



## ADDENDUM 01 – 03.02.2018

### Cherokee National Capitol – Interior Renovation

**Project:**

Bid ID: 16807

Owner: Cherokee Nation Businesses, LLC

Architect: 1Architecture, LLC

To: Prospective Bidders

This Addendum forms a part of the Contract Documents and modifies the original bidding documents with the amendments and additions noted below.

Acknowledge receipt of this Addendum in the space provided on the Bid Form. Failure to do so may disqualify the Bidder.

This Addendum consists of three (3) pages and the following bidding information, Drawings and Attachments:

- **The bid due date has been changed to Monday, March 12<sup>th</sup> at 2:00 PM CST**
- No substitution requests were received
- Updated Bid Return Check List attachment consisting of one (1) page
- Addendum 01, Bidder Question and Answers/Clarifications attachment consisting of three (3) pages.
- Addendum 01, Project Manual attachments consisting of twenty-four (24) pages.
- Addendum 01, Drawing attachments consisting of nineteen (19) pages.

#### CHANGES TO THE PROJECT MANUAL:

##### SECTION 05 5000 – Metal Fabrications

1. Replace Part 1.08 A.2 with "Warranty Period: **2** Years from date of substantial Completion."

##### SECTION 23 7413 – Package Indoor Make Up Air Unit

2. ClimateMaster was added as an approved manufacturer in part 2.1 B.4.

##### SECTION 23 8146 – Water Source Heat Pumps

3. Replace Part 2.01 G.5 with: Compressor: Hermetic, variable speed compressor, **or a 2-speed compressor with variable speed pumps**, installed on dual vibration isolators and housed in an acoustically treated enclosure with factory-installed safeties as follows:
  - a. Antirecycle timer.
  - b. High-pressure cutout.
  - c. Low-pressure cutout or loss of charge switch.
  - d. Internal thermal-overload protection.
  - e. Freezestat to stop compressor if water-loop temperature in refrigerant-to-water heat exchanger falls below 38 deg.
  - f. Condensate overflow switch to stop compressor with high condensate level in condensate drain pan.
  - g. Water-coil, low-temperature switch.
  - h. Air-coil, low-temperature switch.

##### SECTION 26 0943 – Network Lighting Controls

4. Specification section added.



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## CHANGES TO THE DRAWINGS:

### SHEET C101 – Pipe Installation Details

5. Added 8.5"x11" sheet with trench and thrust block details.

### SHEET A103 – Second Floor Plan

6. Added light gage metal furred out partition (P-13) at Gallery 03 (203).

### SHEET A106 – Second Floor Reflected Ceiling Plan

7. Added light gage metal furred out partition (P-13) at Gallery 03 (203).
8. Removed track lighting from Gallery 06 (206). Contractor will still be required to provide electrical connections at this location for Owner installed exhibit lighting.

### SHEET A107 – Ground Floor Finish Plan and Schedule

9. Added products and notes for contractor to seal entirety of first floor existing concrete slab with radon concrete penetrating sealer and radon sealant at any first floor to basement/crawlspace penetrations.

### SHEET A301 – Stair Plans and Details

10. 3/A301 - Added light gage metal furred out partition at Gallery 03 (203) and notes to install Chief PAC 526 recessed wall box.

### SHEET A403 – Partition Types P10-P13

11. P13/A403 - Added light gage metal furred out partition type P-13.

### SHEET M102 – Mechanical Legend and Details

12. Detail 3 was removed.

### SHEET M200 – Geothermal Well Field Plan

13. Notes 19 and 20 added.

### SHEET M203 – Geothermal Details

14. Detail 1 was changed to include a makeup water connection and hose bibb connections for the drains.

### SHEET P200 – Basement – Plumbing Plans

15. A makeup water line, valve and notes have been added for the ground loop piping.

### SHEET P300 – Ground Floor – Plumbing Supply Plan

16. A note has been added to show a water line going to the basement.

### SHEET E100 – Electrical Notes and Legend

17. Added A/V Push Button to Electrical Legend.

### SHEET E102 – Basement Electrical Plans

18. Changed Keynote 26.08 Dimming Panel Specifications.

### SHEET E103 – Ground Floor Power Plan

19. Added Keynote 26.12 for security camera installation.

### SHEET E104 – Second Floor Power Plan

20. Added Keynote 26.12 for security camera installation.
21. Added circuits to be controlled via LCP.
22. Removed Ceiling mounted projector and speaker at Gallery 203.
23. Added power for additional Owner provided exhibit casework at Gallery 205.
24. Removed motion sensor and replaced with pushbutton at Lobby 210.

### SHEET E201 – Ground Level Lighting Plan

25. Redirected circuitry from panel L1 to panel LB.



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SHEET E202 – Second Floor Lighting Plan

26. Redirected circuitry from panel L1 to panel LB.
27. Removed track lighting from Gallery 206 and replaced with junction box for exhibit light fixtures that will be provided by others.
28. Added Lobby track lighting to LCP.

SHEET E301 – Electrical Schedules, Details and Riser

29. Added Lighting Control Panel Zone Schedule
30. Changed Description of CL1 in Luminaire Schedule
31. Removed CL2 from Luminaire Schedule
32. Changed the quantity of TH2 in Luminaire Schedule

SHEET E302 – Panel Schedules and Electrical Details

33. Revised panel schedules L1 and LB

**END OF ADDENDUM 01**

## BID RETURN CHECK LIST

(ALL ITEMS BELOW MUST BE INCLUDED IN YOUR BID SUBMISSION OR BID WILL BE SUBJECT TO DISQUALIFICATION)

- A. Sealed envelope clearly marked with project name, bidder name, and bid package number. \_\_\_\_\_
- B. Bid bond or Cashier's check for 5% of bid; required only if bid is over \$100K. \_\_\_\_\_
- C. Acknowledgement of all addenda (if applicable). \_\_\_\_\_
- D. Cherokee Nation - Previous Work History Form, AIA A305, with supporting documentation \_\_\_\_\_
- E. Non-collusion Affidavit \_\_\_\_\_
- F. Business Relationship Affidavit \_\_\_\_\_
- G. Certificate of Insurance \_\_\_\_\_
- H. Workers Comp Ins. (proof of effective dates) \_\_\_\_\_
- I. Copy of TERO Certification front and back (if applicable). \_\_\_\_\_
- J. List of any certifications related to this bid request. \_\_\_\_\_
- K. Copy of CDIB Card (if applicable) \_\_\_\_\_
- L. Contractor's proposed work schedule \_\_\_\_\_
- M. Schedule of values (schedule should show TERO and non-TERO vendors used for each trade) \_\_\_\_\_
- N. A brief narrative, signed and dated, acknowledging the bidder has read the proposal and fully understands the scope of work, drawings, specifications and any other supporting documents included in the proposal. \_\_\_\_\_
- O. I list of any materials and/or labor not included in the bid price. \_\_\_\_\_
- P. A complete list of subcontractors that bidder will bring to the project. \_\_\_\_\_

If any items are not included please provide an explanation of why the item isn't included in the bid submittal.



## Bidder Question and Answers/Clarifications – 03.02.2018

### Cherokee National Capitol – Interior Renovation

- Question:** Clarify that project is to be bid less sales tax on materials.  
**Answer:** Due to the size of the project, the potential savings does not offset the amount of time that would be involved for processing. Include sales tax on materials in your bid.
- Question:** Will the bid checklist requirements be updated to include the proposed subcontractor list and historical work experience as mentioned at the pre bid?  
**Answer:** Please find attached with this addendum revised bid checklist.
- Question:** Clarify that the soils and concrete testing costs are to be included in the contractor's scope and that all special testing is the Owners scope?  
**Answer:** Correct. Soils, concrete and testing per the project manual specification sections are the responsibility of the contractor and special inspections as outlined in sheet S002 are the Owner's responsibility.
- Question:** Please verify the contractor is to provide a geotechnical report at the proposed new elevator pit location prior to performing this portion of the demolition.  
**Answer:** Yes, this is correctly called out on demolition sheet A004. Until last week the building was occupied by the court and the hand augured geotechnical report would have been too intrusive during occupancy.
- Question:** Will temporary electric need to be provided for all exterior lighting during any electric downtime for the building construction?  
**Answer:** Yes
- Question:** Verify there is only one Unit Price item.  
**Answer:** Per specification section 01 2200 – Unit Prices section 3.01 Schedule of Unit Prices there is only one unit price item. The numbers 1-4 in that section are a Microsoft word heading format that gives a description of the purpose of the Unit Price, defines the Unit for pricing, describes what is to be included in the base bid and provides further detail for the Unit Price scope.
- Question:** Will a temporary project sign be required?  
**Answer:** Yes, contractor to provide (1) 4'x8' project sign with full color vinyl graphic mounted on minimum 3/4" thick exterior grade painted plywood with (2) 4x4 painted wood posts.
- Question:** Sheet C100 notes the location of the new 8" fire line. Are there any trench details and/or requirements for material type, bedding, tracer wires, thrust blocks, city vaults, etc?  
**Answer:** Reference sheet C101 of Addendum 01 for material types, trench and thrust block details. In our phone communications with TPWA prior to issuing the project for bidding, TPWA did not state a vault would be required at the waterline tap. Please provide a city vault in your exclusions list for bidding.
- Question:** Section 055000 calls out for a 20 year warranty on powder coat, is this correct?  
**Answer:** Reference Addendum 01 - Revise section 05 5000 1.08 A.2. Warranty Period to: 2 years from date of substantial completion.
- Question:** Verify that doors 101A and 101B have clearance for the ADA Operators.  
**Answer:** Section 1205.6 of the IEBC for historic buildings permits the continued use of non-code complying door openings as long as they are no more hazardous than before the rehabilitation.

The specified ADA operators will be mounted on the frame above the doors and will not reduce the clearance any more than the existing closers that are being replaced.

11. **Question:** Advise if any toilet accessory items (owner preferred vendor on toiletries) are to be Owner provided and contractor installed?  
**Answer:** No toilet accessories will be Owner provided. All toilet accessory items are to be contractor provided and installed.
12. **Question:** Doors type P-G call out for glazing but there is no glazing spec, please provide.  
**Answer:** Provide door manufacturer's standard non-wire fire-rated glazing as a part of the tested rating assembly in order to achieve the fire rating indicated in the door schedule.
13. **Question:** On the Glass Railing on the job, what material is to be used for the cap, what type of finish for the cap and the glass track, and also what type and size of glass to be used? Also on the existing stair on the inside of the stair where does the wall end and the glass railing start? I looked for other elevation drawings but could not find one that help with this.  
**Answer:** Reference specification section 05 7300-Decorative Metal Railings part 2 for railing components, glass infill panels, materials and finishes. Reference 3/A301 – Enlarged Stair Modification Plan for glass railing dimensions. The railing at the top of the stair is 4'-9" long x 3'-6" Tall (AFF). The railing along the inside of the stair is 9'-4 ½" long x 3'-6" tall (above stair treads).
14. **Question:** Sheet A101 calls out to apply spray foam to underside of ground floor structure in crawl space. What is the intended final thickness of spray foam and intended R value? Apply as far to west as possible? Or remove of soils to cover all?  
**Answer:** Thickness to achieve minimum R-19. Apply as far west as possible without removing soil.
15. **Question:** Sheet A501 indicates wall type WD-3 at face of the radius info desk. Please provide an elevation of the face showing the random appearance of the white oak and also verify that ¼" to 5/8" random thickness is intended as bending the thicker will be an issue without backside kerfing that may show.  
**Answer:** The thicknesses vary. If kerfing is needed for the thicker pieces, the directly adjacent pieces can be a slightly thinner thickness enough to cover the kerfs. Alternatively, the thicker pieces can be steamed or water soaked and braced around a positive form to get the radius.
16. **Question:** There is no CMU spec are we to utilize the Division 4 Masonry as a specification guide shown on sheet S001?  
**Answer:** Yes
17. **Question:** Sheet S001 advises that structural shop drawings submitted for review are to be stamped by a structural engineer and further advises to be submitted not only to the structural engineer of record but also the Owners Testing Agency, Clarify? Will we be required to submit engineered stamped rebar shops, structural steel shops and cold formed/metal stud shops?  
**Answer:** Relevant items indicated to be required by building code in the special inspection schedules on sheet S002 are to be additionally reviewed by the Owner's Testing Agency. Engineered sealed shop drawings will be required for rebar and structural steel. Engineered sealed shop drawings will be required for cold formed metal studs only at loadbearing locations at the new stair walls and ceiling.
18. **Question:** Detail 7 on sheet S501 shows for a reinforced bond beam at the final course to the bottom of the second floor. This is not possible to place the reinforcing and grout full, please review and advise?  
**Answer:** The bond beam can be lowered one course.

19. **Question:** Section 23 0923 calls out for the base bid to be with Alerton on the DDC. It has two other systems as approved but still states to submit data on others than Alerton for approval prior to bid, advise if Trane Tracer SC and Automated Logic require any further documentation to be submitted prior to bid to be acceptable?  
**Answer:** The other listed approved manufacturers will need to meet the standards set for the Alerton basis of design, but as long as they are listed in the specifications as an Approved Control Manufacturer they do not need to be submitted for preapproval.
- Question:** There is no reference in the Hydronic, ground loop sections or sheet M202 and M203 referencing the IGSHPA or their requirements for design, install and maintenance, will this be required and will install contractors require their certifications?  
**Answer:** Yes, Reference notes 19 and 20 on sheet M200 added in Addendum 01
20. **Question:** Verify section 23 7413 is applicable?  
**Answer:** Yes, reference M101 for Dedicated Outdoor Air Unit Schedule. Note, In Addendum 01 ClimateMaster was added as an acceptable manufacturer.
21. **Question:** Verify detail 3 on sheet M102 is not applicable and that all EF's are to be exhausted through roof?  
**Answer:** This detail is no longer applicable and has been removed in Addendum 01.
22. **Question:** Sheet P 200 does not show any new floor drains at the fire riser or ground loop piping entry, will there be any required?  
**Answer:** Floor drains are not required at these locations. The main drain shall be routed to the exterior, reference detail 9/P101. Additionally, reference Addendum 01 detail 1/M203 for changes that provide drains for the equipment to be serviced with a hose routed to the existing sump pump or storm drain.
23. **Question:** Verify the intent of the new service entrance on power is to be from the existing transformer to the interior and that the existing transformer in its current location is not to change?  
**Answer:** Correct, the electric service is coming from the existing transformer location. PWA, the electric utility company provider, stated they would install a new transformer if required. Prior to issuing the project for bidding, they were provided with the drawings for coordination.

**SECTION 05 5000  
METAL FABRICATIONS**

**PART 1 - GENERAL**

1.01 RELATED DOCUMENTS

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

1.02 SUMMARY

- A. Section Includes:
  - 1. Steel framing and supports for applications where framing and supports are not specified in other Sections.
  - 2. Elevator machine beams, hoist beams, and divider beams.
  - 3. Steel shapes for supporting elevator door sills.
  - 4. Metal ladders.
- B. Related Sections:
  - 1. Division 05 Section "Structural Steel Framing."
  - 2. Division 05 Section "Decorative Metal Railings."

1.03 PERFORMANCE REQUIREMENTS

- A. Delegated Design: Design ladders, including comprehensive engineering analysis by a qualified professional engineer, using performance requirements and design criteria indicated.
- B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
  - 1. Temperature Change: 120 deg F, ambient; 180 deg F, material surfaces.

1.04 SUBMITTALS

- A. Shop Drawings: Show fabrication and installation details for metal fabrications.
  - 1. Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.
- B. Samples for Verification: For each type and finish of extruded nosing.
- C. Delegated-Design Submittal: For installed products indicated to comply with performance requirements and design criteria, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation, licensed to practice in the state of the project.
- D. Welding certificates.
- E. Paint Compatibility Certificates: From manufacturers of topcoats applied over shop primers certifying that shop primers are compatible with topcoats.

1.05 QUALITY ASSURANCE

- A. Welding Qualifications: Qualify procedures and personnel according to AWS D1.1/D1.1M, "Structural Welding Code - Steel."
- B. Welding Qualifications: Qualify procedures and personnel according to the following:

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

1.06 PROJECT CONDITIONS

- A. Field Measurements: Verify actual locations of walls and other construction contiguous with metal fabrications by field measurements before fabrication and indicate measurements on Shop Drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish dimensions and proceed with fabricating metal fabrications without field measurements. Coordinate construction to ensure that actual dimensions correspond to established dimensions. Allow for trimming and fitting.

1.07 COORDINATION

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

1.08 WARRANTY

- A. Special Powder Coat Finish Warranty: Provide Manufacturer's standard warranty for work under this Section. Such warranty shall be in addition to and not in lieu of other liabilities which manufacturers and Contractor may have by law or by other provisions of the Contract Documents.
1. Manufacturer guarantees supplied components will not rust, peel or blister for the duration of warranty period. Damage from accident, improper transport, improper installation, normal finish wear, vandalism or abuse are not covered. Warranty is limited to pro-rated value of the coating only, not to exceed original cost of coating.
  2. Warranty Period: **2 Years from date of Substantial Completion.**

**PART 2 - PRODUCTS**

2.01 METALS, GENERAL

- A. Metal Surfaces, General: Provide materials with smooth, flat surfaces unless otherwise indicated. For metal fabrications exposed to view in the completed Work, provide materials without seam marks, roller marks, rolled trade names, or blemishes.

2.02 FERROUS METALS

- A. Steel Plates, Shapes, and Bars: ASTM A36.
- B. Steel Tubing: ASTM A 500, cold-formed steel tubing.
- C. Steel Pipe: ASTM A 53, standard weight (Schedule 40) unless otherwise indicated.

WARRANTY PERIOD  
CHANGED  
ADDENDUM 01 - 03.02.18

2.03 FASTENERS

- A. General: Unless otherwise indicated, provide Type 304 or Type 316 stainless-steel fasteners for exterior use and zinc-plated fasteners with coating complying with ASTM B 633 or **ASTM F 1941**, Class Fe/Zn 5, at exterior walls. Select tamper-resistant fasteners for type, grade, and class required.

2.04 MISCELLANEOUS MATERIALS

- A. Welding Rods and Bare Electrodes: Select according to AWS specifications for metal alloy welded.
- B. Shop Primers: Provide primers that comply with Division 09 painting Sections.
- C. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI#79 and compatible with topcoat.
  - 1. Use primer containing pigments that make it easily distinguishable from zinc-rich primer.
- D. Galvanizing Repair Paint: High-zinc-dust-content paint complying with SSPC-Paint 20 and compatible with paints specified to be used over it.
- E. Bituminous Paint: Cold-applied asphalt emulsion complying with ASTM D 1187.
- F. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.
- G. Concrete: Comply with requirements in Division 03 Section "Cast-in-Place Concrete" for normal-weight, air-entrained, concrete with a minimum 28-day compressive strength of **3000 psi**

2.05 FABRICATION, GENERAL

- A. Shop Assembly: Preassemble items in the shop to greatest extent possible. Disassemble units only as necessary for shipping and handling limitations. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.
- B. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges to a radius of approximately **1/32 inch** unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.
- C. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
- D. Form exposed work with accurate angles and surfaces and straight edges.
- E. Weld corners and seams continuously to comply with the following:
  - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
  - 2. Obtain fusion without undercut or overlap.
  - 3. Remove welding flux immediately.
  - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
- F. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners or welds where possible. Where exposed fasteners are required, use Phillips flat-head (countersunk) fasteners unless otherwise indicated. Locate joints where least conspicuous.

- G. Fabricate seams and other connections that will be exposed to weather in a manner to exclude water. Provide weep holes where water may accumulate.
- H. Cut, reinforce, drill, and tap metal fabrications as indicated to receive finish hardware, screws, and similar items.
- I. Provide for anchorage of type indicated; coordinate with supporting structure. Space anchoring devices to secure metal fabrications rigidly in place and to support indicated loads.
  - 1. Where units are indicated to be cast into concrete or built into masonry, equip with integrally welded steel strap anchors, **1/8 by 1-1/2 inches**, with a minimum **6-inch** embedment and **2-inch** hook, not less than **8 inches** from ends and corners of units and **24 inches** o.c., unless otherwise indicated.

## 2.06 MISCELLANEOUS FRAMING AND SUPPORTS

- A. General: Provide steel framing and supports not specified in other Sections as needed to complete the Work.
- B. Fabricate units from steel shapes, plates, and bars of welded construction unless otherwise indicated. Fabricate to sizes, shapes, and profiles indicated and as necessary to receive adjacent construction.
- C. Fabricate supports for operable partitions from continuous steel beams of sizes recommended by partition manufacturer with attached bearing plates, anchors, and braces as recommended by partition manufacturer. Drill or punch bottom flanges of beams to receive partition track hanger rods; locate holes where indicated on operable partition Shop Drawings.
- D. Galvanize miscellaneous framing and supports where indicated.

## 2.07 METAL LADDERS

- A. General:
  - 1. Comply with ANSI A14.3 unless otherwise indicated.
  - 2. For elevator pit ladders, comply with ASME A17.1.
- B. Steel Ladders:
  - 1. Space siderails **18 inches** apart unless otherwise indicated.
  - 2. Space siderails of elevator pit ladders **12 inches** apart.
  - 3. Siderails: Continuous, **1/2-by-2-1/2-inch** steel flat bars, with eased edges.
  - 4. Rungs: **1-inch** square steel bars capable of withstanding a 300lb load.
  - 5. Fit rungs in centerline of siderails; plug-weld and grind smooth on outer rail faces.
  - 6. Provide nonslip surfaces on top of each rung, either by coating rung with aluminum-oxide granules set in epoxy-resin adhesive or by using a type of manufactured rung filled with aluminum-oxide grout.
  - 7. Support each ladder at top and bottom and not more than **60 inches** o.c. with welded or bolted steel brackets.
  - 8. Galvanize ladders, including brackets and fasteners, with zinc-rich primer.

## 2.08 MISCELLANEOUS STEEL TRIM

- A. Unless otherwise indicated, fabricate units from steel shapes, plates, and bars of profiles shown with continuously welded joints and smooth exposed edges. Miter corners and use concealed field splices where possible.
- B. Provide cutouts, fittings, and anchorages as needed to coordinate assembly and installation with other work.

1. Provide with integrally welded steel strap anchors for embedding in concrete or masonry construction.
  - C. Galvanize exterior miscellaneous steel trim.
  - D. Prime miscellaneous steel trim with zinc-rich primer.
- 2.09 STEEL WELD PLATES AND ANGLES
- A. Provide steel weld plates and angles not specified in other Sections, for items supported from concrete construction as needed to complete the Work. Provide each unit with no fewer than two integrally welded steel strap anchors for embedding in concrete.
- 2.10 FINISHES, GENERAL
- A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
  - B. Finish metal fabrications after assembly.
  - C. Finish exposed surfaces to remove tool and die marks and stretch lines, and to blend into surrounding surface.
- 2.11 STEEL AND IRON FINISHES
- A. Galvanizing: Hot-dip galvanize items as indicated to comply with ASTM A 153 for steel and iron hardware and with ASTM A 123 for other steel and iron products.
    1. Do not quench or apply post galvanizing treatments that might interfere with paint adhesion.
  - B. Shop prime iron and steel items not indicated to be galvanized unless they are to be embedded in concrete, sprayed-on fireproofing, or masonry, or unless otherwise indicated.
    1. Shop prime with primers specified in Division 09 painting Sections unless indicated.
  - C. Preparation for Shop Priming: Prepare surfaces to comply with requirements indicated below:
    1. Exterior Items: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
    2. Items Indicated to Receive Zinc-Rich Primer: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
    3. Items Indicated to Receive Primers Specified in Division 09: SSPC-SP 6/NACE No. 3, "Commercial Blast Cleaning."
    4. Other Items: SSPC-SP 3, "Power Tool Cleaning."
  - D. Shop Priming: Apply shop primer to comply with SSPC-PA 1, "Paint Application Specification No. 1: Shop, Field, and Maintenance Painting of Steel," for shop painting.
    1. Stripe paint corners, crevices, bolts, welds, and sharp edges.

### **PART 3 - EXECUTION**

#### **3.01 INSTALLATION, GENERAL**

- A. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, alignment, and elevation; with edges and surfaces level, plumb, true, and free of rack; and measured from established lines and levels.
- B. Fit exposed connections accurately together to form hairline joints. Weld connections that are not to be left as exposed joints but cannot be shop welded because of shipping size limitations. Do not weld, cut, or abrade surfaces of exterior units that have been hot-dip galvanized after fabrication and are for bolted or screwed field connections.



- C. Field Welding: Comply with the following requirements:
    - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
    - 2. Obtain fusion without undercut or overlap.
    - 3. Remove welding flux immediately.
    - 4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.
  
  - D. Fastening to In-Place Construction: Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction. Provide threaded fasteners for use with concrete and masonry inserts, toggle bolts, through bolts, lag screws, wood screws, and other connectors.
  
  - E. Provide temporary bracing or anchors in formwork for items that are to be built into concrete, masonry, or similar construction.
  
  - F. Corrosion Protection: Coat concealed surfaces of aluminum that will come into contact with grout, concrete, masonry, wood, or dissimilar metals with the following:
    - 1. Extruded Aluminum: Two coats of clear lacquer.
- 3.02 INSTALLING MISCELLANEOUS FRAMING AND SUPPORTS
- A. General: Install framing and supports to comply with requirements of items being supported, including manufacturers' written instructions and requirements indicated on Shop Drawings.
  - B. Anchor supports for operable partitions securely to and rigidly brace from building structure.
- 3.03 ADJUSTING AND CLEANING
- A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
    - 1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.
  - B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded areas of shop paint are specified in Division 09 painting Sections.
  - C. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

**END OF SECTION 05 5000**

**SECTION 23 7413**  
**PACKAGED INDOOR MAKE UP AIR UNIT**

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Indoor packaged unit
- B. Refrigeration components.
- C. Unit operating controls.
- D. Electrical power connections.
- E. Operation and maintenance service.

**1.3 REFERENCES**

- A. NFPA 90 A & B - Installation of Air Conditioning and Ventilation Systems and Installation of Warm Air Heating and Air Conditioning Systems.
- B. ANSI/ASHRAE 15 - Safety Code for Mechanical Refrigeration.
- C. ARI 360 - Commercial and Industrial Unitary Air Conditioning Equipment testing and rating standard.
- D. ANSI/ASHRAE 37 - Testing Unitary Air Conditioning and Heat Pump Equipment.
- E. ANSI/ASHRAE/IESNA 90.1-1999 - Energy Standard for New Buildings Except Low-Rise Residential Buildings.
- F. ANSI Z21.47/UL1995 - Unitary Air Conditioning Standard for safety requirements.
- G. ARI 210/240 - Unitary Air-Conditioning Equipment and Air
- H. ANSI/NFPA 70-1995 - National Electric Code.
- I.

**1.4 SUBMITTALS**

- A. Submit unit performance data including: capacity, nominal and operating performance.
- B. Submit Mechanical Specifications for unit and accessories describing construction, components and options.
- C. Submit shop drawings indicating overall dimensions as well as installation, operation and services clearances. Indicate lift points and recommendations and center of gravity. Indicate unit shipping, installation and operating weights including dimensions.
- D. Submit data on electrical requirements and connection points. Include recommended wire and fuse sizes or MCA, sequence of operation, safety and start-up instructions.
- E. Shop drawings submitted for approval shall be accompanied by a copy of the purchase agreement between the Contractor and an authorized service representative of the manufacturer for check, test and start up and first year service.

**1.5 DELIVERY, STORAGE and HANDLING**

- A. Comply with manufacturer's installation instructions for rigging, unloading, and transporting units.
- B. Protect units from physical damage. Leave factory-shipping covers in place until installation.

**1.6 WARRANTY**

- A. Provide factory start up with parts, labor, and refrigerant loss warranty for TWO years from substantial completion or 30 months from shipment.
- B. Provide five-year total warranty for compressors (materials only).

**1.8 REGULATORY REQUIREMENTS**

- A. Unit shall conform to ANSI Z21.47/UL1995 for construction of packaged air conditioner.

**1.9 EXTRA MATERIALS**

- A. Provide one set of new MERV 8 filters for use during final balancing.
- B. Provide one set of MERV 8 Media for installation during construction.

PART 2 PRODUCTS

2.1 SUMMARY

- A. The contractor shall furnish and install packaged unit(s) as shown and scheduled on the contract documents. The unit(s) shall be installed in accordance with this specification and perform at the specified conditions as scheduled.

B. APPROVED MANUFACTURERS

- 1. Valent
- 2. Addison
- 3. Desert Aire
- 4. ClimateMaster

APPROVED MANUFACTURER ADDED  
ADDENDUM 01 - 03.02.18

2.2 GENERAL UNIT DESCRIPTION

- A. Unit(s) furnished and installed shall be cooling only packaged units as scheduled on contract documents and these specifications. Cooling capacity ratings shall be based on ARI Standard 210. Unit(s) shall consist of insulated weather-tight casing with compressor(s), air-cooled condenser coil, condenser fans, evaporator coil, return-air filters, supply motors and unit controls and drives.
- B. Unit(s) shall be 100% factory run tested and fully charged with R-410A.
- C. Unit(s) shall have labels, decals, and/or tags to aid in the service of the unit and indicate caution areas.
- D. Wiring internal to the unit shall be colored and numbered for identification.
- E. If scheduled, furnish unit with factory mounted unit circuit breaker/disconnect switch with provision for power wiring.

2.3 UNIT CASING

- A. Cabinet: Galvanized steel, phosphatized, and finished with an air-dry paint coating with removable access panels. Structural members shall be 18 gauge with access doors and removable panels of minimum 20 gauge.
- B. Units cabinet surface shall be tested 1000 hours in salt spray test in compliance with ASTM B117.
- C. Cabinet construction shall allow for all service/ maintenance from one side of the unit.
- D. Cabinet top cover shall be one piece construction or where seams exist, it shall be double-hemmed and gasket-sealed.
- E. Access Panels: Water- and air-tight panels with handles shall provide access to filters, heating section, return air fan section, supply air fan section, evaporator coil section, and unit control section.
- F. Units base pan shall have a raised 1 1/8 inch high lip around the supply and return openings for water integrity.
- G. Insulation: Provide 1/2 inch thick fiberglass insulation with foil face on all exterior panels in contact with the return and conditioned air stream. All edges must be captured so that there is no insulation exposed in the air stream.
- H. Provide openings either on side of unit or through the base for power, control, condensate, and hydronic piping connections.
- I. The base of the unit shall have 3 sides for forklift provisions. The base of the units shall have rigging/lifting holes for crane maneuvering.
- J. Provide double-sloping drain pan and install appropriate PVC "P" Trap for condensate.

2.4 AIR FILTERS ACCESS

- A. Air Filters: Factory installed filters shall mount integral within the unit and shall be accessible through access panels.

2.5 FANS AND MOTORS

- A. Provide evaporator fan section with forward curved, double width, double inlet, centrifugal type fan.
- B. Provide self-aligning, grease lubricated, ball or sleeve bearings with permanent lubrication fittings.
- C. If direct drive supply fan motors, provide multi-speed motor. If belt drive supply fan motors, provide with adjustable motor sheaves.

- E. Indoor Fan motors shall be permanently lubricated and have internal thermal overload protection.
- F. Provide shafts constructed of solid hot rolled steel, ground and polished, with key-way, and protectively coated with lubricating oil.

2.6 NOT USED

2.7 EVAPORATOR COIL

- A. Provide configured aluminum fin surface mechanically bonded to copper tubing coil.
- B. Provide factory installed thermal expansion valve (TXV) for each refrigerant circuit. Factory pressure tested at 450 psig and leak tested at 200 psig.
- C. Provide a removable, reversible, cleanable double sloped drain pan for base of evaporator coil.

2.8 CONDENSER SECTION

- A. Provide vertical discharge, direct drive fans with aluminum blades. Fans shall be statically balanced.
- B. Motors shall be permanently lubricated, with integral thermal overload protection in a weather tight casing.
- C. Provide Condenser Coil Expanded metal hail guard.

2.9 REFRIGERATION SYSTEM

- A. Compressor(s): Provide scroll compressor with direct drive operating at 3600 rpm and Integral centrifugal oil pump. Provide suction gas cooled motor with winding temperature limits and compressor overloads.
- B. Units shall have cooling capabilities down to 0 degree F as standard. For field-installed low ambient accessory, the manufacturer shall provide a factory-authorized service technician that will assure proper installation and operation.
- C. Provide each unit with one refrigerant circuit(s) factory-supplied completely piped with liquid line filter-drier, suction and liquid line pressure ports.

2.10 EXHAUST/RETURN SECTION

- A. Provide barometric relief on all units to be furnished with economizer.

2.11 OUTDOOR AIR SECTION

- A. Provide a fully integrated factory-installed 100% modulating outside air economizer with unit return and barometric relief air dampers, minimum position setting, preset linkage, wiring harness with plug. Unit operation is through primary temperature controls that automatically modulate dampers to maintain space temperature conditions.
- B. Provide economizer with dry bulb control unless specifically scheduled on plans otherwise.
- C. Provide adjustable minimum position control located in the economizer section of the unit. Integrate minimum position into unit controls interface to provide minimum outside air adjustment from computer front end.
- D. Provide spring return motor for outside air damper closure during unit shutdown or power interruption.
- E. Provide hail guard for condenser coil.

2.12 OPERATING CONTROLS

- A. The unit-mounted controls shall perform all unit functions by making all heating, cooling, and ventilating decisions through resident software logic.
- B. Provide factory-wired units with 24 volt control circuit with control transformers, contactor pressure lugs or terminal block for power wiring. Units shall have single point power connections. Field wiring of zone controls to be NEC Class II.
- C. Provide factory-installed indoor evaporator defrost control to prevent compressor slugging by interrupting compressor operation.
- D. Provide an anti-cycle timing and minimum on/off between stages timing in the microprocessor.
- E. Economizer Preferred Cooling (if supplied with economizer) - Compressor operation is integrated with economizer cycle to allow mechanical cooling when economizer is not adequate to satisfy zone requirements. Compressors are enabled if space temperature is recovering to cooling setpoint at a

rate of less than 0.2 degrees per minute. Compressor low ambient lockout overrides this function.

2.13 STAGING CONTROLS

- A. Provide NEC Class II, electronic, adjustable zone control to maintain zone temperature setting.
- B. Connect to existing thermostat.
- C. Provide mixed air sensor in unit supply air to control economizer damper to temper supply air (45 deg min). Provide supply air sensing tube to allow for accurate discharge air temperatures downstream of heating section.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Contractor shall verify that platform is ready to receive work and opening dimensions are as indicated on shop drawings.
- B. Contractor shall verify that proper power supply is available.

3.2 INSTALLATION

- A. Disconnect and remove existing packaged units as scheduled. Connect electric, hydronic, and condensate piping for a fully working system.
- C. Install units per manufacturer's recommendations. If conflicts occur between these specifications and manufacturer's recommendations, ask the engineer prior to doing anything.

3.3 MANUFACTURER'S FIELD SERVICES

- A. The contractor shall furnish manufacturer complete submittal wiring diagrams of the package unit as applicable for field maintenance and service.

END OF SECTION

**SECTION 23 8146  
WATER SOURCE HEAT PUMPS**

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes:
  - 1. Concealed horizontal and vertical units.
  - 2. Exposed, floor-mounted console units.

1.02 ACTION SUBMITTALS

- A. Product Data: For each type of product.

1.03 INFORMATIONAL SUBMITTALS

- A. Field quality-control reports.
- B. Warranty: Provide warranty information with serial numbers of each piece of equipment.

1.04 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data and warranty data.

1.05 QUALITY ASSURANCE

- A. ASHRAE Compliance:
  - 1. ASHRAE 15.
  - 2. Applicable requirements in ASHRAE 62.1, Section 5 - "Systems and Equipment" and Section 7 - "Construction and Startup."
- B. ASHRAE/IESNA Compliance: Applicable requirements in ASHRAE/IESNA 90.1, Section 6 - "Heating, Ventilating, and Air-Conditioning."
- C. Comply with NFPA 70.
- D. Comply with safety requirements in UL 484 for assembly of free-delivery, water-source heat pumps.
- E. Comply with safety requirements in UL 1995 for duct-system connections.

1.06 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace components of water-source heat pumps that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to BAS components and refrigeration components.
2. Warranty Period: One year from date of Substantial Completion on entire unit. Five years parts, labor, and refrigerant warranty on compressors.

## PART 2 - PRODUCTS

### 2.01 WATER-SOURCE HEAT PUMPS

- A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. ClimateMaster Trilogy 45
  2. Trane Axiom
  3. WaterFurnace 700A11
- B. Description: Packaged water-source heat pump with temperature controls; factory assembled, tested, and rated according to ASHRAE/ARI/ISO-13256-1.
1. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, by a testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
- C. Cabinet and Chassis: Galvanized-steel casing with the following features:
1. Provide manufacturer's best sound deadening package available.
  2. Custom access panel for access and maintenance of internal components.
  3. Knockouts for electrical and piping connections.
  4. Flanged duct connections.
  5. Cabinet Insulation: Provide the Deluxe (premium) insulation and cabinet with the most sound-deadening package available.
  6. Units field convertible for various discharge configurations.
  7. Condensate Drainage: High-density polyethylene plastic or stainless-steel double sloping drain pan with condensate drain piping projecting through unit cabinet and complying with ASHRAE 62.1.
    - a. Condensate Overflow Protection Switch: Factory installed, factory wired, solid state electronic; mechanical float switch not permitted.
  8. Airstream Surfaces: Surfaces in contact with the airstream shall comply with requirements in ASHRAE 62.1 with either foil faced or closed-cell foam insulation.
- D. Fan: Vortica blower. Direct driven, centrifugal, with variable motor resiliently mounted in fan inlet and with inlet rings to allow wheel removal from one side without removing housing.
1. Motor: Variable speed, permanently lubricated, ECM motor.
- E. Water Circuit:
1. Refrigerant-to-Water Heat Exchangers:
    - a. Coaxial heat exchangers with copper water tube with enhanced heat-transfer surfaces inside a steel shell; both shell and tube are leak tested at the factory on refrigerant side and on water side. Factory mount heat exchanger in unit on resilient rubber vibration isolators.

- b. Stainless-steel, brazed-plate heat exchanger is leak tested at the factory. Factory mount heat exchanger in unit on resilient rubber vibration isolators. Water-Regulating Valves: Limit water flow through refrigerant-to-water heat exchanger, and control head pressure on compressor during cooling and heating. Valves shall close when heat-pump compressor is not running.
  2. Motorized Water Valve: Stop water flow through the unit when compressor is off.
- F. Refrigerant-to-Air Coils: Copper tubes with aluminum fins, leak tested at the factory.
- G. Refrigerant Circuit Components:
1. Sealed Refrigerant Circuit: Charge with R-410A refrigerant.
  2. Filter-Dryer: Factory installed to clean and dehydrate the refrigerant circuit.
  3. Charging Connections: Service fittings on suction and liquid for charging and testing on each circuit.
  4. Reversing Valve: Four-way, solenoid-activated valve designed to be fail-safe in heating position with replaceable magnetic coil.
  5. Compressor: Hermetic, variable speed compressor, or a 2-speed compressor with variable speed pumps, installed on dual vibration isolators and housed in an acoustically treated enclosure with factory-installed safeties as follows:
    - a. Antirecycle timer.
    - b. High-pressure cutout.
    - c. Low-pressure cutout or loss of charge switch.
    - d. Internal thermal-overload protection.
    - e. Freezestat to stop compressor if water-loop temperature in refrigerant-to-water heat exchanger falls below 38 deg.
    - f. Condensate overflow switch to stop compressor with high condensate level in condensate drain pan.
    - g. Water-coil, low-temperature switch.
    - h. Air-coil, low-temperature switch.
  6. Refrigerant Piping Materials: ASTM B 743 copper tube with wrought-copper fittings and brazed joints.
  7. Pipe Insulation: Refrigerant minimum 2" thick, flexible elastomeric insulation on piping exposed to airflow through the unit. Maximum 25/50 flame-spread/smoke-developed indexes according to ASTM E 84.
  8. Refrigerant Metering Device: Thermal-expansion valve.
  9. Refrigerant Metering Device: Dual-port, thermal-expansion valve to allow specified operation with entering-water temperatures from 40 to 100 deg F.
- H. Filters: Disposable, pleated type, 2" thick and with a minimum efficiency reporting value (MERV) of 8 according to ASHRAE 52.2.
- I. Controls:
1. The automatic controls system shall be DDC type fully building automation system (BAS). The BAS system shall monitor and control all hvac functions, for example, the water source heat pump units as well as the central pumps and central water system (flow proof, return/supply water temp, pumps, boilers, fluid cooler.) The BAS contractor is responsible for all communication wiring and programming required to connect the two buildings together.
  2. Basic Unit Control Modes and Devices (independent of BAS)
    - a. Dehumidification mode.

VERBIAGE ADDED  
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- b. Unit shutdown on high or low refrigerant pressures.
- c. Unit shutdown on low water temperature.
- d. Low- and high-voltage protection.
- e. Overcurrent protection for compressor and fan motor.
- f. Random time delay, three to ten seconds, start on power-up.
- g. Time delay override for servicing.
- h. Control voltage transformer.
- i. Water-coil freeze protection (selectable for water or antifreeze).
- j. Air-coil freeze protection (check filter switch).
- k. Condensate overflow shutdown switch.
- l. Option to reset unit at thermostat or disconnect.
- m. Fault type shall be retained in memory if reset at thermostat.
- n. Automatic intelligent reset. Unit shall automatically reset five minutes after trip if the fault has cleared. Should a fault reoccur three times sequentially, lockout requiring manual reset occurs.
- o. Ability to defeat time delays for servicing.
- p. Light-emitting diodes (LED) to indicate high pressure, low pressure, low voltage, and high voltage.
- q. The low-pressure switch SHALL NOT be monitored for the first 90 seconds after a compressor start command to prevent nuisance safety trips.
- r. Remote fault-type indication at thermostat.
- s. Selectable 24-V dc or pilot duty dry contact alarm output.
- t. 24-V dc output to cycle a motorized water valve with compressor contactor.
- u. Electric heat output to control two stages of electric heat (emergency heat).
- v. Service test mode for troubleshooting and service.
- w. Unit-performance sentinel warns when the heat pump is running inefficiently.

3. Thermostat:

- a. Wall-Mounted Sensor
  - 1) Provided by BAS contractor.

J. Electrical Connection: Single point electrical connection.

2.02 HOSE KITS

- A. General: Hose kits shall be designed for operating temperatures from 40-100deg F . Tag hose kits to equipment designations.
- B. Hose: Length 2' braided stainless steel, complete with adapters,. Minimum 1" diameter, equal to water-source, heat-pump connection size.
- C. Isolation Valves: Two-piece, bronze-body ball valves with stainless-steel, standard-port ball and stem with normal pipe thread (NPT) connections, and galvanized-steel lever handle. Provide valve for supply and return. If balancing device is combination shutoff type with memory stop, the isolation valve may be omitted on the return.
- D. Strainer: Provide Y strainer that is recommended and approved by the WSHP manufacturer.
- E. Balancing Device: Automatic balancing valve. Mount in return connection. Include meter ports to allow flow measurement with differential pressure gage.

1. Automatic balancing valve, factory set to operate within 10 percent of design flow rate over a 40:1 differential pressure range.

F. Motorized Water Valve: Slow-acting, 24-V dc, with NPT connections.

#### 2.03 PUMP MODULE (Only If Scheduled)

- A. Minimum 1/6-hp, 230-V, single-phase pump rated to move at least specified gpm at 30' head pressure.
- B. Include pump module hose kit with thread to barb fittings, hose, and hose clamps.
- C. Three-way brass shut-off/flushing/purging valve.
- D. Include controls to operate pump as required to maintain room temperature and ventilation set points.

### PART 3 - EXECUTION

#### 3.01 INSTALLATION

A. Equipment Mounting:

1. Install water-source heat pumps on stand or suspended all-thread with RIS vibration isolation at every factory provided connection point.
2. Support all ductwork independently of the WSHP. Attach to WSHP with flexible duct connections. Use rubberized fabric with 2" isolation.
3. Connect ductwork to WSHP units using only flexible connections that are not "maxed out" and will not allow vibration to transmit from the WSHP unit to the ductwork.

B. Install wall-mounting thermostats.

C. Connect supply and return hydronic piping to heat pump using stainless steel hose braided (flexible) hose kits.

D. Connect heat-pump condensate drain pan to indirect waste connection with condensate trap of adequate depth to seal against fan pressure. Install cleanouts in piping at changes of direction. Use 3' flexible drain connection to the drain pan. Install auxiliary drain pans under units where shown on plans.

E. Connect supply and return ducts to water-source heat pumps with flexible duct connectors.

F. Install electrical devices furnished by manufacturer but not specified to be factory mounted.

G. Install piping adjacent to machine to allow service and maintenance.

H. Ground equipment according to specifications "Grounding and Bonding for Electrical Systems."

3.02 FIELD QUALITY CONTROL

- A. Perform the following field tests and inspections:
  - 1. After installing water-source heat pumps and after electrical circuitry has been energized, test units for compliance with requirements.
  - 2. Inspect for and remove shipping bolts, blocks, and tie-down straps.
  - 3. Operational Test: After electrical circuitry has been energized, start units to confirm proper motor rotation and unit operation.
  - 4. Perform water and airflow test and balance on entire hydronic system.
  - 5. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- B. Heat pumps will be considered defective if they do not pass tests and inspections.
- C. Prepare test and inspection reports.

**END OF SECTION 23 8146**

**SECTION 26 0943  
NETWORK LIGHTING CONTROLS**

SPECIFICATION SECTION  
ADDED  
ADDENDUM 01 - 03.02.18

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Network lighting controls.
- B. Related Information:
  - 1. Division 26 Section "Wiring Devices".
  - 2. Division 26 Section "Lighting Control Devices" for occupancy sensors, photoelectric sensors.
  - 3. Division 26 Section "LED Interior Lighting" for light fixtures controlled by network lighting control systems.

**1.2 REFERENCES**

- A. California Energy Commission (CEC):
  - 1. CEC CCR Title 24, Part 6: California Energy Efficiency Standards for Residential and Nonresidential Buildings, California's Appliance Efficiency Program: Listed lighting control devices.
- B. National Fire Protection Association (NFPA):
  - 1. NFPA 70 - National Electrical Code.
- C. Underwriters Laboratories (UL)
  - 1. UL 508 – Industrial Control Equipment

**1.3 SYSTEM DESCRIPTION**

- A. Web Accessible, network connected, lighting dimming system utilizing control software, central signal microprocessor, lighting control panel including integrated branch circuit protection, and solid-state light dimming modules and relays.
- B. System Components: System includes the following addressable components:
  - 1. Keypad controls.
  - 2. Touch panel controls.
  - 3. Window treatment controls.
  - 4. Occupancy sensors.
  - 5. Daylight compensating lighting controls.
  - 6. Audio visual equipment controls.
  - 7. Interface to facility-wide room management.
  - 8. Interface to building automation system interface.
- C. System Communication:
  - 1. Native communication with building wide Audio Visual Systems.

- D. Unified System Integration – Controller supports native communication protocol utilized by the AV control system.
  - 1. Communication protocol adaptors or translation interfaces between AV control system and lighting control system will not be accepted.

#### 1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product required for complete network lighting control system, demonstrating compliance with requirements.
- B. Shop Drawings: Indicated the following:
  - 1. Schematic diagram showing complete network lighting control system and accessories.
  - 2. Circuits and emergency circuits with capacity and phase, control zones, load type and voltage per circuit.

#### 1.5 INFORMATIONAL SUBMITTALS

- A. Buy American Act certificate.
- B. CEC CCR Title 24 appliance efficiency listing certification.
- C. Sample of manufacturer's warranty.
- D. Load Measurement Report: Submit field test report of completed installation.

#### 1.6 CLOSEOUT SUBMITTALS

- A. Operating and maintenance instructions.
- B. Record drawings.

#### 1.7 QUALITY ASSURANCE

- A. Manufacturer Qualification: Manufacturer of network lighting controls with minimum [five] years record of satisfactory manufacturing and support of components comparable to basis of design system.
- B. Source Requirements: Provide Network Dimming Controls through a single source from a single manufacturer.
- C. Manufacturer Qualifications: Approved manufacturer of network lighting controls listed in this Section with minimum [five] years record of satisfactory manufacturing and support of components comparable to basis of design system.
  - 1. Approval of Comparable Products: Submit the following in accordance with project substitution requirements, within time allowed for substitution review:
    - a. Product data, including certified independent test data indicating compliance with requirements.
    - b. Samples of each component.
    - c. Sample submittal from similar project.
    - d. Project references: Minimum of 5 installations not less than 5 years old, with Owner and Architect contact information.

- e. Sample warranty.
- 2. Substitutions following award of contract are not allowed except as stipulated in Division 01 General Requirements.
- 3. Approved manufacturers must comply separate requirements of Submittals Article.
- D. Electrical Components, Devices, and Accessories: UL listed and labeled.
- E. Regulatory Requirements: Provide components and systems that comply with requirements of the following:
  - 1. NFPA 70.
  - 2. Underwriters Laboratory (UL) standards.
  - 3. Applicable codes and regulations.
- F. Buy American Act Certification: Submit documentation certifying that products comply with provisions of the Buy American Act 41 U.S.C 10a – 10d.
- G. California Appliance Efficiency Listing: Provide products that comply with provisions of CEC CCR Title 24, Part 6.

## 1.8 COORDINATION

- A. Coordinate dimming controls with systems and components specified in the following sections:
  - 1. Division 23 Section "Direct Digital Control Systems for HVAC".
  - 2. Division 25 Section "Facility Management and Control System (FMCS)".
  - 3. Division 26 Section "Wiring Devices".
  - 4. Division 26 Section "Lighting Control Devices".
  - 5. Division 26 Section "LED Interior Lighting".

## 1.9 PROJECT CONDITIONS

- A. Environmental Conditions Range:
  - 1. Temperature: 32 – 104 deg F (0 - 40 deg C).
  - 2. Relative Humidity: 10 – 90 percent, noncondensing.

## 1.10 WARRANTY

- A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace components of Network Lighting Controls that fails in materials or workmanship within the specified warranty period following substantial completion.
  - 1. Warranty Period: Touch screen display and overlay components: 90 days.
  - 2. Warranty Period: Disc drives and other moving parts, and power supplies: 1 year.
  - 3. Warranty Period: Other components, 3 years.
- B. Manufacturer's Extended Support Service: Extended telephone support: Unlimited period.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Basis-of-Design Manufacturer: Subject to compliance with requirements, provide products of Crestron Electronics, Inc., Rockleigh, NJ 07647, Phone (800)237-2041, Fax: (201)767-1903, [www.crestron.com](http://www.crestron.com), or comparable products from a single manufacturer approved by Architect, with the following components and characteristics.

### 2.2 SYSTEM CHARACTERISTICS

- A. Web-accessible, network-connected programmable lighting control dimming system that receives digital or analog signals from addressable input devices, assembles signals at central signal processor, and distributes operating signals to addressable control devices that effect a change in state.
1. System utilizes electronic dimming modules incorporating mechanically latching relays for dimming and on-off switching; an automation control system that interprets input signals and issues output signals to devices effecting a change in state; and a built-in hub that provides 8 isolated segments, each supporting up to 3000 feet of cabling, and up to 25 networked devices on each segment.

### 2.3 NETWORK LIGHTING CONTROL PANELS

- A. Feed-Through Network Lighting Control Panel: Feed-through Type, No Branch Circuit Protection.
1. Basis of Design Product: **Crestron Green Light Express Architectural Dimming Control Panel Model No. GLPD-DIM-FT.**
  2. Branch Circuit Protection: Pass through type utilizing separate branch circuit protection indicated on Drawings.
  3. Electronic Dimming types: Electronic Low-Voltage, 0-10 Volt 4-Wire Dimmable Driver.
  4. Switching Relay Types: Arc-less high inrush, lifetime rated minimum 1,000,000 on/off cycles, with air gap off protection.
  5. Emergency Override: Remote override capability.

### 2.4 DIMMING AND SWITCHING MODULES

- A. Dimming and Switching Module: Incandescent, magnetic low voltage, neon/cold or 2 and 3-wire fluorescent dimming module.
1. Basis of Design Product: **Crestron Dimmer Module Model GLX-DIM.**
  2. Module Description: Field replaceable dimming modules include incandescent, magnetic low voltage, and 2 and 3-wire fluorescent dimming, with high inrush, zero-cross arcless, magnetic latching, and air gap off relays rated for 1,000,000 on/off lifetime cycles of switching. Module features individual circuit load indicator, mechanical and emergency override and manual line test features. Emergency signal from phase loss sensor overrides the preset state of the dimming control; and changes it to the preprogrammed emergency condition. Phase-synchronous Detection Circuitry eliminates lamp flicker.
  3. Channels of Switching: 6 channels of dimming with high inrush, zero-cross arcless, magnetic latching air gap off relays rated for 1,000,000 on/off lifetime cycles of switching.
  4. Maximum Load.
    - a. Lighting: 16A per channel.

- B. Dimming and Switching Module: 0–10V fluorescent ballast dimming module.
  - 1. Basis of Design Product: **Crestron Electronic Power Switching Module Model GLXP-DIMFLV8.**
  - 2. Module Description: Field replaceable 0-10V fluorescent ballast dimming modules include 8 channels of 4-wire, fluorescent dimming with high inrush, zero-cross arcless, mechanical latching, air gap off relays rated for 1,000,000 on/off lifetime cycles of switching. Module features individual circuit load indicator, mechanical and emergency override and manual line test features. Emergency signal from phase loss sensor overrides the preset state of the dimming control; and changes it to the preprogrammed emergency condition. Phase-synchronous Detection Circuitry eliminates lamp flicker.
  - 3. Channels of Switching: 8 channel of dimming with switching relays.
  - 4. Maximum Dimmable Load.
    - a. 0-10V Fluorescent Lighting: 16A per channel.

## 2.5 AUTOMATION CONTROL PROCESSOR

- A. Control Processor: Web accessible, network connected, programmable control processor using manufacturer's software, manufacturer's software applications, and manufacturer's database of industry drivers to work with manufacturer's entire line of lighting dimmers, shade controllers, occupancy sensors, photocells, keypads, contactors, door strikes, touch panels, and thermostats; and provide for the integration of industry devices through eight isolated relays and eight Versiports. Memory expansion up to 4GB Compact Flash Card. SNMP support, with built-in firewall, NAT, and router. 4-wire bus providing 24 VDC power to network devices, with two independent sensing inputs. In separate enclosure.
  - 1. Basis of Design: **Crestron Professional Automation Control System Model PAC2.**
  - 2. Mounting: Modular enclosure-mounted, in array indicated
- B. Control Processor: Integrates photocell sensors, occupancy sensors, and other low voltage controls, devices, and subsystems through multiple control interfaces with control network. Enables addition of relays, 8 separate I/O ports in 2 isolated segments supporting up to 20 devices each, serial COM ports, DTMF interfaces, and shade controllers. MMC memory expansion card slot. 4-wire bus providing 24 VDC power to network devices, with two independent sensing inputs. In separate enclosure.
  - 1. Basis of Design: **Crestron Professional Automation Mini-Control System Model PAC2M.**
  - 2. Mounting: Modular enclosure-mounted in array indicated

## 2.6 ACCESSORIES

- A. Touchpanel: Controls lighting and AV settings along with other modular dimming controller functions.
  - 1. 7 inch active-matrix color LCD touch screen 1024 by 600 WSVGA resolution display.
    - a. Basis of design: **Crestron TSW-760 Touchpanel.**
  - 2. 16-bit color graphics, and dual-window HD video, HDTV, and high-resolution RGB streaming multimedia, IP intercom, and web browsing capabilities. Dynamic graphics and text capability. Enables custom control screen programming.
  - 3. Video display: Scalable display on touchpanel screen.



4. Pushbutton Controls: 12 engraved backlit tactile pushbuttons for volume, channel, and on-screen menu navigation and programmable functions, snap-on front bezel button cover.
  5. Mounting Kit: Wall mounting kit with power, wired Ethernet and CAT5 video connectivity, with back box and trim ring.
  6. Powerpack: 24VDC.
  7. Color: White
- B. Remote Keypad Controls: Field-configurable remote keypad with auto-adjusting backlight illuminating replaceable, engravable programmable buttons in number indicated, with white LED indicators, configured to fit in standard single-gang box.
1. Basis of Design: **Crestron, Cameo Series Keypad Model C2N-C- Series.**
  2. Color: As selected from manufacturer's full range of minimum 12 colors.
  3. Faceplates: **DECORA STYLE**
- C. Remote Keypad Controls: Remote keypad with backlight illuminating replaceable, engravable buttons in number indicated, with amber LED indicators, configured to fit in standard single-gang box.
1. Basis of Design: **Crestron, Designer Series Keypad Model CNX- Series.**
  2. Faceplates: **DECORA STYLE**
- D. Remote Keypad Controls: Remote keypad with replaceable, engravable buttons in number indicated, with red LED indicators, 3W, configured to fit in standard single-gang box.
1. Basis of Design: **Crestron, Decorator Series Keypad Model C2N-D Series.**
  2. Faceplates: **DECORA STYLE**
- E. Power Supply: 50W, 24 V regulated power supply with two 4-pin network connectors, fuse-protected.
1. Basis of Design: **Crestron Cresnet Power Supply Model GLA-PWS-50.**

## 2.7 CONDUCTORS AND CABLING

- A. Power Supply Side of Remote-Control Power Sources: Comply with requirements of Division 26 Section "Low-Voltage Electrical Power Conductors."
- B. UTP Cable: 100-ohm, UTP. Listed and labeled by an NRTL acceptable to authorities having jurisdiction as complying with UL 444 and NFPA 70 for the following types:
1. Communications Control Cable, Non-Plenum Rated: 22 AWG data pair stranded bare copper, and 18 AWG power pair stranded bare copper, Type CM.
    - a. Basis of Design Product: **Crestron CRESNET-NP.**
  2. Communications Control Cable, Plenum Rated: 22 AWG data pair, stranded bare copper and 18 AWG power pair, stranded bare copper, Type CMP, complying with NFPA 262.
    - a. Basis of Design Product: **Crestron CRESNET-P.**
  3. Communications High-Power Control Cable, Non-Plenum Rated: 22 AWG stranded bare copper data pair, and 12 AWG stranded bare copper power pair, Type CM.

- a. Basis of Design Product: **Crestron CRESNET-HP-NP**.

### **PART 3 - EXECUTION**

#### **3.1 EXAMINATION**

- A. Prior to installation, examine work area to verify that conditions for commencing installation comply with manufacturer's requirements.

#### **3.2 INSTALLATION**

- A. Comply with requirements of Division 26 Sections "Low-Voltage Electrical Power Conductors and Cables" for low voltage wiring and digital data transmission wiring.
- B. Comply with NECA 1.
- C. Do not install network lighting controls until space is enclosed, HVAC systems are running, and wet work in space is complete.
- D. Size conductors in accordance with network lighting control manufacturer's instructions. Install network lighting controls in accordance with manufacturer's instructions.
- E. Grounding: Provide electrical grounding in accordance with NFPA 70.
- F. Provide panelboard schedule in pocket provided in panel doors.

#### **3.3 FIELD QUALITY CONTROL**

- A. Manufacturer's Field Quality Control: Pay for the services of a manufacturer's authorized service representative to inspect installation from the commencement of work of this section, make routine inspections during the installation and perform testing recommended by the manufacturer.
- B. Provide the services of the manufacturer to commission network lighting controls and provide a minimum of 4 call-back visits after the date of substantial completion.
- C. Provide written manufacturer's inspection, commissioning, testing reports and call-back reports.

#### **3.4 SOFTWARE**

- A. Install and program software to meet the Owner's requirements. Provide current licenses, and backup copies of the software for the Owner's records.

#### **3.5 SYSTEM STARTUP**

- A. Provide manufacturer's system commissioning.
- B. Switch each load on and off with manual line test feature of the dimming control modules before installing processors.

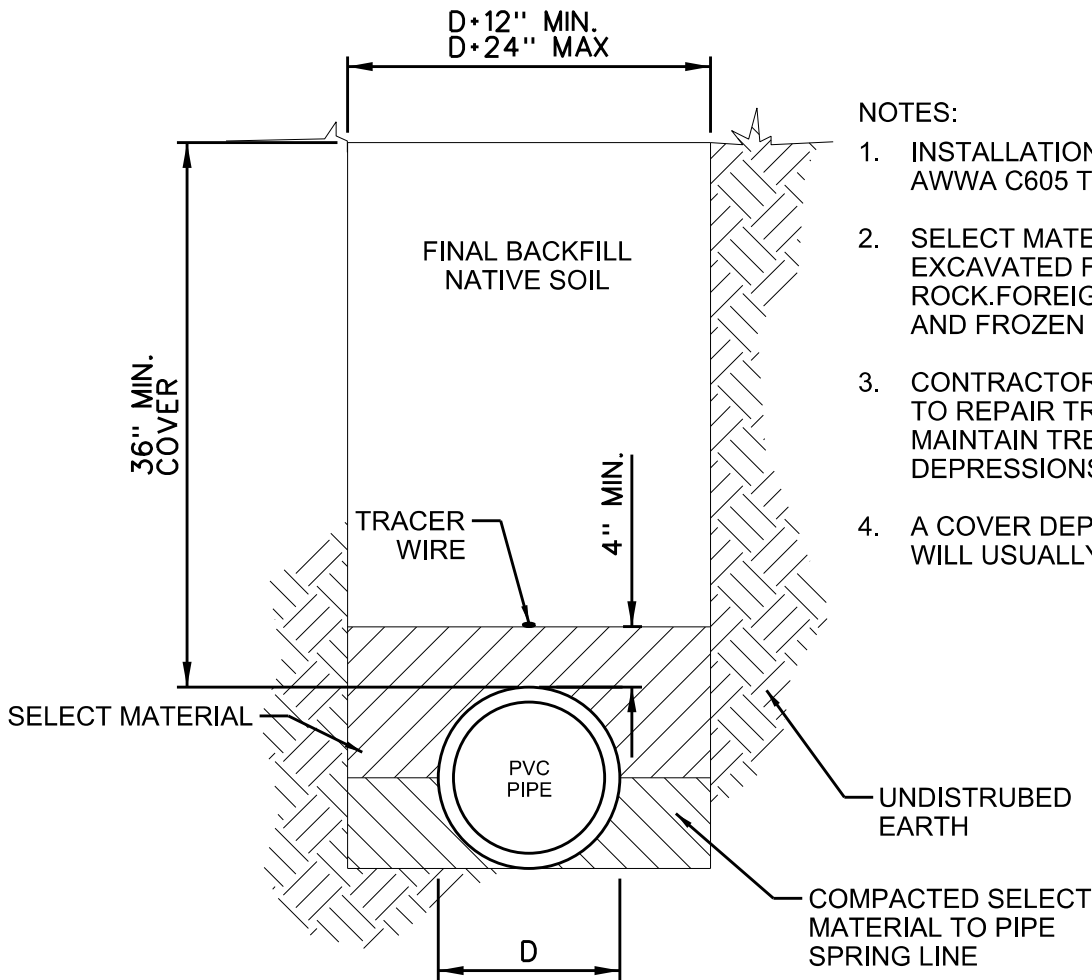
**3.6 ADJUSTING**

- A. Within 12 months of the date of Substantial Completion provide onsite service to adjust the system to account for actual occupied conditions.

**3.7 CLOSEOUT ACTIVITIES**

- A. Training: Train Owner's personnel to operate, maintain, and program network power switching systems. Allow for a minimum of trips to the jobsite to provide additional training as needed.
  - 1. Furnish set of approved submittals and record drawings of actual installation for Owner's personnel in attendance at training session.

**END OF SECTION 26 0943**

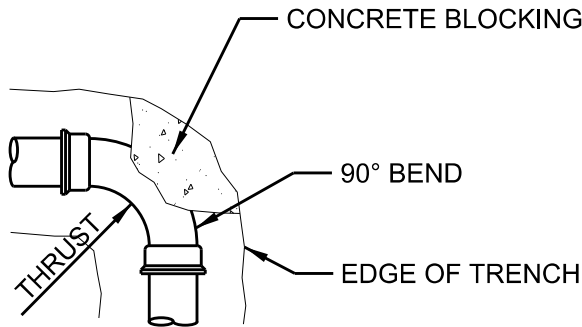


**NOTES:**

1. INSTALLATION SHALL CONFORM TO AWWA C605 TYPE 2.
2. SELECT MATERIAL=NATIVE SOIL EXCAVATED FROM TRENCH FREE OF ROCK.FOREIGN MATERIALS, MUCK AND FROZEN EARTH.
3. CONTRACTOR SHALL BE RESPONSIBLE TO REPAIR TRENCH SETTLEMENT & MAINTAIN TRENCH FREE OF DEPRESSIONS AT SURFACE.
4. A COVER DEPTH OF 1.5 PIPE DIAMETERS WILL USUALLY PREVENT FLOATATION.

**TYPICAL PVC PIPE INSTALLATION DETAIL**


N.T.S.



**90° BEND THRUST BLOCK DETAIL**

N.T.S.



DATE:3/02/2018	SCALE:
FILE NO.:	SHEET:
SURVEY BY:	DRAWN BY:SCB
 CIVIL/ENVIRONMENTAL ENGINEERING 8179 East, 41st Street, TULSA, OKLAHOMA 74145 PHONE:(918)749-5800 FAX:(918)749-5858 C.A. NO.: 1371 - EXPIRES: 6/30/18	

<b>PIPE INSTALLATION DETAILS</b>
CHEROKEE NATION CAPITOL BUILDING
FILE: ADDENDUM 01

C101

**GENERAL NOTES**

- \*\*\*\*PRIOR TO DEMOLITION, REVIEW THE OWNER PROVIDED ENVIRONMENTAL REPORTS PROVIDED IN THE PROJECT MANUAL FOR ASBESTOS, LEAD AND MOLD. ALL HAZARDOUS MATERIAL TO RECEIVE REMEDIATION PER EPA AND LOCAL JURISDICTION STANDARDS BY LICENSED ABATEMENT CONTRACTORS.\*\*\*\*
- CONTRACTOR TO CONTROL CLEANING TO PREVENT DIRT OR DUST FROM LEAVING THE CONSTRUCTION AREA AND INFILTRATING AREAS NOT INVOLVED IN THE PROJECT.
- THE CONTRACTOR SHALL PROTECT AND BE RESPONSIBLE FOR THE EXISTING STRUCTURE, FACILITIES, AND IMPROVEMENTS ADJOINING THE AREA UNDER THIS CONTRACT. ANY DISTURBANCE OR DAMAGE TO ADJOINING PROPERTY RESULTING DIRECTLY OR INDIRECTLY FROM THE CONTRACTOR'S OPERATIONS SHALL BE PROMPTLY RESTORED, REPAIRED, OR REPLACED TO THE SATISFACTION OF OWNER AT THE CONTRACTOR'S EXPENSE.
- CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION OF OLD AND NEW WORK DURING THE CONSTRUCTION PERIOD. SHOULD DAMAGE OCCUR, THE CONTRACTOR SHALL REPAIR AT THE CONTRACTOR'S OWN EXPENSE.

- INSULATION SCHEDULE:
  - NEW WALL PARTITIONS - GLASS FIBER BATT
  - FIRE RATED WALLS - MINERAL WOOL
  - SUSPENDED CEILINGS - GLASS FIBER BATT
  - FIRE RATED SUSPENDED CEILINGS - MINERAL WOOL
  - BASEMENT/ CRAWLSPACE CEILING - SPRAY FOAM
  - ATTIC - BLOW-IN CELLULOSE
- CONTRACTOR TO PROVIDE CONDUIT AND PULL STRINGS TO ALL DATA/ PHONE/ SURVEILLANCE & SPEAKER LOCATIONS. CABLING AND EQUIPMENT FOR DATA/ PHONE/ SURVEILLANCE & SPEAKER LOCATIONS TO BE PROVIDED BY OWNER. RE: ELECTRICAL

**FLOOR PLAN NOTES**

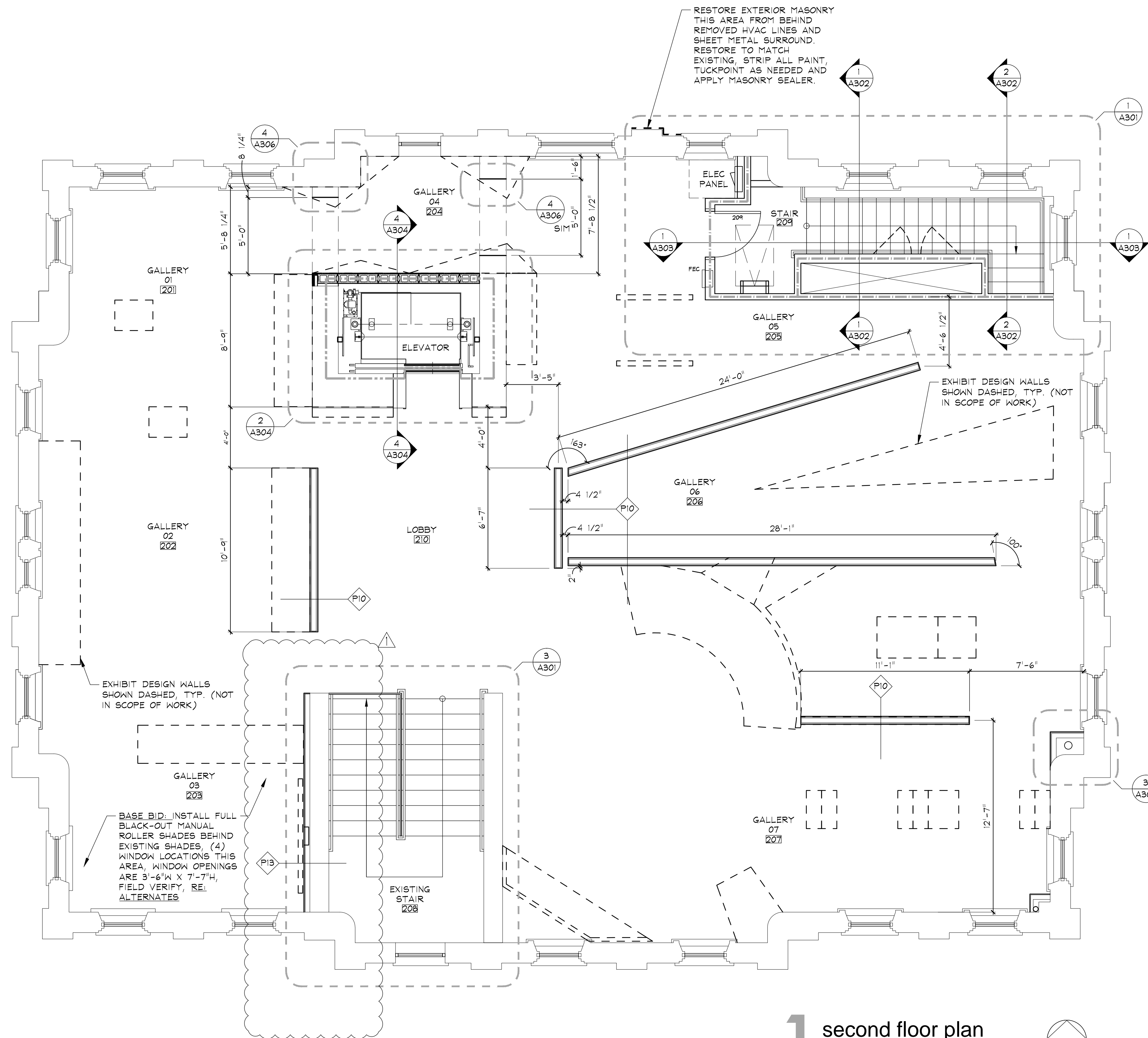
- UNLESS NOTED OTHERWISE, ALL WALL PARTITIONS TO BE PARTITION TYPE P1A.
- PROPOSED REMODEL DOES NOT CHANGE USE PER BUILDING CODE CLASSIFICATION.
- REFERENCE MECHANICAL FOR REQUIRED FIRE DAMPER LOCATIONS.

**PLAN LEGEND**

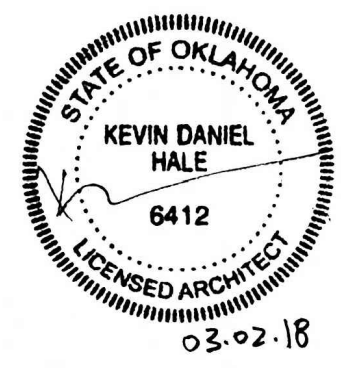
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
101	DOOR NUMBER	ROOM [01]	ROOM NAME AND NUMBER
⊗	FLOOR DRAIN	---	1 HOUR RATED FIRE BARRIER
FEC	FIRE EXTINGUISHER AND CABINET	---	2 HOUR RATED FIRE BARRIER
(1 A101)	ENLARGED PLAN/ PLAN DETAIL	(P1A)	PARTITION TYPE
1 A101	SECTION	1/A101	INTERIOR ELEVATION
		1/A101	SECTION DETAIL

**Notes:**

- SCALE. DO NOT SCALE DRAWINGS.
- CODES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL BUILDING CODES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE COMPLIANCE WITH SAID CODES.
- DIMENSIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, FRAMING CONDITIONS, AND SITE CONDITIONS BEFORE STARTING WORK. ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES. ANY AND ALL COSTS ASSOCIATED WITH WORK OR REPAIR THEREOF PERFORMED FOLLOWING DISCOVERY OF DISCREPANCIES, UNFORESEEN CONDITIONS, OR DEFICIENCIES WILL BE BORNE BY THE CONTRACTOR.
- DIMENSIONS. ALL INTERIOR DIMENSIONS ARE TO THE CENTERLINE OF FRAMING, TO THE CENTERLINE OF OPENINGS OR TO THE INSIDE FINISH FACE, UNLESS NOTED OTHERWISE.
- INSTALLATION. ALL MATERIALS, SUPPLIES AND EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PER APPLICABLE CODES AND REQUIREMENTS. THE ARCHITECT SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CONTRACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- MATERIAL STORAGE. MATERIALS STORED ON SITE SHALL BE PROTECTED FROM DAMAGE BY MOISTURE, WIND, SUN, ABUSE, THEFT OR ANY OTHER HARMFUL EFFECTS. REFERENCE SPECIFICATIONS FOR FURTHER STORAGE REQUIREMENTS.
- SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS OR SAFETY PROGRAMS USED TO PROVIDE A SAFE WORKING ENVIRONMENT ON THE JOB SITE. REFERENCE SPECIFICATIONS FOR SAFETY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL STRUCTURAL SHORING AND BRACING DURING ALL PHASES OF CONSTRUCTION.
- PERMITS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS INCLUDING PAYING TERO FEES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTIONS AND A CERTIFICATE OF OCCUPANCY. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL THE PERMITTING AUTHORITIES.
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**1 second floor plan**  
1/4" = 1'-0"



GENERAL INFORMATION:  
 - CODE: 2015 IEBC, 2015 IBC  
 - USE GROUP: A-3  
 - SPRINKLER STATUS - TO BE INSTALLED  
 - FIRE ALARM - TO BE INSTALLED

**ADDENDUM 01 - 03.02.18**

CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
 INTERIOR RENOVATION  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464**

**ONE architecture**  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

SHEET TITLE  
**SECOND FLOOR PLAN**

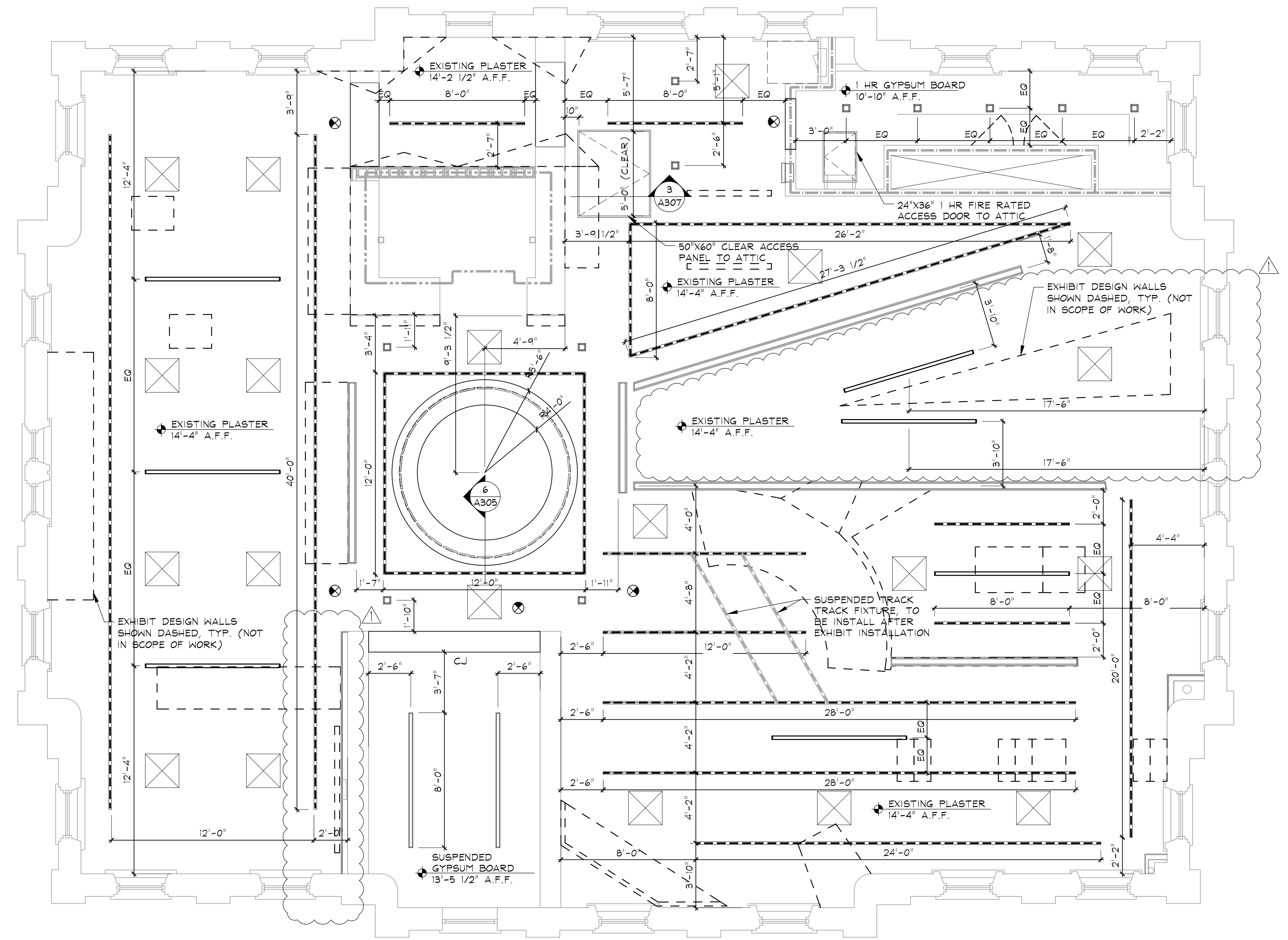
DATE: 02.09.18 PROJECT NUMBER: 1404-003 SHEET NO.: **A103**

**GENERAL NOTES**

- GYPSUM BOARD CEILING AT STORAGE 02 106, STAIR 108, VESTIBULE 113 & STAIR 209 TO BE 1 HOUR FIRE RATED.
- CEILINGS AT FIRE RATED LOCATIONS TO BE (2) LAYERS 5/8" TYPE X GYPSUM BOARD.
- CAN LIGHTS AT FIRE RATED CEILINGS TO BE INSTALLED WITH 1 HOUR FIRE RATED COVER, PROVIDE SAFELITE FIRE RATED CEILING LIGHT COVER BY SPI OR SIMILAR PRODUCT AT ALL FIRE RATED CEILING LIGHT FIXTURE LOCATIONS.
- ALL PENETRATIONS IN FIRE RATED CEILINGS TO RECEIVE FIRE CAULKING TO ACHIEVE CONSISTENT FIRE RATING.
- REFERENCE MECHANICAL FOR REQUIRED FIRE DAMPER LOCATIONS.
- INSULATION SCHEDULE:
  - NEA WALL PARTITIONS - GLASS FIBER BATT
  - FIRE RATED WALLS - MINERAL WOOL
  - SUSPENDED CEILINGS - GLASS FIBER BATT
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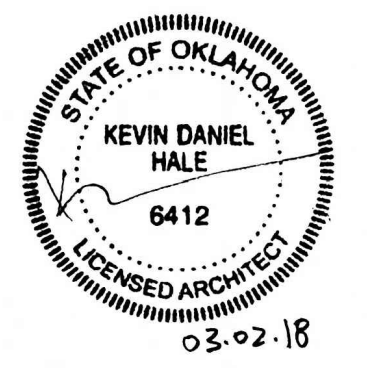
**PLAN LEGEND**

	2X4 LED FLAT PANEL RE: ELECTRICAL		RECESSED LED FIXTURE		1 HOUR RATED FIRE BARRIER
	2X2 LED FLAT PANEL RE: ELECTRICAL		EXIT SIGN		2 HOUR RATED FIRE BARRIER
	LED LINEAR RECESSED SLOT FIXTURE RE: ELECTRICAL		CONTROL JOINT IN GYPSUM CEILING		DIFFUSER RE: MECHANICAL
	SURFACE MOUNTED LINEAR TRACK FIXTURE RE: ELECTRICAL		SPOT ELEVATION		
	SURFACE MOUNTED LINEAR LED FIXTURE RE: ELECTRICAL		SECTION DETAIL		



**Notes:**

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GENERAL INFORMATION:  
 - CODE: 2015 IBC, 2015 IBC  
 - USE GROUP: A-3  
 - SPRINKLER STATUS - TO BE INSTALLED  
 - FIRE ALARM - TO BE INSTALLED

**ADDENDUM 01 - 03.02.18**

CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
 INTERIOR RENOVATION  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464**

**ONE architecture**  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

**1 second floor plan - rcp**  
 1/4" = 1'-0"

SHEET TITLE  
**SECOND FLOOR  
 REFLECTED CEILING PLAN**  
 DATE: 02.09.18 PROJECT NUMBER: 1404-003 SHEET NO.: A106



TILE

**TI-1 FLOOR TILE**  
 MFR: DALTILE  
 SIZE: 12"x24"  
 COLOR: IRONCRAFT RUSTED BRONZE IC14  
 NOTES: ASSEMBLY PER F112-13 TCNA TILE INSTALLATION  
 UNDERLAYMENT 01: CEMENTITIOUS BOND COAT  
 UNDERLAYMENT 02: WATERPROOF MEMBRANE  
 UNDERLAYMENT 03: 1" BONDED MORTAR BED  
 UNDERLAYMENT 04: MORTAR BED BOND COAT  
 UNDERLAYMENT 05: BONDED CRACK ISOLATION MEMBRANE (IF NEEDED)

**TI-2 WALL TILE**  
 MFR: DALTILE  
 SIZE: 12"x24"  
 COLOR: PLAZA NOVA BEIGE HAZE PN05  
 BASE COVE: S-43C4 3X12  
 TOP TRIM: SCHLUTER QUADec  
 NOTES: ASSEMBLY PER W245-13 TCNA TILE INSTALLATION  
 UNDERLAYMENT 01: CEMENTITIOUS BOND COAT  
 UNDERLAYMENT 02: COATED GLASS MAT WATER-RESISTANT GYPSUM BACKER BOARD

**TI-3 WALL ACCENT TILE**  
 MFR: DALTILE  
 SIZE: 1X1 MOSAIC  
 COLOR: METALLICA OXIDIZED COPPER S551  
 NOTES: ASSEMBLY PER W245-13 TCNA TILE INSTALLATION  
 UNDERLAYMENT 01: CEMENTITIOUS BOND COAT  
 UNDERLAYMENT 02: COATED GLASS MAT WATER-RESISTANT GYPSUM BACKER BOARD

**PAINT (ALL PAINT TO BE ZERO VOC)**

**PT-1 TYPICAL WALLS (RE: FINISH PLAN)**  
 MFR: BENJAMIN MOORE  
 COLOR: MONTEREY WHITE HC-27  
 FINISH: FLAT

**PT-2 ALL MOLDINGS AND TYPICAL CEILING (RE: FINISH PLAN)**  
 MFR: BENJAMIN MOORE  
 COLOR: DECORATOR'S WHITE PM-3  
 FINISH: MOLDINGS - SATIN; CEILING - FLAT

**PT-3 SELECT WALLS (RE: FINISH PLAN)**  
 MFR: BENJAMIN MOORE  
 COLOR: WHIPPLE BLUE HC-152  
 FINISH: FLAT

WOOD

**WD-1 TYPICAL FLOORING**  
 SIZE: 3/4" x 5"  
 SPECIES: WHITE OAK  
 UNDERLAYMENT 01: PRIME SLAB AND INSTALL 15LB ASPHALT FELT  
 UNDERLAYMENT 02: VAPOR RETARDER  
 UNDERLAYMENT 03: NOISE REDUCTION UNDERLAYMENT  
 SUBFLOORING: 1/2" PLYWOOD DECKING  
 UNDERLAYMENT 04: 15LB ASPHALT FELT  
 NOTES: STAIN AND SEAL FINISH WOOD (ST-1)

**WD-2 FLOORING AT GALLERY 07 (207) RE: FINISH PLAN & A109**  
 FOR RADIAL PATTERN DESIGN  
 SIZE: 3/4" x 3 1/4"  
 SPECIES: WHITE OAK  
 UNDERLAYMENT 01: PRIME SLAB AND INSTALL 15LB ASPHALT FELT  
 UNDERLAYMENT 02: VAPOR RETARDER  
 UNDERLAYMENT 03: NOISE REDUCTION UNDERLAYMENT  
 SUBFLOORING: 1/2" PLYWOOD DECKING  
 UNDERLAYMENT 04: 15LB ASPHALT FELT  
 NOTES: STAIN AND SEAL FINISH WOOD (ST-2)

**WD-3 WOOD ACCENT AT MILLWORK**  
 SIZE: VARYING WIDTHS 2"-5", VARYING THICKNESS 1/4"-5/8"  
 SPECIES: WHITE OAK TO MATCH FLOORING  
 NOTES: STAIN AND SEAL FINISH WOOD (ST-2)  
 NOTES: RE-MILLWORK DRAWINGS FOR LOCATIONS, NO EXPOSED NAILS TO BE ALLOWED, INFO DESK (M1.1) WOOD ACCENT TO BE ON RADIUS

WALL PROTECTION

**CG: CORNER GUARD**  
 MFR: C/S  
 TYPE: 3" SM SERIES  
 COLOR: 265 FOG

SOLID SURFACING

**SS-1 SOLID SURFACE**  
 MFR: CORIAN BY DUPONT  
 COLOR: VANILLA  
 THICKNESS: 1/2"  
 EDGE PROFILE: 1/4" RADIUS AND 45 MITERED

STAIN

**ST-1 TYPICAL STAIN COLOR**  
 MFR: BONA AB  
 COLOR: AMBERSEAL  
 FINISH: NONA TRAFFIC HD - SATIN

**ST-2 SELECT STAIN COLOR - RADIAL FLOORING, MILLWORK AND HANDRAILS**  
 MFR: BONA AB  
 COLOR: INTENSESEAL  
 FINISH: NONA TRAFFIC HD - SATIN

TERRAZZO

**TZ-1 RESINOUS MATRIX TERRAZZO FLOORING**  
 MFR: TERRAZZO EPICOUR EPOXY 158  
 SIZE: 3/8" NOMINAL  
 COLOR: ARCHITECT TO SELECT FROM MANUFACTURER'S FULL RANGE  
 UNDERLAYMENT 01: FLEXIBLE MEMBRANE 528  
 UNDERLAYMENT 02: BONDING AGENT 159  
 UNDERLAYMENT 03: MOISTURE MITIGATION SYSTEM 950  
 SUBFLOORING: SELF-LEVELING CONCRETE TOPPING TO PROVIDE FLUSH FINISH AT TOP OF TERRAZZO LEVEL

**2 applied finish legend**  
 nts

**\* APPLIED FINISH LEGEND NOTES:**  
 1. ALL MANUFACTURER'S LISTED ARE FOR BASIS OF DESIGN. RE: SPECIFICATIONS FOR ADDITIONAL MANUFACTURERS THAT MAY BE INCORPORATED INTO THE WORK.  
 2. PREP ALL SURFACES PER MANUFACTURER'S RECOMMENDATION PRIOR TO INSTALLATION OF FINISHES.

PLASTER REFINISHING SCHEDULE

RESTORE REMAINING PLASTER PER THE NATIONAL PARK SERVICE TECHNICAL PRESERVATION BRIEF 21 - REPAIRING HISTORIC PLASTER WALLS AND CEILINGS.  
 EXISTING EXTERIOR PLASTER/ MASONRY WALLS AND CONCRETE VAULT WALLS REMOVE ALL DAMAGED PLASTER TO PROVIDE SOLID BASE FOR NEW FINISH COATS. PATCH AND REPAIR ALL REMAINING PLASTER, INSTALL NEW WIRE LATH AS NEEDED FOR PROPER KEYING.  
 FILL ANY HAIRLINE CRACKS WITH A PATCHING COMPOUND.

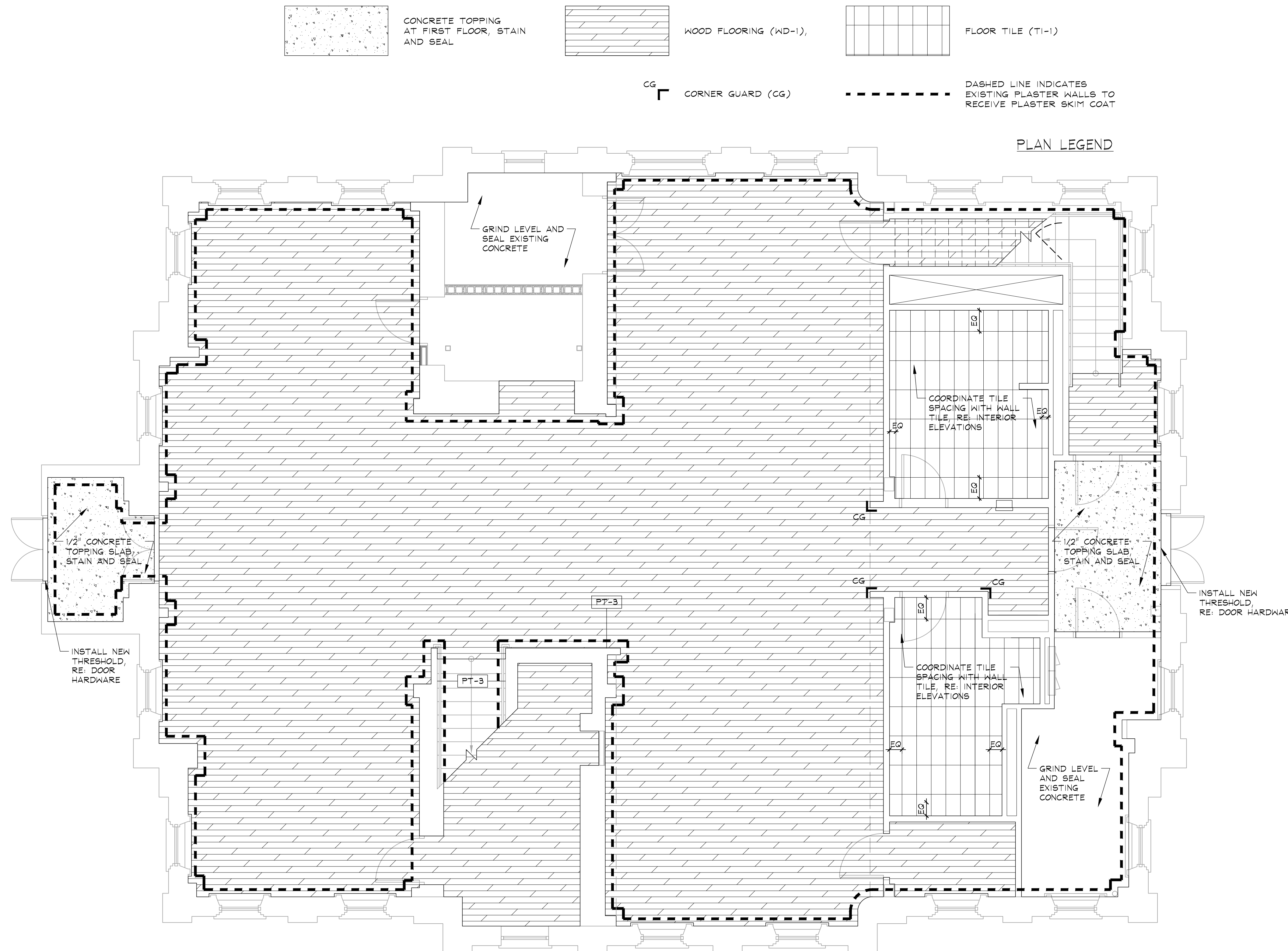
PROVIDE (3) LAYERS OF FINISH SKIM COAT TO ENTIRETY OF WALLS INDICATED BY DASHED LINE IN FINISH PLAN.

\*\*\*REFERENCE UNIT PRICES IN PROJECT MANUAL FOR ADDITIONAL BIDDING REQUIREMENTS FOR PLASTER RENOVATION BEYOND BASE BID.\*\*\*

ROOM NO.	ROOM	WALL	FLOOR	CEILING	CEILING TRIM	BASE
101	ENTRY VESTIBULE	PAINT - RE: PLAN FOR COLOR	STAINED AND SEALED CONCRETE	PAINT	TR3	TRI
102	WELCOME/ LOBBY	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	TR3	TRI
103	STORAGE 01	PAINT - RE: PLAN FOR COLOR	SEALED CONCRETE	PAINT	NONE	RB-1
104	OFFICE	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	NONE	TRI
105	CHANGING GALLERY	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	TR3	TRI
106	STORAGE 02	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	NONE	TRI
107	WOMEN'S	TI-2/ TI-3 - RE: ELEVATIONS	TI-1	PAINT	NONE	TILE
108	STAIR	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	TR3	TRI
109	CORRIDOR	PAINT - RE: PLAN FOR COLOR	WD-1	PAINT	TR3	TRI
110	MEN'S	TI-2/ TI-3 - RE: ELEVATIONS	TI-1	PAINT	NONE	TILE
111	MECHANICAL	PAINT - RE: PLAN FOR COLOR	SEALED CONCRETE	OTS	NONE	TRI
112	IT	PAINT - RE: PLAN FOR COLOR	WD-1	OTS	NONE	TRI
113	EXIT DISCHARGE LOBBY	PAINT - RE: PLAN FOR COLOR	STAINED AND SEALED CONCRETE	PAINT	TR3	TRI

**\* FINISH SCHEDULE NOTES:**  
 1. USE W.R. GYP. BD. AT ALL WET LOCATIONS, RESTROOMS AND MECHANICAL ROOMS.

**3 finish schedule**  
 nts



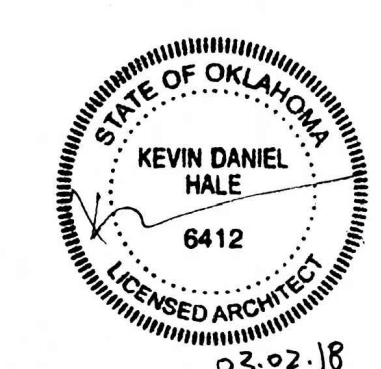
**\* FIRST FLOOR RADON SEALANT NOTES:**  
 1. SEAL ENTIRETY OF FIRST FLOOR EXISTING CONCRETE SLAB WITH RADON SEAL PLUS PENETRATING CONCRETE SEALER, BY RADONSEAL OR APPROVED EQUAL.  
 2. SEAL ALL FIRST FLOOR PENETRATIONS TO BASEMENT AND CRAWLSPACE WITH EASY-POUR RADON SEALANT BY NEOFLEX, RADON PRO PGS SEALANT BY RADONAWAY, OR APPROVED EQUAL.

**\* FLOOR FINISH PLAN NOTES:**  
 1. ALL WALL PAINT COLORS TO BE PT-1 UNLESS NOTED OTHERWISE.  
 2. REFERENCE ADDITIVE ALTERNATES IN PROJECT MANUAL FOR EXTERIOR PAINTING SCOPE.  
 3. REFERENCE UNIT PRICES IN PROJECT MANUAL FOR ADDITIONAL BIDDING REQUIREMENTS FOR PLASTER RENOVATION BEYOND BASE BID.

**1 ground floor finish plan**  
 1/4" = 1'-0"

Notes:

- SCALE. DO NOT SCALE DRAWINGS.
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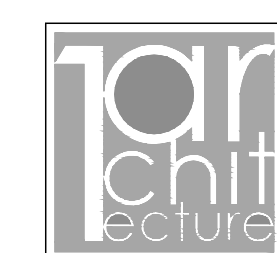


GENERAL INFORMATION:  
 - CODE: 2015 IEBC, 2015 IBC  
 - USE GROUP: A-3  
 - SPRINKLER STATUS - TO BE INSTALLED  
 - FIRE ALARM - TO BE INSTALLED

**ADDENDUM 01 - 03.02.18**

CONSTRUCTION DOCUMENTS FOR:

**CNE - CAPITOL BUILDING INTERIOR RENOVATION**  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464

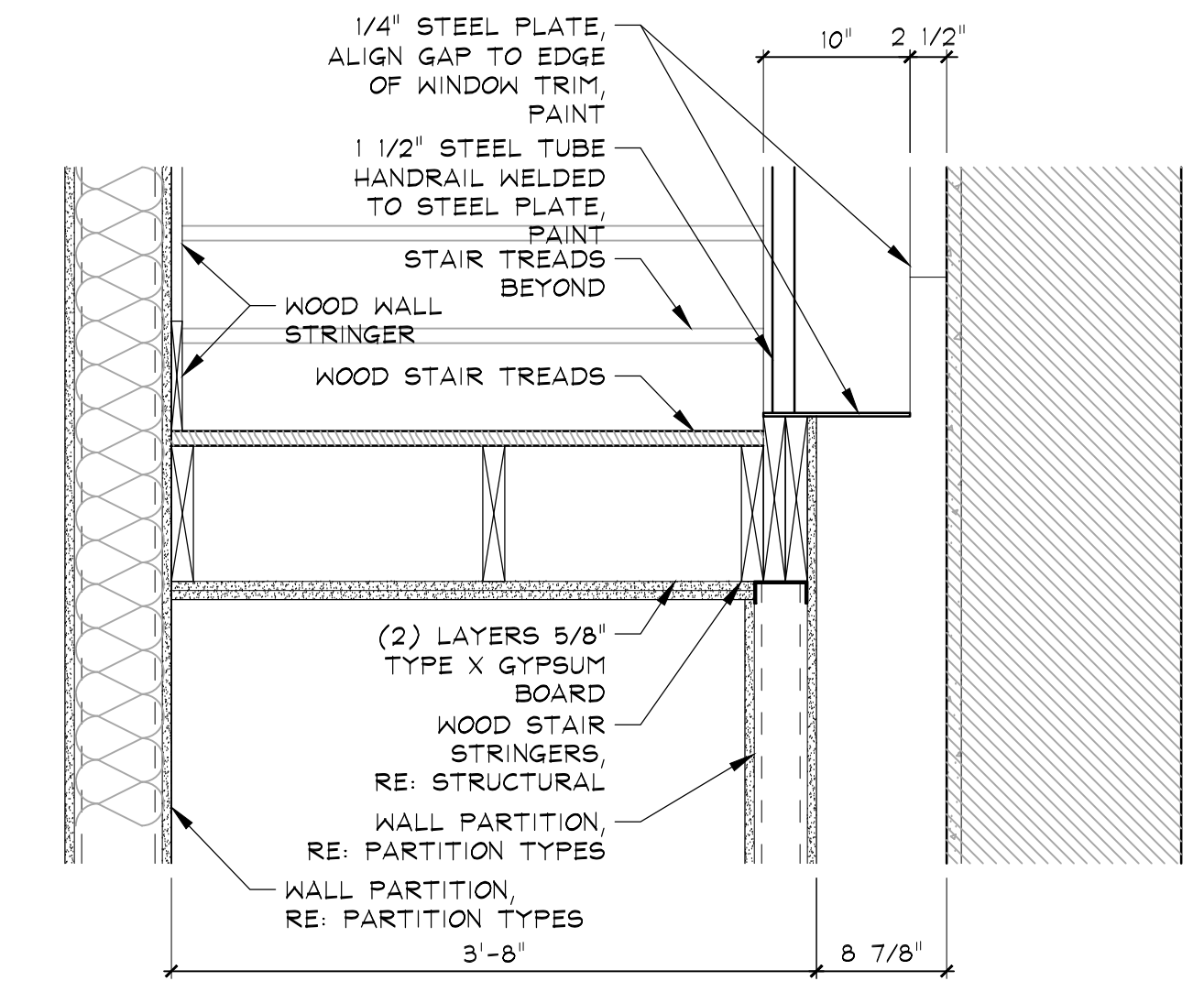


ONE architecture  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

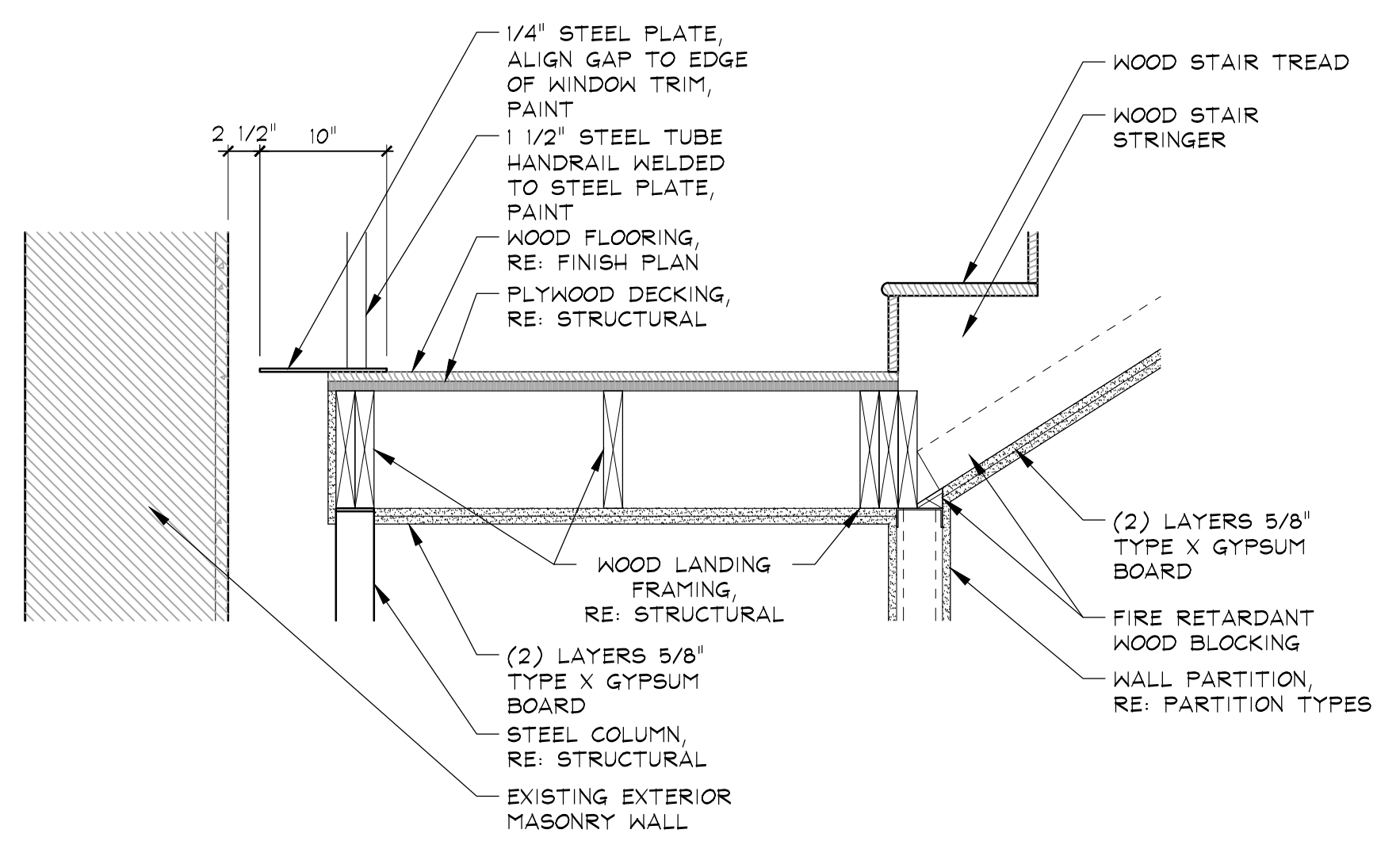
SHEET TITLE: **GROUND FLOOR FINISH PLAN AND SCHEDULE**  
 DATE: 02.09.18 PROJECT NUMBER: 1404-003 SHEET NO.: A107

**Notes:**

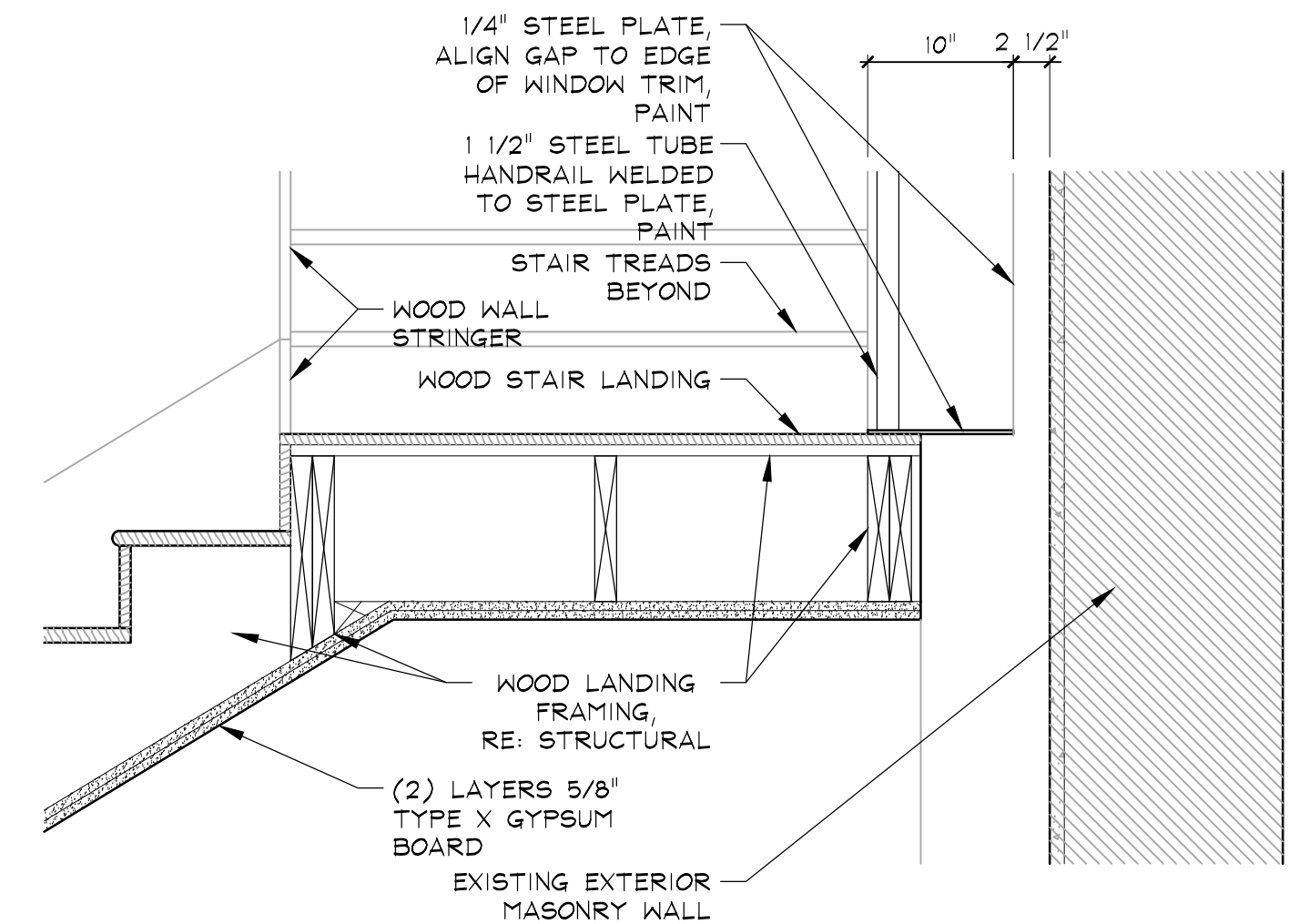
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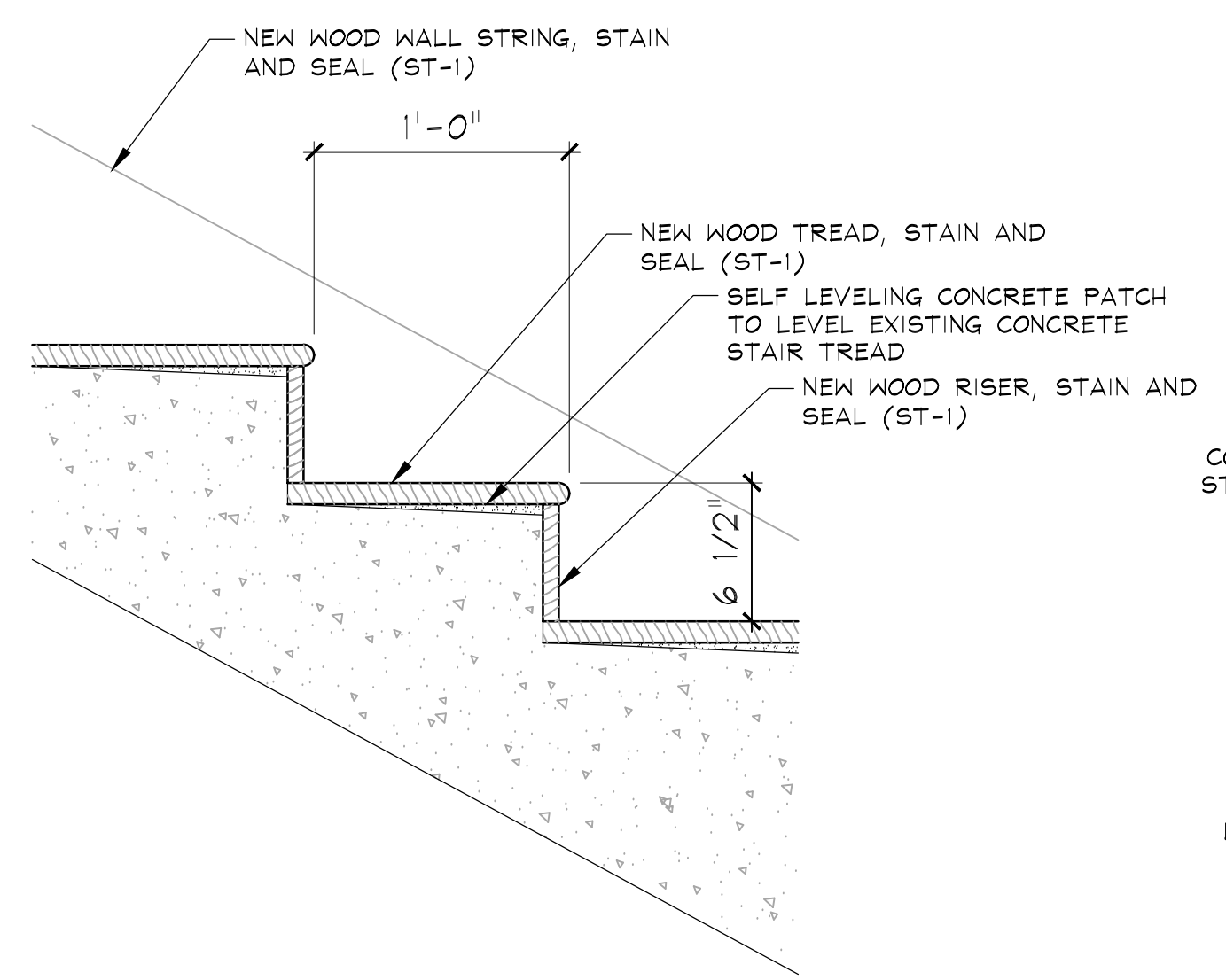
**7 stair framing detail**  
1" = 1'-0"



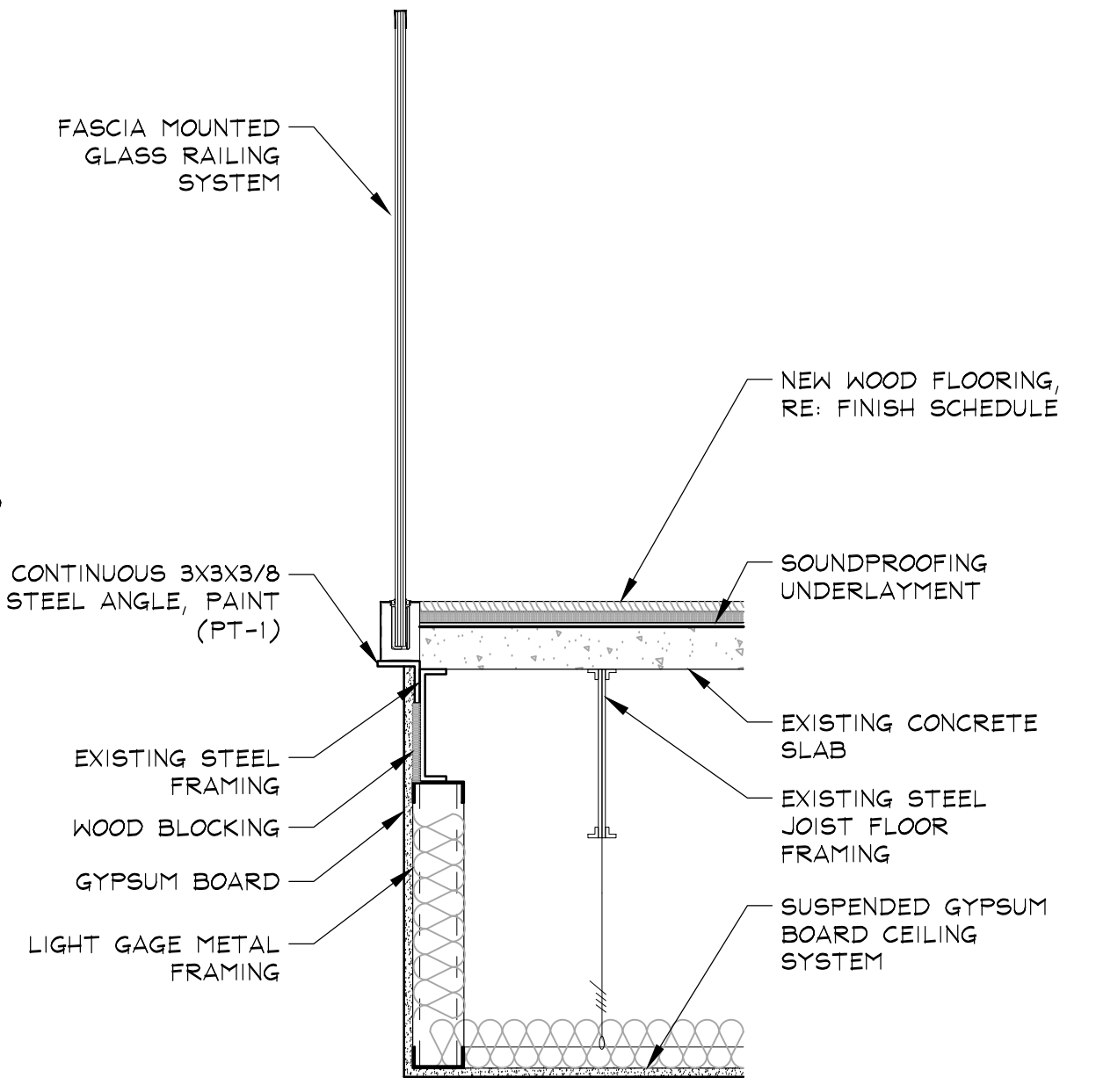
**9 stair landing detail**  
1" = 1'-0"



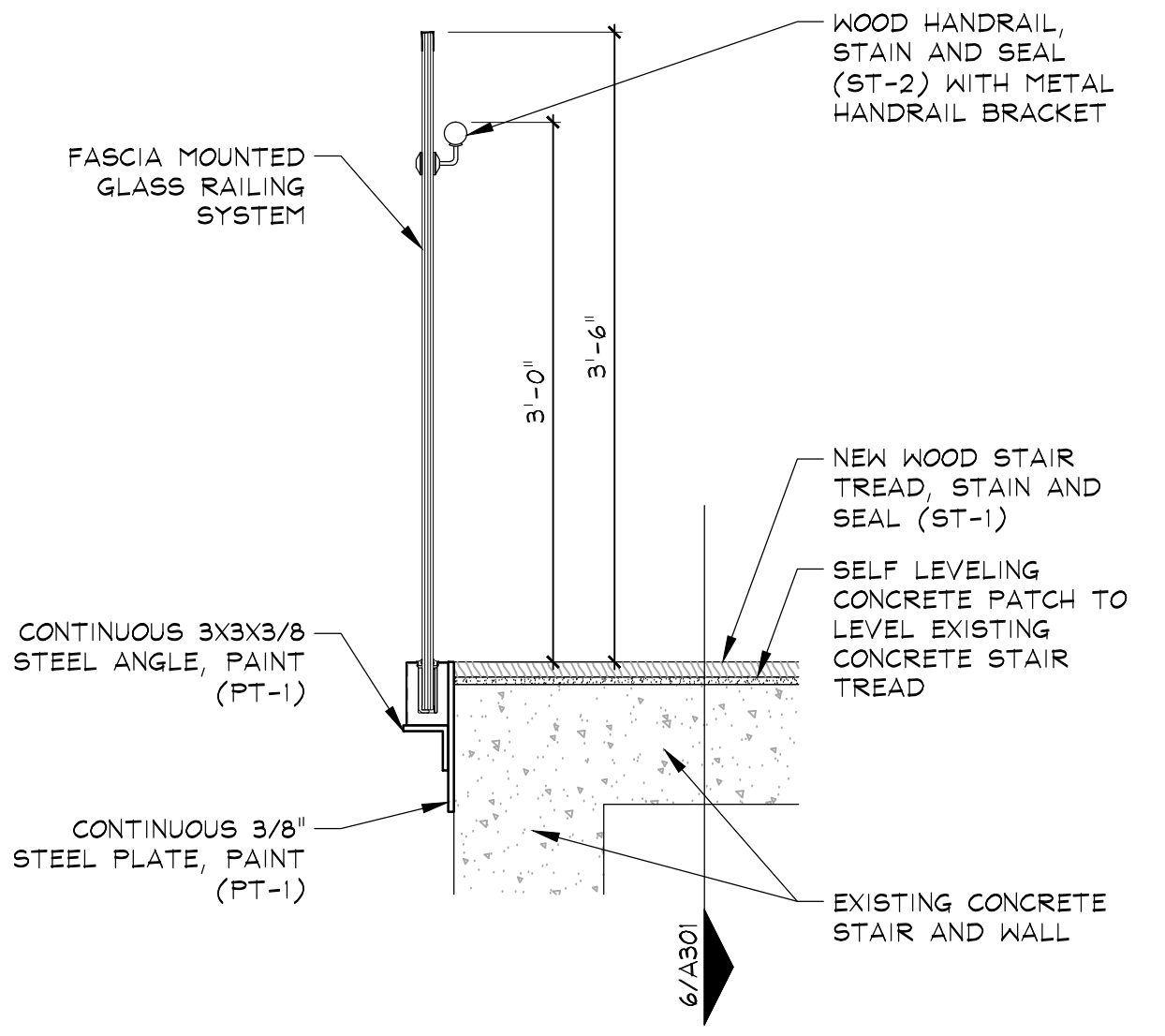
**8 stair landing detail**  
1" = 1'-0"



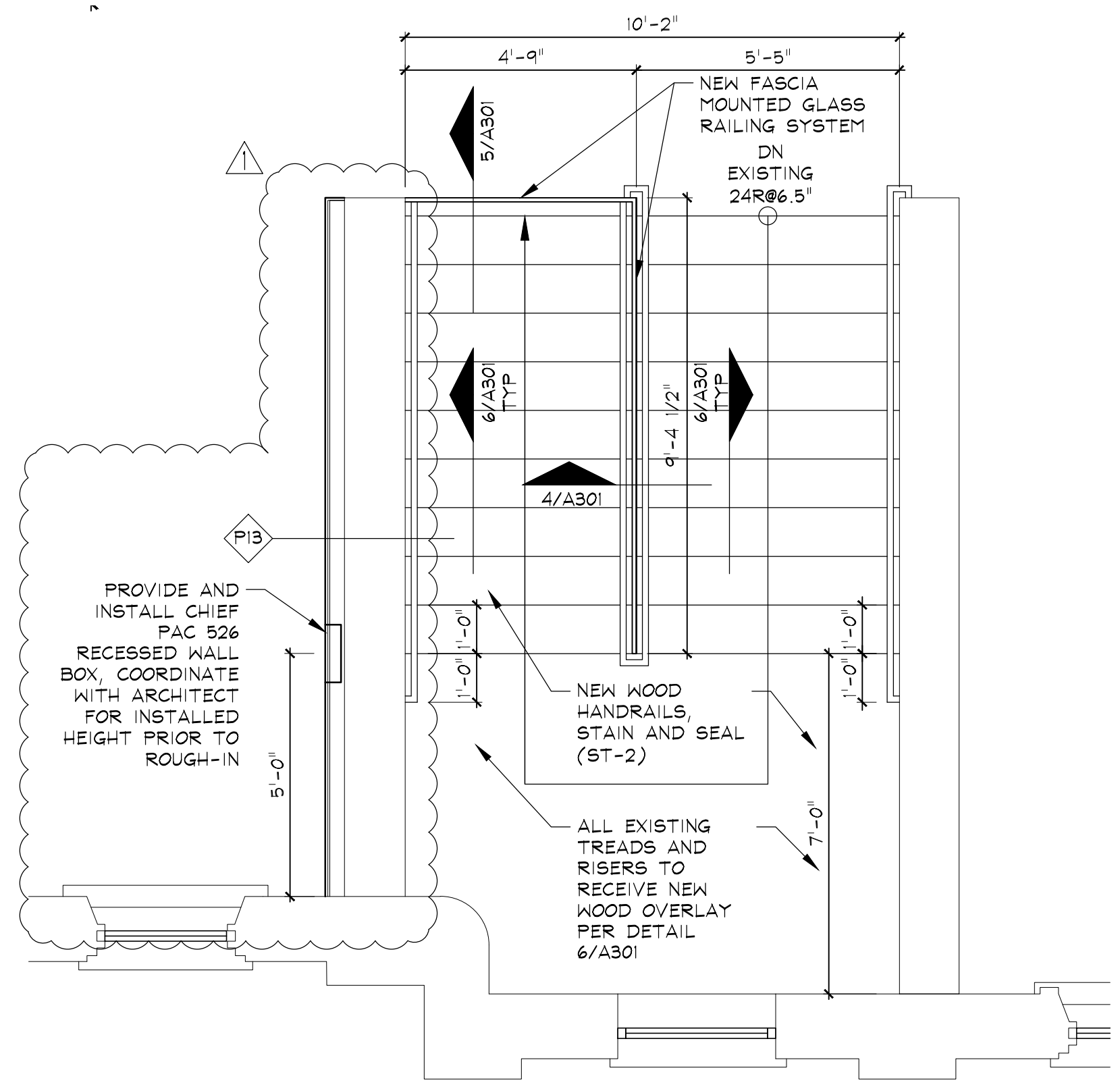
**6 stair tread detail**  
1 1/2" = 1'-0"



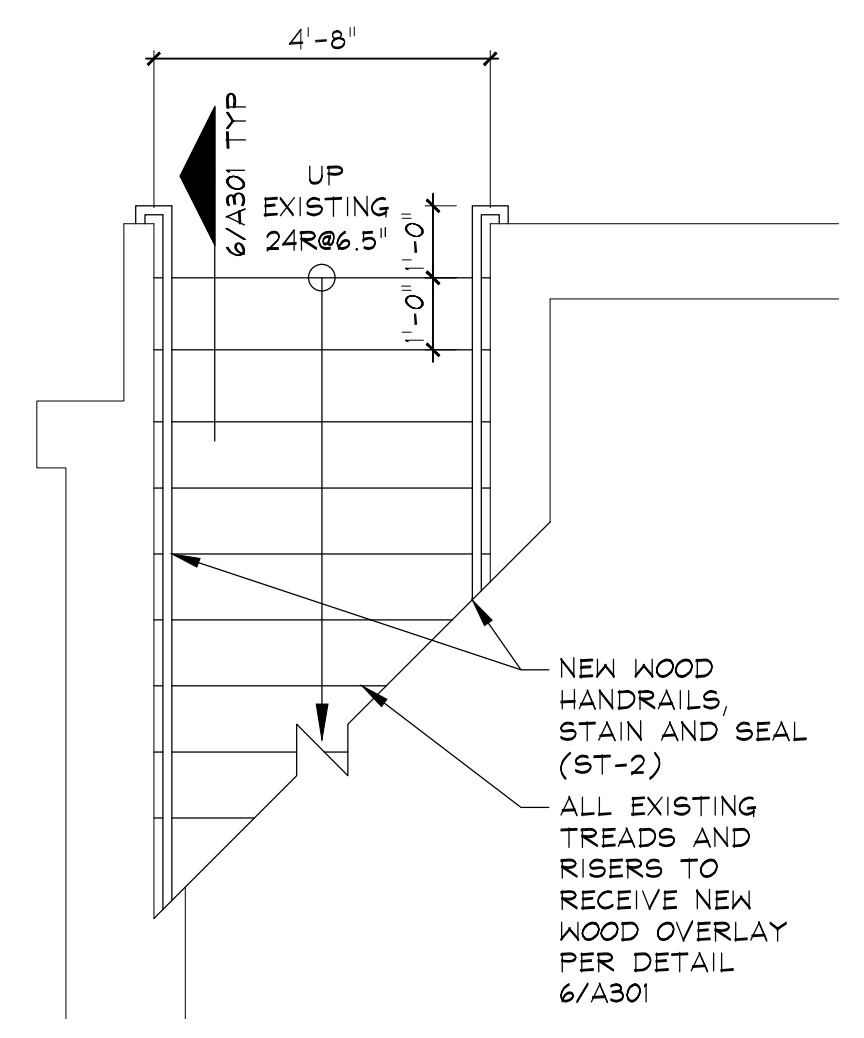
**5 glass rail detail**  
1" = 1'-0"



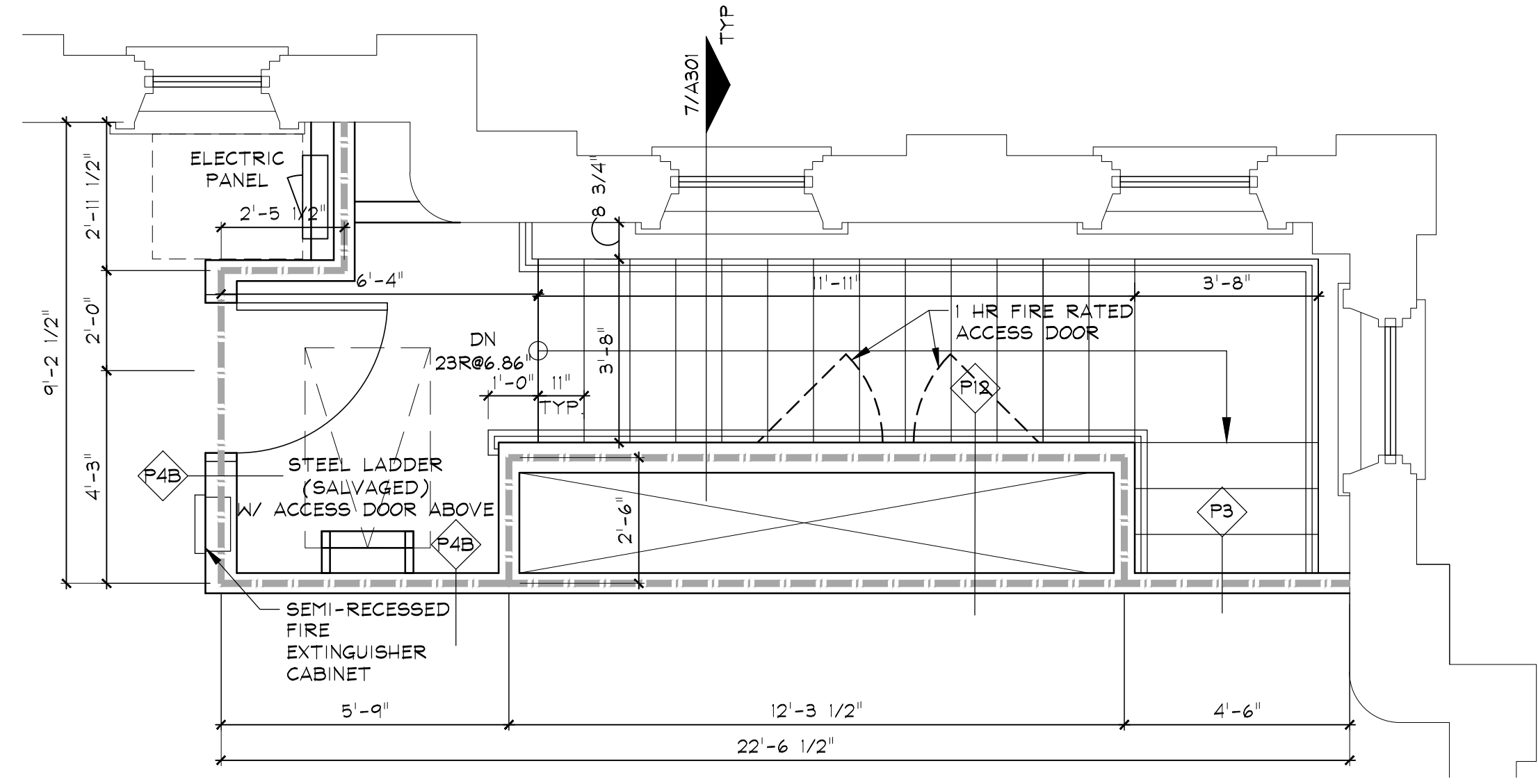
**4 glass rail detail**  
1" = 1'-0"



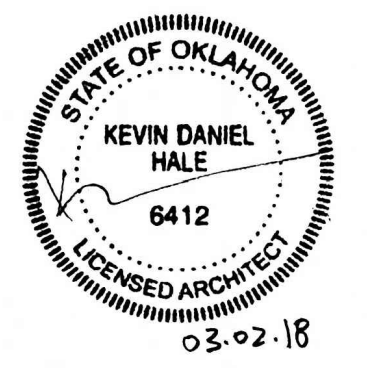
**3 enlarged stair modification plan**  
3/8" = 1'-0"



**2 enlarged stair modification plan**  
3/8" = 1'-0"



**1 enlarged new stair plan**  
3/8" = 1'-0"



GENERAL INFORMATION:  
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- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

**ADDENDUM 01 - 03.02.18**

CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
INTERIOR RENOVATION  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74464**

**ONE architecture**  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

SHEET TITLE  
**STAIR PLANS AND DETAILS**

DATE: 02.09.18 PROJECT NUMBER: 1404-003 SHEET NO.: **A301**



**Notes:**

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 - SPRINKLER STATUS - TO BE INSTALLED  
 - FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

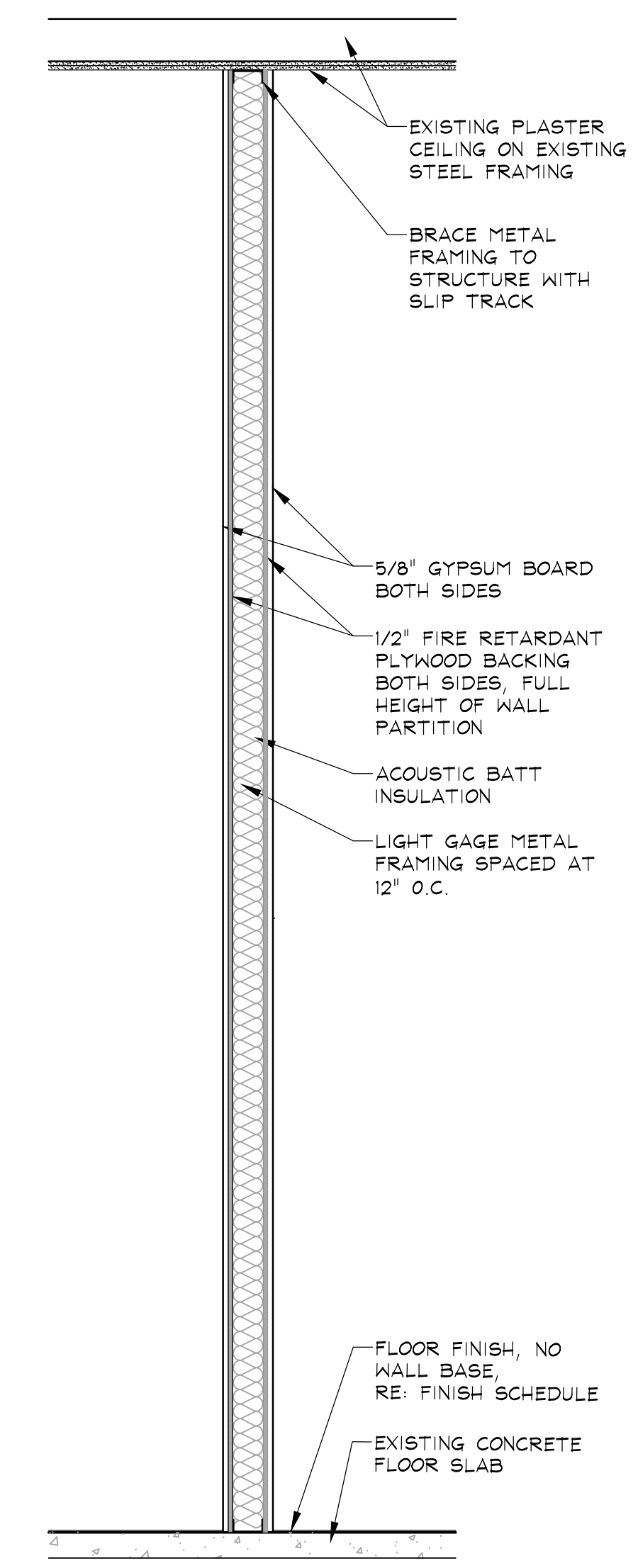
CONSTRUCTION DOCUMENTS FOR:

**CNE - CAPITOL BUILDING  
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**ONE architecture**  
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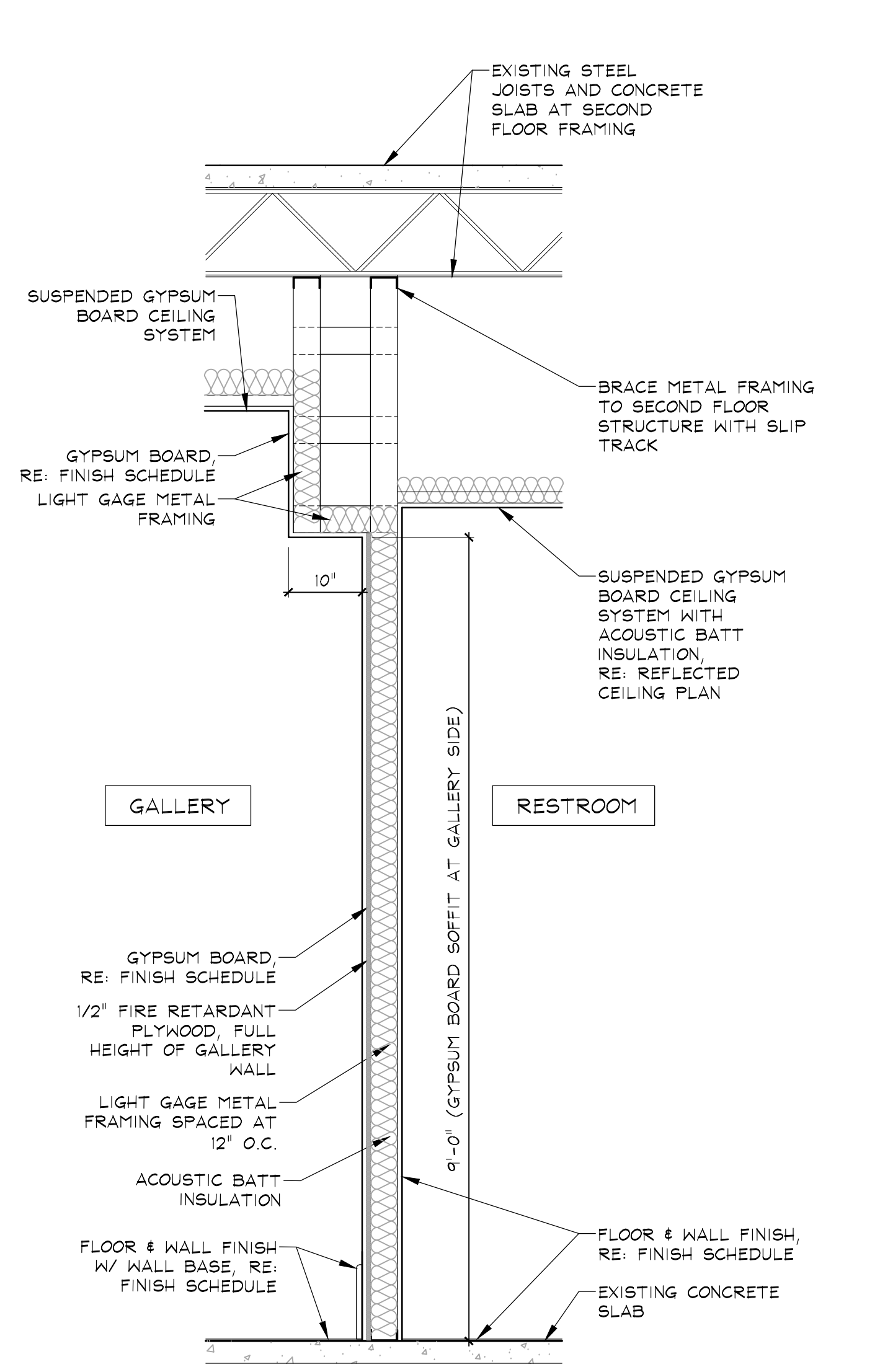
SHEET TITLE  
**PARTITION TYPES P10-P13**

DATE: 02.09.18 PROJECT NUMBER: 1404-003 SHEET NO.: A403



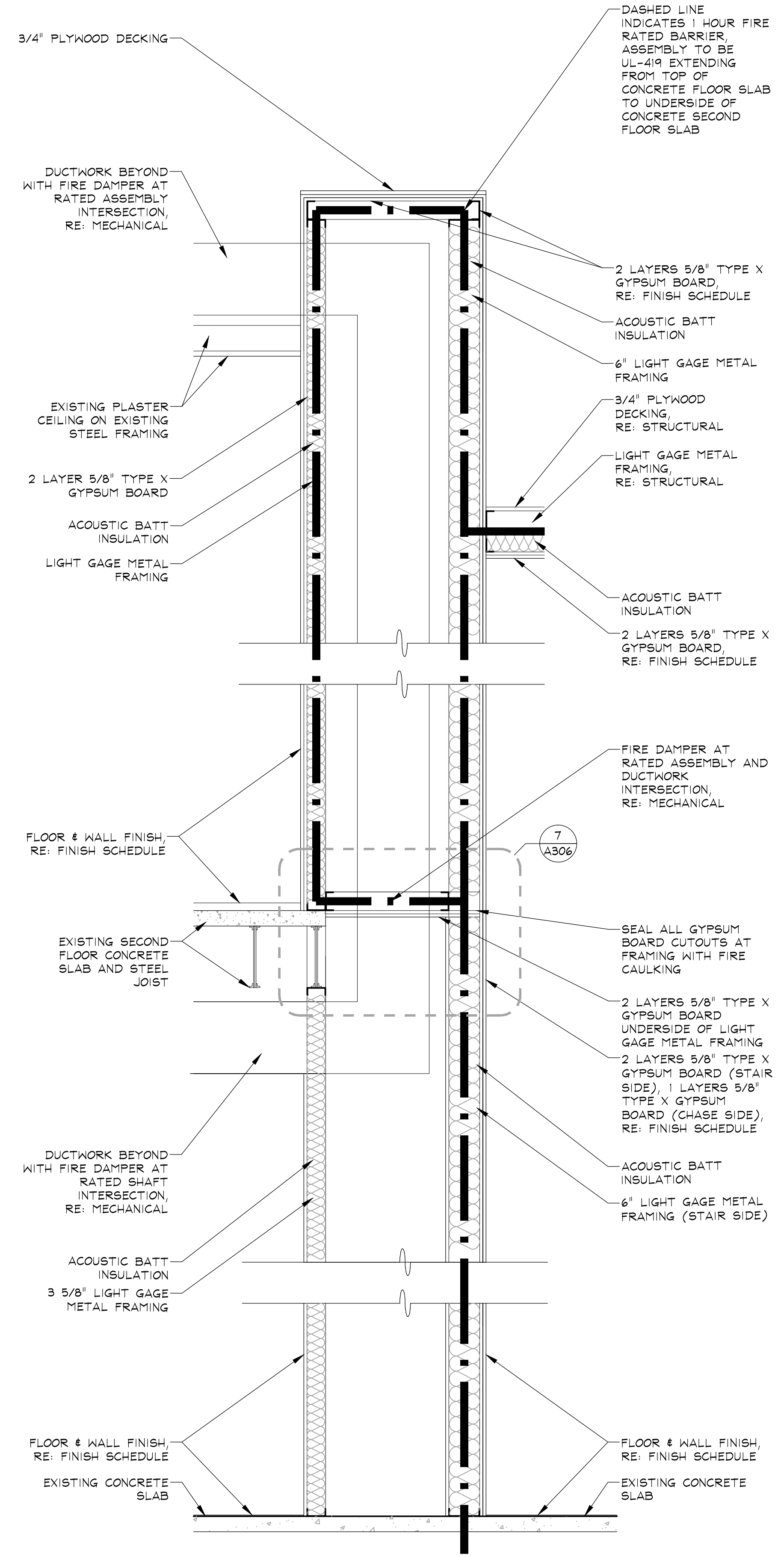
P10

SECOND FLOOR GALLERY EXHIBIT WALL  
 3-5/8" METAL STUDS SPACED AT 12" O.C.  
 WITH ONE LAYER 5/8" GYPSUM BOARD, 1  
 LAYER 1/2" FIRE RETARDANT PLYWOOD EACH  
 SIDE AND ACOUSTIC INSULATION



P11

GROUND FLOOR GALLERY EXHIBIT WALL  
 3-5/8" METAL STUDS SPACED AT 12" O.C.  
 WITH ONE LAYER 5/8" GYPSUM BOARD EACH  
 SIDE, 1 LAYER 1/2" FIRE RETARDANT PLYWOOD  
 (GALLERY SIDE) AND ACOUSTIC INSULATION

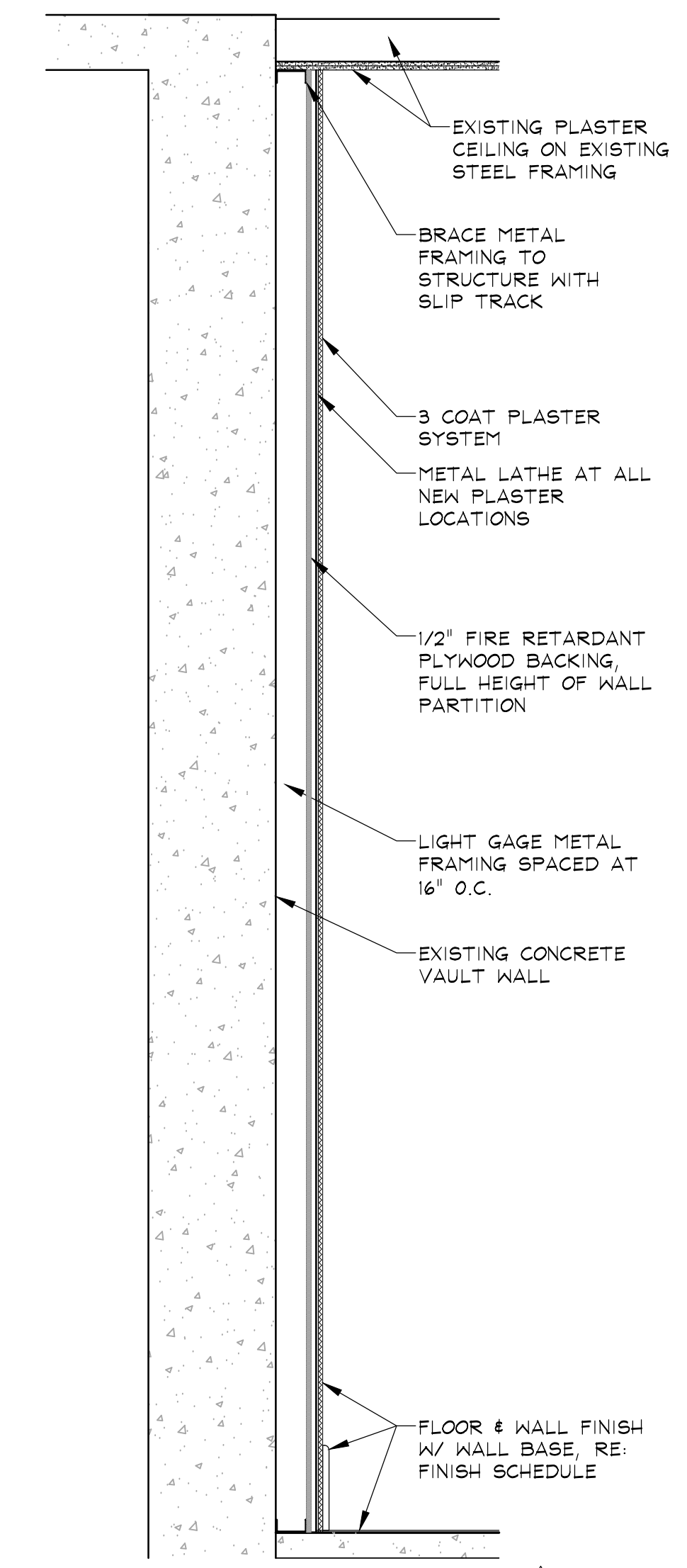


P12

CHASE CAVITY WALL  
 WITH UL-419 1 HOUR FIRE RATED BARRIER  
 3-5/8" & 6" METAL STUDS WITH TWO LAYERS  
 5/8" TYPE X GYPSUM BOARD AT DASHED  
 RATED LOCATIONS ACOUSTIC INSULATION (SEE  
 FIRE RATED BARRIER NOTES)

**\*FIRE BARRIER NOTE:**  
 1. AGGREGATE AREA OF OUTLET BOXES MUST NOT EXCEED 100 SQUARE INCHES PER 100 SQUARE FEET OF WALL AREA.  
 2. ALL PENETRATIONS TO RECEIVE FIRE CAULKING.  
 3. ELECTRICAL BOXES SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24".  
 4. ANY DUCTWORK THAT PENETRATES THROUGH FIRE RATED CONSTRUCTION TO BE PROTECTED ACCORDING TO IBC SECTION 717 REQUIREMENTS.

**\*WALL PARTITION NOTE:**  
 1. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR METAL STUD SIZING PER MAXIMUM SPAN & GAUGE SCHEDULE.  
 2. USE WATER RESISTANT GYPSUM BOARD AT ALL WET LOCATIONS AND RESTROOMS.  
 3. AT WALL TILE LOCATIONS, USE GYPSUM TILE BACKER BOARD FULL HEIGHT OF TILE.



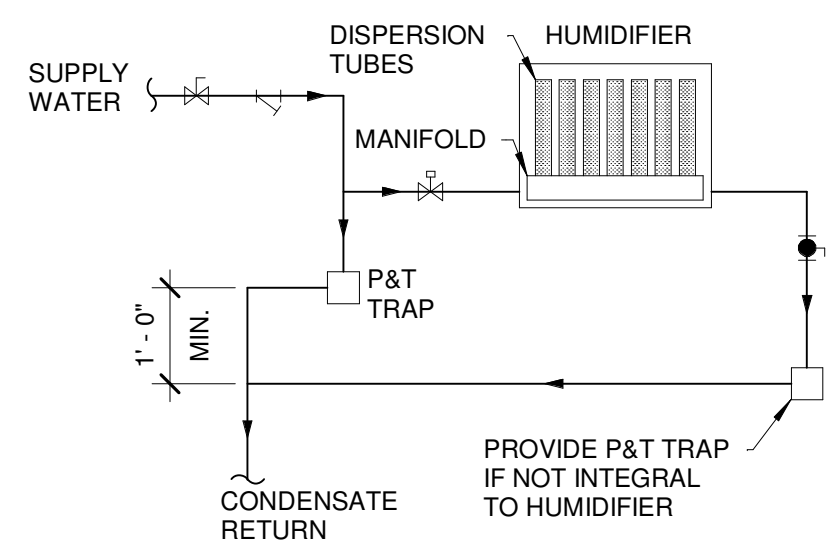
P13

SECOND FLOOR GALLERY FURRED WALL  
 3-5/8" METAL STUDS SPACED AT 16" O.C.  
 WITH 1 LAYER 1/2" FIRE RETARDANT PLYWOOD  
 AND PLASTER FINISH

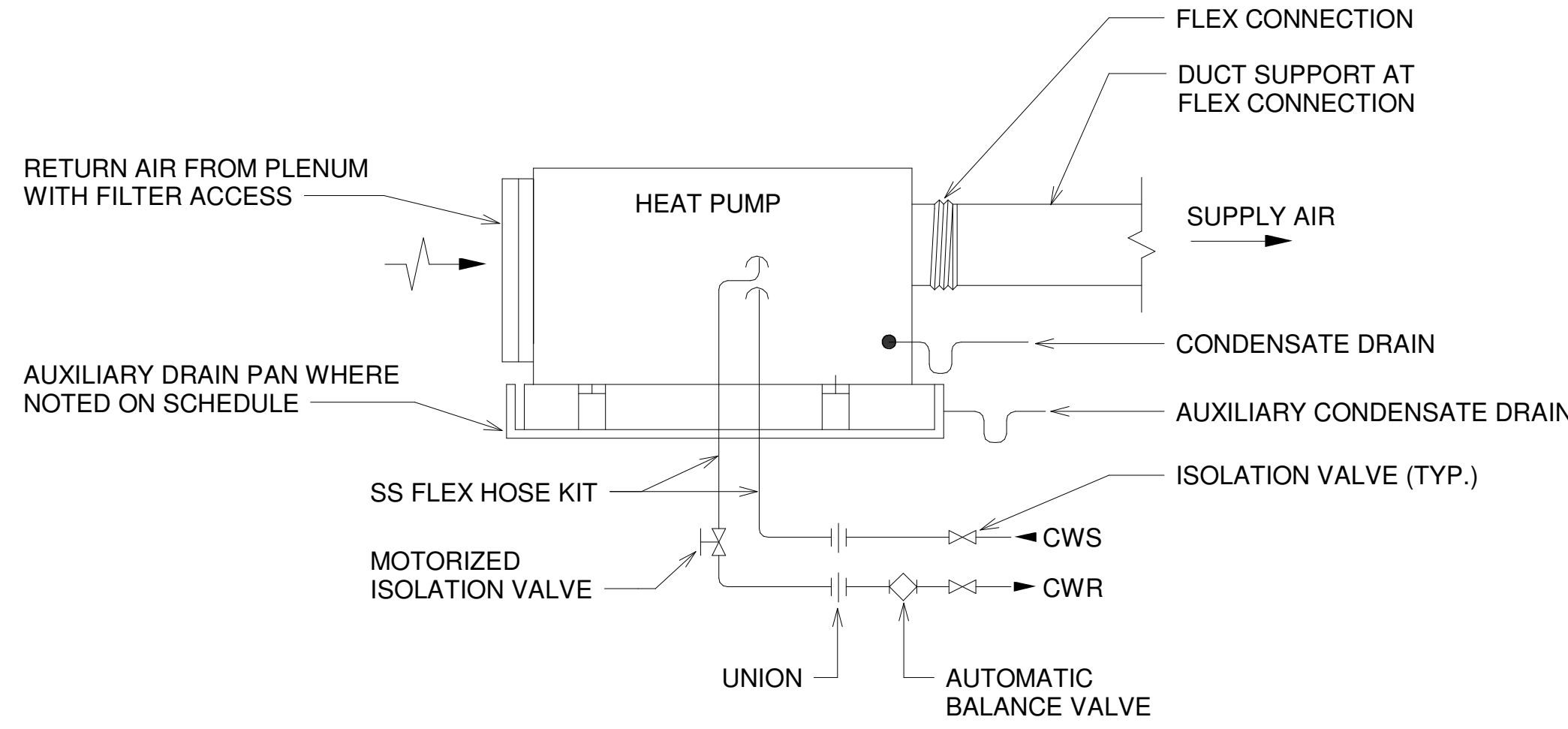
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**1 partition types**  
 3/4" = 1'-0"

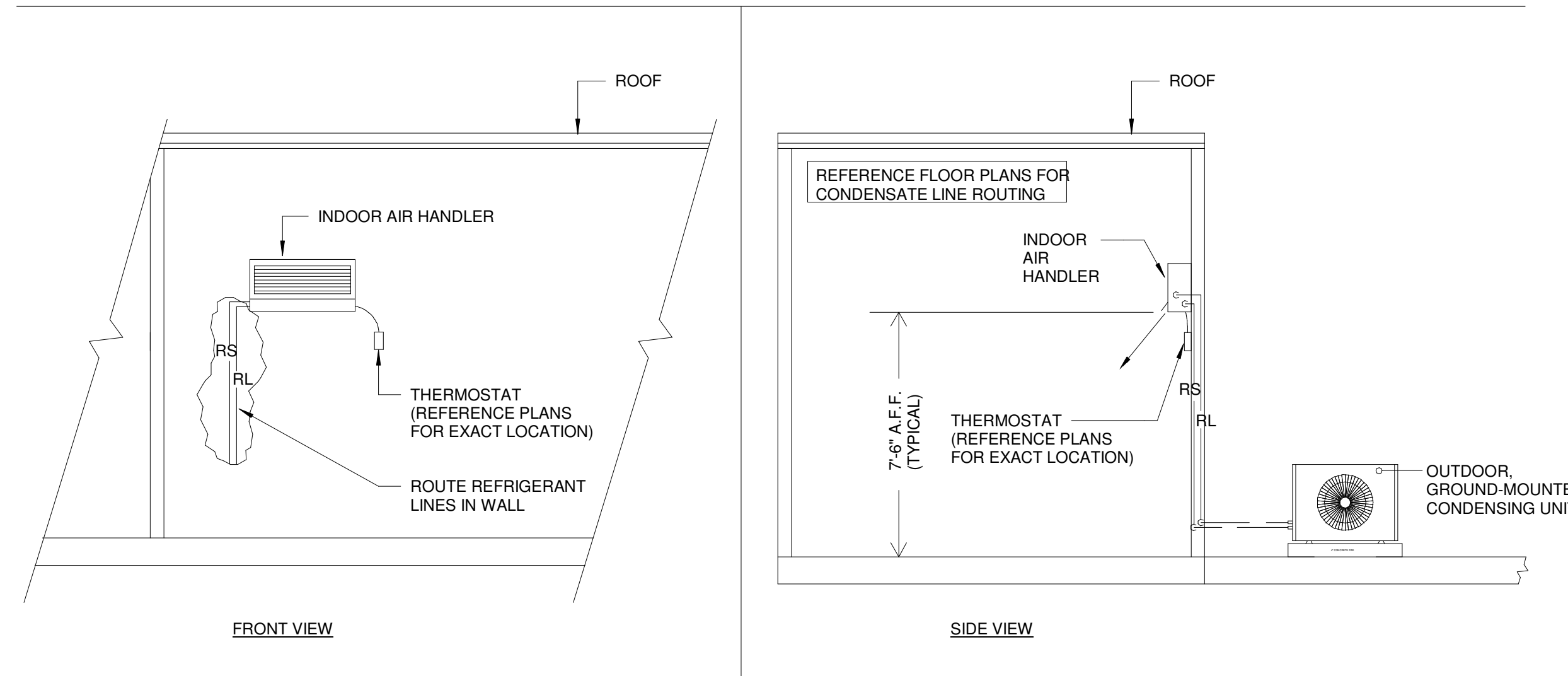
MECHANICAL LEGEND			
①	THERMOSTAT (MOUNTED AT 48" A.F.F.)		EXHAUST GRILLE (CEILING MOUNTED)
	AIR FLOW ARROW		SUPPLY DIFFUSER (CEILING MOUNTED)
AHU-1	EQUIPMENT OR DEVICE TAG		RETURN GRILLE (CEILING MOUNTED)
CFM	STANDARD CUBIC FEET PER MINUTE	CD-2 225 CFM	DIFFUSER CALLOUT TAG
FD	FIRE DAMPER		RECTANGULAR DUCT (FIRST DIMENSION, SIDE SHOWN)
⑤	REMOTE TEMPERATURE AND HUMIDITY SENSOR (MOUNTED AT 48" A.F.F.)		ROUND DUCT



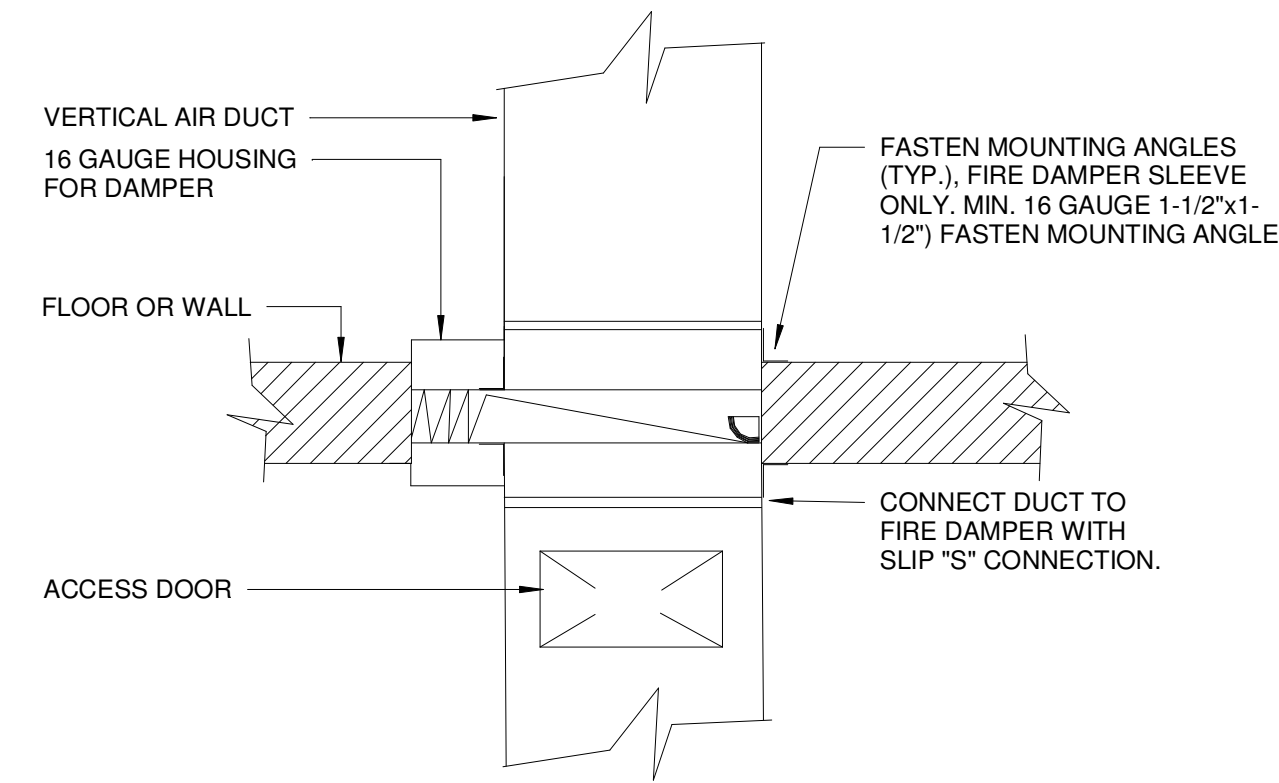
10 HUMIDIFIER PIPING DETAIL  
SCALE: N.T.S.



9 HEAT PUMP PIPING INSTALLATION DETAIL  
SCALE: N.T.S.

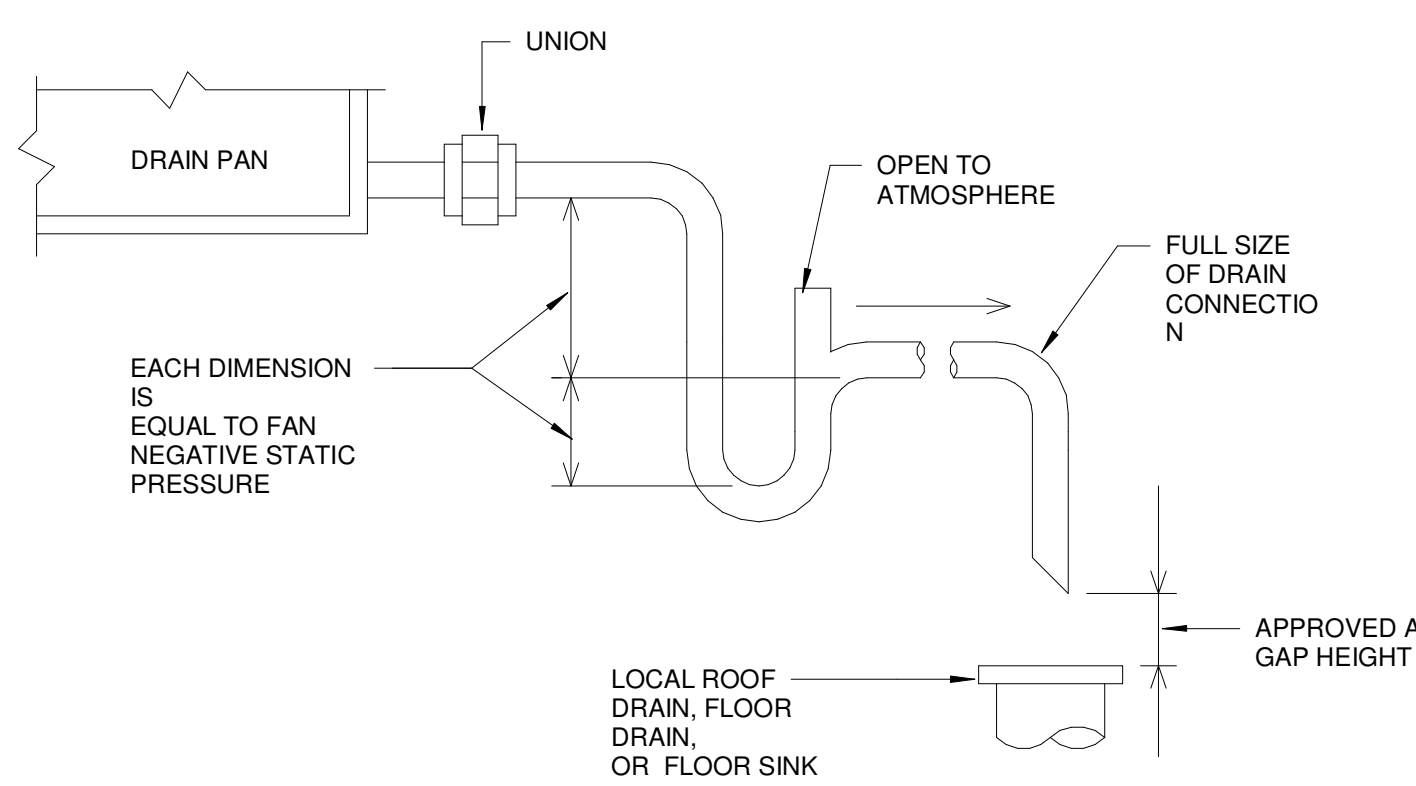


8 DUCTLESS SLIT SYSTEM WITH GROUND-MOUNTED CONDENSING UNIT  
SCALE: N.T.S.

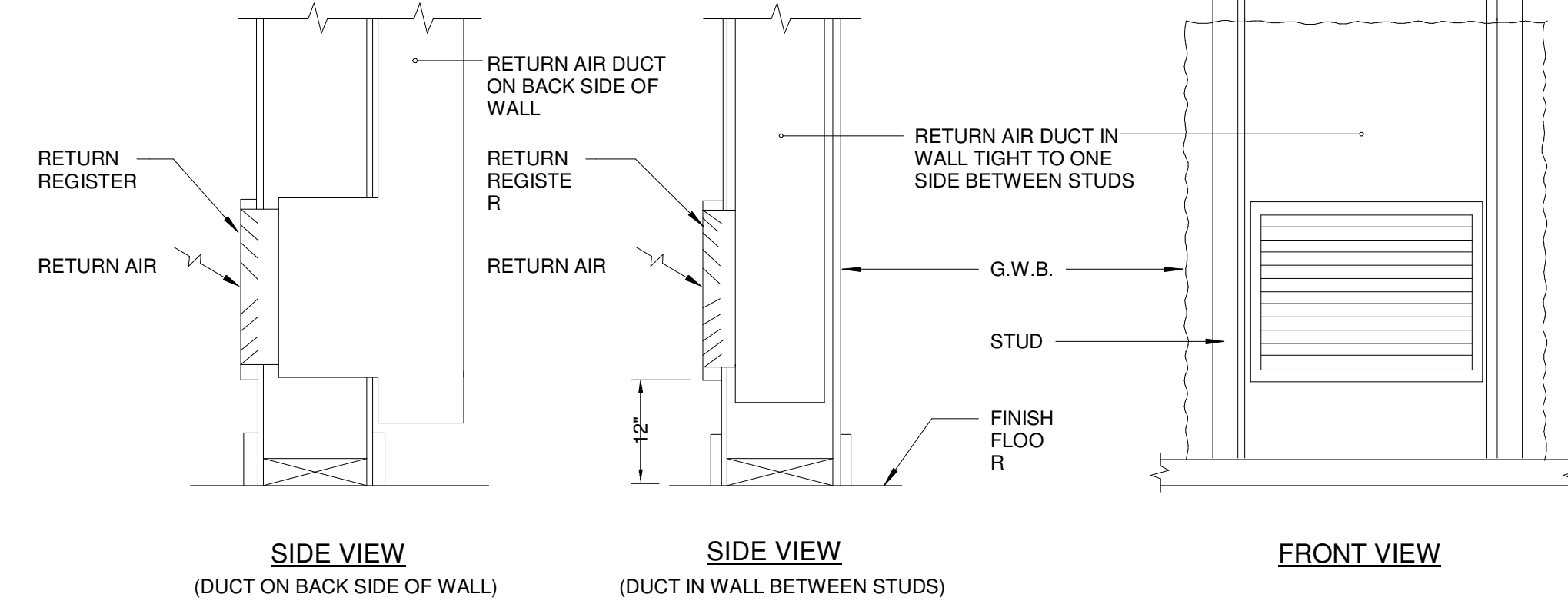


NOTES:  
1. DAMPER ASSEMBLY INSTALLED IN AND FASTENED TO THE SLEEVE.  
2. MAINTAIN FULL DUCT SIZE. DAMPER HOUSING SHALL NOT OBSTRUCT AIR FLOW, (TYPE "B").  
3. MOUNTING SHOWN IS VERTICAL INSTALLATION, HORIZONTAL INSTALLATION IS SIMILAR.

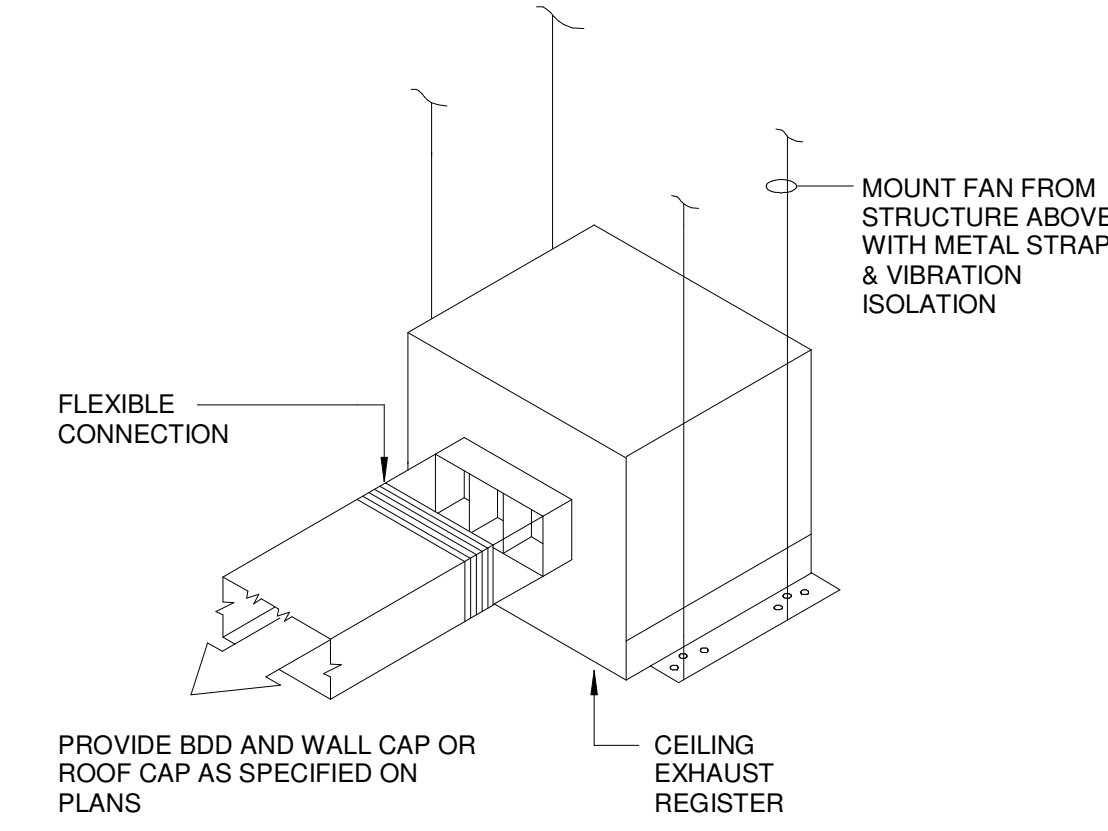
7 FIRE DAMPER INSTALLATION DETAIL  
12" = 1'-0"



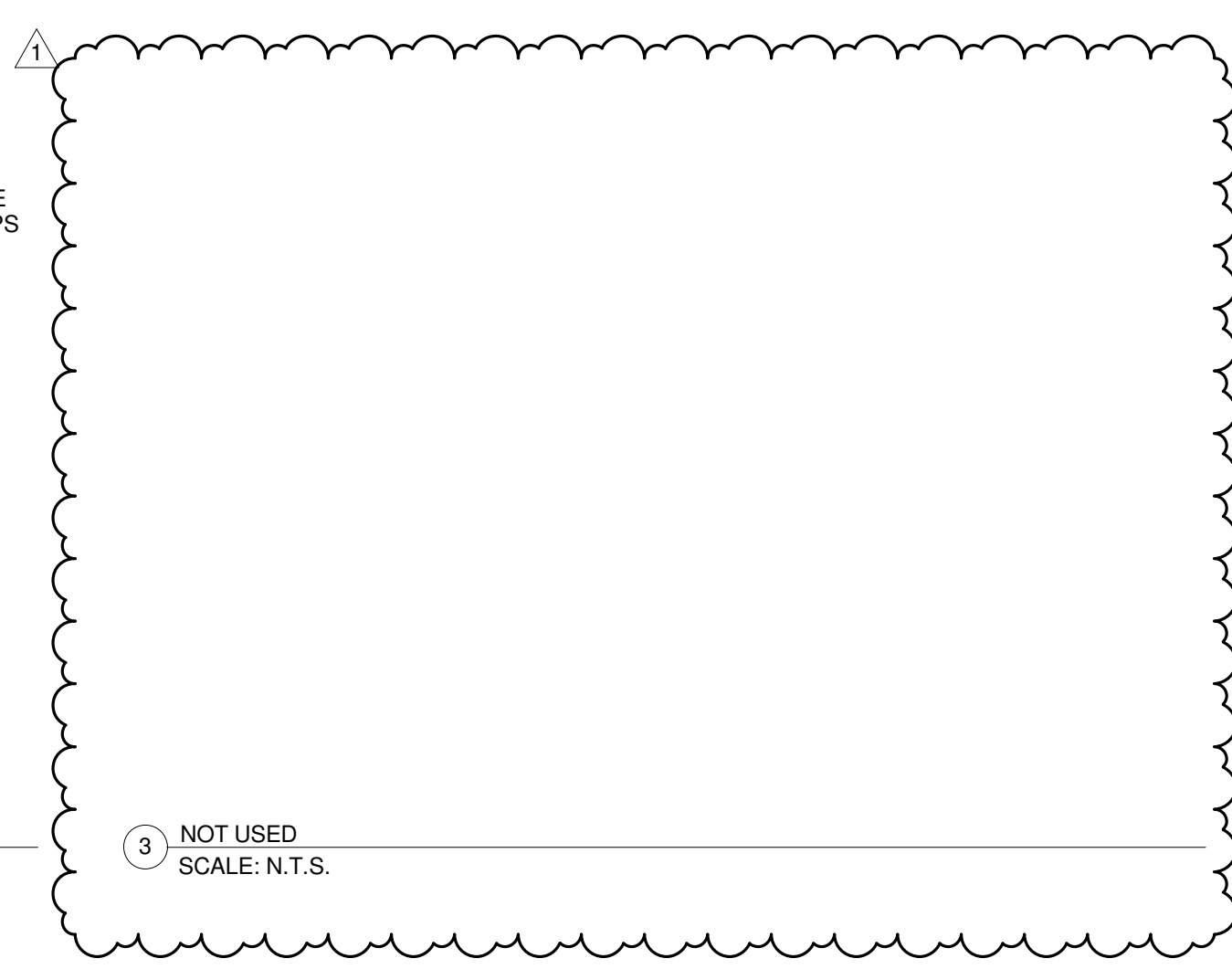
6 CONDENSATE DRAIN DETAIL  
SCALE: N.T.S.



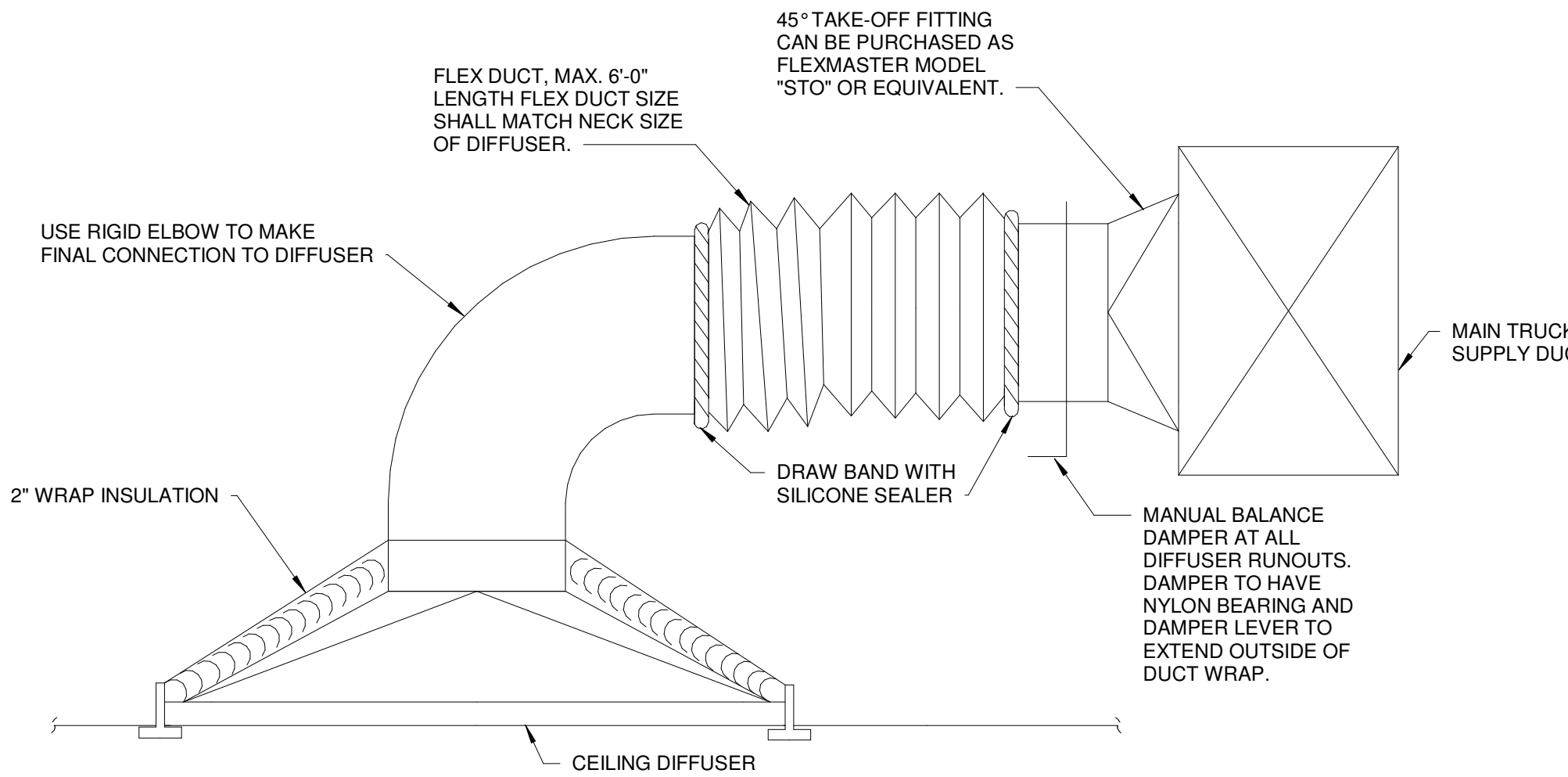
5 WALL MOUNTED RETURN AIR GRILLE DETAIL  
1/4" = 1'-0"



4 CEILING EXHAUST FAN DETAIL  
SCALE: N.T.S.



2 TYPICAL SUPPLY AIR BRANCH DUCT TAKE-OFF  
SCALE: N.T.S.

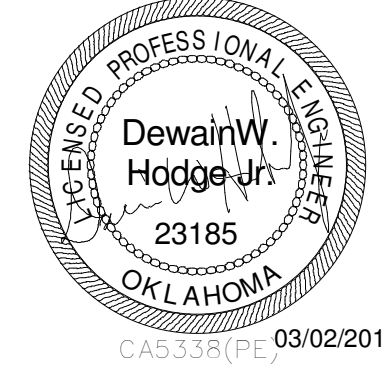


1 TYPICAL DIFFUSER CONNECTION WITH INSULATION  
SCALE: N.T.S.

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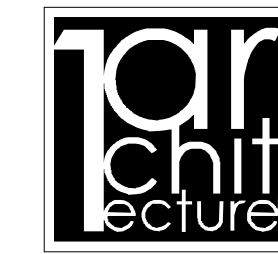
HP ENGINEERING INC.  
5214 W. VILLAGE PARKWAY  
SUITE 120  
ROGERS, AR 72758  
PH. 479.899.6370



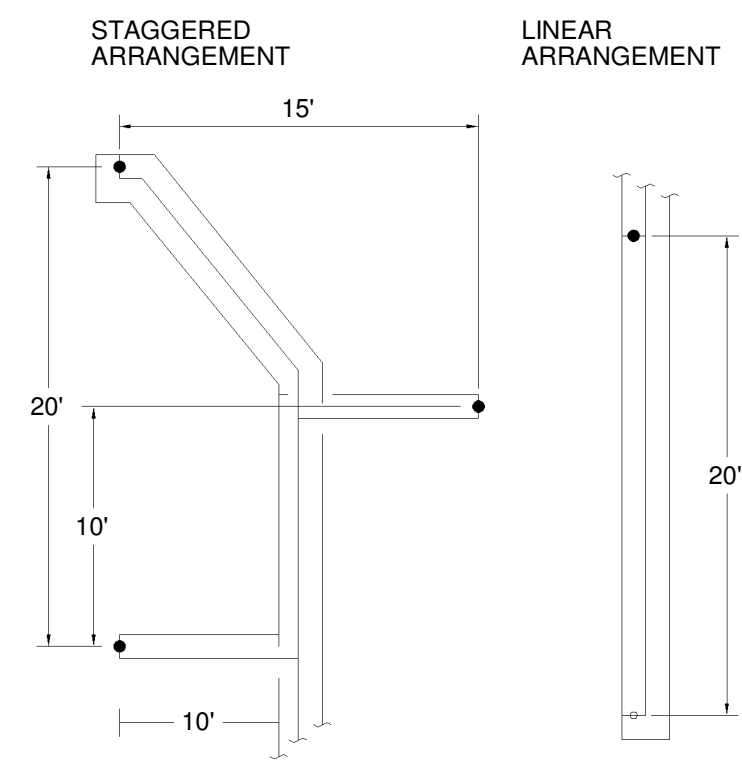
GENERAL INFORMATION:  
- CODE: 2015 IBC, 2015 IBC  
- USE GROUP: A-3  
- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
INTERIOR RENOVATION**  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74464



ONE architecture  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

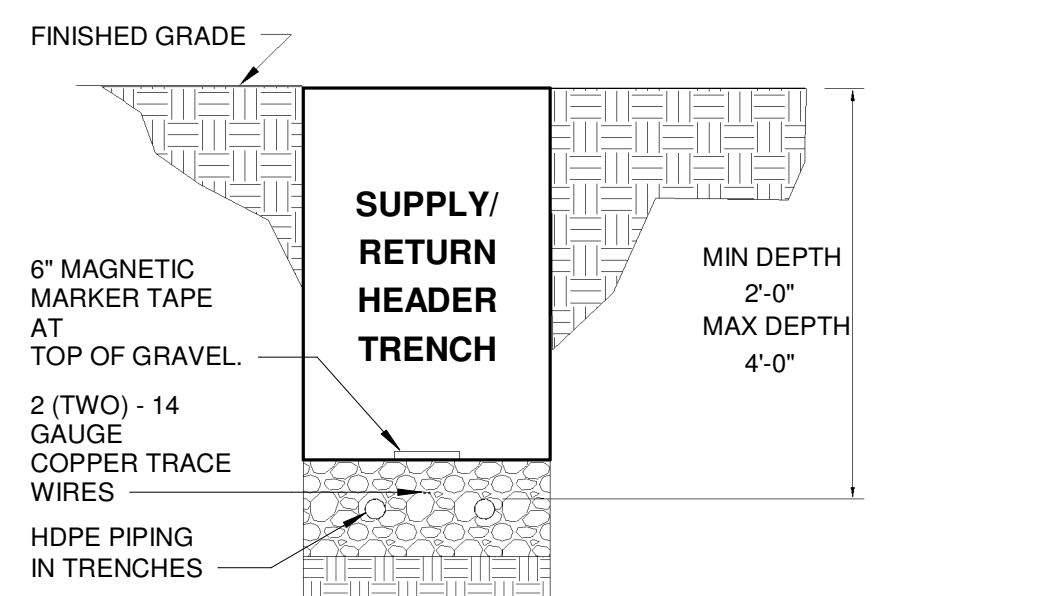


4 WELL SPACING DETAIL  
SCALE: N.T.S.

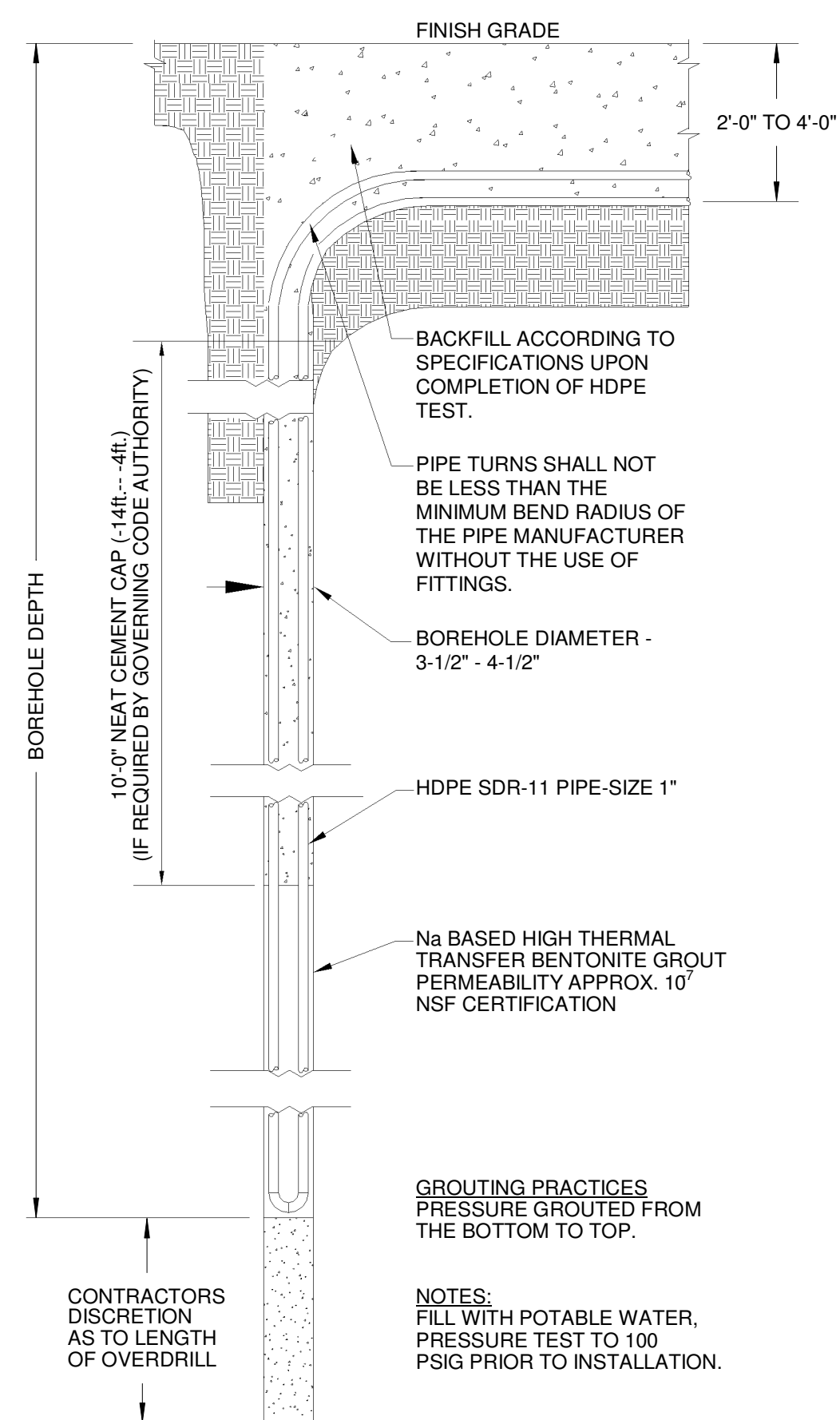
WELL FIELD STATISTICS	
NO. OF BOREHOLES	30
BOREHOLE SPACING	20'-0" MINIMUM
BOREHOLE DEPTH	300
UNICOIL LENGTH	600 + **
PIPE DIAMETER	1"
TOTAL FEET OF BORE	18,000

\* THERMAL CONDUCTIVITY TEST HOLE TO BE REUSED. COORDINATE TEST HOLE INTO BOREHOLE LAYOUT AS DEPICTED.  
\*\* PROVIDE ADDITIONAL PIPE AS REQUIRED TO CONNECT UNICOIL TO HEADING SYSTEM.

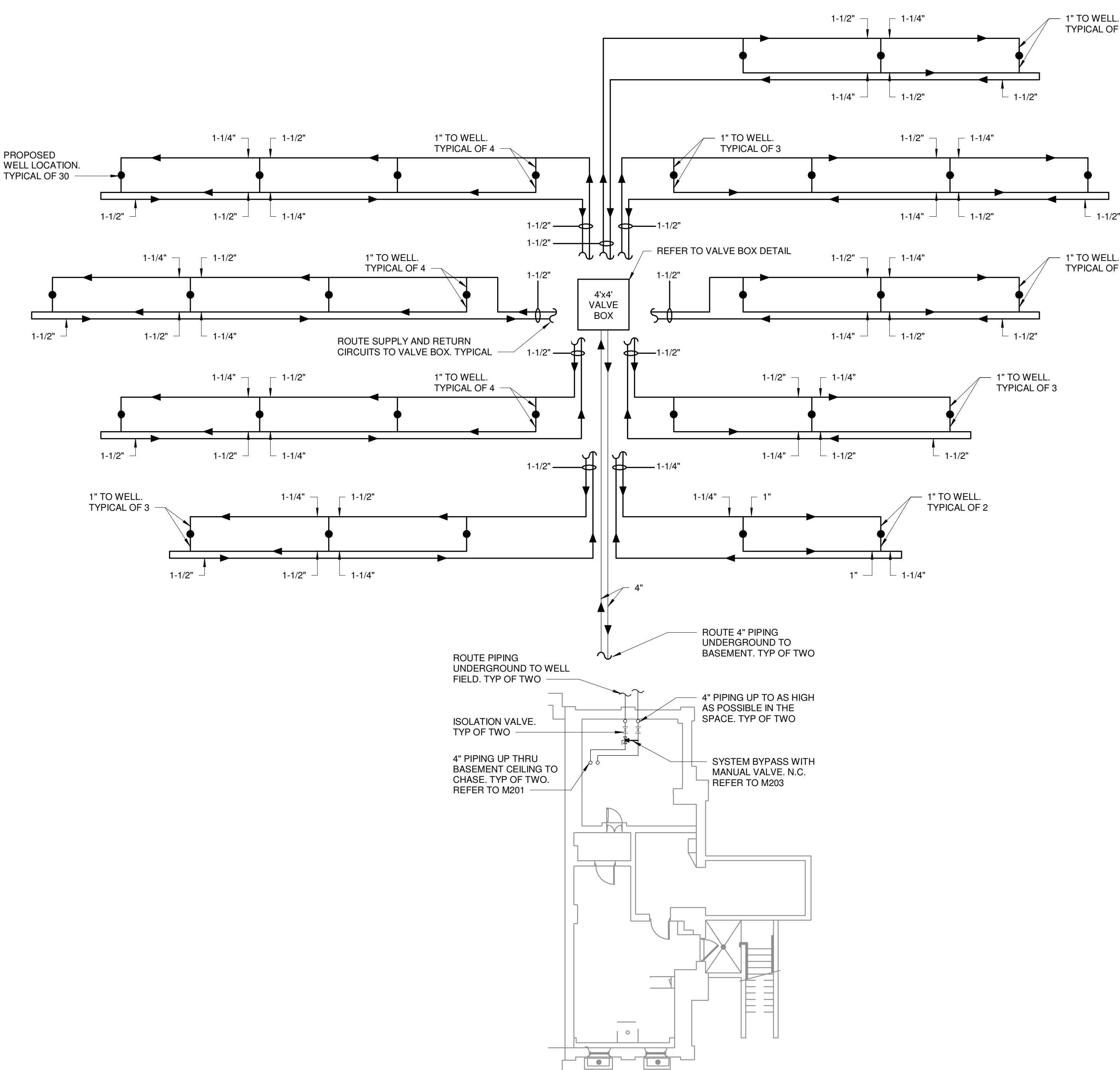
5 WELL FIELD STATISTICS  
SCALE: N.T.S.



3 HEADER TRENCH CROSS SECTION  
SCALE: N.T.S.



2 BOREHOLE & HEATER INSTALLATION DETAIL  
SCALE: N.T.S.



1 GEOTHERMAL WELL FIELD PLAN  
1" = 10'-0"

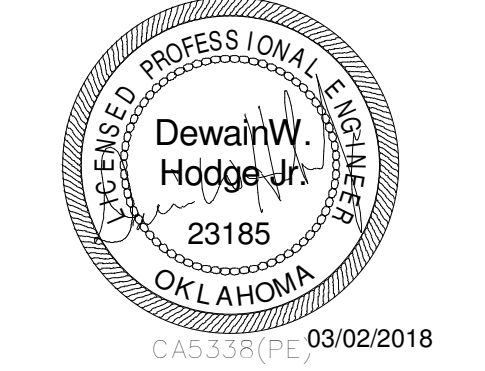
NOTES:

1. ALL HORIZONTAL PIPING TO BE SIZED AT 4' OF WATER PER 100 FT. WITH NO PIPES SMALLER THAN 1-1/4"
2. MAINTAIN MINIMUM DISTANCE OF 5'-0" HORIZONTALLY BETWEEN BORE HOLE LOCATIONS AND WATER, GAS, ELECTRICAL, AND COMMUNICATION LINES UNLESS NOTED OTHERWISE BY THE LOCAL UTILITY PROVIDERS (OR) CONTRACTOR TO COORDINATE THE REQUIRED CLEARANCE DISTANCES WITH ALL LOCAL UTILITY PROVIDERS AND REFLECT THESE CLEARANCES IN THEIR COORDINATION DRAWINGS FOR THE ENGINEER'S REVIEW.
3. MAINTAIN MINIMUM DISTANCE OF 1'-0" VERTICALLY BETWEEN HORIZONTAL LINE RUNS ASSOCIATED WITH GEOTHERMAL SYSTEM AND WATER, GAS, ELECTRIC, AND COMMUNICATION LINES WHEN NECESSARY TO CROSS.
4. MAINTAIN MINIMUM DISTANCE OF 4'-0" HORIZONTALLY BETWEEN BORE HOLE LOCATIONS AND SANITARY SEWER.
5. MAINTAIN MINIMUM DISTANCE OF 2'-0" VERTICALLY BETWEEN HORIZONTAL LINE RUNS ASSOCIATED WITH GEOTHERMAL SYSTEM AND SANITARY SEWER WHEN NECESSARY TO CROSS. CENTER THE CROSSING SECTION SO THAT THE JOINTS ARE AS FAR AS POSSIBLE FROM THE WATER MAINS.
6. WHEN IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION, DESIGN AND CONSTRUCT THE SANITARY SEWER EQUAL TO WATER PIPE, AND PRESSURE TEST IT TO ASSURE WATER TIGHTNESS OF JOINTS ADJACENT TO THE WATER LINES PRIOR TO BACKFILLING. NOTIFY THE GENERAL CONTRACTOR WHEN THIS SITUATION ARISES SO THAT THE REQUIREMENT CAN BE COORDINATED WITH CIVIL.
7. DO NOT INSTALL GEOTHERMAL SYSTEM LINES IN THE SAME TRENCH AS SANITARY SEWER AND SEWER SERVICE LINES.
8. GEOTHERMAL WELL FIELD LOCATION AND SIZE INDICATED IS SCHEMATIC ONLY. THE PLAN IS INTENDED TO SHOW THE DESIRED CONNECTIONS TO HEADER PIPES CLEARLY. UPON INSTALLATION, PIPES CAN BE COMBINED INTO TRENCHES OR OTHERWISE FIELD-MODIFIED TO FIT WITHIN ALLOTTED PROPERTY BOUNDARIES.
9. COORDINATE PIPE ROUTING AND BORE HOLE LOCATIONS WITH ALL SITE/CIVIL CONSTRUCTION FEATURES AND UTILITIES.
10. ALL PIPING ENTRANCES INTO THE BUILDING AND ALL SLAB PENETRATIONS TO BE SLEEVED IN SCHEDULE 40 PVC.
11. ALL PIPING INSIDE THE RESIDENCE SHALL BE ROUTED IN THE PROVIDED CRAWLSPACE.
12. ALL WORK ON THIS SHEET, AND RELATED DETAILS WITHIN MECHANICAL PLANS, ARE TO BE PERFORMED BY PRE-QUALIFIED CONTRACTOR PER THE SPECIFICATIONS.
13. ALL SIZES ARE IN INCHES.
14. LOCATION OF WELLS ARE PROPOSED LOCATIONS ONLY. CONTRACTOR SHALL RELOCATE WELL GROUP AS REQUIRED SO THAT TEST WELL MAY BE REUSED.
15. ALL PIPING INSIDE THE BUILDING SHALL BE UNDER SLAB OR WITHIN MECHANICAL ROOMS.
16. ALL PIPING SHALL BE BETWEEN 2'-0" AND 4'-0" BELOW GRADE OR BELOW FINISHED FLOOR. COORDINATE ALL PIPING WITH SANITARY AND STORM DRAIN PIPING INSIDE AND OUTSIDE OF THE BUILDING.
17. ALL WORK ON THIS SHEET, AND RELATED DETAILS WITHIN MECHANICAL PLANS, TO BE DONE BY PRE-QUALIFIED CONTRACTOR PER THE SPECIFICATIONS.
18. ALL SIZES ARE IN INCHES.
19. GEOTHERMAL SYSTEM MUST BE INSTALLED PER THE IGSHPA STANDARDS FOR DESIGN AND INSTALLATION. IN THE EVENT THAT A CONFLICT OCCURS BETWEEN THE DRAWINGS/SPECIFICATIONS AND THE IGSHPA STANDARDS MANUAL, THE IGSHPA STANDARDS MANUAL SHALL PREVAIL.
20. CONTRACTOR BUSINESS (NOT INDIVIDUAL) MUST BE LISTED AS A MEMBER OF THE IGSHPA WEBSITE PRIOR TO BID.

Notes:

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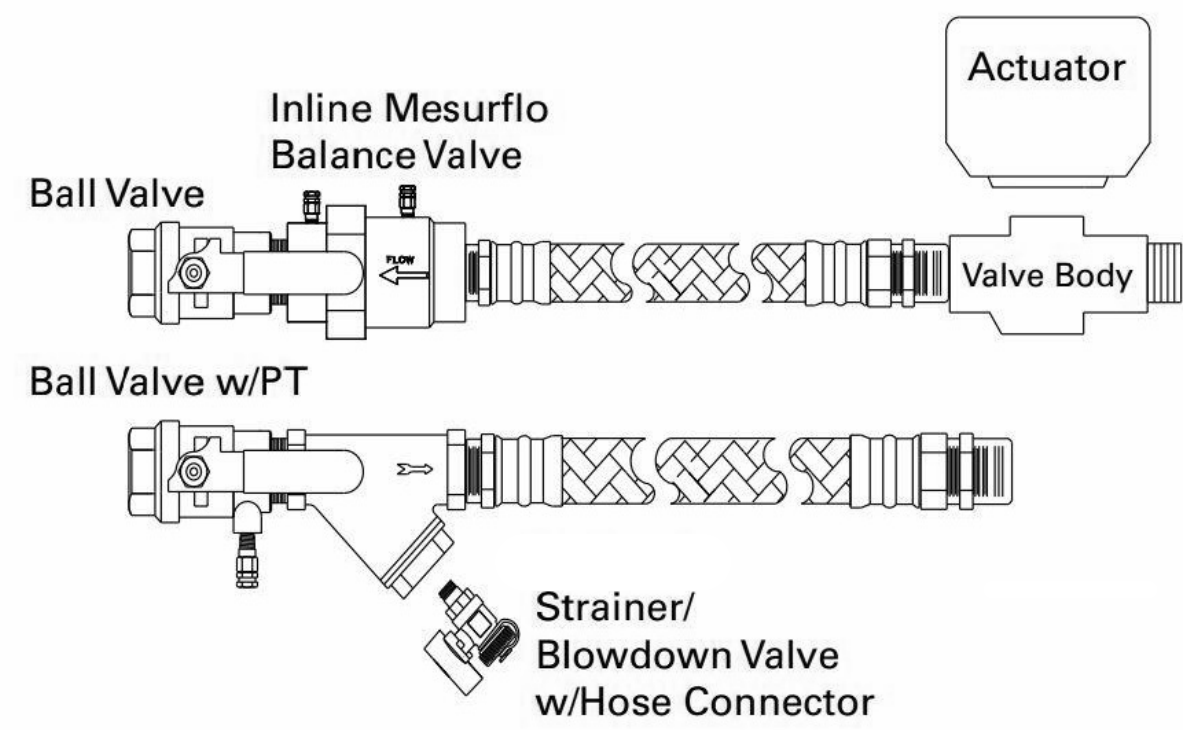
GENERAL INFORMATION:  
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- USE GROUP: A-3  
- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

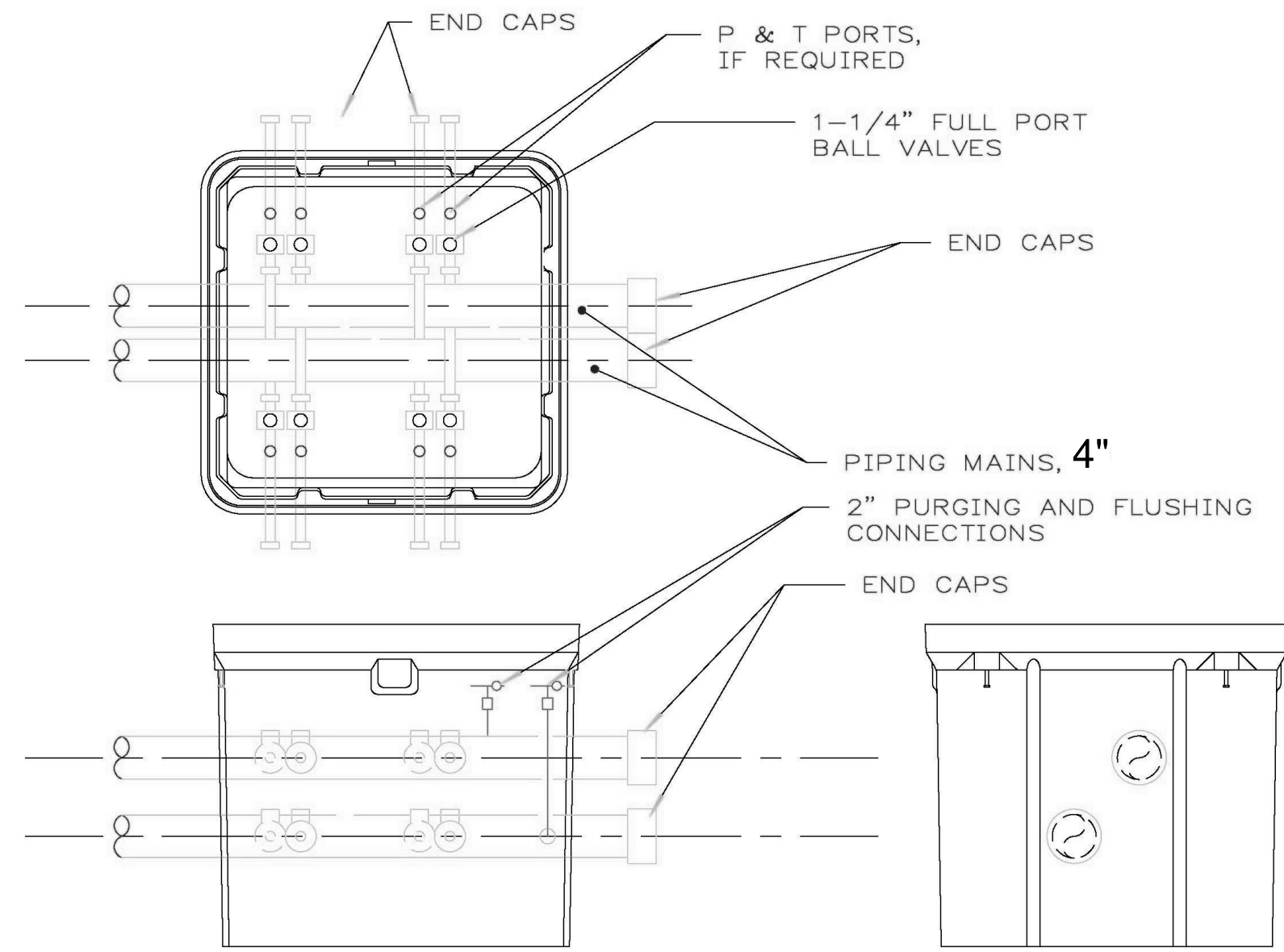
CONSTRUCTION DOCUMENTS FOR:  
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**ONE architecture**  
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PH. 918.764.9996





6 WSHP AUTOMATIC BALANCE HOSE KIT  
SCALE: N.T.S.



2 BOX w/ PIPING and VALVES  
SCALE: N.T.S.

### SPECIFICATIONS

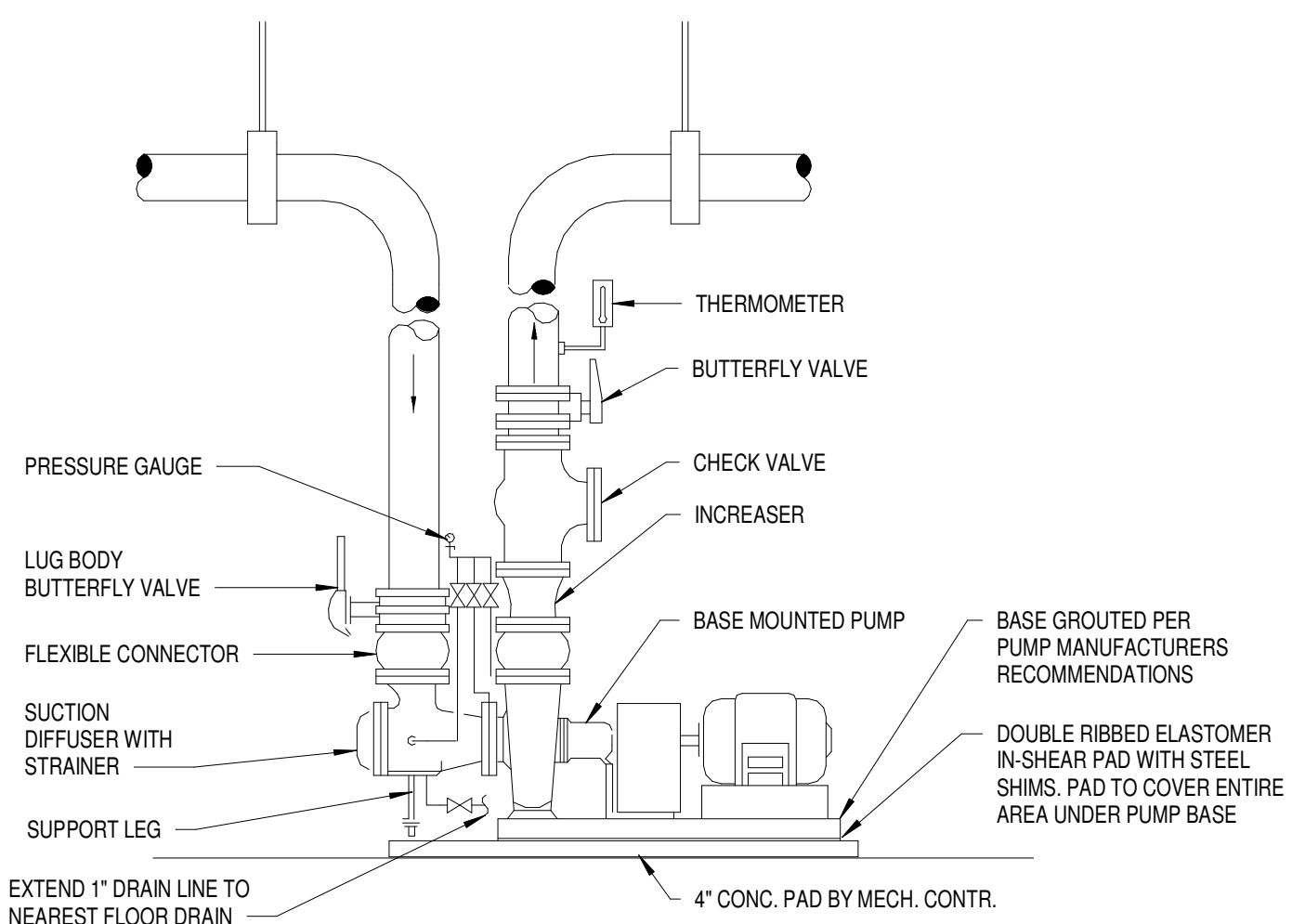
**PIPING:**  
PIPING CONSTRUCTED FROM PE3408 HDPE POLYETHYLENE PIPE AND HEAT FUSED MATERIALS, ALL MEETING ASTM D-3350 CELL CLASSIFICATION 345464C. THE MATERIAL HAS 1600 PSI HYDROSTATIC DESIGN BASIS AT 73°F PER ASTM D-2837 AND IS LISTED IN THE MANUFACTURERS NAME IN PPI TR4 AS A PE3408 COMPOUND.

POLYETHYLENE HDPE PIPE IS MANUFACTURED IN ACCORDANCE WITH ASTM D-3035, POLYETHYLENE FITTINGS ARE MANUFACTURED IN ACCORDANCE WITH ASTM D-2683 FOR SOCKET FUSION FITTINGS, ASTM D-3261 FOR BUTT FUSION FITTINGS, AND ASTM F-1055 FOR ELECTROFUSION FITTINGS, AND ASTM F-1924, SECTION 3.1.6.1 FOR MECHANICAL FITTINGS.

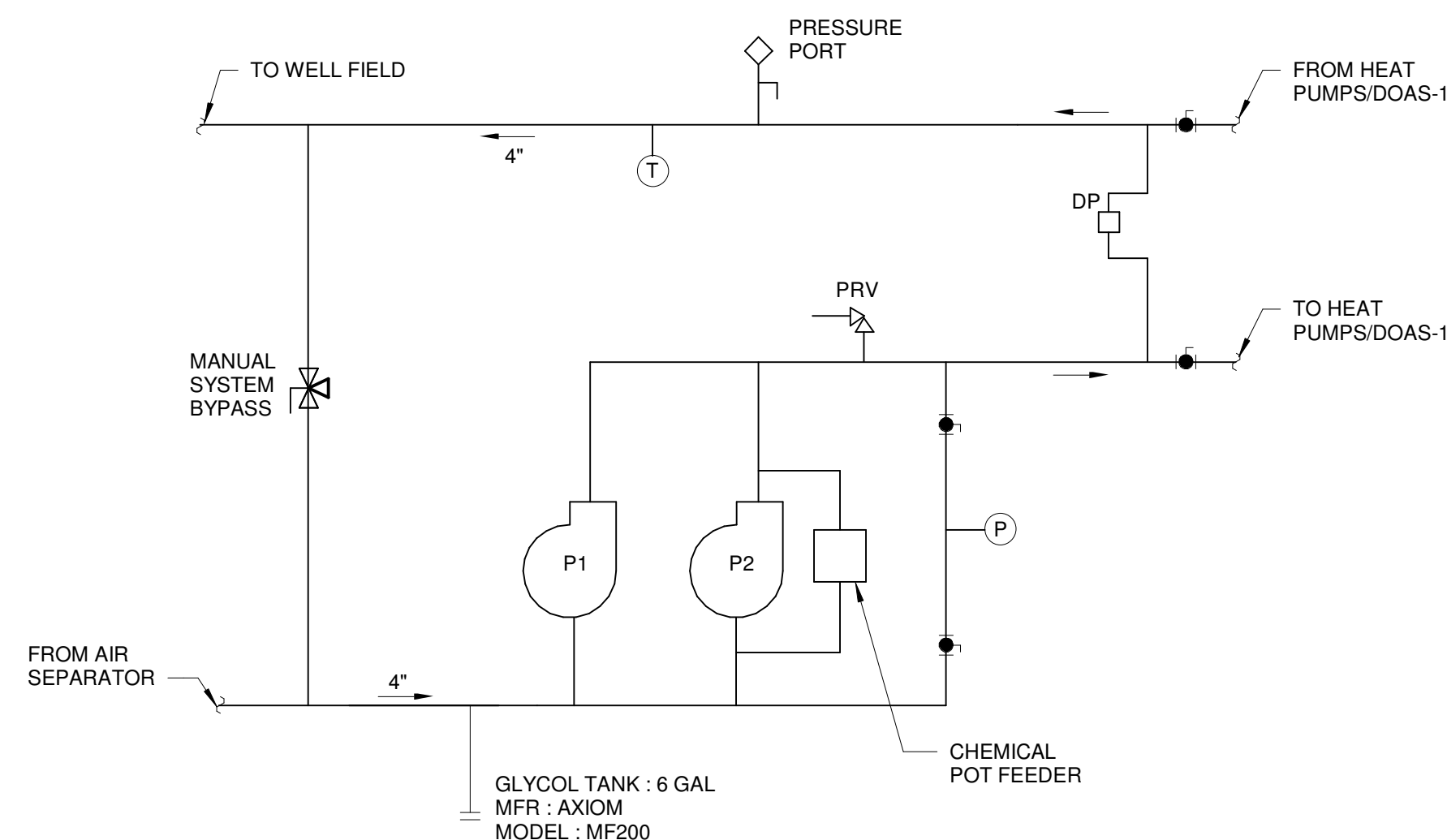
**BOXES**  
BOXES ARE AS MANUFACTURED BY QUAZITE, WITH SOLID BOTTOMS, MODEL PG4848DA48. COVER IS HEAVY DUTY UNITS W/ W6x12 WIDE FLANGE BEAM W/ 6-BOLTS, DESIGNED FOR 15,000 #, TESTED TO 22,500#, ANSI TIER 15 TEST

**VALVES**  
VALVES ARE BALL VALVES, BY KEROTEST POLYBALL, CONSTRUCTED FROM PE-3408 POLYETHYLENE MATERIAL, INCLUDING VALVE MAIN BODY, AND END PIECES. VALVE BODY IS A FULL-PORTED DESIGN, IT OPERATES SMOOTHLY AND SEALS BUBBLE TITE. THE STEM IS "BLOW-OUT PROOF" SEALS, INCLUDING THE BALL, STEM, AND WEATHER SEALS ARE MADE FROM SPECIALLY COMPOUNDED NITRILE FOR ELASTICITY AND TOUGHNESS. THE ACTUATOR IS MADE FROM POLYPROPYLENE FOR STRENGTH AND IMPACT RESISTANCE. THE ENTIRE DESIGN IN ALL SIZES HAS BEEN QUALIFIED TO ASME B16.40, ASTM D-2513, AND THE CODE OF FEDERAL REGULATIONS, PART 192. TESTING WAS PERFORMED IN CONJUNCTION WITH AN INDEPENDANT AGENCY. PETE'S PLUG: WATTS BRASS 1/2" PETE'S PLUG MODEL 0008513

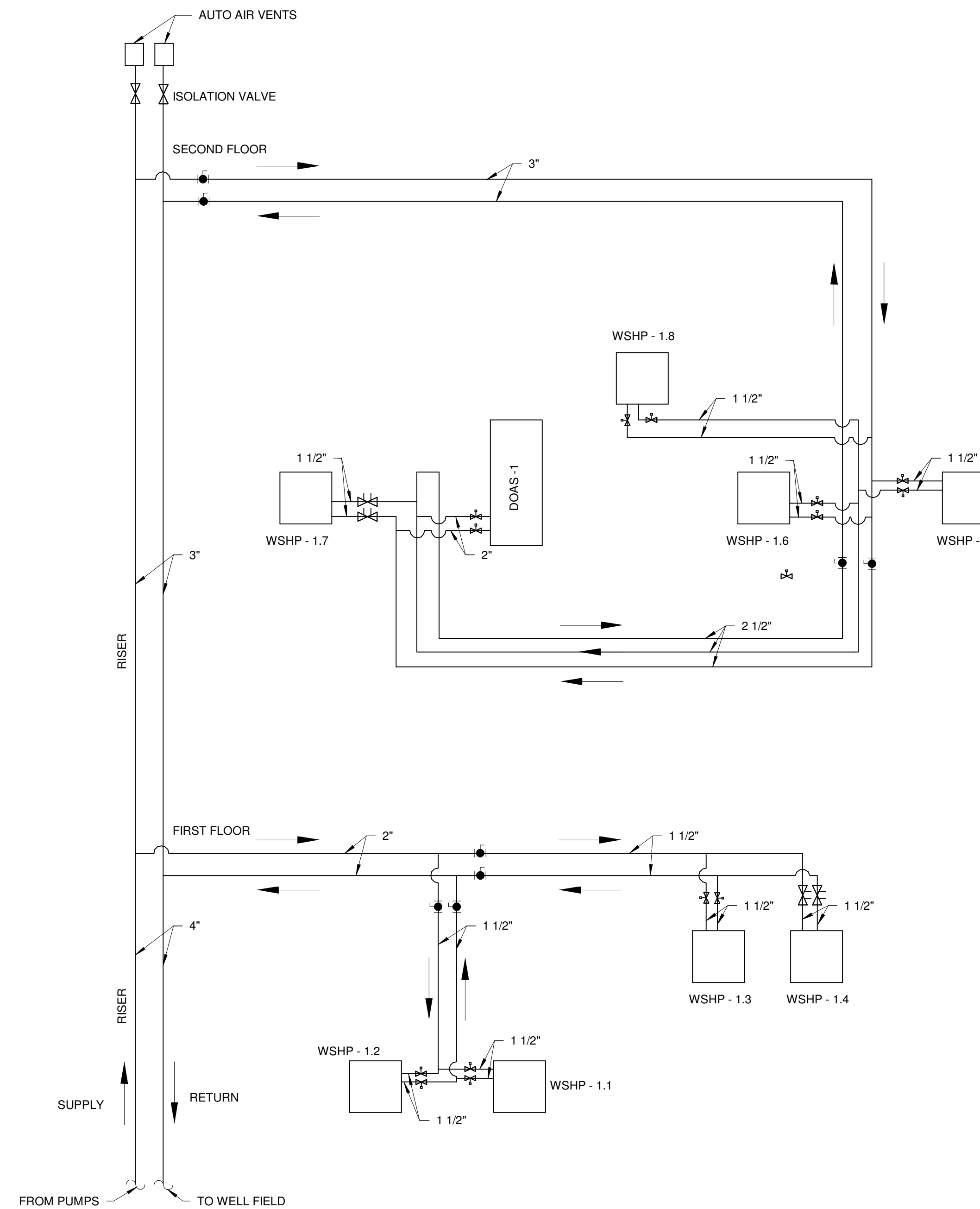
5 WELL FIELD VALVE BOX  
SCALE: N.T.S.



3 VARIABLE VOLUME PUMP PIPING  
SCALE: N.T.S.



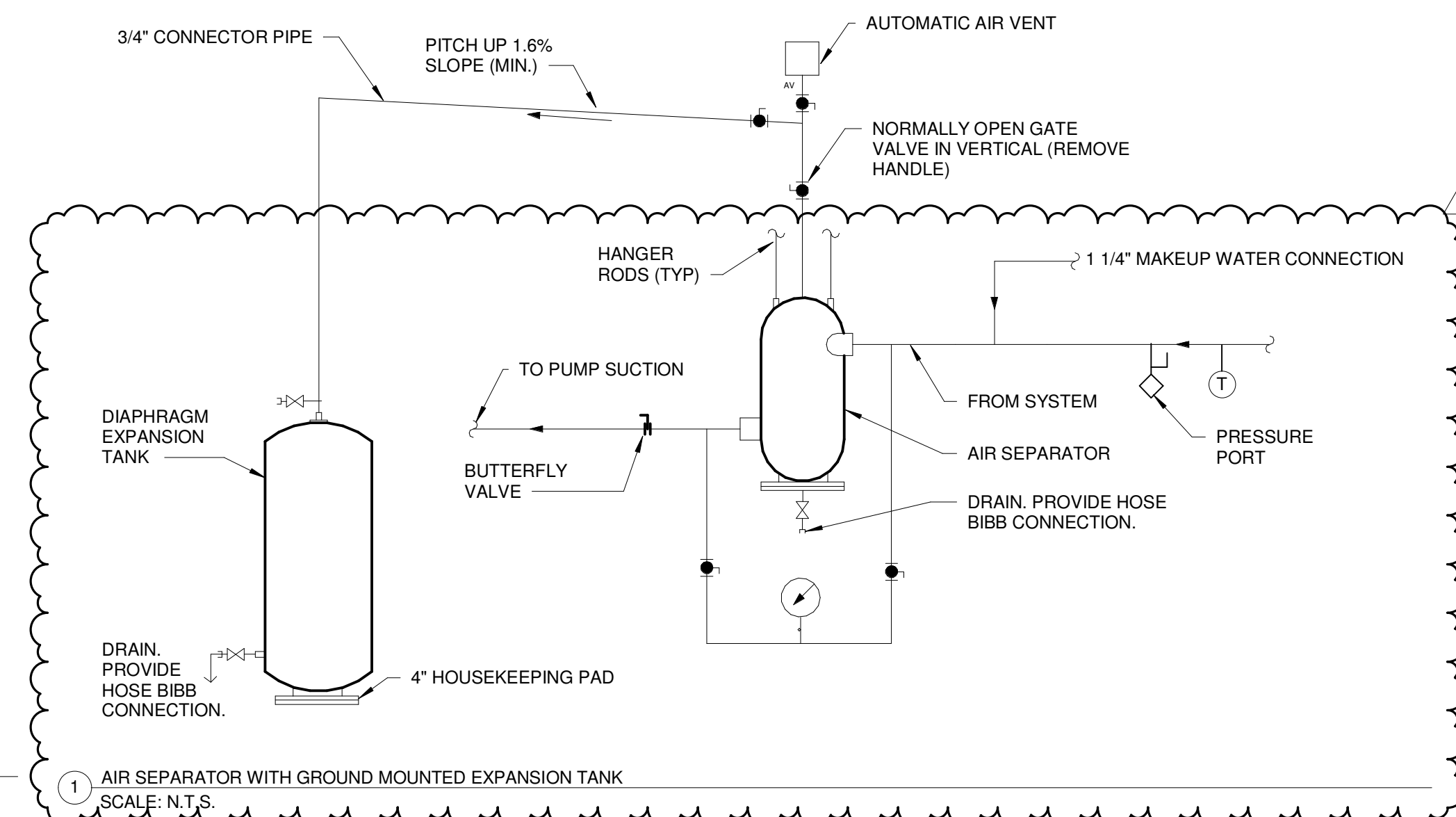
2 PUMP PIPING DIAGRAM  
N.T.S.



4 HEAT PUMP AND DOAS PIPING DIAGRAM  
N.T.S.

#### NOTES

- SEE EXPANSION TANK SYSTEM SCHEDULE FOR COMPONENT SIZES.
- CHARGE TO HIGHEST POINT IN SYSTEM PLUS 4 PSI.

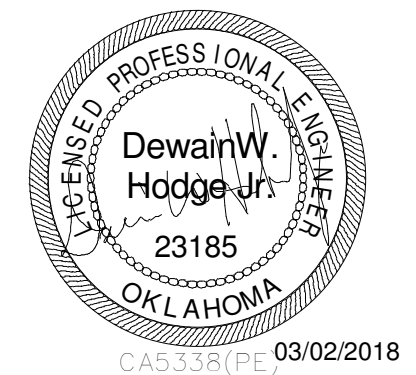


1 AIR SEPARATOR WITH GROUND MOUNTED EXPANSION TANK  
SCALE: N.T.S.

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#### GENERAL INFORMATION:

- CODE: 2015 IEBC, 2015 IBC
- USE GROUP: A-3
- SPRINKLER STATUS - TO BE INSTALLED
- FIRE ALARM - TO BE INSTALLED

#### ADDENDUM 01 - 03.02.18

#### CONSTRUCTION DOCUMENTS FOR:

CNE - CAPITOL BUILDING  
INTERIOR RENOVATION  
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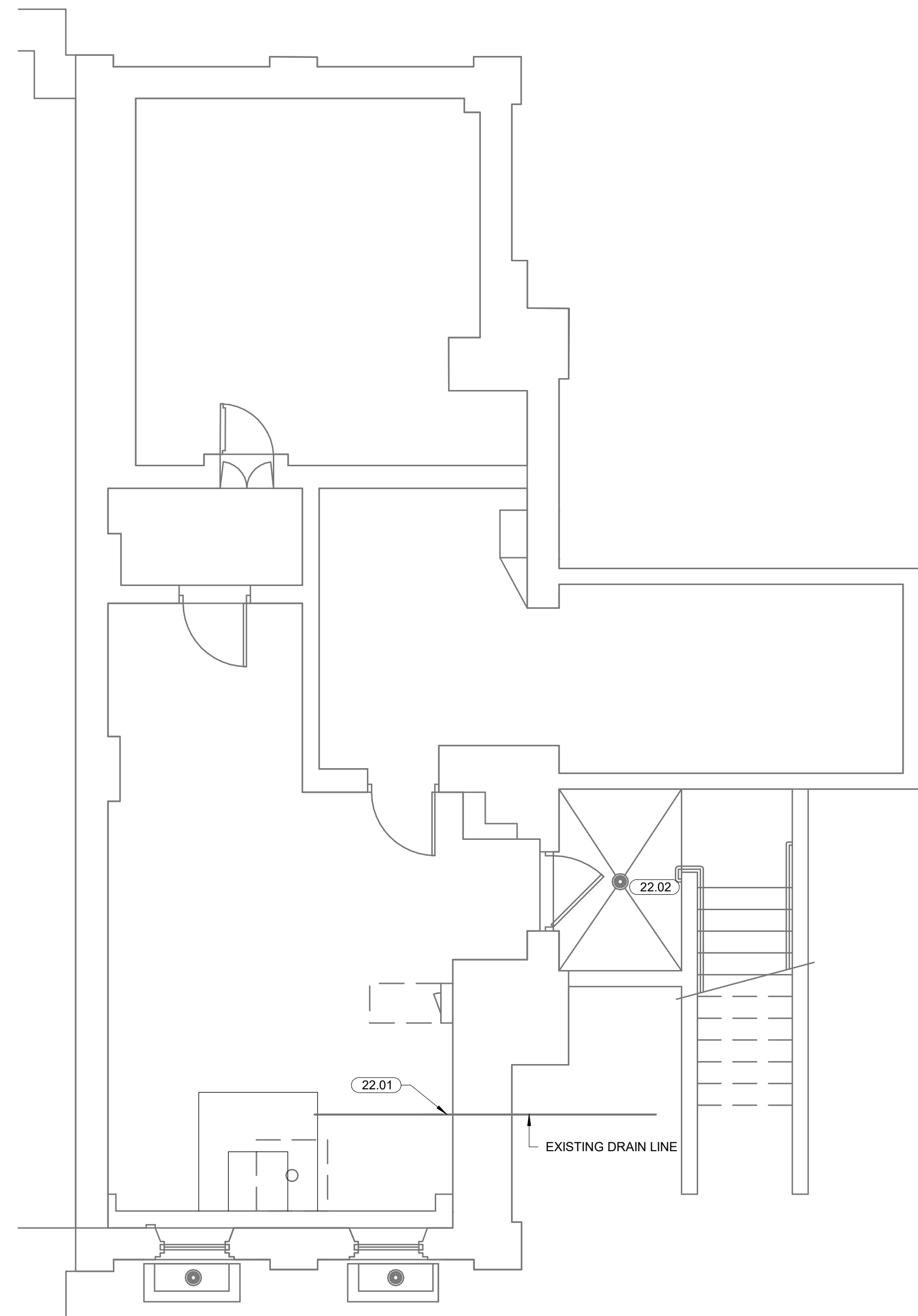
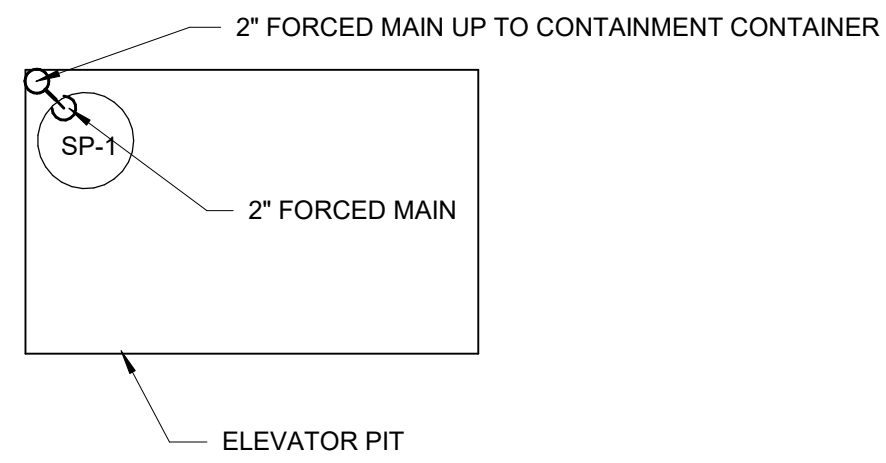
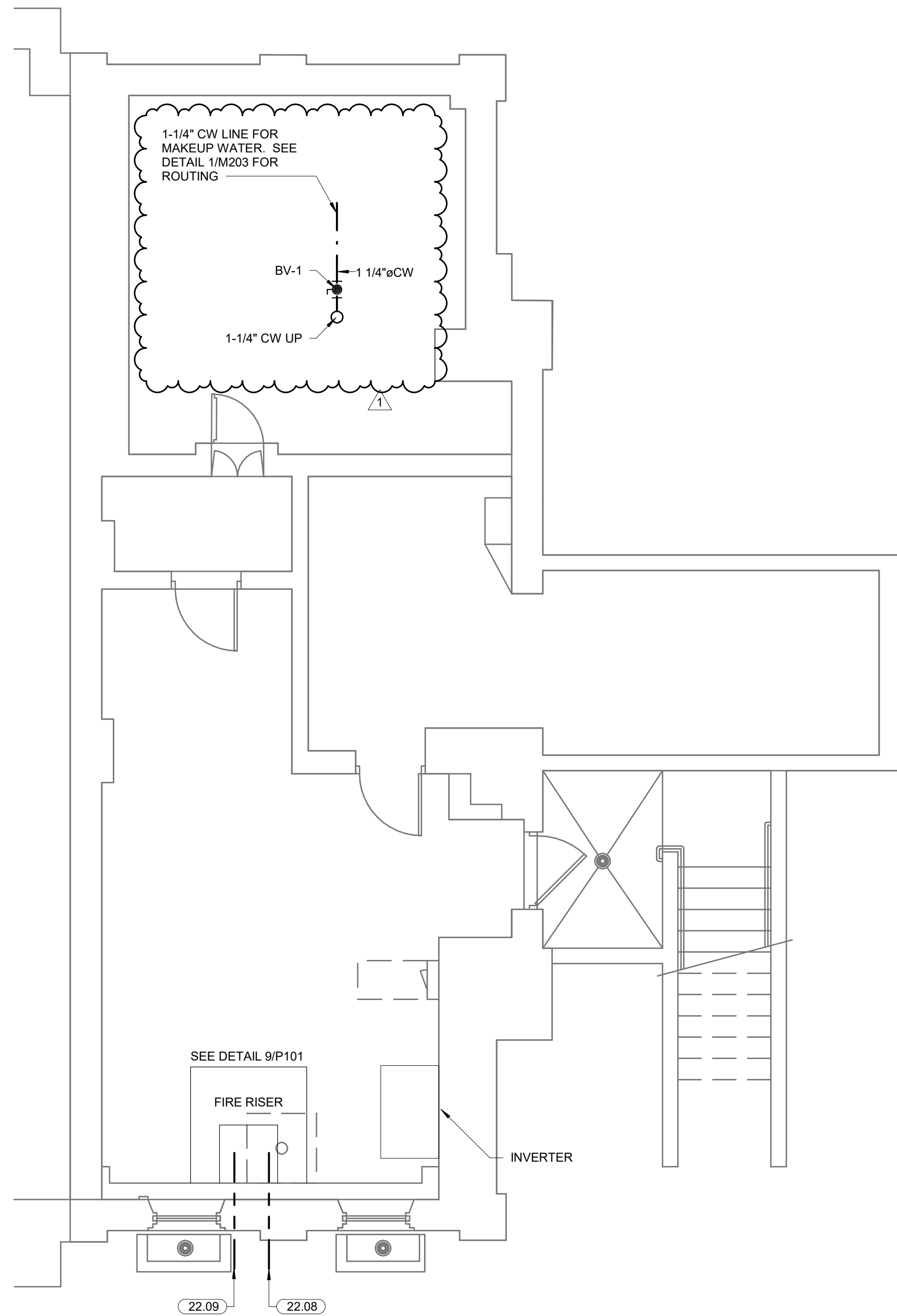
ONE architecture  
1319 e. 6th st  
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#### SHEET TITLE GEOTHERMAL DETAILS

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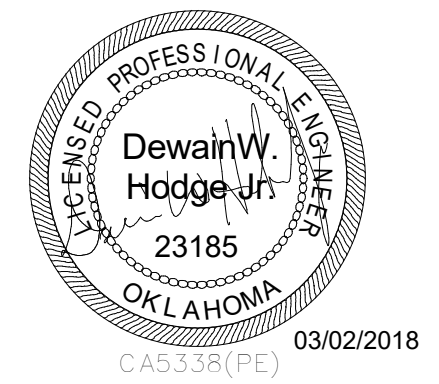
KEYNOTES	
22.01	EXISTING SANITARY DRAIN LINE. FIELD VERIFY EXACT LOCATION, ADEQUATE SIZE, DIRECTION OF FLOW AND INVERT OF EXISTING DRAIN LINE.
22.02	EXISTING EXTERIOR DRAIN. CONTRACTOR SHALL HYDRO JET TO CLEAN OUT DRAIN AND CONFIRM THAT IT IS IN GOOD WORKING CONDITION.
22.08	FIRE LINE. STUB UP INSIDE BUILDING FOR SPRINKLER CONTRACTOR CONNECTION. FIRE LINE TO BE SIZED BY SPRINKLER CONTRACTOR. REFER TO CIVIL PLANS FOR CONTINUATION.
22.09	FIRE LINE TO FDC. REFER TO CIVIL PLANS FOR CONTINUATION. COORDINATE EXACT LOCATION OF FDC WITH LOCAL FIRE MARSHAL.



2 PLUMBING SUPPLY PLAN - BASEMENT  
1/4" = 1'-0"

1 PLUMBING DRAIN PLAN - BASEMENT  
1/4" = 1'-0"

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- CODE: 2015 IEBC, 2015 IBC  
- USE GROUP: A-3  
- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

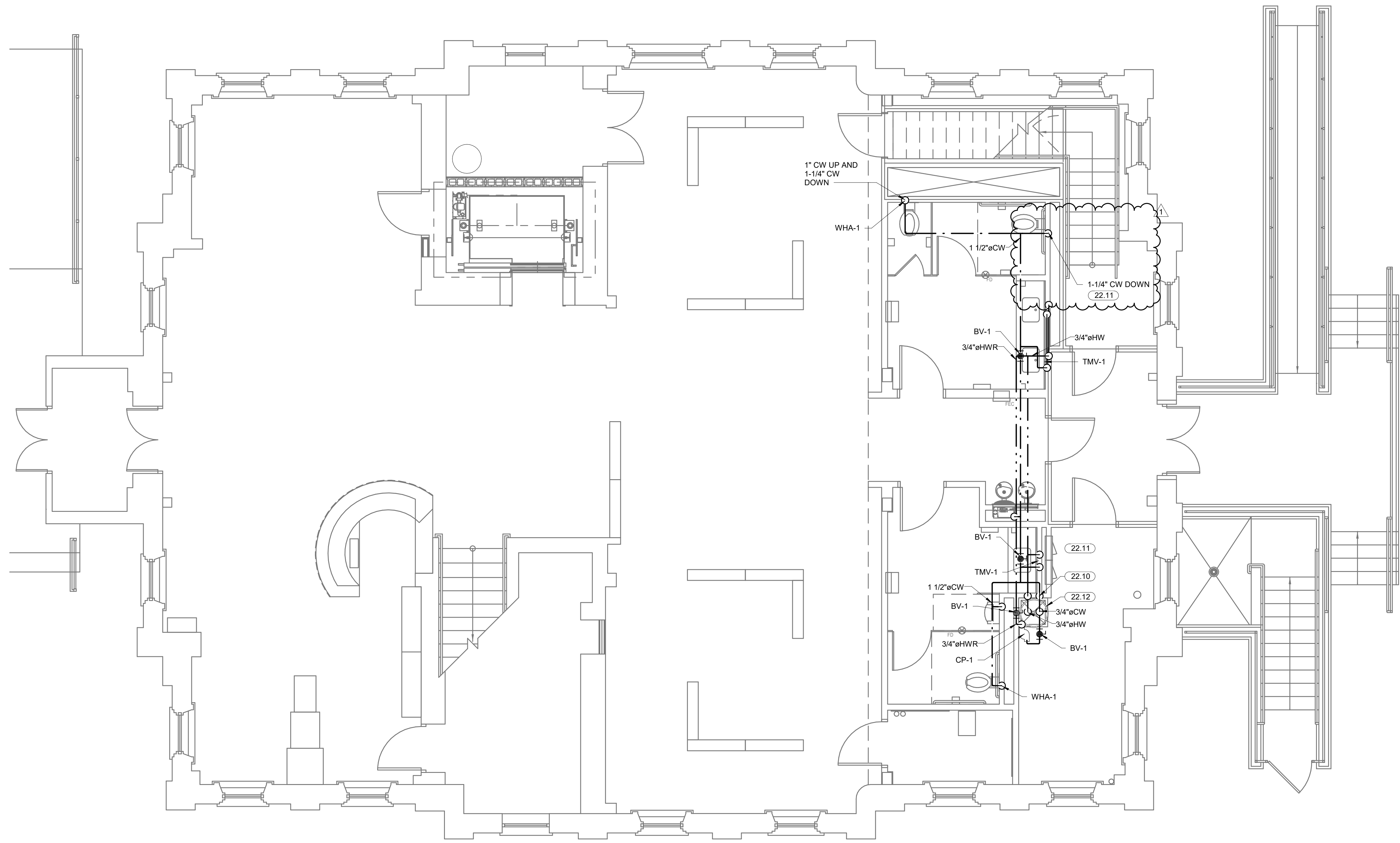
CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
INTERIOR RENOVATION**  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74464

**one architecture**  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

SHEET TITLE:  
**BASEMENT - PLUMBING  
PLANS**

DATE: 02/09/18 PROJECT NUMBER: 1604-003 SHEET NO.: P200

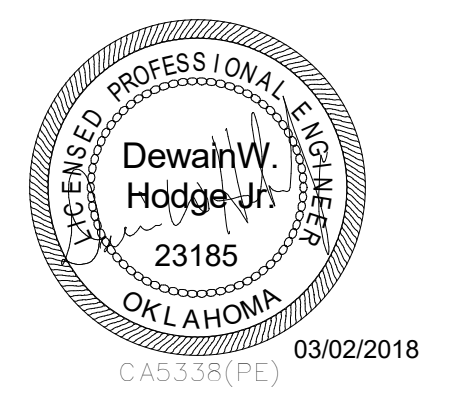
KEYNOTES	
22.10	1-1/2" CW DOWN TO BASEMENT AND CONNECT TO EXISTING CW LINE. FIELD VERIFY EXACT LOCATION AND ADEQUATE SIZE OF EXISTING CW LINE. 42 G.P.M.
22.11	VALVE AND CAP ALL ABANDONED HOT AND COLD WATER SUPPLY LINES IN A CONCEALED LOCATION. ALL VALVES AND CAPS SHALL BE LOCATED IN A CONCEALED LOCATION UNLESS NOTED OTHERWISE.
22.12	EW-H-1: MOUNT ON SHELF ABOVE JS-1 AT 60" A.F.F. ROUTE DRAIN PAN DRAIN AND T&P VALVE TO JS-1.



**Notes:**

- SCALE. DO NOT SCALE DRAWINGS.
- CODES. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND COMPLY WITH ALL APPLICABLE NATIONAL, STATE AND LOCAL BUILDING CODES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE COMPLIANCE WITH SAID CODES.
- DIMENSIONS. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, FRAMING CONDITIONS, AND SITE CONDITIONS BEFORE STARTING WORK. ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES OR POSSIBLE DEFICIENCIES. ANY AND ALL COSTS ASSOCIATED WITH WORK OR REPAIR THEREOF PERFORMED FOLLOWING DISCOVERY OF DISCREPANCIES, UNFORESEEN CONDITIONS, OR DEFICIENCIES WILL BE BORNE BY THE CONTRACTOR.
- DIMENSIONS. ALL INTERIOR DIMENSIONS ARE TO THE CENTERLINE OF FRAMING, TO THE CENTERLINE OF OPENINGS OR TO THE INSIDE FINISH FACE, UNLESS NOTED OTHERWISE.
- INSTALLATION. ALL MATERIALS, SUPPLIES AND EQUIPMENT SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS AND PER APPLICABLE CODES AND REQUIREMENTS. THE ARCHITECT SHALL NOT HAVE CONTROL OR CHARGE OF AND SHALL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, OR PROCEDURES IN CONNECTION WITH THE WORK, FOR THE ACTS OR OMISSIONS OF THE CONTRACTOR, SUB-CRONTACTOR, OR ANY OTHER PERSON PERFORMING ANY OF THE WORK, OR FOR THE FAILURE OF ANY OF THEM TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
- MATERIAL STORAGE. MATERIALS STORED ON SITE SHALL BE PROTECTED FROM DAMAGE BY MOISTURE, WIND, SUN, ABUSE, THEFT OR ANY OTHER HARMFUL AFFECTS. REFERENCE SPECIFICATIONS FOR FURTHER STORAGE REQUIREMENTS.
- SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS OR SAFETY PROGRAMS USED TO PROVIDE A SAFE WORKING ENVIRONMENT ON THE JOB SITE. REFERENCE SPECIFICATIONS FOR SAFETY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL STRUCTURAL SHORING AND BRACING DURING ALL PHASES OF CONSTRUCTION.
- PERMITS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS INCLUDING PAYING TERO FEES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTIONS AND A CERTIFICATE OF OCCUPANCY. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL THE PERMITTING AUTHORITIES.
- CONTRACT DOCUMENTS. THESE CONTRACT DOCUMENTS ARE THE PROPERTY OF THE ARCHITECT AND SHALL NOT BE USED WITHOUT HIS OR HER WRITTEN CONSENT. THESE CONTRACT DOCUMENTS ARE FOR USE SOLELY WITH RESPECT TO THIS PROJECT. THE OWNER SHALL NOT REUSE OR PERMIT THE REUSE OF THESE CONTRACT DOCUMENTS EXCEPT BY MUTUAL AGREEMENT IN WRITING. THE CONTRACT DOCUMENTS SHALL NOT BE USED FOR ISSUE OF A BUILDING PERMIT OR ANY CONSTRUCTION UNLESS SIGNED AND SEALED BY THE ARCHITECT.
- RECYCLE BINS TO BE PROVIDED FOR WORKERS DURING CONSTRUCTION.

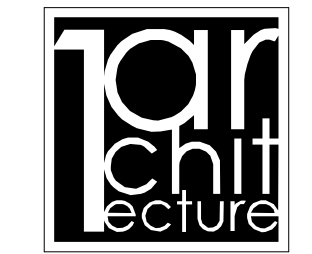
**HP ENGINEERING INC.**  
 5214 W. VILLAGE PARKWAY  
 SUITE 120  
 ROGERS, AR 72758  
 PH. 479.899.6370



GENERAL INFORMATION:  
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GENERAL POWER NOTES	
1	ALL RECEPTACLES SHALL BE GROUNDING TYPE.
2	ALL RECEPTACLES INSTALLED IN BATHROOMS, OUTDOORS AND KITCHENS SHALL HAVE GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION AS REQUIRED BY THE NATIONAL ELECTRIC CODE.
3	COORDINATE MECHANICAL EQUIPMENT CONNECTION REQUIREMENTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE FEEDERS, DISCONNECTS AND MAINTENANCE RECEPTACLES SO THAT THEY WILL NOT INTERFERE WITH OPERATION OR MAINTENANCE OF MECHANICAL EQUIPMENT.
4	PROVIDE POWER TO MECHANICAL, PLUMBING, AND ALL OTHER EQUIPMENT AS REQUIRED FOR PROPER OPERATION. COORDINATE AND VERIFY EACH PIECE OF EQUIPMENT'S POWER/CONTROL REQUIREMENTS PRIOR TO ORDERING RELATED ELECTRICAL EQUIPMENT. REFER TO RELATED MECHANICAL, PLUMBING, AND OTHER RELATED DOCUMENTS FOR LOCATIONS OF EQUIPMENT AND REQUIRED CLEARANCES AROUND EQUIPMENT.
5	COORDINATE EXACT MOUNTING HEIGHT OF EACH ABOVE COUNTER INTERRUPTER PROTECTION PER NEC-210 SHALL CONSIST OF A GFCI PROTECTED DEVICE, EVEN IF NOT SPECIFICALLY INDICATED IN THE DRAWINGS.
6	ALL OUTLETS LOCATED IN AREAS REQUIRING GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION PER NEC-210 SHALL CONSIST OF A GFCI PROTECTED DEVICE, EVEN IF NOT SPECIFICALLY INDICATED IN THE DRAWINGS.

GENERAL LIGHTING NOTES	
1	WHERE RECESSED LIGHTING FIXTURES ARE INDICATED IN A FIRE RATED CEILING, PROVIDE A ONE HOUR RATED "TENT" FOR FIXTURE.
2	PROVIDE ALL MOUNTING AND SUPPORT HARDWARE FOR LIGHT FIXTURES TO MEET SPECIFIED MOUNTING HEIGHTS, REFER TO ARCHITECTURAL ELEVATIONS FOR EXACT MOUNTING HEIGHTS OF FIXTURES.
3	CONNECT "UN-SWITCHED" HOT CONDUCTOR FROM CIRCUIT SERVING SPACE LIGHTING TO EACH EXIT SIGN, EMERGENCY LIGHT, AND ANY FIXTURE DESIGNATED AS NIGHT LIGHT SERVING THE SPACE.
4	COORDINATE ALL DEVICES AND WALL-MOUNTED LIGHT FIXTURE LOCATIONS WITH THE ARCHITECTURAL WALL FINISHES AND ELEVATIONS. SPECIAL ATTENTION AND COORDINATION OF WALL TYPES AND FINISHES IS REQUIRED PRIOR TO ROUGH-IN. EXACT LOCATION OF DEVICES SHALL BE COORDINATED WITH THE ARCHITECT PRIOR TO ROUGH-IN TO AVOID INSTALLATION ON SPECIAL ARCHITECTURAL WALL FINISHES. DEVICES NOT PROPERLY COORDINATED WITH THE SPECIAL WALL FINISHES INDICATED IN THE CONSTRUCTION DOCUMENTS PRIOR TO ROUGH-IN SHALL BE RELOCATED AT NO ADDITIONAL COST TO THE OWNER.
5	ELECTRICAL CONTRACTOR SHALL VERIFY CHEVRON DIRECTIONS OF ALL EXIT SIGNS PRIOR TO ORDERING.
6	FOR BATTERY FED EMERGENCY LIGHTS, PROVIDE EMERGENCY BALLAST. PROVIDE "HOT" WIRE TO EMERGENCY BALLAST. SWITCH FIXTURE AS INDICATED ON PLANS.
7	COORDINATE AND PROVIDE DIMMER SWITCHES RATED FOR AND COMPATIBLE WITH INTENDED LIGHT FIXTURE(S) TO BE CONTROLLED. CIRCUITS CONTROLLED WITH LINE-VOLTAGE DIMMER SWITCHES SHALL NOT SHARE NEUTRAL CONDUCTORS.

GENERAL LOW VOLTAGE NOTES	
1	PROVIDE 4" WIDE X 4" TALL X 3/4" FIRE RATED, PAINTED CDX PLYWOOD BACKBOARD WHERE SHOWN ON DRAWINGS OR AS REQUIRED FOR TELEPHONE, CATV, ALARM SYSTEM EQUIPMENT, ECT. COORDINATE EXACT LOCATION(S) WITH RESPONSIBLE CONTRACTOR(S).
2	PROVIDE (1) 1/2" CONDUIT, AND 4" SQUARE BOX WITH SINGLE GANG DEVICE RING FOR ALL THERMOSTATS LOCATIONS INDICATED ON THE MECHANICAL DRAWINGS. ROUTE CONDUIT FROM BOX TO ACCESSIBLE CEILING CAVITY. PROVIDE PLASTIC BUSHINGS ON EXPOSED CONDUIT ENDS. PROVIDE PULL STRING IN ALL EMPTY CONDUIT SYSTEMS. COORDINATE EXACT LOCATIONS AND MOUNTING HEIGHTS WITH MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN.
3	PROVIDE CABLE HOOKS ABOVE CEILING ON 6" CENTERS IN ALL CORRIDORS. MOUNT 6 INCHES ABOVE CEILING.
4	PROVIDE ROUGH-IN OF ALL BACK BOXES, CONDUITS (WITH BUSHINGS AND PULL STRINGS) AND OTHER WIRE WAYS AS REQUIRED FOR LOW VOLTAGE SYSTEMS. COORDINATE ALL REQUIRED LOCATIONS WITH OWNER AND RESPONSIBLE CONTRACTOR(S).
5	FURNISH AND INSTALL A TELEPHONE SERVICE CONDUIT(S) PER TELEPHONE SERVICE PROVIDER SPECIFICATIONS. STUB UP AT DESIGNATED EQUIPMENT BOARD.
7	ONE #6 COPPER INSULATED GROUND WIRE FROM THE ELECTRICAL SERVICE GROUND TO THE TELEPHONE EQUIPMENT BOARD. LEAVE 36" EXTRA WIRE AT FREE END.
8	FURNISH AND INSTALL A CABLE TV SERVICE CONDUIT(S) PER CABLE TV PROVIDER SPECIFICATIONS. STUB UP AT SERVICE POINT.
9	REFER TO SITE UTILITIES PLAN AND COORDINATE ENTIRE INSTALLATION WITH CABLE TV SERVICE PROVIDER.
9	REFER TO SITE UTILITIES PLAN AND COORDINATE ENTIRE INSTALLATION WITH PHONE SERVICE PROVIDER.
10	PROVIDE BACK BOX AND CONDUIT TO ABOVE THE ACCESSIBLE CEILING AS REQUIRED FOR THE HVAC BUILDING AUTOMATION SYSTEM DEVICES. COORDINATE EXACT LOCATIONS AND OTHER REQUIREMENTS WITH RELATIVE MEP DRAWINGS AND THE CONTROLS CONTRACTOR PRIOR TO ROUGH-IN. THERMOSTATS, TEMPERATURE SENSORS, STATIC PRESSURE SENSORS, HUMIDISTATS, ETC. SHALL BE INSTALLED AT THE SAME ELEVATION AS THE LIGHT SWITCHES UNLESS REQUIRED OTHERWISE.

GENERAL ELECTRICAL NOTES	
1	DRAWINGS ARE DIAGRAMMATIC ONLY AND REPRESENT THE GENERAL SCOPE OF THE WORK. REVIEW ALL GENERAL NOTES, SPECIFICATIONS AND PLANS FOR ADDITIONAL REQUIREMENTS THAT MAY NOT BE SPECIFICALLY CALLED OUT IN THIS PORTION OF THE CONSTRUCTION DOCUMENTS.
2	SPECIAL ATTENTION SHALL BE GIVEN TO ALL RACEWAYS WITHIN FINISHED AREAS WITHOUT CEILINGS AND EXPOSED TO STRUCTURE. IN GENERAL, ALL RACEWAYS SHALL BE CONCEALED WITHIN WALLS, ABOVE STRUCTURE FINISH, OR BELOW FLOOR SLABS WHEN SPECIFIED, WHERE EXPOSED CONDITIONS ARE NECESSARY OR UNAVOIDABLE DUE TO OTHER CONDITIONS. THE BID SHALL INCLUDE ANY REASONABLE MEANS TO MINIMIZE THE AMOUNT OF SURFACE MOUNTED EQUIPMENT. PRIOR TO ROUGH-IN, COORDINATE ALL EXPOSED RACEWAY AND BOX CONDITIONS WITH ARCHITECT PRIOR TO CONSTRUCTION OF WALLS, ROOF DECK, OR FLOOR SLABS. ATTACHMENT TO ROOF DECK OR JOIST WEBBINGS IS NOT ALLOWED. MAINTAIN A MINIMUM SPACING OF 1-1/2" FROM CONDUIT TO ROOF DECK. IN AREAS WHERE EXPOSED RACEWAYS ARE REQUIRED, INSTALL SYSTEMS SQUARE AND TIGHT TO STRUCTURE AND PAINT TO MATCH THE STRUCTURE PER ARCHITECT AND/OR OWNER SPECIFICATIONS. FAILURE TO PROPERLY COORDINATE THE ROUTING OF EXPOSED RACEWAYS MAY RESULT IN RELOCATION OF SUCH RACEWAYS AT NO ADDITIONAL COST TO THE OWNER.
3	OPENINGS AROUND ELECTRICAL PENETRATIONS THROUGH FIRE-RESISTANT-RATED WALLS, PARTITIONS, FLOORS OR CEILINGS SHALL BE FIRESTOPPED USING APPROVED METHODS TO MAINTAIN THE FIRE RESISTANCE RATING. PROVIDE PENETRATION FIRE STOPPING WITH RATINGS DETERMINED PER ASTM E 814 OR UL 1478. FIRE STOPPING SHALL NOT BE LESS THAN FIRE RESISTANCE RATING OF CONSTRUCTIVE PENETRATIONS.
4	FIELD MOUNTED DEVICES SUCH AS SWITCHES, MOTOR STARTERS, RECEPTACLES, ETC. ARE SHOWN IN THEIR APPROXIMATE LOCATION. SWITCH MOUNTING HEIGHT SHALL BE 48" ABOVE FINISHED FLOOR AND RECEPTACLE MOUNTING HEIGHT SHALL BE 18" ABOVE FINISHED FLOOR UON. REFER TO THE TYPICAL MOUNTING HEIGHT DETAIL.
5	INSTALL EQUIPMENT IN A MANNER TO REMAIN ACCESSIBLE WITH REASONABLE MEANS BY THE OWNER FOLLOWING COMPLETION OF WORK. SPECIAL ATTENTION AND ADDITIONAL COORDINATION IS EXPECTED IN AREAS OF THE BUILDING WHERE THE CEILING AND STRUCTURE HEIGHTS HAVE SIGNIFICANT DIFFERENT ELEVATIONS. EQUIPMENT REQUIRING POSSIBLE FUTURE ACCESS SHALL BE INSTALLED SUCH THAT IT MAY BE SAFELY ACCESSED FROM A STANDARD STEP LADDER OR PERSONNEL LIFT SUITABLE FOR THE LOCATION AND CEILING HEIGHT, WITHOUT REMOVING OR DAMAGING THE CEILING GRID STRUCTURE.
6	COORDINATE ALL CEILING MOUNTED ELECTRICAL ITEMS WITH OTHER DISCIPLINES, WITH CEILING, AND STRUCTURE. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
7	FIELD VERIFY LOCATIONS OF EXISTING ELECTRICAL EQUIPMENT, INCLUDING POWER POLES, TELEPHONE PEDESTALS, OVERHEAD AND UNDERGROUND FEEDERS, METERS, PANELS, DEVICES, ETC. PROVIDE FOR COORDINATION WITH EXISTING EQUIPMENT.
8	ROOM NAMES/NUMBERS SHOWN IN PANELBOARD SCHEDULES ARE PER ARCHITECTURAL FLOOR PLANS. CONTRACTOR SHALL PROVIDE FINALIZED PANELBOARD SCHEDULES AT COMPLETION OF PROJECT WITH OWNER PROVIDED ROOM NAMES/NUMBERS.
9	CONDUCTORS FOR BRANCH CIRCUITS AS DEFINED IN ARTICLE 100, SHALL BE SIZED TO PREVENT A VOLTAGE DROP EXCEEDING 3% AT THE FARTHEST LOAD, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST LOAD DOES NOT EXCEED 5%.
10	ALL WORK IS TO BE PERFORMED IN STRICT COMPLIANCE WITH THE NATIONAL ELECTRICAL CODE, STATE LAWS, AND ALL OTHER REGULATIONS GOVERNING WORK OF THIS NATURE.
11	THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK, MATERIAL, AND LABOR TO SATISFY A COMPLETE AND WORKING SYSTEM WHETHER SPECIFIED OR IMPLIED.
12	CONTRACTOR TO CONFIRM EXACT LOCATION OF EXISTING AND NEW EQUIPMENT.
13	THE CONTRACTOR SHALL FURNISH AND INSTALL ALL GROUNDING SYSTEMS (AS REQUIRED) IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
14	ALL ELECTRIC MATERIALS AND EQUIPMENT FOR THE PROJECT SHALL BE NEW AND U.L. OR EQUALLY LISTED.
15	SUBMIT TO THE OWNER CERTIFICATES OF INSPECTIONS IN DUPLICATE FROM AN APPROVED INSPECTION AGENCY UPON COMPLETION.
16	THE CONTRACTOR SHALL SECURE ALL PERMITS OR APPLICATIONS AND PAY ANY AND ALL FEES AS REQUIRED.
17	THE CONTRACTOR SHALL FURNISH ALL INSTRUMENTS AND QUALIFIED PERSONNEL ON FIRM TO PERFORM ALL REQUIRED TESTS.
18	NO EQUIPMENT SHALL BE ENERGIZED UNTIL ALL TEST AND ADJUSTMENTS HAVE BEEN MADE. THREE COPIES OF ALL TEST RESULTS SHALL BE DELIVERED TO THE OWNER.
19	ALL ELECTRICAL WORK SHALL BE COORDINATED WITH THE MECHANICAL WORK AS CALLED FOR IN MECHANICAL SPECIFICATIONS AND PLANS.
20	JUNCTION BOXES LOCATED ABOVE GRID CEILINGS SHALL BE LOCATED NO GREATER THAN 4 FEET ABOVE THE CEILING IN A LOCATION ACCESSIBLE VIA A LADDER FROM THE ROOM BELOW.
21	ALL WIRING DEVICE COVERPLATES SHALL INDICATE PANELBOARD AND CIRCUIT SERVING THE DEVICE. UTILIZE CLEAR VINYL (BLACK LETTERING) IDENTIFICATION LABELS MANUFACTURED BY 3M COMPANY (OR APPROVED EQUIVALENT).
22	THE TYPE OF CONDUIT SHALL BE AS FOLLOWS FOR ALL FEEDERS AND DISTRIBUTION CIRCUITS, UNLESS OTHERWISE SPECIFIED.  APPLICATION - TYPE OF CONDUIT  BURIED IN CONCRETE OR OUTDOORS - PVC WITH RIGID GALVANIZED STEEL ELBOWS  SERVICE ENTRANCE - GALVANIZED RIGID STEEL OR SERVICE UTILITY SPECIFICATIONS
23	SEISMIC PROTECTION FOR SEISMIC CONCERNS OF ALL BUILDING SYSTEMS INCLUDING BUT NOT LIMITED TO MECHANICAL, PLUMBING, AND ELECTRICAL MUST MEET MINIMUM REQUIREMENTS OF ALL APPLICABLE CODES FOR BUILDINGS' CLASSIFIED SEISMIC USE GROUP AND SEISMIC DESIGN CATEGORY. ANY REQUIREMENTS FOR SEISMIC PROTECTION MEASURES TO BE APPLIED SHALL BE INSTALLED IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND/OR FEDERAL CODES AND WITH MANUFACTURER'S REQUIREMENTS, THE MOST STRINGENT SHALL APPLY.  THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE TYPE AND LOCATION OF SEISMIC RESTRAINTS REQUIRED FOR THE VARIOUS SYSTEM'S ELEMENTS CONTAINED IN THE CONSTRUCTION DOCUMENTS BASED ON THE RELATED SEISMIC CODE CRITERIA, THE SIZE AND WEIGHT OF THE SUPPORTED ELEMENT AND THE DISTANCE FROM STRUCTURE THAT THE ELEMENT WILL BE INSTALLED. IF REQUIRED BY LOCAL, STATE, FEDERAL CODES AND/OR OTHER AUTHORITY HAVING JURISDICTION (AHJ) THE CONTRACTOR SHALL SUBMIT DESCRIPTIVE CATALOG DATA OF SEISMIC RESTRAINTS, SHOP DRAWINGS SHOWING THE TYPES, LOCATIONS AND INSTALLATION DETAILS OF SEISMIC RESTRAINTS AND CALCULATIONS SHOWING THAT THE SEISMIC RESTRAINTS MEET THE SEISMIC REQUIREMENTS TO THE LOCAL AHJ FOR REVIEW AND APPROVAL. CALCULATIONS SHALL BE SIGNED AND SEALED BY A REGISTERED PROFESSIONAL ENGINEER, LICENSED IN THE STATE OF THE PROJECT LOCATION AND EMPLOYED BY THE MANUFACTURER OF THE SEISMIC RESTRAINT PRODUCTS. CALCULATIONS SHALL INCLUDE DEAD LOADS, STATIC SEISMIC LOADS AND CAPACITY OF MATERIALS UTILIZED FOR CONNECTIONS TO EQUIPMENT AND STRUCTURE.
24	PROVIDE A MINIMUM OF (3) SPARE 1" CONDUITS FROM RECESSED PANELBOARD, UP TO ACCESSIBLE CEILING SPACE.
25	UNLESS NOTED OTHERWISE PROVIDE MINIMUM #8 AWG CONDUCTORS IN 1" CONDUIT(S) FOR ALL UNDERGROUND SITE POWER AND LIGHTING CIRCUITS. INCREASE CONDUCTOR AND RELATED CONDUIT SIZE AS NOTED OR OTHERWISE REQUIRED TO LIMIT VOLTAGE DROP TO LESS THAN 5% FOR THE ENTIRE LENGTH OF SYSTEM.

ABBREVIATIONS		
AC	ABOVE COUNTER	IG ISOLATED GROUND
AFF	ABOVE FINISHED FLOOR	MCC MOTOR CONTROL CENTER
CB	CIRCUIT BREAKER	NEC NATIONAL ELECTRICAL CODE
E	EXISTING	NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOC.
EC	ELECTRICAL CONTRACTOR	NIC NOT IN CONTRACT
EP	EXPLOSION PROOF	NL NIGHT LIGHT
GFI	GROUND FAULT CIRCUIT INTERRUPTER	UG UNDERGROUND
GR	GROUND	UON UNLESS OTHERWISE NOTED
HP	HORSE POWER	WP WEATHERPROOF
		WR WEATHER RESISTANT
WIRING		
	WIRING CONCEALED IN CEILING OR WALLS UON. ALL WIRE IS NUMBER #12 AWG MINIMUM.	
	EXPOSED RACEWAY.	
	UNDERGROUND RACEWAY. TYPE, SIZE, CONDUCTORS, AND ARRANGEMENT BY NOTATION OR SCHEDULE.	
SWITCHES		
S*	SWITCH MOUNTED AT +48"; SINGLE POLE UON. LOWER CASE LETTER, WHEN PRESENT, INDICATES FIXTURES CONTROLLED.	
	* ABBREVIATIONS FOR SWITCH	
2	DOUBLE POLE SWITCH	
3	3-WAY SWITCH	
4	4-WAY SWITCH	
D	DIMMER SWITCH (SHALL BE COMPATIBLE WITH FIXTURE BEING DIMMED)	
F	FAN SWITCH- DUAL OPERATION WITH DIMMER	
K	KEYED SWITCH	
M	MOTOR RATED SWITCH	
OS	DUAL TECHNOLOGY OCCUPANCY SENSOR	
V	VOLUME CONTROL SWITCH	
◇ OS	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR WITH SPARE DRY CONTACTS. HUBBELL OMNIDIARP SERIES	
RECEPTACLES		
⊕	DUPLEX RECEPTACLE (NEMA 5-20R)	
⊕	DUPLEX RECEPTACLE (NEMA 5-20R); MOUNTED 8" ABOVE COUNTERTOP.	
⊕	(ALL RECEPTACLE TYPES) WITH USB CHARGING PORTS	
⊕	GFI DUPLEX RECEPTACLE (NEMA 5-20R)	
⊕	GFI DUPLEX RECEPTACLE (NEMA 5-20R); MOUNTED 8" ABOVE COUNTERTOP.	
⊕	QUADRUPLX RECEPTACLE (TWO NEMA 5-20R)	
⊕	SPECIAL RECEPTACLE. VERIFY NEMA TYPE WITH MANUFACTURER	
⊕	FLOOR BOX WITH DATA: LEGRAND WIREMOLD SERIES RFB4E-OG OR RFB6E-OG WITH EVOLUTION COVER. ROUTE (2)1" FOR DATA FROM FLOOR BOX TO NEAREST ACCESSIBLE CEILING SPACE. ON FLOOR LEVELS WITH ACCESSIBLE SPACE BELOW, USE POKE-THRU STYLE FLOOR BOXES; LEGRAND 6AT SERIES. SEE ARCHITECTURAL PLANS FOR LOCATION UON.	
⊕	SINGLE RECEPTACLE (NEMA 5-20R)	
⊕	SPLIT WIRED DUPLEX RECEPTACLE (NEMA 5-20R)	
⊕	DIRECT EQUIPMENT CONNECTION: VERIFY CONNECTION DETAILS WITH MANUFACTURER	
⊕	FLOOR BOX: HUBBELL 3SFBSS WITH 3SFCB COVER. EC SHALL ROUTE A 1" FOR FLOOR BOX TO NEAREST ACCESSIBLE CEILING SPACE. ON FLOOR LEVELS WITH ACCESSIBLE SPACE BELOW, USE POKE-THRU STYLE FLOOR BOXES; HUBBELL PT2X2 SERIES. SEE ARCHITECTURAL PLANS FOR LOCATION UON.	
⊕	CEILING MOUNTED RECEPTACLE(NEMA 5-20R)	
PANELS AND MISC.		
	LIGHT OR POWER PANEL	
	4x4 JUNCTION BOX.	
	4x4 FLOOR MOUNTED JUNCTION BOX.	
	EQUIPMENT DISCONNECT: INTERIOR DISCONNECTS SHALL BE NEMA 1 TYPE. EXTERIOR DISCONNECTS SHALL BE NEMA 3R TYPE. SIZE AS INDICATED IN THE PLANS AND PER NAMEPLATE RATING.	
	PHONE/DATA: PROVIDE 4"x4", 30-1/4 CUBIC INCH OUTLET BOX AT 8" ABOVE COUNTER (UON) WITH (2) 3/4" CONDUITS (WITH PULL STRINGS) ROUTED TO ACCESSIBLE CEILING SPACE. PROVIDE SINGLE GANG MUD RING WITH BLANK COVER. PROVIDE PLASTIC BUSHINGS ON EXPOSED CONDUIT ENDS. WIRING BY OTHERS.	
	PHONE/DATA: PROVIDE 4"x4", 30-1/4 CUBIC INCH OUTLET BOX AT +18" (UON) WITH (2) 3/4" CONDUITS (WITH PULL STRINGS) ROUTED TO ACCESSIBLE CEILING SPACE. PROVIDE SINGLE GANG MUD RING WITH BLANK COVER. PROVIDE PLASTIC BUSHINGS ON EXPOSED CONDUIT ENDS. WIRING BY OTHERS.	
	PHONE/DATA: PROVIDE 4"x4", 30-1/4 CUBIC INCH OUTLET BOX IN CEILING. PROVIDE SINGLE GANG MUD RING WITH BLANK COVER. WIRING BY OTHERS.	
	TELEVISION: PROVIDE 4x4 JUNCTION BOX WITH (2) 3/4" CONDUITS (WITH PULL STRINGS) ROUTED TO ACCESSIBLE CEILING SPACE. PROVIDE SINGLE GANG MUD RING WITH BLANK COVER. CONFIRM HEIGHTS WITH ARCHITECT PRIOR TO ROUGH-IN.	
	CEILING MOUNTED SPEAKER: PROVIDE 1/2" C WITH PULL STRINGS. EQUIPMENT AND CABLING BY OTHERS. SPEAKERS TO PART OF AV CONSULTANTS BID.	
	CARD READER: REFER TO SYSTEM PLANS AND SPECIFICATIONS. AT EACH DOOR WITH A CARD READER PROVIDE ALL ELECTRICAL CONNECTIONS FOR DOOR HARDWARE SYSTEMS AS REQUIRED TO MAKE A COMPLETE OPERATIONAL SYSTEM. WHERE REQUIRED, BACK TO BACK 2"x4" BOXES ARE ALLOWED FOR CARD READER AND PUSH TO EXIT SWITCH. PROVIDE POWER TO THE LOCK SYSTEM IN THE I.T. ROOM WHERE NEEDED BY CONTRACTOR INSTALLING SYSTEM.	
	SECURITY CAMERA: PROVIDE CONDUIT WITH PULL STRINGS. VERIFY CONDUIT SIZE WITH EQUIPMENT PROVIDER. EQUIPMENT AND CABLING BY OTHERS. (1 BLACK CAT6 CABLE PER CAMERA)	
	MOTION SENSOR FOR EXHIBIT ACTIVATION. PROVIDE 4" SQUARE BACK BOX WITH 1-GANG MUD RING.	
	WIRELESS ACCESS CONTROL: PROVIDE SINGLE GANG BOX AND CONDUIT WITH PULL STRINGS. VERIFY CONDUIT SIZE WITH EQUIPMENT PROVIDER. EQUIPMENT AND CABLING BY OTHERS. (2 CAT6 CABLES PER LOCATION)	
	AV PUSH BUTTON: PROVIDE 4x4 BOX WITH SINGLE GANG MUD RING; +48" AFF	

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- SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS OR SAFETY PROGRAMS USED TO PROVIDE A SAFE WORKING ENVIRONMENT ON THE JOB SITE. REFERENCE SPECIFICATIONS FOR SAFETY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL STRUCTURAL SHORING AND BRACING DURING ALL PHASES OF CONSTRUCTION.
- PERMITS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS INCLUDING PAYING TERO FEES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTIONS AND A CERTIFICATE OF OCCUPANCY. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL THE PERMITTING AUTHORITIES.
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- RECYCLE BINS TO BE PROVIDED FOR WORKERS DURING CONSTRUCTION.

**HP ENGINEERING INC.**  
1836 South Baltimore Avenue  
Tulsa, OK 74119  
PH. 539.664.4618



GENERAL INFORMATION:  
- CODE: 2015 IBC, 2015 IBC  
- USE GROUP: A-3  
- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:

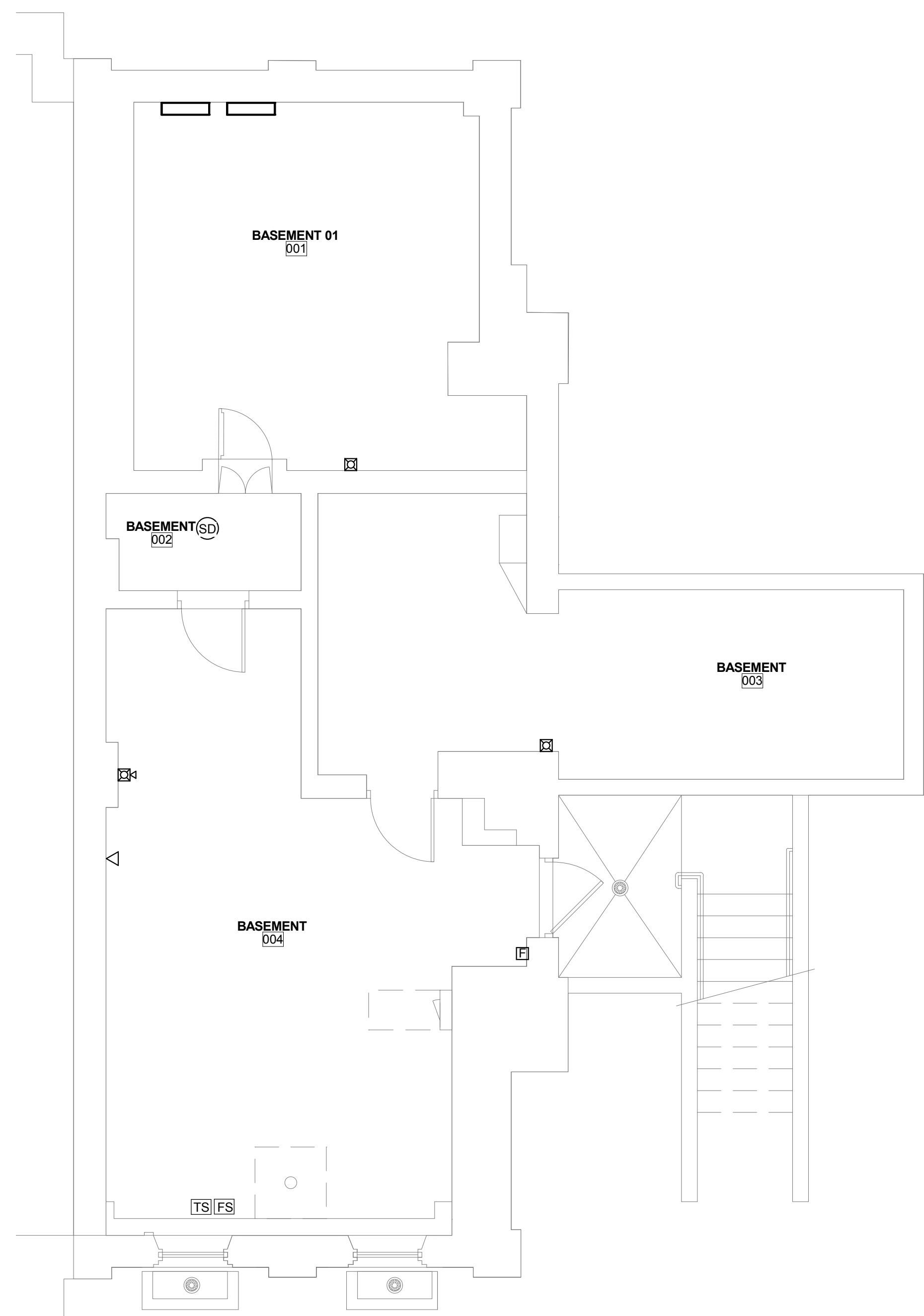
**CNE - CAPITOL BUILDING  
INTERIOR RENOVATION  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74664**



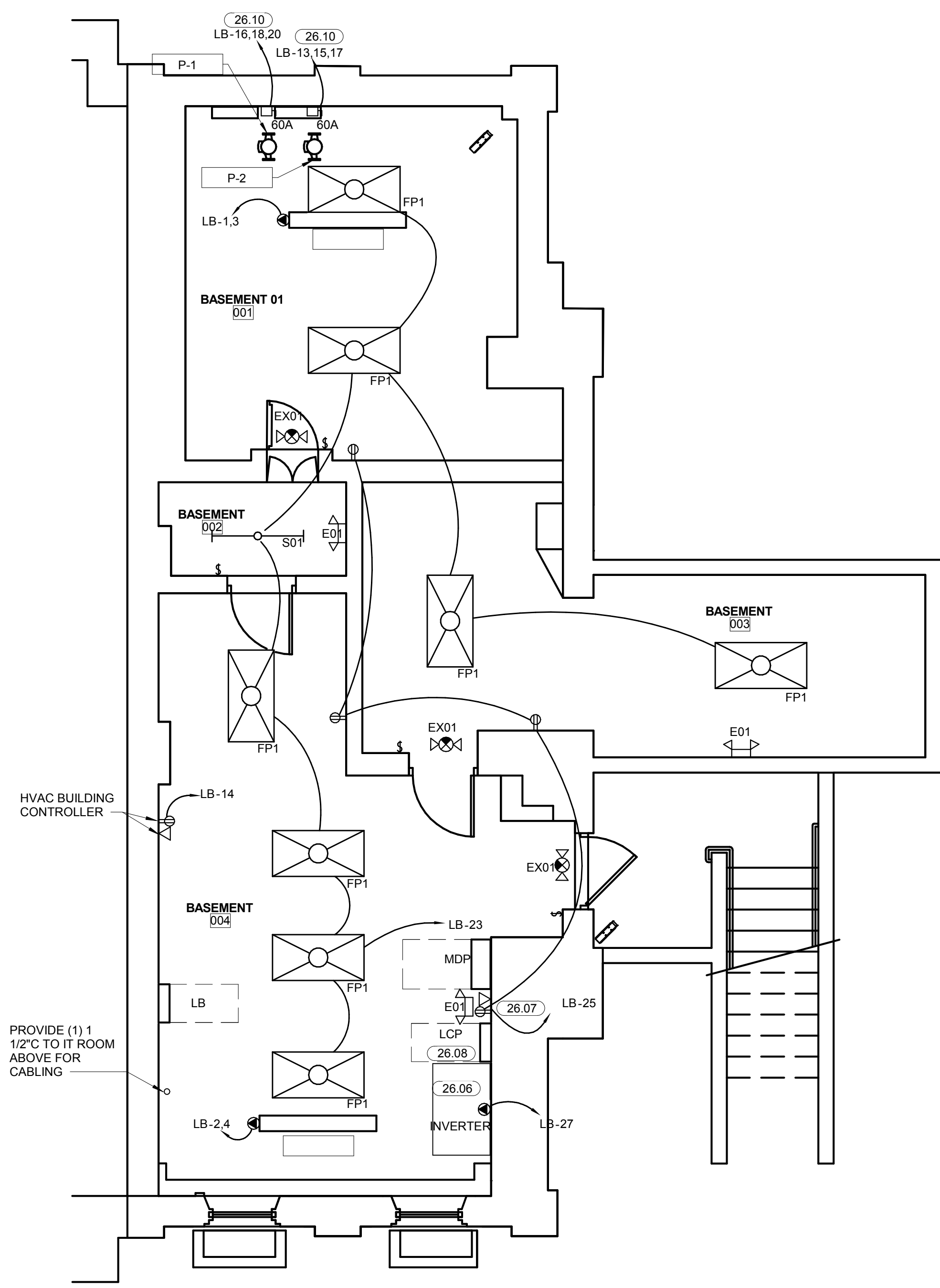
**ONE architecture**  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

SHEET TITLE  
**ELECTRICAL NOTES AND  
LEGEND**

DATE PROJECT NUMBER SHEET NO.  
02/09/18 1604-003 **E100**



2 BASEMENT FIRE ALARM PLAN  
1/4" = 1'-0"



1 BASEMENT ELECTRICAL PLAN  
1/4" = 1'-0"

**POWER PLAN NOTES**

PROVIDE COVER PLATES AT ALL JUNCTION BOX LOCATIONS.  
COORDINATE LOCATIONS OF ALL EQUIPMENT IN ELEVATOR EQUIPMENT ROOM WITH ELEVATOR SHOP DRAWINGS PRIOR TO ROUGH-IN. ELEVATOR DISCONNECT SWITCHES TO HAVE BUILT IN SHUNT TRIP.  
ELECTRICAL CONTRACTOR SHALL REFERENCE ELEVATOR SPECIFICATIONS AND COORDINATE ALL REQUIREMENTS WITH ELEVATOR MANUFACTURE FOR ALL ELECTRICAL REQUIREMENTS PRIOR TO ROUGH-IN  
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SURFACE MOUNTED ELECTRICAL RACEWAY TO BE INSTALLED ON THE INTERIOR AT ALL EXTERIOR MASONRY WALLS. REFER TO ARCHITECTURAL BASE TRIM DETAILS.

**MECHANICAL POWER PLAN...**

MAKE CONNECTIONS TO AUTOMATIC FLUSH TOILETS/URINAL AND AUTOMATIC SINKS PER MANUFACTURER SPECIFICATIONS.  
E.C SHALL MAKE CONNECTIONS BETWEEN THE OUTDOOR AND INDOOR UNITS OF THE MINI-SPLIT SYSTEM.  
EXHAUST FANS SHALL BE CIRCUITED WITH LIGHTS UNLESS SHOWN OTHERWISE. REFER TO MECHANICAL PLANS FOR CONTROLS OF EXHAUST FANS.

**LIGHTING PLAN NOTES**

PLIGHTING CONTROL PANEL: PROVIDE ALL NECESSARY EQUIPMENT, DEVICES AND CIRCUITRY FOR A COMPLETE OPERATIONAL SYSTEM, INCLUDING BUT NOT LIMITED TO: CABLING, CONDUIT, DEVICES.  
FOR LIGHTING CIRCUITRY BEING CONTROLLED BY THE LIGHTING CONTROL PANEL AND BACKED UP BY THE INVERTER FOR EMERGENCY LIGHTING, PROVIDE NECESSARY EQUIPMENT INCLUDING BUT NOT LIMITED TO EMERGENCY RELAYS SO THAT THE INVERTER CIRCUITS WILL COME ON DURING A POWER OUTAGE REGARDLESS OF THE STATE OF THE LIGHTING CONTROL PANEL.  
EXISTING DEVICES AND CIRCUITRY NOT SHOWN SHALL REMAIN. THIS INCLUDES BUILDING FLOOD LIGHTS, SITE LIGHTS AND PAVILION LIGHTING.  
PROVIDE COVER PLATES AT ALL JUNCTION BOX LOCATIONS.

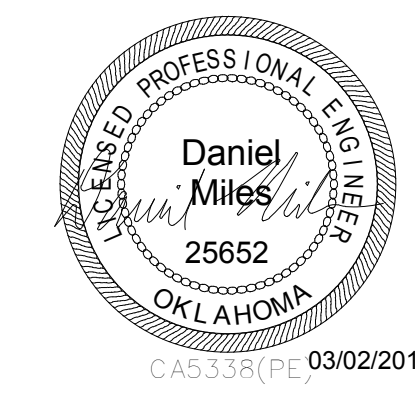
**KEYNOTES**

- 26.06 PROVIDE MYERS ILLUMINATOR CR 3KVA INVERTER, 120V IN AND 120V OUT - OR EQUAL.
- 26.07 CRESTRON PROCESSOR PANEL ENCLOSED DIN-EN.
- 26.08 CRESTRON GREEN LIGHT EXPRESS GLPD DIMMING AND SWITCHING PANEL.
- 26.10 VIA VFD, MECHANICAL CONTRACTOR TO SUPPLY VFD. ELECTRICAL CONTRACTOR SHALL INSTALL VFD.

**Notes:**

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GENERAL INFORMATION:  
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- SPRINKLER STATUS - TO BE INSTALLED  
- FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:

**CNE - CAPITOL BUILDING  
INTERIOR RENOVATION**  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74464



ONE architecture  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

SHEET TITLE  
**BASEMENT ELECTRICAL  
PLANS**

DATE PROJECT NUMBER SHEET NO.  
02/09/18 1604-003 E102



**Notes:**

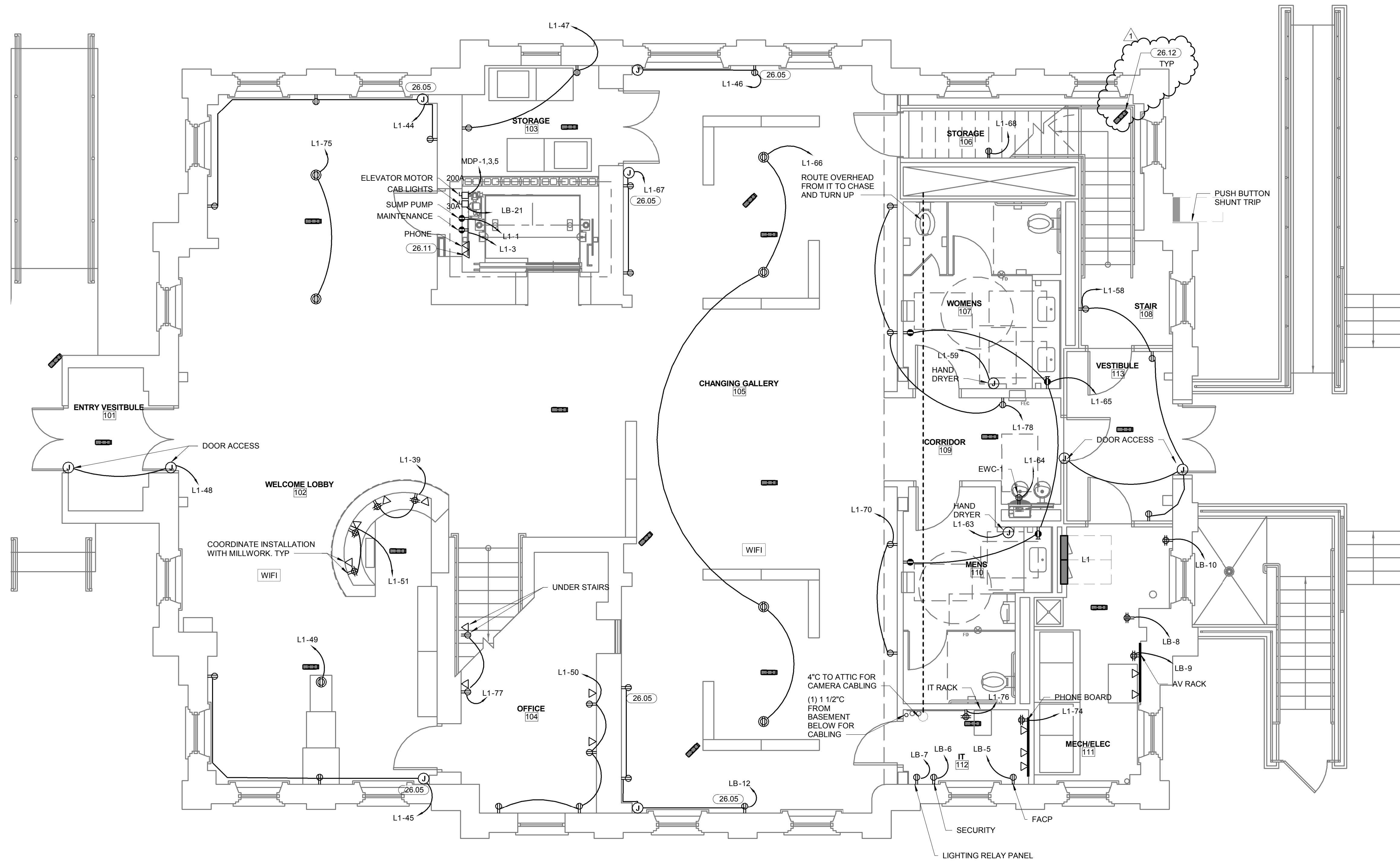
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**KEYNOTES**

26.05 PROVIDE AND INSTALL LEGRAND WIREMOLD ACCESS 5000 DECORATOR RACEWAY. FEED FROM WALL MOUNTED JUNCTION BOX. COORDINATE TERMINATIONS AND LENGTHS WITH ARCHITECT. REFER TO MANUFACTURER'S SPECIFICATIONS FOR MOUNTING DETAILS AND ACCESSORIES.  
 26.11 PROVIDE (2) CAT6 TRAVELING CABLING AT ELEVATOR CONTROLS TO ELEVATOR CAB. REFER TO IT CABLING SPECIFICATIONS FOR REQUIREMENTS.  
 26.12 INTERIOR CAMERA LOCATIONS: PROVIDE SINGLE GANG BOX, FLUSH MOUNTED WITH CEILING FINISH.



1 GROUND FLOOR POWER PLAN  
 1/4" = 1'-0"

**HP ENGINEERING INC.**  
 1836 South Baltimore Avenue  
 Tulsa, OK 74119  
 PH. 539.664.4618



GENERAL INFORMATION:  
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 - USE GROUP: A-3  
 - SPRINKLER STATUS - TO BE INSTALLED  
 - FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:  
**CNE - CAPITOL BUILDING  
 INTERIOR RENOVATION**  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464

**ONE architecture**  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

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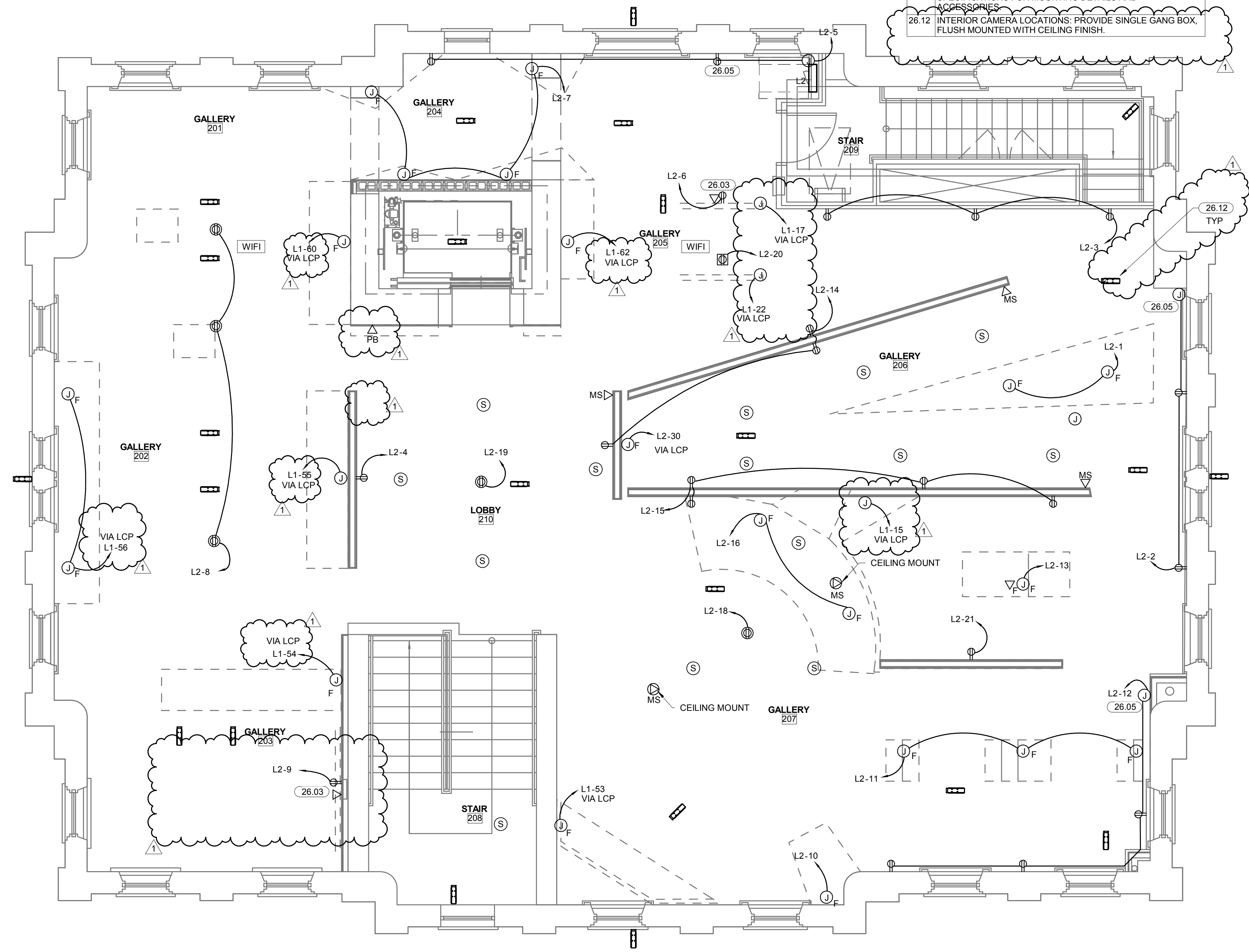
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**KEYNOTES**

26.03 PROVIDE AND INSTALL CHIEF PAC 526 RECESSED WALL BOX. VERIFY INSTALL HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN.

26.05 PROVIDE AND INSTALL LEGRAND WIREMOLD ACCESS 5000 DECORATOR RACEWAY. FEED FROM WALL MOUNTED JUNCTION BOX. COORDINATE TERMINATIONS AND LENGTHS WITH ARCHITECT. REFER TO MANUFACTURER'S SPECIFICATIONS FOR MOUNTING DETAILS AND ACCESSORIES.

26.12 INTERIOR CAMERA LOCATIONS. PROVIDE SINGLE GANG BOX, FLUSH MOUNTED WITH CEILING FINISH.



1 SECOND FLOOR POWER PLAN  
 1/4" = 1'-0"

**HP ENGINEERING INC.**  
 1836 South Baltimore Avenue  
 Tulsa, OK 74119  
 PH. 539.664.4618



- GENERAL INFORMATION:
- CODE: 2015 IEBC, 2015 IBC
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ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:

**CNE - CAPITOL BUILDING  
 INTERIOR RENOVATION**  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464



**ONE architecture**  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

SHEET TITLE  
**SECOND FLOOR POWER  
 PLAN**

DATE PROJECT NUMBER SHEET NO.  
 02/09/18 1604-003 E104

**Notes:**

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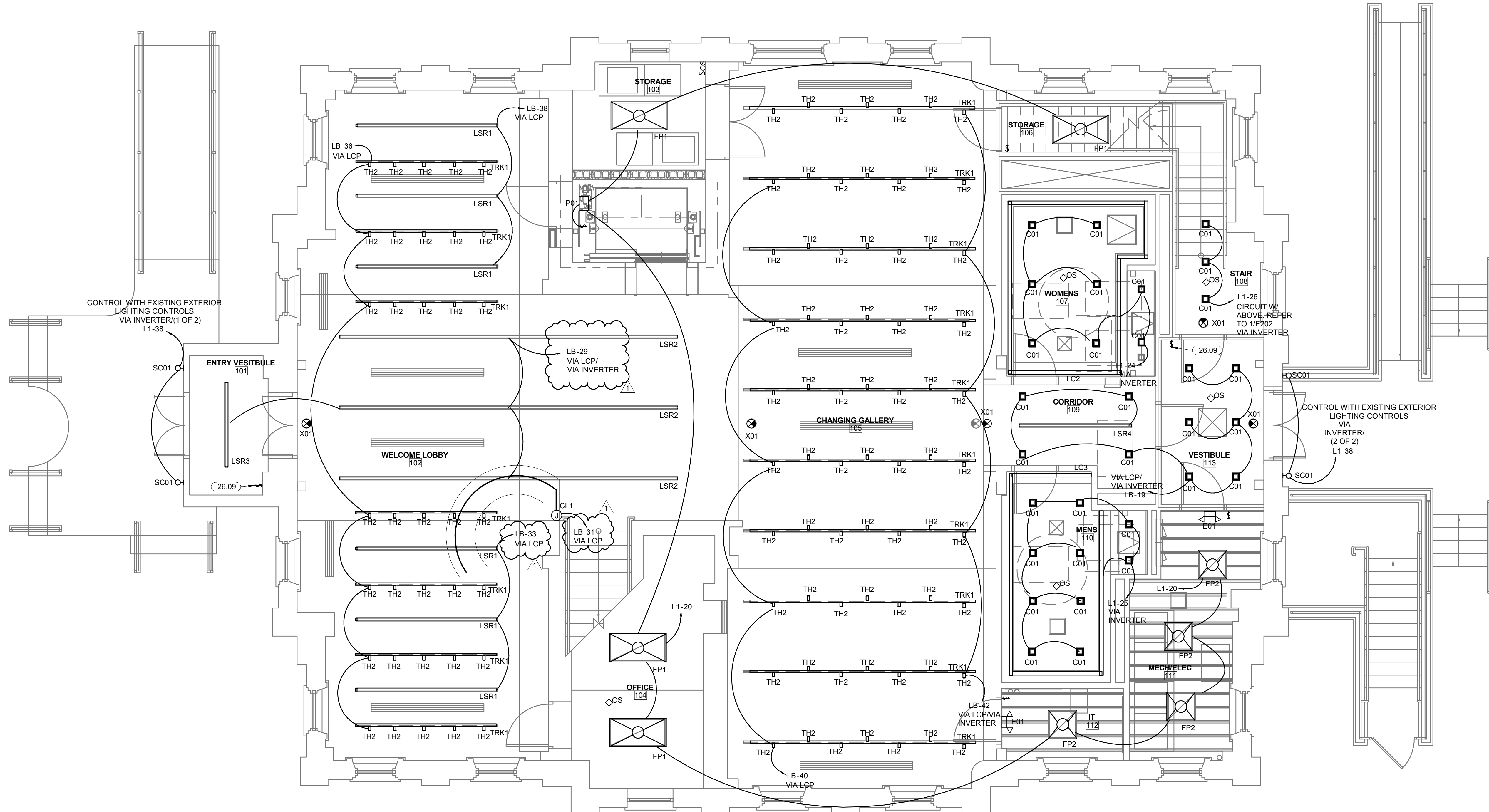
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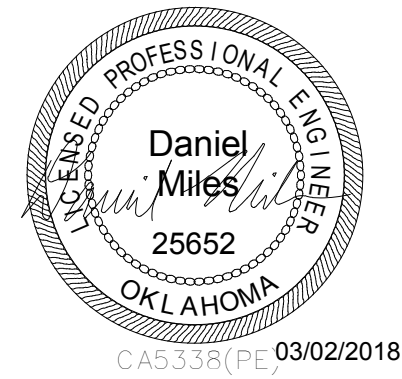
**KEYNOTES**

26.09 | CRESTRON 7" TOUCHSCREEN TSW-760.



1 GROUND FLOOR LIGHTING PLAN  
1/4" = 1'-0"

**HP ENGINEERING INC.**  
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CONSTRUCTION DOCUMENTS FOR:

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INTERIOR RENOVATION**  
100 S. MUSKOGEE AVE.  
TAHLEQUAH, OK 74464



**ONE architecture**  
1319 e. 6th st  
Tulsa, Oklahoma 74120  
PH. 918.764.9996

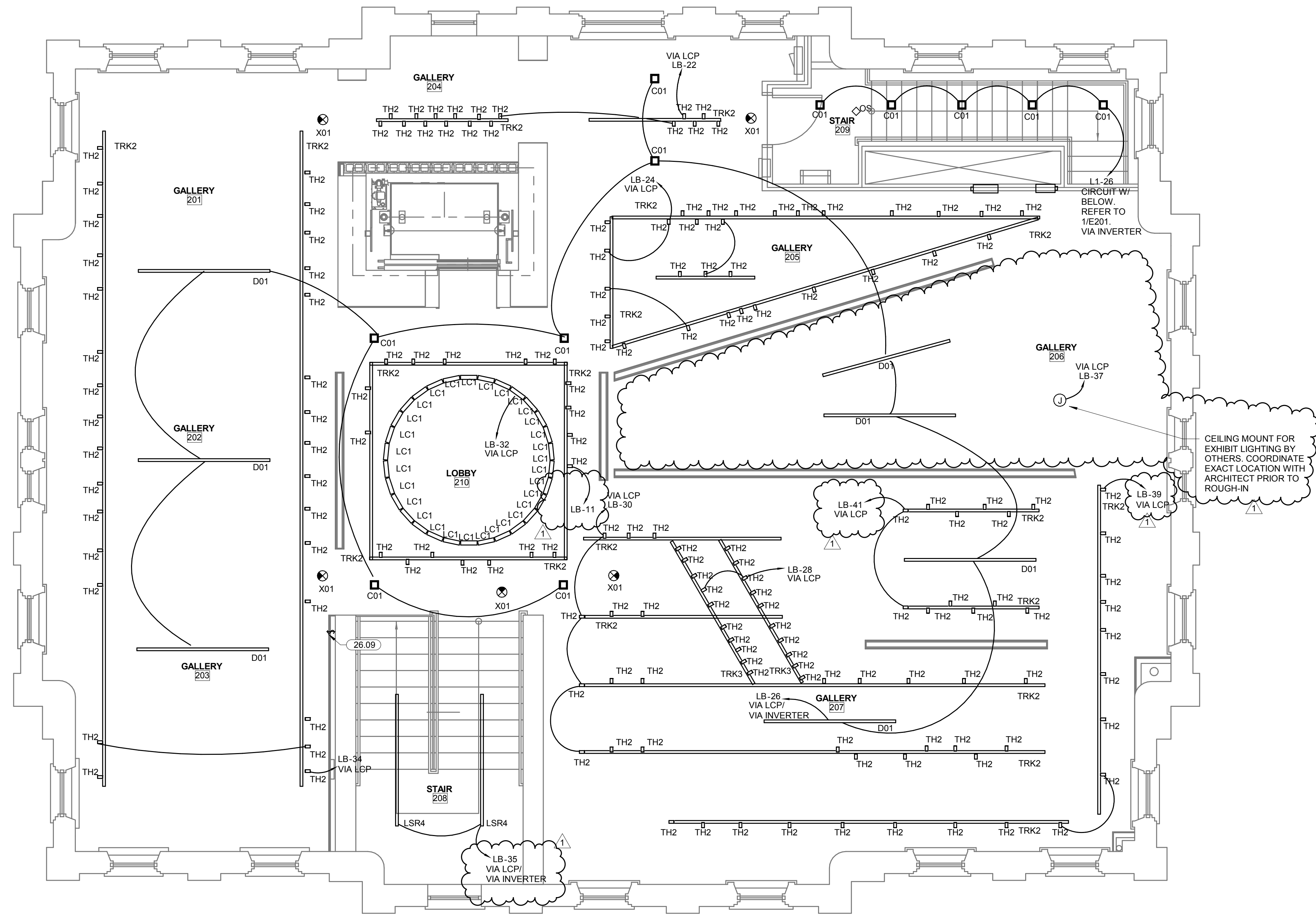
SHEET TITLE  
**GROUND LEVEL LIGHTING  
PLAN**

DATE PROJECT NUMBER SHEET NO.  
02/09/18 1604-003 E201

**Notes:**

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- SAFETY. THE CONTRACTOR IS RESPONSIBLE FOR ALL SAFETY PRECAUTIONS OR SAFETY PROGRAMS USED TO PROVIDE A SAFE WORKING ENVIRONMENT ON THE JOB SITE. REFERENCE SPECIFICATIONS FOR SAFETY REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL STRUCTURAL SHORING AND BRACING DURING ALL PHASES OF CONSTRUCTION.
- PERMITS. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED PERMITS AND APPROVALS INCLUDING PAYING TERO FEES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INSPECTIONS AND A CERTIFICATE OF OCCUPANCY. NO CONSTRUCTION OR FABRICATION SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED AND THOROUGHLY REVIEWED ALL PLANS AND OTHER DOCUMENTS APPROVED BY ALL THE PERMITTING AUTHORITIES.
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- RECYCLE BINS TO BE PROVIDED FOR WORKERS DURING CONSTRUCTION.

KEYNOTES	
26.09	CRESTRON 7" TOUCHSCREEN TSW-760.



**HP ENGINEERING INC.**  
 1836 South Baltimore Avenue  
 Tulsa, OK 74119  
 PH. 539.664.4618



- GENERAL INFORMATION:
- CODE: 2015 IBC, 2015 IBC
  - USE GROUP: A-3
  - SPRINKLER STATUS - TO BE INSTALLED
  - FIRE ALARM - TO BE INSTALLED

**ADDENDUM 01 - 03.02.18**

CONSTRUCTION DOCUMENTS FOR:

**CNE - CAPITOL BUILDING  
 INTERIOR RENOVATION  
 100 S. MUSKOGEE AVE.  
 TAHLEQUAH, OK 74464**



**ONE architecture**  
 1319 e. 6th st  
 Tulsa, Oklahoma 74120  
 PH. 918.764.9996

1 SECOND FLOOR LIGHTING PLAN  
 1/4" = 1'-0"



## LUMINAIRE SCHEDULE

- NOTES:  
 1. EC SHALL PROVIDE A SUBMITTAL PACKAGE INCLUDING CUTSHEETS FOR EACH FIXTURE.  
 2. EC SHALL PROVIDE ALL ACCESSORIES FOR A COMPLETE ASSEMBLY INCLUDING MOUNTING HARDWARE.  
 3. THE MOUNTING TYPE OF EACH FIXTURE SHALL BE COMPATIBLE WITH INSTALLATION SURFACE OF EACH FIXTURE.  
 4. ALL FINISHES SHALL BE COORDINATED WITH ARCHITECT AND DOCUMENTED ON SUBMITTALS.

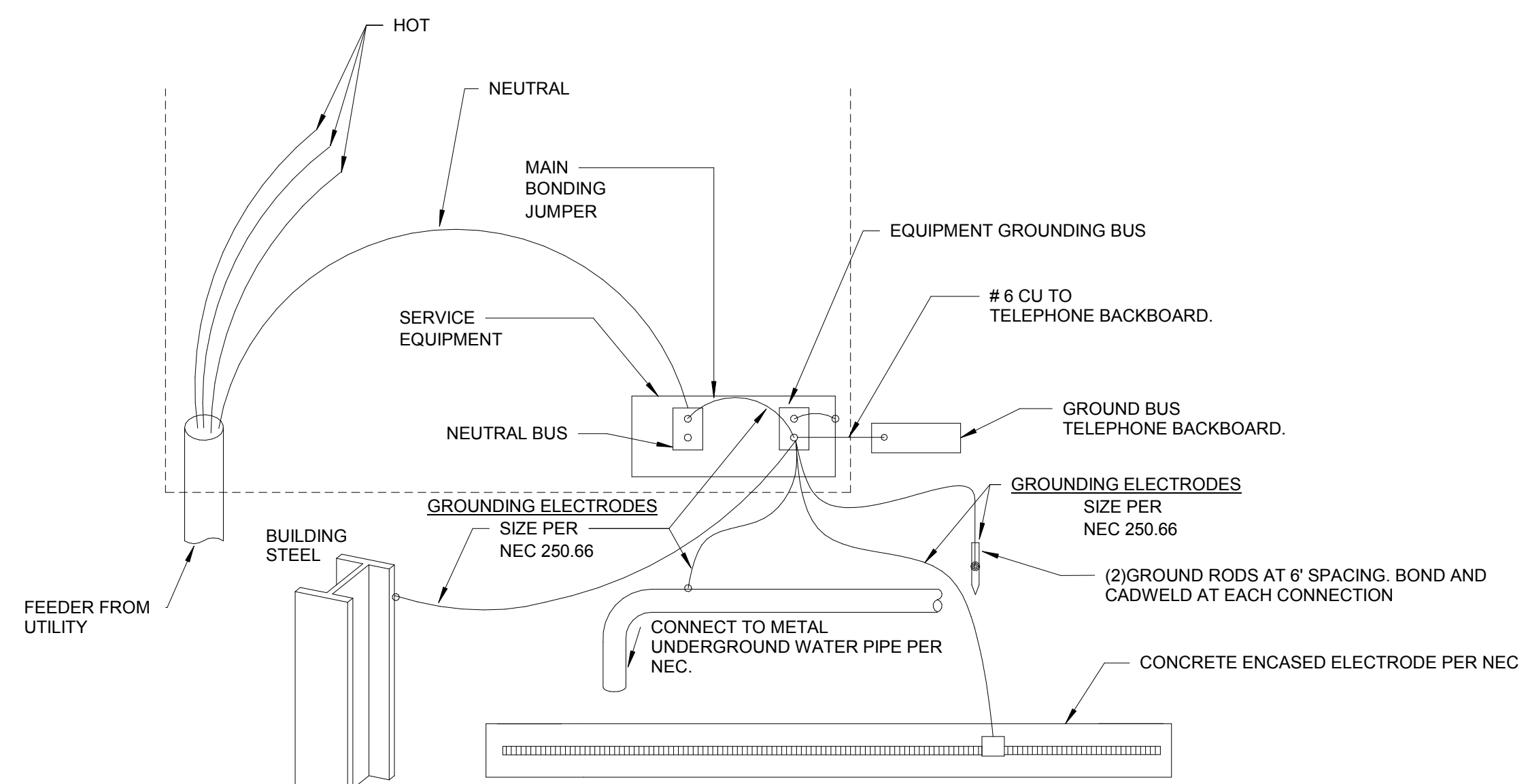
TYPE	LAMP	BALLAST / DRIVER	VOLTS	WATTS	DESCRIPTION	MANUFACTURER	QTY
C01	LED	0-10V DIM	120/277	18 W	6", RECESSED, DOWNLIGHT, SQUARE TRIM, 1800LM	PORTFOLIO LDC06	
CL1	LED	24V POWER SUPPLY	120	20 W	MILLWORK LIGHTING, 3000K	FEELUX MONORAIL WASH MNP1	
D01	LED	0-10V DIM	120/277	34 W	8" LINEAR SURFACE MOUNT, 3000K	EUREKA LIGHTING STROKE 3542-96	
E01	LED	BATTERY	120/277	10 W	EMERGENCY LIGHT, BUGEYE	SURE LITES - APEL	
EX01	LED	BATTERY	120/277	15 W	EXIT/EMERGENCY COMBO, RED LETTERS, WHITE	SURE LITES - APC7	
FP1	LED	0-10V DIM	120/277	50 W	2X4 FLAT PANEL, 5000LM, 3000K	TEXAS FLUORESCENTS LED FLAT PANEL	
FP2	LED	0-10V DIM	120/277	40 W	2X2 FLAT PANEL, 4000LM, 3000K	TEXAS FLUORESCENTS LED FLAT PANEL	
LC1	LED	0-10V DIM	120/277	8 W	ASYMMETRICAL COVE, 1', 3000K, 700LM	i2SYSTEMS CAS I2COVE	
LC2	LED	0-10V DIM	120/277	40 W	COVE LIGHT, 3000K, 588LM/FT	FINELITE SERIES 11 LED MICRO PROFILE COVE WITH TELESCOPING END	
LC3	LED	0-10V DIM	120/277	40 W	COVE LIGHT, 3000K, 588LM/FT	FINELITE SERIES 11 LED MICRO PROFILE COVE WITH TELESCOPING END	
LSR1	LED	0-10V DIM	120/277	70 W	10" RECESSED, TRIMLESS, LINEAR SLOT, 3000K, 2200LM/4FT	LEDALITE PHILIPS TRUGROOVE STANDALONE 39S1	
LSR2	LED	0-10V DIM	120/277	168 W	24" RECESSED, TRIMLESS, LINEAR SLOT, 3000K, 2200LM/4FT	LEDALITE PHILIPS TRUGROOVE STANDALONE 39S1	
LSR3	LED	0-10V DIM	120/277	42 W	6" RECESSED, TRIMLESS, LINEAR SLOT, 3000K, 2200LM/4FT	LEDALITE PHILIPS TRUGROOVE STANDALONE 39S1	
LSR4	LED	0-10V DIM	120/277	56 W	8" RECESSED, TRIMLESS, LINEAR SLOT, 3000K, 2200LM/4FT	LEDALITE PHILIPS TRUGROOVE STANDALONE 39S1	
P01	INC	STANDARD	120/277	100 W	PIT LIGHT, 1600LM, 2700K	ALL PRO VAPORTIGHT FLOODLIGHT	
S01	LED	LED DRIVER	120/277	44 W	4" SURFACE STRIP, 4000LM	METALUX - SLSTP	
SC01	LED	STANDARD	120/277	60 W	DECORATIVE EXTERIOR WALL FIXTURE,	HINKLEY LIGHTING WORK 1845BK	
TH2	LED	TRAILING EDGE	120/277	18 W	LED TRACK HEAD, 1300LM, 3000K, 98CRI	LIGHTOLIER OMNISPT LC-10-930-W-TE LLM-RNF, 120 REFLECTORS, 200 SPREAD LENSES, 200 LIGHT BLOCKING SCREENS	200
TRK1	NA	STANDARD	120/277	0 W	RECESSED TRACK, 2-CIRCUIT, TRIMLESS	LIGHTOLIER ADVENT TRACK 61xMCE AND 7516 LYTESPAN RECESSED HOUSING	220'
TRK2	NA	STANDARD	120/277	0 W	SURFACE TRACK, 2-CIRCUIT, PENDANT MOUNT	LIGHTOLIER ADVENT TRACK 61xMCE	250'
TRK3	NA	STANDARD	120/277	0 W	PENDANT MOUNTED TRACK, 1-CIRCUIT	LIGHTOLIER ADVENT TRACK 61xMCE W/ PENDANT KIT	20'
X01	LED	BATTERY	120/277	5 W	EXIT SIGN, EDGELIT, RED LETTERS, WHITE, EMERGENCY	SURE LITES - EUX7	

## LIGHTING CONTROL PANEL ZONE SCHEDULE

ZONE #	ZONE DESCRIPTION	CIRCUIT	DIM (Y/N)	DIM TYPE	PANEL ID
1	1ST FLOOR - WELCOME LOBBY - LINEAR NORTH	LB-38	Y	0-10V	LCP1-1
2	1ST FLOOR - WELCOME LOBBY - LINEAR MAIN	LB-29	Y	0-10V	LCP1-2
3	1ST FLOOR - WELCOME LOBBY - LINEAR SOUTH	LB-33	Y	0-10V	LCP1-3
4	2ND FLOOR - STAIR	LB-35	Y	0-10V	LCP1-4
5	2ND FLOOR - COVE	LB-32	Y	0-10V	LCP1-5
6	1ST FLOOR - WELCOME LOBBY - CASE LIGHTING	LB-31	Y	0-10V	LCP1-6
7	1ST FLOOR - VESTIBULE 113	LB-19	Y	0-10V	LCP1-7
8	2ND FLOOR - GALLERY - LINEAR	LB-26	Y	0-10V	LCP1-8
9	GALLERY 202 EXHIBIT CASEWORK	L1-56	N		LCP1-9
10	GALLERY 202 EXHIBIT CASEWORK	L1-54	N		LCP1-10
11	1ST FLOOR - WELCOME LOBBY - TRACK DIMMED	LB-36	Y	ELV	LCP2-1
12	1ST FLOOR - WELCOME LOBBY - TRACK SWITCHED	LB-36	N		LCP2-2
13	1ST FLOOR - CHANGING GALLERY - TRACK A - DIMMED	LB-42	Y	ELV	LCP2-3
14	1ST FLOOR - TEMP GALLERY - TRACK A - SWITCHED	LB-42	N		LCP2-4
15	1ST FLOOR - TEMP GALLERY - TRACK B - DIMMED	LB-40	Y	ELV	LCP2-5
16	1ST FLOOR - TEMP GALLERY - TRACK B - SWITCHED	LB-40	N		LCP2-6
17	2ND FLOOR - GALLERY - TRACK DIMMED - WEST	LB-34	Y	ELV	LCP2-7
18	2ND FLOOR - GALLERY - TRACK SWITCHED - WEST	LB-34	N		LCP2-8
19	2ND FLOOR - LOBBY - TRACK DIMMED	LB-11	Y	ELV	LCP2-9
20	2ND FLOOR - LOBBY - TRACK SWITCHED	LB-11	N		LCP2-10
21	2ND FLOOR - GALLERY 204 - TRACK DIMMED	LB-22	Y	ELV	LCP2-11
22	2ND FLOOR - GALLERY 204 - TRACK SWITCHED	LB-22	N		LCP2-12
23	2ND FLOOR - GALLERY 205 - TRACK DIMMED	LB-24	Y	ELV	LCP2-13
24	2ND FLOOR - GALLERY 205 - TRACK SWITCHED	LB-24	N		LCP2-14
25	2ND FLOOR - GALLERY 206 - TRACK DIMMED	LB-37	Y	ELV	LCP2-15
26	2ND FLOOR - GALLERY 206 - TRACK SWITCHED	LB-37	N		LCP2-16
27	2ND FLOOR - GALLERY 207 PERIMETER - TRACK DIMMED	LB-39	Y	ELV	LCP2-17
28	2ND FLOOR - GALLERY 207 PERIMETER - TRACK SWITCHED	LB-39	N		LCP2-18
29	2ND FLOOR - GALLERY 207 A - TRACK DIMMED	LB-30	Y	ELV	LCP2-19
30	2ND FLOOR - GALLERY 207 A - TRACK SWITCHED	LB-30	N		LCP2-20
31	2ND FLOOR - GALLERY 207 B - TRACK DIMMED	LB-28	Y	ELV	LCP2-21
32	2ND FLOOR - GALLERY 207 C - TRACK DIMMED	LB-41	Y	ELV	LCP2-22
33	2ND FLOOR - GALLERY 207 C - TRACK SWITCHED	LB-41	N		LCP2-23
34	GALLERY 202 EXHIBIT CASEWORK	L1-60	N		LCP2-24
35	GALLERY 202 EXHIBIT CASEWORK	L1-55	N		LCP2-25
36	GALLERY 205 EXHIBIT CASEWORK	L1-62	N		LCP2-28
37	GALLERY 207 EXHIBIT CASEWORK	L1-53	N		LCP2-29
38	GALLERY 207 EXHIBIT CASEWORK	L2-17	N		LCP-30
39	GALLERY 205 EXHIBIT CASEWORK	L1-22	N		LCP-31
40	GALLERY 205 EXHIBIT CASEWORK	L1-17	N		LCP-32

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3 TYPICAL GROUNDING DETAIL NTS

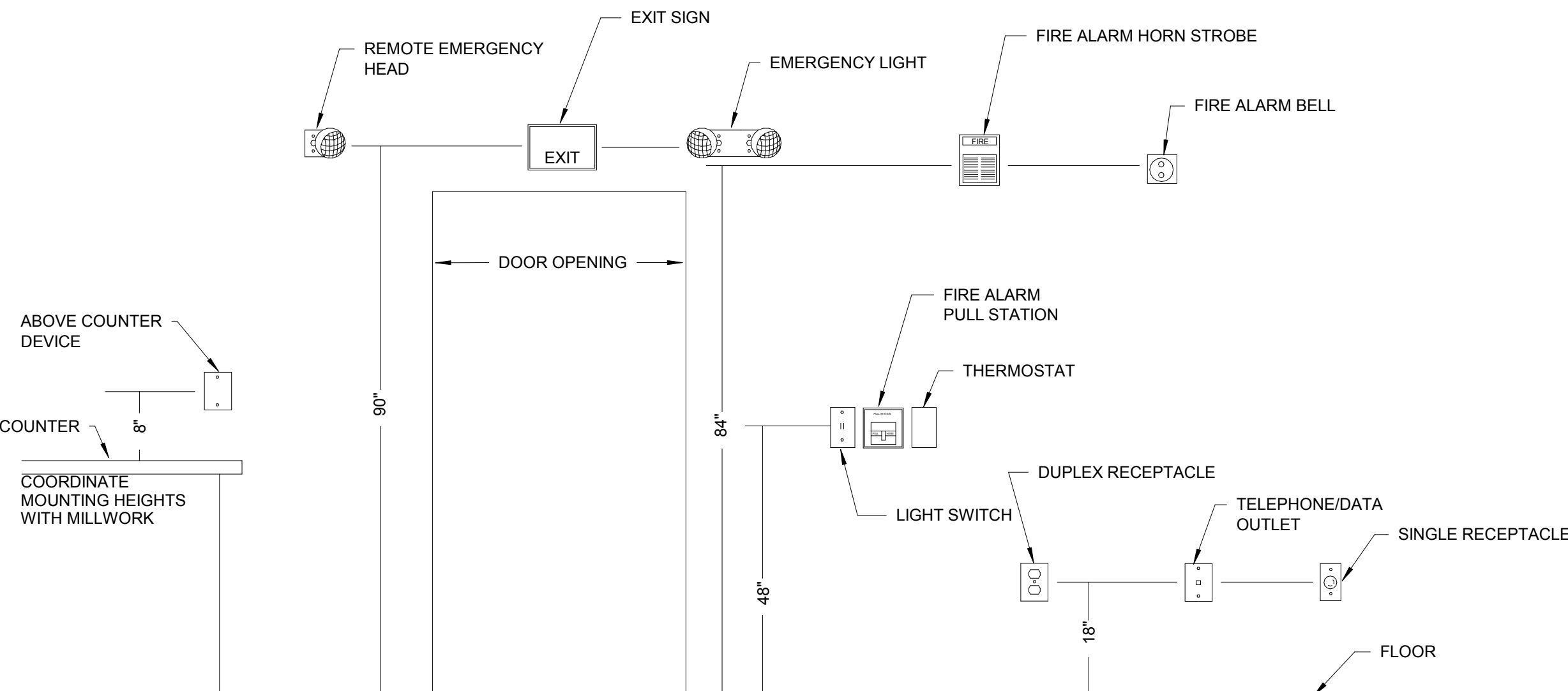
- CONDUIT SIZED BASED ON CONDUCTOR PROPERTIES LISTED IN THE CURRENT NEC EDITION, CHAPTER 9, TABLES 5 AND 5A, AND CONDUIT AREAS LISTED CHAPTER 9, TABLE 4 FOR EMT WITH 40% FILL. OTHER CONDITIONS MAY REQUIRE A LARGER CONDUIT, SUCH AS UNDERGROUND PVC, SIZED FOR NEC.
- GROUND SIZES: EQUIPMENT GROUNDING CONDUCTOR BASED ON NEC TABLE 250.122 - COPPER / GROUNDING ELECTRODE CONDUCTOR BASED ON NEC TABLE 250.66 - COPPER
- CONDUCTOR SIZES BASED ON NEC TABLE 310.15 - COPPER 75°C.

### ELECTRICAL FEEDER KEYNOTES

200-4	2" C, 4#3/0, 1#6 GR
840-4-S	2 - 3 1/2" C, 4-600KCMIL EACH

### ELECTRICAL SERVICE NOTES

- THE ELECTRICAL CONTRACTOR SHALL VERIFY ALL SERVICE AND METERING REQUIREMENTS WITH THE UTILITY COMPANY PRIOR TO BID AND SHALL BE RESPONSIBLE FOR PROVIDING AND INSTALLING ALL MATERIAL AS REQUIRED BY THE SERVING UTILITY AS WELL AS COST INCURRED BY SERVING UTILITY.
- THE ELECTRICAL CONTRACTOR SHALL VERIFY THE FAULT CURRENT AT THE SECONDARY OF THE TRANSFORMER WITH THE UTILITY COMPANY AND ADJUST THE ELECTRICAL PANEL AIC RATINGS TO THE NEXT HIGHER STANDARD RATING.
- ALUMINUM SERVICE CONDUCTORS ARE NOT RECOMMENDED AND SHOULD ONLY BE USED WHERE ABSOLUTELY NECESSARY OR REQUIRED BY THE OWNER. CONTRACTOR TO CONTACT ENGINEER FOR SIZING. WHERE ALUMINUM CONDUCTORS ARE USED, THE OWNER SHALL PROVIDE ANNUAL MAINTENANCE OF ALL TERMINATIONS TO ENSURE SECURE CONNECTIONS. ALUMINUM WIRE WILL EXPAND AND CONTRACT AND OVER TIME MAY BECOME BRITTLE. THE OWNER SHALL ASSUME RESPONSIBILITY FOR USING ALUMINUM CONDUCTORS WITHOUT PROPER INSTALLATION, CARE, AND MAINTENANCE.
- COORDINATE ALL SERVICE AND METERING DETAILS INCLUDING ANY RELOCATION OF EXISTING UTILITY LINES WITH POWER COMPANY.
- CONTRACTOR TO CONFIRM EXACT LOCATION OF METERS WITH ELECTRIC UTILITY.
- PAY ANY POWER COMPANY FEES CHARGED TO OWNER FOR SERVICE AND UTILITY LINE WORK ASSOCIATED WITH THIS PROJECT. THESE COSTS SHALL BE INCLUDED IN BIDS.
- FURNISH AND INSTALL MATERIALS FOR A TEMPORARY CONSTRUCTION SERVICE AS REQUIRED.
- FURNISH AND/OR INSTALL ALL REQUIRED MATERIAL AND LABOR IN COMPLIANCE WITH POWER COMPANY REQUIREMENTS TO PROVIDE A COMPLETE ELECTRICAL SERVICE, INCLUDING TRENCHING AND BACK FILLING, PRIMARY CONDUIT, CONCRETE TRANSFORMER PAD, SECONDARY CONDUITS AND CABLES, C.T. CABINET, METERING AND GROUNDING SYSTEM.



2 TYPICAL MOUNTING HEIGHT NTS

### EQUIPMENT LABELS

ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE A LABEL APPLIED TO WARN OF POTENTIAL ARC FLASH HAZARDS

**WARNING**  
 ARC FLASH AND SHOCK HAZARD.  
 APPROPRIATE PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIRED.

- NOTES:
- ALL SWITCHBOARDS AND PANELBOARDS SHALL HAVE A COMMERCIALY PRODUCED PERMANENT LABEL APPLIED, SIMILAR TO THE ABOVE, TO WARN OF POTENTIAL ARC FLASH HAZARDS, IN ACCORDANCE WITH NEC 110.16 AND NFPA 70E.
  - LABELING MAY BE COMPLETED BY EQUIPMENT MANUFACTURER, EQUIPMENT VENDOR/SUPPLIER, OR THE CONTRACTOR. THE CONTRACTOR SHALL VERIFY THAT ALL SWITCHBOARDS AND PANELBOARDS ARE PROPERLY LABELED IN THE FIELD.

HP ENGINEERING INC.  
 1836 South Baltimore Avenue  
 Tulsa, OK 74119  
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 - FIRE ALARM - TO BE INSTALLED

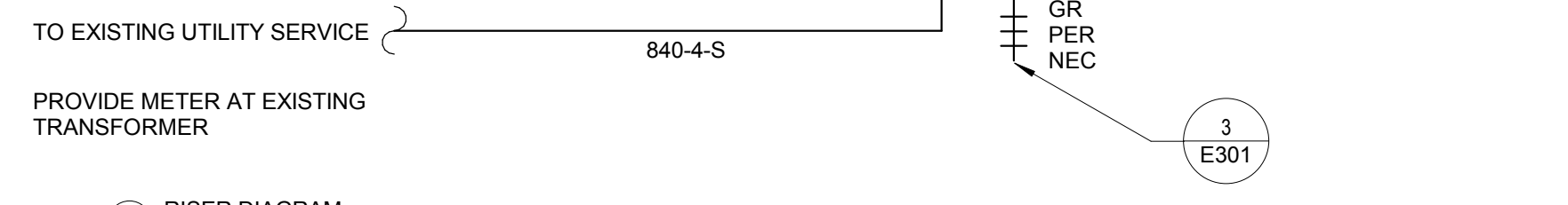
ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR:

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SHEET TITLE  
**ELECTRICAL SCHEDULES,  
 DETAILS AND RISER**  
 DATE PROJECT NUMBER SHEET NO.  
 02/09/18 1604-003 E301



1 RISER DIAGRAM N.T.S.



Branch Panel: L1

NEW

Location: Supply From: MDP Mounting: FLUSH Enclosure: NEMA 1

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

A.I.C. Rating: FULLY Mains Type: MLO Mains Rating: 200 A

Notes:

Table with columns: CKT, Load Name, CB, P, Wire, A, B, C, Wire, P, CB, Load Name, CKT. Lists electrical loads for Branch Panel L1.

Summary table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes Lighting, Other, Power, and Receptacle load details.

Branch Panel: LB

NEW

Location: Supply From: MDP Mounting: SURFACE Enclosure: NEMA 1

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

A.I.C. Rating: FULLY Mains Type: MLO Mains Rating: 200 A

Notes:

Table with columns: CKT, Load Name, CB, P, Wire, A, B, C, Wire, P, CB, Load Name, CKT. Lists electrical loads for Branch Panel LB.

Summary table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes Lighting, Other, Power, and Receptacle load details.

Branch Panel: L2

NEW

Location: Supply From: MDP Mounting: FLUSH Enclosure: NEMA 1

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

A.I.C. Rating: FULLY Mains Type: MLO Mains Rating: 200 A

Notes:

Table with columns: CKT, Load Name, CB, P, Wire, A, B, C, Wire, P, CB, Load Name, CKT. Lists electrical loads for Branch Panel L2.

Summary table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes Power and Receptacle load details.

Branch Panel: MDP

NEW

Location: Supply From: MDP Mounting: SURFACE Enclosure: NEMA 1

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

A.I.C. Rating: FULLY Mains Type: MCB Mains Rating: 800 A

Notes: MCB W/ SHUNT TRIP

Table with columns: CKT, Load Name, CB, P, Wire, A, B, C, Wire, P, CB, Load Name, CKT. Lists electrical loads for Branch Panel MDP.

Summary table with columns: Load Classification, Connected Load, Demand Factor, Estimated Demand, Panel Totals. Includes Lighting, Other, Power, and Receptacle load details.

PANELBOARD NOTES (#)

- 1. TERMINATE GROUND ON ISOLATED GROUND BUS.
2. INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-OFF FOR MAINTENANCE).
3. INSTALL LOCKING DEVICE FURNISHED WITH PANELBOARD (LOCK-ON FOR CRITICAL LOAD).
4. GFI BREAKER FOR PERSONNEL PROTECTION (5 mA).
5. GFI BREAKER FOR EQUIPMENT PROTECTION (30 mA).
6. CONDUCTOR SIZE SHOWN IN PANEL SCHEDULE HAS BEEN INCREASED FOR VOLTAGE DROP. SIZE EQUIPMENT GROUND PROPORTIONALLY PER NEC. REFERENCE GROUND WIRE SIZING CHART.
7. REFER TO ONE-LINE DIAGRAM FOR AVAILABLE FAULT CURRENT FOR INTERRUPT RATINGS.
8. REFER TO ONE-LINE DIAGRAM FOR WIRE SIZES.
9. FACTORY WIRE TO LOAD.
10. THRU CONTROLLER. REFER TO LIGHTING CONTROLLER DETAIL.
11. ADD CIRCUIT BREAKER TO EXISTING PANEL.

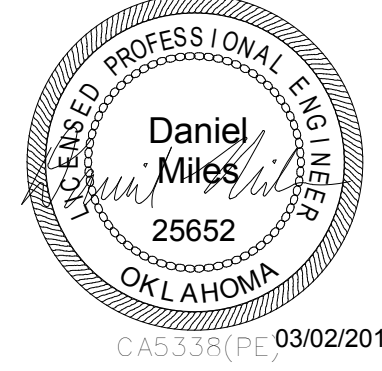
EQUIPMENT GROUNDING CONDUCTOR SIZING CHART

Table with columns: BRKR AMPS, PHASE GROUND, WIRE SIZE (12, 10, 8, 6, 4).

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10. RECYCLE BINS TO BE PROVIDED FOR WORKERS DURING CONSTRUCTION.

HP ENGINEERING INC. 1836 South Baltimore Avenue Tulsa, OK 74119 PH. 539.664.4618



GENERAL INFORMATION: - CODE: 2015 IBC, 2015 IBC - USE GROUP: A-3 - SPRINKLER STATUS - TO BE INSTALLED - FIRE ALARM - TO BE INSTALLED

ADDENDUM 01 - 03.02.18

CONSTRUCTION DOCUMENTS FOR: CNE - CAPITOL BUILDING INTERIOR RENOVATION 100 S. MUSKOGEE AVE. TAHLEQUAH, OK 74464

ONE architecture 1319 e. 6th st Tulsa, Oklahoma 74120 PH. 918.764.9996