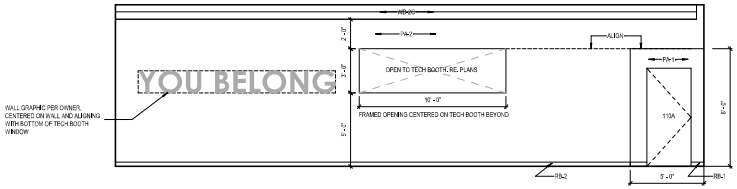
A423



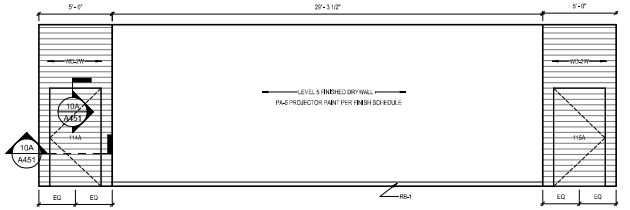
SECTION DETAIL 3" = 1'-0" **10A**



INTERIOR ELEVATION 1/4" = 1'-0" **1F**



INTERIOR ELEVATION 1/4" = 1'-0" **1C**



INTERIOR ELEVATION 1/4" = 1'-0" **1A**

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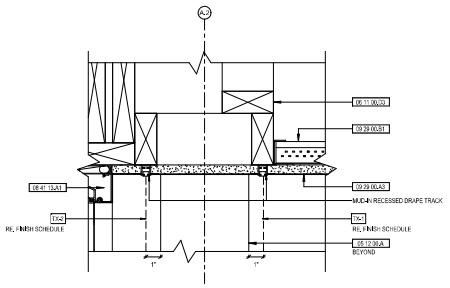
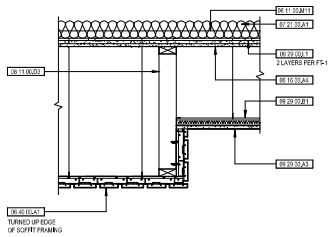
INTERIOR ELEVATIONS

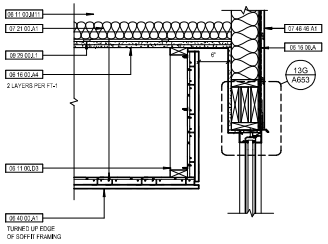
A451



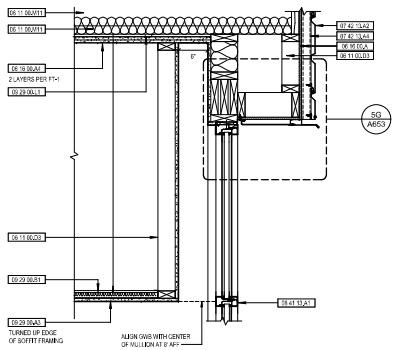
SECTION DETAIL	13E
3" = 1'-0"	



SECTION DETAIL	9E
1" = 1'-0"	



SECTION DETAIL	5E
1" = 1'-0"	



SECTION DETAIL	1E
1" = 1'-0"	

KEYNOTES

NUMBER	DESCRIPTION
05 12 00.A	STEEL COLUMN, RE: STRUCT
06 11 00.D3	2X FRAMING
06 11 00.M11	SHOP FABRICATED WOOD JOISTS, RE: STRUCT
06 16 00.A	5/8" ZIP SHEATHING WITH INTEGRAL WEATHER BARRIER
06 16 00.A4	5/8" TYPE X GYPSUM SHEATHING
06 40 00.A1	INTERIOR WOOD LINEAR SOFFIT PANEL, RE: FINISH SCHEDULE, CLIP SYSTEM PER MANUFACTURER
07 21 00.A1	BATT INSULATION
07 42 13.A2	MORIN METAL PANEL, RE: FINISH SCHEDULE AND SPEC
07 42 13.A4	Z GIRT, RE: MANUF. INSTALL INSTRUCTIONS
07 46 46 A1	HARDIE FIBER CEMENT SIDING, ARTISAN SHIPLAP SIDING, COLOR PER FINISH LEGEND
08 41 13.A1	EXTERIOR STOREFRONT, REF EXTERIOR ELEVATIONS
09 29 00.A3	5/8" GWB, PAINTED, FINISH PER SPEC AND LEGEND
09 29 00.B1	1 1/2" DRYWALL GRID
09 29 00.L1	RESILIENT CHANNEL

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INTERIOR DETAILS

A452

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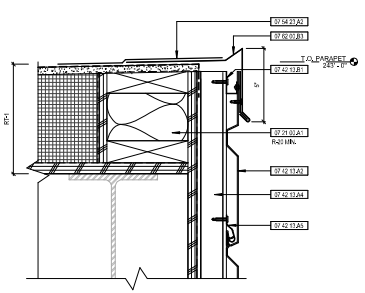

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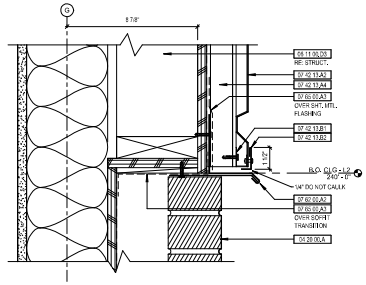
13G



SECTION DETAIL
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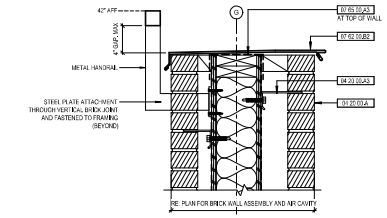
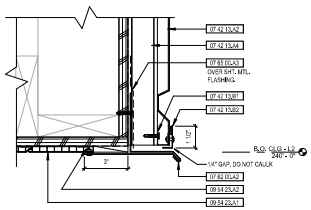


SECTION DETAIL
1 1/2" = 1'-0"

5G



SECTION DETAIL
3" = 1'-0"

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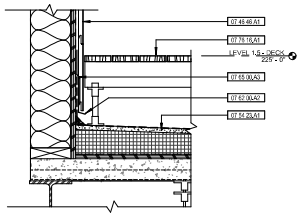
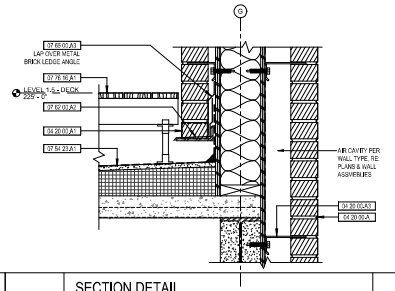


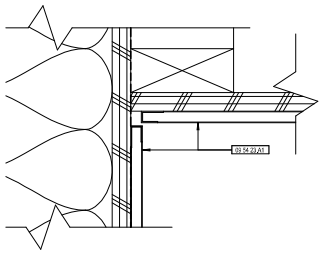
SECTION DETAIL
1 1/2" = 1'-0"

9D



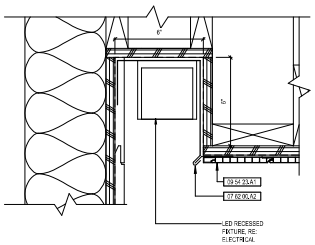
SECTION DETAIL
1 1/2" = 1'-0"

5D



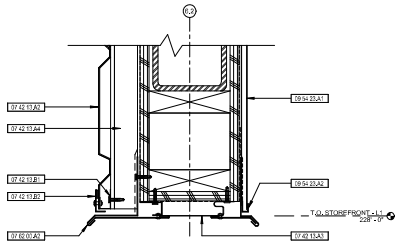
SECTION DETAIL
6" = 1'-0"

13A



SECTION DETAIL
3" = 1'-0"

9A



SECTION DETAIL
3" = 1'-0"

5A

KEYNOTES

NUMBER	DESCRIPTION
04 20 00.A	BRICK. REF ELEVATIONS
04 20 00.A1	MASONRY WEEP VENT
04 20 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
06 11 00.D3	2X FRAMING
07 21 00.A1	BATT INSULATION
07 42 13.A2	MORIN METAL PANEL. RE: FINISH SCHEDULE AND SPEC
07 42 13.A3	MORIN SOFFIT PANEL. RE: FINISH SCHEDULE AND SPEC. COLOR TO MATCH M-1
07 42 13.A4	Z GIRT. RE: MANUF. INSTALL INSTRUCTIONS
07 42 13.A5	MORIN PANEL CLIP. RE: MANUF. INSTALL INSTRUCTIONS
07 42 13.B1	FILLER FLASHING. RE: MANUF. INSTALLATION INSTRUCTIONS
07 42 13.B2	METAL EDGE FLASHING. COLOR TO MATCH M-1
07 46 46.A1	HARDIE FIBER CEMENT SIDING, ARTISAN SHIPLAP SIDING, COLOR PER FINISH LEGEND
07 54 23.A1	TPO MEMBRANE ROOFING
07 54 23.A2	TPO MEMBRANE FLASHING STRIP. HEAT WELD TO SHEET METAL GRAVEL STOP AND ROOF MEMBRANE
07 62 00.A2	PREFINISHED SHEET METAL FLASHING. COLOR TO MATCH M-1
07 62 00.B2	LOW PROFILE. PREFINISHED SHEET METAL COPING. COLOR TO MATCH M-1
07 62 00.B3	PREFINISHED SHEET METAL GRAVEL STOP. COLOR TO MATCH M-1
07 65 00.A3	FLASHING TAPE
07 76 16.A1	DECKING PLANKS ON RAISED PEDESTAL SYSTEM. RE: SPEC
09 54 23.A1	DIRECT ATTACH LINEAR METAL CEILING PANEL
09 54 23.A2	TERMINATION CHANNEL PER MANUFACTURER

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EXTERIOR DETAILS

A501

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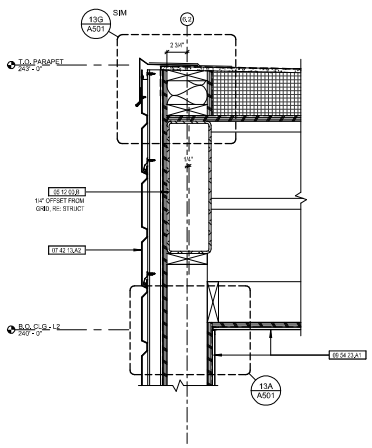
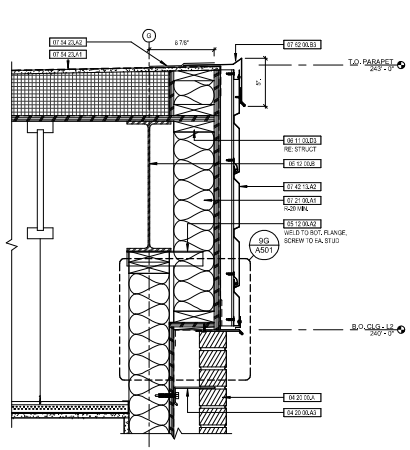


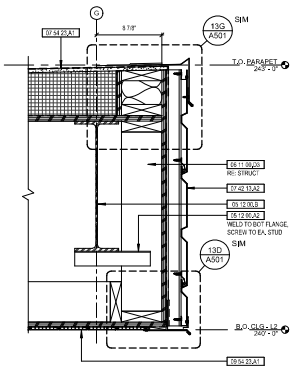
SECTION DETAIL
1 1/2" = 1'-0"

13E



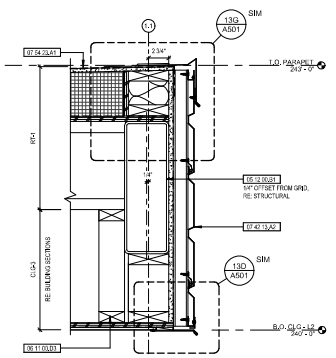
SECTION DETAIL
1 1/2" = 1'-0"

9E



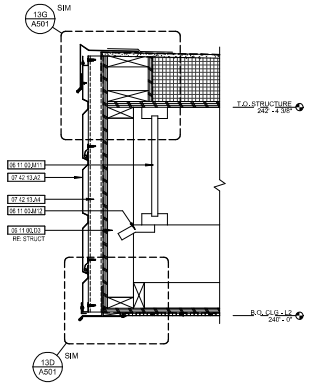
SECTION DETAIL
1 1/2" = 1'-0"

5E



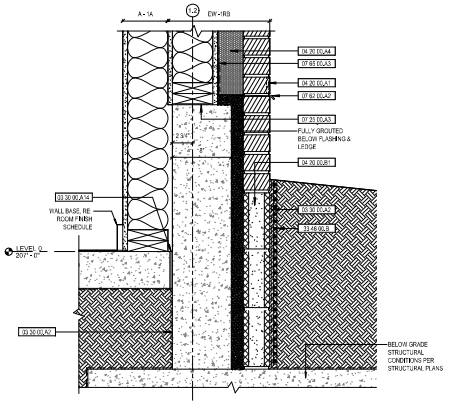
SECTION DETAIL
1 1/2" = 1'-0"

1E



SECTION DETAIL
1 1/2" = 1'-0"

13A



SECTION DETAIL
1 1/2" = 1'-0"

9A

KEYNOTES

NUMBER	DESCRIPTION
03 30 00.A2	VAPOR RETARDER
03 30 00.A14	CONTINUOUS COMPRESSIBLE FILLER & JOINT SEALANT AT SLAB EDGE
04 20 00.A	BRICK, REF ELEVATIONS
04 20 00.A1	MASONRY WEEP VENT
04 20 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
04 20 00.A4	MORTAR NET
04 20 00.B1	4" X 8" X 16" CMU
05 12 00.A2	STEEL ANGLE, RE: STRUCT
05 12 00.B	STEEL BEAM, RE: STRUCT
05 12 00.B1	STEEL TUBE, RE: STRUCT
06 11 00.D3	2X FRAMING
06 11 00.M11	SHOP FABRICATED WOOD JOISTS; RE: STRUCT
06 11 00.M12	SIMPSON HURRICANE CLIP, RE: STRUCT
07 21 00.A1	BATT INSULATION
07 25 00.A3	SILL GASKET
07 42 13.A2	MORIN METAL PANEL, RE, FINISH SCHEDULE AND SPEC
07 42 13.A4	Z GRT, RE: MANUF, INSTALL INSTRUCTIONS
07 54 23.A1	TPO MEMBRANE ROOFING
07 54 23.A2	TPO MEMBRANE FLASHING STRIP, HEAT WELD TO SHEET METAL GRAVEL STOP AND ROOF MEMBRANE
07 62 00.A2	PREFINISHED SHEET METAL FLASHING, COLOR TO MATCH M-1
07 62 00.B3	PREFINISHED SHEET METAL GRAVEL STOP, COLOR TO MATCH M-1
07 65 00.A3	FLASHING TAPE
09 54 23.A1	DIRECT ATTACH LINEAR METAL CEILING PANEL
33 46 00.B	SUBGRADE DRAINAGE MAT & FILTER FABRIC

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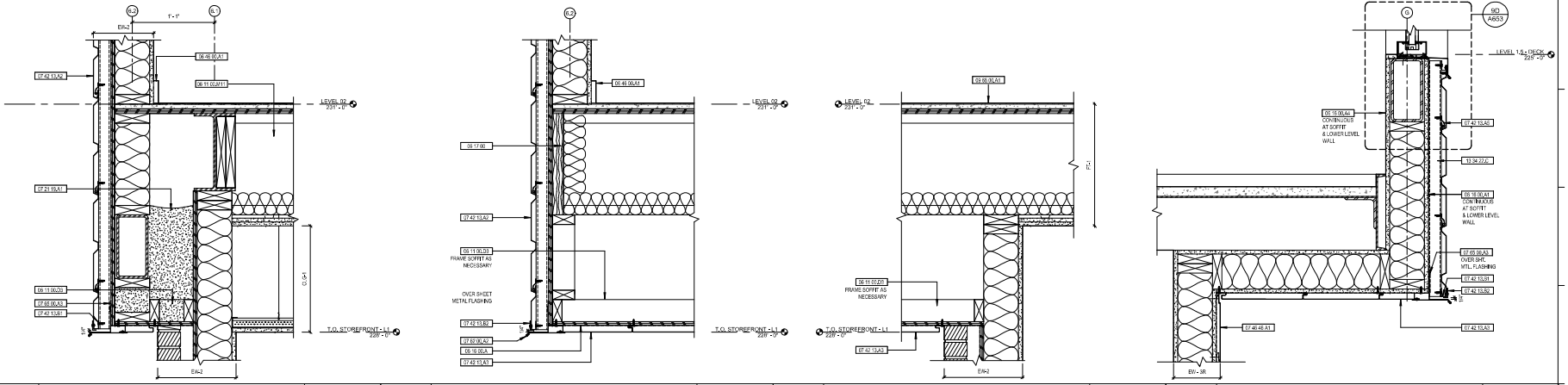
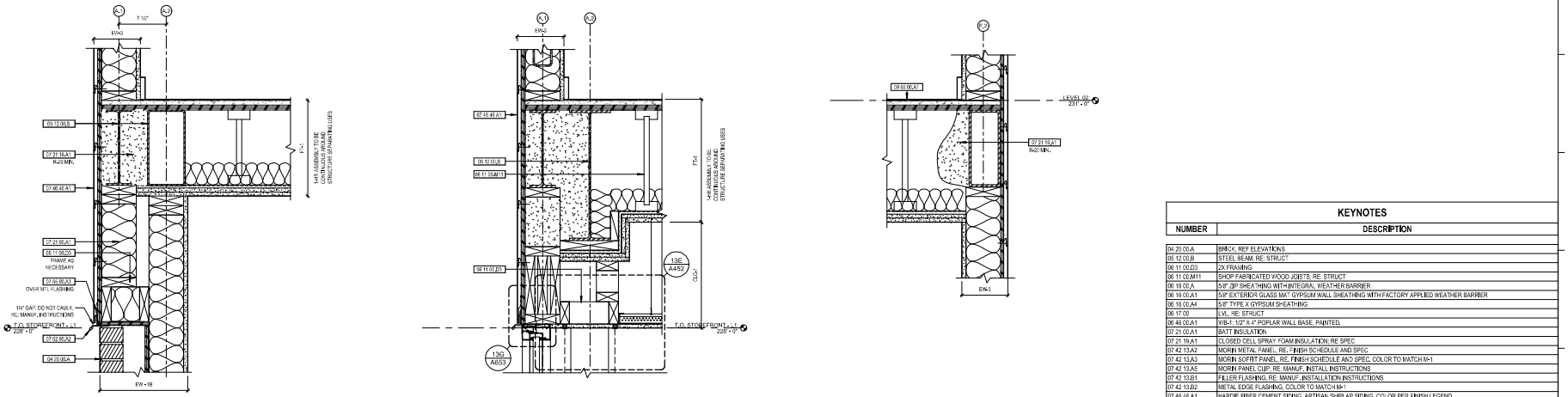
EXTERIOR DETAILS

A502



SECTION DETAIL 1 1/2" = 1'-0"	13F	SECTION DETAIL 1 1/2" = 1'-0"	9F	SECTION DETAIL 1 1/2" = 1'-0"	5F	SECTION DETAIL 1 1/2" = 1'-0"	1F



SECTION DETAIL 1 1/2" = 1'-0"	13A	SECTION DETAIL 1 1/2" = 1'-0"	9A	SECTION DETAIL 1 1/2" = 1'-0"	5A

KEYNOTES

NUMBER	DESCRIPTION
04 20 00.A	BRICK, REF ELEVATIONS
05 12 00.B	STEEL BEAM, RE: STRUCT
06 11 00.D3	2X FRAMING
06 11 00.M11	SHOP FABRICATED WOOD JOISTS, RE: STRUCT
06 16 00.A	5/8" ZIP SHEATHING WITH INTEGRAL WEATHER BARRIER
06 16 00.A1	5/8" EXTERIOR GLASS MAT GYPSUM WALL SHEATHING WITH FACTORY APPLIED WEATHER BARRIER
06 16 00.A4	5/8" TYPE X GYPSUM SHEATHING
06 17 00	LVL, RE: STRUCT
06 46 00.A1	WB-1: 1/2" X 4" POPLAR WALL BASE, PAINTED.
07 21 00.A1	BATT INSULATION
07 21 19.A1	CLOSED CELL SPRAY FOAM INSULATION; RE SPEC
07 42 13.A2	MORIN METAL PANEL, RE.: FINISH SCHEDULE AND SPEC
07 42 13.A3	MORIN SOFFIT PANEL, RE: FINISH SCHEDULE AND SPEC, COLOR TO MATCH M-1
07 42 13.A5	MORIN PANEL CUP, RE: MANUF, INSTALL INSTRUCTIONS
07 42 13.B1	FILLER FLASHING, RE: MANUF, INSTALLATION INSTRUCTIONS
07 42 13.B2	METAL EDGE FLASHING, COLOR TO MATCH M-1
07 46 46.A1	HARDIE FIBER CEMENT SIDING, ARTISAN SHIPLAP SIDING, COLOR PER FINISH LEGEND
07 62 00.A2	PREFINISHED SHEET METAL FLASHING, COLOR TO MATCH M-1
07 65 00.A3	FLASHING TAPE
09 65 00.A1	LVT-1; LOOSE LAY LVT, RE: FINISH PLAN AND LEGEND
09 68 00.A1	CPT-2, RE: FINISH SCHEDULE
13 34 22.C	2" VERTICAL METAL GIRT

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EXTERIOR DETAILS

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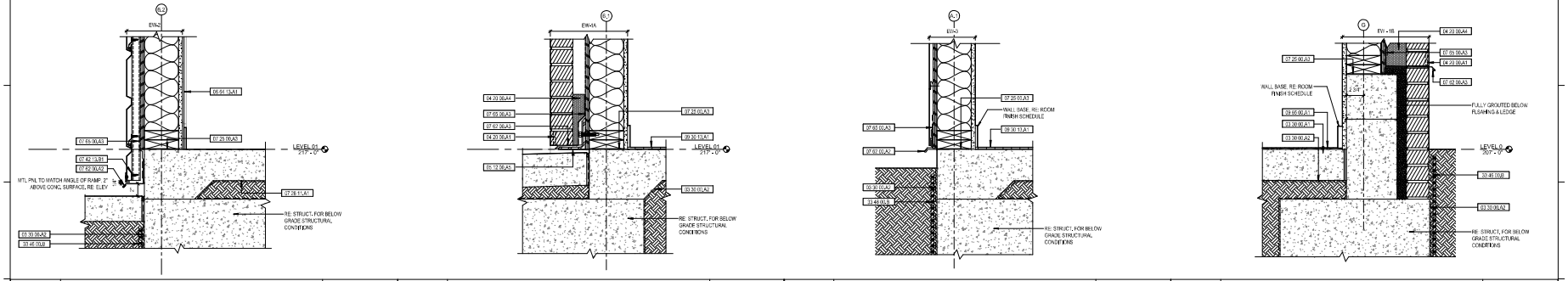
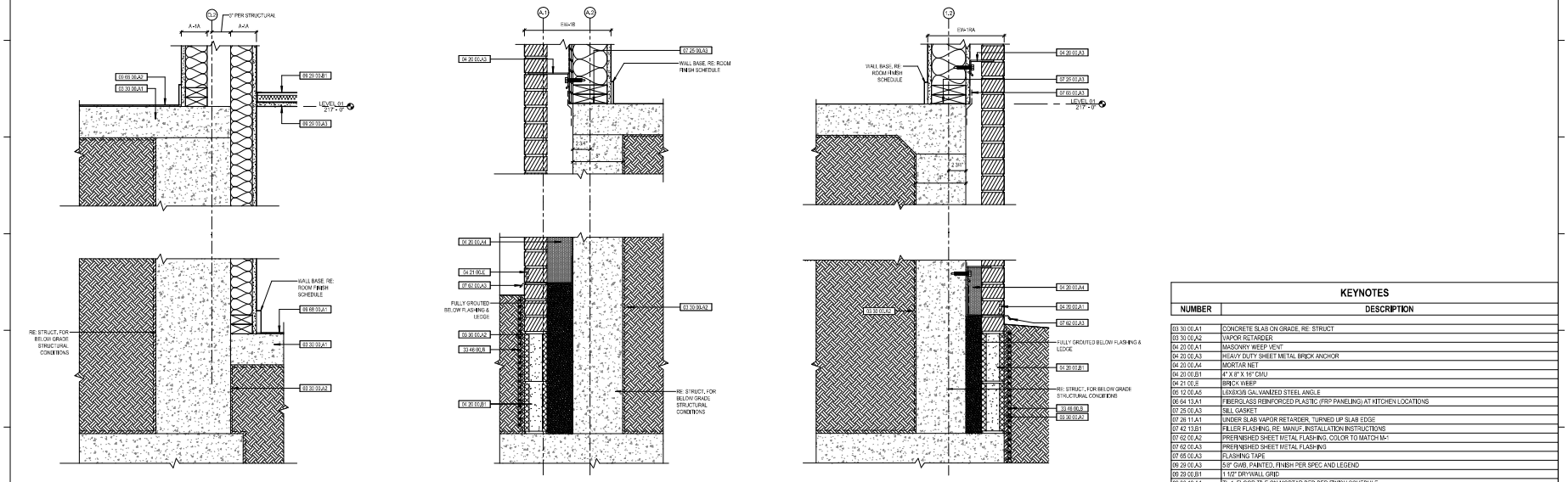


SECTION DETAIL 1 1/2" = 1'-0"	13F	SECTION DETAIL 1 1/2" = 1'-0"	9F	SECTION DETAIL 1 1/2" = 1'-0"	6F	SECTION DETAIL 1 1/2" = 1'-0"	1F



SECTION DETAIL 1 1/2" = 1'-0"	13A	SECTION DETAIL 1 1/2" = 1'-0"	9A	SECTION DETAIL 1 1/2" = 1'-0"	5A

KEYNOTES

NUMBER	DESCRIPTION
03 30 00.A1	CONCRETE SLAB ON GRADE, RE: STRUCT
03 30 00.A2	VAPOR RETARDER
04 20 00.A1	MASONRY WEEP VENT
04 20 00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
04 20 00.A4	MORTAR NET
04 20 00.B1	4" X 8" X 16" CMU
04 21 00.E	BRICK VEEP
05 12 00.A5	L6X6X5/8 GALVANIZED STEEL ANGLE
06 64 13.A1	FIBERGLASS REINFORCED PLASTIC (FRP PANELING) AT KITCHEN LOCATIONS
07 25 00.A3	SILL GASKET
07 26 11.A1	UNDER SLAB VAPOR RETARDER, TURNED UP SLAB EDGE
07 42 13.B1	FILLER FLASHING, RE: MANUF. INSTALLATION INSTRUCTIONS
07 62 00.A2	PREFINISHED SHEET METAL FLASHING, COLOR TO MATCH M-1
07 62 00.A3	PREFINISHED SHEET METAL FLASHING
07 65 00.A3	FLASHING TAPE
09 29 00.A3	5/8" GWB, PAINTED, FINISH PER SPEC AND LEGEND
09 29 00.B1	1 1/2" DRYWALL GRID
09 30 13.A1	TL-1, FLOOR TILE ON MORTAR BED PER FINISH SCHEDULE
09 65 00.A1	LVT-1; LOOSE LAY LVT, RE. FINISH PLAN AND LEGEND
09 68 00.A1	CPT-2, RE. FINISH SCHEDULE
09 68 00.A2	CPT-1, RE. FINISH SCHEDULE
33 46 00.B	SUBGRADE DRAINAGE MAT & FILTER FABRIC

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EXTERIOR DETAILS

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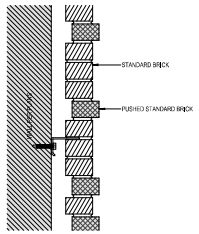
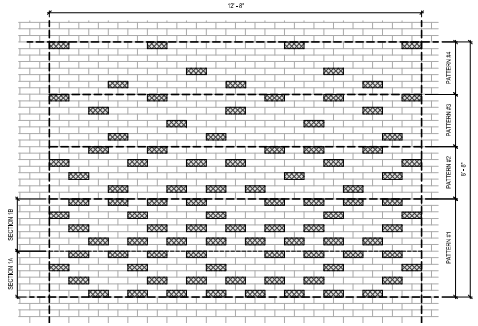


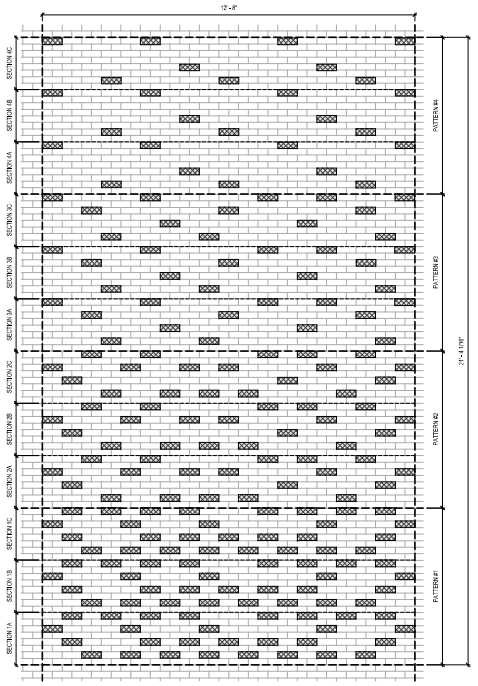
NOTE: PATTERN PER ELEVATIONS (SAM)
NOTE: ALL BRICK TO BE OF SAME SIZE AND COLOR. PUSHED BRICKS TO PROJECT OUTWARD FROM FACE OF WALL ACHIEVE PATTERN RE: SAM.

	ENLARGED DETAIL 1 1/2" = 1'-0"	13F



NOTE: ALL 4 PATTERNS CORRESPOND TO SAME PATTERNS IN DETAIL SAM/05
NOTE: ONLY PATTERN #1 TO HAVE 2 REPEATING SECTIONS AT REAR LOCATION

REFERENCE EXTERIOR ELEVATIONS FOR CRITICAL BUILDING ALIGNMENTS, TO BE COORDINATED IN SHOP DRAWINGS



NOTE: ALL 4 PATTERNS REPRESENT A UNIQUE SET OF 3 REPEATING SECTIONS
NOTE: ALL 3 SECTIONS (WITHIN A PATTERN) REPRESENT THE SAME SET OF 3 REPEATING ROWS

REFERENCE EXTERIOR ELEVATIONS FOR CRITICAL BUILDING ALIGNMENTS, TO BE COORDINATED IN SHOP DRAWINGS

	ENLARGED ELEVATION 1/2" = 1'-0"	9A		ENLARGED ELEVATION 1/2" = 1'-0"	5A

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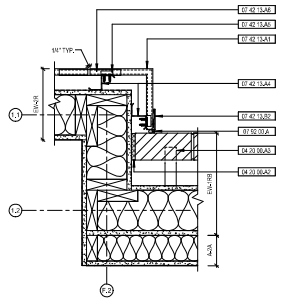
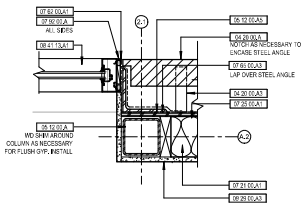
EXTERIOR DETAILS

A505



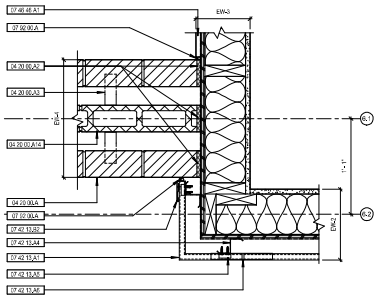
PLAN DETAIL
1 1/2" = 1'-0"

13D



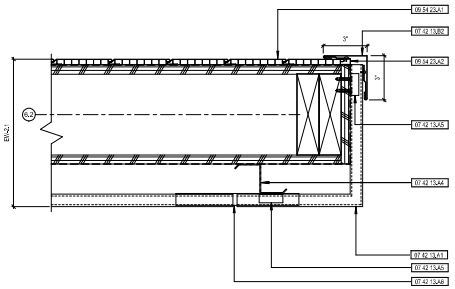
PLAN DETAIL
1 1/2" = 1'-0"

9D



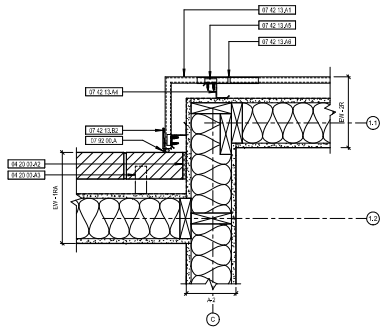
PLAN DETAIL
1 1/2" = 1'-0"

5D



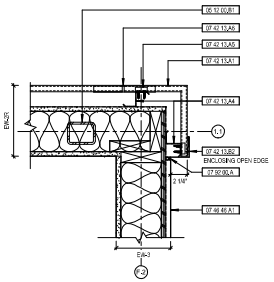
PLAN DETAIL
3" = 1'-0"

1E



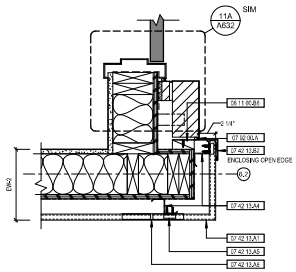
PLAN DETAIL
1 1/2" = 1'-0"

13A



PLAN DETAIL
1 1/2" = 1'-0"

9A



PLAN DETAIL
1 1/2" = 1'-0"

5A

KEYNOTES

NUMBER	DESCRIPTION
04 20.00.A	BRICK, REF ELEVATIONS
04 20.00.A2	MIN. 1/2" DRAINAGE PATH - FILL W/ FREE DRAINING NEOPRENE COMPRESSIBLE MATERIAL
04 20.00.A3	HEAVY DUTY SHEET METAL BRICK ANCHOR
04 20.00.A14	
05 12.00.A	STEEL COLUMN, RE: STRUCT
05 12.00.A5	L6X6X3/8 GALVANIZED STEEL ANGLE
05 12.00.B1	STEEL TUBE, RE: STRUCT
06 11.00.B6	TREATED WOOD NAILER
07 21.00.A1	BATT INSULATION
07 25.00.A1	WEATHER RESISTIVE BARRIER
07 42.13.A1	MORIN MITERSEAM CORNER PANEL
07 42.13.A4	Z GIRT, RE: MANUF, INSTALL INSTRUCTIONS
07 42.13.A5	MORIN PANEL CUP, RE: MANUF, INSTALL INSTRUCTIONS
07 42.13.A6	MORIN SPLICE PLATE, RE: MANUF, INSTALL INSTRUCTIONS
07 42.13.B2	METAL EDGE FLASHING, COLOR TO MATCH M-1
07 46.46.A1	HARDIE FIBER CEMENT SIDING, ARTISAN SHIPLAP SIDING, COLOR PER FINISH LEGEND
07 62.00.A1	PREFINISHED SHEET METAL FLASHING, COLOR TO MATCH ADJACENT WINDOWS
07 65.00.A3	FLASHING TAPE
07 92.00.A	CONTINUOUS SEALANT AND BACKER ROD
08 41.13.A1	EXTERIOR STOREFRONT, REF EXTERIOR ELEVATIONS
09 29.00.A3	5/8" GWB, PAINTED, FINISH PER SPEC AND LEGEND
09 54 23.A1	DIRECT ATTACH LINEAR METAL CEILING PANEL
09 54 23.A2	TERMINATION CHANNEL PER MANUFACTURER

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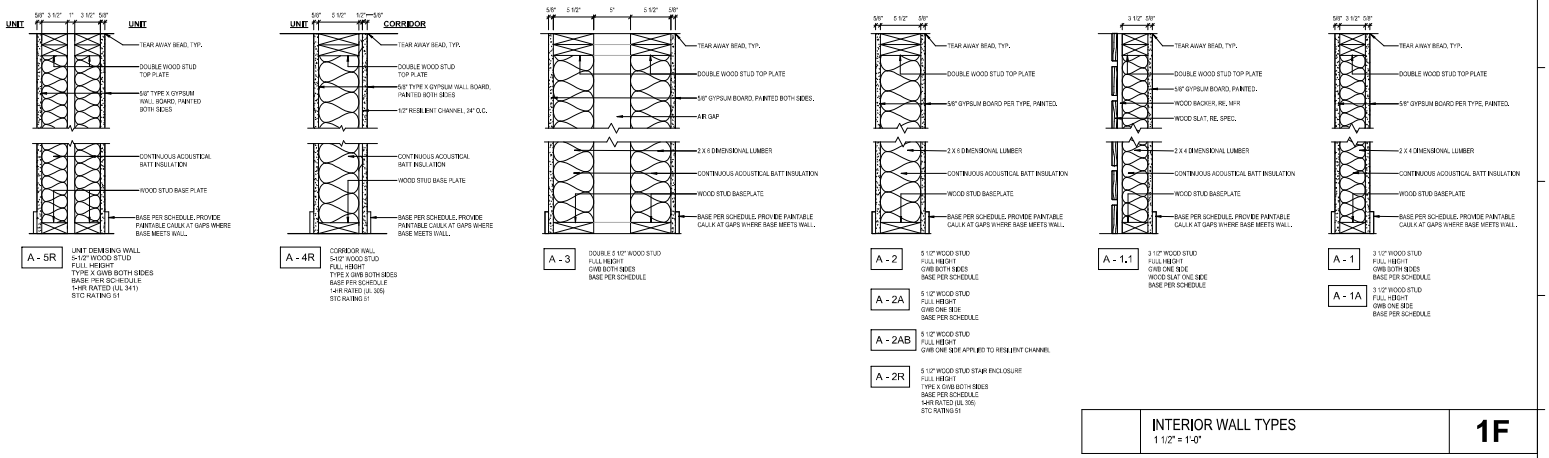
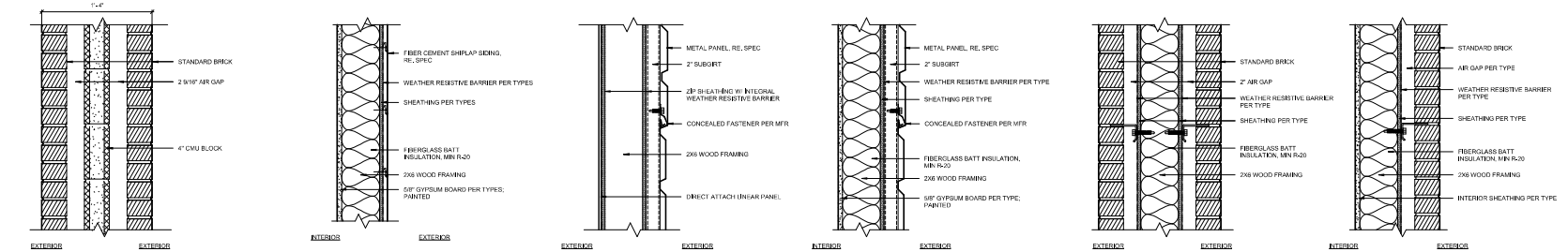
PLAN DETAILS

A511



INTERIOR WALL TYPES
1 1/2" = 1'-0"

1F



EXTERIOR WALL TYPES
1 1/2" = 1'-0"

1A

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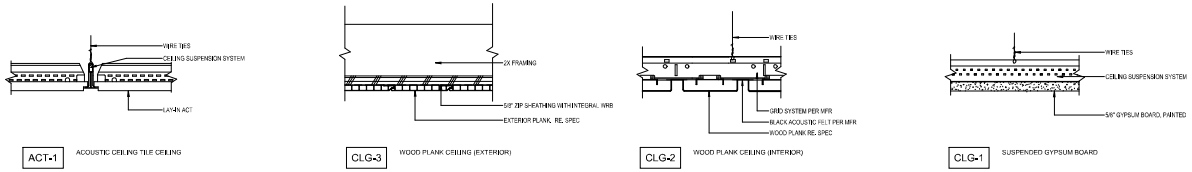
WALL TYPES

A601



ACT-1 ACOUSTIC CEILING TILE CEILING

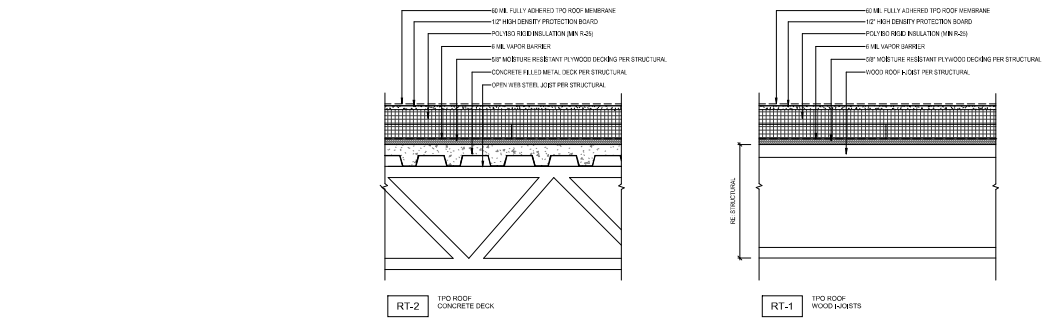
CLG-3 WOOD PLANK CEILING (EXTERIOR)

CLG-2 WOOD PLANK CEILING (INTERIOR)

CLG-1 SUSPENDED GYPSUM BOARD

CEILING TYPES
3" = 1'-0"

1G



RT-2 TPO ROOF CONCRETE DECK

RT-1 TPO ROOF WOOD I-JOISTS

FT-2 1 HR FLOOR ASSEMBLY (UL L569)

FT-1 1 HR FLOOR ASSEMBLY (UL L570) STC 59

SG-1 CONCRETE SLAB ON GRADE FINISH PER SCHEDULE

HORIZONTAL ASSEMBLIES
1 1/2" = 1'-0"

1A

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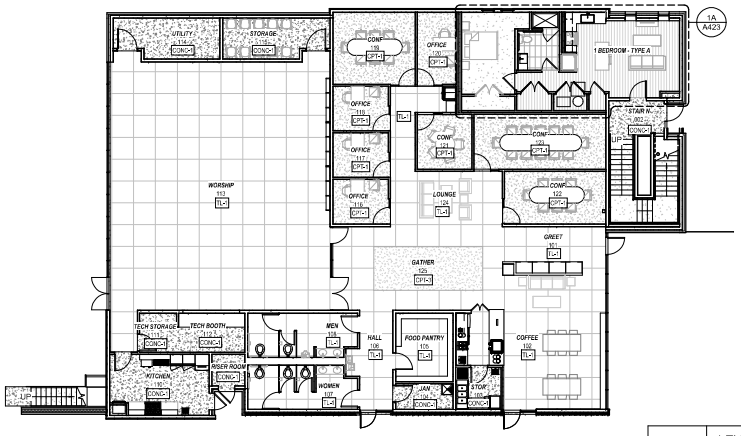
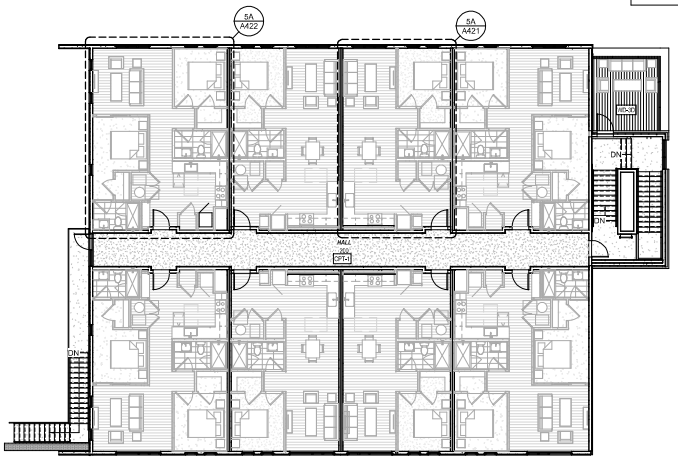
HORIZONTAL ASSEMBLIES

A602



LEVEL 1 - FINISHED FLOOR PLAN
3/32" = 1'-0"

5E



LEVEL 2 - FINISH PLAN
3/32" = 1'-0"

5A

FINISH PLAN - INTERIOR GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHED THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. DASHED LINES INDICATE OVERHEAD ITEMS ABOVE, RE RCP AND ROOF PLANS.
C. ON WALLS WHERE GRAPHICS / SIGNAGE OCCUR PROVIDE LEVEL 5 FIN. AT THESE LOCATIONS NO EXIT SIGNS OR ANY ELECT / FIRE ALARM / MECH / ETC. DEVICES SHALL BE INSTALLED. IF CONFLICT EXISTS, NOTIFY ARCHITECT FOR RESOLUTION.
D. VERIFY ALL DIMS INDICATED AS "FIELD VERIFY" OR "FV" ON THE DWGS PRIOR TO CONST. REPORT ANY ISSUES TO ARCHITECT.
E. PROVIDE NON-COMBUSTIBLE MATERIALS IN RETURN PLENUMS (WALLS AND SOFFIT).
F. ALL FIN (TILE, CLGS, CARPET, ETC.) STARTING & STOPPING POINTS TO BE DETERMINED BY ARCHITECT IN FIELD.
G. PROVIDE 4" X 4" PT SWATCH OF EA COLOR SCHED FOR REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
H. PROVIDE 4" X 4" STAIN SWATCH OF EA COLOR SCHED FOR R REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
J. PROVIDE 10' X 10' MOCK-UP OF EA CARPET TILE PATTERN FOR REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
K. PAINT HOLLOW MTL DRS AND FRAMES TO MATCH ADJACENT WALLS (SEMI-GLOSS), UNO.
L. ALL GYP BD WALLS SCHEDULED TO BE PTD IN RESTRMS OR OTHER WET LOCATIONS SHALL USE EPOXY TYPE PT.
M. AT TILE LOCATIONS PROVIDE 1/8" GROUT LINES MAX, UNO. PROVIDE MOCK-UP FOR REVIEW PRIOR TO INSTALL.
N. EXTEND ALL FIN (INCLUDING PT) BENEATH, BEHIND AND AROUND FURNITURE, CASEWORK, EQUIP, SIGNAGE, ETC. WHETHER SPECIFICALLY INDICATED OR NOT.
P. PROVIDE CEMENT BD IN LIEU OF GYP BD WHERE WALL "TILE IS SPECIFIED, UNO.
Q. PROVIDE MOCK-UPS OF ALL FLR FOR REVIEW AND ACCEPTANCE PRIOR TO PROCEEDING W/ BALANCE OF INSTALL.
R. ALL DR TRANSITIONS & THRESHOLDS PER SPECS, UNO.
S. ALL BASEBRD CORNERS SHALL BE MITER CUT AND ALL RUNS SHALL BE KERF CUT, PATCH, SAND AND PT ALL FASTENER HOLES IN BASEBDS. FIN PER SCHED.
T. RE FIN SCHED FOR ALL FLR, CLG & WALL FIN.
U. ALL MATERIAL TRANSITIONS TO BE COORD W/ THE SPECS. LOCATIONS AND ALIGNMENTS TO BE DETERMINED BY ARCHITECT PRIOR TO INSTALL.

LVT-1
CPT-1
CPT-2
CPT-3
CONC-1
CONC-2
TL-1
TL-2
WD-3D

FINISH PLAN LEGEND
NOT TO SCALE

KEYNOTES	
NUMBER	DESCRIPTION

FINISH FLOOR PLAN KEYED NOTES	
#	DESCRIPTION

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FINISH FLOOR PLANS

A610

FINISH INDEX

DIVISION (hide)	CODE	DESCRIPTION	BASIS OF DESIGN/MANUFACTURER	MODEL	COLOR	SIZE	REMARKS
DIVISION 03: CONCRETE							
DIVISION 03: CONCRETE	CONC-1	INTERIOR CONCRETE	POLISHED & SEALED	SALT AND PEPPER GRIND - LOW GLOSS	-	-	-
DIVISION 04: MASONRY							
DIVISION 04: MASONRY	B-1	EXTERIOR BRICK	CHEROKEE	STANDARD	VELOUR PRIMROSE	7 5/8 X 3 5/8 X 2 1/4	CONTACT: ADAM PITTMAN (601-731-0882), COLUMBIA BLOCK AND BRICK
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES							
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	FRR-1	FIBER REINFORCED PANEL	MARLITE	STANDARD PVC TRIM	S 490N LIGHT GREY	-	-
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WB-1	SOLID WOOD BASE	POPLAR DIMENSIONAL LUMBER	-	TO MATCH PA-1	1/2" x 4"	-
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WD-1C	SOLID WOOD CEILING PLANKS	RULON	LINEAR OPEN	STAINED TO MATCH WD-2C	4 1/2" W	
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WD-1W	SOLID WOOD WALL PLANKS	RULON	LINEAR PANELIZED	STAINED TO MATCH WD-2C	4 1/2" W	
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WD-2C	SOLID WOOD CEILING PLANKS	RULON	ENDURE LINEAR 400	NATURAL MAPLE 413	4" W	-
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WD-2W	SOLID WOOD WALL PLANKS	RULON	ENDURE LINEAR 400	NATURAL MAPLE 413	4" W	-
DIVISION 06: WOOD, PLASTICS, AND COMPOSITES	WD-3D	PRESSURE TREATED DECK BOARDS	-	-	STAINED TO MATCH WD-2C	1 1/4 X 6 "	-
DIVISION 07: THERMAL AND MOISTURE PROTECTION							
DIVISION 07: THERMAL AND MOISTURE PROTECTION	FC-1	FIBER CEMENT SIDING	JAMES HARDIE	ARTISAN SHIPLAP SIDING - SMOOTH	PPG518-1 DELICATE WHITE	10.250" PANEL, 9" EXPOSURE	
DIVISION 07: THERMAL AND MOISTURE PROTECTION	M-1	CORRUGATED METAL PANEL	MORIN	INTEGRITY XAB-16	DARK BRONZE	16" PANELS	
DIVISION 07: THERMAL AND MOISTURE PROTECTION	M-2	FLAT SHEET METAL INFILL	ALUCOBOND	ALUCOLUX	TBD	PER DWGS	
DIVISION 08: DOORS AND WINDOWS							
DIVISION 08: DOORS AND WINDOWS	GL-1	GLAZING			CLEAR	RE: INT, ELEV	
DIVISION 08: DOORS AND WINDOWS	GL-2	GLAZING, FROSTED FILM	LUMAR DECORATIVE WINDOW FILM	MATTE FROST SERIES - MIST (NRM80 PS2)		RE INT, DTLS	
DIVISION 09: FINISHES							
DIVISION 09: FINISHES	ACT-1	ACOUSTIC CEILING TILE	ARMSTRONG	KITCHEN ZONE 2X2		2 X 2 FT	REFER TO SPEC FOR FINISH
DIVISION 09: FINISHES	CAB-1	SHOP APPLIED SPRAY FINISH CABINET	SAUDER CABINETRY		WHITE COLOR TO MATCH PA-1, SATIN FINISH - 5% MATTE LOW VOC		SAUDER CABINETRY AS B.O.D.
DIVISION 09: FINISHES	CPT-1	CARPET TILE	INTERFACE	LIGHTHEARTED, HEARTBEATS	107400 ENDURANCE	50 CM X 50 CM	INSTALL IN MONOLITHIC ORIENTATION
DIVISION 09: FINISHES	CPT-2	BROADLOOM	SHAW CONTRACT	ENDEAVOR	00541 AMBITION	BROADLOOM	
DIVISION 09: FINISHES	CPT-3	CARPET TILE	INTERFACE	WG100 WOVEN GRADIENCE, 13127	108065 AMBER	50CM X 50 CM	INSTALL IN MONOLITHIC ORIENTATION, INSET INTO SURROUNDING TILE AT RM 125, PROVIDE AS RUG AT RM 101 & 124.
DIVISION 09: FINISHES	LVT-1	LVT	KARNDEAN	LOOSE LAY	NUDE DANISH OAK LLP358	59.06" X 9.84"	
DIVISION 09: FINISHES	PA-1	PAINT	PPG	EGGSHELL	PPG518-1 DELICATE WHITE	-	REFER TO SPEC FOR FINISH
DIVISION 09: FINISHES	PA-2	PAINT	PPG	EGGSHELL	PPG0995-7 STARLESS SKY	-	REFER TO SPEC FOR FINISH
DIVISION 09: FINISHES	PA-3	PAINT	PPG	FLAT	PPG518-1 DELICATE WHITE	-	REFER TO SPEC FOR FINISH
DIVISION 09: FINISHES	PA-4	PAINT	PPG	SEMI-GLOSS	PPG518-1 DELICATE WHITE	-	REFER TO SPEC FOR FINISH
DIVISION 09: FINISHES	PA-5	PROJECTOR PAINT					SPEC PER A/V CONSULTANT
DIVISION 09: FINISHES	PA-5	WOOD CLEAR FINISH	CONVERSION VARNISH	CLEAR	-	-	-
DIVISION 09: FINISHES	RB-1	RUBBER BASE	ROPPE	PINNACLE - TYPE - TS	161 SNOW	4"	-
DIVISION 09: FINISHES	RB-2	RUBBER BASE	ROPPE	PINNACLE - TYPE - TS	100 BLACK	4"	-
DIVISION 09: FINISHES	TL-1	LARGE FORMAT TILE	CONCEPT SURFACES	ICON	DOVE GRAY - MATTE	48" X 48"	-
DIVISION 09: FINISHES	TL-2	TILE	CONCEPT SURFACES	ICON	DOVE GRAY - MATTE	12" X 24"	-
DIVISION 09: FINISHES	WT-1	PORCELAIN WALL TILE	DALTILE	COLOR WHEEL LINEAR	MATTE ARCHITECTURAL GRAY 0709	4" X 12"	VERTICAL STACK BOND
DIVISION 09: FINISHES	WT-2	PORCELAIN WALL TILE	DALTILE	COLOR WHEEL LINEAR	MATTE BISCUIT K775	4" X 12"	VERTICAL STACK BOND
DIVISION 10: SPECIALTIES							
DIVISION 10: SPECIALTIES	MTL-1	BRASS PANEL	OCTOLUX	CLASSIC	ANTIQUE BRASS BRUSHED	4' X 8'	REFER TO SPEC
DIVISION 12: FURNISHINGS							
DIVISION 12: FURNISHINGS	CT-C	LAMINATE COUNTERTOP	FORMICA	COLORCORE2 LAMINATE	909 BLACK - MATTE (SB)	-	-
DIVISION 12: FURNISHINGS	CT-Q1	QUARTZ COUTERTOP	DALTILE	ONE QUARTZ MARBLE LOOK	VALOR WHITE - POLISHED	3CM, 136 X 79	-
DIVISION 12: FURNISHINGS	TX-1	TEXTILE - DRAPERY	SAMELSON+CHATELANE	MASCOT	BISQUE	RE: RCP	DOUBLE TRACE TRACK W/ MUD IN FLANGE RE RCP
DIVISION 12: FURNISHINGS	TX-2	TEXTILE - DRAPERY	SAMELSON+CHATELANE	FONT	HEMP	RE: RCP	DOUBLE TRACE TRACK W/ MUD IN FLANGE RE RCP

FINISH SCHEDULE GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHEDULE THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. ON WALLS WHERE GRAPHICS / SIGNAGE OCCUR PROVIDE LEVEL 5 FIN. AT THESE LOCATIONS NO EXIT SIGNS OR ANY ELECT / FIRE ALARM / MECHL / ETC. DEVICES SHALL BE INSTALLED. IF CONFLICT EXISTS, NOTIFY ARCHITECT FOR RESOLUTION.
C. ALL FIN (TILE, CLGS, CARPET, ETC.) STARTING & STOPPING POINTS TO BE DETERMINED BY ARCHITECT IN FIELD.
D. PROVIDE 4" X 4" PAINT SWATCH OF EA COLOR SCHED FOR REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
E. PROVIDE 4" X 4" STAIN SWATCH OF EA COLOR SCHED FOR R REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
F. PROVIDE 10' X 10' MOCK-UP OF EA CARPET TILE PATTERN FOR REVIEW & ACCEPTANCE PRIOR TO BALANCE ON INSTALL.
G. PT HOLLOW MTL DRS AND FRAMES TO MATCH ADJACENT WALLS (SEMI-GLOSS), UNO.
H. ALL GYP BD WALLS SCHED TO BE PTD IN RESTROOMS OR OTHER WET LOCATIONS SHALL USE EPOXY TYPE PT.
J. AT TILE LOCATIONS PROVIDE 1/8" GROUT LINES MAX. UNO. PROVIDE MOCKUP FOR REVIEW PRIOR TO INSTALL.
K. EXTEND ALL FIN (INCLUDING PT) BENEATH, BEHIND AND AROUND FURNITURE, CASEWORK, EQUIP, SIGNAGE, ETC. WHETHER SPECIFICALLY INDICATED OR NOT.
L. PROVIDE CEMENT BD IN LIEU OF GYP BD WHERE WALL TILE IS SPECIFIED, UNO.
M. ALL DR TRANSITIONS & THRESHOLDS PER SPECS, UNO.
N. ALL BASEBD CORNERS SHALL BE MITER CUT AND ALL RUNS SHALL BE KERF CUT, PATCH, SAND AND PT ALL FASTENER HOLES IN BASEBDS.
P. PROVIDE MOCK-UPS OF ALL FLR FOR REVIEW AND ACCEPTANCE PRIOR TO PROCCEDING W/ BALANCE OF INSTALL.
Q. COORD ELEVATOR FLR FIN W/ ARCHITECT.

ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL FINISH EAST	WALL FINISH NORTH	WALL FINISH SOUTH	WALL FINISH WEST	CEILING FINISH
002	STAIR N	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
003	MAIL	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
101	GREET	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	WD-2C
102	COFFEE	TL-1	RB-1	PA-1	PA-2	PA-1	PA-1	PA-3
103	STOR	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
104	JAN	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
105	FOOD PANTRY	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
106	HALL	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
107	WOMEN	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
108	MEN	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
109	RISER ROOM	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
110	KITCHEN	CONC-1	RB-1	FRP-1	FRP-1	FRP-1	FRP-1	ACT-1
111	TECH STORAGE	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
112	TECH BOOTH	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
113	WORSHIP	TL-1	RB-1	PA-2	PA-1	PA-1	PA-5	PA-3
114	UTILITY	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
115	STORAGE	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
116	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
117	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
118	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
119	CONF	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
120	OFFICE	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
121	CONF	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
122	CONF	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
123	CONF	CPT-1	RB-1	PA-1	PA-1	PA-1	PA-1	ACT-1
124	LOUNGE	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
125	GATHER	CPT-3	RB-1	PA-2	PA-1	PA-1	PA-1	WD-2C
126	HALL	TL-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
200	HALL	CPT-3	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3
209	STAIR N	CONC-1	RB-1	PA-1	PA-1	PA-1	PA-1	PA-3

ROOM FINISH SCHEDULE

NUMBER	NAME	FLOOR FINISH	BASE FINISH	WALL FINISH EAST	WALL FINISH NORTH	WALL FINISH SOUTH	WALL FINISH WEST	CEILING FINISH
1 BED - TYPE A	LIVING	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED - TYPE A	KITCHEN	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED - TYPE A	HALL	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED - TYPE A	BATH	TL-2	WB-1	PA-4	PA-4	PA-4	PA-4	PA-4
1 BED - TYPE A	BEDROOM	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED - TYPE A	CLOSET	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	BED	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	CLOSET	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	BATH	TL-2	WB-1	PA-4	PA-4	PA-4	PA-4	PA-4
1 BED	LIVING	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	ENTRY	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	KITCHEN	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
1 BED	DINING	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	BED	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	BATH	TL-2	WB-1	PA-4	PA-4	PA-4	PA-4	PA-4
2 BED	CLOSET	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	BATH	TL-2	WB-1	PA-4	PA-4	PA-4	PA-4	PA-4
2 BED	BED	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	LIVING	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	KITCHEN	LVT-1	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3
2 BED	CLOSET	CPT-2	WB-1	PA-1	PA-1	PA-1	PA-1	PA-3

UNIT APPLIANCE SCHEDULE

MARK	MANUFACTURER	DESCRIPTION	FINISH	NOTES
DW-2	FRIGIDAIRE	DISHWASHER	STAINLESS STEEL	OFCI
DW-3	FRIGIDAIRE	ADA DISHWASHER	STAINLESS STEEL	OFCI
MW-2	FRIGIDAIRE	OVER-RANGE RECIRCULATING MICROWAVE	STAINLESS STEEL	OFCI
REF-2	FRIGIDAIRE	REFRIGERATOR	STAINLESS STEEL	OFCI
REF-3	FRIGIDAIRE	ADA REFRIGERATOR	STAINLESS STEEL	OFCI
RH-2	FRIGIDAIRE	ADA HOOD	STAINLESS STEEL	OFCI
RNG-2	FRIGIDAIRE	RANGE	STAINLESS STEEL	OFCI
RNG-3	FRIGIDAIRE	ADA RANGE	STAINLESS STEEL	OFCI

KITCHEN APPLIANCE SCHEDULE

MARK	MANUFACTURER	MODEL	FINISH	NOTES
DW-1	GE	PDT795SYVFS	STAINLESS STEEL	OFCI
FRZ-1	-	-	STAINLESS STEEL	OFCI
ICE-1	HOSHIZAKI	KML-700MAJ	STAINLESS STEEL	OFCI
MW-1	GE	JES1657SMSS	STAINLESS STEEL	OFCI
OV-1	GE	JTD3000SNSS	STAINLESS STEEL	OFCI
REF-1	-	27" REACH-IN REFRIGERATOR	STAINLESS STEEL	OFCI
RH-1	GREENHECK	GRRS	STAINLESS STEEL	OFCI
RNG-1	ZLINE	SGR30	STAINLESS STEEL	OFCI

CAFE APPLIANCE SCHEDULE

MARK	DESCRIPTION	NOTES
BL-1	BLENDER	OFCI
COF-1	COFFEE MAKER	OFCI
ESK-1	ESPRESSO MACHINE	OFCI
GR-1	ESPRESSO GRINDER	OFCI
GR-2	COFFEE GRINDER	OFCI
ICE-2	30" UNDERCOUNTER ICE MAKER	OFCI
REF-1	27" REACH-IN REFRIGERATOR	OFCI
REF-4	30" UNDERCOUNTER FRIDGE	OFCI

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FINISH INDEX & FINISH SCHEDULE

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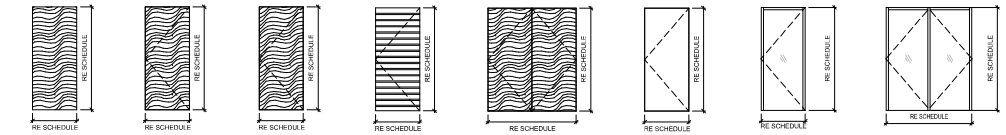


DR TYPE 'A' (SINGLE)
SOLID CORE WOOD DOOR
SWINGING, PT
INT

DR TYPE 'B' (SINGLE)
HOLLOW CORE WOOD DOOR
POCKET - PT
INT

DR TYPE 'C' (SINGLE)
HOLLOW CORE WOOD DOOR
SWINGING - PT
INT

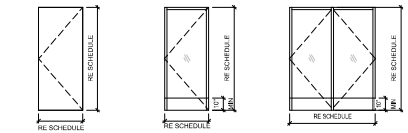
DR TYPE 'D' (SINGLE)
SOLID CORE WOOD DOOR
CUSTOM CLADDING - SWINGING
INT

DR TYPE 'E' (DOUBLE)
SOLID CORE WOOD DOOR
SWINGING - PT
INT

DR TYPE 'F' (SINGLE)
HOLLOW METAL DOOR
SWINGING - PT
INT

DR TYPE 'G' (SINGLE)
1/2" GLASS - CLEAR
SWINGING
INT

DR TYPE 'H' (DOUBLE)
1/2" GLASS - CLEAR
SWINGING
INT



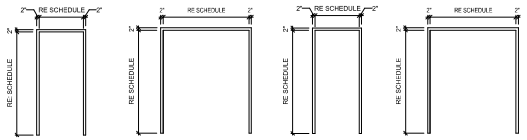
DR TYPE 'J' (SINGLE)
INSULATED HOLLOW METAL DOOR
SWINGING - PT
EXT

DR TYPE 'K' (SINGLE)
INSULATED - 1/2" GLASS - CLEAR
SWINGING
EXT

DR TYPE 'L' (DOUBLE)
INSULATED - 1/2" GLASS - CLEAR
SWINGING
EXT

DOOR TYPES
1/4" = 1'-0"

13F



FRAME TYPE '1' (SINGLE)
WOOD - PT
INT

FRAME TYPE '2' (DOUBLE)
WOOD - PT
INT

FRAME TYPE '3' (SINGLE)
HOLLOW MTL - PT
INT

FRAME TYPE '4' (DOUBLE)
HOLLOW MTL - PT
INT

FRAME TYPES
1/4" = 1'-0"

13C

DOOR SCHEDULE GENERAL NOTES

A. DURING BIDDING / PRICING PHASE, GC SHALL DETERMINE AVAILABILITY OF ALL MATERIALS. ANY DELIVERY SCHED THAT MAY CAUSE COORD PROBLEMS SHALL BE REVIEWED BY ARCHITECT PRIOR TO ORDER AND INSTALL.
B. RE SPECS FOR DR HARDWARE SCHED AND SET TYPES. THE HARDWARE SCHED REPRESENTS THE DESIGN INTENT. THEY ARE A GUIDELINE ONLY AND SHOULD NOT BE CONSIDERED A DETAILED HARDWARE SCHED. DISCREPANCIES, CONFLICTING HARDWARE AND MISSING ITEMS SHOULD BE BROUGHT TO THE ATTENTION OF THE ARCHITECT W/ CORRECTIONS MADE PRIOR TO THE BIDDING PROCESS AND INSTALL. OMITTED ITEMS NOT INCLUDED IN A HARDWARE SET SHOULD BE SCHED W/ THE APPROPRIATE ADDITIONAL HARDWARE REQD FOR PROPER APPLICATION AND FUNCTIONALITY.
C. PRIOR TO BIDDING ALL HARDWARE COLORS / FIN SHALL BE COORD W/ ARCHITECT.
D. ALL HARDWARE MUST BE ADA AND IBC CODE COMPLIANT.
E. ALL DOOR HARDWARE MUST BE REVIEWED W/ OWNER AND ARCHITECT PRIOR TO ORDER AND INSTALL.
F. ACCOUNT FOR REQD HARDWARE QUANTITIES FOR PAIRS OF DRS WHERE APPLICABLE.
G. PANIC HARDWARE: REQD ON DRS SERVING ASSEMBLY OCCUPANCIES W/ 50 OR MORE OCCUPANTS PER SECTION 1008.1.10. REQD ON ALL LOWER LEVEL EXIT DRS. REQD IN ELECT RMS (DRS SWINGING OUT) W/ EQUIP RATED 800 AMPERES OR MORE AND OVER 6' WIDE THAT CONTAIN OVERCURRENT DEVICES, SWITCHING DEVICES OR CONTROL DEVICES PER 1008.1.10.
H. DR SHALL SWING IN THE DIRECTION OF EGRESS IF SERVING 50 OR MORE OR IF > 800 AMPS PER 1008.1.10.
J. PROVIDE FLR / WALL MOUNTED DR STOPS AS REQD. COLOR TO MATCH DR HARDWARE COLOR. NOTIFY ARCHITECT OF TYPE & LOCATIONS BEING PROPOSED PRIOR TO ORDER & INSTALL.
K. ALL KEYING SHALL BE COORD W/ OWNER.
L. PROVIDE TEMPERED GLAZING AT ALL LOCATIONS REQD BY CODE.
M. DR AND STOREFRONT FRAMES SHALL MATCH HISTORIC COLORS AT EXT LOCATIONS.
N. FULLY REPLACED HISTORIC DRS SHALL CLOSELY MATCH ORIGINAL HISTORICAL DRS IN TERMS OF CONFIGURATION, DIM, COLOR AND PROFILES. FV ALL EXIST CONDITIONS.
P. SHPO AND NPS SHALL APPROVE SHOP DWGS OF PROPOSED DRS PRIOR TO ORDER AND INSTALL.
Q. ANY MUNTIN GRIDS MUST BE APPLIED TO THE EXT AND INT OF DR LITES W/ A SPACER BETWEEN INSULATED GLAZING.
R. RE FLR PLANS FOR DR SWING OPERATION.

DOOR & HARDWARE SCHEDULE

MARK	DOOR WIDTH	DOOR HEIGHT	DOOR FIRE RATING	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME FINISH	GLASS TYPE	HARDWARE
LEVEL 0										
001A	3' - 0"	6' - 8"	1 HR	A	WD	PT	1	PT	-	01
002A	3' - 0 1/4"	7' - 11 1/2"	-	J	ALUM	BLK ANOD	-	-	GL-1	AL01
003A	3' - 0"	6' - 8"	1 HR	A	WD	PT	1	PT	-	02
LEVEL 01										
101A	3' - 0 3/4"	7' - 10 1/4"	-	J	ALUM	BLK ANOD	-	-	GL-1	AL01
102A	3' - 0"	7' - 10 1/4"	-	J	ALUM	BLK ANOD	-	-	GL-1	AL01
103A	3' - 0"	6' - 8"	-	F	HM	PT	3	PT	-	03
104A	3' - 0"	6' - 8"	-	F	HM	PT	3	PT	-	04
105A	3' - 0"	6' - 8"	-	F	HM	PT	3	PT	-	04
106A	2' - 10 1/4"	7' - 10 1/4"	-	J	ALUM	BLK ANOD	-	-	GL-1	AL01
107A	3' - 0"	6' - 8"	-	A	WD	PT	1	PT	-	05
108A	3' - 0"	6' - 8"	-	A	WD	PT	1	PT	-	05
109A	3' - 0"	6' - 8"	-	I	HM	PT	3	PT	-	06
110A	3' - 0"	6' - 8"	-	F	HM	PT	3	PT	-	07
110B	3' - 0"	6' - 8"	-	I	HM	PT	3	PT	-	06
111A	3' - 0"	6' - 8"	-	F	HM	PT	3	PT	-	08
113A	2' - 10 1/4"	7' - 11 1/2"	-	G	ALUM	BLK ANOD	-	-	GL-3	AL03
113B	5' - 10 1/4"	7' - 11 1/2"	-	H	ALUM	BLK ANOD	-	-	GL-3	GL02
113C	6' - 10 1/4"	7' - 10 1/4"	-	K	ALUM	BLK ANOD	-	-	GL-1	AL02
114A	3' - 6"	6' - 8"	-	D	WD	WD-1W	-	-	-	16
115A	3' - 6"	6' - 8"	-	D	WD	WD-1W	-	-	-	16
116A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
117A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
118A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
119A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
120A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
121A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
122A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
123A	3' - 0"	8' - 0"	-	G	ALUM	BLK ANOD	-	-	GL-2	GL01
LEVEL 1.5 - DECK										
150A	3' - 0"	6' - 8"	1 HR	I	HM	PT	3	PT	-	10
LEVEL 02										
200A	3' - 0"	6' - 8"	1 HR	A	WD	PT	1	PT	-	11
200B	2' - 10 1/4"	6' - 5 1/2"	-	J	ALUM	BLK ANOD	-	-	GL-1	AL01
201A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
202A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
203A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
204A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
205A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
206A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
207A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01
208A	3' - 0"	6' - 8"	20 MIN	A	WD	PT	1	PT	-	01

UNIT DOOR & HARDWARE SCHEDULE

MARK	DOOR WIDTH	DOOR HEIGHT	DOOR FIRE RATING	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	FRAME TYPE	FRAME FINISH	HARDWARE
A	3' - 0"	6' - 8"	-	C	WD	PT	1	PT	12
B	3' - 0"	6' - 8"	-	C	WD	PT	1	PT	12
C	2' - 8"	6' - 8"	-	C	WD	PT	1	PT	13
D	5' - 0"	6' - 8"	-	E	WD	PT	2	PT	14
E	2' - 10"	6' - 8"	-	C	WD	PT	1	PT	13
F	3' - 0"	6' - 8"	-	B	WD	PT	1	PT	15

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DOOR SCHEDULE, FRAMES AND TYPES

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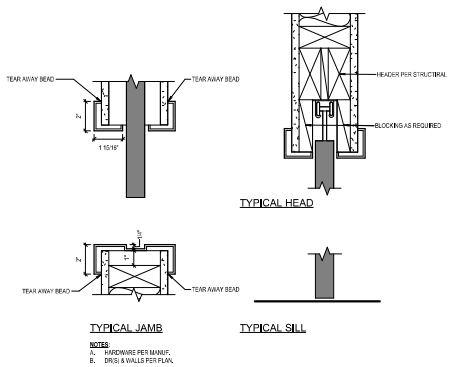
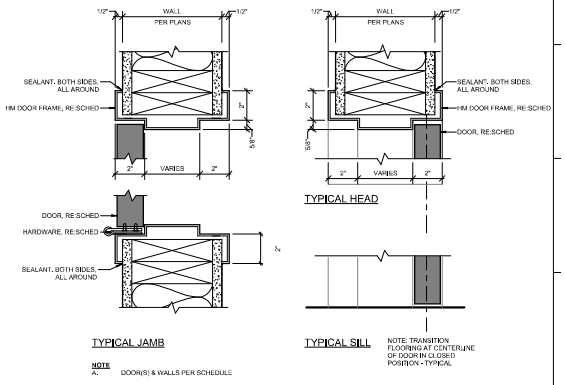
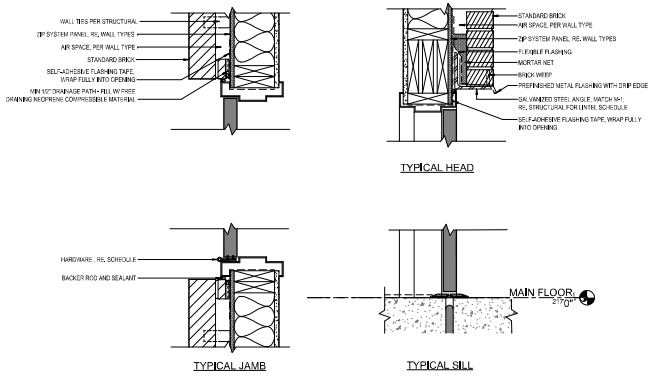


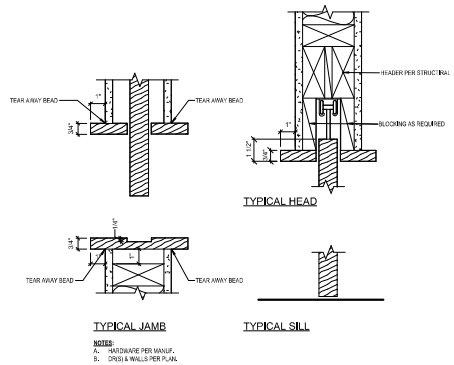
	TYP HM POCKET 3" = 1'-0"	6E



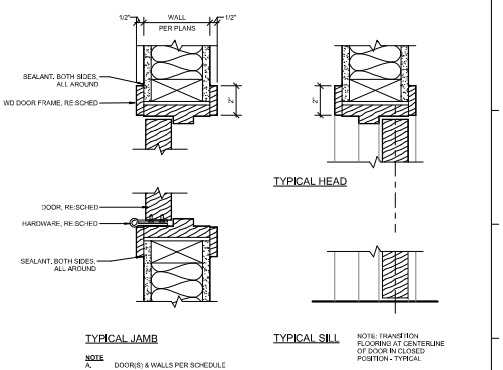
	TYP HM SWINGING 3" = 1'-0"	1E



	TYP HM EXT DOOR 1 1/2" = 1'-0"	11A



	TYP WOOD POCKET 3" = 1'-0"	6A



	TYP WOOD SWINGING 3" = 1'-0"	1A

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DOOR DETAILS

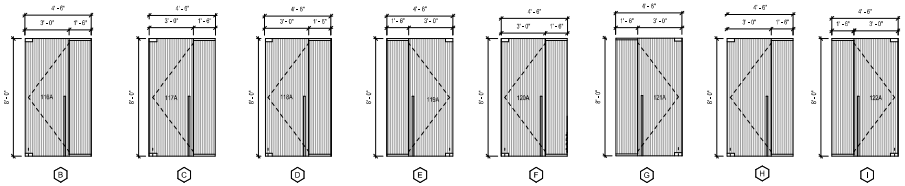
A632

INTERIOR GLAZING SCHEDULE

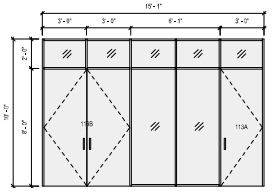
MARK	WIDTH	HEIGHT	GLAZING	NOTES
A	19' - 1"	10' - 0"	GL-1	
B	9' - 6"	9' - 0"	GL-2	
C	9' - 6"	9' - 0"	GL-2	
D	9' - 6"	9' - 0"	GL-2	
E	9' - 6"	9' - 0"	GL-2	
F	9' - 6"	9' - 0"	GL-2	
G	9' - 6"	9' - 0"	GL-2	
H	9' - 6"	9' - 0"	GL-2	
I	9' - 6"	9' - 0"	GL-2	

INTERIOR ELEVATION GENERAL NOTES

A. CABINETS TO COMPLY W/ THE KITCHEN CABINET MANUFACTURING ASSOCIATION (KCMA) QUALITY STANDARD A161.1 FOR CABINETS.
B. ALL CASEWORK SHALL HAVE CONCEALED HINGES AND SELF CLOSING EPOXY-COATED-MTL DRAWER GUIDES, DESIGNED TO PREVENT REBOUND WHEN DRAWERS ARE CLOSED. W/ NYLON-TIRED, BALL-BEARING ROLLERS.
C. RE FIN LEGEND FOR CABINET PULL SELECTIONS.
D. RE PLUMB DWGS AND SPECS FOR ALL FIXTURES.
E. FV ALL PLUMB ROUGH IN LOCATIONS FOR POTENTIAL EXIST STRUCT CONFLICTS. NOTIFY ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALL.
F. INSTALL BLOCKING W/IN BATHROOM WALLS FOR FASTENING OF TOWEL BARS, TOILET PAPER HOLDERS, CURTAIN ROD, LIGHT FIXTURES (AS REQD), MIRRORS (AS REQD) AND ACCESSIBLE GRAB BARS.
G. INSTALL OF DEVICES ON TILE SHALL BE CTRD / EVENLY SPACES ON THE TILE IN ALL DIRECTIONS.
H. RE FIN LEGEND FOR FIN MATERIALS.
J. ALL ACCESSORIES SHALL BE INSTALLED AND SEALED TO PROTECT STRUCT ELEMENTS FROM MOISTURE.
K. ALL BATHROOM ACCESSORIES SHALL BE CHROME WHERE APPLICABLE.
L. ALL BATHROOM ACCESSORIES SHALL BE BOBRICK OR REVIEWED EQ.
M. RE G300 SERIES DWGS FOR STANDARD ADA MOUNTING HTS.
N. ALL EXPOSED TILE EDGES TO RECEIVE AN ANODIZED SCHLUTER SHIENE STRIP PER SPECS.
P. SCRIBE STRIPS NOT TO HAVE MORE THAN A 1/8" VARIANCE FROM TOP TO BOT.
Q. SCRIBE WALL BASE TO FLR AS REQD.
R. SCRIBE ALL MILLWORK TO FLR.
S. MOUNTING HTS FOR PENDANT FIXTURES TO BE COORD W/ ARCHITECT ON SITE.
T. PROVIDE TOILET TANK FLUSH CONTROL ON SIDE AWAY FROM WALL, TYP.
U. PROVIDE FLR AND BASE AT REFRIGERATOR AND RANGE LOCATIONS.
V. PROVIDE NON-COMBUSTIBLE MATERIALS IN RETURN PLENUMS (WALLS ON SOFFIT).
W. ACOUSTICALLY INSULATE WALLS (AND SOFFITS WHERE APPLICABLE) SURROUNDING MECH UNITS.
X. ALL EXPOSED EDGES OF CABINETS, FILLER PNLS, COUNTERTOPS AND END PNLS TO BE FIN, INCLUDING AT ROLL UNDER SINKS AT 'TYPE A' ACCESSIBLE UNITS.
Y. PROVIDE AND INSTALL SHOWER SEATS IN ALL ACCESSIBLE "TYPE A" UNITS.
Z. AT ROLL-UNDER SINKS W/ FRONT APPROACH, INSULATE PIPES OR PROVIDE VALANCE PNL COMPLYING W/ ACCESSIBLE KNEE AND TOE CLEARANCES.
AA. PROVIDE SWITCH FOR KITCHEN EXHAUST IN FACE OF CABINET AT ACCESSIBLE "TYPE A" UNITS.
BB. PROVIDE HANDSHOWER W/ 59" MIN HOSE LENGTH AT SHOWERS IN ALL "TYPE A" UNITS.
CC. PROVIDE FIN FLR AND BASE AT ROLL-UNDER SINKS.
DD. PROVIDE LIGHT SWITCHES, OUTLETS, THERMOSTATS, CHECK-IN AND ENVIRONMENTAL CONTROLS W/IN ACCESSIBLE REACH RANGE.
EE. PROVIDE CLOTHES ROD AND SHELF AT 6'-0" AFF WHERE INDICATED ON PLANS. MOUNTING HT AT "TYPE A" UNITS AT 4'-0" AFF TO TOP OF SHELF.
FF. PROVIDE 1/2" THRESHOLD MAX AT ACCESSIBLE SHOWERS.
GG. RE A600 SERIES FOR APPLIANCE SCHED.
HH. ALIGN TILE JTS W/ CASEWORK REVEALS WHERE APPLICABLE, UNO.



INTERIOR ELEVATIONS
1/4" = 1'-0"
5D



INTERIOR ELEVATION
1/4" = 1'-0"
5A

KEYNOTES

NUMBER	DESCRIPTION

INTERIOR ELEVATION KEYED NOTES

#	DESCRIPTION

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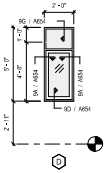
INTERIOR GLAZING ELEVATIONS

A651

STOREFRONT SCHEDULE					
MARK	WINDOW WIDTH	WINDOW HEIGHT	FINISH	MANUF	NOTES
1	9' - 6 1/2"	11'- 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37
2	32'- 0 1/2"	11'- 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37
3	9' - 0"	11'- 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37
4	40'- 0"	11'- 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37
5	9' - 4"	11'- 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37
6	9' - 9"	7' - 0"	DARK BRONZE	EFCO	EFCO 403 THERMAL STOREFRONT 2"X4 1/2" W/ 1" INSULATED GLASS,U-FACTOR = 0.37

WINDOW SCHEDULE									
MARK	WINDOW HEIGHT	WINDOW WIDTH	WINDOW OPERATION	WINDOW SILL HEIGHT	WINDOW GLAZING	WINDOW MANUF	FRAME MATERIAL	FRAME FINISH	NOTES
A	6' - 0"	2' - 0"	CASEMENT	1' - 8"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2
B1	5' - 0"	3' - 0"	CASEMENT (LEFT)	1' - 8"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2
B2	5' - 0"	3' - 0"	CASEMENT (RIGHT)	1' - 8"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2
C1	5' - 0"	3' - 0"	CASEMENT (LEFT)	1' - 8"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2
C2	5' - 0"	3' - 0"	CASEMENT (RIGHT)	1' - 8"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2
D	5' - 0"	3' - 0"	CASEMENT	2' - 11"	GL-1	QUAKER	VINYL	BLK	V300 SERIES, CARDINAL 366 IG #2



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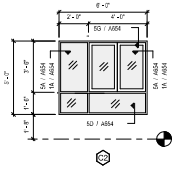
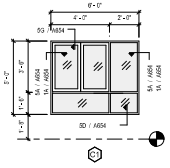


B2

NOTE: SEE BUILDING ELEVATIONS FOR JAMB CONDITION AT EACH INSTANCE.



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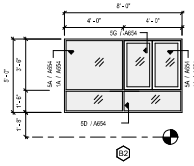

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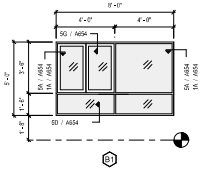

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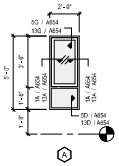
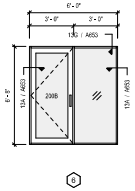
NOTE: SEE BUILDING ELEVATIONS FOR JAMB CONDITION AT EACH INSTANCE.



A

NOTE: SEE BUILDING ELEVATIONS FOR HEAD, JAMB, & SILL CONDITION AT EACH INSTANCE.



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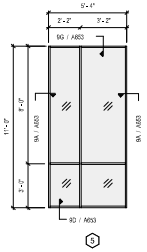

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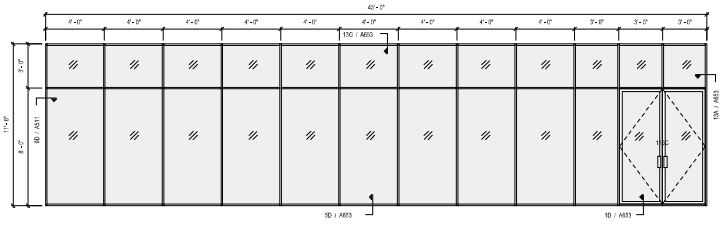

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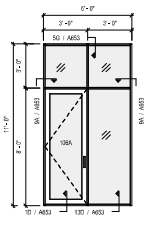

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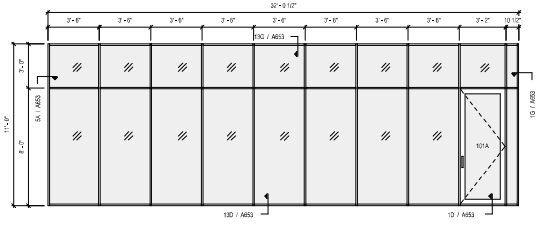

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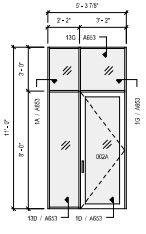

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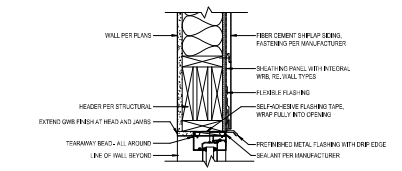
STOREFRONT AND WINDOW ELEVATIONS

A652



HEAD DETAIL	13G
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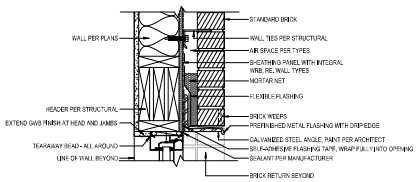

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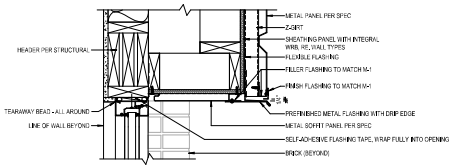

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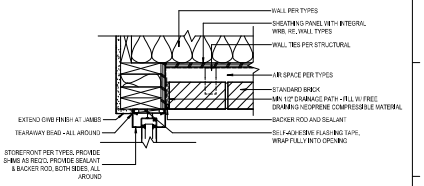

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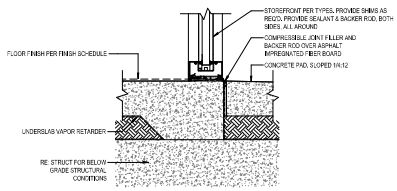

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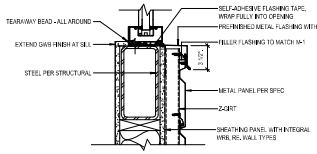

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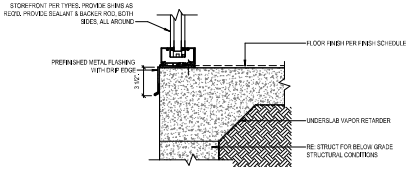

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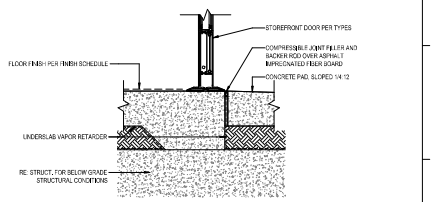

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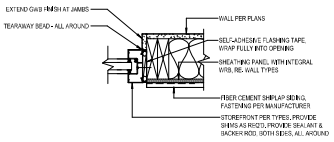

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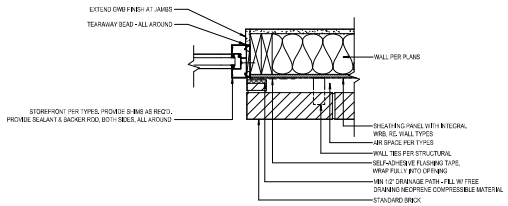

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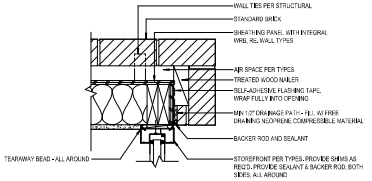

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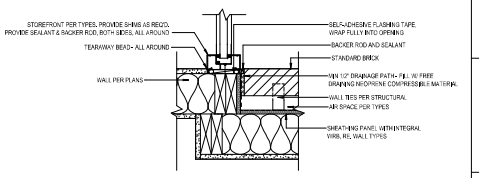

JAMB DETAIL	1A
1 1/2" = 1'-0"	

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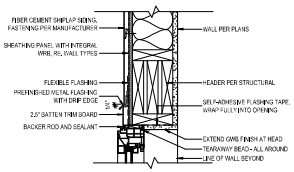
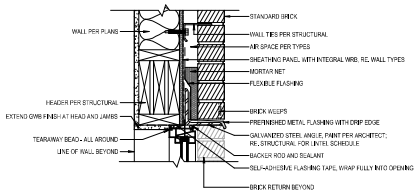
STOREFRONT DETAILS

A653



HEAD DETAIL
1 1/2" = 1'-0"
13G



HEAD DETAIL
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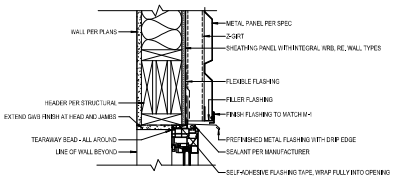
9G



HEAD DETAIL
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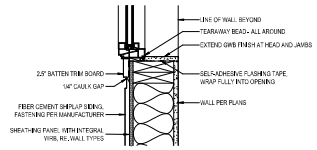
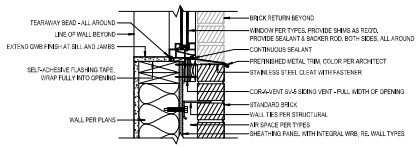
5G



SILL DETAIL
1 1/2" = 1'-0"
13D



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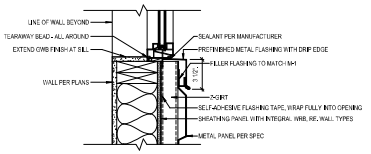

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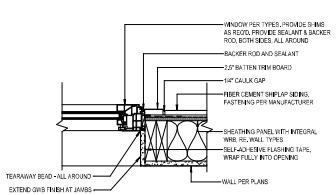

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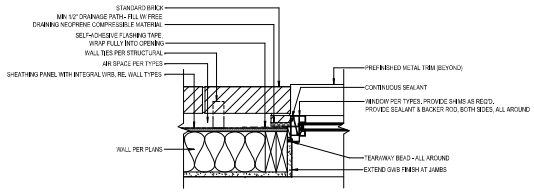

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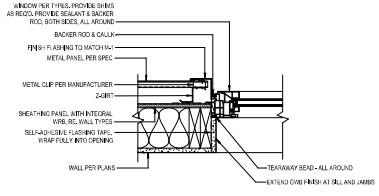

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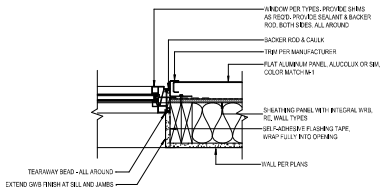

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WINDOW DETAILS

A654

HVAC LEGEND

DUCTWORK

	RADIUS ELBOW
M2.1	ELBOW WITH TURNING VANES
	RECTANGULAR BRANCH TAKEOFF WITH BALANCING DAMPER
	RECTANGULAR SUPPLY DUCT UP
	RECTANGULAR SUPPLY DUCT DOWN
	RECTANGULAR RETURN OR EXHAUST DUCT UP
	RECTANGULAR RETURN OR EXHAUST DUCT DOWN
	ROUND DUCT UP
	ROUND DUCT DOWN
	CONICAL ROUND BRANCH TAKEOFF FROM RECT. DUCT WITH BALANCING DAMPER
	CONICAL ROUND BRANCH TAKEOFF FROM ROUND DUCT WITH BALANCING DAMPER
18x12" / 18x12"	DUCT SIZE (CLEAR INSIDE DIMENSION) FIRST FIGURE INDICATES PLAN SIZE
18" / 18"	ROUND DUCT DIAMETER SIZE (CLEAR INSIDE DIMENSION)
	FLEXIBLE DUCT
M2.1 M2.1	VOLUME DAMPER IN DUCT
M2.1 M2.1	MOTORIZED DAMPER
	DUCT END / CAP
DB	IN-D-VATE DRYER BOX MODEL 480

DIFFUSER, RETURN AND EXHAUST GRILLES

CEILING SUPPLY DIFFUSER

DIFFUSER TAG AND DUCT RUNOUT SIZE

A1 / 201

CFM

4 WAY SUPPLY DIFFUSER, THROW INDICATED BY ARROWS IN DIRECTION OF THROW.

CEILING RETURN OR EXHAUST DIFFUSER

DIFFUSER TAG AND DUCT RUNOUT SIZE

B1 / 201

CFM

SIDEWALL SUPPLY REGISTER

DIFFUSER TAG

C2 / 201

CFM

SIDEWALL RETURN REGISTER

DIFFUSER TAG

C2 / 201

CFM

MISCELLANEOUS

ø	DIAMETER
1 / M2.1	DETAIL NUMBER / DRAWING NUMBER — LARGE SCALE DESIGNATION
EF-1.01	1.01 — THE NUMBER ON SYSTEM / FLOOR — MECHANICAL EQUIPMENT DESIGNATION

PIPING

R	REFRIGERANT

CONTROLS

T	THERMOSTAT
	CEILING OCCUPANCY SENSOR
WS	WALL SWITCH

HVAC ABBREVIATIONS

ACU	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AMPS	AMPERAGE
BD	BALANCING DAMPER
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSE POWER
BMS	BUILDING MANAGEMENT SYSTEM
BTU	BRITISH THERMAL UNIT
CC	COOLING COIL
CD	CEILING DIFFUSER
CER	CEILING RETURN GRILLE
CFM	CUBIC FEET PER MINUTE CFM
CG	CEILING GRILLE
CO	CLEAN OUT
CRA	CONDITIONING RETURN AIR
CU	CONDENSING UNIT
DAD	DUCT ACCESS DOOR
DB	DRY BULB
DG	DOOR GRILLE
DH	DEHUMIDIFIER
DIA	DIAMETER
DN	DOWN
DX	DIRECT EXPANSION
EA	EXHAUST AIR
EAT	ENTERING AIR TEMPERATURE
EDB	ENTERING DRY BULB
EF	EXHAUST FAN
EFF	EFFICIENCY
ELEC	ELECTRICAL
ESP	EXTERNAL STATIC PRESSURE
EWB	ENTERING WET BULB
EWH	ELECTRIC WATER HEATER
°F	DEGREES FAHRENHEIT
FD	FUSIBLE LINK FIRE DAMPER W/ DAD
FLA	FULL LOAD AMPS
FLR	FLOOR
FT	FEET
HC	HEATING COIL
HORIZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR
ID	INSIDE DIMENSION
KW	KILOWATT
LAT	LEAVING AIR TEMPERATURE
LBS	POUNDS
LRA	LOCK ROTOR AMPS
MD	MOTORIZED DAMPER
MA	MIXED AIR
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MCA	MINIMUM CIRCUIT AMPS
MECH	MECHANICAL
MFG	MANUFACTURER
MFS	MAXIMUM FUSE SIZE
MIN	MINIMUM
MOCP	MAXIMUM OVERCURRENT PROTECTION
NC	NORMALLY CLOSED
NFA	NET FREE AREA
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OA	OUTSIDE AIR INTAKE
OBD	OPPOSED BLADE DAMPER
OC	ON CENTER
OD	OUTSIDE DIMENSION
PH OR Ø	PHASE
PD	PRESSURE DROP
PSI	POUNDS PER SQUARE INCH (GAUGE)
PRV	PRESSURE REDUCING VALVE
QTY	QUANTITY
RA	RETURN AIR
REFR	REFRIGERANT
REQ'D	REQUIRED
RH	RELATIVE HUMIDITY
RHC	REHEAT COIL
RL	REFRIGERANT LIQUID
RLA	RUN LOAD AMPS
RPM	REVOLUTIONS PER MINUTE
RS	REFRIGERANT SUCTION
SA	SUPPLY AIR
SENS	SENSIBLE
SPD	SPLITTER DAMPER
SQFT	SQUARE FEET
SP	STATIC PRESSURE
TA	TRANSFER AIR
TYP	TYPICAL
V	VOLTS
VERT	VERTICAL
VFD	VARIABLE FREQUENCY DRIVE
VD	VOLUME DAMPER
W	WITH
WB	WET BULB
WSR	WALL SUPPLY REGISTER

CODE REVIEW

APPLICABLE CODES (BASIS OF DESIGN)
CODES REQUIREMENTS INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

2018 INTERNATIONAL BUILDING CODE

2018 INTERNATIONAL MECHANICAL CODE

2018 NATIONAL ELECTRICAL CODE

HVAC GENERAL NOTES

1. EACH CONTRACTOR, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT, COMPLIANCE WITH SPECIFICATIONS, PROPER ELECTRICAL SERVICE, AND AVOID CONFLICT WITH ANY OTHER BUILDING SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS.
2. ALL OFFSETS, TURNS, FITTINGS, TRIM, DETAIL, ETC., MAY NOT BE INDICATED, BUT SHALL BE PROVIDED AS REQUIRED. ADDITIONAL ALLOWANCES SHALL BE INCLUDED FOR SAME AT EACH PROPOSER'S DISCRETION.
3. OBSERVE ALL APPLICABLE CODES, RULES AND REGULATIONS (CITY, COUNTY, LOCAL, STATE, FEDERAL, MUNICIPALITY, UTILITY COMPANY, OSHA, ETC.).
4. ALL SYSTEMS, EQUIPMENT, AND MATERIALS ARE TO BE INSTALLED IN A NEAT AN WORKMANLIKE MANNER; WORK NOT DONE SO SHALL BE REMOVED AND REINSTALLED SATISFACTORILY.
5. WHERE MOUNTING HEIGHTS ARE NOT INDICATED OR ARE IN CONFLICT WITH ANY OTHER BUILDING SYSTEM, CONTACT THE ENGINEER BEFORE INSTALLATION. REFER ALSO TO ARCHITECTURAL WALL INTERIOR AND EXTERIOR WALL ELEVATIONS, CEILING HEIGHTS AND OTHER DETAILS OF THESE DOCUMENTS. REFERENCE SPECIFICATION SECTION "MECHANICAL GENERAL PROVISIONS" FOR COORDINATION DRAWING REQUIREMENTS.
6. DO NOT SCALE DRAWINGS. PRINTING DISTORTS SCALE. WORK SHALL BE LAID OUT FROM DIMENSIONED DRAWINGS, OR DIMENSIONS SUPPLIED TO THE CONTRACTOR.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THEIR WORK. ALL CUTTING AND PATCHING SHALL MATCH ADJACENT SURFACES.
8. TURNING VANES SHALL BE INSTALLED IN ALL SUPPLY, RETURN, AND EXHAUST DUCTWORK ELBOWS. TURNING VANES NOT REQUIRED FOR KITCHEN EXHAUST DUCTS.
9. THESE DRAWINGS ARE ACCURATE TO THE BEST OF OUR KNOWLEDGE, HOWEVER LOCATIONS, DEPTHS, ELEVATIONS, AND SIZES WERE TAKEN FROM DIFFERENT SOURCES AND ARE SUBJECT TO DEVIATION. THE CONTRACTOR SHALL ASSUME SOME DEVIATIONS AND INCLUDE OFFSETS, ADDITIONAL PIPING, ETC. AT THE TIME OF BID.
10. WHERE PENETRATING ROOFING MEMBRANE OR OTHER MATERIALS USED FOR WEATHERPROOFING THE BUILDING, MAKE SUCH PENETRATIONS IN A WAY THAT WILL NOT VOID OR DIMINISH THE ROOFING WARRANTY OR INTEGRITY IN ANY WAY. COORDINATE ALL SUCH PENETRATIONS WITH THE GENERAL CONTRACTOR/ROOFER.
11. ADVISE THE ARCHITECT OF ANY CONFLICTS, ERRORS, OMISSIONS, ETC. AT LEAST TEN (10) DAYS PRIOR TO BID DATE, TO ALLOW CLARIFICATION BY WRITTEN ADDENDUM.
12. DEVIATION FROM SPECIFICATIONS OR PLANS REQUIRES PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND MUST BE SUBMITTED IN WRITING NO LATER THAN TEN DAYS PRIOR TO THE BID DATE.
13. COORDINATE THE LOCATION OF DRAINS, ELECTRICAL OUTLETS, ETC. WITH ALL MECHANICAL ROOM EQUIPMENT, ETC. PRIOR TO COMMENCING INSTALLATION. WORK NOT SO COORDINATED SHALL BE REMOVED AND PROPERLY INSTALLED AT THE EXPENSE OF THE RESPONSIBLE CONTRACTOR(S).
14. THE PURPOSE AND INTENT OF THE DOCUMENTS PERTAINING TO THIS PROJECT IS TO PROVIDE A COMPLETE, FUNCTIONAL, AND SAFE FACILITY. ANYTHING LESS SHALL BE UNACCEPTABLE.
15. ALL VIBRATING, OSCILLATING, NOISE PRODUCING OR ROTATING EQUIPMENT SHALL BE ISOLATED FROM SURROUNDING SYSTEMS IN AN APPROVED MANNER, NOISY, VIBRATING, OR STRUCTURALLY DAMAGING INSTALLATIONS SHALL BE SATISFACTORILY REPLACED OR REPAIRED AT THE INSTALLING CONTRACTOR'S EXPENSE. THE FINAL DECISION ON THE SUITABILITY OF A PARTICULAR INSTALLATION SHALL BE THAT OF THE ARCHITECT.
16. INSTALL EQUIPMENT, MATERIALS, ETC. IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND DIRECTIONS. IF IN CONFLICT WITH THE DESIGN INDICATED IN CONTRACT DOCUMENTS, ADVISE THE ARCHITECT PRIOR TO INSTALLATION FOR CLARIFICATION.

HVAC SHEET INDEX

M001	MECHANICAL LEGEND, ABBREVIATIONS & NOTES
M002	MECHANICAL SPECIFICATIONS
M003	MECHANICAL SPECIFICATIONS
M004	MECHANICAL SPECIFICATIONS
MZ101	FIRST FLOOR HVAC ZONING PLAN
MZ102	SECOND FLOOR HVAC ZONING PLAN
M101	OVERALL FIRST FLOOR AND MAIL ROOM HVAC PLAN
M102	OVERALL SECOND FLOOR HVAC PLAN
M103	OVERALL ROOF HVAC PLAN

HVAC GENERAL NOTES (CONT'D)

17. ALL SUPPORTS FOR EQUIPMENT, DEVICES, OR FIXTURES SHALL BE UNIQUE FROM THE BUILDING STRUCTURE. DO NOT SUPPORT FROM OTHER TRADES, EQUIPMENT OR SUPPORTS WITHOUT WRITTEN PERMISSION FROM THE ARCHITECT AND CONSENT OF THE OTHER TRADE, IN WRITING.
18. DEVIATIONS IN SIZE, CAPACITIES, FIT, FINISH, ETC. FOR EQUIPMENT FROM THAT SPECIFIED SHALL BE THE RESPONSIBILITY OF THE PURCHASER OF THAT EQUIPMENT. ANY PROVISIONS REQUIRED TO ACCOMMODATE A DEVIATION, WHETHER APPROVED BY THE ARCHITECT OR NOT, SHALL BE THE RESPONSIBILITY OF THE PURCHASER.
19. THE GENERAL CONTRACTOR FOR THIS CONSTRUCTION IS RESPONSIBLE FOR THE COORDINATION, APPEARANCE, SCHEDULING, AND TIMELINESS OF THE WORK OF ALL TRADES, CONTRACTORS, SUPPLIERS, INSTALLERS, ETC.
20. VALVES, BALANCING DAMPERS OR ANY MECHANICAL/ELECTRICAL ITEM SHALL NOT BE LOCATED ABOVE A HARD CEILING. IF THIS IS NOT POSSIBLE, THEN AN APPROPRIATELY SIZED ACCESS DOOR SHALL BE PLACED UNDER THE ITEM TO ALLOW EASY MAINTENANCE AND ADJUSTMENT BY THIS CONTRACTOR.
21. THE GENERAL CONTRACTOR, MECHANICAL CONTRACTOR, AND ALL OTHER CONTRACTORS SHALL ENSURE PROPER COORDINATION BETWEEN ALL TRADES SUCH THAT CONDUITS, PIPING, DUCTWORK, ETC. DO NOT BLOCK ACCESS TO VALVES, EQUIPMENT, DUCT ACCESS DOORS, ETC. ITEMS THAT HAVE BEEN INSTALLED WHERE ACCESS IS COMPROMISED SHALL BE RELOCATED AT THE CONTRACTOR'S EXPENSE.
22. THE CONTRACTOR SHALL INCLUDE IN THEIR BID ALL COSTS ASSOCIATED WITH DRAINING AND FILLING PIPING SYSTEMS AS REQUIRED TO INSTALL THEIR NEW WORK.
23. TESTING, ADJUSTING, AND BALANCING AGENCY IS TO PROVIDE SIZING OF FAN AND MOTOR SHEAVES REQUIRED FOR PROPER BALANCE. REPLACE FAN AND MOTOR SHEAVES AND BELTS AS REQUIRED ON EQUIPMENT (AHUs, EFs, ETC.). THE MECHANICAL CONTRACTOR SHALL PURCHASE AND INSTALL ALL SHEAVES AND BELTS AS REQUIRED.
24. PRIOR TO ORDERING ANY MATERIALS OR ROUGH-IN OF ANY KIND, THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR FINAL COORDINATION OF ALL ELECTRICAL REQUIREMENTS (I.E., VOLTAGE, PHASE, CIRCUIT BREAKER, WIRING SIZE, ETC.) WITH THE ELECTRICAL CONTRACTOR. THERE WILL BE NO CHANGE IN THE CONTRACT AMOUNT FOR ANY DISCREPANCIES. MECHANICAL CONTRACTOR SHALL COORDINATE WITH ALL OTHER CONTRACTORS, VENDORS, AND SUPPLIERS AND SHALL INSURE COMPLETE, 100% FUNCTIONAL, TESTED, INSPECTED, AND APPROVED SYSTEMS. CLAIMS FOR ADDITIONAL COST OR CHANGE ORDERS WILL IMMEDIATELY BE REJECTED.
25. EQUIPMENT BRACING WILL BE INCLUDED FOR ALL OVERHEAD UTILITIES AND OTHER EQUIPMENT WEIGHING 31 POUNDS OR MORE (EXCLUDING DISTRIBUTED SYSTEMS SUCH AS PIPING, ETC.). BRACING SHALL BE ACCOMPLISHED BY EITHER RIGID OR FLEXIBLE SYSTEMS. ALL EQUIPMENT MOUNTINGS SHALL BE DESIGNED TO RESIST FORCES OF 0.5 TIMES THE EQUIPMENT WEIGHT IN ANY DIRECTION AND 1.5 TIMES THE EQUIPMENT WEIGHT IN THE DOWNWARD DIRECTION. ALL BRACING SHALL BE CONTRACTOR DESIGNED.
26. ALL BRANCH DUCTS TO AIR DISTRIBUTION DEVICES (SUPPLY, RETURN, EXHAUST, ETC.) SHALL INCLUDE A VOLUME DAMPER PER DRAWINGS AND SPECIFICATIONS.
27. DUCT SIZES INDICATED ARE ACTUAL INSIDE (NET) DIMENSIONS. ALL RECTANGULAR SUPPLY, RETURN, EXHAUST, AND OUTDOOR AIR DUCT SIZES ARE INSIDE CLEAR DIMENSIONS (INSIDE LINER, WHERE APPLICABLE).
28. THE CONTRACTOR SHALL INSTALL CONDENSATE DRAINS, WITH UNION CONNECTIONS, FROM ALL A/C EQUIPMENT. PROVIDE TRAPPED DRAINAGE PIPING WITH VENT RISERS 6" HIGH NEAR EQUIPMENT CONNECTIONS. PROVIDE NEW INSULATED CONDENSATE DRAINS FOR ALL HVAC COOLING COILS AND OVERFLOW PANS AND ROUTE ON SLOPE TO CONNECTION WITH NEARBY PLUMBING VENT STACK, OR FLOOR DRAIN, OR AS INDICATED ON PLANS. PROVIDE CLEANOUTS ON DRAINS, 1" OR LARGER, EVERY 20' O.C., AND AT ENDS AND OFFSETS OF RUNS.

HVAC SHEET INDEX (CONT'D)

M104	OVERALL FIRST FLOOR AND MAIL ROOM REFRIGERANT PIPING PLAN
M105	OVERALL SECOND FLOOR REFRIGERANT PIPING PLAN
M106	OVERALL ROOF REFRIGERANT PIPING PLAN
M501	MECHANICAL DETAILS
M502	MECHANICAL DETAILS
M601	MECHANICAL SCHEDULES
M602	MECHANICAL SCHEDULES
M603	MECHANICAL SCHEDULES

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MECHANICAL LEGEND, ABBREVIATIONS & NOTES

M001

GENERAL

SUMMARY

A. WORK INCLUDED IN SECTION 230000 HEATING, VENTILATING AND AIR CONDITIONING (HVAC) SYSTEMS: PROVIDE ALL MATERIALS, EQUIPMENT, FABRICATION, INSTALLATION AND TESTS AS NOTED IN CONTRACT DOCUMENTS IN CONFORMITY WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
B. MATERIALS COMPOSITION SHALL CONFORM TO THE INTERNATIONAL MECHANICAL CODE.
C. RELATED SECTIONS.
1. CONSULT ALL OTHER SECTIONS, DETERMINE THE EXTENT AND CHARACTER OF RELATED WORK AND PROPERLY COORDINATE WORK SPECIFIED HEREIN WITH THAT SPECIFIED ELSEWHERE TO PRODUCE A COMPLETE AND OPERABLE INSTALLATION.

COORDINATION

A. MECHANICAL CONTRACTOR SHALL REVIEW THE DOCUMENTS OF OTHER TRADES, IN PARTICULAR MECHANICAL DRAWINGS, PRIOR TO BID AND INCLUDE IN BID ALL OFFSETS AND OTHER REROUTING OF DUCTWORK, PIPING, AND DEVICES TO AVOID CONFLICTS. WHERE DUCTS AND MECHANICAL PIPING CONFLICT WITH DIVISION 21 AND DIV 22 PIPING, DIVISION 21 AND 22 PIPING SHALL BE REROUTED AS REQUIRED TO RESOLVE THE CONFLICT. IN NO CASE SHALL PIPING PENETRATE DUCTWORK.
B. ROUTING OF DUCT AND PIPE SHALL BE IN A NEAT MANNER TO WORK WITH THE ARCHITECTURAL AND STRUCTURAL ELEMENTS OF THE BUILDING AND THE REQUIREMENTS OF THE ARCHITECT. ANY DUCT AND PIPE ROUTES AT EXPOSED CEILING AREAS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT. SUBMIT THESE PIPE ROUTES IN ADVANCE TO THE ARCHITECT PRIOR TO THE SHOP DRAWING SUBMITTAL.

DIVISION OF WORK

A. THIS SECTION DELINEATES THE DIVISION OF WORK BETWEEN DIVISIONS. SEE RESPONSIBILITY MATRIX ON PLANS.
B. CONSULT OTHER SECTIONS, DETERMINE THE EXTENT AND CHARACTER OF RELATED WORK, AND PROPERLY COORDINATE WORK SPECIFIED HEREIN WITH THAT SPECIFIED ELSEWHERE TO PRODUCE A COMPLETE AND OPERABLE INSTALLATION. THIS SECTION IS PROVIDED TO ASSIST THE CONTRACTOR IN COORDINATION OF WORK SCOPE BUT SHALL NOT BE CONSTRUED TO LIMIT CONTRACTOR'S SCOPE OF WORK ENCOMPASSED BY THE CONTRACT DOCUMENTS.

QUALITY ASSURANCE

A. ALL EQUIPMENT AND ACCESSORIES TO BE THE PRODUCT OF A MANUFACTURER REGULARLY ENGAGED IN ITS MANUFACTURE.
B. ALL ITEMS OF A GIVEN TYPE SHALL BE THE PRODUCTS OF SAME MANUFACTURER.
C. SUPPLY ALL EQUIPMENT AND ACCESSORIES NEW AND FREE FROM DEFECTS.
D. SUPPLY ALL EQUIPMENT AND ACCESSORIES IN COMPLIANCE WITH THE APPLICABLE STANDARDS LISTED IN HEREIN WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL CODES.

SUBMITTALS

A. SCHEDULE.
1. ALLOW 10 WORKING DAYS FOR APPROVAL UNLESS ENGINEER AGREES TO ACCELERATED SCHEDULE.
B. SUBMIT DRAWINGS, PRODUCT DATA, SAMPLES AND CERTIFICATES OF COMPLIANCE REQUIRED AS HEREINAFTER SPECIFIED IN THIS SECTION.
C. SUBMISSION PROCEDURE.
1. INITIAL SUBMITTAL.
a. EACH SUBMITTAL SHALL HAVE A UNIQUE SERIAL NUMBER SUCH AS "SUBMITTAL 220000-01".
b. LONG LEAD EQUIPMENT AND MATERIAL ELECTRONIC SUBMITTALS MAY BE SUBMITTED EARLY IN PROJECT AT ONE TIME, OTHERS SHALL BE SUBMITTED ELECTRONICALLY ALL AT ONE TIME AND WITHIN THIRTY DAYS OF NOTICE-TO-PROCEED (NTP).
c. SUBMIT ONE ELECTRONIC COPY OF PRODUCT DATA IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF. PROVIDE SEPARATE FILES FOR EACH EQUIPMENT TYPE. PAPER COPIES OR SCANS OF PAPER COPIES WILL NOT BE ACCEPTED.
d. SUBMITTAL WILL BE REVIEWED, AND COMMENTS RETURNED TO CONTRACTOR.
2. RESUBMISSION.
a. EACH RESUBMITTAL SHALL HAVE THE ORIGINAL UNIQUE SERIAL NUMBER PLUS UNIQUE REVISION NUMBER SUCH AS "SUBMITTAL 220000-01 REVISION 1".
b. MAKE ANY CORRECTIONS OR CHANGE IN SUBMITTALS AS REQUIRED.
c. RESUBMIT FOR REVIEW IN ELECTRONIC FORMAT DESCRIBED ABOVE UNTIL NO EXCEPTIONS ARE TAKEN, OR UNLESS CONTRACTOR AGREES WITH "FURNISH AS CORRECTED" REMARKS.
3. FINAL APPROVAL: ONCE SUBMISSION IS ACCEPTED, CONTRACTOR SHALL PRINT TWO BOUND SETS OF SUBMITTALS FOR OWNER. ENGINEERING RESOURCE GROUP DOES NOT REQUIRE OR DESIRE PAPER COPIES.
D. CONTENTS OF SUBMITTALS.
1. HVAC MATERIAL SUBMITTALS
a. PIPING, FITTINGS, JOINING METHOD, INSULATION, IDENTIFICATION, VALVES.
2. HVAC EQUIPMENT SUBMITTALS
a. MANUFACTURER'S NAME AND MODEL NUMBER.
b. ALL INFORMATION REQUIRED TO COMPLETELY DESCRIBE MATERIALS AND EQUIPMENT AND TO INDICATE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO:
1) A SCHEDULE, FOR ALL ITEMS OF THE SAME TYPE SHALL BE SUPPLIED. THE SCHEDULE SHALL INCLUDE THE MANUFACTURER, THE MODEL SIZE, SPECIFIC INFORMATION THAT MAKES THAT ITEM UNIQUE, THE SERVICE OF THE ITEM, THE SYSTEM SERVED BY THE ITEM.
2) PHYSICAL DATA, PERFORMANCE DATA, ELECTRICAL AND HVAC REQUIREMENTS.
E. SHOP DRAWINGS.
1. DRAWINGS SHALL BE DEVELOPED USING 3D SOFTWARE SUCH AS REVIT, CAD-DUCT AND CAD-PIPE THAT IS COMPATIBLE WITH NAVISWORKS.
2. SHOP DRAWINGS SHALL INCLUDE THE FOLLOWING AT A MINIMUM.
a. ALL RECTANGULAR DUCTWORK.
b. ALL ROUND DUCTWORK OTHER THAN FLEXIBLE DUCTWORK.
c. ALL PIPING LARGER THAN 3/4" INCHES.
d. ALL EQUIPMENT.
e. ALL GRILLES, REGISTERS AND DIFFUSERS.
3. PROVIDE COORDINATION PLANS INDICATING LAYOUT OF PADS, CURBS, PENETRATIONS, OPENINGS, AND OTHER ITEMS TO BE PROVIDED BY OTHER TRADES.

GENERAL (CONTINUED)

F. OPERATING INSTRUCTIONS & MAINTENANCE MANUALS.
1. BEFORE REQUESTING ACCEPTANCE OF WORK, SUBMIT IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF VIA EMAIL FOR REVIEW BY ENGINEER, FILE SHALL INCLUDE BOOKMARKS FOR EACH PIECE OF EQUIPMENT. PAPER COPIES WILL NOT BE ACCEPTED.
2. AFTER REVIEW AND MAKING CORRECTIONS NOTED, FURNISH THREE PRINTED AND BOUND SETS FOR THE OWNER. ASSEMBLE IN WITH SEPARATE TABS FOR EACH PIECE OF EQUIPMENT IN HEAVY THREE-RING BINDER.
3. O&M MANUAL SHALL INCLUDE ALL SUBMITTAL DATA SUBMITTED HEREIN ABOVE, AS INSTALLED. THE INTENT OF THIS SECTION IS THAT A SINGLE DOCUMENT CONTAINS ALL RELEVANT INFORMATION ABOUT EACH PIECE OF EQUIPMENT.
4. IN ADDITION TO THE SUBMITTAL DATA, THE O&M MANUAL SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR ALL NEW EQUIPMENT:
a. MANUFACTURER'S NAME, MODEL NUMBER, SERVICE MANUAL, SPARE-PARTS LIST, AND DESCRIPTIVE LITERATURE FOR ALL COMPONENTS.
b. INSTALLATION INSTRUCTIONS.
c. MAINTENANCE INSTRUCTIONS.
d. WIRING DIAGRAMS.
e. NAME, ADDRESS AND PHONE NUMBER OF CONTRACTORS EQUIPMENT SUPPLIERS AND SERVICE AGENCIES.
f. GUARANTEE PERIOD, INCLUDING START AND END PERIOD.
G. RECORD DRAWINGS.
1. UPDATE DESIGN/SHOP DRAWINGS TO "AS-BUILT" CONDITIONS:
a. FULLY INCORPORATE ALL REVISIONS MADE BY ALL CRAFTS IN COURSE OF WORK.
b. INCLUDE ALL FIELD CHANGES, ADJUSTMENTS, VARIANCES, SUBSTITUTIONS, AND DELETIONS, INCLUDING ALL CHANGE ORDERS.
c. SUBMIT IN ELECTRONIC FORMAT PER SUBMITTALS ABOVE FOR APPROVAL.
2. ONCE APPROVED.
a. PROVIDE ONE SET OF ADOBE PDF FILES OF EACH DRAWING ON PORTABLE MEDIA (E.G., USB FLASH DRIVE).
b. PROVIDE ONE FULL SIZE SET OF DRAWINGS ON BOND PAPER.
c. PROVIDE PDF SET LOADED ONTO 1 FLASH DRIVE.

WARRANTY

A. FURNISH ALL LABOR, MATERIALS, SERVICES, AND EQUIPMENT WARRANTIES AS OUTLINED HEREIN FOR MECHANICAL SYSTEMS AND EQUIPMENT.
B. TEST PERIOD: EACH PIECE OF EQUIPMENT SHALL MEET PERFORMANCE SPECIFICATIONS AFTER THREE MONTHS' ACTUAL OPERATION TO OWNER'S SATISFACTION.
C. CONSIDERED FAULTY WORKMANSHIP, THIS WARRANTY SHALL INCLUDE REPAIR, REMOVAL OF DEFECTIVE PARTS AND INSTALLATION OF REPLACEMENTS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR PROPERTY DAMAGE THAT RESULTS FROM DEFECTS IN MATERIALS, IMPROPER CONTROLS OR SETUP, AND/OR INSTALLATION DURING THE WARRANTY PERIOD.
D. FOR FIRST YEAR AFTER THE WARRANTY BEGINS, CONTRACTOR SHALL PROVIDE, AT NO COST TO THE OWNER, ANY REQUIRED MAINTENANCE AND SERVICE NECESSARY TO ASSURE THE PROPER OPERATION OF THE INSTALLATIONS AND SYSTEMS. LATENT DEFECTS ARISING DURING THIS PERIOD SHALL, UPON NOTIFICATION BY THE OWNER, BE PROMPTLY CORRECTED AT NO ADDITIONAL COST TO THE OWNER. THIS SHALL INCLUDE:
1. REFRIGERANT AND OIL REPLACEMENT IN REFRIGERATION SYSTEMS: LEAKING REFRIGERANT SYSTEMS SHALL BE REPAIRED, PROVED TIGHT, AND CHARGED WITH MANUFACTURER'S RECOMMENDED REFRIGERANT AND LUBRICANT, WITHIN ANY STANDARD WARRANTY PERIOD.
2. ANY ADJUSTMENTS AND SERVICE REQUIRED, EXCLUDING FILTER MONITORING AND REPLACEMENT.
3. ANY NECESSARY ADJUSTMENTS IN SYSTEM CONTROL SET POINTS WHEN REQUIRED, EXCLUDING FILTER MONITORING.
E. THE CONTRACTOR SHALL MAKE INSPECTIONS AT END OF 6TH AND 11TH MONTHS AFTER BEGINNING OF WARRANTY RELATED TO THE HVAC CONTROL SYSTEM. DURING THESE INSPECTIONS THE CONTRACTOR SHALL VERIFY ALL CONTROL SETTINGS AND RECALIBRATE CONTROLS AND SENSORS TO MATCH REQUIREMENTS AS CAN BE COORDINATED WITH PROFESSIONAL BASED ON HISTORICAL TREND BY DATA AND TO OPTIMIZE SYSTEM PERFORMANCE. TEMPERATURE AND SAFETY CONTROLS SHALL BE ADJUSTED AS NECESSARY TO INSURE CONTINUOUS, TROUBLE FREE, SAFE, AND AUTOMATIC OPERATION OF SYSTEMS INCLUDING GAS BURNER, REFRIGERATING EQUIPMENT, ETC.
F. EXTENDED EQUIPMENT WARRANTIES
1. DEFINITIONS AND GENERAL REQUIREMENTS
a. EXTENDED WARRANTIES, DEFINED AS A WARRANTY AFTER THE STANDARD ONE (1) YEAR WARRANTY ALLOCATED TO THE HVAC CONTROL SYSTEM, DURING THESE INSPECTIONS THE
b. "COMPREHENSIVE" IS DEFINED AS A COMPLETE WARRANTY EXCEPT FOR ACTS OF GOD AND NEGLIGENT MAINTENANCE OR OPERATION OF THE SPECIFIED EQUIPMENT AS REQUIRED OF THE OWNER.
c. ALL COMPREHENSIVE EQUIPMENT WARRANTIES SHALL INCLUDE ALL PARTS, LABOR, SHIPPING, POSTAGE, FREIGHT, HANDLING FEES, ETC., TO ACCOMPLISH ANY REPAIR AND/OR REPLACEMENT AT NO ADDITIONAL COST TO OWNER. THESE WARRANTY PROVISIONS WILL BE BINDING ON ANY CONTRACTOR AND/OR SUPPLIER/MANUFACTURER UNLESS SPECIFICALLY APPROVED OTHERWISE IN WRITING BY OWNER.
d. THIRD PARTY INSURANCE AND/OR SPLIT CONTRACTOR LABOR/MANUFACTURER'S EQUIPMENT/MATERIAL WARRANTIES SHALL NOT BE ACCEPTABLE. ONLY MANUFACTURER'S COMPREHENSIVE WARRANTIES SHALL BE ACCEPTABLE.
e. SEE EXTENDED WARRANTY TABLE.
f. ALL WARRANTIES BEGIN AT SUBSTANTIAL COMPLETION OF ENTIRE PROJECT UNLESS OTHERWISE APPROVED BY ARCHITECT / OWNER.
g. ALL EQUIPMENT TYPICAL OPERATIONAL O&M PROCEDURES, AIR FILTER CHANGES, LUBRICATION, ETC., ARE THE CONTRACTOR'S RESPONSIBILITY UNTIL THE OWNER ACCEPTS THE ENTIRE PROJECT.

GUARANTEE

A. THE CONTRACTOR SHALL GUARANTEE THE FOLLOWING:
1. ALL NEW MATERIALS, NEW EQUIPMENT, APPARATUS, AND WORKMANSHIP SHALL BE FREE OF DEFECTIVE MATERIALS AND FAULTY WORKMANSHIP.
2. ALL EQUIPMENT AND MATERIAL WILL PRODUCE THE RESULTS SPECIFIED. SERVICE OF EXISTING EQUIPMENT IS THE RESPONSIBILITY OF THE OWNER.
3. ALL SYSTEMS HAVE BEEN FULLY TESTED, ADJUSTED, AND BALANCED.
B. THE HVAC CONTRACTOR SHALL FURNISH WRITTEN GUARANTEE TO REPLACE ALL DEFECTIVE WORK, MATERIALS, AND SERVICES FURNISHED UNDER THIS SECTION, AT NO ADDITIONAL COST TO THE OWNER, FOR THE WARRANTY PERIOD.
C. THE OWNER RESERVES THE RIGHT TO MAKE TEMPORARY REPAIRS AS NECESSARY TO KEEP EQUIPMENT IN OPERATING CONDITION WITHOUT VOIDING THE GUARANTEES OR RELIEVING RESPONSIBILITY DURING THE GUARANTEE PERIOD.

EXECUTION

RECORD DRAWINGS

A. KEEP AN ACCURATE DIMENSIONAL RECORD OF INSTALLED SYSTEMS AND EQUIPMENT. MAINTAIN A SET OF RECORD ("AS-BUILT") DRAWINGS UP-TO-DATE AS CONSTRUCTION PROGRESSES. DRAWINGS SHALL BE MAINTAINED AT THE JOBSITE AND AVAILABLE FOR INSPECTION BY THE ARCHITECT AND OWNER.

PROTECTION OF WORK DURING CONSTRUCTION

A. PROTECT FROM DAMAGE, WATER, DUST, ETC., MATERIAL, EQUIPMENT AND APPARATUS PROVIDED UNDER THIS DIVISION, BOTH IN STORAGE AND INSTALLED, UNTIL SUBSTANTIAL COMPLETION HAS BEEN FILED.
B. PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. PROTECT EXPOSED COILS WITH PLYWOOD OR OTHER SUITABLE RIGID COVERS TO AVOID DAMAGE TO FINS.
C. PROTECT EXISTING WALLS, DOORS, CARPETING, ETC. FROM DAMAGE. ANY DAMAGE MUST BE REPAIRED AT NO COST TO OWNER.
D. COVER MOTORS AND OTHER MOVING MACHINERY TO PROTECT FROM DIRT AND WATER DURING CONSTRUCTION.
E. DURING TRANSPORT TO AND STORAGE ON THE CONSTRUCTION SITE. AND DURING ROUGH-IN UNTIL FINAL CONNECTIONS ARE MADE, ALL DUCTWORK AND OTHER RELATED AIR DISTRIBUTION COMPONENT OPENINGS SHALL BE COVERED WITH PLASTIC TO PREVENT CONTAMINATION FROM DUST, WATER, AND DEBRIS.
F. KEEP OPENINGS IN PIPING CLOSED TO PREVENT ENTRANCE OF FOREIGN MATTER.
G. MATERIAL, EQUIPMENT OR APPARATUS:
1. MATERIAL, EQUIPMENT, OR APPARATUS DAMAGED BECAUSE OF IMPROPER STORAGE OR PROTECTION WILL BE REJECTED.
2. REMOVE DAMAGED MATERIAL, EQUIPMENT OR APPARATUS FROM SITE AND PROVIDE NEW, DUPLICATE, MATERIAL, EQUIPMENT, OR APPARATUS IN REPLACEMENT OF THAT REJECTED.
3. POROUS MATERIALS, SUCH AS DUCT LINER, SHALL BE PROTECTED FROM WEATHER. IF SUCH MATERIAL BECOMES WET DURING CONSTRUCTION, IT SHALL BE REMOVED AND REPLACED AT NO COST TO OWNER; DRYING IS NOT SUFFICIENT DUE TO POSSIBLE MICROBIAL CONTAMINATION.

INSTALLATION AND WORKMANSHIP

A. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER.
B. REPAIR ALL DAMAGED OR TEMPORARILY REMOVED WALLS, ROOFS, ROOFING, EQUIPMENT, ETC.
C. FOLLOW MANUFACTURER'S INSTALLATION INSTRUCTIONS AND RECOMMENDATIONS.
D. ALL EQUIPMENT MUST BE ANCHORED TO THE BUILDING. ALL HUNG EQUIPMENT SHALL INCORPORATE VIBRATION ISOLATION.

DUCTWORK

A. INSTALL PER SMACNA STANDARDS.
B. RECTANGULAR AND MEDIUM PRESSURE DUCT BENDS GREATER THAN 45 DEGREES SHALL BE CURVED SECTIONS, THE CENTER LINE RADIUS OF WHICH SHALL NOT BE LESS THAN 1-1/2 TIMES THE WIDTH OF THE DUCT IN THE PLANE OF THE BEND, WHERE REQUIRED DUE TO SPACE CONSTRAINTS, SHORT RADIUS ELBOWS WITH TURNING VANES AND SPLITTER(S) MAY BE USED, NO CAPPED "BULLHEAD" TEES, AND SHORT-RADIUS TEES PERMITTED. ON LOW PRESSURE DUCTS, SQUARE ELBOWS WITH SINGLE WIDTH TURNING VANES MAY BE USED. ROUND DUCT ELBOWS MAY BE ADJUSTABLE TYPE ON LOW PRESSURE SYSTEMS ONLY WITH INSTALLATION DURING THE WARRANTY SEALED.
C. GRILLE CONNECTIONS.
1. PROVIDE AT ENTRY TO DIFFUSER COLLAR EITHER: STRAIGHT DUCT FOR 1 DUCT DIMMETERS OR GREATER; FULL RADIUS ELBOW. PLENUM WITH SIDE DUCT COLLAR, EQUAL TO THERMAFLEX FLEXFLOW ELBOW.
2. CONNECTIONS AT GRILLES SHALL BE INSULATED TO THE EXTENT THE DUCT IS INSULATED INCLUDING THE PLENUM, REGISTER BOX AND BACK PAN.
3. SEAL CONNECTIONS AT GRILLES PER SEAL CLASS OF UPSTREAM DUCTWORK.
D. SEE DUCTWORK / INSULATION SCHEDULE.

FILTERS

A. MEDIA AS SELECTED IN EQUIPMENT SCHEDULES ON THE DRAWINGS.
B. CONSTRUCTION FILTERS:
1. TYPE 1 FOR ALL EQUIPMENT: ROLL MEDIA NOT ACCEPTABLE.
2. TYPE 2 FILTER MEDIA IS INTENDED TO BE UTILIZED OVER RETURN/EXHAUST AIR GRILLES, REGISTERS AND/OR OPEN DUCTWORK DURING THE CONSTRUCTION PERIOD WHEN THE SYSTEMS ARE BEING OPERATED. THIS FILTER MEDIA IS NOT TO BE UTILIZED INSIDE THE HOUSING OF ANY HVAC SYSTEMS.
C. SPARE FILTERS:
1. PROVIDE THREE (3) SETS OF SPARE FILTERS FOR EACH PIECE OF HVAC EQUIPMENT AND FILTER GRILLE EXCEPT THE FOLLOWING (PROVIDE ONLY ONE (1) SPARE SET):
a. PTACS (THRU-WALL UNITS).
b. VRF SYSTEM (INDOOR UNITS).
D. BEFORE TURNING SYSTEM OVER TO THE OWNER, REMOVE TEMPORARY CONSTRUCTION FILTERS AND INSTALL CLEAN FINAL FILTERS.
E. TYPE 2 FILTERS DURING CONSTRUCTION SHALL BE MINIMUM MERV 11; SPARE FILTERS MERV 8.

CLEANING

A. THOROUGHLY CLEAN ALL EQUIPMENT, DUCTS, ETC. FREE OF DUST, SCALE, FILINGS, PLASTER, GREASE, OIL, PAINT AND OTHER CONSTRUCTION DEBRIS.
B. NO CONSTRUCTION MATERIALS, DEBRIS, DIRT, ETC. SHALL REMAIN IN ANY AREA, INCLUDING BOTH TENANT AREAS AND MECHANICAL AREAS, DURING NORMAL BUSINESS HOURS. CLEAN UP ALL AREAS PRIOR TO START OF NORMAL BUSINESS HOURS.
C. DUCTS.
1. DUCT OPENINGS SHALL BE SEALED WITH PLASTIC DURING CONSTRUCTION TO PREVENT DEBRIS BUILDUP.
2. VACUUM ANY VISIBLE DEBRIS FROM INSIDE DUCTS, DUCT PLENUMS AND GRILLE BOXES.
3. USE CONNECTED FAN(S) TO BLOW AIR THROUGH ALL DUCT SYSTEMS UNTIL THEY ARE FREE OF ALL FOREIGN MATERIALS.

EQUIPMENT AND PIPING IDENTIFICATION

A. EQUIPMENT.
1. ALL MECHANICAL EQUIPMENT SHALL BE IDENTIFIED BY NAMEPLATES SECURELY FASTENED IN A CLEARLY VISIBLE LOCATION TO THE EQUIPMENT HOUSING OR FRAME. NAMEPLATES SHALL INCLUDE THE EQUIPMENT DESIGN PLAN MARK AND BRIEF DESCRIPTION OF THE AREA OR SYSTEM SERVED, SUCH AS: "AHU 4-4: CONFERENCE ROOM 449". PROVIDE ADDITIONAL NAMEPLATES ON FACE OF STARTERS OR VARIABLE SPEED DRIVES PROVIDED UNDER THIS SECTION.
2. NAMEPLATES SHALL BE 2-1/2" X 3/4" MINIMUM, EITHER 1/8" THICK BAKELITE WITH ENGRAVED WHITE CORE LETTERS AND BEVELED EDGE, OR ALUMINUM WITH BLACK ENAMELED BACKGROUND AND ETCHED OR ENGRAVED NATURAL ALUMINUM LETTERING.\
3. MANUFACTURER'S NAMEPLATE SHALL BE CLEAN AND LEGIBLE AND INSTALLED IN A CLEARLY VISIBLE LOCATION.

EXECUTION (CONTINUED)

PAINTING

A. PAINTING UNDER THIS SECTION.
1. BLACK STEEL OR PVC WATER PIPING EXPOSED TO OUTDOORS: ONE COAT PRIMER. TWO COAT ALKYD OIL PAINT, COLOR BY ARCHITECT.
2. INTERIOR OF DUCTWORK AT AIR OUTLETS AS FAR BACK AS VISIBLE FROM OCCUPIED SPACES: FLAT BLACK.
3. MARRED SURFACES OF FACTORY PAINTED EQUIPMENT: SPOT COAT (TOUCH-UP) TO MATCH ADJACENT COAT.
4. DUCTWORK EXPOSED TO VIEW OUTDOORS AND INDOORS.
5. ABOVE ROOF CAPS, FLASHINGS, AND VENTS.
6. PIPING INSULATION / JACKET OUTDOORS.
C. PAINT.
1. HIGH GLOSS MEDIUM OR LONG ALKYD PAINT FOR STEEL. BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS. APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
2. PROVIDE PRIMER SUITED FOR SUBSTRATE.
3. MEDIUM GLOSS EXTERIOR LATEX ENAMEL FOR INSULATION AND JACKET.
D. COLORS.
1. COLOR CODING AS FOLLOWS ON SHERWIN WILLIAMS, "KEM LUSTRAL" OR "METALALISTIC II" NAME AND FIGURE NUMBERS
2. INTERIOR OF DUCTWORK AS FAR BACK AS VISIBLE FROM OUTSIDE: FLAT BLACK.
3. UNCOATED HANGERS, SUPPORTS, RODS AND INSETS: DIP IN ZINC CHROMATE PRIMER.
4. OUTDOOR EXPOSED PIPING INSULATION: ELASTOMERIC INSULATION: UV RESISTANT WHITE.
5. INDOOR AND EXTERIOR INSTALLATIONS: COLOR BY ARCHITECT.
E. FACTORY FINISH.
1. STEEL AIR OUTLETS IN ACOUSTICAL TILE CEILINGS: BAKED WHITE ENAMEL.
2. ALUMINUM AIR OUTLETS: ANODIZED.
3. EXPOSED FAN COIL UNITS: BAKED ENAMEL.
4. UNIT VENTILATORS AND UNIT HEATERS: BAKED ENAMEL.
F. MARRED SURFACES OF PRIME COATED EQUIPMENT AND PIPING: SPOT PRIME COAT TO MATCH ADJACENT COAT.

LEAKAGE TESTING

1. DUCT LEAKAGE TESTING: DUCT LEAKAGE TESTS SHALL BE PERFORMED IN ACCORDANCE WITH THE SMACNA DUCT LEAKAGE TESTING MANUAL. IF DUCT SYSTEMS DO NOT MEET THE LEAKAGE CLASSES LISTED IN THIS MANUAL AT APPLICABLE DUCT RATING PRESSURE, LEAKS SHALL BE SEALED AND TESTS RERUN, BOTH AT THE HVAC CONTRACTOR'S EXPENSE.

TESTING, ADJUSTING, AND BALANCING

TEST AND ADJUST ALL ITEMS OF HEATING, VENTILATING AND AIR CONDITIONING SYSTEM TO PROVIDE DESIGN CONDITIONS.

1. TESTING AND BALANCING SHALL BE PERFORMED IN COMPLETE ACCORDANCE WITH AABC OR NEBB NATIONAL STANDARDS FOR FIELD MEASUREMENTS AND INSTRUMENTATION AS APPLICABLE TO AIR DISTRIBUTION.
2. IN GENERAL, SYSTEMS SHALL BE BALANCED SO THAT ONE OR MORE BALANCING VALVES/DAMPERS REMAINS WIDE OPEN; IF FURTHER FLOW REDUCTION IS REQUIRED, FAN SPEED SHALL BE REDUCED.
3. AN INDEPENDENT TESTING AND BALANCING AGENCY CERTIFIED BY THE AABC OR NEBB SHALL BE ENGAGED TO TEST AND BALANCE THE HVAC SYSTEMS. SYSTEMS SHALL BE BALANCED TO PLUS/MINUS 10% OF DESIGN REQUIREMENTS. THE CONTRACTOR SHALL PLACE ALL SYSTEMS AND EQUIPMENT INTO FULL OPERATION FOR TESTING AND BALANCING. ONE COPY OF THE FINAL TEST AND BALANCE REPORT WITH THE AABC/NEBB NATIONAL PERFORMANCE GUARANTY SHALL BE SENT DIRECTLY TO THE ENGINEER OF RECORD.
4. BALANCE AIR SYSTEMS INCLUDING ALL MECHANICAL EQUIPMENT, AIR OUTLETS, EXHAUST FANS USING AABC/NEBB STANDARD TEST SHEETS.
5. AIR PURIFICATION SYSTEMS: USE A PORTABLE HANDHELD ION COUNTER AND REPORT TAG OF UNIT, CONFIRMATION THAT ION GENERATOR IS INSTALLED, MODEL NUMBER OF ION GENERATOR, VOLTAGE AND AMPS AND AMOUNT OF IONS AT DISCHARGE OF UNITS AT SUPPLY.
6. VARIABLE REFRIGERANT FLOW SYSTEMS: REPORT TO INCLUDE TAG OF INDOOR UNIT, BRANCH SELECTORS (AS REQUIRED) AND OUTDOOR UNITS, VOLTS AND AMPS, LEAVING AIR TEMPERATURE IN HEATING MODE, LEAVING AIR TEMPERATURE IN COOLING MODE, FOR HEAT PUMP SYSTEMS, CONFIRM HOW UNITS ARE CHANGED FROM COOLING TO HEATING MODE AND VICE VERSA AND ADD TO TAB REPORT. DRAIN PIPING CHECKLIST.

CLOSEOUTS

CLOSEOUTS SHALL BE SUBMITTED TO PROFESSIONAL WITHIN TWO (2) WEEKS OF NTP. ONE HARD COPY OF CLOSEOUTS AND TWO (2) SETS ON FLASH DRIVE. CLOSEOUTS SHALL INCLUDE:

1. O&M MANUALS
2. RECORD DRAWINGS
3. COPY OF APPROVED SUBMITTALS
4. TAB COMPLETE REPORT
5. EXTENDED WARRANTIES
6. PIPE TEST LOGS
7. ATTIC STOCK
8. CONTROL AS-BUILTS
9. OWNER TRAINING DOCUMENTATION
10. SEE OTHERS ON CHECKLIST SCHEDULE

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100% CONSTRUCTION DOCUMENTS

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MECHANICAL SPECIFICATIONS

M002

SPLIT SYSTEM AIR-CONDITIONERS

A. VARIABLE REFRIGERANT FLOW SPLIT-SYSTEM HEAT PUMPS.

B. TRANE-MITSUBISHI, DAIKIN, HITACHI, OR EQUAL.

1. MULTI POSITION AIR HANDLING UNIT: REFRIGERANT R-410A, EQUIPPED WITH AN ELECTRONIC EXPANSION VALVE. THE CABINET SHALL BE CONSTRUCTED WITH SOUND ABSORBING, FOIL-FACED INSULATION TO CONTROL AIR LEAKAGE. CABINET TO BE PRE-PAINTED HEAVY-GAUGE STEEL CASING. COILS SHALL BE OF THE DIRECT EXPANSION TYPE CONSTRUCTED FROM ALUMINUM TUBES EXPANDED INTO ALUMINUM FINS TO FORM A MECHANICAL BOND. DIRECT-DRIVE SIROCCO TYPE SUPPLY FAN.

2. EXTERNAL FILTER RACK: FACTORY ASSEMBLED, SIDE OR TOP SERVICE HOUSINGS, CONSTRUCTED OF 18 GAGE GALVANIZED STEEL WITH INTEGRAL TRACK TO RECEIVE 2-INCH MERV 8 FILTERS.

3. ELECTRIC COIL: HELICAL, NICKEL-CHROME, RESISTANCE-WIRE HEATING ELEMENTS; WITH REFRACTORY CERAMIC SUPPORT BUSHINGS, AUTOMATIC-RESET THERMAL CUTOUT, BUILT-IN MAGNETIC CONTACTORS, MANUAL-RESET THERMAL CUTOUT, AIRFLOW PROVING DEVICE, AND ONE-TIME FUSES IN TERMINAL BOX FOR OVERCURRENT PROTECTION. AS INDICATED ON PLANS.

4. PROVIDE UNITS WITH SINGLE POINT POWER CONNECTION AND CONTROL BOX WITH CIRCUIT BREAKERS FOR OVERLOAD AND SHORT CIRCUIT PROTECTION. CIRCUIT BREAKERS SHALL QUALIFY AS DISCONNECT MEANS AT UNIT. PROVIDE UNIT WITH CIRCUIT BREAKER COVER KIT TO PROTECT CIRCUIT BREAKER.

D. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS: INVERTER SCROLL COMPRESSOR SHALL BE VARIABLE SPEED (INVERTER) CONTROLLED, THE CONDENSING UNIT FAN(S) SHALL CONSIST OF PROPELLER TYPE, DIRECT-DRIVE FAN MOTORS THAT HAVE MULTIPLE SPEED OPERATION VIA A DC INVERTER, THE CONDENSER COIL SHALL BE MANUFACTURED FROM COPPER TUBES EXPANDED INTO ALUMINUM FINS TO FORM A MECHANICAL BOND.

E. CONTROLS:

1. THE UNIT SHALL BE COMPATIBLE WITH INTERFACING WITH A BAS SYSTEM VIA OPTIONAL LONWORKS OR BACNET GATEWAYS.

2. WALL MOUNTED PROGRAMMABLE THERMOSTAT.

3. WALL MOUNTED WI-FI THERMOSTAT.

SPLIT SYSTEM AIR-CONDITIONERS

A. SPLIT-SYSTEM HEAT PUMPS WITH SECONDARY ELECTRIC HEAT.

B. TRANE, DAIKIN, YORK, OR EQUAL.

C. AIR HANDLER: CASING SHALL BE HEAVY GAUGE STEEL, PHOSPHATIZED AND FINISHED WITH BAKED-ON ENAMEL. EVAPORATOR AND HEAT EXCHANGER SECTIONS SHALL BE INSULATED WITH ONE-INCH (1") THICK FOIL-FACED GLASS FIBER.

D. EXTERNAL FILTER RACK: FACTORY ASSEMBLED, SIDE OR TOP SERVICE HOUSINGS, CONSTRUCTED OF 18 GAGE GALVANIZED STEEL WITH INTEGRAL TRACK TO RECEIVE 2-INCH MERV 8 FILTERS.

E. EVAPORATOR COIL SHALL BE CONSTRUCTED OF ALUMINUM FINS, MECHANICALLY BONDED TO COPPER TUBES.

F. ELECTRIC COIL: HELICAL, NICKEL-CHROME, RESISTANCE-WIRE HEATING ELEMENTS; WITH REFRACTORY CERAMIC SUPPORT BUSHINGS, AUTOMATIC-RESET THERMAL CUTOUT, BUILT-IN MAGNETIC CONTACTORS, MANUAL-RESET THERMAL CUTOUT, AIRFLOW PROVING DEVICE, AND ONE-TIME FUSES IN TERMINAL BOX FOR OVERCURRENT PROTECTION.

G. PROVIDE UNITS WITH SINGLE POINT POWER CONNECTION AND CONTROL BOX WITH CIRCUIT BREAKERS FOR OVERLOAD AND SHORT CIRCUIT PROTECTION. FACTORY WIRED AND MOUNTED ON ELECTRIC HEAT UNIT. CIRCUIT BREAKERS SHALL QUALIFY AS DISCONNECT MEANS AT UNIT. PROVIDE UNIT WITH CIRCUIT BREAKER COVER KIT TO PROTECT CIRCUIT BREAKER.

H. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS: SINGLE OR DUAL CIRCUIT TYPE, AS SCHEDULED, AND SHALL CONSIST OF SCROLL COMPRESSOR(S) AND, CONDENSER COIL(S), CONDENSER FANS, REFRIGERANT RECEIVER, CHARGING VALVES, CONTROLS AND HOLDING CHARGE. BAKED ENAMEL CASING AND HAIL GUARDS.

I. HEAT-PUMP COMPONENTS: REVERSING VALVE AND LOW-TEMPERATURE-AIR CUTOFF THERMOSTAT.

J. CONTROLS: WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH LCD TOUCHSCREEN DISPLAY, WI-FI, 7-DAY PROGRAMMABLE, OVERRIDE CONTROL. FAN SPEED CONTROL. HONEYWELL RTH9580 WF, TRANE PIVOT OR EQUAL..

AIR INLETS AND OUTLETS

A. TITUS, PRICE, METAL-AIRE OR EQUAL.
B. STYLES: SEE CONSTRUCTION DRAWINGS.
C. BORDERS AND FRAMES:
1. DIFFUSER TRIM TO MATCH CEILING TYPE; SEE REFLECTED CEILING PLANS.
2. USE FRAMES WITH CONCEALED FASTENERS, NO VISIBLE SCREW HEADS.
D. INTERIOR OF PERFORATED DIFFUSERS (BACK-PAN AND BLADES) PAINTED FLAT BLACK.
E. ALL VISIBLE PORTIONS OF GRILLE BOXES PAINTED FLAT BLACK ON THE INSIDE; GRILLE BOX DUCT LINER PINS PAINTED FLAT BLACK.
F. SQUARE TO ROUNDS ARE TO BE 3" HIGH DIFFUSER BOXES ON TOP OF GRILLES WITH FACTORY BLACK PAINT INSIDE.

LOUVERS

A. RUSKIN, GREENHECK, OR EQUAL.

B. LOUVER DESIGN.

1. EXTRUDED ALUMINUM.

2. WIND-DRIVEN RAIN RESISTANT TYPE.

3. FACTORY FINISH: KYNAR 500, COLOR SELECTED BY ARCHITECT.

4. SCREEN: 14-GAUGE ALUMINUM WIRE SCREEN.

5. COMBINATION LOUVER/DAMPER TO INCLUDE CONCEALED ACTUATOR.

PACKAGED ROOFTOP UNITS

A. TRANE, DAIKIN, JCI OR EQUAL.

B. BAKED ENAMEL PAINT FINISH, 1/2-INCH, 3/4 POUND DENSITY ASTM C1071 TYPE 1 INSULATION (FULLY INSULATED INCLUDING BASE) TOOL-LESS CONDENSER HAIL COIL GUARDS. BASE RAIL, HINGED ACCESS PANELS WITH QUARTER TURN LATCHING HANDLES, INTERNALLY ISOLATED FAN.

C. OUTDOOR AIR DAMPER: LOW LEAKAGE OUTDOOR AIR DAMPER AS REQUIRED BY ASHRAE 90.1. DAMPER MOTOR: TWO-POSITION WITH ADJUSTABLE MINIMUM POSITION. POSITION SHALL BE SET BY TAB AGENCY. OUTDOOR AIR INTAKE WEATHER HOOD.

D. EVAPORATOR COIL: ALUMINUM RIPPLED AND LANCED FINS. COPPER TUBE CONSTRUCTION. ALUMINUM FINS MECHANICALLY BONDED TO COPPER TUBES.

E. CONDENSER COIL: ALUMINUM/ALUMINUM CONSTRUCTION. ALUMINUM LANCED FINS. ALUMINUM FINS THERMALLY BONDED TO ALUMINUM FLAT TUBE.

F. HOT-GAS REHEAT REFRIGERANT COIL: ALUMINUM-PLATE FIN AND SEAMLESS INTERNALLY GROOVED COPPER TUBE IN STEEL CASING WITH EQUALIZING-TYPE VERTICAL DISTRIBUTOR.

G. COMPRESSOR: SCROLL TYPE, RESILIENTLY MOUNTED ON RUBBER MOUNTS FOR VIBRATION ISOLATION. OVERLOAD PROTECTED. INTERNAL EXCESSIVE CURRENT AND TEMPERATURE PROTECTION. ISOLATED FROM CONDENSER AND EVAPORATOR FAN AIR STREAMS. REFRIGERANT COOLED.

H. GAS HEAT: FACTORY ASSEMBLED, PIPED, AND WIRED; COMPLYING WITH ANSI Z21.47/CSA 2.3 AND NFPA 54., STAINLESS STEEL BURNER, HEAT EXCHANGER AND DRAIN PAN, INTEGRAL POWER VENT WITH VERTICAL EXTENSION.

1. SAFETY CONTROLS:
a. GAS CONTROL VALVE: SINGLE-STAGE OR MULTI-STAGE MODULATING.
b. GAS TRAIN: SINGLE-BODY, REGULATED, REDUNDANT, 24-V AC GAS VALVE ASSEMBLY CONTAINING PILOT SOLENOID VALVE, PILOT FILTER, PRESSURE REGULATOR, PILOT SHUTOFF, AND MANUAL SHUTOFF.

I.

DISCONNECT SWITCH ACCESSIBLE FROM OUTSIDE UNIT AND CONTROL-CIRCUIT TRANSFORMER WITH BUILT-IN OVERCURRENT PROTECTION.

J. UNIT SHALL BE PROVIDED WITH A FACTORY INSTALLED 115-VOLT, 15-AMP GROUND FAULT SERVICE RECEPTACLE. CONTRACTOR IS RESPONSIBLE FOR TYPE AND POWER REQUIREMENTS FOR RECEPTACLE. IF DEDICATED CIRCUIT IS REQUIRED, MECHANICAL CONTRACTOR IS RESPONSIBLE FOR CIRCUIT OR RECEPTACLE CAN BE FIELD WIRED FOR POWER THRU UNIT WITH TRANSFORMER AS REQUIRED.

K. ECONOMIZER: DRY BULB, LOW LEAKAGE OUTDOOR AIR DAMPER; AS REQUIRED BY ASHRAE 90.1., BAROMETRIC RELIEF.

L. CONTROLS: WALL MOUNTED PROGRAMMABLE THERMOSTAT WITH LCD TOUCHSCREEN DISPLAY, WI-FI, 7-DAY PROGRAMMABLE, OVERRIDE CONTROL. FAN SPEED CONTROL. HONEYWELL RTH9580 WF, TRANE PIVOT OR EQUAL.

M. STARTUP TO BY PERFORMED BY A FACTORY-AUTHORIZED SERVICE REPRESENTATIVE. CONTRACTOR STARTUP NOT ALLOWED. ALL PRE-STARTUP CHECKLIST AND FINAL STARTUP CHECKLIST TO BE TURNED OVER AFTER UNITS ARE STATED AND ARE RUNNING.

DUCTLESS SPLIT-SYSTEM HEAT PUMPS

A. TRANE-MITSUBISHI, DAIKIN, HITACHI, OR EQUAL.
B. WALL MOUNTED HEAT PUMP INDOOR UNITS.
1. UNIT CABINET: THE UNIT SHALL HAVE MULTI-DIRECTIONAL DRAIN AND REFRIGERANT PIPING ARRANGEMENTS PROVIDING OPTIONS FOR FOUR (4) DIRECTIONS FOR REFRIGERANT PIPING AND TWO (2) DIRECTIONS FOR DRAINING. UNIT SHALL HAVE A SEPARATE BACK PLATE WHICH SECURES THE UNIT FIRMLY TO THE WALL.
2. FAN: THE EVAPORATOR FAN SHALL BE DIRECT DRIVE. THE INDOOR FAN SHALL BE CAPABLE OF FOUR (4) SPEEDS, HIGH, MID 1, MID 2, AND LOW, TWO OF WHICH MAY BE SELECTED BY THE ROOM CONTROLLER.
3. FILTER: RETURN AIR SHALL BE FILTERED BY MEANS OF AN EASILY REMOVABLE WASHABLE FILTER.
4. COIL: THE EVAPORATOR COIL SHALL BE OF NONFERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING WITH INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE.
5. THE UNIT ELECTRICAL POWER SHALL BE 208 VOLTS, 1 PHASE, 60 HERTZ.
6. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS: BAKED ENAMEL CASING, INVERTER COMPRESSOR, REVERSING VALVE AND LOW-TEMPERATURE AIR CUT-OFF THERMOSTAT.
C. 4-WAY CEILING-RECESSED CASSETTE INDOOR UNIT.
1. UNIT CABINET: THE UNIT SHALL BE FOUR-WAY CASSETTE STYLE THAT RECESSES INTO THE CEILING WITH A CEILING GRILLE; UNIT SHALL HAVE COMPACT CABINET 22.4" WIDE X 22.4" DEEP TO FIT WITHIN A STANDARD 24" SQUARE SUSPENDED CEILING GRID. CABINET PANEL SHALL PROVISIONS FOR FIELD INSTALLED FILTERED OUTSIDE AIR INTAKE. TWO, THREE OR FOUR-WAY BLOW PATTERN.
2. FAN: THE EVAPORATOR FAN SHALL BE DIRECT DRIVE. THE INDOOR FAN SHALL BE CAPABLE OF THREE (3) SPEEDS, HIGH, MID, AND LOW. THE INDOOR UNIT VANES SHALL HAVE FIVE (5) POSITIONS AND SWING FEATURE CAPABLE OF AUTOMATICALLY SWINGING THE VANES UP AND DOWN. GRILLE SHALL HAVE I-SEE SENSOR OR EQUAL TO WORK IN CONJUNCTION WITH INDOOR UNIT CONTROL SEQUENCE. SENSOR MUST DETECT OCCUPANCY AND MOTION WITHIN A 99' DETECTING DIAMETER BASED ON 8.8 FT MOUNTING HEIGHT WITH 1.856 OR MORE MEASURING POINTS.
3. FILTER: RETURN AIR SHALL BE FILTERED BY MEANS OF AN EASILY REMOVABLE WASHABLE FILTER.
4. COIL: THE EVAPORATOR COIL SHALL BE OF NON FERROUS CONSTRUCTION WITH SMOOTH PLATE FINS ON COPPER TUBING WITH INNER GROOVES FOR HIGH EFFICIENCY HEAT EXCHANGE.
5. THE UNIT ELECTRICAL POWER SHALL BE 208 VOLTS, 1 PHASE, 60 HERTZ.
6. AIR-COOLED, COMPRESSOR-CONDENSER COMPONENTS: BAKED ENAMEL CASING, INVERTER COMPRESSOR, REVERSING VALVE AND LOW-TEMPERATURE AIR CUT-OFF THERMOSTAT.
D. ACCESSORIES.
1. SEVEN-DAY, LCD, PROGRAMMABLE HARD WIRED THERMOSTAT.
2. LOW AMBIENT KIT: PERMITS OPERATION DOWN TO 0 °F.

FANS

A. COOK, GREENHECK, PENNBERRY, OR EQUAL.

B. FANS SHALL BE TESTED AND RATED IN ACCORDANCE WITH AMCA STANDARDS AND SHALL BEAR AMCA LABELS

C. ALL FANS TO BE ECM/VFD WITH MOTOR OPERATED SPEED CONTROL.

D. WHEELS SHALL BE BALANCED STATICALLY AND DYNAMICALLY, FREE FROM VIBRATION OR NOISES.

E. BEARINGS SELF-ALIGNING, BALL-BEARING TYPE, COMPLETE WITH GREASE FITTINGS, EXTENDED TO SINGLE POINT ON DRIVE SIDE OR TO ACCESSIBLE LOCATION.

F. ACTUAL BRAKE HORSEPOWER OF FAN AND DRIVE SHALL NOT EXCEED NAMEPLATE RATING OF MOTOR DRIVING FAN.

G. PROVIDE ADJUSTABLE SHEAVES FOR ONE-TO-TWO-STRAND BELT DRIVES ON MOTORS 15 HP OR LESS. SHEAVES SHALL BE SELECTED TO OPERATE AT MID-POINT OF FAN CURVE TO ALLOW ADJUSTMENT IN BOTH DIRECTIONS. FOR BELT DRIVES WITH MORE THAN TWO STRANDS SERVING MOTORS OVER 15 HP, PROVIDE FIXED SHEAVES. REPLACE FAN SHEAVES AS NECESSARY TO OBTAIN DESIRED RESULTS.

H. PROVIDE BACK DRAFT DAMPERS ON EXHAUST FANS.

AIR PURIFICATION SYSTEM

A. GLOBAL PLASMA, BIOCLIMATIC, PHENOMENAL AIRE OR EQUAL.

B. PROVIDE TO THE OWNER A PORTABLE HANDHELD, ION COUNTER WITH A CALIBRATED RANGE OF 0 TO 20,000 IONS/CM3 AND AN ACCURACY OF +- 25% WITHIN THE SPECIFIED RANGE. ION COUNTER SHALL HAVE AUTOMATIC ZEROING CAPABILITY ON 10-MINUTE INTERVALS.

C. THE BIPOLAR IONIZATION SYSTEM SHALL OPERATE IN SUCH A MANNER THAT EQUAL AMOUNTS OF POSITIVE AND NEGATIVE IONS ARE PRODUCED. SINGLE POLE ION DEVICES SHALL NOT BE ACCEPTABLE.

D. EACH PLASMA GENERATOR WITH BIPOLAR IONIZATION OUTPUT SHALL INCLUDE THE REQUIRED NUMBER OF ELECTRODES AND POWER GENERATORS SIZED TO THE AIR HANDLING EQUIPMENT CAPACITY. ELECTRODES SHALL BE ENERGIZED WHEN THE MAIN UNIT DISCONNECT IS TURNED ON AND THE FAN IS OPERATING. IONIZATION OUTPUT WHEN TESTED IN THE OCCUPIED SPACE SHALL BE BETWEEN 500 AND 800 IONS/CM3.

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MECHANICAL SPECIFICATIONS

M003

FILTERS

A. CAMFIL/FARR, FLANDERS, OR EQUAL.

B. TYPE 1: PLEATED FILTER: 2 INCH OR 4 INCH PLEATED., COTTON & SYNTHETIC MEDIA (NO POLYESTER)

1. MINIMUM PERFORMANCE:

a. MERV 8 FOR USE AFTER CONSTRUCTION PERIOD.

b. MERV 11 FOR USE AT STARTUP AND DURING CONSTRUCTION PERIOD.

C. TYPE 2: BULK MEDIA:

1. 1 INCH FIBERGLASS.

2. FILTER MEDIA SHALL CONSIST OF A CONTINUOUS FILAMENT FIBERGLASS OF GRADUATED DENSITY. MEDIA SHALL INCLUDE A SKIN ON THE LEAVING AIR SIDE. FURTHERMORE, THE MEDIA SHALL BE TREATED WITH A NON-TOXIC, NON-FLAMMABLE, ODOR FREE ADHESIVE.

3. UL LISTED, CLASS 2

REFRIGERANT PIPING (VRF)

A. COPPER TUBE AND FITTINGS:
1. STRAIGHT LENGTHS: ASTM B 75, UNS C12200, H55 TEMPER (LIGHT DRAWN), ACR BENDING QUALITY; CLEANED, EDDY CURRENT TESTED, AND PLUGGED PER ASTM B 280.
a. REFTEKK "HHC"
2. COILED: ASTM B 280, UNS C12200, O60 TEMPER (SOFT ANNEALED), ACR, CLEANED AND CAPPED
a. REFTEKK "CCE"
B. BRAZING FILLER METALS: AWS A5.8.
a. REFTEKK "BRG"
C. FIELD SWAGED BRAZING CUPS: MSS-SP-73, ASME B 16.50
D. FIELD BENDS (ALL ANGLES): ASME B31.5
E. WROUGHT-COPPER FITTINGS: ASME B16.22.
F. WROUGHT-COPPER UNIONS: ASME B16.22.
G. SUCTION (LOW PRESSURE GAS), HOT GAS (HIGH PRESSURE GAS), AND LIQUID LINES GREATER THAN OD 5/8" FOR HEAT PUMP AND HEAT RECOVERY APPLICATIONS: STRAIGHT LENGTHS, COPPER, TYPE ACR TYPE L, H55 (LIGHT DRAWN)-TEMPER TUBING AND FIELD BENT FITTINGS WITH BRAZED JOINTS.
H. SUCTION (LOW PRESSURE GAS), HOT GAS (HIGH PRESSURE GAS) AND LIQUID LINES OD 5/8" AND SMALLER FOR HEAT PUMP AND HEAT RECOVERY APPLICATIONS: COPPER, TYPE ACR, O60 (SOFT ANNEALED)-TEMPER TUBING AND FIELD BENT FITTINGS WITH BRAZED JOINTS.

MOTOR CONTROLLERS/STARTERS

A. GENERAL.

1. MANUAL RESET, CLASS 20, THERMAL TYPE OVERLOAD PROTECTION FOR EACH PHASE, IN ACCORDANCE WITH NEMA ICS 2-2000 (R2005).

2. NEMA 3R ENCLOSURES FOR EXTERIOR APPLICATION.

3. EQUIPMENT FURNISHED WITH FACTORY-INSTALLED STARTERS SHALL ALSO BE EQUIPPED WITH INDIVIDUAL MOTOR DISCONNECT AND THERMAL MAGNETIC CIRCUIT BREAKERS OR FUSES AS SPECIFIED HEREIN WITH LUGS SIZED TO RECEIVE A FEEDER AS INDICATED ON THE ELECTRICAL DRAWINGS.

4. 120 V SECONDARY CONTROL POWER TRANSFORMER WITH FUSED PRIMARY AND SECONDARY CIRCUIT IN THE ENCLOSURE.

5. UNUSED AUXILIARY CONTACTS (INSTALLED ON EACH CONTACTOR): 1 NORMALLY OPEN, AND 1 NORMALLY CLOSED.

B. MOTOR STARTERS SHALL BE PROVIDED WITH PROVISIONS FOR INTERFACING WITH THE ENERGY MANAGEMENT AND CONTROL SYSTEM (EMCS) OR OTHER CONTROL AND INTERLOCKING REQUIREMENTS.

1. FOR ALL MAGNETIC STARTERS, A MINIMUM OF ONE SET OF FIELD REVERSIBLE AUXILIARY CONTACTS SHALL BE PROVIDED WITH THE STARTER.

C. FOR 3-PHASE MOTORS, UNLESS OTHERWISE SPECIFIED HEREIN:

1. COMBINATION MAGNETIC TYPE AND THERMAL MAGNETIC CIRCUIT BREAKER WITH:

a. CIRCUIT BREAKERS HAVING MINIMUM AIC RATING AS SPECIFIED IN DIVISION 26.

b. EXTERNAL OPERATING HANDLE CAPABLE OF BEING LOCKED IN THE OFF OR OPEN POSITION.

c. HAND-OFF-AUTOMATIC SWITCH, EXCEPT THOSE MANUALLY CONTROLLED.

d. STARTERS FOR MOTORS 50 HP AND LARGER SHALL BE SOLID-STATE, REDUCED-VOLTAGE TYPE.

D. FOR 1-PHASE, UNLESS OTHERWISE SPECIFIED HEREIN:

1. MANUAL STARTING SWITCH WITH THERMAL OVERLOAD PROTECTION AND PILOT LIGHT.

2. HAND-OFF-AUTOMATIC SWITCH.

3. MAGNETIC ACROSS-THE-LINE STARTERS WITH OVERLOAD PROTECTION AND HAND-OFF-AUTOMATIC SWITCH, EXCEPT FOR MANUALLY CONTROLLED EQUIPMENT.

E. PROVIDE CONTROL TRANSFORMERS FOR EQUIPMENT WITH VOLTAGE ABOVE 240 VOLTS, OR AS REQUIRED FOR COMPLETE, OPERABLE SYSTEMS.

F. COORDINATE WITH DIVISION 26: ELECTRICAL.

G. REFER TO INDIVIDUAL EQUIPMENT SECTIONS FOR FACTORY-PROVIDED CONTROLLERS.

1. INSTALLED ON EQUIPMENT BY MANUFACTURER.

2. SUPPLIED WITH EQUIPMENT BY MANUFACTURER FOR FIELD INSTALLATION.

MOTORS

A. GENERAL.
1. IN ACCORDANCE WITH NEMA, IEEE, AND ANSI C50 STANDARDS.
2. SIZED TO OPERATE DRIVEN DEVICES UNDER ALL CONDITIONS WITHOUT OVERLOAD.
3. MINIMUM SERVICE FACTOR: 1.15.
4. TYPE.
a. 1/2 HORSEPOWER AND SMALLER: AC MOTOR SINGLE-PHASE, 60 HERTZ, NEMA RATED FOR 110 VOLT, WITH BUILT-IN OVERLOAD PROTECTION.
b. 3/4 HORSEPOWER AND LARGER: AC MOTOR 3 PHASE, 60 HERTZ, AC MOTOR, NEMA RATED FOR 460 VOLT OR AS AVAILABLE.
c. MOTORS 50 HORSEPOWER AND OVER: REDUCED VOLTAGE START, SUITABLE FOR STAR-DELTA STARTING.
B. ENCLOSURE.
1. OPEN DRIP-PROOF (ODP): PROVIDE ODP MOTORS UNLESS OTHERWISE INDICATED.
2. TOTALLY ENCLOSED (TEFC):
a. NON-VENTILATED: UNDER ½ HORSEPOWER.
b. FAN-COOLED: ½ HORSEPOWER AND LARGER.
C. EFFICIENCY.
1. MOTORS 1 HORSEPOWER AND LARGER SHALL BE NEMA PREMIUM™ LABELED AND HAVE GUARANTEED EFFICIENCIES EQUAL TO OR EXCEEDING NEMA TABLE 12-6D.
D. MOTORS DRIVEN BY VARIABLE FREQUENCY DRIVES.
1. SHALL MEET THE REQUIREMENTS OF NEMA MG-1 PART 31.40.4.2.
2. WHERE USED FOR PUMPS OR FANS (VARIABLE TORQUE), SHALL HAVE MINIMUM 10:1 TURNDOWN AND BE CAPABLE OF OPERATING AT 10 PERCENT SPEED INDEFINITELY

PRE-ENGINEERED RANGE HOODS

A. DENLAR, GUARDIAN OR EQUAL.

B. CABINET MOUNTED WITH FAN/LIGHT COMBO, PRE-ENGINEERED, PRE-INSTALLED FIRE SUPPRESSION SYSTEM, TWO SPEED FAN CONTROL (HI/LOW), RESET SWITCH, PRESSURE GAUGE, HARD WIRED FUEL SOURCE DISCONNECT, DRY ALARM CONTACTS, CHARCOAL AIR FILTER, SPOT WELDED CONSTRUCTION WITH HEMMED EDGES.

C. ETL/CSA LISTED

D. EXTINGUISHING AGENT TO BE A WET CHEMICAL POTASSIUM CITRATE OR POTASSIUM ACETATE SOLUTION IN A PRESSURIZED CYLINDER.

FIRE DAMPERS

A. RUSKIN, GREENHECK, OR EQUAL.

B. RATINGS (TEST CONDITIONS AND LABEL) PER UL STANDARD 555, 250 DEGREES FAHRENHEIT MINIMUM, 1-1/2-HOUR FIRE RATING, UNLESS OTHERWISE INDICATED IN THE DRAWINGS, DYNAMIC (CLOSES AGAINST AIR FLOW), FACTORY SLEEVE.

C. DAMPER: MULTI-BLADED, EQUIPPED WITH FUSIBLE LINK, SPRING LOADED TYPE

D. FUSIBLE LINK: UL LISTED, FUSIBLE LINKS ON FIRE DAMPERS SHALL BE CONSTRUCTED TO UL STANDARD 33 - FUSIBLE LINKS FOR FIRE PROTECTION SERVICE, TEMPERATURE RATING: PER CODE.

E. TYPE:RECTANGULAR TYPE UP TO 1000 FEET PER MINUTE: RUSKIN DIBD2 OR DIBD10 STYLE A OR EQUAL.

F. RECTANGULAR TYPE 1000 FEET PER MINUTE AND HIGHER: RUSKIN DIBD2 OR DIBD10 STYLE B OR EQUAL.

G. CIRCULAR AND OVAL TYPE: RUSKIN DIBD2 STYLE CR AND CO, OR DIBD10 STYLE R AND LO OR EQUAL.

H. STATUS END SWITCHES: WHERE INDICATED ON THE DRAWINGS, RUSKIN SP100 OR EQUAL SWITCH PACKAGE.

MANUAL AND AUTOMATIC DAMPERS

A. RUSKIN, GREENHECK, OR EQUAL.

B. MANUAL DAMPERS:

1. CONFORM TO REQUIREMENTS OF SMACNA HVAC DUCT CONSTRUCTION STANDARDS.

2. BLADES OF SAME MATERIAL AS DUCT WHERE DAMPER IS LOCATED.

3. VENTLOK 400 AND 4000 SERIES OR EQUAL DAMPER HARDWARE; FOR LOW PRESSURE SYSTEMS 2-INCH SMACNA PRESSURE CLASS AND LESS.

4. VENTLOK HIVEL HARDWARE OR EQUAL; FOR GREATER THAN 2-INCH SMACNA PRESSURE CLASS.

5. SEALED BUSHINGS INSTALLED AT BOTH ENDS TO AVOID DUCT LEAKAGE.

6. FOR DAMPERS ABOVE NON-REMOVABLE CEILINGS AND WITHOUT CEILING ACCESS PANELS PROVIDE VENTLOK NO. 677 OR EQUAL CONCEALED DAMPER REGULATOR. WITH PAINTABLE COVER PLATE. REQUIRED INTERCONNECTING HARDWARE.

7. ROUND, INLINE: HEAVY 26-GAUGE G-90 GALVANIZED STEEL BODY (ALL SIZES), EXTRA HEAVY 24-GAUGE G-90 GALVANIZED STEEL BLADE, 3/8" SQUARE AXLE SECURED TO BLADE WITH U-BOLTS, NYLON BUSHINGS ON THRU AND END (ALL SIZES), 2" STOOL WITH LOCKING QUADRANT AND HANDLE (ALL SIZES, WING NUTS NOT ACCEPTABLE). SEALED ON ALL SEAMS, BO3 (2") BUILD-OUT, 3/8" SQUARE SHAFT (SOLID ROD), U-BOLT, LOCKING QUADRANT, HANDLE, FLEXMASTER CO. CONNECTING SLEEVE (SL-BO3). CROWN 175-XS2 OR EQUAL.

8. RECTANGULAR SINGLE BLADE DAMPERS: GALVANIZED STEEL DUCTWORK: GALVANIZED STEEL, EXCEPT AS INDICATED IN THE DRAWINGS, BLADE TO BE TWO GAGES HEAVIER THAN DUCT GAGE, OR 18 GAGE, WHICHEVER IS LIGHTER

9. RECTANGULAR MULTI-BLADE DAMPERS: LOW PRESSURE/LOW VELOCITY SYSTEMS (2-INCH WATER COLUMN OR LESS STATIC PRESSURE CLASS AND 1500 FPM OR LESS FACE VELOCITY), OPPOSED BLADE DAMPER, RUSKIN MODEL CD35 OR EQUAL.

C. AUTOMATIC DAMPERS: MILL GALVANIZED, INTEGRAL, HEAVY-DUTY FACTORY-INSTALLED MOTORIZED DAMPER ACCEPTABLE FOR EXHAUST FANS UNLESS OTHERWISE SCHEDULED, RUSKIN MODEL CD36 OR EQUAL.

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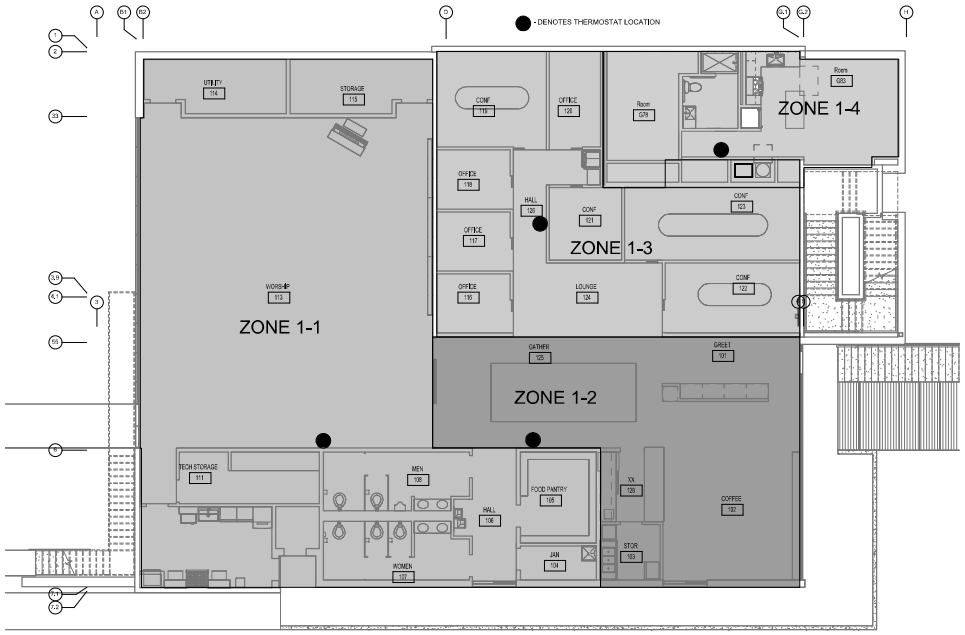
MECHANICAL SPECIFICATIONS

M004



1 MZ101 **FIRST FLOOR HVAC ZONING PLAN**
1/8" = 1'-0"

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FIRST FLOOR HVAC ZONING PLAN

MZ101



1 MZ102 **SECOND FLOOR HVAC ZONING PLAN**
1/8" = 1'-0"

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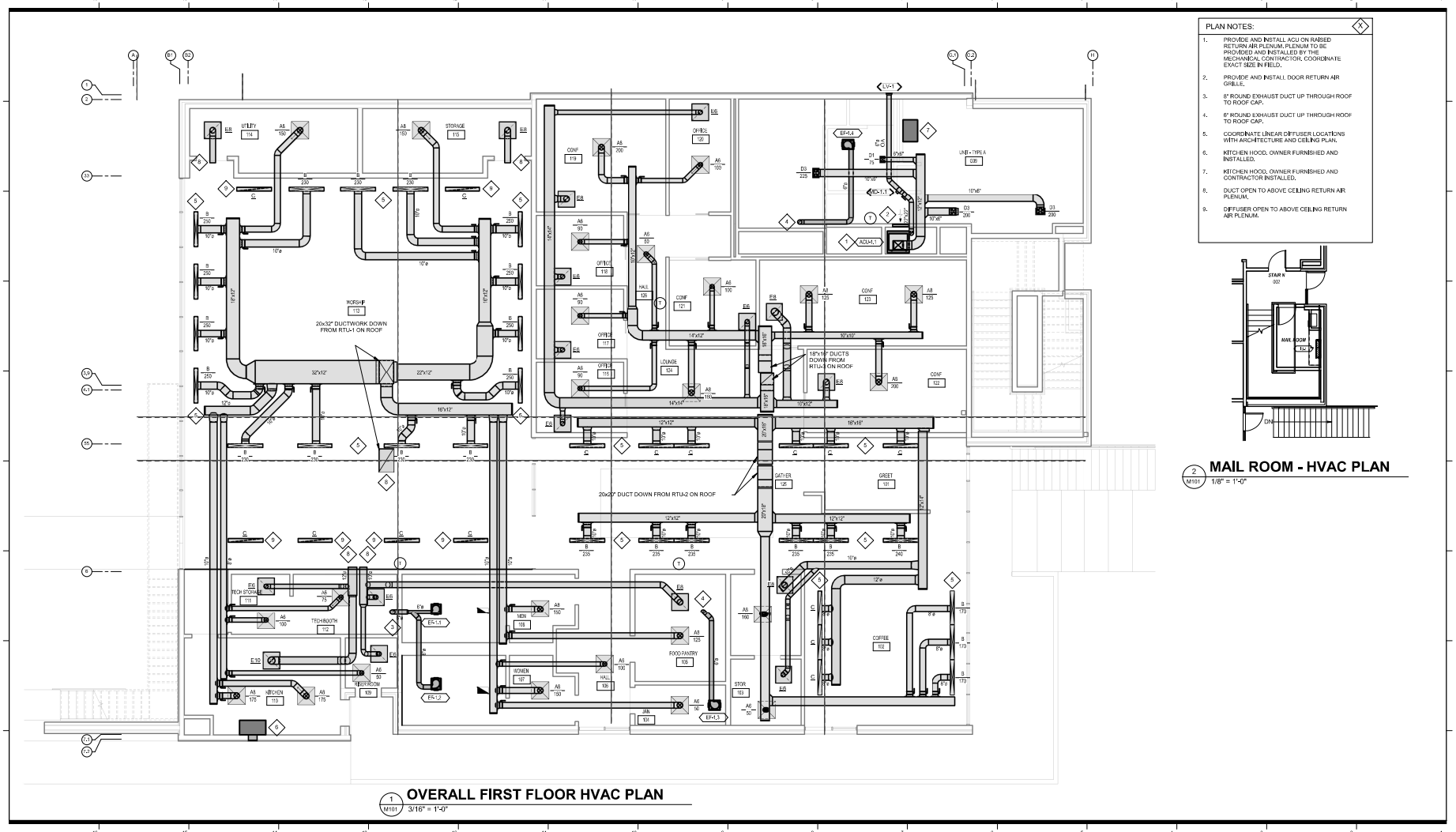
SECOND FLOOR HVAC ZONING PLAN

MZ102



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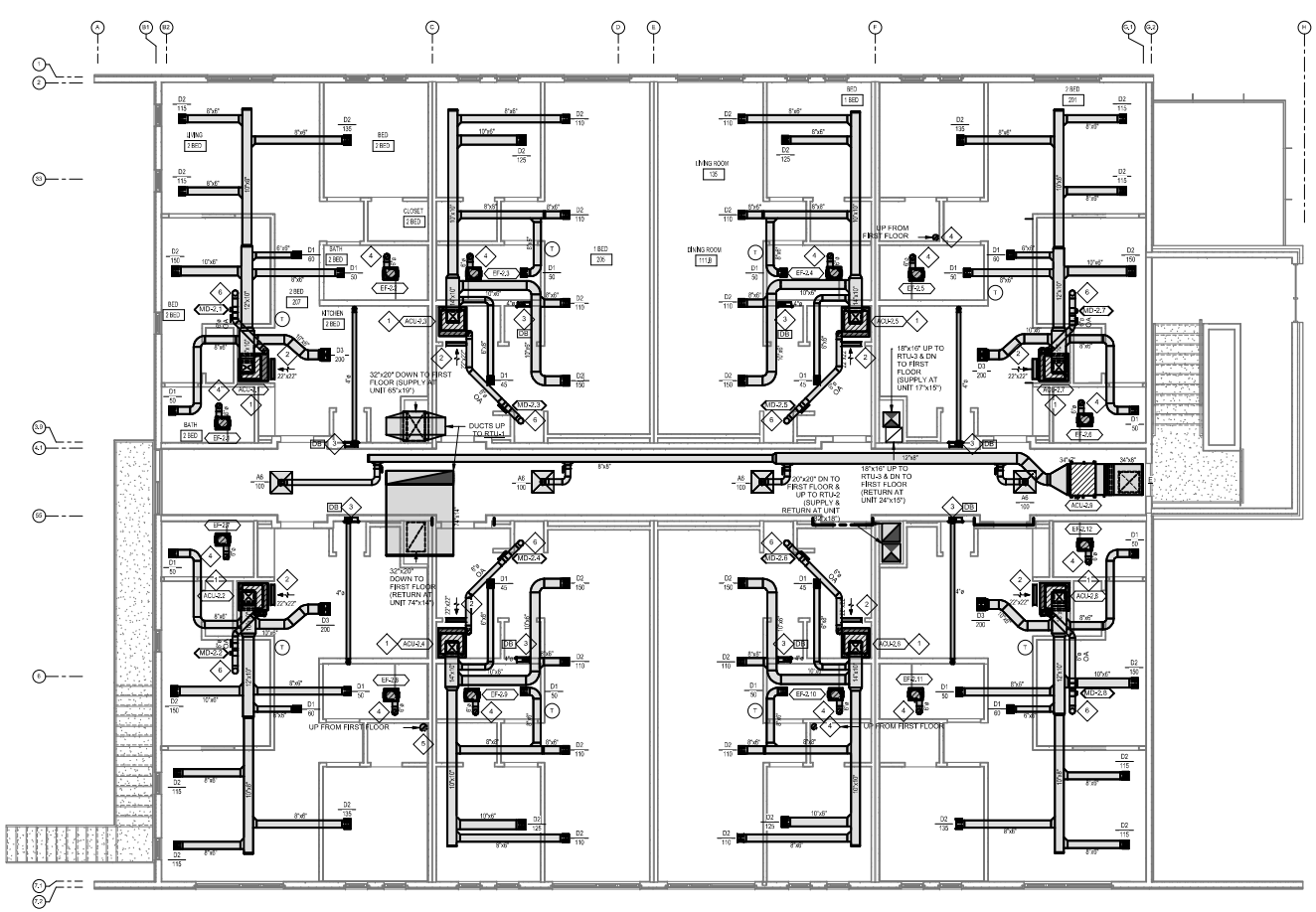
OVERALL FIRST FLOOR AND MAIL ROOM HVAC PLAN

M101



1 M102 **OVERALL SECOND FLOOR HVAC PLAN**
3/16" = 1'-0"

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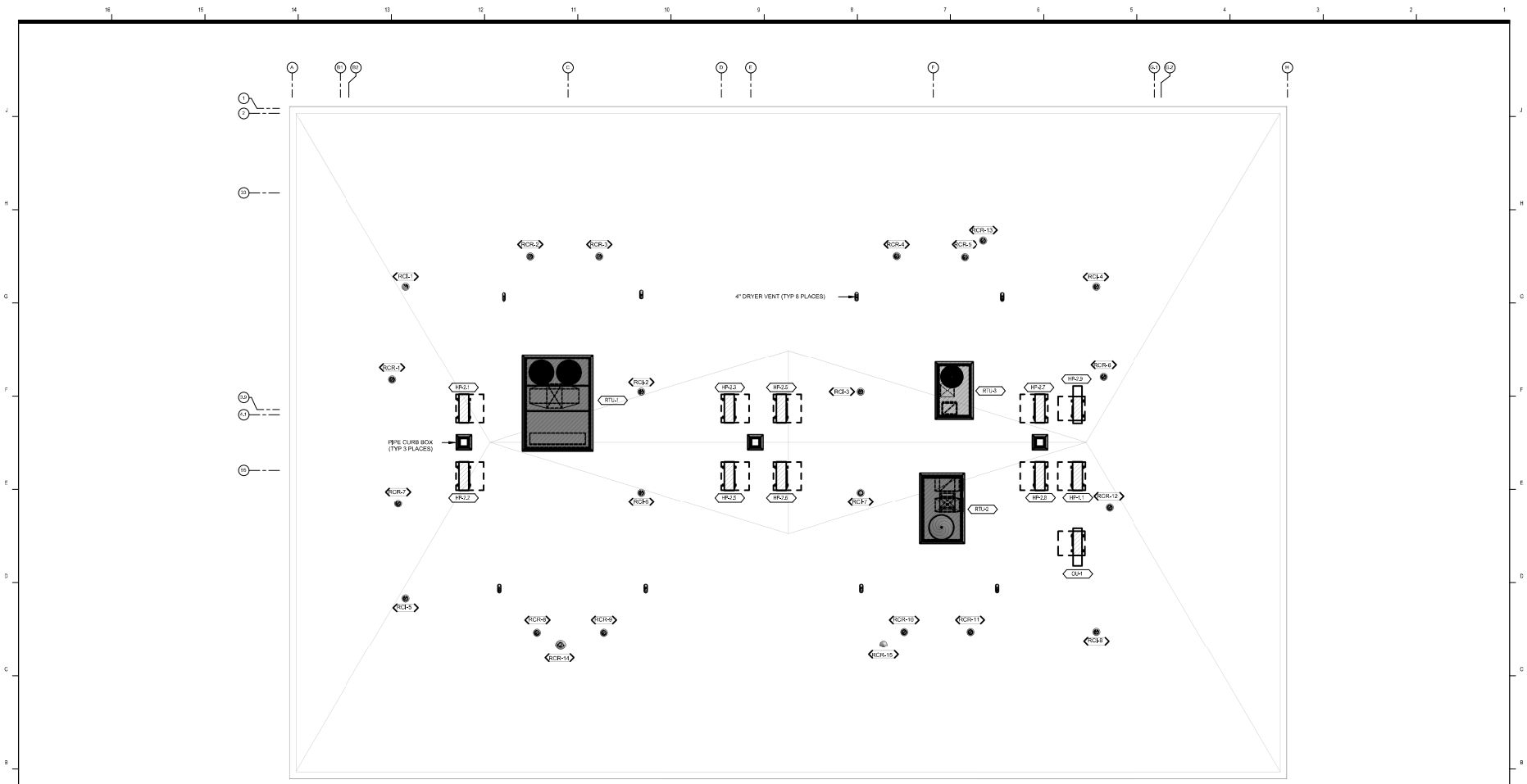
JASON CHRISTOPHER GROSS — REGISTERED PROFESSIONAL ENGINEER — 01/16/26 — 17087 — STATE OF MISSISSIPPI

OVERALL SECOND FLOOR HVAC PLAN

M102



1 M103 **OVERALL ROOF HVAC PLAN**
3/16" = 1'-0"

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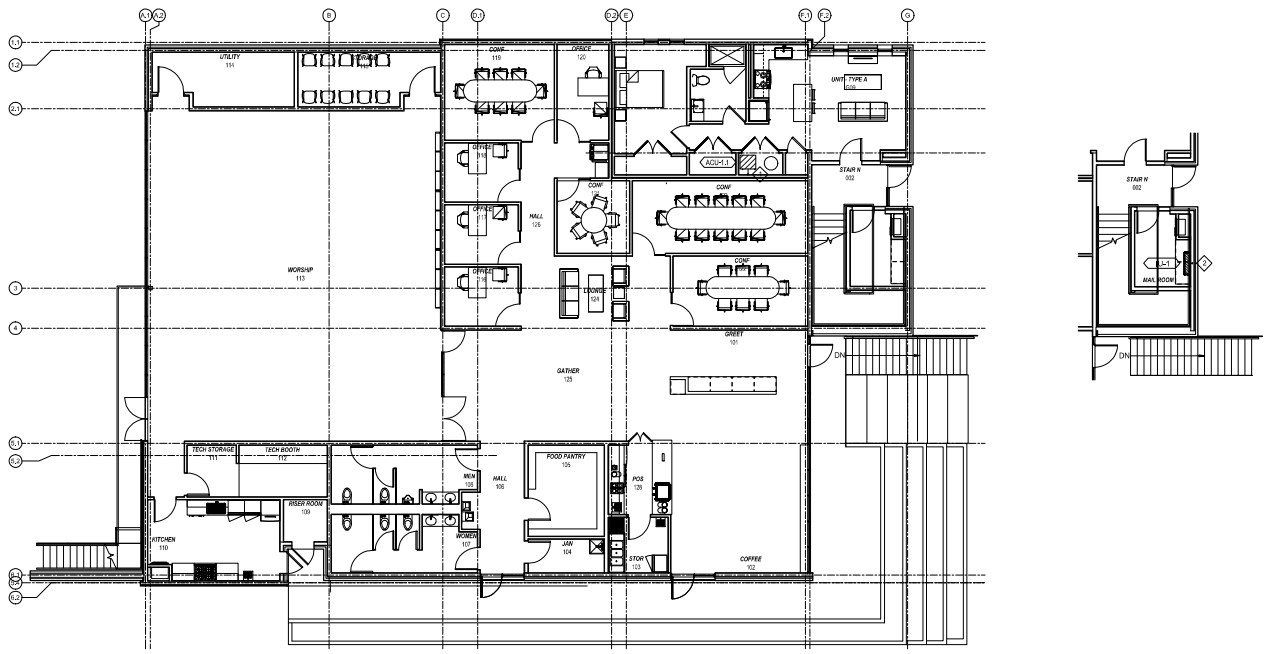
17087
STATE OF MISSISSIPPI

OVERALL ROOF HVAC PLAN

M103

PLAN NOTES: 2

1. REFRIGERANT UP TO SPACE BETWEEN FIRST AND SECOND FLOOR.
2. ROUTE REFRIGERANT PIPING UP FROM MAIL ROOM THROUGH PIPE CURB BOX TO CONDENSING UNIT ON ROOF.



1 M104 **OVERALL FIRST FLOOR AND MAIL ROOM REFRIGERANT PIPING PLAN**

1/8" = 1'-0"

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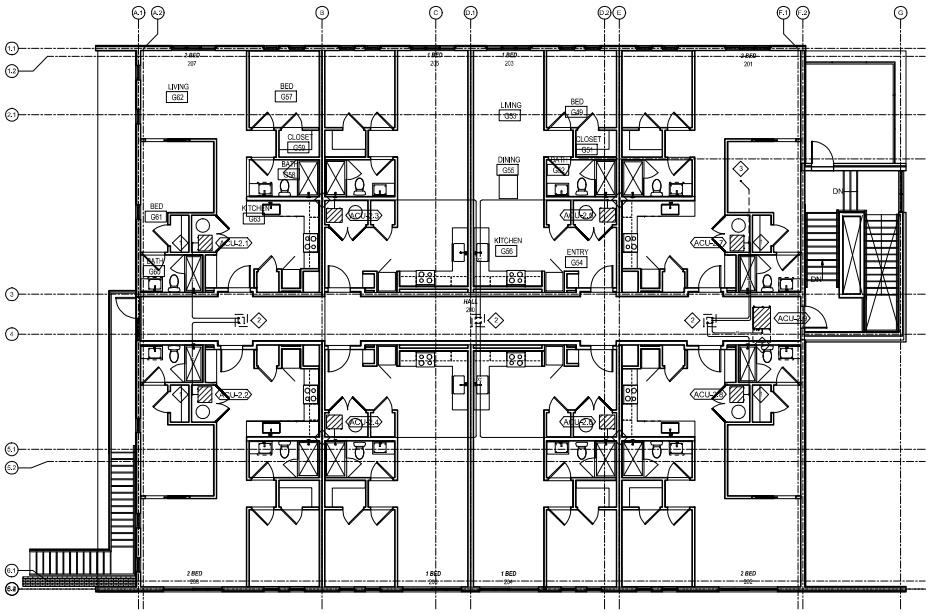
OVERALL FIRST FLOOR AND MAIL ROOM REFRIGERANT PIPING PLAN

M104

PLAN NOTES:

1. REFRIGERANT PIPING UP TO SPACE ABOVE SECOND FLOOR AND BELOW ROOF, ROUTE UP THROUGH PIPE CURB BOX TO CONDENSING UNIT ON ROOF.
2. PIPE CURB BOX ON ROOF.
3. REFRIGERANT PIPING UP FROM FIRST FLOOR, ROUTE TO MECHANICAL CLOSET ON SECOND FLOOR AND THEN UP THROUGH PIPE CURB BOX ON ROOF.



1 / M105 **OVERALL SECOND FLOOR REFRIGERANT PIPING PLAN**

1/8" = 1'-0"

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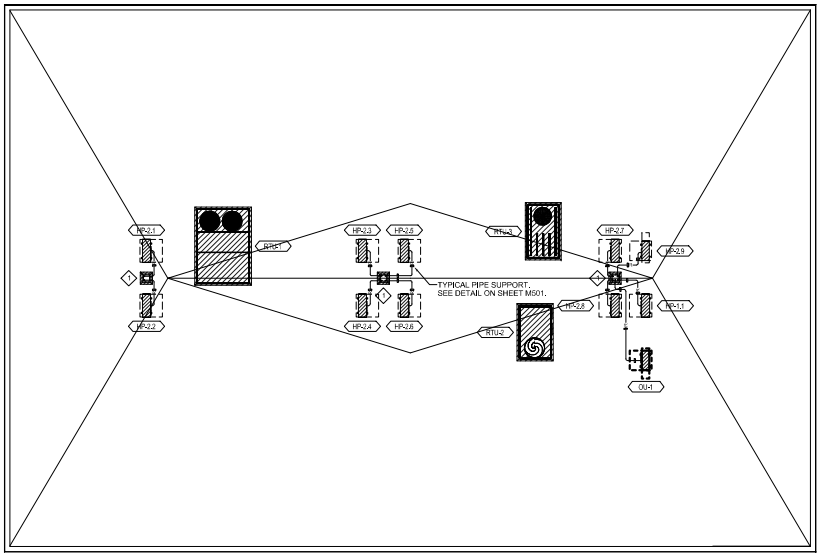
STATE OF MISSISSIPPI

OVERALL SECOND FLOOR REFRIGERANT PIPING PLAN

M105

GENERAL NOTES:
A. ROUTE CONDENSATE FROM UNITS ON ROOF TO NEAREST ROOF DRAIN.
PLAN NOTES: ◇
1. REFRIGERANT PIPING ROUTED UP THROUGH PIPE CURB BOX TO CONDENSING UNITS ON ROOF.



1 M106 **OVERALL ROOF REFRIGERANT PIPING PLAN**
1/8" = 1'-0"

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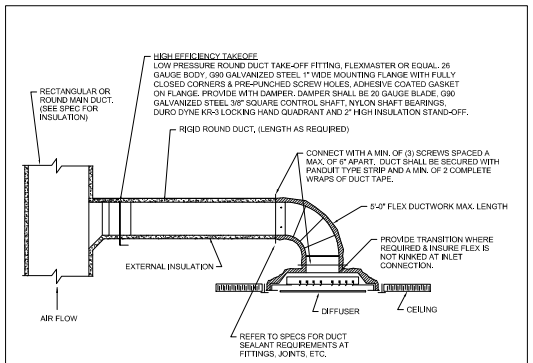
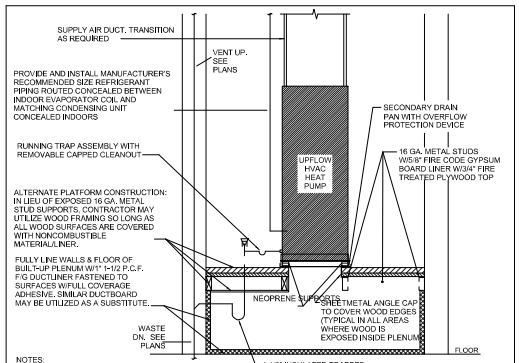
STATE OF MISSISSIPPI

OVERALL ROOF REFRIGERANT PIPING PLAN

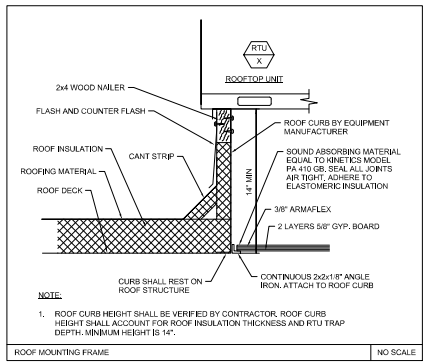
M106



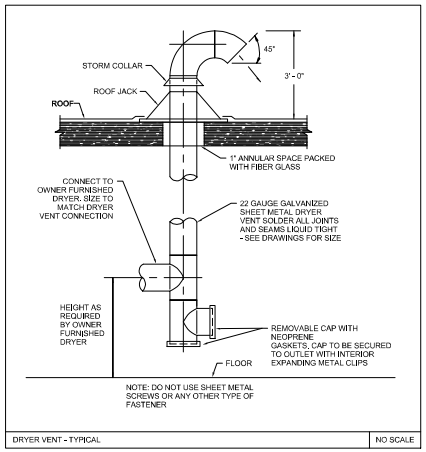
TYPICAL ROUND SUPPLY BRANCH DUCT DETAIL | NO SCALE



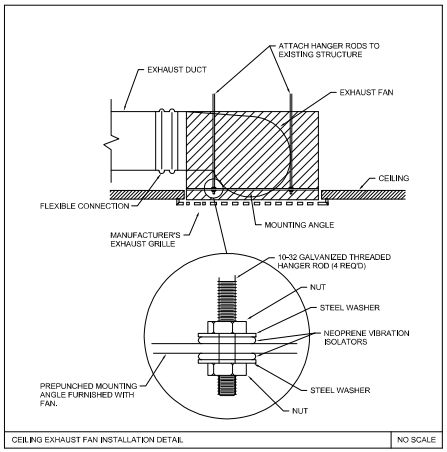
HEAT PUMP BLOWER COIL ON RETURN AIR BUILT-UP PLATFORM DETAIL | NO SCALE



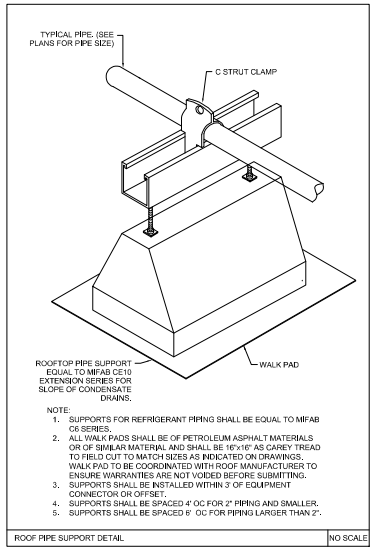
ROOF MOUNTING FRAME | NO SCALE



DRYER VENT - TYPICAL | NO SCALE



CEILING EXHAUST FAN INSTALLATION DETAIL | NO SCALE



ROOF PIPE SUPPORT DETAIL | NO SCALE

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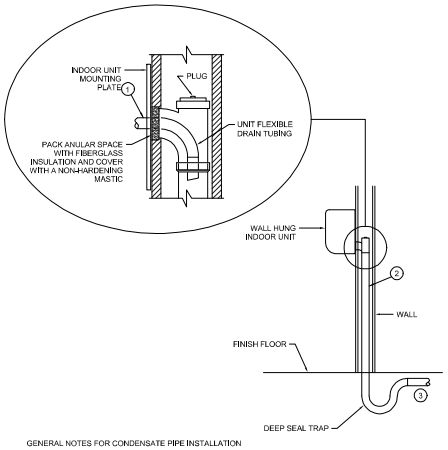
JASON CHRISTOPHER GROSS REGISTERED PROFESSIONAL ENGINEER STATE OF MISSISSIPPI 01/16/26 17087

MECHANICAL DETAILS

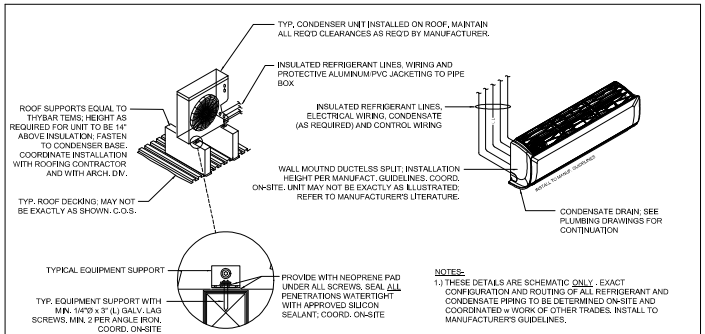
M501



GENERAL NOTES FOR CONDENSATE PIPE INSTALLATION

1. DRAIN HOSE SHALL BE EXTENDED THRU MOUNTING PLATE AND SANITARY TEE INTO 2" WASTE PIPE
2. CONDENSATE DRAIN PIPING SHALL BE ROUTED AS NECESSARY TO CONTINUE DOWN THRU FINISHED FLOOR. A MINIMUM OF 1" PER 100" OF HORIZONTAL RUN MUST BE KEPT AT ALL TIMES
3. SEE PLUMBING DRAWINGS FOR CONTINUATION

CONCEALED CONDENSATE DRAIN FOR WALL HUNG UNIT DETAIL | NO SCALE



- BLOW-UP DETAIL -

NOTES-

1.) THESE DETAILS ARE SCHEMATIC ONLY . EXACT CONFIGURATION AND ROUTING OF ALL REFRIGERANT AND CONDENSATE PIPING TO BE DETERMINED ON-SITE AND COORDINATED w WORK OF OTHER TRADES. INSTALL TO MANUFACTURER'S GUIDELINES.

2.) INSTALL ALL COMPONENTS TO MANUFACTURER'S RECOMMENDATIONS AND GUIDELINES; COORDINATE w WORK OF OTHER TRADES.

3.) CAREFULLY COORDINATE THE INSTALLATION OF CONDENSER UNIT WITH ARCHITECTURAL AND STRUCTURAL DIVISIONS. INTEGRITY OF ROOFING MEMBRANE TO BE MAINTAINED WATERTIGHT.

OUTDOOR SINGLE ZONE MINI-SPLIT DETAIL | NO SCALE

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01/16/26
17087
STATE OF MISSISSIPPI

MECHANICAL DETAILS

M502

ROOFTOP AIR CONDITIONING UNIT SCHEDULE

TAG	MANUFACTURER & MODEL NO.	REFR TYPE	SUPPLY FAN				COOLING											HEATING					ELECTRICAL			OPER WT (LBS)	REMARKS
			SUPPLY CFM	OA CFM	DESIGN ESP	HP	AMBIENT TEMP	EDB (UNIT) / EWB (UNIT)	LDB (UNIT) / LWB (UNIT)	CAPACITY (MBH) TOTAL	CAPACITY (MBH) SENS	MIN EER	MIN IEER	COMPRESSOR QTY	COMPRESSOR RLA	CONDENSER QTY	CONDENSER FLA	EAT	INPUT (MBH)	OUTPUT (MBH)	HGRH	FUEL	MIN EFF(%)	VOLT/Ø	MCA	MOCP		
RTU-1	TRANE YSK240A3S0L **DZC0A1B1A00201	R-454B	6000	600	1	3	95.0	81.0 / 67.0	56.9 / 54.7	237.3	168.8	9.8	13.5	2	1@44.5 1@25.9	1	4.3	68.0	250.0	202.5	YES	NAT GAS	80.0	208/3	108	150	2456	HAIL GUARDS, HINGED ACCESS PANELS, 14" ROOF CURB, NON-FUSED DISCONNECT, POWERED GFI OUTLET, THRU BASE GAS, ELEC, & CONDENSATE, DRY BULB ECONOMIZER (LOW-LEAKAGE DAMPER PER ASHRAE 90.1-CURRENT ADDITION), BAROMETRIC RELIEF, MERV 8 FILTERS, STAINLESS STEEL DRAIN PAN
RTU-2	TRANE YSK090A3S0L **D0C0A1B1A00201	R-454B	2500	250	1	3	95.0	81.0 / 67.0	57.1 / 55.7	91.1	66.2	11.0	14.6	2	1@16.5 1@9.9	1	3.3	68.0	120.0	97.2	YES	NAT GAS	80.0	208/3	43	50	1174	HAIL GUARDS, HINGED ACCESS PANELS, 14" ROOF CURB, NON-FUSED DISCONNECT, POWERED GFI OUTLET, THRU BASE GAS, ELEC, & CONDENSATE, DRY BULB ECONOMIZER (LOW-LEAKAGE DAMPER PER ASHRAE 90.1-CURRENT ADDITION), BAROMETRIC RELIEF, MERV 8 FILTERS, STAINLESS STEEL DRAIN PAN

TAG	MANUFACTURER & MODEL NO.	REFR TYPE	SUPPLY FAN				COOLING											HEATING					ELECTRICAL			OPER WT (LBS)	REMARKS
			SUPPLY CFM	OA CFM	DESIGN ESP	HP	AMBIENT TEMP	EDB (UNIT) / EWB (UNIT)	LDB (UNIT) / LWB (UNIT)	CAPACITY (MBH) TOTAL	CAPACITY (MBH) SENS	EER SEER	EER2 SEER2	COMPRESSOR QTY	COMPRESSOR RLA	CONDENSER QTY	CONDENSER FLA	EAT	INPUT (MBH)	OUTPUT (MBH)	HGRH	FUEL	MIN EFF(%)	VOLT/Ø	MCA	MOCP		
RTU-3	TRANE YSK048A3S0L **B0C0A1B1A00201	R-454B	1400	140	1	1	95.0	81.0 / 67.0	56.8 / 54.3	46.9	34.8	12.0 / 14.0	11.0 / 13.4	1	14.8	1	5.3	68.0	80.0	64.8	YES	NAT GAS	80.0	208/3	31	45	1500	HAIL GUARDS, HINGED ACCESS PANELS, 14" ROOF CURB, NON-FUSED DISCONNECT, POWERED GFI OUTLET, THRU BASE GAS, ELEC, & CONDENSATE, DRY BULB ECONOMIZER (LOW-LEAKAGE DAMPER PER ASHRAE 90.1-CURRENT ADDITION), BAROMETRIC RELIEF, MERV 8 FILTERS, STAINLESS STEEL DRAIN PAN

POWER VENTILATOR SCHEDULE (FIRST FLOOR)

TAG	MANUFACTURER AND MODEL NO.	TYPE	CFM	ESP	RPM	SOUND (dBA/SONES)	ELECTRICAL BHP	ELECTRICAL HP	ELECTRICAL V/Ø	ON/OFF	REMARKS
EF-1.1	COOK GCVF-180	CEILING MOUNTED	210	0.375	1333	5.0	0.013	53W	115/1	OCCUPANCY SENSOR	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, MOTION SENSOR SHALL BE CEILING MOUNTED - PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR
EF-1.2	COOK GCVF-180	CEILING MOUNTED	210	0.375	1333	5.0	0.013	53W	115/1	OCCUPANCY SENSOR	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE, MOTION SENSOR SHALL BE CEILING MOUNTED - PROVIDED AND INSTALLED BY THE MECHANICAL CONTRACTOR
EF-1.3	COOK GCVF-100	CEILING MOUNTED	50	0.375	844	2.0	0.013	7W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-1.4	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE

POWER VENTILATOR SCHEDULE (SECOND FLOOR)

TAG	MANUFACTURER AND MODEL NO.	TYPE	CFM	ESP	RPM	SOUND (dBA/SONES)	ELECTRICAL BHP	ELECTRICAL HP	ELECTRICAL V/Ø	ON/OFF	
EF-2.1	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.2	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.3	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.4	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.5	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.6	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.7	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.8	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.9	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.10	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.11	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE
EF-2.12	COOK GCVF-180	CEILING MOUNTED	100	0.375	928	2.5	0.013	15W	115/1	LIGHT SWITCH	PRE-WIRED DISCONNECT, ECM MOTOR, BACKDRAFT DAMPER, ISOLATOR KIT, WHITE ALUMINUM GRILLE

ROOF EXHAUST / INTAKE CAP SCHEDULE

TAG	MANUFACTURER AND MODEL NO.	SERVES	FUNCTION	THROAT SIZE, INCHES	WT, POUNDS	REMARKS
RCR-1	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.1	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-2	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.2	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-3	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.3	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-4	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.4	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-5	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.5	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-6	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.6	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-7	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.7	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-8	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.8	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-9	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.9	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-10	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.10	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-11	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.11	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-12	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 2.12	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-13	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 1.4	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-14	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 1.1 & 1.2	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCR-15	COOK PR SPUN ALUMINUM GRAVITY	EXHAUST FAN 1.3	EXHAUST AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BACKDRAFT DAMPER, BIRDSCREEN
RCI-1	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.1	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-2	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.3	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-3	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.5	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-4	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.7	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-5	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.2	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-6	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.4	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-7	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.8	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN
RCI-8	COOK PR SPUN ALUMINUM GRAVITY	A/C UNIT 2.7	OUTSIDE AIR	8.625"	13	PROVIDE ROOF CURB TO MATCH ROOF SLOPE, BIRDSCREEN

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MECHANICAL SCHEDULES

M601

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE (FIRST FLOOR)

TAG	MANUFACTURER	NOMINAL TONS	SUPPLY FAN				ELECTRIC HEAT		FILTER			OPER WT (LBS)	REMARKS
			SUPPLY CFM	OA CFM	ESP	HP	VOLT/Ø	KW	TYPE	DEPTH	MERV		
ACU-1.1	MITSUBISHI / TRANE PVA-AA30NL	2.0	700	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION

SPLIT SYSTEM AIR HANDLING UNIT SCHEDULE (SECOND FLOOR)

TAG	MANUFACTURER	NOMINAL TONS	SUPPLY FAN				ELECTRIC HEAT		FILTER			OPER WT (LBS)	REMARKS
			SUPPLY CFM	OA CFM	ESP	HP	VOLT/Ø	KW	TYPE	DEPTH	MERV		
ACU-2.1	MITSUBISHI / TRANE PVA-AA30NL	2.5	875	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.2	MITSUBISHI / TRANE PVA-AA30NL	2.5	875	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.3	MITSUBISHI / TRANE PVA-AA24NL	2.0	700	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.4	MITSUBISHI / TRANE PVA-AA24NL	2.0	700	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.5	MITSUBISHI / TRANE PVA-AA24NL	2.0	700	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.6	MITSUBISHI / TRANE PVA-AA24NL	2.0	700	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.7	MITSUBISHI / TRANE PVA-AA30NL	2.5	875	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.8	MITSUBISHI / TRANE PVA-AA30NL	2.5	875	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	141	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION
ACU-2.9	MITSUBISHI / TRANE PEAD-AA18NL	1.5	525	—	0.5	—	208 / 1	—	THROW AWAY	1"	N.A.	60	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). SEE OUTDOOR UNIT SCHEDULE FOR OUTDOOR AMBIENT CONDITIONS, CONNECTED CAPACITY AND OTHER FACTORS ASSOCIATED WITH CORRECTED CAPACITIES. SEE SCHEMATIC PIPING/CONTROL DIAGRAM FOR INDICATION OF REQUIRED INDOOR UNIT REMOTE CONTROLLERS, SYSTEM CONTROLLERS, AND INTEGRATION DEVICES, PROVIDE WITH PROGRAMMABLE THERMOSTAT, FILTER SECTION, TXV, SINGLE POINT POWER CONNECTION

HEAT PUMP CONDENSING UNIT SCHEDULE (FIRST FLOOR)

TAG	MANUFACTURER & MODEL NO	SERVING	NOM TONS	REFR TYPE	ELECTRICAL			OPER WT (LBS)	REMARKS
					MCA	MOCP	VOLT/Ø		
HP-1.1	MITSUBISHI / TRANE PUZ-AK30NLHZ	ACU-1.1	2.5	R454B	30	48	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.

HEAT PUMP CONDENSING UNIT SCHEDULE (SECOND FLOOR)

TAG	MANUFACTURER & MODEL NO	SERVING	NOM TONS	REFR TYPE	ELECTRICAL			OPER WT (LBS)	REMARKS
					MCA	MOCP	VOLT/Ø		
HP-2.1	MITSUBISHI / TRANE PUZ-AK30NLHZ	ACU-2.1	2.5	R454B	30	48	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.2	MITSUBISHI / TRANE PUZ-AK30NLHZ	ACU-2.2	2.5	R454B	30	48	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.3	MITSUBISHI / TRANE PUZ-AK24NLHZ	ACU-2.3	2.0	R454B	25	39	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.4	MITSUBISHI / TRANE PUZ-AK24NLHZ	ACU-2.4	2.0	R454B	25	39	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.5	MITSUBISHI / TRANE PUZ-AK24NLHZ	ACU-2.5	2.0	R454B	25	39	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.6	MITSUBISHI / TRANE PUZ-AK24NLHZ	ACU-2.6	2.0	R454B	25	39	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.7	MITSUBISHI / TRANE PUZ-AK30NLHZ	ACU-2.7	2.5	R454B	30	48	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.8	MITSUBISHI / TRANE PUZ-AK30NLHZ	ACU-2.8	2.5	R454B	30	48	208 / 1	231	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.
HP-2.9	MITSUBISHI / TRANE PUZ-AK18NL	ACU-2.9	1.5	R454B	20	27	208 / 1	99	NOMINAL COOLING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 80/67°F (DB/WB) & OUTDOOR OF 95°F (DB), NOMINAL HEATING CAPACITIES ARE BASED ON INDOOR COIL EAT OF 70°F (DB) & OUTDOOR OF 43°F (WB). EFFICIENCY VALUES FOR EER, IEER, COP ARE BASED ON AHRI 1230 TEST METHOD FOR MIXTURE OF DUCTED & NON-DUCTED INDOOR UNITS. FOR SYSTEMS WITH MULTIPLE MODULES, REFRIGERANT PIPE DIMENSIONS INDICATE TOTAL SYSTEM COMBINED PIPING DOWNSTREAM OF MODULE TWINNING. ADDED FIELD CHARGE LISTED IS IN ADDITION TO FACTORY CHARGE. THIS MUST BE UPDATED BASED UPON FINAL AS-BUILT PIPING LAYOUT.

DUCTLESS SPLIT-SYSTEM - INDOOR UNIT SCHEDULE

TAG	MANUFACTURER & MODEL NO	TYPE	COOLING (MBH)	HEATING (MBH)	ELECTRICAL			OPER WT (LBS)	REMARKS
					VOLT/Ø	FLA	MCA		
IU-1	TRANE MSZ-GX18NL	WALL MOUNTED	18	21.6	208/1	0.14	1.0	37	WIRED WALL MOUNTED THERMOSTAT. INDOOR UNIT RECEIVES POWER FROM OUTDOOR UNIT. PROVIDE CONDENSATE PUMP.

DUCTLESS SPLIT-SYSTEM - OUTDOOR UNIT SCHEDULE

TAG	MANUFACTURER & MODEL NO	NOM TONS	REFR TYPE	OAT	ELECTRICAL			SEER	EER	OPER WT (LBS)	REMARKS
				COOL / HEAT	MCA	MOCP	VOLT/Ø				
OU-1	TRANE MUZ-GX18NL	1-1/2 TON	R454B	95.0 / 47.0	23	25	208/1	22.5	14.1	116	INVERTER COMPRESSOR, LOW AMBIENT KIT

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100% CONSTRUCTION DOCUMENTS
Issued: 01.16.2026

PROJ. A_2406

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JASON CHRISTOPHER GROSS
REGISTERED PROFESSIONAL
ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

MECHANICAL SCHEDULES

M602

AIR DISTRIBUTION DEVICE SCHEDULE

TAG	TYPE	MANUFACTURER & MODEL NO.	NECK SIZE	FACE SIZE	REMARKS
A6	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE SPD	6"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).
A8	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE SPD	8"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).
A10	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE SPD	10"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).
D1	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE 520	6x6"	8x6"	SEE PLANS FOR THROW DIRECTIONS.
D2	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE 520	8x6"	10x6"	SEE PLANS FOR THROW DIRECTIONS.
D3	CEILING MOUNTED SUPPLY AIR DEVICE	PRICE 520	10x6"	12x6"	SEE PLANS FOR THROW DIRECTIONS.
E6	CEILING MOUNTED RETURN AIR DEVICE	PRICE SPD	6"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).
E8	CEILING MOUNTED RETURN AIR DEVICE	PRICE SPD	8"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).
E10	CEILING MOUNTED RETURN AIR DEVICE	PRICE SPD	10"Ø	24x24"	PROVIDE ALL SURFACE MOUNTED GRILLES WITH PLASTER FRAME MOUNT (PRICE SPF).

WALL LOUVER SCHEDULE

TAG	MANUFACTURER & MODEL NO.	FUNCTION	CFM	MIN NET FREE AREA (SQFT)	OVERALL SIZE (L X H)	DEPTH	MAX PD (IN.W.G.)	REMARKS
LV-1	GREENHECK EHH-601	OUTSIDE AIR ACU-1,1	50	.58	8x8	6	0.03	FLUOROPOLYMER FINISH IN COLOR SELECTED BY ARCHITECT. ALUMINUM BIRDSCREEN

LINEAR SLOT DIFFUSERS SCHEDULE

TAG	MANUFACTURER & MODEL NO.	NO. OF SLOTS	SLOT WIDTH (IN)	TOTAL WIDTH (IN)	TOTAL LENGTH (FT)	BORDER TYPE	PATTERN	MOUNTING	PLENUM				MAX NC	REMARKS
									NUMBER	LENGTH (IN)	INLET (IN.)	TYPE		
B	PRICE AS215 (SUPPLY)	1	1.5	7	4'-0"	51	ADJUSTA -SLOT	SUSPENDED	1	48	8	ASP	<25	SIZE BASED ON PLAN CFM'S. FINISH TO BE SELECTED BY ARCH. PROVIDE WITH CABLE OPERATED DAMPER (VCRBEC). COORDINATE LINEAR GRILLES MODELS AND PLENUMS WITH ARCHITECT CEILING SYSTEM.
C	PRICE AS215 (RETURN)	1	1.5	7	4'-0"	51	ADJUSTA -SLOT	SUSPENDED	1	48	8	ASP	<25	SIZE BASED ON PLAN CFM'S. FINISH TO BE SELECTED BY ARCH. PROVIDE WITH CABLE OPERATED DAMPER (VCRBEC). COORDINATE LINEAR GRILLES MODELS AND PLENUMS WITH ARCHITECT CEILING SYSTEM.

MOTORIZED DAMPER SCHEDULE

TAG	DAMPER MODEL	ACTUATOR		INTERLOCK	POWER WIRING	CONTROLS & INTERLOCK WIRING	REMARKS
		MODEL	VOLTAGE/PHASE				
MD-1.1	RUSKIN CDRS-25	BELIMO	120/1	ACU-1.1	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.1	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.1	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.2	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.2	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.3	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.3	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.4	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.4	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.5	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.5	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.6	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.6	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.7	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.7	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
MD-2.8	RUSKIN CDRS-25	BELIMO	120/1	ACU-2.8	DIVISION 26	DIVISION 23	INTERLOCK WITH AHU. 2-POSITION ACTUATOR. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.

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STATE OF MISSISSIPPI

MECHANICAL SCHEDULES

M603

ELECTRICAL LEGEND

GENERAL NOTES

1. ALL EQUIPMENT AND DEVICES ARE TO BE FLUSH MOUNTED UNLESS OTHERWISE NOTED.
2. DEVICES NOTED AS "GFI" SHALL BE GROUND FAULT CIRCUIT INTERRUPTING DEVICES.
3. DEVICES NOTED AS "WP" SHALL BE WEATHERPROOF WHILE-IN-USE.
4. DEVICES NOTED AS "DL" SHALL BE RATED FOR DAMP LOCATION.
5. DEVICES NOTED AS "NL" SHALL BE NIGHT LIGHTS. PROVIDE UNSWITCHED POWER TO FIXTURE.
6. DEVICES NOTED AS "WG" SHALL BE PROVIDED AND INSTALLED WITH A WIRE GUARD.
7. DEVICES NOTED AS "TR" SHALL BE TAMPER RESISTANT.
8. PROVIDE UNSWITCHED POWER TO EMERGENCY BATTERY PACKS.
9. "W/E" INDICATES DEVICE/DISCONNECT PROVIDED WITH THE EQUIPMENT BY OTHERS.

LUMINAIRES (See Light Fixture Schedule)

NOTE: THE NUMBER INSIDE THE CIRCLE IS THE CIRCUIT NUMBER. THE LETTER BESIDE THE SYMBOL IS THE FIXTURE TYPE DESCRIBED IN THE LIGHT FIXTURE SCHEDULE.

- 2"X2" RECESSED FIXTURE.
- 2"X2" RECESSED EMERGENCY FIXTURE.
- SURFACE MOUNTED OR SUSPENDED FIXTURE.
- SURFACE MOUNTED OR SUSPENDED EMERGENCY FIXTURE.
- RECESSED CEILING FIXTURE.
- RECESSED EMERGENCY CEILING FIXTURE.
- PENDANT MOUNT FIXTURE.
- CEILING MOUNTED EXIT SIGN. PROVIDE CHEVRONS AS INDICATED BY ARROWS.
- EXIT SIGN WITH EMERGENCY LIGHTING.
- WALL MOUNTED EXIT SIGN. PROVIDE CHEVRONS AS INDICATED BY ARROWS.
- WALL MOUNTED FIXTURE.
- WALL MOUNTED LINEAR FIXTURE.
- SURFACE MOUNTED TRACK AND TRACK LIGHTING FIXTURE.
- CEILING FAN.
- WALLWASH OR SPOT LIGHT FIXTURE.

MISCELLANEOUS

- CONTACTOR.
- PHOTOCELL.
- CEILING MOUNTED JUNCTION BOX.
- WALL MOUNTED JUNCTION BOX.
- FLEXIBLE CONNECTION TO EQUIPMENT.

SWITCHES

- SINGLE-POLE, SINGLE-THROW SWITCH. MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- DOUBLE-POLE, SINGLE-THROW, 30 AMP SWITCH. MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- THREE-WAY SWITCH. MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- FOUR-WAY SWITCH. MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- LED DIMMER EQUAL TO LEVITON #IPI710-LFZ MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- AUTOMATIC WALL SWITCH, SENSORSWITCH #WSXA-PDT OR APPROVED EQUAL. MOUNT CENTERLINE OF BOX AT 45" A.F.F. UNLESS NOTED OTHERWISE.
- AUTOMATIC WALL SWITCH WITH INTEGRAL 0-10V DIMMER. SENSORSWITCH #WSXA-PDT-D-VA OR APPROVED EQUAL. MOUNT CENTERLINE OF BOX AT 45"A.F.F. UNLESS NOTED OTHERWISE.
- HORSEPOWER RATED SWITCH WITH THERMAL OVERLOADS (MANUAL MOTOR STARTER).
- PASSIVE INFRARED AND ULTRASONIC DUAL TECHNOLOGY OCCUPANCY SENSOR WITH A 12' RADIAL COVERAGE. CEILING MOUNTED. SENSORSWITCH #CM-PDT-9 OR APPROVED EQUAL.
- PASSIVE INFRARED AND ULTRASONIC DUAL TECHNOLOGY OCCUPANCY SENSOR WITH A 28' RADIAL COVERAGE. CEILING MOUNTED. SENSORSWITCH #CM-PDT-10 OR APPROVED EQUAL.
- POWER PACK MOUNTED ABOVE CEILING. SENSORSWITCH #PP20 OR APPROVED EQUAL.
- INVERTER MOUNTED ABOVE ACCESSIBLE CEILING. FEM LIGHTING #S-EMN-110/125

RECEPTACLES

- DUPLEX RECEPTACLE, NEMA 5-20R, MOUNTED 18" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, ONE COVER PLATE, MOUNTED 18" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, ONE COVER PLATE, MOUNTED WITH BOTTOM OF BOX 2" ABOVE COUNTER BACKSPLASH. WHERE THERE IS NO BACKSPLASH MOUNT 6" ABOVE COUNTER. WHERE RECEPTACLE IS SHOWN IN AN AREA WITH NO COUNTER, MOUNT 45"A.F.F. TO CENTERLINE OF BOX.
- DUPLEX RECEPTACLE, NEMA 5-20R, MOUNTED WITH BOTTOM OF BOX 2" ABOVE COUNTER BACKSPLASH. WHERE THERE IS NO BACKSPLASH MOUNT 6" ABOVE COUNTER. WHERE RECEPTACLE IS SHOWN IN AN AREA WITH NO COUNTER, MOUNT 45"A.F.F. TO CENTERLINE OF BOX.
- DUPLEX RECEPTACLE, NEMA 5-20R, FOR DRINKING FOUNTAIN FED FROM GFCI BREAKER. MOUNTED IN ACCORDANCE WITH MANUFACTURER'S ROUGH-IN REQUIREMENTS. VERIFY CONNECTION TYPE PRIOR TO BID. RECEPTACLE SHALL BE MOUNTED CONCEALED BEHIND THE SHROUD OF THE DRINKING FOUNTAIN.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R, MOUNTED IN A FLOOR BOX.
- SINGLE RECEPTACLE, NEMA 14-50R. PROVIDE 6' CORD AND MATCHING PLUG WHERE REQUIRED. MOUNTING DETERMINED BY NEC FOR TYPE OF EQUIPMENT BEING CONNECTED.
- SINGLE RECEPTACLE, NEMA 6-30R, MOUNTED 18" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
- SINGLE RECEPTACLE, NEMA 14-30R, MOUNTED 36" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE. PROVIDE 6' CORD AND MATCHING PLUG WHERE REQUIRED.

CONDUIT AND WIRING

- CONDUCTORS IN CONDUIT CONCEALED WITHIN WALL OR CEILING. TIC MARKS INDICATE NUMBER OF CONDUCTORS. THE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN, BUT SHALL BE PROVIDED. SIZE THE EQUIPMENT GROUNDING CONDUCTOR AND THE CONDUIT PER THE NEC. THE ABSENCE OF TIC MARKS SIGNIFIES THAT TWO CONDUCTORS PLUS AN EQUIPMENT GROUNDING CONDUCTOR SHOULD BE PROVIDED. FOR EXAMPLE, THE MARKINGS TO THE LEFT SIGNIFY THAT THREE CONDUCTORS PLUS AN EQUIPMENT GROUNDING CONDUCTOR SHOULD BE PROVIDED.
- THE TEXT INSIDE THE ARC INDICATES THE AWG SIZE OF THE CONDUCTORS THAT SHALL BE RUN IN THE CONDUIT. THE ABSENCE OF TEXT SIGNIFIES THAT THE CONDUCTORS SHOULD BE #12 AWG.
- CIRCUITRY RUN IN STRAIGHT LINE SEGMENTS SIGNIFIES EXPOSED SURFACE-MOUNTED RACEWAY (SEE SPECIFICATIONS).
- CONDUCTORS IN CONDUIT CONCEALED BELOW GRADE OR FLOOR. TIC MARKS INDICATE NUMBER OF CONDUCTORS. THE EQUIPMENT GROUNDING CONDUCTOR IS NOT SHOWN, BUT SHALL BE PROVIDED. SIZE THE EQUIPMENT GROUNDING CONDUCTOR AND THE CONDUIT PER THE NEC. THE ABSENCE OF TIC MARKS SIGNIFIES THAT TWO CONDUCTORS PLUS AN EQUIPMENT GROUNDING CONDUCTOR SHOULD BE PROVIDED. THE MARKINGS TO THE LEFT SIGNIFY THAT THREE CONDUCTORS PLUS AN EQUIPMENT GROUNDING CONDUCTOR SHOULD BE PROVIDED.
- HOMERUN TO PANELBOARD. ARC DENOTES CONCEALED CIRCUITRY. TEXT DENOTES PANELBOARD NAME WITH CIRCUIT NUMBER. DEVICES HAVING CIRCUIT NUMBERS LOCATED BESIDE THEM MAY NOT SHOW THE CIRCUIT NUMBERS AT THE HOMERUN ARROWS.
- PARTIAL HOMERUN TO PANELBOARD. COMBINE ALL PARTIAL HOMERUNS THAT ARE ON THE SAME CIRCUIT IN A JUNCTION BOX PRIOR TO ENTERING THE PANELBOARD.
- LOW VOLTAGE CONDUCTORS USED FOR MOTION DETECTOR CIRCUITRY. SEE MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR REQUIREMENTS.

VOLTAGE DROP CHART FOR 20A, 1Ø CIRCUITS

Voltage	Circuit Length	Conductor Size (AWG)
120	< 50'	#12
120	> 50'	#10
120	> 90'	#8
120	> 140'	#6
277	< 130'	#12
277	> 130'	#10
277	> 200'	#8
277	> 330'	#6

VOLTAGE DROP CHART NOTES:

1) CIRCUIT SIZES INDICATED ON THE DRAWINGS ARE MINIMUM REQUIREMENTS. REFER TO THIS CHART FOR UPSIZING CONDUCTORS AS NEEDED.

2) DO NOT CONNECT CONDUCTORS LARGER THAN #10 DIRECTLY TO A RECEPTACLE OR A SWITCH. PROVIDE A JUNCTION BOX TO DOWNSIZE THE CONDUCTOR TO #12 AT THE DEVICE.

3) FOR CIRCUITS LONGER THAN THOSE LISTED ABOVE, CONSULT WITH THE ENGINEER FOR CONDUCTOR SIZES.

GEAR

- FUSED DISCONNECT SWITCH. TEXT INDICATES AMPACITY/NUMBER OF POLES/ENCLOSURE TYPE; F-(RATING OF FUSES).
- NON-FUSED DISCONNECT SWITCH. TEXT INDICATES AMPACITY/NUMBER OF POLES/ENCLOSURE TYPE.
- PANELBOARD.
- NETWORK MEDIA ENCLOSURE FOR TERMINATION OF COMMUNICATION CABLES. PROVIDE RECEPTACLES FOR TELCO, METERING, SECURITY, AND ALL OTHER SYSTEMS AS REQUIRED. COORDINATE WITH ALL TRADES AND SUPPLIERS FOR REQUIREMENTS PRIOR TO ROUGH-IN. COORDINATE INCOMING SERVICE LOCATION AND REQUIREMENTS WITH PHONE AND TV PROVIDER PRIOR TO BID. SEE 3/E001 FOR PART NUMBER.

FIRE ALARM SYSTEM

- MANUAL PULL STATION. MOUNT 48"A.F.F. TO CENTERLINE OF BOX.
- STROBE. MOUNT 80"A.F.F. TO BOTTOM OF BOX.
- COMBINATION HORN AND STROBE. MOUNT 80"A.F.F. TO BOTTOM OF BOX.
- SMOKE DETECTOR.
- THERMAL DETECTOR.
- DUCT SMOKE DETECTOR IN RETURN DUCT.
- DUCT SMOKE DETECTOR IN SUPPLY DUCT.
- CARBON MONOXIDE DETECTOR.
- MULTISENSOR TECHNOLOGY SMOKE AND CARBON MONOXIDE DETECTOR. ALL DETECTORS WITH IN A SINGLE UNIT MUST BE INTERLOCKED TO SOUND OFF SIMULTANEOUSLY.
- FIRE ALARM CONTROL PANEL. CIRCUIT BREAKER SHALL BE COLORED RED.
- FIRE ALARM ANNUNCIATOR PANEL.
- FIRE ALARM HORN AND STROBE MOUNTED ON THE CEILING TO A FLUSH MOUNTED BOX.
- FIRE ALARM STROBE MOUNTED ON THE CEILING TO A FLUSH MOUNTED BOX.
- FIRE ALARM BELL.
- FLOW SWITCH.
- TAMPER SWITCH.

COMMUNICATIONS

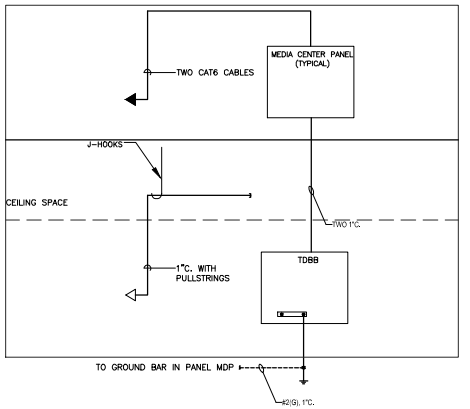
- DATA OUTLET MOUNTED 18" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.
- DATA OUTLET MOUNTED WITH BOTTOM OF BOX 2" ABOVE COUNTER BACKSPLASH. WHERE THERE IS NO BACKSPLASH MOUNT 6" ABOVE COUNTER. WHERE TELEPHONE/DATA OUTLET IS SHOWN IN AN AREA WITH NO COUNTER, MOUNT 45" A.F.F. TO CENTERLINE OF BOX.
- DUPLEX RECEPTACLE, NEMA 5-20R AND A DATA OUTLET MOUNTED IN A FLOOR BOX.
- DOUBLE DUPLEX RECEPTACLE, NEMA 5-20R AND A DATA OUTLET MOUNTED IN A FLOOR BOX.
- WIFI.
- DATA OUTLET MOUNTED 18" A.F.F. TO CENTERLINE OF BOX UNLESS NOTED OTHERWISE.

LIGHTING FIXTURE SCHEDULE

TYPE	MANUFACTURER	PART NUMBER	LAMPS	MOUNTING	REMARKS
A	3G LIGHTING	3G1-48RSL-2L1-30K-80CRI-875LW/FT	LED, 36W 3,000 LUMENS	RECESSED	
B	LITHONIA	LDN6-AL02-SWB1-L06-AR-TRW-LSS MVOLT-UGZ	LED, 25W 2,212 LUMENS	RECESSED	
C	LITHONIA	LDN6-AL02-SWB1-L06-AR-TRW-LSS MVOLT-UGZ	LED, 19W 1,741 LUMENS	RECESSED	
CE	LITHONIA	LDN6-AL02-SWB1-L06-AR-TRW-LSS MVOLT-UGZ-E10WCP	LED, 19W 1,741 LUMENS	RECESSED	*WITH 120V EMERGENCY BATTERY PACK.
D	LITHONIA	LDN6-AL02-SWB1-L06-AR-TRW-LSS MVOLT-UGZ	LED, 12W 1,181 LUMENS	RECESSED	
DE	LITHONIA	LDN6-AL02-SWB1-L06-AR-TRW-LSS MVOLT-UGZ-E10WCP	LED, 12W 1,181 LUMENS	RECESSED	*WITH 120V EMERGENCY BATTERY PACK.
F	LITHONIA	CPX-2X2-ALO7-80CRI-SWB7-SWL MVOLT	LED, 20W 2,587 LUMENS	RECESSED	
GE	LITHONIA	WDGE 2-P4-40K-VW-MVOLT-SRM E10WH-PE-DBLXD	LED, 35W 4,526 LUMENS	WALL	*WITH 120V EMERGENCY BATTERY PACK.
H	LITHONIA	LDN6-AL01-SWB1-L06-AR-TRW-LSS MVOLT-UGZ	LED, 9W 790 LUMENS	RECESSED	
J	LUMENS	ITEM# ICW2510801	LED, 4W 330 LUMENS	WALL	
K	LUMENS	ITEM# DA2479040	LED, 15W 1,440 LUMENS	WALL	
L	LUMINII	KBS-W-HB-**-44SO-30K-R80-SF NA-WH-**-*	LED, 1.3W/FT 95 LUMENS/FT	STEP LIGHTS	*VERIFY LENGTH AND CONNECTIONS PRIOR TO ORDERING. POWER SUPPLY # PS-UNI-96-24
M	LUMENS	ITEM# MFM1666178	LED, 19W 1,600 LUMENS	FAN	
N	BIRCHWOOD	BW165-DI-250-250-30-FW-BW-6 MW-UNV-D1-CSS-30W	LED, 24W 1,250 LP/ 1,250 DN	SUSPENDED	
P	PRECISION	SOL20-SP-WDSO-18K30K-WD-WH USCC-RM-1120WD1-01A	LED, 23W 1,780 LUMENS	SURFACE	
Q	LUMENS	ITEM# ICW2537976	LED, 5W	SURFACE	
R	HYDREL	PINE-P1-80CRI-40K-MVOLT-45DEG FLC-KW-JBA-C3-*	LED, 33W 3,108 LUMENS	KNUCKEL	*FINISH BY ARCHITECH
S	FOCAL POINT	FSM4LWL-FL-625-30K-1C-UNV-LD1 *-EM-WH-23'	LED, 138W 14,375 LUMENS	RECESSED	*VERIFY CEILING TYPE WITH ARCHITECT PRIOR TO ORDERING. **WITH 120V EMERGENCY BATTERY PACK.
T	FOCAL POINT	FSM4LWL-FL-625-30K-1C-UNV-LD1 *-WH-18'	LED, 10BW 1,250 LUMENS	RECESSED	*VERIFY CEILING TYPE WITH ARCHITECT PRIOR TO ORDERING.
V	FOCAL POINT	FSM4LWL-FL-625-30K-1C-UNV-LD1 *-EM-WH-73'	LED, 438W 45,625 LUMENS	RECESSED	*VERIFY CEILING TYPE WITH ARCHITECT PRIOR TO ORDERING. **WITH 120V EMERGENCY BATTERY PACK.
W	SPI LIGHTING	SEW12145-WT-L18W-120-277V-3000K DF_90+HE-MK6-PSE-WL-12"-DF-FT-*	LED, 16W 1,627 LUMENS	WALL	*COLOR BY ARCHITECT.
X	LITHONIA	LDM-S-BBS-RG-MVOLT-EL	LED	UNIVERSAL	*WITH 120V EMERGENCY BATTERY PACK.
XEM	LITHONIA	LHQM-S-BBS-RG-MVOLT-HO	LED	UNIVERSAL	*WITH 120V EMERGENCY BATTERY PACK.
Y	QTL LIGHTING	W2SW-5.0-30K-DMP-STD-45-S1-CONE CLS-WH-CL2-SST-SF-*-0	LED, 5W/FT 408 LUMENS/FT	SHELF	*VERIFY EXACT LENGTH PRIOR TO ORDERING.

GENERAL LIGHTING NOTES:

1. ALL LIGHT FIXTURE WITH SELECTABLE COLOR TEMPERATURER SHALL BE SET TO 3000 KELVIN UNLESS NOTED OTHERWISE.



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100% CONSTRUCTION DOCUMENTS

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CHRISTOPHER M. GREEN — 15776 — STATE OF MISSISSIPPI — REGISTERED PROFESSIONAL ENGINEER — 1/16/2026

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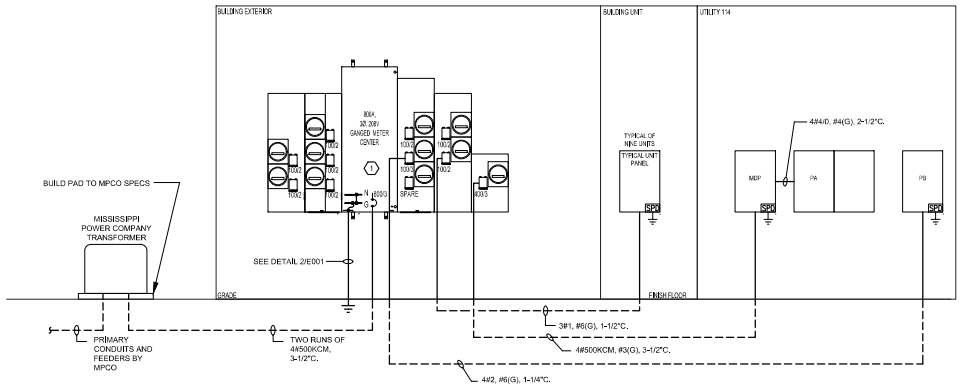
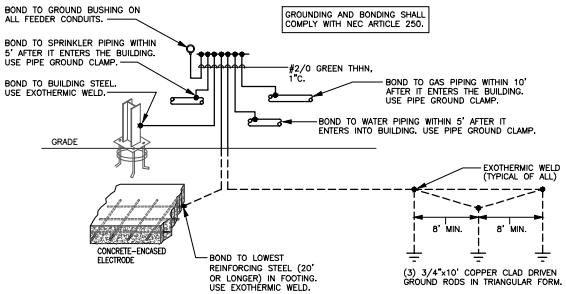
ELECTRICAL LEGEND

E000



1 E001 SINGLE LINE DIAGRAM
Scale: NONE



2 E001 GROUNDING DETAIL
Scale: NONE



3 E001 MEDIA CENTER PART NUMBER
Scale: NONE

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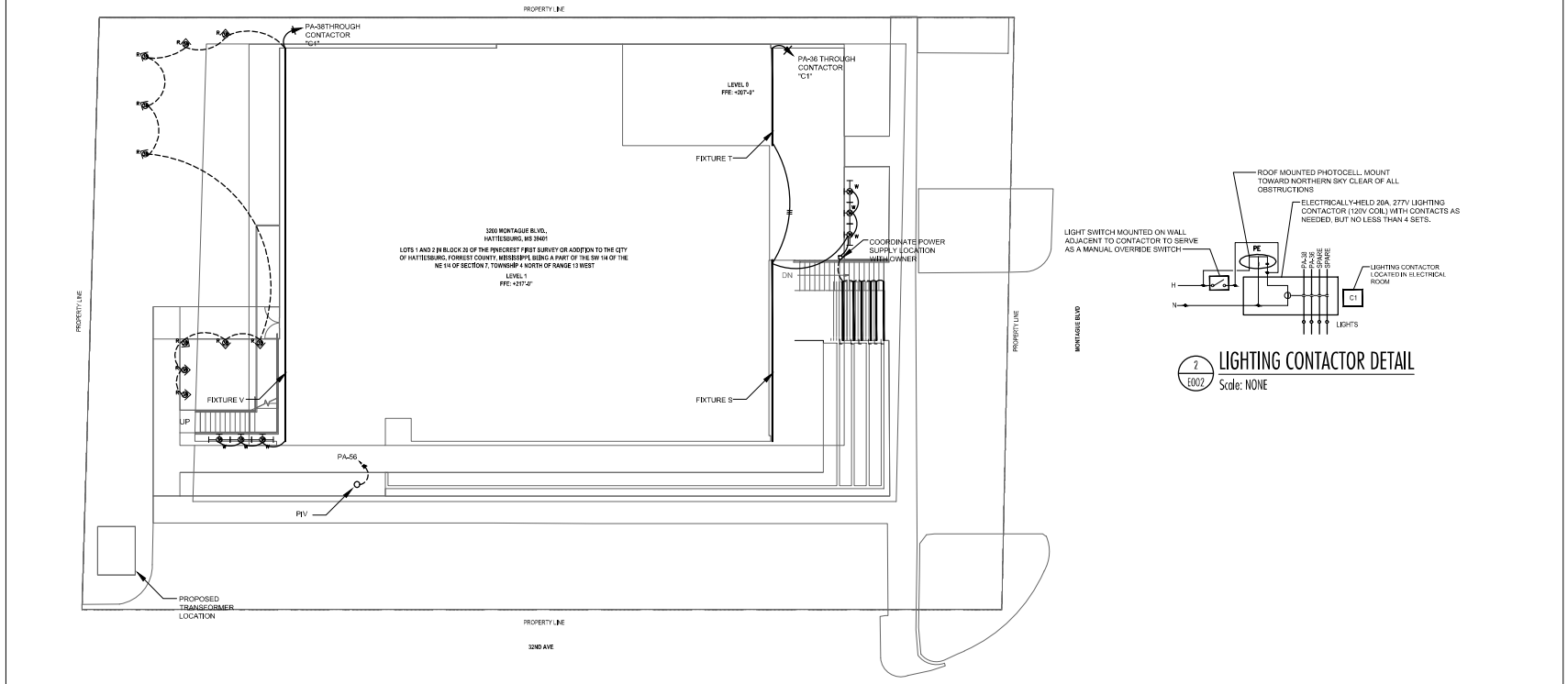
ELECTRICAL ONE LINE

E001



1 E002 SITE PLAN
Scale: 1" = 10'-0"

2 E002 LIGHTING CONTACTOR DETAIL
Scale: NONE

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ELECTRICAL SITE PLAN

E002

PANEL: MDP — LOCATION: ELECTRICAL ROOM; VOLT: 208Y/120V, 3Ø, 4W; BUS: 400A; LUG LOCATION: BOTTOM FEED; MAIN BUS: 400A MAIN BREAKER; MOUNTING: SURFACE; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) A	A	B	B	C	C	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	150	3	RTU-1	10.4	3.0					RTU-3	45	3	2
3	-	-	-			10.4	3.0			-	-	-	4
5	-	-	-					10.4	3.0	-	-	-	6
7	50	3	RTU-2	4.1	0.0					SPARE	225	3	8
9	-	-	-			4.1	0.0			-	-	-	10
11	-	-	-					4.1	0.0	-	-	-	12
13	50	3	SPARE	0.0	0.0					SPARE	45	3	14
15	-	-	-			0.0	0.0			-	-	-	16
17	-	-	-					0.0	0.0	-	-	-	18
19	60	3	SPD	0.0	15.4					PANEL "PA"	225	3	20
21	-	-	-			0.0	16.1			-	-	-	22
23	-	-	-					0.0	16.2	-	-	-	24
25	20	1	SPARE	0.0	0.0					SPARE	20	1	26
27	20	1	SPARE			0.0	0.0			SPARE	20	1	28
29	20	1	SPARE	0.0	0.0					SPARE	20	1	30
31	20	1	SPARE	0.0	0.0					SPARE	20	1	32
33	20	1	SPARE			0.0	0.0			SPARE	20	1	34
35	20	1	SPARE					0.0	0.0	S	20	1	36
37	20	1	SPARE	0.0	0.0					PANEL "PA"	225	3	38
39	20	1	SPARE			0.0	0.0			-	-	-	40
41	20	1	SPARE					0.0	0.0	-	-	-	42
TOTAL				32.8		33.6		33.7					

PANEL: PA — LOCATION: ELECTRICAL ROOM; VOLT: 208Y/120V, 3Ø, 4W; BUS: 225A; LUG LOCATION: BOTTOM FEED; MAIN BUS: 225A MAIN BREAKER W/ FEED THRU LUGS; MOUNTING: SURFACE; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) A	A	B	B	C	C	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	20	1	REC. - JAN, HALL, GATHER, GREET	1.1	0.4					REC. - MEN, WOMEN BATHROOM	20	1	2
3	*20	1	REC. - DRINKING FOUNTAIN			0.6	1.1			REC. - RISER ROOM, KITCHEN, WORSHIP	20	1	4
5	*20	1	REC. - DRINKING FOUNTAIN					0.5	0.7	REC. - WORSHIP	20	1	6
7	20	1	REC. - STORAGE, UTILITY	0.5	0.4					REC. - WORSHIP	20	1	8
9	20	1	REC. - CONF 121, LOUNGE			0.9	0.4			REC. - WORSHIP	20	1	10
11	20	1	REC. - CONF 122					0.9	1.1	REC. - OFFICE 116, OFFICE 117	20	1	12
13	20	1	REC. - CONF 123	0.9	1.0					REC. - COFFEE	20	1	14
15	20	1	REC. - OFFICE 118			0.5	0.4			REC. - STAIR IN	20	1	16
17	20	1	REC. - CONF 119, OFFICE 120					1.4	0.4	REC. - HALL, GATHER	20	1	18
19	20	1	REC. / PROJECTOR	0.5	0.9					LTS. - OFFICE 120, CONF 119, CONF 121, CONF 122	20	1	20
21	20	1	LTS. - WORSHIP 113			0.6	0.1			LTS. - HALL 200	20	1	22
23	20	1	LTS. - KITCHEN 110, TECH BOOTH 111, MEN 106, JAN 108					0.6	0.7	REC. - COFFEE	20	1	24
25	*20	1	REC. - ICE MACHINE	1.9	0.0					SPARE	20	1	26
27	*20	1	REC. - FREEZER			0.8	2.3			EWH-10	30	2	28
29	*20	1	REC. - REFRIGERATOR					0.8	2.3	-	-	-	30
31	*20	1	REC. - DISHWASHER	0.8	1.5					EF-1,3	20	1	32
33	20	1	REC. - MICROWAVE			1.4	0.5			LTS. - STAIRWELL	20	1	34
35	20	1	REC. - MICROWAVE					1.4	0.5	LTS. - EXTERIOR	20	1	36
37	*40	2	REC. - RANGE	3.2	0.7					LTS. - EXTERIOR	20	1	38
39	-	-	-			3.2	0.5			REC. - TDBB	20	1	40
41	30	2	HP-2.9, ACU-2.9					1.7	0.5	REC. - TDBB	20	1	42
43	-	-	-	1.7	0.0					SPARE	20	1	44
45	*40	2	OVEN			3.1	0.0			SPARE	20	1	46
47	-	-	-					3.1	0.0	SPARE	20	1	48
49	20	1	SPARE	0.0	0.0					SPARE	20	1	50
51	20	1	SPARE			0.0	0.0			SPARE	20	1	52
53	20	1	SPARE					0.0	0.0	SPARE	20	1	54
TOTAL				15.4		16.1		16.2		* GFCI BREAKER			

PANEL: PA - SEC. 2 — LOCATION: ELECTRICAL ROOM; VOLT: 208Y/120V, 3Ø, 4W; BUS: 225A; LUG LOCATION: TOP FEED; MAIN: MAIN LUGS ONLY; MOUNTING: SURFACE; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) A	A	B	B	C	C	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
55	20	1	SPARE	0.0	0.1					PW	20	1	56
57	20	1	SPARE			0.0	0.0			SPARE	20	1	58
59	20	1	SPARE					0.0	0.0	SPARE	20	1	60
61	20	1	SPARE	0.0	0.0					SPARE	20	1	62
63	20	1	SPARE			0.0	0.0			SPARE	20	1	64
65	20	1	SPARE					0.0	0.0	SPARE	20	1	66
67	20	1	SPARE	0.0	0.0					SPARE	20	1	68
69	20	1	SPARE			0.0	0.0			SPARE	20	1	70
71	20	1	SPARE					0.0	0.0	SPARE	20	1	72
73	20	1	SPARE	0.0	0.0					SPARE	20	1	74
75	20	1	SPARE			0.0	0.0			SPARE	20	1	76
77	20	1	SPARE					0.0	0.0	SPARE	20	1	78
79	20	1	SPARE	0.0	0.0					SPARE	20	1	80
81	20	1	SPARE			0.0	0.0			SPARE	20	1	82
83	20	1	SPARE					0.0	0.0	SPARE	20	1	84
85	20	1	SPARE	0.0	0.0					SPARE	20	1	86
87	20	1	SPARE			0.0	0.0			SPARE	20	1	88
89	20	1	SPARE					0.0	0.0	SPARE	20	1	90
91	20	1	SPARE	0.0	0.0					SPARE	20	1	92
93	20	1	SPARE			0.0	0.0			SPARE	20	1	94
95	20	1	SPARE					0.0	0.0	SPARE	20	1	96
97	20	1	SPARE	0.0	0.0					SPARE	20	1	98
99	20	1	SPARE			0.0	0.0			SPARE	20	1	100
101	20	1	SPARE					0.0	0.0	SPARE	20	1	102
103	20	1	SPARE	0.0	0.0					SPARE	20	1	104
105	20	1	SPARE			0.0	0.0			SPARE	20	1	106
107	20	1	SPARE					0.0	0.0	SPARE	20	1	108
TOTAL				0.1		0.0		0.0		* GFCI BREAKER			

PANEL: PB — LOCATION: ELECTRICAL ROOM; VOLT: 208Y/120V, 3Ø, 4W; BUS: 100A; LUG LOCATION: BOTTOM FEED; MAIN BUS: 100A MAIN BREAKER; MOUNTING: SURFACE; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) A	A	B	B	C	C	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	20	1	LTS. - STOR 103, COFFEE 102	0.2	0.2					REC. - POS, ESPRESSO GRINDER	*20	1	2
3	20	1	REC. - STOR			0.2	0.0			SPARE	20	1	4
5	*20	1	REC. - POS, ESPRESSO GRINDER					0.2	0.2	REC. - PCS	*20	1	6
7	*20	1	REC. - POS, COFFEE BREWER	0.2	0.2					REC. - POS, BLENDER	*20	1	8
9	*20	1	REC. - POS, COFFEE GRINDER			0.2	0.2			REC. - POS, UNDERCOUNTER ICE MAKER	*20	1	10
11	*20	1	REC. - POS, UNDER COUNTER FRIDGE					0.2	0.0	REC. - ESPRESSC MACHINE	*30	2	12
13	*20	1	REC. - COFFEE	0.4	0.0					-	-	-	14
15	20	1	SPARE			0.0	0.0			SPARE	20	1	16
17	20	1	SPARE					0.0	0.0	SPARE	20	1	18
19	20	1	SPARE	0.0	0.0					SPARE	20	1	20
21	20	1	SPARE			0.0	0.0			SPARE	20	1	22
23	20	1	SPARE					0.0	0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0					SPARE	20	1	26
27	20	1	SPARE			0.0	0.0			SPARE	20	1	28
29	20	1	SPARE					0.0	0.0	SPARE	20	1	30
31	20	1	SPARE	0.0	0.0					SPARE	20	1	32
33	20	1	SPARE			0.0	0.0			SPARE	20	1	34
35	20	1	SPARE					0.0	0.0	SPARE	20	1	36
37	20	1	SPARE	0.0	0.0					SPD	20	1	38
39	20	1	SPARE			0.0	0.0			-	30	3	40
41	20	1	SPARE					0.0	0.0	-	-	-	42
TOTAL				1.1		0.5		0.5		* GFCI BREAKER			

PANEL: U1 — LOCATION: U1; VOLT: 208/120V, 1Ø, 3W; BUS: 100A; LUG LOCATION: BOTTOM FEED; MAIN BUS: MAIN LUGS ONLY; MOUNTING: RECESSED; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	L1	L2	L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0			DRYER	***30	2	2
3	*20	1	LIGHTS & REC			0.0	0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0			WASHER	**20	1	6
7	20	1	BATHROOM REC			0.0	0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0			-	-	-	10
11	*20	1	KITCHEN REC			0.0	0.0	HP-2.1, ACU-2.1	50	2	12
13	*20	1	KITCHEN REC	0.0	0.0			-	-	-	14
15	**20	1	REFRIGERATOR			0.0	0.0	EWH-2	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0			-	-	-	18
19	20	1	SPARE			0.0	0.0	KH-2.1	20	1	20
21	20	1	SPARE	0.0	0.0			SPARE	20	1	22
23	20	1	SPARE			0.0	0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0			SPARE	20	1	26
27	20	1	SPARE			0.0	0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0			-	-	-	30
*** - GFCI CIRCUIT BREAKER			* - DENOTES ARC FAULT BREAKER	0.0		0.0		** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER			

PANEL: U2 — LOCATION: U2; VOLT: 208/120V, 1Ø, 3W; BUS: 100A; LUG LOCATION: BOTTOM FEED; MAIN BUS: MAIN LUGS ONLY; MOUNTING: RECESSED; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	L1	L2	L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0			DRYER	***30	2	2
3	*20	1	LIGHTS & REC			0.0	0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0			WASHER	**20	1	6
7	20	1	BATHROOM REC			0.0	0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0			-	-	-	10
11	*20	1	KITCHEN REC			0.0	0.0	HP-2.3, ACU-2.3	40	2	12
13	*20	1	KITCHEN REC	0.0	0.0			-	-	-	14
15	**20	1	REFRIGERATOR			0.0	0.0	EWH-4	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0			-	-	-	18
19	20	1	SPARE			0.0	0.0	KH-2.3	20	1	20
21	20	1	SPARE	0.0	0.0			SPARE	20	1	22
23	20	1	SPARE			0.0	0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0			SPARE	20	1	26
27	20	1	SPARE			0.0	0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0			-	-	-	30
*** - GFCI CIRCUIT BREAKER			* - DENOTES ARC FAULT BREAKER	0.0		0.0		** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER			

PANEL: U3 — LOCATION: U3; VOLT: 208/120V, 1Ø, 3W; BUS: 100A; LUG LOCATION: BOTTOM FEED; MAIN BUS: MAIN LUGS ONLY; MOUNTING: RECESSED; PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	L1	L2	L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0			DRYER	***30	2	2
3	*20	1	LIGHTS & REC			0.0	0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0			WASHER	**20	1	6
7	20	1	BATHROOM REC			0.0	0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0			-	-	-	10
11	*20	1	KITCHEN REC			0.0	0.0	HP-2.5, ACU-2.5	40	2	12
13	*20	1	KITCHEN REC	0.0	0.0			-	-	-	14
15	**20	1	REFRIGERATOR			0.0	0.0	EWH-6	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0			-	-	-	18
19	20	1	SPARE			0.0	0.0	KH-2.5	20	1	20
21	20	1	SPARE	0.0	0.0			SPARE	20	1	22
23	20	1	SPARE			0.0	0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0			SPARE	20	1	26
27	20	1	SPARE			0.0	0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0			-	-	-	30
*** - GFCI CIRCUIT BREAKER			* - DENOTES ARC FAULT BREAKER	0.0		0.0		** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER			

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100% CONSTRUCTION DOCUMENTS

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TPS PROJ. # 24153

ELECTRICAL PANEL SCHEDULES

E003

PANEL	LOCATION:	U4	LUG LOCATION:	BOTTOM FEED
U4	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-2.7, ACU-2.7	50	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-8	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-2.7	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

PANEL	LOCATION:	U5	LUG LOCATION:	BOTTOM FEED
U5	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-2.2, ACU-2.2	50	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-3	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-2.2	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

PANEL	LOCATION:	U6	LUG LOCATION:	BOTTOM FEED
U6	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-2.4, ACU-2.4	40	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-5	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-2.4	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

PANEL	LOCATION:	U7	LUG LOCATION:	BOTTOM FEED
U7	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-2.6, ACU-2.6	40	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-7	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-2.6	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

Load Calculation For Unit Typical 2B 2BR

UNIT 1 — Optional Feeder and Service Load Calculations NEC 220.82

General Lighting	3 VA	807 SF		2,421 VA
Kitchen Appliance Ckts	1500 VA	2		3,000 VA
Refrigerator	800 VA	1		800 VA
Fixed inplace microwave	1150 VA	1		1,150 VA
Laundry Circuit	1500 VA	1		1,500 VA
Electric Cloth Dryer	5000 VA	1		5,000 VA
Water Heater	4500 VA	1		4,500 VA
Electric Range	8000 VA	1		8,000 VA
Dishwasher	950 VA	1		950 VA
			Subtotal	27,321 VA
		First 10,000VA @ 100%		10,000 VA
		Remainder @ 40%		6,928 VA
			Total	16,928 VA
AHU	VA	1	65%	0 VA
CU	4992	1	100%	4,992 VA
			Total	21,920 VA
				91 Amps @ 208V

Load Calculation For Unit Typical 1B 1BR

UNIT 2 — Optional Feeder and Service Load Calculations NEC 220.82

General Lighting	3 VA	635 SF		1,905 VA
Kitchen Appliance Ckts	1500 VA	2		3,000 VA
Refrigerator	800 VA	1		800 VA
Fixed inplace microwave	1150 VA	0		0 VA
Laundry Circuit	1500 VA	1		1,500 VA
Electric Cloth Dryer	5000 VA	1		5,000 VA
Water Heater	4500 VA	1		4,500 VA
Electric Range	8000 VA	1		8,000 VA
Dishwasher	950 VA	1		950 VA
Wall Heater	3300 VA	0		0 VA
			Subtotal	25,655 VA
		First 10,000VA @ 100%		10,000 VA
		Remainder @ 40%		6,262 VA
			Total	16,262 VA
AHU	0 VA	1	65%	0 VA
CU	3328	1	100%	3,328 VA
EUH	VA	1	65%	0 VA
			Total	19,590 VA
				82 Amps @ 208V

Load Calculation For Building

4X 2B 2BR — Optional Feeder and Service Load Calculations NEC 220.84

General Lighting	3 VA	805 SF		2,415 VA
Kitchen Appliance Ckts	1500 VA	2		3,000 VA
Fixed inplace microwave	1150 VA	1		1,150 VA
Laundry Circuit	1500 VA	1		1,500 VA
Electric Cloth Dryer	5000 VA	1		5,000 VA
Water Heater	4500 VA	1		4,500 VA
Electric Range	8000 VA	1		8,000 VA
Refrigerator	800 VA	1		800 VA
Dishwasher	950 VA	1		950 VA
AHU	VA	1	65%	0 VA
OHP	4992 VA	1	100%	4,992
			Total	32,307 VA
			Demand Factor 45%	14,538
				61 Amps @ 208, 1ø
			House Loads	Amps @ 208, 1ø
			Total Amps	61 Amps @ 208, 1ø

Load Calculation For Building

4X 1B 1BR — Optional Feeder and Service Load Calculations NEC 220.84

General Lighting	3 VA	635 SF		1,905 VA
Kitchen Appliance Ckts	1500 VA	2		3,000 VA
Fixed inplace microwave	1150 VA	1		1,150 VA
Laundry Circuit	1500 VA	1		1,500 VA
Electric Cloth Dryer	5000 VA	1		5,000 VA
Water Heater	4500 VA	1		4,500 VA
Electric Range	8000 VA	1		8,000 VA
Refrigerator	800 VA	1		800 VA
Dishwasher	950 VA	1		950 VA
AHU	VA	1	65%	0 VA
OHP	3328 VA	1	100%	3,328
EUH	0 VA	1	65%	0 VA
			Total	30,133 VA
			Demand Factor 45%	13,560
				38 Amps @ 208, 1ø
			House Loads	0 Amps @ 208, 1ø
			Total Amps	38 Amps @ 208, 1ø

PANEL	LOCATION:	U8	LUG LOCATION:	BOTTOM FEED
U8	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	LIGHTS & REC	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-2.8, ACU-2.8	50	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-9	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-2.8	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

PANEL	LOCATION:	U9	LUG LOCATION:	BOTTOM FEED
U9	VOLT:	208/120V, 1Ø, 3W	MAIN BUS:	MAIN LUGS ONLY
	BUS:	100A	MOUNTING:	RECESSED

PANELBOARD AIC RATING (A): 22,000

CIRCUIT NO.	BREAKER AMPS	BREAKER POLES	DESCRIPTION	PHASE LOAD (KVA) L1	PHASE LOAD (KVA) L2	DESCRIPTION	BREAKER AMPS	BREAKER POLES	CIRCUIT NO.
1	*20	1	LIGHTS & REC	0.0	0.0	DRYER	***30	2	2
3	*20	1	LIGHTS & REC		0.0	-	-	-	4
5	*20	1	SPARE	0.0	0.0	WASHER	**20	1	6
7	20	1	BATHROOM REC		0.0	RANGE	***50	2	8
9	**20	1	DISHWASHER	0.0	0.0	-	-	-	10
11	*20	1	KITCHEN REC		0.0	HP-1.1, ACU-1.1	50	2	12
13	*20	1	KITCHEN REC	0.0	0.0	-	-	-	14
15	**20	1	REFRIGERATOR		0.0	EWH-1	30	2	16
17	20	1	MEDIA CENTER PANEL	0.0	0.0	-	-	-	18
19	20	1	SPARE		0.0	KH-1.2	20	1	20
21	20	1	SPARE	0.0	0.0	SPARE	20	1	22
23	20	1	SPARE		0.0	SPARE	20	1	24
25	20	1	SPARE	0.0	0.0	SPARE	20	1	26
27	20	1	SPARE		0.0	TYPE 2B SPD	30	2	28
29	20	1	SPARE	0.0	0.0	-	-	-	30

*** - GFCI CIRCUIT BREAKER | * - DENOTES ARC FAULT BREAKER | ** - DENOTES DUAL FUNCTION ARC/GROUND FAULT CIRCUIT BREAKER

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100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2026

PROJ. # 2406

Issued For	Date	#
100% CONSTRUCTION DRAWINGS	01.16.2026	0

CHRISTOPHER T. GREEN — 15778 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MISSISSIPPI

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ELECTRICAL PANEL SCHEDULES

E004

SPECIFICATIONS

SECTION 26-05-11
ELECTRICAL GENERAL AND WORK IN EXISTING FACILITIES

PART 1 - GENERAL

1.1 GENERAL

A. All work shall conform to the latest editions of the National Electrical Code (NEC) (National Fire Protection Association (NFPA) 70), the Standard for Electrical Safety in the Workplace (NFPA 70E), the Life Safety Code (NFPA 101), the International Building Code, the Americans with Disabilities Act, and all other applicable federal, state, and local codes and regulations.

B. All work shall be performed in strict accordance with NFPA 70E. Submission of bid shall stand as an agreement by the Contractor to indemnify and hold harmless the Engineer and Owner from all liability related to damage and/or injury to personnel and equipment during the installation of the project.

C. The contract documents are schematic in nature and are intended to convey the intent of the electrical work to be performed on this project. Provide all material, labor, equipment, etc., necessary to provide complete and operable electrical systems.

D. The General Conditions, Supplementary Conditions, General Requirements, Information to Bidders, and all other parts of this set of Contract Documents are hereby adopted and are applicable to the Division 26, 27, and 28 Contractor.

1.2 SCOPE OF WORK

A. Visit site prior to bid. Devise a plan for installation of complete and operable electrical systems meeting the requirements and intent of the Contract Documents. Submission of bid stands as evidence that the Contractor accepts the Contract Documents as sufficient and complete for the work to be performed. Notify the engineer at least two weeks prior to bid of any discrepancies between the Contract Documents and actual field conditions. No change orders will be granted due to existing conditions that could have been observed during a site visit.

B. Provide temporary power and lighting during construction. Coordinate with the General Contractor for the exact requirements.

C. Electrical switchgear and panelboard layouts are based on sizes of Square D equipment. Equipment manufactured by General Electric, Siemens, and Cutler Hammer are equally acceptable. However, the Electrical Contractor is responsible for selecting any furnishing gear that will fit in the spaces provided and shall be responsible for arranging the gear to meet the required code clearances. Regardless of the manufacturer, the Electrical Contractor shall provide a drawing-to-scale electrical layout with the equipment brochures for all rooms in which panelboards, motor controllers, switchboards, or switchgear are placed. The drawings shall include the work of all other trades including mechanical system piping, ductwork, sprinkler piping, etc. No conduits shall be installed until layouts have been approved.

D. Locate junction boxes, pull boxes, disconnects, and other equipment requiring access in such a manner that they are accessible at the end of construction. Notify the Architect when it is impossible to plan conduit routing or equipment placement in such a manner, and provide the necessary access panels in the ceiling or wall as required. The access panel type and style shall be subject to the Architect's approval. Employ a painter to provide the appropriate color as directed by the Architect.

E. Relocate, or reconcile, all electrical equipment, conduit, and circuitry conflicting with or obstructing work on this project. Where the electrical systems are owned by other entities, pay them to relocate, or reinstall, their facilities.

F. Arrange for connection of service to all electrical systems by the appropriate utility company. Coordinate completely with all utility company requirements even if they are different than the contract documents. If utility company requirements are different than the contract documents, notify the engineer at least ten days prior to bid. Pay all utility company charges necessary for installation and connection of service. **No change orders will be granted for utility company connection fees.**

G. Provide all necessary equipment, raceway, circuitry, fittings, lugs, terminations, labor, etc., and connect to all equipment and appliances requiring electrical connections furnished herein, by the Owner, or by other Contractors. Prior to ordering electrical equipment and roughing-in for equipment furnished by the Owner or other Contractors, verify all connection types, connection locations, connection heights, voltages, number of phases, conductor sizes, disconnecting means, breaker sizes, etc. Furnish the proper electrical equipment for the equipment actually being supplied.

1.3 WORK IN EXISTING FACILITIES

A. All work shall be scheduled and coordinated through the General Contractor with the Owner. Provide necessary costs for all work during both normal and premium work hours in bid.

B. Provide continuous uninterrupted power to all existing facilities to remain during the entire construction process. Any required power outages must be scheduled and approved by the Owner in writing at least three days prior to the outage.

1.4 SCOPE OF WORK IN EXISTING FACILITIES

A. Prior to beginning work, survey existing electrical systems. Document, in writing, signed by the Owner any portions of existing systems that are not operating properly before construction begins. Any electrical systems found inoperable at the end of the construction process that has not been so documented shall be repaired at the end of construction.

B. Remove electrical equipment in areas being demolished and electrical equipment feeding other equipment being demolished. Remove raceways and circuitry back to the panel of origination. Where raceways are installed in inaccessible areas, remove conductors back to the nearest originators. Where circuits are not being completely demolished, remove conductors back to a junction box or other connection point outside of the renovation area and remove all unused electrical equipment back to normal raceways. Where necessary, turn panels without existing electrical equipment that is to remain. It is the intent of this specification that all existing equipment to remain be left completely operable at the end of the construction process.

C. Survey existing panel board circuitry and provide new typewritten directories giving complete as-built circuitry information for all panel boards affected by the construction on this project.

D. Where new circuit breakers are installed in existing equipment, the new circuit breakers shall be manufactured for installation in that equipment. The Amperes Interrupting Current (AIC) Rating shall equal the AIC rating of the existing equipment. A breaker with a lower AIC rating may be used if the contractor provides calculations showing that the breaker rating is sufficient to handle the available fault current. Submit these calculations for approval prior to ordering the breakers. An AIC rating on an existing breaker in the panelboard or switchboard does not demonstrate sufficient proof that the available fault current is less than that breaker's AIC rating.

1.5 SUBMITTALS AND SHOP DRAWINGS

A. Within 30 days after award of Contract and prior to beginning work, provide six bound copies of manufacturers' cut sheets containing information concerning each article of electrical equipment to be furnished on this project. These cut sheets shall contain sufficient information to prove compliance with the contract documents. Information addressing the requirements of the contract documents shall be highlighted. Each bound set shall bear the stamp of the Electrical Contractor as well as the General Contractor.

B. Within 30 days after award of Contract and prior to beginning work, provide six sets of full size shop drawings showing exact equipment locations with all equipment drawn to scale. Show all raceways with their junction boxes and pull boxes. Show all connection types, locations, and heights to equipment. Provide mounting and support details for all raceways and equipment. Coordinate with all other trades to ensure that there are no conflicts between systems. Each set of shop drawings shall bear the stamp of the Electrical Contractor, the General Contractor, and all Project Sub-Contractors. Failure to submit these Shop Drawings will render the Electrical Contractor responsible for resolving all conflicts between trades at his own expense.

C. Submittals and Shop Drawings are reviewed to determine quality of materials. Approval of submittals and shop drawings does not relieve the Contractor of meeting the requirements and intent of the Contract Documents.

D. Outlet, light fixture, and device locations are shown in their approximate locations on the drawings. Coordinate with Architectural drawings to get final locations. Most all electrical outlets shown at counters such that the bottom of the box is two inches above the backsplash or six inches above countertop with no backsplash. The Owner reserves the right to relocate outlets, light fixtures, and devices a distance not to exceed twenty feet prior to the installation of outlet boxes.

PART 2 - PRODUCTS

2.1 All electrical equipment and materials shall be new. All equipment and materials shall be stored on the job site in weatherproof enclosures. Electronic equipment shall be stored in facilities where the temperature and humidity are controlled. In addition, comply completely with all manufacturers' requirements for storage and handling.

2.2 All equipment shall be UL listed for the application in which it is used and shall be labeled as evidence of its UL listing.

2.3 Each circuit breaker supplying a multiwire branch circuit shall be provided with a manufacturer-supplied handle tie to simultaneously disconnect all ungrounded conductors. Each multi-wire branch circuit shall comply with NEC article 210.4.

2.4 Products shall be selected to maintain or improve the aesthetics of the facility. Gain approval of the Architect or Engineer prior to ordering or installing any electrical equipment or raceway.

PART 3 - EXECUTION

3.1 WORKMANSHIP

All work shall be performed with an emphasis on neatness. The Engineer, Architect, and Owner retain the right to reject work that is, in their judgment, unsatisfactory.

3.2 EXPERIENCE

The Contractor shall have completed at least two jobs of similar size and scope within the past five years. The Engineer reserves the right to reject Contractors based on their inability to submit evidence of their experience, or based on experience with the Contractor on previous projects.

3.3 PERMITS

Obtain and pay for all permits required for work.

SECTION 26-05-11
ELECTRICAL GENERAL AND WORK IN EXISTING FACILITIES (CONT.)

3.4 FIRESTOPPING

A. Fireproof all penetrations through firewalls with a firestopping compound listed to maintain the rating of the wall through which the raceway passes.

B. The firestopping seals shall be a compact, intumescent, latex elastomer. The seals shall be capable of withstanding a minimum of 3 times at 1000°F. The material shall be recognized and be applicable to overhead, vertical and horizontal fire-stops. The seals shall be listed by independent test agencies such as UL or FM and be tested to and pass the criteria of ASTM E 814 Fire Test, tested under positive pressure. It shall comply with the requirements of the NEC (NFPA-70), BOCA, ICBO, SBCCI and NFPA Code 101. Fire-stopping seals shall be paintable, but shall be non-hardening. Fire-stopping seals shall be 3M fire barrier CP or approved equal.

C. The firestopping materials shall be installed by individuals certified to perform such work. Submit evidence of personnel certifications with electrical equipment brochures.

D. Where cable trays are shown crossing firewalls, terminate the cable tray on each side of the wall and run the conductors through conduits installed in the wall. Firecaulk around the conductors after installation.

E. Provide mineral-wool packing and all other materials recommended by the manufacturer for a complete installation.

3.5 FLASHING

Provide all necessary equipment and flash all roof penetrations in such a manner to ensure that all penetrations are completely sealed and all roof warranties remain in effect. Where there are no roof warranties, the Electrical Contractor shall guarantee the electrical penetrations against leaking for a period of one year from project completion. Employ a professional roofing contractor to perform all flashing.

3.6 PROTECTION

A. Keep energized equipment covered during all phases of construction. Use enclosures, doors, covers, etc., to ensure that neither personnel nor machinery contact live electrical equipment.

B. Replace electrical equipment that is damaged during construction.

3.7 DAMAGED FACILITIES

A. Locate all existing site equipment and utilities prior to beginning construction. Repair all equipment and utilities damaged during construction, or pay for the repair of the equipment and utilities where required by the Owner of the damaged facilities.

B. Coordinate the routing of all circuits and the locations of all devices with the Architect or Engineer and the Owner. Shop drawings shall describe completely the locations and elevations of all raceways, boxes, fittings, and equipment.

3.8 EXCAVATION AND BACKFILL

A. Excavate in such a manner as to minimize excavation of the soil. Backfill trenches around conduits with fine sand that is free of rocks, clods, and debris. Tamp sand a minimum of 6" over conduits. Backfill the rest of the trench in six inch increments, wetted, and tamped. Finish compaction shall be a minimum of 95% of that of the adjacent earth. Resurface the grade with the same material as that excavated from the grade whether it be paving, concrete, soil, etc. Repair work shall be comparable to the quality of the original site prior to excavation.

B. Provide a 3" wide plastic-backed marker tape 12" below grade over all electrical conduits buried underground. Tapes for power circuits shall have a warning such as "Caution: Buried Electrical Line Below," Labels on tapes for telephone, data, cable television, and other facilities shall adequately describe the line over which they are buried.

C. Provide a #12 AWG wire in each buried conduit run backfilled accordingly on each end.

3.9 IDENTIFICATION

A. Label all switchboards, panel boards, motor starters, disconnects, and motor control centers furnished under Division 26, 27, and 28 and other divisions of this contract with engraved rigid plastic nameplates having letters at least ¼ inch high. Nameplates shall be bolted to the enclosure. All labels shall indicate the voltage, number of phases, the AIC rating, and the panelboard and circuit number from which the device is fed.

B. All circuit breakers in Switchboards, Motor Control Centers, Square D Model and similar panelboards shall be labeled with plastic nameplates (as described in Part A) providing the name of the load served and the amperage and number of poles of the breaker.

C. All Square D NQOD, NF and similar panel boards shall have typewritten circuit directories.

D. Label all conductors at all junction boxes, pull boxes, and terminations with typewritten adhesive markers indicating the panel board or switchboard name and circuit number of the conductor. Labels shall be Brady Bradsol or approved equal.

E. Label all junction boxes and pull boxes with standard permanent labels containing the name of the panel board and circuit numbers of the circuits contained within. Use black paint for normal circuits, red paint for emergency circuits, and orange paint for fire alarm circuits. The Contractor may select other colors for junction boxes and pull boxes for auxiliary systems.

F. Label all conduits in the most likely direction of access and view every 50' and on both ends of each bend with stenciled painted letters containing the name of the panelboard and circuit numbers of the circuits contained within. Use black paint for normal circuits, red paint for emergency circuits, and orange paint for fire alarm circuits. The Contractor may select other colors for conduits for auxiliary systems.

3.10 AS-BUILT DRAWINGS

Maintain one set of drawings during construction for as-built markings. Mark these drawings in red to indicate field changes. Provide these drawings to the Engineer at the end of the construction process. Where required under the General Conditions, Special Conditions, or other portions of this contract, provide revised computer drawn as-built drawings to the Engineer at the end of construction.

3.11 TESTING

A. Test all systems, or pay testing agencies as required, for compliance with the requirements of all regulatory agencies.

B. Test the electrical power service ground using a Biddle Three-Terminal Ground Resistance Tester, or approved equal. Grounds shall meet the requirements of the NEC or of Specification 26 05 26, whichever is more stringent. Test grounds only when the earth is dry. Provide additional ground rods as necessary to achieve the required results.

C. Prior to making final equipment connections, test all service, feeder, and branch circuit conductors for continuity, phase-to-phase faults, and phase-to-ground faults using a Megger BM100 or approved equal test instrument generating 500 Vdc. Insulation resistance shall be a minimum of 500,000 Ohms between any conductor and ground and 1,000,000 Ohms between any two conductors.

D. Test other systems as required in their respective specifications.

E. Provide three bound copies of all test results to the Engineer at the end of the construction process. No Recommendation of Substantial Completion will be granted until all testing reports have been submitted.

3.12 WARRANTY

Provide the Owner a written guarantee to repair, or replace, all faulty equipment and systems for a period of one year from date of Substantial Completion. During this one-year period, a representative of the Contractor shall be on the site actively working on the repairs within 24 hours of the Owner's telephone call. During this period of time, the Owner shall not be charged for any repair work or expenses related with the repair work unless the Contractor can prove that the Owner has damaged the equipment or system.

END OF SECTION

SECTION 26-05-20
LOW-VOLTAGE POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 Provide all circuitry, terminations, splices, connectors, lugs, and other equipment necessary for connection of all equipment requiring electrical connections.

1.2 METAL CLAD CABLE.

A. Provide all circuitry, terminations, splices, connectors, lugs, and other equipment necessary for connection of metal clad cable where used on this project.

B. Metal Clad (MC) Cable may only be used where new electrical devices are being installed in existing hollow walls. All other circuitry shall be in conduit per Specification 26 05 33.

C. Provide a junction box in the accessible ceiling above the location of the new outlet. Provide a hole in the wall above the accessible ceiling. At the proper outlet height, cut out a hole in the wall for the use of an after-construction box. Run MC Cable down the wall to the junction box in the crawlspace, and connect it to the after-construction box before installing the box in the wall.

D. Each MC cable shall be furnished with a green insulated copper ground wire that is not shown by tic marks on the drawings.

PART 2 - PRODUCTS

2.1 CONDUCTORS

A. All electrical conductors shall be soft-drawn annealed copper having 98% conductivity and an insulation rating of 600V.

B. Conductors shall be UL listed for installation in the raceway in which they are to be installed.

C. Conductors shall be rated 90 degrees C for use in residential, commercial, industrial, and institutional facilities, and shall be listed as 105 degrees C appliance wire. Conductors shall be listed under UL 83, UL 1063, and UL 758, if XLP or EPR insulation is used, conductors shall be listed under UL 44 and NEMA WC7.

D. Conductors used for branch circuits, feeders, auxiliary systems, and controls run in dry locations shall have PVC insulation and a Mylin outer jacket. They shall be THHN/THWN or XHHW-2.

E. Conductors used for branch circuits, feeders, auxiliary systems, and controls run in wet locations shall have XLP or EPR insulation and be type XHHW-2.

F. Conductors used for operating room isolation panels and associated branch circuits shall be copper stranded conductor having a cross-linked polyethylene insulation or equivalent with a dielectric constant of 3.5 or less. Wires-in-flex composite that increases the dielectric constant shall not be used on the secondary conductors of isolation panels. The isolated circuit conductors shall be identified as follows:

Isolated Circuit #1 - Orange
Isolated Circuit #2 - Brown

For 125 volt, 15 & 20 ampere receptacles: The orange conductor shall be connected to the terminal on the receptacle that is identified in accordance with NEC 200.10(B) for connection to the grounded circuit conductor.

G. Conductors used for services shall be type SR for aerial services or type USE-2 for underground services.

H. Sizes #10 and #12 shall be solid conductors except where used for controls. All controls conductors shall be stranded.

I. Use minimum #14 AWG conductors for controls and auxiliary circuits. Use larger conductors as required to compensate for voltage drops exceeding 3% of the system voltage.

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100% CONSTRUCTION DOCUMENTS

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ELECTRICAL SPECS

E005

SPECIFICATIONS

SECTION 26-05-20
LOW-VOLTAGE POWER CONDUCTORS AND CABLES (CONT.)

J. Conductors shall be furnished in the colors described below unless local ordinances require different colors. Conductors #8 and smaller shall be furnished with colored insulation; conductors larger than #8 shall be taped with the appropriately colored tape for a length of at least 3" at each panelboard, junction box, pull box, load, or other exposed location. Ground conductors shall be taped green for their entire exposed length.

SYSTEM VOLTAGE	208Y/120V, 3 PHASE, 4 WIRE	120/240V, 3 PHASE, 4 WIRE	480Y/277V, 3 PHASE, 4 WIRE
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	ORANGE	ORANGE
PHASE C	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	GRAY
GROUND	GREEN	GREEN	GREEN

2.1 Metal Clad Cable

A. Shall be UL listed as type MC. It shall meet the requirements of UL 1569. It shall also be constructed in accordance with NEC 334 G.

B. Fittings shall be manufactured and UL listed for the application in which they are used.

C. MC cable shall have an interlocked armor made of aluminum alloy or galvanized steel.

D. All electrical conductors shall be soft-drawn annealed copper having 98% conductivity and an insulation rating of 600V.

E. Conductors shall have PVC insulation and a Nylon outer jacket. They shall be THWN/THHW or XHHW-2.

F. Sizes #10 and #12 shall be solid conductors. Other conductors shall be stranded.

G. Conductors shall be furnished in the colors described below unless local ordinances require different colors. Conductors #8 and smaller shall be furnished with colored insulation; conductors larger than #8 shall be taped with the appropriately colored tape for a length of at least 3" at each panelboard, junction box, pull box, load, or other exposed location. Ground conductors shall be taped green for their entire exposed length.

SYSTEM VOLTAGE	208Y/120V, 3 PHASE, 4 WIRE	120/240V, 3 PHASE, 4 WIRE	480Y/277V, 3 PHASE, 4 WIRE
PHASE A	BLACK	BLACK	BROWN
PHASE B	RED	ORANGE	ORANGE
PHASE C	BLUE	BLUE	YELLOW
NEUTRAL	WHITE	WHITE	WHITE
GROUND	GREEN	GREEN	GREEN

PART 3 - EXECUTION

3.1 CONDUCTORS

A. Pulling conductors carefully, using a minimum of two tradesmen - one feeding the conductors into the conduit, and the other pulling the conductors into the conduit.

B. Join stranded conductors with appropriate mechanical or compression lugs. Wire nuts may be used for solid conductors only.

C. Splices shall only be made in approved enclosures. Splices shall not be pulled inside conduits.

D. Provide cable supports and strain relief connectors as required by the NEC.

E. Furnish junction boxes, pull boxes, handholes, manholes, etc, as required to ensure that the maximum number of bends allowed by the NEC are not exceeded and to ensure that the cables are not damaged during installation.

3.2 METAL CLAD CABLE EXECUTION

A. Install MC Cable per the requirements of NEC 334 G.

B. Join stranded conductors with appropriate mechanical or compression lugs. Wire nuts may be used for solid conductors only.

C. Provide cable supports as required by the NEC.

D. Furnish junction boxes, pull boxes, handholes, manholes, etc, as required to ensure that the maximum number of bends allowed by the NEC are not exceeded and to ensure that the cables are not damaged during installation. Do not enclose junction boxes in areas that will be inaccessible at the end of construction.

E. MC Cable shall be run complete between junction boxes or outlet boxes. Splices are not allowed.

END OF SECTION

SECTION 26-05-26
GROUNDING AND BONDING

PART 1 - GENERAL

1.1 GENERAL

Ground all equipment, systems, structures, etc., per the latest edition of the National Electrical Code (NEC).

PART 2 - PRODUCTS

2.1 Use mechanical bolted connections in dry locations that are accessible.

2.2 Use exothermic welds in wet locations and locations that will be inaccessible at the end of construction.

2.3 Ground rods shall be UL listed 3/4" x 10' copper-clad steel ground rods with a minimum copper cladding thickness of 10 mils.

PART 3 - EXECUTION

3.1 Ground rods shall be installed with their tops no less than 6" below grade.

3.2 Bond ground connections to metal raceways at each end of the conduit runs. Provide grounding bushings where required by the NEC. Where cable trays are used, bond the ground conductor to each section and fitting of the tray.

3.3 Provide all circuits with an equipment grounding conductor sized per the NEC, or as shown on the drawings. Circuitry shown on drawings does not include the required equipment grounding conductor. Where multiple circuits are run with a common neutral, only one equipment grounding conductor is needed. The equipment grounding conductor shall be furnished with green insulation for conductors #6 AWG and smaller, where larger than #6, the equipment grounding conductor shall be taped green for its entire exposed length.

3.4 The grounding electrode conductor(s) shall be bare or shall be colored green for its entire exposed length.

3.5 Individual ground conductors shall be installed in PVC conduit sized per the NEC.

3.6 Provide receptacles, luminaires, and other devices with a green conductor that bonds the receptacle grounding screw or pigtail, the outlet box grounding screw, and the equipment grounding conductor together.

3.7 In multi-bay facilities, where two or more different panel boards serve the same potential area, an 8 AWG insulated continuous copper conductor shall bond these different panel boards together.

3.8 Telephone, cable television, and other auxiliary systems shall be bonded to the electrical building service ground using a conductor no smaller than #6 AWG.

END OF SECTION

SECTION 26-05-33
RACEWAYS OUTLET BOXES AND JUNCTION BOXES

PART 1 - GENERAL

1.1 GENERAL

A. All electrical systems circuitry shall be contained in raceways unless expressly listed in the specification for that system.

B. Outlet Boxes and Junction Boxes

1. Furnish and install all outlet boxes and junction boxes in accordance with this specification and the requirements of the NEC.

2. Provide outlet boxes for all switches, receptacles, luminaires, telephone jacks, cable jacks, and other devices furnished in this Contract. Provide all necessary hardware including, but not limited to, additional structural support, support brackets, screws, bolts, future studs, etc.

3. Outlet boxes and junction boxes in dry locations shall be galvanized stamped steel boxes sized per the latest edition of the National Electrical Code (NEC), but no less than 4" x 4" x 2 1/8" deep. The thickness of the steel shall be in compliance with the requirements of the NEC. Provide stamped steel covers for all junction boxes manufactured to fit the particular box on which it is used.

4. Outlet boxes used in concrete and masonry walls and ceilings shall be of the concrete type manufactured for such applications.

5. Outlet boxes and junction boxes in wet locations shall be of cast metal construction with gasketed weatherproof covers. All conduit connections to the boxes shall be made watertight.

6. Wall outlet boxes shall be 4" x 4" x 2 1/8", or larger as required, with plaster rings provided for flush installation. Plaster rings shall have single-gang openings unless the equipment mounted inside requires two-gang installation.

7. Floor boxes in slabs on grade shall be deep rectangular cast iron, fully adjustable boxes with brass rings. Covers shall be made of brass and shall provide flip top access to the power or data jacks inside. Screw-on covers are not acceptable unless a flip-top cover is unavailable for the device installed in the floor box. Provide the box sized as required for the number of devices shown installed. Boxes shall be as follows, or approved equal:

A. Single-Gang Boxes: Hubbell B2436
B. Single-Gang Cover Plates: Hubbell S3825
C. Double-Gang Boxes: Hubbell B4625
D. Double-Gang Cover Plates: Two Hubbell S3825 Cover Plates
E. Triple-Gang Boxes: Hubbell B4333
F. Triple-Gang Cover Plates: Three Hubbell S3825 Cover Plates

8. In slabs above grade, use cast iron, screw-adjustable shallow boxes as follows, or approved equal:

A. Single-Gang Boxes: Hubbell B2414
B. Two-Gang Boxes: Hubbell B2416
C. Three-Gang Boxes: Hubbell B2418

9. Receptacles installed in floor boxes shall be as described in Specification 26 09 23, Switches and Receptacles. Data, Telephone, or Combination Data and Telephone Outlets shall consist of Category 5 rated RJ45 jacks mounted in a Hubbell DJ01 strap for use under a S3825 flip top cover plate.

10. For existing above grade, use poke thru boxes as follows, or equal:

A. Hubbell System One

11. Size all boxes per the requirements of the latest NEC.

1.2 SCOPE OF WORK

A. Raceways

1. Provide all raceways, fittings, couplings, anchors, supports, hangers, etc. for complete raceway systems.
2. Size all conduit per the requirements of the NEC; however, minimum conduit size shall be 3/4" nominal trade size.

3. Use Schedule 40 polyvinyl chloride (PVC) conduit for circuits run underground and in slabs on grade level. Provide PVC-coated galvanized rigid steel elbows and PVC-coated galvanized rigid steel conduit for all vertical runs extending to a point at least 8' above grade. Galvanized rigid steel conduit coated with two complete coats of asphaltum or bituminous paint may be used in lieu of PVC-coated galvanized rigid steel conduit.

4. Use Galvanized Rigid Steel (GRS) conduit for all applications where circuits are run above ground exposed to the weather.

5. Use Intermediate Metal Conduit (IMC) for all branch circuits, feeders, and auxiliary circuits requiring conduit 1 ¼" nominal trade size or larger in dry locations.

6. Use Electrical Metallic Tubing (EMT) for all branch circuits and feeders less than 1 ¼" nominal trade size in dry locations and in slabs above grade level.

PART 2 - PRODUCTS

2.1 Products for Raceways

A. PVC conduits, fittings, couplings, adapters, and accessories shall be UL listed and approved for use with 90 degree Celsius conductors. The UL listing shall be affixed to each nor foot length of conduit and each fitting. Conduits and coupings with NEMA Specification TC-2 and UL 651. Fittings shall comply with NEMA TC-3 and UL 514A.

B. PVC-coated conduits, fittings, couplings, adapters, and accessories shall be UL listed with PVC as the primary corrosion protector. They shall be hot dipped galvanized rigid steel conduit with threads electrically-galvanized after cutting. The conduit shall meet UL 1. The fittings shall meet UL 514B. The PVC coating shall be uniformly applied to the interior and exterior of all conduit and fittings. The coating shall be nominally 2 mils thick. The PVC coating shall extend one pipe diameter or two inches, whichever is less, at every male fitting except unless to fit over the joining female connector. Couplings shall contain a series of longitudinal ribs 40 mils in thickness, to protect the coating from damage by tools during installation. PVC-coated conduits shall be ETL Verified PVC-001. Fittings shall be manufactured to the same standard. PVC-coated conduit shall be Robroy Plastibond or approved equal.

C. GRS conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot-dipped galvanized steel. They shall meet the safety standards of UL 6, and shall be manufactured to ANSI C80.1. Threads shall be hot galvanized after cutting.

D. IMC conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot-galvanized steel. Fittings, couplings, adapters, and accessories shall be the same as those for GRS conduit described above. IMC shall meet UL 1242 and ANSI C80.6. Threads shall be hot galvanized after cutting. The inside of the conduit shall be finished with a corrosion-resistant coating.

E. EMT conduits, fittings, couplings, adapters, and accessories shall be UL listed. They shall be hot galvanized steel and shall be produced in accordance with UL 797 and ANSI C80.3. The inside shall be finished with a corrosion-resistant finishcoating coating.

F. Conduit fittings used with EMT conduits may be set screw interior type or compression type. All metallic fittings for IMC and Rigid conduit shall be compression type fittings.

G. Flexible metallic conduit shall be constructed of galvanized steel and shall be UL listed as compliant with UL 1 and UL 1479.

H. Liquidtight flexible conduit shall be constructed of galvanized steel and shall be covered with a PVC jacket to resist liquids, dirt, grease, and oils. All fittings shall be designed, constructed, and installed to maintain the integrity of the liquidtight connections. Liquidtight flexible conduit shall comply with UL 360.

2.2 Acceptable Manufacturers for Outlet Boxes and Junction Boxes:

A. Outlet boxes and junction boxes shall be manufactured by Raco, Steel-City, Crouse-Hinds, or Appleton.

PART 3 - EXECUTION

3.1 Conduit Execution

A. Conduits run underground shall be buried no less than 24" deep. Services and primary conduits feeding transformers shall be buried no less than 48" deep.

B. Do not install conduits in or below ground floor slabs, except for service conduits, site lighting, and where specifically indicated on the drawings.

C. Do not install conduits within 6" of the deck where a screw down type roof system is utilized.

D. PVC-coated conduits may be field-bent provided that manufacturer-approved tools are used. Individuals installing PVC-coated conduits shall be trained for installation by factory-certified trainers. Provide evidence of training with equipment brochures.

E. Support and install all conduits per the latest edition of the National Electrical Code. Support groups of conduits with electrical strut supported by threaded rods anchored to the building structure. Supports shall be designed to hold no less than twice the weight of the conduit and contained to be supported plus an additional 200 pounds per individual.

F. All conduits shall be grouped and run parallel to each other and to building walls.

G. All conduits shall be assembled according to the manufacturer's instructions.

H. Conduits run underground shall be assembled to be watertight.

I. Ground conductors during installation. Pull a mandrel sized for that conduit and a cleaning brush through each conduit before installation of any conductors.

SECTION 26-05-33
RACEWAYS OUTLET BOXES AND JUNCTION BOXES (CONT.)

J. Conduits that are obviously damaged and field bends that are obviously out of round shall be replaced.

K. Provide final connections to equipment with flexible metallic conduit, in wet or damp locations, use liquidtight flexible conduit. Flexible conduit shall not exceed 72".

L. Terminate conduits entering boxes with a locknut inside the box and a locknut outside the box. Provide protective bushings on all conduit threads. Use watertight hubs where conduit terminations are exposed to moisture.

M. Use grounding bushings on all feeder conduits, all underground conduits, and where required by the National Electrical Code.

N. Conduits shall be no no closer than 12" to hot water pipes.

O. Where conduits are run through the ceiling and are required to make connections to equipment within the room that is not located near a wall, support the conduit from the structural ceiling and provide a flange bolted to the floor. Install a tee conduit fitting in the vertical run of conduit, and make the connection to the equipment with a piece of flexible conduit extending from the tee conduit fitting to the equipment.

P. Provide expansion fittings where conduits cross building expansion joints. Provide grounding jumpers between the conduits.

Q. Provide EMT conduit sleeves where conduits pass through walls, floors, or footings sized a minimum of two nominal trade sizes larger than the conduit that must pass through the sleeve.

R. Equip all empty conduits with a pullwire or string capable of withstanding 200 pounds of pulling tension.

3.2 Execution for Outlet Boxes and Junction Boxes.

A. All devices shall be flush mounted unless specific written permission is obtained from the Engineer for a particular device in a particular location.

B. Install outlet boxes in walls, and provide plaster rings such that wall finish contractor's finish is flush against the edge of the plaster ring. Workmanship will not be accepted where the hole in the wall shows behind the cover plate, or the wall finish is uneven or unpainted at the edge of the cover plate.

C. Use round or square ceiling outlet boxes as required for the device being installed. The ceiling shall be finished flush against the box; the fixture shall completely cover the box and mount tight against the ceiling. Coordinate the requirements of the fixture prior to installing the box.

D. Provide junction boxes, pull boxes, and conduit fittings where required by the NEC to limit the number of bends in the raceway, and where required to prevent damage to conductors due to long runs.

E. Junction boxes and pull boxes installed in the ground outside shall be Quazite Composite or approved equal. Mount the boxes over 24" of washed gravel **(UL)** if splices are to be made inside the boxes; the boxes shall be of the type furnished with a bottom; and all conduit connections shall be watertight. In addition, all conductor splices shall be made watertight using an appropriate splice kit as manufactured by 3M, or an approved equal.

END OF SECTION

SECTION 26-09-23
SWITCHES AND RECEPTACLES

PART 1 - GENERAL

Furnish and install all switches and receptacles in accordance with this specification and the requirements of the NEC.

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

Switches and receptacles shall be manufactured by Hubbell, Cooper Wiring Devices, Leviton, or Pass & Seymour.

2.2 GENERAL

A. Switches and receptacles shall be specification grade. They shall have ampacity and voltage ratings suitable for the application in which they are used.

B. Consult architect or engineer for device colors prior to ordering devices.

C. Provide brushed stainless steel cover plates for all devices. A single cover plate shall cover all devices in one box.

D. Light switches shall be 20 Ampere, 120-277V back-wired and side-wired toggle switches. They shall be rated up to 2 HP at 240V. Each switch shall be equipped with a grounding screw. Switches shall be Hubbell CS20 series or approved equal.

E. Duplex NEMA 5-20R receptacles shall be Hubbell HBL 5362A or approved equal.

F. Duplex GFI NEMA 5-20R receptacles shall be Hubbell HBL GF5362A or approved equal.

G. Weatherproof while-in-use cover plates shall be Taskbox #3401-7 or approved equal. Cover plates shall be single gang, lockable, and constructed of heavy duty die cast metal.

H. At 120V, 15 and 20 ampere receptacles inside back in dwelling units shall be of the tamper-resistant type.

I. At 15 and 20 ampere, 125 and 250V non-locking receptacles installed in wet or damp locations shall be listed as the weather-resistant type.

J. Devices furnished in this Contract, but not listed above, shall be of the same standard of quality as those items listed.

PART 3 - EXECUTION

3.1 Flush mount all devices unless specific written permission is obtained from the Engineer for a particular device in a particular location.

3.2 Install devices vertically unless the drawings specifically state that the particular device should be mounted horizontally.

3.3 Install receptacles with the ground slot up.

END OF SECTION

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ELECTRICAL SPECS

E006

SPECIFICATIONS

SECTION 26-09-26
VACANCY SENSORS

SECTION 260926 - VACANCY SENSORS

PART 1 - GENERAL

1.1 Furnish and install a complete system of Vacancy sensors as shown on the drawings and as specified herein to comply with the International Energy Conservation Code (IECC) 2012. The drawings are provided to show the general scope of the work, and show the absolute minimum components required. Actual system components, quantities, and locations shall be determined by the master installer/ vendor and provided to the Contractor with the installation shop drawings.

1.2 The Contractor and Sales Representatives are advised to take notice of specified component characteristics when attempting to select and propose substitutions. It is highly unlikely that substitutions on a component basis will produce results that provide acceptable system performance.

1.2 Provide all power packs, hardware, software, devices, circuitry, and other components, material and labor required to install, configure, and test the entire system to the satisfaction of the Architect, Owner, and Engineer.

1.4 Submit an sets of manufacturer's cut sheets describing completely all equipment, and six sets of shop drawings showing all circuitry including terminal-to-terminal connections.

1.5 The wiring diagrams on these drawings are based on our best interpretation of the manufacturer's data that was available at the time of design; however, they shall not be used for system installation and configuration. The controls equipment vendor is expected to be thoroughly knowledgeable of the equipment that is being proposed, and shall provide detailed shop drawings tailored for each circuit and lighting zone on the project. General manufacturer's data sheets shall not be acceptable. The shop drawings must be suitable for the wiring technician to use for complete installation of the circuitry without referring to data sheets or catalogues made up for connection of lighting control equipment. These requirements shall be followed whether the specified equipment, or products of other manufacturers, is provided.

PART 2 - PRODUCTS

2.1 Hallway Vacancy sensors: Vacancy sensors used in the hallways shall be passive infrared, ceiling-mounted units with a coverage of 6 x 100. They shall be Sensor Switch WHD WV 180 or approved equal.

2.2 Wall mounted LED lighting controls shall be 0-10V dimmer/vacancy sensor type equal to Lutron MS-P701-4-WX.

2.3 Wall mounted lighting controls shall be dual technology (ultrasonic/passive infrared) dual relay vacancy sensor type equal to Lutron MS-R2051-4-IA.

2.4 Areas up to 300 Square Feet: Ceiling mounted Vacancy sensors used in areas up to 300 square feet shall be dual technology infrared and passive infrared, ceiling-mounted units with a 360 degree, 300 square foot coverage.

2.5 Power Packs: Power packs shall be of the same manufacturer as the Vacancy sensors. Each shall be capable of controlling a 20 ampere circuit. They shall be rated for operation at the voltage of the system on which they will be used.

2.6 Circuitry: Provide control circuits as required by the manufacturer for optimum system operation, but no less than the following: Control cables shall be two-conductor #22 AWG copper with an overall jacket. Adjust conductor sizes as required to overcome unacceptable voltage drop.

PART 3 - EXECUTION

3.1 Vacancy sensors shall be provided so that their coverage areas overlap and there are no dead zones in the rooms where persons may stand and not be detected.

3.2 Vacancy Sensors shall be set for "manual on-automatic off" operation.

3.3 All work shall be done by qualified system technicians.

3.4 Wiring, including control wiring, shall be in Raceways meeting Specification 260533.

3.5 Guarantee workmanship and material for a period of one year after final acceptance. During the warranty period, repair or replace faulty equipment at no cost to the Owner for labor, material & expenses.

3.6 Upon completion of job, and entire system, After testing submit a certificate to the Architect stating verification of the following:

PART 4 - CLOSE-OUT DOCUMENTS

4.1 Provide the following documents to the Architect for delivery to the Owner at the time of substantial completion:

A. Written Guarantee

B. Two sets of data prepared by the manufacturer for each item of electrical equipment consistently describing each piece of equipment. The data shall include parts lists, a description of operation, shop drawings, wiring diagrams, maintenance procedures, and other literature required for operation and maintenance of equipment.

4.2 Instruct the Owner on system operational procedures. Notify the Owner and Architect at least one week in advance of the training session. Provide written step-by-step instructional material.

4.3 Notify the General Contractor that you are to present during the Pre-Final Inspection. During that inspection, demonstrate all system functionality and coordinate any minor work items and punch lists as required to show the quality of the installation. The Owner, Architect, and Engineer reserve the right to reject unsatisfactory workmanship or performance.

END OF SECTION 260926

SECTION 26-24-00
PANELBOARDS

PART 1 - GENERAL

1.1 Furnish and install all panelboards, complete with their circuit breakers, phase buses, neutral buses, ground buses, structural supports, and other equipment necessary for complete systems.

1.2 The equipment vendor shall perform all calculations necessary and provide complete Arc Flash Labels as required by the National Electrical Code (NEC) and the drawings. Note: The drawings typically require more detail than required by the NEC.

PART 2 - PRODUCTS

2.1 GENERAL

A. Panelboards shall be designed, manufactured, and tested to be in compliance with NEMA PB 1, UL 50, UL 67, UL 489, NFPA 70, and the ASTM.

B. Circuit breakers shall be designed, manufactured, and tested to be in compliance with NEMA AB 1, UL 489, and Federal Specification W-C-375B/GEN.

C. Panelboards shall be UL listed for service entrance where used for that purpose.

D. Panelboard ampere interrupting current (AIC) ratings shall equal the lowest rated device in the panelboard. Provide panelboards with the AIC ratings shown on the Contract Drawings. Buses shall be braced to withstand the AIC rating shown on the drawings. Series ratings shall only be used where shown on the panelboard schedules.

E. All panelboards shall be furnished with dead-front, door-in-door construction.

F. Lug locations shall be determined during the creation of shop drawings for proper arrangement with the raceway system.

G. Buses shall be constructed of 98% conductivity copper or equivalently rated aluminum.

H. Panelboard enclosures shall be NEMA 1 when they are to be mounted indoors, and NEMA 3R when they are to be mounted outdoors. Provide special enclosures where shown on the Contract Drawings.

2.2 ACCEPTABLE MANUFACTURERS

Panelboards shall be manufactured by Siemens, Square D, General Electric, or Cutler Hammer.

2.3 PANELBOARD CLASSES

A. Power distribution panelboards shall be available with mains and branch devices up to 1200 amperes. AIC ratings shall be available up to 200,000 Amperes. Power distribution panelboards shall be equipped with a nameplate containing the appropriate system voltage, number of wires, and number of phases for the system on which they are installed.

B. In 480Vac and less applications where a main breaker not exceeding 600 Amperes is required, the AIC rating does not exceed 65,000 Amperes, and no branch breakers exceed 125Amperes, Square D NF and equivalent panelboards may be used.

C. In 480Vac and less applications where a main breaker not exceeding 225 Amperes is required, the AIC rating does not exceed 14,000 Amperes, and no branch breakers exceed 100Amperes, Square D NE/NB and equivalent panelboards may be used.

D. In 240Vac and less applications where a main breaker not exceeding 400 Amperes or main lugs not exceeding 600 Amperes is required, the AIC rating does not exceed 22,000 Amperes, and no branch breakers exceed 125 Amperes, Square D NQOD and equivalent panelboards may be used.

2.4 CIRCUIT BREAKERS

A. Circuit breakers shall be thermal magnetic, molded-case with quick-make, quick-break contact action. They shall have thermal and magnetic tripping elements on each pole. Breakers with multiple poles shall have common tripping of all poles. Circuit breaker ampere ratings shall be stamped on the handle. Interrupting ratings of the circuit breakers shall be equivalent to the specified AIC rating of the panelboard. Breakers handles shall reside in a position between "ON" and "OFF" after a trip condition. Breakers shall be rated HACR when used for heating, air-conditioning, and refrigeration. HID when used with High Intensity Discharge fixtures, and shall be rated SWD when used for switching duty.

B. Circuit breaker sizes for motor loads are based on Square D recommendations for use of their breakers at the motor horsepowers listed on the mechanical drawings. If equipment is used other than Square D, adjust breaker sizes per the manufacturer's recommendations.

C. Each circuit breaker supplying a multiwire branch circuit shall be equipped with a manufacturer supplied handle tie to simultaneously disconnect all ungrounded conductors. Each multiwire branch circuit shall comply with NEC Article 210.4.

D. Circuit breakers with slash ratings, such as 120/240V or 480Y/277V, shall be used in solidly grounded systems where the nominal voltage of any conductor to ground does not exceed the lower of the two values of the breaker's voltage rating and the nominal voltage between any two conductors does not exceed the higher value of the circuit breaker's voltage rating.

E. Circuit breakers with straight voltage ratings, such as 240V or 480V, shall be used in systems other than solidly grounded systems (Corner-Grounded Delta, Ungrounded, Impedance Grounded, etc.) where the nominal voltage between any two conductors does not exceed the circuit breaker's voltage rating. A two-pole circuit breaker shall not be used to protect a three-phase, Corner-Grounded Delta system unless the circuit breaker is marked "1Ø-3Ø".

PART 3 - EXECUTION

3.1 Install panelboards in complete compliance with all manufacturers' installation instructions.

3.2 Install conductors neatly in panelboards. Group and tie-wrap circuits that share a common neutral.

3.3 Number circuits exactly as shown on the contract drawings.

END OF SECTION

SECTION 26-28-00
DISCONNECTS AND SEPARATELY-MOUNTED CIRCUIT BREAKERS

PART 1 - GENERAL

Furnish and install all disconnects and separately-mounted circuit breakers as shown on the drawings, specified herein, and required by the NEC.

PART 2 - PRODUCTS

2.1 GENERAL

A. Disconnects shall be of the heavy-duty type, and shall be UL listed for service entrance use. They shall meet or exceed the requirements of NEMA Standard KS1. Provide fuses sized to appropriately protect the load served. Equipment manufacturer's recommendations shall take precedence over the Contract Drawings.

B. Fuses shall be dual element, time-delay, Class J fuses. They shall be Bussman Low-Peak or approved equal.

C. Circuit breakers shall be thermal magnetic, molded-case with quick-make, quick-break contact action. They shall have thermal and magnetic tripping elements on each pole. Breakers with multiple poles shall have common tripping of all poles. Circuit breaker ampere ratings shall be stamped on the handle. Interrupting ratings of the circuit breakers shall be equivalent to the specified AIC rating of the panelboard. Breakers handles shall reside in a position between "ON" and "OFF" after a trip condition. Breakers shall be rated HACR when used for heating, air-conditioning, and refrigeration. HID when used with High Intensity Discharge fixtures, and shall be rated SWD when used for switching duty.

D. Circuit breaker sizes for motor loads are based on Square D recommendations for use of their breakers at the motor horsepowers listed on the mechanical drawings. If equipment is used other than Square D, adjust breaker sizes per the manufacturer's recommendations.

E. Circuit breakers with slash ratings, such as 120/240V or 480Y/277V, shall be used in solidly grounded systems where the nominal voltage of any conductor to ground does not exceed the lower of the two values of the breaker's voltage rating and the nominal voltage between any two conductors does not exceed the higher value of the circuit breaker's voltage rating.

F. Circuit breakers with straight voltage ratings, such as 240V or 480V, shall be used in systems other than solidly grounded systems (Corner-Grounded Delta, Ungrounded, Impedance Grounded, etc.) where the nominal voltage between any two conductors does not exceed the circuit breaker's voltage rating. A two-pole circuit breaker shall not be used to protect a three-phase, Corner-Grounded Delta system unless the circuit breaker is marked 1Ø-3Ø.

G. Disconnect and individually-mounted circuit breaker ampere interrupting current (AIC) ratings shall equal the rating of the panelboard from which they are fed unless otherwise noted.

H. Buses shall be constructed of 98% conductivity copper or equivalently rated aluminum.

I. Switches shall be horsepower rated where used to serve motors.

J. Enclosures shall be NEMA 1 when they are to be mounted indoors, NEMA 3R when they are to be mounted outdoors, and NEMA 4X where they are subject to washdown. Provide special enclosures where shown on the Contract Drawings.

2.2 ACCEPTABLE MANUFACTURERS

Disconnects and separately-mounted circuit breakers shall be manufactured by Siemens, Square D, General Electric, or Cutler Hammer.

PART 3 - EXECUTION

3.1 Install disconnects and individually-mounted circuit breakers in complete compliance with all manufacturers' installation instructions. Where necessary, provide structural supports and bracing for installation.

3.2 Disconnects are to be surface-mounted.

3.3 Individually-mounted circuit breakers are to be flush-mounted unless otherwise shown.

END OF SECTION

SECTION 26-28-00
DISCONNECTS AND SEPARATELY-MOUNTED CIRCUIT BREAKERS (CONT.)

F. Circuit breakers with straight voltage ratings, such as 240V or 480V, shall be used in systems other than solidly grounded systems (Corner-Grounded Delta, Ungrounded, Impedance Grounded, etc.) where the nominal voltage between any two conductors does not exceed the circuit breaker's voltage rating. A two-pole circuit breaker shall not be used to protect a three-phase, Corner-Grounded Delta system unless the circuit breaker is marked 1Ø-3Ø.

G. Disconnect and individually-mounted circuit breaker ampere interrupting current (AIC) ratings shall equal the rating of the panelboard from which they are fed unless otherwise noted.

H. Buses shall be constructed of 98% conductivity copper or equivalently rated aluminum.

I. Switches shall be horsepower rated where used to serve motors.

J. Enclosures shall be NEMA 1 when they are to be mounted indoors, NEMA 3R when they are to be mounted outdoors, and NEMA 4X where they are subject to washdown. Provide special enclosures where shown on the Contract Drawings.

2.2 ACCEPTABLE MANUFACTURERS

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PART 3 - EXECUTION

3.1 Install disconnects and individually-mounted circuit breakers in complete compliance with all manufacturers' installation instructions. Where necessary, provide structural supports and bracing for installation.

3.2 Disconnects are to be surface-mounted.

3.3 Individually-mounted circuit breakers are to be flush-mounted unless otherwise shown.

END OF SECTION

SECTION 26-43-00
SURGE PROTECTIVE DEVICE (SPD)

PART 1 - GENERAL

1.1 SCOPE

A. The Contractor shall furnish and install the Surge Protective Device (SPD) equipment having the electrical characteristics, ratings, and modifications as specified herein and as shown on the contract drawings. To maximize performance and reliability and to obtain the lowest possible let-through voltages, the surge protection shall be integrated into electrical distribution equipment such as switchgear, switchboards, panelboards, busway (integrated within bus plug), or motor control centers. Refer to related sections for surge requirements in:

1.2 RELATED SECTIONS

A. Section 26 24 00 - Panelboards

1.3 REFERENCES

A. SPD units and all components shall be designed, manufactured, and tested in accordance with the latest applicable UL standard (ANSI/UL 1449 3rd Edition).

1.4 SUBMITTALS - For Review/Approval

A. The following information shall be submitted to the Engineer:

1. Provide verification that the SPD complies with the required ANSI/UL 1449 3rd Edition listing by Underwriters Laboratories (UL) or other Nationally Recognized Testing Laboratory (NRTL). Compliance may be in the form of a file number that can be verified on UL's website or on any other NRTL's website, as long as the website contains the following information at a minimum: model number, SPD Type, system voltage, phases, modes of protection, Voltage Protection Rating (VPR), and Nominal Discharge Current (In).
2. For side-mount mounting applications (SPD mounted external to electrical assembly), electrical/mechanical drawings showing unit dimensions, weights, installation instruction details, and wiring configuration.

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E007

SPECIFICATIONS

SECTION 26-43-00
SURGE PROTECTIVE DEVICE (SPD) CONT.

B. Where applicable the following additional information shall be submitted to the engineer:

1. Descriptive bulletins
2. Product sheets

1.3 Submittals - for Construction

A. The following information shall be submitted for record purposes:

1. Final as-built drawings and information for items listed in Section 1.04 and shall incorporate all changes made during the manufacturing process

1.6 QUALIFICATIONS

A. The manufacturer of the assembly shall be the manufacturer of the major components within the assembly.

B. For the equipment specified herein, the manufacturer shall be ISO 9001 or 9002 certified.

C. The manufacturer of this equipment shall have produced similar electrical equipment for a minimum period of five (5) years. When requested by the Engineer, an acceptable list of installations with similar equipment shall be provided demonstrating compliance with this requirement.

D. The SPD shall be compliant with the Restriction of Hazardous Substances (RoHS) Directive 2002/95/EC.

1.7 DELIVERY, STORAGE AND HANDLING

A. Equipment shall be handled and stored in accordance with manufacturer's instructions. One (1) copy of manufacturer's instructions shall be included with the equipment at time of shipment.

1.8 OPERATION AND MAINTENANCE MANUALS

A. Operation and maintenance manuals shall be provided with each SPD shipped.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Eaton Cutler-Hammer

The listing of specific manufacturers above does not imply acceptance of their products that do not meet the specified ratings, features, and functions. Manufacturers listed above are not relieved from meeting these specifications in their entirety. Products in accordance with the specification and manufactured by others not named will be considered only if pre-approved by the Engineer ten (10) days prior to bid date.

2.2 VOLTAGE SURGE SUPPRESSION - GENERAL

B. Electrical Requirements

1. Unit Operating Voltage - Refer to drawings for operating voltage and unit configurations.
2. Maximum Continuous Operating Voltage (MCOV) - The MCOV shall not be less than 125% of the nominal system operating voltage.
3. The suppression system shall incorporate thermally protected metal-oxide varistors (MOVs) as the core surge suppression component for the service entrance and other distribution points. The system shall not utilize silicon avalanche diodes, selenium cells, air gaps, or other components that may increase the system voltage leading to system upset or create any environmental hazards.
4. Protection Modes - The SPD must protect all modes of the electrical system being utilized. The required protection modes are indicated by bullets in the following table:

	PROTECTION MODES			
CONFIGURATION	L-N	L-G	L-L	N-G
WYE	●	●	●	●
DELTA	NA	●	●	NA
SINGLE SPLIT PHASE	●	●	●	●
HIGH LEG DELTA	●	●	●	●

5. Nominal Discharge Current (In) - All SPDs applied to the distribution system shall have a 20kA In rating regardless of their SPD Type (includes Types 1 and 2) or operating voltage. SPDs having an In less than 20kA shall be rejected.

6. ANSI/UL 1449 3rd Edition Voltage Protection Rating (VPR) - The maximum ANSI/UL 1449 3rd Edition VPR for the device shall not exceed the following:

MODES	208Y/120V	480Y/277V	600Y/347V
L-N; L-G; N-G	700	1200	1500
L-L	1200	2000	3000

C. SPD Design

1. Maintenance Free Design - The SPD shall be maintenance free and shall not require any user intervention throughout its life. SPDs containing items such as replaceable modules, replaceable fuses, or replaceable batteries shall not be accepted. SPDs requiring any maintenance of any sort such as periodic tightening of connections shall not be accepted. SPDs requiring user intervention to test the unit via a diagnostic test kit or similar device shall not be accepted.
2. Balanced Suppression Platform - The surge current shall be equally distributed to all MOV components to ensure equal stressing and maximum performance. The surge suppression platform must provide equal impedance paths to each matched MOV. Designs incorporating replaceable SPD modules shall not be accepted.
3. Electrical Noise Filter - Each unit shall include a high-performance EMI/RFI noise rejection filter. Noise attenuation for electric line noise shall be up to 50 dB from 10 kHz to 100 MHz using the MIL-STD-220A insertion loss test method. Products unable to meet this specification shall not be accepted.
4. Internal Connections - No plug-in component modules or printed circuit boards shall be used as surge current conductors. All internal components shall be soldered, hardwired with connections utilizing low impedance conductors.
5. Monitoring Diagnostics - Each SPD shall provide the following integral monitoring options:

A. Protection Status Indicators - Each unit shall have a green / red solid-state indicator light that reports the status of the protection on each phase.

i. For wye configured units, the indicator lights must report the status of all protection elements and circuitry in the L-N and L-G modes. Wye configured units shall also contain an additional green / red solid-state indicator light that reports the status of the protection elements and circuitry in the N-G mode. SPDs that indicate only the status of the L-N and L-G modes shall not be accepted.

ii. For delta configured units, the indicator lights must report the status of all protection elements and circuitry in the L-G and L-L modes.

iii. The absence of a green light and the presence of a red light shall indicate that damage has occurred on the respective phase or mode. All protection status indicators must indicate the actual status of the protection on each phase or mode. If power is removed from any one phase, the indicator lights must continue to indicate the status of the protection on all other phases and protection modes. Diagnostics packages that simply indicate whether power is present on a particular phase shall not be accepted.

B. Remote Status Monitor - The SPD must include Form C dry contacts (one NO and one NC) for remote annunciation of its status. Both the NO and NC contacts shall change state under any fault condition.

C. Audible Alarm and Silence Button - The SPD shall contain an audible alarm that will be activated under any fault condition. There shall also be an audible alarm silence button used to silence the audible alarm after it has been activated.

D. Surge Counter - The SPD shall be provided with a surge counter display that indicates to the user how many surges have occurred at the product. The surge counter shall register each time a surge event with a peak current magnitude of a minimum of 50 x 20A occurs. A reset push-button shall also be standard, allowing the surge counter to be zeroed. The reset button shall contain a mechanism to prevent accidental resetting of the counter via a single, short-duration button press. In order to prevent accidental resetting, the surge counter reset button shall be depressed for a minimum of 2 seconds in order to clear the surge count total.

i. The ongoing surge count shall be stored in non-volatile memory. If power to the SPD is completely interrupted, the ongoing count indicated on the surge counter's display prior to the interruption shall be stored in non-volatile memory and displayed after power is restored. The surge counter's memory shall not require a backup battery in order to achieve this functionality.

6. Overcurrent Protection

A. The unit shall contain thermally protected MOVs. These thermally protected MOVs shall have a thermal protection element packaged together with the MOV in order to achieve overcurrent protection of the MOV. The thermal protection element shall disconnect the MOV(s) from the system in a safe manner should a condition occur that would cause them to enter a thermal runaway condition.

7. Fully Integrated Component Design - All of the SPD's components and diagnostics shall be contained within one discrete assembly. SPDs or individual SPD modules that must be ganged together in order to achieve higher surge current ratings or other functionality shall not be accepted.

SECTION 26-43-00
SURGE PROTECTIVE DEVICE (SPD) CONT.

8. Safety Requirements

a. The SPD shall minimize potential arc flash hazards by containing no user serviceable / replaceable parts and shall be maintenance free. SPDs containing items such as replaceable modules, replaceable fuses, or replaceable batteries shall not be accepted. SPDs requiring any maintenance of any sort such as periodic tightening of connections shall not be accepted. SPDs requiring user intervention to test the unit via a diagnostic test kit or similar device shall not be accepted.

b. SPDs designed to interface with the electrical assembly via conductors shall require no user contact with the inside of the unit. Such units shall have any required conductors factory installed.

c. Side-mount SPDs shall be factory sealed in order to prevent access to the inside of the unit. Side-mount SPDs shall have factory installed phase, neutral, ground and remote status contact conductors factory installed and shall have a pigtail of conductors protruding outside of the enclosure for field installation.

2.3 SYSTEM APPLICATION

A. The SPD applications covered under this section include distribution and branch panel locations, busway, motor control centers (MCC), switchgear, and switchboard assemblies. All SPDs shall be tested and demonstrate suitability for application within ANSI/IEEE C62.41 Category C, B, and A environments.

B. Surge Current Capacity - The minimum surge current capacity the device is capable of withstanding shall be as shown in the following table:

MINIMUM SURGE CURRENT CAPACITY BASED ON ANSI / IEEE C62.41 LOCATION CATEGORY			
CATEGORY	APPLICATION	PER PHASE	PER MODE
C	SERVICE ENTRANCE LOCATIONS (SWITCHBOARDS, SWITCHGEAR, MCC, MAINS).	250 kA	125 kA
B	HIGH EXPOSURE ROOF TOP LOCATIONS (DISTRIBUTION PANELBOARDS).	160 kA	80 kA
A	BRANCH LOCATIONS (PANELBOARDS, MCCs, BUSWAY)	120 kA	60 kA

C. SPD Type - All SPDs installed on the line side of the service entrance disconnect shall be Type 1 SPDs. All SPDs installed on the load side of the service entrance disconnect shall be Type 1 or Type 2 SPDs.

2.4 Lighting and Distribution Panelboard Requirements

A. The SPD application covered under this section includes lighting and distribution panelboards. The SPD units shall be tested and demonstrate suitability for application within ANSI/IEEE C62.41 Category B environments.

1. The SPD shall not limit the use of through-fed lugs, sub-fed lugs, and sub-feed breaker options.
2. SPDs shall be installed behind-the-trim by the load side of the main breaker. SPDs installed in main lug only panelboards shall be installed immediately following the incoming main lugs.
3. The panelboard shall be capable of re-energizing upon removal of the SPD.
4. The SPD shall be interfaced to the panelboard via a direct bus bar connection. Alternately, an SPD connected to a 20A circuit breaker for disconnecting purposes may be installed using short lengths of conductors as long as the conductors originate integrally to the SPD. The SPD shall be located directly adjacent to the 20A circuit breaker.
5. The SPD shall be factory installed and mounted within the panelboard by the manufacturer of the panelboard.
6. The SPD shall be of the same manufacturer as the panelboard.
7. The complete panelboard including the SPD shall be UL67 listed.

B. Side-mount Mounting Applications Installation (SPD mounted external to electrical assembly)

1. Lead lengths between the breaker and suppressor shall be kept as short as possible to ensure optimum performance. Any excess conductor length shall be trimmed in order to minimize let-through voltage. The installer shall comply with the manufacturer's recommended installation and wiring practices.

C. Switchgear, Switchboard, MCC and Busway Requirements

1. The SPD application covered under this section is for switchgear, switchboard, MCC, and busway locations. Service entrance-located SPDs shall be tested and demonstrate suitability for application within ANSI/IEEE C62.41 Category C environments.
2. The SPD shall be of the same manufacturer as the switchgear, switchboard, MCC, and busway.
3. The SPD shall be factory installed inside the switchgear, switchboard, MCC, and/or bus plug at the assembly point by the original equipment manufacturer.
4. Locate the SPD on the load side of the main disconnect device, as close as possible to the phase conductors and the ground-neutral bar.
5. The SPD shall be connected through a disconnect/20A circuit breaker. The disconnect shall be located in immediate proximity to the SPD. Connection shall be made via bus, conductors, or other connections originating in the SPD and shall be kept as short as possible.
6. The SPD shall be integral to switchgear, switchboard, MCC, and/or bus plug as a factory assembled design.
7. All monitoring and diagnostic features shall be visible from the front of the equipment.

2.5 Enclosures

A. All enclosed equipment shall have NEMA 1 general purpose enclosures, unless otherwise noted. Provide enclosures suitable for locations as indicated on the drawings and as described below:

1. NEMA 1 - Constructed of a polymer (units integrated within electrical assemblies) or steel (sidemount units only), intended for indoor use to provide a degree of protection to personal access to hazardous parts and provide a degree of protection against the ingress of solid foreign objects (falling dirt).
2. NEMA 4 - Constructed of steel intended for either indoor or outdoor use to provide a degree of protection against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (dirt and windblown dust); to provide a degree of protection with respect to the harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); and that will be undamaged by the external formation of ice on the enclosure. (sidemount units only)
3. NEMA 4X - Constructed of stainless steel providing the same level of protection as the NEMA 4 enclosure with the addition of corrosion protection. (sidemount units only)

PART 3 - EXECUTION

3.1 EXAMINATION

3.2 FACTORY TESTING

A. Standard factory tests shall be performed on the equipment under this section. All tests shall be in accordance with the latest version of NEMA and UL standards.

3.3 INSTALLATION

A. The Contractor shall install all equipment per the manufacturer's recommendations and the contract drawings.

3.4 WARRANTY

A. The manufacturer shall provide a full ten (10) year warranty from the date of shipment against any SPD part failure when installed in compliance with manufacturer's written instructions and any applicable nationalor local code.

END OF SECTION

SECTION 26-51-00
LIGHTING

SECTION 265100 - LIGHTING

PART 1 - GENERAL

Provide all lighting fixtures (luminaires), lamps, end caps, connectors, fittings, structural support members, supports, brackets, etc., for a complete and operable lighting system.

PART 2 - PRODUCTS

2.1 LUMINAIRES

A. Luminaires are shown in the Luminaire Schedule on the drawings to establish a standard of quality. Manufacturer's names and model numbers shall not be interpreted as a proprietary specification. Notify the engineer at least two weeks prior to bid if an equivalent for a fixture listed in the schedule is not readily available.

B. Prior to submitting electrical equipment brochures for review and approval, coordinate with the General Contractor and verify that the fixtures are appropriate for the ceiling types in which they are shown to be installed. Also verify that ballast voltage on the submittals is appropriate for the electrical system on which the fixtures are to be installed (regardless of voltage listed in the part number in the Fixture Schedule). Submit with equipment brochures a certificate stating that these items of coordination have been completed.

2.2 LED

A. LED fixtures shall be LM79 and LM80 tested. Color temperature shall be as specified on the drawings.

B. Lumen outputs listed on the drawings are minimum requirements.

C. Fixtures shall have a minimum 80CRI.

2.3 BATTERIES

A. Emergency Batteries: Emergency batteries in fixtures shall consist of an automatic power failure device, a test switch, and a pilot light that is visible from outside of the fixture. They shall contain a fully automatic solid state charger in a self-contained power pack. The fixture shall be factory wired in a manner that will allow the emergency lamps to be switched with unswitched circuitry maintaining a charging power to the battery. Wiring diagrams shall be furnished with the fixture showing switching connections. The battery shall be of the sealed electrolyte type with the capacity to provide power to the lamps provided for a minimum of 90 minutes.

The battery shall be able to service unattended with no maintenance for a period of no less than ten years. Emergency batteries shall be fully compatible with solid state ballasts. Battery packs shall be mounted inside the fixture unless remotely mounted ballasts are shown on the drawings.

2.4 SUPPORTS

A. Provide all structural members necessary to support fixtures in locations shown on the contract drawings. Submit mounting and support details to the Architect or Engineer for approval with the project shop drawings. Notify the General Contractor prior to bid of any structural work that will be required to support the fixtures.

B. Provide hangers, cords, stems, etc., where required. Coordinate with the Architect or Engineer for proper stem lengths prior to ordering fixtures.

C. Support the ceiling and all four corners of recessed light fixtures.

D. Provide clips for fixtures installed in lay-in ceilings. Clips shall be equal to Erico Caddy clips # 515 or #516.

PART 3 - EXECUTION

3.1 Raceways for lighting systems in accessible ceilings shall be run to junction boxes mounted in locations that do not interfere with the ceiling installation the luminaire installation, or other building systems. Provide final connections to fixtures using raceways or flexible conduit. Flexible conduit shall not exceed six feet in length.

3.2 All recessed fixtures shall be mounted with their trims flush against the ceiling.

3.3 Comply completely with all manufacturers' installation instructions.

3.4 LED fixtures shall be warranted for 5 years after beneficial occupancy.

END OF SECTION 265100

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ELECTRICAL SPECS

E008

SPECIFICATIONS

SECTION 27-30-00
TELEPHONE AND DATA SYSTEMS

PART 1 - GENERAL

1.1 Provide complete telephone and data systems in accordance with this specification and the contract drawings. All systems shall be furnished and installed to meet or exceed EIA/TIA Category 6 Standards.

1.2 All new wiring on this project shall conform to the EIA-TIA 568A T568A scheme.

1.3 Prior to ordering equipment, provide six sets of manufacturer's cut sheets to the Architect or Engineer for the equipment to be installed. Also submit shop drawings showing the floor plan with all wiring tag identification and conduit and cable routing. Do not order any equipment without receiving submittals and shop drawings that have been reviewed and approved by the Engineer.

1.4 Contractors furnishing and installing telephone and data system components shall be regularly involved in furnishing and installing systems of the type specified. They shall have installed five systems similar in size and scope within the past six months. The Telephone and Data System Contractor shall pull the cable as well as install all jacks and make all other system terminations.

PART 2 - PRODUCTS

2.1 Outlet Boxes Provide outlet boxes in accordance with Specification 26 05 33.

2.2 Plaster Rings Plaster rings shall be furnished to provide single-gang openings in outlet boxes unless otherwise noted.

2.3 Raceways Provide raceways in accordance with Specification 26 05 33.

2.4 Jacks Provide outlet boxes with a strap containing the number of Jacks indicated on the drawings. Outlet jacks shall be 8-position, 8-conductor, RJ45 jacks that are multi-vendor supportive accepting most phone and data plugs. Jacks shall have gold-plated (50 microinches minimum) contacts with 110 connections on the back. The jacks shall snap in the straps. The straps shall be colored to match the switches and receptacle color selected by the Architect. The straps shall be covered by a stainless steel wall plate identical to those of the receptacles and switches. Telephone outlet jacks shall be yellow; data jacks shall be blue.

2.5 Fiber Optic Cabling: Cable shall be a 12 strand 62.5/125 micron multimode. Bandwidth shall be 2000MHz @ 850nm.

2.6 Cable All cable shall be Category 6 rated and shall conform to or exceed the EIA/TIA 568 Commercial Building Wiring Standard. Horizontal Cable Section and the EIA/TIA Technical Systems Bulletin 36 for Unshielded Twisted Pair Cables. Other standards supported shall include IEEE 802.3, based, 10BASE-T, IEEE 802.5, 4 Mbps, 16 Mbps (UTP), 100 Mbps (100VG), 104 Workstations, proposed ANSI X3T9.5 TP-PMD requirements for UTP at 100 Mbps, and 155 MB ATM. Cabling shall be UL listed. Telephone cables shall be yellow; data cables shall be blue. All Cable shall be plenum rated.

2.7 Telephone and Data Backboard (TDBB): Shall consist of a ¾" x 4' x 4' sheet of plywood, primed and painted with two coats of fire retardant paint of the color and finish selected by the Architect. Provide a ¼" x 4" x 17.75" copper ground block (Erico Erico's TMGB-417612PT or approved equal) on the wall. Bond a #6 AWG copper conductor to the ground block with a two hole compression lug and run the #6 AWG ground wire to the electrical power system ground. Bond the #6 AWG ground wire to the power system electrode using an exothermic weld.

2.8 Punchdown Blocks Telephone cables shall terminate at the Telephone & Data Backboard on Punchdown Blocks. Telephone Cabling shall be terminated on 110 punchdown blocks maintaining the Category 6 rating. Furnish punchdown blocks for all telephone outlets in the contract plus 25% additional outlets.

2.9 Patch Panels: Data Cables shall terminate at the Telephone & Data Backboard in patch panels. Provide a patch panel (or panels) at each TDBB to accommodate all cabling plus 15% spare capacity. Provide crossconnecting cables as required to interconnect the patch panels providing the Owner a single connection point for a connection to a server.

2.10 Racks: Provide a 19" rack for mounting of the patch panels. The rack shall be mounted on the TDBB.

PART 3 - EXECUTION

3.1 Provide a 1" conduit extending from each outlet box to a point above the nearest accessible ceiling. Terminate the conduit with a protective bushing.

3.2 Route conductors from the outlet box, above the lay-in ceilings, and to the telephone and data backboard. Group, bewrap, and support the conductors from the structural ceiling above the lay-in ceiling. Provide conduit for sleeves where cables pass through areas with hard ceilings.

3.3 Provide a minimum of two data cables to each data outlet or combination telephone/data outlet. Provide one cable to each telephone outlet.

3.4 Mount plywood backboard securely to wall framing members. The bottom of the backboard shall be 6" above the finished floor.

3.5 Provide a #6 copper ground wire in 1" PVC conduit from the Telephone and Data Backboard to the Building Power System Ground.

3.6 Service Conduits: Provide two 4" PVC conduits with long radius elbows from the Telephone and Data Backboard to a pint 5' outside of the building. These conduits shall be for future use by the Owner. Conduits bends shall contain not than no less than 10 times the conduit diameter. Furnish conduits with pullstrings. Stub conduits up 4" above the floor at the Telephone and Data Backboard and cover with plastic caps. Do not glue the caps on the conduits. Seal conduits below grade to prohibit the entrance of dirt, water, and gases. Service conduits shall be buried 24" to 36" below grade. Mark the end of the conduits by placing a vertical stick of conduit from the end of the conduit vertically to a point at least 12" above grade. Provide physical protection as well as warning tape attached to sleeves around the exterior.

3.7 Fiber Optic: Terminate all fiber optic strands at the rack in a fiber optic termination box.

3.8 Equip all spare conduits with a pullwire or string capable of withstanding 200 pounds of pulling tension.

3.9 Uniquely identify and label all cables at each end using EIA/TIA Standards. Provide engraved or professionally standard label markings on the faceplate beside each jack.

3.10 Test each cable for opens, shorts, correct pairs, crossed wiring, and proper termination using a CT200 tester from Alcorn Services, Inc. or approved equal. Replace any cable that is unable to pass the tests. Provide a written log of the test results of each cable to the Engineer at the punchout inspection. Demonstrate testing of any cables selected by the Engineer.

END OF SECTION

SECTION 28-31-00
FIRE ALARM SYSTEM

PART 1 - GENERAL

1.1 GENERAL

A. Furnish and install a complete and operable fire alarm system in accordance with the Contract drawings and all federal, state, and local codes. Equipment on the drawings represents the absolute minimum required for the project. Include costs for all other required devices and equipment required for a complete and operable code compliant system. Notify the engineer in writing of any devices required by code, but not shown, at least ten days prior to bid.

B. Comply completely with the latest edition of all applicable federal, state, and local codes including, but not limited to the following:
1) National Electrical Code (NFPA 70)
2) Life Safety Code (NFPA 101)
3) National Fire Alarm Code (NFPA 72)
4) The International Building Code
5) ANSI/ASME A17.1, Safety Code for Elevators and Escalators

1.2 SCOPE OF WORK

A. Provide all enclosures, hardware, software, devices, and all other components, material, and labor required to install, configure, and test the entire system to the satisfaction of the Engineer and all authorities.

B. All components of the system shall be manufactured by the same company. The system and its components shall be approved by UL and Factory Mutual.

C. All system components shall be installed by a franchised distributor of the fire alarm system having a repair and service department on call 24 hours a day, seven days a week. The repair and service department shall be located within 150 miles of the project.

D. Submit complete shop drawings showing all devices including mounting locations and heights and terminal-to-terminal connections. **Employ an independent third party testing agency that will be involved in certification of the system to review the shop drawings to ensure compliance with the contract documents and all applicable codes.**

PART 2 - PRODUCTS

2.1 Provide an intelligent, addressable fire alarm control panel complete with all equipment necessary to monitor and control the devices shown. The system shall sound a non-coded general alarm. Upon an alarm condition, the fire alarm control panel shall automatically report the alarm condition to a monitoring agency. Provide all telephone connections, circuitry, and conduit to perform this functionality back to the telephone backboard. (The fire alarm system shall be capable of producing voice announcements through the system speakers).

2.2 Provide a NiCad battery sized to operate the control panel without normal power for 24 hours, and then to alarm the panel continuously for at least five minutes. Submit battery sizing calculations with the manufacturer's cut sheets and shop drawings.

2.3 All devices shall be addressable and shall be electronically supervised.

2.4 Smoke detectors shall be of the photoelectric type.

2.5 Duct detectors shall be of the air sampling type. Furnish complete with sampling tubes and duct housings.

2.6 Smoke detectors mounted under raised computer floors shall be of the photoelectric type. They shall be UL listed for installation in plenums.

2.7 Pull stations shall be of metallic construction. They shall be furnished with lexan shields and warning horns.

2.8 Horns shall be rated a minimum of 85 dB at 10'.

2.9 Speakers shall be square. They shall be wall-mounted to a 4" square box. They shall produce a minimum sound level of 95dB at 10'. They shall have adjustable taps for volume level adjustment.

2.10 Strobes shall have a nominal rating of at least 75 Cd.

2.11 Combination horn-strobe units or speaker-strobe units shall meet the specified requirements of the individual horns, strobes, and speakers.

2.12 Monitor all sprinkler system flow switches at the facility. Provide an alarm upon flow indication.

2.13 Monitor all sprinkler system tamper and supervisory switches at the facility. Provide a trouble signal upon tamper indication.

2.14 Provide duct detectors in the return duct of all air units. If a fresh air intake duct is installed, all duct detectors shall be mounted upstream of the intake duct. For air units with flow ratings greater than 15,000 CFM, provide duct detectors in both the return and supply ducts.

2.15 Provide all necessary relays and circuitry, and shut down all air units upon an alarm condition of the fire alarm system.

2.16 Provide all necessary equipment and circuitry for control of the elevator in accordance with ANSI/ASME A17.1, Safety Code for Elevators and Escalators.

2.17 Provide all necessary equipment and circuitry to automatically release the magnetic door locks upon an alarm of the Fire Alarm System.

2.18 Conductors shall be #14 AWG copper rated THHN/THWN. Provide larger conductors where required to compensate for voltage drop.

PART 3 - EXECUTION

3.1 All components and circuitry shall be assembled and installed per the requirements of all applicable codes and the manufacturer's recommendations.

3.2 All devices shall be mounted with their bases flush in the walls.

3.3 Smoke detectors shall be mounted at least 36" away from supply vents.

3.4 All outlet boxes, junction boxes, and cover plates shall be painted red.

3.5 All circuitry shall be in concealed conduit sized per the NEC, but no less than ½" EMT. All fire alarm conduits shall be painted red.

3.6 The Fire Alarm System Contractor shall employ an independent third party testing agency to test and certify all system components, including each smoke detector, duct detector, and installation prior to the pre-final inspection. All systems shall be completely operable prior to the request for a pre-final site observation. The system shall be tested in the presence of the Owner, Architect, and Engineer at the pre-final site observation.

3.7 Provide a one-year warranty for the system and all components. The warranty shall begin at the date of final acceptance of the building. During the warranty period, the system shall be repaired or replaced as necessary at no cost to the Owner. During the warranty period, a technician shall be on the job site within twenty-four hours of a problem report from the Owner.

END OF SECTION

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100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2026

PROJ. A_2406

Issued For	Date	#
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CHRISTOPHER LEE ALCORN — 15278 — REGISTERED PROFESSIONAL ENGINEER — STATE OF MISSISSIPPI

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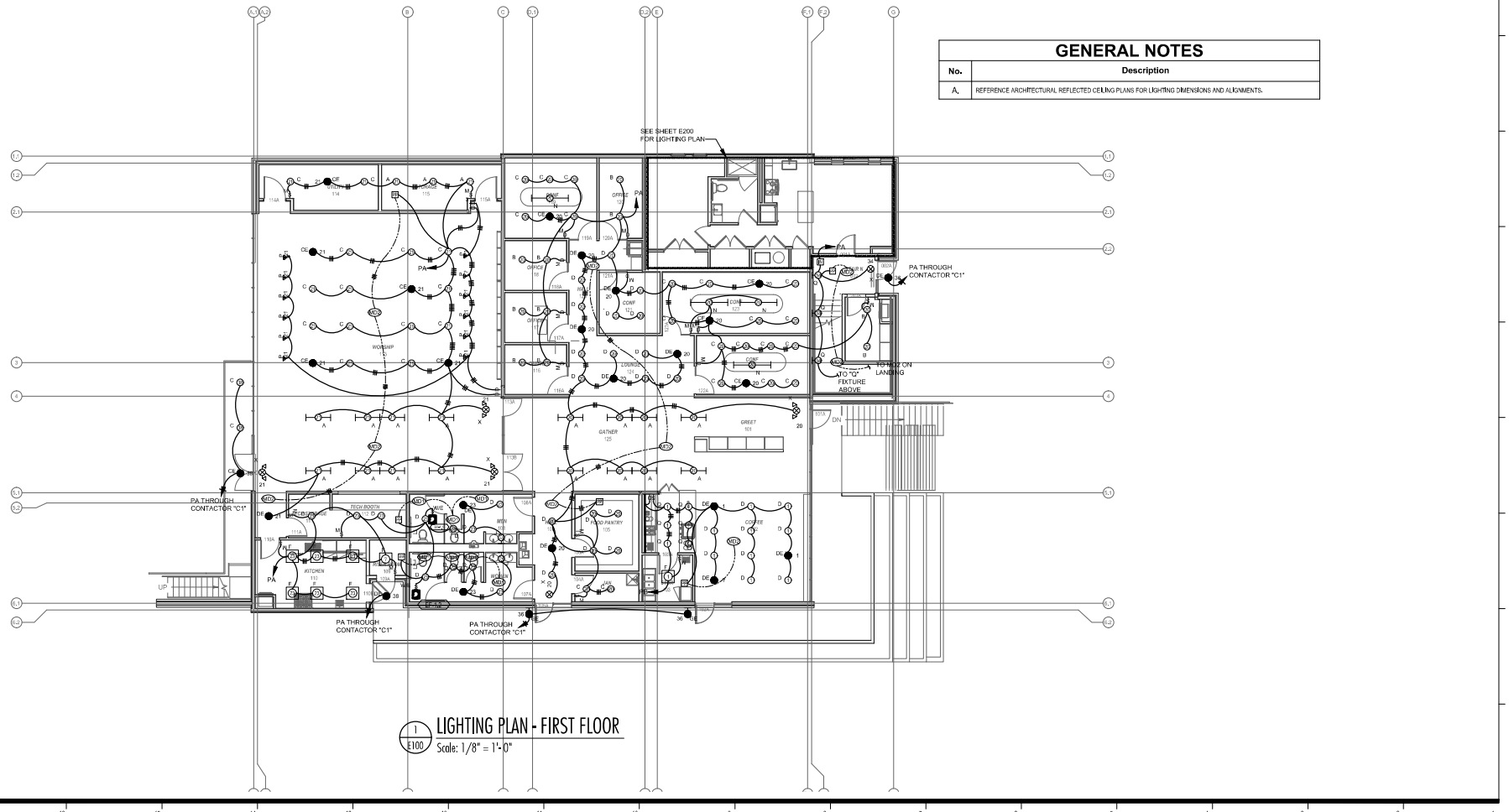
TPS PROJ. # 24153

ELECTRICAL SPECS

E009

GENERAL NOTES

No.	Description
A.	REFERENCE ARCHITECTURAL REFLECTED CEILING PLANS FOR LIGHTING DIMENSIONS AND ALIGNMENTS.



1 E100 LIGHTING PLAN - FIRST FLOOR
Scale: 1/8" = 1'-0"

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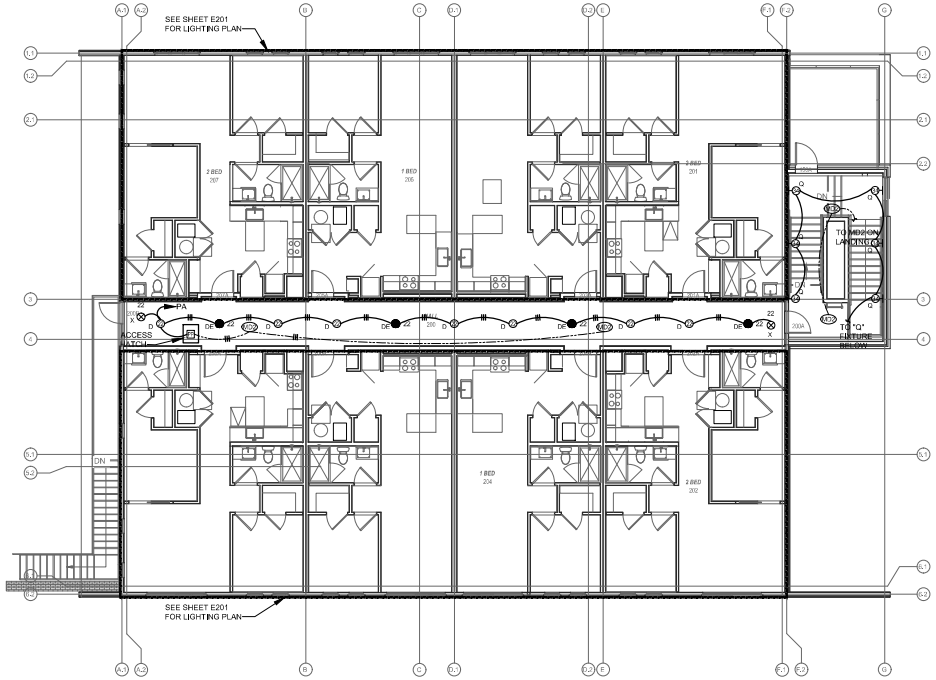
ELECTRICAL
LIGHTING PLAN

E100



1 / E101 LIGHTING PLAN - SECOND FLOOR
Scale: 1/8" = 1'- 0"

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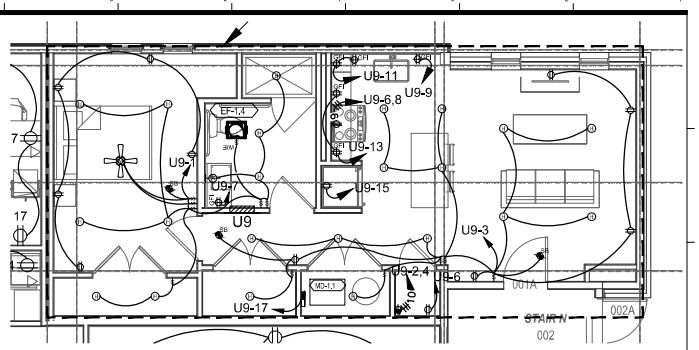
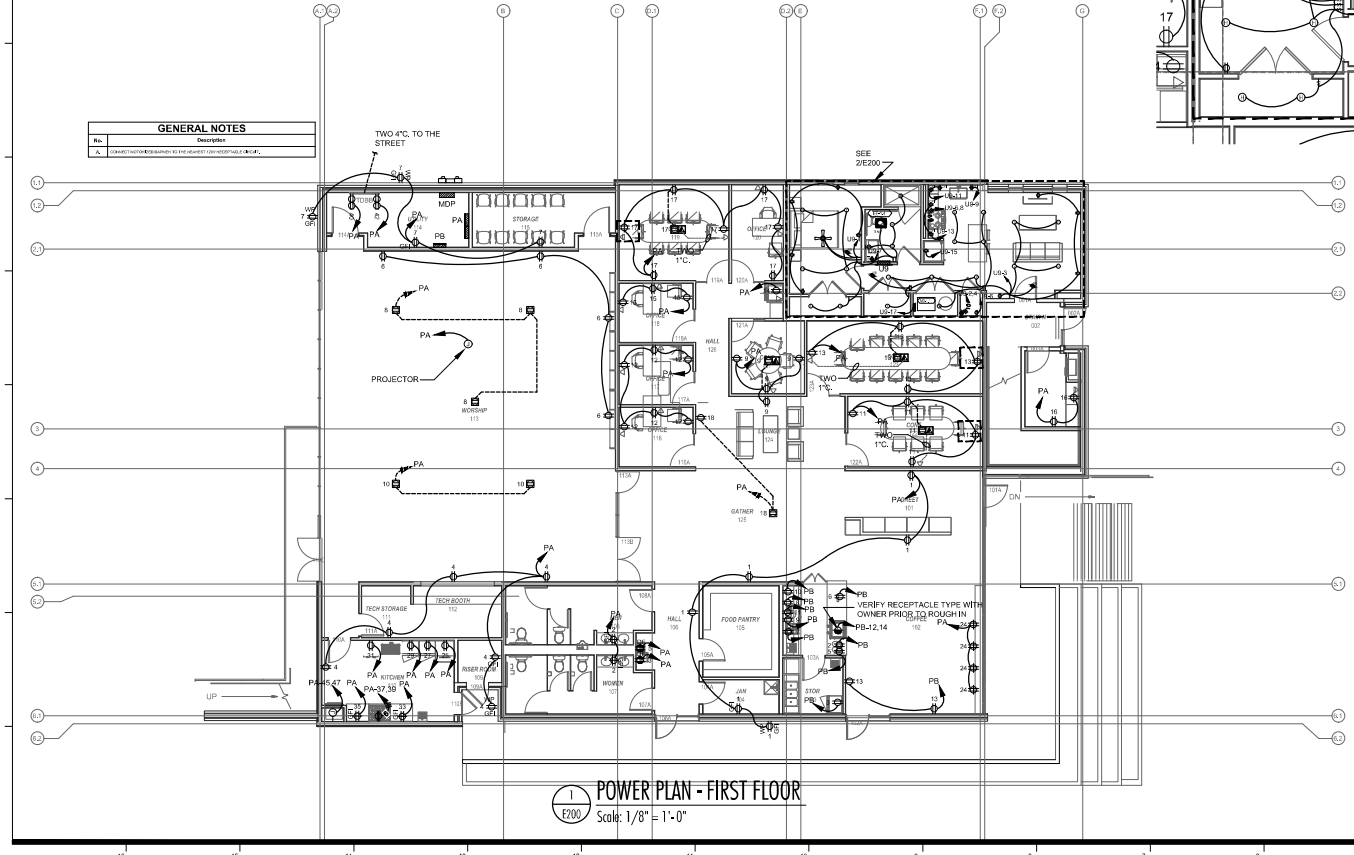
ELECTRICAL
LIGHTING PLAN
E101



2 / E200 ENLARGED POWER PLAN - FIRST FLOOR
Scale: 1/4" = 1'-0"



1 / E200 POWER PLAN - FIRST FLOOR
Scale: 1/8" = 1'-0"

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ELECTRICAL
POWER PLAN

E200

UNIT PLAN NOTES

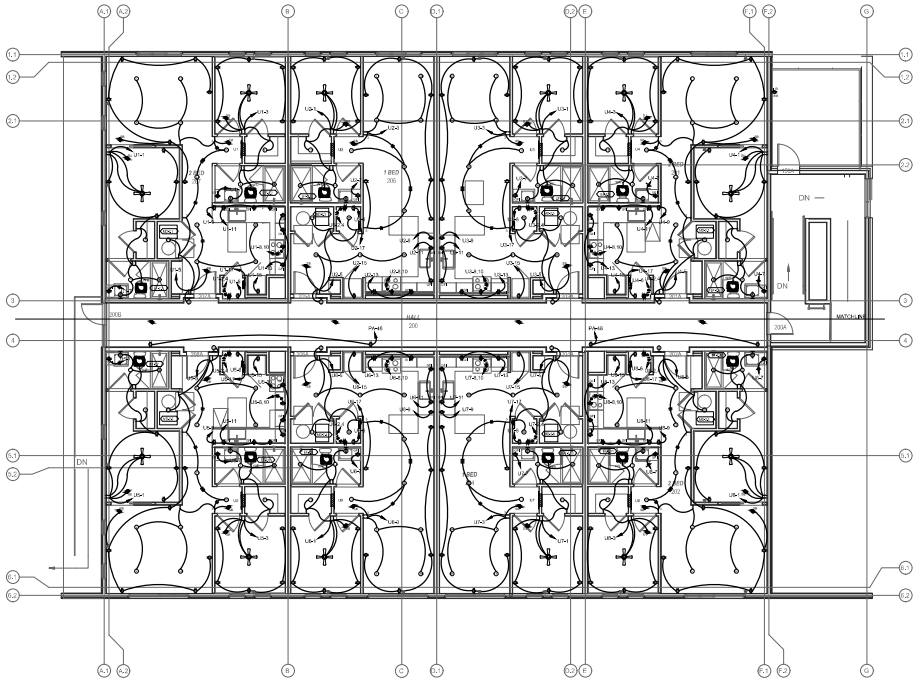
Mark	Description
A.	MOUNT RECEPTACLE FOR DISHWASHER IN ACCORDANCE WITH NEC 422.16(B)(2).
B.	MOUNT RECEPTACLE FOR RANGE IN ACCORDANCE WITH NEC 422.33.
C.	ALL 15 & 20 AMP, 120V RECEPTACLES SHALL BE TAMPER RESISTANT TYPE, EXCEPT REFRIGERATOR, WASHER, AND DISHWASHER.
D.	CONTRACTOR SHALL FURNISH AND INSTALL SWITCH FOR VENT AND LIGHT TO THE FACE OF LOWER CABINET IN ALL HANDICAP ACCESSIBLE UNITS.
E.	EACH DATA/TV OUTLET SHALL HAVE CABLE HOMERUN TO UNIT NETWORK MEDIA ENCLOSURE. COORDINATE CABLE AND OUTLET TYPE WITH OWNER. (TYPICAL OF ALL)
F.	REFER TO MECHANICAL PLANS FOR MECHANICAL EQUIPMENT LOCATIONS.
G.	CENTER ALL CEILING FANS IN ROOMS. ALL CEILING FAN LIGHT KITS AND FAN MOTORS SHALL BE CONTROLLED SEPARATELY. (TYPICAL OF ALL)
H.	RECEPTACLES SERVING LAUNDRY, KITCHEN, & BATHROOM COUNTERS/BASINS SHALL BE GFCI PROTECTED. (NEC 210.8)
I.	ALL CIRCUITS SERVING KITCHENS, FAMILY ROOMS, DINING ROOMS, LIVING ROOMS, PARLORS, LIBRARIES, DENS, BEDROOMS, SUNROOMS, RECREATIONAL ROOMS, CLOSETS, HALLWAYS, LAUNDRY AREAS, OR SIMILAR ROOMS SHALL BE AFCI PROTECTED. (NEC 210.12)

PANEL NOTES

No.	Description
A.	THE ELECTRICAL CONTRACTOR SHALL CONFIRM THE MCA (WIRE SIZE), MOCP (CIRCUIT BREAKER SIZE), AND EXACT CONNECTION TYPES FOR THE MECHANICAL/PLUMBING EQUIPMENT WITH THE MECHANICAL/PLUMBING SUBMITTALS PRIOR TO ORDERING ELECTRICAL EQUIPMENT.

OWNER/GENERAL CONTRACTOR NOTES

No.	Description
A.	ELECTRIC METER & CATV/TELEPHONE ENTRY SHALL BE PLACED ON SAME SIDE OF BUILDING. COORDINATE WITH UTILITY PROVIDERS.
B.	REFER TO ARCHITECTURAL PLANS FOR ALL DIMENSIONS, DOOR SWINGS, ETC.
C.	REFER TO APPROVED JOB-SPECIFIC MILLWORK DRAWINGS FOR SPECIFIC LAYOUTS AT KITCHEN & BATHS.



1 / E201 OVERALL POWER PLAN - SECOND FLOOR
Scale: 1/8" = 1'- 0"

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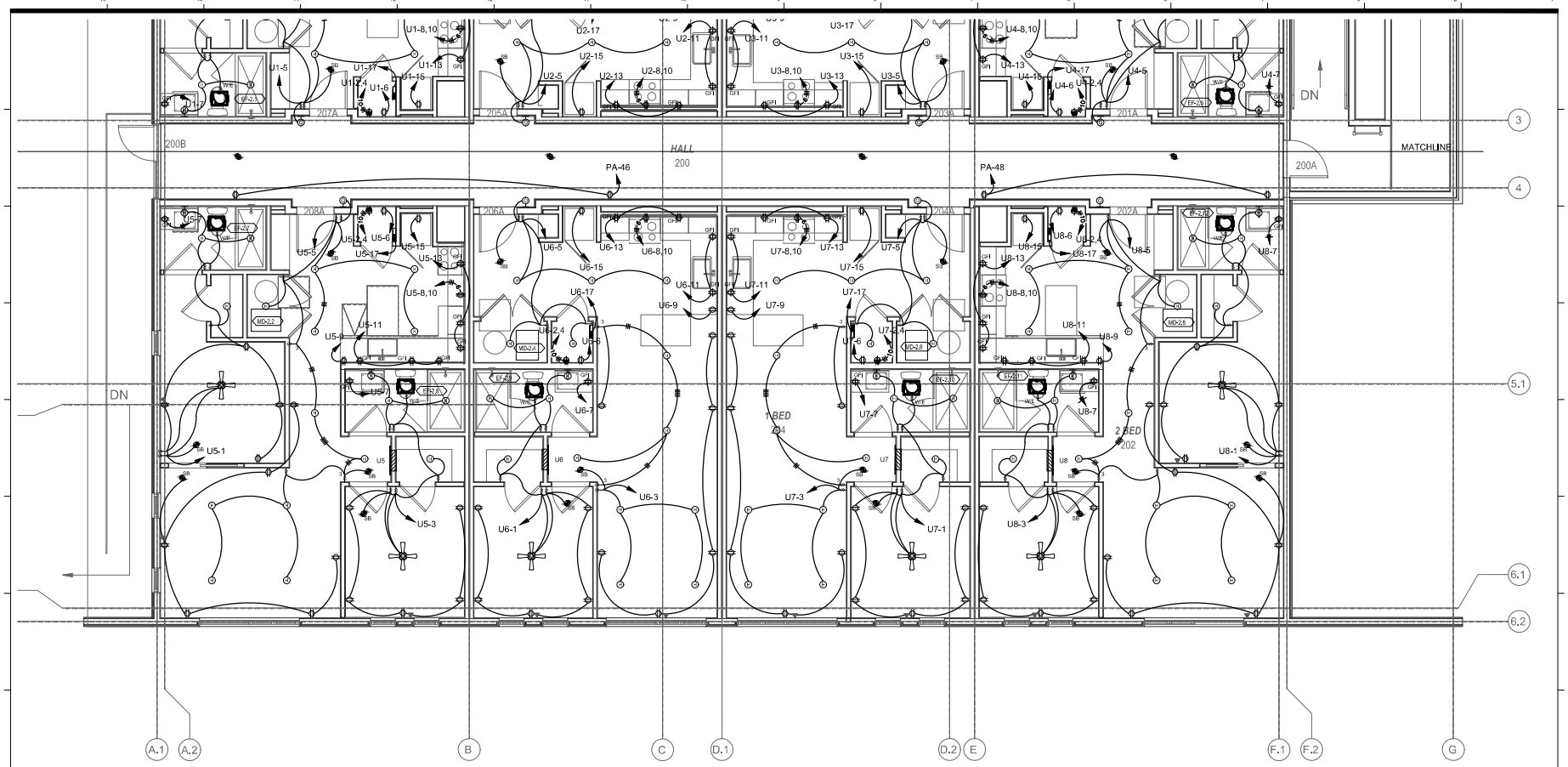
ELECTRICAL POWER PLAN

E201



1 / E202 PARTIAL POWER PLAN - SECOND FLOOR

Scale: 1/4" = 1'- 0"

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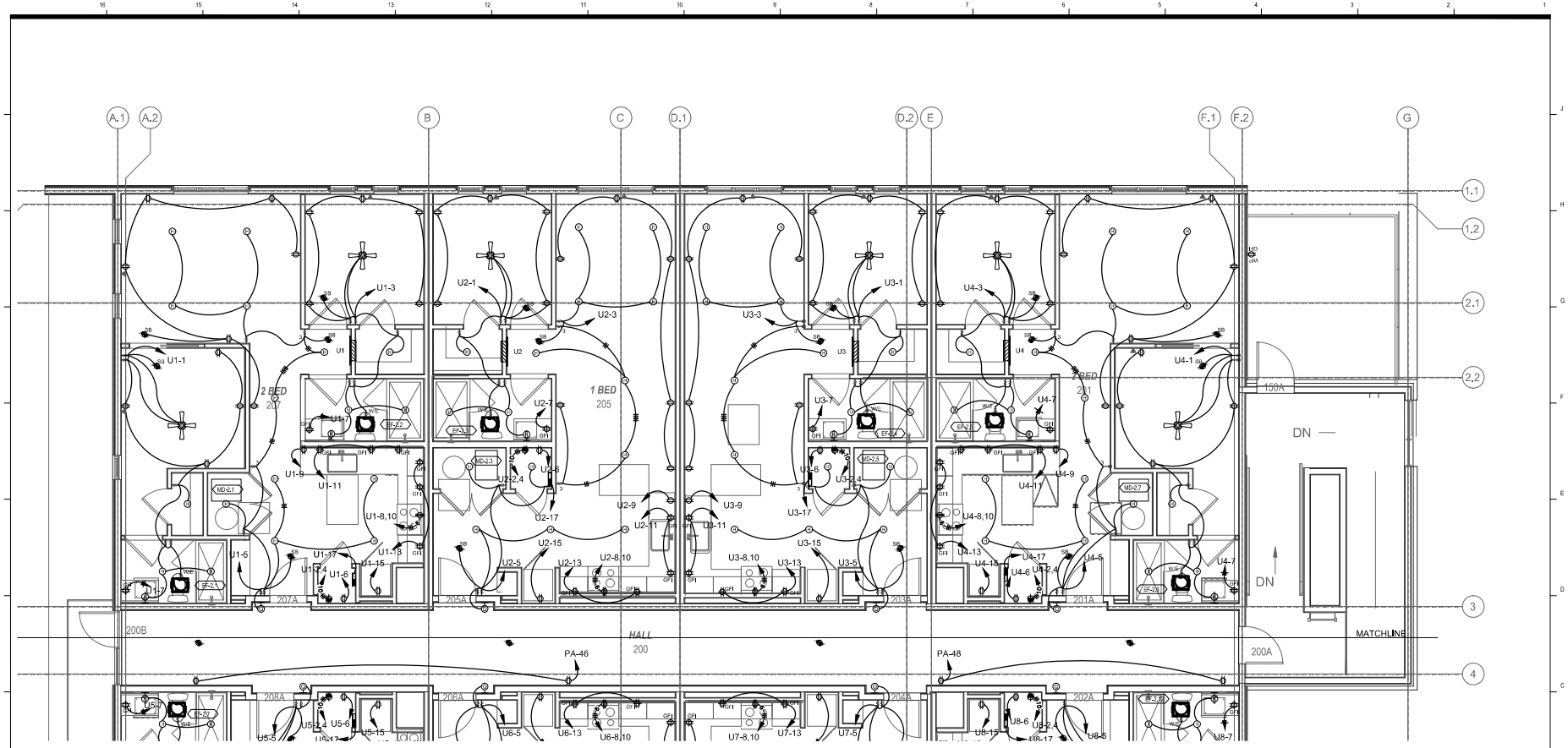
ELECTRICAL
POWER PLAN

E202



1 / E203 PARTIAL POWER PLAN - SECOND FLOOR

Scale: 1/4" = 1'- 0"

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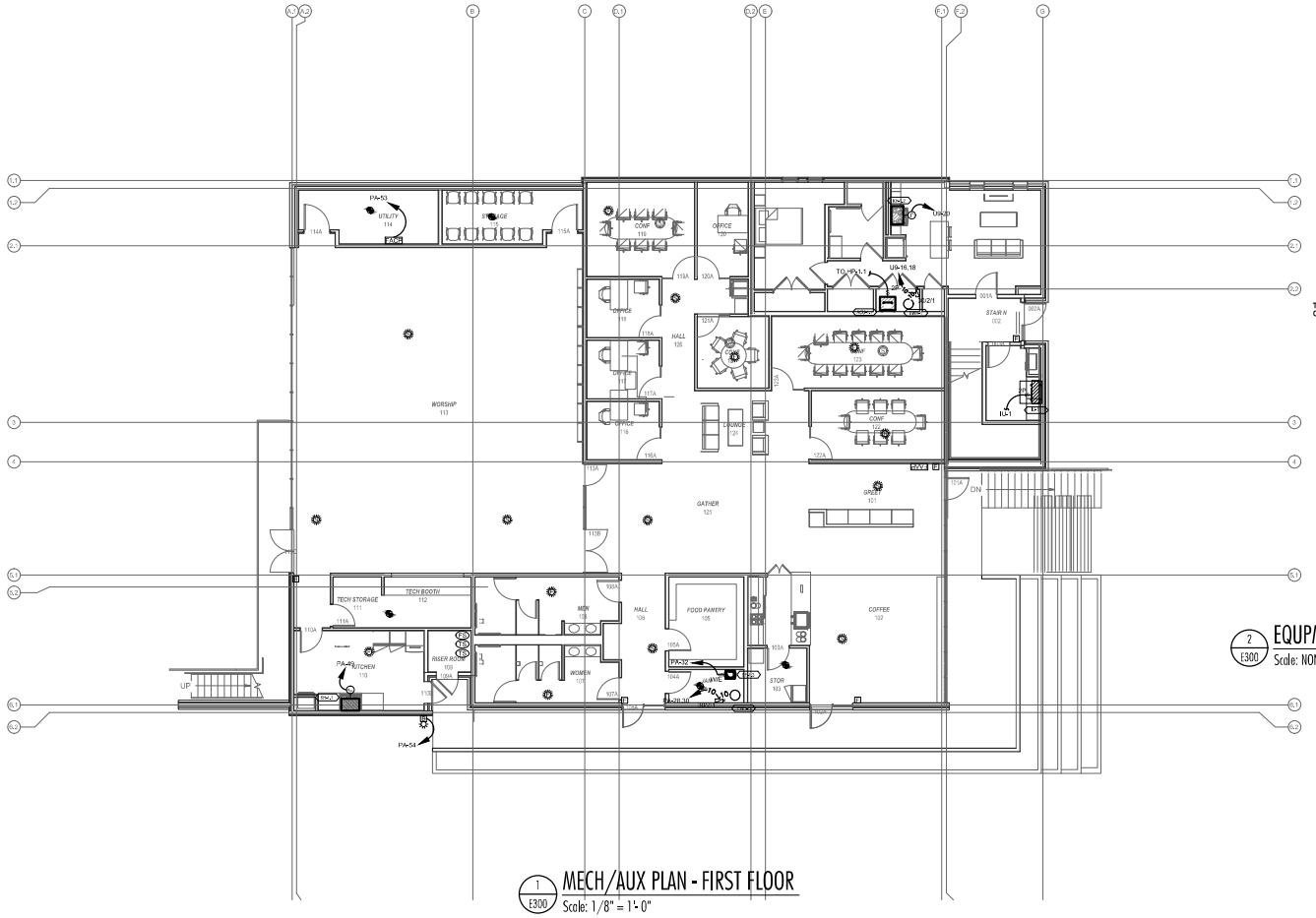
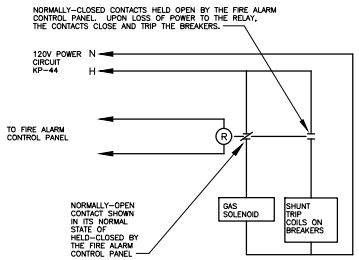
ELECTRICAL
POWER PLAN

E203



1 E300 MECH/AUX PLAN - FIRST FLOOR
Scale: 1/8" = 1'-0"



NOTE:

PROVIDE A SUPERVISED CIRCUIT FROM THE FIRE ALARM PANEL TO MONITOR THE VENT HOOD FIRE SUPPRESSION SYSTEM. UPON AN ALARM CONDITION OF THE FIRE ALARM SYSTEM, THE FIRE ALARM SYSTEM SHALL CAUSE THE SHUNT TRIP BREAKERS TO TRIP ALL ELECTRICAL APPLIANCES UNDER THE HOOD, AND ON THE SUPPLY AND EXHAUST FANS IN THE HOOD. SOME HOODS ARE UL LISTED TO OPERATE WITH THE EXHAUST FAN RUNNING IN THE ALARM CONDITION. VERIFY THAT THIS IS NOT THE CASE BEFORE CIRCUITING THIS UNIT TO SHUNT TRIP THE EXHAUST FAN BREAKER. THE FIRE ALARM PANEL SHALL ALSO PROVIDE POWER TO A RELAY THAT IN TURN HOLDS THE GAS SOLENOID VALVE, FURNISHED BY THE MECHANICAL CONTRACTOR, OPEN UNDER NORMAL CONDITIONS. AN ALARM CONDITION OF THE FIRE ALARM SYSTEM SHALL RELEASE THE POWER TO THIS SOLENOID CAUSING THE GAS TO THE EQUIPMENT UNDER THE VENT HOOD TO SHUT OFF. SEE DETAIL ON THIS SHEET.

2 E300 EQUPMENT SHUTDOWN DETAIL FOR FIRE SUPPRESION SYSTEM
Scale: NONE

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100% CONSTRUCTION DOCUMENTS

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PROJ. A_2406

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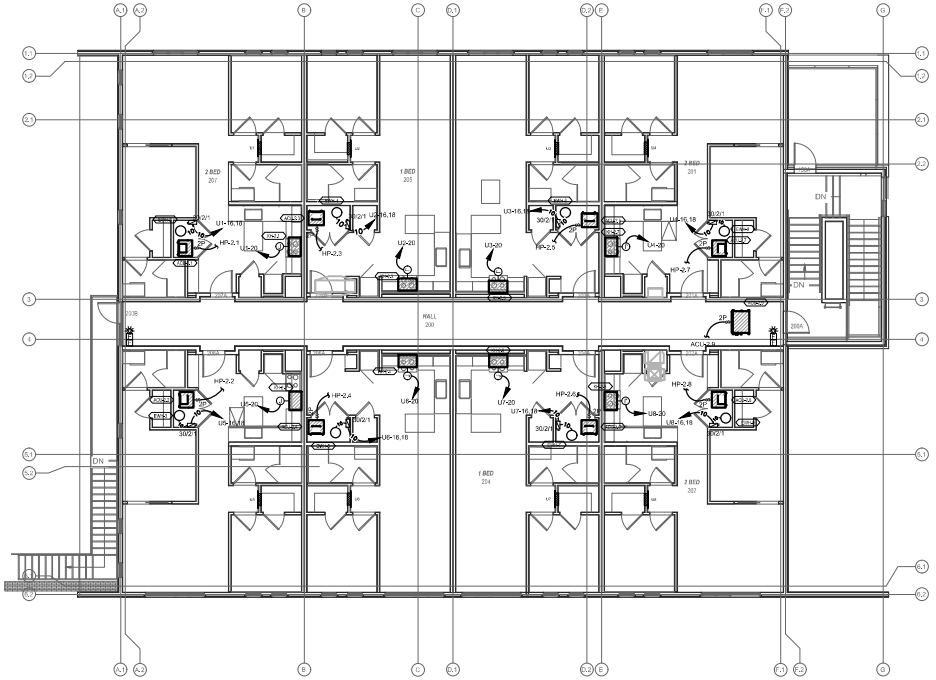
ELECTRICAL
MECHANICAL PLAN

E300



1 / E301 MECH/AUX PLAN - SECOND FLOOR
Scale: 1/8" = 1'- 0"

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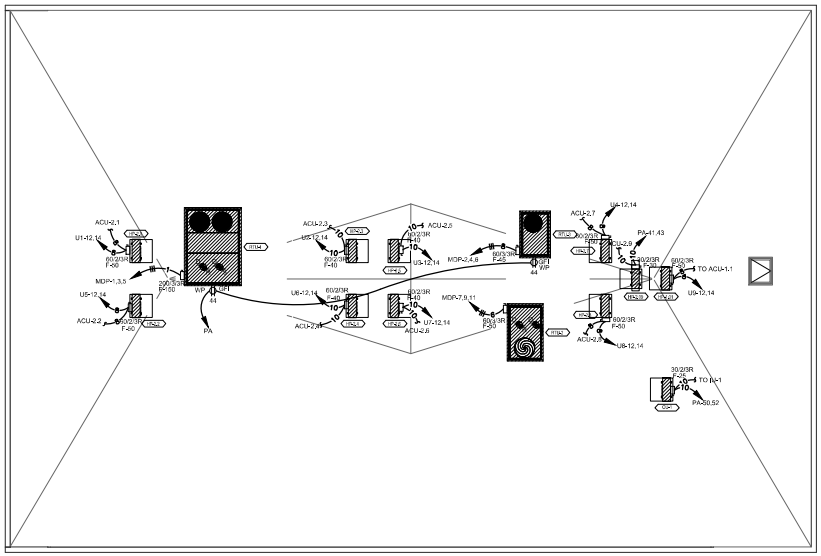
ELECTRICAL
MECHANICAL PLAN

E301



1 / E302 MECH/AUX PLAN - ROOF PLAN

Scale: 1/8" = 1'- 0"

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ELECTRICAL
MECHANICAL PLAN

E302

PLUMBING SHEET INDEX

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CODE REVIEW

APPLICABLE OR LOCAL ADOPTED CODES (BASIS OF DESIGN)

CODES REQUIREMENTS INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

2018 INTERNATIONAL BUILDING CODE

2018 INTERNATIONAL PLUMBING CODE

PLUMBING LEGEND

PIPING

	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
F	FIRE PROTECTION PIPING
G	GAS PIPING
	SANITARY WASTE PIPING
GW	GREASE WASTE PIPING
	PLUMBING VENT PIPING
D	DRAIN PIPING
CD	GRAVITY CONDENSATE DRAIN PIPING
SD	STORM DRAIN PIPING
2SD	SECONDARY STORM DRAIN PIPING

PIPING / ACCESSORIES

	BELOW GRADE SHUT-OFF VALVE
	UNION
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	BALL VALVE
	CHECK VALVE
	THERMOMETER
	RELIEF VALVE
	PRESSURE REDUCING VALVE (PRV)
"A"	MECHANICAL SHOCK ARRESTOR; LETTER INDICATES PDI SIZE
	FIRESTOPPING
	PIPE SLEEVE
	PIPE CAP
	PIPE BLIND FLANGE
	BALL VALVE WITH HOSE THREAD CONNECTION
	GAS BALL SHUT-OFF VALVE
	EMERGENCY GAS SOLENOID VALVE

MISCELLANEOUS

	FLOOR DRAIN
	FREEZE PROOF / RESISTANT HOSE BIBB
WCO	WALL CLEANOUT
CO	CLEANOUT
FFCO	IN-LINE FLUSH FLOOR CLEANOUT
FFCO	FINISH FLOOR CLEANOUT
	2 WAY FLUSH GRADE CLEANOUT
	ROOF DRAIN
	ICE MAKER BOX
	WASHING MACHINE BOX
	NEW CONNECTION TO EXISTING PIPING, DUCTWORK AND/OR EQUIPMENT

PLUMBING ABBREVIATIONS

AFF	ABOVE FINISH FLOOR
ASME	AMERICAN SOCIETY OF MECH ENGINEERS
BTU	BRITISH THERMAL UNIT
CO	CLEAN OUT
COND.	CONDENSATE
CW	DOMESTIC COLD WATER
DIA	DIAMETER
DN	DOWN
ELECT	ELECTRICAL
ET	EXPANSION TANK
EWH	ELECTRIC WATER HEATER
FD	FLOOR DRAIN
FFCO	FINISH FLOOR CLEANOUT
FFE	FINISH FLOOR ELEVATION
FGCO	FLUSH GRADE CLEANOUT
FHB	FREEZE PROOF / RESISTANT HOSE BIBB
FLR	FLOOR
FT	FEET
GPM	GALLONS PER MINUTE
HP	HORSE POWER
HR	HOUR
HW	HOT WATER
ID	INSIDE DIMENSION
IMB	ICE MAKER BOX
KW	KILOWATT
L	LAVATORY
LBS	POUNDS
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
MECH	MECHANICAL
MFG	MANUFACTURER
MIN	MINIMUM
MV	MIXING VALVE
NC	NORMALLY CLOSED
NIC	NOT IN THIS CONTRACT
NO	NORMALLY OPEN
NO.	NUMBER
NTS	NOT TO SCALE
OD	OUTSIDE DIMENSION
OD	OVERFLOW DRAIN
P	PUMP
PLBG	PLUMBING
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH (GAUGE)
RPM	REVOLUTIONS PER MINUTE
RD	ROOF DRAIN
RP	RECIRC PUMP
S	SINK
SS	SANITARY SINK (MOP SINK)
SAN	SANITARY
SP	STATIC PRESSURE
SF	SQUARE FEET
TP	TRAP PRIMER
TYP	TYPICAL
V	VENT
VTR	VENT THRU ROOF
W	SANITARY WASTE
W/	WITH
WC	WATER CLOSET
WCVB	WATER CLOSET VALVE BOX
WCO	WALL CLEANOUT

PLUMBING GENERAL NOTES

1. EACH CONTRACTOR, SUPPLIER AND/OR MANUFACTURER SHALL REFER TO ALL DOCUMENTS PERTAINING TO THIS PROJECT AND COORDINATE ACCORDINGLY SO AS TO ENSURE ADEQUACY OF FIT, COMPLIANCE WITH SPECIFICATIONS, PROPER ELECTRICAL SERVICE, AND AVOID CONFLICT WITH ANY OTHER BUILDING SYSTEMS. VERIFY SAME WITH SHOP DRAWINGS.
2. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL PLUMBING PIPING, FIXTURES, TRIM, AND ACCESSORIES AS REQUIRED FOR A COMPLETE AND FUNCTIONAL PLUMBING SYSTEM. CONTRACTOR SHALL VERIFY WITH ARCHITECT AND DRAWINGS, WHICH PLUMBING INSTALLATIONS ARE DESIGNATED FOR ADA ACCESSIBILITY. ALL SUCH FIXTURE INSTALLATIONS SHALL INCLUDE ALL INSTALLATION ACCESSORIES, MOUNTING HEIGHT, CONTROL OFFSET, SIZE AND ACCESSIBILITY AS REQUIRED BY LATEST EDITION OF AMERICANS WITH DISABILITIES ACT (ADA) AND LOCAL GOVERNING AUTHORITIES.
3. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND ELEVATIONS OF ALL PLUMBING FIXTURES.
4. ALL PLUMBING VENTS, WHERE NOTED VENT UP (VTR), SHALL BE COMBINED WITHIN WALL OR ABOVE CEILING CONCEALED AREAS, WHERE FEASIBLE, SO AS TO MINIMIZE ROOF PENETRATIONS. CONTRACTOR SHALL COORDINATE LOCATION OF ROOF PLUMBING AND FLUE VENTS SUCH THAT ALL VENTS ARE MINIMUM 15 FEET FROM ANY OUTDOOR AIR INTAKE LOCATIONS. ALL ROOF PENETRATIONS, VENTS, FLUES, ETC., SHALL BE MADE ON BACK SIDE OF ROOF AS CAN BE COORDINATED WITH ARCHITECT. ALL FLUES AND VENTS EXPOSED ABOVE ROOF SHALL BE FIELD PAINTED COLOR BY ARCHITECT.
5. ALL DRAINAGE, VENT AND WATER PIPING SHALL BE CONCEALED INSIDE WALLS AND PIPE CHASES OR ABOVE CEILINGS, EXCEPT AS OTHERWISE NOTED AND AT APPROPRIATE EQUIPMENT FINAL CONNECTIONS. HOLD ALL PIPING ABOVE CEILINGS AS HIGH AS POSSIBLE AND COORDINATE WITH OTHER TRADES.
6. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, ETC., TO AVOID INTERFERENCES WITH STRUCTURAL MEMBERS, EQUIPMENT, PIPING, DUCTWORK, LIGHTS, CONDUIT, ETC.
7. SLOPES AND INVERT ELEVATIONS SHALL BE ESTABLISHED BEFORE ANY PIPE IS INSTALLED IN ORDER TO MAINTAIN PROPER SLOPES. ANY DISCREPANCIES SHALL BE REPORTED TO THE ARCHITECT, ALL PIPING SHALL BE LOCATED & DETERMINED WHEN TO BE INSTALLED TO AVOID CONFLICT WITH OTHER TRADES.
8. WATER PIPING ROUTED ABOVE CEILINGS AND IN EXTERIOR WALLS SHALL BE ROUTED ON HEATED SIDE (UNDERSIDE) OF CEILING INSULATION AND HEATED SIDE (INSIDE) OF WALL INSULATION.
9. CONTRACTOR SHALL VERIFY/COORDINATE PIPE SIZES AND CONNECTIONS WITH SUBMITTED AND APPROVED KITCHEN EQUIPMENT AND/OR PLUMBING FIXTURE ROUGH-IN SCHEDULE FOR WASTE, VENT AND WATER PIPING ROUGH-IN SIZES. CONTACT ARCHITECT SHOULD QUESTIONS OR CONFLICTS ARISE. PLUMBING CONTRACTOR SHALL PROVIDE AND INSTALL ROUGH-IN, FINAL CONNECTIONS AND INSTALLATION APPURTENANCES AS RECOMMENDED BY APPLIANCE AND/OR EQUIPMENT MANUFACTURER FOR DISHWASHERS, ICE MAKERS, AND MACHINES, WASHERS, DRYERS, ETC. VERIFY LOCATION ON ARCHITECTURAL DRAWINGS AND CONNECTION REQUIREMENTS FROM APPROVED BROCHURES OF THE EQUIPMENT AND/OR APPLIANCES MANUFACTURER.
10. KEEP ALL BURIED PIPING CLEAR OF FOOTINGS AND GRADE BEAMS. COORDINATE WITH STRUCTURAL.
11. ALL VERTICAL RISERS TO FLOOR DRAINS AND FLOOR MOUNTED SINKS SHALL BE MAXIMUM 18" LONG.
12. ALL ABOVE GRADE HORIZONTAL DRAINAGE AND VENT PIPING ROUTING SHALL BE COORDINATED WITH OTHER TRADES AND STRUCTURAL/ARCHITECTURAL DRAWINGS. CONSISTENTLY SLOPE ALL PIPING, NOT INDICATED OTHERWISE, AT MINIMUM AS REQUIRED BY PLUMBING CODE APPLICABLE TO THIS PROJECT BUT IN NO CASE LESS THAN 1%.
13. WHEN SLEEVES, PIPES, CONDUITS, ETC. PENETRATE GRADE BEAMS OR TIE BEAMS THE CONTRACTOR SHALL INCREASE THE DEPTH OF THE PENETRATED BEAM BY NO LESS THAN TWICE THE DIAMETER OF THE PENETRATION FOR A DISTANCE OF 4'-0" CENTERED ON THE PENETRATION, WHERE THE PENETRATION INTERRUPTS REINFORCING STEEL, AN EQUAL NUMBER OF LIKE SIZE REINFORCING BARS SHALL BE BENT UNDER THE PENETRATION AND LAP SPLICED 30 BAR DIAMETERS ON EACH SIDE. CONCRETE COVER REQUIREMENTS ON ALL SIDES SHALL BE THE SAME AS SHOWN FOR THE UNMODIFIED GRADE BEAM OR TIE BEAM. SEE STRUCTURAL DRAWINGS FOR FURTHER SPECIFICS. ETC. PROVIDE NEW SCHEDULE 40 PVC PIPE SLEEVE A MIN. TWO SIZES LARGER THAN CARRIER PIPE AT ALL SUCH CROSSINGS. TO EXTEND MIN. 6" PAST FOUNDATION ON BOTH ENDS. PROVIDE CAKUM AND SEALANT IN ANNULAR SPACE OF SLEEVES AND WATER PROOF ON ALL BUILDING PERIMETER AND INTERIOR FOOTING AND GRADE BEAM APPLICATIONS.
14. ALL CLEANOUTS IN SANITARY, STORM AND CONDENSATE DRAIN PIPING SHALL BE FULL PIPE SIZE UP TO 4" AND SHALL BE 4" SIZE ON 6" AND LARGER PIPING. ALL WALL CLEANOUTS SHALL BE PROVIDED WITH WALL COVERS, MOUNT IN UNOBTRUSIVE LOCATION WHILE MAINTAINING ACCESSIBILITY. ALL FLOOR CLEANOUTS SHOWN SHALL BE SET FLUSH WITH FLOOR AREAS OR FINISHED GRADE.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR THEIR WORK. ALL CUTTING AND PATCHING SHALL MATCH ADJACENT SURFACES.
16. WHERE POSSIBLE, INSTALL SHUT-OFF VALVES, SHOCK ABSORBERS, EQUIPMENT, ETC. REQUIRING MAINTENANCE, CLEANING, & ADJUSTING ABOVE ACCESSIBLE CEILINGS OR IN SERVICE AREAS. IN OTHER LOCATIONS, PROVIDE ACCESS PANELS ADJACENT TO THE ACCESS AREA. FINISH TO MATCH ARCHITECTURAL. LOCATE ALL VALVES AND SHOCK ABSORBERS WITHIN 1'-0" FROM ACCESS PANELS, CEILING TILES, OR OTHER POINT OF ACCESS.
17. WHERE CONNECTING TO A UTILITY OR SERVICE, VERIFY LOCATION, SIZES, MATERIALS, FLUID BEING HANDLED, & INVERTS OF EXISTING UTILITY & CONFIRM THAT NEW PIPES ROUTED TO EXISTING UTILITIES CAN BE INSTALLED CONFORMING TO APPLICABLE CODES AS INDICATED. NOTIFY ARCHITECT OF ANY CONFLICTS OR DISCREPANCIES PRIOR TO PURCHASING MATERIALS OR PERFORMING WORK OR EXTENSION OF CONNECTION, WITH THE EXCEPTION OF EXCAVATION OR OTHER WORK TO PROVIDE ACCESS TO THE CONCEALED UTILITY.
18. WATER CLOSET FLUSH VALVE LEAVERS SHALL BE LOCATED ON THE APPROACH SIDE OF THE WATER CLOSET.
19. GAS REGULATORS REQUIRING VENTS SHALL BE VENTED TO THE BUILDING EXTERIOR. TERMINATE VENTS A MINIMUM OF 15'-0" FROM ANY AIR INTAKE OR SOURCE OF IGNITION.
20. DURING FINAL OBSERVATION WALK-THRU, CLEANOUT COVERS AND AND ACCESS PANELS SHALL BE OPENED AND ITEMS EXPOSED FOR VERIFICATION OF INSTALLATION AND POSITION.
21. DOMESTIC WATER, GAS, SANITARY SEWER, AND STORM SEWER TO REMAIN IN OPERATION IN EXISTING BUILDING DURING DEMOTION AND CONSTRUCTION OF NEW WORK. CONTRACTOR TO DETERMINE TEMPORARY SERVICES IF NEEDED AND ARRANGE OUTAGES OF SERVICES WITH OWNER AND ARCHITECT.
22. INSTALL CONDENSATE DRAINS FROM ALL A/C EQUIPMENT. PROVIDE TRAPPED DRAINAGE PIPING WITH VENT RISERS 6" HIGH NEAR EQUIPMENT CONNECTIONS. PROVIDE NEW INSULATED CONDENSATE DRAINS FOR ALL HVAC COOLING COILS AND OVERFLOW PANS AND ROUTE ON SLOPE TO CONNECTION WITH NEARBY PLUMBING VENT STACK OR FLOOR DRAIN. PROVIDE CLEANOUTS ON DRAINS, 1" OR LARGER, EVERY 20' O.C., AND AT ENDS AND OFFSETS OF RUNS.
23. COORDINATE UNDERGROUND PIPING WITH GRADE BEAMS AND WALL FOOTINGS. SLEEVE ALL GRADE BEAMS UTILIZING SLEEVES A MINIMUM 2 SIZES LARGER THAN DRAINAGE PIPING SIZE. SOME SLEEVES MAY NOT BE SHOWN, BUT SLEEVES AT ALL GRADE BEAM HORIZONTAL AND VERTICAL PIPING PENETRATIONS ARE REQUIRED.
24. PROVIDE NEAT PIPE SLEEVES AT ALL GAS, WATER, STORM, SANITARY, AND REFRIGERANT PIPING EXTERIOR WALL PENETRATIONS. FILL VOID IN ANNULAR SPACE WITH HEAT ELASTOMERIC SEALANT, BELOW GRADE SLEEVES INTO HABITABLE SPACES SHALL INCLUDE WATER-TIGHT SLEEVES AS "LINK SEAL".
25. FIRESTOP ALL PIPING AND CONDUIT PENETRATIONS OF FLOORS AND FIRE, SMOKE, OR COMBINATION WALLS/PARTITIONS TO MEET THE LATEST INTERNATIONAL BUILDING CODE REQUIREMENTS. CONTRACTOR SHALL PROVIDE APPROVED SOUND ABSORBENT SEALANT AT ALL SIMILAR PENETRATIONS AT 'SOUND' AND FULL HEIGHT WALLS (SEALED TO UNDERSIDE OF ROOF DECK) INDICATED ON ARCHITECTURAL AND/OR MECHANICAL DRAWINGS.
26. PROVIDE AND INSTALL DIELECTRIC BUSHINGS IN ALL PIPE SYSTEMS WHERE UNLIKE METALS ARE CONNECTED, I.E., COPPER TO STEEL. PROVIDE AND INSTALL STEEL SLEEVES IN ALL FLOORS, WALLS, ROOF DECK, ETC., FOR PIPE PENETRATIONS. SLEEVES SHALL BE OF SUFFICIENT DIAMETER TO ACCOMMODATE PIPE AND INSULATION, WHERE APPROPRIATE. COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN FLOORS AND WALL AND ATTACHMENTS FOR HANGERS AS CONSTRUCTION PROGRESSES. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO WALLS AS POSSIBLE.
27. PROVIDE 12" X 12" LOCKING PIANO HINGED ACCESS PANELS FOR SHOCK ABSORBERS, TRAP PRIMERS, AND ALL VALVES LOCATED ABOVE NON-ACCESSIBLE CEILINGS AND INSIDE PIPE CHASES. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
28. PIPE ALL DRIPS, DRAINS, RELIEFS, ETC, TO THE NEAREST FLOOR DRAIN UNLESS OTHERWISE INDICATED.
29. NEATLY INSULATE ALL WATER AND DRAIN PIPING UNDER LAVATORIES AND SINKS ON HANDICAPPED FIXTURES PER SPECIFICATIONS.
30. DO NOT RUN PLUMBING PIPING THROUGH OR OVER ELECTRICAL CLOSETS OR WITHIN 3'-0" OF ELECTRICAL PANEL FRONTS.

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CHRISTOPHER GROSS — LICENSED PROFESSIONAL ENGINEER — 01/16/26 — 17087 — STATE OF MISSISSIPPI

PLUMBING LEGEND, ABBREVIATIONS & NOTES

P001

GENERAL

SUMMARY

A. WORK INCLUDED IN SECTION 220000 PLUMBING: PROVIDE ALL MATERIALS, EQUIPMENT, FABRICATION, INSTALLATION AND TESTS AS NOTED IN CONTRACT DOCUMENTS IN CONFORMITY WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
B. MATERIALS COMPOSITION SHALL CONFORM TO THE INTERNATIONAL PLUMBING CODE.
C. RELATED SECTIONS:
   1. CONSULT ALL OTHER SECTIONS, DETERMINE THE EXTENT AND CHARACTER OF RELATED WORK AND PROPERLY COORDINATE WORK SPECIFIED HEREIN WITH THAT SPECIFIED ELSEWHERE TO PRODUCE A COMPLETE AND OPERABLE INSTALLATION.

COORDINATION

A. PLUMBING CONTRACTOR SHALL REVIEW THE DOCUMENTS OF OTHER TRADES, IN PARTICULAR MECHANICAL DRAWINGS. PRIOR TO BID AND INCLUDE IN BID ALL OFFSETS AND OTHER REROUTING OF PIPING AND DEVICES TO AVOID CONFLICTS. WHERE DUCTS AND MECHANICAL PIPING CONFLICT WITH 220000 PIPING, 220000 PIPING SHALL BE REROUTED AS REQUIRED TO RESOLVE THE CONFLICT. IN NO CASE SHALL PIPING PENETRATE DUCTWORK.
B. ROUTING OF PIPE SHALL BE IN A NEAT MANNER TO WORK WITH THE ARCHITECTURAL AND STRUCTURAL ELEMENTS OF THE BUILDING AND THE REQUIREMENTS OF THE ARCHITECT. ANY PIPE ROUTES AT EXPOSED CEILING AREAS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT. SUBMIT THESE PIPE ROUTES IN ADVANCE TO THE ARCHITECT PRIOR TO THE SHOP DRAWING SUBMITTAL.

SUBMITTALS

A. SCHEDULE.
   1. ALLOW 10 WORKING DAYS FOR APPROVAL UNLESS ENGINEER AGREES TO ACCELERATED SCHEDULE.
B. FIXTURE, EQUIPMENT, AND MATERIAL DATA SHALL BE SUBMITTED ELECTRONICALLY ALL AT ONE TIME.
C. SUBMISSION PROCEDURE.
   1. INITIAL SUBMITTAL:
      a. EACH SUBMITTAL SHALL HAVE A UNIQUE SERIAL NUMBER SUCH AS "SUBMITTAL 220000-01".
      b. SUBMITTAL 6 MAY BE SUBMITTED NONCONCURRENTLY IF REQUIRED BY THE SCHEDULE.
      c. SUBMIT ONE ELECTRONIC COPY OF PRODUCT DATA IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF. PROVIDE SEPARATE FILES FOR EACH EQUIPMENT TYPE. PAPER COPIES OR SCANS OF PAPER COPIES WILL NOT BE ACCEPTED.
      d. SUBMITTAL WILL BE REVIEWED, AND COMMENTS RETURNED TO CONTRACTOR.
   2. RESUBMISSION.
      a. EACH RESUBMITTAL SHALL HAVE THE ORIGINAL UNIQUE SERIAL NUMBER PLUS UNIQUE REVISION NUMBER SUCH AS "SUBMITTAL 220000-01 REVISION 1".
      b. MAKE ANY CORRECTIONS OR CHANGE IN SUBMITTALS AS REQUIRED.
      c. RESUBMIT FOR REVIEW IN ELECTRONIC FORMAT DESCRIBED ABOVE UNTIL NO EXCEPTIONS ARE TAKEN OR, UNLESS CONTRACTOR AGREES WITH "FURNISH AS CORRECTED" REMARKS.
   3. FINAL APPROVAL: ONCE SUBMISSION IS ACCEPTED, CONTRACTOR SHALL PRINT TWO BOUND SETS OF SUBMITTALS FOR OWNER. ENGINEERING RESOURCE GROUP DOES NOT REQUIRE OR DESIRE PAPER COPIES.
D. CONTENTS OF SUBMITTALS.
   1. PLUMBING MATERIAL SUBMITTALS
      a. PIPING, FITTINGS, JOINING METHOD, INSULATION, IDENTIFICATION, VALVES.
   2. PLUMBING EQUIPMENT SUBMITTALS
      a. MANUFACTURER'S NAME AND MODEL NUMBER.
      b. ALL INFORMATION REQUIRED TO COMPLETELY DESCRIBE MATERIALS AND EQUIPMENT AND TO INDICATE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO:
         1) A SCHEDULE, FOR ALL ITEMS OF THE SAME TYPE SHALL BE SUPPLIED. THE SCHEDULE SHALL INCLUDE THE MANUFACTURER, THE MODEL, SIZE, SPECIFIC INFORMATION THAT MAKES THAT ITEM UNIQUE, THE SERVICE OF THE ITEM, THE SYSTEM SERVED BY THE ITEM.
         2) PHYSICAL DATA, PERFORMANCE DATA, ELECTRICAL AND PLUMBING REQUIREMENTS.
E. OPERATING INSTRUCTIONS & MAINTENANCE MANUALS.
   1. BEFORE REQUESTING ACCEPTANCE OF WORK, SUBMIT IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF VIA EMAIL FOR REVIEW BY ENGINEER. FILE SHALL INCLUDE BOOKMARKS FOR EACH PIECE OF EQUIPMENT. PAPER COPIES WILL NOT BE ACCEPTED.
   2. AFTER REVIEW AND MAKING CORRECTIONS NOTED, FURNISH THREE PRINTED AND BOUND SETS FOR THE OWNER. ASSEMBLE IN WITH SEPARATE TABS FOR EACH PIECE OF EQUIPMENT IN HEAVY THREE-RING BINDER.
   3. O&M MANUAL SHALL INCLUDE ALL SUBMITTAL DATA SUBMITTED HEREIN ABOVE. AS INSTALLED. THE INTENT OF THIS SECTION IS THAT A SINGLE DOCUMENT CONTAINS ALL RELEVANT INFORMATION ABOUT EACH PIECE OF EQUIPMENT.
   4. IN ADDITION TO THE SUBMITTAL DATA, THE O&M MANUAL SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR ALL NEW EQUIPMENT:
      a. MANUFACTURER'S NAME, MODEL NUMBER, SERVICE MANUAL, SPARE-PARTS LIST, AND DESCRIPTIVE LITERATURE FOR ALL COMPONENTS.
      b. INSTALLATION INSTRUCTIONS.
      c. MAINTENANCE INSTRUCTIONS.
      d. WIRING DIAGRAMS.
      e. NAME, ADDRESS AND PHONE NUMBER OF CONTRACTORS EQUIPMENT SUPPLIERS AND SERVICE AGENCIES.
      f. GUARANTEE PERIOD, INCLUDING START AND END PERIOD.
F. RECORD DRAWINGS.
   1. UPDATE DESIGN/SHOP DRAWINGS TO "AS- BUILT" CONDITIONS.
      a. FULLY INCORPORATE ALL REVISIONS MADE BY ALL CRAFTS IN COURSE OF WORK.
      b. INCLUDE ALL FIELD CHANGES. ADJUSTMENTS, VARIANCES, SUBSTITUTIONS, AND DELETIONS, INCLUDING ALL CHANGE ORDERS.
      c. EXACT LOCATION, TYPE, AND FUNCTION OF CONCEALED VALVES, PIPING. AIR VENTS AND PIPING DRAINS. EXACT SIZE. ELEVATIONS. AND HORIZONTAL LOCATION OF PIPING
   2. SUBMIT IN ELECTRONIC FORMAT PER SUBMITTALS ABOVE FOR APPROVAL.
   3. ONCE APPROVED,
      a. PROVIDE ONE SET OF ADOBE PDF FILES OF EACH DRAWING ON PORTABLE MEDIA (E.G., USB FLASH DRIVE).
      b. PROVIDE ONE FULL SIZE SET OF DRAWINGS ON BOND PAPER.
      c. PROVIDE PDF SET LOADED ONTO 1 FLASH DRIVE.

PRODUCTS

MANUFACTURERS

A. NAMED MANUFACTURER MODEL NUMBERS USED AS EXAMPLE OF ITEM AND ESTABLISH MINIMUM LEVEL OF QUALITY AND MINIMUM STANDARD OPTIONS. EQUIVALENT MODELS ARE ACCEPTABLE.
   1. VITREOUS CHINA FIXTURES: SLOAN, AMERICAN STANDARD, TOTO, ZURN, KOHLER.
   2. STAINLESS STEEL SINKS: AMERICAN STANDARD, JUST, ELKAY, KOHLER.
   3. SINK AND LAVATORY TRIM: ZURN, KOHLER, DELTA.
   4. MOP BASINS: STERN-WILLIAMS, FIAT PRODUCTS. FLORESTONE.
   5. SHOWERS: ZURN, LAWLER, LEONARD.
   6. ELECTRIC DRINKING FOUNTAINS: ELKAY, HAWS, HALSEY TAYLOR.
   7. FIXTURE CARRIERS: WADE, ZURN, J.R. SMITH.
   8. DRAINS AND CLEANOUTS: WADE. ZURN.
   9. WATER HAMMER ARRESTORS (SHOCK ABSORBERS): WADE, MIFAB.
   10. THERMOSTATIC MIXING VALVES: LAWLER, LEONARD VALVE COMPANY, POWERS SIMMONS.
   11. VALVES: APOLLO, NIBCO, WATTS.
   12. BALANCING VALVES: BELL & GOSSETT, NIBCO, WATTS, ARMSTRONG

PRODUCTS (CONTINUED)

PLUMBING FIXTURES - GENERAL

A. ALL FIXTURES, FAUCETS, STOPS, AND TRIM ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND OWNER.
B. VITREOUS CHINA FIXTURES SHALL BE TWICE FIRED WHITE VITREOUS CHINA.
C. ALL PLUMBING FIXTURES SHALL BE CERTIFIED BY AND COMPLY WITH THE EPA WATER CONSERVATION REGULATIONS.
D. PROVIDE FIXTURES AND TRIM COMPLETE FOR PROPER INSTALLATION AS DESCRIBED IN THE MANUFACTURER'S CATALOG WITH THE MODIFICATIONS AS SHOWN ON PLUMBING FIXTURE SCHEDULE IN THE PLANS OR SPECIFICATIONS.
E. ALL FIXTURES FOR HANDICAPPED PERSONAL SHALL BE MOUNTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), HANDICAPPED REGULATIONS.
F. SEAL UP JOINTS BETWEEN FIXTURES AND WALL OR FLOOR WITH WHITE MASTIC. MASTIC COLOR SHALL BE AS APPROVED BY THE ARCHITECT.
G. PROVIDE QUARTER-TURN WATER SUPPLY STOPS AT EACH NEW AND RELOCATED FIXTURE.
H. PROVIDE TUBING, TAILPIECES, SUPPLIES, TRAPS, PIPE FLANGES, AND WASTES TO WALL OF NOT LESS THAN #17-GAUGE POLISHED CHROMIUM-PLATED BRASS, UNLESS NOTED OTHERWISE. SUPPLIES AND TRAPS SHALL BE CENTERED, PLUMB, AND PERPENDICULAR TO WALL FOR LAVATORIES AND SINKS.
I. INSTALL ESCUTCHEONS AT PIPING WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED, FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. HEAVY-DUTY TYPE ESCUTCHEONS, WITH SETSCREWS SHALL BE UTILIZED IN EXPOSED APPLICATIONS UNDER WALL MOUNTED LAVATORIES AND SINKS AND ON EXPOSED PIPING APPLICATIONS ON TANK TYPE WATER CLOSET STOPS AND ON EXPOSED PIPING TO FLUSH VALVES, ETC. LIGHT DUTY SLIP-JOIN TYPE MAY BE UTILIZED IN CONCEALED INSTALLATIONS WITHIN CABINETS. USE DEEP-PATTERN ESCUTCHEONS IF REQUIRED TO CONCEAL PROTRUDING FITTINGS.
J. PROVIDE AND INSTALL BRAIDED STAINLESS STEEL FLEXIBLE SUPPLIES FOR ALL WATER PIPING FROM SHUT-OFF VALVE, TO APPLICABLE FIXTURES. END CONNECTIONS AND LENGTH TO MATCH EACH APPLICATION. PROVIDE FOR ALL TANK TYPE WATER CLOSETS, LAVATORIES, SINKS, EDF'S, WATER HEATERS, ICE MAKERS, WASHERS, ETC. PROVIDE NEAT INSULATION PACKAGE, AS TRUEBO, ON ADA SINKS AND LAVATORIES WATER AND WASTE PIPING EXPOSED APPLICATIONS.
K. PROVIDE AND INSTALL NEW FLOOR MOUNTED, CONCEALED IN WALL, CARRIERS FOR ALL WALL MOUNTED SINKS, LAVATORIES, EDF'S, WATER CLOSETS, URINALS, ETC. WHERE SINK, LAVATORY, EDF OR URINAL CARRIERS ARE INSTALLED IN WALLS LESS THAN 4", AND WASTE ARMS CAN INTERFERE WITH AVAILABLE SPACES, USE CARRIER WITH INTEGRAL PASS THRU SLEEVE AS SMITH FIG 0710-TAB-WL, OR EQUAL.

EXECUTION

INSPECTION

A. VERIFY THAT CONDITIONS ARE SATISFACTORY FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT. NOTIFY ARCHITECT IF CONDITIONS ARE NOT SATISFACTORY AND DO NOT COMMENCE WORK UNTIL CONDITIONS HAVE BEEN CORRECTED.

INSTALLATION

A. ALL EQUIPMENT AND SYSTEM COMPONENTS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. REPAIR ALL DAMAGED FINISHES. INSTALL ALL EQUIPMENT AND SYSTEMS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. ALL EQUIPMENT MUST BE ANCHORED TO THE BUILDING. ALL HUNG EQUIPMENT SHALL INCORPORATE VIBRATION ISOLATION.

PROTECTION OF WORK DURING CONSTRUCTION

A. PROTECT FROM DAMAGE, WATER, DUST, ETC., MATERIAL, EQUIPMENT AND APPARATUS PROVIDED UNDER THIS DIVISION, BOTH IN STORAGE AND INSTALLED, UNTIL SUBSTANTIAL COMPLETION HAS BEEN FILED, PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. COVER MOTORS AND OTHER MOVING MACHINERY TO PROTECT FROM DIRT AND WATER DURING CONSTRUCTION.
B. MATERIAL, EQUIPMENT, OR APPARATUS DAMAGED BECAUSE OF IMPROPER STORAGE OR PROTECTION WILL BE REJECTED. REMOVE DAMAGED MATERIAL, EQUIPMENT OR APPARATUS FROM SITE AND PROVIDE NEW, DUPLICATE, MATERIAL, EQUIPMENT, OR APPARATUS IN REPLACEMENT OF THAT REJECTED. POROUS MATERIALS, SUCH AS PIPE INSULATION, SHALL BE PROTECTED FROM WEATHER. IF SUCH MATERIAL BECOMES WET DURING CONSTRUCTION, IT SHALL BE REMOVED AND REPLACED AT NO COST TO THE OWNER. DRYING IS NOT SUFFICIENT DUE TO POSSIBLE MICROBIAL CONTAMINATION.
C. PROTECT OTHER MISCELLANEOUS EQUIPMENT, PIPING, ETC. DURING CONSTRUCTION. WHERE INADVERTENT DAMAGE OCCURS, RESTORE TO CONDITION SIMILAR TO THAT BEFORE DAMAGE. INSPECT EACH PIECE OF PIPE, TUBING, FITTINGS, AND EQUIPMENT FOR DEFECTS AND OBSTRUCTIONS. PROMPTLY REMOVE ALL DEFECTIVE MATERIALS FROM THE SITE. INSTALL PIPES TO CLEAR ALL BEAMS AND OBSTRUCTIONS. DO NOT CUT INTO ANY STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF THE ARCHITECT.

PIPING

A. ALL GRAVITY PIPING SHALL SLOPE AT PER THE INTERNATIONAL PLUMBING CODE.
B. INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY LEAK RESISTANT PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH MINIMUM JOINTS AND COUPLINGS BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY AND MAINTENANCE/REPLACEMENT OF VALVES AND EQUIPMENT; REDUCE SIZES, WHERE INDICATED BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCURATELY AT CONNECTIONS, WITHIN 1/16-INCH MISALIGNMENT TOLERANCE.
C. WHEREVER POSSIBLE, PIPING SHALL BE RUN IN BEAM BAYS BEFORE OFFSETTING TO BELOW A BEAM. VERIFY ALL INVERT ELEVATIONS AND PITCHED LINES BEFORE STARTING WORK; COORDINATE ALL PIPE RUNS BELOW SLAB AT FLOOR WITH THE GENERAL CONTRACTOR. VERTICAL PIPE PENETRATIONS OF THE STRUCTURAL FOUNDATION ARE NOT PERMITTED. PIPING SHALL BE OFFSET HORIZONTALLY BELOW TOP OF SLAB AND ABOVE TOP OF FOUNDATION. PIPING SHALL BE WRAPPED WITH ½" LAYER OF INSULATION. REFER TO STRUCTURAL DRAWINGS FOR DETAILS IN REGARDS TO LOCATIONS OF SLEEVES THROUGH GRADE BEAMS.

EXECUTION (CONTINUED)

VALVES

A. FOR VALVES IN MULTIPLE PARALLEL RUNS OF PIPING, PROVIDE 4" CLEARANCE BETWEEN VALVE HANDLE AND ADJACENT PIPE, OR INSULATION. INSTALL VALVE HANDLES IN HORIZONTAL POSITION BETWEEN PIPES. DO NOT INSTALL VALVE HANDLES ON TOP OF PIPE.
B. INSTALL VALVES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. PROVIDE ALL VALVES (EXCEPT CONTROL VALVES), STRAINERS, AND CHECK VALVES OF SAME SIZE AS THE PIPES IN WHICH THEY ARE INSTALLED UNLESS OTHERWISE INDICATED. PRESSURE RATING OF VALVES SAME AS PIPING IN WHICH INSTALLED.
C. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED. INSTALL VALVES WITH CAST DIRECTIONAL ARROWS IN DIRECTION OF FLOW.
D. LOCATE WHEEL HANDLES TO CLEAR OBSTRUCTIONS WITH HAND. INSTALL VALVES ONLY IN ACCESSIBLE LOCATIONS. LOCATE EQUIPMENT SHUT-OFF VALVES TO BE ACCESSIBLE WITHOUT CLIMBING OVER EQUIPMENT. PROVIDE OPEN-ENDED LINE VALVES WITH PLUGS OR BLIND FLANGES.

EQUIPMENT AND PIPING IDENTIFICATION

A. EQUIPMENT.
   1. ALL PLUMBING EQUIPMENT SHALL BE IDENTIFIED BY NAMEPLATES SECURELY FASTENED IN A CLEARLY VISIBLE LOCATION TO THE EQUIPMENT HOUSING OR FRAME. NAMEPLATES SHALL INCLUDE THE EQUIPMENT DESIGN PLAN MARK, MODEL NUMBER AND SERIAL NUMBER. NAMEPLATES SHALL BE 2-1/2" X 3/4" MINIMUM, EITHER 1/16" THICK BAKELITE WITH ENGRAVED WHITE CORE LETTERS AND BEVELED EDGE OR ALUMINUM WITH BLACK ENAMELED BACKGROUND AND ETCHED OR ENGRAVED NATURAL ALUMINUM LETTERING. MANUFACTURER'S NAMEPLATE SHALL BE CLEAN AND LEGIBLE AND INSTALLED IN A CLEARLY VISIBLE LOCATION.
B. PIPING.
   1. IDENTIFY PIPING WITH SYMBOL IDENTIFICATION, DIRECTION OF FLOW ARROWS AND SPECIFIC PRESSURE ZONES, COMPLYING WITH ANSI A 13.1 COLOR STANDARDS.
   2. IDENTIFY PIPING AT APPROXIMATELY 25' CENTERS WHERE UNCONCEALED. CONCEALED PIPING ABOVE INACCESSIBLE CEILINGS SHALL BE IDENTIFIED AT EACH ACCESS PANEL. CONCEALED PIPING ABOVE ACCESSIBLE CEILINGS SHALL BE IDENTIFIED WITHIN 10 FEET OF EACH WALL PENETRATION (BOTH SIDES OF WALLS).
   3. PRINTED LABELS WITH COLORED BACKGROUND AND ATTACHING STRAP. SETON, W. BRADY, OR EQUAL.
C. BURIED UTILITY WARNING AND IDENTIFICATION TAPE.
   1. SETON, BRADY, OR EQUAL.
   2. POLYETHYLENE PLASTIC TAPE MANUFACTURED SPECIFICALLY FOR WARNING AND IDENTIFICATION OF BURIED PIPELINES. CODE AND LETTER COLORING SHALL BE PERMANENT, UNAFFECTED BY MOISTURE AND OTHER SUBSTANCES CONTAINED IN TRENCH BACKFILL MATERIAL.
   3. INSTALL TAPE 12" ABOVE TOP OF PIPE DURING BACKFILLING OF TRENCH.

CLEANING

A. DURING CONSTRUCTION: KEEP OPENINGS IN PIPING CLOSED TO PREVENT ENTRANCE OF FOREIGN MATTER. CLEAN PIPE, FITTINGS, AND VALVES INTERNALLY.
B. CLEAN PLUMBING FIXTURES WITH SOAP AND WATER, REMOVE MARKS AND LABELS. CLEAN AND POLISH CHROME. REMOVE PAINT, CONCRETE, PLASTER, AND OTHER FOREIGN MATERIALS.
C. CLEAN ALL SINKS AND TANKS. OF DIRT AND DEBRIS.
D. REMOVE SHIPPING PAPER FROM CLEANOUT COVERS AND DRAIN STRAINERS AND POLISH.
E. REMOVE AND CLEAN OUT ALL DIRT AND DEBRIS FROM PIPE SPACES, INCLUDING ALL WIRE, AND BLOCKING.
F. ALL EQUIPMENT AND MATERIALS FURNISHED BY THIS SECTION SHALL BE COMPLETELY DUST AND PAINT FREE, CLEAN, AND RUST FREE AND FRESHLY PAINTED OR POLISHED WHEN THE FINAL INSPECTION IS MADE.
G. THOROUGHLY CLEAN AND FLUSH INTERIOR AND EXTERIOR OF ALL PIPING SYSTEMS (WET SYSTEMS, AND DRAINAGE SYSTEMS) OF ANY NATURE OF ALL PIPE CONTAMINATES SUCH AS CUTTINGS, FILLINGS, GREASE, SOLDER, FLUX AND WELDING RESIDUE.

EXCAVATING, TRENCHING, AND BACKFILLING

A. IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 31 FOR EXCAVATING, TRENCHING, AND BACKFILLING.
B. PROVIDE BARRICADES, SIGNS, LANTERNS, SHORING, SHEETING, AND PUMPING AS PART OF WORK IN THIS DIVISION AS REQUIRED TO ENSURE SAFE CONDITIONS, COMPLY WITH OSHA REQUIREMENTS.
C. DIG TRENCHES STRAIGHT, TRUE TO LINE AND GRADE WITH SIDES AND BOTTOMS SMOOTHED OF ANY ROCK POINTS. EXCAVATE 6 INCHES BELOW GRADE OF PIPE. FILL WITH SAND PROPERLY PACKED. SUPPORT PIPE FOR ENTIRE LENGTH ON PACKED SAND, SHAPE OR PACK BOTTOM OF TRENCHES FOR PIPE, DUCT FITTINGS, HUBS, COUPLINGS, ETC., USING TEMPLATES TO FIT OUTSIDE PERIPHERY OF LOWER THIRD OF PIPING AND DUCTWORK. PROVIDE PIPING OUTSIDE BUILDING WITH 36-INCH MINIMUM COVER FROM TOP OF PIPE TO FINISHED GRADE, MINIMUM WIDTH 16 INCHES, PROVIDE IDENTIFICATION WIRE AND TAPE.
D. DISPOSE OF ALL SURPLUS EXCAVATION MATERIAL AND SEEPAGE WATER AS DIRECTED BY THE ARCHITECT.
E. BACKFILL,
   1. AFTER PIPING HAS BEEN INSTALLED, TESTED, AND APPROVED, BACKFILL ALL EXCAVATION, TAMP AND COMPACT BY MOTOR POWERED OR COMPRESSED AIR TAMPERS.
   2. BACKFILL TO 6-INCHES ABOVE CROWN OF PIPE WITH UNWASHED SAND, WITH REMAINDER OF TRENCH BACK-FILLED AND MECHANICALLY TAMPED IN 6-INCH MAXIMUM LAYERS OF SELECTED EXCAVATED MATERIALS, FREE FROM ORGANIC MATTER, ROCKS, ETC. PROVIDE 90-PERCENT COMPACTION IN ACCORDANCE WITH ASTM D 1557-58T; 95-PERCENT COMPACTION FOR TRENCHES BELOW BUILDING SLABS.
F. IN ANY ASPHALT OR CONCRETE PAVED AREAS, BACKFILL ONLY TO SUBGRADE LEVEL.
G. WHEN PIPING IS INSTALLED, PRIOR TO BACKFILLING, ADVISE ARCHITECT; DO NOT BACKFILL WITHOUT ACCEPTANCES OF ARCHITECT.
H. REPLACE TO ORIGINAL CONDITION ALL PAVING, CURBS, GUTTERS, WALKS, ETC., WHICH BECOME DISTURBED BY TRENCHING.

LEAKAGE TESTING

A. BEFORE CONDUCTING TESTS, VALVE-OFF OR DISCONNECT ANY EQUIPMENT AND APPARATUS WHICH MAY BE DAMAGED BY THE TEST PRESSURES HIGHER THAN NORMAL WORKING PRESSURES. ALL TESTING SHALL BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION.
B. SANITARY SOIL, WASTE, AND VENT PIPING: HYDROSTATICALLY TEST AND PROVE TIGHT, TO PROVIDE A MINIMUM 10-FOOT HEAD OF WATER, AND IN ACCORDANCE WITH THE GOVERNING PLUMBING CODE.
C. STORM DRAIN PIPING: HYDROSTATICALLY TEST AND PROVE TIGHT, TO PROVIDE A MINIMUM 10-FOOT HEAD OF WATER, AND IN ACCORDANCE WITH THE GOVERNING PLUMBING CODE.
D. DOMESTIC HOT WATER AND DOMESTIC COLD-WATER PIPING: TEST AND PROVE TIGHT UNDER 150 PSI HYDROSTATIC PRESSURE.
E. TRAP PRIMER PIPING: TEST AND PROVE TIGHT UNDER 50 PSI HYDROSTATIC PRESSURE.
F. NATURAL GAS PIPING: SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NFPA 54 REQUIREMENTS.
   1. INSPECT, TEST, AND PURGE PIPING ACCORDING TO ANSI Z223.1, PART 4 "INSPECTION, TESTING, AND PURGING" AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. ISOLATE PRESSURE REDUCING VALVES AND EQUIPMENT CONTROLS DURING TESTING. TEST PRESSURE TO BE 100 PSI FOR A PERIOD OF 24 HOURS WITH NO DROP IN PRESSURE.
G. APPLY TESTS FOR A MINIMUM PERIOD OF TWO (2) HOURS, UNLESS OTHERWISE HEREINBEFORE SPECIFIED, AND UNTIL TESTS ARE COMPLETE, IN THE OPINION OF THE INSPECTING AUTHORITY.
H. WORK MAY BE TESTED IN SECTIONS, IF NECESSARY, FOR CONVENIENCE. IN THIS CASE, TEST OF FIRST SECTION SHALL INCLUDE ALL CONNECTIONS BETWEEN PREVIOUSLY TESTED SECTIONS AND SECTION UNDER TEST.
I. FURNISH ALL LABOR AND ALL OTHER UTILITIES REQUIRED TO CONDUCT LEAKAGE TESTS.

EXECUTION (CONTINUED)

STERILIZATION

A. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING AS FOLLOWS:
   1. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING.
   2. USE PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION; IF METHODS ARE NOT PRESCRIBED, USE PROCEDURES DESCRIBED IN EITHER AWWA C651 OR AWWA C652 OR FOLLOW PROCEDURES DESCRIBED BELOW:
      a. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
      b. FILL AND ISOLATE SYSTEM ACCORDING TO EITHER OF THE FOLLOWING:
         1) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS.
         2) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 200 PPM OF CHLORINE. ISOLATE AND ALLOW TO STAND FOR THREE HOURS.
      c. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME.
      d. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.
      e. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION.
B. CLEAN NON-POTABLE DOMESTIC WATER PIPING AS FOLLOWS:
   1. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING.
   2. USE PURGING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION OR IF METHODS ARE NOT PRESCRIBED, FOLLOW PROCEDURES DESCRIBED BELOW:
      a. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
      b. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.
C. PREPARE AND SUBMIT REPORTS OF PURGING AND DISINFECTING ACTIVITIES. INCLUDE COPIES OF WATER-SAMPLE APPROVALS FROM AUTHORITIES HAVING JURISDICTION.
D. CLEAN INTERIOR OF DOMESTIC WATER PIPING SYSTEM, REMOVE DIRT AND DEBRIS AS WORK PROGRESSES.

TESTING, ADJUSTING, AND BALANCING (TAB)

A. THE FOLLOWING MINIMAL TAB SHALL BE PROVIDED, WITH REPORT AND INFORMATION SUBMITTED WITH CLOSEOUTS.
   1. MIXING VALVES INLET TEMPERATURE AND ADJUST TO DELIVER SPECIFIED OUTLET TEMPERATURES FOR EACH HEATER, APPLIANCE, AND FIXTURE. INCLUDE A NARRATIVE IN TAB REPORT INDICATING SAME.

POTABLE HOT WATER BALANCING AND VERIFICATION

A. THE MASTER AND POINT-OF-USE MIXING VALVES SHALL BE SET TO PROVIDE THE SCHEDULED TEMPERATURES ON THE DRAWINGS. OR DETAILS.
B. THE TAB SHALL INDICATE IN THE FINAL REPORT:
   1. TEMPERATURE SETPOINT OF WATER HEATER(S).
   2. TEMPERATURE AT OUTLET OF MASTER MIXING VALVE.
   3. TEPID TEMPERATURE AT ALL PLUMBING FIXTURES/APPLIANCES, AND SAFETY EQUIPMENT WITH HOT, OR TEPID TEMPERATURE SERVICE.

CLOSEOUTS

CLOSEOUTS SHALL BE SUBMITTED TO PROFESSIONAL WITHIN TWO (2) WEEKS OF NTP. ONE HARD COPY OF CLOSEOUTS AND TWO (2) SETS ON FLASH DRIVE. CLOSEOUTS SHALL INCLUDE:

1. O&M MANUALS
2. RECORD DRAWINGS
3. COPY OF APPROVED SUBMITTALS
4. TAB COMPLETE REPORT
5. EXTENDED WARRANTIES
6. PIPE TEST LOGS
7. ATTIC STOCK
8. CONTROL AS-BUILTS
9. OWNER TRAINING DOCUMENTATION
10. SEE OTHERS ON CHECKLIST SCHEDULE

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100% CONSTRUCTION DOCUMENTS

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CHRISTOPHER GROSS — REGISTERED PROFESSIONAL ENGINEER — 01/16/26 — 17087 — STATE OF MISSISSIPPI

PLUMBING SPECIFICATIONS

P002

GENERAL

SUMMARY

A. WORK INCLUDED IN SECTION 220000 PLUMBING: PROVIDE ALL MATERIALS, EQUIPMENT, FABRICATION, INSTALLATION AND TESTS AS NOTED IN CONTRACT DOCUMENTS IN CONFORMITY WITH APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION.
B. MATERIALS COMPOSITION SHALL CONFORM TO THE INTERNATIONAL PLUMBING CODE.
C. RELATED SECTIONS:
   1. CONSULT ALL OTHER SECTIONS, DETERMINE THE EXTENT AND CHARACTER OF RELATED WORK AND PROPERLY COORDINATE WORK SPECIFIED HEREIN WITH THAT SPECIFIED ELSEWHERE TO PRODUCE A COMPLETE AND OPERABLE INSTALLATION.

COORDINATION

A. PLUMBING CONTRACTOR SHALL REVIEW THE DOCUMENTS OF OTHER TRADES, IN PARTICULAR MECHANICAL DRAWINGS, PRIOR TO BID AND INCLUDE IN BID ALL OFFSETS AND OTHER REROUTING OF PIPING AND DEVICES TO AVOID CONFLICTS. WHERE DUCTS AND MECHANICAL PIPING CONFLICT WITH 220000 PIPING, 220000 PIPING SHALL BE REROUTED AS REQUIRED TO RESOLVE THE CONFLICT. IN NO CASE SHALL PIPING PENETRATE DUCTWORK.
B. ROUTING OF PIPE SHALL BE IN A NEAT MANNER TO WORK WITH THE ARCHITECTURAL AND STRUCTURAL ELEMENTS OF THE BUILDING AND THE REQUIREMENTS OF THE ARCHITECT. ANY PIPE ROUTES AT EXPOSED CEILING AREAS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT. SUBMIT THESE PIPE ROUTES IN ADVANCE TO THE ARCHITECT PRIOR TO THE SHOP DRAWING SUBMITTAL.

SUBMITTALS

A. SCHEDULE.
   1. ALLOW 10 WORKING DAYS FOR APPROVAL UNLESS ENGINEER AGREES TO ACCELERATED SCHEDULE.
B. FIXTURE, EQUIPMENT, AND MATERIAL DATA SHALL BE SUBMITTED ELECTRONICALLY ALL AT ONE TIME.
C. SUBMISSION PROCEDURE.
   1. INITIAL SUBMITTAL.
      a. EACH SUBMITTAL SHALL HAVE A UNIQUE SERIAL NUMBER SUCH AS 'SUBMITTAL 220000-01'.
      b. SUBMITTALS MAY BE SUBMITTED NON-CONCURRENTLY IF REQUIRED BY THE SCHEDULE.
      c. SUBMIT ONE ELECTRONIC COPY OF PRODUCT DATA IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF. PROVIDE SEPARATE FILES FOR EACH EQUIPMENT TYPE. PAPER COPIES OR SCANS OF PAPER COPIES WILL NOT BE ACCEPTED.
      d. SUBMITTAL WILL BE REVIEWED, AND COMMENTS RETURNED TO CONTRACTOR.
   2. RESUBMISSION.
      a. EACH RESUBMITTAL SHALL HAVE THE ORIGINAL UNIQUE SERIAL NUMBER PLUS UNIQUE REVISION NUMBER SUCH AS 'SUBMITTAL 220000-01 REVISION 1'.
      b. MAKE ANY CORRECTIONS OR CHANGE IN SUBMITTALS AS REQUIRED.
      c. RESUBMIT FOR REVIEW IN ELECTRONIC FORMAT DESCRIBED ABOVE UNTIL NO EXCEPTIONS ARE TAKEN OR, UNLESS CONTRACTOR AGREES WITH "FURNISH AS CORRECTED" REMARKS.
   3. FINAL APPROVAL: ONCE SUBMISSION IS ACCEPTED, CONTRACTOR SHALL PRINT TWO BOUND SETS OF SUBMITTALS FOR OWNER, ENGINEERING RESOURCE GROUP DOES NOT REQUIRE OR DESIRE PAPER COPIES.
D. CONTENTS OF SUBMITTALS.
   1. PLUMBING MATERIAL SUBMITTALS
      a. PIPING, FITTINGS, JOINING METHOD, INSULATION, IDENTIFICATION, VALVES.
   2. PLUMBING EQUIPMENT SUBMITTALS
      a. MANUFACTURER'S NAME AND MODEL NUMBER.
      b. ALL INFORMATION REQUIRED TO COMPLETELY DESCRIBE MATERIALS AND EQUIPMENT AND TO INDICATE COMPLIANCE WITH DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED TO:
         1) A SCHEDULE, FOR ALL ITEMS OF THE SAME TYPE SHALL BE SUPPLIED. THE SCHEDULE SHALL INCLUDE THE MANUFACTURER, THE MODEL, SIZE, SPECIFIC INFORMATION THAT MAKES THAT ITEM UNIQUE, THE SERVICE OF THE ITEM, THE SYSTEM SERVED BY THE ITEM.
         2) PHYSICAL DATA, PERFORMANCE DATA, ELECTRICAL AND PLUMBING REQUIREMENTS.
E. OPERATING INSTRUCTIONS & MAINTENANCE MANUALS.
   1. BEFORE REQUESTING ACCEPTANCE OF WORK, SUBMIT IN WORD-SEARCHABLE FORMAT SUCH AS ADOBE PDF VIA EMAIL FOR REVIEW BY ENGINEER. FILE SHALL INCLUDE BOOKMARKS FOR EACH PIECE OF EQUIPMENT, PAPER COPIES WILL NOT BE ACCEPTED.
   2. AFTER REVIEW AND MAKING CORRECTIONS NOTED, FURNISH THREE PRINTED AND BOUND SETS FOR THE OWNER, ASSEMBLE IN WITH SEPARATE TABS FOR EACH PIECE OF EQUIPMENT IN HEAVY THREE-RING BINDER.
   3. O&M MANUAL SHALL INCLUDE ALL SUBMITTAL DATA SUBMITTED HEREIN ABOVE, AS INSTALLED. THE INTENT OF THIS SECTION IS THAT A SINGLE DOCUMENT CONTAINS ALL RELEVANT INFORMATION ABOUT EACH PIECE OF EQUIPMENT.
   4. IN ADDITION TO THE SUBMITTAL DATA, THE MANUAL SHALL ALSO INCLUDE THE FOLLOWING INFORMATION FOR ALL NEW EQUIPMENT.
      a. MANUFACTURER'S NAME, MODEL NUMBER, SERVICE MANUAL, SPARE-PARTS LIST, AND DESCRIPTIVE LITERATURE FOR ALL COMPONENTS.
      b. INSTALLATION INSTRUCTIONS.
      c. MAINTENANCE INSTRUCTIONS.
      d. WIRING DIAGRAMS.
      e. NAME, ADDRESS AND PHONE NUMBER OF CONTRACTORS EQUIPMENT SUPPLIERS AND SERVICE AGENCIES.
      f. GUARANTEE PERIOD, INCLUDING START AND END PERIOD.
F. RECORD DRAWINGS.
   1. UPDATE DESIGN/SHOP DRAWINGS TO "AS- BUILT" CONDITIONS:
      a. FULLY INCORPORATE ALL REVISIONS MADE BY ALL CRAFTS IN COURSE OF WORK.
      b. INCLUDE ALL FIELD CHANGES, ADJUSTMENTS, VARIANCES, SUBSTITUTIONS, AND DELETIONS, INCLUDING ALL CHANGE ORDERS.
      c. EXACT LOCATION, TYPE, AND FUNCTION OF CONCEALED VALVES, PIPING, AIR VENTS AND PIPING DRAINS. EXACT SIZE, ELEVATIONS, AND HORIZONTAL LOCATION OF PIPING
   2. SUBMIT IN ELECTRONIC FORMAT PER SUBMITTALS ABOVE FOR APPROVAL.
   3. ONCE APPROVED,
      a. PROVIDE ONE SET OF ADOBE PDF FILES OF EACH DRAWING ON PORTABLE MEDIA (E.G., USB FLASH DRIVE).
      b. PROVIDE ONE FULL SIZE SET OF DRAWINGS ON BOND PAPER.
      c. PROVIDE PDF SET LOADED ONTO 1 FLASH DRIVE.

PRODUCTS

MANUFACTURERS

A. NAMED MANUFACTURER MODEL NUMBERS USED AS EXAMPLE OF ITEM AND ESTABLISH MINIMUM LEVEL OF QUALITY AND MINIMUM STANDARD OPTIONS. EQUIVALENT MODELS ARE ACCEPTABLE.
   1. VITREOUS CHINA FIXTURES: SLOAN, AMERICAN STANDARD, TOTO, ZURN, KOHLER.
   2. STAINLESS STEEL SINKS: AMERICAN STANDARD, JUST, ELKAY, KOHLER.
   3. SINK AND LAVATORY TRIM: ZURN, KOHLER, DELTA.
   4. MOP BASINS: STERN-WILLIAMS, FIAT PRODUCTS, FLORESTONE.
   5. SHOWERS: ZURN, LAWLER, LEONARD.
   6. ELECTRIC DRINKING FOUNTAINS: ELKAY, HAWS, HALSEY TAYLOR.
   7. FIXTURE CARRIERS: WADE, ZURN, J.R. SMITH.
   8. DRAINS AND CLEANOUTS: WADE; ZURN.
   9. WATER HAMMER ARRESTORS (SHOCK ABSORBERS): WADE, MIFAB.
   10. THERMOSTATIC MIXING VALVES: LAWLER, LEONARD VALVE COMPANY, POWERS SIMMONS.
   11. VALVES: APOLLO, NIBCO, WATTS.
   12. BALANCING VALVES: BELL & GOSSETT, NIBCO, WATTS, ARMSTRONG

PRODUCTS (CONTINUED)

PLUMBING FIXTURES - GENERAL

A. ALL FIXTURES, FAUCETS, STOPS, AND TRIM ARE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT AND OWNER.
B. VITREOUS CHINA FIXTURES SHALL BE TWICE FIRED WHITE VITREOUS CHINA.
C. ALL PLUMBING FIXTURES SHALL BE CERTIFIED BY AND COMPLY WITH THE EPA WATER CONSERVATION REGULATIONS.
D. PROVIDE FIXTURES AND TRIM COMPLETE FOR PROPER INSTALLATION AS DESCRIBED IN THE MANUFACTURER'S CATALOG WITH THE MODIFICATIONS AS SHOWN ON PLUMBING FIXTURE SCHEDULE IN THE PLANS OR SPECIFICATIONS.
E. ALL FIXTURES FOR HANDICAPPED PERSONAL SHALL BE MOUNTED IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), HANDICAPPED REGULATIONS.
F. SEAL UP JOINTS BETWEEN FIXTURES AND WALL OR FLOOR WITH WHITE MASTIC. MASTIC COLOR SHALL BE AS APPROVED BY THE ARCHITECT.
G. PROVIDE QUARTER-TURN WATER SUPPLY STOPS AT EACH NEW AND RELOCATED FIXTURE.
H. PROVIDE TUBING, TAILPIECES, SUPPLIES, TRAPS, PIPE FLANGES, AND WASTES TO WALL OF NOT LESS THAN #17-GAUGE POLISHED CHROMIUM-PLATED BRASS, UNLESS NOTED OTHERWISE. SUPPLIES AND TRAPS SHALL BE CENTERED, PLUMB, AND PERPENDICULAR TO WALL FOR LAVATORIES AND SINKS.
I. INSTALL ESCUTCHEONS AT PIPING WALL, FLOOR, AND CEILING PENETRATIONS IN EXPOSED, FINISHED LOCATIONS AND WITHIN CABINETS AND MILLWORK. HEAVY-DUTY TYPE ESCUTCHEONS, WITH SETSCREWS SHALL BE UTILIZED IN EXPOSED APPLICATIONS UNDER WALL MOUNTED LAVATORIES AND SINKS AND ON EXPOSED PIPING APPLICATIONS ON TANK TYPE WATER CLOSET STOPS AND ON EXPOSED PIPING TO FLUSH VALVES, ETC. LIGHT DUTY SLIP-ON TYPE MAY BE UTILIZED IN CONCEALED INSTALLATIONS WITHIN CABINETS. USE DEEP-PATTERN ESCUTCHEONS IF REQUIRED TO CONCEAL PROTRUDING FITTINGS.
J. PROVIDE AND INSTALL BRAIDED STAINLESS STEEL FLEXIBLE SUPPLIES FOR ALL WATER PIPING FROM SHUT-OFF VALVE, TO APPLICABLE FIXTURES. END CONNECTIONS AND LENGTH TO MATCH EACH APPLICATION. PROVIDE FOR ALL TANK TYPE WATER CLOSETS, LAVATORIES, SINKS, EDF'S, WATER HEATERS, ICE MAKERS, WASHERS, ETC. PROVIDE NEAT INSULATION PACKAGE, AS TRUEBO, ON ADA SINKS AND LAVATORIES WATER AND WASTE PIPING EXPOSED APPLICATIONS.
K. PROVIDE AND INSTALL NEW FLOOR MOUNTED, CONCEALED IN WALL CARRIERS FOR ALL WALL MOUNTED SINKS, LAVATORIES, EDF'S, WATER CLOSETS, URINALS, ETC. WHERE SINK, LAVATORY, EDF OR URINAL CARRIERS ARE INSTALLED IN WALLS LESS THAN 4". AND WASTE ARMS CAN INTERFERE WITH AVAILABLE SPACES, USE CARRIER WITH INTEGRAL PASS THRU SLEEVE AS SMITH FIG 0710-TAB-WL, OR EQUAL.

EXECUTION

INSPECTION

A. VERIFY THAT CONDITIONS ARE SATISFACTORY FOR THE INSTALLATION OF MATERIALS AND EQUIPMENT. NOTIFY ARCHITECT IF CONDITIONS ARE NOT SATISFACTORY AND DO NOT COMMENCE WORK UNTIL CONDITIONS HAVE BEEN CORRECTED.

INSTALLATION

A. ALL EQUIPMENT AND SYSTEM COMPONENTS SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. REPAIR ALL DAMAGED FINISHES. INSTALL ALL EQUIPMENT AND SYSTEMS PER THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND RECOMMENDATIONS. ALL EQUIPMENT MUST BE ANCHORED TO THE BUILDING. ALL HUNG EQUIPMENT SHALL INCORPORATE VIBRATION ISOLATION.

PROTECTION OF WORK DURING CONSTRUCTION

A. PROTECT FROM DAMAGE, WATER, DUST, ETC., MATERIAL, EQUIPMENT AND APPARATUS PROVIDED UNDER THIS DIVISION. BOTH IN STORAGE AND INSTALLED, UNTIL SUBSTANTIAL COMPLETION HAS BEEN FILED, PROVIDE PROTECTIVE COVERS, SKIDS, PLUGS OR CAPS TO PROTECT EQUIPMENT AND MATERIALS FROM DAMAGE AND DETERIORATION DURING CONSTRUCTION. COVER MOTORS AND OTHER MOVING MACHINERY TO PROTECT FROM DIRT AND WATER DURING CONSTRUCTION.
B. MATERIAL, EQUIPMENT, OR APPARATUS DAMAGED BECAUSE OF IMPROPER STORAGE OR PROTECTION SHALL BE REJECTED. REMOVE DAMAGED MATERIAL, EQUIPMENT OR APPARATUS FROM SITE AND PROVIDE NEW, DUPLICATE, MATERIAL, EQUIPMENT, OR APPARATUS IN REPLACEMENT OF THAT REJECTED. POROUS MATERIALS, SUCH AS PIPE INSULATION, SHALL BE PROTECTED FROM WEATHER, IF SUCH MATERIAL BECOMES WET DURING CONSTRUCTION, IT SHALL BE REMOVED AND REPLACED AT NO COST TO OWNER; DRYING IS NOT SUFFICIENT DUE TO POSSIBLE MICROBIAL CONTAMINATION.
C. PROTECT FROM MISCELLANEOUS EQUIPMENT, PIPING, ETC. DURING CONSTRUCTION. WHERE INADVERTENT DAMAGE OCCURS, RESTORE TO CONDITION SIMILAR TO THAT BEFORE DAMAGE. INSPECT EACH PIECE OF PIPE. TUBING, FITTINGS, AND EQUIPMENT FOR DEFECTS AND OBSTRUCTIONS, PROMPTLY REMOVE ALL DEFECTIVE MATERIALS FROM THE SITE. INSTALL PIPES TO CLEAR ALL BEAMS AND OBSTRUCTIONS. DO NOT CUT INTO ANY STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF THE ARCHITECT.

PIPING

A. ALL GRAVITY PIPING SHALL SLOPE AT PER THE INTERNATIONAL PLUMBING CODE.
B. INSTALL PIPES AND PIPE FITTINGS IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES WHICH WILL ACHIEVE PERMANENTLY LEAK RESISTANT PIPING SYSTEMS, CAPABLE OF PERFORMING EACH INDICATED SERVICE WITHOUT PIPING FAILURE. INSTALL EACH RUN WITH MINIMUM JOINTS AND COUPLINGS BUT WITH ADEQUATE AND ACCESSIBLE UNIONS FOR DISASSEMBLY AND MAINTENANCE/REPLACEMENT OF VALVES AND EQUIPMENT. REDUCE SIZES, WHERE INDICATED BY USE OF REDUCING FITTINGS. ALIGN PIPING ACCURATELY AT CONNECTIONS, WITHIN 1/16-INCH MISALIGNMENT TOLERANCE.
C. WHEREVER POSSIBLE, PIPING SHALL BE RUN IN BEAM BAYS BEFORE OFFSETTING TO BELOW A BEAM. VERIFY ALL INVERT ELEVATIONS AND PITCHED LINES BEFORE STARTING WORK. COORDINATE ALL PIPE RUNS BELOW SLAB AT FLOOR WITH THE GENERAL CONTRACTOR. VERTICAL PIPE PENETRATIONS OF THE STRUCTURAL FOUNDATION ARE NOT PERMITTED. PIPING SHALL BE OFFSET HORIZONTALLY BELOW TOP OF SLAB AND ABOVE TOP OF FOUNDATION. PIPING SHALL BE WRAPPED WITH ½" LAYER OF INSULATION. REFER TO STRUCTURAL DRAWINGS FOR DETAILS IN REGARDS TO LOCATIONS OF SLEEVES THROUGH GRADE BEAMS.

EXECUTION (CONTINUED)

VALVES

A. FOR VALVES IN MULTIPLE PARALLEL RUNS OF PIPING, PROVIDE 4" CLEARANCE BETWEEN VALVE HANDLE AND ADJACENT PIPE, OR INSULATION. INSTALL VALVE HANDLES IN HORIZONTAL POSITION BETWEEN PIPES. DO NOT INSTALL VALVE HANDLES ON TOP OF PIPE.
B. INSTALL VALVES IN ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS. PROVIDE ALL VALVES (EXCEPT CONTROL VALVES), STRAINERS, AND CHECK VALVES OF SAME SIZE AS THE PIPES IN WHICH THEY ARE INSTALLED UNLESS OTHERWISE INDICATED. PRESSURE RATING OF VALVES SAME AS PIPING IN WHICH INSTALLED.
C. INSTALL VALVES WITH STEMS UPRIGHT OR HORIZONTAL, NOT INVERTED. INSTALL VALVES WITH CAST DIRECTIONAL ARROWS IN DIRECTION OF FLOW.
D. LOCATE WHEEL HANDLES TO CLEAR OBSTRUCTIONS WITH HAND. INSTALL VALVES ONLY IN ACCESSIBLE LOCATIONS. LOCATE EQUIPMENT SHUT-OFF VALVES TO BE ACCESSIBLE WITHOUT CLIMBING OVER EQUIPMENT. PROVIDE OPEN-ENDED LINE VALVES WITH PLUGS OR BLIND FLANGES.

EQUIPMENT AND PIPING IDENTIFICATION

A. EQUIPMENT.
   1. ALL PLUMBING EQUIPMENT SHALL BE IDENTIFIED BY NAMEPLATES SECURELY FASTENED IN A CLEARLY VISIBLE LOCATION TO THE EQUIPMENT HOUSING OR FRAME. NAMEPLATES SHALL INCLUDE THE EQUIPMENT DESIGN PLAN MARK, MODEL NUMBER AND SERIAL NUMBER. NAMEPLATES SHALL BE 2-1/2" X 3/4" MINIMUM, EITHER 1/16" THICK BAKELITE WITH ENGRAVED WHITE CORE LETTERS AND BEVELED EDGE OR ALUMINUM WITH BLACK ENAMELED BACKGROUND AND ETCHED OR ENGRAVED NATURAL ALUMINUM LETTERING. MANUFACTURER'S NAMEPLATE SHALL BE CLEAN AND LEGIBLE AND INSTALLED IN A CLEARLY VISIBLE LOCATION.
B. PIPING.
   1. IDENTIFY PIPING WITH SYMBOL IDENTIFICATION, DIRECTION OF FLOW ARROWS AND SPECIFIC PRESSURE ZONES, COMPLYING WITH ANSI A 13.1 COLOR STANDARDS.
   2. IDENTIFY PIPING AT APPROXIMATELY 25' CENTERS WHERE UNCONCEALED, CONCEALED PIPING ABOVE INACCESSIBLE CEILINGS SHALL BE IDENTIFIED AT EACH ACCESS PANEL. CONCEALED PIPING ABOVE ACCESSIBLE CEILINGS SHALL BE IDENTIFIED WITHIN 10 FEET OF EACH WALL PENETRATION (BOTH SIDES OF WALLS).
   3. PRINTED LABELS WITH COLORED BACKGROUND AND ATTACHING STRAP: SETON, W. BRADY, OR EQUAL.
C. BURIED UTILITY WARNING AND IDENTIFICATION TAPE.
   1. SETON, BRADY, OR EQUAL.
   2. POLYETHYLENE PLASTIC TAPE MANUFACTURED SPECIFICALLY FOR WARNING AND IDENTIFICATION OF BURIED PIPELINES. CODE AND LETTER COLORING SHALL BE PERMANENT, UNAFFECTED BY MOISTURE AND OTHER SUBSTANCES CONTAINED IN TRENCH BACKFILL MATERIAL.
   3. INSTALL TAPE 12" ABOVE TOP OF PIPE DURING BACKFILLING OF TRENCH.

CLEANING

A. DURING CONSTRUCTION: KEEP OPENINGS IN PIPING CLOSED TO PREVENT ENTRANCE OF FOREIGN MATTER. CLEAN PIPE, FITTINGS, AND VALVES INTERNALLY.
B. CLEAN PLUMBING FIXTURES WITH SOAP AND WATER. REMOVE MARKS AND LABELS. CLEAN AND POLISH CHROME, REMOVE PAINT, CONCRETE, PLASTER, AND OTHER FOREIGN MATERIALS.
C. CLEAN ALL EQUIPMENT AND TANKS, OF DIRT AND DEBRIS.
D. REMOVE SHIPPING PAPER FROM CLEANOUT COVERS AND DRAIN STRAINERS AND POLISH.
E. REMOVE AND CLEAN OUT ALL DIRT AND DEBRIS FROM PIPE SPACES. INCLUDING ALL WIRE, AND BLOCKING.
F. ALL EQUIPMENT AND MATERIALS FURNISHED BY THIS SECTION SHALL BE COMPLETELY DUST AND PAINT FREE, CLEAN, AND RUST FREE AND FRESHLY PAINTED OR POLISHED WHEN THE FINAL INSPECTION IS MADE.
G. THOROUGHLY CLEAN AND FLUSH INTERIOR AND EXTERIOR OF ALL PIPING SYSTEMS (WET SYSTEMS, AND DRAINAGE SYSTEMS) OF ANY NATURE OF ALL PIPE CONTAMINATES SUCH AS CUTTINGS, FILINGS, GREASE, SOLDER, FLUX AND WELDING RESIDUE.

EXCAVATING, TRENCHING, AND BACKFILLING

A. IN ACCORDANCE WITH THE REQUIREMENTS OF DIVISION 31 FOR EXCAVATING, TRENCHING, AND BACKFILLING.
B. PROVIDE BARRICADES, SIGNS, LANTERNS, SHORING, SHEETING, AND PUMPING AS PART OF WORK IN THIS DIVISION AS REQUIRED TO ENSURE SAFE CONDITIONS. COMPLY WITH OSHA REQUIREMENTS.
C. DIG TRENCHES STRAIGHT, TRUE TO LINE AND GRADE WITH SIDES AND BOTTOMS SMOOTHED OF ANY ROCK POINTS. EXCAVATE 6 INCHES BELOW GRADE OF PIPE. FILL WITH SAND PROPERLY PACKED, SUPPORT PIPE FOR ENTIRE LENGTH ON PACKED SAND, SHAPE OR PACK BOTTOM OF TRENCHES FOR PIPE, DUCT FITTINGS, HUBS, COUPLINGS, ETC., USING TEMPLATES TO FIT OUTSIDE PERIPHERY OF LOWER THIRD OF PIPING AND DUCTWORK. PROVIDE PIPING OUTSIDE BUILDING WITH 36-INCH MINIMUM COVER FROM TOP OF PIPE TO FINISHED GRADE. MINIMUM WIDTH 18 INCHES. PROVIDE IDENTIFICATION WIRE AND TAPE.
D. DISPOSE OF ALL SURPLUS EXCAVATION MATERIAL AND SEEPAGE WATER AS DIRECTED BY THE ARCHITECT.
E. BACKFILL.
   1. AFTER PIPING HAS BEEN INSTALLED, TESTED, AND APPROVED, BACKFILL ALL EXCAVATION, TAMP AND COMPACT BY MOTOR POWERED OR COMPRESSED AIR TAMPERS.
   2. BACKFILL TO 6-INCHES ABOVE CROWN OF PIPE WITH UNWASHED SAND, WITH REMAINDER OF TRENCH BACK-FILLED AND MECHANICALLY TAMPED IN 6-INCH MAXIMUM LAYERS OF SELECTED EXCAVATED MATERIALS, FREE FROM ORGANIC MATTER, ROCKS, ETC. PROVIDE 95-PERCENT COMPACTION IN ACCORDANCE WITH ASTM D 1557-58T; 90-PERCENT COMPACTION FOR TRENCHES BELOW BUILDING SLABS.
F. IN ANY ASPHALT OR CONCRETE PAVED AREAS, BACKFILL ONLY TO SUBGRADE LEVEL.
G. WHEN PIPING IS INSTALLED, PRIOR TO BACKFILLING, ADVISE ARCHITECT; DO NOT BACKFILL WITHOUT ACCEPTANCE OF ARCHITECT.
H. REPLACE TO ORIGINAL CONDITION ALL PAVING, CURBS, GUTTERS, WALKS, ETC., WHICH BECOME DISTURBED BY TRENCHING.

LEAKAGE TESTING

A. BEFORE CONDUCTING TESTS, VALVE-OFF OR DISCONNECT ANY EQUIPMENT AND APPARATUS WHICH MAY BE DAMAGED BY THE TEST PRESSURES HIGHER THAN NORMAL WORKING PRESSURES. ALL TESTING SHALL BE WITNESSED BY THE AUTHORITY HAVING JURISDICTION.
B. SANITARY SOIL, WASTE, AND VENT PIPING: HYDROSTATICALLY TEST AND PROVE TIGHT, TO PROVIDE A MINIMUM 10-FOOT HEAD OF WATER, AND IN ACCORDANCE WITH THE GOVERNING PLUMBING CODE.
C. STORM DRAIN PIPING: HYDROSTATICALLY TEST AND PROVE TIGHT, TO PROVIDE A MINIMUM 10-FOOT HEAD OF WATER, AND IN ACCORDANCE WITH THE GOVERNING PLUMBING CODE.
D. DOMESTIC HOT WATER AND DOMESTIC COLD-WATER PIPING: TEST AND PROVE TIGHT UNDER 150 PSI HYDROSTATIC PRESSURE.
E. TRAP PRIMER PIPING: TEST AND PROVE TIGHT UNDER 50 PSI HYDROSTATIC PRESSURE.
F. NATURAL GAS PIPING: SHALL BE PRESSURE TESTED IN ACCORDANCE WITH NFPA 54 REQUIREMENTS.
   1. INSPECT, TEST, AND PURGE PIPING ACCORDING TO ANSI Z223.1, PART 4 "INSPECTION, TESTING, AND PURGING" AND REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. ISOLATE PRESSURE REDUCING VALVES AND EQUIPMENT CONTROLS DURING TESTING. TEST PRESSURE TO BE 100 PSI FOR A PERIOD OF 24 HOURS WITH NO DROP IN PRESSURE.
G. APPLY TESTS FOR A MINIMUM PERIOD OF TWO (2) HOURS, UNLESS OTHERWISE HEREINBEFORE SPECIFIED, AND UNTIL TESTS ARE COMPLETE, IN THE OPINION OF THE INSPECTING AUTHORITY.
H. WORK MAY BE TESTED IN SECTIONS, IF NECESSARY, FOR CONVENIENCE. IN THIS CASE, TEST OF FIRST SECTION SHALL INCLUDE ALL CONNECTIONS BETWEEN PREVIOUSLY TESTED SECTIONS AND SECTION UNDER TEST.
I. FURNISH ALL LABOR AND ALL OTHER UTILITIES REQUIRED TO CONDUCT LEAKAGE TESTS.

EXECUTION (CONTINUED)

STERILIZATION

A. CLEAN AND DISINFECT POTABLE DOMESTIC WATER PIPING AS FOLLOWS:
   1. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING.
   2. USE PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION. IF METHODS ARE NOT PRESCRIBED, USE PROCEDURES DESCRIBED IN EITHER AWWA C651 OR AWWA C652 OR FOLLOW PROCEDURES DESCRIBED BELOW:
      a. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
      b. FILL AND ISOLATE SYSTEM ACCORDING TO EITHER OF THE FOLLOWING:
         1) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 50 PPM OF CHLORINE. ISOLATE WITH VALVES AND ALLOW TO STAND FOR 24 HOURS.
         2) FILL SYSTEM OR PART THEREOF WITH WATER/CHLORINE SOLUTION WITH AT LEAST 200 PPM OF CHLORINE. ISOLATE AND ALLOW TO STAND FOR THREE HOURS.
      c. FLUSH SYSTEM WITH CLEAN, POTABLE WATER UNTIL NO CHLORINE IS IN WATER COMING FROM SYSTEM AFTER THE STANDING TIME.
      d. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.
      e. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION.
B. CLEAN NON-POTABLE DOMESTIC WATER PIPING AS FOLLOWS:
   1. PURGE NEW PIPING AND PARTS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BEFORE USING.
   2. USE PURGING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION OR IF METHODS ARE NOT PRESCRIBED, FOLLOW PROCEDURES DESCRIBED BELOW:
      a. FLUSH PIPING SYSTEM WITH CLEAN, POTABLE WATER UNTIL DIRTY WATER DOES NOT APPEAR AT OUTLETS.
      b. SUBMIT WATER SAMPLES IN STERILE BOTTLES TO AUTHORITIES HAVING JURISDICTION. REPEAT PROCEDURES IF BIOLOGICAL EXAMINATION SHOWS CONTAMINATION.
C. PREPARE AND SUBMIT REPORTS OF PURGING AND DISINFECTING ACTIVITIES. INCLUDE COPIES OF WATER-SAMPLE APPROVALS FROM AUTHORITIES HAVING JURISDICTION.
D. CLEAN INTERIOR OF DOMESTIC WATER PIPING SYSTEM. REMOVE DIRT AND DEBRIS AS WORK PROGRESSES.

TESTING, ADJUSTING, AND BALANCING (TAB)

A. THE FOLLOWING MINIMAL TAB SHALL BE PROVIDED, WITH REPORT AND INFORMATION SUBMITTED WITH CLOSEOUTS.
   1. MIXING VALVES INLET TEMPERATURE AND ADJUST TO DELIVER SPECIFIED OUTLET TEMPERATURES FOR EACH HEATER, APPLIANCE, AND FIXTURE. INCLUDE A NARRATIVE IN TAB REPORT INDICATING SAME.

POTABLE HOT WATER BALANCING AND VERIFICATION

A. THE MASTER AND POINT-OF-USE MIXING VALVES SHALL BE SET TO PROVIDE THE SCHEDULED TEMPERATURES ON THE DRAWINGS, OR DETAILS.
B. THE TAB SHALL INDICATE IN THE FINAL REPORT:
   1. TEMPERATURE SETPOINT OF WATER HEATER(S).
   2. TEMPERATURE AT OUTLET OF MASTER MIXING VALVE.
   3. TEPID TEMPERATURE AT ALL PLUMBING FIXTURES/APPLIANCES, AND SAFETY EQUIPMENT WITH HOT, OR TEPID TEMPERATURE SERVICE.

CLOSEOUTS

CLOSEOUTS SHALL BE SUBMITTED TO PROFESSIONAL WITHIN TWO (2) WEEKS OF NTP. ONE HARD COPY OF CLOSEOUTS AND TWO (2) SETS ON FLASH DRIVE. CLOSEOUTS SHALL INCLUDE:

1. O&M MANUALS
2. RECORD DRAWINGS
3. COPY OF APPROVED SUBMITTALS
4. TAB COMPLETE REPORT
5. EXTENDED WARRANTIES
6. PIPE TEST LOGS
7. ATTIC STOCK
8. CONTROL AS-BUILTS
9. OWNER TRAINING DOCUMENTATION
10. SEE OTHERS ON CHECKLIST SCHEDULE

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100% CONSTRUCTION DOCUMENTS
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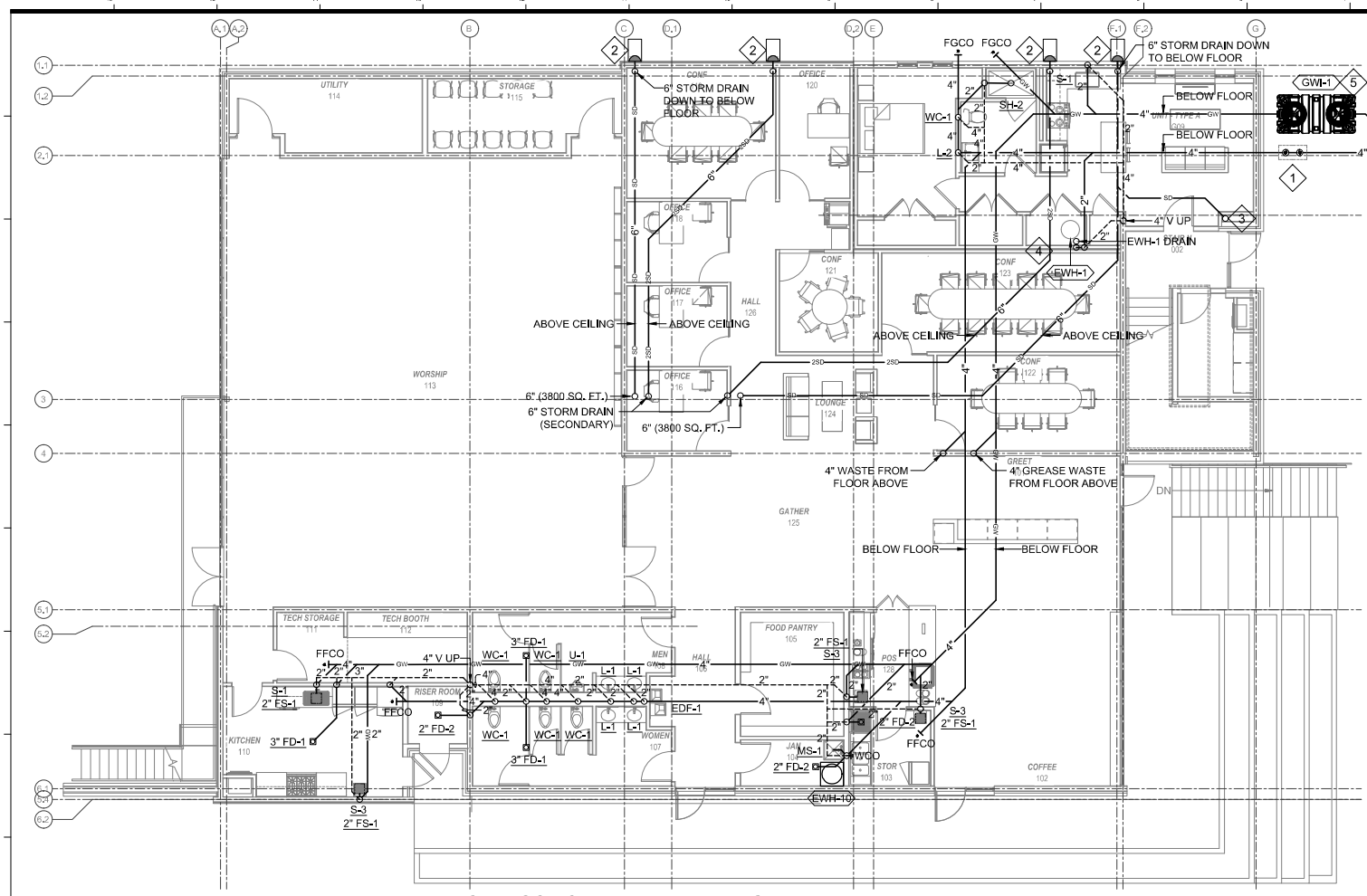
CHRISTOPHER GROSS REGISTERED PROFESSIONAL ENGINEER 01/16/26 17087 STATE OF MISSISSIPPI

PLUMBING SPECIFICATIONS

P003



PLAN NOTES

1. 2 WAY FLUSH GRADE CLEAN OUT. LOCATE IN APPROVED LOCATION.
2. DISCHARGE SECONDARY DRAIN 18" A.F.G. WITH LAMB'S TONGUE RD-3. INSTALL SPLASH BLOCK.
3. 2" STORM DRAIN FROM PATIO / DECK.
4. ROUTE A/C UNIT CONDENSATE DRAIN TO SPILL INTO EWH DRAIN.
5. GREASE WASTE INTERCEPTOR. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
6. ROUTE CONDENSATE DRAIN BELOW GRADE TO NEAREST SANITARY LINE.

FIRST FLOOR SANITARY PLUMBING PLAN

1 P101 3/16" = 1'-0"

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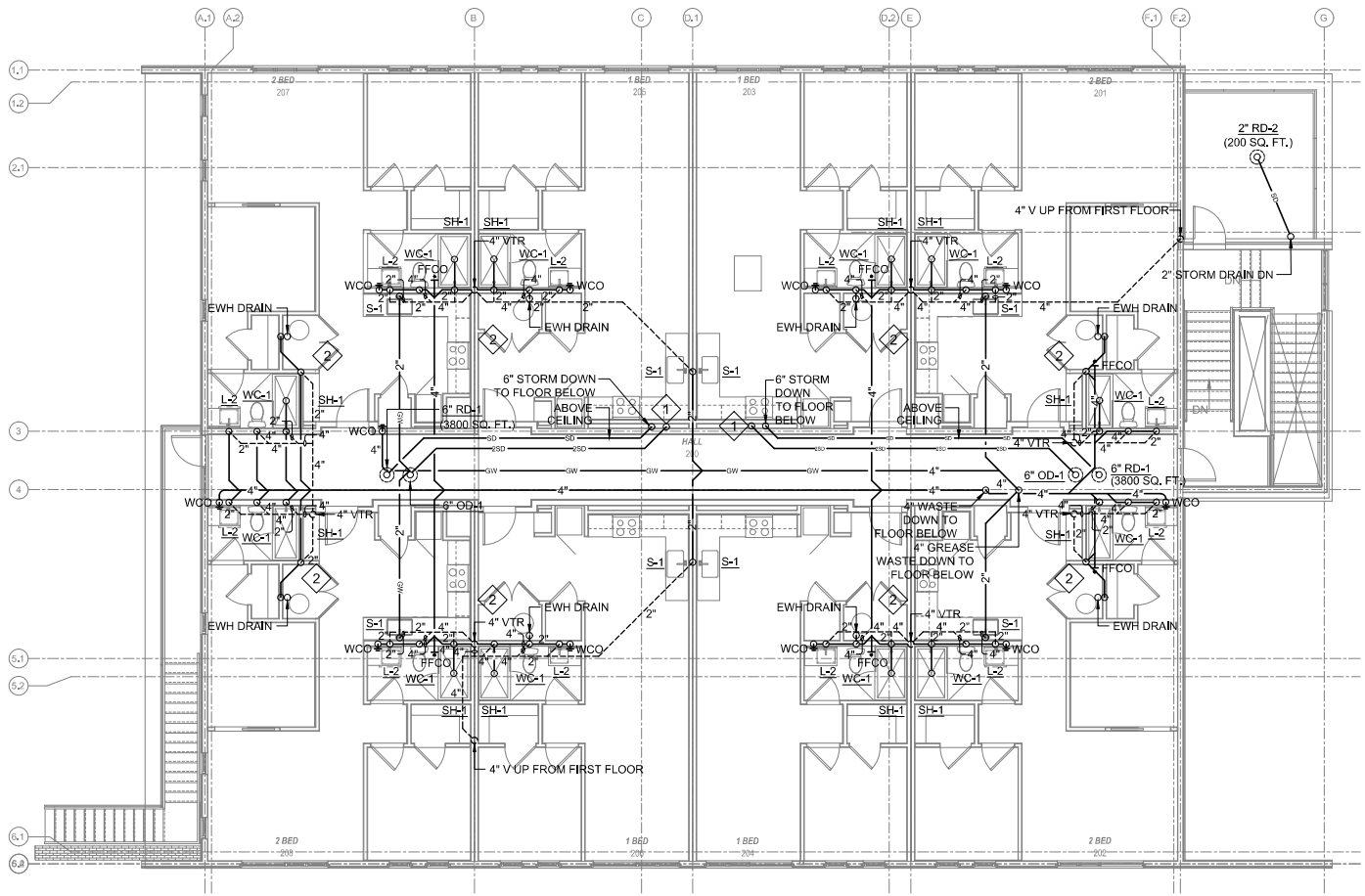
JASON CHRISTOPHER GROSS
LICENSED PROFESSIONAL ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

FIRST FLOOR SANITARY PLUMBING PLAN

P101



PLAN NOTES

1. 6" SECONDARY DRAIN DOWN TO FLOOR BELOW.
2. ROUTE A/C UNIT CONDENSATE DRAIN TO SPILL INTO EWH DRAIN.

SECOND FLOOR SANITARY PLUMBING PLAN

P102 3/16" = 1'-0"

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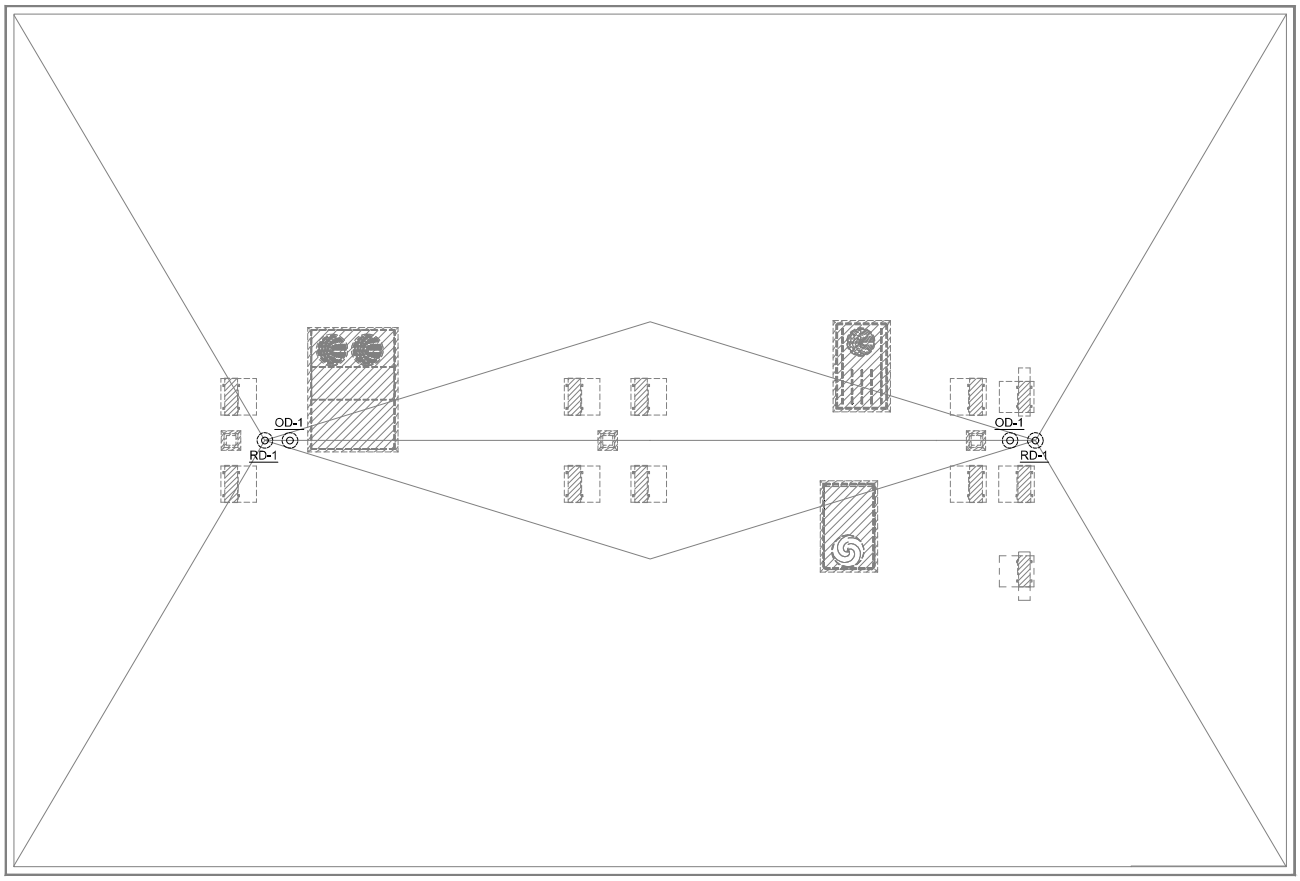
LICENSED PROFESSIONAL ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

SECOND FLOOR SANITARY PLUMBING PLAN

P102



1 P103 **ROOF SANITARY PLUMBING PLAN**
3/16" = 1'-0"

"N"

GENERAL NOTES

A. ROUTE RTU AND HP UNIT CONDENSATE TO SPILL INTO NEAREST ROOF DRAIN.

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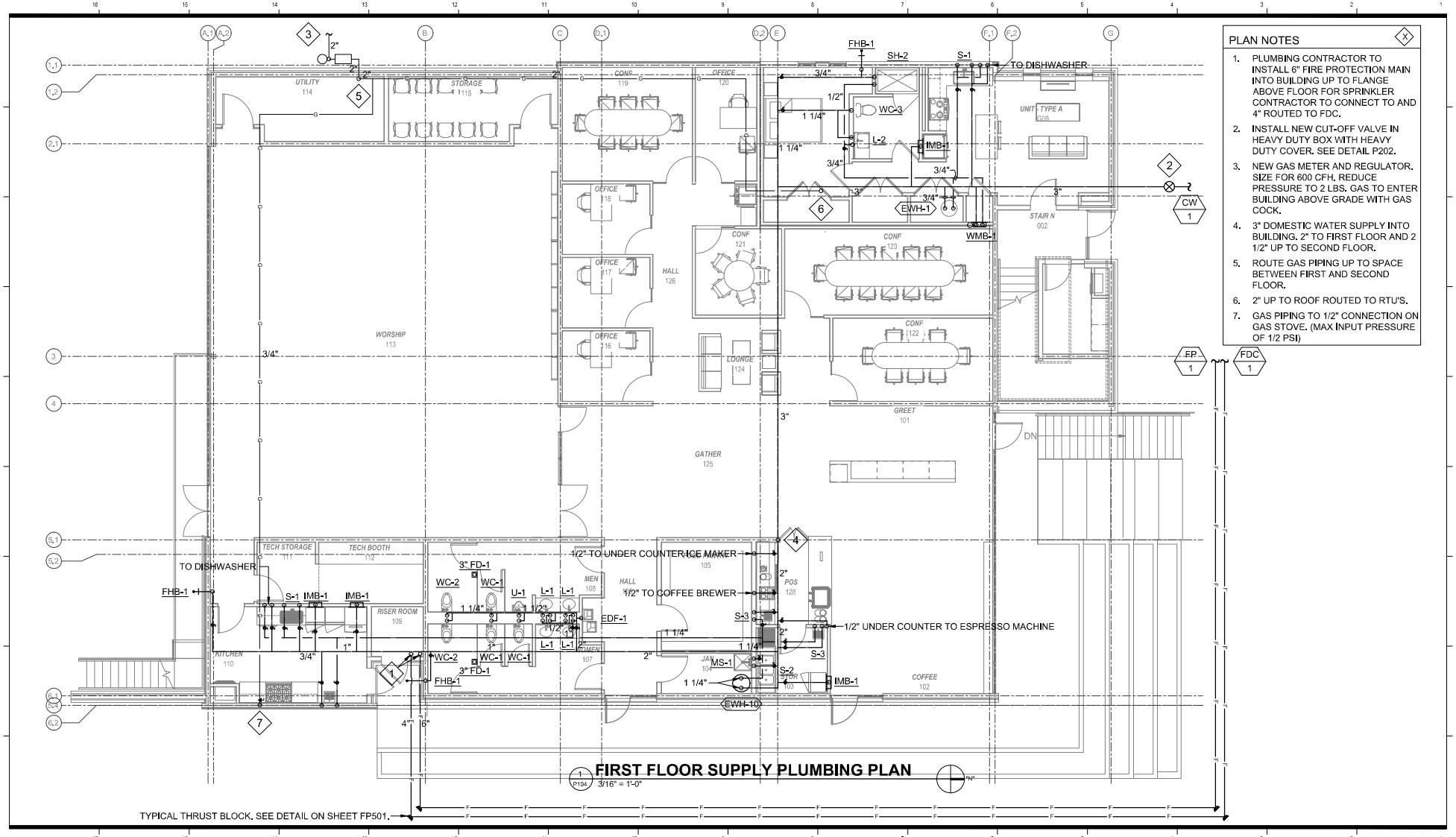
ROOF SANITARY PLUMBING PLAN

P103



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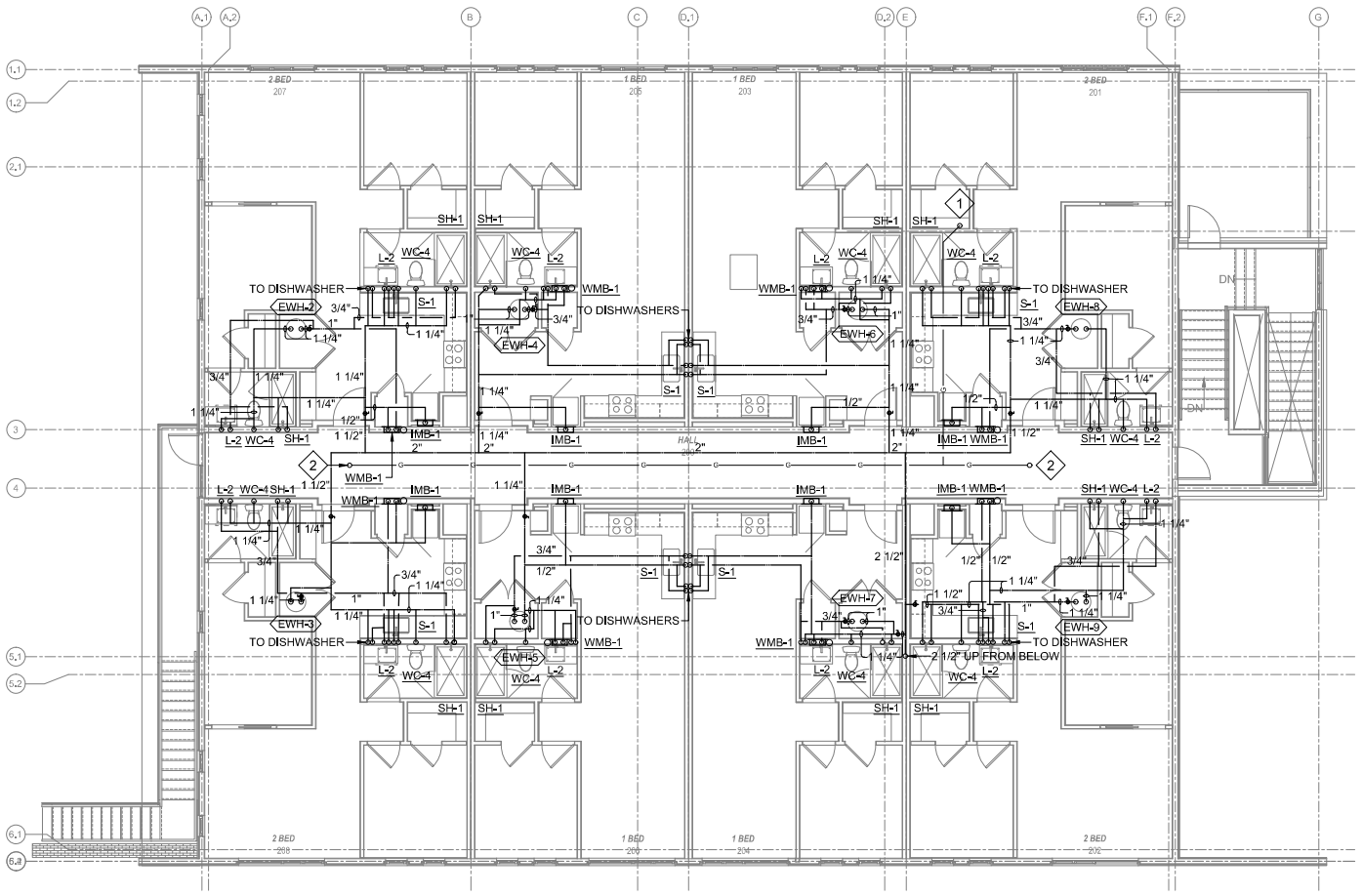
FIRST FLOOR SUPPLY PLUMBING PLAN

P104



PLAN NOTES

1. ROUTE GAS PIPING UP TO SPACE ABOVE SECOND FLOOR.
2. 2" GAS PIPING UP TO ROOF ROUTED TO RTU'S.

1 P105 **SECOND FLOOR SUPPLY PLUMBING PLAN**
3/16" = 1'-0"

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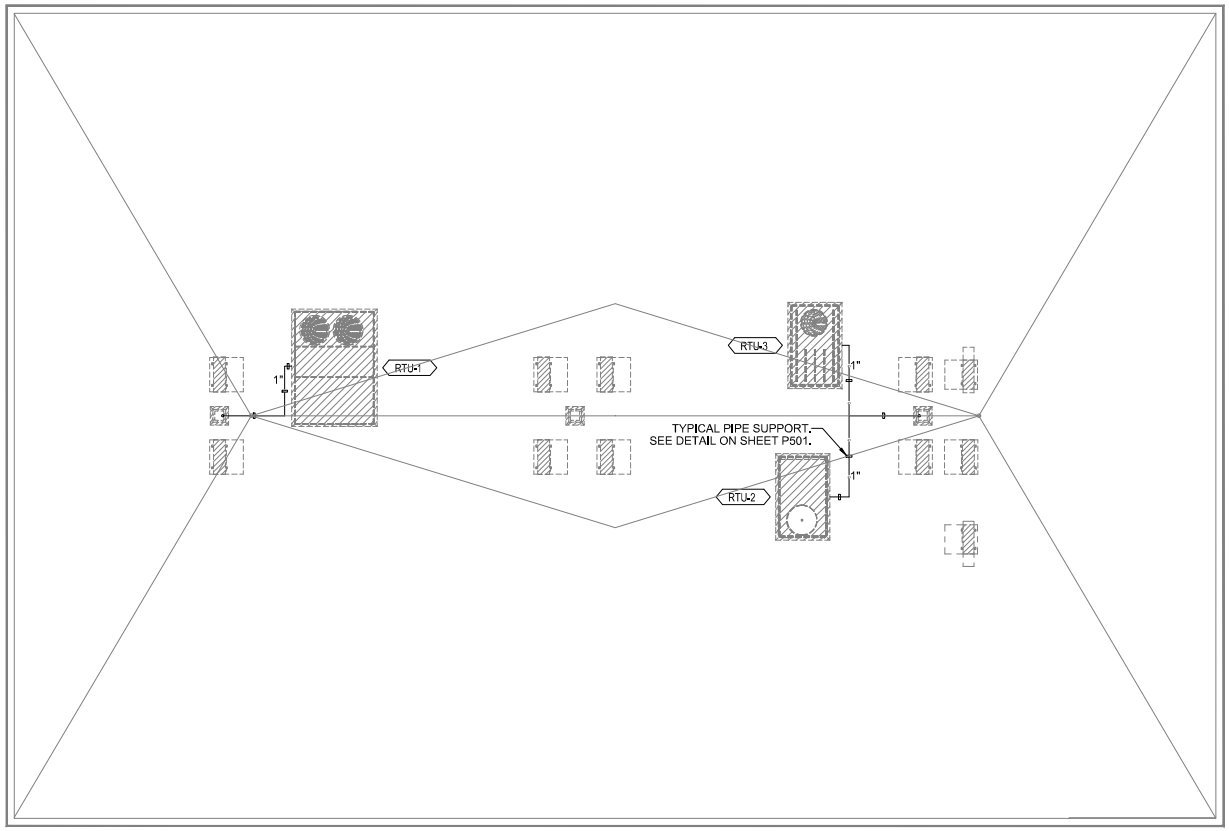
STATE OF MISSISSIPPI

SECOND FLOOR SUPPLY PLUMBING PLAN

P105



1 P106 **ROOF SUPPLY PLUMBING PLAN**
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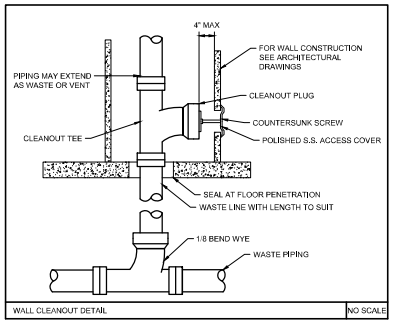
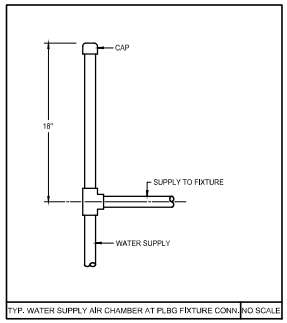
ROOF SUPPLY PLUMBING PLAN

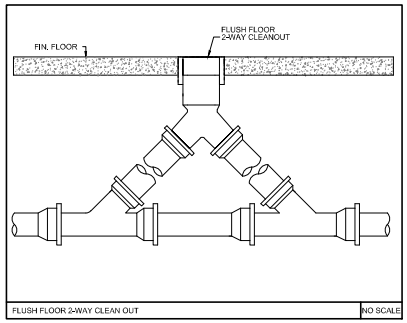
P106



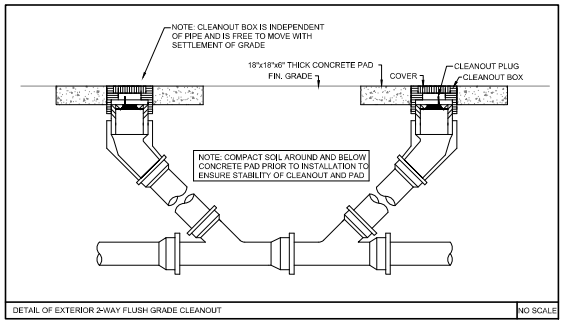
WALL CLEANOUT DETAIL — NO SCALE



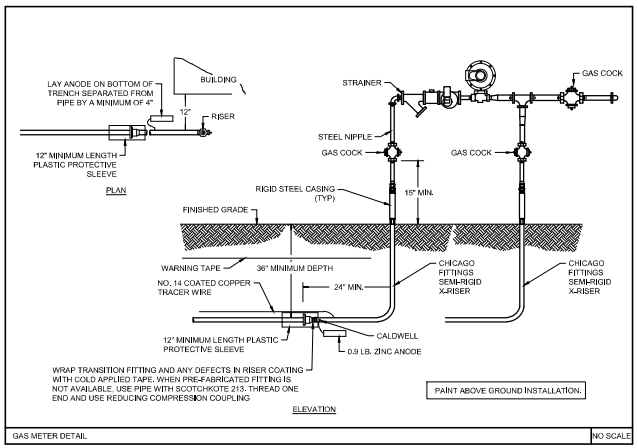
TYP. WATER SUPPLY AIR CHAMBER AT PLBG FIXTURE CONN. — NO SCALE



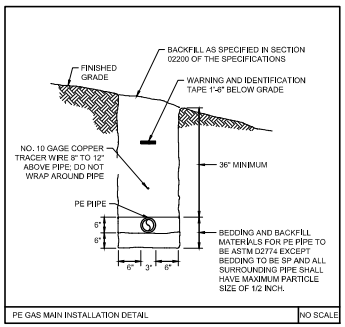
FLUSH FLOOR 2-WAY CLEAN OUT — NO SCALE



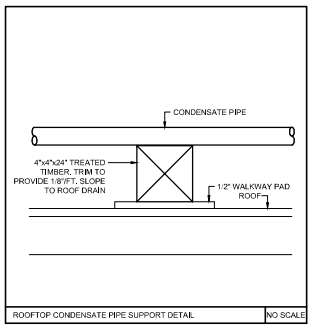
DETAIL OF EXTERIOR 2-WAY FLUSH GRADE CLEANOUT — NO SCALE



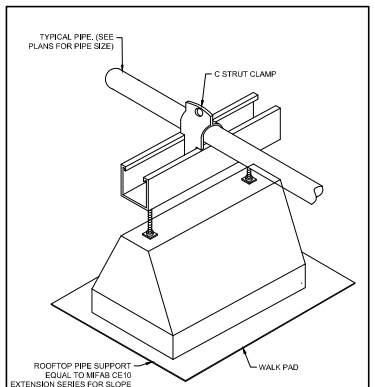
GAS METER DETAIL — NO SCALE



PE GAS MAIN INSTALLATION DETAIL — NO SCALE



ROOFTOP CONDENSATE PIPE SUPPORT DETAIL — NO SCALE



NOTE:
1. SUPPORTS FOR GAS PIPING SHALL BE EQUAL TO MIFAB C6 SERIES.
2. ALL WALK PADS SHALL BE OF PETROLEUM ASPHALT MATERIALS OR OF SIMILAR MATERIAL AND SHALL BE 16"x16" AS CAREY TREAD TO FIELD CUT TO MATCH SIZES AS INDICATED ON DRAWINGS. WALK PAD TO BE COORDINATED WITH ROOF MANUFACTURER TO ENSURE WARRANTIES ARE NOT VOIDED BEFORE SUBMITTING.
3. SUPPORTS SHALL BE INSTALLED WITHIN 3' OF EQUIPMENT CONNECTOR OR OFFSET.
4. SUPPORTS SHALL BE SPACED 4' OC FOR 2" PIPING AND SMALLER.
5. SUPPORTS SHALL BE SPACED 6' OC FOR PIPING LARGER THAN 2".

ROOF PIPE SUPPORT DETAIL — NO SCALE

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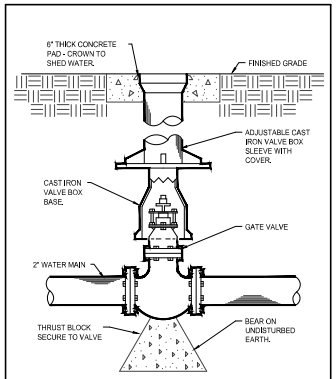
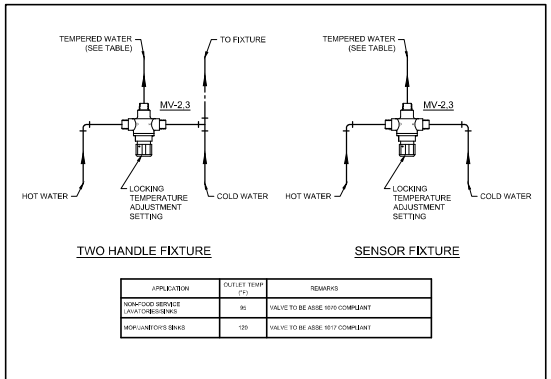
PLUMBING DETAILS

P501

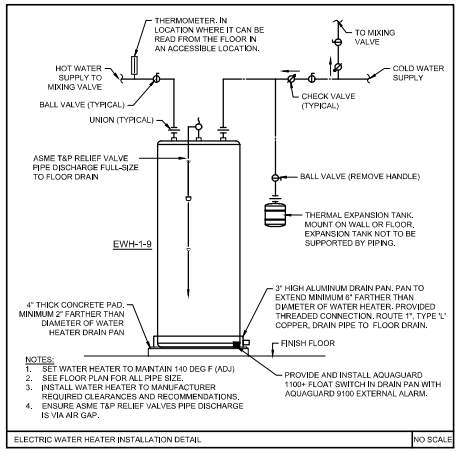


CUT-OFF VALVE IN HEAVY DUTY BOX DETAIL — NO SCALE



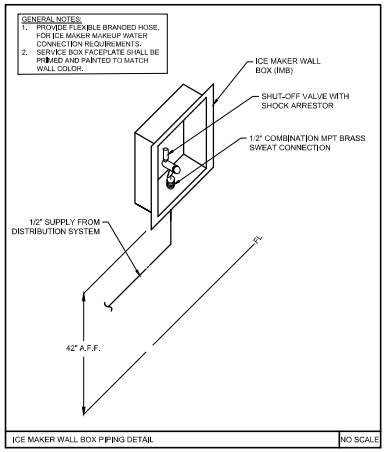
APPLICATION	OUTLET TEMP (°F)	REMARKS
NON-FOOD SERVICE LAVATORY SINKS	95	VALVE TO BE ASSE 1070 COMPLIANT
MOP/JANITOR'S SINKS	120	VALVE TO BE ASSE 1017 COMPLIANT

POINT OF USE MIXING VALVE DETAIL — NO SCALE

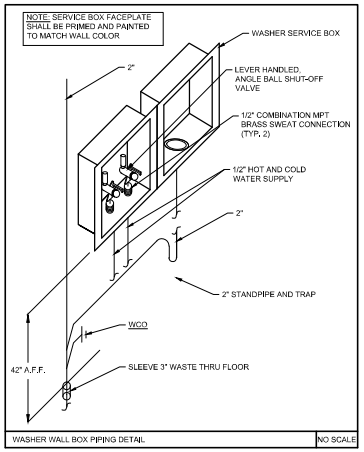


NOTES:
1. SET WATER HEATER TO MAINTAIN 140 DEG F (ADJ)
2. SEE FLOOR PLAN FOR ALL PIPE SIZE.
3. INSTALL WATER HEATER TO MANUFACTURER REQUIRED CLEARANCES AND RECOMMENDATIONS.
4. ENSURE ASME T&P RELIEF VALVES PIPE DISCHARGE IS VIA AIR GAP.

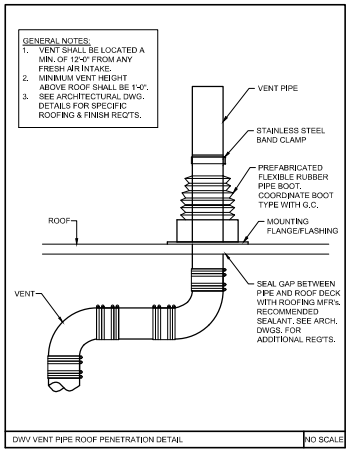
ELECTRIC WATER HEATER INSTALLATION DETAIL — NO SCALE



ICE MAKER WALL BOX PIPING DETAIL — NO SCALE



WASHER WALL BOX PIPING DETAIL — NO SCALE



DWV VENT PIPE ROOF PENETRATION DETAIL — NO SCALE

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CHRISTOPHER GROSS — LICENSED PROFESSIONAL ENGINEER — 01/16/26 — 17087 — STATE OF MISSISSIPPI

PLUMBING DETAILS

P502

SPECIFICATION NOTES

(1) 4" FPT inlet/outlet with 4" plain end fittings
(2) Unit weight: 390 lbs. For wet weight, add 4254 lbs. For traffic-rated cover(s), add 90 lbs per cover. For pedestrian cover(s), add 7 lbs per cover.
(3) Maximum operating temperature: 150º F continuous
(4) Liquid Capacity: 510 gal
Grease Capacity (100 GPM): 3,271 lbs (448 gal)
Grease Capacity (200 GPM): 2,969 lbs (407 gal)
Solids Capacity: 102 gal
(5) This unit does not require flow control for 100 GPM and 200 GPM applications
(6) For gravity drainage applications only
(7) Do not use for pressure applications
(8) Cover placement allows full access to tank for proper maintenance
(9) Vent not required unless per local code
(10) Engineered inlet and outlet diffusers with inspection ports are removable to inspect / clean piping
(11) Integral air relief / Anti-siphon / Sampling access
(12) Cover adapters provide an adjustable height range of 5"
(13) Designed for below-grade, above-grade, indoor or outdoor installations
(14) Safety Star® (450 lbs load capacity) is an access restrictor built into each cover adapter to prevent accidental entry into tanks

CERTIFIED PERFORMANCE

Great Basin® hydromechanical grease interceptors are third party performance-tested and listed by IAPMO to ASME A112.14.3 and CSA B481.1 grease interceptor standards and greatly exceed requirements for grease separation and storage. They are compliant to the Uniform Plumbing Code and the International Plumbing Code.

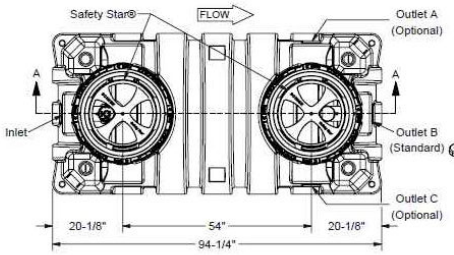
ENGINEER SPECIFICATION GUIDE

Schier Great Basin® grease interceptor model GB-500 shall be lifetime guaranteed and made in USA of seamless, molded polyethylene with minimum 7/16" uniform wall thickness. Flow control cartridge shall be PVC. Interceptor shall be furnished for above or below-grade installation with adjustable cover adapter and Safety Star® access restrictor built into each cover adapter, and three outlet options. This unit is certified for hydromechanical performance to ASME A112.14.3 (Type D) and CSA B481.1. Interceptor flow rate shall be 100 GPM or 200 GPM. Interceptor grease capacity shall be 3,271 lbs @ 100 GPM or 2,969 lbs @ 200 GPM.

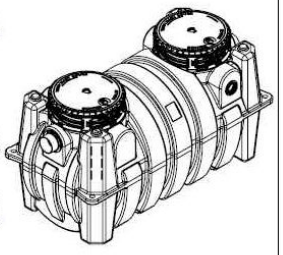
COVERS SOLD SEPARATELY

This unit is provided with temporary cover(s) intended for the duration of jobsite installation. Purchase one of the following finish covers.

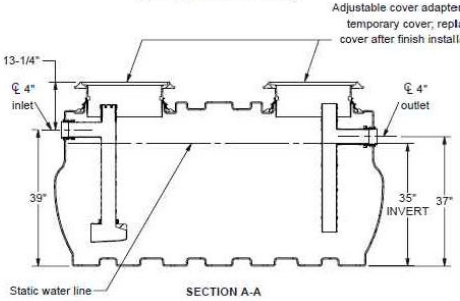
- T24-GI (8044-000-01): Traffic-rated cast iron cover shall provide water/gas-tight seal and have a minimum of 16,000 lbs load capacity. For outdoor installation.
- P24-GI (8045-000-01): Pedestrian-rated poly cover shall provide water/gas-tight seal and have a minimum of 2,000 lbs load capacity. For indoor installation.



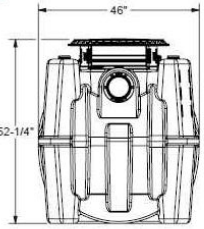
TOP VIEW
(COVER(S) REMOVED FOR CLARITY)



ISOMETRIC VIEW



SECTION A-A



INLET END VIEW

SCHIER

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fax: 913-951-3399

schierproducts.com

Made in the U.S.A.

SPECIFICATION SHEET

MODEL NUMBER	GB-500
PART NUMBER	4075-300-02
DESCRIPTION	GB-500 GREASE INTERCEPTOR 100 GPM / 200 GPM, 4" PLAIN/FPT CONNECTIONS
DRAWN BY	G.HEIDE
DATE	08/11/2025 REV A ECO 00143

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GWI-1 GREASE INTERCEPTOR DETAIL — NO SCALE

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PLUMBING DETAILS

P503

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	MAKE AND MODEL	MIXING VALVE	ELECTRICAL V/PH	REMARKS
WC-1	WATER CLOSET (WALL MOUNTED, FLUSH VALVE)	PROFLO PF1731	--	--	1.28 GPF, MODIFY HEIGHT OF FLUSH VALVE AS REQUIRED FOR HANDRAIL, TRAP PRIMER AS REQUIRED, OPEN FRONT WHITE SEAT, SELF-SUSTAINING HINGES W/S.S, POST AND PINTLES, FLOOR MOUNTED CARRIER, POWER CONVERTER
	FLUSH VALVE (BATTERY POWERED SENSOR)	AMERICAN STANDARD 6065.111.002	--	120/1	
	SEAT	BEMIS 1055SSC, AMERICAN STANDARD 5901.100SS, ZURN Z5955SS-EL-STS	--	--	
	CARRIER	J.R. SMITH, WADE, ZURN	--	--	
WC-2	WATER CLOSET (WALL MOUNTED, FLUSH VALVE, A.D.A.)	PROFLO PF1731	--	--	1.28 GPF, TRAP PRIMER AS REQUIRED, OPEN FRONT WHITE SEAT, SELF-SUSTAINING HINGES W/S.S, POST AND PINTLES, FLOOR MOUNTED CARRIER, POWER CONVERTER
	FLUSH VALVE (BATTERY POWERED SENSOR)	AMERICAN STANDARD 6065.111.002	--	120/1	
	SEAT	BEMIS 1055SSC, AMERICAN STANDARD 5901.100SS, ZURN Z5955SS-EL-STS	--	--	
	CARRIER	J.R. SMITH, WADE, ZURN	--	--	
WC-3	WATER CLOSET (FLOOR MOUNTED, TANK TYPE, A.D.A.)	SLOAN WETS-1029		--	1.28 GPF, OPEN FRONT WHITE SEAT, SELF-SUSTAINING HINGES W/S.S, POST AND PINTLES, MINIMUM 1000G MaP FLUSH SCORE
	SEAT	BEMIS 1055SSC, AMERICAN STANDARD 5901.100SS		--	
WC-4	WATER CLOSET (FLOOR MOUNTED, TANK TYPE)	SLOAN WETS-4029		--	1.28 GPF, OPEN FRONT WHITE SEAT, SELF-SUSTAINING HINGES W/S.S, POST AND PINTLES, MINIMUM 1000G MaP FLUSH SCORE
	SEAT	BEMIS 1055SSC, AMERICAN STANDARD 5901.100SS		--	
U-1	URINAL	AMERICAN STANDARD 6590.001	--	--	0.5 GPF, SEE ARCHITECTURAL PLANS FOR A.D.A. URINALS, FLOOR MOUNTED CARRIERS
	FLUSH VALVE (BATTERY OPERATED)	AMERICAN STANDARD 6063061.002	--	--	
	CARRIER	J.R. SMITH, WADE, ZURN	--	--	
L-1	LAVATORY (UNDER COUNTER MOUNTED, OVAL)	SLOAN SS-3001, KOHLER K-2210, AMERICAN STANDARD 0496.221	--	--	FITS STANDARD 17x14" OVAL OPENING, 0.5 GPM, A.D.A COMPLIANT, PROVIDE WITH 4" DECK PLATE, FINISH PER ARCHITECT
	FAUCET (BATTERY OPERATED)	DELTA DEMD-211LF	YES	--	
L-2	LAVATORY (UNDER COUNTER MOUNTED, RECTANGULAR)	SLOAN SS-3021, KOHLER K-20000-0, AMERICAN STANDARD 0514.000	--	--	NOMINAL 21-5/8" L x 15-3/4" W x 6-1/4" D, 0.5 GPM, A.D.A COMPLIANT, PROVIDE WITH 4" DECK PLATE, FINISH PER ARCHITECT
	FAUCET (BATTERY OPERATED)	DELTA DEMD-211LF	YES	--	
S-1	STAINLESS STEEL SINGLE COMPARTMENT SINK (DROP IN)	ELKAY DLR252210	--	--	1.5 GPM, A.D.A. COMPLIANT, (4" CENTERS, MAX 2.5" THICK COUNTERTOP), CERAMIC STRUCTURES, ESCUTCHEON
	FAUCET (SWING SPOUT, ABOVE DECK, SINGLE HANDLE)	DELTA 100LF-HDF, KOHLER K-30613-CP, MOEN 7423	YES	--	
S-2	STAINLESS STEEL THREE COMPARTMENT SINK WITH DRAINBOARD AND STAINLESS STEEL LEGS	ELKAY 3C10X14-2-16X	--	--	
	FAUCET (TUBE SPOUT)	DELTA 28C8934	YES	--	
S-3	STAINLESS STEEL SINGLE COMPART, SINK (UNDERMOUNT)	ELKAY ELUH2317PD	--	--	**1.5 GPM, A.D.A. COMPLIANT, DECK MOUNTED (1" CENTERS, MAX 2.5" THICK COUNTERTOP), ESCUTCHEON**
	FAUCET (SWING SPOUT, ABOVE DECK, SINGLE HANDLE)	DELTA 100LF-HDF, KOHLER K-30613-CP, MOEN 7423	YES	--	
SH-1	ONE-PIECE ACRYLIC SHOWER	AQUATIC 6030BFSC (60"W x 30"D x 78-7/8"H)	--	--	HEAD (1.75 GPM AT 80 PSI), WAND (1.75 GPM/80 PSI), U4993-PK SHOWER ARM/FLANGE, A.D.A. COMPLIANT, R10700-UNWS VALVE, 2" SURFIT SHOWER DRAIN, INSTALL GROUT SUPPORT UNDER SHOWER, SEAT,
	TRIM (SINGLE HANDLE)	DELTA T13H303-20 WITH RP70175PR HEAD AND 59462-B1-PK WAND	YES	--	
SH-2	ONE-PIECE ACRYLIC SHOWER	AQUATIC 6030BFSC (60"W x 30"D x 78-7/8"H)	--	--	HEAD (1.75 GPM/80 PSI), WAND (1.75 GPM/80 PSI), U4993-PK ARM/FLANGE, A.D.A. COMPLIANT, R10700-UNWS VALVE, 2" SURFIT SHOWER DRAIN, INSTALL GROUT SUPPORT UNDER SHOWER, SEAT,
	TRIM (SINGLE HANDLE, A.D.A.)	DELTA T13H303-20 WITH RP70175PR HEAD AND 59462-B1-PK WAND	YES	--	
MS-1	MOP SINK, FLOOR MOUNTED, SQUARE	STERN WILLIAMS MTB-2424	--	--	TERAZZO, 24"W x 24"L x 10"H, 24" H BACK AND SIDE PANEL, ALUMINUM BUMPER GUARD, 30" HOSE AND WALL BRACKET, S.S. MOP HANGER, CHECK VALVES ON HOT AND COLD WATER LINES,
	SINK FAUCET WALLMOUNT	DELTA 28C9LH	YES	--	STAINLESS STEEL, NON-FILTERED, A.D.A., PROVIDE WITH FLOOR MOUNTED CARRIER.
EDF-1	ELECTRIC DRINKING FOUNTAIN (BI-LEVEL W/BOTTLE FILLER)	ELKAY EZST-L8WSSK	--	120/1 (6A)	
FHB-1	FREEZEPROOF HOSE BIBB, WALL MOUNTED	ZURN Z1320-CXL-WC, WOODFORD B66	--	--	VACUUM BREAKER, BRASS FINISH, WALL CLAMP
WMB-1	WASHING MACHINE BOX	GUY GRAY WB200	--	--	--
IMB-1	ICE MACHINE BOX	GUY GRAY 88133	--	--	--
TP-1	TRAP PRIMER	ZURN Z1021	--	--	CONNECT TO WATER CLOSET FLUSH VALVE ASSEMBLY.
FD-1	SQUARE FLOOR DRAIN	ZURN ZN4155(CP)	--	--	6x6" SQUARE WITH SURE SEAL TRAP GUARD OR WITH TRAP PRIMER AS SHOWN ON PLANS
FD-2	FLOOR DRAIN W/RECESSED RIM	ZURN ZN4151	--	--	7-3/8" DIAMETER WITH SURE SEAL TRAP GUARD
FS-1	FLOOR SINK (8"x8"x6" WITH 3/4 GRATE)	ZURN ZN1910-3	--	--	CAST IRON BODY AND SQUARE, WHITE ACID RESISTING PORCELAIN ENAMEL INTERIOR AND TOP.
RD-1	ROOF DRAIN, COMBO PRIMARY / SECONDARY	ZURN Z164	--	--	12" DIAMETER, CAST IRON DOME
RD-2	DECK DRAIN, PRIMARY	ZURN Z158	--	--	12" DIAMETER, CAST IRON DOME
RD-3	DOWNSPOUT NOZZLE	ZURN ZANB195-SS, RECTORSEAL G-O-N	--	--	NICKEL BRONZE BODY, STAINLESS STEEL SCREEN, ESCUTHCHEON

GREASE TRAP

MARK	DESCRIPTION	MAKE	MODEL	FLOW RATE GPM	LIQUID CAPACITY (GAL)	SOLIDS CAPACITY (GAL)	INLET/ OUTLET SIZE	NO. OF COVERS	DIMENSIONS IN INCHES			WEIGHT IN LBS.		REMARKS
									LENGTH	WIDTH	HEIGHT	DRY	WET	
GWI-1	GREASE WASTE INTERCEPTOR	SCHIER	GB-500	100	510	128	4"	2	94.25	46	49.5	530	4,300	POLYETHYLENE, BUILT-IN FLOW CONTROL, BELOW-GRADE INSTALLATION, ADJUSTABLE COVER ADAPTERS FOR FLUSH GRADE INSTALLATION, ASME A112.14.3 (TYPE C) CERTIFIED, COVER TO HAVE MINIMUM 16,000 LBS LOAD CAPACITY

THERMOSTATIC MIXING VALVE SCHEDULE

MARK	DESCRIPTION	MAKE	MODEL	IN	OUT	MIN. FLOW (GPM)	FLOW / MAX PRESSURE DROP	REMARKS
MV-1	WATER HEATER	LEONARD	PMV-100-LF	SEE DWG	SEE DWG	0.25	17 GPM / 5 PSI	DIGITAL.
MV-2	POINT OF USE	LEONARD	170-LF	3/8"	3/8"	0.25	1.7 GPM / 10 PSI	INSTALL BELOW HAND WASH LAVATORY, SINKS, AND TANKLESS WATER HEATER SERVING 1 FIXTURE.
MV-3	POINT OF USE	LEONARD	270-LF	1/2"	1/2"	0.25	5.5 GPM / 10 PSI	INSTALL AT SERVICE SINKS, UTILITY SINKS, HW HOSE BIBBS, ETC., SMALL TANKLESS ELECTRIC POINT-OF-USE WATER HEATERS.

SITE UTILITIES CONNECTION SCHEDULE

TAG	DESCRIPTION	LOCATION	SIZE	INVERT	CAPACITY/ PRESSURE	REMARKS
SS 1	SANITARY SEWER	P101	4"	-	-	SEE CIVIL FOR CONTINUATION
W 1	DOMESTIC COLD WATER	P102	3"	-	-	SEE CIVIL FOR CONTINUATION
FP 1	FIRE PROTECTION MAIN	P102	6"	-	-	SEE CIVIL FOR CONTINUATION
FDC 1	FIRE DEPARTMENT CONNECTION	P102	4"	-	-	SEE CIVIL FOR LOCATION

NOTE: INVERT ON SANITARY SEWER IS BASED ON THE FINISHED FLOOR ELEVATION THE AREA IT COVERS.

PLUMBING FIXTURE CONNECTION SCHEDULE

FIXTURE TYPE	ABBREVIATION	ROUGH-IN SIZES				REMARKS
		C.W.	H.W.	WASTE	VENT	
WATER CLOSET	WC-	1"	--	4"	2-4"	FLUSH VALVE
WATER CLOSET	WC-	1/2"	--	4"	2-4"	TANK
LAVATORY	L-	1/2"	1/2"	2"	2"	--
URINAL	U-	3/4"	--	2"	2"	--
SHOWER HEAD & DRAIN	SH-	1/2"	1/2"	2"	2"	--
ELECTRIC DRINKING FOUNTAIN	EDF-	1/2"	--	2"	2"	--
SINK	S-	1/2"	1/2"	2"	2"	--
MOP SINK	MS-	1/2"	1/2"	2"	2"	--
ICE MAKER BOX	IMB-	1/2"	--	--	--	--
WASHING MACHINE BOX	WMB-	3/4"	3/4"	2"	2"	--
FREEZE PROOF / RESISTANT HOSE BIBB	FHB-	3/4"	--	--	--	--
FLOOR DRAIN	FD-	--	--	SEE PLAN	SEE PLAN	PROVIDE WITH 1/2" C.W. CONNECTION TO TRAP PRIMER AS INDICATED ON PLUMBING FIXTURE SCHEDULE

PLUMBING SUBMITTAL REQUIREMENTS

ITEM	PRODUCT DATA	SAMPLES	SHOP DRAWING
DOMESTIC WATER			
PIPING AND FITTING MATERIALS	R	--	R
SOLDER	R	--	R
COUPLINGS	R	--	R
MIXING VALVES	R	--	R
BACKFLOW PREVENTERS	R	--	R
HOSE BIBBS	R	--	R
OUTLET BOXES	R	--	R
WATER METERS	R	--	R
SANITARY WASTE AND VENT			
PIPING AND FITTING MATERIALS	R	--	R
COUPLINGS	R	--	R
CLEANOUTS	R	--	R
FLOOR DRAINS	R	--	R
STORM DRAIN			
PIPING AND FITTINGS MATERIALS	R	--	R
COUPLINGS	R	--	R
ROOF DRAINS	R	--	R
WATER HEATERS			
EQUIPMENT	R	--	R
ACCESSORIES	R	--	R
CONTROLS	R	--	R
COMPRESSION TANK	R	--	R
PLUMBING FIXTURES			
FIXTURE	R	--	R
TRIM	R	--	R
SUPPORTS	R	--	R
ACCESSORIES	R	--	R

NOTES: "R" MEANS REQUIRED.

WATER HEATER SCHEDULE

MARK	MAKE	MODEL	VOLTAGE/PHASE	GALLONS	K.W.	TOTAL ELEMENTS	TYPE	REMARKS
EWH-1	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-2	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-3	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-4	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-5	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-6	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-7	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-8	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-9	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.
EWH-10	RHEEM	ELDSS2-7TB	208/1	47	9	2 @ 4.5KW	NON-SIMULTANEOUS	MOUNT IN CLOSET NEXT TO AC UNIT, INSTALL WITH ET-1 & MV-1 (SEE DETAIL), PROVIDE AND INSTALL WITH 7-DAY DIGITAL TIMER (120V / 1 PH BY DIV 26) (2953-), TEMPERATURE AQUASTAT (120V / 1 PH BY DIV 26) (4563-2) AND 120V/1PH SOLENOID VALVE. SEE WATER HEATER DETAIL.

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CHRISTOPHER GROSS
REGISTERED PROFESSIONAL ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

PLUMBING SCHEDULES

P601

PIPE, VALVE, AND INSULATION SCHEDULE

EQUIPMENT OR PIPING SYSTEM	LOCATION	PIPE MATERIALS						JOINING METHOD				HEAT TRACE	INSULATION			IDENTIFICATION			SHUT-OFF VALVES						REMARKS
		≤SIZE	MATERIAL	TYPE/ SCHEDULE	>SIZE	MATERIAL	TYPE/ SCHEDULE	≤SIZE	METHOD	>SIZE	METHOD		THICK-NESS	TYPE	JACKET	TYPE	BACKGROUND COLOR	LETTERING COLOR	≤SIZE	MATERIAL	TYPE / PRESSURE RATING	>SIZE	MATERIAL	TYPE / PRESSURE RATING	
DOMESTIC COLD WATER	BELOW GRADE	3"	COPPER	TYPE K ASTM B88	3"	STAINLESS STEEL	304/ 200 PSI	3"	NO JOINTS	3"	NO JOINTS	-	-	-	-	-	-	-	3"	BRONZE	FULL PORT BALL 125#	3"	ALUMINUM	LUG BUTTERFLY 125#	UTILIZE STAINLESS STEEL IN-BUILDING RISER FOR PIPE SIZES 4" AND GREATER. IN-BUILDING RISER SHALL BE AMES FIRE & WATERWORKS SERIES BR OR EQUAL., UNDERGROUND COPPER & SS PIPE SHALL BE ENCASED WITH POLYETHYLENE IN ACCORDANCE WITH ASTM A 674 OR AWWA C105/A21.5.
DOMESTIC COLD WATER	ABOVE GRADE INDOORS	3"	COPPER	TYPE L ASTM B88	3"	PP	SDR11	3"	SOLDERED /BRAZED	3	BF/EF	-	3/4"	FIBER-GLASS	ASJ	PRE-TENSION	GREEN	WHITE	3"	BRONZE	FULL PORT BALL 125#	3"	PP/ ALUMINUM	TUPP/LUG BUTTERFLY 125#	PIPING OUTDOORS AND/OR EXPOSED TO AMBIENT TEMPERATURE SHALL BE HEAT TRACED. PIPING JOINING METHOD ABOVE 2" SHALL BE BRAZED.
SANITARY WASTE & VENT / RAIN LEADER	BELOW GRADE / INDOORS / IN PLENUM SPACES	ALL	CPVC	SOLID WALL/ SCH 40 ASTM D 2665	ALL	CPVC	SOLID WALL/ SCH 40 ASTM D 2665	ALL	SOLVENT CEMENTED	ALL	SOLVENT CEMENTED	-	-	-	-	-	-	-	-	-	-	-	-	-	DWV FITTINGS, SOLVENT CEMENT (ASTM D 2618).
SANITARY WASTE & VENT / RAIN LEADER	ABOVE GRADE INDOORS / AND NOT IN PLENUM SPACES	ALL	PVC	SOLID WALL/ SCH 40 ASTM D 2665	ALL	PVC	SOLID WALL/ SCH 40 ASTM D 2665	ALL	SOLVENT CEMENTED	ALL	SOLVENT CEMENTED	-	-	-	-	PRE-TENSION	BROWN	WHITE	-	-	-	-	-	-	PVC SHALL NOT BE USED IN RETURN AIR PLENUMS UNLESS IT IS ALSO WRAPPED WITH APPROVED FIRESAFING. DWV FITTINGS, ADHESIVE PRIMER (ASTM F 656), SOLVENT CEMENT (ASTM D 2564).
SANITARY WASTE & VENT / RAIN LEADER	ABOVE GRADE INDOORS / AND IN PLENUM SPACES	ALL	CAST IRON	HUBLESS/ ASTM A 888	ALL	CAST IRON	HUBLESS/ ASTM A 888	ALL	NO HUB	ALL	NO HUB	-	-	-	-	PRE-TENSION	BROWN	WHITE	-	-	-	-	-	-	USE WHERE INSTALLED IN RETURN AIR PLENUMS. PROVIDE HEAVY-DUTY TYPE NO HUB COUPLINGS.
DOMESTIC HOT WATER AND RECIRCULATING	ABOVE GRADE INDOORS	3"	COPPER	TYPE L ASTM B88	3"	PP	SDR11	3"	SOLDERED /BRAZED	3	BF/EF	-	1"	FIBER-GLASS	ASJ	PRE-TENSION	RED	WHITE	3"	BRONZE	FULL PORT BALL 125#	3"	PP/ ALUMINUM	TUPP/LUG BUTTERFLY 125#	INCLUDES DOMESTIC HOT WATER SUPPLY AND RE-CIRCULATION PIPING INDOORS. PIPING JOINING METHOD ABOVE 2" SHALL BE BRAZED.
CONDENSATE DRAINS	ABOVE GRADE INDOORS	1"	PVC	SOLID WALL/ SCH 40 ASTM D 2665	1"	COPPER	TYPE L OR M ASTM B88	ALL	SOLVENT SEALED	1"	SOLDERED	-	1/2"	ELASTO-MERIC	-	PRE-TENSION	DARK GRAY	WHITE	-	-	-	-	-	-	WITH DWV FITTINGS ON 1-1/2" AND LARGER. INSTALL W/UNION AT CONNECTION. PVC SHALL NOT BE USED IN RETURN AIR PLENUMS UNLESS IT IS ALSO WRAPPED WITH APPROVED FIRESAFING. COPPER TO BE USED IN RETURN AIR PLENUMS.
TRAPPED OVERFLOW DRAIN PAN	ABOVE GRADE INDOORS	2"	COPPER	TYPE L OR M ASTM B88	-	-	-	2"	SOLDERED	-	-	-	1/2"	FIBER-GLASS	ASJ	PRE-TENSION	DARK GRAY	WHITE	2"	BRONZE	FULL PORT BALL 125#	-	-	-	WITH DWV FITTINGS ON 1-1/2" AND LARGER. INSTALL W/UNION AT CONNECTION TO DRAIN PANS. VALVES REQUIRED ONLY ON DRAIN PANS.
KITCHEN SINK WASTE	ABOVE SLAB EXPOSED TO VIEW	1-1/2"	CHROME PLTD BRASS	-	1-1/2"	COPPER	TYPE L ASTM B88	1-1/2"	SLIP JOINT	1-1/2"	SOLDERED	-	-	-	-	-	-	-	-	-	-	-	-	-	PAINT COPPER EXPOSED TO VIEW INSTALLATIONS "CHROME" COLOR. INCLUDE UNIONS ON COPPER SINK, TRAP, AND WALL DRAIN CONNECTIONS.
GREASE WASTE AND VENT	ABOVE GRADE	ALL	CAST IRON	ASTM A74	ALL	CAST IRON	ASTM A74	ALL	NO HUB	ALL	NO HUB	-	-	-	-	-	-	-	-	-	-	-	-	-	PIPING TO BE EPOXY COATED AS EQUAL TO CHARLOTTE EDGE HP, TYLER DURA PIPE. (SPEARS LAB WASTE EQUAL). HEAVY DUTY COUPLINGS, INSULATION AND HEAT TRACE ONLY REQUIRED ON INSTALLATIONS INDICATED ON DRAWINGS. PROVIDE TEMPERATURE MAINTENANCE TYPE HEAT TRACE ON ALL GREASE WASTE.
GREASE WASTE AND VENT	BELOW GRADE	ALL	CAST IRON	ASTM A74	ALL	CAST IRON	ASTM A74	ALL	HUB AND SPIGOT	ALL	HUB AND SPIGOT	-	-	-	-	-	-	-	-	-	-	-	-	-	PIPING TO BE EPOXY COATED AS EQUAL TO CHARLOTTE EDGE HP, TYLER DURA PIPE. (SPEARS LAB WASTE EQUAL). ASTM C564 GASKETS, ASTM B29 CAULKING MATERIALS HEAT TRACE ONLY REQUIRED ON INSTALLATIONS INDICATED ON DRAWINGS. PROVIDE TEMPERATURE MAINTENANCE TYPE HEAT TRACE ON ALL GREASE WASTE.

NOTES:

A. WATER PIPING INDOOR JOINING MAY BE PRESS FITTINGS ON 2" AND SMALLER PIPES.
B. INCLUDE 0.017" THICK ALUMINUM OUTER JACKET OVER ALL PIPE AND FITTING INSULATION OUTDOORS.
C. VALVE AND PIPING ACCESSORY INSULATION (STRAINERS, PRV, BFPS, ETC.) ON WATER PIPING MAY BE ELASTOMERIC TYPE, WITH THICKNESS 1/2" INDOOR S AND 1-1/2" OUTDOORS.
D. PROVIDE BLOCKING OR HIGHER DENSITY SAME THICKNESS INSULATION AT HANGER / SADDLE SUPPORTS.
E. INSULATE ALL INDOOR MULTI-STORY BUILDING SANITARY WASTE AND RAIN LEADER PIPING ABOVE LOWEST FLOOR SLAB TO 48" ABOVE HIGHEST FLOOR SLAB FOR SOUND ATTENUATION.
F. INCLUDE 12 GA. BARE COPPER WIRE WRAP AROUND ALL NON-METALLIC UNDERGROUND PIPING OUTSIDE BUILDING.
G. INCLUDE METALLIC SPECIAL IDENTIFICATION TAPE (12" BELOW FINISHED GRADE) ATOP ALL NON-METALLIC AND ALL PIPING BURIED MORE THAT THREE FEET (3') DEEP OUTSIDE BUILDINGS.
H. INCLUDE CUSTOM NEAT ELASTOMERIC INSULATION ON ALL WATER AND WASTE PIPING ON ADA SINKS/LAVATORIES.
I. PROVIDE A METAL RISER AT ALL ABOVE GROUND METER/REGULATOR/AND UNDERGROUND BRANCH PIPING.
J. USE SPEARS STAINLESS STEEL REINFORCED THREADED PVC ADAPTERS.
K. PIPE RISER AT METER/REGULATOR AND OTHER GRADE PENETRATIONS SHALL BE PVC COATED STEEL PAINTED.

ABBREVIATIONS:

ASJ ALL SERVICE JACKET (INSULATION)
ALUM 0.014" ALUMINUM OUTER JACKET
BLK BLACK
BF/EF BUT FUSION ON PIPE TO PIPE. ELECTRO/HEAT FUSION ON BRANCH OUTLET SADDLE JOINTS
CSST CORRUGATED STAINLESS STEEL TUBING
PE POLYETHYLENE
PP POLYPROPYLENE (NIRON/ASAHI)
TUPP TRUE UNION POLYPROPYLENE

*** PIPE RISER AT METER/REGULATOR AND OTHER GRADE PENETRATIONS SHALL BE PVC COATED STEEL PAINTED.

DOMESTIC WATER PIPING TEST LOG

DATE	SYSTEM	DESCRIPTION OF PIPING SECTION TESTED	TEST PRESSURE (PSIG)	TEST DURATION (HOURS)	RETULTS (PASS/FAIL)	WITNESS (INITIALS)

This form stall be completed and submitted with the project closeout documents. Contractor shall copy this form if more sheets are required. Piping pressure test log shall be kept at project site and shall be made available to the Architect upon request.

STORM DRAIN PIPING TEST LOG

DATE	SYSTEM	DESCRIPTION OF PIPING SECTION TESTED	TEST PRESSURE (PSIG)	TEST DURATION (HOURS)	RETULTS (PASS/FAIL)	WITNESS (INITIALS)

This form stall be completed and submitted with the project closeout documents. Contractor shall copy this form if more sheets are required. Piping pressure test log shall be kept at project site and shall be made available to the Architect upon request.

SANITARY WASTE AND VENT PIPING TEST LOG

DATE	SYSTEM	DESCRIPTION OF PIPING SECTION TESTED	TEST PRESSURE (PSIG)	TEST DURATION (HOURS)	RETULTS (PASS/FAIL)	WITNESS (INITIALS)

This form stall be completed and submitted with the project closeout documents. Contractor shall copy this form if more sheets are required. Piping pressure test log shall be kept at project site and shall be made available to the Architect upon request.

PLUMBING CLOSEOUT DOCUMENT CHECKLIST

PROJECT NAME:

INITIALS OF PERSON COMPLETING TASK	DATE OF TASK COMPLETED	DESCRIPTION OF CONTRACTORS SUBMITTAL
		FINAL TAB REPORT
		SIGNED LETTER RECORD OF OWNERS PERSONNEL O & M TRAINING WITH SIGN IN SHEET.
		DVD RECORD OF OWNERS PERSONNEL O & M TRAINING (3 EACH).
		OPERATION AND MAINTENANCE MANUALS.
		AS-BUILT DRAWINGS WITH CONTRACTOR'S STAMP.
		WARRANTY INFORMATION
		POTABLE WATER SANITATION REPORT AND CERTIFICATION
		PIPE PRESSURE TEST LOG, INCLUDE NARRATIVES OF WHAT WAS TESTED, DESCRIPTION OF TEST METHODOLOGY AND RESULTS.
		VALVE TAG AND FLOOR PLAN LOCATION CHARTS.
		KEYS TO ACCESS DOORS, CONTROL PANELS, ETC, PROVIDE WRITTEN RECEIPTS WITH OWNER'S ACCEPTANCE).
		KEYS TO PLUMBING STOPS AND HOSE BIBB BOXES (PROVIDE WRITTEN RECEIPTS WITH OWNER'S ACCEPTANCE).
		PROVIDE SPARE CIRCULATING PUMP SEALS (PROVIDE WRITTEN RECEIPTS WITH OWNER'S ACCEPTANCE).
		SEISMIC RESTRAINT MANUFACTURER'S REPRESENTATIVE CERTIFICATION THAT ALL INSTALLATIONS HAVE BEEN INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

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REGISTERED PROFESSIONAL
ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

PLUMBING SCHEDULES

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FIRE PROTECTION SHEET INDEX

FP001	FIRE PROTECTION LEGEND, ABBREVIATIONS & NOTES
FP002	FIRE PROTECTION SPECIFICATIONS
FP003	FIRE PROTECTION SPECIFICATIONS
FP101	FIRE PROTECTION FLOOR PLAN LEVEL 1
FP102	FIRE PROTECTION FLOOR PLAN LEVEL 2
FP501	FIRE PROTECTION DETAILS
FP601	FIRE PROTECTION SCHEDULES

FIRE PROTECTION FLOW DATA

PRESSURE - 51 P.S.I. - STATIC / 48 P.S.I. - RESIDUAL

FLOW: 1061 GPM

FLOW TEST LOCATION: USM WESLEY 3200 MONTAGUE BLVD
HATTIESBURG, MS

DATE OF TEST: 10/30/25 CONDUCTED BY: SOUTHERN FIRE

CODE REVIEW

APPLICABLE OR LOCAL ADOPTED CODES (BASIS OF DESIGN)
CODE REQUIREMENTS INCLUDE BUT NOT LIMITED TO THE FOLLOWING:

2016 NATIONAL FIRE PROTECTION ASSOCIATION (NFPA 1) FIRE CODE

2016 NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS

2016 NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS

2018 INTERNATIONAL BUILDING CODE

2018 INTERNATIONAL FIRE CODE

FIRE PROTECTION ABBREVIATIONS

AFF	ABOVE FINISH FLOOR	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
AH	AMP HOUR	NIC	NOT IN THIS CONTRACT
AHJ	AUTHORITY HAVING JURISDICTION	NO	NORMALLY OPEN
ALM	ALARM	NTS	NOT TO SCALE
AWG	AMERICAN WIRE GAUGE	OD	OUTSIDE DIMENSION
CLG	CEILING	P	PUMP
DIA	DIAMETER	PA	PREACTION
DN	DOWN	PLBG	PLUMBING
FH	FIRE HYDRANT	P.I.V.	POST INDICATOR VALVE
FD	FLOOR DRAIN	PRV	PRESSURE REDUCING VALVE
FLR	FLOOR	PSI	POUNDS PER SQUARE INCH (GAUGE)
FT	FEET	RPM	REVOLUTIONS PER MINUTE
GPM	GALLONS PER MINUTE	SP	SPRINKLER
HP	HORSE POWER	SF	SQUARE FEET
HR	HOUR	TS	TAMPER SWITCH
ID	INSIDE DIMENSION	TYP	TYPICAL
KW	KILOWATT	UL	UNDERWRITERS LABORATORY
LBS	POUNDS	V	VENT
MAX	MAXIMUM	VTR	VENT THRU ROOF
MECH	MECHANICAL	W/	WITH
MFG	MANUFACTURER	W/O	WITHOUT
MIN	MINIMUM	EFP	EXISTING FIRE PROTECTION
NC	NORMALLY CLOSED		

FIRE PROTECTION LEGEND

PIPING / ACCESSORIES

— F —	FIRE PROTECTION PIPING
	ELBOW TURNED UP
	ELBOW TURNED DOWN
	BOTTOM PIPE CONNECTION
	TOP PIPE CONNECTION
	OS&Y GATE VALVE (SUPERVISED)
	OS&Y GATE VALVE OR INDICATING BUTTERFLY VALVE (SUPERVISED)
	CHECK VALVE
	FLOW SWITCH
	BUTTERFLY VALVE WITH TAMPER SWITCH

SPRINKLER HEADS

	UPRIGHT SPRINKLER HEAD
	CONCEALED PENDANT SPRINKLER HEAD
	PENDANT SPRINKLER HEAD
	SIDEWALL SPRINKLER HEAD

MISCELLANEOUS

	NEW CONNECTION TO EXISTING PIPING, DUCTWORK AND/OR EQUIPMENT

FIRE PROTECTION GENERAL NOTES

GENERAL

1. FURNISH ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR A COMPLETE FIRE SUPPRESSION SYSTEM WHERE SHOWN ON DRAWINGS AND REQUIRED BY THE APPROPRIATE BUILDING CODES, INCLUDING, BUT NOT LIMITED TO NFPA 13.
2. THE CONTRACTOR SHALL SUBMIT FOR APPROVAL, DETAILED CONSTRUCTION DRAWINGS AND HYDRAULIC CALCULATIONS TO THE ENGINEER AND FIRE SUB-CODE OFFICIAL, PRIOR TO THE INSTALLATION OF ANY EQUIPMENT. OBTAIN CERTIFICATE OF INSPECTION AND APPROVAL FROM THE SAME AGENCY HAVING JURISDICTION AFTER INSTALLATION. THE FIRE SUPPRESSION SYSTEM SPECIFICATIONS ARE PERFORMANCE BASED ONLY. THE CONTRACTOR(S) SHALL BE FULLY RESPONSIBLE FOR THE DESIGN AND TO PROVIDE ALL NECESSARY EQUIPMENT, HARDWARE, CONTROLS, SENSOR, ETC. PER LOCAL FIRE PROTECTION CODES.
3. NUMBERS AND LOCATIONS OF SPRINKLER HEADS, SHOWN ON THESE PLANS, ARE FOR ILLUSTRATION PURPOSES ONLY. EXACT NUMBER AND LOCATIONS SHALL BE SHOWN ON SPRINKLER CONSTRUCTION SHOP DRAWINGS WHICH SHALL BE PROVIDED BY THE CONTRACTOR.
4. ALL NEW SPRINKLER PIPING AND HEADS SHALL BE LOCATED ONLY AS INDICATED ON APPROVED SHOP DRAWINGS. SHOP DRAWINGS MUST BE SUBMITTED AND APPROVED BEFORE STARTING WORK. ANY DEVIATIONS MADE TO APPROVED LAYOUT MUST BE SUBMITTED TO ENGINEER AS "AS-BUILT" DRAWINGS.
5. ALL SPRINKLER SYSTEM COMPONENTS TO BE APPROVED BY THE ENGINEER AND GENERAL CONTRACTOR AND INSTALLED BY THE FIRE PROTECTION CONTRACTOR.
6. COORDINATE INTERLOCKS, SIGNALING AND ALARM CONTACTS WITH FIRE ALARM AND ELECTRICAL CONTRACTORS. COORDINATE DUCT SMOKE DETECTION WITH MECHANICAL CONTRACTOR.
7. CONTRACTOR TO DESIGN PER FM GLOBAL STANDARDS UNLESS OTHERWISE INDICATED.
8. IN GENERAL, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO: COMPLETE OVERHEAD AUTOMATIC SPRINKLER SYSTEMS AS INDICATED ON THE CONTRACT DRAWINGS AND CONTRACT SPECIFICATIONS, CONNECTION TO UNDERGROUND FIRE SERVICE, SYSTEMS AND DEVICE TESTING, ALL NECESSARY PERMITS.
9. THE FIRE SPRINKLER SYSTEMS FOR PROTECTION OF THE BUILDING SHALL BE HYDRAULICALLY DESIGNED WET PIPE SPRINKLER SYSTEMS AS SPECIFIED IN THE FOLLOWING:
   A. OFFICES, INCLUDING CORRIDORS, LOUNGES, AND SIMILAR SPACES SHALL BE DESIGNED FOR A LIGHT HAZARD OCCUPANCY TO PROVIDE A MINIMUM DESIGN DISCHARGE DENSITY OF 0.10 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
   B. MECHANICAL, MINOR STORAGE, AND SIMILAR AREAS OF THE BUILDING SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP 1 OCCUPANCY. A MINIMUM DESIGN DISCHARGE DENSITY OF 0.15 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
   C. BULK STORAGE AND SIMILAR AREAS AREAS OF THE BUILDING SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP 2 OCCUPANCY. A MINIMUM DESIGN DISCHARGE DENSITY OF 0.20 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
   D. ALL SPRINKLERS WITHIN THE PROJECT AREA SHALL BE NEW, QUICK RESPONSE, ORDINARY TEMPERATURE RATING (EXCEPT AS REQUIRED BY NFPA 13).
10. PROVIDE A COMPLETE AUTOMATIC FIRE SUPPRESSION SYSTEM FOR ALL NEW AND/OR EXISTING INTERIOR AND EXTERIOR COVERED SPACES, INTERSTITIAL SPACES, ATTICS, OVERHANGS, CANOPIES, ETC. AS REQUIRED FOR A COMPREHENSIVE FIRE SPRINKLER SYSTEM.
11. ALL EQUIPMENT SHALL BE LISTED BY UNDERWRITERS LABORATORIES AND/OR FACTORY MUTUAL APPROVED.
12. ALL MATERIALS AND EQUIPMENT FURNISHED BY THE CONTRACTOR SHALL BE NEW, FIRST GRADE STANDARD, CURRENT PRODUCTS OF A MANUFACTURER REGULARLY ENGAGED IN THE PRODUCTION OF SUCH MATERIALS AND EQUIPMENT. WHERE TWO OR MORE PIECES OF EQUIPMENT PERFORMING THE SAME FUNCTION ARE REQUIRED, THEY SHALL BE THE PRODUCT OF ONE MANUFACTURER AND EXACT DUPLICATES.

PIPING

1. ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGER AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN SPRINKLER SYSTEMS.
2. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED.
3. NO PIPING SHALL BE HUNG FROM THE PIPING OF OTHER TRADES OR DUCTWORK. HANGERS SHALL BE OF HEAVY CONSTRUCTION, SUITABLE FOR THE SIZE OF PIPE TO BE SUPPORTED.
4. PIPING PENETRATIONS THROUGH FIRE RATED WALLS SHALL BE FIRE STOPPED AND SEALED TO A FIRE RATING EQUAL TO THE WALL IT PENETRATES.
5. ALL SPRINKLER PIPING 2" AND BELOW SHALL BE SCHEDULE 40 STEEL. SCHEDULE 10 PIPING SHALL BE ALLOWABLE FOR PIPE SIZES 2-1/2" AND ABOVE.
6. ALL SPRINKLER PIPING IN CRITICAL AREAS MUST BE SCHEDULE 40 STEEL WITH THREADED FITTINGS OR VICTAULIC-TYPE FITTINGS WHERE PERMITTED.
7. FIRE PROTECTION PIPING LAYOUT IS SCHEMATIC IN NATURE AND DOES NOT INDICATE ALL REQUIRED FITTINGS, DRAIN VALVES, ETC.
8. ALL SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED. PROVIDE DRAINS FOR TRAPPED PIPING IN ACCORDANCE WITH NFPA 13.
9. ALL PIPES PASSING THROUGH FOUNDATION WALLS TO BE PROTECTED.
10. SPRINKLER SYSTEM DRAIN LINES SHALL BE FULLY COORDINATED WITH ALL TRADES.
11. THE USE OF SADDLE TEES FITTED WITH RUBBER GASKETS IS NOT PERMITTED.
12. PIPE SIZES INDICATED ON THE CONTRACT DRAWINGS SHALL NOT BE REDUCED. THEY SHALL HOWEVER BE INCREASED IF REQUIRED BY HYDRAULIC CALCULATIONS.
13. BOLT ON OR STRAP ON BRANCH AND OUTLET FITTINGS WILL NOT BE PERMITTED. SIMILARLY, HOLE CUT PIPING SYSTEM OR STRAPLESS OUTLETS WILL NOT BE PERMITTED.
14. BOLT ON OR STRAP ON BRANCH AND OUTLET FITTINGS WILL NOT BE PERMITTED. SIMILARLY, HOLE CUT PIPING SYSTEM OR STRAPLESS OUTLETS WILL NOT BE PERMITTED.
15. GROOVED COUPLINGS SHALL BE UL LISTED AND/OR FM APPROVED FOR FIRE PROTECTION SERVICE. PLAIN-END TYPE PIPE FITTINGS AND COUPLINGS SHALL NOT BE USED.
16. INSTALL HANGERS, BRAIDED HOSE DROP CONNECTIONS, SWING JOINTS AND BRACING IN ACCORDANCE WITH NFPA 13.
17. SYSTEM PIPING SHALL BE INSTALLED SUCH THAT NO JOINTS, FITTINGS OR DEVICES OCCUR DIRECTLY OVER ELECTRICAL EQUIPMENT OR WITHIN THE CLEARANCE SPACE AS REQUIRED BY THE NATIONAL ELECTRIC CODE (NEC).
18. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OPENINGS AND PENETRATIONS REQUIRED FOR THE FIRE PROTECTION PIPING.
19. CUTTING STRUCTURAL MEMBERS FOR THE PASSING OF FIRE PROTECTION PIPING OR PIPE HANGER FASTENING WILL NOT BE PERMITTED EXCEPT WITH APPROVAL OF THE PROFESSIONAL.
20. SUITABLE MEANS SHALL BE PROVIDED AT EACH HOLE OR PENETRATION TO MAINTAIN THE DESIGNED FIRE RESISTANCE RATING OF THE WALL, CEILING, OR FLOOR ASSEMBLY.
21. INSTALL SPLIT WALL PLATES OR ESCUTCHEONS WHERE EXPOSED PIPING PASSES THROUGH A FINISHED FLOOR, WALL OR CEILING. THEY SHALL FIT SNUGLY AROUND PIPING. THE FINISH OF ESCUTCHEONS OR WALL PLATES SHALL MATCH THE COLOR OF ADJACENT WALLS, CEILINGS, OR FLOORS.
22. UPON COMPLETION OF INSTALLATION AND WHILE PIPING IS STILL EXPOSED, HYDROSTATICALLY TEST THE SYSTEMS AT 200 PSI (OR 50 PSI IN EXCESS OF THE SYSTEM WORKING PRESSURE, WHICHEVER IS GREATER) FOR A PERIOD OF 2 HOURS. PORTIONS OF THE SYSTEM MAY BE TESTED AS THEY ARE COMPLETED. SEVENTY-TWO HOUR NOTICE SHALL BE GIVEN TO THE PROFESSIONAL AND THE AUTHORITY HAVING JURISDICTION PRIOR TO ANY TEST. A PRE-INSTALLATION INSPECTION OF PIPE, FITTINGS, AND DEVICES IS REQUIRED.
23. WHERE FLOOR OPENINGS ARE NOT CLASSIFIED AS ATRIUMS, THE SPRINKLERS AT THE CEILING MUST BE ZONED WITH LOWER LEVEL IF IT IS ENCLOSED ON THE UPPER LEVEL (THE ENCLOSURE IS EFFECTIVELY CREATING A HIGH CEILING). OTHERWISE, SPRINKLERS MUST BE ZONED WITH THE UPPER LEVEL.

SPRINKLERS

1. IN AREAS WITHOUT SUSPENDED CEILINGS, LOCATE SPRINKLER HEADS ABOVE AND BELOW ALL DUCTS OVER 48" IN WIDTH.
2. IN AREAS WITH SUSPENDED CEILINGS, SPRINKLER HEADS SHALL BE INSTALLED CENTERED IN BOTH DIRECTIONS OF THE CEILING TILE, CONCEALED SPRINKLER HEADS SHALL BE USED FOR ALL FINISHED CEILING AREAS.
3. UPRIGHT SPRINKLERS SHALL BE INSTALLED IN AREAS WITHOUT SUSPENDED CEILINGS. PROVIDE PROTECTIVE CAGE ON ALL HEADS IN AREAS UNDER DUCTS OR SUBJECT TO ACCIDENTAL DAMAGE.
4. ALL PENDENT AND SIDEWALL SPRINKLERS LOCATED WITHIN 7 FT OF THE FLOOR OR SUBJECT TO MECHANICAL DAMAGE SHALL BE PROVIDED WITH LISTED SPRINKLER GUARDS COMPATIBLE WITH THE SPRINKLER MODELS AND TYPES ON WHICH THEY ARE INSTALLED.
5. STOCK OF EXTRA SPRINKLERS SHALL BE FURNISHED AS REQUIRED FOR EACH TEMPERATURE RATING. EXTRA SPRINKLERS IN THE QUANTITIES REQUIRED BY NFPA 13, CABINETS, AND WRENCHES SHALL BE PROVIDED.
6. DISTANCE OF SPRINKLERS FROM HEAT SOURCES SHALL BE IN ACCORDANCE WITH NFPA.
7. SPRINKLER HEADS INSTALLED IN TILE CEILINGS SHALL BE INSTALLED IN THE CENTER OF THE TILES.
8. SPRINKLER GUARDS MUST BE PROVIDED IN THE FOLLOWING: SPRINKLERS INSTALLED LESS THAN 7 FT FROM FLOOR, SPRINKLERS INSTALLED WITHIN ELEVATOR MACHINE ROOMS AND ELEVATOR PITS, SPRINKLERS INSTALLED WITHIN ELECTRICAL CLOSETS AND EQUIPMENT ROOMS
9. COORDINATE SPRINKLER HEAD LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS. CHANGES ARE SUBJECT TO APPROVAL BY ARCHITECT AND SHALL BE MADE AT NO ADDITIONAL COST TO THE OWNER.

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CHRISTOPHER GROSS — REGISTERED PROFESSIONAL ENGINEER — STATE OF MISSISSIPPI — 01/16/26 — 17087

FIRE PROTECTION LEGEND, ABBREVIATIONS & NOTES

FP001

GENERAL

WORK INCLUDED

A. THIS SECTION IS A PERFORMANCE SPECIFICATION SECTION ONLY. THE FIRE SPRINKLER SYSTEM DESCRIBED ON THE DRAWINGS AND IN THE SPECIFICATIONS SHALL BE FULLY DESIGNED BY THE FIRE PROTECTION CONTRACTOR(S). THE FIRE SUPPRESSION SYSTEM SPECIFICATIONS ARE PERFORMANCE BASED ONLY. THE CONTRACTOR(S) SHALL BE FULLY RESPONSIBLE FOR THE DESIGN AND TO PROVIDE ALL NECESSARY EQUIPMENT, HARDWARE, CONTROLS, SENSOR, ETC. PER LOCAL FIRE PROTECTION CODES AND THE AUTHORITY HAVING JURISDICTION (AHJ). A FACTOR OF SAFETY SHALL BE EMPLOYED SUCH THAT A 5 PSI SURPLUS SHALL EXISTING ABOVE NEEDED PRESSURE.

B. FURNISH ALL LABOR, MATERIALS, TOOLS, AND EQUIPMENT TO COMPLETE THE AUTOMATIC FIRE SPRINKLER SYSTEM AND STANDPIPE (AS REQUIRED) SYSTEM AS HEREINAFTER DESCRIBED, READY FOR SERVICE TO THE ENTIRE SATISFACTION OF THE OWNER, ARCHITECT, AHJ AND OWNER'S INSURANCE UNDERWRITER. PROVIDE HYDRAULICALLY CALCULATED SYSTEMS AS DEFINED IN THE ADOPTED EDITION OF NFPA 13 AND NFPA 14 AND IN ACCORDANCE WITH THE AHJ AND OWNER'S INSURANCE REQUIREMENTS.

C. VERIFY ELECTRICAL REQUIREMENTS OF ALARM VALVES, FLOW SWITCHES, VALVE SUPERVISION SWITCHES, ALARM BELLS AND PUMPS WITH ELECTRICAL CONTRACTOR.

D. IN GENERAL, WORK SHALL INCLUDE, BUT NOT BE LIMITED TO:

1. COMPLETE OVERHEAD AUTOMATIC SPRINKLER SYSTEMS AS INDICATED ON THE CONTRACT DRAWINGS AND CONTRACT SPECIFICATIONS.
2. CONNECTION TO UNDERGROUND FIRE SERVICE.
3. SYSTEMS AND DEVICE TESTING.
4. ALL NECESSARY PERMITS.

F. THE FIRE SPRINKLER SYSTEMS FOR PROTECTION OF THE BUILDING SHALL BE HYDRAULICALLY DESIGNED WET PIPE SPRINKLER SYSTEMS AS SPECIFIED IN THE FOLLOWING AND PER NFPA 13:

1. OFFICES, INCLUDING CORRIDORS, LOUNGES, AND SIMILAR SPACES SHALL BE DESIGNED FOR A LIGHT HAZARD OCCUPANCY TO PROVIDE A MINIMUM DESIGN DISCHARGE DENSITY OF 0.10 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
2. MECHANICAL, MINOR STORAGE, AND SIMILAR AREAS OF THE BUILDING SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP 1 OCCUPANCY. A MINIMUM DESIGN DISCHARGE DENSITY OF 0.15 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
3. BULK STORGE AND SIMILAR AREAS AREAS OF THE BUILDING SHALL BE DESIGNED FOR AN ORDINARY HAZARD GROUP 2 OCCUPANCY. A MINIMUM DESIGN DISCHARGE DENSITY OF 0.20 GPM PER SQ FT OVER THE HYDRAULIC CALCULATION AREA OR ROOM.
4. ALL SPRINKLERS WITHIN THE PROJECT AREA SHALL BE NEW, QUICK RESPONSE, ORDINARY TEMPERATURE RATING (EXCEPT AS REQUIRED BY NFPA 13).
5. ELEVATOR SHAFTS AND STAIRWELLS SHALL BE SPRINKLERED.

G. PROVIDE A COMPLETE AUTOMATIC FIRE SUPPRESSION SYSTEM FOR ALL NEW AND/OR EXISTING INTERIOR AND EXTERIOR COVERED SPACES, INTERSTITIAL SPACES, ATTICS, OVERHANGS, CANOPIES, ETC. AS REQUIRED FOR A COMPREHENSIVE FIRE SPRINKLER SYSTEM AND COVERAGE BY NFPA 13.

REFERENCE STANDARDS

A. SYSTEM, EQUIPMENT, INSTALLATION AND MATERIALS AND METHODS USED SHALL COMPLY WITH THE LATEST ADOPTED EDITIONS OF THE FOLLOWING:

1. NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 1 FIRE CODE.
2. NFPA 13 STANDARD FOR THE INSTALLATION OF SPRINKLER SYSTEMS.
3. NFPA 14 STANDARD FOR THE INSTALLATION OF STANDPIPE AND HOSE SYSTEMS.
4. NFPA 24 STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES.
5. INTERNATIONAL BUILDING CODE
6. INTERNATIONAL FIRE CODE

DESIGN CRITERIA

A. DESIGN SPRINKLER SYSTEMS AND OBTAIN APPROVAL FROM AHJ.

B. DETERMINE THE STATIC AND RESIDUAL PRESSURE FOR THE SITE AS REQUIRED FOR ACCURATE DETERMINATION OF SYSTEM REQUIREMENTS. BASE SYSTEM CALCULATIONS ON THE LOWEST EXPECTED STATIC AND RESIDUAL PRESSURE FOR THE AREA.

1. TEST DATA FOR STATIC AND RESIDUAL PRESSURE SHALL BE MEASURED BY THE CONTRACTOR. TEST SHALL BE MADE WITHIN THE PRESENCE OF THE ARCHITECT AND AT A TIME APPROVED BY THE ARCHITECT AND OWNER.

C. IT IS THE INTENT OF THESE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR A COMPLETE AND OPERATING AUTOMATIC FIRE PROTECTION SPRINKLER SYSTEM IN FULL COMPLIANCE WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION AS SET FORTH IN NFPA 13, NFPA 14, AND NFPA 24, CURRENTLY ADOPTED EDITIONS.

D. REVIEW ARCHITECTURAL AND STRUCTURAL DRAWINGS TO DETERMINE THE EXTENT OF CONSTRUCTION AND RESULTANT FIRE PROTECTION COVERAGE TO COMPLY WITH NFPA, INTERSTITIAL SPACES, IF UTILIZED, WILL REQUIRE SPRINKLER PROTECTION.

E. PROVIDE FIRE SPRINKLERS TO PROTECT ALL BUILDING OVERHANGS GREATER THAN 4 FEET WIDE, OR AS REQUIRED BY LOCAL AUTHORITY.

F. PROVIDE ADDITIONAL FIRE SPRINKLERS WHERE REQUIRED TO MEET THE REQUIREMENTS OF NFPA13 AND/OR AHJ(S). COORDINATE WITH THE WORK OF OTHER TRADES ESPECIALLY WHEN IT MAY CREATE INTERFERENCES AND OR OBSTRUCTIONS REQUIRING SPECIAL PROTECTION. ADDITIONAL PIPING AND HEADS AND DRAINS.

G. USE OF PIPING LIGHTER THAN SCHEDULE 10 IS NOT ALLOWED.

H. THE INITIAL BUILDING SHALL CONTAIN BASIC SPRINKLER COVERAGE WHICH CAN BE MODIFIED AND EXTENDED FOR THE FUTURE BUILD-OUT OF UNIMPROVED SPACES.

I. DESIGN SHALL COMPLY WITH THE OWNER'S INSURANCE UNDERWRITERS' REQUIREMENTS.

1.4 COORDINATION/SPECIAL CONSIDERATIONS

A. COORDINATE WITH OTHER TRADES ALL EQUIPMENT LOCATIONS, PIPE, DUCT AND CONDUIT RUNS, ELECTRICAL OUTLETS AND FIXTURES, AIR INLETS AND OUTLETS, AND STRUCTURAL AND ARCHITECTURAL FEATURES. PROVIDE INFORMATION ON LOCATION OF PIPING AND BRACING TO ALL OTHER TRADES AS REQUIRED FOR A COMPLETELY COORDINATED PROJECT.

B. CONTRACT DRAWINGS: ALL PIPING AND SPRINKLER HEADS REQUIRED FOR THE SPRINKLER AND STANDPIPE SYSTEMS ARE NOT SHOWN. SPRINKLER HEADS SHOWN ARE MINIMUM REQUIRED.

C. WHERE HEADS ARE LOCATED AT SUSPENDED CEILING, SPACING SHALL BE AS REQUIRED BY NFPA 13, EXCEPT AS FOLLOWS: IN ALL LOCATIONS, SPRINKLER HEADS SHALL BE EQUIDISTANT BETWEEN LIGHTS, BETWEEN WALL AND LIGHTS, BETWEEN LIGHTS AND AIR DIFFUSERS, AND BETWEEN WALL, LIGHTS, AND AIR DIFFUSERS. PROVIDE UNIFORM AND REPETITIVE PATTERN FOR EACH ROOM. LOCATE BY REFLECTED CEILING PLAN WHERE SHOWN.

D. INSTALL ALL SPRINKLER HEADS IN CENTER OF CEILING TILES.

E. PROVIDE APPROVED DRY PENDANT SPRINKLER HEADS IN SPACES SUBJECT TO FREEZING.

F. PROVIDE HIGH TEMPERATURE SPRINKLER HEADS IN ALL ELECTRICAL ROOMS OR OTHER AREAS WITH ELEVATED TEMPERATURES SUCH AS MECHANICAL ROOMS.

G. COORDINATE WITH THE FIRE ALARM CONTRACTOR TO ENSURE FULL AWARENESS OF THE LOCATION OF CONTROL VALVES, FLOW SWITCHES, TAMPER SWITCHES, AND ALARM AND SIGNAL SWITCHES.

GENERAL (CONTINUED)

QUALITY ASSURANCE

A. MANUFACTURERS: FIRMS REGULARLY ENGAGED IN MANUFACTURE OF FIRE PROTECTION PRODUCTS, OF TYPES, MATERIALS, AND SIZES REQUIRED, WHOSE PRODUCTS HAVE BEEN IN SATISFACTORY USE IN SIMILAR SERVICE FOR NOT LESS THAN 5 YEARS.
B. INSTALLER: A FIRM WITH AT LEAST FIVE YEARS OF SUCCESSFUL INSTALLATION EXPERIENCE ON PROJECTS WITH FIRE SPRINKLER PIPING SIMILAR TO THAT REQUIRED FOR THIS PROJECT.
C. FIRESTOP PENETRATIONS WITH AN APPROVED MATERIAL AS PRESCRIBED IN THE INTERNATIONAL BUILDING CODE (IBC).
D. INSTALLATION OF THE SPRINKLER SYSTEM SHALL NOT BE STARTED UNTIL COMPLETE PLANS AND SPECIFICATIONS (INCLUDING WATER SUPPLY INFORMATION AND TYPE OF EXISTING SPRINKLER SYSTEM, IF ANY) HAVE BEEN REVIEWED AND APPROVED BY THE AHJ AND THE OWNER'S INSURANCE UNDERWRITER.
E. THE FIRE SPRINKLER CONTRACTOR SHALL FURNISH EVIDENCE OF A FULL-TIME EMPLOYEE WHO POSSESSES A NICET LEVEL 3 OR HIGHER CERTIFICATION IN AUTOMATIC SPRINKLER SYSTEM LAYOUT. A SIGNED AND NOTARIZED WRITTEN STATEMENT FROM THE FIRE SPRINKLER CONTRACTOR STATING THE NAME AND NICET CERTIFICATION OF THE FULL-TIME EMPLOYEE WHO OVERSEES THE SHOP DRAWINGS AND INSTALLATION SHALL ACCOMPANY THE SHOP DRAWING SUBMITTAL.

SUBMITTALS

A. SUBMIT PIPE, FITTINGS, VALVES, SPRINKLER HEADS, GAUGES, SLEEVES AND ESCUTCHEONS, FLOW AND TAMPERS SWITCHES, ALARM BELLS, PIPE HANGERS AND SUPPORTS, IDENTIFICATION SIGNS, SPRINKLER HEAD CABINETS, HOSE VALVE CABINETS, COORDINATION DRAWINGS, AHJ APPROVAL LETTER, INSURANCE UNDERWRITER'S APPROVAL LETTER, HYDRAULIC CALCULATIONS AND STATIC AND RESIDUAL FLOW TEST RESULTS.
B. PREPARE AND SUBMIT PRELIMINARY DRAWING TO THE OWNER SHOWING THE PROPOSED LOCATION OF THE FIRE SPRINKLER HEADS COORDINATED WITH AND IN RELATION TO THE CEILING TILE PATTERN, LIGHT FIXTURE AND DUCT INLETS/OUTLETS. REVIEW OF THIS DRAWING AND THE AHJ'S REVIEW STAMP THEREON SHALL BE A PREREQUISITE FOR THE PREPARATION OF FURTHER WORKING PLANS.

PRODUCTS

MANUFACTURERS

A. NAMED MANUFACTURER MODEL NUMBERS USED AS EXAMPLE OF ITEM AND ESTABLISHED MINIMUM LEVEL OF QUALITY AND MINIMUM STANDARD OPTIONS. EQUIVALENT MODELS ARE ACCEPTABLE.
1. SPECIALTY VALVES AND DEVICES: BADGER FIRE PROTECTION, INC., GRINNELL CORP., VIKING CORP.
2. WATER-FLOW INDICATORS AND SUPERVISORY SWITCHES: GRINNELL CORP., POTTER ELECTRIC SIGNAL CO., VIKING CORP.
3. SPRINKLER, DRAIN, AND ALARM TEST FITTINGS: CENTRAL SPRINKLER CORP., GRINNELL CORP., VICTAULIC CO.
4. SPRINKLER, BRANCH-LINE TEST FITTINGS: ELKHART BRASS MFG. CO. INC., SMITH INDUSTRIES. INC; POTTER-ROEMER DIV.
5. SPRINKLER, INSPECTOR'S TEST FITTINGS: G/J INNOVATIONS, INC., TRIPLE R SPECIALTY OF AJAX, INC.
6. FIRE DEPARTMENT CONNECTIONS: BADGER FIRE PROTECTION, INC., ELKHART BRASS MFG. CO., INC., GRINNELL CORP.
7. SPRINKLERS: BADGER FIRE PROTECTION, INC., GRINNELL CORP., VIKING CORP.
8. INDICATOR POSTS AND INDICATOR-POST, GATE VALVES: GRINNELL CORP., MCWANE, INC.; KENNEDY VALVE DIV., NIBCO, INC.
9. INDICATOR VALVES: GRINNELL CORP., MCWANE, INC.; KENNEDY VALVE DIV., NIBCO, INC.
10. FIRE-PROTECTION-SERVICE VALVES: GRINNELL CORP., MCWANE, INC., KENNEDY VALVE DIV., NIBCO, INC.
11. GROOVED-END FITTINGS FOR STEEL PIPING: VICTAULIC CO.

VALVE AND ALARM SYSTEM IDENTIFICATION

A. PROVIDE IDENTIFICATION AS FOLLOWS.
1. BRASS VALVE TAGS.
2. PROVIDE THE FOLLOWING SIGNS:
a. AT EACH SPRINKLER VALVE, INCLUDING ROOF MANIFOLD, SIGN INDICATING WHAT PORTION OF SYSTEM VALVE CONTROLS.
b. AT EACH OUTSIDE ALARM DEVICE, SIGN INDICATING WHAT AUTHORITY TO CALL IF DEVICE IS ACTIVATED.

BASIC PIPES AND TUBES

A. PIPING SHALL BE NEW, DESIGNED FOR 300 PSI WORKING PRESSURE, CONFORMING TO ASTM SPECIFICATIONS AND HAVE THE MANUFACTURER'S NAME OR BRAND ALONG WITH THE PIPE APPLICABLE ASTM STANDARD MARKED ON EACH LENGTH OF PIPE.
B. PIPING INSTALLED UNDERGROUND: PVC PIPE: AWWA C900, CLASS 200, WITH BELL END WITH GASKET, AND WITH SPIGOT END.
C. PIPING INSTALLED ABOVE GROUND 2 INCH AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE. PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH SPECIFICATIONS ASTM A-135 AND A-53.
D. PIPING INSTALLED ABOVE GROUND 2-1/2 INCH AND LARGER SHALL BE SCHEDULE 10 BLACK STEEL PIPE. PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH SPECIFICATION ASTM A-135.
E. ALL FIRE PROTECTION PIPING SHALL BE PROVIDED WITH FACTORY-APPLIED ANTIMICROBIAL COATINGS TO INHIBIT MICROBIOLOGICALLY INFLUENCED CORROSION (MIC). ALLIED TUBE AND CONDUIT "ABF IT" WHEATLAND TUBE COMPANY "MIC SHIELD" OR EQUAL.
F. SPRINKLER PIPING AND FITTINGS EXPOSED TO WEATHER, USED IN A CORROSIVE ATMOSPHERE, OR AS NOTED ON DRAWINGS SHALL BE GALVANIZED.
G. IN-BUILDING RISERS SHALL BE INSTALLED AS INDICATED ON THE PLANS. RISERS SHALL BE COMPOSED OF A SINGLE EXTENDED 90-DEGREE FITTING OF FABRICATED 304 STAINLESS STEEL TUBING, MAXIMUM WORKING PRESSURE 300 PSI. THE FITTING SHALL HAVE A GROOVED-END CONNECTION ON THE OUTLET (BUILDING) SIDE AND A CIPS COUPLER ON THE INLET (UNDERGROUND) SIDE. THE IN-BUILDING RISER SHALL BE AN AMES FIRE & WATERWORKS SERIES IBR (OR EQUAL).
H. SADDLE TEE BRANCH FITTING NOT ALLOWED.

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FIRE PROTECTION SPECIFICATIONS

FP002

PRODUCTS (CONTINUED)

PIPE AND TUBE FITTINGS

A. CAST-IRON THREADED FLANGES: ASME B16.1.

B. CAST-IRON THREADED FITTINGS: ASME B16.4.

C. DUCTILE-IRON FITTING: AWWA C110, DUCTILE-IRON OR CAST-IRON TYPE; OR AWWA C153, DUCTILE-IRON, COMPACT MECHANICAL-JOINT TYPE. INCLUDE CEMENT-MORTAR LINING AND SEAL COAT ACCORDING TO AWWA C104 AND GLANDS, RUBBER GASKETS, AND BOLTS AND NUTS ACCORDING TO AWWA C111.

D. DUCTILE-IRON FITTINGS: ASTM A47, MALLEABLE-IRON OR ASTM A 536 DUCTILE-IRON CASTING COMPLYING WITH AWWA PIPE SIZE, WITH ENDS FACTORY GROOVED ACCORDING TO AWWA C606.

E. PVC FITTINGS: AWWA C900, CLASS 200, WITH BELL-AND-SPIGOT OR DOUBLE-BELL ENDS, INCLUDE ELASTOMERIC GASKET IN EACH BELL.

F. MALLEABLE-IRON THREADED FITTINGS: ASME B16.3.

G. STEEL, THREADED COUPLINGS: ASTM A 865.

H. STEEL WELDING FITTINGS: ASTM A 234/A 234M, ASME B16.9, OR ASME B16.11.

I. STEEL FLANGES AND FLANGED FITTINGS: ASME B16.5.

SUPPORTS AND ANCHORS

A. SPACING AND DETAILS OF THE SUPPORT AND BRACING OF FIRE SPRINKLER PIPING SHALL COMPLY WITH THE CURRENTLY ADOPTED EDITION OF NFPA 13. U-HOOK HANGERS USED AS SWAY BRACING SHALL HAVE LEGS BENT OUT 10 DEGREES AND SHALL HAVE A SLENDERNESS RATIO NOT EXCEEDING 200.

B. CONCRETE INSERTS: UNI-STRUT P-3200 CONTINUOUS INSERT OR M24 SPOT INSERT KIN-LINE OR EQUAL. DO NOT USE POWDER ACTUATED FASTENERS FOR SUPPORT OF OVERHEAD PIPING UNLESS APPROVED BY ARCHITECT.

C. ALL INTERIOR SUPPORTS TO AND FASTENERS TO BE ZINC PLATED STEEL.

D. ALL SUPPORTS AND FASTENERS EXSPOSED TO WEATHER TO BE HOT DIPPED GALVANIZED.

VALVES

A. PROVIDE VALVES, UL LISTED, AND FM APPROVED, IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE SIZES AND TYPES WHICH MATE AND MATCH PIPING AND EQUIPMENT CONNECTIONS.

1. GATE VALVES: PROVIDE IRON GATE CONTROL VALVE, OUTSIDE SCREW AND YOKE (OS&Y), 175-LB RATED WORKING PRESSURE, OF SIZES INDICATED, TO CLOSE BY TURNING TO THE RIGHT AND TO BE SEALED WITH APPROVED METAL SEALS. VALVES SHALL BE IRON BODY, BRONZE FITTED. VALVES 2 INCHES AND SMALLER SHALL BE SCREWED AND VALVES OVER 2 INCHES SHALL BE FLANGED. FOR REFERENCE PURPOSES, MUELLER A-2073-6. GRINNELL, KENNEDY, STOCKHAM, OR EQUAL.
2. BUTTERFLY VALVE: PROVIDE UL LISTED FM APPROVED BUTTERFLY VALVES (SLOW-CLOSE) WITH POSITION INDICATORS. ELECTRIC MOTOR OPERATED VALVES SHALL BE NORMALLY OPEN AND SHALL FAIL IN THE OPEN POSITION. FOR REFERENCE PURPOSES, MUELLER B-3211. GRINNELL, KENNEDY, STOCKHAM, OR EQUAL.
3. SWING CHECK VALVES: PROVIDE UL LISTED FLANGED, SWING TYPE, IRON BODY, BRONZE SEAT RING AND DISC RING, AND 175 PSI PRESSURE RATING. FOR REFERENCE PURPOSES, MUELLER A-2120-6. GRINNELL, KENNEDY, STOCKHAM, OR EQUAL.
4. RISER DRAIN VALVES: MAIN RISER DRAIN VALVES SHALL BE ANGLE OR GLOBE TYPE, BRONZE BODY, SCREWED, 200 PSI PRESSURE RATING, 2 INCHES SIZE, WITH RENEWABLE COMPOSITION SOFT DISC. FOR REFERENCE PURPOSES, GRINNELL 3210, STOCKHAM, NIBCO, FAIRBANKS OR EQUAL.
5. AUXILIARY DRAIN VALVE: VALVES FOR AUXILIARY DRAINS AND OWNER'S TEST CONNECTIONS SHALL BE GLOBE TYPE, BRONZE BODY, SCREWED, 200 PSI PRESSURE RATING, 1-INCH SIZE WITH A RENEWABLE COMPOSITION SOFT DISC. FOR REFERENCE PURPOSES, GRINNELL 3210, STOCKHAM, NIBCO, FAIRBANKS OR EQUAL.
6. INDICATING VALVES, 2-1/2 INCHES AND SMALLER: UL 1091; BUTTERFLY OR BALL-TYPE, BRONZE BODY WITH THREADED ENDS; AND INTEGRAL INDICATING DEVICE.
7. INDICATOR POSTS: UL 789, VERTICAL TYPE, CAST IRON BODY, WITH WINDOWS FOR TARGET PLATES THAT INDICATE VALVE POSITION, EXTENSION ROD AND COUPLING, LOCKING DEVICE, AND RED ENAMEL FINISH.
8. SWING CHECK VALVES, 2 INCHES AND SMALLER: UL 312 OR MSS SP-80, CLASS 150; BRONZE BODY WITH BRONZE DISC AND THREADED ENDS.
9. SWING CHECK VALVES, 2-1/2 INCHES AND LARGER: UL 312, CAST-IRON BODY AND BOLTED CAP, WITH BRONZE DISC OR CAST-IRON DISC WITH BRONZE-DISC RING AND FLANGED ENDS.

FIRE PROTECTION SPECIALTIES

A. PROVIDE FIRE PROTECTION SPECIALTIES, UL LISTED, IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE SIZES AND TYPES THAT MATCH PIPING AND EQUIPMENT CONNECTIONS.

1. INSTALL DRAINS ON MAIN RISERS AND AUXILIARY DRAINS AT ALL LOW POINTS IN THE SYSTEM.
2. ONE OWNER'S TEST DRAIN SHALL BE INSTALLED FOR EACH SPRINKLER SYSTEM.
3. PROVIDE DRAIN LINE TO FLOOR SINK OR TO OUTSIDE, AS REQUIRED, TO SUIT PROJECT CONDITIONS.
4. FIVE OR FEWER TRAPPED HEADS WILL NOT REQUIRE A DRAIN VALVE BUT MAY BE DRAINED THROUGH A PLUGGED FITTING.
5. PIPE DRAIN VALVES TO A FLOOR SINK OR TO THE OUTSIDE OF THE BUILDING. DISCHARGE SHALL BE VISIBLE FROM SIGHT DRAIN FITTING OR OPEN-END DRAINPIPE. PROVIDE FLUSHING CONNECTIONS AT ENDS OF ALL CROSS MAINS.
6. FLOW ALARM: FURNISH AND INSTALL A FLOW ALARM SYSTEM FOR EACH MAIN SPRINKLER RISER AS SHOWN ON THE DRAWINGS. THE SYSTEMS SHALL BE COMPLETE WITH GRINNELL F-620, VIKING OR EQUAL, FLOW SWITCH. AS PART OF DIVISION 26, WIRE FLOW ALARM TO THE FIRE ALARM CONTROL PANEL. PROVIDE 3/4-INCH CONDUIT AND TWO #14 WIRES FROM THE TAMPER SWITCH TO THE FIRE DEPARTMENT CONTROL PANEL.
7. PROVIDE WIRING BETWEEN SWITCH, BELL, AND JUNCTION BOX. PROVIDE JUNCTION BOX UNDER DIVISION 26. WIRING SHALL MEET THE REQUIREMENTS OF DIVISION 26. ALL CONTROLS SHALL BE IDENTIFIED BY PERMANENT METAL TAGS OR OTHER APPROVED MEANS. ALARM SWITCH SHALL BE UL OR FM APPROVED AND SHALL HAVE ADJUSTABLE RETARD MECHANISM AND TWO SETS OF CONTACTS. WIRING BETWEEN ELECTRICAL DISTRIBUTION PANEL AND JUNCTION BOX WILL BE PROVIDED UNDER DIVISION 26.
8. WATER-FLOW INDICATORS: UL 346; ELECTRICAL-SUPERVISION, VANE-TYPE WATER-FLOW DETECTOR, WITH 250-PSIG PRESSURE RATING; AND DESIGNED FOR HORIZONTAL OR VERTICAL INSTALLATION. INCLUDE TWO SINGLE-POLE, DOUBLE-THROW, CIRCUIT SWITCHES FOR ISOLATED ALARM AND AUXILIARY CONTACTS, 7 A, 125-V AC AND 0.25 A, 24-V DC; COMPLETE WITH FACTORY-SET, FIELD-ADJUSTABLE RETARD ELEMENT TO PREVENT FALSE SIGNALS AND TAMPERPROOF COVER THAT SENDS SIGNAL IF REMOVED.
9. PRESSURE SWITCHES: UL 753; ELECTRICAL-SUPERVISION-TYPE, WATER-FLOW SWITCH WITH RETARD FEATURE, INCLUDE SINGLE-POLE, DOUBLE-THROW, NORMALLY CLOSED CONTACTS, AND DESIGN THAT OPERATES ON RISING PRESSURE AND SIGNALS WATER FLOW.
10. VALVE SUPERVISORY SWITCHES: UL 753; ELECTRICAL; SINGLE-POLE, DOUBLE THROW; WITH NORMALLY CLOSED CONTACTS. INCLUDE DESIGN THAT SIGNALS CONTROLLED VALVE IS IN OTHER THAN FULLY OPEN POSITION, GRINNELL MODEL F640, VIKING OR EQUAL, WITH SINGLE POLE DOUBLE THROW SWITCH ACTUATOR INSTALLED TO CHANGE SWITCH POSITION WHEN OS&Y VALVE IS BEING CLOSED.
11. INDICATOR-POST SUPERVISORY SWITCHES: UL 753; ELECTRICAL; SINGLE-POLE, DOUBLE THROW, WITH NORMALLY CLOSED CONTACTS. INCLUDE DESIGN THAT SIGNALS CONTROLLED INDICATOR-POST VALVE IS IN OTHER THAN FULLY OPEN POSITION.
12. AS PART OF DIVISION 26, WIRE SUPERVISORY SWITCH TO THE FIRE ALARM CONTROL PANEL, PROVIDE 3/4-INCH CONDUIT AND TWO #14 WIRES FROM THE TAMPER SWITCH TO THE FIRE DEPARTMENT CONTROL PANEL.

PRODUCTS (CONTINUED)

AUTOMATIC SPRINKLERS

A. PROVIDE AUTOMATIC SPRINKLERS IN ACCORDANCE WITH THE FOLLOWING LISTING. PROVIDE FUSIBLE LINKS OR GLASS BULBS FOR 165 DEGREES F. UNLESS OTHERWISE NOTED. UL OR FM APPROVED.

B. TYPE: SPRAY PATTERN TYPE, AUTOMATIC CLOSED-TYPE HEADS OF ORDINARY DEGREE TEMPERATURE RATING, EXCEPT THAT SPRINKLERS TO BE INSTALLED IN VICINITY OF HEATING EQUIPMENT SHALL BE OF TEMPERATURE RATINGS REQUIRED FOR SUCH LOCATIONS BY THE CURRENTLY ADOPTED EDITION OF NFPA 13.

C. SPRINKLER HEADS SHALL BE UL OR FM LISTED.

1. EXPOSED LOCATIONS: PROVIDE UPRIGHT TYPE HEADS AT ALL AREAS WITH NO FINISHED CEILINGS.
2. WHERE HEADS ARE LOCATED AT HEIGHT OF LESS THAN 8 FEET ABOVE FINISHED FLOOR, OR WHERE HEADS ARE LOCATED IN MECHANICAL EQUIPMENT AREAS, PROVIDE WIRE GUARDS TO PROTECT HEADS FROM DAMAGE.
3. CONCEALED LOCATIONS: PROVIDE UPRIGHT-TYPE HEADS OR PENDENT-TYPE HEADS.
4. SIDEWALL LOCATIONS: WHERE REQUIRED AND WHERE APPROVED BY THE ARCHITECT.
5. FINISHED CEILINGS: LOCATE AT ALL CEILINGS WITH LAY-IN ACOUSTICAL TILE CEILING AND AT PLASTER OR GYPSUM BOARD TYPE CEILINGS. PROVIDE CONCEALED TYPE HEADS ENAMEL METALLIC COVER IN CEILINGS OF FINISHED SPACES. METALLIC COVER COLOR SHALL BE SELECTED BY THE ARCHITECT.
6. WHERE FIRE SPRINKLER HEADS ARE LOCATED IN ROOMS WITH SURFACE MOUNTED LIGHTS (OR OTHER OBSTRUCTIONS), PROVIDE MULTIPLE CONCEALED TYPE HEADS WITH ENAMEL METALLIC COVER IN CEILINGS OF FINISHED SPACES. METALLIC COVER COLOR SHALL BE SELECTED BY THE ARCHITECT.
7. WHERE FIRE SPRINKLER HEADS ARE LOCATED IN SECURE CEILINGS, PROVIDE INSTITUTIONAL/ANTI-LIGATURE HEADS IN SECURE CEILINGS.
8. WHERE FIRE SPRINKLER HEADS ARE LOCATED IN ROOMS (UTILITY ROOMS, MECHANICAL ROOMS, ETC.) WITH SURFACE MOUNTED LIGHTS, PROVIDE 2- PIECE ADJUSTABLE SPRINKLER ESCUTCHEON, WITH ADJUSTMENT FROM 1-7/8" TO 3-1/8" BELOW FINISHED CEILING. FIRE SPRINKLER DROP NIPPLE SHOULD BE MOUNTED 2-1/4" BELOW THE FINISHED CEILING SURFACE.
9. SPRINKLER HEADS IN LIGHT HAZARD AREA SHALL BE QUICK RESPONSE TYPE.
10. EXTENDED COVERAGE SPRINKLERS SHALL NOT BE USED.

D. SPRINKLER GUARDS: WIRE-CAGE TYPE, INCLUDING FASTENING DEVICE FOR ATTACHING TO SPRINKLER.

E. SPRINKLER CABINET AND WRENCH: FURNISH STEEL, BAKED RED ENAMELED, SPRINKLER BOX WITH CAPACITY TO STORE SPRINKLERS AND WRENCH SIZED TO SPRINKLERS. SPARE SPRINKLERS AND WRENCHES CALLED FOR UNDER "EXTRA STOCK."

FIRE DEPARTMENT CONNECTIONS

A. EXPOSED INLET TYPE, FIRE DEPARTMENT CONNECTIONS: UL 405, 175-PSIG MINIMUM PRESSURE RATING; WITH CORROSION-RESISTANT-METAL BODY WITH BRASS INLETS, BRASS WALL ESCUTCHEON PLATE, BRASS LUGGED CAPS WITH GASKETS AND BRASS CHAINS, AND BRASS LUGGED SWIVEL CONNECTIONS. INCLUDE INLETS WITH THREADS ACCORDING TO NFPA 1963 AND MATCHING LOCAL FIRE DEPARTMENT SIZES AND THREADS, OUTLET WITH PIPE THREADS, CHECK DEVICES OR CLAPPERS FOR INLETS, AND ESCUTCHEON PLATE WITH MARKING SIMILAR TOO "AUTO SPKR.". FINISH: POLISHED CHROME-PLATED.

B. EXPOSED, FREE-STANDING TYPE, FIRE DEPARTMENT CONNECTIONS: UL 405, 175-PSIG MINIMUM PRESSURE RATING; WITH CORROSION-RESISTANT-METAL BODY WITH BRASS INLETS, BRASS WALL ESCUTCHEON PLATE, BRASS LUGGED CAPS WITH GASKETS AND BRASS CHAINS, AND BRASS LUGGED SWIVEL CONNECTIONS. INCLUDE INLETS WITH THREADS ACCORDING TO NFPA 1963 AND MATCHING LOCAL FIRE DEPARTMENT SIZES AND THREADS, OUTLET WITH PIPE THREADS, CHECK DEVICES OR CLAPPERS FOR INLETS, AND ESCUTCHEON PLATE WITH MARKING SIMILAR TOO "AUTO SPKR.". FINISH: POLISHED CHROME-PLATED.

PAINTING

A. ALL PIPING SYSTEMS EXPOSED TO VIEW IN EQUIPMENT ROOMS AND IN OCCUPIED BUILDING SPACES SHALL BE PRIMED AND PAINTED PRIOR TO INSTALLING IDENTIFICATION LABELS. COLOR BY ARCHITECT.

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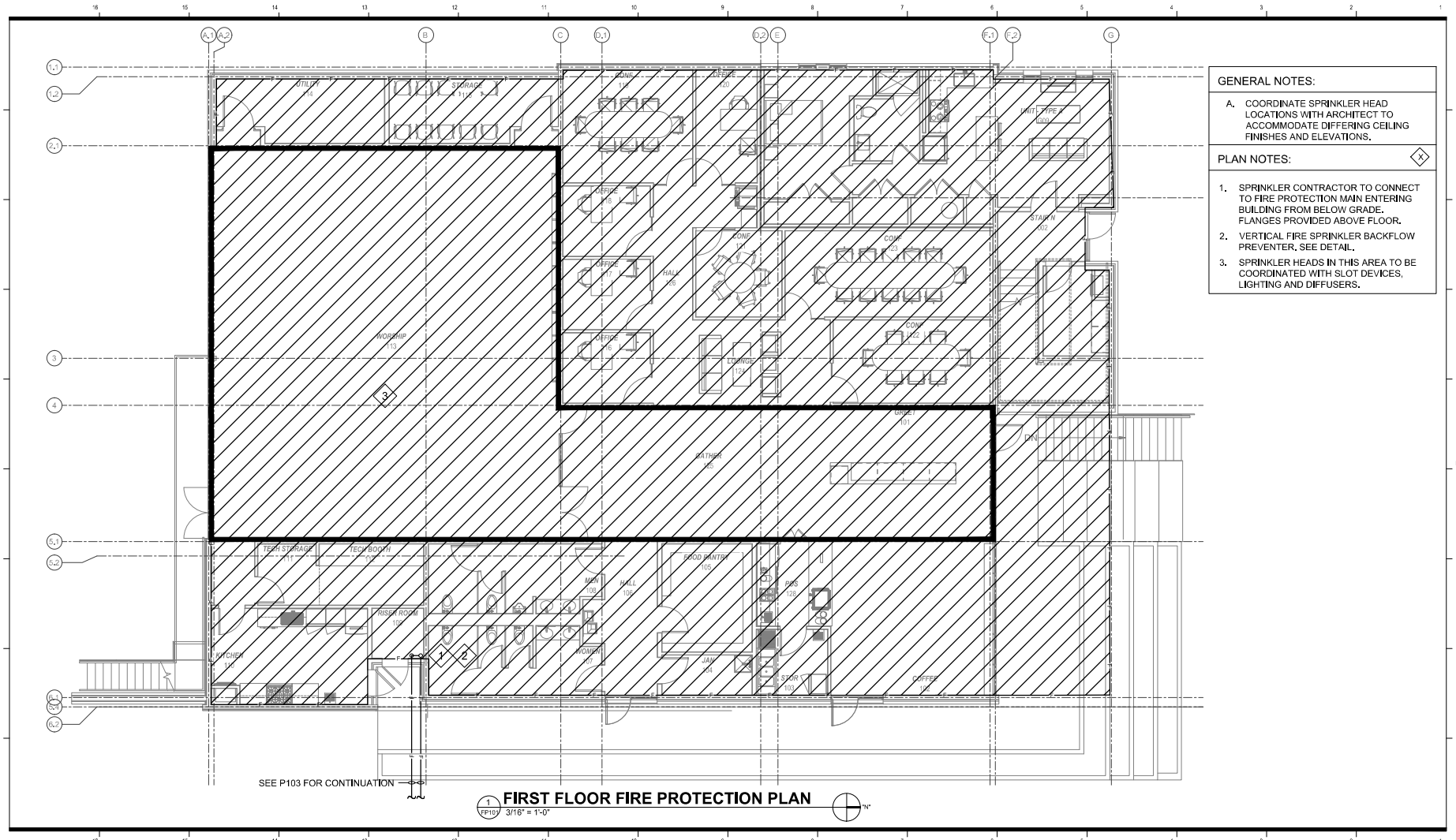
FIRE PROTECTION SPECIFICATIONS

FP003



1 FP101 FIRST FLOOR FIRE PROTECTION PLAN
3/16" = 1'-0"

GENERAL NOTES:

A. COORDINATE SPRINKLER HEAD LOCATIONS WITH ARCHITECT TO ACCOMMODATE DIFFERING CEILING FINISHES AND ELEVATIONS.

PLAN NOTES:

1. SPRINKLER CONTRACTOR TO CONNECT TO FIRE PROTECTION MAIN ENTERING BUILDING FROM BELOW GRADE. FLANGES PROVIDED ABOVE FLOOR.
2. VERTICAL FIRE SPRINKLER BACKFLOW PREVENTER. SEE DETAIL.
3. SPRINKLER HEADS IN THIS AREA TO BE COORDINATED WITH SLOT DEVICES, LIGHTING AND DIFFUSERS.

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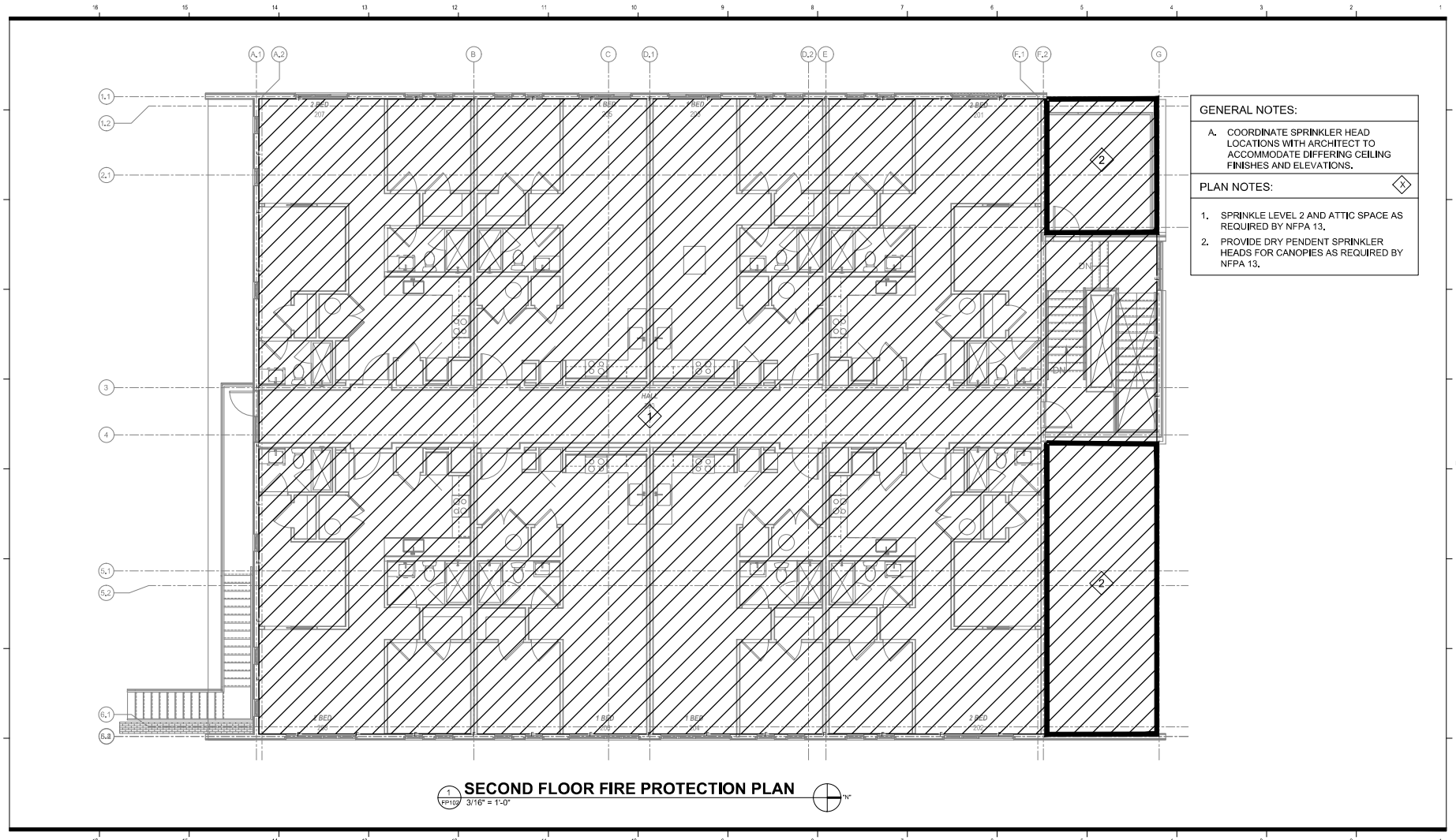
FIRST FLOOR FIRE PROTECTION PLAN

FP101



1 FP102 **SECOND FLOOR FIRE PROTECTION PLAN**
3/16" = 1'-0"

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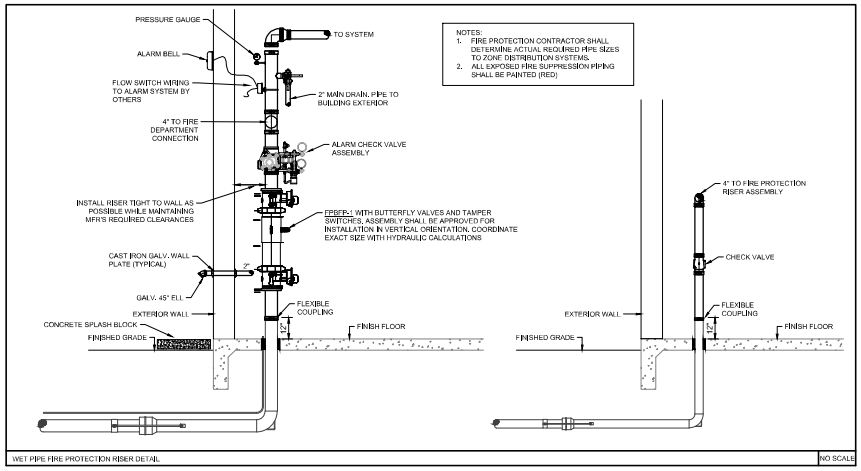
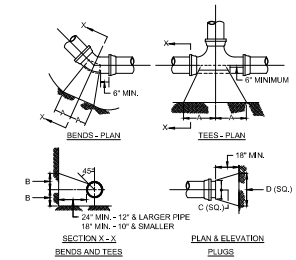
SECOND FLOOR FIRE PROTECTION PLAN

FP102



NOTES:
1. FIRE PROTECTION CONTRACTOR SHALL DETERMINE ACTUAL REQUIRED PIPE SIZES TO ZONE DISTRIBUTION SYSTEMS.
2. ALL EXPOSED FIRE SUPPRESSION PIPING SHALL BE PAINTED (RED)

WET PIPE FIRE PROTECTION RISER DETAIL — NO SCALE



SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A	B	C	D
2	8	6	8	6	8	6	8	6	6	12
2-1/2	8	6	8	6	8	6	8	6	6	12
3	8	6	8	6	8	8	10	12	8	16
4	8	6	8	6	8	8	10	12	8	16
6	8	10	8	8	8	8	10	12	8	16
8	12	12	8	10	8	9	10	12	12	20

STANDARD THRUST BLOCKS FOR WATER MAINS — NO SCALE

KEM STUDIO
1515 GENESSEE ST SUITE 11
KANSAS CITY MO 64102
t 816 756 1808
kemstudio.com

ARCHITECT'S CONSULTANTS
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HATTIESBURG, MS 39401

ERG
ERG P.N. 24,121

100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2026

PROJ. A_2406

Issued For	Date	#
100% CONSTRUCTION DOCUMENTS	01.16.2026	0

JASON CHRISTOPHER GROSS
LICENSED PROFESSIONAL ENGINEER
01/16/26
17087
STATE OF MISSISSIPPI

FIRE PROTECTION DETAILS

FP501

MISCELLANEOUS FIRE PROTECTION POWER, CONTROL AND INTERLOCK WIRING CONNECTIONS

TAG	DESCRIPTION	POWER WIRING	CONTROL & INTERLOCK WIRING	ELECTRICAL V/Ø	REMARKS
RISER	FIRE PROTECTION RISER VALVE	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	TAMPERPROOF SUPERVISORY SWITCHES TO MONITOR VALVE STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
EAB	ELECTRIC ALARM BELL	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	LOCATED ON WALL ADJACENT TO FIRE PROTECTION RISER ROOM. SEE FIRE PROTECTION RISER DETAIL FOR ADDITIONAL INFORMATION.
F1	ZONE 1 FIRE PROTECTION FLOW SWITCH	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FLOW SWITCH TO MONITOR SYSTEM FLOW STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.

FIRE PROTECTION BACKFLOW PREVENTER

MARK	DESCRIPTION	MAKE	MODEL	SERVES	REMARKS
FPBFP-1	FIRE PROTECTION BACKFLOW PREVENTER	WATTS	757OSY NRS	FIRE PROTECTION	--

VIBRATION ISOLATION/SEISMIC RESTRAINTS

EQUIPMENT TYPE	BASIS OF DESIGN	SEISMIC DESIGN CATEGORY "SDC"	SEISMIC COMPONENT IMPORTANCE FACTOR	REMARKS
FIRE PROTECTION	KINETICS			1, 2

NOTES: 1. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS. 2. SEISMICALLY RATED FOR PROJECT CONDITIONS.

MISCELLANEOUS FIRE PROTECTION POWER, CONTROL AND INTERLOCK WIRING CONNECTIONS

TAG	DESCRIPTION	POWER WIRING	CONTROL & INTERLOCK WIRING	ELECTRICAL V/Ø	REMARKS
PIV	POST INDICATOR VALVE	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	TAMPERPROOF SUPERVISORY SWITCHES TO MONITOR VALVE STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS. VERIFY LOCATION ON SITE.
RISER	FIRE PROTECTION RISER VALVE	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	TAMPERPROOF SUPERVISORY SWITCHES TO MONITOR VALVE STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
FLOW	FIRE PROTECTION FLOW SWITCH	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	FLOW SWITCH TO MONITOR SYSTEM FLOW STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
VAL	SUPERVISED VALVE	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	TAMPERPROOF SUPERVISORY SWITCHES TO MONITOR VALVE STATUS. VERIFY/COORDINATE DEDICATED POWER OR SYSTEM POWER REQUIREMENTS.
EAB	ELECTRIC ALARM BELL	DIV 26 ELECTRICAL	DIV 26 FIRE ALARM	120/1	LOCATED ON WALL ADJACENT TO FIRE PROTECTION RISER ROOM. SEE FIRE PROTECTION RISER DETAIL FOR ADDITIONAL INFORMATION.

FIRE SUPPRESSION PIPING TEST LOG (PER NFPA REQUIREMENTS

DATE	SYSTEM	DESCRIPTION OF PIPING SECTION TESTED	TEST PRESSURE (PSIG)	TEST DURATION (HOURS)	RETULTS (PASS/FAIL)	WITNESS (INITIALS)

This form stall be completed and submitted with the project closeout documents. Contractor shall copy this form if more sheets are required. Piping pressure test log shall be kept at project site and shall be made available to the Architect upon request.

FIRE PROTECTION CLOSEOUT DOCUMENT CHECKLIST

PROJECT NAME:

INITIALS OF PERSON COMPLETING TASK	DATE OF TASK COMPLETED	DESCRIPTION OF CONTRACTORS SUBMITTAL
		SIGNED LETTER RECORD OF OWNERS PERSONNEL O & M TRAINING.
		DVD RECORD OF OWNERS PERSONNEL O & M TRAINING (3 EACH).
		VALVE TAG AND FLOOR PLAN LOCATION CHARTS.
		PIPE PRESSURE TEST LOG. PIPE PRESSURE TEST PER NFPA 13.
		PROVIDE COPY OF INSTALLATION AND MATERIAL CERTIFICATE PER NFPA 13.

FIRE PROTECTION SUBMITTAL REQUIREMENTS

ITEM	PRODUCT DATA	SAMPLES	SHOP DRAWING
PIPING, FITTING, VALVES	R	--	--
SPRINKLER HEADS	R	--	R
GAUGES	R	--	R
SLEEVES AND ESCHUTCHEONS	R	--	--
FLOW AND TAMPER SWITCHES	R	--	R
ALARM BELLS	R	--	R
PIPE HANGERS AND SUPPORTS	R	--	R
IDENTIFICATION SIGNS	R	--	--
SPRINKLER HEAD CABINETS	R	--	R
HOSE VALVE CABINETS	R	--	R
COORDINATION DRAWINGS	--	--	R
AHJ APPROVAL LETTER	--	--	R
INSURANCE UNDERWRITER'S APPROVAL LETTER	--	--	R
HYDRAULIC CALCULATIONS	--	--	R
STATIC AND RESIDUAL FLOW TEST RESULTS	--	--	R
WRITTEN STATEMENT WITH NICET LEVEL 3 EMPLOYEE	R	--	--

NOTES: "R" MEANS REQUIRED.
"RJ" MEANS REQUIRED ONLY FOR PRODUCTS AND EQUIPMENT DIFFERING FOR THE SPECIFIED MANUFACTURER AND MODEL AND FOR "OR EQUALS" WHERE SPECIFIED.

FIRE PROTECTION PIPE SCHEDULE

LOCATION	PIPE MATERIALS ≤SIZE	MATERIAL	TYPE/ SCHEDULE	>SIZE	MATERIAL	TYPE/ SCHEDULE	REMARKS
ABOVE GRADE	2"	BLACK STEEL	SCH 40	2-1/2"	BLACK STEEL	SCH 10	ALL PIPING SHALL BE PROVIDED WITH FACTORY-APPLIED ANTIMICROBIAL COATINGS TO INHIBIT MICROBIOLOGICALLY INFLUENCED CORROSION (MIC). WHEATLAND "MIC SHIELD". ALLIED TUBE AND CONDUIT "ABF II", OR EQUAL. STEEL THREADED COUPLING (ASTM A865), MALLEABLE-IRON THREADED FITTING (ASME B16.3), PAINT ALL EXPOSED PIPING AND INCLUDING FIRE PROTECTION RISER, COLOR BY ARCHITECT.
IN-BUILDING RISER	ALL	STAINLESS STEEL	TYPE 304	--	--	--	IN-BUILDING RISERS SHALL BE INSTALLED AS INDICATED ON THE PLANS. RISERS SHALL BE COMPOSED OF A SINGLE EXTENDED 90-DEGREE FITTING OF FABRICATED 304 STAINLESS STEEL TUBING, MAXIMUM WORKING PRESSURE 300 PSI. THE FITTING SHALL HAVE A GROOVED-END CONNECTION ON THE OUTLET (BUILDING) SIDE AND A CIPS COUPLER ON THE INLET (UNDERGROUND) SIDE. THE IN-BUILDING RISER SHALL BE AN AMES FIRE & WATERWORKS SERIES IBR, OR EQUAL.
BELOW GRADE	ALL	PVC	AWWA C900 CLASS 200	--	--	--	FITTINGS TO BE AWWA C900 BELL AND SPIGOT OR DOUBLE ENDS WITH ELASTOMERIC GASKET IN EACH BELL.
BELOW GRADE	ALL	DUCTILE IRON	AWWA C111/C151	--	--	--	FITTINGS TO BE ASTM A47,AWWA C110, DUCTILE-IRON OR CAST-IRON TYPE, OR AWWA C153, DUCTILE-IRON, COMPACT MECHANICAL-JOINT TYPE. INCLUDE CEMENT-MORTAR LINING AND SEAL COAT ACCORDING TO AWWA C104 AND GLANDS, RUBBER GASKETS, AND BOLTS AND NUTS ACCORDING TO AWWA C111. FACTORY GROOVED AWAA C606.

JOINING METHODS:

A. GROOVED-END PIPE COUPLINGS: UL 213 AND AWWA C606, RIGID PATTERN, UNLESS OTHERWISE INDICATED; GASKETED FITTING MATCHING STEEL PIPE OD. INCLUDE DUCTILE-IRON HOUSING WITH KEYS MATCHING STEEL PIPE FITTING GROOVES, PRE-LUBRICATED RUBBER GASKET LISTED FOR USE WITH HOUSING AND STEEL BOLTS AND NUTS. INCLUDE LISTING FOR DRY-PIPE SERVICE FOR COUPLINGS FOR DRY PIPING.
B. STEEL, GROOVED-END FITTINGS: UL-LISTED AND FM APPROVED, ASTM A47, MALLEABLE IRON OR ASTM A 536, DUCTILE IRON, WITH DIMENSIONS MATCHING STEEL PIPE AND ENDS FACTORY GROOVED ACCORDING TO AWWA C606.
C. TRANSITION COUPLINGS: AWWA C219, SLEEVE TYPE, OR OTHER MANUFACTURED FITTING THE SAME SIZE AS, WITH PRESSURE RATING AT LEAST EQUAL TO, AND WITH ENDS COMPATIBLE WITH PIPING TO BE JOINED.

ABBREVIATIONS:

AWWA AMERICAN WATER WORKS ASSOCIATION
SCH SCHEDULE

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1515 GENESSEE ST SUITE 11
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t 816 756 1808
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601.271.2808

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601.265.1955

DEVELOPER
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walker@ucchills.com
601.270.4487

ERG
ERG P.N. 24,121

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HATTIESBURG, MS 39401

100% CONSTRUCTION DOCUMENTS

Issued: 01.16.2026

PROJ. A_2406

Issued For	Date	#
100% CONSTRUCTION DOCUMENTS	01/16/26	0

CHRISTOPHER GROSS LICENSED PROFESSIONAL ENGINEER 01/16/26 17087 STATE OF MISSISSIPPI

FIRE PROTECTION SCHEDULES

FP601

URBAN DEVELOPMENT
PLANNING DIVISION

Quick Facts:

Applicant:

Laron Smith

Address:

1209 Corinne Street

Zoning:

B-3 (BCO)

Future Land Use:

Community Business Corridor

Historic District:

Oaks Historic

Overlay District(s):

Broadway Corridor Overlay District

Flood Zone:

X

Ward:

4

County:

Forrest

PPIN Number(s):

21809 & 21810

Parcel Number(s):

2-038C-16-363.00 & 2-038C-16-362.00

Hattiesburg Board of Adjustment
Planning Division
Item C - Staff Report
August 5th, 2026



Applicant's Requests:
Laron Smith, Applicant, requests a variance from the residential buffer requirement of 30ft to allow for 0ft for a B-3 (BCO) zoned property located at 1209 Corinne Street (PPIN 21809 & 21810, Forrest County, Ward 4).



Background and History



Staff met with the applicant for a pre-application meeting and site plan review meetings on May 28, 2026 and June 11, 2026. The applicant proposes relocating their business from its current location near 4th Street and 25th Avenue to 1209 Corinne Street. The proposed use is allowed in the B-3 (BCO) zoning district, subject to applicable conditions for use.

During review, staff identified that portions of the applicant's proposed site improvements would encroach into the required 30-foot residential zoning buffer between the subject property and the R-3 zoned property to the northeast. The applicant explained that the proposed improvements include a small parking area and an expansion of the rear porch area. Because these improvements would extend into the required buffer area, staff advised the applicant of the variance process to request relief from the residential buffer requirement.

The variance is not required for the business use itself to be permitted at this location. Rather, the variance relates to elective site improvements proposed by the applicant to better serve the business. If the variance is not granted, the applicant may still pursue occupancy and operation of the business at this location, provided all applicable zoning, building, fire, life-safety, licensing, and operational requirements are met. The applicant may also revise the site plan, reduce or remove the proposed encroachments, or utilize alternative arrangements that do not require relief from the residential buffer standard.

Zoning buffers are intended to provide separation and transition between districts or uses that may differ in intensity, activity, noise, lighting, traffic, or visual character. Residential buffers are especially important where commercial activity is located adjacent to or near residentially zoned property. These buffer areas help reduce potential impacts on nearby residential properties by providing space for landscaping, screening, fencing, stormwater management, and general separation between more intensive site activity and residential areas.

In this case, the required buffer is intended to protect the residentially zoned property to the northeast from potential impacts associated with expanded commercial site activity, including parking, outdoor gathering areas, lighting, noise, and circulation. The variance request asks the Board of Adjustment and City Council to determine whether reducing the required buffer to accommodate the proposed

improvements is appropriate based on the site conditions, the nature of the proposed improvements, and the applicable variance criteria.

The applicant also presented the proposed rear porch addition to the Hattiesburg Historic Conservation Commission, which approved the porch addition from a historic design standpoint on July 8, 2026. The HHCC approval was granted contingent upon approval of any required variance. The Historic Commission will still need to review any proposed signage for the property once the applicant is ready to move forward.



Surrounding Area Image

Future Land Use:

Community Business District The Community Business District is primarily a non-residential district located along the city's major roadways. In this district, certain residential and non-residential land uses may be found that exhibit suburban development patterns.

District Characteristics The characteristics of this district include the following: moderate-density single-family residences and certain two-family and multi-family uses; mixed-use buildings and developments; suburban-style, higher-intensity business developments that provide services to the entire community; and less-intensive commercial uses than are found in the Regional Business District.

District Land Uses The following land uses should be found in this district: residential uses; public and quasi-public uses, such as churches and schools; and general indoor retail, service and office land uses that do not require the outdoor storage of goods or equipment.



Surrounding Area Image

Codes and Regulations

SECTION 7: Standards of Design

Table 7.11-2 Zoning Buffer Requirements													
Zones	A-1	A-2	R-1A	R-1B	R-1C	R-2	R-3	B-1/B-2	B-3	B-4	B-5	I-1	I-2	Buffer Yard Specifications
B-3	30'	30'	30'	30'	30'	30'	30'	-	-	-	-	-	-	Type 30 shall consist of a landscaped area a minimum of 30 feet in width, landscaped as an opaque barrier, one large canopy tree (ultimate height 50± feet) for every 60 lineal feet of buffer yard and 1 medium evergreen tree planted on a triangular staggered spacing for every 15 lineal feet of buffer yard.

Considerations and Basis for Approval

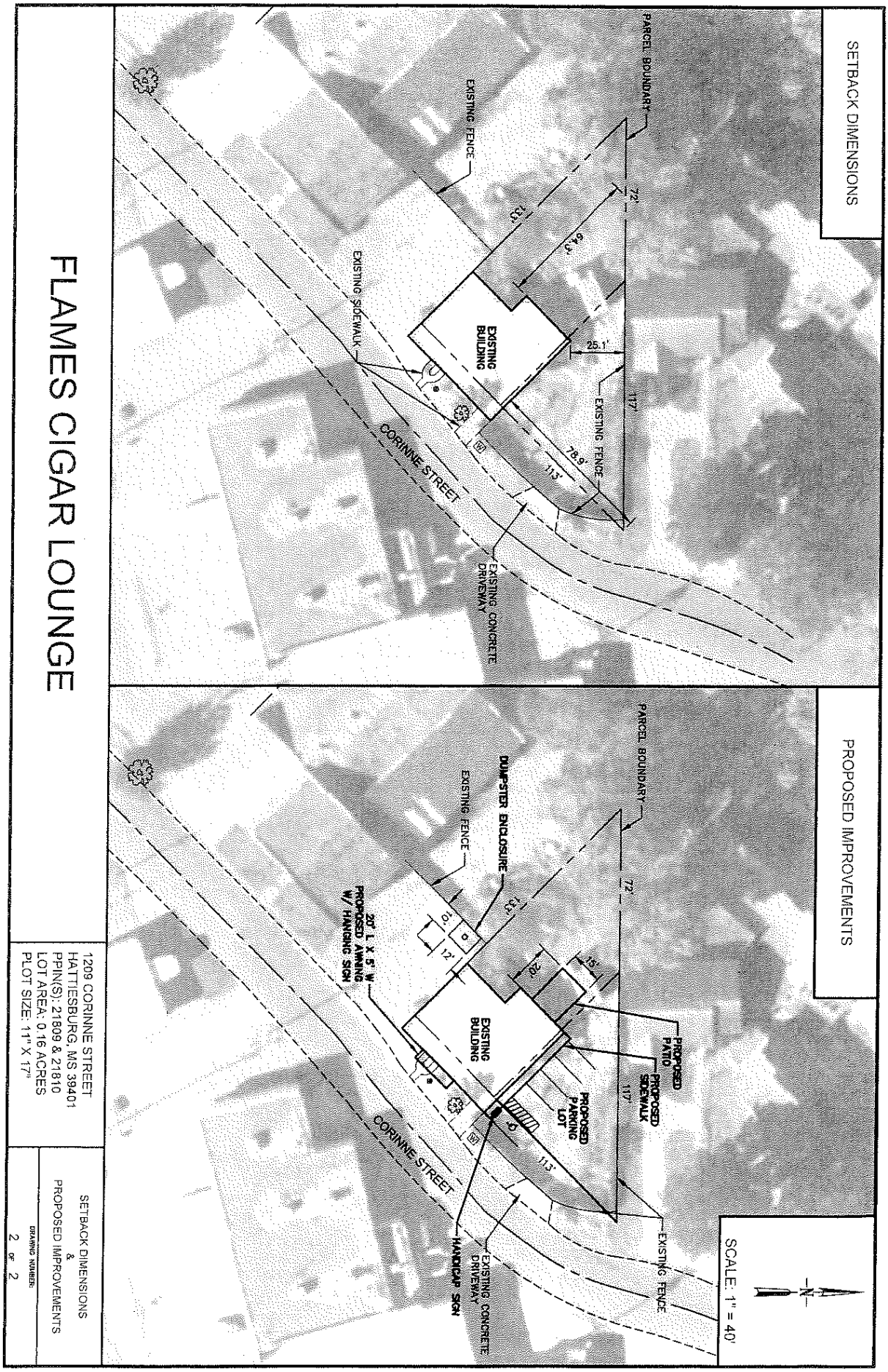
Option:

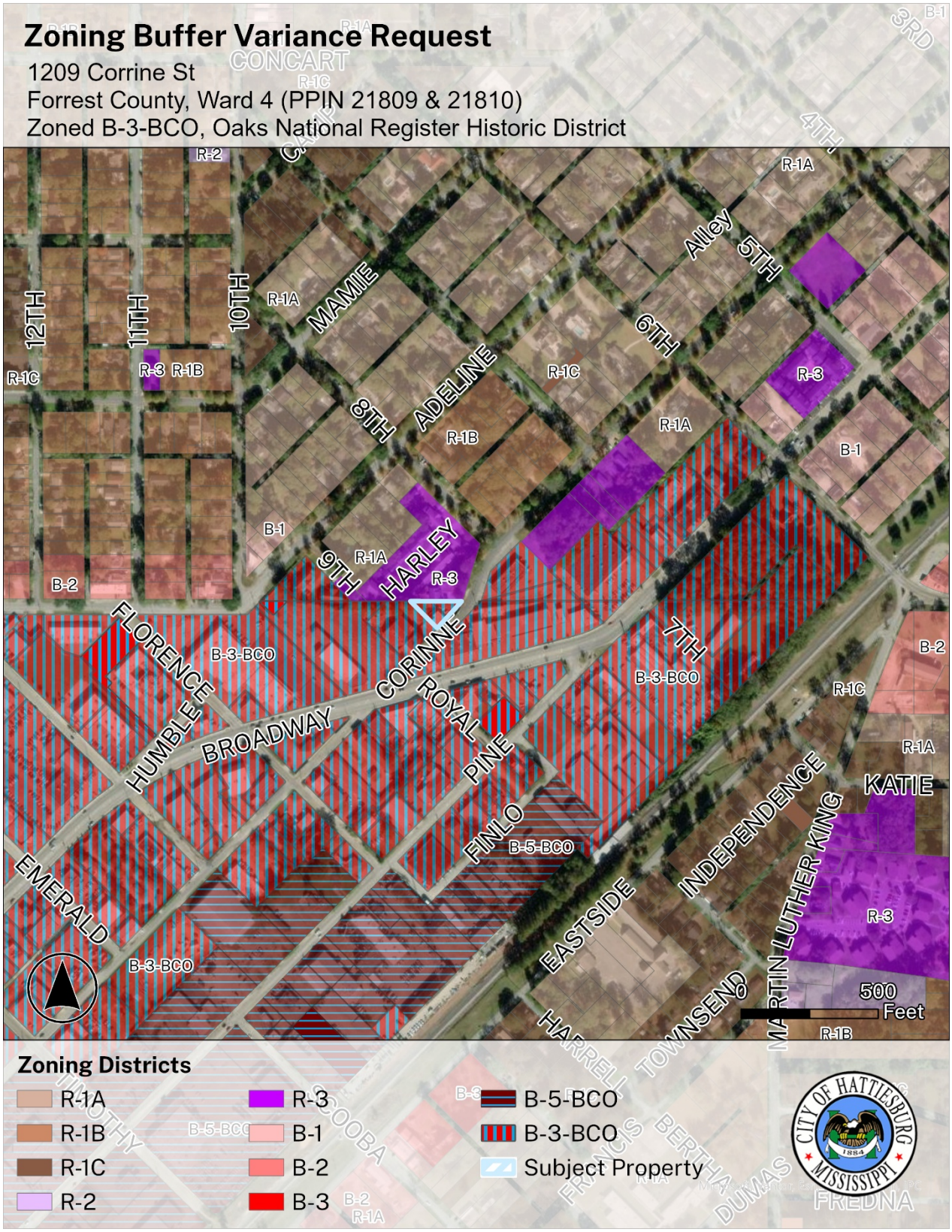
Recommend approval or denial of a variance from the residential buffer requirement of 30ft to allow for 0ft for a B-3 (BCO) zoned property located at 1209 Corinne Street (PPIN 21809 & 21810, Forrest County, Ward 4).

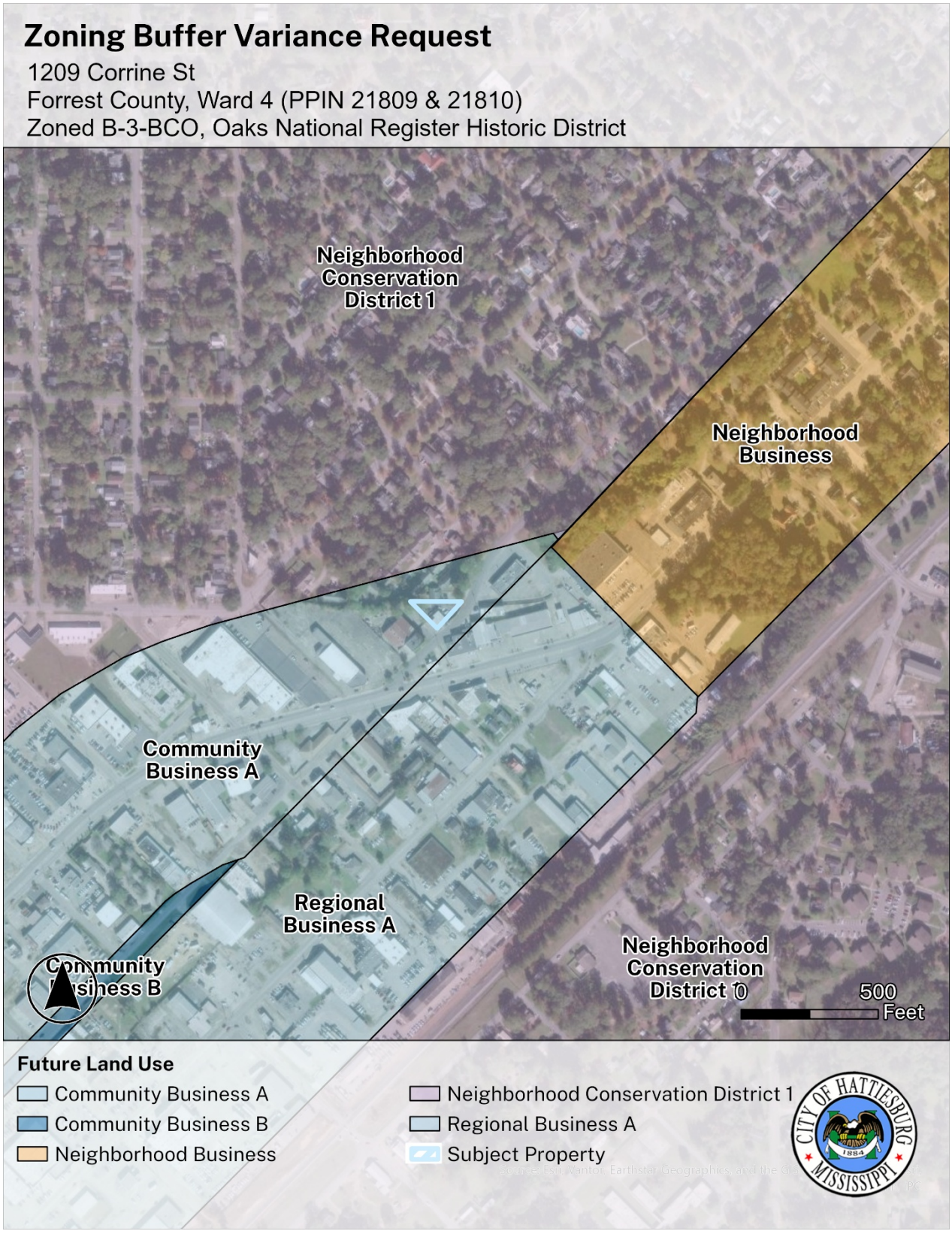
Basis for Approval:

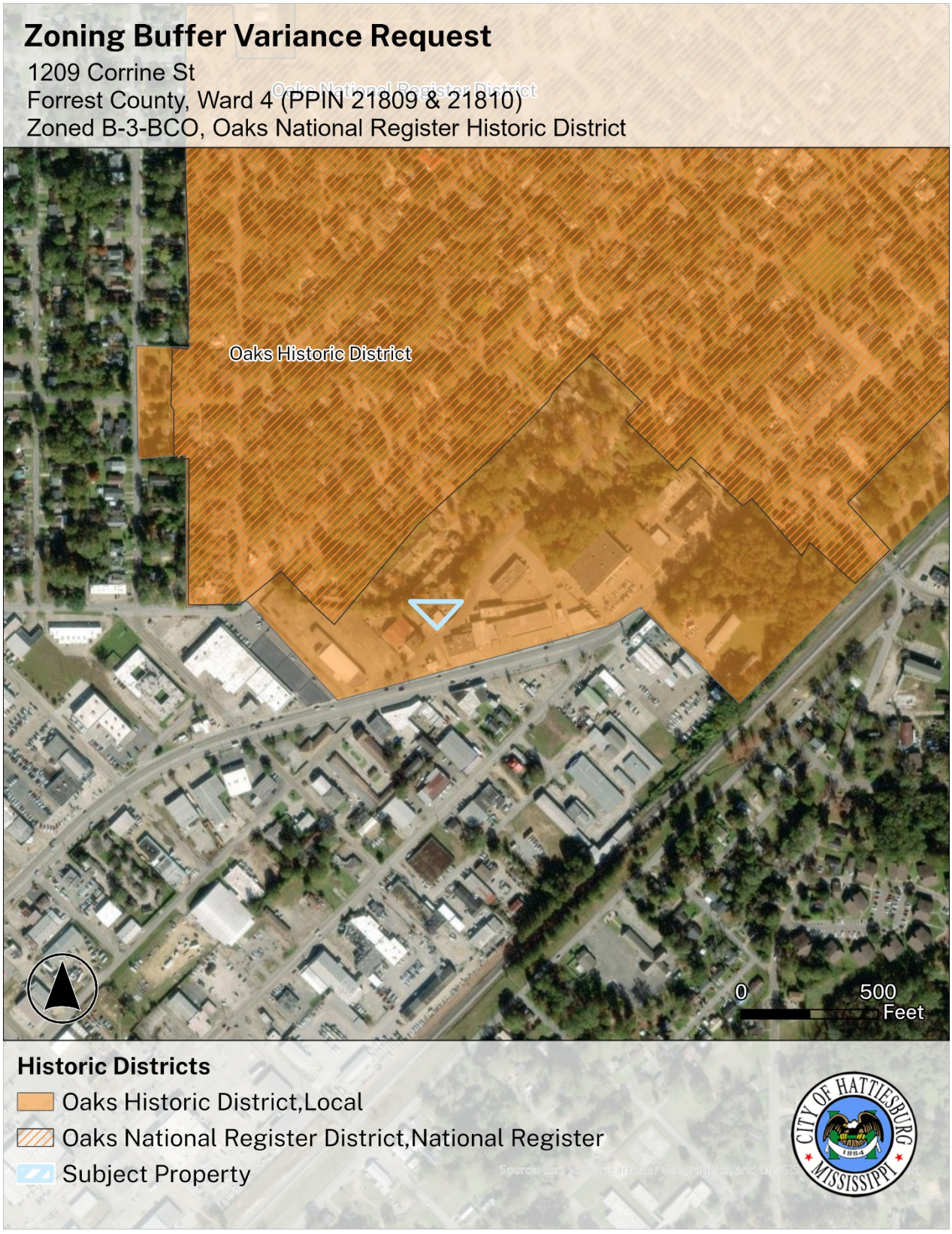
1. Hardship.
    a. The hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant.
    b. There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.
2. Special Privilege.
    a. A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.
3. Literal Interpretation.
    a. The literal interpretation of the provisions of the regulations would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant
4. Reasonable Use.
    a. The applicant cannot make reasonable use of the property without the requested variance.

5. Minimum Required.
    a. The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.
6. Conformance with the Purposes of this Code.
    a. The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.


FLAMES CIGAR LOUNGE
SETBACK DIMENSIONS
PARCEL BOUNDARY
EXISTING FENCE
72'
133'
64.3'
EXISTING BUILDING
25.1'
117'
EXISTING FENCE
78.9'
113'
EXISTING SIDEWALK
CORINNE STREET
EXISTING CONCRETE DRIVEWAY
PROPOSED IMPROVEMENTS
PARCEL BOUNDARY
DUMPSTER ENCLOSURE
EXISTING FENCE
72'
133'
10'
12'
20'
15'
20' L X 5' W PROPOSED AWNING W/ HANGING SIGN
EXISTING BUILDING
PROPOSED PATIO
PROPOSED SIDEWALK
PROPOSED PARKING LOT
117'
113'
CORINNE STREET
EXISTING FENCE
EXISTING CONCRETE DRIVEWAY
HANDICAP SIGN
SCALE: 1" = 40'
N
1209 CORINNE STREET
HATTIESBURG, MS 39401
PPIN(S): 21809 & 21810
LOT AREA: 0.16 ACRES
PLOT SIZE: 11" X 17"
SETBACK DIMENSIONS
&
PROPOSED IMPROVEMENTS
DRAWING NUMBER:
2 OF 2


Zoning Buffer Variance Request
1209 Corrine St
Forrest County, Ward 4 (PPIN 21809 & 21810)
Zoned B-3-BCO, Oaks National Register Historic District
CONCART
3RD
4TH
Alley
5TH
6TH
7TH
8TH
9TH
10TH
11TH
12TH
MAMIE
ADELINE
HARLEY
CORINNE
ROYAL
PINE
FINLO
FLORENCE
HUMBLE
BROADWAY
EMERALD
EASTSIDE
INDEPENDENCE
MARTIN LUTHER KING
KATIE
TOWNSEND
HARRELL
R-2
R-1A
R-1B
R-1C
R-3
B-1
B-2
B-3-BCO
B-5-BCO
500
Feet
Zoning Districts
R-1A
R-1B
R-1C
R-2
R-3
B-1
B-2
B-3
B-5-BCO
B-3-BCO
Subject Property
CITY OF HATTIESBURG
MISSISSIPPI
1884


Zoning Buffer Variance Request
1209 Corrine St
Forrest County, Ward 4 (PPIN 21809 & 21810)
Zoned B-3-BCO, Oaks National Register Historic District
Neighborhood Conservation District 1
Neighborhood Business
Community Business A
Regional Business A
Community Business B
Neighborhood Conservation District 1
0
500
Feet
Future Land Use
Community Business A
Community Business B
Neighborhood Business
Neighborhood Conservation District 1
Regional Business A
Subject Property
CITY OF HATTIESBURG
1884
MISSISSIPPI


Zoning Buffer Variance Request
1209 Corrine St
Forrest County, Ward 4 (PPIN 21809 & 21810)
Zoned B-3-BCO, Oaks National Register Historic District
Oaks Historic District
0
500
Feet
Historic Districts
Oaks Historic District,Local
Oaks National Register District,National Register
Subject Property

Application for Public Hearing

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

NOTE:

- **Fill this application out IN FULL with what applies to your application**
- Refer to the hattiesburgms.com/planning for Land Development Code and GIS map. Access via link or QR code

Applicant Information

Name Applicant: Laron Smith **Project Name:** Sincere Flames Cigar Lounge

Municipal Address of Site: 1209 & Corrine St, H'burg, MS **PPIN #:** 21809 + 21810

Parcel Number(s): _____

Type of Public Hearing	Additional Information Needed:
☑ Variance	☐ Sign ☐ Setback ☐ Off-Site Parking ☐ Lot Width ☐ Lot Coverage Area ☑ Buffer ☐ Open Space ☐ Other: Reduce Zoning Buffer to 0'
☐ Rezoning	Existing Zoning: _____ Proposed Zoning: _____
☐ Conditional Use	☐ Automotive Filling Station ☐ Digital Billboard, New ☐ Digital Billboard, Replacement ☐ Telecommunications ☐ Restaurant ☐ Solar Farm ☐ Other: _____
Other Application types: ☐ Subdividing of lot, Parcel, or Tract ☐ Street or Alley Renaming ☐ Vacating Street or Alley	☐ Minor/Major Subdivision ☐ Overlay District ☐ Planned Mixed-Use District (PMU)

For Staff Only:

Zoning:	Historic District:	Flood Zone:	Ward:
B-3-BID	OGKS	X	☐1 ☐2 ☐3 ☑4 ☐5
Project Number:			**Received:**
PPIN # or Parcel #: 21809 & 21810		6/24/26	

Updated Version 12/04/24

Application for Site Plan Review

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

The following fees are an excerpt from Ordinance No. 2977, adopted January 22, 2008, as amended.

Public Hearing Fees	
Public Hearing Type	Fees Associated
Variance Variance applications include one Concept Site Plan Review and one Variance request	**$175.00** per application. **$50.00** for each additional variance.
Street / Alley Naming or Re-Naming *Fees for replacement street signs shall be paid after City Council approval but prior to the effective date. *	**$300.00** per application. **$100.00** per required street name sign *if approved*
Street / Alley Closing	**$200.00** per application.
Zoning Change	**$400.00** per application. *see PUD or PRD & zoning package rate)
Planned Unit Development (PUD) or Planned Residential Development (PRD) with zoning change package	**$600.00** per package.
Subdivision of Land (Preliminary Plats) Note: Final Plats should be submitted to the governing body for approval within 12 months of approval of preliminary plats.	**$250.00** per application. **$10.00** per each additional created lot (** see PUD or PRD & Subdivision of Land package rate)
Planned Unit Development (PUD) or Planned Residential Development with Subdivision of Land Package**	**$500.00** per application. **$10.00** per each additional created lot (** see PUD or PRD & Subdivision of Land package rate)
Change in Land Development Code Text	**$200.00** per application.
Appeal Fees for Proponent or Opponent appeals to City Council *Exempt from fees – Established Neighborhood Association*	**$50.00** per appeal.
Cancellation/Re-notification fee on any public hearing process (Planning Commission or City Council) that is tabled or cancelled at the owner/developer's Request	**$50.00** (per each 100 mailing labels)

OTHER PROCESSES MAY HAVE ADDITIONAL FEES
Make all checks payable to the City of Hattiesburg

I hereby certify that I have completed and attached the above-required documents, information, and fees.

Print Name: Laron Smith **Signature:**

Updated Version 12/04/2024

FOR VARIANCE APPLICANTS:

The Board of Adjustment has the responsibility to hear and make recommendation on requests for variances to the requirements of this Code (per Section 11.4). Section 12.4.1 Variances are departures from the standards of the Land Development Code, except land use, which will not be contrary to the public interest and where, owing to conditions peculiar to the property and not as a result of the action of the applicant, a literal enforcement of this Code would result in unnecessary and undue hardship.

The following conditions must be met before a variance can be recommended.

Approval Criteria.
A variance is not a right, but a privilege that property owners meeting the following criteria may request. These criteria are to be used to consider all variance requests. It shall be the burden of the applicant to prove that the request meets these criteria. Use this worksheet or format your own to demonstrate the following criteria.

1. **Hardship.** (a) the hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant. (b) There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.

   Hardship additional space is needed to build deck which will enhance the building & productivity. It will also increase space for our patrons.

2. **Special Privilege.** A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.

   The request is to extend the exterior patio on currently current property.

3. **Literal Interpretation.** The literal interpretation of the provision of the regulation would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant.

   Addition of the deck will not impede on other property owners privacy or property.

4. **Reasonable Use.** The applicant cannot make reasonable use of the property without the requested variance.

   The requested variance is required by the city. No modifications can be made without the city's approval.

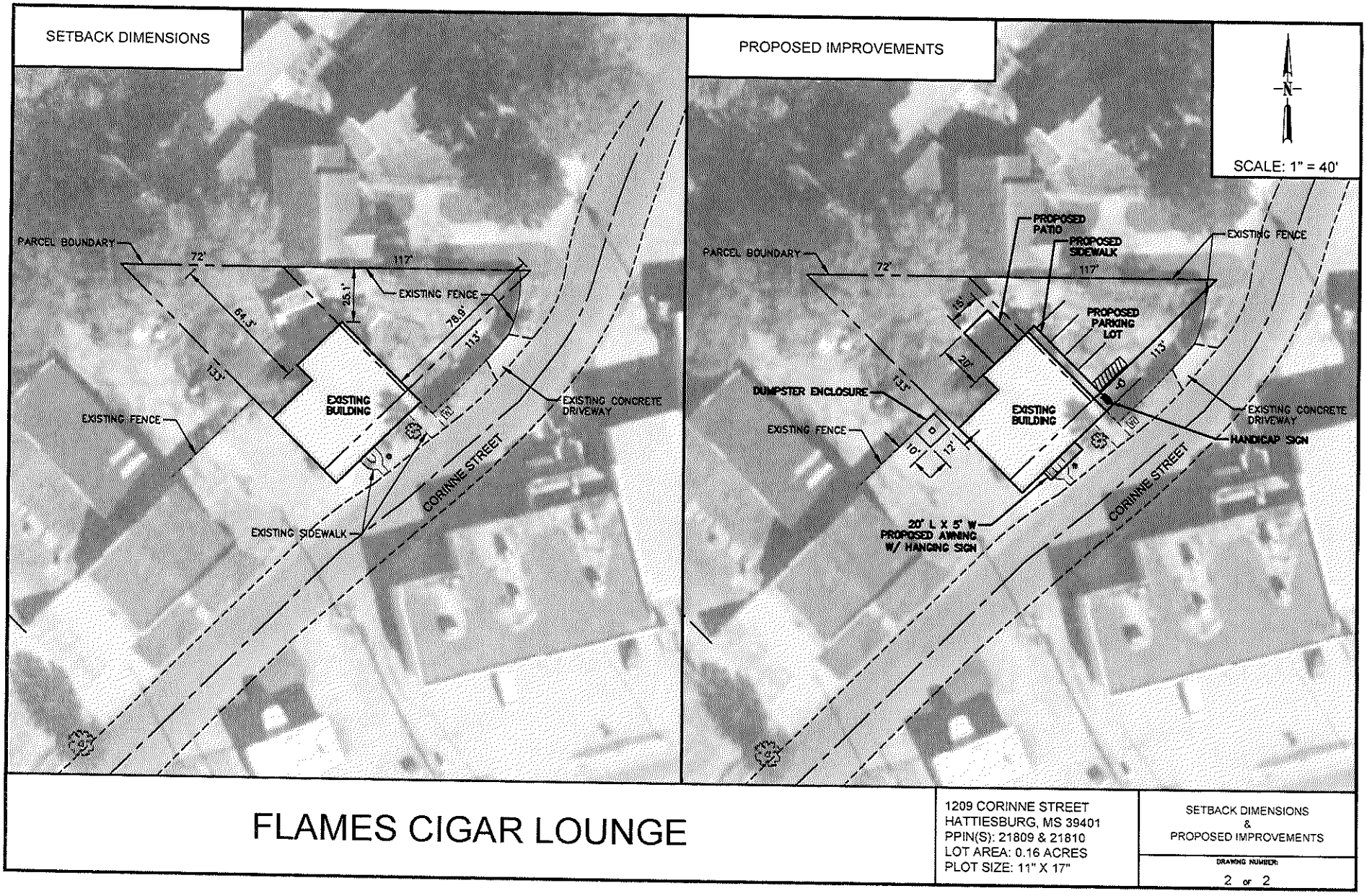
5. **Minimum Required.** The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.

The minimum is 10 ft and is needed to help with spacing of outside seating.

6. **Conformance with Purpose of this Code.** The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

No land development code will be impacted.

12.4.1.2 Conditions of Approval. In recommending the granting of a variance, the Board of Adjustment may require appropriate conditions and safeguards in conformity with this Code. Violation of such conditions and safeguards, when made a part of the terms under which a variance is granted, shall be deemed a violation of the Code. The recommendation of the Board Adjustment shall be presented to the City Council for final action.



FLAMES CIGAR LOUNGE

1209 CORINNE STREET
HATTIESBURG, MS 39401
PPIN(S): 21809 & 21810
LOT AREA: 0.16 ACRES
PLOT SIZE: 11" X 17"

SETBACK DIMENSIONS
&
PROPOSED IMPROVEMENTS

DRAWING NUMBER
2 or 2

URBAN DEVELOPMENT
PLANNING DIVISION

Quick Facts:

Applicant:

United Fence

Address:

6892 Hwy 49

Zoning:

I-1 (Industrial)

Future Land Use:

Regional Business Corridor

Historic District:

N/A

Overlay District(s):

N/A

Flood Zone:

AE and SX

Ward:

1

County:

Forrest

PPIN Number(s):

27559

Parcel Number(s):

2-025B-25-060.00

Hattiesburg Board of Adjustment
Planning Division
Item D - Staff Report
August 5th, 2026



Property Image

Applicant's Requests:
United Fence, Applicant, requests a variance from the fence height requirement of a maximum of 4ft in a front yard to instead allow for 7ft for an I-1 zoned property located at 6892 Hwy 49 (PPIN 27559, Forrest County, Ward 1).



Background and History



Property and Surrounding Area Image

The applicant was referred to the planning division by code enforcement officers after the installation of a new fence on the property was stopped. The applicants were in the process of installing a 7-ft fence when they were stopped by code enforcement for installing the fence in the front yard. The Land Development Code limits front-yard fences to a maximum height of 4 ft. The applicants spoke with planning staff and decided to apply for a variance to allow the fence to exceed the 4-ft maximum and be 7 ft tall.

Future Land Use:

Regional Business District The Regional Business District is primarily a non-residential district located along major arterial streets and highways. Limited types of residential uses—apartment complexes and second-floor housing in strip commercial or lifestyle centers—are allowed and encouraged to locate in this district. The nature and volume of traffic along these corridors are different from the traffic along other commercial corridors, and therefore, the land uses require special consideration. The land uses in this district may generate a higher volume of regional traffic and/or require frequent access by large trucks and commercial vehicles.

District Characteristics The characteristics of this district include the following: suburban-style commercial centers and big-box buildings; well-positioned and screened outdoor uses; mixed-use buildings and developments; high-density residential developments such as apartment complexes; large, private parking areas; and light industrial campuses and employment centers. Regulations should be established to promote development patterns for these uses that enhance the streetscape, screen outdoor storage and equipment areas from public view, and enable safe circulation among neighboring properties without requiring travel on the street or highway corridor.

District Land Uses The following land uses should be found in this district: high-density residential uses; public and quasi-public uses; hotels and motels; general indoor and outdoor retail uses; heavy commercial and light industrial uses; service and office land uses; and light industrial campuses and corporate offices.



Surrounding Area Image

Codes and Regulations

SECTION 7: Dimensional Standards

7.9.1.7 The maximum height of fences and walls shall be four feet above grade when located in a front yard. Otherwise, the maximum height of a fence is eight feet.

Considerations and Basis for Approval

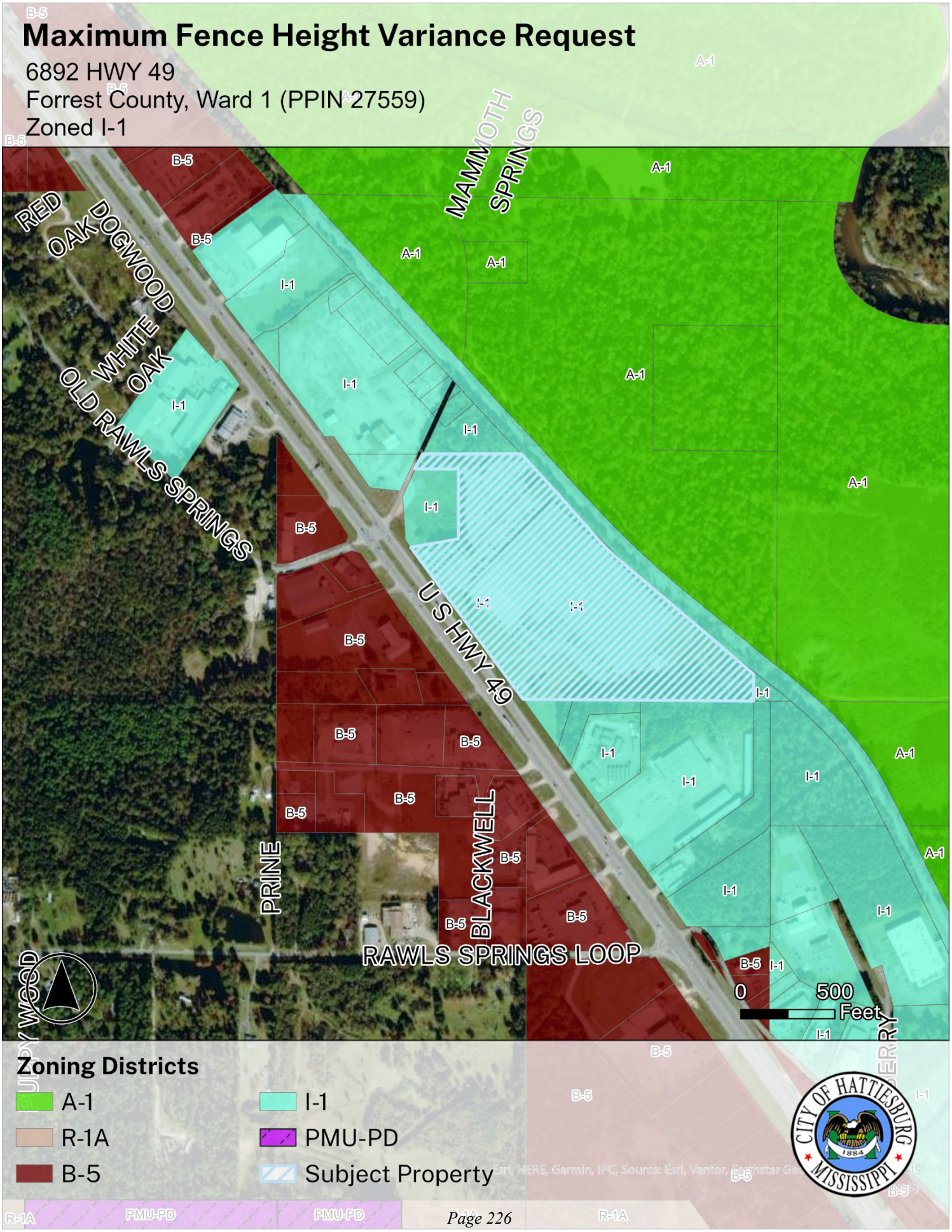
Option:

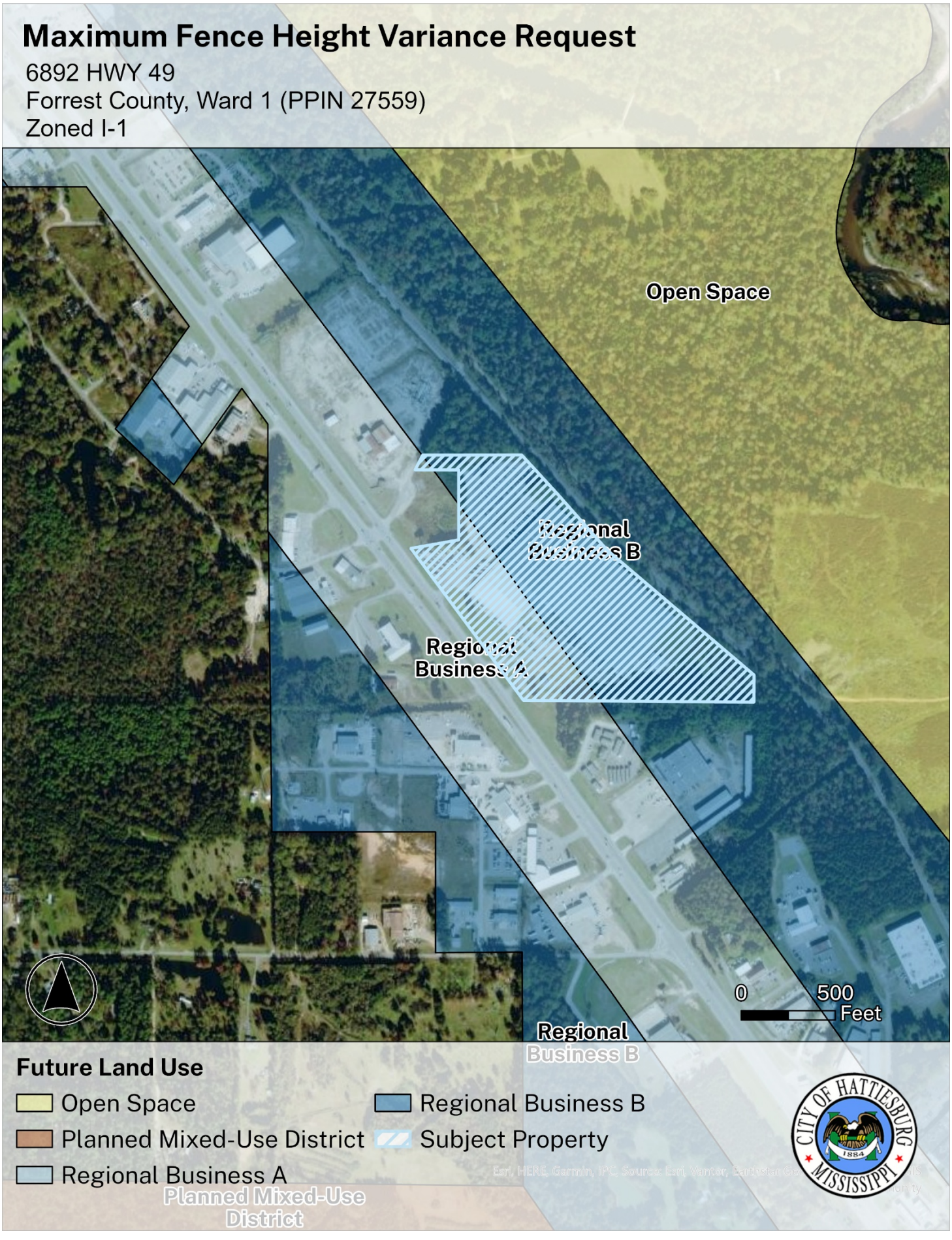
Recommend approval or denial of a variance from the fence height requirement of a maximum of 4ft in a front yard to instead allow for 7ft for an I-1 zoned property located at 6892 Hwy 49 (PPIN 27559, Forrest County, Ward 1).

Basis for Approval:

1. Hardship.
    a. The hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant.
    b. There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.
2. Special Privilege.
    a. A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.
3. Literal Interpretation.
    a. The literal interpretation of the provisions of the regulations would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant

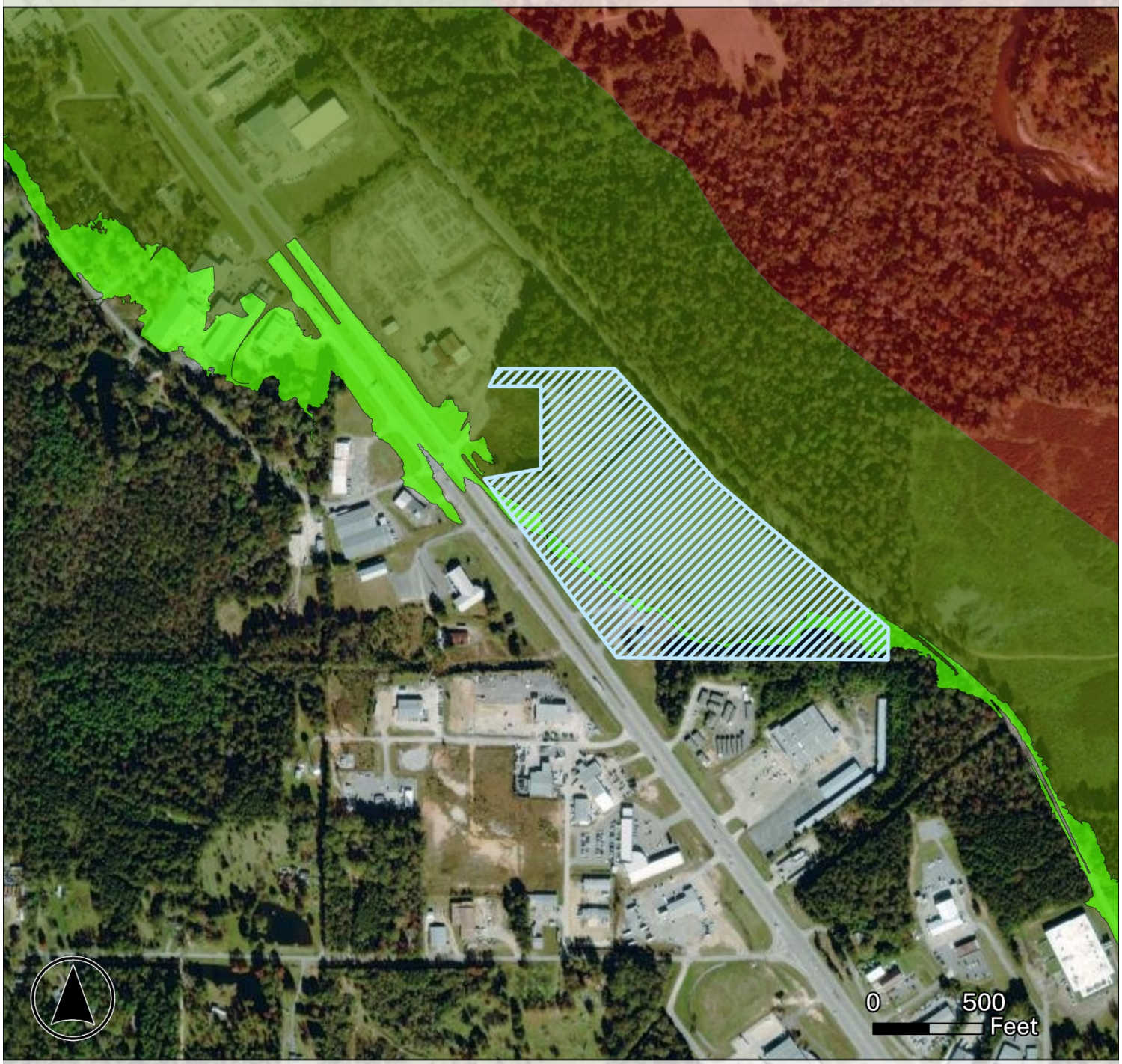
4. Reasonable Use.
    a. The applicant cannot make reasonable use of the property without the requested variance.
5. Minimum Required.
    a. The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.
6. Conformance with the Purposes of this Code.
    a. The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.


Maximum Fence Height Variance Request
6892 HWY 49
Forrest County, Ward 1 (PPIN 27559)
Zoned I-1
MAMMOTH SPRINGS
RED OAK DOGWOOD
WHITE OAK
OLD RAWLS SPRINGS
U S HWY 49
PRINE
BLACKWELL
RAWLS SPRINGS LOOP
A-1
B-5
I-1
0
500
Feet
Zoning Districts
A-1
R-1A
B-5
I-1
PMU-PD
Subject Property
CITY OF HATTIESBURG
1884
MISSISSIPPI


Maximum Fence Height Variance Request
6892 HWY 49
Forrest County, Ward 1 (PPIN 27559)
Zoned I-1
Open Space
Regional Business B
Regional Business A
Regional Business B
0
500
Feet
Future Land Use
Open Space
Planned Mixed-Use District
Regional Business A
Regional Business B
Subject Property
Planned Mixed-Use District
CITY OF HATTIESBURG
1884
MISSISSIPPI

Maximum Fence Height Variance Request

6892 HWY 49
Forrest County, Ward 1 (PPIN 27559)
Zoned I-1



Flood Zones & Wetlands

- FLOODWAY AREA IN ZONE AE
- ZONE A (100 yr flood - no elevation)
- ZONE AE (100 yr flood w / elevation)
- ZONE SX (500 yr flood)
- Subject Property

CITY OF HATTIESBURG 1884 MISSISSIPPI

Esri, HERE, Garmin, [illegible]

Application for Public Hearing

City of Hattiesburg – Planning Division
PO BOX 1898 – Hattiesburg, MS 39403-1898 | Phone (601)- 545-4599

NOTE:

- **Fill this application out IN FULL with what applies to your application**
- Refer to the hattiesburgms.com/planning for Land Development Code and GIS map. Access via link or QR code

Applicant Information

Name Applicant: United Fence **Project Name:** Phoenix

Municipal Address of Site: 6892 USHWY 49 North **PPIN #:** 27559

Parcel Number(s): _____

Type of Public Hearing	Additional Information Needed:
☒ Variance	☐ Sign ☐ Setback ☐ Off-Site Parking ☐ Lot Width ☐ Lot Coverage Area ☐ Buffer ☐ Open Space ☒ Other: Fencing 6' tall + 3 Barbed Wire Surrounding Property with Cantilever gates x 2
☐ Rezoning	Existing Zoning: _____ Proposed Zoning: _____
☐ Conditional Use	☐ Automotive Filling Station ☐ Digital Billboard, New ☐ Digital Billboard, Replacement ☐ Telecommunications ☐ Restaurant ☐ Solar Farm ☐ Other: _____
Other Application types: ☐ Subdividing of lot, Parcel, or Tract ☐ Street or Alley Renaming ☐ Vacating Street or Alley	☐ Minor/Major Subdivision ☐ Overlay District ☐ Planned Mixed-Use District (PMU)

For Staff Only:

Zoning:	Historic District:	Flood Zone:	Ward:
I-1	N/A	AE	☒1 ☐2 ☐3 ☐4 ☐5
Project Number: VARI-0626-0041			**Received:**
PPIN # or Parcel #: 27559			

Updated Version 12/04/24

OWNER AFFIDAVIT PAGE

THIS PAGE MUST BE SIGNED IN FRONT OF A NOTARY, BY THE OWNER(S) OF THE SUBJECT PROPERTY

WITNESS THE SIGNATURES of the **OWNER(s)** of the subject property located at

401 E Kilbourn Ave Milwaukee WI,
Street Address City State

on this the 29 day of June, 2026

In the matter of this request, the property owner further authorizes the following named person(s) to represent them at the public hearing on this petition.

United Fence

on this the 29 day of June, 2026.

Owen Ruhl
Property Owner (Print)

Property Owner (Signature)

STATE OF Wisconsin

COUNTY OF Milwaukee

Personally came and appeared before me, the within named
kandice Bop,
who signed and delivered the above and foregoing instrument as and for their free act and deed on the day and year therein mentioned, and who acknowledge to me that they are the owner(s) of the subject property as described in this Public Hearing Application.

GIVEN UNDER MY HAND AND OFFICIAL SEAL OF OFFICE, this the 29th day of June, 2026

NOTARY PUBLIC

SHANNON GEE NOTARY PUBLIC STATE OF WISCONSIN

My Commission Expires:
4/23/2030

Scanned with CamScanner



FOR VARIANCE APPLICANTS:

The Board of Adjustment has the responsibility to hear and make recommendation on requests for variances to the requirements of this Code (per Section 11.4). Section 12.4.1 Variances are departures from the standards of the Land Development Code, except land use, which will not be contrary to the public interest and where, owing to conditions peculiar to the property and not as a result of the action of the applicant, a literal enforcement of this Code would result in unnecessary and undue hardship.

The following conditions must be met before a variance can be recommended.

Approval Criteria.
A variance is not a right, but a privilege that property owners meeting the following criteria may request. These criteria are to be used to consider all variance requests. It shall be the burden of the applicant to prove that the request meets these criteria. Use this worksheet or format your own to demonstrate the following criteria.

1. **Hardship.** (a) the hardship is unique to the property and is not or will not be caused by the actions or inactions of the applicant. (b) There are exceptional conditions creating an undue hardship applicable only to the property involved or the intended use which do not apply generally to the other land areas or uses within the same zoning district.

   This is an Industrial Building. Having a 4 foot tall Fence is not Sufficient for Security over this Property. For Security to be Sufficient, this fence Requires to be a minimum of 6 foot tall With 3 strands of Barbed Wire and Cantilever Gates.

2. **Special Privilege.** A variance shall not confer any special privilege that is denied to other lands or structures in the same zoning district.

   There are multiple Businesses in the area that have this same fence Installed. This new fence will be Identical to the ones surrounding it.

3. **Literal Interpretation.** The literal interpretation of the provision of the regulation would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district and would cause unnecessary and undue hardship on the applicant.

   A 4' foot Fence would cause hardship on the owner as it is not sufficient to secure the dwelling.

4. **Reasonable Use.** The applicant cannot make reasonable use of the property without the requested variance.

   Property owner can not safely store or manage Product without secure fencing.

5. **Minimum Required.** The granting of a variance is the minimum variance that will make possible the reasonable use of the land or structure.

The minimum requirement for fencing around this property is 6' tall galvanized Commercial Grade material with 3-3 strands of Barbed Wire on top and Security Cantilever gates to ensure Safety.

6. **Conformance with Purpose of this Code.** The granting of a variance will not conflict with the purposes and intent expressed or implied in the Land Development Code.

The overall granting of this variance will not conflict with public or Land Development Code

12.4.1.2 Conditions of Approval. In recommending the granting of a variance, the Board of Adjustment may require appropriate conditions and safeguards in conformity with this Code. Violation of such conditions and safeguards, when made a part of the terms under which a variance is granted, shall be deemed a violation of the Code. The recommendation of the Board Adjustment shall be presented to the City Council for final action.

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Phoenix Hattiesburg MS Industrial Investors LLC
401 East Kilbourn Avenue, Suite 201
Milwaukee, WI 53202

July 6, 2026

VIA FEDEX

City of Hattiesburg
Permit Department
Building Permits
P.O. Box 1898
Hattiesburg, MS 39403

RE: Notice of Authorized Agent for Phoenix Hattiesburg MS Industrial Investors LLC ("Company"), owner of real property located at 6892 US Hwy 49 North, Hattiesburg, Mississippi 39402 ("Property")

To whom it may concern:

This letter serves as the Company's notice to the City of Hattiesburg that Owen Ruhl is authorized to act as the Company's authorized agent with respect to the Property.

Please contact me at david@phoenixinvestors.com if you have any questions.

Sincerely,

DocuSigned by:
David M. Marks
A7F97D76EAC4451...

David M. Marks
Manager