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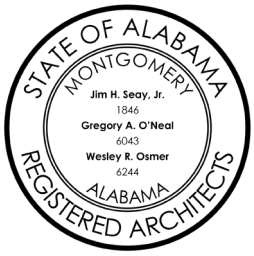
Date: **02-15-2021**

To: **All Plan Holders**

Subject: **ADDENDUM NO. 7**

Project: **CENTER FOR MATERIALS AND MANUFACTURING SCIENCES, TROY UNIVERSITY MAIN CAMPUS-TROY ALABAMA**

Job #: **SSL# 18144**
BC# 2020416
PSCA#: 006P



From: **Cody Smith**

The plans dated November 17, 2020 and Specifications dated November 2020 of the subject project, and any subsequent addenda are amended as follows: (Where there are conflicts between the plans and specifications and the addendum, this addendum shall govern)

Item 1: Refer to the Specifications ADVERTISEMENT FOR BIDS. **Delete** the first paragraph and **Replace** with the following:

Sealed proposals will be received by Troy University by the Purchasing Department of Troy University, at the Physical Plant Conference Room, located at 1 melton Carter Dr, Troy, Alabama 36081 until 2:00 PM CST for the base bids and 3:00 PM CST for all alternates on Tuesday, February 23, 2021 at which time they will be open and read.

Item 2: Refer to attached Sheet LS2.0:
-Revise West stair footprint

Item 3: Replace L1.0 with the attached L1.0:
-Move Mech Yard
-Revise West stair footprint
-Revise Construction Fence
-Add 2 Single Acorn lights

Item 4: Replace L4.0 with the attached L4.0:
-Move Mech Yard
-New Mech Yard Elevations
-New Mech Yard section detail

Item 5: Replace A2.1 with the attached A2.1:
-Revise West Stair footprint

Item 6: Replace A2.3 with the attached A2.3:
-Add door 1300c

Item 7: Replace A2.3a with the attached A2.3a:
-Add door 1300c

Item 8: Replace A3.5 with the attached A3.5:
-Add door 1300c

Item 9: Replace A4.1a with the attached A4.1a:
-Revise West stair elevation

Item 10: Replace A4.2 with the attached A4.2:
-Revise West stair elevation

Item 11: Replace A5.4 with the attached A5.4:
-Revise West stair section

Item 12: Replace A9.4 with the attached A9.4:
-Revise Waterproofing legend & diagram

Item 13: Replace A10.0 with the attached A10.0:
-Revise West stair footprint

Item 14: Refer to attached sheet E001:
-Removed primary electrical relocation and work
-Moved mechanical yard and equipment
-Combined building and mechanical yard transformers into one
-Added acorn pole mounted lights to west stairs
-Added data conduits to lighting standard details
-Moved VRF-1A&B to mechanical yard

Item 15: Refer to attached sheet E002:
-Revised docking station detail
-Changed generator descriptions on riser diagrams
-New mechanical yard layout

Item 16: Refer to attached sheet E003:
-Added general notes 19, 20, and 21

Item 17: Refer to attached sheet E005:
-Added wiring and controls for exterior post top lights

Item 18: Refer to attached sheet E020:
-Removed VRF-1A&B from panel 0HM

Item 19: Refer to attached sheet E024:
-Added VRF-1A&B to CH1

Item 20: Replace C1.0 with the attached C1.0

Item 21: Replace C2.0 with the attached C2.0

Item 22: Replace C3.0 with the attached C3.0

Item 23: Replace C4.0 with the attached C4.0

Item 24: Replace C7.0 with the attached C7.0

Item 25: Replace C8.0 with the attached C8.0

Item 26: Replace Spec Section "04 1324 Pre-Applied Sheet Membrane Waterproofing" with the attached.

Item 27: Refer to Spec Section "08 7100 Door Hardware" add the following Door Hardware Set:

Set: 30.0

Doors: 1300c
Description: EXT MEP PR

6 Hinge, Full Mortise	TA2314 NRP 4-1/2" x 4-1/2"	US32D	MK	087100
2 Surface Bolt	580-8	US32D	RO	087100
1 Dormitory Lock	70 8225 LE1B	US26D	SA	087100
1 SFIC core	Key to existing facility			
2 Door Closer	281 Reg / PA	EN	SA	087100
2 Door Stop	409 / 446 [as required]	US32D	RO	087100
1 Threshold	1715AK MSES25SS		PE	087100
1 Rain Guard (Frame mount)	347A		PE	087100
1 Rain Guard (Door mount)	68AR		PE	087100
1 Gasketing	S88D		PE	087100
2 Sweep	315CN		PE	087100
1 Astragal	357SP X S88D		PE	087100

2 Position Switch	DPS-M/W-WH (as required)	SU 087100	

Notes: Mount astragal on exterior of door.

Item 28: Replace M1.6 with the attached M1.6

Item 29: Replace M1.7 with the attached M1.7

Item 30: Replace M1.8 with the attached M1.8

Item 31: Replace M1.9 with the attached M1.9

Item 32: Replace M1.10 with the attached M1.10

Item 33: Replace M1.12 with the attached M1.12

Item 34: Replace M2.0 with the attached M2.0

Item 35: Replace P1.0 with the attached P1.0

Item 36: Replace P1.4 with the attached P1.4

Item 37: Replace P3.0 with the attached P3.0

Item 38: Replace P3.3 with the attached P3.3

Item 39: Replace S2.0 with the attached S2.0

Item 40: Replace S3.0 with the attached S3.0

Item 41: Replace S5.0 with the attached S5.0

Item 42: Replace S6.0 with the attached S6.0

Item 43: Replace S20.0 with the attached S20.0

Item 44: Replace A3.4 with the attached A3.4:
-Door 1102 shall have an STC 40 rated door

Item 45: Refer to attached AHU-1 Trane Approval letter.

Item 46: Refer to attached ZEA Mechanical Addendum Items – 10 items, 3 pages

Item 47: Refer to Specification Section "01 1700 Project Closeout" Para. 1.5, Add Subparagraph:

E. Record Flow Test: Contractor to provide a flow test after project completion for all new fire hydrants installed as part of the project. Flow Test to include flow (GPM), static pressure (PSI), and Residual pressure (PSI).

End of Addendum No. 7

SECTION 07 1324
Pre-Applied Sheet Membrane Waterproofing

PART 1 — GENERAL

1.01 SUMMARY

A. The Work of this Section includes, but is not limited to, pre-applied sheet membrane waterproofing that forms an integral bond to poured concrete for the following applications:
   1. Vertical Applications: Membrane applied against soil retention system prior to placement of concrete foundation walls;
   2. Horizontal Applications: Membrane applied on prepared subbase prior to placement of concrete slabs.

B. Related sections include, but are not limited to, the following:
   1. Section 31 2210 – Earthwork Geotechnical
   1. Section 03 0000 – Cast-In-Place Concrete

NOTE TO SPECIFIER: For vertical applications, coordinate with concrete formwork section to require one-sided wall forming system to minimize punctures to the sheet membrane waterproofing during formwork installation.

1.02 SUBMITTALS

A. Submit manufacturer's product data, installation instructions and membrane samples for approval.

1.03 REFERENCE STANDARDS

A. The following standards and publications are applicable to the extent referenced in the text.

B. American Society for Testing and Materials (ASTM):
   C 836 Standard Specification for High Solids, Cold Liquid-Applied Elastomeric Waterproofing Membrane for Use with Separate Wearing Course
   D 412 Standard Test Methods for Rubber Properties in Tension
   D 570 Standard Test Method for Water Absorption of Plastics
   D 903 Standard Test Method for Peel or Stripping Strength of Adhesive Bonds
   D 1876 Standard Test Method for Peel Release of Adhesives (T-Peel)
   D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection
   D 3767 Standard Practice for Rubber - Measurements of Dimensions
   D 5385 Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes
   E 96 Standard Test Methods for Water Vapor Transmission of Materials
   E 154 Standard Test Methods for Water Vapor Retarders Used in Contact with Earth Under Concrete Slabs, on Walls, or as Ground Cover

1.04 QUALITY ASSURANCE

A. Manufacturer: Sheet membrane waterproofing system shall be manufactured and marketed by a firm approved by manufacturer. i

B. Installer: A firm which has at least 3 years experience in work of the type required by this section.

C. Materials: For each type of material required for the work of this section, provide primary materials which are the products of one manufacturer.

D. Pre-Installation Conference: A pre-installation conference shall be held prior to commencement of field operations to establish procedures to maintain optimum working conditions and to coordinate this work with related and adjacent work. Agenda for meeting shall include review of special details and flashing.

E. Schedule Coordination: Schedule work such that membrane will not be left exposed to weather for longer than that recommended by the manufacturer.

1.05 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in labeled packages. Store and handle in strict compliance with manufacturer's instructions. Protect from damage from weather, excessive temperature, and construction operations. Remove and dispose of damaged material in accordance with applicable regulations.

1.06 PROJECT CONDITIONS

A. Perform work only when existing and forecasted weather conditions are within the limits established by the manufacturer of the materials used. Proceed with installation only when the substrate construction and preparation work is complete and in condition to receive sheet membrane waterproofing.

1.07 WARRANTY

A. Sheet Membrane Waterproofing: Provide written ten year material warranty issued by the membrane manufacturer upon completion of work. See warranty at end of Section.

PART 2 — PRODUCTS

2.01 MATERIALS

A. Pre-applied Integrally Bonded Sheet Waterproofing Membrane: PREPRUFE® **300R Plus** ***(Addendum 7)*** Membrane by GCP Applied Technologies ("GCP"). Provide membrane with the following physical properties: BASIS OF DESIGN or equal.

PHYSICAL PROPERTIES FOR PREPRUFE® 300R **Plus *(Addendum 7)*** MEMBRANE:

Property	Test Method	Typical Value
Color		White
Thickness	ASTM D 3767	0.8 mm (0.030in.) nominal
Lateral Water Migration Resistance	ASTM D 5385[1]	Pass at 55 m (180 ft.) of hydrostatic head pressure
Low Temperature Flexibility	ASTM D 1970	Unaffected at -23°C (-10°F)
Elongation	ASTM D 412[2]	300%
Crack Cycling at -23°C (-9.4°F), 100 Cycles	ASTM C 836[5]	Unaffected, Pass
Tensile Strength, film	ASTM D 412	27.6 MPa (4,000 lbs./in.^{2})
Peel Adhesion to Concrete	ASTM D 903[3]	700 N/m (4.0 lbs./in.)
Resistance to Hydrostatic Head	ASTM D 5385[6]	180ft. (55m)
Lap Adhesion	ASTM D 1876[4]	700 N/m (4.0 lbs./in.)
Puncture Resistance	ASTM E 154	600N (135 lbs.)
Permeance	ASTM E 96 Method B	<0.1 perms ((5.74 ng/(Pa x s x m^2))
Water Absorption	ASTM D 570	0.5%

Footnotes:

1. *Lateral water migration resistance is tested by casting concrete against membrane with a hole and subjecting the membrane to hydrostatic head pressure with water. The test measures the resistance of lateral water migration between the concrete and the blind side waterproofing membrane. A hydrostatic head pressure of 71 m (231 ft) of water is the limit of the apparatus.*
2. *Elongation of membrane is run at a rate of 50 mm (2 in.) per minute.*
3. *Concrete is cast against the protective coating surface of the membrane and allowed to cure (7 days minimum). Peel adhesion of membrane to concrete is measured at a rate of 50 mm (2 in.) per minute at room temperature.*
4. *The test is conducted 15 minutes after the lap is formed at a rate of 50 mm (2 in.) per minute.*
5. *Test conducted at -23^{0}C (-9.4^{0}F)*
6. *Hydrostatic head tests are performed by casting concrete against the membrane with a lap. Before the concrete sets a 3 mm (0.125 in.) spacer is inserted perpendicular to the membrane to create a gap. The cured block is placed in a chamber where water is introduced to the membrane surface up to a head of 71 m (231 ft) of water which is the limit of the apparatus.*

B. Waterstop: ADCOR® hydrophilic waterstop by GCP Applied Technologies for non-moving concrete construction joints. See gcpat.com

C. Preformed Soil Retention Wall Tieback Cover: PREPRUFE® Tieback Cover by GCP Applied Technologies as a prefabricated detail for soil retention wall tiebacks.

D. Tape for covering cut edges, roll ends, penetrations and detailing: PREPRUFE® Tape LT (for temperatures between 25°F (-4°C) and 86°F (+30°C)) and PREPRUFE® Tape HC (for use in Hot Climates, minimum 50°F (10°C))

E. Miscellaneous Materials: accessories specified or acceptable to manufacturer of pre-applied waterproofing membrane.

PART 3 — EXECUTION

3.01 EXECUTION

A. The installer shall examine conditions of substrates and other conditions under which this work is to be performed and notify the Contractor, in writing, of circumstances detrimental to the proper completion of the work. Do not proceed with work until unsatisfactory conditions are corrected.

3.02 SUBSTRATE PREPARATION

A. It is essential to create a sound and solid substrate to eliminate movement during the concrete pour. Substrates must be regular and smooth with no gaps or voids greater than 0.5 in. (12 mm). Grout around all penetrations such as utility conduits, etc. for stability.

1. Horizontal Surfaces - The substrate must be free of loose aggregate and sharp protrusions. Avoid curved or rounded substrates. When installing over earth or crushed stone, ensure substrate is well compacted to avoid displacement of substrate due to traffic or concrete pour. The surface does not need to be dry, but standing water must be removed.
2. Vertical Surfaces - Use concrete, plywood, insulation or other approved facing to sheet piling to provide support to the membrane. Board systems such as timber lagging must be close butted to provide support and not more than 0.5 in. (12 mm) out of alignment

3.03 INSTALLATION, HORIZONTAL APPLICATIONS

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Place the PREPRUFE® 250 membrane HDPE film side to the substrate with the clear plastic release liner facing towards the concrete pour. End laps should be staggered to avoid a build-up of layers.
2. Leave the plastic release liner in position until overlap procedure is completed.
3. Accurately position succeeding sheets to overlap the previous sheet 3 in. (75 mm) along the marked selvedge. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap.
4. Peel back the plastic release liner from between the overlaps as the two layers are bonded together. Ensure a continuous bond is achieved without creases and roll firmly with a heavy roller.
5. Completely remove the plastic liner to expose the protective coating. Any initial tack will quickly disappear.

3.04 INSTALLATION, VERTICAL APPLICATIONS

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:

1. Where desired mechanically fasten the PREPRUFE® 250 membrane vertically using fasteners appropriate to the substrate with the clear plastic release liner facing towards the concrete pour. The membrane may be installed in any convenient length.
2. All mechanical fastening shall be through the selvedge using a small and low profile head fastener so that the membrane lays flat and allows firmly rolled overlaps.
3. Immediately remove the plastic release liner.
4. Ensure the underside of the succeeding sheet is clean, dry and free from contamination before attempting to overlap.
5. After placement roll firmly to ensure a watertight seal.
6. Overlap all roll ends and cut edges by a minimum 3 in. (75 mm) and ensure the area is clean and free from contamination, wiping with a damp cloth if necessary.
7. Allow to dry and apply PREPRUFE® Tape LT (or HC in hot climates) centered over the lap edges and roll firmly.
8. Immediately remove printed plastic release liner from the tape.

3.05 WATERSTOP INSTALLATION

A. Strictly comply with installation instructions in manufacturer's published literature, including but not limited to, the following:
   1. Secure ADCOR® hydrophilic waterstop using masonry nails 1½ in. - 2 in. (40 mm – 50 mm) long with a washer ¾ in. (20 mm) in diameter. Hilti EM6-20-12 FP8 shot fired fixings with ¼ in. (6 mm) nuts and ¾ in. (20 mm) diameter washers may also be used. Fixings should be spaced at a maximum of 12 in. (300 mm) centers with a minimum spacing that ensures proper contact to substrate.
   2. On irregular concrete faces, or on vertical surfaces, apply a ½ in. (12 mm) bead of ADCOR® Adhesive as bedding for ADCOR® hydrophilic waterstop.
   3. ADCOR® hydriphilic waterstop joints should overlap a minimum of 4 in. (100 mm), ensuring full contact between jointed pieces.

3.06 PROTECTION

A. Protect membrane in accordance with manufacturer's recommendations until placement of concrete. Inspect for damage just prior to placement of concrete and make repairs in accordance with manufacturer's recommendations.

PROJECT WATERPROOFING WARRANTY

NAME OF PROJECT: TROY UNIVERSITY CENTER FOR MATERIALS AND MANUFACTURING SCIENCES

PROJECT LOCATION: TROY, ALABAMA

OWNER : TROY UNIVERSITY

DATE OF SUBSTANTIAL COMPLETION: _____

DATE OF EXPIRATION: _____

A. A. THE WATERPROOFING CONTRACTOR AND GENERAL CONTRACTOR DO HEREBY CERTIFY THAT THE BELOW SLAB VAPOR PROTECTION UNDERGROUND WATERPROOFING WORK INCLUDED IN THIS CONTRACT WAS INSTALLED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF THE PLANS AND SPECIFICATIONS 07 1610 BELOW GRADE WATER PROOFING AND IN ACCORDANCE WITH APPROVED WATERPROOFING MANUFACTURER'S RECOMMENDATIONS FOR ALL SPECIFIED WARRANTY REQUIREMENTS.

A. B. THE WATERPROOFING CONTRACTOR AND GENERAL CONTRACTOR HEREBY GUARANTEE THE WATERPROOFING AND ASSOCIATED WORK INCLUDING BUT NOT LIMITED TO ALL UNDERGROUND VERTICAL AND HORIZONTAL WATERPROOFING TO BE WATER TIGHT AND FREE FROM ALL LEAKS AND MOISTER INTRUSION, DUE TO FAULTY OR DEFECTIVE MATERIALS AND WORKMANSHIP FOR A PERIOD OF TEN (10) YEARS, STARTING ON THE DATE OF SUBSTANTIAL COMPLETION OF THE PROJECT.

A. C. SUBJECT TO THE TERMS AND GENERAL CONTRACTOR CONDITIONS LISTED BELOW, THE WATERPROOFING CONTRACTOR SHALL SO GUARANTEE THAT DURING THE GUARANTEE PERIOD HE WILL, AT HIS OWN COST AND EXPENSE, MAKE OR CAUSE TO BE MADE SUCH REPAIRS TO, OR REPLACEMENTS OF SAID WORK, IN ACCORDANCE WITH THE WATERPROOFING MANUFACTURERS RECOMMENDATIONS AS ARE NECESSARY TO CORRECT FAULTY AND DEFECTIVE WORK AND/OR MATERIALS WHICH MAY DEVELOP IN THE WORK INCLUDING. ANTICIPATED LIFE OF THE WATERPROOFING SYSTEMS AND THE BEST STANDARDS APPLICABLE TO THE PARTICULAR WATERPROOFING TYPE IN VALUE AND IN ACCORDANCE WITH CONSTRUCTION DOCUMENTS AS ARE NECESSARY TO MAINTAIN SAID WORK IN WATERTIGHT CONDITIONS, AND FURTHER, TO RESPOND ON OR WITHIN SEVEN (7) CALENDAR DAYS UPON PROPER NOTIFICATION OF LEAKS OR DEFECTS BY THE OWNER.

i. 1. During the Guarantee Period, if the Owner allows alteration of the work by anyone other the Waterproofing Contractor or General Contractor, including cutting, patching and maintenance in connection with penetrations, and positioning of anything effecting the below grade waterproofing, this Guarantee shall become null and void upon the date of said alterations

i. 2. Future building additions will not void this Guarantee, except for that portion of the future addition that might affect the work under this contract at the point of connection of the waterproofed areas, and any damage caused by such addition.

i. 3. The Owner shall promptly notify the Waterproofing Contractor and the General Contractor of observed, known or suspected leaks, defects or deterioration, and shall afford reasonable opportunity for the Waterproofing Contractor to inspect the work, and to examine the evidence of such leaks, defects or deterioration.

D. INCLUDED IN THIS WARRANTY ARE ALL REQUIRED REPAIRS AND RECONSTITUTING OF PHYSICAL FACILITY TO THE PROJECT AS A RESULT OF DAMAGE TO THE FACILITY DUE TO FAILURE OF THE ABOVE NOTED SYSTEMS AT NO ADDITIONAL COST TO OWNER.

IN WITNESS THEREOF, THIS INSTRUMENT HAS BEEN DULY EXECUTED THIS _____ DAY OF _____ (YEAR).

_____

WATERPROOFING CONTRACTORS' AUTHORIZED SIGNATURE

_____

COMPANY NAME

_____

COMPANY ADDRESS

_____

GENERAL CONTRACTOR'S AUTHORIZED SIGNATURE

_____

COMPANY NAME

_____

COMPANY ADDRESS

_____

NOTARY PUBLIC

A. END OF SECTION

February 11, 2021

Seay Seay & Litchfield Architects & Interior Designers
1115 S Court Street
Montgomery, AL 36104

To whom it may concern,

The purpose of this letter is to gain prior approval for the unit labeled as AHU-1 on the project at Troy University Center for Materials and Manufacturing Sciences. Through coordination and customization, Trane has developed a design that meets the intent of the specifications and the performance required for the job. The Trane unit to be listed as an equivalent to the Temtrol air handler is a completely customizable unit, and any information required for prior approval can be supplied. The desired approved equivalent air handling unit provided by Trane Commercial is the Trane model TCFS air handling unit. If any further information is required please reach out.

approved subject to compliance with the project plans and specs
Thyno J. Zgouvas
2-11-2021

Sincerely,

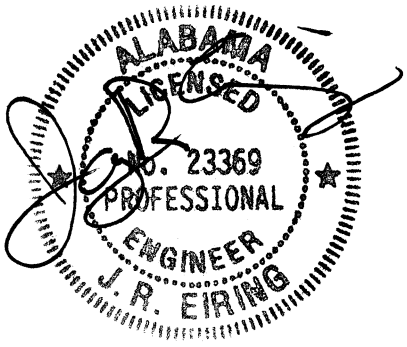
Parker McCallum
Account Manager

Commercial HVAC - Southeast Region
Pensacola, Florida

ZGOUVAS, EIRING & ASSOCIATES
CONSULTING ENGINEERS, INC.

Mechanical Addendum
Troy CMMS

February 8, 2021



1. Refer to Specifications Section 23 1570-36, Part 13 Zero Clearance Grease Duct Fire Protection Insulation. Revise as follows:

   a. Revise Section Title to read as Zero Clearance Duct Fire Protection Insulation.
   b. Revise Para. 13.1, General to read as follows: Provide two hour rated duct enclosure classified by UL for all Lab exhaust ductwork from the point of penetration of the rated enclosure to its termination point of 10'-0" within each space, including all duct support assemblies within the 10'-0" distance as required by NFPA 45, 7.5.10.2.1. Example: Where an exhaust duct penetrates the rated shaft, it shall be fire wrapped from the connection point to the main within the rated shaft back to the respective general exhaust valve, fume hood, snorkel, etc. to a minimum of 10'-0" within the finished space, including its related duct support assemblies. Do not cover exhaust valves, fume hoods, snorkels or similar devices with fire rated insulation. All exhaust duct work located within the rated shaft also requires the specified fire wrap. Note that the energy recovery plenum assembly for the Energy Recovery Unit ERU-1 also requires fire wrap. System shall be 3M "Fire Master" Duct Wrap or approved equivalent. Install per UL Label.

2. Refer to the specifications Section 23 1570-30, Part 9, High Velocity Ductwork Designed for 10" WG Pressure (AHU-1 100% Outside Air Unit) and add the following requirements:

   a. Extent of factory fabricated and insulated double wall ductwork and fittings is partially shown on the plans with slashes. Remainder of ductwork, **except** that which is exposed to view in finished areas, shall be factory fabricated single wall duct and fittings.
   b. All ductwork exposed to view in finished areas shall be factory fabricated and insulated double wall duct and fittings with 1" thickness insulation. Coordinate requirement with Architect's reflected ceiling plan.

c. All factory fabricated and insulated double wall duct and fittings indicated with slashes shall be provided with 2” thickness insulation.
d. All remaining factory fabricated single wall duct and fittings shall be externally insulated with 2” thickness insulation as specified in 23 1570-32, Part 11.

3. Refer to the specifications Section 23 1570-30, Part 10, High Velocity Ductwork Designed for 10” WG Negative Pressure and add the following requirements:

a. Delete the requirement for the plastisol acid resistant coating.

4. Refer to the specifications Section 23 1571, Stainless Steel Round, Rectangular and Flat Oval Exhaust Duct and Fittings and add the following requirements:

a. This specification applies to all ductwork associated with ERU-1.
b. Extent of factory fabricated and insulated stainless steel double wall ductwork and fittings is partially shown on the plans with slashes. Remainder of ductwork, **except** that which is exposed to view in finished areas, shall be factory fabricated stainless steel single wall duct and fittings.
c. All ductwork exposed to view in finished areas shall be factory fabricated and insulated double wall duct and fittings with 1” thickness insulation. Coordinate requirement with Architect’s reflected ceiling plan.
d. All factory fabricated and insulated double wall duct and fittings indicated with slashes shall be provided with 2” thickness insulation.
e. All remaining factory fabricated single wall duct and fittings shall be externally insulated with 2” thickness insulation as specified in 23 1570-32, Part 11.

5. Refer to the specifications Section 23 1571, Stainless Steel Round, Rectangular and Flat Oval Exhaust Duct and Fittings and add the following clarification:

a. This specification applies to all ductwork associated with ERU-1.

6. Refer to the Drawings, Sheets M1.3 through M1.10: Note the deflection patterns shown for the Laboratory Radial-Tec diffusers. Provide as shown.

7. Refer to the specifications Section 23 1570-49, Para. 20.1, General, and add the following clarification: Coiled refrigerant piping is not allowed.

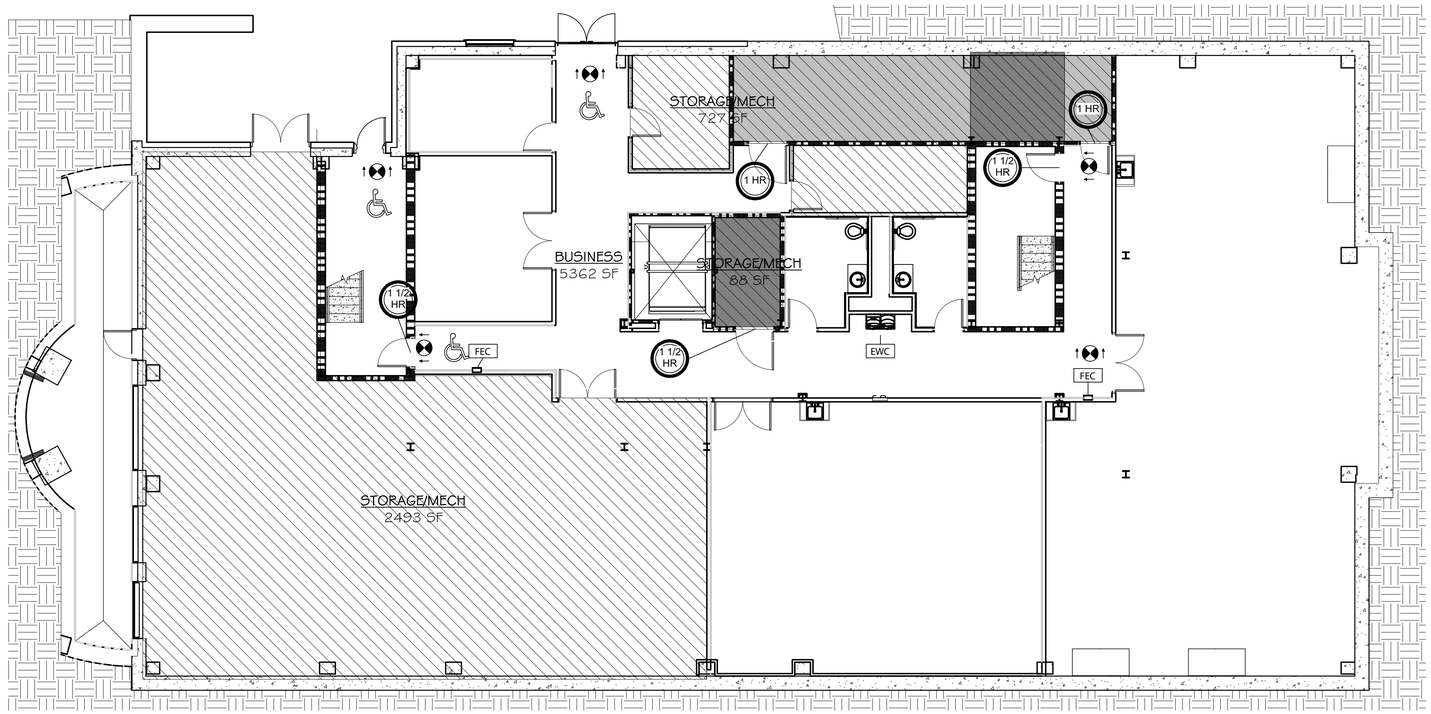
8. Refer to the specifications Section 23 1570-69, Para. 25.7 and add the following clarification: Delete reference to Chiller drive and substitute “AHU Drives”.

9. Refer to the Specifications Section 23 1571, Para 2.2.A.a, Clarification. Disregard “*First fifty linear feet from the energy recovery unit shall be double wall, no perforations*”. Double wall stainless steel duct shall be as specified/clarified in this addendum.

10. Refer to the plans, Sheet M3.1, Section “C” and provide the following:

    a. Top edge of the exhaust fans related to the ERU-1 shall terminate to 6” below the roof surround that is hiding the fans.

END OF ADDENDUM

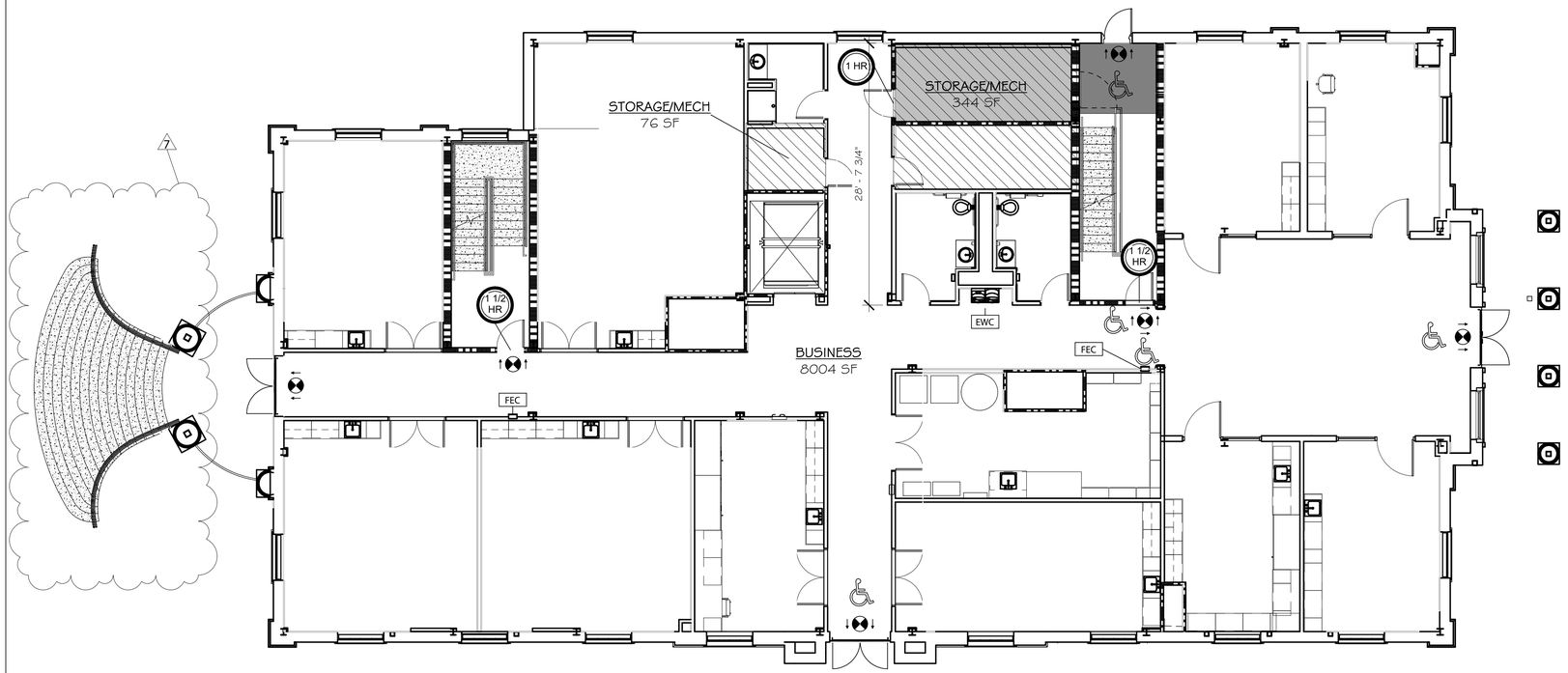


1 / L2.0 LEVEL 0
1/8" = 1'-0"

LIFE SAFETY LEGEND

- EWC — ELECTRIC WATER COOLER - SEE PLUMBING
- FEC — FIRE EXTINGUISHER CABINET
- FEB — FIRE EXTINGUISHER BRACKET
- AED — AUTOMATED EXTERNAL DEFIBRILLATOR
- 1 HOUR FIRE RATING (UL#
- 2 HOUR FIRE RATING (UL#
- 3 HOUR FIRE RATING (UL#
- EMERGENCY EXIT SIGNAGE
- HANDICAP ACCESSIBLE EXIT LOCATION
- EXIT TRAVEL PATH
- AREAS INDICATED TO RECIEVE 1-HR RATED CEILING
- AREAS INDICATED TO RECIEVE 2-HR RATED CEILING
- HATCH FOR LIFE SAFETY CALCULATIONS FOR MECHANICAL STORAGE OCCUPANCY

5



2 / L2.0 LEVEL 1
1/8" = 1'-0"

SS&L
ARCHITECTURE & INTERIOR DESIGN
Montgomery | Dothan | WWW.SSLARCH.COM
(M) 334. 263. 5162 | (D) 334. 791. 5248

Rev.	Description	Date
5	Add. 5	01/15/2021
7	Add. 7	02/15/2021

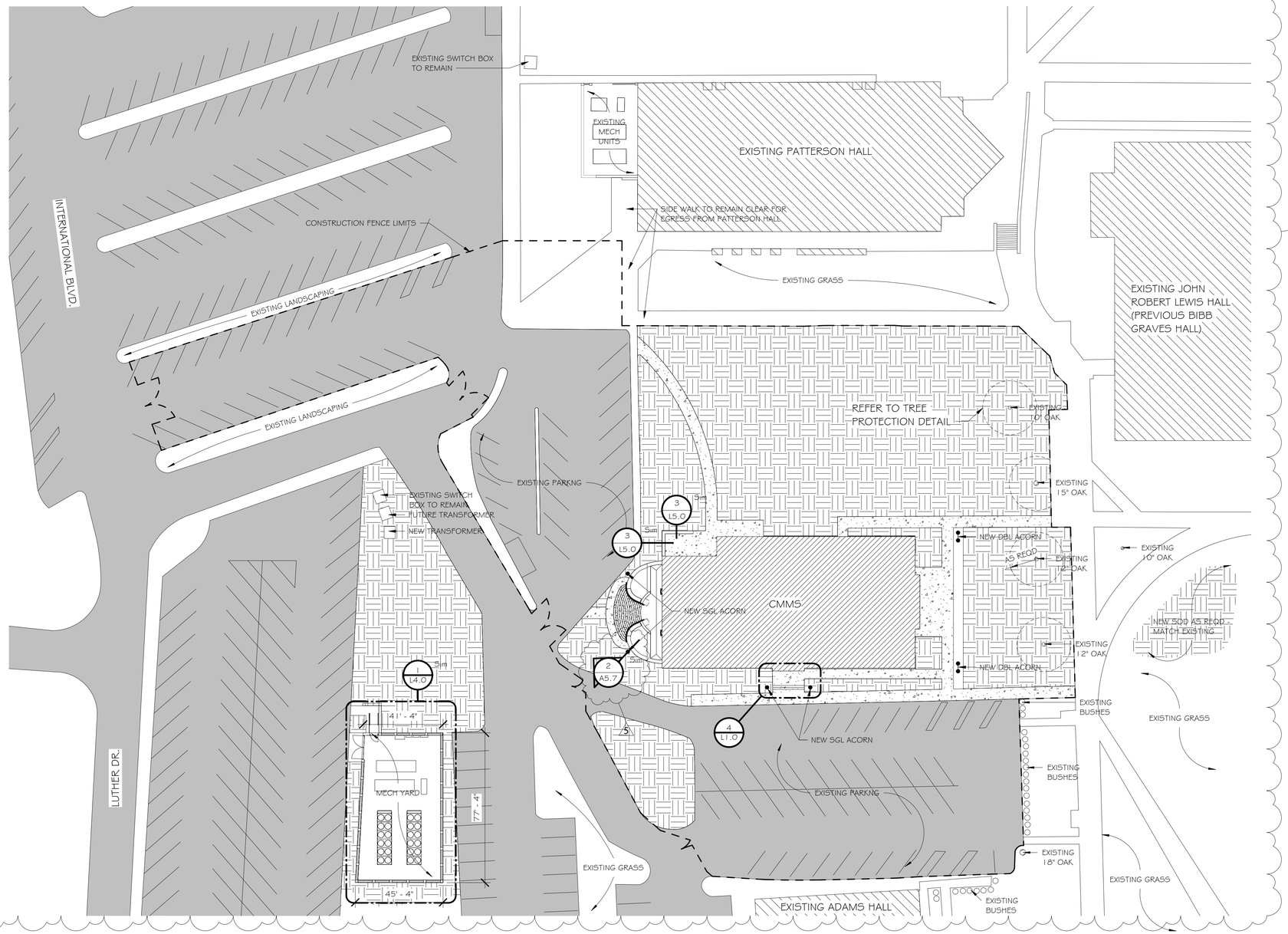
Job Number: 18144
Date: 11/17/2020
Drawn By: CS,JB,DB,LG
Checked By: JS, FL

Project Title:
CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

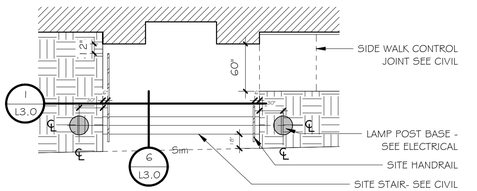
Sheet Title:
LIFE SAFETY PLANS

Sheet Number:
LS2.0

STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr.
1546
Gregory A. O'Neal
4343
Wesley R. Osmer
4344
ALABAMA
REGISTERED ARCHITECTS



1 / L1.0 SITE PLAN
1" = 30'-0"



4 / L1.0 SOUTH ENTRY
1/8" = 1'-0"

0' 15' 30' 60' 120'

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Rev.	Description	Date
5	Add. 5	01/15/2021
7	Add. 7	02/15/2021

Job Number
18144

Date
11/17/2020

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CS,JB,DB,LG

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JS, FL

Project Title
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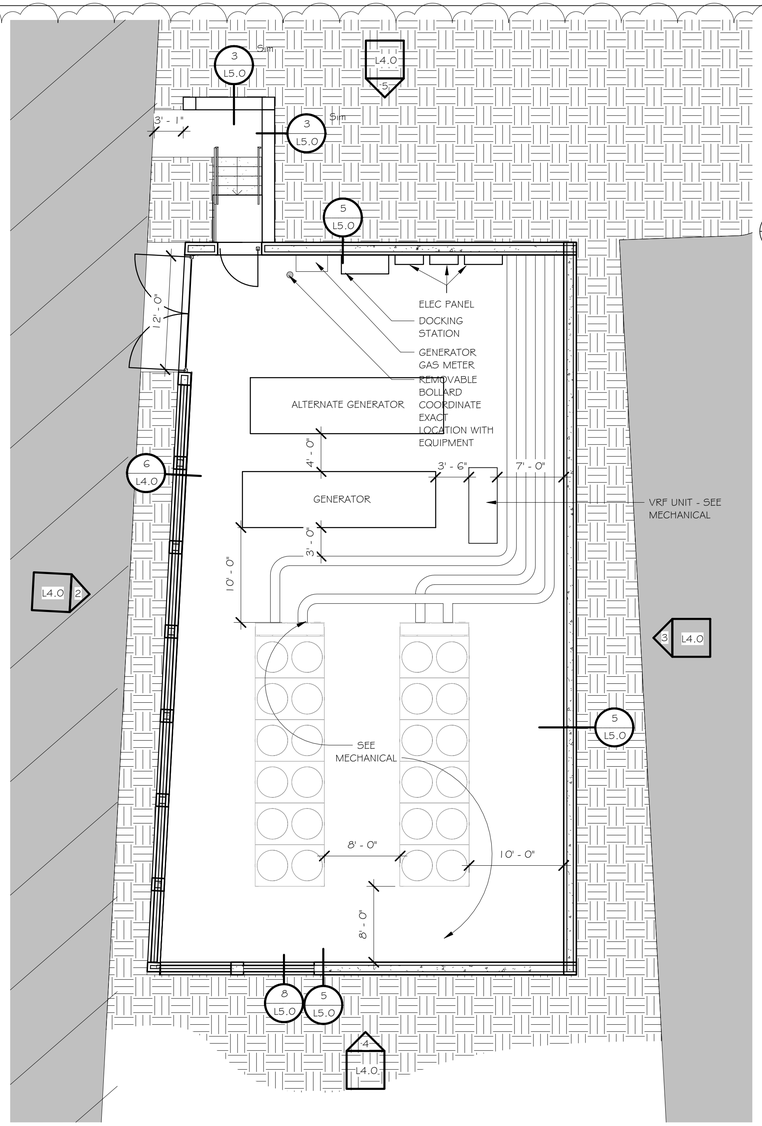
TROY UNIVERSITY | TROY, AL

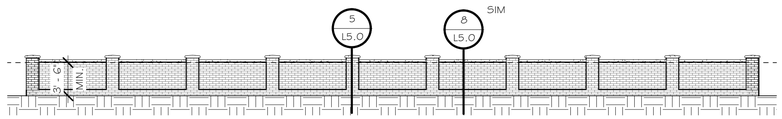
Sheet Title
SITE PLAN

Sheet Number
L1.0

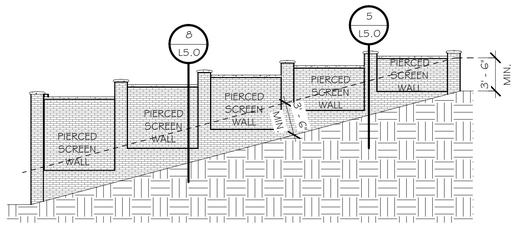
STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr.
1046
Gregory A. O'Neal
4043
Wesley A. Garner
4244
ALABAMA
REGISTERED ARCHITECTS



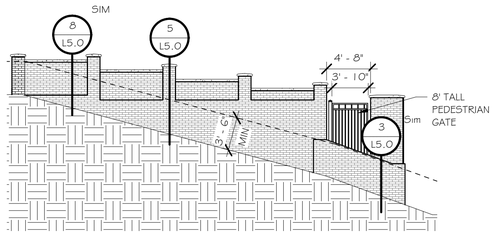
1 / L4.0 MECHANICAL YARD
1/8" = 1'-0"



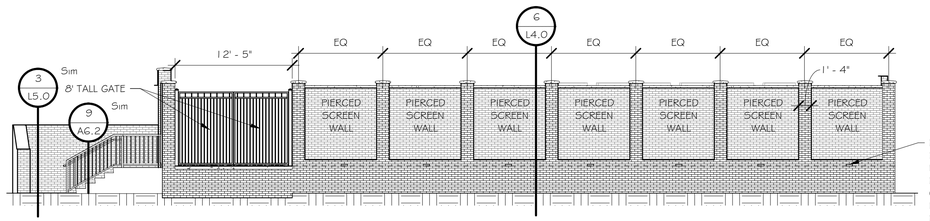
3 / L4.0 MECH YARD EAST ELEVATION
1/8" = 1'-0"



4 / L4.0 MECH YARD SOUTH ELEVATION
1/8" = 1'-0"



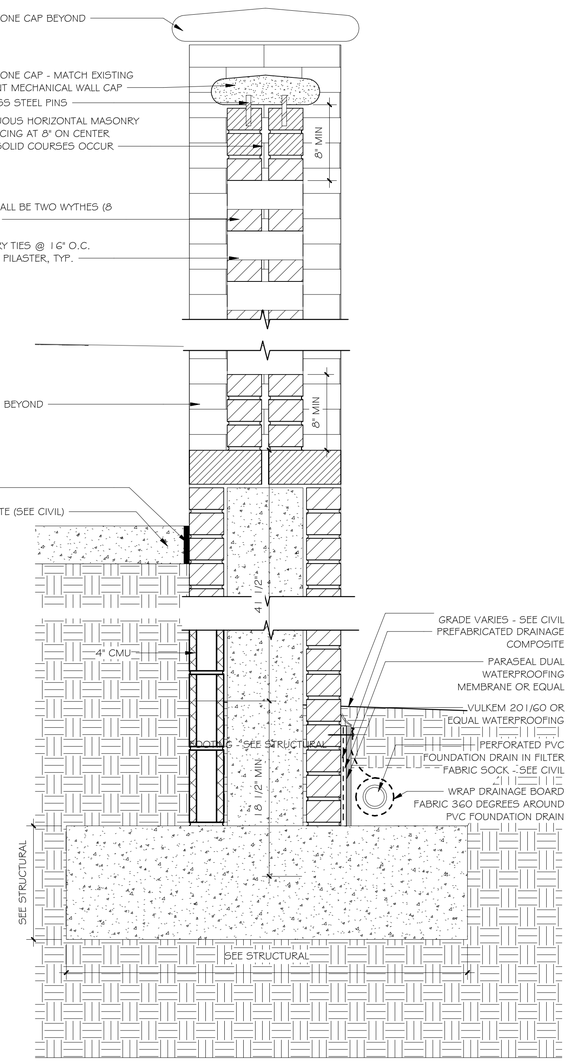
5 / L4.0 MECH YARD NORTH ELEVATION
1/8" = 1'-0"



PROVIDE 7.5"X2" COPPER SCUPPER WITH DRIP EDGE FOR MECH YARD SURFACE DRAINAGE. COPPER DRIP EDGE TO EXTEND 2" BEYOND FACE OF BRICK. PROVIDE COPPER FLANGE & SEALANT AS REQUIRED ON INTERIOR SIDE OF WALL. COORDINATE EXACT LOCATION OF SCUPPER WITH MECH YARD SLAB TO PROVIDE POSITIVE DRAINAGE.

2 / L4.0 MECH YARD WEST ELEVATION
1/8" = 1'-0"

NOTE: EXTEND CONTINUOUS MASONRY REINFORCING IN WALL INTO PILASTER, TYP.



6 / L4.0 MECH YARD SCREEN WALL SECTON 2
1 1/2" = 1'-0"

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18144

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Sheet Title
MECHANICAL YARD

Sheet Number
L4.0

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MONTGOMERY
Jim H. Seay, Jr.
1046
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6043
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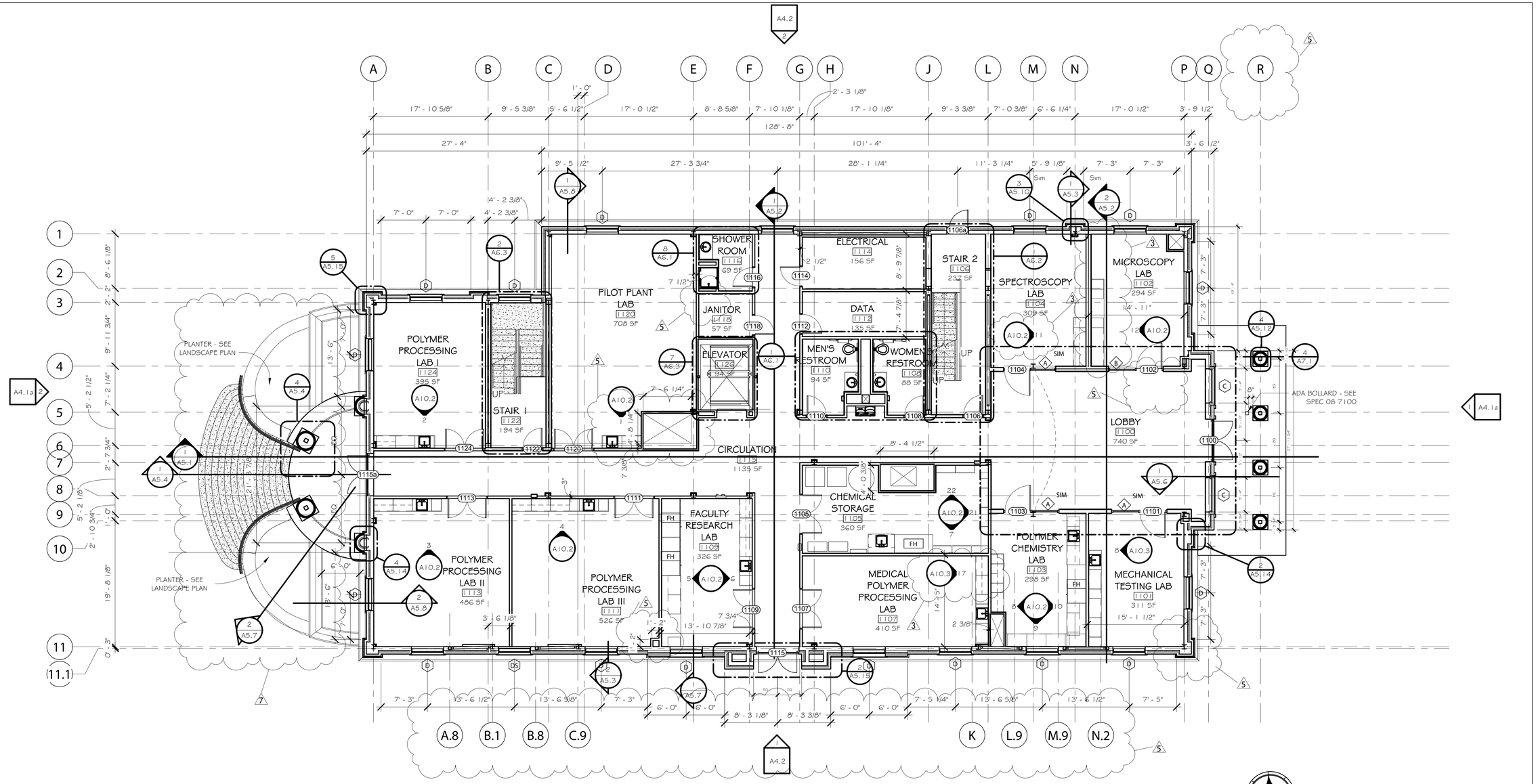

1 / A2.1 LEVEL 1 FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. TYPICAL AT COLUMNS AND STRUCTURAL ELEMENTS PROTRUDING FROM WALLS: PROVIDE METAL STUD AND GYPSUM WALL BOARD FURR OUT AS REQUIRED TO FULLY CONCEAL.
2. REFER TO LIFE SAFETY PLAN FOR LOCATIONS OF FIRE EXTINGUISHERS WITH RECESSED CABINETS.

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3	Add. 3	12/16/2020
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18144

Date
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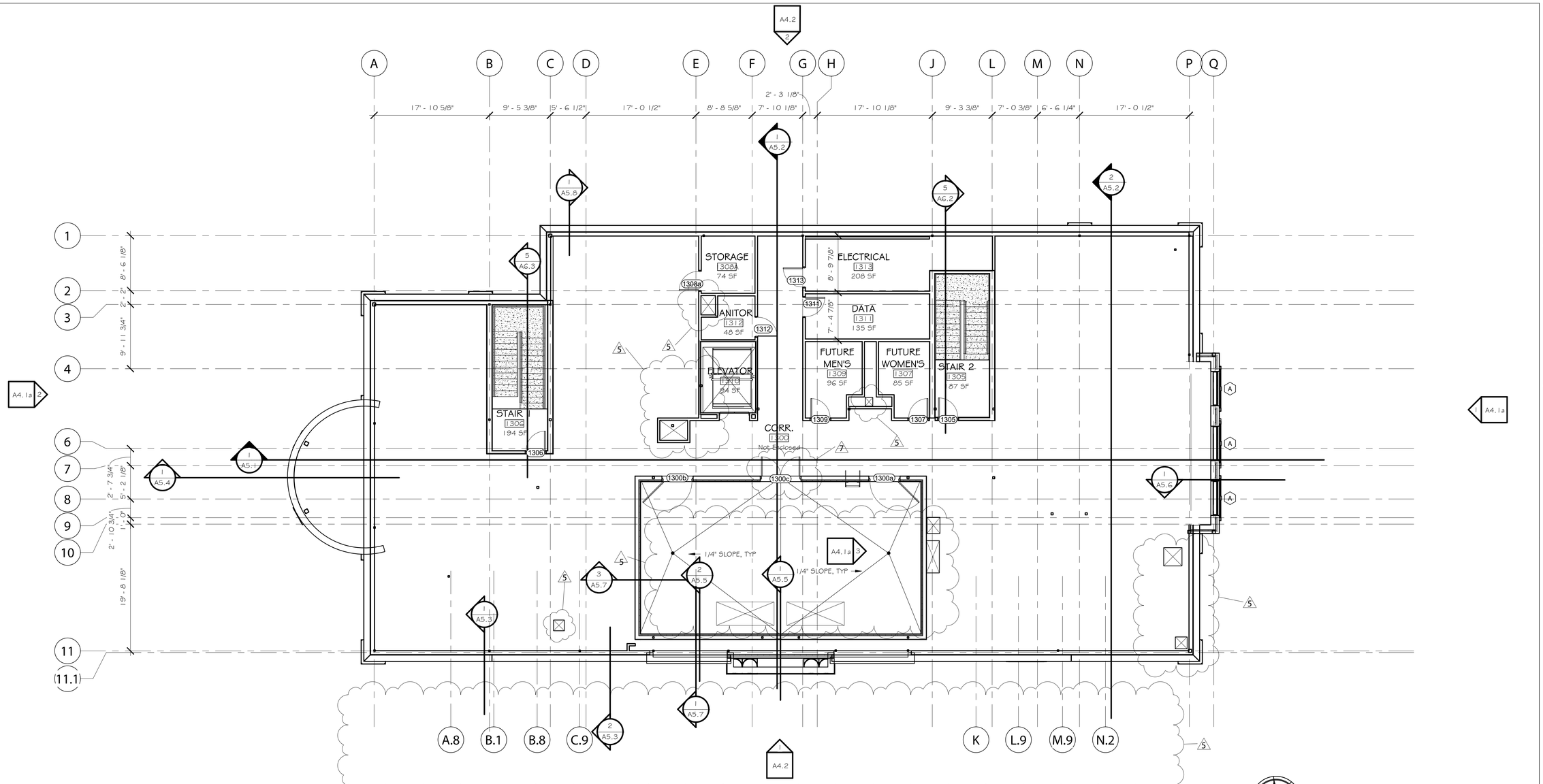
Sheet Title
LEVEL 1 FLOOR PLAN

Sheet Number
A2.1

STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr.
1946
Gregory A. O'Neal
4043
Wesley R. Osmer
4244
ALABAMA
REGISTERED ARCHITECTS



1 A2.3 LEVEL 3 FLOOR PLAN - BASE BID
1/8" = 1'-0"

GENERAL NOTES:

1. TYPICAL AT COLUMNS AND STRUCTURAL ELEMENTS PROTRUDING FROM WALLS: PROVIDE METAL STUD AND GYPSUM WALL BOARD FURR OUT AS REQUIRED TO FULLY CONCEAL.
2. REFER TO LIFE SAFETY PLAN FOR LOCATIONS OF FIRE EXTINGUISHERS WITH RECESSED CABINETS.

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Sheet Title
LEVEL 3 FLOOR PLAN - BASE BID

Sheet Number
A2.3

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1046
Gregory A. O'Neal
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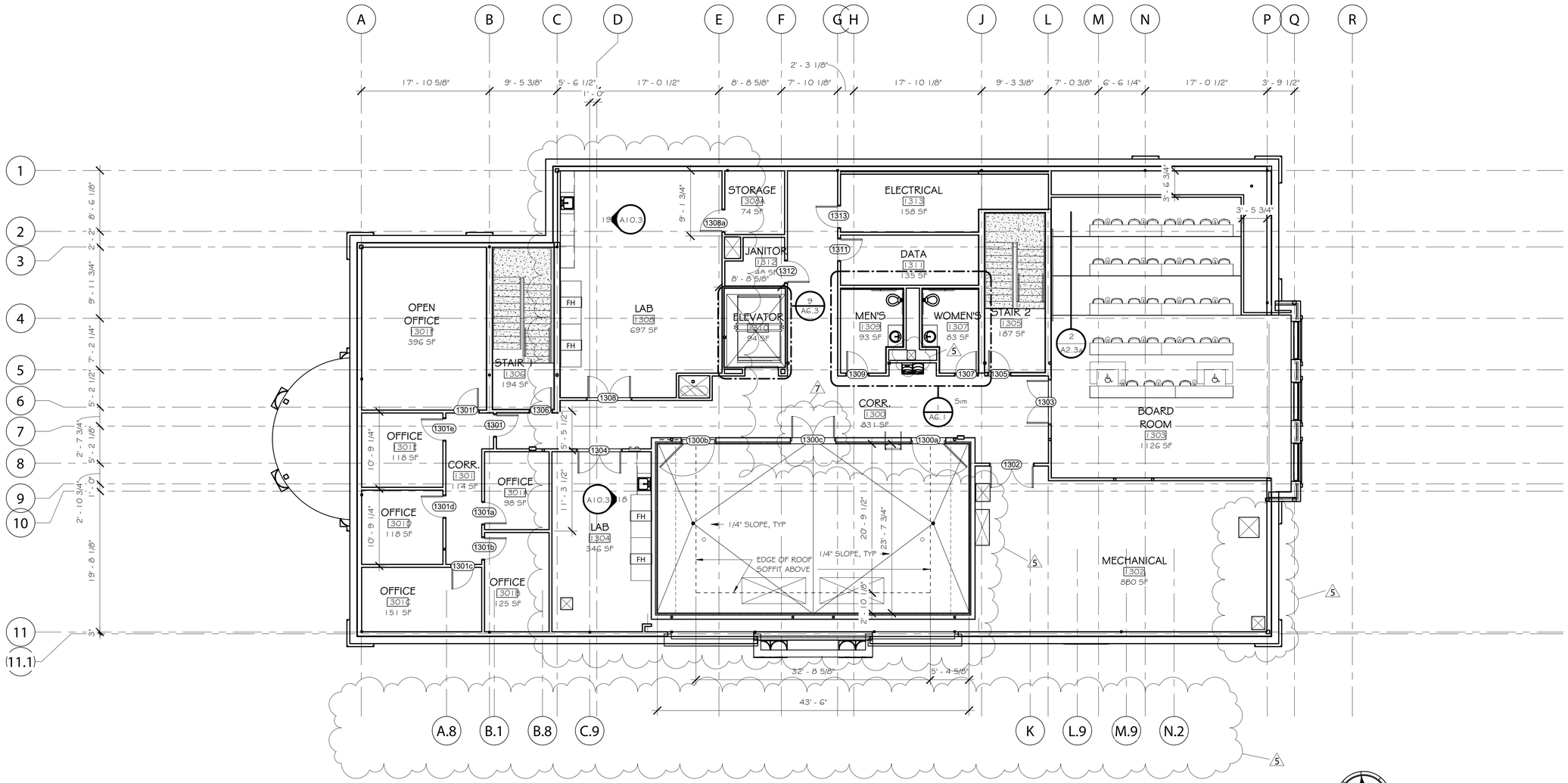
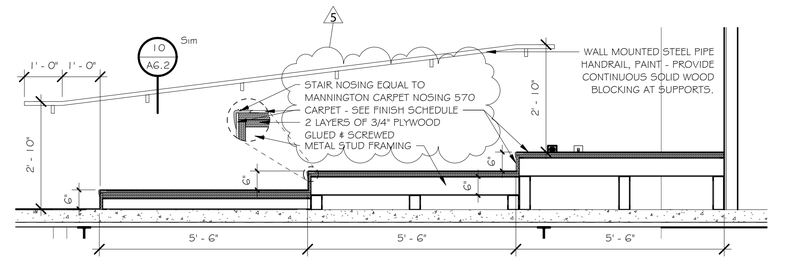
Wesley B. Osmer
6244
ALABAMA
REGISTERED ARCHITECTS



1 / A2.3a LEVEL 3 ALTERNATE FLOOR PLAN
1/8" = 1'-0"

GENERAL NOTES:

1. TYPICAL AT COLUMNS AND STRUCTURAL ELEMENTS PROTRUDING FROM WALLS: PROVIDE METAL STUD AND GYPSUM WALL BOARD FURR OUT AS REQUIRED TO FULLY CONCEAL.
2. REFER TO LIFE SAFETY PLAN FOR LOCATIONS OF FIRE EXTINGUISHERS WITH RECESSED CABINETS.



2 / A2.3a TIERED SEATING PLATFORM DETAIL
1/2" = 1'-0"

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Sheet Title:
LEVEL 3 ALTERNATE FLOOR PLAN

Sheet Number:
A2.3a

STATE OF ALABAMA
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Gregory A. O'Neal 6043
Wesley B. Osmer 6044
ALABAMA
REGISTERED ARCHITECTS

DOOR, OPENING & FRAME SCHEDULE LEVEL 3

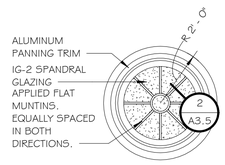
DOOR NO.	LEAVES	LEAF 1 WIDTH	LEAF 2 WIDTH	TOTAL WIDTH	HEIGHT	THICKNESS	ELEVATION TYPE	ACCESS CONTROL	FRAME ELEVATION TYPE	DETAILS: HEAD DETAIL	DETAILS: JAMB DETAIL	DETAILS: SILL DETAIL	FIRE RATING	GLAZING TYPE	STC RATING	NOTES
LEVEL 3																
1300a	1	4' - 6"		4' - 6"	7' - 0"	0' - 1 3/4"	F HM EXT		HM F2 EXT	5/A5.11	6/A5.11	7/A5.11	7			
1300b	1	4' - 6"		4' - 6"	7' - 0"	0' - 1 3/4"	F HM EXT		HM F2 EXT	5/A5.11	6/A5.11	7/A5.11				
1300c	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	F HM EXT		HM F2 EXT	5/A5.11 SIM	6/A5.11 SIM	7/A5.11 SIM				
1301	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301b	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301c	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301d	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301e	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1301f	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1302	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1303	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			IG-3		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1304	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1305	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2		
1306	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2		
1307	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1308	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1		ALTERNATE ONLY - ADD IF ALTERNATE ACCEPTED
1308a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1309	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1311	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1312	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6					
1313	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6		1 HR			

DOOR SCHEDULE NOTE:
PRIOR TO ORDERING AND FABRICATION OF ALL DOORS AND ASSOCIATED FRAMES THE CONTRACTOR SHALL ILLUSTRATE DIAGRAMATICALLY FINAL CEILING HEIGHTS THROUGH VERIFICATION OF ALL BUILDING SYSTEMS AND PROJECT CONDITIONS, AND RECEIVE WRITTEN APPROVAL OF THE DIAGRAMS BY THE ARCHITECT.

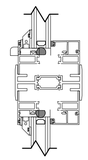
5

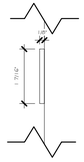
WINDOW SCHEDULE

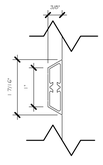
1. REFER TO SPEC SECTION 08 5113 ALUMINUM WINDOWS, DOORS & FRAMES AND 08 8000 GLAZING.
2. FIELD VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION OF WINDOW ASSEMBLIES. NOTIFY ARCHITECT PRIOR TO PROCEEDING IF ANY DISCREPANCIES ARE IDENTIFIED.
3. REFER TO FRAME SCHEDULE FOR TRANSOM ABOVE DOORS.
4. AT ALL WINDOWS/AREAS TO RECEIVE SPANDREL GLAZING, WINDOWS SHALL BE OUTSIDE GLAZED IN ORDER FOR GLAZING TO BE REPLACED FROM THE EXTERIOR.



WINDOW TYPE GS
ALUMINUM STANDARD FIXED WINDOW



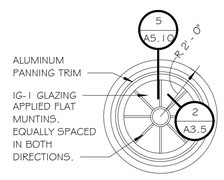




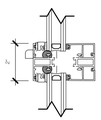
1 A3.5 STACKED MULLION 3" = 1'-0"

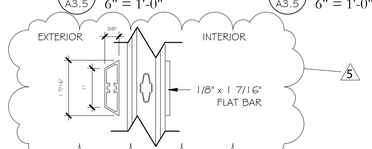
2 A3.5 APPLIED MUNTIN FLAT 6" = 1'-0"

3 A3.5 APPLIED MUNTIN 6" = 1'-0"



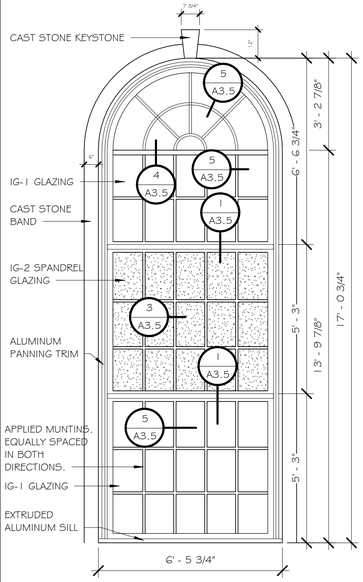
WINDOW TYPE G
ALUMINUM STANDARD FIXED WINDOW



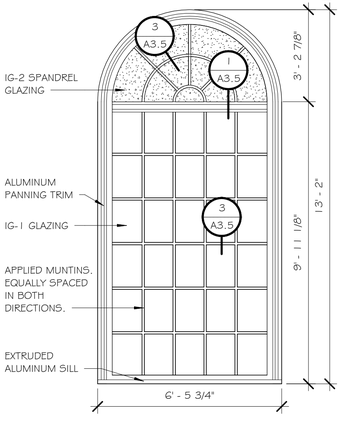


4 A3.5 MEETING RAIL 3" = 1'-0"

5 A3.5 TRIPLE GRID MUNTIN 6" = 1'-0"



WINDOW TYPE A
ALUMINUM STANDARD FIXED WINDOW



WINDOW TYPE B
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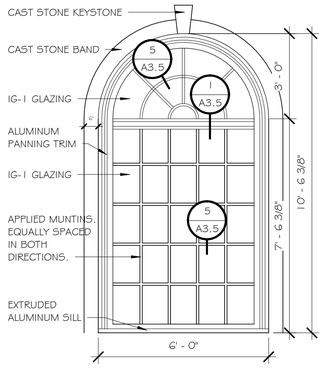
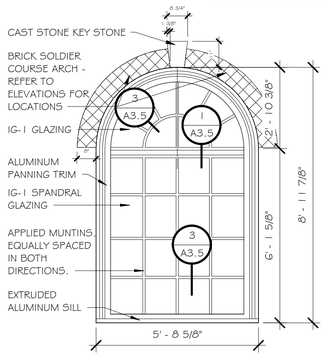
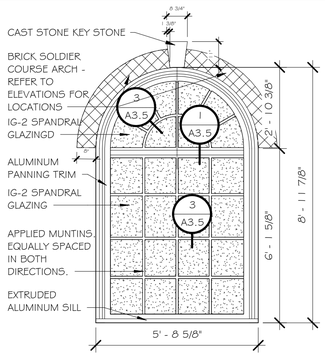


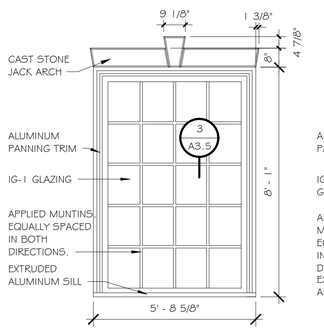
WINDOW TYPE C
ALUMINUM STANDARD FIXED WINDOW



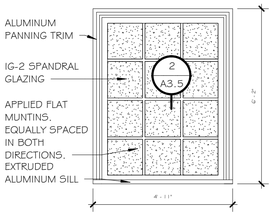
WINDOW TYPE D5
ALUMINUM STANDARD FIXED WINDOW



WINDOW TYPE D5
ALUMINUM STANDARD FIXED WINDOW



WINDOW TYPE E
ALUMINUM STANDARD FIXED WINDOW

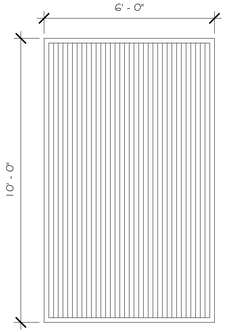


WINDOW TYPE F
ALUMINUM STANDARD FIXED WINDOW

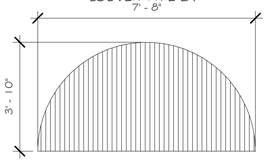
LOUVER SCHEDULE

1. REFER TO SPEC SECTION 08 9100 LOUVERS.
2. FIELD VERIFY AND COORDINATE ALL DIMENSIONS PRIOR TO FABRICATION OF LOUVER ASSEMBLIES. NOTIFY ARCHITECT PRIOR TO PROCEEDING IF ANY DISCREPANCIES ARE IDENTIFIED.
3. COORDINATE WITH MECHANICAL & STRUCTURAL.
4. GC TO PROVIDE SUPPORT STRUCTURE AS REQUIRED BY LOUVER MANUFACTURER.

LOUVER TYPE LA



LOUVER TYPE LB



LOUVER TYPE LC

LOUVER TYPE LD

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5	Add. 5	01/15/2021
7	Add. 7	02/15/2021

Job Number: 18144

Date: 11/17/2020

Drawn By: CS,JB,DB,LG

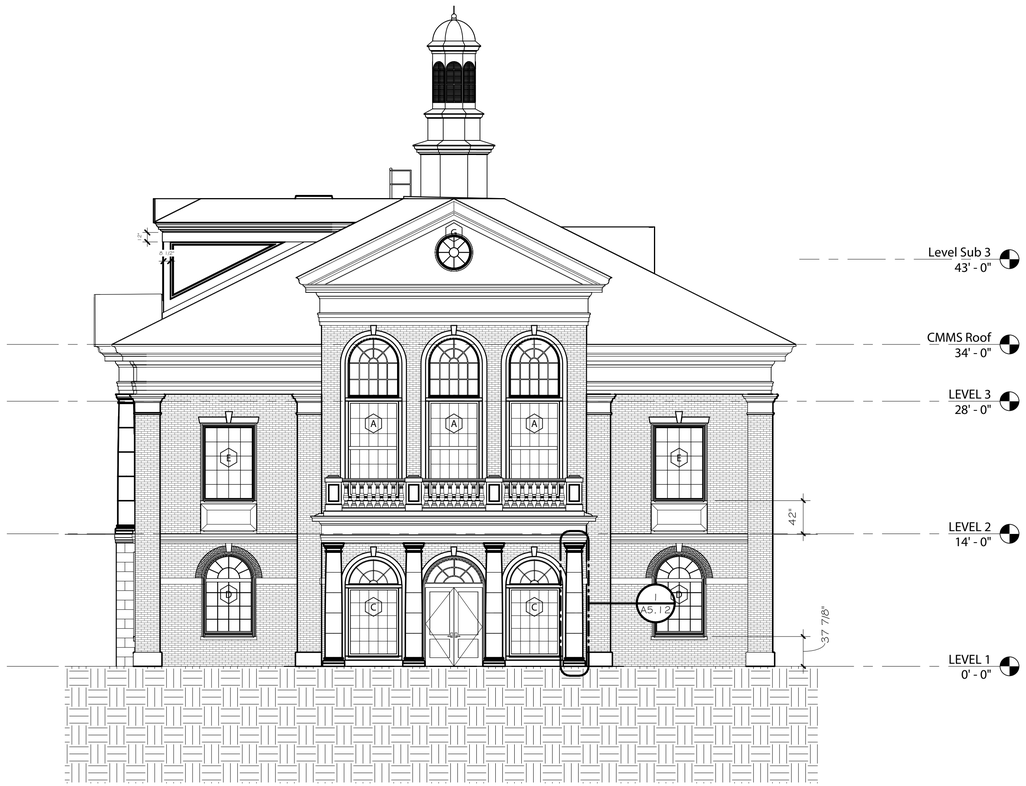
Checked By: JS, FL

Project Title:
CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

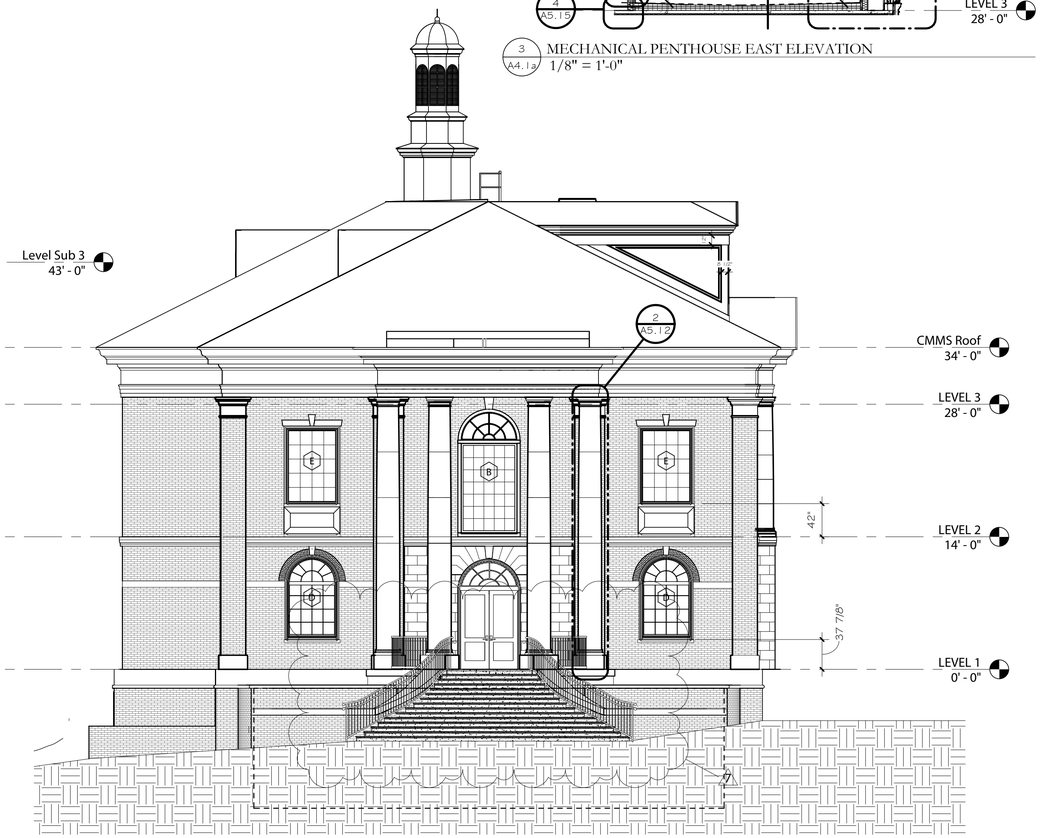
Sheet Title:
DOOR SCHEDULE LEVEL 3 & WINDOW SCHEDULE

Sheet Number:
A3.5

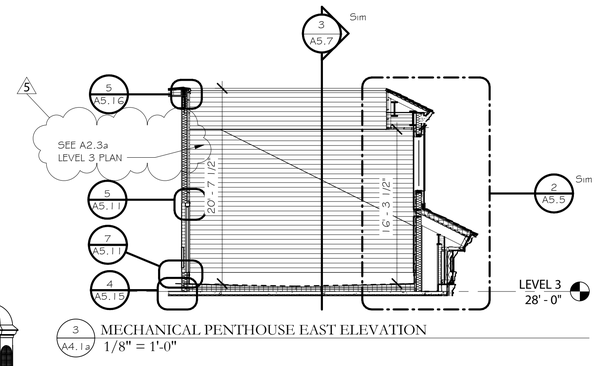
STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr.
1046
Gregory A. O'Neal
6043
Wesley R. Garner
6244
ALABAMA
REGISTERED ARCHITECTS



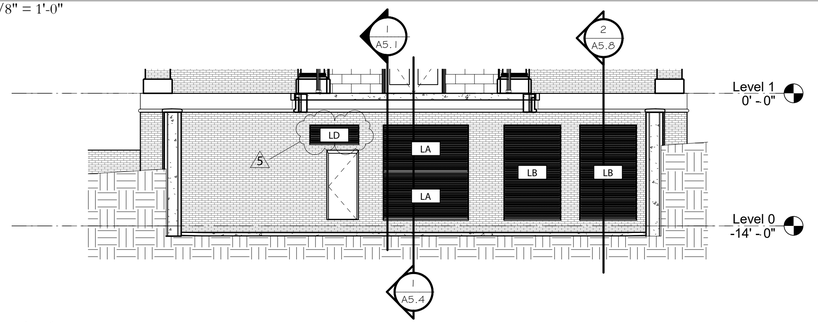
1 A4.1a EAST ELEVATION
1/8" = 1'-0"



2 A4.1a WEST ELEVATION
1/8" = 1'-0"



3 A4.1a MECHANICAL PENTHOUSE EAST ELEVATION
1/8" = 1'-0"



4 A4.1a Elevation 6 - a
1/8" = 1'-0"

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Date
11/17/2020

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CS,JB,DB,LG

Checked By
JS, FL

Project Title
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Sheet Title
ALTERNATE EXTERIOR ELEVATIONS

Sheet Number
A4.1a

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1046
Gregory A. O'Neal
6043
Wesley R. Garner
6244
ALABAMA
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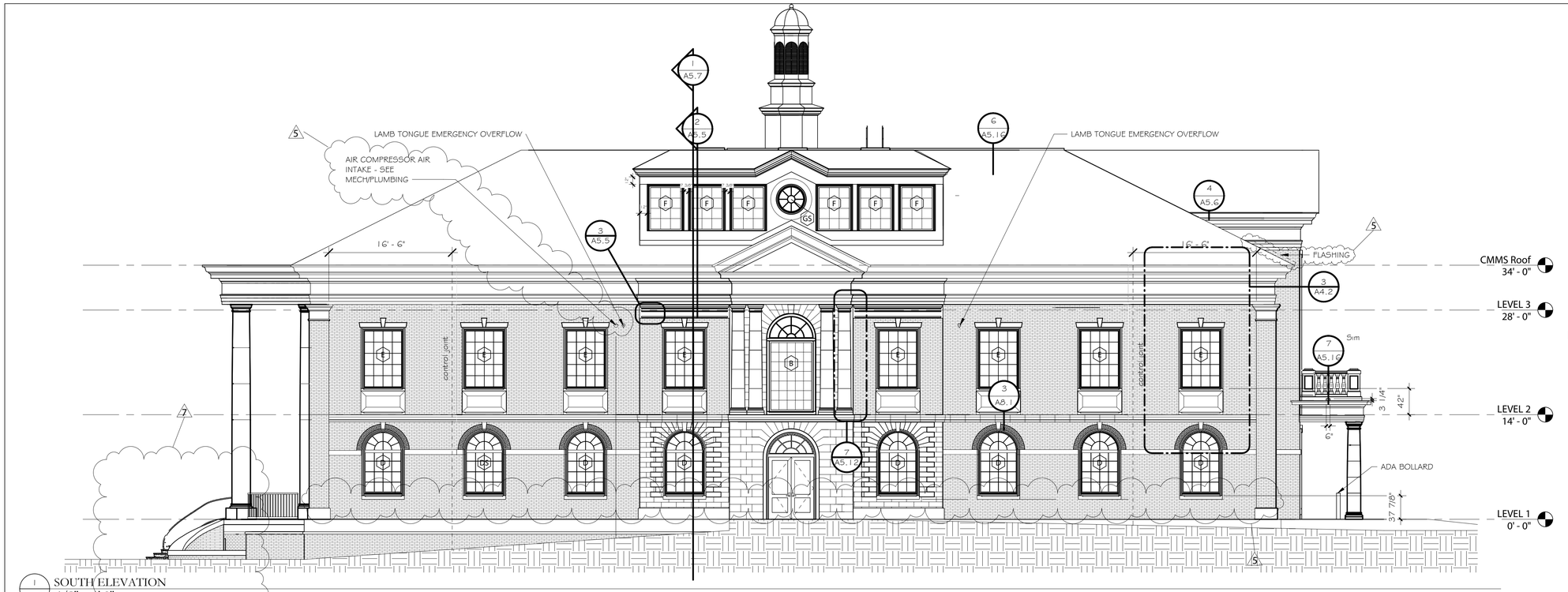
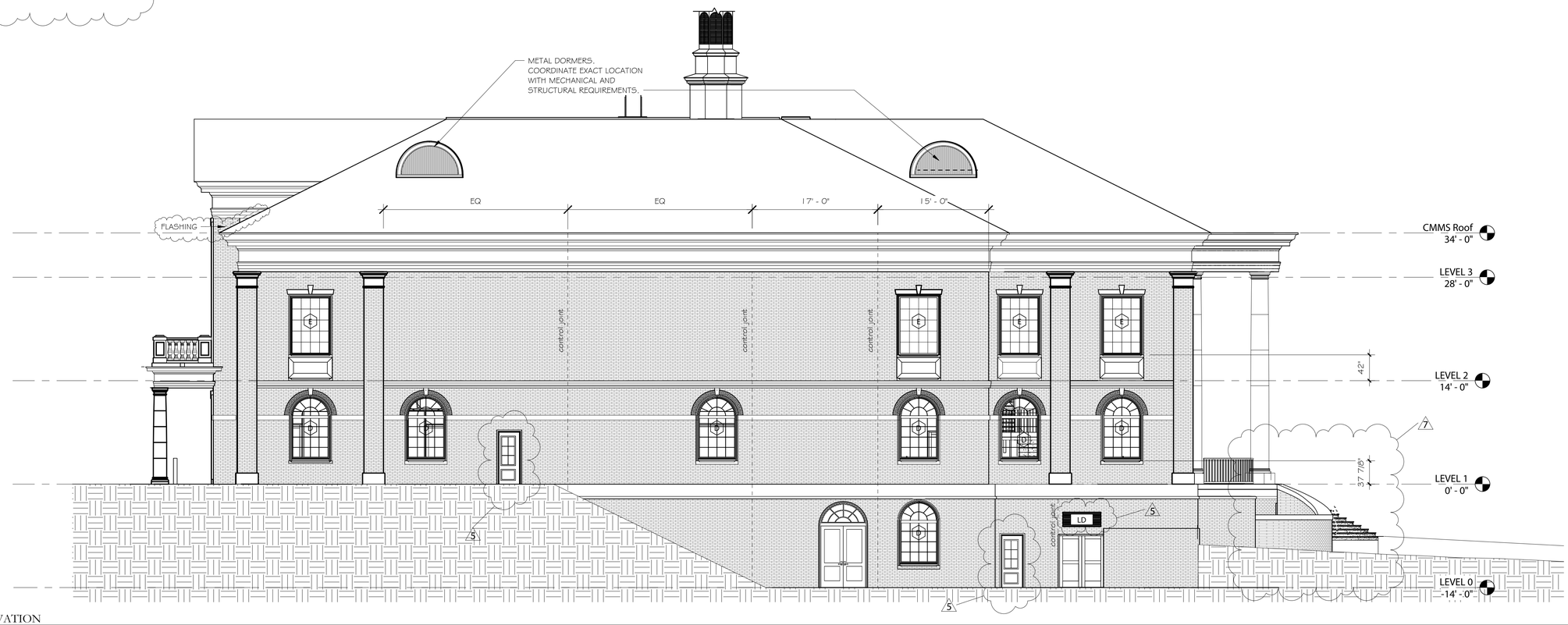
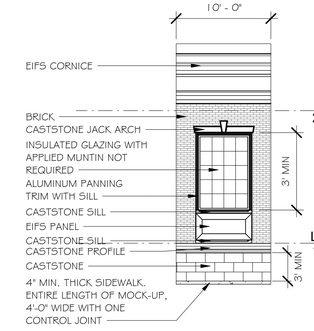


1 / A4.2 SOUTH ELEVATION
1/8" = 1'-0"



2 / A4.2 NORTH ELEVATION
1/8" = 1'-0"

*MOCK-UP TO REMAIN IN PLACE UNTIL SIDEWALKS ARE INSTALLED AND APPROVED.



3 / A4.2 WALL MOCK UP
1/8" = 1'-0"

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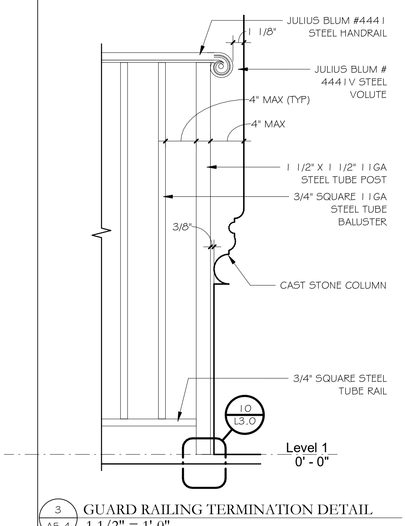
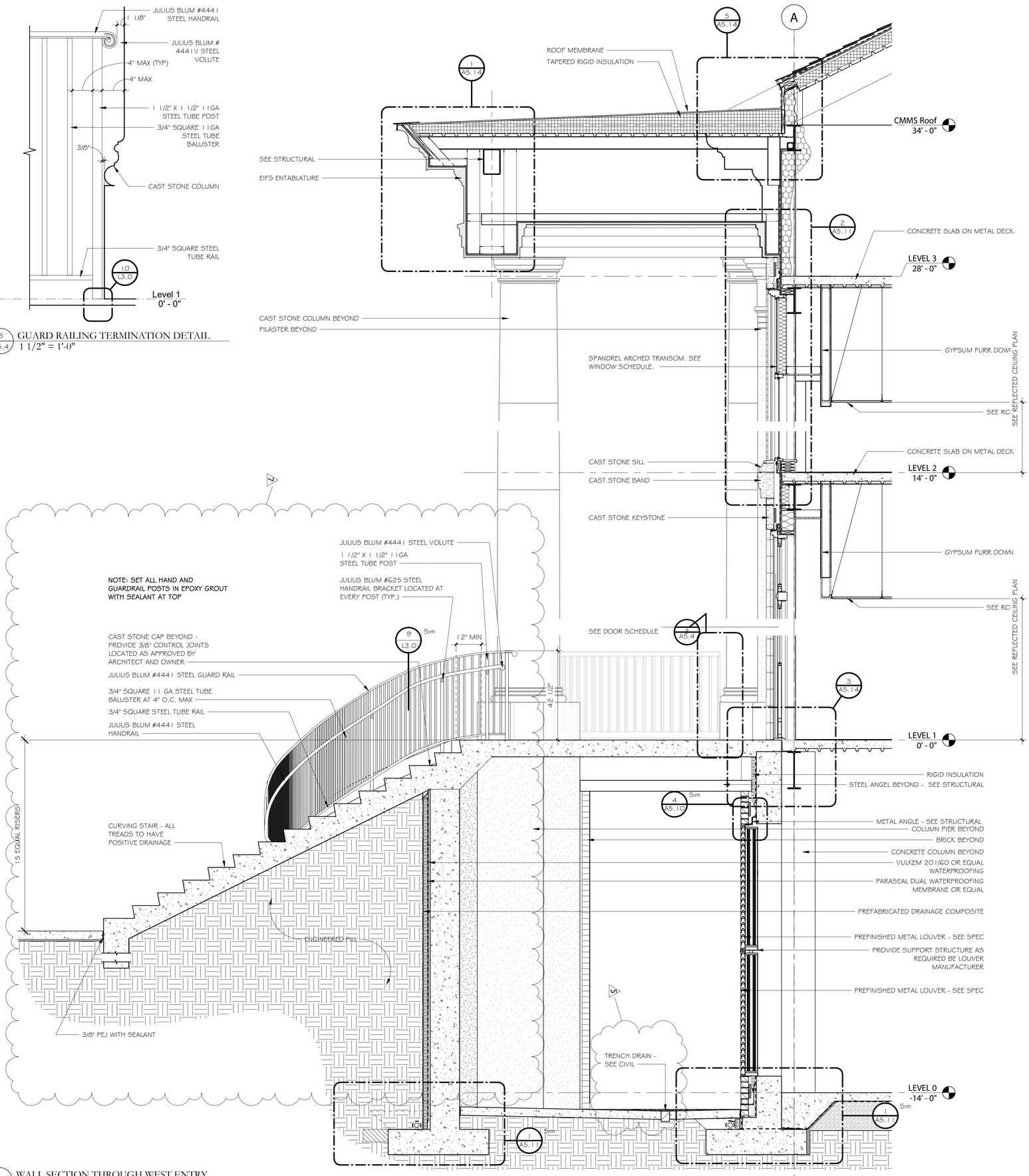
Sheet Title
EXTERIOR ELEVATIONS - BASE BID

Sheet Number
A4.2

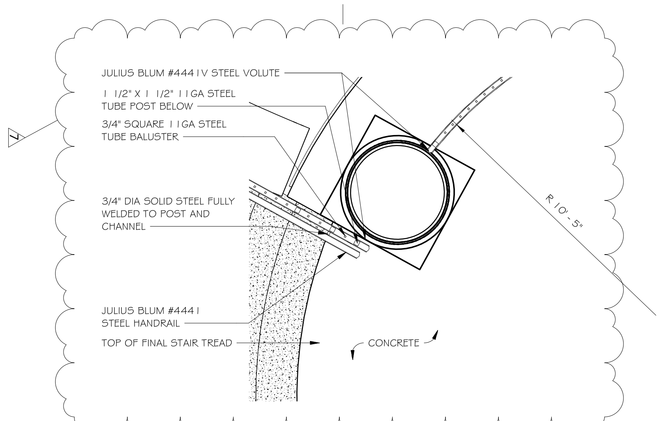
STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr.
1046
Gregory A. O'Neal
4043
Wesley B. Clamer
4344
ALABAMA
REGISTERED ARCHITECTS



3 / A5.4 GUARD RAILING TERMINATION DETAIL
1 1/2" = 1'-0"



1 / A5.4 WALL SECTION THROUGH WEST ENTRY
1/2" = 1'-0"



4 / A5.4 WEST ENTRY HANDRAIL PLAN DETAIL
1/2" = 1'-0"

STATE OF ALABAMA
REGISTERED ARCHITECTS
MONTGOMERY

Sheet Number
A5.4

Sheet Title
WALL SECTIONS

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES

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Project Title
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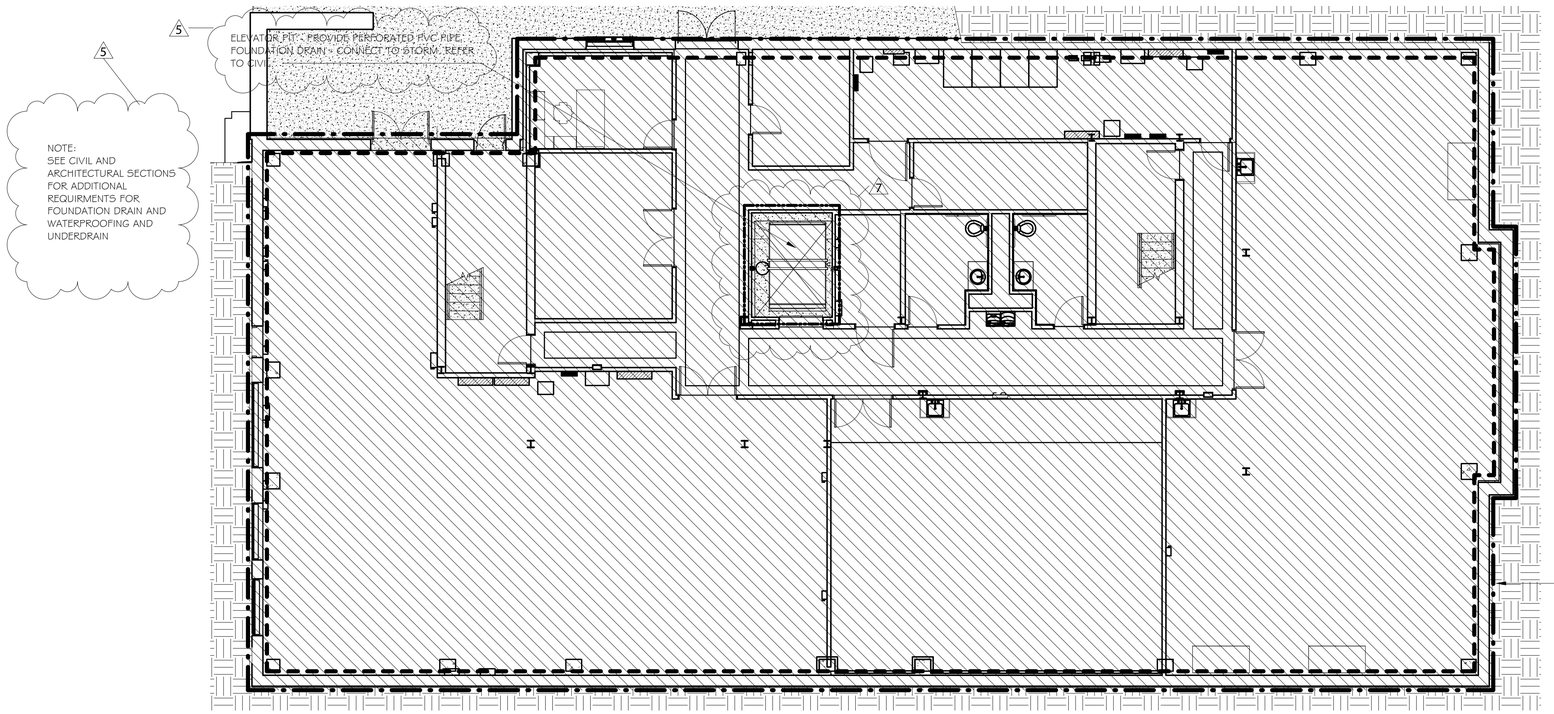

1 / A9.4 LEVEL 0 DIAGRAM
1/8" = 1'-0"

WATERPROOFING LEGEND

7 — PRE-APPLIED SHEET MEMBRANE WATERPROOFING EQUAL TO PREPRUFE 300R PLUS - SEE SPECIFICATION 07 1324

5 — SELF-ADHERING WATERPROOF MEMBRANE. SEE SPECIFICATION 07 1325. REFER TO 1/A5.11 FOR ADDITIONAL REQUIREMENTS

VERTICAL SHEET WATER PROOFING MEMBRANE / DRAINAGE BOARD - SEE SPECIFICATION 07 1610 BELOW GRADE WATERPROOFING. REFER TO 1/A5.11 FOR ADDITIONAL REQUIREMENTS

DAMPROOFING. SEE SPECIFICATION SECTION 07 1113

7 — BITUTHENE 3000. SEE SPEC SECTION 07 1325.

REFER TO CIVIL FOR LOCATIONS OF PERFORATED PVC PIPE FOUNDATION DRAINS

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Sheet Title
FOUNDATION WATERPROOFING DIAGRAMS

Sheet Number
A9.4

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1046
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ALABAMA
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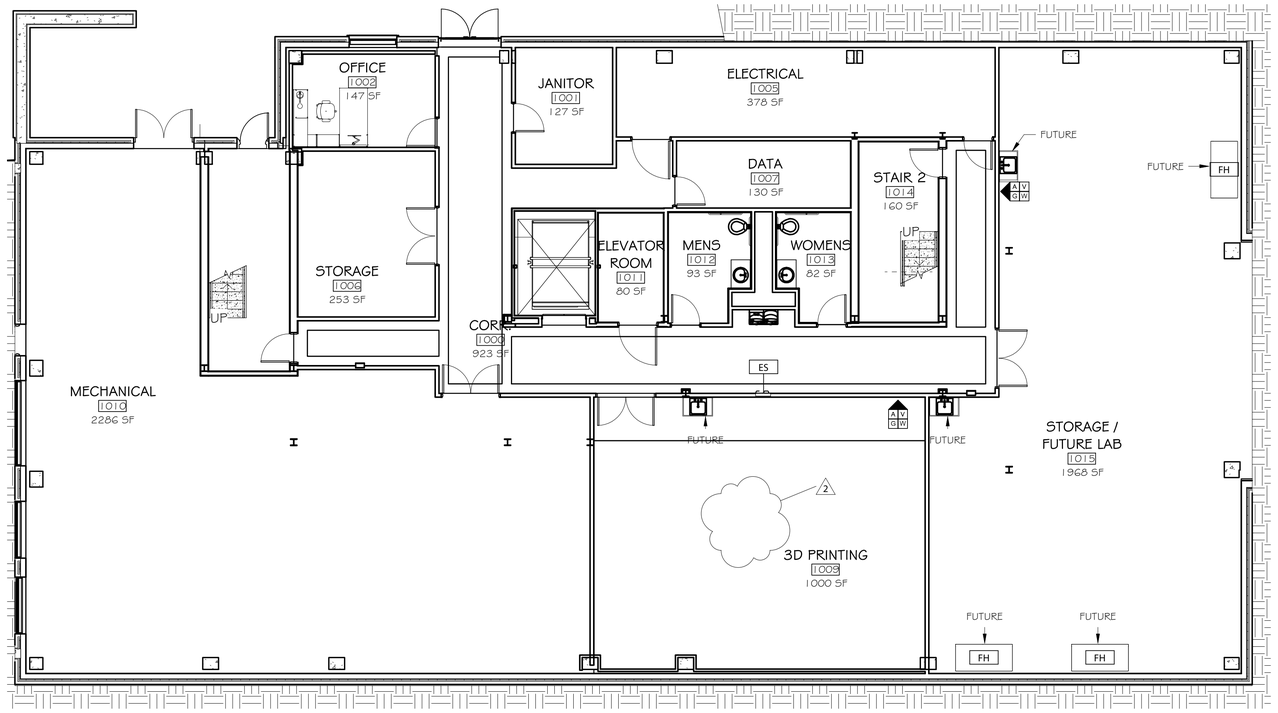
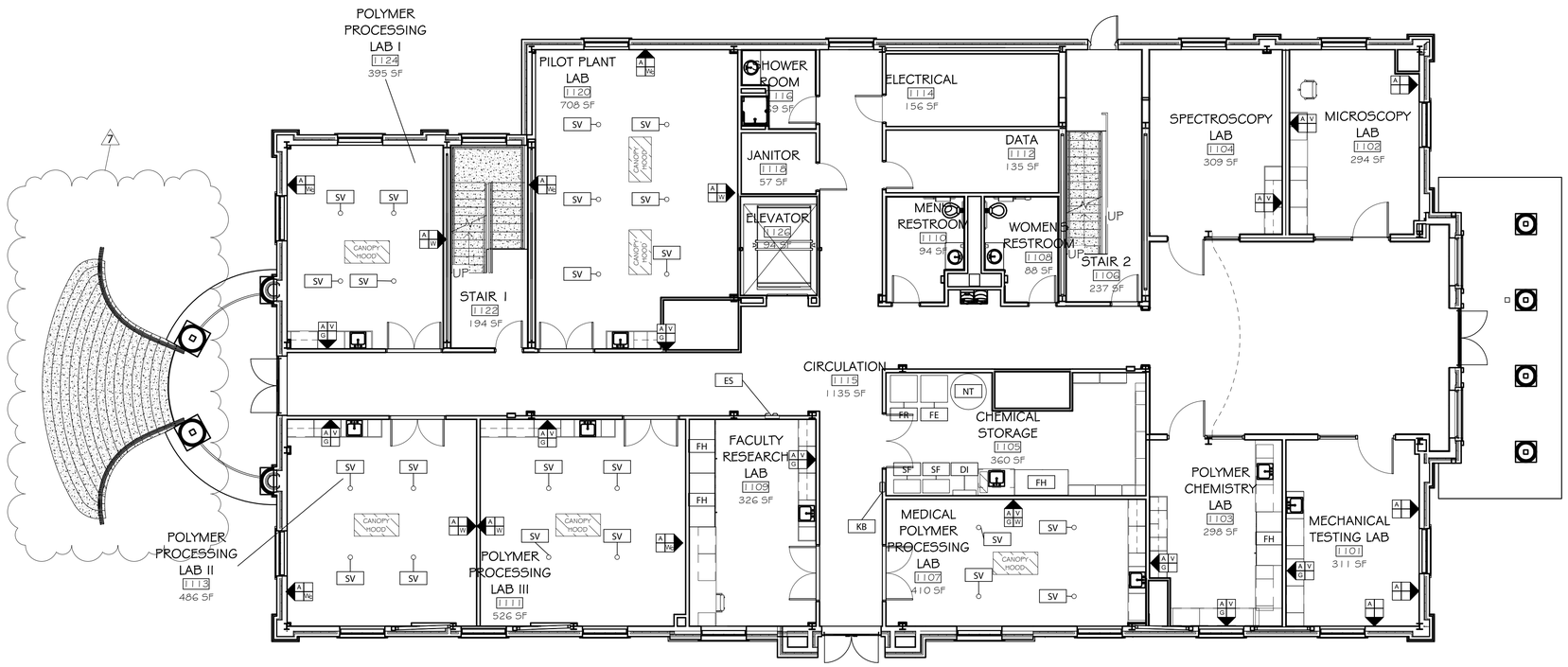


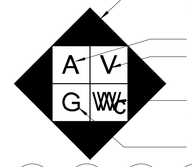
1 A10.0 MECHANICAL BASEMENT EQUIPMENT PLAN
1/8" = 1'-0"



2 A10.0 Faculty Research Lab - First Floor
1/8" = 1'-0"

EQUIPMENT LEGEND

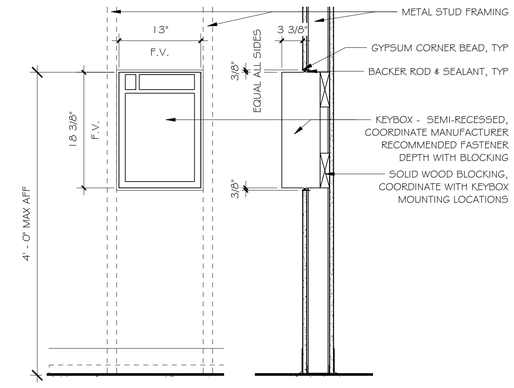
LAB UTILITY TAG:



FH	FUME HOOD (OFOI)

FUME HOOD UTILITIES (EACH):
- COMPRESSED AIR
- VACUUM
- NATURAL GAS
- COLD WATER

SV	SNORKEL VENT (OFOI)
FL	FLAME CABINET (OFOI)
AC	ACID CABINET (OFOI)
SF	STORAGE ROOM FLAME CABINET (OFOI)
FR	REFRIGERATOR (OFOI)
FE	FREEZER (OFOI)
ES	EMERGENCY SHOWER (CFCI)
FEC	FIRE EXTINGUISHER CABINET (CFCI)
NT	NITROGEN TANK (OFOI)
TV	TELEVISION (OFOI)
KB	KEY BOX (CFCI)
DI	DEIONIZED WATER SYSTEM (CFCI) BASIS OF DESIGN: LABCONCO WATERPRO POLISHING SYSTEM, MODEL: 90052 1
DB	GLASS DISPLAY BOARD (CFCI) SPEC SECTION 10 1200



3 A10.0 KEYBOX DETAIL
1" = 1'-0"

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7	Add. 7	02/15/2021

Job Number: 18144
Date: 11/17/2020
Drawn By: CS,JB,DB,LG
Checked By: JS, FL
Project Title: CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL
Sheet Title: FURNITURE, FIXTURES & EQUIPMENT PLANS
Sheet Number: A10.0

STATE OF ALABAMA
MONTGOMERY
Jim H. Seay, Jr. 1046
Gregory A. O'Neal 6043
Wesley R. Oemer 6244
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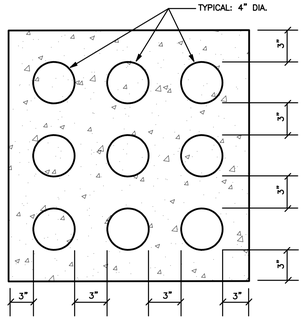


DUCT BANK NOTES:

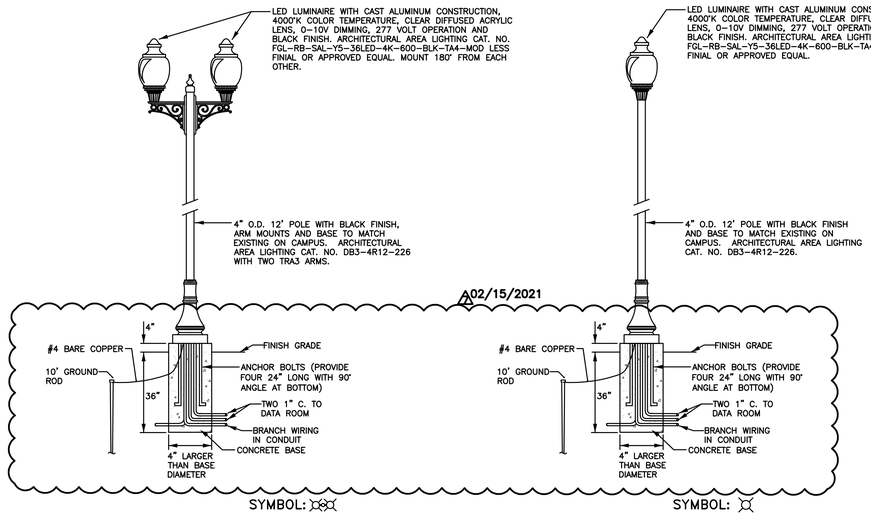
1. CONCRETE SHALL BE 3,000 P.S.I. @ 28 DAYS OR AS SPECIFIED.
2. PROVIDE REINFORCING RODS ON TOP OF DUCTS WHEN CROSSING OR PLACED IN ROADWAYS.
3. MINIMUM COVER TO TOP OF CONCRETE SHALL BE 24".
4. NON-FERROUS TIE WIRES TO BE INBEDED IN DUCT BED CONCRETE.
5. THE DUCT BANK FOR SECONDARY POWER CONDUCTORS FROM TRANSFORMER TO SE SWBD SHALL HAVE NINE 4" DIAMETER DUCTS (3 HIGH x 3 WIDE) WITH SAME SPACING AS DETAIL.
6. THE DUCT BANK FOR SECONDARY POWER CONDUCTORS FROM TRANSFORMER TO PANEL CH SHALL HAVE FOUR 4" DIAMETER DUCTS (2 HIGH x 2 WIDE) WITH SAME SPACING AS DETAIL.
7. THE DUCT BANK FOR GENERATOR FEED FROM GENERATOR TO DOCKING STATION AND DOCKING STATION TO BUILDING EMERGENCY WIRING GUTTER SHALL HAVE FOUR 4" DIAMETER DUCTS (2 HIGH x 2 WIDE) WITH SAME SPACING AS DETAIL.

POWER DUCT BANK DETAIL

SCALE: NOT TO SCALE

LEGEND (THIS SHEET ONLY):

- NEW AREA LIGHTING STANDARD, TYPE A, SEE DETAIL.
- NEW AREA LIGHTING STANDARD, TYPE B, SEE DETAIL.
- BRANCH CIRCUIT WIRING IN UNDERGROUND PVC CONDUIT, #10 CONDUCTORS IN 1" CONDUIT 24" BELOW GRADE UNLESS NOTED.
- MOTOR OR EQUIPMENT JUNCTION BOX.
- SAFETY SWITCH, SIZE AND TYPE AS NOTED. FUSE PER NAMEPLATE.

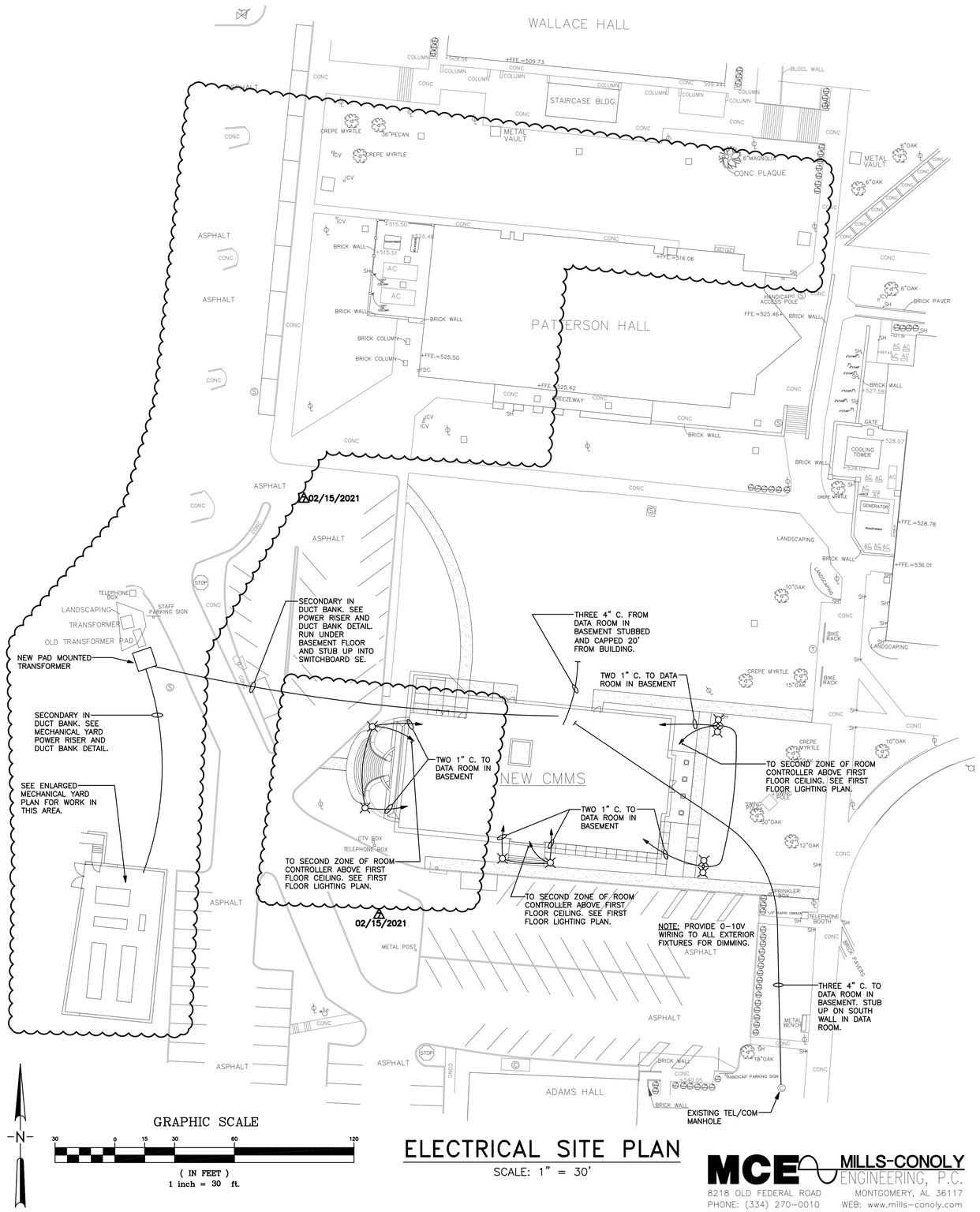


AREA LIGHTING STANDARD "A"

NO SCALE

AREA LIGHTING STANDARD "B"

NO SCALE



ELECTRICAL SITE PLAN

SCALE: 1" = 30'

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Job Number 18144

Date 11/17/2020

Drawn By SCC

Checked By SLC

Revised 02/15/2021

Project Title

Center for Materials and Manufacturing Sciences
TROY UNIVERSITY

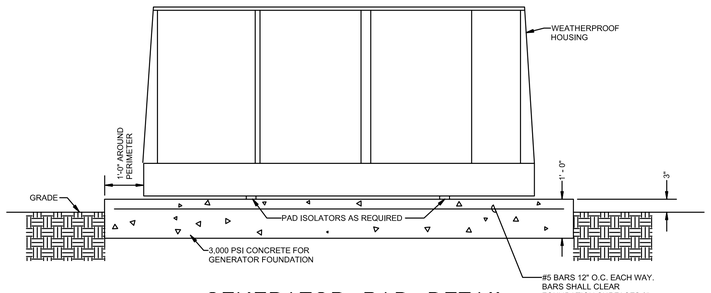
Sheet Title

Electrical Site Plan

Sheet Number

E001

ALABAMA REGISTERED PROFESSIONAL ENGINEER STEVEN L. CONOLY NO. 17551 2/15/21

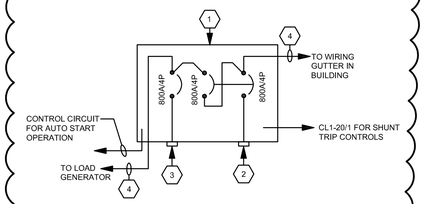


GENERATOR PAD DETAIL

SCALE: NOT TO SCALE

KEYED NOTES:

1. 800A, 277/480V, 3Ø, 4W TRIPLE SWITCH DOCKING STATION IN A NEMA 3R SS ENCLOSURE MOUNTED ON WALL. NEUTRAL SHALL BE SWITCHED (4 POLE) DOCKING STATION SHALL HAVE MECHANICAL INTERLOCKS TO PREVENT PERMANENT AND TEMPORARY GENERATORS FROM BEING CONNECTED AT THE SAME TIME. DOCKING STATION SHALL ALSO HAVE A TERMINAL BLOCK FOR TEMPORARY GENERATOR START/STOP CONTROL CONDUCTORS.
2. CONNECTION FOR FUTURE PORTABLE GENERATOR, MALE CAMLOCK CONNECTION WITH WEATHERPROOF COVER.
3. TO LOAD BANK, FEMALE CAMLOCK CONNECTION WITH WEATHERPROOF COVER.
4. SEE RISER DIAGRAM FOR SIZES.



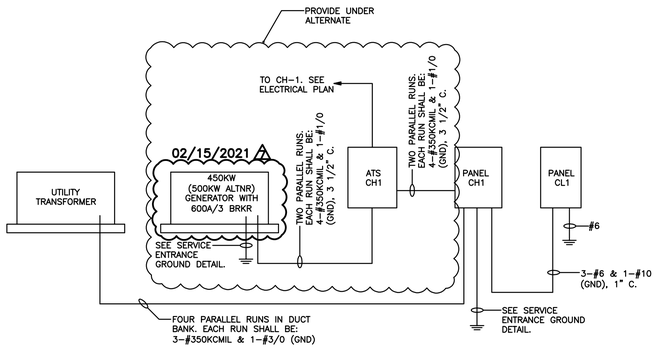
DOCKING STATION DETAIL

SCALE: NOT TO SCALE

△1 02/15/2021

LEGEND (THIS SHEET ONLY):

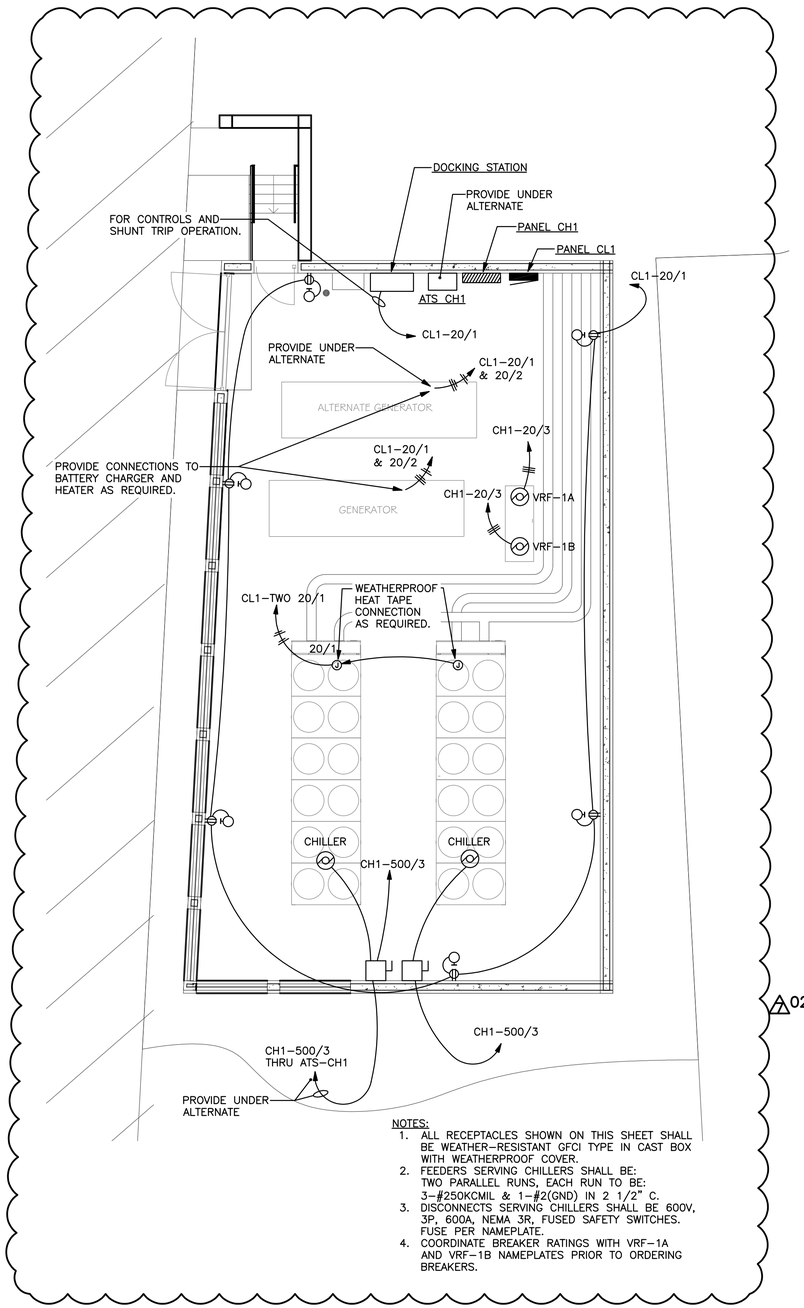
- BRANCH CIRCUIT WIRING IN UNDERGROUND PVC CONDUIT, #12 CONDUCTORS IN 1" CONDUIT BELOW GRADE UNLESS NOTED.
- SAFETY SWITCH, SIZE AND TYPE AS NOTED. FUSE PER NAMEPLATE.
- MOTOR OR EQUIPMENT JUNCTION BOX.
- DUPLEX RECEPTACLE, GFI WP TYPE, 18" A.F.F. UNLESS NOTED OTHERWISE. MOUNTED FLUSH IN WALL.
- PANELBOARD.
- 17"X8" LED WALL BRACKET WITH ALUMINUM HOUSING, FLAT RECTANGULAR DESIGN, 3000 LUMEN OUTPUT, WIDE THROW MEDIUM LIGHT DISTRIBUTION, INTEGRAL MOTION/PHOTO SENSOR, INTERNAL BATTERY BACKUP AND 120-277V INTERNAL DRIVER. LITHONIA #WSTLED-P2-40K-VW-MVOLT-PIR-E20WH OR APPROVED EQUAL.



MECHANICAL YARD

POWER RISER DIAGRAMS

SCALE: NOT TO SCALE

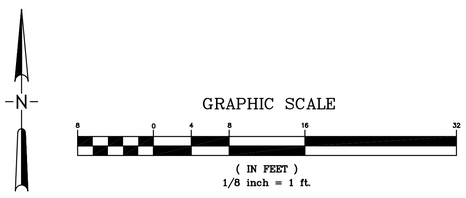


NOTES:

1. ALL RECEPTACLES SHOWN ON THIS SHEET SHALL BE WEATHER-RESISTANT GFCI TYPE IN CAST BOX WITH WEATHERPROOF COVER.
2. FEEDERS SERVING CHILLERS SHALL BE: TWO PARALLEL RUNS, EACH RUN TO BE: 3-#250KCMIL & 1-#2(GND) IN 2 1/2" C.
3. DISCONNECTS SERVING CHILLERS SHALL BE 600V, 3P, 600A, NEMA 3R, FUSED SAFETY SWITCHES. FUSE PER NAMEPLATE.
4. COORDINATE BREAKER RATINGS WITH VRF-1A AND VRF-1B NAMEPLATES PRIOR TO ORDERING BREAKERS.

ENLARGED MECHANICAL YARD ELECTRICAL PLAN

SCALE: 1/8" = 1'



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Job Number: 18144
Date: 11/17/2020
Drawn By: SCC
Checked By: SLC
Revised: 02/15/2021
Project Title: Center for Materials and Manufacturing Sciences, TROY UNIVERSITY
Sheet Title: Mechanical Yard Electrical Site Plan
Sheet Number: E002

ALABAMA REGISTERED No. 17050 PROFESSIONAL 2/15/21 ENGINEER STEVEN L. CONOLY

LEGEND

- LIGHT FIXTURE, LETTER IN OR ADJACENT TO SYMBOL DENOTES TYPE, SEE FIXTURE SCHEDULE.
- S — DUPLEX RECEPTACLE, 18" A.F.F. UNLESS NOTED OTHERWISE. HALF SWITCHED. MOUNTED FLUSH IN WALL.
- DUPLEX RECEPTACLE, 18" A.F.F. UNLESS NOTED OTHERWISE. MOUNTED FLUSH IN WALL.
- S — DOUBLE DUPLEX RECEPTACLE, 18" A.F.F. UNLESS NOTED OTHERWISE. ONE DUPLEX SWITCHED. MOUNTED FLUSH IN WALL.
- DOUBLE DUPLEX RECEPTACLE, 18" A.F.F. UNLESS NOTED OTHERWISE. MOUNTED FLUSH IN WALL.
- S — DUPLEX RECEPTACLE, MOUNTED 6' A.F.F. UNLESS NOTED OTHERWISE. HALF SWITCHED. MOUNTED FLUSH IN WALL.
- DUPLEX RECEPTACLE, MOUNTED 6' A.F.F. UNLESS NOTED OTHERWISE. MOUNTED FLUSH IN WALL.
- S — DUPLEX RECEPTACLE, 9" ABOVE COUNTER OR SINK HEIGHT. HALF SWITCHED. MOUNTED FLUSH IN WALL.
- DUPLEX RECEPTACLE, 9" ABOVE COUNTER OR SINK HEIGHT. MOUNTED FLUSH IN WALL.
- S — DUPLEX RECEPTACLE, MOUNTED FLUSH WITH CEILING WHERE CEILING OCCURS OR TO UNDERSIDE OF STRUCTURE. HALF SWITCHED.
- DATA WALL OUTLET, 18" A.F.F. MOUNTED FLUSH IN WALL. PROVIDE A 1" C. TO NEAREST CABLE HOOKS OR DATA ROOM WITH PULL WIRE.
- C — DATA WALL OUTLET, 9" ABOVE COUNTER MOUNTED FLUSH IN WALL. PROVIDE A 1" C. TO NEAREST CABLE HOOKS OR DATA ROOM WITH PULL WIRE.
- TELEVISION WALL OUTLET, 6' A.F.F. UNLESS NOTED OTHERWISE, MOUNTED FLUSH IN WALL. PROVIDE A 1" C. TO NEAREST CABLE HOOKS OR DATA ROOM WITH PULL WIRE.
- DATA CEILING OUTLET, MOUNTED FLUSH WITH CEILING WHERE CEILING OCCURS OR TO UNDERSIDE OF STRUCTURE. PROVIDE A 1" C. TO NEAREST CABLE HOOKS OR DATA ROOM WITH PULL WIRE.
- CABLE HOOK SYSTEM, SEE SPECIFICATIONS.
- FB — FLOOR BOX.
- FB S — FLOOR BOX. HALF SWITCHED.
- SAFETY SWITCH, SIZE AND TYPE AS NOTED. FUSE PER NAMEPLATE.
- 200A, 3P, NEMA 3R, FUSABLE ELEVATOR CONTROL SWITCH WITH SHUNT TRIP AND AUXILIARY CONTACTS. FUSE PER ELEVATOR RECOMMENDATIONS. EATON #ES4 (COORDINATE RELAY VOLTAGES WITH EQUIPMENT CONNECTED) OR APPROVED EQUAL.
- PANELBOARD.
- MOTOR OR EQUIPMENT JUNCTION BOX.
- J — JUNCTION BOX, MOUNTED ABOVE ACCESSIBLE CEILING WHERE CEILING OCCURS.
- J — JUNCTION BOX, MOUNTED FLUSH IN WALL.
- LOW VOLTAGE WIRING FOR LIGHTING CONTROLS, RUN CONCEALED.
- BRANCH CIRCUIT WIRING, RUN CONCEALED.
- BRANCH CIRCUIT WIRING, RUN UNDERGROUND.
- INDICATES NEUTRAL CONDUCTOR IN BRANCH CIRCUIT WIRING.
- INDICATES PHASE CONDUCTOR IN BRANCH CIRCUIT WIRING.
- INDICATES HOMERUN.
- A — SINGLE NEMA L6-30 RECEPTACLE. 18" A.F.F. IF LOCATED AT A COUNTER, MOUNT 9" ABOVE COUNTER.
- B — DOUBLE DUPLEX RECEPTACLE, MOUNT TO DATA RACK AS DIRECTED BY TROY IT AFTER UNIVERSITY INSTALLS RACK.
- C — ELECTRIC WATER COOLER OUTLET, GFCI RECEPTACLE JUST BELOW UNIT, 120V.
- CH — CANOPY HOOD CONNECTION, 150W, 120V. CONNECT TO HOOD LIGHT SWITCH AS DIRECTED BY HOOD INSTALLER.
- CT — CHEMICAL TANK CONNECTION, 120V. PROVIDE A SINGLE GANG WALL SWITCH ADJACENT TO UNIT FOR DISCONNECT.
- D — SINGLE NEMA L5-30 RECEPTACLE. 18" A.F.F. IF LOCATED AT A COUNTER, MOUNT 9" ABOVE COUNTER.
- DH — ELECTRIC DUCT HEATER, 480V, 3Ø.
- E — EMERGENCY SHOWER ALARM CONNECTION, 120V.
- FF — FURNITURE FEED INTO LEG OF FURNITURE, 120V. COORDINATE EXACT LOCATION WITH FURNITURE INSTALLER.
- G — GROUND OUTLET. SINGLE GANG JUNCTION BOX FLUSH IN WALL. EXTEND GROUND CONDUCTOR TO EQUIPMENT AND BOND TO EQUIPMENT AS DIRECTED BY EQUIPMENT INSTALLER.
- H — FUME HOOD CONNECTION, 120V. MAKE CONNECTIONS TO HOOD LIGHTING AND INTEGRAL RECEPTACLE AS REQUIRED.
- HD — HAND DRYER CONNECTION, 120V.
- K — KEY BOX CONNECTION, 120V.
- L — HVAC CONTROL PANEL, 120V. LOCATE AS DIRECTED BY MECHANICAL CONTRACTOR.
- M — 120 VOLT FOR HVAC CONTROLS AND HVAC USE. LOCATE AND CONNECT AS DIRECTED BY HVAC CONTRACTOR.
- N — ACCESS CONTROL, DOOR CONTROL POWER SUPPLY CONNECTION, 120V. COORDINATE WITH ACCESS CONTROL INSTALLER.
- P — DUCTLESS HEAT PUMP INDOOR UNIT CONNECTION, 208V, SØ, 2A. PROVIDE A 2 POLE WALL SWITCH ADJACENT TO UNIT FOR DISCONNECT AND LABEL "HVAC".
- S — ELECTRIC SHADE CONTROL PANEL CONNECTION, 120V. VERIFY LOCATION WITH SHADE INSTALLER.
- SP — SIMPLEX RECEPTACLE FOR SUMP PUMP, 120V. LOCATE AS DIRECTED BY ELEVATOR INSTALLER.
- UV — UV LIGHT CONNECTION, 120V. COORDINATE WITH MECHANICAL CONTRACTOR.
- UH — UNIT HEATER CONNECTION, 120V. PROVIDE SINGLE POLE WALL SWITCH ADJACENT TO UNIT FOR DISCONNECT AND LABEL "UNIT HEATER".
- T — SUPPLY AIR VOLUME TERMINAL UNIT, 277V OR 480V. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
- V — VARIABLE AIR VOLUME TERMINAL UNIT, 277V OR 480V. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
- WC — HOT WATER HEATER CIRCULATING PUMP, 120V. PROVIDE A SINGLE GANG WALL SWITCH ADJACENT TO PUMP FOR DISCONNECT AND LABEL "PUMP".
- WI — HOT WATER HEATER CONNECTION, 45KW, 480V, 3Ø.
- Y — AHU INTERNAL LIGHTING. PROVIDE SINGLE POLE WALL SWITCH ON OR ADJACENT TO UNIT FOR CONTROL. LOCATE AS DIRECTED BY MECHANICAL CONTRACTOR.
- Z — BOILER CONNECTION, 120V.
- FURNITURE MOUNTED RECEPTACLES BY FURNITURE SUPPLIER. MAKE CONNECTIONS AS REQUIRED.
- TWO CHANNEL RACEWAY. MOUNT DIRECTLY ABOVE COUNTER BACKSPLASH WHERE COUNTERS OCCUR. WHERE NO COUNTERS OCCUR, MOUNT AT 18" A.F.F. COORDINATE WITH ARCHITECT PRIOR TO ROUGH-IN TO VERIFY COUNTER LOCATIONS. PROVIDE 1 1/4" C. FROM DATA SECTION TO NEAREST CABLE HOOKS OR DATA ROOM. MOUNT RECEPTACLES IN POWER SECTION 4' ON CENTER.
- CAMERA OUTLET. PROVIDE SINGLE GANG BOX FLUSH IN CEILING/WALL. PROVIDE A 1" C. TO NEAREST CABLE HOOKS OR DATA ROOM WITH PULL WIRE.
- (##) — ACCESS CONTROL DESIGNATION. SEE ACCESS CONTROL DETAILS.
- CR — CARD READER OUTLET.
- HO — HANDICAP OPERATOR OUTLET.
- DP — ACCESS CONTROL, DOOR OPENER POWER CONNECTION, 120V.
- ICS — INTERCOM SYSTEM, ELEVATOR LOBBY STATION.
- ICM — INTERCOM SYSTEM, MASTER STATION.
- GANN — GENERATOR ANNUNCIATOR.
- $ — WALL SWITCH, SINGLE POLE.
- $3 — WALL SWITCH, THREE WAY, SINGLE POLE.
- $O — OCCUPANCY SENSOR WALL SWITCH, SINGLE POLE, DUAL TECHNOLOGY.
- $U — OCCUPANCY SENSOR WALL SWITCH, SINGLE POLE, ULTRASONIC ONLY.
- $V — VACANCY SENSOR WALL SWITCH, SINGLE POLE, ULTRASONIC ONLY.

LEGEND (CONTINUED)

- $L — DIGITAL LIGHTING CONTROLS, WALL SWITCH.
- $LD — DIGITAL LIGHTING CONTROLS, WALL DIMMER SWITCH.
- PS — DIGITAL LIGHTING CONTROLS, ONE ZONE POWER SUPPLY.
- RC — DIGITAL LIGHTING CONTROLS, ONE ZONE DIMMING ROOM CONTROLLER.
- 2RC — DIGITAL LIGHTING CONTROLS, TWO ZONE DIMMING ROOM CONTROLLER.
- RCT — DIGITAL LIGHTING CONTROLS, ONE ZONE ROOM CONTROLLER WITH TIME AND SCHEDULING CONTROL.
- PLC — DIGITAL LIGHTING CONTROLS, PLUG LOAD CONTROLLER. CONNECT TO OCCUPANCY SENSOR/ROOM CONTROLLER PER INSTALLATION INSTRUCTIONS.
- DIGITAL LIGHTING CONTROLS, OCCUPANCY SENSOR, 360°, DUAL TECHNOLOGY. FLUSH IN CEILING. IF NO CEILING OCCURS, SUSPEND TO LEVEL OF LIGHT FIXTURES.
- DIGITAL LIGHTING CONTROLS, OCCUPANCY SENSOR, WALL MOUNTED, DUAL TECHNOLOGY.
- GTD — UL 924 EMERGENCY GENERATOR TRANSFER DEVICE WITH DIMMING CONTROL BYPASS. CONNECT 0-10V WRING TO DEVICE AND FIXTURE PER INSTALLATION INSTRUCTIONS. HUBBELL #ALCR1277 OR APPROVED EQUAL.
- FANN — FIRE ALARM SYSTEM, ANNUNCIATOR.
- FIRE ALARM SYSTEM, CONTROL PANEL.
- FIRE ALARM SYSTEM, MONITOR MODULE AND TAMPER SWITCH CONNECTION.
- FIRE ALARM SYSTEM, MONITOR MODULE AND FLOW VALVE CONNECTION.
- FIRE ALARM SYSTEM, SPEAKER AND FLASHING LIGHT.
- FIRE ALARM SYSTEM, FLASHING LIGHT ONLY.
- FIRE ALARM SYSTEM, MANUAL STATION.
- C — FIRE ALARM SYSTEM, CONTROL MODULE.
- M — FIRE ALARM SYSTEM, MONITOR MODULE.
- FIRE ALARM SYSTEM, HEAT DETECTOR, CEILING MOUNTED.
- CO — FIRE ALARM SYSTEM, CARBON MONOXIDE DETECTOR, CEILING/WALL MOUNTED.
- S — FIRE ALARM SYSTEM, SMOKE DETECTOR, CEILING MOUNTED.
- S — FIRE ALARM SYSTEM, SMOKE DETECTOR, DUCT MOUNTED. COORDINATE LOCATION WITH MECHANICAL CONTRACTOR.
- GFI — ADJACENT TO DEVICE INDICATES GFI TYPE.
- WP — ADJACENT TO DEVICE INDICATES WEATHERPROOF TYPE.
- FPN — ADJACENT TO DEVICE INDICATES FUSE PER NAMEPLATE.
- NL — ADJACENT TO FIXTURE INDICATES FIXTURE TO BE CONSTANTLY ON (NIGHT LIGHT).

GENERAL ELECTRICAL NOTES:

1. NO MULTI-WIRE BRANCH CIRCUITS SHALL BE RUN ON THIS PROJECT. PROVIDE A NEUTRAL CONDUCTOR FOR EACH PHASE CONDUCTOR. THE NEUTRAL CONDUCTOR SHALL HAVE A CONTINUOUS STRIPE OF SAME COLOR AS THE PHASE CONDUCTOR IN BRANCH CIRCUIT. GROUP BRANCH CIRCUIT CONDUCTORS WHEN SAME COLOR IS USED IN COMMON CONDUIT. NO MORE THAN THREE CIRCUITS SHALL BE RUN IN A CONDUIT.

2. PROVIDE GREEN INSULATED GROUND CONDUCTOR IN ALL RUNS IN ADDITION TO THOSE SHOWN. WHEN NO CONDUCTORS ARE SHOWN, THEN PROVIDE A PHASE, NEUTRAL AND GROUND CONDUCTOR.

3. PLEASE CONTACT THE ARCHITECT OR ENGINEER IF ANY CONCERNS OR QUESTIONS OCCUR. IT IS BETTER TO DISCUSS THE ITEMS, NO MATTER HOW TRIVIAL, THAN TO ASSUME SOMETHING THAT COULD POSSIBLY BE INCORRECT.

4. FROM EACH DATA WALL OUTLET AND TELEVISION/DATA WALL OUTLET RUN A 3/4" CONDUIT CONCEALED IN WALL AND STUB OUT AT NEAREST CABLE HOOK SYSTEM OR DATA ROOM.

5. REFER TO SPECIFICATIONS FOR LIGHTNING PROTECTION WORK TO BE INCLUDED IN THIS PROJECT.

6. CONTRACTOR SHALL VERIFY ALL ELECTRICAL EQUIPMENT (PANELBOARDS, SWITCHBOARDS, TRANSFORMERS, ATS'S, SAFETY SWITCHES, ETC.) WILL PHYSICALLY FIT IN ROOMS OR SPACES SHOWN WITH OTHER EQUIPMENT BY ELECTRICAL AND OTHER TRADES PRIOR TO BID.

7. THIS PROJECT IS REQUIRED TO COMPLY WITH AN ENERGY CODE (ASHRAE 90.1 2013 EDITION). PROVIDE LIGHTING AND RECEPTACLE CONTROLS TO MEET THIS CODE. PROGRAM LIGHTING AND RECEPTACLES AS DIRECTED BY OWNER, BUT TO STILL MEET ENERGY CODE. PROVIDE ENERGY METERING IN PANELS TO MEET ENERGY CODE.

8. THE ELECTRICAL CONTRACTOR SHALL REFER TO THE MECHANICAL DRAWINGS AND PROVIDE THERMOSTAT BACK BOXES WHERE SHOWN. FROM EACH THERMOSTAT BOX RUN A 1/2" CONDUIT UP WALL AND STUB OUT AT AN ACCESSIBLE SPACE ABOVE THE CEILING. COORDINATE WORK AND BOX SIZES WITH MECHANICAL CONTRACTOR.

9. ALL BRANCH CIRCUIT RUNS SHALL BE OVERHEAD UNLESS SHOWN BELOW SLAB. PROVIDE JUNCTION BOXES ABOVE CEILING OR ON/SUSPENDED FROM STRUCTURE TO FEED LIGHT FIXTURES, RECEPTACLES AND OTHER DEVICES OR ITEMS.

10. AIC RATINGS SHOWN ON PANELBOARD/SWITCHBOAD SCHEDULES ARE ESTIMATED. ACTUAL RATING SHALL BE AS REQUIRED BY ARC FAULT STUDY CALCULATIONS.

11. ALL SURFACE MOUNTED PANELS SHALL HAVE DOOR-IN-DOOR CONSTRUCTION.

12. UNDER ALTERNATE FLOOR PLANS, PROVIDE ALL WORK SHOWN ON BASE BID FLOOR PLAN IN ADDITION TO WORK SHOWN ON ALTERNATE PLAN. SHADED SYMBOLS ON ALTERNATE FLOOR PLANS INDICATE BASE BID ITEMS.

13. PRIOR TO ROUGH-IN OF A NEW OUTLET (RECEPTACLE, DATA, TV, ETC.), VERIFY EXACT LOCATION WITH THE ARCHITECT.

14. THE LOW VOLTAGE LIGHTING CONTROL WIRING SHALL BE COLOR, TYPE AND SIZE RECOMMENDED BY THE LIGHTING/DIMMING MANUFACTURER AND SHALL BE INSTALLED IN CONDUIT SEPARATE FROM THE POWER CONDUCTORS OR RUN EXPOSED IN A NEAT AND ORDERLY MANNER ATTACHED TO THE LIGHTING CIRCUIT CONDUITS WITHIN 12" FROM LUMINAIRE AND BOX AND AT LEAST 24" MAXIMUM INTERVALS THROUGHOUT RUN.

15. AFTER WORK HAS BEEN COMPLETED, CLEAN ALL LIGHT FIXTURES IN THE RENOVATED SPACES. NO DIRT, DEBRIS, FINGER PRINTS, SOAP RESIDUE, ETC. SHALL BE VISIBLE.

16. SUBMIT SUBSTITUTIONS TO LIGHT FIXTURES AND LIGHTING CONTROLS TO THE ENGINEER AT LEAST 10 DAYS PRIOR TO BID FOR REVIEW.

17. COORDINATE ANY POWER OUTAGES WITH UNIVERSITY.

18. THE SPACE ABOVE THE CEILINGS IS AN AIR PLENUM. ALL DEVICES, WIRING, ETC. SHALL BE PLENUM RATED IF LOCATED ABOVE THE CEILING.

19. INSTALL AND CONNECT FREQUENCY DRIVES AND MOTOR STARTERS FOR ALL HVAC EQUIPMENT AS DIRECTED BY HVAC CONTRACTOR.

20. PROVIDE CONTROL MODULE AT EACH AHU FOR SMOKE DETECTION SHUT DOWN.

21. EXHAUST FANS ON ROOF SHALL NOT BE SHUT-DOWN BY FIRE ALARM.

7 — 02/15/2021

Lighting Fixture Schedule

Type	Description	Model	Lamp	Mounting	Remarks
A	6" DIA. LED OPEN DOWNLIGHT WITH SEMI-SPECULAR REFLECTOR, 2000 LUMEN OUTPUT, MEDIUM DISTRIBUTION, WET LOCATION LISTED UNDER COVER, 0-10V DIMMING AND 120-277V INTERNAL DRIVER.	PRESCOLITE LTR-6RD-H-ML-20L-DM1-LTR-6RD-T-ML-40K-8-MD-SS APPROVED EQUALS: HE WILLIAMS 6DR	23W LED	RECESSED IN CEILING	
B	6" DIA. LED OPEN DOWNLIGHT WITH SEMI-SPECULAR REFLECTOR, 3500 LUMEN OUTPUT, MEDIUM DISTRIBUTION, 90+ CRI, 0-10V DIMMING AND 120-277V INTERNAL DRIVER.	PRESCOLITE LTR-6RD-H-HL-35L-DM1-LTR-6RD-T-HL-40K-9-MD-SS APPROVED EQUALS: HE WILLIAMS 6DR	43W LED	RECESSED IN CEILING	
G	42" TALL LED ACORN LUMINAIRE WITH CAST ALUMINUM CONSTRUCTION, CLEAR DIFFUSED ACRYLIC LENS, BLACK FINISH, TYPE 3 DISTRIBUTION, 0-10V DIMMING AND MULTVOLT INTERNAL DRIVER.	AAL FGL-RB-SAL-Y3-36LED-4K-600-BLK-TA3-WMA3-MOD LESS FINIAL APPROVED EQUALS: HADCO RL34	73W LED	WALL	MOUNT BOTTOM OF FIXTURE AT 6'-9" A.F.F. FIXTURE TO MATCH SITE POST TOPS.
H	36" TALL LED ACORN LUMINAIRE WITH CAST ALUMINUM CONSTRUCTION, CLEAR DIFFUSED ACRYLIC LENS, BLACK FINISH, TYPE 3 DISTRIBUTION, 0-10V DIMMING AND MULTVOLT INTERNAL DRIVER.	AAL FGS-RB-SAL-Y3-36LED-4K-450-BLK-TA3-WMA3-MOD LESS FINIAL APPROVED EQUALS: HADCO RL34	53W LED	WALL	MOUNT BOTTOM OF FIXTURE AT 6'-9" A.F.F. FIXTURE TO MATCH SITE POST TOPS.
K	17"X8" LED WALL BRACKET WITH ALUMINUM HOUSING, FLAT RECTANGULAR DESIGN, 3000 LUMEN OUTPUT, FORWARD THROW MEDIUM LIGHT DISTRIBUTION, INTEGRAL MOTION/PHOTO SENSOR AND 120-277V INTERNAL DRIVER.	LITHONIA WSTLED-P2-40K-VF-MVOLT-PIR-* APPROVED EQUALS: VISIONAIRE PGAS-2	16W LED	WALL	*FINISH BY ARCHITECT.
L1	2'X2' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 3000 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP22-40-ML-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	30W LED	RECESSED IN CEILING	
L2	2'X4' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 3500 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP24-40-MW-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	33W LED	RECESSED IN CEILING	
L3	2'X4' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 4100 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP24-40-LW-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	39W LED	RECESSED IN CEILING	
L4	2'X4' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 4500 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP24-40-ML-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	45W LED	RECESSED IN CEILING	
L5	2'X4' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 5100 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP24-40-HL-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	54W LED	RECESSED IN CEILING	
L6	2'X4' LED FLAT PANEL WITH EXTRUDED ALUMINUM FRAME, ACRYLIC LENS, 6600 LUMEN OUTPUT, 0-10V DIMMING AND 120-277V INTEGRAL DRIVER.	COLUMBIA SRP24-40-VL-G-ED1-U APPROVED EQUALS: DAY-BRITE 2FPZ	69W LED	RECESSED IN CEILING	
P	LED WALL BRACKET (ENCLOSED AND GASKETED) WITH ALUMINUM GUARD AND 120 VOLT DRIVER.	HUBBELL V8LU15-WW1-VCG-1 APPROVED EQUALS: STONCO VWXL	20W LED	WALL	*MOUNT IN ELEVATOR PIT AS DIRECTED BY ELEVATOR INSTALLER.
P1	4' x 4" SQUARE LED LINEAR WITH EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, FLUSH SOFT DIFFUSED ACRYLIC LENS, AIRCRAFT CABLE SUSPENSION, 600 LUMENS/FOOT, 0-10V DIMMING AND 120-277V INTERNAL DRIVER.	LITECONTROL 4L-P-D-4(+)-SOF-C1-40K-D060-D01-1C-UNV-FA APPROVED EQUALS: FINELITE HP4	22W LED	SUSPENDED	*FINISH BY ARCHITECT. SUSPEND FIXTURE UNDER OTHER TRADES TO HEIGHT BY ARCHITECT. PROVIDE CONTINUOUS RUNS WHERE SHOWN WITH 8-12' SECTIONS. FACTORY ASSEMBLED.
P2	4' x 4" SQUARE LED LINEAR WITH EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, FLUSH SOFT DIFFUSED ACRYLIC LENS, AIRCRAFT CABLE SUSPENSION, 900 LUMENS/FOOT, 0-10V DIMMING AND 120-277V INTERNAL DRIVER.	LITECONTROL 4L-P-D-4(+)-SOF-C1-40K-D090-D01-1C-UNV-FA APPROVED EQUALS: FINELITE HP4	33W LED	SUSPENDED	*FINISH BY ARCHITECT. SUSPEND FIXTURE UNDER OTHER TRADES TO HEIGHT BY ARCHITECT. PROVIDE CONTINUOUS RUNS WHERE SHOWN WITH 8-12' SECTIONS. FACTORY ASSEMBLED.
P3	4' x 4" SQUARE LED LINEAR WITH EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, FLUSH SOFT DIFFUSED ACRYLIC LENS, AIRCRAFT CABLE SUSPENSION, 1000 LUMENS/FOOT, 0-10V DIMMING AND 120-277V INTERNAL DRIVER.	LITECONTROL 4L-P-D-4(+)-SOF-C1-40K-D100-D01-1C-UNV-FA APPROVED EQUALS: FINELITE HP4	36W LED	SUSPENDED	*FINISH BY ARCHITECT. SUSPEND FIXTURE UNDER OTHER TRADES TO HEIGHT BY ARCHITECT. PROVIDE CONTINUOUS RUNS WHERE SHOWN WITH 8-12' SECTIONS. FACTORY ASSEMBLED.
P4	4' x 4" SQUARE LED LINEAR WITH EXTRUDED ALUMINUM HOUSING, DIE CAST ALUMINUM END CAPS, 70/30 DIRECT/INDIRECT DISTRIBUTION, FLUSH SOFT DIFFUSED ACRYLIC LENS, AIRCRAFT CABLE SUSPENSION, 900 LUMENS/FOOT, 0-10V DIMMING UP AND DOWNLIGHT SEPARATELY AND 120-277V INTERNAL DRIVER.	LITECONTROL 4L-P-ID-STD-4(+)-SOF-C1-40K-I035-D060-D01-2C-UNV-FA	32W LED	SUSPENDED	*FINISH BY ARCHITECT. SUSPEND FIXTURE UNDER OTHER TRADES TO HEIGHT BY ARCHITECT. PROVIDE CONTINUOUS RUNS WHERE SHOWN WITH 8-12' SECTIONS. FACTORY ASSEMBLED.
S1	4' LED STRIP WITH ROUND DIFFUSED LENS, 3600 LUMEN OUTPUT, WIDE LIGHT DISTRIBUTION, 0-10V DIMMABLE AND 120-277V INTERNAL DRIVER.	COLUMBIA MPS-4-40-MW-C-W-ED-U-PAF APPROVED EQUALS: HE WILLIAMS 75	30W LED	SUSPENDED/SURFACE	SUSPEND BELOW AND COORDINATE LOCATION WITH OTHER TRADES.
S2	4' LED STRIP WITH ROUND DIFFUSED LENS, 4600 LUMEN OUTPUT, WIDE LIGHT DISTRIBUTION, 0-10V DIMMABLE AND 120-277V INTERNAL DRIVER.	COLUMBIA MPS-4-40-ML-C-W-ED-U-PAF APPROVED EQUALS: HE WILLIAMS 75	40W LED	SUSPENDED/SURFACE	SUSPEND BELOW AND COORDINATE LOCATION WITH OTHER TRADES.
W4	4' x 4" LED WALL MOUNT FIXTURE WITH ROUND/CURVED LENS, DIRECT/INDERECT LIGHT DISTRIBUTION, 800 LUMENS/FT, INTERNAL BI-LEVEL OCCUPANCY SENSOR AND 120-277V INTERNAL DRIVER.	AXIS PRWLED-800-80-40-S-4-W-UNV-BI*-1-OS APPROVED EQUALS: PRIMUS LN3	29W LED	WALL	*PROVIDE OCCUPANCY SENSOR AND DRIVER SO THAT FIXTURE STAYS ON AT 30%, AND WHEN OCCUPANCY IS DETECTED BRIGHTENS TO 100%. PROVIDE CONSTANT HOT CIRCUIT TO FIXTURE.
W6	6' x 4" LED WALL MOUNT FIXTURE WITH ROUND/CURVED LENS, DIRECT/INDERECT LIGHT DISTRIBUTION, 800 LUMENS/FT, INTERNAL BI-LEVEL OCCUPANCY SENSOR AND 120-277V INTERNAL DRIVER.	AXIS PRWLED-800-80-40-S-6-W-UNV-BI*-1-OS APPROVED EQUALS: PRIMUS LN3	43W LED	WALL	*PROVIDE OCCUPANCY SENSOR AND DRIVER SO THAT FIXTURE STAYS ON AT 30%, AND WHEN OCCUPANCY IS DETECTED BRIGHTENS TO 100%. PROVIDE CONSTANT HOT CIRCUIT TO FIXTURE.
EXIT SNGL	SINGLE FACE EDGE LIT EXIT LIGHT WITH RED LETTERS ON MIRRORED BACKGROUND, BRUSHED ALUMINUM HOUSING TRIM, LED LAMPS, 120/277 VOLT OPERATION AND WITH OR WITHOUT ARROWS (AS SHOWN).	DUAL-LITE LES-C/W-S-R-*-N-A-M APPROVED EQUALS: BEGHELLI BRU	N/A	CEILING/WALL	
EXIT DBL	DOUBLE FACE EDGE LIT EXIT LIGHT WITH RED LETTERS ON MIRRORED BACKGROUND, BRUSHED ALUMINUM HOUSING TRIM, LED LAMPS, 120/277 VOLT OPERATION AND WITH OR WITHOUT ARROWS (AS SHOWN).	DUAL-LITE LES-C-D-R-*-N-A-M APPROVED EQUALS: BEGHELLI BRU	N/A	CEILING	

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Job Number 18144

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Drawn By SCC

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Project Title

Center for Materials and Manufacturing Sciences
TROY UNIVERSITY

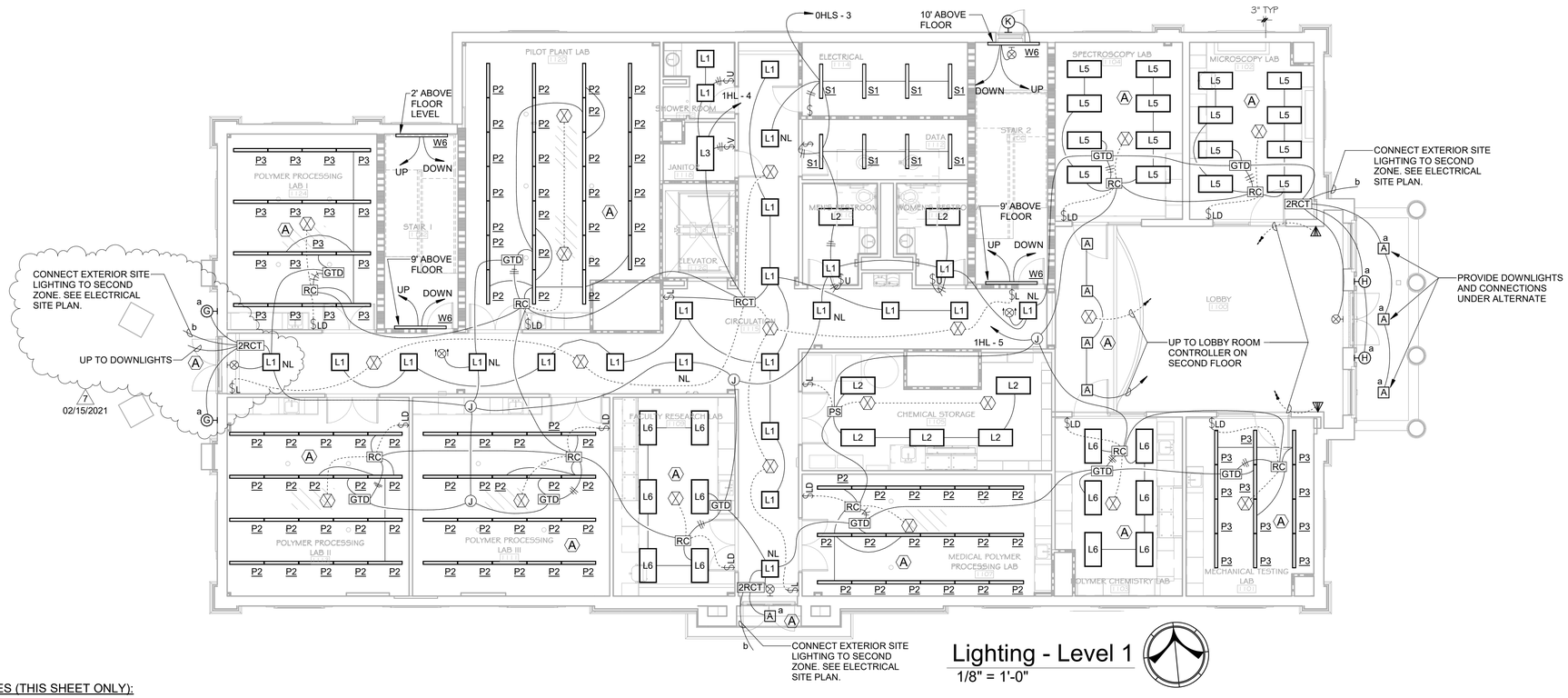
Sheet Title

Legends, Schedules and Notes

Sheet Number

E003

ALABAMA REGISTERED No. 17050 PROFESSIONAL ENGINEER STEVEN L. CONOLY 2/15/21

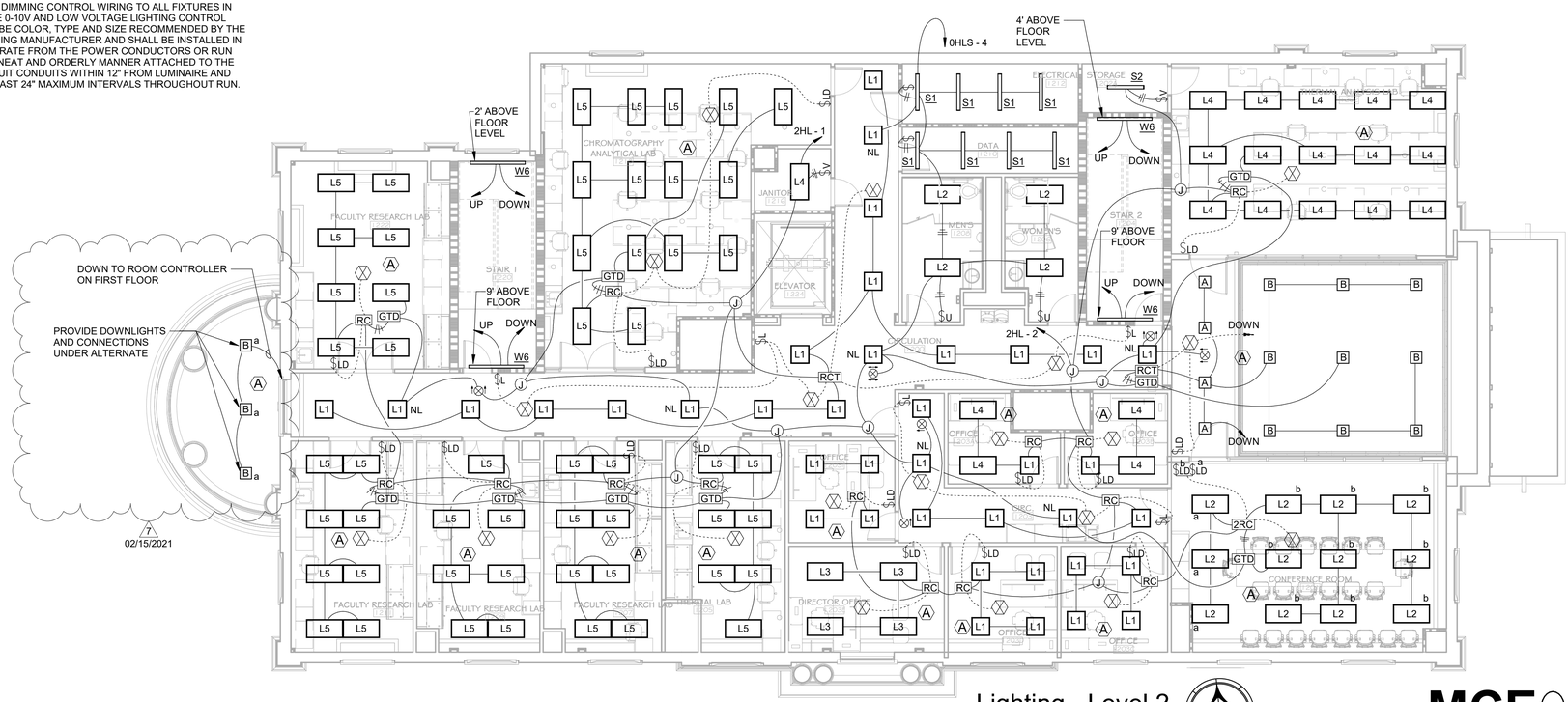


Lighting - Level 1

1/8" = 1'-0"

REFERENCED NOTES (THIS SHEET ONLY):

(A) PROVIDE 0-10V DIMMING CONTROL WIRING TO ALL FIXTURES IN THIS AREA. THE 0-10V AND LOW VOLTAGE LIGHTING CONTROL WIRING SHALL BE COLOR, TYPE AND SIZE RECOMMENDED BY THE LIGHTING/DIMMING MANUFACTURER AND SHALL BE INSTALLED IN CONDUIT SEPARATE FROM THE POWER CONDUCTORS OR RUN EXPOSED IN A NEAT AND ORDERLY MANNER ATTACHED TO THE LIGHTING CIRCUIT CONDUITS WITHIN 12" FROM LUMINAIRE AND BOX AND AT LEAST 24" MAXIMUM INTERVALS THROUGHOUT RUN.



Lighting - Level 2

1/8" = 1'-0"

0' 4' 8' 16' 32'

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Date: 11/17/2020

Drawn By: SCC

Checked By: SLC

Revised: 02/15/2021

Project Title

Center for Materials and Manufacturing Sciences
TROY UNIVERSITY

Sheet Title

First and Second Floor Lighting Plans

Sheet Number

E005

ALABAMA REGISTERED No. 17059 PROFESSIONAL 2/15/21 ENGINEER STEVEN L. CONOLY

Panel: 0HM

Location: Mech. 1010
Supply From: SE
Mounting: Surface Mounted
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Type: NF

A.I.C. Rating: 65kA
Mains Type: MLO
Mains Rating: 800 A
MCB Rating: N/A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	CWP-1a	70 A	3	EDB	9422 VA	1108 VA					EDB	3	20 A	SAF-1	43
2	--	--	--	--			9422 VA	1108 VA			--	--	--	--	44
3	--	--	--	--					9422 VA	1108 VA	--	--	--	--	45
4	CWP-1b	70 A	3	EDB	9422 VA	15000 VA					EDB	3	80 A	Water Heater	46
5	--	--	--	--			9422 VA	15000 VA			--	--	--	--	47
6	--	--	--	--					9422 VA	15000 VA	--	--	--	--	48
7	CWP-2a	70 A	3	EDB	9422 VA	5820 VA					EDB	3	30 A	GWP-1a	49
8	--	--	--	--			9422 VA	5820 VA			--	--	--	--	50
9	--	--	--	--					9422 VA	5820 VA	--	--	--	--	51
10	CWP-2b	70 A	3	EDB	9422 VA	5820 VA					EDB	3	30 A	GWP-1b	52
11	--	--	--	--			9422 VA	5820 VA			--	--	--	--	53
12	--	--	--	--					9422 VA	5820 VA	--	--	--	--	54
13	Vacuum Pump	20 A	3	EDB	4312 VA	16667 VA					EDB	3	100 A	Duct Heater	55
14	--	--	--	--			4312 VA	16667 VA			--	--	--	--	56
15	--	--	--	--					4312 VA	16667 VA	--	--	--	--	57
16	Air Compressor	60 A	3	EDB	11085 VA	0 VA					--	3	50 A	Spare	58
17	--	--	--	--			11085 VA	0 VA			--	--	--	--	59
18	--	--	--	--					11085 VA	0 VA	--	--	--	--	60
19	SATU-1	30 A	1	EDB	5000 VA	0 VA					--	3	20 A	Spare	61
20	SATU-2	30 A	1	EDB			5000 VA	0 VA			--	--	--	--	62
21	SATU-3	30 A	3	EDB					5000 VA	0 VA	--	--	--	--	63
22	--	--	--	--	5000 VA	0 VA					--	--	--	Space	64
23	--	--	--	--			5000 VA	0 VA			--	--	--	Space	65
24	SATU-4	20 A	1	EDB					3000 VA	0 VA	--	--	--	Space	66
25	SATU-5	50 A	3	EDB	10000 VA	0 VA					--	--	--	Space	67
26	--	--	--	--			10000 VA	0 VA			--	--	--	Space	68
27	--	--	--	--					10000 VA	0 VA	--	--	--	Space	69
28	SATU-6	50 A	3	EDB	10000 VA	0 VA					--	--	--	Space	70
29	--	--	--	--			10000 VA	0 VA			--	--	--	Space	71
30	--	--	--	--					10000 VA	0 VA	--	--	--	Space	72
31	Tx OLM	25 A	3	EDB	1810 VA	0 VA					--	--	--	Space	73
32	--	--	--	--			3150 VA	0 VA			--	--	--	Space	74
33	--	--	--	--					3000 VA	0 VA	--	--	--	Space	75
34	Spare	20 A	3	--	0 VA	0 VA					--	--	--	Space	76
35	--	--	--	--			0 VA	0 VA			--	--	--	Space	77
36	--	--	--	--					0 VA	0 VA	--	--	--	Space	78
37	Spare	20 A	3	--	0 VA	0 VA					--	--	--	Space	79
38	--	--	--	--			0 VA	0 VA			--	--	--	Space	80
39	--	--	--	--					0 VA	0 VA	--	--	--	Space	81
40	ATS OS (Alternate)	100 A	3	EDB	18845 VA	0 VA					--	--	--	Space	82
41	--	--	--	--			18845 VA	0 VA			--	--	--	Space	83
42	--	--	--	--					18845 VA	0 VA	--	--	--	Space	84
		Total Load:			148156 VA		149496 VA		147346 VA						
		Total Amps:			535 A		540 A		532 A						

02/15/2021 7

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Redudant 1+1	204520 VA	50.00%	102260 VA		
Redudant 2+1	0 VA	0.00%	0 VA	**Total Conn. Load:**	444997 VA
				Total Est. Demand:	342737 VA
				Total Conn. Current:	535 A
				Total Est. Demand Current:	412 A

Notes:
Spare breakers shall be EDB type.
Two equal sections.

Panel: 0HRD

Location: Electrical 1005
Supply From: SE
Mounting: Surface Mounted
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Type: I-Line

A.I.C. Rating: 65kA
Mains Type: MLO
Mains Rating: 600 A
MCB Rating: N/A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	Tx 0RA	125 A	3	HD	12335 VA	0 VA					--	--	--	Space	19
2	--	--	--	--			12083 VA	0 VA			--	--	--	--	20
3	--	--	--	--					10999 VA	0 VA	--	--	--	--	21
4	Tx 1RA	125 A	3	HD	17145 VA	0 VA					--	--	--	Space	22
5	--	--	--	--			16325 VA	0 VA			--	--	--	--	23
6	--	--	--	--					17070 VA	0 VA	--	--	--	--	24
7	Tx 1RB	175 A	3	JD	18630 VA	0 VA					--	--	--	Space	25
8	--	--	--	--			19810 VA	0 VA			--	--	--	--	26
9	--	--	--	--					20140 VA	0 VA	--	--	--	--	27
10	Tx 2RA	125 A	3	HD	13530 VA	0 VA					--	--	--	Space	28
11	--	--	--	--			16140 VA	0 VA			--	--	--	--	29
12	--	--	--	--					14620 VA	0 VA	--	--	--	--	30
13	Tx 2RB	125 A	3	HD	11100 VA	0 VA					--	--	--	Space	31
14	--	--	--	--			11895 VA	0 VA			--	--	--	--	32
15	--	--	--	--					8690 VA	0 VA	--	--	--	--	33
16	Tx 3RA	125 A	3	HD	15220 VA	0 VA					--	--	--	Space	34
17	--	--	--	--			14315 VA	0 VA			--	--	--	--	35
18	--	--	--	--					17380 VA	0 VA	--	--	--	--	36
		Total Load:			87960 VA		90568 VA		88899 VA						
		Total Amps:			318 A		327 A		321 A						

Panel Totals

Total Conn. Load: 267426 VA

Total Conn. Current: 322 A

Notes:

Panel: 0HCH

Location: Mechanical 1010
Supply From: ATS OS
Mounting: Surface Mounted
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Type: NF

A.I.C. Rating: 65kA
Mains Type: MLO
Mains Rating: 100 A
MCB Rating: N/A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	CWP-1a	50 A	3	EDB	9422 VA	0 VA					--	--	--	Space	10
2	--	--	--	--			9422 VA	0 VA			--	--	--	Space	11
3	--	--	--	--					9422 VA	0 VA	--	--	--	Space	12
4	CWP-1b	50 A	3	EDB	9422 VA	0 VA					--	--	--	Space	13
5	--	--	--	--			9422 VA	0 VA			--	--	--	Space	14
6	--	--	--	--					9422 VA	0 VA	--	--	--	Space	15
7	Space	--	--	--	0 VA	0 VA					--	--	--	Space	16
8	Space	--	--	--			0 VA	0 VA			--	--	--	Space	17
9	Space	--	--	--					0 VA	0 VA	--	--	--	Space	18
		Total Load:			18845 VA		18845 VA		18845 VA						
		Total Amps:			68 A		68 A		68 A						

Legend:

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Redudant 1+1	56534 VA	50.00%	28267 VA		
Redudant 2+1	0 VA	0.00%	0 VA	**Total Conn. Load:**	56534 VA
				Total Est. Demand:	28267 VA
				Total Conn. Current:	68 A
				Total Est. Demand Current:	34 A

Notes:
Provide under alternate.

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Job Number 18144
Date 11/17/2020
Drawn By SCC
Checked By SLC
Revised 02/15/2021

Project Title
Center for Materials and Manufacturing Sciences
TROY UNIVERSITY

Sheet Title
Panelboard Schedules

Sheet Number
E020

ALABAMA REGISTERED No. 17050 PROFESSIONAL 2/15/21 ENGINEER STEVEN L. CONOLY

Panel: CH1

Location: Mechanical Yard
Supply From: Utility
Mounting: Surface Mounted
Enclosure: NEMA 3R

Volts: 480/277 Wye
Phases: 3
Wires: 4
Type: I-Line

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 1200 A
MCB Rating: 1200 A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	CH-1	500 A	3	LJ	114731 VA	4157 VA					HJ	3	20 A	VRF-1b	13
2	--	--	--	--			114731 VA	4157 VA			--	--	--	--	14
3	--	--	--	--					114731 VA	4157 VA	--	--	--	--	15
4	CH-2	500 A	3	LJ	114731 VA	0 VA					--	--	--	Space	16
5	--	--	--	--			114731 VA	0 VA			--	--	--	--	17
6	--	--	--	--					114731 VA	0 VA	--	--	--	--	18
7	Panel CL1	60 A	3	HJ	5020 VA	0 VA					--	--	--	Space	19
8	--	--	--	--			3750 VA	0 VA			--	--	--	--	20
9	--	--	--	--					2750 VA	0 VA	--	--	--	--	21
10	VRF-1a	20 A	3	HJ	4157 VA	0 VA					--	--	--	Space	22
11	--	--	--	--			4157 VA	0 VA			--	--	--	--	23
12	--	--	--	--					4157 VA	0 VA	--	--	--	--	24
	Total Load:				242796 VA		241526 VA		240526 VA						
	Total Amps:				877 A		872 A		868 A						

7 02/15/2021

Panel Totals

Total Conn. Load: 724848 VA

Total Conn. Current: 872 A

Notes:
Provide UL S.E. label.
Main breaker shall have ground-fault protection of equipment per NEC 230.95.
Main breaker shall have energy-reducing maintenance bypass switch with local status indicator per NEC 240.87.

Panel: 0HLS

Location: Electrical 1005
Supply From: ATS EM
Mounting: Surface Mounted
Enclosure: NEMA 1

Volts: 480/277 Wye
Phases: 3
Wires: 4
Type: NF

A.I.C. Rating: 65kA
Mains Type: MLO
Mains Rating: 100 A
MCB Rating: N/A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	Stairwell Emergency Lighting	20 A	1	EDB	726 VA	0 VA					--	--	--	Space	16
2	Basement Emergency...	20 A	1	EDB			1808 VA	0 VA			--	--	--	Space	17
3	1st Floor Emergency Lighting	20 A	1	EDB					2020 VA	0 VA	--	--	--	Space	18
4	2nd Floor Emergency Lighting	20 A	1	EDB	1141 VA	0 VA					--	--	--	Space	19
5	Attic Emergency Lighting	20 A	1	EDB			1798 VA	0 VA			--	--	--	Space	20
6	Tx 0LLS	25 A	3	EDB					1451 VA	0 VA	--	--	--	Space	21
7	--	--	--	--	300 VA	0 VA					--	--	--	Space	22
8	--	--	--	--			250 VA	0 VA			--	--	--	Space	23
9	Elevator Room Lighting	20 A	1	EDB					80 VA	0 VA	--	--	--	Space	24
10	Spare	20 A	1	--	0 VA	0 VA					--	--	--	Space	25
11	Spare	20 A	1	--			0 VA	0 VA			--	--	--	Space	26
12	Spare	20 A	1	--					0 VA	0 VA	--	--	--	Space	27
13	Space	--	--	--	0 VA	0 VA					--	--	--	Space	28
14	Space	--	--	--			0 VA	0 VA			--	--	--	Space	29
15	Space	--	--	--					0 VA	0 VA	--	--	--	Space	30
	Total Load:				2167 VA		3856 VA		3436 VA						
	Total Amps:				8 A		15 A		13 A						

Panel Totals

Total Conn. Load: 9411 VA

Total Conn. Current: 11 A

Notes:
Provide internal Surge Protection Device (S.P.D.).
Spare breakers shall be EDB type.

Panel: CL1

Location: Mechanical Yard
Supply From: CH1
Mounting: Surface Mounted
Enclosure: NEMA 3R

Volts: 480 to 120/208 Wye
Phases: 3
Wires: 4
Type: Power-Zone Substation -15KVA

A.I.C. Rating: 65kA
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 60 A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	Generator Heater	20 A	2	QOB	1250 VA	0 VA					--	--	--	Space	15
2	--	--	--	--			1250 VA	0 VA			--	--	--	Space	16
3	Generator Heater	20 A	2	QOB					1250 VA	0 VA	--	--	--	Space	17
4	--	--	--	--	1250 VA	0 VA					--	--	--	Space	18
5	Generator Battery Charger	20 A	1	QOB			1000 VA	0 VA			--	--	--	Space	19
6	Generator Battery Charger	20 A	1	QOB					1000 VA	0 VA	--	--	--	Space	20
7	Heat Tape	20 A	1	QOB	1500 VA	0 VA					--	--	--	Space	21
8	Heat Tape	20 A	1	QOB			1500 VA	0 VA			--	--	--	Space	22
9	Docking Station	20 A	1	QOB					500 VA	0 VA	--	--	--	Space	23
10	Lights and Receptacles	20 A	1	QOB	1020 VA	0 VA					--	--	--	Space	24
11	Spare	20 A	1	--			0 VA	0 VA			--	--	--	Space	25
12	Spare	20 A	1	--					0 VA	0 VA	--	--	--	Space	26
13	Space	--	--	--	0 VA	0 VA					--	--	--	Space	27
14	Space	--	--	--			0 VA	0 VA			--	--	--	Space	28
	Total Load:				5020 VA		3750 VA		2750 VA						
	Total Amps:				43 A		33 A		23 A						

Panel Totals

Total Conn. Load: 11520 VA

Total Conn. Current: 32 A

Notes:
Square D #MPZB15T2F65K or approved equal.
Spare breakers shall be QOB type.

Panel: 0LLS

Location: Electrical 1005
Supply From: Tx 0LLS
Mounting: Surface Mounted
Enclosure: NEMA 1

Volts: 120/208 Wye
Phases: 3
Wires: 4
Type: NQOD

A.I.C. Rating: 10kA
Mains Type: MCB
Mains Rating: 100 A
MCB Rating: 50 A

CKT	Circuit Description	Trip	Poles	Breaker Type	A		B		C		Breaker Type	Poles	Trip	Circuit Description	CKT
1	Door Opener	20 A	1	QOB	300 VA										13
2	Door Opener	20 A	1	QOB			300 VA								14
3	Intercom	20 A	1	QOB					250 VA						15
4	FACP	20 A	1	QOB	1200 VA										16
5	Spare	20 A	1	--			0 VA								17
6	Spare	20 A	1	--					0 VA						18
7	Space	--	--	--	0 VA										19
8	Space	--	--	--			0 VA								20
9	Space	--	--	--					0 VA						21
10	Space	--	--	--	0 VA										22
11	Space	--	--	--			0 VA								23
12	Space	--	--	--					0 VA						24
	Total Load:				1451 VA		300 VA		250 VA						
	Total Amps:				12 A		3 A		2 A						

Panel Totals

Total Conn. Load: 1948 VA

Total Conn. Current: 5 A

Notes:
Spare breakers shall be QOB type.
Provide lock-on device for FACP.
Provide internal Surge Protection Device (S.P.D.).

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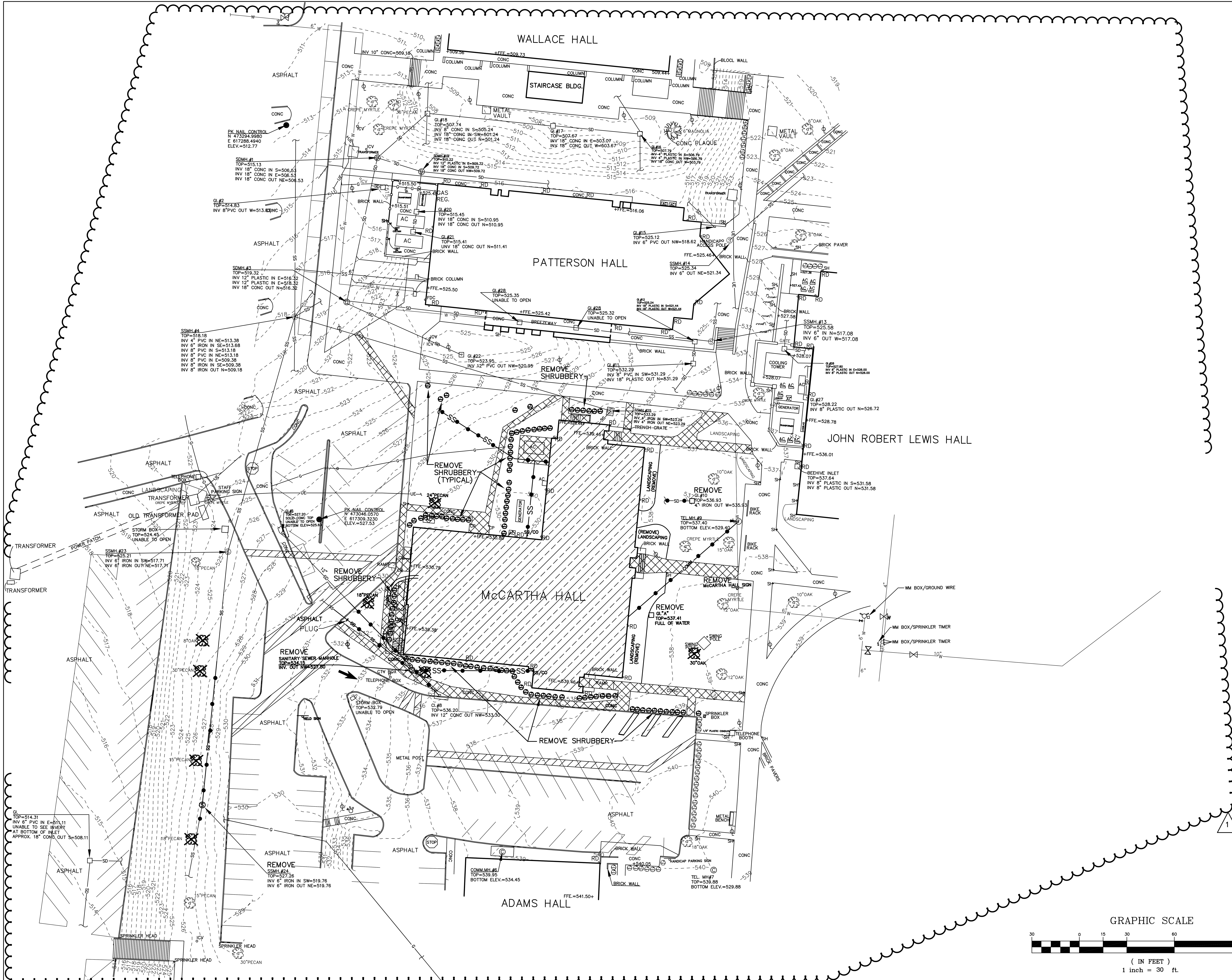
Job Number 18144
Date 11/17/2020
Drawn By SCC
Checked By SLC
Revised 02/15/2021

Project Title
Center for Materials and Manufacturing Sciences
TROY UNIVERSITY

Sheet Title
Panelboard Schedules

Sheet Number
E024

ALABAMA REGISTERED No. 17050 PROFESSIONAL 2/15/21 ENGINEER STEVEN L. CONOLY



NOTE: HORIZONTAL AND VERTICAL CONTROL BASED ON ALDOT. CORS. STATION.(EAST ZONE)

LEGEND

DESCRIPTION	EXISTING	REMOVE
BUILDING		
CURB		
CURB & GUTTER		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		
SANITARY SEWER MANHOLE		
SANITARY SEWER LINE	SS	SS
GAS METER	GM	
GAS LINE	G	
STORM MANHOLE		
GRATE INLET		
AREA INLET		
STORM DRAIN LINE	SD	SD
FRENCH DRAIN LINE	FD	
CLEAN-OUT	CO	
WATER LINE	W	
ELECTRIC (AERIAL)	AE	
ELECTRIC (UNDERGROUND)	UE	
WATER METER	WM	
FIRE HYDRANT		
POWER POLE		
LIGHT POLE		
GUY WIRE		
TRAFFIC SIGN		
BUMPER POST	BP	
METAL COLUMN		
FLOOD LIGHT		
SHRUBBERY		REMOVE
HEDGE ROW		
TREE		
FENCE		
GRADE CONTOUR	999	

NOTES:

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ALL OF THE UNDERGROUND UTILITIES.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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Rev.	Description	Date
1	ADDENDUM 7	2-15-2021

Job Number 18144

Date 11/17/2020

Drawn By CGH

Checked By SBG

Project Title

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES

TROY UNIVERSITY | TROY, AL

Sheet Title

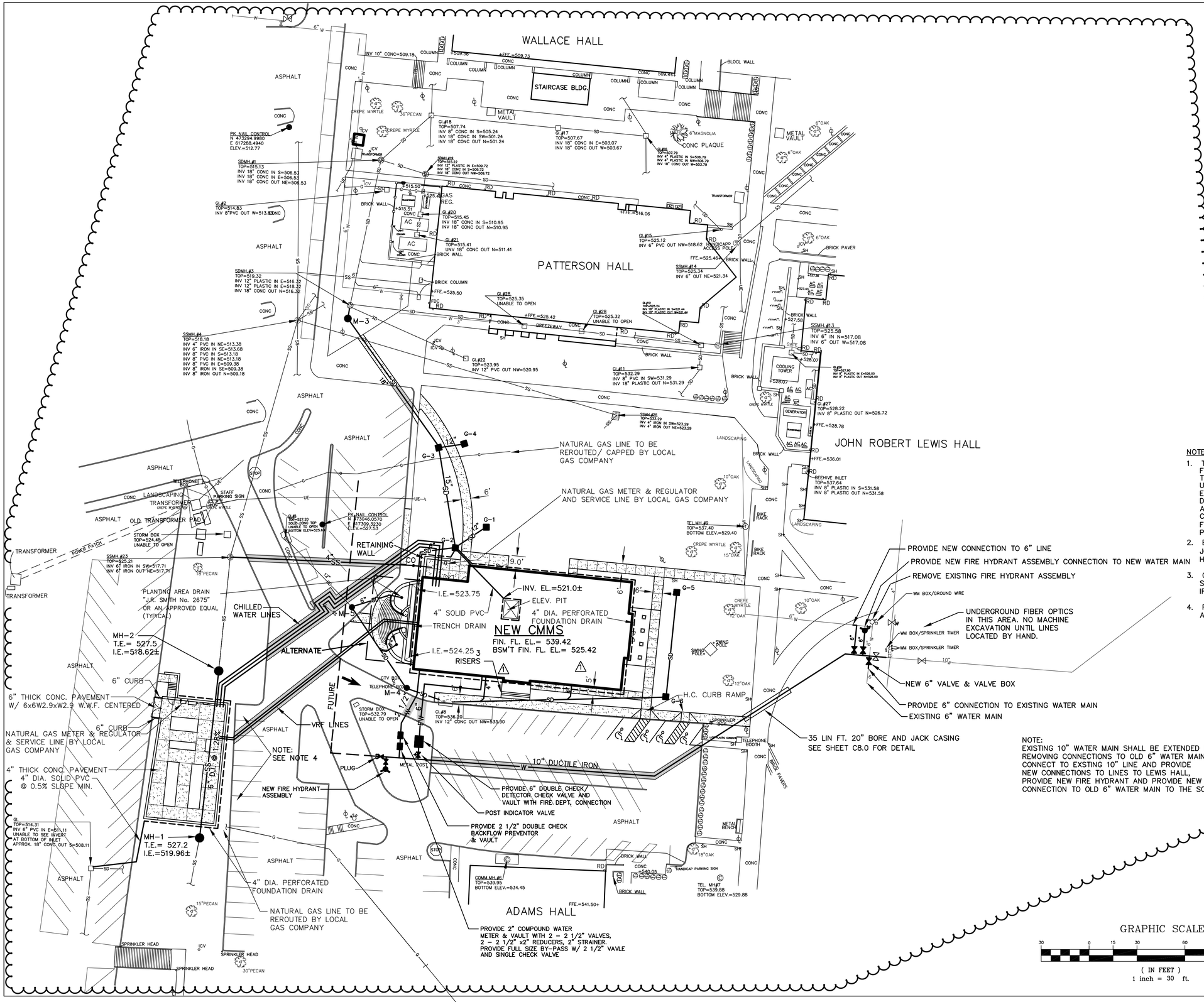
SITE DEMOLITION PLAN

Sheet Number

C1.0

ALABAMA LICENSED No. 5935 PROFESSIONAL ENGINEER PATRICK A. MOSELEY

11/17/20



NOTE: HORIZONTAL AND VERTICAL CONTROL BASED ON ALDOT. CORS. STATION.(EAST ZONE)

LEGEND

DESCRIPTION	EXISTING	NEW
BUILDING		
CURB		
CURB & GUTTER		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		
SANITARY SEWER MANHOLE	S	
SANITARY SEWER LINE	SS	SS
GAS METER	O GM	
GAS LINE	G	
STORM MANHOLE		
CURB INLET		
GRATE INLET		
AREA INLET		
STORM DRAIN LINE	SD	
CLEAN-OUT	O CO	CO
WATER LINE	W	W
ELECTRIC (AERIAL)	AE	
ELECTRIC (UNDERGROUND)	UE	
WATER METER	WM	
FIRE HYDRANT		
POWER POLE		
GUY WIRE		
TRAFFIC SIGN		
BUMPER POST	BP	
FENCE	x x	
BUSH		
HEDGE ROW		
TREE		

NOTES:

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ALL OF THE UNDERGROUND UTILITIES.
2. EXPOSED WATER LINE TO EXISTING BUILDING FACE TO LOCATE JOINTS. PROVIDE "MEGALUG" RESTRAINED JOINTS AND/OR HARNESSES TO PROPERLY RESTRAIN NEW WATER LINE.
3. CONTRACTOR SHALL FIELD DETERMINE ELEVATIONS OF EXISTING SANITARY SEWER LINES IN AREA OF NEW WORK AND LOWER LINES IF THERE ARE CONFLICTS WITH NEW CONSTRUCTION.
4. RREMOVE AND REPLACE EXISTING CONCRETE CURB AND ASPHALT PAVEMENT AS NEEDED TO INSTALL MECHANICAL YARD.

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

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CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

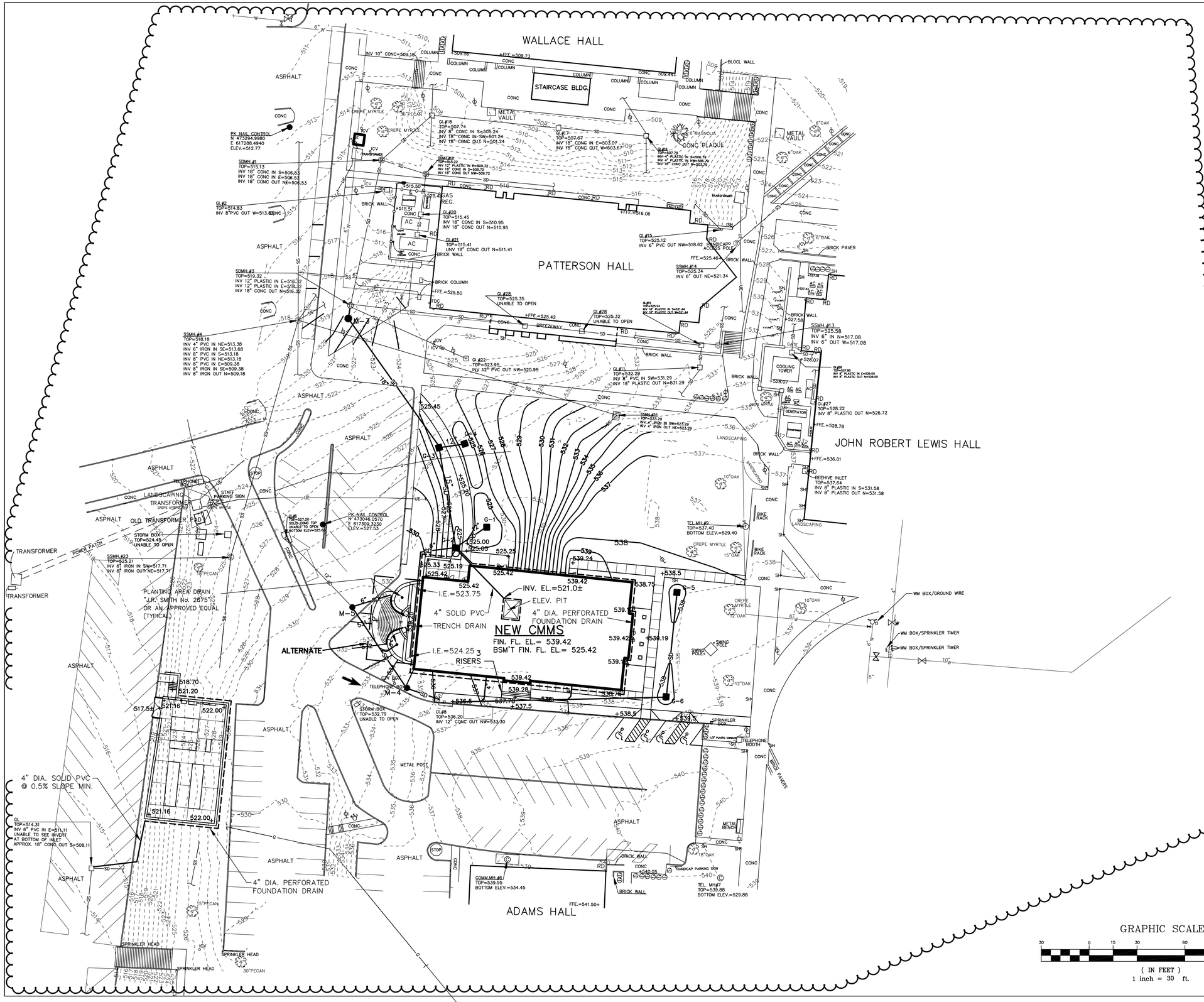
Rev.	Description	Date
1	ADDENDUM 5	1-15-2021
2	ADDENDUM 7	2-15-2021

Job Number: 18144
Date: 11/17/2020
Drawn By: CGH
Checked By: SBG
Project Title:

Sheet Title: SITE LAYOUT & UTILITIES PLAN

Sheet Number: C2.0

ALABAMA LICENSED No. 5935 PROFESSIONAL ENGINEER PATRICK A. MOSELEY
11/17/20



NOTE: HORIZONTAL AND VERTICAL CONTROL BASED ON ALDOT. CORS. STATION.(EAST ZONE)

LEGEND

DESCRIPTION	EXISTING	NEW
BUILDING		
CURB		
CURB & GUTTER		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		
SANITARY SEWER MANHOLE	S	
SANITARY SEWER LINE	SS	
GAS METER	GM	
GAS LINE	G	
STORM MANHOLE		
CURB INLET		
GRATE INLET		
AREA INLET		
STORM DRAIN LINE	SD	SD
CLEAN-OUT	CO	
WATER LINE	W	
ELECTRIC (AERIAL)	AE	
ELECTRIC (UNDERGROUND)	UE	
WATER METER	WM	
FIRE HYDRANT		
POWER POLE		
GUY WIRE		
TRAFFIC SIGN		
BUMPER POST	BP	
FENCE	x x	
BUSH		
HEDGE ROW		
TREE		
GRADE CONTOUR	666	666
SPOT ELEVATION	+ (666.00)	+ 666.00

NOTES:

1. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED ALL OF THE UNDERGROUND UTILITIES.

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CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Rev.	Description	Date
1	ADDENDUM 7	2-15-2021

Job Number: 18144
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Cheeked By: SBG
Project Title:

Sheet Title: SITE GRADING & DRAINAGE PLAN
Sheet Number: C3.0

NOTE: HORIZONTAL AND VERTICAL CONTROL BASED ON ALDOT. CORS. STATION.(EAST ZONE)

WALLACE HALL

PATTERSON HALL

JOHN ROBERT LEWIS HALL

ADAMS HALL

STAIRCASE BLDG.

CONC PLAQUE

BLOCL WALL

METAL VAULT

COOLING TOWER

GENERATOR

BRICK PAVER

BRICK WALL

BRICK COLUMN

BREEZEWAY

LANDSCAPING

ASPHALT

CONC

CREPE MYRTLE

OLD TRANSFORMER PAD

TRANSFORMER

CHILLED WATER LINES

PLANTING AREA DRAIN "J.R. SMITH No. 2875" OR AN APPROVED EQUAL (TYPICAL)

PK NAIL CONTROL
N 473294.9980
E 617288.4940
ELEV.=512.77

PK NAIL CONTROL
N 473048.0570
E 617309.3230
ELEV.=527.53

MH-2
T.E.= 527.5
I.E.=518.62±

MH-1
T.E.= 527.2
I.E.=519.96±

ALTERNATE

NEW CMMS
FIN. FL. EL.= 539.42
BSM'T FIN. FL. EL.= 525.42

I.E.=523.75
4" SOLID PVC
TRENCH DRAIN
INV. EL.=521.0±
ELEV. PIT
4" DIA. PERFORATED FOUNDATION DRAIN
I.E.=524.25
3 RISERS

TEMPORARY INLET PROTECTION (TYPICAL)

NATURAL GAS LINE TO BE REROUTED/ CAPPED BY LOCAL GAS COMPANY

NATURAL GAS METER & REGULATOR AND SERVICE LINE BY LOCAL GAS COMPANY

NATURAL GAS METER & REGULATOR & SERVICE LINE BY LOCAL GAS COMPANY

4" DIA. SOLID PVC @ 0.5% SLOPE MIN.

6" DI @ 1.2%

4" DIA. PERFORATED FOUNDATION DRAIN

NATURAL GAS LINE TO BE REROUTED BY LOCAL GAS COMPANY

NEW FIRE HYDRANT ASSEMBLY

PROVIDE 6" DOUBLE CHECK DETECTOR CHECK VALVE AND VAULT WITH FIRE DEPT. CONNECTION

POST INDICATOR VALVE

PROVIDE 2 1/2" DOUBLE CHECK BACKFLOW PREVENTOR & VAULT

PROVIDE 2" COMPOUND WATER METER & VAULT WITH 2 - 2 1/2" VALVES, 2 - 2 1/2" x2" REDUCERS, 2" STRAINER. PROVIDE FULL SIZE BY-PASS W/ 2 1/2" VAVLE AND SINGLE CHECK VALVE

10" DUCTILE IRON W

PROVIDE NEW CONNECTION TO 6" LINE

PROVIDE NEW FIRE HYDRANT ASSEMBLY CONNECTION TO NEW WATER MAIN

REMOVE EXISTING FIRE HYDRANT ASSEMBLY

UNDERGROUND FIBER OPTICS IN THIS AREA. NO MACHINE EXCAVATION UNTIL LINES LOCATED BY HAND.

NEW 6" VALVE & VALVE BOX

PROVIDE 6" CONNECTION TO EXISTING WATER MAIN

EXISTING 6" WATER MAIN

35 LIN FT. 20" BORE AND JACK CASING
SEE SHEET C8.0 FOR DETAIL

NOTE:
EXISTING 10" WATER MAIN SHALL BE EXTENDED BY REMOVING CONNECTIONS TO OLD 6" WATER MAIN. CONNECT TO EXSTING 10" LINE AND PROVIDE NEW CONNECTIONS TO LINES TO LEWIS HALL, PROVIDE NEW FIRE HYDRANT AND PROVIDE NEW CONNECTION TO OLD 6" WATER MAIN TO THE SOUTH.

GENERAL NOTES FOR SOIL EROSION AND SEDIMENT CONTROL

1. AN ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM) STORMWATER PERMIT (NOI) FOR THIS PROJECT WILL BE REQUIRED DUE TO THE DISTURBED AREA BEING MORE THAN ONE (1) ACRE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE PERMIT AND INSTALLATION OF EROSION CONTROL MEASURES AND THE MAINTENANCE OF SAME DURING ALL PHASES OF CONSTRUCTION.
2. ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ONSITE INSPECTION DUE TO CONDITIONS NOT SHOWN ON PLANS.
3. FAILURE TO PROPERLY INSTALL AND MAINTAIN EROSION CONTROL PRACTICES MAY RESULT IN CONSTRUCTION BEING HALTED.
4. EROSION CONTROL MEASURES WILL BE INSPECTED AT LEAST WEEKLY AND FOLLOWING RAINFALL AND REPAIRED BY CONTRACTOR.
5. ALL SILT FENCING SHALL COMPLY WITH ALABAMA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS.
6. STORM DRAIN SYSTEMS SHALL BE MAINTAINED CLEAN AND FREE OF SILT AND DEBRIS.
7. A RESPONSE TO A NOTIFICATION OF NON COMPLIANCE OR INADEQUATE MEASURES SHALL BE MADE WITHIN 24 HOURS AFTER RECEIVING SUCH NOTIFICATION, UNLESS OTHERWISE SPECIFIED FOR CONDITIONS DEEMED CRITICAL.
8. IMPLEMENTATION AND MAINTENANCE:

A) IMPLEMENTATION:

1. NO CLEARING, GRADING, FILLING, OR OTHER LAND DISTURBING ACTIVITIES SHALL BE PERMITTED UNTIL APPROVED EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED, EXCEPT THOSE OPERATIONS NEEDED TO INSTALL SUCH MEASURES.
2. THESE EROSION AND SEDIMENT CONTROL MEASURES SHALL APPLY TO ALL FEATURES OF THE CONSTRUCTION SITE, INCLUDING BUT NOT LIMITED TO STREET AND UTILITY INSTALLATIONS AS WELL.

B) MAINTENANCE: ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CONTINUOUSLY MAINTAINED BY THE CONTRACTOR DURING THE CONSTRUCTION PHASE OF THE DEVELOPMENT.

9. ALL EROSION CONTROL MEASURES SHALL BE REMOVED AT THE COMPLETION OF THIS CONTRACT.

LEGEND

DESCRIPTION	EXISTING	NEW
BUILDING		
CURB		
CURB & GUTTER		
CONCRETE PAVEMENT		
ASPHALT PAVEMENT		
SANITARY SEWER MANHOLE	Ⓢ	
SANITARY SEWER LINE	SS	
GAS METER	GM	
GAS LINE	G	
STORM MANHOLE	Ⓓ	●
CURB INLET	□	
GRATE INLET	□	
AREA INLET	□	
STORM DRAIN LINE	SD	SD
CLEAN-OUT	CO	
WATER LINE	W	
ELECTRIC (AERIAL)	AE	
ELECTRIC (UNDERGROUND)	UE	
WATER METER	WM	
FIRE HYDRANT		
POWER POLE		
GUY WIRE		
TRAFFIC SIGN		
BUMPER POST	BP	
FENCE	x x	
BUSH		
HEDGE ROW		
TREE		
GRADE CONTOUR	666	666
TEMPORARY SILT FENCE		SF
TEMPORARY INLET PROTECTION		

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

N

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1	ADDENDUM 5	1-15-2021
2	ADDENDUM 7	2-15-2021

Job Number: 18144
Date: 11/17/2020
Drawn By: CGH
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Project Title:

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Sheet Title: SITE EROSION & SEDIMINATION CONTROL PLAN

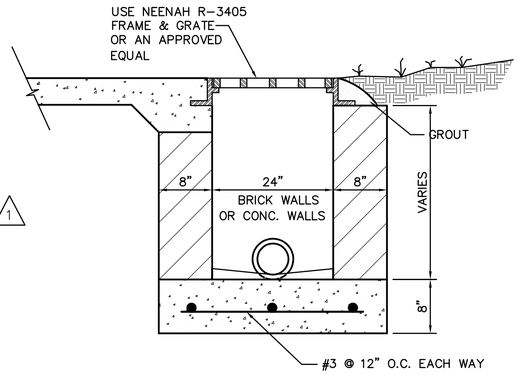
Sheet Number: C4.0

ALABAMA LICENSED PROFESSIONAL ENGINEER No. 5935 PATRICK A. MOSELEY
11/17/20

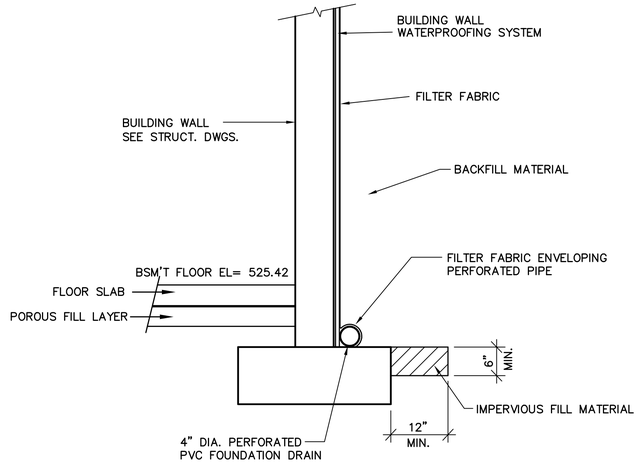
STORM DRAINAGE PIPE AND STRUCTURE SCHEDULE

STRUCTURE FROM	STRUCTURE TO	PIPE LGTH. FT.	PIPES DIA. IN.	PIPES SLOPE %	PIPES INVERT ELEV. UP STREAM	PIPES INVERT ELEV. DOWN STREAM	STRUCTURES NO.	STRUCTURES TYPE STURCTURE	STRUCTURES TOP ELEV.	REMARKS
G-1	G-2	15	12	1.00	521.00	520.85	G-1	GRATE INLET	524.50	
G-2	G-3	62	15	1.00	520.50	519.88	G-2	GRATE INLET	524.50	
G-4	G-3	15	12	1.00	520.50	520.35	G-3	GRATE INLET	525.00	
G-3	M-3	98	18	1.00	519.80	518.82	G-4	GRATE INLET	524.50	
M-3	SDMH#1	8	18	1.00	518.82	518.74	M-3	MANHOLE	520.00	
G-5	G-6	64	12	0.50	534.50	534.18	G-5	GRATE INLET	524.50	
G-6	CI.#8	134	12	0.50	534.17	533.50	G-6	GRATE INLET	524.50	
CI.#8	M-4	22	12	*	*	*	M-4	MANHOLE	535.00	
M-4	M-5	61	15	*	*	*	M-5	MANHOLE	531.00	

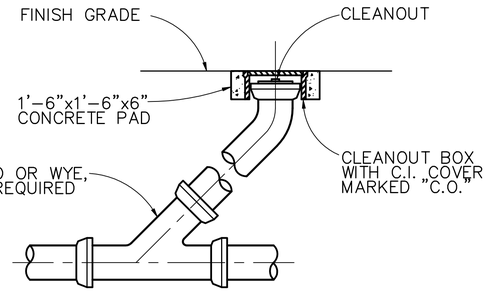
* CONTRACTOR SHALL FIELD DETERMINE INVERT ELEVATION OF EXISTING 12" PIPE AT MANHOLE M-5 LOCATION. PROVIDE UNIFORM SLOPE OF NEW PIPE FROM EXISTING C.I.#18 TO NEW MANHOLE M-5.



GRATE INLET
NTS



TYPICAL EXTERIOR FOUNDATION DRAIN DETAIL



TYPICAL CLEANOUT DETAIL
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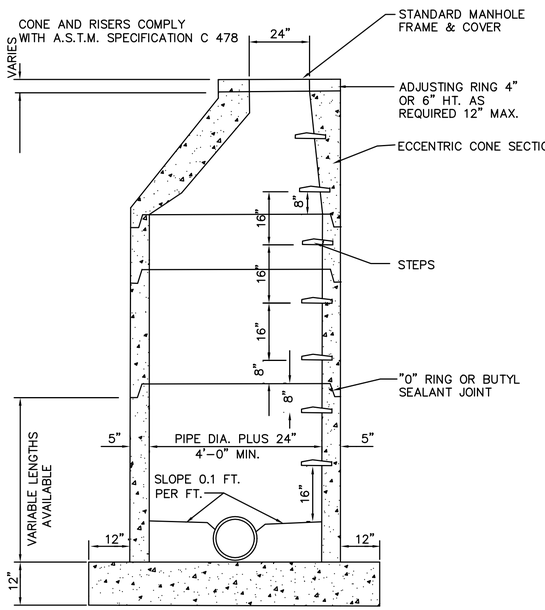
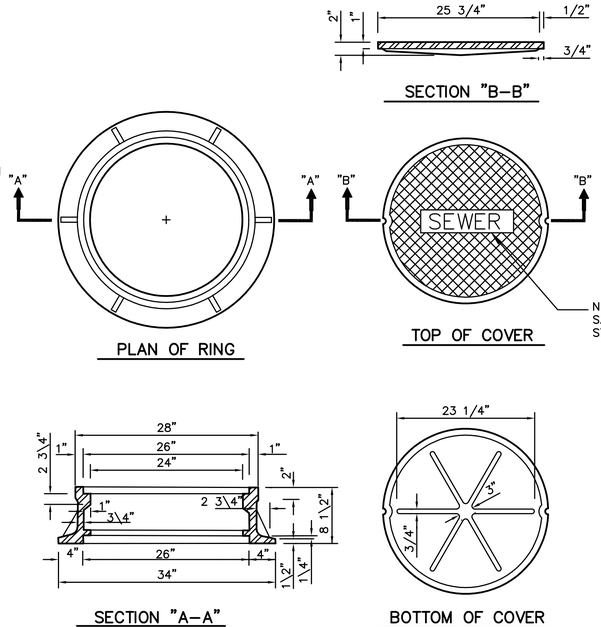
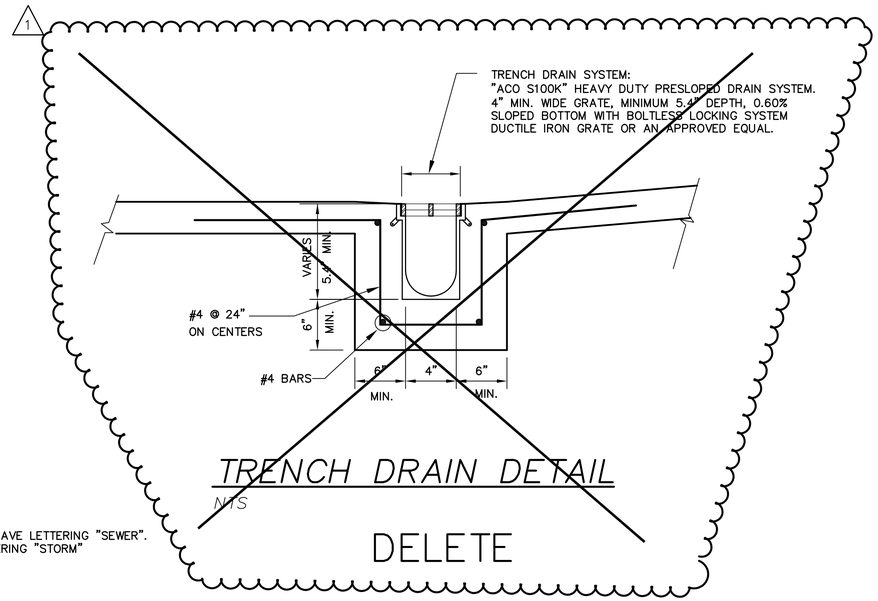


PRECAST CONCRETE MANHOLE
NTS



STANDARD MANHOLE COVER & RING
NTS



TRENCH DRAIN DETAIL
NTS

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Rev.	Description	Date
1	ADDENDUM 7	2-15-2021

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Checked By: SBG
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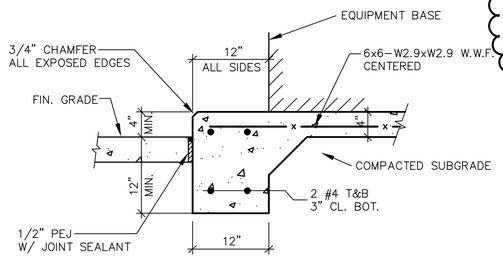
CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

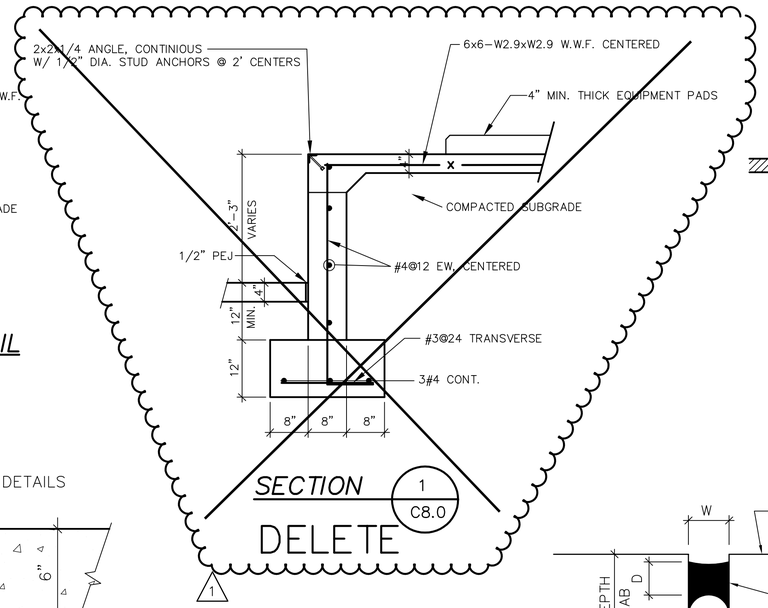
Sheet Title: SITE DETAILS
Sheet Number: C7.0

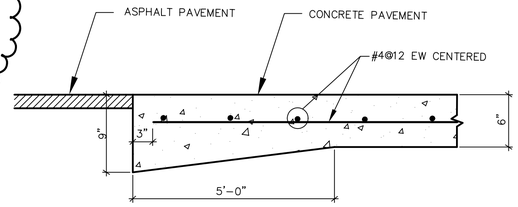
ALABAMA LICENSED PROFESSIONAL ENGINEER No. 5935 PATRICK A. MOONEY
11/17/20



TYPICAL MECH. PAD DETAIL

NTS





THICKENED EDGE DETAIL

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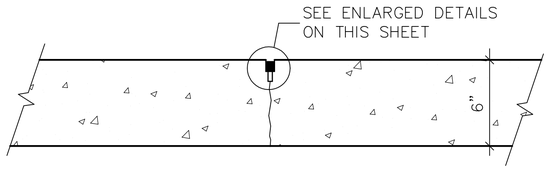
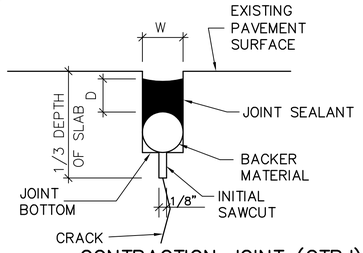
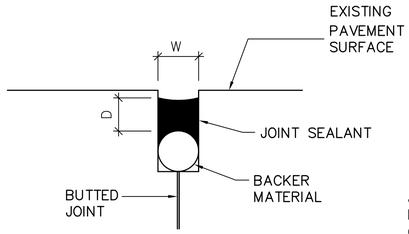


SAW CUT CONTRACTION JOINT (CTRJ)

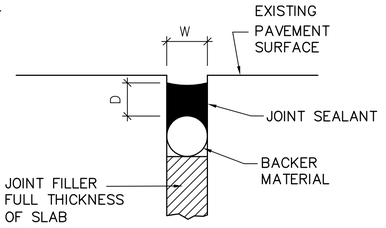
N.T.S.



CONTRACTION JOINT (CTRJ)



CONSTRUCTION JOINT (CJ)



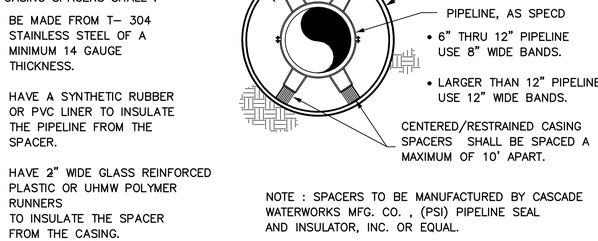
EXPANSION JOINT (EJ)

W= WIDTH OF SEALANT RESERVOIR (1/2" MIN, 5/8" MAX.)
D= DEPTH OF SEALANT; 0.5W FOR SILICONE SEALANT
DIAMETER OF BACKER MATERIAL= W + 1/8"

NOTE:
TOP OF SEALANT SHALL BE 1/4" TO 1/16" BELOW TOP OF PAVEMENT

JOINT SEALANT DETAILS (BACKER MATERIAL)

N.T.S.



CASING SPACERS SHALL :

- BE MADE FROM T– 304 STAINLESS STEEL OF A MINIMUM 14 GAUGE THICKNESS.
- HAVE A SYNTHETIC RUBBER OR PVC LINER TO INSULATE THE PIPELINE FROM THE SPACER.
- HAVE 2" WIDE GLASS REINFORCED PLASTIC OR UHMW POLYMER RUNNERS TO INSULATE THE SPACER FROM THE CASING.

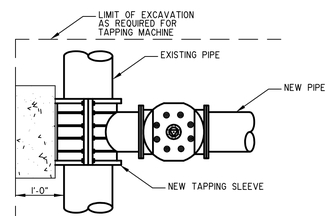
- 6" THRU 12" PIPELINE USE 8" WIDE BANDS.
- LARGER THAN 12" PIPELINE USE 12" WIDE BANDS.

CENTERED/RESTRAINED CASING SPACERS SHALL BE SPACED A MAXIMUM OF 10' APART.

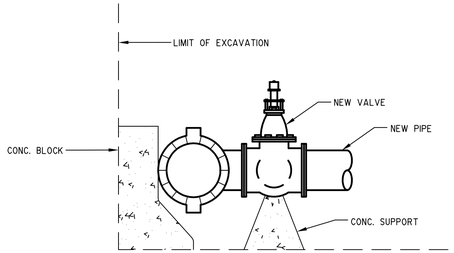
NOTE : SPACERS TO BE MANUFACTURED BY CASCADE WATERWORKS MFG. CO. , (PSI) PIPELINE SEAL AND INSULATOR, INC. OR EQUAL.

UNDERCROSSING WITH STAINLESS STEEL SPACERS

NTS

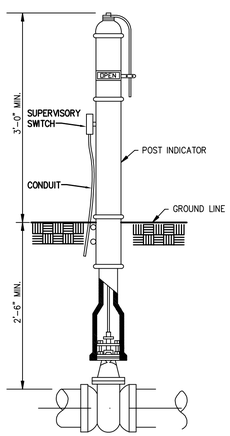


PLAN



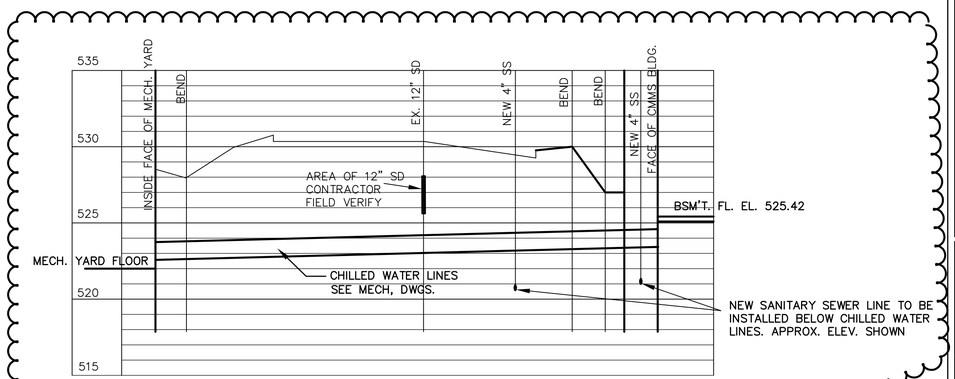
ELEVATION TAPPING SLEEVE & VALVE INSTALLATION DETAIL

NO SCALE



POST INDICATOR VALVE DETAIL

NOT TO SCALE



PROFILE OF CHILLED WATER LINES

SCALES——HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

1

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Rev.	Description	Date
1	ADDENDUM 7	2-15-2021

Job Number 18144

Date 11/17/2020

Drawn By CGH

Checked By SBG

Project Title

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Sheet Title
SITE DETAILS

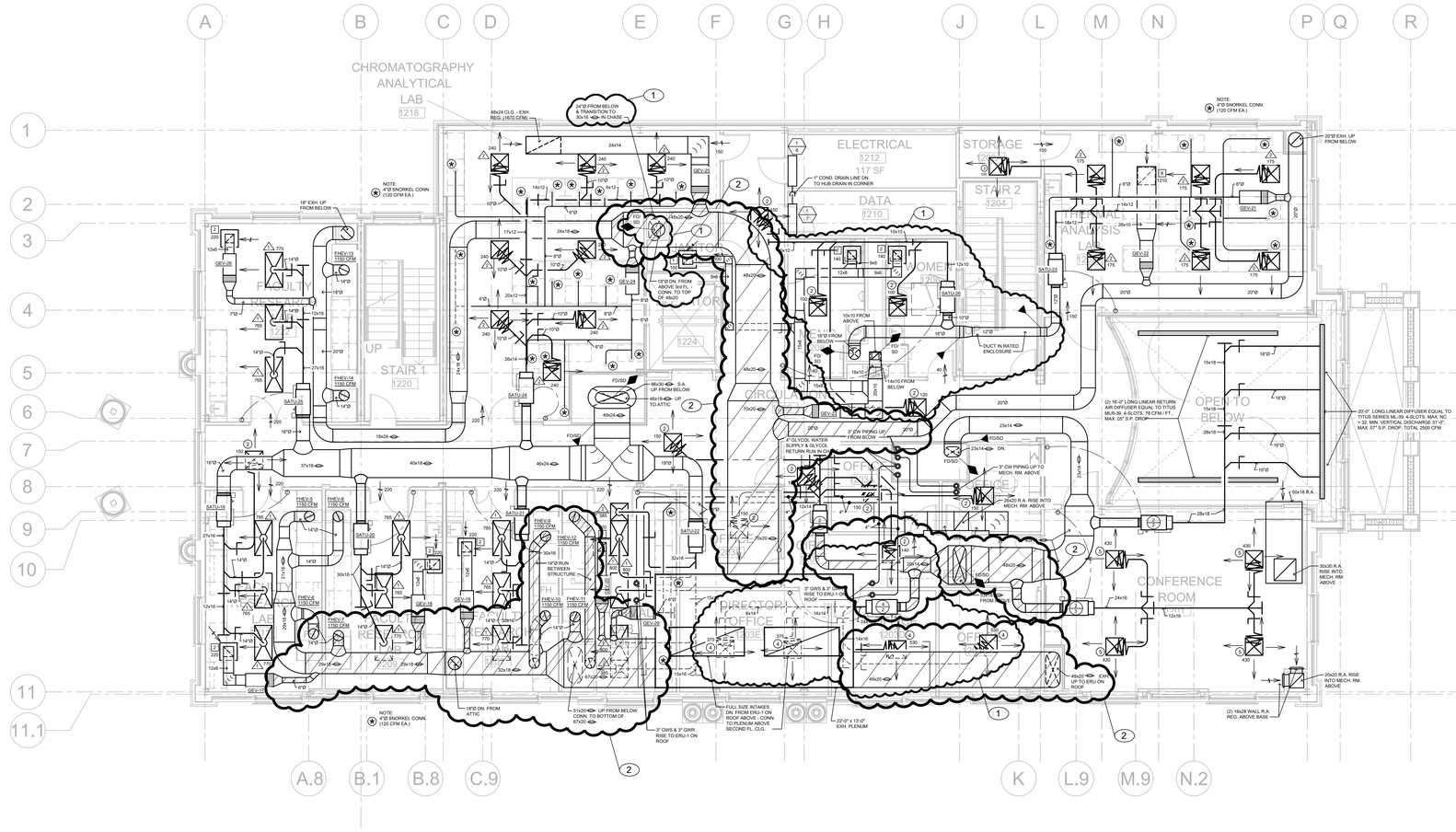
Sheet Number
C8.0

ALABAMA LICENSED No. 5935 PROFESSIONAL ENGINEER PATRICK A. MOSELEY
11/17/20

LEGEND

CWS	CHILLED WATER SUPPLY
CWR	CHILLED WATER RETURN
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
	AUTOMATIC CHANGEOVER VALVE
	ISOLATION / GATE VALVE
	SQUARE HEAD BALANCING VALVE
	COMBINATION BALANCING VALVE AND FLOW METER
	BALL VALVE
	BUTTERFLY VALVE
	CHECK / SWING GATE
	FACTORY FABRICATED AND INSULATED DOUBLE WALL FLAT OVAL DUCT
	MOTORIZED R.A. DAMPER
	MANUAL VOLUME DAMPER (MVD)
	MOTORIZED DAMPER (MD)
	SMOKE DETECTOR
S	SMOKE DAMPER
	DUCT MOUNTED C02 SENSOR
	DENOTES LOCATION OF VERTICAL ACTION FIRE DAMPER
	DENOTES LOCATION OF HORIZONTAL ACTION FIRE DAMPER
FD/SD	DENOTES LOCATION OF VERTICAL ACTION COMBINATION FIRE AND SMOKE DAMPER
FD/SD	DENOTES LOCATION OF HORIZONTAL ACTION COMBINATION FIRE AND SMOKE DAMPER
	CEILING DIFFUSER
	RETURN AIR GRILLE/REGISTER EXHAUST AIR GRILLE/REGISTER

4	CEILING DIFFUSER DESIGNATOR
4	RETURN AIR GRILLE/REGISTER
4	EXHAUST AIR GRILLE/REGISTER
1/4	VAV TERMINAL UNIT DESIGNATOR AIR HANDLING UNIT SERVED BY TERMINAL UNIT NUMBER
12x12	DUCT W/ RECTANGULAR SIZE
12x12	DUCT W/ FLAT OVAL SIZE
	RECTANGULAR SUPPLY DUCT TURNING UP
	RECTANGULAR SUPPLY AIR DUCT TURNING DOWN
	RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING UP
	RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING DOWN
	RECTANGULAR SUPPLY AIR DUCT FLOOR OR ROOF PENETRATION
	RECTANGULAR RETURN OR EXHAUST AIR DUCT FLOOR OR ROOF PENETRATION
	R.A. TEMPERATURE SENSOR
ATD	AIR TRANSFER DUCT
AD	AUXILIARY DRAIN
T	THERMOSTAT
S	REMOTE TEMPERATURE SENSOR
H	HUMIDISTAT
C	CO2 SENSOR
A.F.F.	ABOVE FINISH FLOOR
C.D.	CEILING DIFFUSER
CLG.	CEILING OR COOLING
CONN.	CONNECT OR CONNECTION
F.D.	FIRE DAMPER
G.C.	GENERAL CONTRACTOR
O.A.	OUTSIDE AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR



GENERAL VAV NOTES (AHU-2 SYSTEM):

1.) ALL ROUND AND FLAT OVAL DUCTWORK FROM AIR HANDLING UNITS TO THE VAV TERMINAL UNITS SHALL BE FACTORY FABRICATED SPIRAL DUCTS AND FITTINGS RATED FOR 4" STATIC PRESSURE (W.C.).
2.) ALL BRANCH TAKE-OFF FITTINGS SHALL BE CONICAL TYPE AS SHOWN ON THE PLANS.
3.) ALL DUCTWORK DOWNSTREAM OF THE VAV TERMINAL UNITS SHALL BE LOW PRESSURE TYPE RATED FOR .5" STATIC PRESSURE (W.C.)
4.) MAXIMUM LENGTH OF FLEXIBLE ROUND DUCTS TO DIFFUSERS SHALL BE 6'-0" FOR LOW PRESSURE DUCTWORK AND 12" FOR MED/HIGH PRESSURE SUPPLY AIR DUCTS TO VAV TERMINAL UNITS.
5.) ALL RECTANGULAR/SQUARE DUCTWORK DOWNSTREAM OF THE VAV TERMINAL UNITS SHALL BE INTERNALLY INSULATED WITH 2" THICK ACOUSTICAL DUCT LINER. SEE SPECS FOR INSULATION TYPE.
6.) COORDINATE FINAL LOCATION OF ALL CEILING DIFFUSERS, CEILING REGISTERS, ETC., WITH THE ARCHITECTURAL REFLECTED CEILING PLANS.
7.) EXTENT OF FACTORY FABRICATED AND INSULATED DOUBLE WALL DUCT IS INDICATED ON THE DUCTWORK WITH SLASHES.
8.) FINAL LOCATION OF ALL VAV TERMINAL UNITS SHALL ALLOW FOR COMPLETE AND EASY MAINTENANCE TO HEATING COILS, FILTERS, CONTROLS, POWER SWITCHES, ETC.
9.) ALL AIR TRANSFER DUCTS (ATD) AND COLLARS SHALL BE LINED WITH 2" THICK ACOUSTICAL DUCT LINER/INSULATION.
10.) COMBUSTIBLE MATERIALS ARE NOT ALLOWED IN AREAS OR SPACES USED AS A RETURN AIR PLENUM. THE GENERAL CONTRACTOR SHALL PROVIDE AN AIRTIGHT SEAL AT ALL JOINTS OF THE R.A. PLENUM SPACE, INCLUDING INTERIOR PARTITIONS BETWEEN SPACES USED AS A RETURN AIR PLENUM AND SPACES NOT USED AS A RETURN AIR PLENUM. CONTRACTOR SHALL PAY PARTICULAR ATTENTION TO PERIMETER JOINTS OF THE BUILDING TO ENSURE NO AMBIENT AIR ENTERS THE RETURN AIR PLENUM.
11.) NO BARE EXPOSED FIBERGLASS INSULATION, INCLUDING BATT TYPE FIBERGLASS INSULATION, IS ALLOWED IN THE RETURN AIR PLENUM. ALL INSULATION SHALL HAVE NON-COMBUSTIBLE FACING WITH 25 RATING FOR FLAME SPREAD AND 50 FOR FUEL CONTRIBUTED AND SMOKE DEVELOPED AS DETERMINED BY ASTM E84.
12.) ALL EXPOSED EDGES OF INSULATION THAT OCCURS ON ENDS OF DUCTWORK WITH EXPOSED INSULATION SHALL BE PROVIDED WITH DUCT NOSINGS AS SHOWN ON THE PLAN DETAILS. ALL OTHER SHALL BE PAINTED WITH DUCT SEALER RATED AND IN COMPLIANCE WITH ASTM E84 FOR 25/50 SMOKE AND FLAME SPREAD.

N
W E
S

OVERALL SECOND FLOOR HVAC PLAN

SCALE: 1/8" = 1'-0"
NOTE: OVERALL PLAN IS PROVIDED FOR COORDINATION PURPOSES ONLY - SEE OTHER PLANS FOR DETAILS

0' 2' 4' 8' 16' 32'

NOTE:

THE SPACE/PLENUM ABOVE THE CEILING IS UTILIZED AS A RETURN AIR PLENUM. THE GENERAL CONTRACTOR SHALL SEAL THE PLENUM AIR TIGHT. ALL PENETRATIONS OF THE R.A. PLENUM SHALL BE SEALED AIR TIGHT. NO COMBUSTIBLES ARE ALLOWED IN THE R.A. PLENUM SPACE.

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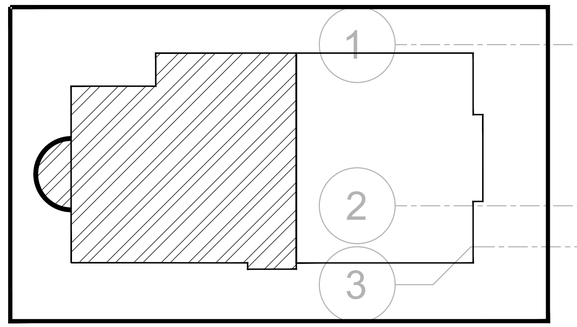
Project Title

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

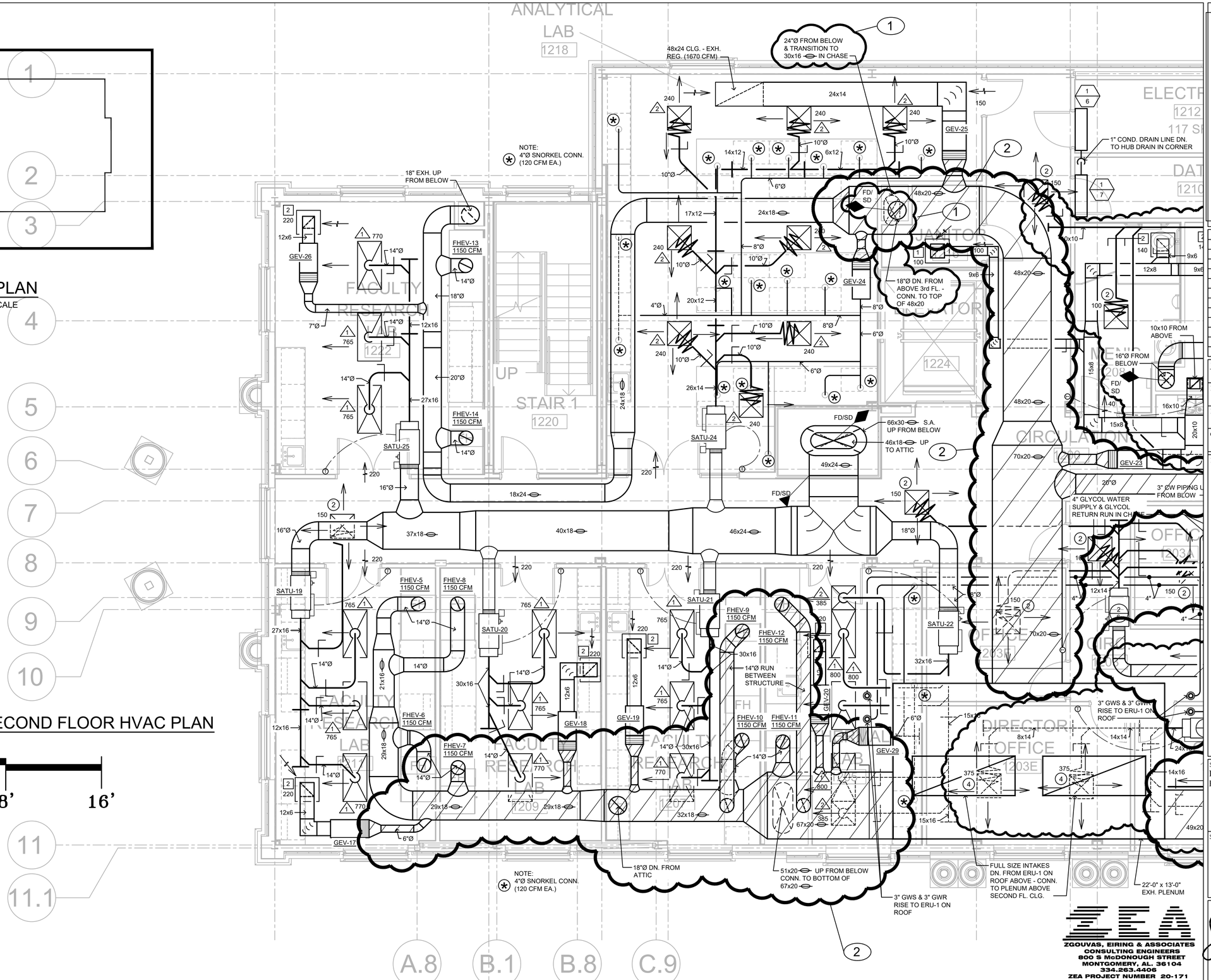
Sheet Title
OVERALL SECOND FLOOR HVAC PLAN

Sheet Number
M1.6

ALABAMA REGISTERED No. 23369 PROFESSIONAL 02.15.21 ENGINEER J.R. EIRING



KEY PLAN
NOT TO SCALE



PARTIAL SECOND FLOOR HVAC PLAN
SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 16'

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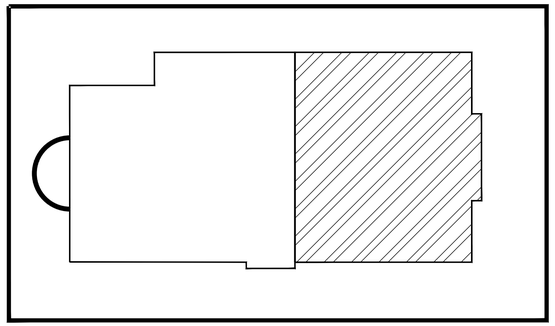
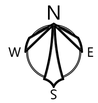
Sheet Title
PARTIAL SECOND FLOOR HVAC PLAN

Sheet Number
M1.7

ALABAMA LICENSED No. 23369 PROFESSIONAL 02.15.21 ENGINEER J.R. EIRING



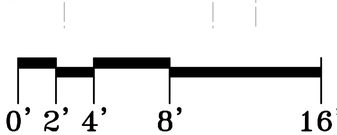


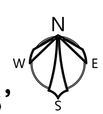
KEY PLAN
NOT TO SCALE

NOTE:
⊛ 4"Ø SNORKEL CONN.
(120 CFM EA.)

ELECTRICAL 1212 117 SF
STORAGE 1202
STAIR 2 1204
DATA 1210
THERMAL ANALYSIS LAB 1205
WOMEN 1206
MEN 1208
JANITOR 1224
CIRCULATION 202
OFFICE 1203
OFFICE 1203A
OFFICE 1203B
OFFICE 1203C
OFFICE 1203D
OFFICE 1203E
DIRECTOR OFFICE 1203E
CONFERENCE ROOM 1211
OPEN TO BELOW

1" COND. DRAIN LINE DN. TO HUB DRAIN IN CORNER
20"Ø EXH. UP FROM BELOW
GEV-25
GEV-21
GEV-22
GEV-23
SATU-22
SATU-23
SATU-26
10x10 FROM ABOVE
16"Ø FROM BELOW
14x10 FROM BELOW
FD/SD
DUCT IN RATED ENCLOSURE
3" ØW PIPING UP FROM BLOW
4" GLYCOL WATER SUPPLY & GLYCOL RETURN RUN IN CHASE
3" CW PIPING UP TO MECH. RM. ABOVE
26x20 R.A. RISE INTO MECH. RM. ABOVE
3" GWS & 3" GWR RISE TO ERU-1 ON ROOF
53x18 FROM ABOVE
49x20 EXH. UP TO ERU ON ROOF
(2) 16'-0" LONG LINEAR RETURN AIR DIFFUSER EQUAL TO TITUS MLR-39, 4-SLOTS, 78 CFM / FT., MAX .05" S.P. DROP
20'-0" LONG LINEAR DIFFUSER EQUAL TO TITUS SERIES ML-39, 4-SLOTS, MAX. NC = 32, MIN. VERTICAL DISCHARGE 31'-0", MAX .07" S.P. DROP, TOTAL 2500 CFM
50x18 R.A.
30x30 R.A. RISE INTO MECH. RM. ABOVE
20x20 R.A. RISE INTO MECH. RM. ABOVE
(2) 18x28 WALL R.A. REG. ABOVE BASE
FULL SIZE INTAKES DN. FROM ERU-1 ON ROOF ABOVE - CONN. TO PLENUM ABOVE SECOND FL. CLG.
22'-0" x 13'-0" EXH. PLENUM





PARTIAL SECOND FLOOR HVAC PLAN
SCALE: 1/4" = 1'-0"

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Sheet Title: PARTIAL SECOND FLOOR HVAC PLAN

Sheet Number: M1.8

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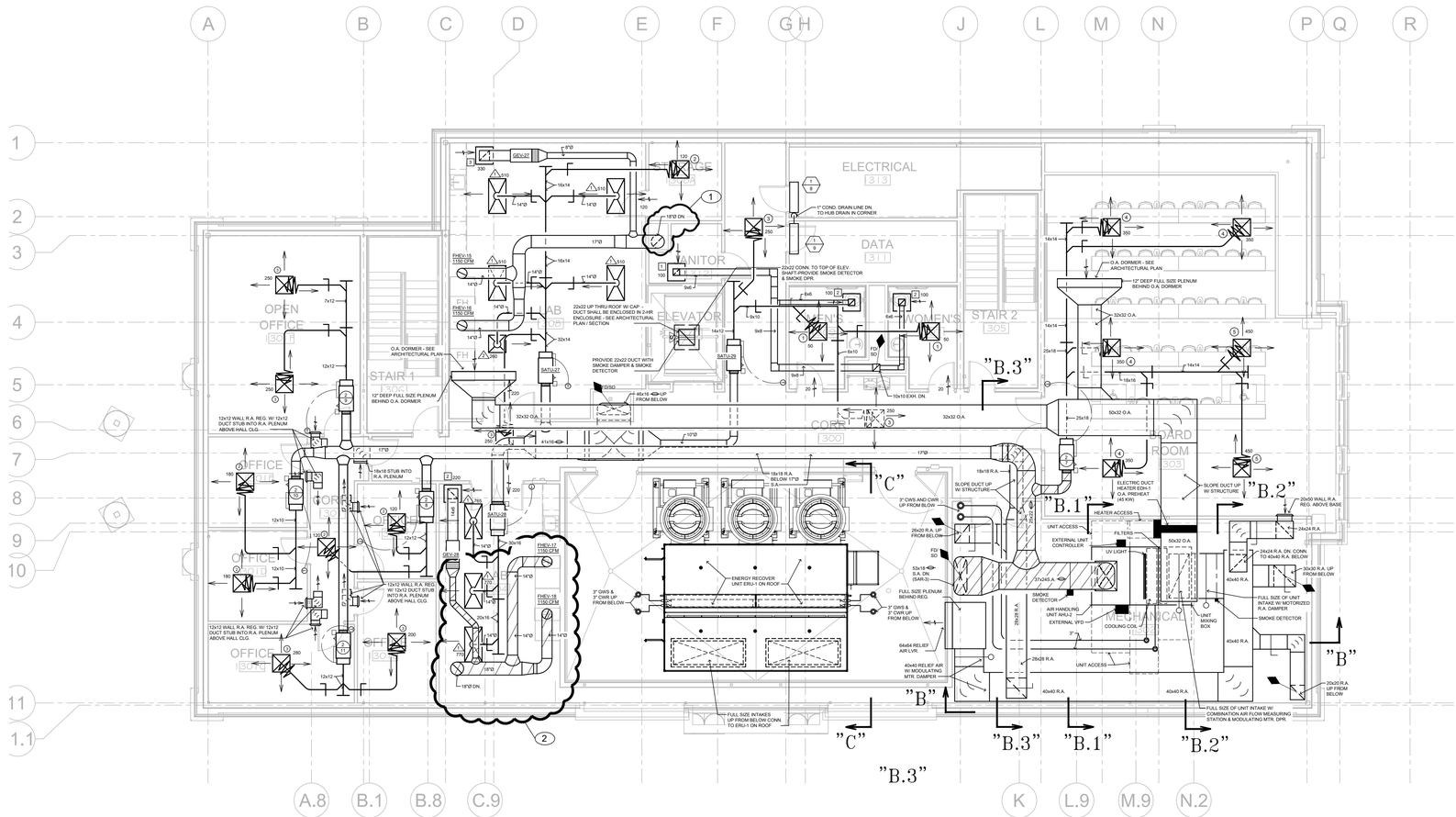
LEGEND

- CWS — CHILLED WATER SUPPLY
- CWR — CHILLED WATER RETURN
- HWS — HOT WATER SUPPLY
- HWR — HOT WATER RETURN
- AUTOMATIC CHANGEOVER VALVE
- ISOLATION / GATE VALVE
- SQUARE HEAD BALANCING VALVE
- COMBINATION BALANCING VALVE AND FLOW METER
- BALL VALVE
- BUTTERFLY VALVE
- CHECK / SWING GATE
- FACTORY FABRICATED AND INSULATED DOUBLE WALL FLAT OVAL DUCT
- MOTORIZED R.A. DAMPER
- MANUAL VOLUME DAMPER (MVD)
- MOTORIZED DAMPER (MD)
- SMOKE DETECTOR
- SMOKE DAMPER
- DUCT MOUNTED C02 SENSOR
- DENOTES LOCATION OF VERTICAL ACTION FIRE DAMPER
- DENOTES LOCATION OF HORIZONTAL ACTION FIRE DAMPER
- FD/SD — DENOTES LOCATION OF VERTICAL ACTION COMBINATION FIRE AND SMOKE DAMPER
- FD/SD — DENOTES LOCATION OF HORIZONTAL ACTION COMBINATION FIRE AND SMOKE DAMPER
- CEILING DIFFUSER
- RETURN AIR GRILLE/REGISTER
- EXHAUST AIR GRILLE/REGISTER

- (4) CEILING DIFFUSER DESIGNATOR
- (4) RETURN AIR GRILLE/REGISTER
- [4] EXHAUST AIR GRILLE/REGISTER
- (1/4) VAV TERMINAL UNIT DESIGNATOR — AIR HANDLING UNIT SERVED BY TERMINAL UNIT NUMBER
- 12x12 — DUCT W/ RECTANGULAR SIZE
- 12x12 — DUCT W/ FLAT OVAL SIZE
- RECTANGULAR SUPPLY DUCT TURNING UP
- RECTANGULAR SUPPLY AIR DUCT TURNING DOWN
- RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING UP
- RECTANGULAR RETURN AIR OR EXHAUST DUCT TURNING DOWN
- RECTANGULAR SUPPLY AIR DUCT FLOOR OR ROOF PENETRATION
- RECTANGULAR RETURN OR EXHAUST AIR DUCT FLOOR OR ROOF PENETRATION
- R.A. TEMPERATURE SENSOR
- ATD — AIR TRANSFER DUCT
- AD — AUXILIARY DRAIN
- (T) THERMOSTAT
- (S) REMOTE TEMPERATURE SENSOR
- (H) HUMIDISTAT
- (C) CO2 SENSOR

A.F.F.	ABOVE FINISH FLOOR
C.D.	CEILING DIFFUSER
CLG.	CEILING OR COOLING
CONN.	CONNECT OR CONNECTION
F.D.	FIRE DAMPER
G.C.	GENERAL CONTRACTOR
O.A.	OUTSIDE AIR
R.A.	RETURN AIR
S.A.	SUPPLY AIR



GENERAL VAV NOTES (AHU-2 SYSTEM):

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N W E S

OVERALL ATTIC HVAC PLAN

SCALE: 1/8" = 1'-0"
NOTE: OVERALL PLAN IS PROVIDED FOR COORDINATION PURPOSES ONLY - SEE OTHER PLANS FOR DETAILS

0' 2' 4' 8' 16' 32'

NOTE:

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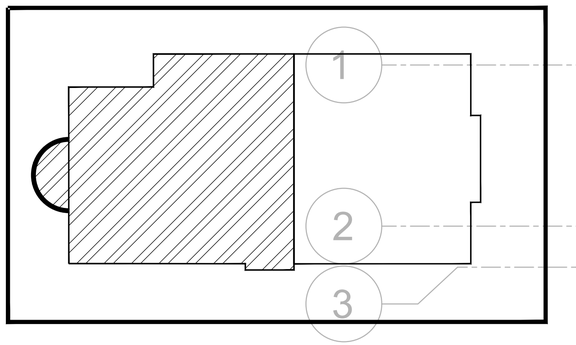
TROY UNIVERSITY | TROY, AL

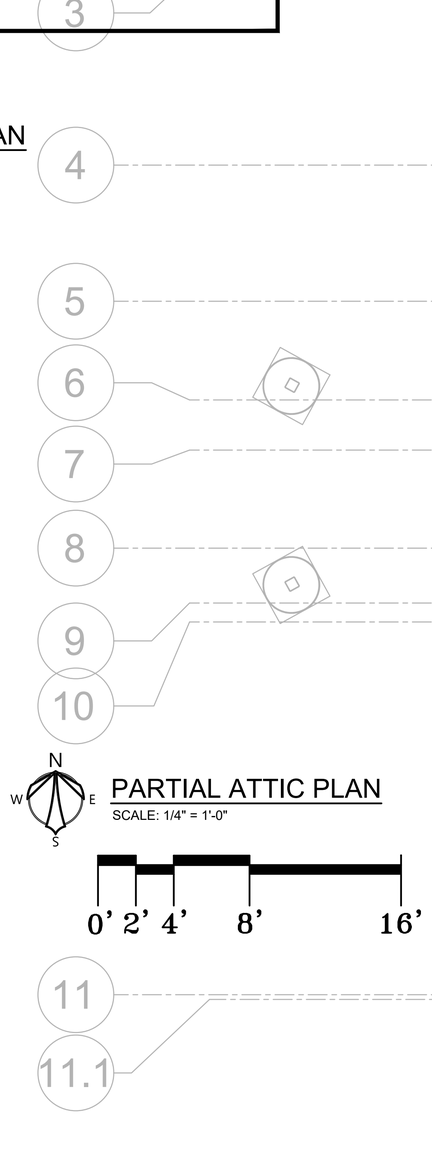
Sheet Title
OVERALL ATTIC HVAC PLAN

Sheet Number
M1.9

BRANDON J. EIRING — LICENSED — No. 23369 — PROFESSIONAL ENGINEER — 02.15.21



KEY PLAN
NOT TO SCALE



N
W E
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PARTIAL ATTIC PLAN
SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 16'

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Sheet Title: PARTIAL ATTIC HVAC PLAN

Sheet Number: M1.10

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ALABAMA LICENSED No. 23369 PROFESSIONAL ENGINEER J.R. EIRING 02.15.21

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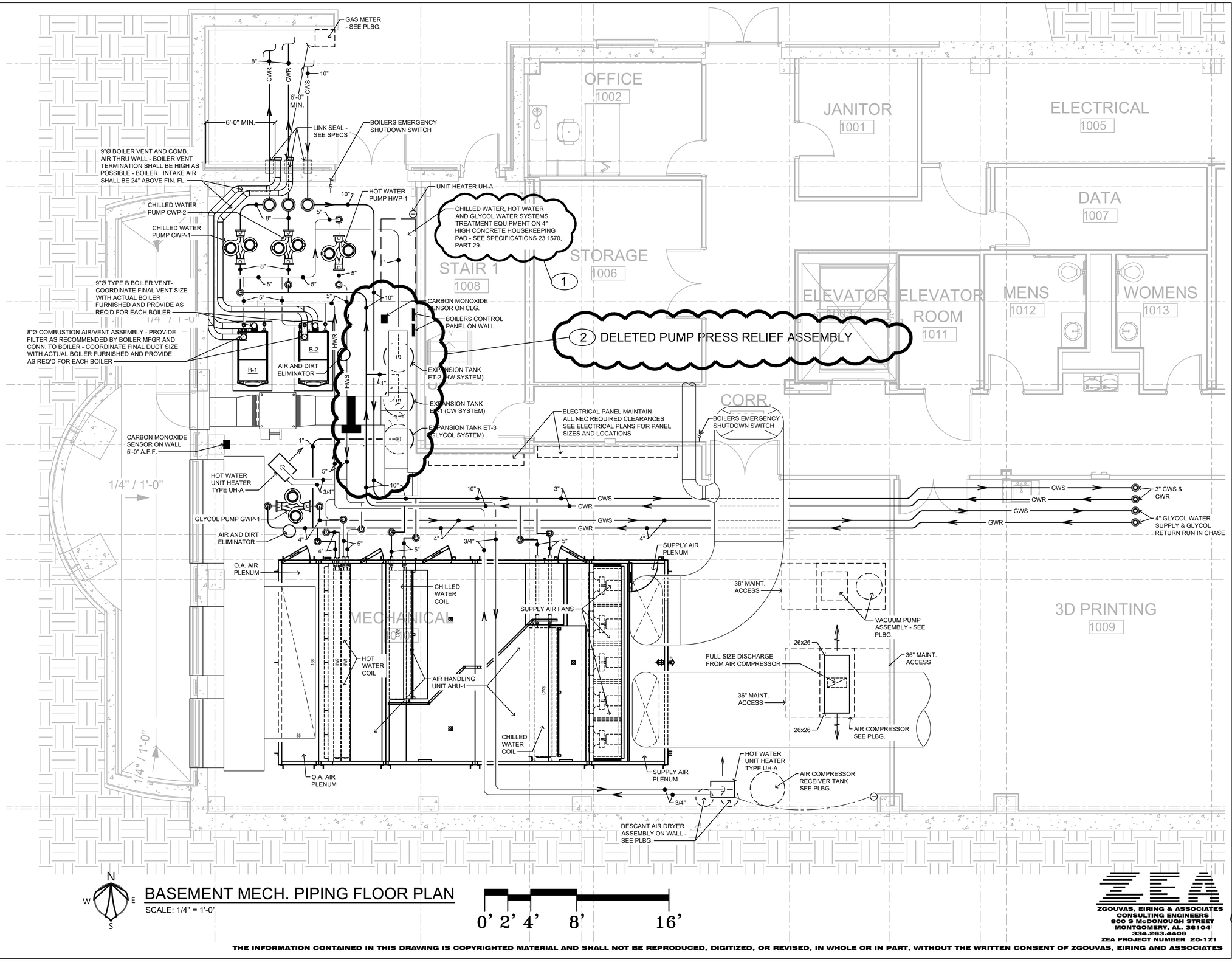

BASEMENT MECH. PIPING FLOOR PLAN

SCALE: 1/4" = 1'-0"

0' 2' 4' 8' 16'

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Sheet Title
BASEMENT MECH. PIPING PLAN

Sheet Number
M1.12

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MECH. PIPING SITE PLAN

SCALE: 1/16" = 1'-0"

0' 2' 4' 8' 16' 32'

N W E S

EXISTING GRASS

EXISTING LANDSCAPING

EXISTING LANDSCAPING

EXISTING PARKNG

EXISTING SWITCH BOX TO REMAIN

FUTURE TRANSFORMER

NEW TRANSFORMER

2

8" CWR UNDERGROUND SEE DETAIL

ANCHOR

10" CWS UNDERGROUND SEE DETAIL

CWR

CWS

10" CWS UNDERGROUND SEE DETAIL

ANCHOR

6'x6' EXPANSION LOOP W/ ANCHORS

ANCHOR

PROVIDE SPARE SCHED. 40 SOLID WALL CONDUIT WITH INSULATED REFRIGERANT PIPING AS REQUIRED FOR THE VRF SYSTEM BEING INSTALLED.. SEAL ENDS OF COPPER TUBING AND PIPING ENTRANCE AT OUTDOOR UNITS.

SCHEDULE 40 SOLID WALL PVC UNDERGROUND CONDUIT FOR VRF REFRIG. PIPING - SIZE SHALL BE SIZE AS REQ'D FOR SYSTEM - SEAL OPENING AS REQUIRED TO KEEP RAIN OUT AT REFRIGERANT PIPING ENTRANCE

8" CWR UNDERGROUND SEE DETAIL

CWR

CWS

10" CWS UNDERGROUND SEE DETAIL

ANCHOR

PROVIDE SPARE SCHED. 40 SOLID WALL CONDUIT WITH INSULATED REFRIGERANT PIPING AS REQUIRED FOR THE VRF SYSTEM BEING INSTALLED.. SEAL ENDS OF COPPER TUBING AND PIPING ENTRANCE AT OUTDOOR UNITS.

REFRIG. PIPING RUN EXPOSED OVER TO PVC CONDUIT

VRF-1 OUTDOOR UNITS ON CONC. PAD - PAD BY GEN. CONTRACTOR

SCHEDULE 40 SOLID WALL PVC UNDERGROUND CONDUIT FOR VRF REFRIG. PIPING - SIZE SHALL BE SIZE AS REQ'D FOR SYSTEM - SEAL OPENING AS REQUIRED TO KEEP RAIN OUT AT REFRIGERANT PIPING ENTRANCE

AIR COOLED CHILLER C-1 ON CONC. PAD - PAD BY GEN. CONTR.

AIR COOLED CHILLER C-2 ON CONC. PAD - PAD BY GEN. CONTR.

2

MECH YARD

CMMS

EXISTING GRASS

EXISTING ADAMS HALL

EXISTING BUSHES

NEW SGL ACORN

EXISTING BUSHES

EXISTING PARKNG

EXISTING 18" OAK

EXISTING

EXISTIN ROBER (PREVI GRAVE

EXIST 10" OA

NE MA

EXIS

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Project Title:

CENTER FOR MATERIALS AND MANUFACTURING SCIENCES

TROY UNIVERSITY | TROY, AL

Sheet Title: MECH. SITE PLAN

Sheet Number: M2.0

ZEA EIRING

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JOHN L. EIRING ALABAMA REGISTERED No. 23369 PROFESSIONAL 02.15.21 ENGINEER J.P. EIRING

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PLUMBING LEGEND

————	SOIL OR WASTE LINE
— — — —	VENT LINE
——ACID——	ACID WASTER LINE
— —ACID—	ACID VENT LINE
——S——	STORM LINE
——–——	COLD WATER LINE
——– – ——–	HOT WATER LINE
——– – – ——–	HOT WATER RETURN LINE
——A——	AIR LINE
——V——	VACUUM LINE
——VE——	VACUUM EXHAUST LINE
——G——	GAS LINE
——?——	NON-POTABLE COLD WATER LINE
	GAS COCK
	BALL VALVE
	SWING CHECK VALVE
	GAS PRESSURE REGULATOR
	UNION
	PIPE TURNING UP
	PIPE TURNING DOWN
	P TRAP
FD	FLOOR DRAIN
MFD	MECHANICAL FLOOR DRAIN
SD	SHOWER DRAIN
RD	ROOF DRAIN
OFRD	OVERFLOW ROOF DRAIN
A	LABORATORY AIR OUTLET
V	LABORATORY VACUUM OUTLET
G	LABORATORY GAS OUTLET
CW	LABORATORY COLD WATER OUTLET
HW	LABORATORY HOT WATER OUTLET
P-#	PLUMBING FIXTURE NUMBER
#	RISER DIAGRAM NUMBER
L-#	LABORATORY EQUIPMENT NUMBER
TMV-1	THERMOSTATIC MIXING VALVE #1
TMV-2	THERMOSTATIC MIXING VALVE #2
TMV-3	THERMOSTATIC MIXING VALVE #3
AFF	ABOVE FINISH FLOOR
CO	CLEAN OUT
WS	WASTE STACK
WSV	WASTE STACK VENT
AWS	ACID WASTE STACK
VS	VENT STACK
AVS	ACID VENT STACK
AWSV	ACID WASTE STACK VENT
VSTR	VENT STACK THRU ROOF
AVSTR	ACID VENT STACK THRU ROOF
RL	RAIN LEADER
OFRL	OVERFLOW RAIN LEADER
CW	COLD WATER
HW	HOT WATER
HWR	HOT WATER RETURN
UR	URINAL
WC	WATER CLOSET
LAV	LAVATORY
EWC	ELECTRIC WATER COOLER
EXIST.	EXISTING
HB	HOSE BIBB
WH	WALL HYDRANT
NPCW	NON-POTABLE COLD WATER
RPZBP	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
INV	INVERT
NC	NORMALLY CLOSED

PLUMBING FIXTURE CONNECTION SCHEDULE

MARK	FIXTURE	WASTE	CW	HW	REMARKS
P-1	WATER CLOSET	4"	1"	-	FLOOR MOUNTED, STANDARD MOUNTING HEIGHT
P-2	WATER CLOSET	4"	1"	-	FLOOR MOUNTED, ADA COMPLIANT, PULL HANDLE LEFT SIDE OF FIXTURE
P-3	WATER CLOSET	4"	1"	-	FLOOR MOUNTED, ADA COMPLIANT, PULL HANDLE RIGHT SIDE OF FIXTURE
P-4	URINAL	2"	3/4"	-	WALL HUNG, ADA COMPLIANT LIP 17" A.F.F.
P-5	LAVATORY	1 1/4"	1/2"	1/2"	COUNTERTOP, ADA COMPLIANT
P-6	ELEC WATER COOLER	1 1/4"	1/2"	-	WALL HUNG, ADA COMPLIANT, LOWER SPOUT OUTLET 36" A.F.F.
P-7	JANITOR'S RECEPTOR	3"	1/2"	1/2"	-
P-8	SHOWER	2"	1/2"	1/2"	-

LABORATORY EQUIPMENT CONNECTION SCHEDULE

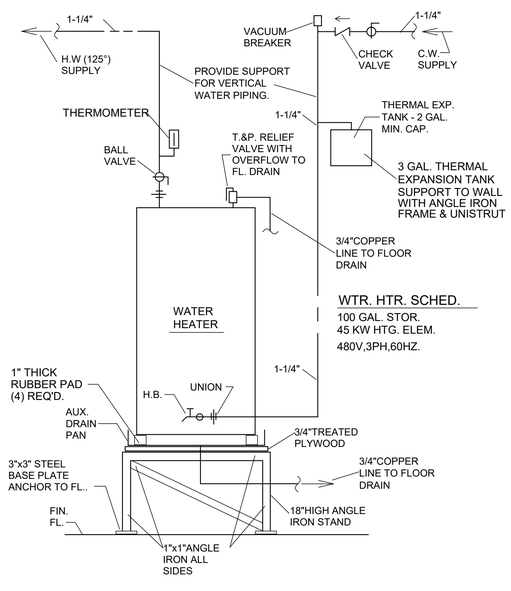
MARK	FIXTURE	WASTE	CW	HW	AIR	VACUUM	GAS	REMARKS
L-1	LAB SINK	1 1/2"	1/2"	1/2"	-	-	-	ROUGH & CONNECT
L-2	FUME HOOD	1 1/2"	1/2"	-	(2) 1/2"	(2) 1/2"	(2) 1/2"	ROUGH & CONNECT
L-3	SAFETY SHOWER/EYE WASH	-	1"	1"	-	-	-	ROUGH & CONNECT. PROVIDE TMV-1 ABOVE CEILING
L-4	EMERGENCY SHUT OFF	-	-	-	-	-	-	LOCATE ON GAS LINE ABV CEILING AND BUTTON ON WALL ADJACENT TO EXIT DOOR
L-5	ISIMET GAS DETECTOR	-	-	-	-	-	-	LOCATE WHERE SHOWN ON PLANS
L-6	DEIONIZED FAUCET	-	1/2"	-	-	-	-	ROUGH & CONNECT
L-7	COUNTERTOP EYE WASH	-	1/2"	1/2"	-	-	-	ROUGH & CONNECT. PROVIDE TMV-2 ABOVE CEILING

GENERAL PLUMBING NOTES

1. ROUGH WATER CLOSET AND URINAL FLUSH VALVE SO THAT THE FLUSH TUBE IS VERTICALLY STRAIGHT.
2. PROVIDE A CAST IRON DEEP SEAL P-TRAP AND A TRAP SEAL FOR EACH FLOOR DRAIN AND HUB DRAIN.
3. PROVIDE A VACUUM BREAKER FOR EACH WALL HYDRANT/HOSE BIBB.
4. ROUTE ALL OVERHEAD WATER PIPING AND WATER PIPING WITHIN NON-MASONRY WALLS WITHIN THE BUILDING INSULATION ENVELOPE.
5. ALL WATER PIPING WITHIN MASONRY WALLS SHALL BE INSULATED AS SPECIFIED.
6. ALL WATER PIPING INSTALLED IN EXTERIOR WALLS SHALL BE LOCATED ON THE INTERIOR SIDE OF THE BUILDING EXTERIOR WALL INSULATION
7. COORDINATE ALL PIPING RUNS WITH THE ELECTRICAL PLANS AN ELECTRICAL CONTRACTOR. DO NOT ROUTE ANY PIPING OVER ELECTRICAL PANELS, TRANSFORMERS, SWITCHGEAR, ETC. MAINTAIN CLEARANCES AS REQUIRED BY RESPECTIVE CODES.
8. ALL PIPING AND FITTINGS ROUTED IN/THROUGH RETURN AIR PLENUMS, RETURN AIR PLATFORMS OR FIRE RATED PARTITIONS OR ENCLOSURES SHALL BE CAST IRON OR PVDF. SEE SPECS.
9. PLUMBING VENTS SHALL TERMINATE A MINIMUM OF 10'-0" DISTANCE FROM ALL HVAC OUTSIDE AIR INTAKES.
10. ADA FIXTURES AND INSTALLATION SHALL COMPLY WITH CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
11. FLUSH VALVE HANDLE FOR ALL MANUAL FLUSH WATER CLOSETS SHALL BE LOCATED ON THE WIDE SIDE OF THE TOILET STALL AS REQUIRED BY CURRENT ADA STANDARDS FOR ACCESSIBLE DESIGN.
12. ROUGH-IN ADA WATER CLOSETS 18" FROM FINISHED WALL TO CENTERLINE OF THE WATER CLOSET. MEASURE FROM FACE OF SHORT SIDE OF THE STALL TO THE FINISHED WALL.
13. PROVIDE A READILY ACCESSIBLE CLEANOUT AT OR NEAR THE BASE OF EACH WASTE AND VENT STACK PER INTERNATIONAL PLUMBING CODE AND THE SPECIFICATIONS. LOCATE TO THE SIDE OF THE WATER CLOSETS WITH A MINIMUM CLEARANCE OF 6" FROM THE ROUGH-IN OF THE WATER CLOSETS. PREFERRED LOCATION IS IN ADA STALL TO ALLOW FOR ADDITIONAL ACCESS.
14. WATER SUPPLY SYSTEM IS DESIGNED FOR A STATIC PRESSURE OF 50 TO 75 PSI. GAUGE WATER SUPPLY PRESSURE AND VERIFY PRESSURE IS WITHIN THE SPECIFIED LIMITS. PROVIDE WATER PRESSURE REDUCING VALVE AS REQUIRED TO MAINTAIN WATER PRESSURE WITHIN DESIGN LIMITS.
15. PROVIDE A BALL VALVE ON EACH SIDE OF EVERY DIELECTRIC UNION TO FACILITATE ITS REMOVAL.
16. ALL OUTSIDE CLEANOUTS SHALL BE BROUGHT TO GRADE AND FINISHED FLUSH IN 12x12x12 CONCRETE PAD.
17. ALL INTERIOR AND EXTERIOR WALL HYDRANTS AND HOSE BIBBS SHALL BE LOCATED 24" A.F.F.
18. WATER HAMMER ARRESTORS SHALL BE INSTALLED AT ALL SOLENOID, REMOTE OPERATED OR QUICK CLOSING VALVES AND AT EACH PLUMBING FIXTURE OR BATTERY OF PLUMBING FIXTURES. SEE SPECS FOR ADDITIONAL REQUIREMENTS.
19. ALL HUB DRAINS THAT RISE THROUGH RETURN AIR PLATFORMS SHALL BE INSULATED CAST IRON AND TERMINATED TO 6" ABOVE THE RETURN AIR PLATFORM AND SEALED AIR TIGHT. COORDINATE REQUIREMENT WITH MECHANICAL CONTRACTOR.

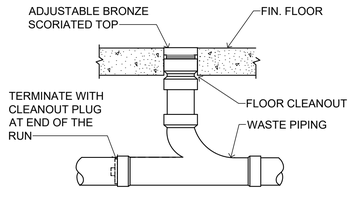
2

REVISED DETAILS
SEE SHEET M1.4



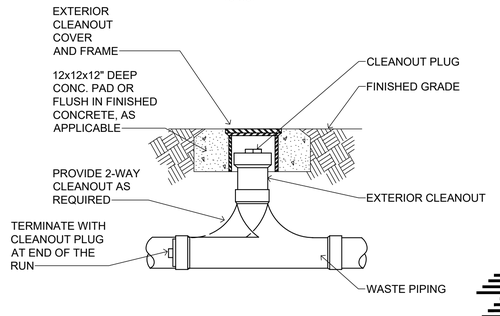
WATER HEATER DETAIL

NO SCALE



TYP. FLOOR CLEANOUT DETAIL

NO SCALE



TYP. EXTERIOR CLEANOUT DETAIL

NO SCALE

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1	ADD #5	01.15.21
2	ADD #7	02.15.21

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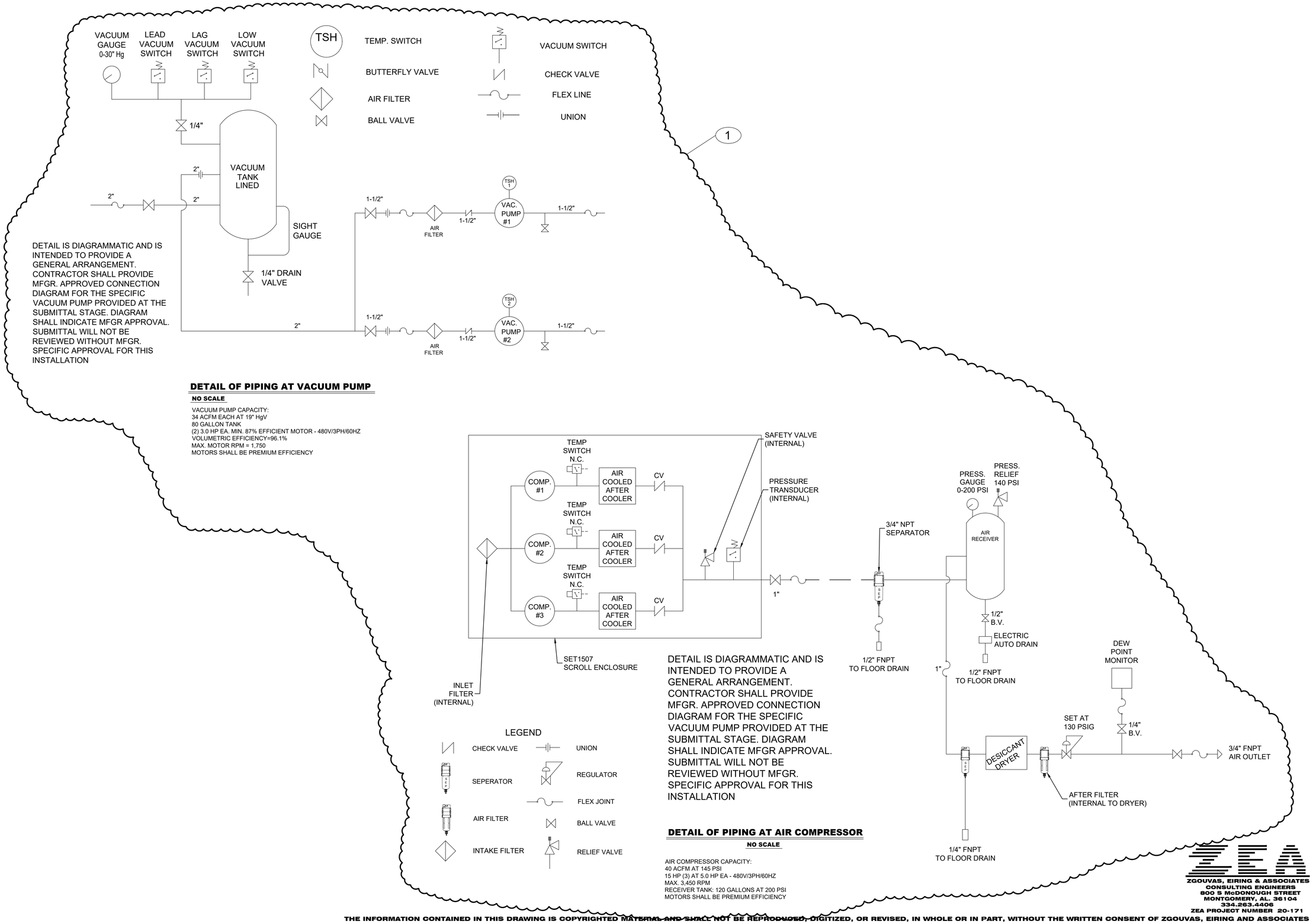
CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Sheet Title: PLBG. SCHEDULES DETAILS

Sheet Number: P1.0

ALABAMA REGISTERED ENGINEER
No. 23369
PROFESSIONAL
02.15.21
ENGINEER
J. R. EIRING



DETAIL IS DIAGRAMMATIC AND IS INTENDED TO PROVIDE A GENERAL ARRANGEMENT. CONTRACTOR SHALL PROVIDE MFGR. APPROVED CONNECTION DIAGRAM FOR THE SPECIFIC VACUUM PUMP PROVIDED AT THE SUBMITTAL STAGE. DIAGRAM SHALL INDICATE MFGR APPROVAL. SUBMITTAL WILL NOT BE REVIEWED WITHOUT MFGR. SPECIFIC APPROVAL FOR THIS INSTALLATION

DETAIL OF PIPING AT VACUUM PUMP

NO SCALE

VACUUM PUMP CAPACITY:
34 ACFM EACH AT 19" HgV
80 GALLON TANK
(2) 3.0 HP EA. MIN. 87% EFFICIENT MOTOR - 480V/3PH/60HZ
VOLUMETRIC EFFICIENCY=96.1%
MAX. MOTOR RPM = 1,750
MOTORS SHALL BE PREMIUM EFFICIENCY

DETAIL IS DIAGRAMMATIC AND IS INTENDED TO PROVIDE A GENERAL ARRANGEMENT. CONTRACTOR SHALL PROVIDE MFGR. APPROVED CONNECTION DIAGRAM FOR THE SPECIFIC VACUUM PUMP PROVIDED AT THE SUBMITTAL STAGE. DIAGRAM SHALL INDICATE MFGR APPROVAL. SUBMITTAL WILL NOT BE REVIEWED WITHOUT MFGR. SPECIFIC APPROVAL FOR THIS INSTALLATION

LEGEND

CHECK VALVE
UNION
SEPERATOR
REGULATOR
FLEX JOINT
AIR FILTER
BALL VALVE
INTAKE FILTER
RELIEF VALVE

DETAIL OF PIPING AT AIR COMPRESSOR

NO SCALE

AIR COMPRESSOR CAPACITY:
40 ACFM AT 145 PSI
15 HP (3) AT 5.0 HP EA - 480V/3PH/60HZ
MAX. 3,450 RPM
RECEIVER TANK: 120 GALLONS AT 200 PSI
MOTORS SHALL BE PREMIUM EFFICIENCY

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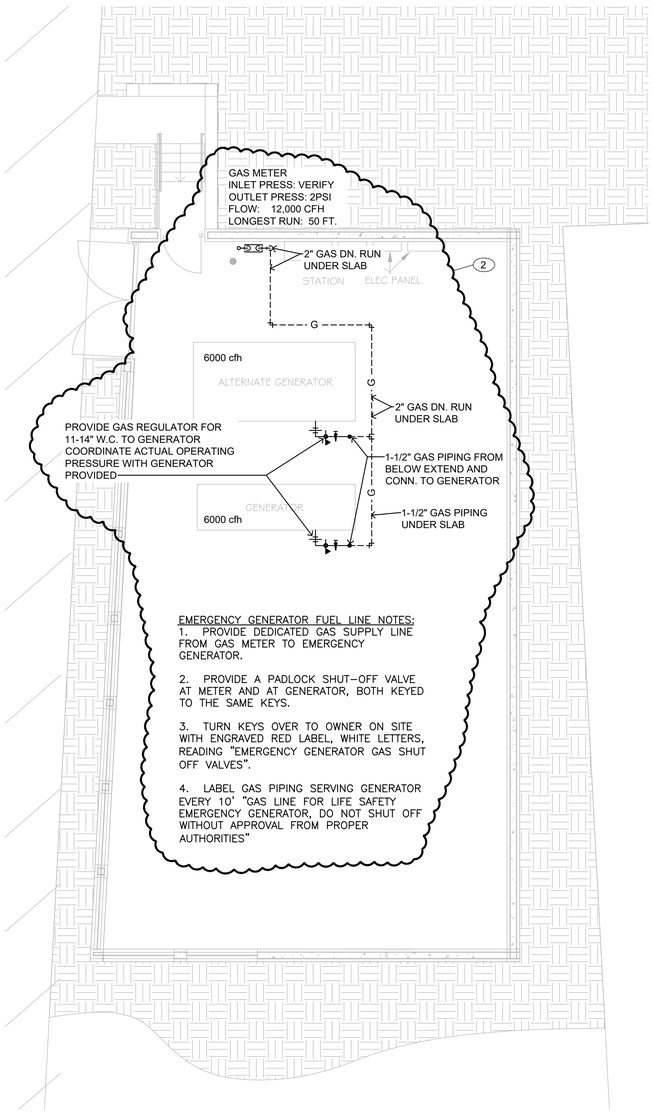
Sheet Title: PLBG. DETAILS

Sheet Number: P1.4

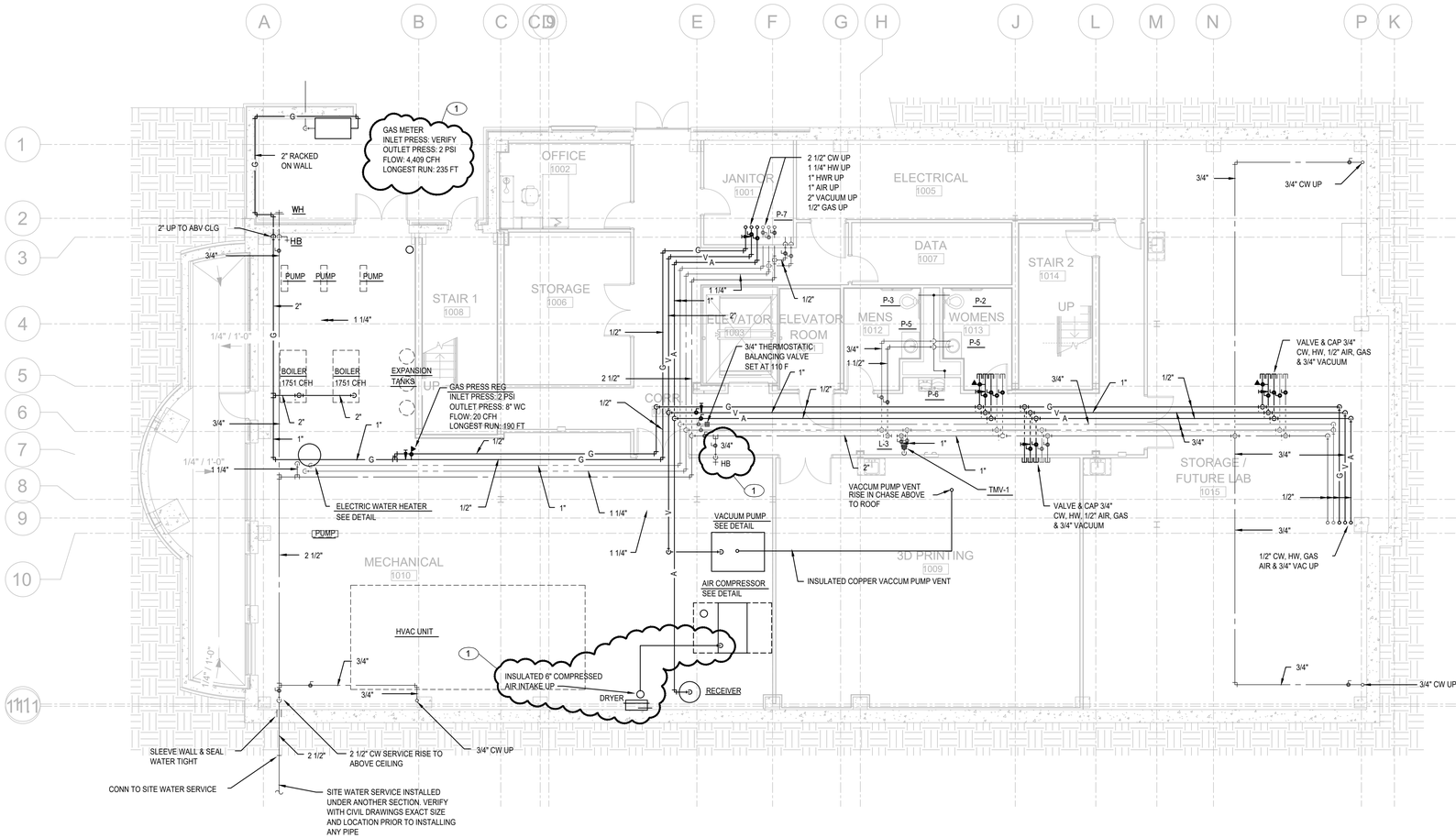
ALABAMA LICENSED No. 23369 PROFESSIONAL ENGINEER 02.15.21 J.R. EIRING



MECHANICAL YARD - GAS PIPING

SCALE: 1/8"=1'-0"

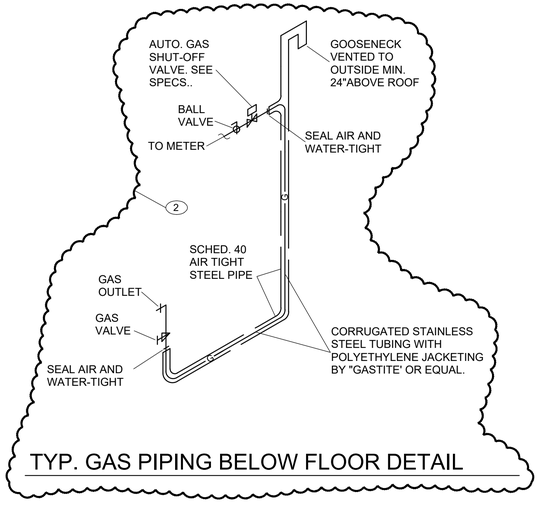
0' 2' 4' 8' 16' 32'



BASEMENT FLOOR PLAN - PRESSURE PIPING

SCALE: 1/8"=1'-0"

0' 2' 4' 8' 16' 32'



TYP. GAS PIPING BELOW FLOOR DETAIL

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Project Title

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Sheet Title
BASEMENT PLBG. PLAN - PRESSURE PIPING

Sheet Number
P3.0

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334.263.4406
ZEA PROJECT NUMBER 20-171

STATE OF ALABAMA
JAMES R. EIRING
No. 23369
PROFESSIONAL
02.15.21
ENGINEER
J.R. EIRING

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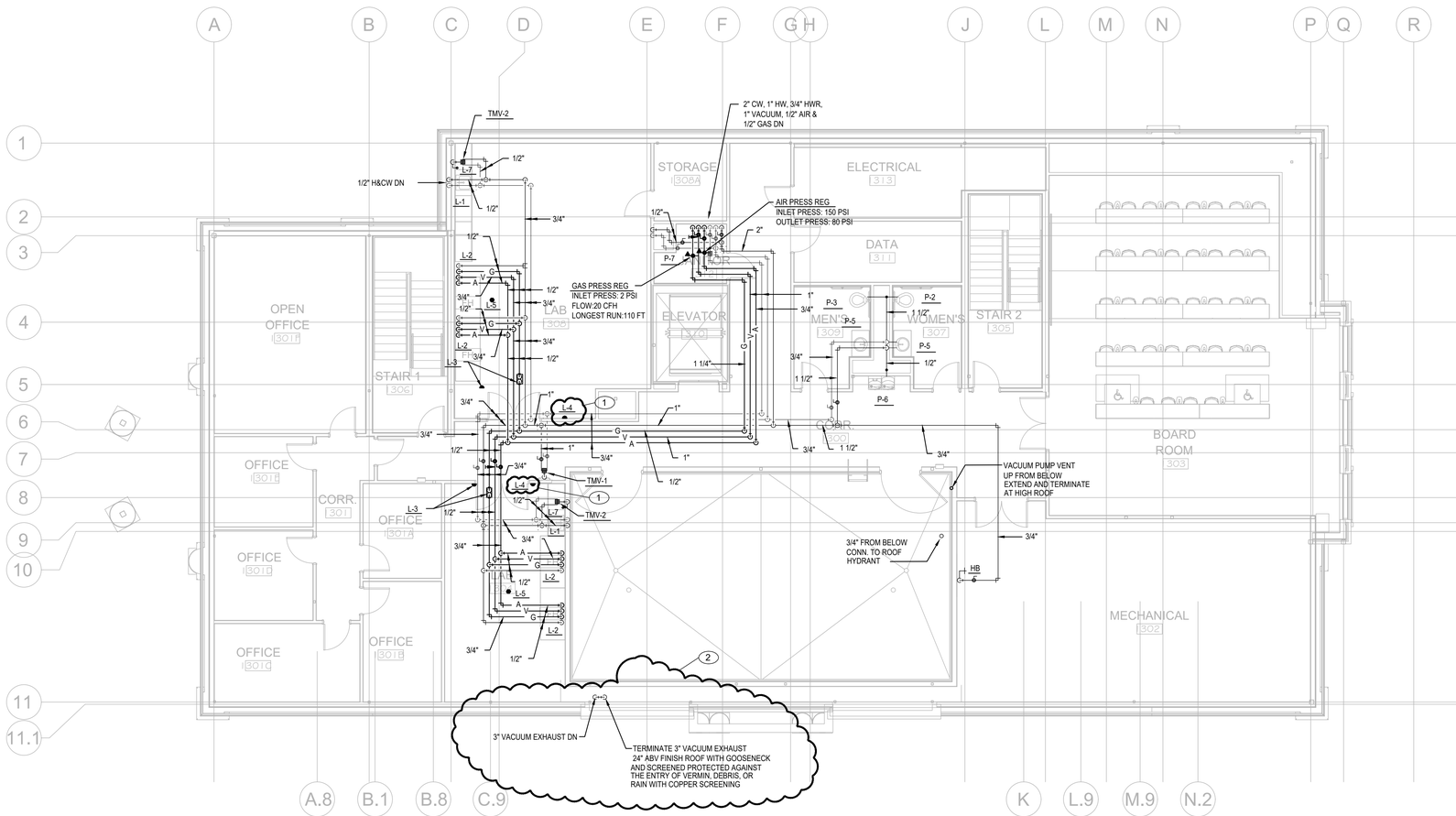

ATTIC FLOOR PLAN - PRESSURE PIPING

SCALE: 1/8"=1'-0"

0' 2' 4' 8' 16' 32'

ZGOUVAS, EIRING & ASSOCIATES
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Job Number
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Date
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Drawn By
CW

Checked By
TZ

Project Title
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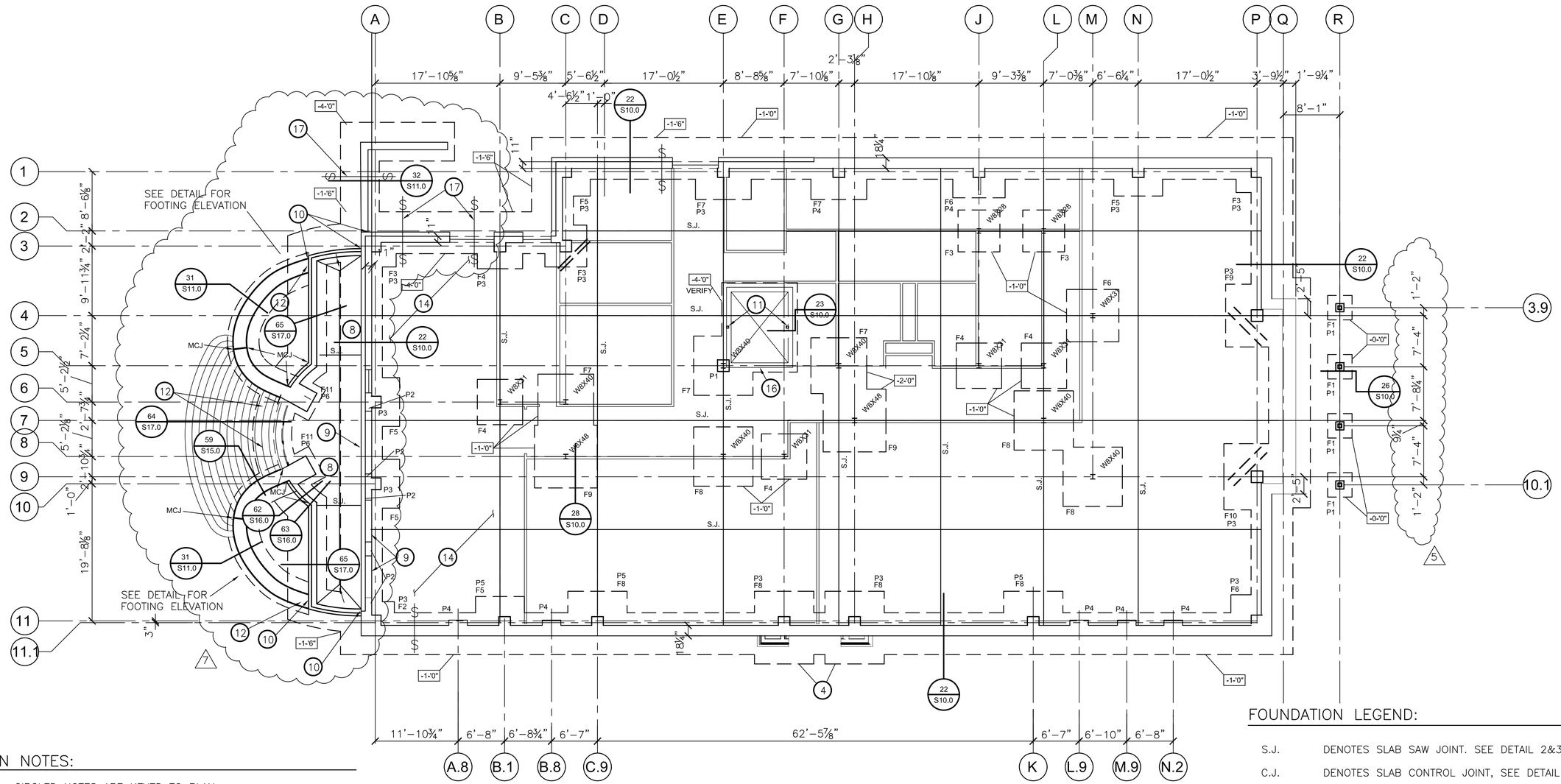
Sheet Title
ATTIC FL. PLBG. PLAN - PRESSURE PIPING

Sheet Number
P3.3

ALABAMA LICENSED No. 23369 PROFESSIONAL 02.15.21 ENGINEER J.R. EIRING



PLAN NOTES:

(○) – CIRCLED NOTES ARE KEYED TO PLAN.

1. SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
3. SEE SHEET S1.1 FOR BASE PLATES & OTHER SCHEDULES
4. EXTEND SCHEDULED FOOTING AND REBAR TO EXTEND 1'–4" MIN. BEYOND ENTRY PILASTERS
5. SEE ARCH. DRAWINGS & SITE PLAN FOR SIDEWALKS, PAVING, ETC.
6. SEE S3.0 FOR COLUMN SIZES THAT BEAR ON CONCRETE PIERS, MONOLITHIC w/ BASEMENT WALL, NEAR FIRST FLOOR LEVEL
7. SEE SHEET S20.0 FOR MECHANICAL YARD PLAN
8. PROVIDE 6" THICK SLAB ON GRADE IN AREAWAY. SLOPE SLAB TO TRENCH DRAIN. SEE ARCH.
9. COORDINATE WALL OPENINGS w/ LOUVERS. SEE ARCH. & SPECS
10. PROVIDE ¾" EXPANSION JOINT WHERE RETAINING WALL ABUTS THE MAIN BUILDING OR INTERSECTING WALL. FILL w/ COMPRESSIBLE FILLER & SEALANT.
11. PROVIDE HSS4x4x¼" GUIDE RAIL ANCHORAGE POST IN WALL EACH SIDE OF ELEVATOR. SEE DETAIL 69/S17.0
12. SEE DETAIL 66/S17.0 FOR INTERSECTION OF HIGH FOOTING w/ TALLER WALL.
13. BASEMENT SLAB ON GRADE CONSTRUCTION:
    6" THICK SLAB w/ 6x6, W2.1xW2.1 W.W.F. OVER VAPOR BARRIER OVER 4" THICK LAYER OF CLEAN POROUS FILL. SEE SPECS FOR VAPOR BARRIER.
14. SEE DETAIL 74/S18.0 FOR TYP. CONCRETE "HOUSEKEEPING" PADS. SEE MECH. DRAWINGS FOR LOCATIONS.
15. SOIL BACKFILL AGAINST BASEMENT WALLS SHALL NOT EXTEND MORE THAN 9'–0" ABOVE BASEMENT FLOOR UNTIL FIRST FLOOR STRUCTURAL SLAB IS IN PLACE AND CURED (3) DAYS.
16. SEE DETAIL 85/S19.0 FOR TYP. ELEVATOR SUPPORT ANGLE @ DOOR. COORDINATE w/ MANUFACTURER
17. STEP FOOTING BELOW MECH. PIPES. MAINTAIN 12" MIN. OF REINFORCED FOUNDATION WALL BETWEEN PIPE PENETRATIONS. SEE ARCH. & MECH. FOR LOCATION.

BASEMENT & FOUNDATION PLAN

SCALE: 1/8" = 1'–0"

(FIN. FLR. EL. = –14'–0")

NORTH

FOUNDATION LEGEND:

S.J.	DENOTES SLAB SAW JOINT. SEE DETAIL 2&3/S8.0.
C.J.	DENOTES SLAB CONTROL JOINT, SEE DETAIL 2&3/S8.0.
Fx	DENOTES FOOTING SIZE. SEE SCHEDULE ON SHEET S1.1
Px	DENOTES CONCRETE PIER SIZE. SEE SCHEDULE ON SHEET S1.1
BF–x	DENOTES BRACE FRAME. SEE SHEET S7.0
–X'–X"	DENOTES MINIMUM DISTANCE FROM FINISH FLOOR OF BASEMENT TO TOP OF FOOTING.
MCJ	DENOTES MASONRY CONTROL JOINT IN BRICK VENEER. RAKE & CAULK TO MATCH MORTAR. SEE ARCH. FOR OTHER LOCATIONS
	DENOTES APPROX. FOOTING STEP LOCATION. SEE TYP. DETAIL
	DENOTES (2) #4 x 4'–6" REBAR, CENTERED IN SLAB

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432 Herron Street
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Phone 334–265–4631
Job No.: 20016

ALABAMA REGISTERED NO. 16466 PROFESSIONAL ENGINEER TERRANCE W. GRANT

11-17-2020

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Date 11/17/2020

Drawn By jrm

Checked By TWG

Project Title

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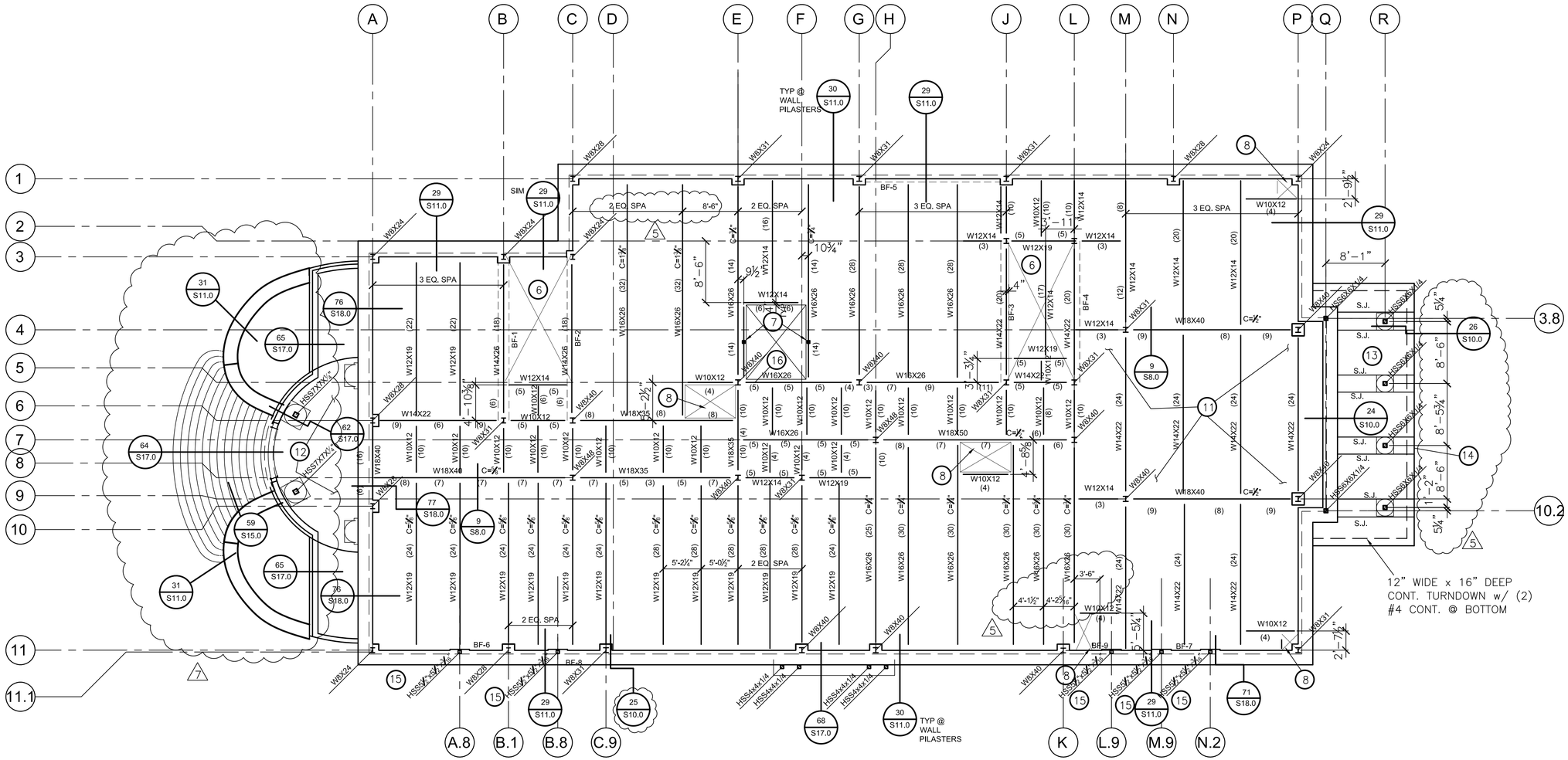
Sheet Title: BASEMENT & FOUNDATION PLAN

Sheet Number: S2.0



PLAN NOTES:

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1. SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
3. SEE SHEET S1.1 FOR SCHEDULES
4. SEE ARCH. DRAWINGS & SITE PLAN FOR SIDEWALKS, PAVING, ETC.
5. FLOOR CONSTRUCTION:
   5½" THICK (INCLUDING 2", 20ga COMPOSITE DECK) FLOOR SLAB w/ NORMAL WEIGHT CONCRETE. REINFORCE w/ 6x6, W2.1xW2.1 W.W.F., 1½" CLEAR FROM TOP.
6. STAIR CONSTRUCTION:
   DESIGN BY FABRICATOR FOR 100psf LIVE LODE & CODE COMPLIANT HANDRAILS. SEE DETAILS & ARCH. FOR ADD'L INFORMATION. PROVIDE HSS3x3x¼" POST IN WALL BELOW LANDINGS FOR SUPPORT OR HANGER.
7. SEE DETAIL FOR HSS4x4x¼" GUIDE RAIL ANCHORAGE POST IN WALL EA. SIDE OF ELEVATOR. SEE DETAIL 69/S17.0
8. SEE DETAIL 37/S12.0 FOR TYP. FLOOR OPENING DETAIL
9. LOCATE BEAMS ON GRID LINES AS SHOWN AND EQUALLY SPACED, U.N.O.
10. SOIL BACKFILL AGAINST BASEMENT WALLS SHALL NOT EXTEND MORE THAN 9'–0" ABOVE BASEMENT FLOOR SLAB UNTIL FIRST FLOOR STRUCTURAL SLAB IS IN PLACE AND CURED (3) DAYS.
11. DEPRESS TOP OF SLAB ½" FOR TERRAZO FLOOR FINISH. COORDINATE EXACT LOCATION w/ ARCH.
12. 8" THICK, REINFORCED STRUCTURAL SLAB @ PORCH, OVER AREAWAY, SEE DETAILS.
13. 4" MIN. THICK SLAB ON COMPACTED FILL. REINFORCE w/ 6x6, W1.4xW1.4 W.W.F. SEE ARCH. FOR FINISH & SLOPE.
14. PROVIDE 12" WIDE x 18" MIN. DEEP PERIMETER TURNDOWN w/ (2) #4 CONT. @ TOP & BOTT.
15. CENTER HSS IN 6" STEEL STUD WALL.
16. SEE DETAIL 85/S19.0 FOR TYP. ELEVATOR SUPPORT ANGLE @ DOOR. COORDINATE w/ MANUFACTURER

FIRST FLOOR FRAMING PLAN

SCALE: 1/8" = 1'–0"
(FIN. FLR. EL. = +0'–0")

NORTH

LEGEND:

C=X	DENOTES UPWARD CAMBER @ CENTER OF BEAM
(X)	DENOTES NUMBER OF ¾"ø HD STUDS. SEE NOTES ON S1.0. STUDS TO BE 4½" LONG AFTER WELDING
BF–X	DENOTES BRACED FRAME TYPE. SEE FRAMING ELEVATIONS ON S7.0.

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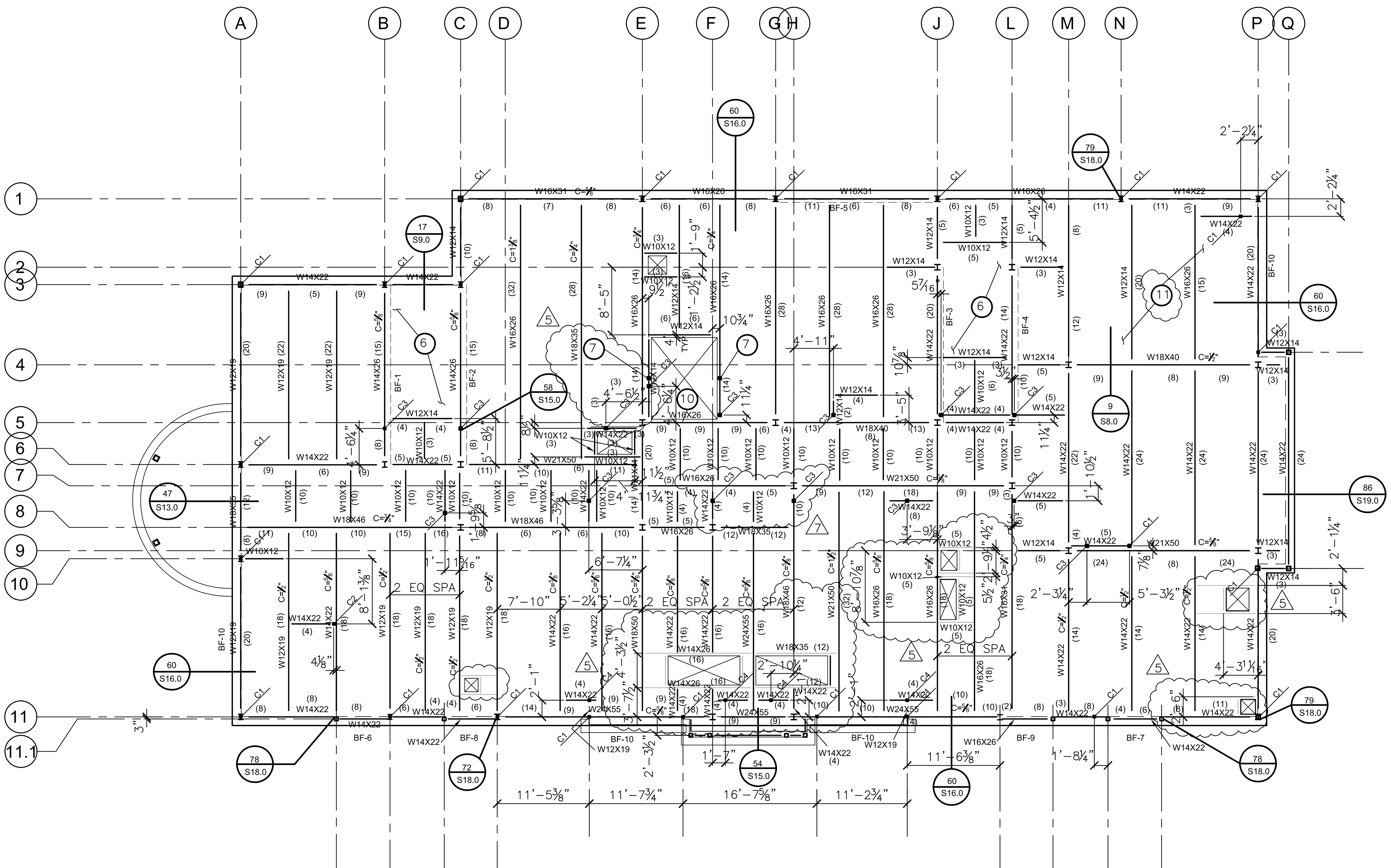
Sheet Title: FIRST FLOOR FRAMING PLAN
Sheet Number: S3.0



ATTIC FLOOR FRAMING PLAN

SCALE: 1/8" = 1'-0"
(FIN. FLR. EL. = +28'-0")

NORTH

PLAN NOTES:

◯ – CIRCLED NOTES ARE KEYED TO PLAN.

1. SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN.
3. SEE SHEET S1.1 FOR SCHEDULES
4. SEE ARCH. & MECHANICAL DRAWINGS FOR EQUIPMENT SUPPORT, ETC.
5. FLOOR CONSTRUCTION:
   5½" THICK (INCLUDING 2" 20ga, GALV COMPOSITE DECK) FLOOR SLAB w/ NORMAL WEIGHT CONCRETE. REINFORCE w/ 6x6, W2.1xW2.1 W.W.F., 1½" CLEAR FROM TOP.
6. STAIR CONSTRUCTION:
   DESIGN BY FABRICATOR FOR 100psf LIVE LODE & CODE COMPLIANT HANDRAILS. SEE DETAILS & ARCH. FOR ADD'L INFORMATION. PROVIDE HSS3x3x¼" POST IN WALL BELOW LANDINGS FOR SUPPORT OR HANGER. SEE TYP. DETAILS.
7. SEE DETAIL FOR HSS4x4x¼" GUIDE RAIL ANCHORAGE POST IN WALL EA. SIDE OF ELEVATOR. SEE DETAIL 69/S17.0
8. SEE DETAIL 37/S12.0 FOR TYP. FLOOR OPENING DETAIL
9. LOCATE BEAMS ON GRID LINES AS SHOWN AND EQUALLY SPACED, U.N.O.
10. SEE DETAIL 85/S19.0 FOR TYP. ELEVATOR SUPPORT ANGLE @ DOOR. COORDINATE w/ MANUFACTURER
11. FOR ALTERNATE PLAN, PROVIDE STEPPED PLATFORMS IN THIS AREA. SEE ARCH. SECTION. USE 2 LAYERS OF ¾" T&G PLYWOOD w/ SCREWS @ 8" MAX. O.C. INTO SUPPORTS. USE 6", 16ga. FLOOR JOISTS @ 16" O.C., MAX. w/ MAX. SPAN = 5'-6". PROVIDE 3⅝", 18ga. @ 16" O.C., MAX. SUPPORT WALLS w/ CONT. TRACK, T&B. ALIGN JOIST DIRECTLY OVER STUDS.

△5

12. SEE MECH. DRAWINGS FOR CONCRETE CURBS AROUND FLOOR PENETRATIONS. SEE NOTES ON S1.0 FOR REINFORCING. SEE MECH. DRAWINGS WHERE CONCRETE CURBS OR PADS OCCUR UNDER UNITS. PROVIDE SAME REINFORCING AS FOR CURBS @ PENETRATIONS PLUS #4 @ 12" O.C. E.W. @ HOUSEKEEPING PADS LARGER THAN 24"x24"

LEGEND:

C=X	DENOTES UPWARD CAMBER @ CENTER OF BEAM
(X)	DENOTES NUMBER OF ¾"ø HD STUDS. SEE NOTES ON S1.0. STUDS TO BE 4½" LONG AFTER WELDING.
C1	DENOTES HSS4x4x3⁄16" STUB COLUMN w/ ½" BASE PLATE & (4) ¾"ø BOLTS
C2	DENOTES HSS4x4x¼" STUB COLUMN w/ ½" BASE PLATE & (4) ¾"ø BOLTS
C3	DENOTES HSS5x5x3⁄16" STUB COLUMN w/ ½" BASE PLATE & (4) ¾"ø BOLTS
C4	DENOTES HSS5x5x⅜" STUB COLUMN w/ ½" BASE PLATE & (4) ¾"ø BOLTS
BF–X	DENOTES BRACED FRAME TYPE. SEE FRAMING ELEVATIONS ON S7.0.

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ALABAMA REGISTERED NO. 16466 PROFESSIONAL ENGINEER TERRANCE W. GRANT
11-17-2020

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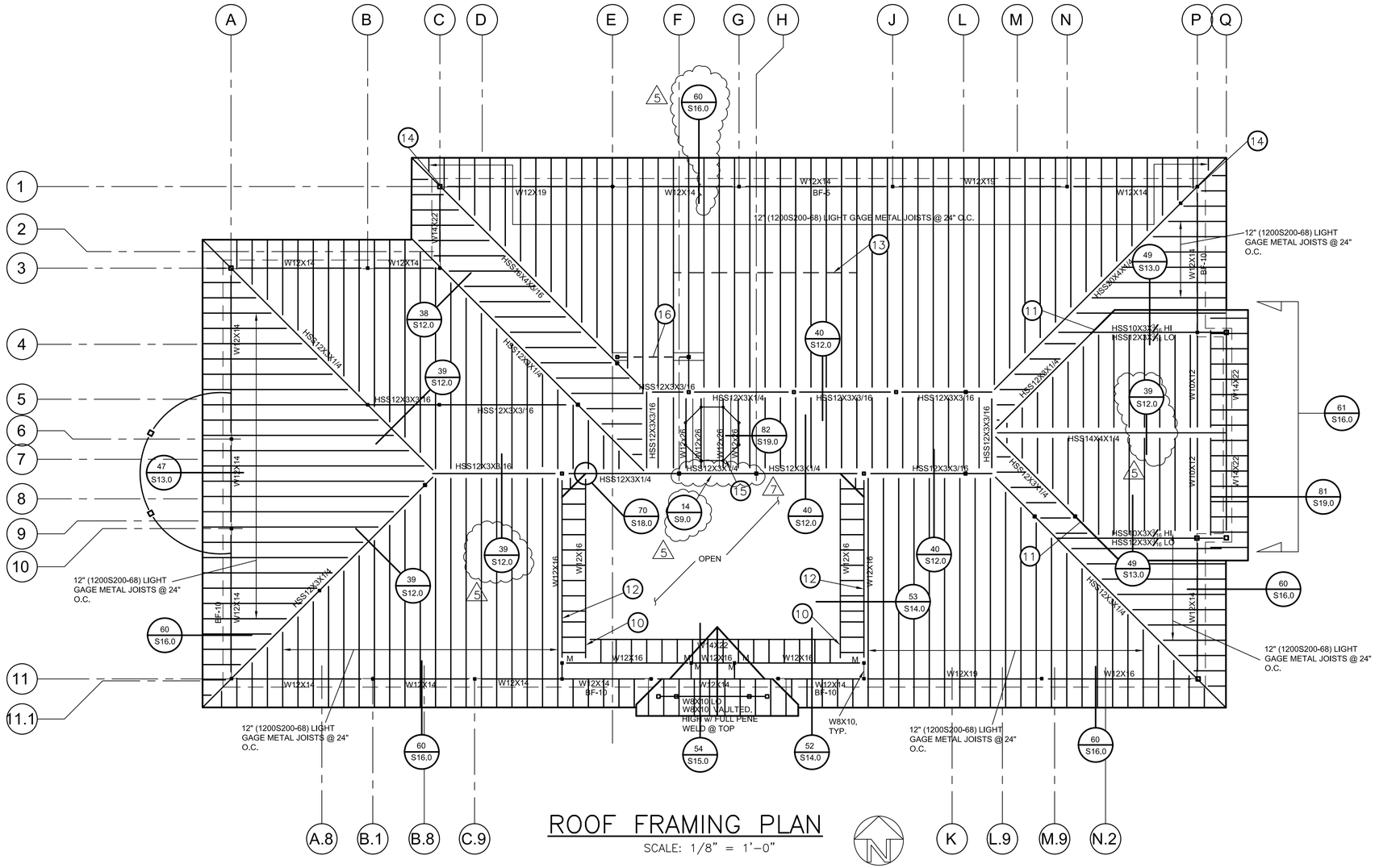
Rev.	Description	Date
5	ADD. #5	1/15/21
7	ADD. #7	2/15/21

Job Number: 18144
Date: 11/17/2020
Drawn By: jrm
Checked By: TWG

Project Title: CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Sheet Title: ATTIC FLOOR FRAMING PLAN

Sheet Number: S5.0



ROOF FRAMING PLAN

SCALE: 1/8" = 1'-0"

NORTH

PLAN NOTES:

(○) – CIRCLED NOTES ARE KEYED TO PLAN.

1. SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR DIMENSIONS NOT SHOWN & ROOF SLOPES.
3. SEE SHEET S1.1 FOR SCHEDULES
4. SEE ARCH. & MECHANICAL DRAWINGS FOR EQUIPMENT SUPPORT, ETC.
5. ROOF CONSTRUCTION: 1½"x24ga WIDE RIB METAL DECK OVER 12" LIGHTGAGE, UNPUNCHED STUD JOISTS @ 24" MAX. O.C. USE 1200S200-68 RAFTERS, TYP.
6. STAIR CONSTRUCTION: DESIGN BY FABRICATOR FOR 100psf LIVE LODE & CODE COMPLIANT HANDRAILS. SEE DETAILS & ARCH. FOR ADD'L INFORMATION. PROVIDE HSS3x3x¼" POST IN WALL BELOW LANDINGS FOR SUPPORT OR HANGER. SEE TYP. DETAILS.
7. SEE DETAIL FOR HSS4x4x¼" GUIDE RAIL ANCHORAGE POST IN WALL EA. SIDE OF ELEVATOR. SEE DETAIL 69/S17.0
8. SEE DETAIL 83/S19.0 FOR TYP. ROOF OPENING DETAIL
9. LOCATE BEAMS ON GRID LINES AS SHOWN AND EQUALLY SPACED, U.N.O.
10. "BROKEN BACK" BEAM w/ FULL PENETRATION WELD ALL AROUND.
11. PROVIDE WELDED CONNECTION WHERE HIGH BEAM INTERSECTS LOW BEAM.
12. PROVIDE DOUBLE 12" RAFTER @ MAIN ROOF TO SUPPORT STUD WALL ABOVE WHERE WALL BELOW SHIFTS. SEE ARCH.
13. PROVIDE CONTINUOUS BRIDGING AT MID-SPAN OF ALL RAFTERS WITH SPAN GREATER THAN 12'-0", TYP.
14. CUT BOTTOM OF HSS TO BEAR OVER COLUMN & WELD ⅜" CLOSURE PLATE, TYP.
15. PREFAB. CUPOLA. SEE ARCH. COORDINATE FRAMING DIMENSION w/ CUPOLA MANUFACTURER.
16. W8x18 HOIST BEAM. COORDINATE HEIGHT w/ ELEVATOR MANUFACTURER

LEGEND:

BF-X	DENOTES BRACED FRAME TYPE. SEE FRAMING ELEVATIONS ON S7.0.
M	DENOTES MOMENT CONNECTION TO HSS COL. SEE DETAIL 80/S18.0

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7	ADD. #7	2/15/2

Job Number: 18144

Date: 11/17/2020

Drawn By: jrm

Checked By: TWG

Project Title:

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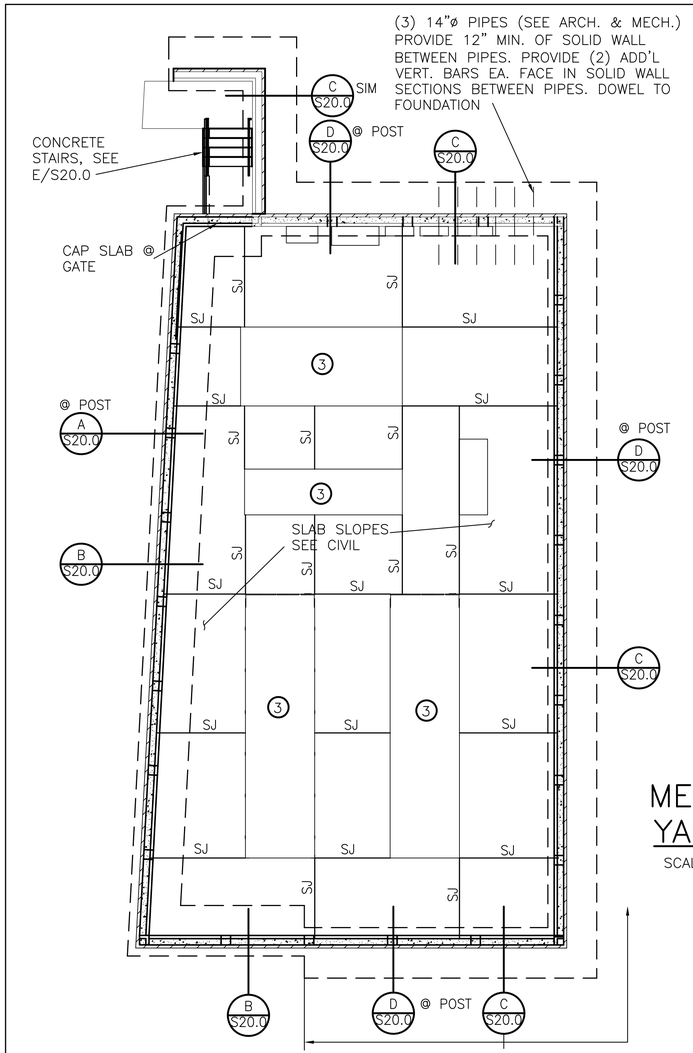
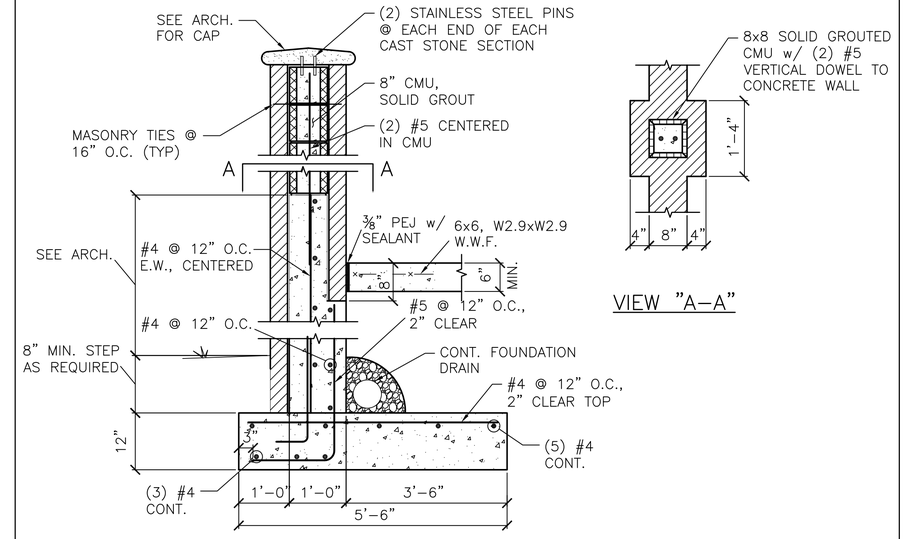
Sheet Title: ROOF FRAMING PLAN

Sheet Number: S6.0



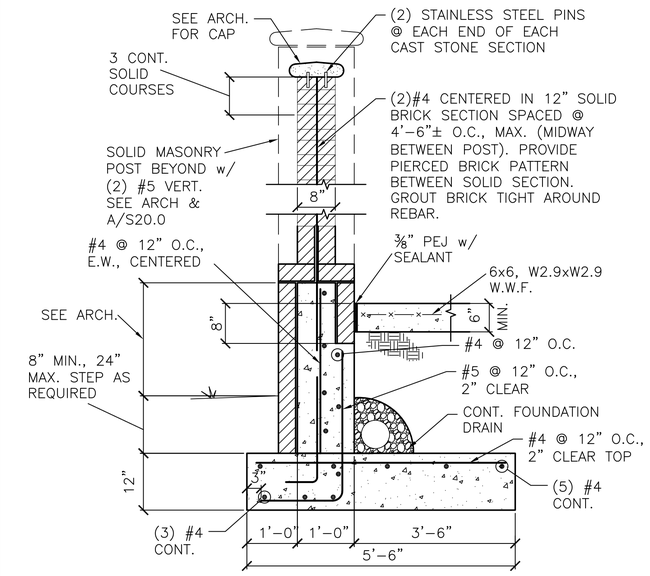
MECHANICAL YARD PLAN

SCALE: 1/8" = 1'-0"



DETAIL A SCALE: 3/4"=1'-0"

VIEW "A-A"

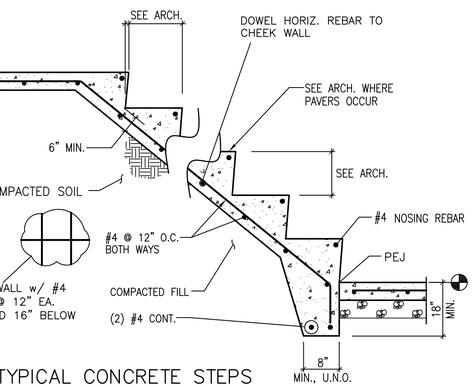


DETAIL B SCALE: 3/4"=1'-0"

PLAN NOTES:

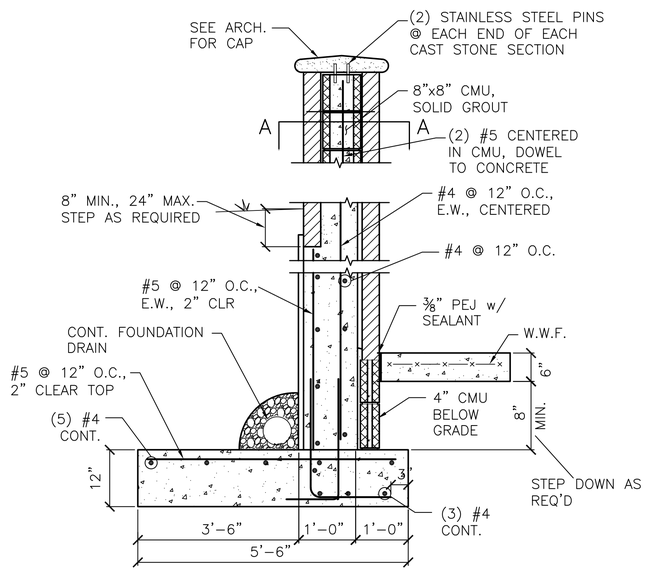
◯ – CIRCLED NOTES ARE KEYED TO PLAN.

1. SEE SHEET S1.0 FOR GENERAL STRUCTURAL NOTES.
2. SEE ARCHITECTURAL DRAWINGS FOR ADD'L INFORMATION
3. PROVIDE 12" THICK SLAB w/ #4 @ 12" O.C. EA. WAY @ TOP & BOTTOM UNDER EQUIPMENT. EXTEND 12" THICKNESS 8" BEYOND EQUIPMENT ON ALL SIDES & PROVIDE ⅜" PEJ w/ SEALANT @ JOINT BETWEEN 6" & 12" SLABS. COORDINATE DIMENSIONS e/ EQUIPMENT

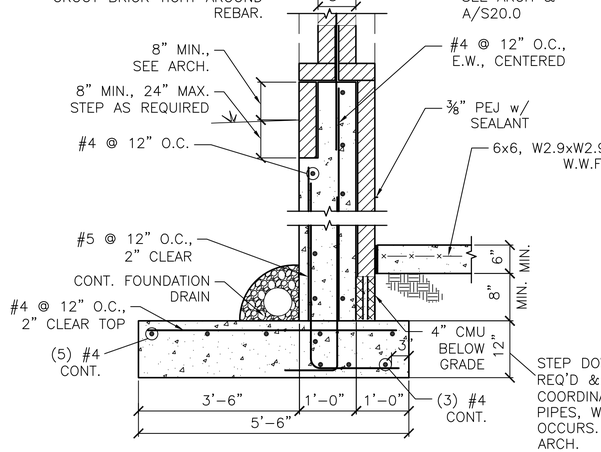


TYPICAL CONCRETE STEPS

DETAIL E SCALE: 3/4"=1'-0"



DETAIL D SCALE: 3/4"=1'-0"



DETAIL C SCALE: 3/4"=1'-0"

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Checked By TWG

Project Title

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Sheet Title
MECHANICAL YARD PLAN & DETAILS

Sheet Number
S20.0

DOOR, OPENING & FRAME SCHEDULE LEVEL 1 & 2

DOOR NO.	LEAVES	LEAF 1 WIDTH	LEAF 2 WIDTH	TOTAL WIDTH	HEIGHT	THICKNESS	ELEVATION TYPE	ACCESS CONTROL	FRAME ELEVATION TYPE	DETAILS: HEAD DETAIL	DETAILS: JAMB DETAIL	DETAILS: SILL DETAIL	FIRE RATING	GLAZING TYPE	NOTES
LEVEL 1															
1100	2	3' - 0"	3' - 0"	6' - 0"	8' - 4"	0' - 1 3/4"	RG ALUM EXT	ELECTRIFIED HARDWARE	ALUM F2	3/A5.13	3/A5.13	4/A3.6		IG-1	HANDICAP OPERATOR
1101	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		7/A3.7	7/A3.7	7/A3.7		S-1	
1102	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		7/A3.7	7/A3.7	7/A3.7		IG-3	STC 40 RATED DOOR
1103	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		7/A3.7	7/A3.7	7/A3.7		S-1	
1104	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		7/A3.7	7/A3.7	7/A3.7		S-1	
1105	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	F WD	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6				
1106	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2	
1106a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	RG ALUM EXT		ALUM F1	14/A3.6 SIM	14/A3.6	4/A3.6		IG-1	
1107	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		S-1	
1108	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1109	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		S-1	
1110	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1111	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		IG-3	
1112	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1113	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		IG-3	
1114	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6		1 HR		
1115	2	3' - 0"	3' - 0"	6' - 0"	8' - 4"	0' - 1 3/4"	RG ALUM EXT	ELECTRIFIED HARDWARE	ALUM F2	13/A3.6	10/A3.6	4/A3.6		IG-1	
1115a	2	3' - 0"	3' - 0"	6' - 0"	8' - 4"	0' - 1 3/4"	RG ALUM EXT	ELECTRIFIED HARDWARE	ALUM F2	13/A3.6	13/A3.6 SIM	4/A3.6		IG-1	
1116	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6				
1118	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1120	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		IG-3	
1122	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2	
1124	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7	1/A3.7		IG-3	
LEVEL 2															
1201	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		1/A3.7	1/A3.7			S-1	
1201a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1202	1	4' - 0"		4' - 0"	8' - 0"	0' - 1 3/4"	SF5	PREP FRAME FOR FUTURE ELECTRIC STRIKE		1/A3.7	1/A3.7			S-1	
1202a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD		HM F1	1/A3.6	1/A3.6			S-1	
1203	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203b	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203c	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203d	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203e	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1203f	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	FG WD	PREP FRAME FOR FUTURE ELECTRIC STRIKE	HM F1	1/A3.6	1/A3.6			S-1	
1204	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2	
1205	2	3' - 0"	1' - 6"	4' - 6"	7' - 0"	0' - 1 3/4"	UE SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1	
1206	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1207	2	3' - 0"	1' - 6"	4' - 6"	7' - 0"	0' - 1 3/4"	UE SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1	
1208	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1209	2	3' - 0"	1' - 6"	4' - 6"	7' - 0"	0' - 1 3/4"	UE SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1	
1210	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1211	2	3' - 0"	1' - 6"	4' - 6"	7' - 0"	0' - 1 3/4"	UE SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1	
1212	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6		1 HR		
1216	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	F WD		HM F1	1/A3.6	1/A3.6				
1218	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE		1/A3.7				S-1	
1218a	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	G WD		HM F1	1/A3.6	1/A3.6			S-1	
1220	1	3' - 0"		3' - 0"	7' - 0"	0' - 1 3/4"	NL WD		HM F1	1/A3.6	1/A3.6		1 1/2 HR	S-2	
1222	2	3' - 0"	3' - 0"	6' - 0"	7' - 0"	0' - 1 3/4"	SF3	PREP INACTIVE DOOR FOR FUTURE ELECTRIC STRIKE	ALUM F3	1/A3.7	1/A3.7			S-1	

DOOR SCHEDULE NOTE:
PRIOR TO ORDERING AND FABRICATION OF ALL DOORS AND ASSOCIATED FRAMES THE CONTRACTOR SHALL ILLUSTRATE DIAGRAMATICALLY FINAL CEILING HEIGHTS THROUGH VERIFICATION OF ALL BUILDING SYSTEMS AND PROJECT CONDITIONS, AND RECEIVE WRITTEN APPROVAL OF THE DIAGRAMS BY THE ARCHITECT.

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5	Add. 5	01/15/2021
7	Add. 7	02/15/2021

Job Number: 18144
Date: 11/17/2020
Drawn By: CS,JB,DB,LG
Checked By: JS, FL

Project Title:
CENTER FOR MATERIALS AND MANUFACTURING SCIENCES
TROY UNIVERSITY | TROY, AL

Sheet Title:
DOOR SCHEDULE
LEVEL 1 & LEVEL 2

Sheet Number:
A3.4

STATE OF ALABAMA
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