DALE PARTNERS

Addendum Two

T. Doug Dale, AIA
Jeffrey R. Barnes, AIA, ASID
Leigh G. Jaunsen, AIA, LEED AP
Russ S. Blount, AIA, LEED AP
Jason M. Agostinelli, AIA
Neil Polen, AIA, LEED GA
In memory of

1. Project Information

IHL#405-004

MSU High Performance Computing Data Center

Date of Addendum One: December 12, 2022

2. Notice to Bidders

a. This Addendum is issued to all plan holders pursuant to the Instruction to Bidders and Conditions of the Contract. This Addendum serves to clarify, revise, and supersede information in the Project Manual, Drawings and previously issued Addenda. Portions of the Addendum affecting the Contract Documents will be incorporated into the Contract by enumeration of the Addendum in the Owner/Contractor Agreement.

b. The Bidder shall acknowledge receipt of this addendum in the appropriate space on the Bid Form.

c. The date for receipt of bids is unchanged by this Addendum.

3. General

a. As discussed at the Pre-Bid meeting, the soil berm on the South side of 301 Research Boulevard is available for use on this project as fill in landscape areas with slopes 10:1 or flatter. This material can only be used in landscape areas and not below pavements, structures, sidewalks, etc. because it does not meet specifications for “Satisfactory Fill” in the Earthwork Specification 312000. See included report from Burns, Cooley, Dennis, Inc. “Exploration of Subsurface Soil Conditions Potential Borrow Area 301 Research Boulevard”, dated March 29, 2022, and Earthwork Specification 312000 for additional information. If the contractor plans to use this material in his bid price and estimated quantities, the owner shall not be responsible if it is determined at any time that this material cannot be used on the proposed project due to unforeseen conditions or poor condition of the soil materials in the berm. If the contractor chooses to use this material for this project, the following conditions are required to be met:

DALE PARTNERS ARCHITECTS, P.A.
Architecture ▪ Interiors ▪ Planning
161 Lameuse Street, Suite 201
Biloxi, MS 39530
P 228.374.1409 ▪ f 228.374.1414
dalepartners.com

i. *Submit for review and approval to the CTL and engineer locations where the material is planned to be used as fill on the project site prior to beginning any work in the 301 Research Blvd berm area.*

ii. *Submit a schedule of work to remove the soil to the owner for approval prior to beginning work.*

iii. *The contractor shall perform one call in the berm area and maintain markings similar to any work performed on site.*

iv. *If any utilities are discovered in within the berm area, the contractor shall verify depth of utilities to ensure there are no elevation conflicts during or after construction operations in the area.*

v. *The contractor shall perform all work to strip material, excavate, haul, and place on the proposed project site.*

vi. *Appropriate erosion control is required to prevent track out and sediment loss when soil is exposed at the berm.*

vii. *The berm area is to be finish graded to provide positive drainage when excavation operations are complete.*

viii. *The area must be sodded upon completion and watered until a healthy stand of grass is achieved. Coordinate with landscape architect for sodding requirements.*

4. RFI Question Responses

a. The Bid Security in the amount of 5% of the base bid is listed in the project manual but the pre-bid agenda mentions 5% of the total maximum bid amount. Which is required?

   i. *5% of the base bid.*

b. Alternate C1 replaces the 610 limestone with steel slag in the mechanical yard. Please confirm if this only applies to the mechanical yard portion of the crushed stone pavement area shown on Sheet C121.

   i. *Confirmed. The slag alternate only applies to the area in the mechanical yard noted as new crushed stone pavement on sheet C121. The slag alternate does not apply to any other areas noted to receive new crushed limestone such as below new concrete, etc.*

c. Please confirm if temporary casings for drilled piers are to be included in the base bid or only in the unit price on the bid form.

   i. *Include the temporary casing in the unit pricing only. Reference Geotechnical report section 5.5.*

d. Please clarify that the call out for PT-01 on the interior storefront at NCO as shown on Interior Elevation 3/A-482 is not required.

   i. *Not required, note should be pointing to adjacent interior wall.*

e. Several areas will have pipe penetrating vertically through hollow-core floors. Some areas will have change in direction between structural beams. Hangers will be required for this change in direction. Can hangers be used in hollow-core planks? Please note 18” pipe is 160lbs per foot with water. Please see attached S-102 for clarification.

   i. *The hollow core planks can be used to support piping with hangers attached to the bottom of the planks*

f. RFI answer G.i. in addendum #1 indicates no insulation on chill water piping in crawl space. However spec section 230700.3.1 indicates 1.5” thick insulation. Please verify intent.

   i. *Chilled water piping (8" pipes in crawl space) are 60F - 72F design temperature and fall under 1.5" phenolic insulation with S-1 jacket per specifications. Process chilled water piping (18" pipes in crawl space) are 80F-100F design temperature and are not required to have insulation per specifications.*

g. Is the 7" unreinforced concrete paved drive a straight 4,000 mix or should this mix contain fiber or be a limestone mix?

   i. *The concrete pavement shall be as shown on 1/C202 and per specification 321313. Fiber reinforcement is not currently included in the required pavement mix design. See plans and specs for additional requirements.*

h. Should curb ramps include a form of detectable surface as there is not one shown?

   i. *Detectable warning surfaces at ADA ramps are not currently included in the bid documents.*

i. Can it be confirmed that the testing lab will be hired by the owner?

   i. *Confirmed.*

j. Is the exterior aluminum signage on the south elevation owner provided? If by contractor, can a spec be provided

   i. *Building signage will be covered in the Allowance added in this addendum.*

k. Page 10 of the Geotech calls for the pavement undercut buffer to extend 3 feet beyond pavement edge, but the pavement details in the plans call for 2 feet.

   i. *The 2.00’ minimum dimension on detail 1/C202 is in reference to the minimum distance to extend lime treatment and crushed stone (where required) below the pavement section as described by note 7 on 1/C202 and also page 15 of the geotechnical report. The limits of the select fill buffer below pavement/sidewalk areas shall be planned to extend directly below and not less than 3’ beyond the edge of pavement and other ground supported appurtenances in accordance with the recommendations on page 10 of the geotechnical report.*

l. Do all sidewalks and the concrete drainage swale need to be undercut with a 3 feet select fill buffer extending 3 feet out from the pavement edge?

   i. *Yes. A minimum 3.00' buffer to expansive soils, extending 3.00' beyond edge of concrete, shall be provided at these as recommended on page 9 of the geotechnical report and referenced on detail 4/C202.*

m. Sheet S-001, foundation note 2.2 calls for ramps, stairs and sidewalks to be undercut 5 feet extending 5 feet out, is this correct?

   i. *At ramps, stairs, sidewalks directly adjacent to building undercut a minimum of 3-feet below bottom of foundation members or slabs and at the Electrical Transformer mat slab undercut a minimum of 5-feet and extent lateral the same distance as the thickness of the buffer and replace with compacted structural fill.*

n. Please confirm that the building pad will require 36 inches select fill buffer extending 5 feet beyond the building footprint.

   i. *The building supported over crawlspace or void forms do not require any special earthwork except for grading for drainage.*

o. Will the 2" mud slab have a stone capillary barrier? How thick?

   i. *The mud slab does not require stone capillary barrier, however a vapor barrier will be added to addendum #2.*

p. What is the anticipated start date of construction?

   i. *As soon as mutually agreed upon by the Owner and Contractor but no later than June 01 2023.*

q. For the 48 inch storm drain pipe installation on the far north end of the site under the existing gravel road, will this area require a minimum select fill buffer and a minimum stone base when the road is put back to match existing?

   i. *The storm pipe shall be bedded and backfilled with the materials as noted for pipe bedding and backfill. Therefore, any areas above the new pipe cannot be filled with unsatisfactory fill materials.*

r. On Sheet AS-201, you show aluminum "clear anodized" railing on top of the cast stone cap. The elevation pages do not seem to show this and there is not a spec for the aluminum railing. Please advise if the aluminum railing is required and if so, can you provide a spec for the scope?

   i. *Yes, the clear anodized aluminum railing is required. A spec insert has been added to spec section 055213 to cover the railing. Rails have been added to elevations and additional notes have been added to the drawings. Drawings re-issued via this addendum.*

s. Please clarify which frame type should be used for openings 001b, 001c and 001d on the door schedule on drawing A621.

i. *These doors are overhead doors and are not provided with a typical door frame. Reference details A/A-531 and 7/A-531, along with spec section 083323 for overhead door requirements.*

t. Please provide an elevation for frame type SF6.

i. *There is no SF6 in this project. The SF6 shown in the door schedule has been removed via this addendum.*

u. Please refer to A-591, There is no detail of the attachment for access floor pedestals directly to steel structure. Please confirm detail for attachment of pedestals to steel structure if additional work will be required by other trades outside the installation process of the access flooring subcontractor

i. *The attachment of the floor pedestals to the steel structure should fall within the scope of the access flooring contractor using the manufacturers/suppliers standard method for pedestal attachment that will meet all performance requirements listed in section 2.1 of spec section 096900.*

v. Please refer to A-004B, are we to assume that some type of temporary measures will need to be in place to support construction man lifts for overhead work above Data Hall room 125. Could the design team assist in determining an acceptable plan to support construction equipment during construction in this area. In addition, has it been confirmed that the specified access flooring system will support construction access such as man lifts post installation for use in warranty & maintenance.

i. *The General Contractor will be responsible for protecting the access floor during construction. The access floor design load can be found in 096900 Access Flooring spec and the steel design load can be found on Sheet S-001.*

w. Refer to Drawing A301, the drawing seems to indicate a granular subbase under mud slabs and grade beams. The structural drawings only indicate pea gravel around foundation drain. Please confirm that there is no granular base under mud slabs or grade beams.

i. *No granular sub base is required under the mudslab.*

x. Please refer to Detail 1/S-201, the pier bid length is noted as +/- 29'-0". The detail shows the 29' dimension taken from the bottom of concrete beam. Please confirm that the 29' length will be measured from the bottom of concrete beam as shown in the detail or is from top of ground?

i. *The pier bid length of 29 feet shall be measured from bottom of grade beam or top of crawl space or whichever provides the deep end bearing elevation.*

y. Please reference addendum 1 section 01 900 Part 1 – Summary of Work Supplement paragraph 1.1.A.1. Addendum 1 indicates there will be a mutually agreed upon notice to proceed date after submittals are approved. Given the lead time of electrical gear and mechanical equipment it is anticipated that

the notice to proceed may need to be extended to or through the summer of 2023. This delayed NTP will be necessary to allow ample time for installation of materials and equipment that are directly impacted by permanent power and fully operational mechanical systems. Given the above, how are the general contractors to project cost escalations and/or manpower availability due to the lack of knowledge of the official start date of this project.

i. *Latest start date of NTP has been issued in a previous question in this addendum. Additionally, the GC will be encouraged to start the submittal process as soon as the LOI is executed in order to secure pricing and delivery dates. GC will be allowed to invoice for stored material prior to NTP if necessary.*

z. Arc Flash Study for this project. Can you please clarify if the electrical contractor will be responsible for the study? If so, can you please provide a specification as to the requirements?

i. *AEI will perform the arc flash analysis and email PDFs of the stickers to the EC. The EC will print and apply the stickers.*

aa. Can we use GE/ABB on the Gear and Equipment?

i. *Yes for inside gear.*

bb. Do we need to run any of the conduit for the future gear and leave empty in the crawl space? I know we have to run out past the concrete pads on the outdoor conduits but I wasn't sure if we need to run anything in the crawl space?

i. *All conduit shown on the plans should be run including the conduit in the crawlspace.*

cc. Specification 3.2 of 033000 calls for granular subbase at all slab on grade locations. I see this is shown in the plans at the transformer pad, but the paving on the ramp and the exterior stair landings is called out as "slabs". Please confirm whether granular base will be required under the ramp and exterior stair landing slabs.

i. *Yes, a granular subbase is required under ramp and stair slabs.*

dd. The utility transformer, pullbox and HVS arrangements shown on E-401 does not conform to the arrangements on EU-100. This includes the conduit requirements for future equipment.

i. *Follow EU-100 for conduit plan at utility equipment.*

ee. The generator pad detail 12/E-500 differs significantly from that on detail 5/S-208.

i. *Disregard Detail 12/E-500, Use detail 5/S-208 for Generator support detail*

5. Project Manual

a. Issued in this Addendum:

i. *Section 00 300 Proposal Form*

1. Corrected IHL Project #

ii. *Section 01 500 Construction Facilities & Temp Controls.*

1. Revised 2.1., H regarding MSU not being the utility provider
2. Revised 2.1, J,2, D- to insert custom windscreen spec.
3. Added requirements for a job site camera

iii. *Section 01 900 Division One Supplement*

1. Increased the construction timeline by two months to 18 months.
2. Added additional information regarding the requirements for the assistant superintendent and project manager.
3. Added signage allowance.

iv. *Section 055213 Pipe and Tube Railings*

1. Added section for aluminum railings

v. *Section 313116 Termite Control*

6. Drawing Sheets

i. *Sheet G-001 Drawing Index*

1. Updated current issued/revision dates for sheets issued/reissued in this Addendum.

ii. *Sheet AS-201*

1. Added notes and elevations for the aluminum railing at the retaining walls.

iii. *Sheet A-201*

1. Added aluminum railing at retaining walls to elevations

iv. *Sheet A-501*

1. Modified detail 1/A-501 regarding cast stone parapet coping and roof membrane.
2. Added general note to provide 2 stage (2 layers) of backer rod and sealant to all coast stone joints

v. *Sheet A-503*

1. Added metal parapet coping to precast entry, details 5,6/A-503
2. Modified Detail 1/A-503 regarding cast stone parapet coping and roofing membrane.
3. Added general note to provide 2 stage (2 layers) of backer rod and sealant to all cast stone joint

vi. *Sheet A-621*

1. Revised door schedule frame types and dimensions

vii. *Sheet S-001*

1. Revised Note 2.3 under Foundations

viii. *Sheet S-101*

1. Revised mud slab thickness and added vapor Barrier

ix. *Sheet S-102*

1. Show pipe penetrations through precast hollow core planks
2. Added beams to help support precast hollow core planks at 18" diameter pipe penetrations.
3. Added section 8/S203 detailing embed plate at h HSS door jambs

x. *Sheet S-103*

1. Revise grade beam labels
2. Revised mud slab thickness and added vapor Barrier

xi. *Sheet S-104*

1. Revised HSS post size to HSS6x6x3/8
2. Add section 12/S-303
3. Add section 13/S-303
4. Revised B2 beam reaction

xii. *Sheet S-105*

1. Add section 6/S-403
2. Remove column H-11 o roof plan. Column on extends to Level 01
3. Add section 2/S-403

xiii. *Sheet S-201*

1. Added offset baseplates to baseplate schedule

xiv. *Sheet S-206*

1. Revised grade beam labels in sections 1 and 2

xv. *Sheet S-210*

1. Revised grade beam schedule

xvi. *Sheet S-303*

1. Revised section 3
2. Add details 12 and 13

xvii. *Sheet S-403*

1. Add section 6
2. Revised detail 3

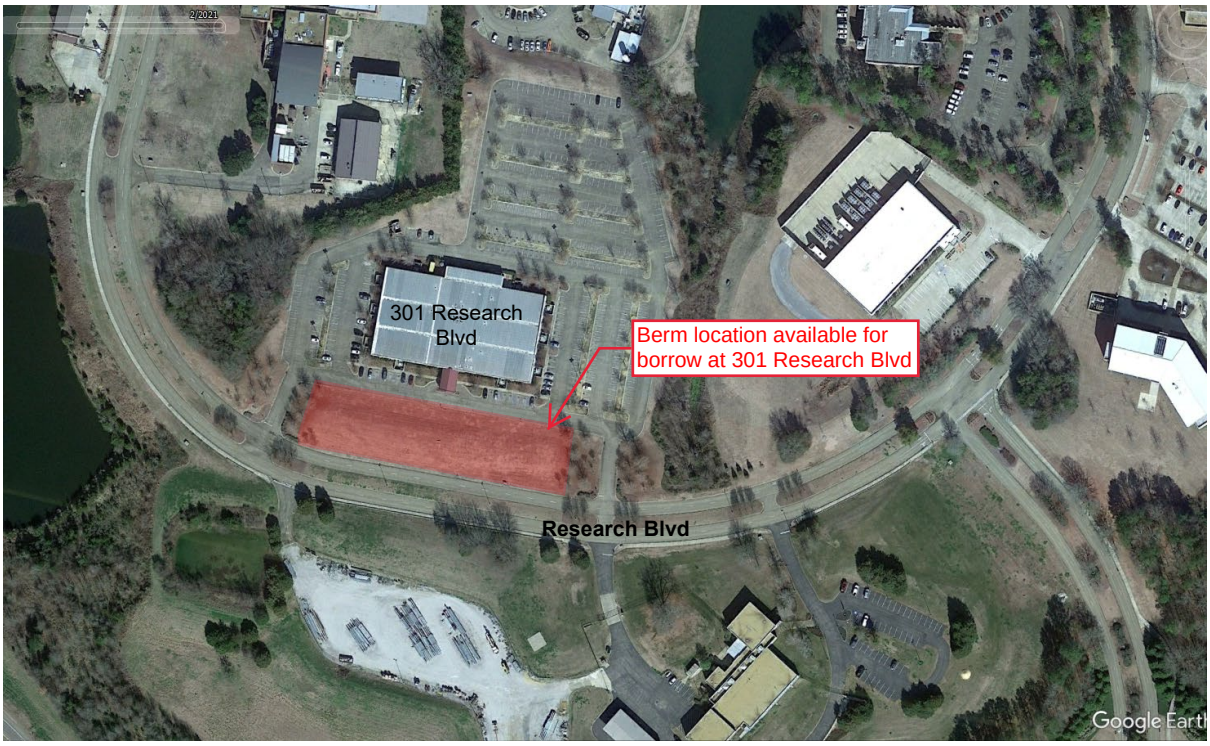
xviii. Sheet S404

1. Revised truss framing elevation.
2. Add section 2

7. Attachments

a. 301 Research Blvd – Berm Location Map
b. 220156 Berm at MSU SBR
c. Section 00 300 Proposal Form
d. Section 01 500 Construction Facilities & Temp Controls.
e. Section 01 900 Division One Supplement
f. Section 055213 Pipe and Tube Railings
g. Section 313116 Termite Control
h. Sheet G-001 Drawing Index
i. Sheet AS-201
j. Sheet A-201
k. Sheet A-501
l. Sheet A-503
m. Sheet A-621
n. Sheet S-001
o. Sheet S-101
p. Sheet S-102
q. Sheet S-103
r. Sheet S-104
s. Sheet S-105
t. Sheet S-201
u. Sheet S-206
v. Sheet S-210
w. Sheet S-303
x. Sheet S-403
y. Sheet S404

End of Addendum One



BERM LOCATION AT 301 RESEARCH BLVD

OVERALL VICINITY MAP

BURNS COOLEY DENNIS, INC.

GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

Corporate Office
551 Sunnybrook Road
Ridgeland, MS 39157
Phone: (601) 856-9911
Fax: (601) 853-2077

■

Mailing Address
Post Office Box 12828
Jackson, MS 39236

www.bcdgeo.com

■

Materials Laboratory
278 Commerce Park Drive
Ridgeland, MS 39157
Phone: (601) 856-2332
Fax: (601) 856-3552

March 29, 2022

Leigh Jaunsen, AIA, LEED AP BD+C
Dale Partners Architects
161 Lameuse Street, Suite 201
Biloxi, Mississippi 39564

Report No. 220156

Exploration of Subsurface Soil Conditions
Potential Borrow Area
301 Research Boulevard
Starkville, Mississippi

Dear Ms. Jaunsen:

Submitted here is the report of our exploration of subsurface soil conditions for the above-captioned project area. This exploration was authorized by your e-mail on March 7, 2022. We caution that this report merely presents the subsurface soil conditions encountered at the locations of the borings. No engineering recommendations are provided as part of this report.

Field Exploration

At your request, the subsurface soil conditions within the existing berm located at 301 Research Boulevard in Starkville, Mississippi were explored by means of four borings. The approximate locations of the borings are shown on Figure 1. The boring locations were spaced evenly along the berm.

All soils were classified in general accordance with the Unified Soil Classification System. A synopsis of the Unified Soil Classification System is presented on Figure 2 along with symbols and terminology typically utilized on graphical soil boring logs. Graphical logs of the borings are presented on Figures 3 through 6. Approximate GPS coordinates for the boring locations as determined by our drilling personnel using a hand-held device are shown at the bottom of the graphical logs within the “Comments” section. Ground surface elevations have not been determined.

The borings were advanced full depth by dry augering to an exploration depth of 15 ft using a track-mounted drill rig. Observations were made continuously during auger drilling to detect free water entering the open boreholes. Notes pertaining to groundwater observations are included at the bottom right corner of the graphic boring logs.

Disturbed auger cutting samples were taken at approximate 1-ft depth intervals in the borings. The depths at which the auger cutting samples were taken are illustrated as small I-shaped symbols under the "Samples" column of the graphic boring logs.

All soils encountered during drilling were examined and classified in the field by a geotechnical engineering technician. The auger cutting samples were sealed in jars to provide material for visual examination and testing in the laboratory. The boreholes were plugged with soil cuttings after completion of drilling and sampling. Unless other disposition is requested, we routinely discard soil samples after about six months of storage.

Laboratory Testing

All of the soil samples were examined in the laboratory and tests were performed on the samples to assist in evaluating the classifications and volume change properties of the subsurface soils encountered in the borings. The types of laboratory tests performed are described in the following paragraphs.

Classification Tests. The classifications and volume change properties of fine-grained soils were investigated by means of Atterberg liquid and plastic limit tests. The results of the liquid and plastic limit tests are plotted as small crosses interconnected by dashed lines in the data section of the graphic boring logs. In accordance with the Unified Soil Classification System, fine-grained soils are classified as either clays or silts of low or high plasticity based on the results of Atterberg limit tests. The numerical difference between the liquid limit and plastic limit is defined as the plasticity index (PI). The magnitudes of the liquid limit and plasticity index and the proximity of the natural water content to the plastic limit are indicators of the potential for a fine-grained soil to shrink or swell upon changes in moisture content or to consolidate under loading. The proximity of the natural water content to the plastic limit is also an indicator of soil strength.

The classifications of soils containing some sand were investigated by means of minus No. 200 sieve tests performed on selected samples. The percentages of fines resulting from the minus No. 200 sieve test are tabulated at the appropriate depths under the “% Passing No. 200 Sieve” column of the graphic boring logs.

Water Content Tests. Water content tests were performed on all samples to corroborate field classifications and to extend the usefulness of the plasticity data. The results of the water content tests are plotted as small shaded circles in the data section of the graphic boring logs. The water content data have been interconnected on the logs to illustrate a continuous profile with depth.

General Subsurface Conditions

A general description of subsurface soil and groundwater conditions revealed by the borings made for this subsurface exploration is provided in the following paragraphs. The graphical logs shown on Figures 3 through 6 should be referred to for specific soil and groundwater conditions encountered at each boring location. Stick logs of the borings are shown in profile on Figure 7 to aid in visualizing subsurface soil conditions. Tabulated adjacent to the stick logs are Atterberg liquid and plastic limits, percentages of fines passing the No. 200 sieve and water contents.

Soil Conditions. Subsurface soil conditions encountered in the borings generally consist of irregularly stratified silty clays (CL), sandy clays (CL) and clays (CH). Silty clays (CL) and sandy clays (CL) were encountered within the following depth intervals:

- 6.5 ft to 15 ft at Boring 1
- 1.5 ft to 6.5 ft and 8.5 ft to 14 ft at Boring 2
- 0 ft to 3 ft and 6 ft to 8.5 ft at Boring 3
- 0 ft to 2 ft and 6.5 ft to 15 ft at Boring 4

The silty clays (CL) and sandy clays (CL) are generally classified as stiff and very stiff and are considered to have moderate to high strength and low to moderate compressibility. However, the silty clays (CL) and sandy clays (CL) encountered within the approximate depth intervals of 2 ft to 3 ft and 6 ft to 7 ft at Boring 3 and 6.5 ft to 8 ft and 10 ft to 11 ft at Boring 4 are classified as medium stiff with respect to consistency and are considered to have low-moderate strength and moderate-high compressibility. The silty clays (CL) and sandy clays (CL) are considered to have low shrink/swell potential.

Clays (CH) were encountered within the approximate depth intervals of:

- 0 ft to 6.5 ft at Boring 1
- 0 ft to 1.5 ft, 6.5 ft to 8.5 ft and 14 ft to 15 ft at Boring 2
- 3 ft to 6 ft and 8.5 ft to 15 ft at Boring 3
- 2 ft to 6.5 ft at Boring 4

The clays (CH) are classified as stiff and very stiff and are considered to have moderate to high strength and low to moderate compressibility. The clays (CH) are considered to be expansive with moderate to high shrink/swell potential.

Groundwater. Free water was not encountered during auger drilling the borings. In our opinion, groundwater conditions at the site will be influenced by rainfall, surface drainage, and by the rise and fall of water levels in nearby ditches, creeks, ponds or other bodies of water. Groundwater conditions at the site can also be influenced by man-made changes. Surficial soils can become saturated and weak to relatively shallow depths during periods of prolonged and heavy rainfall.

Report Limitations

We caution that this report merely presents subsurface conditions encountered at the locations of the borings. It should be understood that subsurface conditions between and beyond the borings might differ from those encountered at the boring locations. The only warranty made by us in connection with the services provided is we have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, express or implied, is made or intended.

We appreciate the opportunity to be of service. If you should have any questions concerning this report, please do not hesitate to call us.

Very truly yours,

BURNS COOLEY DENNIS, INC.

Amber Templeton Reeb

Amber Templeton Reeb, P.E.

Marcos V. F. Rodrigues, P.E.

MR/ATR/khb
Copies Submitted: (via e-mail)

Approximate Boring Locations

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

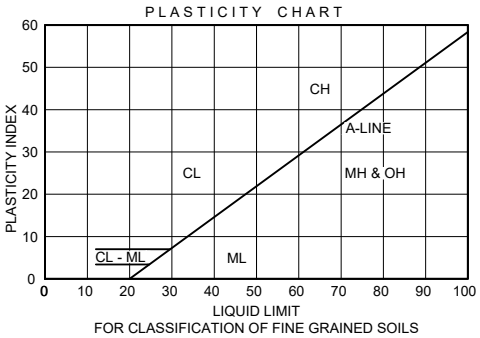
JOB NO. 220156	SCALE: AS SHOWN	FIGURE 1

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOL & LETTER	DESCRIPTION
COARSE-GRAINED SOILS More than half of material larger than No. 200 sieve size	GRAVELS More than half of coarse fraction larger than No.4 sieve size	Clean Gravels (Little or no fines)	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURE
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURE
		Gravels with fines (Appreciable amount of fines)	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURE
			GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURE
	SANDS More than half of coarse fraction smaller than No.4 sieve size	Clean Sands (Little or no fines)	SW	WELL GRADED SAND, GRAVELLY SAND
			SP	POORLY GRADED SAND, GRAVELLY SAND
		Sands with fines (Appreciable amount of fines)	SM	SILTY SAND, SAND-SILT MIXTURE
			SP-SM	SLIGHTLY SILTY SAND
			SC	CLAYEY SAND, SAND-CLAY MIXTURE
FINE-GRAINED SOILS More than half of material smaller than No. 200 sieve size	SILTS AND CLAYS	Liquid limit less than 50	ML	SILT WITH LITTLE OR NO PLASTICITY
			ML	CLAYEY SILT, SILT WITH SLIGHT TO MEDIUM PLASTICITY
			ML	SANDY SILT
			CL	SILTY CLAY, LOW TO MEDIUM PLASTICITY
			CL	SANDY CLAY, LOW TO MEDIUM PLASTICITY (30% TO 50% SAND)
	SILTS AND CLAYS	Liquid limit greater than 50	MH	SILT, FINE SANDY OR SILTY SOIL WITH HIGH PLASTICITY
			CH	CLAY, HIGH PLASTICITY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOIL
SEDEMENTARY ROCK TYPES:			LS	LIMESTONE
			MARL	MARL

TERMS CHARACTERIZING SOIL STRUCTURE

Slickensided	- Clays with polished and striated planes created as a result of volume changes related to shrinking, swelling and/or changes in overburden pressure.
Fissured	- Clays with a blocky or jointed structure generally created by seasonal shrinking and swelling.
Laminated	- Composed of thin alternating layers of varying color and texture.
Calcareous	- Containing appreciable quantities of calcium carbonate.
Parting	- Paper thin (less than 1/8 inch).
Seam	- 1/8 inch to 3 inch thickness.
Layer	- Greater than 3 inches in thickness.



FOR CLASSIFICATION OF FINE GRAINED SOILS

DENSITY AND CONSISTENCY

COARSE-GRAINED SOILS

DENSITY	PENETRATION RESISTANCE, N Blows per Foot
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>50

FINE-GRAINED SOILS

CONSISTENCY	COHESION Kips/Sq. Ft	PENETRATION RESISTANCE, N Blows per Foot
Very Soft	<0.25	0 - 1
Soft	0.25 - 0.50	2 - 4
Medium Stiff	0.50 - 1.00	5 - 8
Stiff	1.00 - 2.00	9 - 15
Very Stiff	2.00 - 4.00	16 - 30
Hard	>4.00	>30

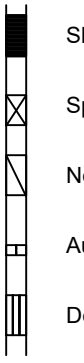
PARTICLE SIZE IDENTIFICATION

Cobbles	- Greater than 3 inches
Gravel	- Coarse - 3/4 inch to 3 inches Fine - 4.76 mm to 3/4 inch
Sand	- Coarse - 2 mm to 4.76 mm Medium - 0.42 mm to 2 mm Fine - 0.074 mm to 0.42 mm
Silt & Clay	- Less than 0.074 mm

RELATIVE COMPOSITION

Slightly	5 - 15%
With	16 - 29%
Sandy	30 - 50%
(or gravelly)	

SAMPLE TYPES
(Shown in Sample Column)



CLASSIFICATION, SYMBOLS AND TERMS USED ON GRAPHICAL BORING LOGS

LOG OF BORING NO. 1

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT	○- UC, Cohesion, kips/sq ft, △- UU; SPT (N_{60}) ⊗; PLASTIC LIMIT; WATER CONTENT %; LIQUID LIMIT	% PASSING NO. 200 SIEVE
			SURFACE EL: ±ft			1 2 3 4 / 20 40 60 80	
			Stiff tan and light gray sandy clay (CH)			19.1; 15 ⊗; 53 ⊗; 21.8; 21.5	57.2
			Very stiff tan and light gray clay (CH) with mica			18 ⊗; 62 ⊗; 26.6; 20.5; 21.1	
5			Very stiff light gray and tan silty clay (CL) with mica			15.7; 14 ⊗; 39 ⊗; 18.2; 16.4	
10			- stiff below 10'			16 ⊗; 34 ⊗; 17.6; 23.0; 21.3	
15						19 ⊗; 45 ⊗; 22.0; 25.0; 21.7	
20							

BORING DEPTH: 15 ft

DATE: 03/21/22

COMMENTS:
GPS Coordinates
N 33° 28' 10.4"
W 88° 47' 39.5"

GROUNDWATER DATA: No free water encountered during auger drilling.

220156 3/29/2022 1:52:54 PM

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

FIGURE 3

LOG OF BORING NO. 2

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT	○ - UC, Cohesion, kips/sq ft, △ - UU; SPT (N_{60}) ⊗; PLASTIC LIMIT; WATER CONTENT %; LIQUID LIMIT	% PASSING NO. 200 SIEVE
			SURFACE EL: ±ft			1 2 3 4 / 20 40 60 80	
			Stiff tan clay (CH), slightly sandy			21.5	
			Stiff tan and light gray silty clay (CL), slightly sandy with mica - very stiff 2' - 5'			16 42 17.2 15.4 14.8 15.7 16 40 19.7	
5			Stiff tan and light gray clay (CH), slightly silty, with mica			21.0 18 51 22.7	
			Stiff tan silty clay (CL) with mica			16 38 19.8 16.1	
10			- tan and gray below 11'			16 38 19.0 17.1 16.6	
			Very stiff gray clay (CH) with mica			17.0 19.7	
15							
20							

BORING DEPTH: 15 ft

DATE: 03/21/22

COMMENTS:
GPS Coordinates
N 33° 28' 10.3"
W 88° 47' 37.8"

GROUNDWATER DATA: No free water encountered during auger drilling.

220156 3/29/2022 1:52:55 PM

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

FIGURE 4

LOG OF BORING NO. 3

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT	○- UC, Cohesion, kips/sq ft, △- UU; SPT (N_{60}) ⊗; PLASTIC LIMIT; WATER CONTENT %; LIQUID LIMIT	% PASSING NO. 200 SIEVE
			SURFACE EL: ±ft			1 2 3 4 / 20 40 60 80	
			Stiff tan and light gray silty clay (CL) with mica			22.4; 17 ⊗ 42; 23.4	
			- medium stiff below 2'				
			Stiff tan and light gray clay (CH), slightly silty with mica			24.1; 15 ⊗ 53; 24.7; 23.6	
5							
			Medium stiff tan and light gray silty clay (CL) with mica			24.5; 16 ⊗ 44; 26.3; 23.7	
			- stiff below 7'				
			Very stiff tan and light gray clay (CH), slightly sandy			21.4; 20.7; 18.7; 15 ⊗ 50; 18.9; 18.1; 19.6	
10							
			- with sand pockets below 14'				
15						20.3	
20							

BORING DEPTH: 15 ft

DATE: 03/21/22

COMMENTS:
GPS Coordinates
N 33° 28' 10.1"
W 88° 47' 36.3"

GROUNDWATER DATA: No free water encountered during auger drilling.

220156 3/29/2022 1:52:55 PM

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

FIGURE 5

LOG OF BORING NO. 4

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT	○- UC, Cohesion, kips/sq ft (1 2 3 4), △- UU; SPT (N_{60}) ⊗; PLASTIC LIMIT; WATER CONTENT %; LIQUID LIMIT (20 40 60 80)	% PASSING NO. 200 SIEVE
			SURFACE EL: ±ft				
			Stiff tan and light gray silty clay (CL) with mica			15, 46; 23.9; 22.7	
			Stiff tan clay (CH), slighlty silty, with mica			17, 51; 23.0; 23.9; 17, 50; 23.2; 23.2	
5			Medium stiff gray and tan silty clay (CL) with mica - with trace of organics to 8' - stiff below 8'			30.1; 21, 45; 34.3; 20.3	
10			Stiff gray and tan sandy clay (CL) - medium stiff 10' - 11'			15, 45; 19.2; 28.1; 20.1; 21.6; 14, 32; 22.5; 22.8	66.8
15							
20							

BORING DEPTH: 15 ft

DATE: 03/21/22

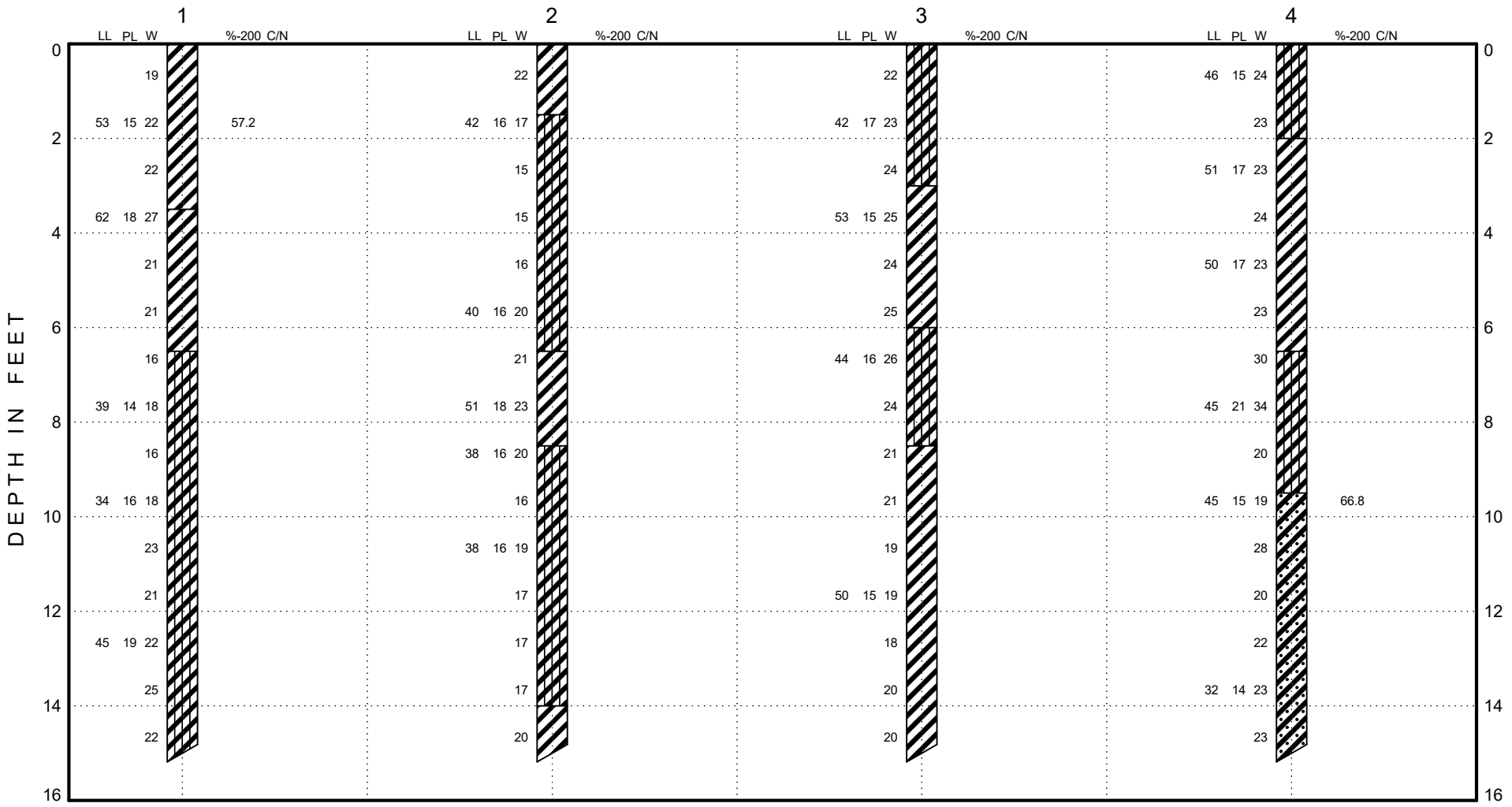
COMMENTS:
GPS Coordinates
N 33° 28' 10.0"
W 88° 47' 34.7"

GROUNDWATER DATA: No free water encountered during auger drilling.

220156 3/29/2022 1:52:55 PM

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

FIGURE 6



LEGEND:

LL = Liquid Limit
PL = Plastic Limit
W = Water Content
DD = Dry Density (pcf)
C/N = Cohesion (ksf)/Penetration Resistance, N (blows/ft) in the same column
MS = Matric Suction (tsf)
%-200 = % Passing No. 200 Sieve

NOTE: See Figure 2 for boring log legend.

SUBSURFACE SOIL PROFILE

POTENTIAL BORROW AREA
301 RESEARCH BOULEVARD
STARKVILLE, MISSISSIPPI

Job No.	Date	Figure
220156	3/29/22	7

GENERIC FENCE (NEW 12-16-21)

BURNS COOLEY DENNIS, INC.

PROPOSAL FORM
SECTION 00 300

To: Mississippi State University
Mr. Donald Buffum
Office of Procurement and Contracts
P. O. Box 5307
Barr Avenue, 610 McArthur Hall
Mississippi State, Mississippi 39762

Re: Project #: IHL#405-004
Project Title: MSU High Performance Computing Data Center
Location: Starkville, Mississippi

I propose to complete all work in accordance with the Project Manual, Drawings and Addenda within **16 months of the issuance of the Notice to Proceed** for the sum of:

BASE BID:

_____Dollars ($_____)

ALTERNATES:

Alternate C1 ( ) Adds ( ) Deducts

_____Dollars ($_____)

C1 Description: Steel slag in lieu of #610 crushed limestone in the mechanical yard

Alternate C2 ( ) Adds ( ) Deducts

_____Dollars ($_____)

C2 Description: Concrete paving in lieu of asphalt

Alternate L1 ( ) Adds ( ) Deducts

_____Dollars ($_____)

L1 Description: Include landscape plantings and irrigation

Alternate A1 ( ) Adds ( ) Deducts

_____Dollars ($_____)

A1 Description: Change Roofing system to a modified bitumen roofing system

Alternate A2 ( ) Adds ( ) Deducts

_____Dollars ($_____)

A2 Description: Include interior fit out of Office Space

Alternate M1 ( ) Adds ( ) Deducts

_____Dollars ($_____)

*M1 Description: Install Second Chiller Module*_____

_____

Alternate E1 ( ) Adds ( ) Deducts

_____Dollars ($_____)

*E1 Description: Install UPS system*_____

Alternate E2 ( ) Adds ( ) Deducts

_____Dollars ($_____)

E2 Description: Generator Clean Fuel Management System (Fuel Polish System)

UNIT PRICES:

1. **Earthwork – Additional Excavation and Backfill**

ADD:_____Dollars ($_____) per CY
Description For areas in addition to those required by the contract documents: undercut and removal of existing unsatisfactory fill materials and spoil off site, and material backfill with satisfactory imported fill materials per the project specifications (measured as compacted in place volume).

2. **Drilled Piers – Additional Excavation**

ADD:_____**Dollars ($_____)** per linear foot for earth excavation of each size drilled pier.

3. **Drilled Piers – Additional Concrete**

ADD:_____**Dollars ($_____)** per linear foot of concrete, in place, including reinforcement, and temporary casing for each size drilled pier.

ADDENDA ACKNOWLEDGMENT:

No. ___ Date _____ No. _____ Date _____ No. ___ Date _____

No. ___ Date _____ No. _____ Date _____ No. ___ Date _____

ACCEPTANCE:

I certify that I am authorized to enter into a binding contract, if this Proposal is accepted.

Signature _____ Date _____

Name and Title _____

Name of Business _____

(Complete spelling - exact as recorded at the Contractor's Board)

Address _____

_____

_____

City/State/Zip Code _____

Bidder's Certificate of Responsibility Numbers(s): _____

Attach copy of Non-Resident Bidder's Preference Law (5.04 of Bidder's Checklist)

List any Mechanical/Plumbing and/or Electrical Subcontractors that will perform work of this contract. COR must be included where a subcontract exceeds $50,000.00. If no sub-contractor is listed, and such work is within scope of contract, bidders own COR classification(s) must be sufficient to self-perform any such work. If no sub-contractor is listed, then use of subcontractor to perform such scope will not be permitted. This is in accordance with 5.05 and 5.06 of the Bidder's Checklist See section 00 100 Instruction to Bidders.

Mechanical Contractor: _____

Certificate of Responsibility No. _____

Plumbing Contractor: _____

Certificate of Responsibility No. _____

Electrical Contractor: _____

Certificate of Responsibility No. _____

***** End of Section *****

SECTION 01 500 – CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Scope: Work required under this section consists of all temporary construction facilities, services and related items to complete the work indicated on the drawings and described in the Project Manual.

B. Standards:

1. Conform to or exceed all temporary construction requirements stated in the current edition of the International Building Code.
2. Refer to Article 10.1.1 in Section 00700 entitled General Conditions.

C. Materials: All materials required by the Work of this section shall be as specified in the respective sections.

1.2 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Erosion- and Sedimentation-Control Plan: Show compliance with requirements of EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.

C. Moisture-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage.

1. Describe delivery, handling, and storage provisions for materials subject to water absorption or water damage.
2. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
3. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.

1.3 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

PART 2 - PRODUCTS

2.1 FACILITIES AND CONTROLS

A. Access: The Prime General Contractor shall provide an adequate access and/or roads to the site of the structure, if required for the prosecution of work; and, should also provide and maintain at least one (1) temporary, or permanent, access to each working elevation to be permanently occupied.

B. Hoisting Facilities: The Prime General Contractor shall be responsible for providing suitable capacity and hoisting facilities for all people and materials. The use of the hoisting facilities shall be by mutual agreement of the Prime General Contractor and the individual Contractor.

C. Sanitation Facilities: The Prime General Contractor is responsible for furnishing adequate temporary toilet facilities on the job site.

D. Drinking Water: The Prime General Contractor shall provide at all times sanitary drinking water facilities for all workmen on the job including ice, when required, and paper cups, etc..

E. Fire Protection: The Prime General Contractor shall provide general temporary fire protection. Subcontractors will be responsible for their own.

F. Storage: The Prime General Contractor shall coordinate the allocation of storage areas to the various Sub- contractors.

G. Temporary Heat: The Prime General Contractor shall provide heat, fuel and services, as necessary, to protect all work from dampness and cold until final acceptance. If in the late stages of the construction, mechanical and electrical installations will permit, the mechanical and electrical facilities may be used to provide heat and ventilation. However, the Owner is saved harmless of any costs of operation or responsibility as to acceptance of mechanical and/or electrical installations.

H. Utilities: The Prime General Contractor shall make arrangements for and furnish all water, electricity (lighting and power) and other utilities necessary for construction purposes.

I. Project Sign:

1. The Prime General Contractor shall erect on adequate supports and maintain one (1) neatly constructed and painted 3/4” thick plywood sign approximately four (4) feet by eight (8) feet. The Professional will provide colors, lettering, layout and location of the sign.
2. No other signs shall be displayed on the job site without permission of the Professional. The display of sign advertisements is strictly prohibited.

J. Construction Site Fence:

1. General
   a. Site Enclosure Fence: The contractor is required to install a construction fence, as shown in the plans, to be maintained, as needed, throughout the duration of the project. The site enclosure fence should be kept in a manner that will prevent people and animals from easily entering the site except by entrance gates.

1) Extent of Fence: As indicated on Drawings.
2) Maintain security by limiting number of keys and restricting distribution to authorized personnel. Allow owner to interlock their lock as necessary.
3) The Contractor shall call Mississippi One-Call System, Inc., before driving any posts for the fencing.
4) Signs shall not be posted on the fence system except: "Caution: Construction Area Authorized Personnel Only" signs may be installed at 50 foot intervals; safety related signs required by OSHA; and visitor site entry rules as required by the Contractor. Advertising signage is strictly prohibited.
5) The Contractor shall keep plant growth from around the base of the fence by either trimming or chemical treatment.
6) Fence shall be maintained for the duration of the project, and shall not be removed without the Owner's permission.

2. Fence Design And Materials

a. The minimum height for all temporary fencing shall be 8 feet.
b. The fencing shall be of galvanized 11-1/2 ga. chain-link construction with a minimum of 1-5/8" O.D. tubular steel posts and top rails, and bottom tension wire.
c. Privacy netting to screen construction activities shall be used on all projects unless specified otherwise in the contract documents.
d. Privacy screen material shall be knitted high density polyethylene with no fillers, 90% privacy, 6' tall, black, seamed reinforced hems at all edges and grommets a maximum of 24" on center, custom MSU logo printed every 25' (file to be provided by Owner), equal to Fence Screen's (fencescreen.com) Builder Logo Roll - 111 Series. Contractor to provide art of custom printed windscreen to Owner/Architect for approval.

e. Limit entrance/exit to no more than two locations, unless otherwise approved by the Owner.
f. Gates shall be a minimum of 12 feet in width to allow access for emergency vehicles.
g. Where other transportation authorities need to review gate locations and operation, communication with those authorities will be coordinated through the Owner.
h. Gates shall be closed and locked at all times the site is not occupied, unless otherwise directed by the Owner where emergency vehicle passage through the site is needed to access existing occupied buildings.

3. Job Site Camera
a. Contractor is required to furnish a job site camera for the duration of construction and provide web access to the Owner and Architect.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Common-Use Field Office: Of sufficient size to accommodate needs of Owner, Architect, and construction personnel office activities and to accommodate Project meetings specified in other Division 01 Sections. Keep office clean and orderly. Furnish and equip offices as follows:

1. Furniture required for Project-site documents including file cabinets, plan tables, plan racks, and bookcases.
2. Conference room of sufficient size to accommodate meetings of 10 individuals. Provide electrical power service and 120-V ac duplex receptacles, with no fewer than one receptacle on each wall. Furnish room with conference table, chairs, and 4-foot- square tack and marker boards.
3. Drinking water and private toilet.
4. Coffee machine and supplies.
5. Heating and cooling equipment necessary to maintain a uniform indoor temperature of 68 to 72 deg F.
6. Lighting fixtures capable of maintaining average illumination of 20 fc at desk height.

C. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Provide temporary parking areas for construction personnel.

D. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.

1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
2. Remove snow and ice as required to minimize accumulations.

E. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 01730 "Execution."

F. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

G. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.

3.2 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Section 011000 "Summary."

C. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

D. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings.

1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant- protection zones.
2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.

E. Storm water Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of storm water from heavy rains.

F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

G. Barricades, Warning Signs, and Lights: Provide as indicated in the Contract Documents and comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

3.3 MOISTURE AND MOLD CONTROL

A. Contractor's Moisture-Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:

1. Protect`covered or dammed.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:

1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
2. Keep interior spaces reasonably clean and protected from water damage.
3. Periodically collect and remove waste containing cellulose or other organic matter.
4. Discard or replace water-damaged material.
5. Do not install material that is wet.
6. Discard, replace, or clean stored or installed material that begins to grow mold.
7. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing the material in drywall or other interior finishes.

D. Controlled Construction Phase of Construction: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:

1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
2. Use permanent HVAC system to control humidity.
3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.

    a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective.
    b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Architect.
    c. Remove materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.4 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary roads and paved areas not intended for or acceptable for integration into permanent construction. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 01710 "Cleaning."

***** End of Section *****

SECTION 01 900 – DIVISION ONE SUPPLEMENT

PART 1 - SUMMARY OF WORK SUPPLEMENT

1.1 WORK SEQUENCE

A. The Contractor must be complete with all work in accordance with the Project Manual and Drawings on or before **18 months** from the Notice To Proceed.

1. Owner intends to issue a letter of intent to award (LOI) for the project within 7 days of bid receipt assuming the project is within the Owner's budget. This LOI allows the Contractor to begin the submittal process with the Design Professional if the Contractor desires with the caveat that contract execution is pending approval by IHL Staff. Since time is of the essence, Contractor is to identify long lead time materials and equipment that affect the critical path and submit applicable items within 21 days of contract execution. A Notice to Proceed with Construction can then be issued on a mutually agreed upon date after submittals are approved,

1. PROJECT MILESTONES
   A. The Contractor shall generate and incorporate the following milestones into the Contractor's overall baseline project schedule.
      i. Lower level drilled piers complete
      ii. Lower level grade & cross beams complete
      iii. Equipment room level steel floor framing & slab complete
      iv. Level 01 Crawl Space drilled piers complete
      v. Level 01 grade & cross beams complete
      vi. Level 01 steel floor framing & slab complete
      vii. Level 02 steel roof framing & decking complete
      viii. Mechanical yard structure complete and ready for mechanical units
      ix. Building dry-in
      x. Exterior enveloped / façade complete
      xi. Conditioned Air

   B. If the Contractor fails to meet any milestone date, then a Recovery Plan must be submitted for approval within 10 days of the missed milestone date. Recovery Plan must include outline of schedule to expedite the project to achieve the remaining milestone dates.

   C. Milestone dates and a milestone summary sheet must be included in project schedule that is submitted with each Application for Payment. If a milestone date is missed during the payment period then an approved Recovery Plan must be included to process payment.

2. WORK BY OWNER
   A. Concurrent Work by Owner
      i. Concurrent work by Owner includes but is not limited to the following:
         1. Tele/Data work by MSU ITS.
         2. Furniture, Fixtures & Equipment.

3. AT&T
4. Wi-Fi systems

3. PROJECT COORDINATION
   A. General Contractor Staff: Contractor shall provide the following minimum staff for the project, and shall provide any additional staff as necessary during the course of the Work:
      i. Offsite:
         1. Senior Project Manager
         2. Scheduler
            a. This individual shall be responsible for ensuring that the project schedule is maintained and updated in a timely manner in accordance with contract document requirements.

      ii. Onsite and dedicated to the project:
         1. Project Superintendent
         2. Project Manager
            a. This individual shall be full-time but not required to be on-site until structural work begins.
         3. Assistant Superintendent
            a. This individual shall be on-site once structural work begins through substantial completion.
         4. MEP coordinator
            a. This individual shall be on-site once rough-ins begin through substantial completion.

      iii. Other Staff / Consultants
         1. Quality Control Manager – visit site as needed.
         2. Safety Manager – visit site as needed.

      iv. Contractor's supervision and management personnel are subject to approval by the Owner. Within ten (10) days of the notice to proceed, the contractor shall submit the proposed staff resumes to the Architect and Owner for review and approval.

   B. Survey Verification of Existing Conditions: The Contractor shall be responsible for field dimensioning the existing conditions of the project site and the building, especially as it relates to connection/tie-in locations. The contractor shall employ or assign a qualified surveyor to perform survey of existing structure that is in contact with new structure within 45 days of Notice to Proceed. General Contractor shall report findings to the Architect within 1 week of survey. This will require the Contractor to field verify the existing structure prior to shop drawing completion and submission to ensure that the work under this scope will be coordinated with the existing structure and systems. Notify the design team immediately of any variances from the project documents as it relates to the existing facility.

   C. Material Tracking: The General Contractor shall submit a Material Tracking Log to the Architect & Owner for review and approval per the log at the end of this section within thirty (30) days of

Notice to Proceed. Each item will be provided an ID number that matches the specification number. The Required on Site Date provided must coincide with the project schedule. The submittal due date must be coordinated with submittal log. The Lead Time for each item must be provided and verified by the suppler or vendor in writing via email or letter. This log must be updated and submitted to the design team and owner's representative each week during the weekly coordination meetings.

i. If material procurement is delayed due to late submission of acceptable submittals then the General Contractor shall make arrangements to expedite the material to ensure that the material arrives on time per the material status log.
ii. If a submittal submission is submitted late per the log then the General Contractor shall provide a plan of action to expedite the material procurement of provide documentation from the supplier that the material will arrive on time per the material status log. The plan of action shall be submitted within one week of the later submission.

D. Submittal Software: General Contractor shall utilize Plan Grid, or an approved equal, web-based data sharing for submitting, processing and tracking contract documents. The General Contractor shall pay for the Plan Grid Exchange service and provide access and account usage to design team and owner.

E. Deficiency Log - The General Contractor shall maintain a log of deficiencies noted by the design team or owner's representative. The log shall be per the attached form. The log shall track the items from the date they were noted to the date they were completed. The log shall include a picture of the corrected item after correction to document the completion of each item. The General Contractor shall maintain this log and update project team weekly of the status. The deficiencies log shall be submitted with the monthly pay application. The estimated value of repairing any item that is over thirty (30) days old shall be deducted from the progress payment. This shall be on a spreadsheet format and saved on a shared folder with design team and owner.

F. Concrete Pour Log - The General Contractor shall maintain a concrete pour log that tracks the date of each pour, location of concrete pour, yardage installed, concrete breaks with a column for each break (7-day, 28-day, 56 day). The General Contractor will update and provide to design and owner weekly.

G. Daily Reports – The Contractor's Superintendent will prepare a report daily which includes as a minimum the Contractor's force on site by craft and skill level and their efforts of the day, supervision, material deliveries, problems encountered, inspections and their results, milestone achieved, significant items of work accomplished or attempted, delays or disruptions that occur, visitors and special instructions which effect their work. Reports shall be uploaded to Submittal Exchange on a weekly basis.

H. Site Logistics Plan – thirty days before beginning each phase the Contractor shall submit a Site Logistics Plan for review. At a minimum the plan shall include construction entrances, specific material lay down areas, temporary toilet facilities, access roads and hoisting plans.

I. Quality Control - General Contractor shall enact and enforce quality control procedures by its own personnel or other third party to ensure compliance with the Contract Documents and the

quality of work acceptable to the Architect and Owner. The General Contractor shall submit a quality control plan to the owner's representative within thirty (30) days of Notice to proceed. The following are specific quality control measures that will be required to be included in the Quality Control Plan. These are not mandatory methods but are for purposes of intent of the level of quality control that is to be implemented by the General Contractor. The evidence of the inspections by inspection forms, marking the areas of work inspected and documenting with pictures as mentioned below is required in some manner in order for the owner to have assurance that the inspections are taking place. Each inspection form and associated picture shall be submitted as one file both electronically via Submittal Exchange and hard copy to be provided to the owner representative on a weekly basis for all inspections performed the previous week.

i. Site Utilities:
    1. Existing: Contractor shall verify that any existing conduits be videoed prior to tie-in to ensure that the conduits and pipe are not damaged or clogged. Provide video and report to design team prior to commencing work.
    2. New: Prior to Substantial Completion new site utilities and existing utilities that connect to new shall be videoed to ensure pipes are not damaged or clogged. Provide video and report to design team prior to requesting Substantial Completion.
    3. The Contractor shall provide an opportunity to have all site utilities inspected by the Owner's utility departments prior to covering up work.
    4. A steel mandrel of appropriate size shall be pulled through all primary conduits and communication conduits that are 3" and larger.

ii. Structure
    1. Implement a plan to inspect each concrete pour and document rough-in prior to installing concrete.
    2. Implement a plan to inspect each structural steel, metal decking, etc element of the project.
    3. Implement a plan to inspect each CMU wall element of the project.
    4. Implement a plan to inspect each precast element of the project.

iii. Exterior Envelope
    1. First work approvals – At the start of each of the exterior sheathing/vapor barrier, masonry, window, storefront, roofing and metal panel scope of works the General Contractor shall install a portion of the work for the design team and owner's representative to review. The General Contractor shall not proceed with the installation of work until the design team has issued a "First Work Verification Form".
    2. Testing – The following test shall be performed after the issuance of the "First Work Verification Form". These are in addition to the testing required in each specification section of the project manual.
        a. Windows – perform water leak test per AAMA 501.2.-03 on 5% of the windows on each building. If any water leak test fails then corrections shall be made to that opening and a re-test shall be performed on that window opening and an adjacent window opening. General Contractor shall perform water leak / air infiltration test on mock-up wall.
        b. Sub-Roof System – water test sub-roofs
        c. Traffic Coating – manufacturer inspection of installation

3. Photographic Documentation – Document the installation of the following items with a photograph that is saved electronically by the location of the installation. The General Contractor shall be responsible for taking, filing, and submitting the photos to the design team. The Design Team and Owner's representative shall approve the identification method for submitting these.
    a. Exterior Sheathing / Vapor Barrier – Exterior sheathing after joints have been treated, every 500 sq ft. Window flashing prior to and after window installation, every window. Vapor Barrier every 500 sq ft.
    b. Masonry – Through-wall flashing at bottom of wall, relief angles, and window/door lintels. Take photos of every lintel and of every 50 linear feet of through-wall flashing at bottom of wall and relief angles. The masonry subcontractor shall perform their own quality control inspection with an approved inspection form and pictures of the work prior to cover up. The Contractor shall perform a similar inspection after the Masonry sub is complete with their inspection.
4. Precast Architectural Concrete
    a. The General Contractor, Erector and Fabricator shall work together to as-built the supporting structures and coordinate fabrication to identify any conflicts. This shall be performed as the concrete and steel are installed. Any modifications shall be performed at the plant prior to shipping. All modifications must be reviewed by the architect and engineer of record.
    b. Plant quality control check – Prior to shipping material the fabricator must check panels for quality, includes but not limited to dimensions, embeds, finish, shape, etc. This must be performed on each piece with an approved inspection form and associated pictures. This documentation must be submitted to owner on a weekly basis. The Contractor shall perform a minimum of four (4) plant visits to review the quality control process.
    c. Job site material quality control check - Prior to unloading material the General Contractor must check materials for quality, includes but not limited to dimensions, embeds, finish, shape, etc. This must be performed on each piece with an approved inspection form and associated pictures. This documentation must be submitted to owner on a weekly basis.
    d. The erector and Contractor shall perform quality control inspections of each section after installation and prior to joint sealants being applied. This must be performed on each piece with an approved inspection form and associated pictures. This documentation must be submitted to owner on a weekly basis.

iv. In-wall Inspections - Upon completion of the in-wall rough-in for each phase of the project each subcontractor shall appoint a competent quality control supervisor to inspect all work for layout, completion, neatness, and specifications. After making any corrections necessary and verifying that work is complete the supervisor will mark both sides of each stud in the phase to indicate that the area is

complete and ready for the General Contractor's inspection. Each trade will be assigned the following colors to paint the studs:

1. Mechanical Contractor – Green
2. Electrical Contractor – Blue
3. Drywall Contractor – Orange
4. General Contractor – Red

After each trade has inspected their own work and marked the studs accordingly the General Contractor will inspect each room in the phase. The General Contractor will notify the quality control supervisor of each Subcontractor deficiencies that need to be corrected. After the deficiencies have been corrected the General Contractor shall complete an in-wall inspection form and take pictures of each wall of the room. The inspection form and the pictures will be uploaded onto Submittal Exchange for file.

v. Above Ceiling Inspections – The General Contractor shall implement a similar process to the inwall inspections above.

vi. Building Systems Inspections – The General Contractor shall provide a plan for checking the following systems to verify that they are installed correctly and operated correctly.

1. Fire Alarm System
2. Building Control System
3. Sprinkler System
4. Life Safety System
5. Emergency Generator
6. Temp air filter maintenance during construction
7. Duct dust control
8. Plumbing System
9. Interior Finishes – Provide a plan to verify substrates are acceptable to install finishes, protect finishes after installing, etc.

4. PROGRESS SCHEDULE SUPPLEMENT

A. Contractor to employ professional scheduler to manage the project schedule. Another project staff member cannot be the scheduler.

B. Contractor to utilize Primavera P6 software. Contractor to make P6 electronic file available to the Owner & Architect upon request.

C. The Contractor shall provide additional activities and logic as needed as the project progresses and as requested by the Owner or Architect to provide an accurate schedule.

5. TEMPORARY CONSTRUCTION FACILITIES AND CONTROLS

A. The Contractor shall maintain construction fence and security at all times. If any portion of the project site fence is damaged the contractor must repair and restore the fence within 24 hours. The Contractor must also keep all gates secured at all times. The Contractor will designate one person to be responsible for locking the project gates at the close of work each day.

B. The Contractor shall maintain erosion control measures at all times during the project. Contractor must comply to the requirements of the Erosion Control Plan and MDEQ approved Storm Water Pollution Prevention Plan.

6. PROJECT MEETINGS
   A. Contractor shall have adequate A/V system in construction trailer to conduct coordination meetings virtually.
   B. Weekly OAC Coordination Meetings: Contractor to lead meetings as scheduled by owner and design professionals. Project Superintendent and Project Manager shall attend and participate in weekly coordination meetings with owner and design team and prepare the following agenda and information each meeting. The meeting will be held at location selected by owner's representative.
      1. Updated schedule with phasing plans and flow of work pdfs.
      2. Rain days since previous meeting.
      3. Open RFIs needing answer – identify critical RFIs.
      4. Open Submittals needing review – identify critical submittals.
      5. Updated Project Schedule.
      6. Deficiency log with status of items noted
      7. Material status log with updated delivery dates

7. SURVEY VERIFICATION OF EXISTING CONDITIONS
   A. The Contractor shall be responsible for field dimensioning the existing conditions of the project site and the building, especially as it relates to connection/tie in locations. Notify the design team immediately of any variances from the project documents.

PART 2 - ALLOWANCE SUPPLEMENT

2.1 **SCHEDULE OF ALLOWANCES**

A. Include in the Bid, for inclusion in the Contract Sum, the amount (lump sum) of **$350,000.00** (*Three Hundred and Fifty Thousand Dollars*) to procure the DDC Building Controls System for this project. The DDC Building Controls System is described in Specification Section 230980 "Controls and Instrumentation and Control for HVAC" illustrated on Division 23 drawings. This allowance is to be carried by the MECHANICAL contractor.

B. Include in the Bid, for inclusion in the Contract Sum, the amount (lump sum) of **$150,000.00** (*One Hundred and Fifty Thousand Dollars*) to procure all of the roofing insulation (material only) identified in Section 075423 Thermoplastic-Polyolefin (TPO) that is required to complete the roofing Work of Phase One. All work associated with the installation of the roofing material is to be included in the Contract Sum. This allowance is to be carried by the ROOFING contractor.

C. Include in the Bid, for inclusion in the Contract Sum, the amount (lump sum) of **$100,000.00** *(One Hundred Thousand Dollars)* to be used as a contingency allowance at the discretion of the Owner to expedite repairs of unknown conditions that affect critical path.

D. Include in the Bid, for inclusion in the Contract Sum, the amount (lump sum) of **$25,000.00** *(Twenty-Five Thousand Dollars)*to locate an existing abandoned 20" metal pipe force main crossing the site and remove it in all areas where piping is 6' and shallower from existing grade. In areas deeper than 6' the contractor shall abandon in place where crossing the site by exposing both ends and filling with excavatable flowable fill in accordance with the project specifications.

E. Include in the Bid, for inclusion in the Contract Sum, the amount (lump sum) of **$20,000.00** *(Twenty-Thousand Dollars)* for the exterior building signage depicted on elevation 1/A-201 as well as all interior room signage.

PART 3 - ALTERNATE SUPPLEMENT

3.1 **DESCRIPTION OF ALTERNATES**

A. Alternate C1: Steel slag in lieu of #610 crushed limestone for crushed stone pavement in the mechanical yard area.

1. All Work associated with installing steel slag in lieu of crushed limestone is to be included as part of this Alternate.

B. Alternate C2: Concrete in lieu of asphalt.

1. All Work associated with the installation of concrete paving in lieu of asphalt for the front entrance drive and parking lot is to be included as part of this Alternate.

C. Alternate L1: Include landscape plantings and irrigation.

1. All Work associated with the installation of the landscape plantings, including the plant material, and the installation of the irrigation system, including the purchase of materials, are to be included as part of this Alternate. Irrigation sleeves are to remain part of the Base Bid. Areas shown to receive landscape planting in the Drawings will not be required to have a different material as part of the Base Bid as the Owner will address these areas under a separate Contract if this Alternate is not taken.

D. Alternate A1: Change Roofing system to a modified bitumen roofing system.

1. All Work associated with the installation of a modified bitumen roof system, including the purchase of the materials, wood blocking, expansion joint cover, etc, are to be included as part of this Alternate. The roof insulation will remain part of an Allowance under this Alternate.

E. Alternate A2: Include interior fit out of Office space.

1. All Work associated with the installation of interior finishes such as floor coverings, base, wall finishes, and ceilings as well as millwork and interior demising partitions and doors for Rooms 113, 114, 115, 116, 117, 118, 119, and 120.

F. Alternate M1: Install Second Chiller Module

1. All Work associated with the installation of the second chiller module for N+1 redundancy for cooling for the first 5MW of load, including the purchase of equipment and materials and electrical provisions, are to be included as part of this Alternate.

G. Alternate E1: Install UPS system

1. All Work associated with the installation of the second UPS system for 2N redundancy for the critical power including the purchase of materials, are to be included as part of this Alternate.

H. Alternate E2: Generator Clean Fuel Management System (Fuel Polish System)

1. All Work associated with the provision of a clean fuel management system for the emergency generator, as described in Specification 263213, are to be included as part of this Alternate.

PART 4 - UNIT PRICES

4.1 **SCHEDULE OF UNIT PRICES**

A. Unit-Price No. 1: **Earthwork- Additional Excavation and Backfill** – For areas in addition to those required by the contract documents: undercut and removal of existing unsatisfactory fill materials and spoil off site, and material backfill with satisfactory imported fill materials per the project specifications (measured as compacted in place volume).

B. Unit-Price No. 2: **Drilled Piers- Additional Excavation** – For areas in addition to those required by the contract documents: Earth excavation per linear foot of each size drilled pier.

C. Unit-Price No. 3: **Drilled Piers- Additional Concrete** – For areas in addition to those required by the contract documents: Concrete, in place, including reinforcement, and temporary casing per linear foot for each size drilled pier.

D. The unit prices stated above and as listed on 00 300 Proposal Form will apply to authorized changes in quantities of items added or deducted from the Work. These unit prices shall remain fixed throughout the length of the contract from the date of the signatures of the contract between the Owner and the Contractor. During this period, the Owner shall have the option to execute change orders to the Contract for Construction for any or all of the items listed below in the quantities selected and at the unit prices so stated.

PART 5 - ADVERSE WEATHER DELAYS

5.1 **ADVERSE WEATHER DELAYS**

A. Definition of Adverse Weather:

1. Adverse Weather is defined as the occurrence of one or more of the following conditions within a twenty-four (24) hour day that prevents construction activity exposed to weather conditions or access to the site:

   a. Precipitation (rain, snow, or ice) in excess of one-tenth inch (0.10”) liquid measure;
   b. Temperatures that do not rise above that required for the day’s construction activity, if such temperature requirement is specified or accepted as standard industry practice.

2. Adverse Weather may include, if appropriate, “dry-out” or “mud” days:

   a. Resulting from precipitation days that occur beyond the standard baseline;
   b. Only if there is a hindrance to site access or sitework and Contractor has taken all reasonable accommodations to avoid such hindrance; and,
   c. At a rate no greater than one (1) make-up day for each day or consecutive days of precipitation beyond the standard baseline that total one (1) inch or more, liquid measure, unless specifically recommended otherwise by the Engineer.

3. A Weather Delay Day may be counted if adverse weather prevents work on the project for fifty percent (50%) or more of the contractor's scheduled workday and, only if, critical path construction activities were included in the day's schedule, including a weekend day or holiday if Contractor has scheduled construction activity that day.

4. Contractor shall take into account that certain construction activities are more affected by adverse weather and seasonal conditions than other activities, and that "dry-out" or "mud" days are not eligible to be counted as a Weather Delay Day until the standard baseline is exceeded. Hence, Contractor should allow for an appropriate number of additional days associated with the Standard Baseline days in which such applicable.

B. Extensions of Contract Time:

1. An extension of time on the basis of weather may be granted only for the number of Weather Delay Days in excess of the number of days listed as the Standard Baseline for that month.

C. Standard Baseline for Average Climatic Range

1. The Engineer has reviewed weather data available from the National Oceanic and Atmospheric Administration (NOAA) and determined a Standard Baseline of average climatic range for the project location.

2. Standard Baseline is defined as the normal number of calendar days for each month during which construction activity exposed to weather conditions is expected to be prevented and suspended by cause of adverse weather. Suspension of construction activity for the number of days each month as listed in the Standard Baseline is included in the Work and is not eligible for extension of Contract Time.

3. Standard Baseline is as follows:

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
8	7	8	7	7	8	7	6	6	5	6	7

D. Documentation and Submittals

1. The Contractor must submit each month with his Application for Payment, a separate letter stating that he is or is not requesting an extension of time for that period of time when Applications for Payment are considered. No payment on a monthly Application for Payment will be approved until the letter is received. Any adverse weather days that occur after the schedule date of substantial completion will not be considered and will not qualify for an adjustment to the contract time. Once the contract time has concluded, additional time will not be considered due to adverse weather.

2. Supporting Data shall run concurrently with the Application for Payment and shall consist of the following:

a. Submit a daily log reporting form for approval prior to the first Application for Payment containing:

1). Record of adverse conditions that hindered work.
2). Time of day work activities were stopped.

3). Temperature.
4). Work in progress.
5). Number of hours work was stopped for each workday.
6). Trades on the job and number of workmen for each trade.
7). Record weather conditions each calendar day of each month, adverse or not.

3. Submit actual weather data to support claim for time extension obtained from nearest NOAA weather station or other independently verified source approved by Designer at beginning of project.

4. Use Standard Baseline data provided in this Section when documenting actual delays due to weather in excess of the average climatic range.

***** End of Section *****

SECTION 055213 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Steel railings.
2. Aluminum railings.

B. Related Requirements:

1. Section 055113 "Metal Pan Stairs" for steel tube railings associated with metal pan stairs.

1.3 COORDINATION

A. Coordinate selection of shop primers with topcoats to be applied over them. Comply with paint and coating manufacturers' written recommendations to ensure that shop primers and topcoats are compatible with one another.

B. Coordinate installation of anchorages for railings. 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.

1.4 ACTION SUBMITTALS

A. Product Data:

1. Manufacturer's product lines of mechanically connected railings.
2. Fasteners.
3. Post-installed anchors.
4. Handrail brackets.
5. Shop primer.
6. Intermediate coats and topcoats.
7. Bituminous paint.
8. Nonshrink, nonmetallic grout.
9. Metal finishes.

10. Paint products.

B. Shop Drawings: Include plans, elevations, sections, details, and attachments to other work.

C. Delegated-Design Submittal: For railings, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

1.5 QUALITY ASSURANCE

A. Welding Qualifications: Qualify procedures and personnel in accordance with the following:

1. AWS D1.1/D1.1M, "Structural Welding Code - Steel."
2. AWS D1.2/D1.2M, "Structural Welding Code - Aluminum."
3. AWS D1.6/D1.6M, "Structural Welding Code - Stainless Steel."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Protect mechanical finishes on exposed surfaces of railings from damage by applying a strippable, temporary protective covering before shipping.

1.7 FIELD CONDITIONS

A. Field Measurements: Verify actual locations of walls and other construction contiguous with railings by field measurements before fabrication.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Delegated Design: Engage a qualified professional engineer, as defined in Section 014000 "Quality Requirements," to design railings, including attachment to building construction.

B. Structural Performance: Railings, including attachment to building construction, shall withstand the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Handrails and Top Rails of Guards:
   a. Uniform load of 50 lbf/ ft. applied in any direction.
   b. Concentrated load of 200 lbf applied in any direction.
   c. Uniform and concentrated loads need not be assumed to act concurrently.
2. Infill of Guards:
   a. Concentrated load of 50 lbf applied horizontally on an area of 1 sq. ft..
   b. Infill load and other loads need not be assumed to act concurrently.

C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes.

1. Temperature Change: 120 deg F , ambient; 180 deg F , material surfaces .

2.2 METALS, GENERAL

A. Metal Surfaces, General: Provide materials with smooth surfaces, without seam marks, roller marks, rolled trade names, stains, discolorations, or blemishes.

B. Brackets, Flanges, and Anchors: Cast or formed metal of same type of material and finish as supported rails unless otherwise indicated.

1. Provide type of bracket with flange tapped for concealed anchorage to threaded hanger bolt and that provides 1-1/2-inch clearance from inside face of handrail to finished wall surface.

2.3 STEEL RAILINGS

A. Source Limitations: Obtain each type of railing from single source from single manufacturer.

B. Tubing: ASTM A500/A500M (cold formed) or ASTM A513/A513M, Type 5.

C. Pipe: ASTM A53/A53M, Type F or Type S, Grade A, Standard Weight (Schedule 40), unless another grade and weight are required by structural loads.

1. Provide galvanized finish for exterior installations and where indicated.

D. Plates, Shapes, and Bars: ASTM A36/A36M.

2.4 ALUMINUM RAILINGS

A. Source Limitations: Obtain each type of railing from single source from single manufacturer.

B. Aluminum, General: Provide alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated, and with not less than the strength and durability properties of alloy and temper designated below for each aluminum form required.

C. Extruded Bars and Tubing: ASTM B221, Alloy 6063-T5/T52.

D. Die and Hand Forgings: ASTM B247, Alloy 6061-T6.

E. Castings: ASTM B26/B26M, Alloy A356.0-T6.

2.5 FASTENERS

A. Fastener Materials:

1. Ungalvanized-Steel Railing Components: Plated steel fasteners complying with ASTM F1941, Class Fe/Zn 5 for zinc coating.
2. Hot-Dip Galvanized Railing Components: Type 304 stainless steel or hot-dip zinc-coated steel fasteners complying with ASTM A153/A153M or ASTM F2329/F2329M for zinc coating.
3. Aluminum Railing Components: Type 304 stainless steel fasteners.
4. Finish exposed fasteners to match appearance, including color and texture, of railings.

B. Fasteners for Anchoring Railings to Other Construction: Select fasteners of type, grade, and class required to produce connections suitable for anchoring railings to other types of construction and capable of withstanding design loads.

C. Fasteners for Interconnecting Railing Components:

1. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless otherwise indicated.
2. Provide concealed fasteners for interconnecting railing components and for attaching them to other work, unless exposed fasteners are unavoidable or are the standard fastening method for railings indicated.
3. Provide square or hex socket flat-head machine screws for exposed fasteners unless otherwise indicated.

D. Post-Installed Anchors: Fastener systems with working capacity greater than or equal to the design load, according to an evaluation report acceptable to authorities having jurisdiction, based on ICC-ES AC193 or ICC-ES AC308.

1. 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.

2.6 MISCELLANEOUS MATERIALS

A. Handrail Brackets: Cast stainless steel, center of handrail 2-1/2 inches from face of railing wall.

B. Etching Cleaner for Galvanized Metal: Complying with MPI#25.

C. Galvanizing Repair Paint: High-zinc-dust-content paint, complying with SSPC-Paint 20 and compatible with paints specified to be used over it.

D. Shop Primers: Provide primers that comply with Section 099113 "Exterior Painting"." Section 099123 "Interior Painting."

E. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.

1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.

F. Epoxy Zinc-Rich Primer: Complying with MPI#20 and compatible with topcoat.

G. Shop Primer for Galvanized Steel: Primer formulated for exterior use over zinc-coated metal and compatible with finish paint systems indicated.

H. Intermediate Coats and Topcoats: Provide products that comply with Section 099113 "Exterior Painting." Section 099123 "Interior Painting."

I. Epoxy Intermediate Coat: Complying with MPI #77 and compatible with primer and topcoat.

J. Polyurethane Topcoat: Complying with MPI #72 and compatible with undercoat.

K. Bituminous Paint: Cold-applied asphalt emulsion, complying with ASTM D1187/D1187M.

L. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout, complying with ASTM C1107/C1107M. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.7 FABRICATION

A. General: Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage , but not less than that required to support structural loads.

B. Shop assemble railings to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations.

1. Clearly mark units for reassembly and coordinated installation.
2. Use connections that maintain structural value of joined pieces.

C. Cut, drill, and punch metals cleanly and accurately.

1. Remove burrs and ease edges to a radius of approximately 1/32 inch unless otherwise indicated.
2. Remove sharp or rough areas on exposed surfaces.

D. Form work true to line and level with accurate angles and surfaces.

E. Fabricate connections that are exposed to weather in a manner that excludes water.

1. Provide weep holes where water may accumulate.
2. Locate weep holes in inconspicuous locations.

F. Cut, reinforce, drill, and tap as indicated to receive finish hardware, screws, and similar items.

G. Connections: Fabricate railings with welded connections unless otherwise indicated.

H. Welded Connections: Cope components at connections to provide close fit, or use fittings designed for this purpose. Weld all around at connections, including at fittings.

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove flux immediately.
4. At exposed connections, finish exposed welds to comply with NOMMA's "Voluntary Joint Finish Standards" for Finish #1 welds; ornamental quality with no evidence of a welded joint

I. Welded Connections for Aluminum Pipe: Fabricate railings to interconnect members with concealed internal welds that eliminate surface grinding, using manufacturer's standard system of sleeve and socket fittings.

J. Form changes in direction as follows:

1. By bending or by inserting prefabricated elbow fittings.
2. .
3. .
4. By bending to smallest radius that will not result in distortion of railing member.

K. Bend members in jigs to produce uniform curvature for each configuration required. Maintain cross section of member throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of components.

L. Close exposed ends of hollow railing members with prefabricated cap and end fittings of same metal and finish as railings.

M. Provide wall returns at ends of wall-mounted handrails unless otherwise indicated. Close ends of returns unless clearance between end of rail and wall is 1/4 inch or less.

N. Brackets, Flanges, Fittings, and Anchors: Provide wall brackets, flanges, miscellaneous fittings, and anchors to interconnect railing members to other work unless otherwise indicated.

1. At brackets and fittings fastened to plaster or gypsum board partitions, provide crush-resistant fillers or other means to transfer loads through wall finishes to structural supports and prevent bracket or fitting rotation and crushing of substrate.

O. Provide inserts and other anchorage devices for connecting railings to concrete or masonry work.

1. Fabricate anchorage devices capable of withstanding loads imposed by railings.
2. Coordinate anchorage devices with supporting structure.

P. For railing posts set in concrete, provide stainless steel sleeves not less than 6 inches long with inside dimensions not less than 1/2 inch greater than outside dimensions of post, with metal plate forming bottom closure.

Q. For removable railing posts, fabricate slip-fit sockets from stainless steel tube or pipe whose ID is sized for a close fit with posts; limit movement of post without lateral load, measured at top, to not more than one-fortieth of post height.

1. Provide socket covers designed and fabricated to resist being dislodged.
2. Provide chain with eye, snap hook, and staple across gaps formed by removable railing sections at locations indicated. Fabricate from same metal as railings.

2.8 STEEL AND IRON FINISHES

A. Galvanized Railings:

1. Hot-dip galvanize exterior steel railings, including hardware, after fabrication.
2. Comply with ASTM A123/A123M for hot-dip galvanized railings.
3. Comply with ASTM A153/A153M for hot-dip galvanized hardware.
4. Do not quench or apply post-galvanizing treatments that might interfere with paint adhesion.
5. Fill vent and drain holes that are exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.

B. For galvanized railings, provide hot-dip galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.

C. Preparing Galvanized Railings for Shop Priming: After galvanizing, thoroughly clean railings of grease, dirt, oil, flux, and other foreign matter, and treat with etching cleaner and as follows.

1. Comply with SSPC-SP 16.

D. For nongalvanized-steel railings, provide nongalvanized ferrous-metal fittings, brackets, fasteners, and sleeves; however, hot-dip galvanize anchors to be embedded in exterior concrete or masonry.

E. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below:

1. Exterior Railings: SSPC-SP 6/NACE No. 3.
2. Railings Indicated To Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3.
3. Railings Indicated To Receive Primers Specified in Section 099600 "High-Performance Coatings": SSPC-SP 6/NACE No. 3.
4. Other Railings: SSPC-SP 3.

F. Primer Application: Apply shop primer to prepared surfaces of railings unless otherwise indicated. Comply with requirements in SSPC-PA 1 for shop painting. Primer need not be applied to surfaces to be embedded in concrete or masonry.

1. Shop prime uncoated railings with universal shop primer unless indicated.
2. Do not apply primer to galvanized surfaces.

G. Shop-Painted Finish: Comply with Section 099113 "Exterior Painting."

1. Color: Match Architect's sample .

2.9 ALUMINUM FINISHES

A. 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 the same piece are unacceptable. 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.

B. Clear Anodic Finish: AAMA 611, AA-M12C22A41 .

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements are clearly marked for Installer. Locate reinforcements and mark locations if not already done.

3.2 INSTALLATION, GENERAL

A. Perform cutting, drilling, and fitting required for installing railings.

1. Fit exposed connections together to form tight, hairline joints.
2. Install railings level, plumb, square, true to line; without distortion, warp, or rack.
3. Set railings accurately in location, alignment, and elevation; measured from established lines and levels.
4. Do not weld, cut, or abrade surfaces of railing components that are coated or finished after fabrication and that are intended for field connection by mechanical or other means without further cutting or fitting.
5. Set posts plumb within a tolerance of 1/16 inch in 3 feet.
6. Align rails so variations from level for horizontal members and variations from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.

B. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

1. Coat concealed surfaces of aluminum that will be in contact with grout, concrete, masonry, wood, or dissimilar metals, with a heavy coat of bituminous paint.

C. Adjust railings before anchoring to ensure matching alignment at abutting joints.

D. Fastening to In-Place Construction: Use anchorage devices and fasteners where necessary for securing railings and for properly transferring loads to in-place construction.

3.3 RAILING CONNECTIONS

A. Welded Connections: Use fully welded joints for permanently connecting railing components. Comply with requirements for welded connections in "Fabrication" Article, whether welding is performed in the shop or in the field.

B. Expansion Joints: Install expansion joints at locations indicated but not farther apart than required to accommodate thermal movement. Provide slip-joint internal sleeve, extending 2 inches beyond joint on either side; fasten internal sleeve securely to one side; and locate joint within 6 inches of post.

3.4 ANCHORING POSTS

A. Form or core-drill holes not less than 5 inches deep and 3/4 inch larger than OD of post for installing posts in concrete. Clean holes of loose material, insert posts, and fill annular space between post and concrete with nonshrink, nonmetallic grout , mixed and placed to comply with anchoring material manufacturer's written instructions.

B. Anchor posts to metal surfaces with flanges, angle type, or floor type, as required by conditions, connected to posts and to metal supporting members as follows:

1. For steel railings, weld flanges to post and bolt to metal supporting surfaces.
2. For aluminum railings, attach posts as indicated, using fittings designed and engineered for this purpose.

C. Install removable railing sections, where indicated, in slip-fit stainless steel sockets cast in concrete.

3.5 ATTACHING RAILINGS

A. Anchor railing ends to concrete and masonry with flanges connected to railing ends and anchored to wall construction with anchors and bolts.

B. Anchor railing ends to metal surfaces with flanges bolted to metal surfaces and welded to railing ends .

C. Attach handrails to walls with wall brackets. Provide brackets with 1-1/2-inch clearance from inside face of handrail and finished wall surface.

1. Use type of bracket with flange tapped for concealed anchorage to threaded hanger bolt .
2. Locate brackets as indicated or, if not indicated, at spacing required to support structural loads.

D. Secure wall brackets to building construction as follows:

1. For concrete and solid masonry anchorage, use drilled-in expansion shields and hanger or lag bolts.
2. For hollow masonry anchorage, use toggle bolts.
3. For steel-framed partitions, fasten brackets directly to steel framing or concealed steel reinforcements, using self-tapping screws of size and type required to support structural loads .

3.6 REPAIR

A. Touchup Painting:

1. Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
   a. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Section 099113 "Exterior Painting." Section 099123 "Interior Painting."

3.7 CLEANING

A. Clean by washing thoroughly with clean water and soap and rinsing with clean water.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas, and repair galvanizing to comply with ASTM A780/A780M.

3.8 PROTECTION

A. Protect finishes of railings from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings at time of Substantial Completion.

B. Restore finishes damaged during installation and construction period, so no evidence remains of correction work. Return items that cannot be refinished in the field to the shop; make required alterations and refinish entire unit, or provide new units.

END OF SECTION 055213

SECTION 313116 - TERMITE CONTROL

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Soil treatment.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product. Include the EPA-Registered Label for termiticide products.

1.3 INFORMATIONAL SUBMITTALS

A. Soil Treatment Application Report: Include the following:

1. Date and time of application.
2. Moisture content of soil before application.
3. Termiticide brand name and manufacturer.
4. Quantity of undiluted termiticide used.
5. Dilutions, methods, volumes used, and rates of application.
6. Areas of application.
7. Water source for application.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: A specialist who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment and products in jurisdiction where Project is located and who employs workers trained and approved by manufacturer to install manufacturer's products.

1.5 WARRANTY

A. Soil Treatment Special Warranty: Manufacturer's standard form, signed by Applicator and Contractor, certifying that termite control work consisting of applied soil termiticide treatment will prevent infestation of subterranean termites , including Formosan termites (Coptotermes formosanus) . If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

A. Termiticide: EPA-Registered termiticide acceptable to authorities having jurisdiction, in an aqueous solution formulated to prevent termite infestation.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. BASF Corporation.
   b. Bayer Environmental Science.
   c. Ensystex, Inc.
2. Service Life of Treatment: Soil treatment termiticide that is effective for not less than five years against infestation of subterranean termites.

PART 3 - EXECUTION

3.1 PREPARATION

A. Remove extraneous sources of wood cellulose and other edible materials, such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil within and around foundations.

B. Soil Treatment Preparation: Remove foreign matter and impermeable soil materials that could decrease treatment effectiveness on areas to be treated.

3.2 APPLYING SOIL TREATMENT

A. Application: Mix soil treatment termiticide solution to a uniform consistency. Distribute treatment uniformly. Apply treatment at the product's EPA-Registered Label volume and rate for maximum specified concentration of termiticide to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction.

1. Slabs-on-Grade and Basement Slabs: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Soil adjacent to and along the entire inside perimeter of foundation walls; along both sides of interior partition walls; around plumbing pipes and electric conduit penetrating the slab; around interior column footers, piers, and chimney bases; and along the entire outside perimeter, from grade to bottom of footing.

B. Post warning signs in areas of application.

C. Reapply soil treatment solution to areas disturbed by subsequent excavation, grading, landscaping, or other construction activities following application.

END OF SECTION 313116

DRAWING INDEX

Sheet Number	Sheet Name	Sheet Issue Date	Current Revision Number	Revision Issue Date
G-000	COVER	11/10/2022		
G-001	DRAWING INDEX	11/10/2022	02	12/12/2022
G-011	MAPS, SYMBOLS, ABBREVIATIONS	11/10/2022		
G-021	TYPICAL MOUNTING DIAGRAMS	11/10/2022		
G-101	EGRESS AND OCCUPANCY ANALYSIS	11/10/2022		
C-001	CIVIL GENERAL NOTES	11/10/2022		
C-101	EROSION CONTROL PLAN	11/10/2022		
C-111	DEMOLITION PLAN	11/10/2022		
C-121	SITE PLAN	11/10/2022		
C-131	GRADING PLAN	11/10/2022		
C-141	UTILITY PLAN	11/10/2022		
C-201	CIVIL DETAILS	11/10/2022		
C-202	CIVIL DETAILS	11/10/2022		
C-203	CIVIL DETAILS	11/10/2022		
C-204	CIVIL DETAILS	11/10/2022		
C-205	CIVIL DETAILS	11/10/2022		
C-206	CIVIL DETAILS	11/10/2022		
C-207	CIVIL DETAILS	11/10/2022		
C-208	CIVIL DETAILS	11/10/2022		
C-209	CIVIL DETAILS	11/10/2022		
L-100	LANDSCAPE PLAN	11/10/2022		
L-150	LANDSCAPE NOTES AND DETAILS	11/10/2022		
L-200	IRRIGATION SLEEVING PLAN	11/10/2022		
S-001	STRUCTURAL NOTES	11/10/2022	02	12/12/2022
S-002	STRUCTURAL NOTES (cont.)	11/10/2022		
S-003	STRUCTURAL QUALITY ASSURANCE PLAN	11/10/2022		
S-004	STRUCTURAL QUALITY ASSURANCE PLAN (cont.)	11/10/2022		
S-101	LOWER LEVEL FOUNDATION PLAN	11/10/2022	02	12/12/2022
S-102	EQUIPMENT ROOM LEVEL FLOOR FRAMING	11/10/2022	02	12/12/2022
S-103	LEVEL 01 CRAWL SPACE PLAN	11/10/2022	02	12/12/2022
S-104	LEVEL 01 FLOOR FRAMING PLAN	11/10/2022	02	12/12/2022
S-105	LEVEL 02 ROOF FRAMING PLAN	11/10/2022	02	12/12/2022
S-106	COOLING TOWER FOUNDATION PLAN	11/10/2022		
S-201	FOUNDATION SECTIONS AND DETAILS	11/10/2022	02	12/12/2022
S-202	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-203	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-204	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-205	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-206	FOUNDATION SECTIONS AND DETAILS	11/10/2022	02	12/12/2022
S-207	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-208	FOUNDATION SECTIONS AND DETAILS	11/10/2022		
S-210	CONCRETE BEAM DETAILS	11/10/2022	02	12/12/2022
S-301	FLOOR FRAMING SECTIONS AND DETAILS	11/10/2022		
S-302	FLOOR FRAMING SECTIONS AND DETAILS	11/10/2022		
S-303	FLOOR FRAMING SECTIONS AND DETAILS	11/10/2022	02	12/12/2022
S-304	FLOOR FRAMING SECTIONS AND DETAILS	11/10/2022		
S-401	ROOF FRAMING SECTIONS AND DETAILS	11/10/2022		
S-402	ROOF FRAMING SECTIOSN AND DETAILS	11/10/2022		
S-403	ROOF FRAMING SECTIONS AND DETAILS	11/10/2022	02	12/12/2022
S-404	ROOF FRAMING SECTIONS AND DETAILS	11/10/2022	02	12/12/2022
S-500	MOMENT FRAME ELEVATIONS	11/10/2022		
S-501	MOMENT FRAME DETAILS	11/10/2022		
AS101	ARCHITECTURAL SITE PLAN	11/10/2022	02	12/12/2022
AS-201	SITE DETAILS	11/10/2022		
A-001A	LOWER LEVEL PLAN - KEYED	11/10/2022		
A-001B	LOWER LEVEL PLAN - DIMENSIONS	11/10/2022		
A-002A	LEVEL 01 PLAN - KEYED	11/10/2022		
A-002B	LEVEL 01 PLAN - DIMENSIONS	11/10/2022		
A-003	CRAWL SPACE PLAN	11/10/2022	01	12/5/2022
A-004A	LOWER LEVEL PLAN - SLAB EDGE PLAN	11/10/2022		
A-004B	LEVEL 01 PLAN - SLAB EDGE PLAN	11/10/2022		
A-021	ROOF PLAN	11/10/2022		
A-041	REFLECTED CEILING PLAN - LOWER LEVEL	11/10/2022		
A-042	REFLECTED CEILING PLAN - LEVEL 01	11/10/2022	01	12/5/2022
A-201	EXTERIOR ELEVATIONS	11/10/2022	02	12/12/2022
A-301	BUILDING SECTIONS	11/10/2022		
A-321	WALL SECTIONS	11/10/2022		
A-322	WALL SECTIONS	11/10/2022		
A-323	WALL SECTIONS	11/10/2022		
A-401	RESTROOM ENLARGED FLOOR PLANS	11/10/2022		
A-481	RESTROOM ELEVATIONS	11/10/2022		
A-482	INTERIOR ELEVATIONS	11/10/2022		
A-501	EXTERIOR DETAILS	11/10/2022	02	12/12/2022
A-502	EXTERIOR DETAILS	11/10/2022		
A-503	EXTERIOR DETAILS	11/10/2022	02	12/12/2022
A-531	DOOR DETAILS	11/10/2022		
A-541	WINDOW DETAILS	11/10/2022		
A-581	MILLWORK PLANS, ELEVATIONS, AND DETAILS	11/10/2022		
A-582	MILLWORK PLANS, ELEVATIONS, AND DETAILS	11/10/2022		
A-591	INTERIOR SECTIONS AND DETAILS	11/10/2022		
A-601	PARTITION TYPES	11/10/2022		
A-611	FINISH SCHEDULE AND LEGEND	11/10/2022		
A-621	DOOR, FRAME, & WINDOW TYPES	11/10/2022	02	12/12/2022
A-622	DOOR, FRAME, & WINDOW TYPES	11/10/2022		
A-623	DOOR, FRAME, & WINDOW TYPES	11/10/2022		
A-701	STAIR PLANS, SECTIONS AND DETAILS	11/10/2022		
A-702	STAIR PLANS, SECTIONS AND DETAILS	11/10/2022		
A-721	ELEVATOR PLAN AND DETAILS	11/10/2022		
AF-941	FINISH PLAN - LOWER LEVEL 01	11/10/2022		
AF-942	FINISH PLAN - LEVEL 01	11/10/2022		
FA-200	FIRE ALARM PLAN - LOWER LEVEL 01	11/10/2022		
FA-210	FIRE ALARM PLAN - LEVEL 01	11/10/2022		
FA-400	FIRE ALARM RISER DIAGRAM	11/10/2022		
FA-700	FIRE ALARM OPERATIONS MATRIX	11/10/2022		
FP-000	FIRE PROTECTION SYMBOLS AND ABBREVIATIONS	11/10/2022		
FP-101	FIRE PROTECTION PLAN - CRAWL SPACE	11/10/2022		
FP-200	FIRE PROTECTION PLAN - LOWER LEVEL 01	11/10/2022		
FP-210	FIRE PROTECTION PLAN - LEVEL 01	11/10/2022		
FP-300	ENLARGED FIRE PROTECTION PLANS	11/10/2022		
FP-400	FIRE PROTECTION RISER DIAGRAM	11/10/2022		
FP-500	FIRE PROTECTION DETAILS	11/10/2022		
FP-501	FIRE PROTECTION DETAILS	11/10/2022		
P-000	PLUMBING SYMBOLS AND ABBREVIATIONS	11/10/2022		
P-100	PLUMBING UNDERGROUND PLAN	11/10/2022		
P-101	PLUMBING PLAN - CRAWL SPACE	11/10/2022		
P-200	PLUMBING PLAN - LOWER LEVEL 01	11/10/2022		
P-210	PLUMBING PLAN - LEVEL 01	11/10/2022		
P-220	PLUMBING PLAN - ROOF LEVEL	11/10/2022		
P-300	ENLARGED PLUMBING PLANS	11/10/2022		
P-301	ENLARGED PLUMBING PLANS - CHILLER MODULES	11/10/2022		
P-400	DOMESTIC WATER RISER DIAGRAMS	11/10/2022		
P-401	SANITARY AND VENT RISER DIAGRAM	11/10/2022		
P-402	STORM WATER RISER DIAGRAM	11/10/2022		
P-403	CHILLING MODULES PLUMBING RISER DIAGRAM	11/10/2022		
P-500	PLUMBING DETAILS	11/10/2022		
P-501	PLUMBING DETAILS	11/10/2022		

Sheet Number	Sheet Name	Sheet Issue Date	Current Revision Number	Revision Issue Date
P-600	PLUMBING SCHEDULES	11/10/2022		
M-000	MECHANICAL SYMBOLS & ABBREVIATIONS	11/10/2022		
M-100	MECHANICAL SITE PLAN	11/10/2022		
MD-200	MECHANICAL DUCT PLAN - LOWER LEVEL 01	11/10/2022		
MD-210	MECHANICAL DUCT PLAN - LEVEL 01	11/10/2022		
MP-200	MECHANICAL PIPE PLAN - LOWER LEVEL 01	11/10/2022		
MP-210	MECHANICAL PIPE PLAN - LEVEL 01	11/10/2022		
M-300	ENLARGED MECHANICAL PLANS - LOWER LEVEL MECHANICAL ROOM	11/10/2022		
M-500	MECHANICAL DETAILS	11/10/2022		
M-501	MECHANICAL DETAILS	11/10/2022		
M-502	MECHANICAL DETAILS	12/05/2022		
M-510	VRF SYSTEM DETAILS	11/10/2022		
M-511	VRF SYSTEM DETAILS	11/10/2022		
M-600	MECHANICAL SCHEDULES	11/10/2022		
M-601	MECHANICAL SCHEDULES	11/10/2022		
M-700	MECHANICAL INSTRUMENTATION SYMBOLS & ABBREVIATIONS	11/10/2022		
M-701	CONTROL NETWORK ARCHITECTURE	11/10/2022		
M-702	MAIN ELECTRICAL ROOM AND DATA HALL FLOW AND CONTROL DIAGRAM	11/10/2022		
M-703	DEDICATED OUTDOOR AIR SYSTEM FLOW AND CONTROL DIAGRAM	11/10/2022		
M-704	VRF SYSTEM FLOW AND CONTROL DIAGRAM	11/10/2022		
M-705	ELECTRICAL AND PLUMBING EQUIPMENT POINTS LISTS	11/10/2022		
M-706	DX AIR HANDLING UNIT FLOW AND CONTROL DIAGRAM	11/10/2022		
MEP-300	MEP SECTIONS	11/10/2022		
MEP-301	MEP RENDERINGS	11/10/2022		
MEP-302	MEP RENDERINGS	11/10/2022		
CP-000	CHILLER PLANT SYMBOLS & ABBREVIATIONS	11/10/2022		
CP-300	ENLARGED CHILLER PLANT PLANS - PUMP MODULE	11/10/2022		
CP-301	ENLARGED CHILLER PLANT PLANS - CHILLER MODULES INTERIOR	11/10/2022		
CP-302	ENLARGED CHILLER PLANT PLANS - CHILLER MODULES COOLING TOWERS	11/10/2022		
CP-500	CHILLER PLANT DETAILS	11/10/2022		
CP-520	CENTRAL CHILLER PLANT RENDERINGS	11/10/2022		
CP-600	CHILLER PLANT SCHEDULES	11/10/2022		
CP-700	CHILLER PLANT INSTRUMENTATION SYMBOLS & ABBREVIATIONS	11/10/2022		
CP-701	CHILLER PLANT PLC SYSTEM NETWORK ARCHITECTURE	11/10/2022		
CP-702	CHILLER PLANT POINTS LIST AND ALARM SCHEDULE	11/10/2022		
CP-703	CHILLER PLANT FLOW AND CONTROL DIAGRAM - PUMP MODULE	11/10/2022		
CP-704	CHILLER PLANT FLOW AND CONTROL DIAGRAM - CHILLER MODULE CHILLED WATER	11/10/2022		
CP-705	CHILLER PLANT FLOW AND CONTROL DIAGRAM - CHILLER MODULE CONDENSER & PROCESS CHILLED WATER	11/10/2022		
E-000	ELECTRICAL SYMBOLS AND ABBREVIATIONS	11/10/2022		
E-400	SINGLE LINE DIAGRAM - MASTERPLAN	11/10/2022		
E-401	SINGLE LINE DIAGRAM - EQUIPMENT YARD	11/10/2022	01	12/5/2022
E-402	SINGLE LINE DIAGRAM - HPCC DISTRIBUTION SYSTEM	11/10/2022		
E-403	SINGLE LINE DIAGRAM - MECHANICAL DISTRIBUTION SYSTEM	11/10/2022		
E-404	GROUNDING RISER DIAGRAM	11/10/2022		
E-500	ELECTRICAL DETAILS	11/10/2022		
E-501	ELECTRICAL DETAILS	11/10/2022		
E-502	ELECTRICAL DETAILS	11/10/2022		
E-503	ELECTRICAL DETAILS	11/10/2022		
E-504	ELECTRICAL DETAILS	11/10/2022	01	12/5/2022
E-600	LIGHTING FIXTURE SCHEDULE	11/10/2022		
E-601	ELECTRICAL EQUIPMENT ELEVATIONS & SCHEDULES	11/10/2022		
E-602	ELECTRICAL EQUIPMENT ELEVATIONS & SCHEDULES	11/10/2022		
E-603	ELECTRICAL EQUIPMENT ELEVATIONS & SCHEDULES	11/10/2022		
E-604	ELECTRICAL EQUIPMENT SCHEDULES - CHILLER MODULES	11/10/2022		
E-605	ELECTRICAL EQUIPMENT SCHEDULES - CHILLER MODULES	11/10/2022		
E-606	ELECTRICAL EQUIPMENT SCHEDULES - HPC 1	11/10/2022		
E-607	ELECTRICAL EQUIPMENT SCHEDULES - HPC 2	11/10/2022		
E-608	ELECTRICAL EQUIPMENT SCHEDULES - UPS SYSTEM	11/10/2022		
E-609	ELECTRICAL EQUIPMENT SCHEDULES - BUILDING PANELS	11/10/2022	01	12/5/2022
E-610	ELECTRICAL EQUIPMENT SCHEDULES	11/10/2022		
EG-100	ELECTRICAL GROUNDING SITE PLAN	11/10/2022		
EG-200	LIGHTNING PROTECTION PLAN	11/10/2022		
EL-100	LIGHTING SITE PLAN	11/10/2022		
EL-200	LIGHTING PLAN - LOWER LEVEL 01	11/10/2022		
EL-210	LIGHTING PLAN - LEVEL 01	11/10/2022	01	12/5/2022
EL-400	ENLARGED LIGHTING PLANS - LOWER LEVEL 01	11/10/2022		
EO-200	OVERHEAD RACEWAY PLAN - LOWER LEVEL 01	11/10/2022		
EP-200	POWER PLAN - LOWER LEVEL 01	11/10/2022		
EP-210	POWER PLAN - LEVEL 01	11/10/2022	01	12/5/2022
EP-400	ENLARGED POWER PLANS - LOWER LEVEL 01	11/10/2022		
EP-410	ENLARGED POWER PLANS - LEVEL 01	11/10/2022		
EU-100	POWER SITE PLAN & ELECTRICAL YARD UNDERGROUND PLAN	11/10/2022		
EU-200	ELECTRICAL UNDERGROUND RACEWAY PLAN	11/10/2022		
EU-210	ELECTRICAL CRAWL SPACE RACEWAY PLAN	11/10/2022		
T-000	TECHNOLOGY SYSTEMS SYMBOLS AND ABBREVIATIONS	11/10/2022		
T-001	TECHNOLOGY SCHEDULES AND NOTES	11/10/2022		
T-100	TECHNOLOGY SITE PLAN	11/10/2022		
T-200	TECHNOLOGY SYSTEMS PLAN - LOWER LEVEL 01	11/10/2022		
T-210	TECHNOLOGY SYSTEMS PLAN - LEVEL 01	11/10/2022		
TO-200	TECHNOLOGY OVERHEAD RACEWAYS	11/10/2022		
TO-210	TECHNOLOGY OVERHEAD RACEWAYS	11/10/2022		
TS-200	SECURITY SYSTEMS PLAN - LOWER LEVEL 01	11/10/2022		
TS-210	SECURITY SYSTEMS PLAN - LEVEL 01	11/10/2022		
T-400	TECHNOLOGY SYSTEMS ENLARGED PLANS	11/10/2022		
T-500	TECHNOLOGY SYSTEMS DETAILS	11/10/2022		
T-501	TECHNOLOGY SYSTEMS DETAILS	11/10/2022		
T-502	SECURITY SYSTEMS DETAILS	11/10/2022		
T-503	SECURITY SYSTEMS DETAILS	11/10/2022		
T-600	TECHNOLOGY SYSTEMS RISER DIAGRAMS	11/10/2022		

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

Gensler

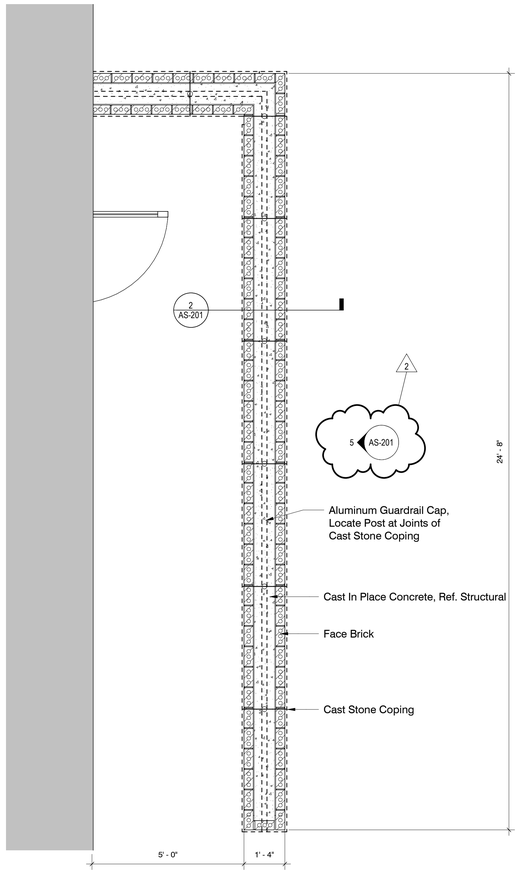
High Performance Computing Data Center
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

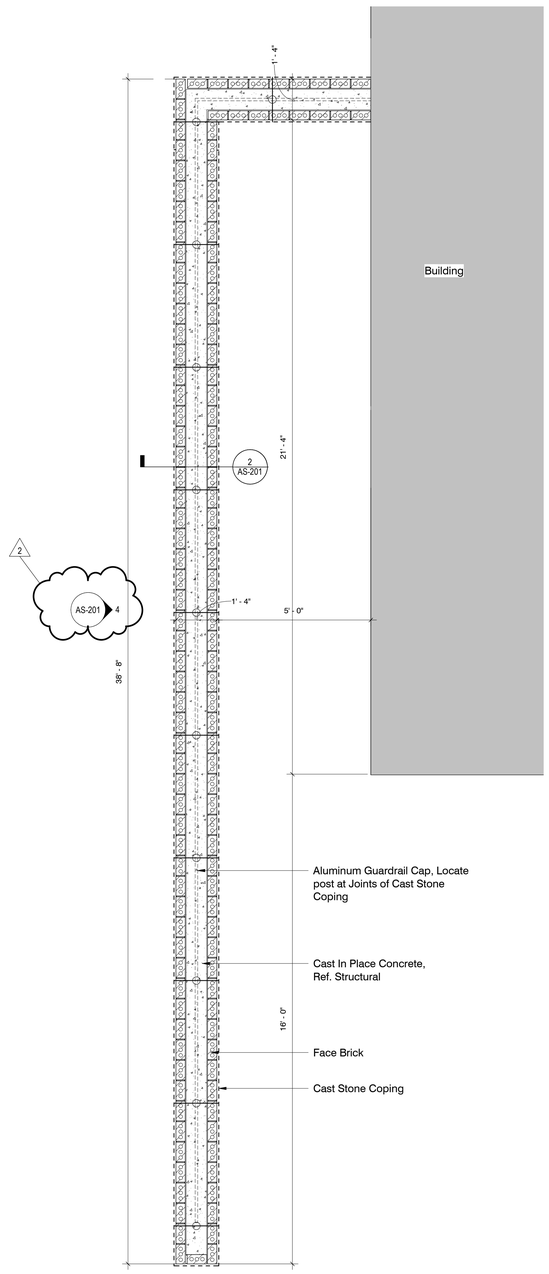
Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
1	12/05/2022
2	12/12/2022

G-001

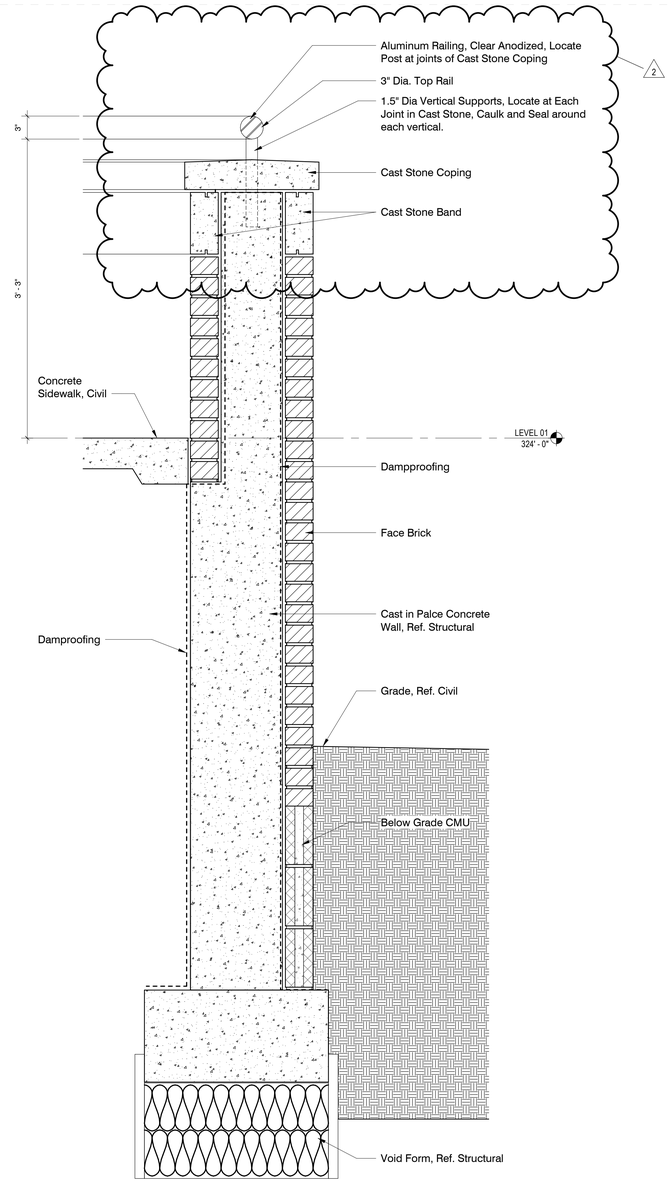
DRAWING INDEX



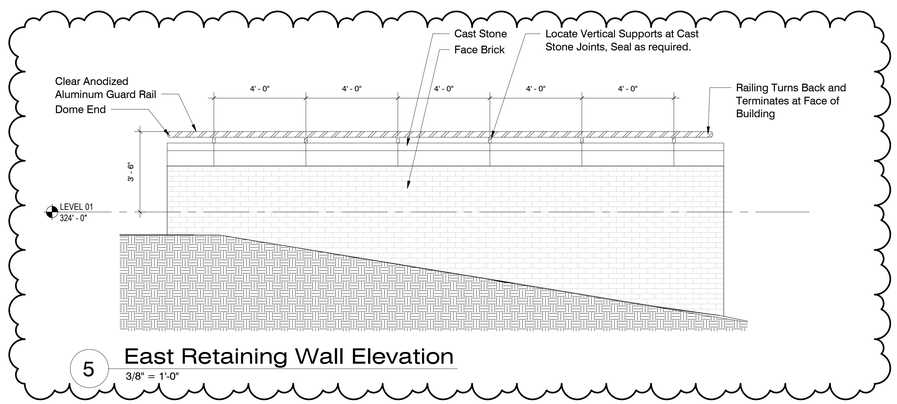
1 Site Retaining Wall East
1/2" = 1'-0"



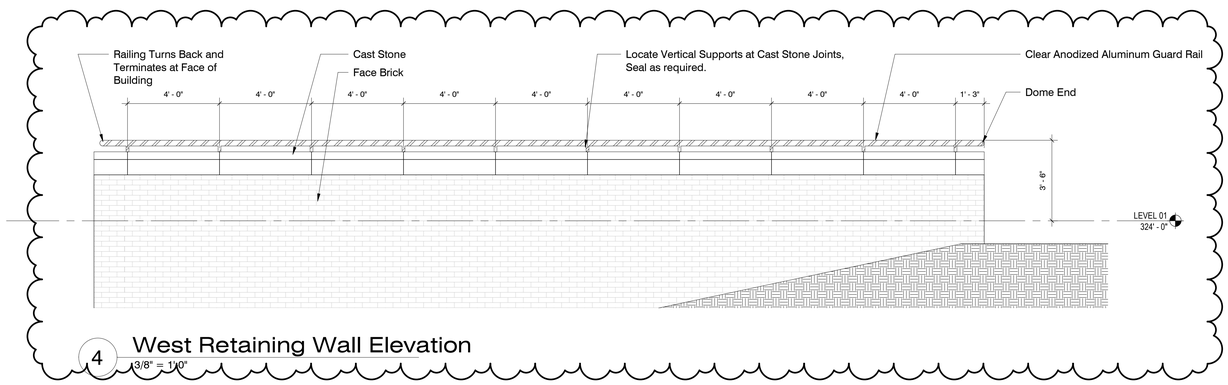
3 Site Retaining Wall West
1/2" = 1'-0"



2 Section @ Exterior Retaining Wall
1 1/2" = 1'-0"



5 East Retaining Wall Elevation
3/8" = 1'-0"



4 West Retaining Wall Elevation
3/8" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

REGISTERED ARCHITECT JASON M. ARMSTRONG 2029 11/15/22 STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

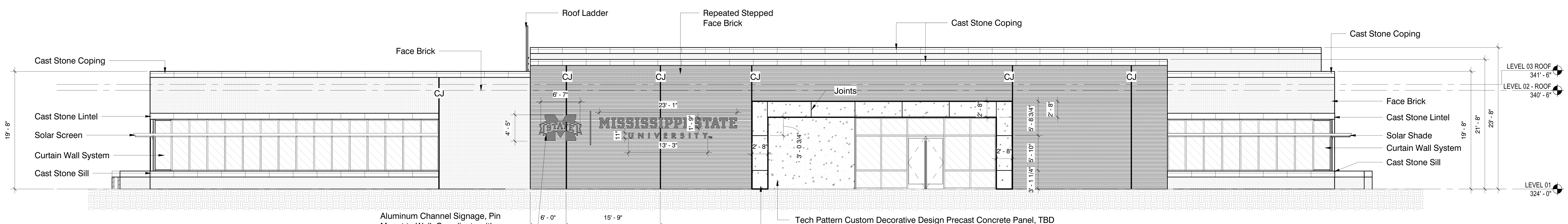
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

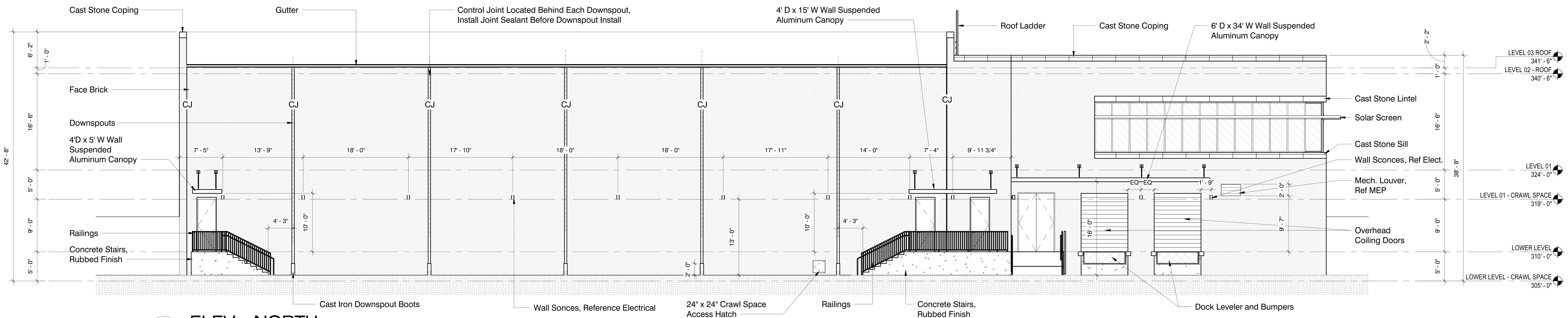
Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/2022

AS-201

SITE DETAILS



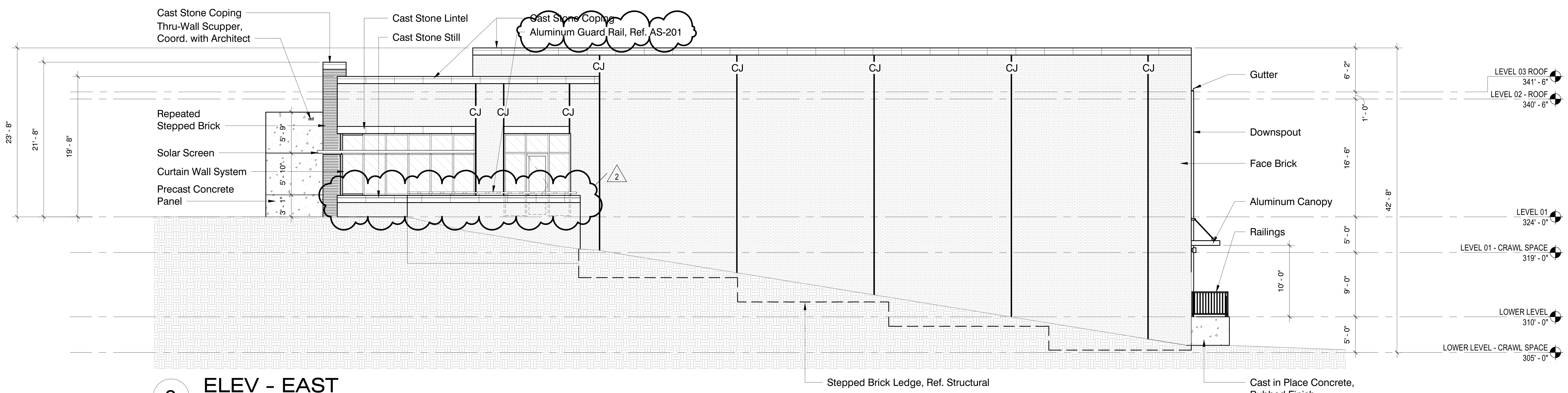
1 ELEV - SOUTH
1/8" = 1'-0"



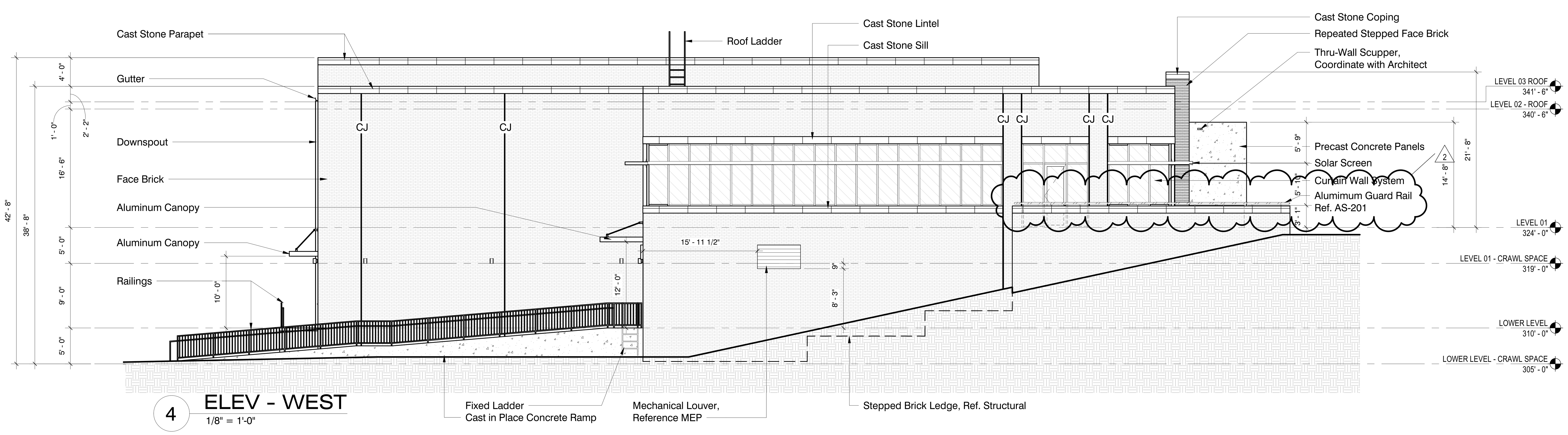
3 ELEV - NORTH
1/8" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET G-011 FOR SYMBOLS.
B. ALL PARTITION TYPES TO BE 'D1' U.N.O.
C. MAINTAIN 6" CLEARANCE BETWEEN EDGE OF DOOR FRAME & INTERSECTING PARTITION, U.N.O.
D. DIMENSIONS AND ALIGNMENTS ARE FROM FACE OF FINISH TO FACE OF FINISH. PROVIDE FURRING AS NECESSARY TO ACHIEVE ALIGNMENTS SHOWN.
E. VERIFY DIMENSIONS NOTED "CLEAR", "HOLD", "MIN", OR "V.I.F." DURING LAYOUT OF WORK. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO PROCEEDING.
F. PROVIDE BLOCKING IN ALL PARTITIONS TO ACCOMODATE MILLWORK INSTALLATIONS & OTHER WALL & CEILING HUNG ELEMENTS AS REQUIRED REFER TO FURNITURE PLANS TO COORDINATE LOCATION OF OVERHEAD UNITS..
H. PROVIDE MOISTURE AND MOLD RESISTANT TYPE GYP. BD. AT ALL WET AREAS SCHEDULED.
J. FIRESAFE ALL FLOOR OPENINGS TO MEET PROPER FIRE RATING AT STRUCTURAL FLOORS. MAINTAIN FIRE RATING WHERE PENETRATIONS OCCUR AT RATED ASSEMBLIES.
K. ALL DOWNSPOUT BOOTS TO TIE INTO SUBGRADE DRAINAGE, REF CIVIL
L. DIMENSIONS FROM COLUMN GRID LINE TO EXTERIOR FACE OF STUD AT EXTERIOR WALLS IS TYPICALLY 1' - 2" UNLESS NOTED OTHERWISE.
M. WHERE STRUCTURAL BEAMS/TRUSSES OR OTHER ELEMENTS PENETRATE WALLS, SEAL TIGHTLY AROUND THE STRUCTURAL FRAMING USING EITHER SPRAY FOAM OR ASCOUTICAL SEALANT TO ENSURE A SOUND PROOF, AIR TIGHT SEAL,WHERE ELEMENTS ARE VISIBLE, ACOUSTICAL SEALANT IS TO BE USED AND CLEANY INSTALLED.
N. FURNITURE IS OWNER PROVIDED, COORDINATE ELECTRICAL/DATA CONNECTIONS AS REQUIRED, REF. ELECTRICAL
O AT ALL CAST STONE JOINTS, PROVIDE 2 STAGE (2 LAYERS) OF BACKER ROD AND SEALANT



2 ELEV - EAST
1/8" = 1'-0"



4 ELEV - WEST
1/8" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

Gensler

High Performance Computing Data Center

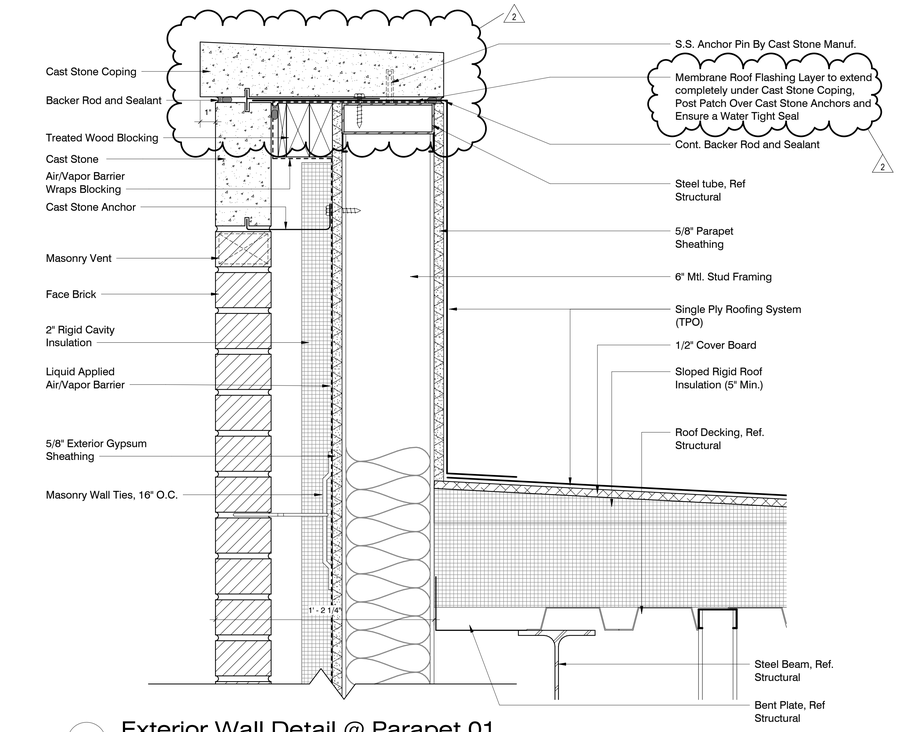
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

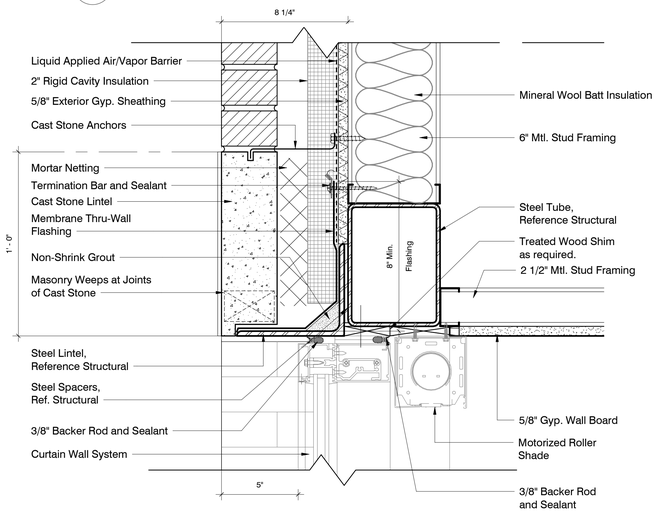
Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/2022

A-201

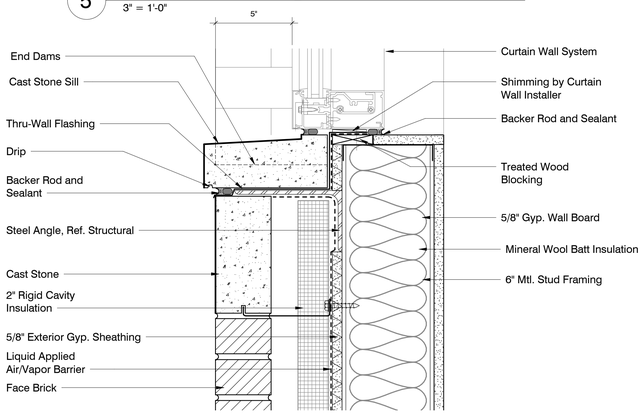
EXTERIOR ELEVATIONS



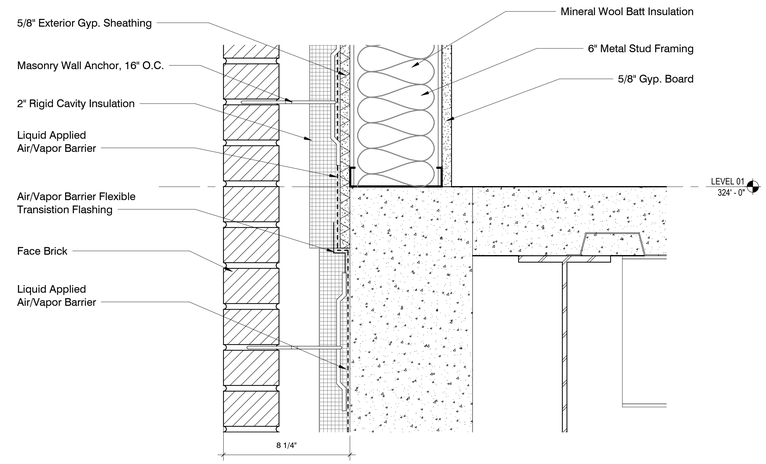
1 Exterior Wall Detail @ Parapet 01
3" = 1'-0"



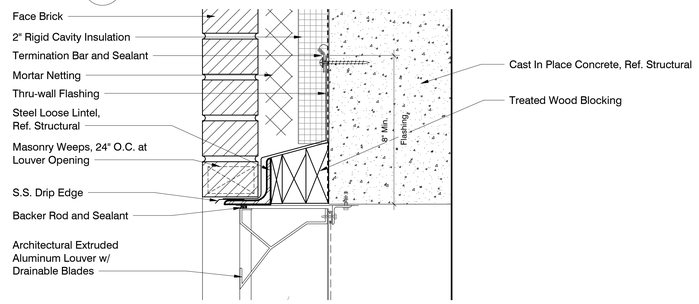
5 Exterior Detail @ Curtain Wall Head
3" = 1'-0"



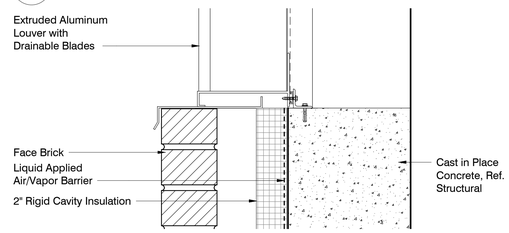
6 Exterior Detail @ Curtain Wall Sill
3" = 1'-0"



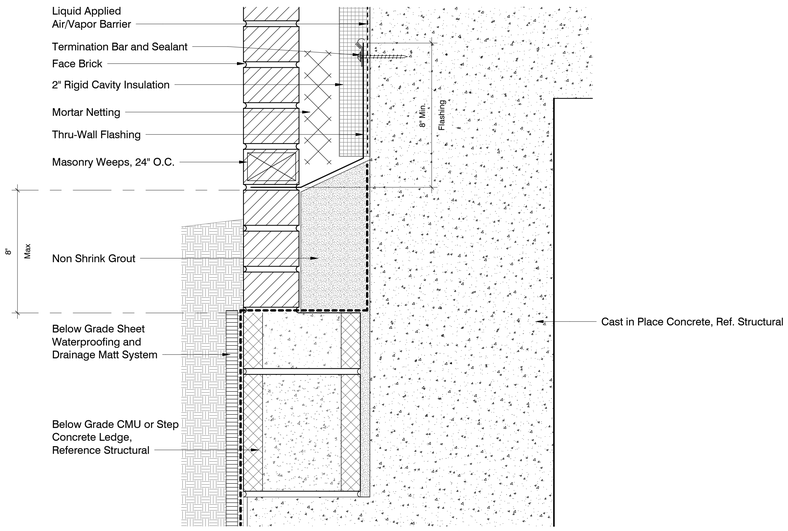
2 Exterior Wall Detail 01
3" = 1'-0"



4 Exterior Wall Detail @ Louver Head
3" = 1'-0"



7 Exterior Wall Detail @ Louver Sill
3" = 1'-0"



3 Exterior Wall Detail @ Grade 01
3" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET G-011 FOR SYMBOLS.
B. ALL PARTITION TYPES TO BE 'D1' U.N.O.
C. MAINTAIN 6" CLEARANCE BETWEEN EDGE OF DOOR FRAME & INTERSECTING PARTITION, U.N.O.
D. DIMENSIONS AND ALIGNMENTS ARE FROM FACE OF FINISH TO FACE OF FINISH. PROVIDE FURRING AS NECESSARY TO ACHIEVE ALIGNMENTS SHOWN.
E. VERIFY DIMENSIONS NOTED "CLEAR", "HOLD", "MIN", OR "V.I.F." DURING LAYOUT OF WORK. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO PROCEEDING.
F. PROVIDE BLOCKING IN ALL PARTITIONS TO ACCOMODATE MILLWORK INSTALLATIONS & OTHER WALL & CEILING HUNG ELEMENTS AS REQUIRED REFER TO FURNITURE PLANS TO COORDINATE LOCATION OF OVERHEAD UNITS.
H. PROVIDE MOISTURE AND MOLD RESISTANT TYPE GYP. BD. AT ALL WET AREAS SCHEDULED.
J. FIRESAFE ALL FLOOR OPENINGS TO MEET PROPER FIRE RATING AT STRUCTURAL FLOORS. MAINTAIN FIRE RATING WHERE PENETRATIONS OCCUR AT RATED ASSEMBLIES.
K. ALL DOWNSPOUT BOOTS TO TIE INTO SUBGRADE DRAINAGE, REF CIVIL
L. DIMENSIONS FROM COLUMN GRID LINE TO EXTERIOR FACE OF STUD AT EXTERIOR WALLS IS TYPICALLY 1' - 2" UNLESS NOTED OTHERWISE.
M WHERE STRUCTURAL BEAMS/TRUSSES OR OTHER . ELEMENTS PENETRATE WALLS, SEAL TIGHTLY AROUND THE STRUCTURAL FRAMING USING EITHER SPRAY FOAM OR ASCOUTICAL SEALANT TO ENSURE A SOUND PROOF, AIR TIGHT SEAL.WHERE ELEMENTS ARE VISIBLE, ACOUSTICAL SEALANT IS TO BE USED AND CLEANY INSTALLED.
N. FURNITURE IS OWNER PROVIDED, COORDINATE ELECTRICAL/DATA CONNECTIONS AS REQUIRED, REF. FURNITURE.
O AT ALL CAST STONE JOINTS, PROVIDE 2 STAGE (2 LAYERS) OF BACKER ROD AND SEALANT

2

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

REGISTERED ARCHITECT JASON M. ADDISTANDO 2009 STATE OF MISSISSIPPI

Gensler

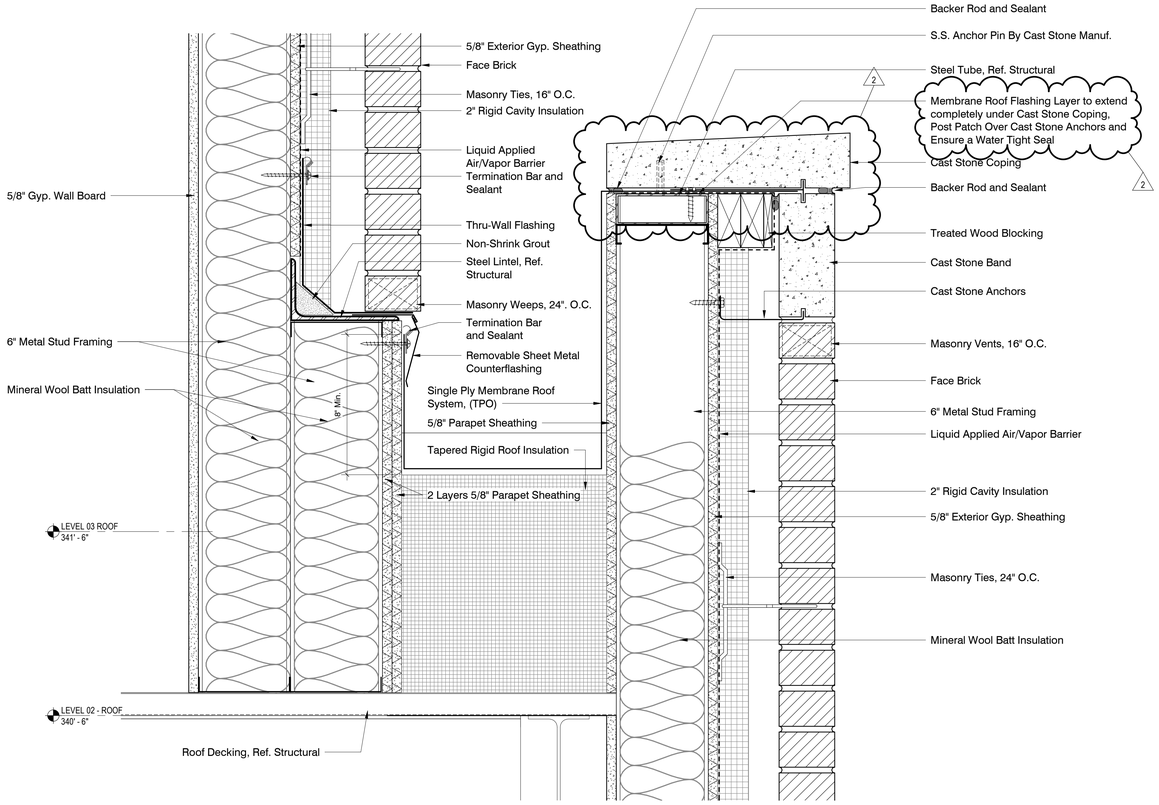
High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

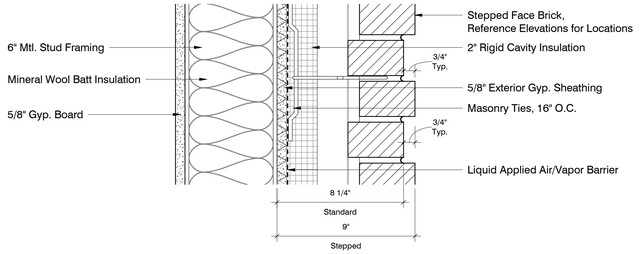
Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/2022

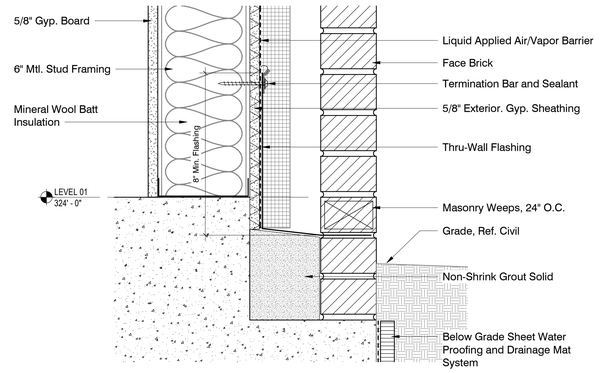
A-501
EXTERIOR DETAILS



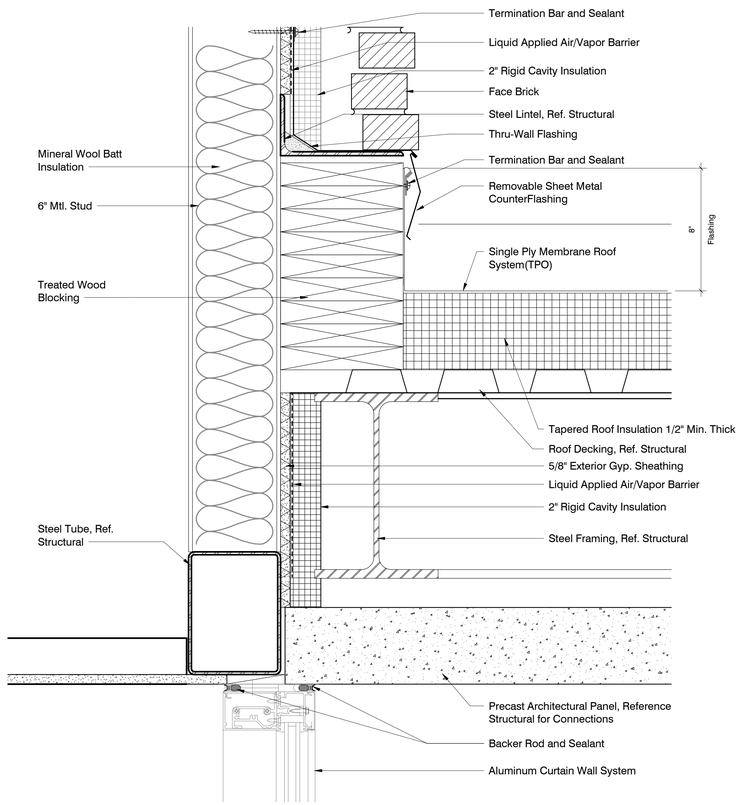
1 Exterior Wall Detail @ Roof 03
3" = 1'-0"



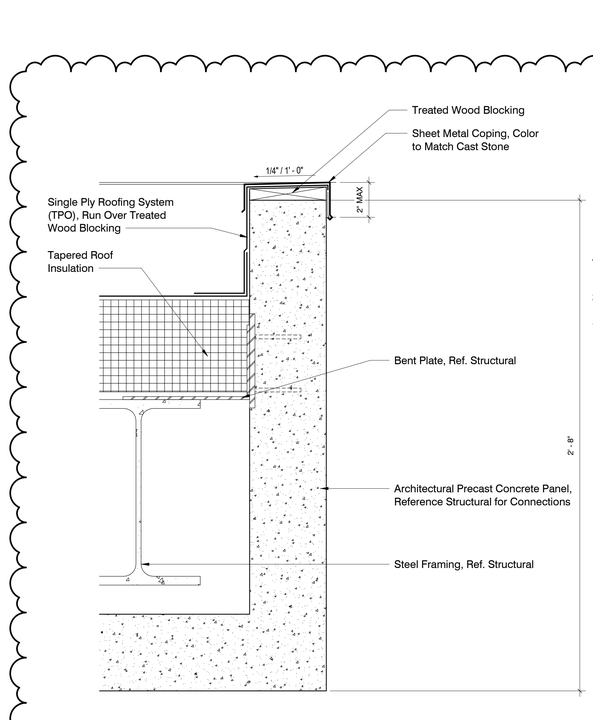
2 Exterior Wall Detail @ Stepped Brick Typ.
3" = 1'-0"



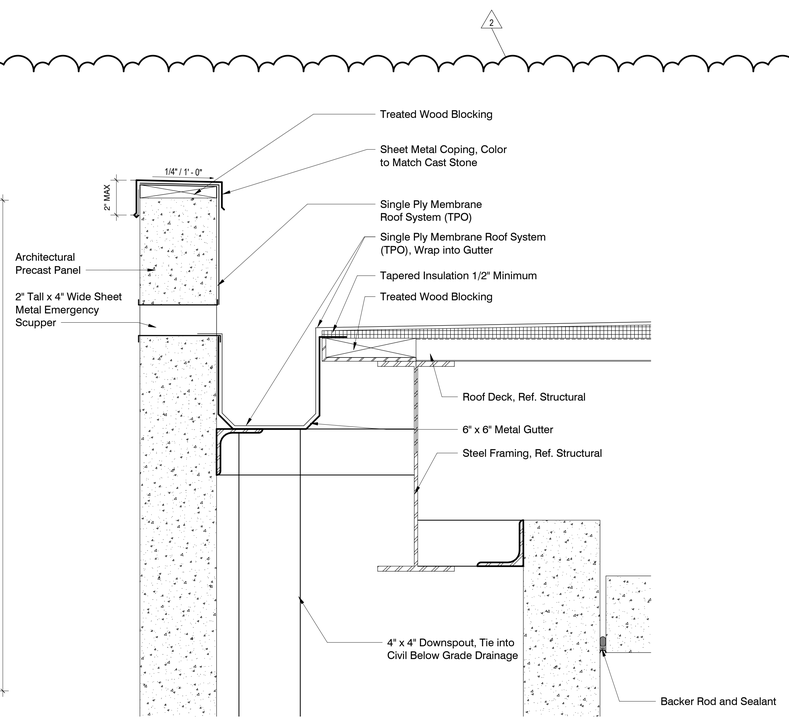
3 Exterior Wall Detail @ Grade 03
3" = 1'-0"



4 Exterior Wall Detail @ Roof 04
3" = 1'-0"



5 Exterior Wall Detail @ Roof 05
3" = 1'-0"



6 Exterior Wall Detail @ Roof 06
3" = 1'-0"

GENERAL NOTES

A. REFER TO SHEET G-011 FOR SYMBOLS.
B. ALL PARTITION TYPES TO BE 'D1' U.N.O.
C. MAINTAIN 6" CLEARANCE BETWEEN EDGE OF DOOR FRAME & INTERSECTING PARTITION, U.N.O.
D. DIMENSIONS AND ALIGNMENTS ARE FROM FACE OF FINISH TO FACE OF FINISH. PROVIDE FURRING AS NECESSARY TO ACHIEVE ALIGNMENTS SHOWN.
E. VERIFY DIMENSIONS NOTED "CLEAR", "HOLD", "MIN", OR "V.I.F." DURING LAYOUT OF WORK. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO PROCEEDING.
F. PROVIDE BLOCKING IN ALL PARTITIONS TO ACCOMODATE MILLWORK INSTALLATIONS & OTHER WALL & CEILING HUNG ELEMENTS AS REQUIRED REFER TO FURNITURE PLANS TO COORDINATE LOCATION OF OVERHEAD UNITS.
H. PROVIDE MOISTURE AND MOLD RESISTANT TYPE GYP. BD. AT ALL WET AREAS SCHEDULED.
J. FIRESAFE ALL FLOOR OPENINGS TO MEET PROPER FIRE RATING AT STRUCTURAL FLOORS. MAINTAIN FIRE RATING WHERE PENETRATIONS OCCUR AT RATED ASSEMBLIES.
K. ALL DOWNSPOUT BOOTS TO TIE INTO SUBGRADE DRAINAGE, REF CIVIL
L. DIMENSIONS FROM COLUMN GRID LINE TO EXTERIOR FACE OF STUD AT EXTERIOR WALLS IS TYPICALLY 1' - 2" UNLESS NOTED OTHERWISE.
M. WHERE STRUCTURAL BEAMS/TRUSSES OR OTHER ELEMENTS PENETRATE WALLS, SEAL TIGHTLY AROUND THE STRUCTURAL FRAMING USING EITHER SPRAY FOAM OR ASCOUTICAL SEALANT TO ENSURE A SOUND PROOF, AIR TIGHT SEAL.WHERE ELEMENTS ARE VISIBLE, ACOUSTICAL SEALANT IS TO BE USED AND CLEANY INSTALLED.
N. FURNITURE IS OWNER PROVIDED, COORDINATE ELECTRICAL/DATA CONNECTIONS AS REQUIRED. REF. ELECTRICAL
O AT ALL CAST STONE JOINTS, PROVIDE 2 STAGE (2 LAYERS) OF BACKER ROD AND SEALANT

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com
REGISTERED ARCHITECT JASON M. ADDISMOND 23029 STATE OF MISSISSIPPI
Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

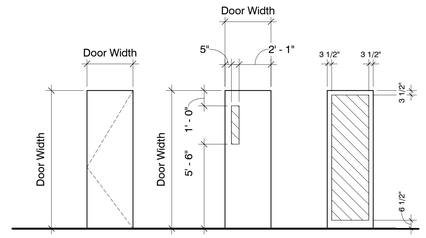
Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/2022

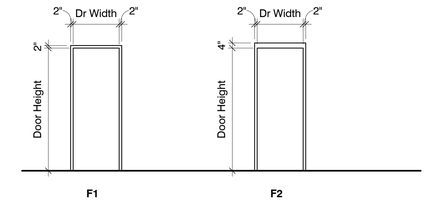
A-503
EXTERIOR DETAILS

DOOR SCHEDULE

NUMBER	Pair	DOOR WIDTH	DOOR HEIGHT	DOOR TYPE	DOOR MATERIAL	DOOR FINISH	DOOR GLASS	FRAME TYPE	FRAME MATERIAL	FRAME FINISH	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	ASSEMBLY RATING FIRE RATING	HARD WARE SET	REMARKS
001a	Yes	6' - 0"	10' - 0"	D1	HM	PT	N/A	F2	HM	PT	5/A531	6/A531	4/A531	-		
001b	No	8' - 0"	10' - 0"	D4	AL	AL	N/A	AL	AL	PT	8/A-531	7/A-531	Manuf.	-		Overhead Door
001c	No	8' - 0"	10' - 0"	D4	AL	AL	N/A	AL	AL	PT	8/A-531	7/A-531	Manuf.	-		Overhead Door
001d	No	8' - 0"	10' - 0"	D4	AL	AL	N/A	AL	AL	PT	Manuf.	Manuf.	Manuf.	-		Overhead Door
001e	No	3' - 6"	7' - 0"	D2	HM	PT	GL2	F1	HM	PT	1/A531	2/A531	3/A531			
002	Yes	6' - 0"	8' - 10"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
003	No	3' - 0"	8' - 10"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
004	No	3' - 0"	8' - 10"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
005a	No	4' - 0"	8' - 10"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	2 HR.		
005b	No	3' - 0"	9' - 0"	D1	HM	PT	N/A	F2	HM	PT	5/A531	6/A531	4/A531	-		
006a	No	4' - 0"	8' - 10"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
006b	No	3' - 0"	9' - 0"	D1	HM	PT	N/A	F2	HM	PT	5/A531	6/A531	4/A531	-		
007a	Yes	6' - 0"	10' - 0"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
007b	No	3' - 0"	10' - 0"	D1	HM	PT	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
101	Yes	6' - 0"	8' - 10"	D3	AL	AL	GL1	CW4	AL	Clear Anodic	Manuf.	Manuf.	4/A531	-		Curtain Wall Door
102	Yes	6' - 0"	8' - 10"	D3	AL	AL	GL2	CW5	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		Cutain Wall Door
103	No	3' - 0"	8' - 10"	D3	AL	AL	GL1	CW3	AL	Clear Anodic	Manuf.	Manuf.	4/A531	-		
105	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
106	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
107	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
108	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
109	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
110	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
111	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
112	No	3' - 0"	8' - 10"	D3	AL	AL	GL2	CW11	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		Curtain Wall Door
113	No	3' - 0"	8' - 10"	D3	AL	AL	GL1	CW8	AL	Clear Anodic	Manuf.	Manuf.	4/A531	-		
115	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF2	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
116	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF2	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
117	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF1	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
118	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF1	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
119	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF2	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
120	No	3' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	SF2	AL	Clear Anodic	Manuf.	Manuf.	3/A531	-		
121a	Yes	6' - 0"	8' - 10"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
121b	Yes	6' - 0"	10' - 0"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531	-		
122	Yes	8' - 0"	10' - 0"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531			
123	No	3' - 6"	10' - 0"	D1	WD	PLAM-01	N/A	F1	HM	PT	1/A531	2/A531	3/A531			
E-01a	No	5' - 6"	9' - 4"	Specs	Specs	Specs	N/A	Specs	Specs	Specs	Manuf.	Manuf.	Manuf.	-		Elevator Door, Card Reader Required to Lab
E-01b	No	5' - 6"	9' - 4"	Specs	Specs	Specs	N/A	Specs	Specs	Specs	Manuf.	Manuf.	Manuf.	-		Elevator Door
E-01c	No	5' - 6"	9' - 4"	Specs	Specs	Specs	N/A	Specs	Specs	Specs	Manuf.	Manuf.	Manuf.	-		Elevator Door, Card Reader Required to Lab
S-01a	No	3' - 0"	8' - 10"	D2	HM	PT	GL2	F1	HM	PT	1/A531	2/A531	3/A531	-		
S-01b	No	3' - 0"	8' - 10"	D2	WD	PLAM-01	GL2	F1	HM	PT	1/A531	2/A531	3/A531	-		
S-02a	No	3' - 0"	8' - 10"	D2	HM	PT	GL2	F1	HM	PT	1/A531	2/A531	3/A531	-		
S-02b	No	3' - 0"	9' - 0"	D1	HM	PT	N/A	F2	HM	PT	5/A531	6/A531	4/A531	-		
S-02c	No	3' - 0"	8' - 10"	D2	WD	PLAM-01	GL2	F1	HM	PT	1/A531	2/A531	3/A531	-		



Door Types
1/4" = 1'-0"



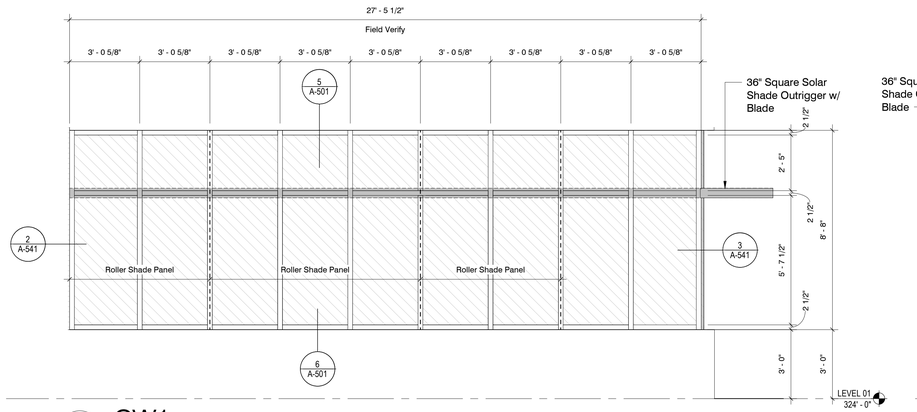
Frame Types
1/4" = 1'-0"

GENERAL NOTES

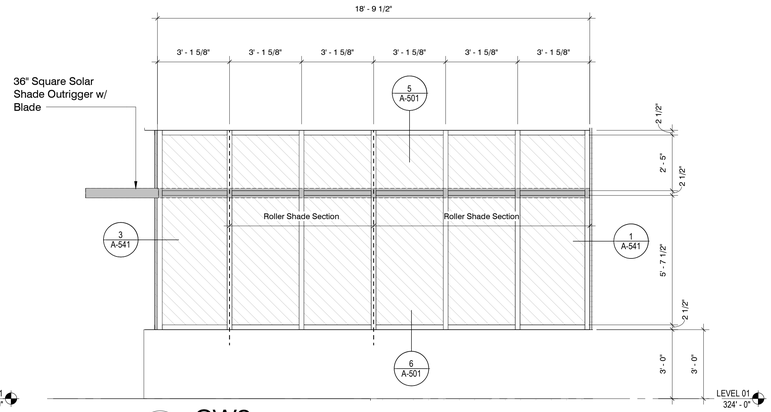
A. REFER TO SHEET G-011 FOR SYMBOLS.
B. ALL PARTITION TYPES TO BE 'D1' U.N.O.
C. MAINTAIN 6" CLEARANCE BETWEEN EDGE OF DOOR FRAME & INTERSECTING PARTITION, U.N.O.
D. DIMENSIONS AND ALIGNMENTS ARE FROM FACE OF FINISH TO FACE OF FINISH. PROVIDE FURRING AS NECESSARY TO ACHIEVE ALIGNMENTS SHOWN.
E. VERIFY DIMENSIONS NOTED "CLEAR", "HOLD", "MIN", OR "V.I.F." DURING LAYOUT OF WORK. NOTIFY ARCHITECT OF DISCREPANCIES PRIOR TO PROCEEDING.
F. PROVIDE BLOCKING IN ALL PARTITIONS TO ACCOMODATE MILLWORK INSTALLATIONS & OTHER WALL & CEILING HUNG ELEMENTS AS REQUIRED REFER TO FURNITURE PLANS TO COORDINATE LOCATION OF OVERHEAD UNITS.
H. PROVIDE MOISTURE AND MOLD RESISTANT TYPE GYP. BD. AT ALL WET AREAS SCHEDULED.
J. FIRESAFE ALL FLOOR OPENINGS TO MEET PROPER FIRE RATING AT STRUCTURAL FLOORS. MAINTAIN FIRE RATING WHERE PENETRATIONS OCCUR AT RATED ASSEMBLIES.
K. ALL DOWNSPOUT BOOTS TO TIE INTO SUBGRADE DRAINAGE, REF CIVIL
L. DIMENSIONS FROM COLUMN GRID LINE TO EXTERIOR FACE OF STUD AT EXTERIOR WALLS IS TYPICALLY 1' - 2" UNLESS NOTED OTHERWISE.
M WHERE STRUCTURAL BEAMS/TRUSSES OR OTHER ELEMENTS PENETRATE WALLS, SEAL TIGHTLY AROUND THE STRUCTURAL FRAMING USING EITHER SPRAY FOAM OR ASCOUTICAL SEALANT TO ENSURE A SOUND PROOF, AIR TIGHT SEAL.WHERE ELEMENTS ARE VISIBLE, ACOUSTICAL SEALANT IS TO BE USED AND CLEANY INSTALLED.
N. FURNITURE IS OWNER PROVIDED, COORDINATE ELECTRICAL/DATA CONNECTIONS AS REQUIRED, REF. ELECTRICAL
O AT ALL CAST STONE JOINTS, PROVIDE 2 STAGE (2 LAYERS) OF BACKER ROD AND SEALANT

Abbreviations:

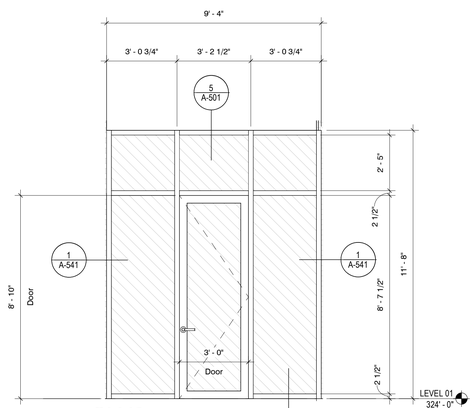
PT - Paint - See Spec Section 099113 & 099123
HM - Hollow Metal
AL - Aluminum
PLAM- Plastic Laminate
Manuf: Standard Manufacturers Details, reference related specifications section.



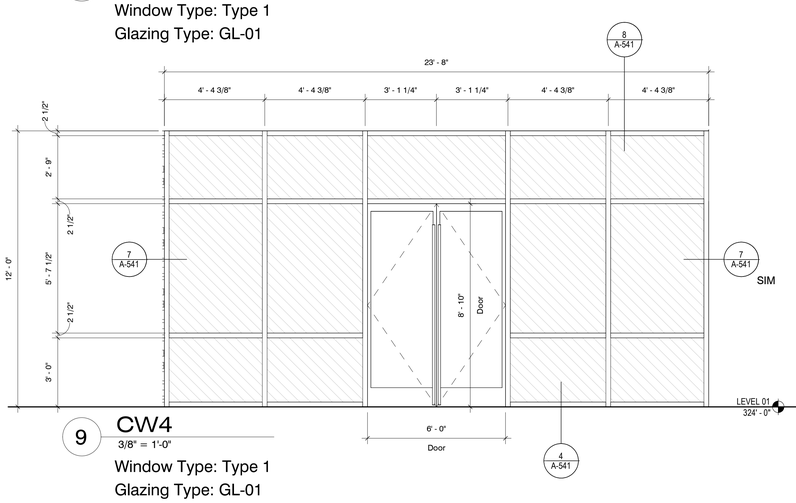
1 **CW1**
3/8" = 1'-0"
Window Type: Type 1
Glazing Type: GL-01



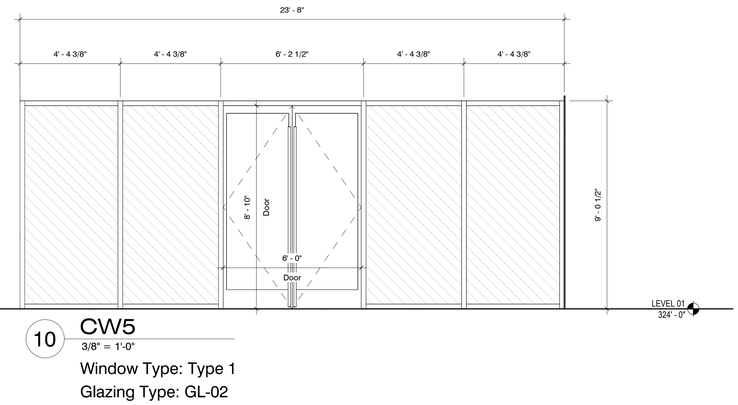
7 **CW2**
3/8" = 1'-0"
Window Type: Type 1
Glazing Type: GL-01



8 **CW3**
3/8" = 1'-0"
Glazing Type: GL-01
Window Type: Type 1



9 **CW4**
3/8" = 1'-0"
Window Type: Type 1
Glazing Type: GL-01



10 **CW5**
3/8" = 1'-0"
Window Type: Type 1
Glazing Type: GL-02

Window Type Notes

Type 1: Exterior Aluminum Curtain Wall System.
- a. 2 1/2" Sightline
- b. 6" Depth
- c. Thermally Broken
- d. Finish: Clear Anodized

Type 2: Interior Aluminum Storefront
- a. 2" Sightline
- b. 4.5" Depth
- c. Non-Thermally Broken
- d. Finish: Clear Anodized

Type 3: Double Glazed Frameless Partition System
- a. 1" Sightline (Top, Bottom, Sides) - 1/8" Clear H Section at glass joints
- b. 4" Depth
- c. Non- thermally Broken
- d. Finish: Clear Anodized
- e. Double Glazed

Glass Type Notes

GL-01: 1" Exterior Insulated Glazing, Reference Spec Section 088000

GL-02: 1/4" Monolithic Glazing, Reference Spec Section 088000

GL-03: 3/4" Laminated Glazing, Reference Spec Section 088000

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com
REGISTERED ARCHITECT JASON M. ADDINGTON 2029 STATE OF MISSISSIPPI
Gensler

High Performance Computing Data Center
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/2022

A-621
DOOR, FRAME, & WINDOW TYPES

STRUCTURAL NOTES

THE STRUCTURAL NOTES DEFINE GENERAL DESIGN AND MATERIAL REQUIREMENTS AND ARE INTENDED TO SUPPLEMENT, BUT NOT REPLACE, THE PROJECT SPECIFICATIONS

DESIGN CRITERIA

1. Building Code: 2018 International Building Code and ASCE 7-16 (except Chapter 14)

   1.1. Building Risk Category: II

2. Design Loads

   2.1. Uniform Floor Live Loads (reduced per Building Code, UNO)

Lower-Level Floor Slab	150 psf
First Floor Offices	50 psf
First Floor Lab and Shop	100 psf
First Floor Corridors	100 psf
First Floor Data Hall Machine Room	100 psf
Partitions	20 psf (except when live load > 80 psf)
Stairs	100 psf
Mechanical Rooms	150 psf

   2.2. Roof Loads

   2.2.1. Uniform Roof Live Load (reduced per Building Code) 20 psf

   2.2.2. Rain Loads: Rain Intensity, i = 7.55in/hr (15-min duration/ 100 yr MRI)

   2.3. Wind Loads:
   Basic Wind Speed V(ult) = 108 mph; V(asd) = 84 mph
   Wind Exposure C
   Internal Pressure Coefficient, GC_{pi} = +/-0.18 (Enclosed Building)
   Directionality Factor, K_d = 0.85

   2.3.1. Component and Cladding Pressures (psf)
   2.3.2. Note: Positive Pressures act Toward the Surface; Negative Away.

Roof C&C Pressures - Without Overhangs (psf)				
Eff. Area (sq. ft.)	Zone 1	Zone 1'	Zone 2	Zone 3
10	+16 / -49	+16 / -28.1	+16 / -64.6	+16 / -88.1
20	+16 / -45.8	+16 / -28.1	+16 / -60.5	+16 / -79.8
50	+16 / -41.5	+16 / -28.1	+16 / -55	+16 / -68.8
100	+16 / -38.2	+16 / -28.1	+16 / -50.8	+16 / -60.5
200	+16 / -35	+16 / -24.2	+16 / -46.7	+16 / -52.2
500	+16 / -30.7	+16 / -19	+16 / -41.2	+16 / -41.2

Roof C&C Pressures - With Overhangs (psf)				
Eff. Area (sq. ft.)	Zone 1	Zone 1'	Zone 2	Zone 3
10	+16 / -49	+16 / -49	+16 / -64.6	+16 / -64.6
20	+16 / -48.2	+16 / -48.2	+16 / -59.1	+16 / -59.1
50	+16 / -47.2	+16 / -47.2	+16 / -51.8	+16 / -51.8
100	+16 / -46.4	+16 / -46.4	+16 / -46.2	+16 / -46.2
200	+16 / -39.6	+16 / -39.6	+16 / -40.7	+16 / -40.7
500	+16 / -30.7	+16 / -30.7	+16 / -33.4	+16 / -33.4

Wall C&C Pressures (psf)			Parapet C&C Pressures (psf)	
Eff. Area (sq. ft.)	Zone 4	Zone 5	Zone 4 / Zone 2	Zone 5 / Zone 3
10	+28.1 / -30.5	+28.1 / -37.5	+/- 85.4	+/- 109.4
20	+26.9 / -29.2	+26.9 / -35	+/- 79.9	+/- 99.6
50	+25.2 / -27.6	+25.2 / -31.7	+/- 72.6	+/- 86.7
100	+24 / -26.3	+24 / -29.2	+/- 67	+/- 76.9
200	+22.8 / -25.1	+22.8 / -26.7	+/- 61.5	+/- 67.1
500	+21.1 / -23.4	+21.1 / -23.4	-	-

   2.4. Earthquake Loads:
   Seismic Importance Factor, I = 1.00
   Mapped Spectral Response Accelerations, S_S and S_1 = 0.222 and 0.114
   Site Class: C
   Spectral Response Coefficients, S_{DS} and S_{D1} = 0.192 and 0.114
   Seismic Design Category: B
   Basic Seismic-Force-Resisting System: Steel system not specifically detail for seismic design
   Response Modification Factor, R = 3.0
   Analysis Procedure: Equivalent Lateral Force Procedure

3. Structural Engineer is not responsible for the design of steel stairs, handrails, curtain wall/window wall systems, cold-formed steel framing, or other systems not shown in the Structural Documents. Such systems shall be designed, furnished, and installed as required by other portions of the Construction Documents.

4. Steel floor and roof assemblies and individual beams shall be considered "Restrained" (ASTM E119, Standard Test Methods for Fire Tests of Building Construction and Materials) for determining fireproofing thickness.

5. No explicit provisions have been made for future building expansion.

GENERAL

1. Reference to standards or specifications of technical societies, organizations, or associations means the standard or specification referenced by the governing Building Code shown on the Drawings, unless specifically noted otherwise.

2. Material, workmanship, and design shall conform to the referenced Building Code.

3. For dimensions not shown in the Structural Drawings, see the Architectural Drawings.

4. Contractor responsibilities include, but are not limited to, the following:

   4.1 Coordinate the Structural Documents with the Architectural, Mechanical, Electrical, Plumbing, and Civil Documents. Architect/Structural Engineer shall be notified of any discrepancy or omission prior to installation of associated work.

   4.2 Coordinate Structural Documents with Architectural and MPE Documents for location and quantity of miscellaneous framing for items such as roof drains, suspended or supported mechanical units, etc. Refer to Architectural and MPE Documents for additional miscellaneous structural elements that may not appear in the Structural Documents.

   4.3 Equipment/Framing Verification

   4.3.1 Mechanical Equipment: Submit actual weights of equipment to be used for review at least 3 weeks prior to fabrication and construction. Coordinate opening sizes and locations with Mechanical Contractor.

   4.3.2 Elevator Loads: Submit elevator shop drawings and loads (machine beam/slab, and guide rails) for review prior to detailing, fabrication and installation of elevator system.

   4.3.3 Miscellaneous Framing: Verify framing shown on the Structural Drawings for mechanical equipment, Owner-furnished items, partitions, etc. is consistent with the requirements of such items.

   4.4 The structure is stable only in its completed form. Temporary supports required for stability during all intermediate stages of construction shall be designed, furnished, and installed by the Contractor.

   4.5 Contractor has sole responsibility for jobsite safety and complying with all health and safety precautions as required by any regulatory agency. In performing construction observation visits to the jobsite, the Structural Engineer will have no control over, nor responsibility for, the Contractor's means, methods, sequences, techniques, or Procedures in performing the work.

   4.6 Contractor is responsible for locating concrete reinforcement prior to installation of post-installed anchors, through bolts, or other post-installed items in concrete. Existing reinforcement including post-tensioning tendons shall not be cut or otherwise damaged while installing post-installed anchors.

5. Contractor shall field verify all existing conditions, elevations, and site conditions prior to construction and fabrication. Contractor shall immediately notify Structural Engineer of any existing conditions that are in conflict with the Structural Documents.

SUBMITTALS

1. Shop Drawings and Submittals

   1.1 Reproduction of Structural Drawings for shop drawings is not permitted.

   1.2 Electronic drawing files will not be provided to the Contractor.

   1.3 Review of shop drawings will be for conformance with the Construction Documents regarding arrangement and sizes of members and the Contractor's interpretation of the design loads, if applicable, and Construction Document details. Such review shall not relieve the Contractor of the full responsibility to comply with the Construction Documents.

2. Submittals

   2.1 The Structural Quality Assurance Plan and Specifications identify the required submittals. Prior to (or with) the first submittal, Contractor shall submit a list of all required submittals for Engineer's review.

3. Deferred Submittals

   3.1 Deferred Submittals include those portions of the project that are furnished by the Contractor and designed by someone other than the Engineer of Record and are submitted at the time of the application. Deferred Submittals shall be submitted to the Building Official prior to fabrication and installation.

   3.2 Submittal documents for Deferred Submittals:

   3.2.1 Shall be included in the Contractor's scope of services and shall be sealed by an Engineer licensed in the project state. Design of Deferred Submittals shall be in accordance with the governing Building Code indicated above.

   3.2.2 Shall be submitted to the registered design professional in responsible charge who shall review them and forward to the Building Official with a notation indicating the deferred submittal documents have been reviewed and that they have been found in general conformance with the design of the building. Deferred submittal items shall not be installed until the design and submittal documents have been approved by the Building Official.

   3.3 The following shall be considered Deferred Submittals:
   Structural Precast Concrete
   Steel Connections - See "Structural Steel" Section
   Cold-Formed Exterior Steel Stud Framing
   Steel Stairs and Handrails
   Curtainwall/Window Wall Systems
   Elevators

FOUNDATION

1. Geotechnical Report: High Performance Computing Data Center
   Prepared by Burns Cooley Dennis, Inc.
   Report No. 210115, Dated June 2, 2021

   1.1 It is recommended that the Contractor become familiar with the subsurface conditions that will be encountered and obtain a copy of the geotechnical report and any supplemental reports. The report(s) may be included as a reference document within the construction documents. Otherwise the Contractor should contact the Owner to obtain a copy of the report(s).

2. Building Pad Preparation

   2.1 Strip vegetation and topsoil.

   2.2 For building supported above crawl space by drilled piers, no special earthwork is required except for grading for drainage.

2 2.3 At ramps, stairs, sidewalks directly adjacent to building undercut a minimum of 3-feet below bottom of foundation members or slabs and at the Electrical Transformer mat slab undercut a minimum of 5-feet and extent lateral the same distance as the thickness of the buffer and replace with compacted structural fill.

3. Drilled Piers: Soil Bearing Capacity 20,000 psf
   Skin Friction Capacity 600 psf

REINFORCEMENT

1. Reinforcing Bars: ASTM A615, Grade 60

   1.1 Reinforcing bars are not to be welded.

2. Welded Wire Reinforcement (WWR): ASTM A1064, 8" minimum side and end laps

3. Reinforcement Placement (UNO)

   3.1 Concrete Reinforcement Cover

Below Grade:	Unformed	3" clear
	Formed	2" clear
Walls		3/4" clear
Pilaster (Ties)		1 1/2" clear
Beams/Girders (Stirrups)		1 1/2" clear
Slabs		3/4" clear

4. Reinforcement Splices

   4.1 Reinforcement marked "Continuous" can be spliced at locations determined by Contractor. All other reinforcement shall be spliced only at locations shown or noted, unless approved in writing by Structural Engineer.

   4.2 Splice Lengths (UNO)

   Concrete Reinforcement: See Concrete Lap Splice Tables in Drawings

CAST-IN-PLACE CONCRETE

1. Concrete Properties

   1.1 Normal Weight Structural Concrete

	28-Day, f'c (min.) (max.)	w/cm Ratio	Entrained Air
Drilled Piers	3,000 psi	----	None Required
Mat Foundation	3,000 psi	----	None Required
Grade Beams	3,000 psi	----	None Required
Basement Walls, Retaining Walls	4,000 psi	----	None Required
Wall Pilasters	4,000 psi	----	None Required
Slabs on Composite Steel Deck	3,500 psi	0.48	None Required
Walls	3,000 psi	0.50	None Required
Beams	3,000 psi	0.48	None Required
Topping	3,000 psi	0.48	None Required
Mechanical Equipment Pads:			
Interior	3,000 psi	----	None Required
Exterior	3,000 psi	----	5.0 +/- 1.5%
Mud Slab	2,500 psi	----	None Required
All Other Concrete	5,000 psi	0.40	5.0 +/- 1.5%
Aggressive Environment:			
Loading Dock Walls	5,000 psi	0.40	6.0 +/- 1.5%
Site Retaining Walls	5,000 psi	0.40	6.0 +/- 1.5%
Exposed Framed Slabs	5,000 psi	0.40	6.0 +/- 1.5%

   Note: All concrete shall be assigned the exposure classes FO, SO, WO, and CO; except concrete in Aggressive Environment shall be assigned the exposure classes F3, S3, W1, and C2 (see ACI 318).

2. Construction Joint Locations: No horizontal construction joints are permitted except as shown on the Structural Drawings. Obtain written consent for additional joints.

3. Pipes or ducts shall not exceed one-third the slab or wall thickness unless specifically detailed. See mechanical and electrical drawings for location of sleeves, accessories, etc.

   3.1 Do not install conduits, pipes, ducts, or sleeves in cast-in-place concrete columns unless approved in writing by licensed design professional.

   3.2 Conduit shall not be installed within 4½-in. composite slabs and is not preferred to be installed in 6-in. composite slab. However, if a limited quantity of conduit must be installed within the 6-in. composite slab, the conduit outside diameter shall not exceed 1", no crossover can occur, and conduit runs shall be spaced at 18" with a minimum of 3/4" cover. Where possible, conduit should be installed within the low flutes of the composite deck.

4. Concrete floors supported by composite steel deck are to be finished level. The weight of the wet concrete will cause deflection of the steel framing.

   4.1 Concrete overruns are to be anticipated and included in the Contractor's Bid.

5. Special Finishes: Refer to Architectural Drawings for molds, grooves, ornaments, clips or grounds required to be encased in concrete and for location of floor finishes and slab depressions.

6. Defect Repair: Honey-combing, spalls, cracks, etc. shall be repaired. Extent of defective area to be determined by the Structural Engineer.

7. Curing

   7.1 Begin curing procedures immediately following commencement of the finishing operation.

   7.2 Concrete shall be moist cured in accordance with ACI 308. See Specification for additional information.

   7.3 All concrete topping slabs shall be wet cured a minimum of 7 days in strict accordance with ACI 301. The acceptable methods of wet curing are ponding, continuous fogging, continuous sprinkling; or application of mats or fabric kept continuously wet.

NON-SHRINK GROUTING

1. Non-shrink grout under steel base plates shall be non-metallic with minimum compressive strength of 5000 psi at 28 days.

2. Non-shrink grout used for patching, repair, and other specific applications shall be submitted for review and approval by engineer.

STRUCTURAL PRECAST CONCRETE

1. Precast concrete design, manufacture and erection shall conform to ACI 318 and PCI Manual 116.

2. Precast Design Loads

   2.1 Precast Members: Superimposed loads as given below in addition to the self-weight of the precast member, toppings, etc.

   Dead Loads: Floors 10 psf MPE, Miscellaneous
   20 psf Partitions

   Live Loads: See Design Criteria above.

   2.2 Effects to be considered by the Precast Design Engineer in the design of the precast elements and connections include, but are not limited to, the following:

   Gravity
   Wind
   Seismic
   Differential temperature between panel faces
   Eccentricity of applied loads
   Lateral earth pressure
   Loads from materials supported by panels
   Volumetric changes due to temperature, creep, & shrinkage
   Handrails
   Impact on panels designed as guardrails
   Erection loads
   Load combinations shall be in accordance with the Building Code.

3. Design of structural precast elements and their connections shall be the sole responsibility of the Contractor. Submit shop drawings, design load data, and support reactions of precast elements and their connections sealed by an Engineer licensed in the project state.

4. Concrete Minimum 28-day Compressive Strength, f'c = 5000 psi.

5. Openings and Embedded Items: Coordinate with Architectural, Mechanical, Electrical and Plumbing Contract Documents.

ARCHITECTURAL PRECAST CONCRETE

1. Design of architectural precast elements and their connections shall be the sole responsibility of the Contractor. Submit shop drawings, design load data, and support reactions of precast elements and their connections sealed by an Engineer licensed in the project state.

2. Connections: Connection concepts only are shown in sections and details of the Contract Documents. The design and frequency of connections shall be the responsibility of the Precast Supplier and the Precast Design Engineer in coordination with the panel design itself. Shop drawings shall adequately show the architectural precast panel attachment locations to the structure.

CAST STONE

1. Connections shown for precast elements (cast stone) are minimum conditions provided to show the basic support elements considered in the design. Additional or modified support connections may be required. The Contractor and cast stone manufacturer shall be responsible for all cast stone design including support connections. These elements shall be designed by a specialty engineer licensed in the project state. Shop drawings and calculations shall be sealed and submitted to the Architect/Engineer for review. The design shall distribute the load to the structure in the same general fashion as shown in the details. The specialty engineer shall also design any additional tie-backs and stability connections required for the support of the cast stone. All embedments, pins, and bolts for the cast stone shall be stainless steel. See specifications for additional information.

STRUCTURAL DRAWING INDEX

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capitol Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
No. 21331
STATE OF MISSISSIPPI

Gensler

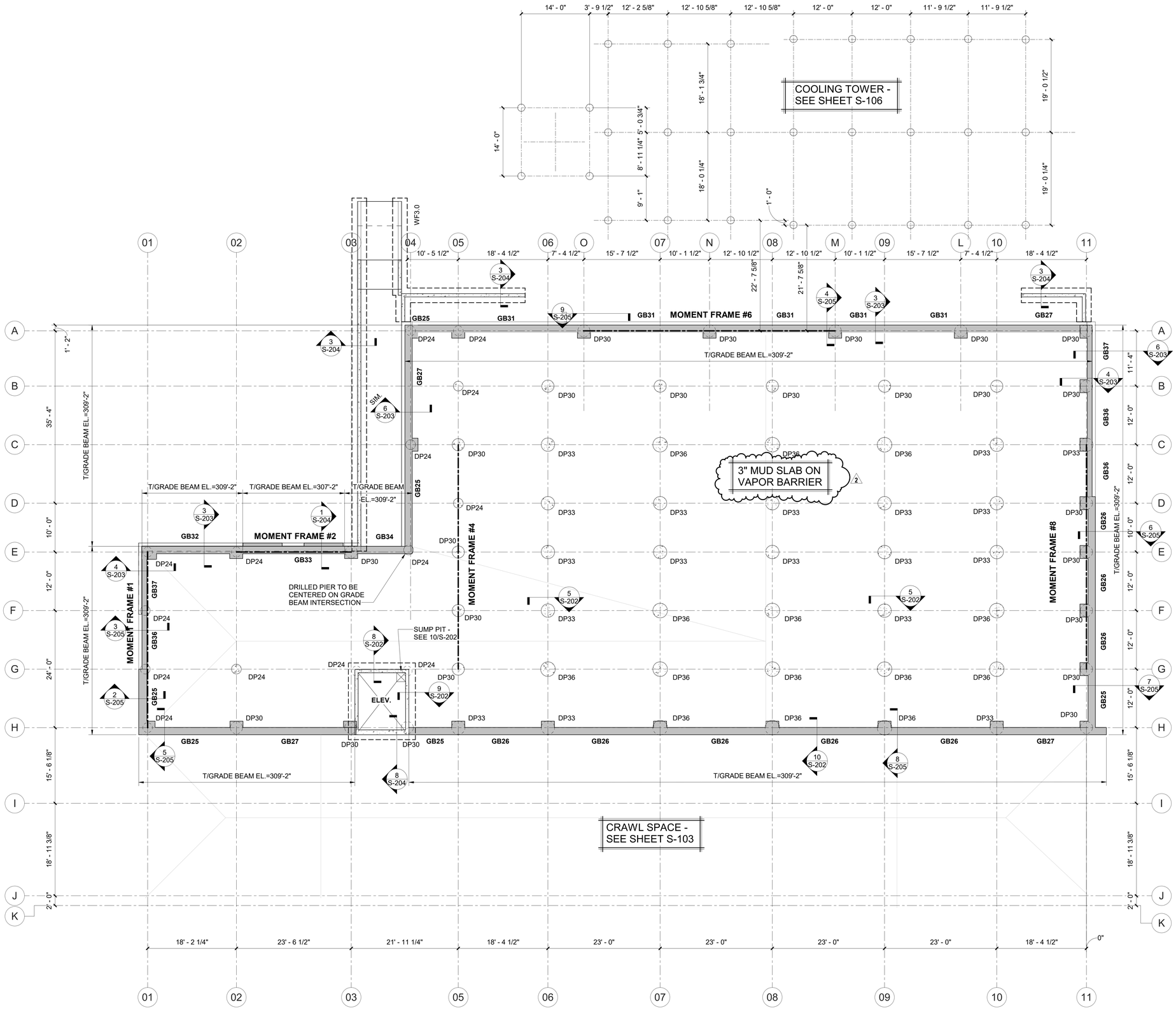
Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

High Performance Computing Data Center
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

S-001
STRUCTURAL NOTES



1 LOWER LEVEL FOUNDATION PLAN
SCALE: 1/8" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHACHERER REGISTERED PROFESSIONAL ENGINEER 21331 STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

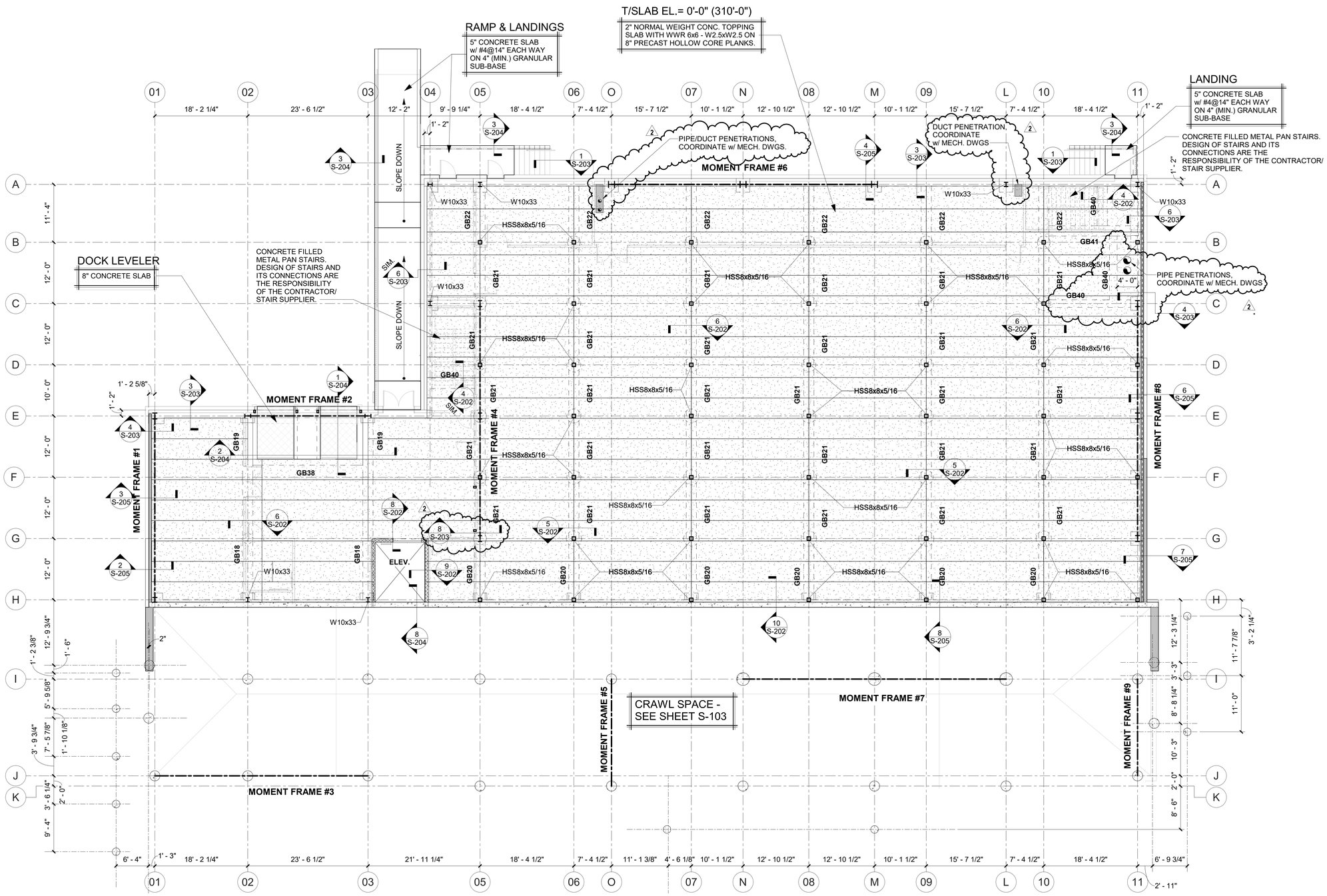
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-101
LOWER LEVEL FOUNDATION PLAN



1 EQUIPMENT ROOM LEVEL FLOOR FRAMING
SCALE: 1/8" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

THOMAS C. SCHACHERER
REGISTERED PROFESSIONAL ENGINEER
21331
STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

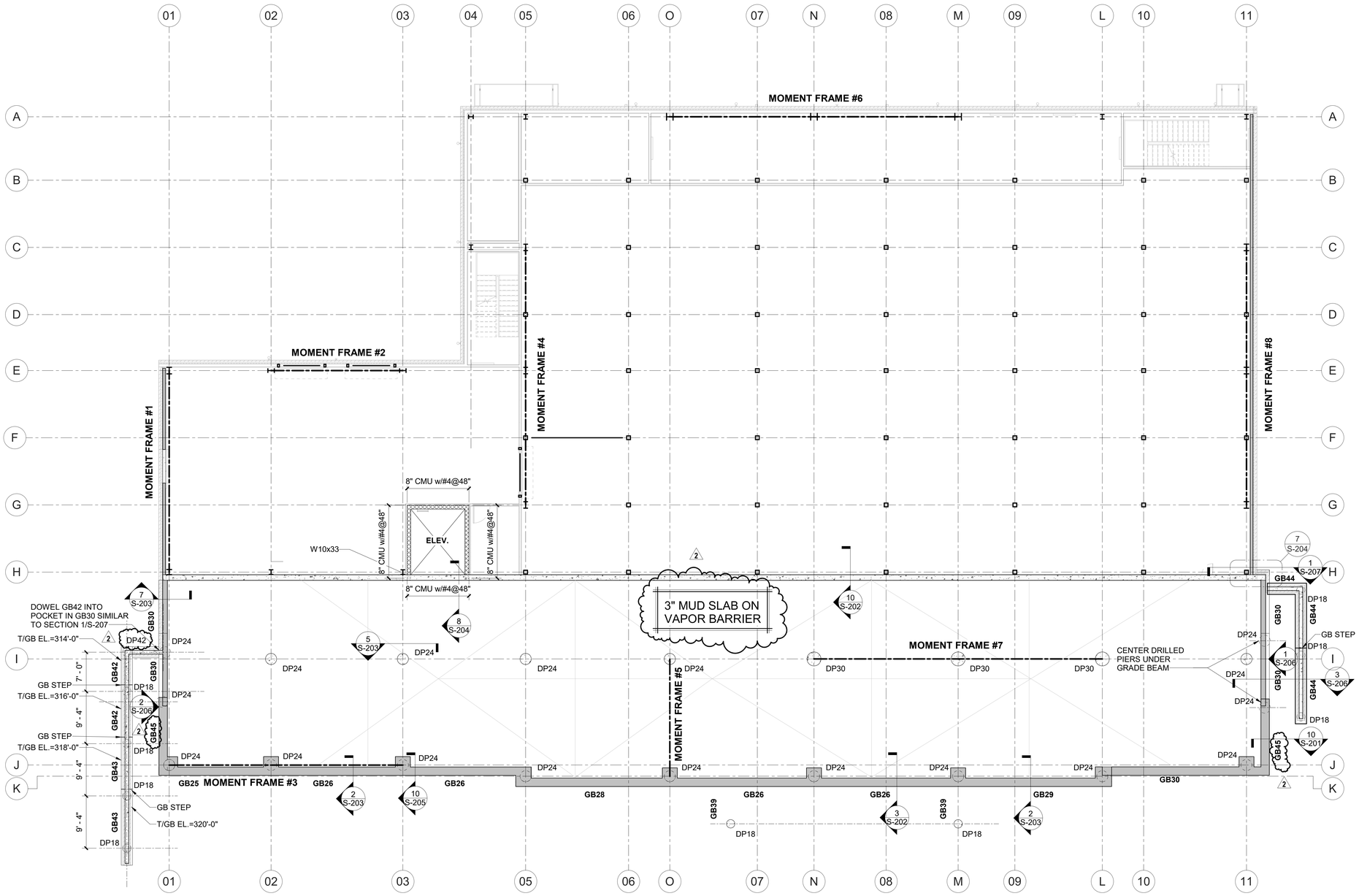
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
P. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-102
EQUIPMENT ROOM LEVEL FLOOR FRAMING



1 LEVEL 01 CRAWL SPACE PLAN
SCALE: 1/8" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
21331
STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-103
LEVEL 01 CRAWL SPACE PLAN

Typical Framing Sheet and Detail References

Framing Notes

1. ALL DIMENSIONS ARE TO BE VERIFIED WITH ARCHITECTURAL DRAWINGS BEFORE DETAILING AND CONSTRUCTION ARE TO BEGIN. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS DIMENSIONS SHOWN ARE TO FACE OF WALL.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS RELATED TO THE NEW BUILDING CONSTRUCTION PRIOR TO FABRICATION AND CONSTRUCTION OF THE NEW BUILDING.
3. ⋈ INDICATES WELD-THRU MOMENT CONNECTION. SEE 5/S-302
4. COORDINATE ALL MECHANICAL OPENING SIZES AND LOCATIONS WITH MP&E DRAWINGS.
5. BEAMS SHALL BE EQUALLY SPACED BETWEEN COLUMN CENTERLINES U.N.O.
6. SEE ARCHITECTURAL DRAWINGS FOR FLOOR TOPPINGS AND FINISHES.

T/SLAB = (324'-0")
6" NORMAL WEIGHT CONCRETE SLAB WITH WWR 6x6-W1.4 x W1.4 AND 2" COMPOSITE STEEL DECK (GALV.) TOTAL THICKNESS = 6"
SEE 1/S-301 FOR DECK ATTACHMENT DETAIL.

T/SLAB = (324'-0")
4 1/2" NORMAL WEIGHT CONCRETE SLAB WITH WWR 6x6-W1.4 x W1.4 AND 2" COMPOSITE STEEL DECK (GALV.) TOTAL THICKNESS = 4 1/2"
SEE 1/S-301 FOR DECK ATTACHMENT DETAIL.

CONCRETE FILLED METAL PAN STAIRS. DESIGN OF STAIRS AND ITS CONNECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR/STAIR SUPPLIER.

CONCRETE FILLED METAL PAN STAIRS. DESIGN OF STAIRS AND ITS CONNECTIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR/STAIR SUPPLIER.

COORDINATE w/MECH. PIPING

HSS6x6x1/4, COORDINATE LOCATIONS OF HSS WITH CANOPY SUPPLIER

T/ACCESS FLOOR EL. =324'-0"
T/STEEL EL. = 323'-0"

T/SLAB EL.= (324'-0")
2" NORMAL WEIGHT CONC. TOPPING SLAB WITH WWR 6x6 - W2.5xW2.5 ON 8" PRECAST HOLLOW CORE PLANKS.

MOMENT FRAME #1
MOMENT FRAME #2
MOMENT FRAME #3
MOMENT FRAME #4
MOMENT FRAME #5
MOMENT FRAME #6
MOMENT FRAME #7
MOMENT FRAME #8
MOMENT FRAME #9

BEAM LEGEND

BEAM SIZE — STUD QUANTITY (COMPOSITE BEAMS ONLY) — REACTION

W16x26 (20) R=30k

NOTES 1. STUDS TO BE UNIFORMLY SPACED ALONG BEAM.
2. FOR BEAMS SUPPORTING COMPOSITE SLAB AND w/ NO STUDS INDICATED (e.g. AT MOMENT FRAMES), PROVIDE STUDS @ 24" TYP.
3. EACH END OF BEAM SHALL BE DESIGNED FOR THE VERTICAL AND HORIZONTAL END REACTIONS THAT ARE BASED ON THE LRFD LOAD COMBINATIONS.

MISCELLANEOUS BEAM MARKS

B1 = W10x12 (@ 12") R=15k
B2 = W12x14 (@ 12") R=15k
B3 = W12x26 (@ 12") R=25k

1 LEVEL 01 FLOOR FRAMING PLAN
SCALE: 1/8" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHACHT — REGISTERED PROFESSIONAL ENGINEER — 21331 — STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

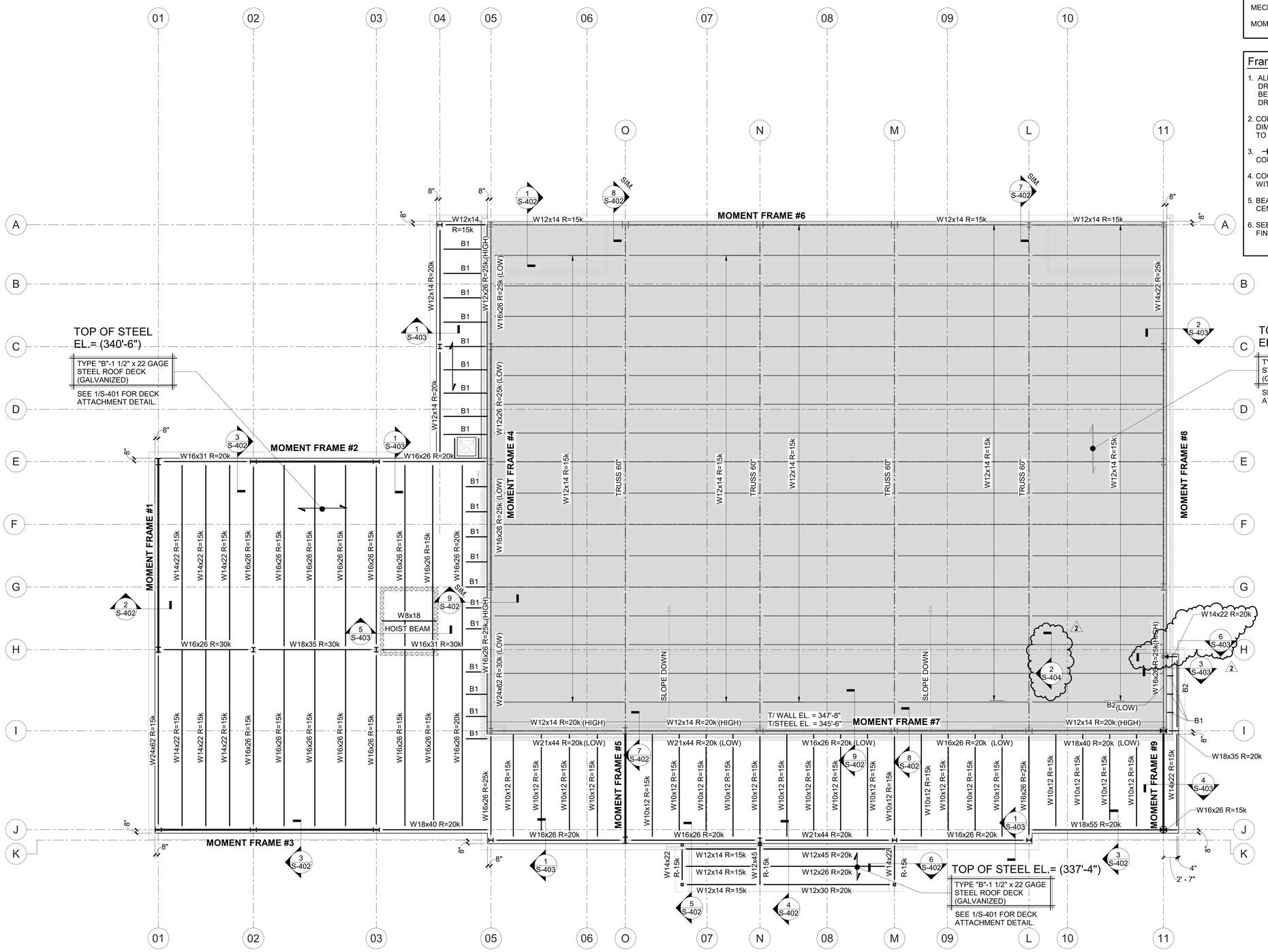
Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-104
LEVEL 01 FLOOR FRAMING PLAN

Typical Framing Sheet and Detail References

Framing Notes

1. ALL DIMENSIONS ARE TO BE VERIFIED WITH ARCHITECTURAL DRAWINGS BEFORE DETAILING AND CONSTRUCTION ARE TO BEGIN. FOR DIMENSIONS NOT SHOWN, SEE ARCHITECTURAL DRAWINGS DIMENSIONS SHOWN ARE TO FACE OF WALL.
2. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS AND DIMENSIONS RELATED TO THE NEW BUILDING CONSTRUCTION PRIOR TO FABRICATION AND CONSTRUCTION OF THE NEW BUILDING.
3. ⋈ ⋈ ⋈ INDICATES WELD-THRU MOMENT CONNECTION. SEE 5/S-302
4. COORDINATE ALL MECHANICAL OPENING SIZES AND LOCATIONS WITH MP&E DRAWINGS.
5. BEAMS SHALL BE EQUALLY SPACED BETWEEN COLUMN CENTERLINES U.N.O.
6. SEE ARCHITECTURAL DRAWINGS FOR FLOOR TOPPINGS AND FINISHES.



BEAM LEGEND

STUD QUANTITY (COMPOSITE BEAMS ONLY)
BEAM SIZE — W16x26 (20) R=30k — REACTION

NOTES 1. STUDS TO BE UNIFORMLY SPACED ALONG BEAM.
2. FOR BEAMS SUPPORTING COMPOSITE SLAB AND w/ NO STUDS INDICATED (e.g. AT MOMENT FRAMES), PROVIDE STUDS @ 24" TYP.
3. EACH END OF BEAM SHALL BE DESIGNED FOR THE VERTICAL AND HORIZONTAL END REACTIONS THAT ARE BASED ON THE LRFD LOAD COMBINATIONS.

MISCELLANEOUS BEAM MARKS

B1 = W10x12 (@ 12") R=15k
B2 = W12x14 (@ 12") R=15k
B3 = W12x26 (@ 12") R=25k

1 LEVEL 02-ROOF FRAMING PLAN
SCALE: 1/8" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHACHT — REGISTERED PROFESSIONAL ENGINEER — 21331 — STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

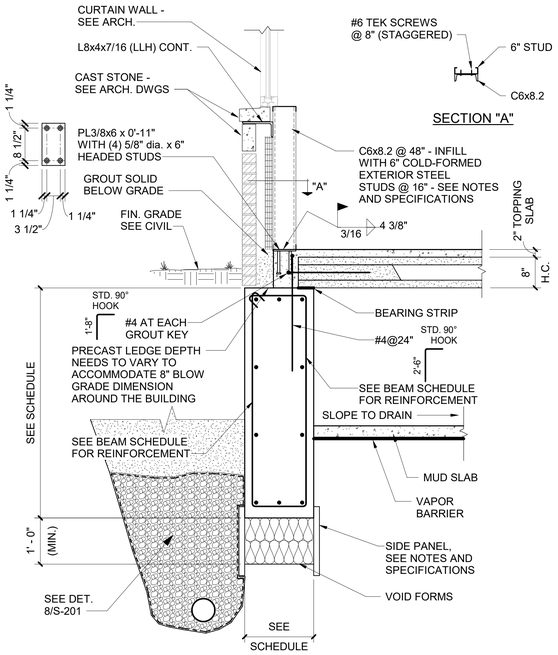
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

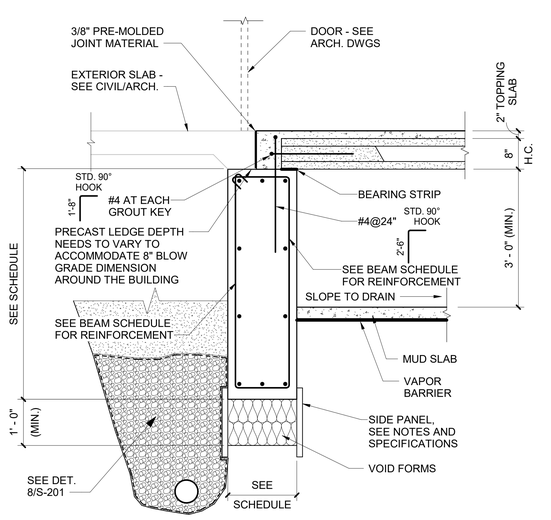
Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-105
LEVEL 02 ROOF FRAMING PLAN



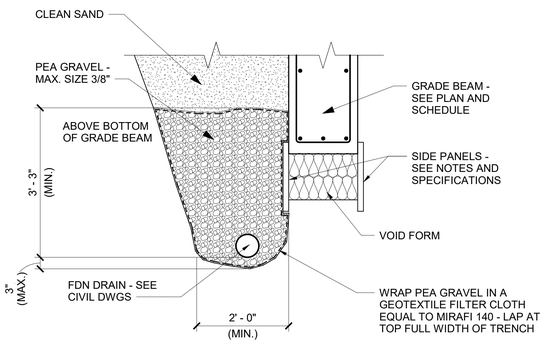
10 EXTERIOR WALL SECTION

3/4" = 1'-0"



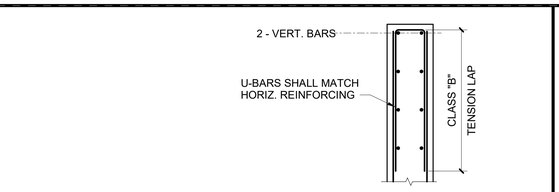
9 EXTERIOR WALL SECTION AT DOOR OPENING

3/4" = 1'-0"



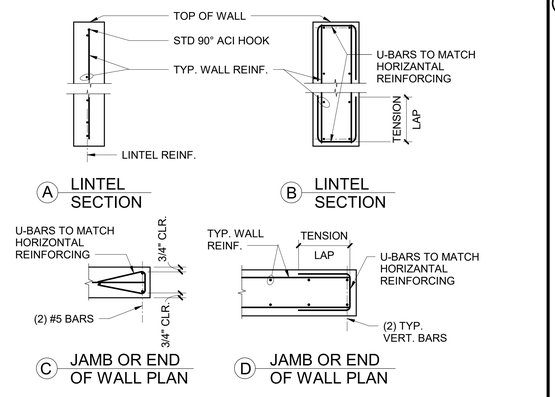
8 SECTION AT PERMETER GRADE BEAM

3/4" = 1'-0"

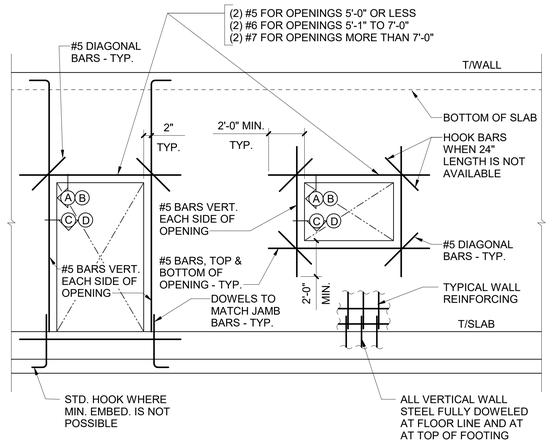


7 TYPICAL DOUBLE MAT REINFORCING PLACEMENT

3/4" = 1'-0"



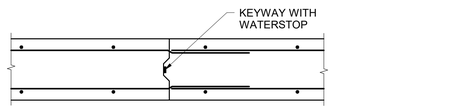
LINTEL REINFORCING



ELEVATION

6 MIN. REINFORCING AT CONCRETE WALL OPENINGS

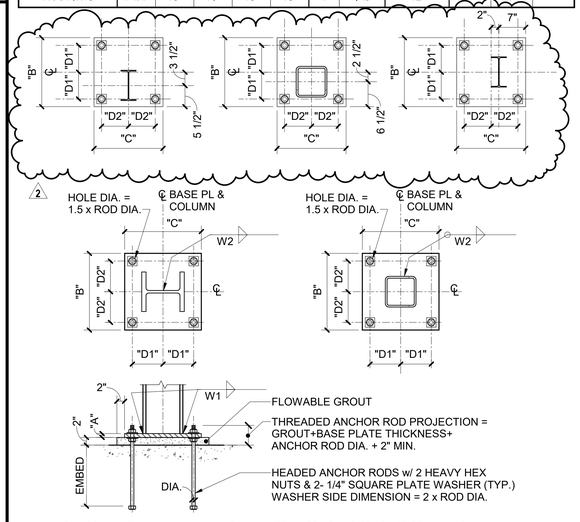
3/4" = 1'-0"



5 CONCRETE WALL JOINT DETAILS

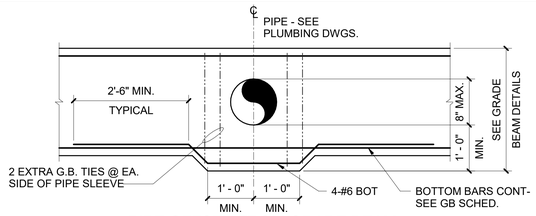
3/4" = 1'-0"

COLUMN	BASE PLATE					ANCHOR RODS			WELDS		
	A	B	C	D1	D2	No.	DIA.	EMBED.	W1	W2	W3
W10	1 1/4"	18"	18"	7"	7"	4	1"ø	12"	5/16	1/4	-
HSS8x8	1 1/4"	16"	16"	6"	6"	4	1"ø	12"	-	1/4	-
HSS10x10	1 1/4"	18"	18"	18"	18"	4	1"ø	12"	-	1/4	-

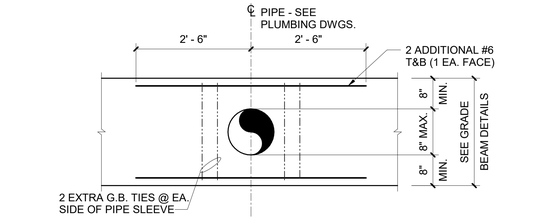


4 BASE PLATE AND ANCHOR ROD SCHEDULE

3/4" = 1'-0"



PIPE OFFSET FROM GRADE BEAM

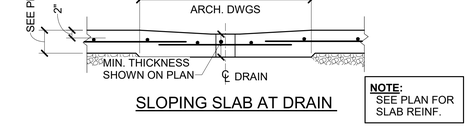


NOTE:
1. COORDINATE PIPE PENETRATION LOCATIONS WITH PLUMBING CONTRACTOR.
2. PROVIDE PIPE SLEEVE WITH MIN. INSIDE DIAMETER 2" LARGER THAN OUTSIDE DIAMETER OF PIPE.
3. WHERE SLEEVE CAN NOT BE LOCATED WITHIN MID-DEPTH OF GRADE BEAM, SEE OFFSET PIPE DETAIL.

PIPE CENTERED IN GRADE BEAM

3 TYPICAL GRADE BEAM SLEEVE DETAILS

3/4" = 1'-0"

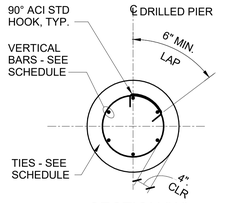


2 TYPICAL SLAB-ON-GROUND DETAILS

3/4" = 1'-0"

DP MARK	DRILLED PIER			REMARKS
	DIA. INCHES	VERT. REINF.	TIES	
DP18	18"	5-#7	#3@12"	
DP24	24"	6-#9	#3@12"	
DP30	30"	9-#9	#3@12"	
DP33	33"	10-#9	#3@12"	
DP36	36"	10-#10	#3@12"	

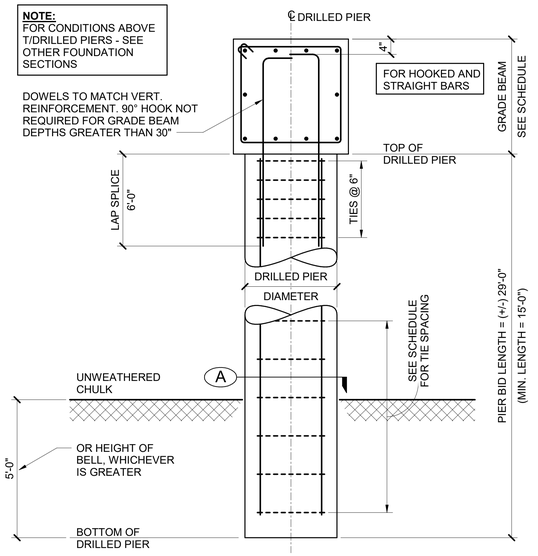
NOTE:
ENDS OF CIRCULAR TIES SHALL TERMINATE WITH STANDARD HOOKS THAT ENGAGE A VERTICAL BAR. OVERLAPS AT ENDS OF ADJACENT CIRCULAR TIES SHALL BE STAGGERED AROUND THE PERIMETER ENCLOSING THE VERTICAL REINFORCING.



SECTION "A"

FLOOR ELEV. = 310.0'

NOTE:
FOR CONDITIONS ABOVE T/DRILLED PIERS - SEE OTHER FOUNDATION SECTIONS



ELEVATION

1 DRILLED PIER SCHEDULE AND DETAIL

3/4" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
No. 21331
STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

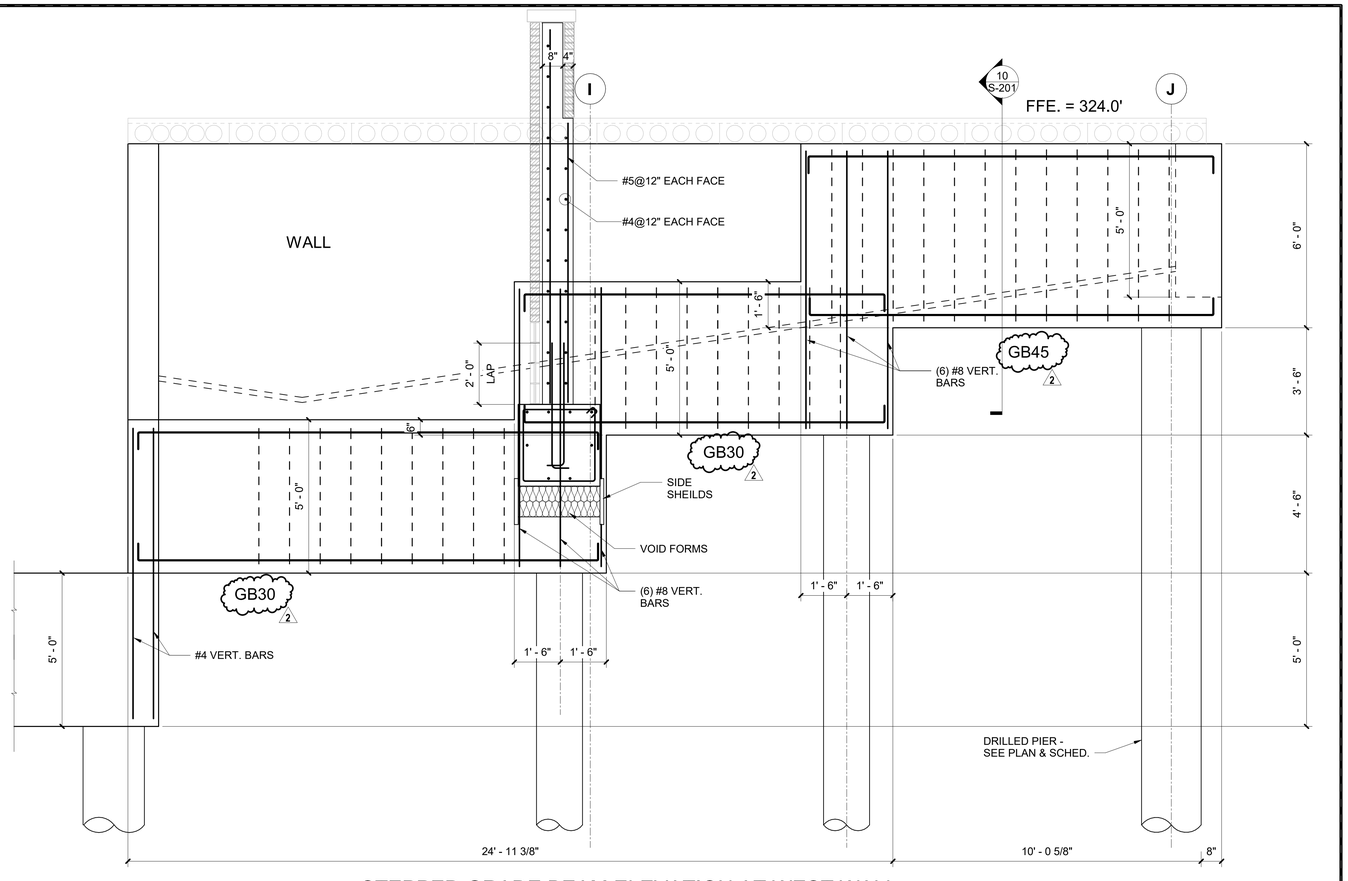
Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-201

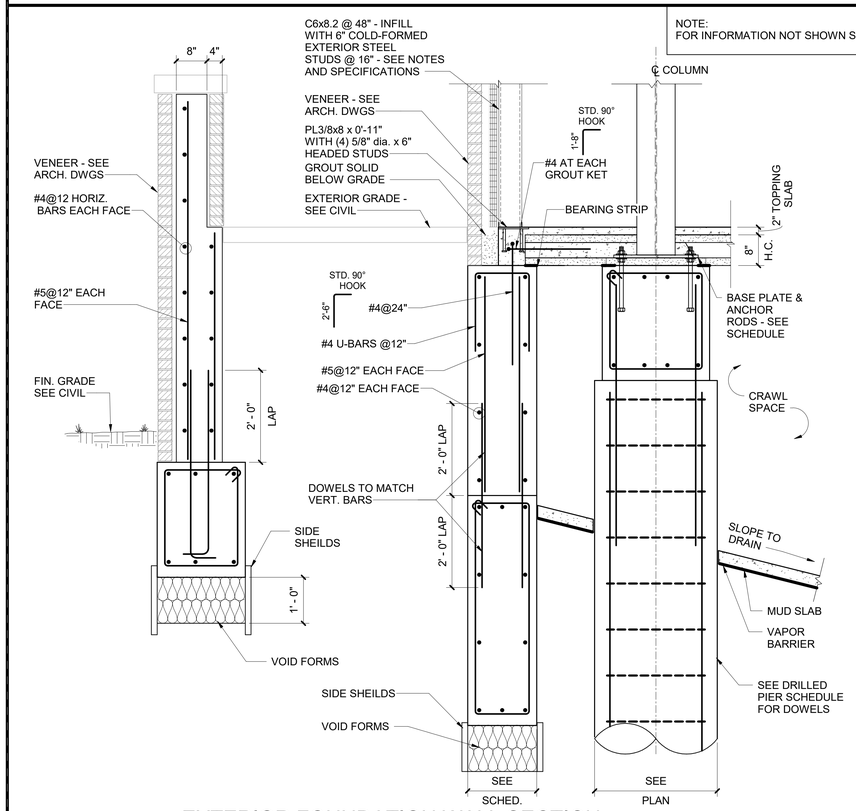
FOUNDATION SECTIONS AND DETAILS



2 STEPPED GRADE BEAM ELEVATION AT WEST WALL

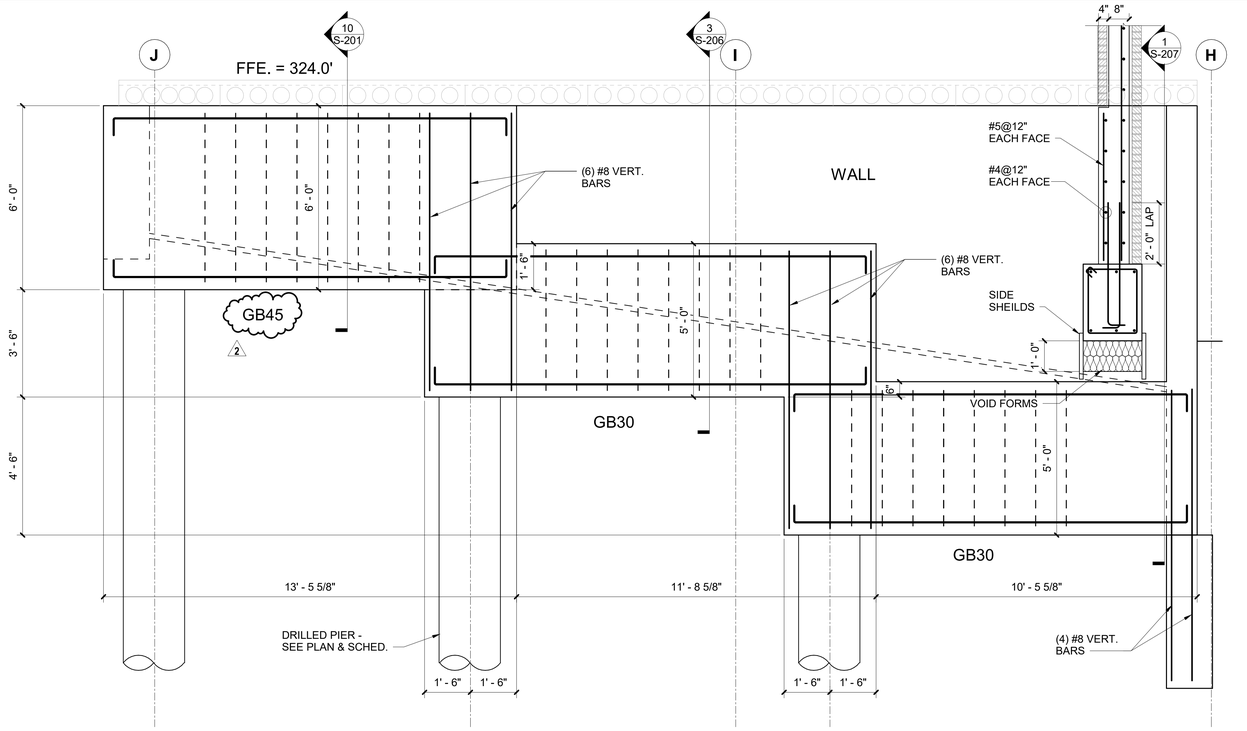
1/2" = 1'-0"

NOTE:
FOR INFORMATION NOT SHOWN SEE 2/S-203.



3 EXTERIOR FOUNDATION WALL SECTION

3/4" = 1'-0"



1 STEPPED GRADE BEAM ELEVATION AT EAST WALL

1/2" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
21331
STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

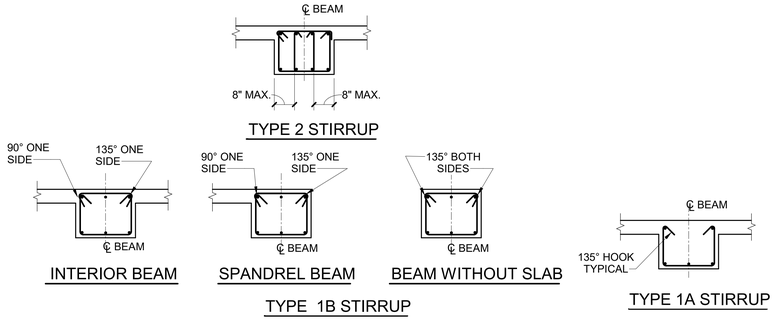
Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-206
FOUNDATION SECTIONS AND DETAILS

CLASS B TENSION LAP SPLICE TABLE (ft-in.)	
BAR SIZE	SPLICE LENGTH
#4	2'-9"
#5	3'-5"
#6	4'-1"
#7	6'-0"
#8	6'-9"
#9	7'-7"

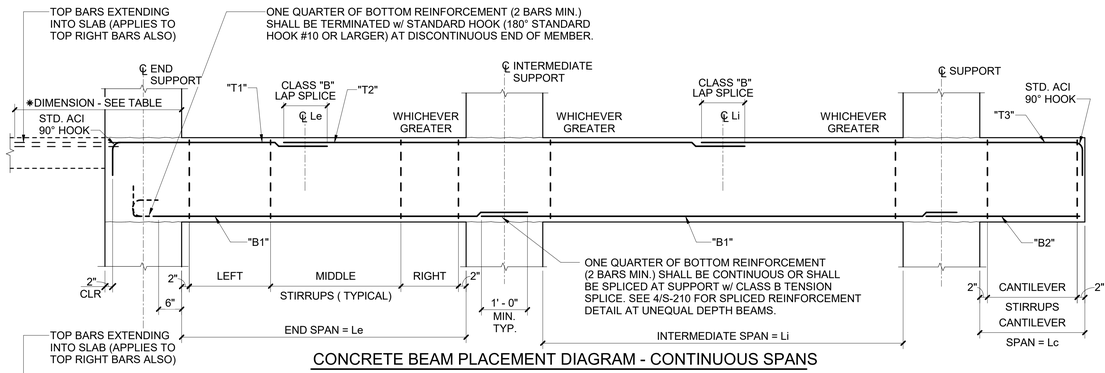


4 STIRRUP DETAILS

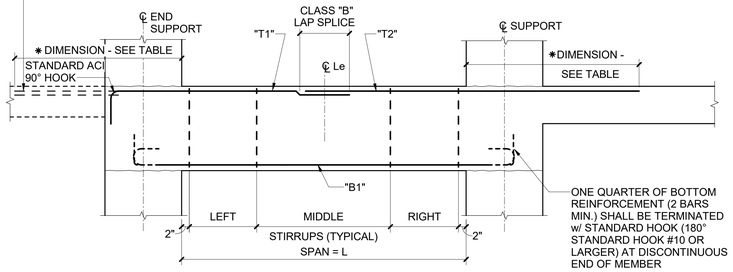
STANDARD BEAM TYPES

BEAM TYPE	DIAGRAM SUPPORT	DIAGRAM SUPPORT	REMARKS
I1			
LE1			
RE1			

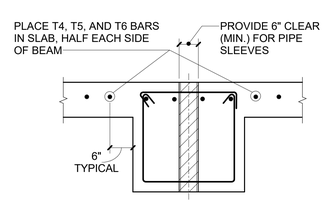
BEAM TYPE	DIAGRAM SUPPORT	DIAGRAM SUPPORT	REMARKS
SS			



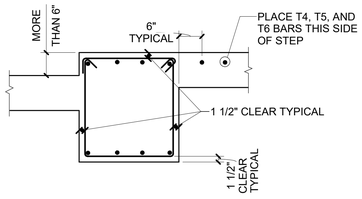
CONCRETE BEAM PLACEMENT DIAGRAM - CONTINUOUS SPANS



CONCRETE BEAM PLACEMENT DIAGRAM - SINGLE SPAN



BEAM WITH PIPE SLEEVE
(WHERE INDICATED ON SCHEDULE)



BEAM AT SLAB DEPRESSION

2 BEAM SECTIONS

GRADE BEAM SCHEDULE

BEAM MARK	BEAM SIZE (INCHES) WIDTH	DEPTH	BOTTOM BARS "B1"	"B2"	TOP BARS "T1"	"T2"	"T3"	FACE BARS (EF)	STIRRUPS (SPACING) SIZE	TYPE	LEFT	MIDDLE	RIGHT	CANT.	STD. BEAM TYPE	DIAGRAM SUPPORT	SUPPORT	PROVIDE PIPE SLEEVE Y OR N	REMARKS
GB1	24"	20"	4-#8	-	2-#4	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB2	24"	20"	4-#6	-	4-#6	4-#7	-	-	#4	1B	8"	8"	8"	-	LE1				
GB3	24"	20"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB4	24"	20"	4-#6	-	4-#6	4-#9	-	-	#4	1B	8"	8"	8"	-	LE1				
GB5	24"	20"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB6	24"	20"	4-#6	-	4-#6	4-#6	-	-	#4	1B	8"	8"	8"	-	LE1				
GB7	24"	20"	4-#6	-	-	4-#6	-	-	#4	1B	8"	8"	8"	-	I1				
GB8	24"	20"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB9	32"	20"	4-#6	-	4-#6	4-#6	-	-	#4	1B	8"	8"	8"	-	LE1				
GB10	32"	20"	4-#6	-	-	4-#6	-	-	#4	1B	8"	8"	8"	-	I1				
GB11	32"	20"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB12	24"	22"	4-#6	-	4-#5	4-#6	-	-	#4	1B	8"	8"	8"	-	LE1				
GB13	24"	22"	4-#5	-	4-#5	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB14	24"	22"	4-#6	-	4-#6	4-#6	-	-	#4	1B	8"	8"	8"	-	LE1				
GB15	24"	22"	4-#5	-	4-#5	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB16	24"	22"	4-#7	-	4-#7	4-#8	-	-	#4	1B	8"	8"	8"	-	LE1				
GB17	24"	22"	4-#5	-	4-#5	-	-	-	#4	1B	8"	8"	8"	-	-				
GB18	24"	22"	4-#6	-	4-#5	6-#7	-	-	#4	1B	8"	8"	8"	-	LE1				
GB19	24"	22"	4-#7	-	5-#7	-	-	-	#4	1B	8"	8"	8"	-	RE1				
GB20	24"	18"	3-#6	-	3-#6	3-#6	-	-	#4	1B	6"	6"	6"	-	LE1				
GB21	24"	18"	3-#6	-	-	3-#6	-	-	#4	1B	6"	6"	6"	-	I1				
GB22	24"	18"	3-#6	-	3-#6	-	-	-	#4	1B	6"	6"	6"	-	RE1				
GB23	24"	18"	4-#5	-	4-#6	4-#6	-	-	#4	1B	6"	6"	6"	-	LE1				
GB24	24"	18"	4-#5	-	4-#6	-	-	-	#4	1B	6"	6"	6"	2	-				
GB25	18"	60"	3-#6	-	3-#6	3-#6	-	#5@12"	#4	1B	12"	12"	12"	-	LE1				WHEN TRANSITION TO 12" WIDE BEAMS HOOK 1 TOP BAR AND CONTINUE OTHER 2 TOP BARS
GB26	18"	60"	3-#6	-	-	3-#6	-	#5@12"	#4	1B	12"	12"	12"	-	I1				WHEN TRANSITION TO 12" WIDE BEAMS HOOK 1 TOP BAR AND CONTINUE OTHER 2 TOP BARS
GB27	18"	60"	3-#6	-	3-#6	-	-	#5@12"	#4	1B	12"	12"	12"	-	RE1				AT GRID 11 ALONG GRID H CANTILEVER END, USAE 3-#8 T3 BARS
GB28	18"	60"	3-#6	-	3-#7	3-#6	-	#5@12"	#4	1B	12"	12"	12"	-	LE1				
GB29	18"	60"	3-#6	-	3-#8	-	-	#5@12"	#4	1B	12"	12"	12"	-	RE1				
GB30	18"	60"	3-#6	-	3-#6	-	-	#5@12"	#4	1B	12"	12"	12"	-	SS				
GB31	18"	60"	3-#7	-	-	3-#7	-	#5@12"	#4	1B	12"	12"	12"	-	I1				
GB32	18"	60"	4-#9	-	3-#6	4-#9	-	#5@12"	#4	1B	12"	12"	12"	-	SS				
GB33	18"	36"	5-#10	-	-	5-#10	-	#5@12"	#4	1B	12"	12"	12"	-	-				EXTEND EACH END OF TOP BARS INTO ADJACENT GB 6'-0"
GB34	18"	60"	4-#9	-	3-#6	-	-	#5@12"	#4	1B	12"	12"	12"	-	SS				
GB35	12"	60"	2-#6	-	2-#6	2-#6	-	#5@12"	#4	1B	12"	12"	12"	-	LE1				
GB36	12"	60"	2-#6	-	-	2-#6	-	#5@12"	#4	1B	12"	12"	12"	-	I1				
GB37	12"	60"	2-#6	-	2-#6	-	-	#5@12"	#4	1B	12"	12"	12"	-	RE1				
GB38	24"	22"	4-#9	-	4-#7	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB39	32"	20"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB40	18"	18"	3-#7	-	3-#6	2	-	-	#4	1B	6"	6"	6"	-	SS				
GB41	24"	18"	3-#8	-	3-#8	-	-	-	#4	1B	6"	6"	6"	2	-	SS			
GB42	32"	32"	4-#7	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB43	32"	32"	4-#7	-	4-#7	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB44	30"	30"	4-#6	-	4-#6	-	-	-	#4	1B	8"	8"	8"	-	SS				
GB45	18"	72"	3-#6	-	3-#6	-	-	#5@12"	#4	1B	12"	12"	12"	-	SS				
2																			

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com
THOMAS C. SCHAEFER REGISTERED PROFESSIONAL ENGINEER 21331 STATE OF MISSISSIPPI
Gensler

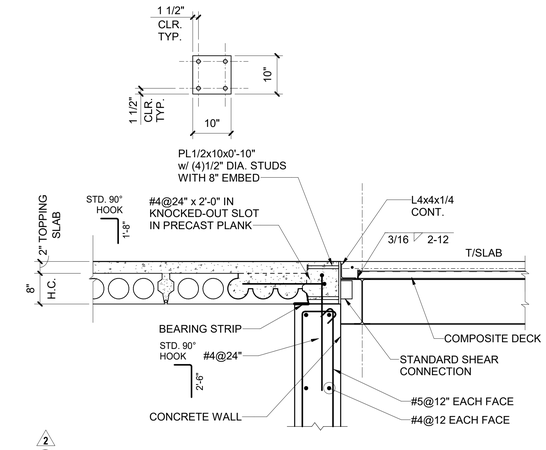
High Performance Computing Data Center
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

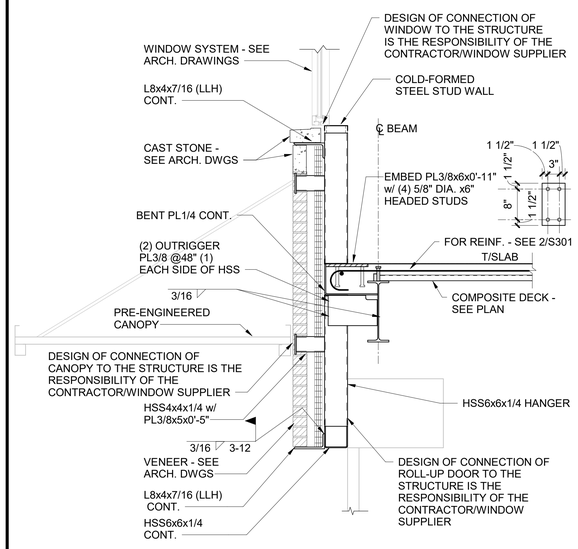
S-210
CONCRETE BEAM DETAILS



2

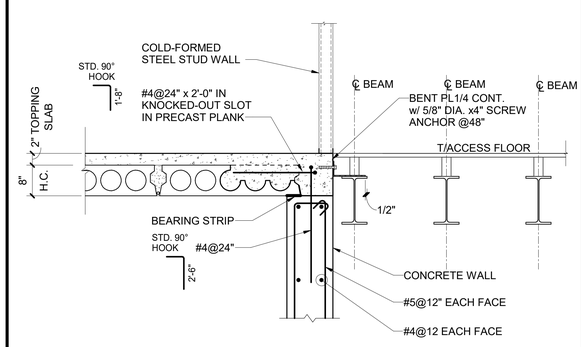
13 BEAM TO WALL CONNECTION

3/4" = 1'-0"



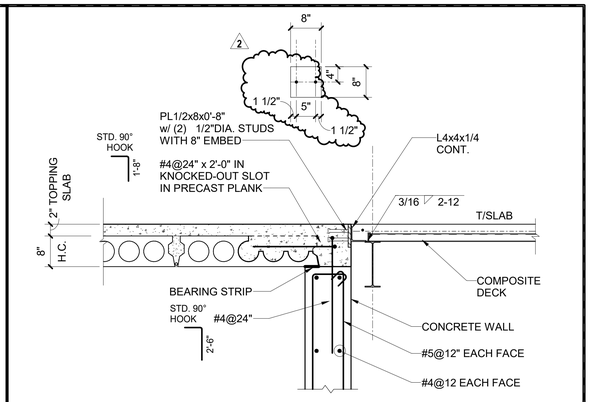
10 EXTERIOR WALL SECTION AT ROLL-UP DOOR

3/4" = 1'-0"



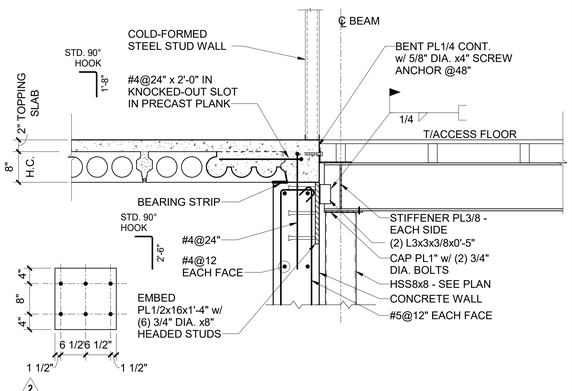
7 SECTION AT FLOOR FRAMING

3/4" = 1'-0"



3 SECTION AT FLOOR FRAMING

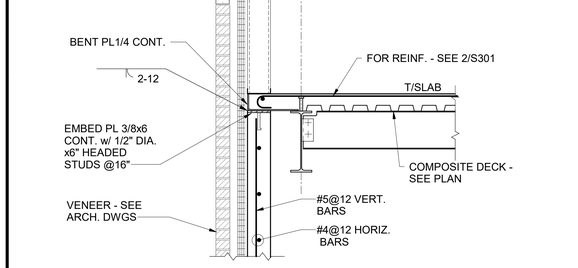
3/4" = 1'-0"



2

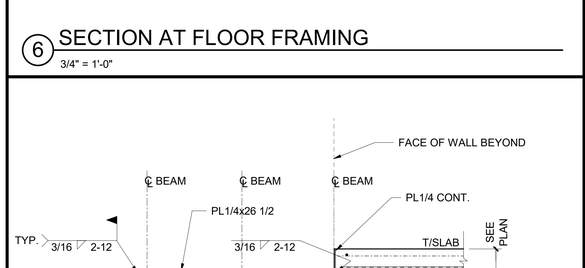
12 SECTION AT FLOOR TRANSITION

3/4" = 1'-0"



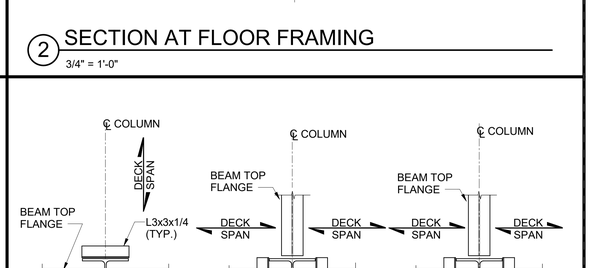
9 EXTERIOR WALL SECTION

3/4" = 1'-0"



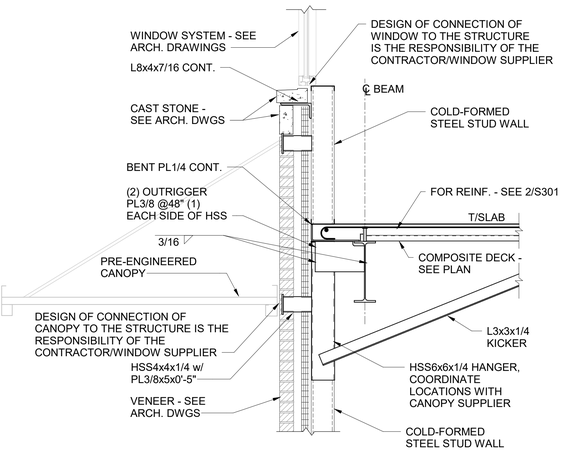
5 SECTION AT FLOOR FRAMING

3/4" = 1'-0"



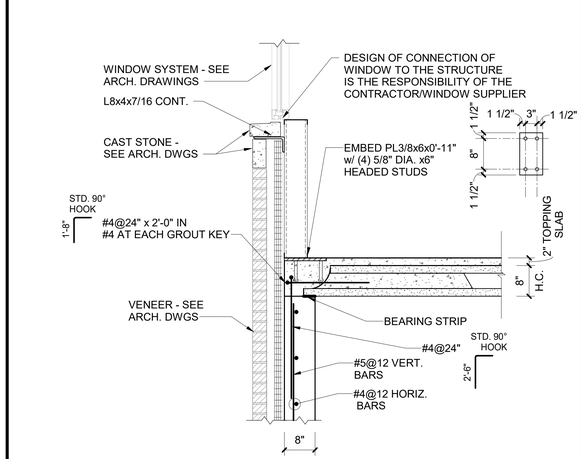
1 COMPOSITE DECK SUPPORT

3/4" = 1'-0"



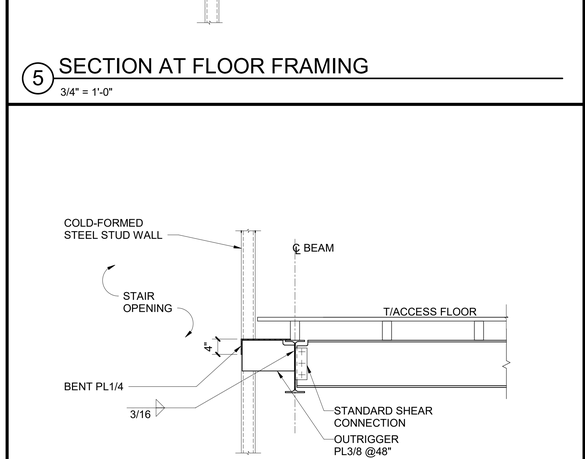
11 EXTERIOR WALL SECTION

3/4" = 1'-0"



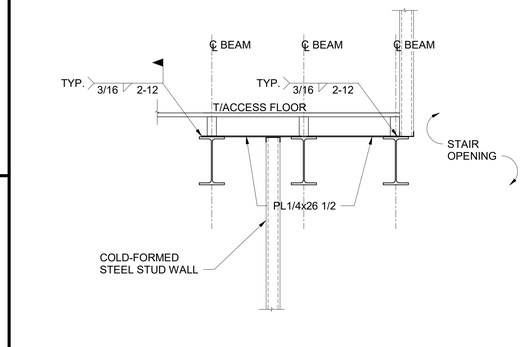
8 EXTERIOR WALL SECTION

3/4" = 1'-0"



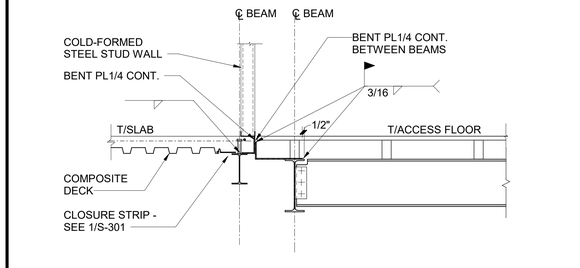
4 SECTION AT FLOOR FRAMING

3/4" = 1'-0"



6 SECTION AT FLOOR FRAMING

3/4" = 1'-0"



2 SECTION AT FLOOR FRAMING

3/4" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHAEFER REGISTERED PROFESSIONAL ENGINEER 21331 STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

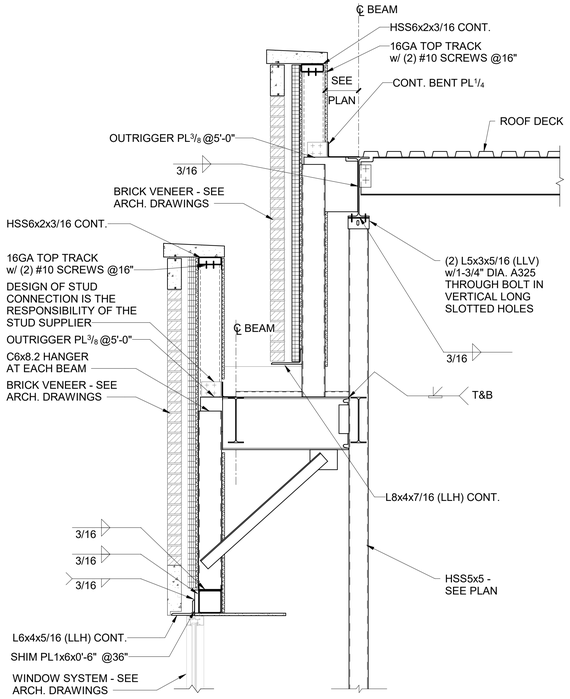
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

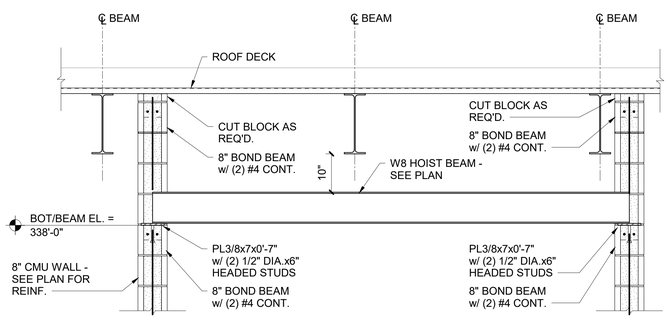
Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

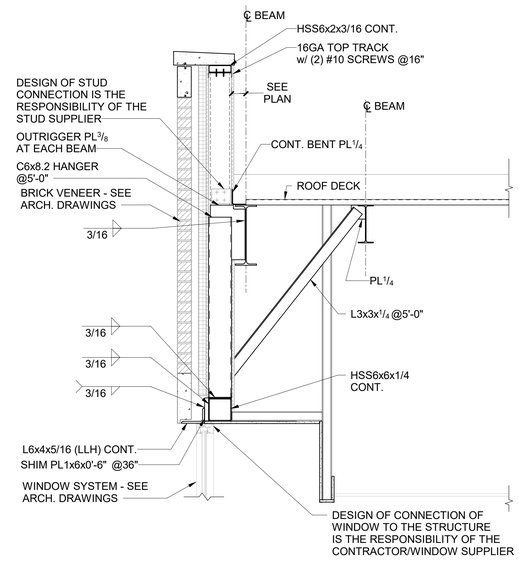
S-303
FLOOR FRAMING SECTIONS AND DETAILS



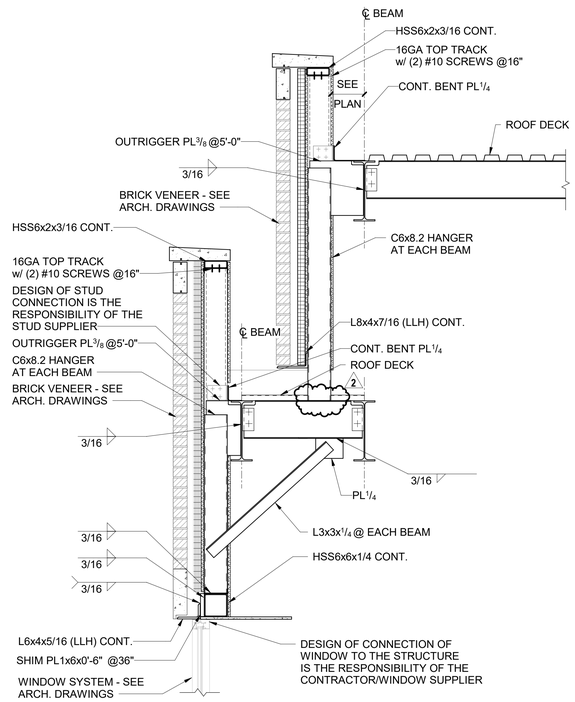
6 SECTION AT LOW ROOF
3/4" = 1'-0"



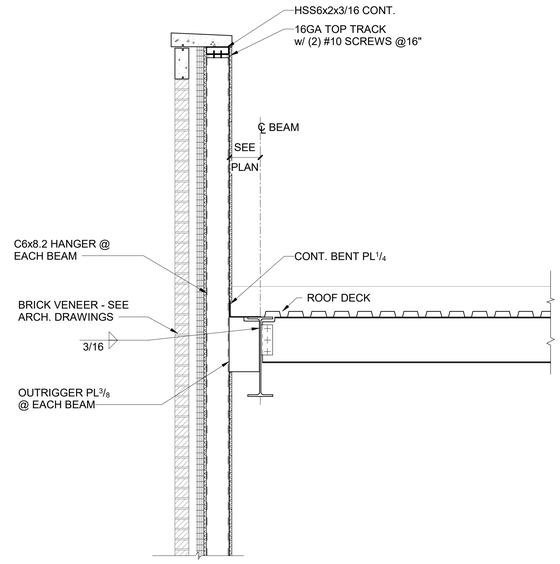
5 SECTION AT ROOF AT ELEVATOR HOIST BEAM
3/4" = 1'-0"



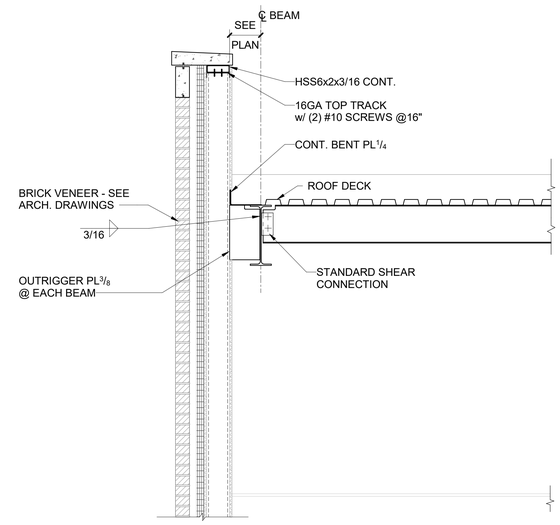
4 EXTERIOR WALL SECTION AT ROOF
3/4" = 1'-0"



3 EXTERIOR WALL SECTION AT ROOF
3/4" = 1'-0"



2 EXTERIOR WALL SECTION AT ROOF
3/4" = 1'-0"



1 EXTERIOR WALL SECTION AT ROOF
3/4" = 1'-0"

DALE PARTNERS
Architecture
Interiors
Planning
One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411
161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409
dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
No. 21331
STATE OF MISSOURI

Gensler

High Performance Computing Data Center

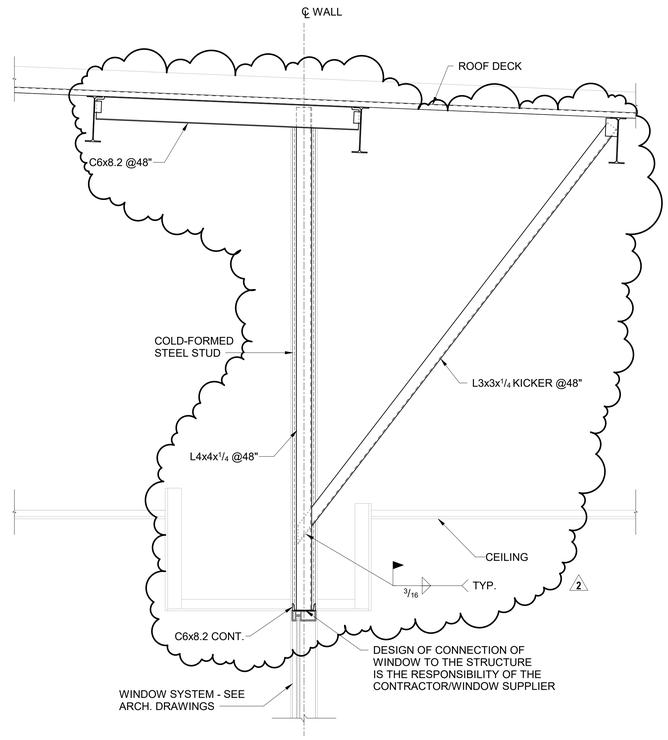
2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
p. 615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-403
ROOF FRAMING
SECTIONS AND DETAILS



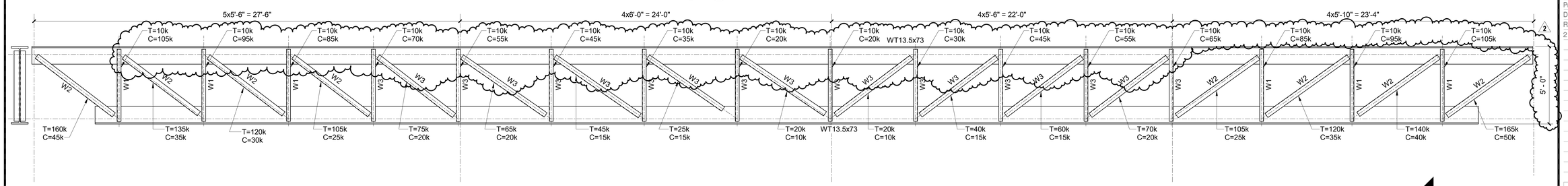
2 SECTION AT INTERIOR WALL AT ROOF

3/4" = 1'-0"

WEB MEMBERS		
MARK	SIZE	DESIGN LOADS
W1	⌋L3 1/2x3 1/2x5/16	
W2	⌋L3 1/2x3 1/2x5/8	
W3	⌋L2 1/2x2 1/2x1/4	

NOTE: CAMBER = 2"

2



1 TRUSS FRAMING ELEVATION

3/8" = 1'-0"

DALE PARTNERS

Architecture
Interiors
Planning

One Jackson Place
Suite 250
188 East Capital Street
Jackson, MS 39201
p 601.352.5411

161 Lameuse Street
Biloxi, MS 39530
p 228.374.1409

dalepartners.com

THOMAS C. SCHAEFER
REGISTERED PROFESSIONAL ENGINEER
21331
STATE OF MISSISSIPPI

Gensler

High Performance Computing Data Center

2 Research Boulevard
Starkville, MS, 39759

Construction Documents

Project No	IHL #405-004
Date	11/10/2022
Revisions	Rev Date
2	12/12/22

Structural Design Group
Consulting Structural Engineers
220 Great Circle Road, Suite 106
Nashville, Tennessee 37228
615.255.5537
www.sdg-structure.com
SDG Project No. 2020-261.00

S-404

ROOF FRAMING SECTIONS AND DETAILS