

## HARPER PERKINS ARCHITECTS, INC.

4724 Old Jacksboro Highway  
Telephone 940.767.1421

Wichita Falls, Texas 76302-3599  
Facsimile Number 940.397.0273

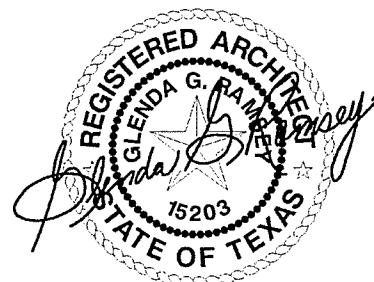
### ADDENDUM NO. 1

To the Drawings and Project Manual dated 16 June 2017

for

**TAS/ADA FIRE MARSHAL  
DEFERRED MAINTENANCE PROJECTS  
MIDWESTERN STATE  
UNIVERSITY**

3410 Taft Boulevard  
Wichita Falls, Texas



EXP. DATE: 25 AUGUST  
DATE SIGNED: 3 August 2017

Addendum Date: 2 August 2017

#### **NOTICE TO PROPOSERS:**

This Addendum will be considered a part of the Contract Documents for the above referenced project as though it had been issued at the same time and incorporated integrally therewith. Where provisions of the following supplementary data differ from those in the original Contract Documents, this Addendum shall govern and take precedence.

Proposers are hereby notified that they shall make any necessary adjustments in their estimates on account of this Addendum. It will be construed that such Proposer's Competitive Sealed Proposal is submitted with full knowledge of all modifications and supplementary data specified herein.

**ITEM 1 - AD#1:** To the Project Manual and Drawings.

**ADD:** A Pre-Bid Conference was held in Room C-111 of the Fain Fine Arts Building on July 27, 2017 at 10:00 a.m. – the Conference also included a walk-through of the Bolin Science Hall, Fain Fine Arts Building, Ferguson Building, Hardin Administration Building, and associated Sites. A “pdf” file of the Sign-In Sheets from the Conference are available for download from the MSU Website at <https://mwsu.edu/purchasing/>.

**ITEM 2 - AD#1:** To the Project Manual and Drawings.

**ADD:** A Campus Map with the Buildings that are a part of this Project has been included for informational purposes – refer to attachment “AD#1-01” included with this Addendum.

**ITEM 3 - AD#1:** To the Project Manual and Drawings.

**ADD:** A tentative Project Schedule, developed by the Architect in coordination with the Owner, has been included for informational purposes – refer to attachment “AD#1-02” included with this Addendum. A formal project Schedule will be developed and maintained by the Construction Manager-at-Risk (CM@R) during the duration of the Project and will be revised and updated as necessary. The separate projects for each Building that are highlighted in “yellow” are critical tasks which have liquidated damages if not completed by the indicated and stated completion date. The Transformer Replacement scope of work at Bolin Science Hall has two (2) possible

completion dates and will depend on the Submittal review process & approval and the time frame needed for the shipping of materials. This schedule and dates are tentative and will be finalized by the OAC Team after the receiving and scoping of Bids and the subsequent submittal and approval of a GMP from the CM@R by the Owner.

**ITEM 4 - AD#1:** To the Project Manual, Section **00100, NOTICE TO SUB-CONTRACTORS/MATERIAL SUPPLIERS**; Section **00200, INSTRUCTIONS TO PROPOSERS**; and Section **00400, PROPOSAL FORM**.

**ADD:** Proposals can be emailed to the following email address: [stephen.shelley@mwsu.edu](mailto:stephen.shelley@mwsu.edu).

**ADD:** As clarification, all Proposals need to go be hand delivered, sent by messenger, or emailed directly to the MSU Purchasing/Contract Management Department (Room 202 of the Daniel Building).

**ADD:** As clarification, a Bid Bond is required to accompany each Bid/Proposal. The cost of Performance and Payment Bonds shall be listed separately in the Proposal and not included in the Base Proposal Amount. Performance and Payment Bonds will only be required if awarded the Bid **and** be at the discretion of the CM@R.

**ITEM 5 - AD#1:** To the Project Manual, Section **01100, SUMMARY**.

**DELETE:** On page **011000-6** under Part **2.1(B)**, Bid Package **#2, Landscaping**. Landscaping is being included in an Allowance – see **ITEM 6** below.

**ADD:** On page **011000-7** under Part **2.1(B)**, Bid Package **#6, Masonry**, add as part of this package the scope of work associated with Section **072726, FLUID APPLIED MEMBRANE AIR BARRIERS**.

**ITEM 6 - AD#1:** To the Project Manual, Section **012100, ALLOWANCES**.

**ADD:** As clarification, on page **012100-3** under Part **3.3(A)**, the 5% Contingency amount is for use by the CM@R when approved in writing by the Owner after consultation with the Architect and Owner.

**ADD:** An allowance of \$20,000 shall be included for the provision of hydro-mulching, sodding, and landscaping on this project. Sod material is to be installed along any new concrete, the width of one standard piece of sod with the sod's long axis parallel with the concrete. Hydro-mulch shall be provided on areas that are disturbed and regraded as part of new construction work. New landscaping in the form of plants, bushes, etc. (to be determined in coordination with the Owner) will be provided at a minimum along the new sidewalks at the east entrance at the center Hardin Administration Building (Floor Plan – Area **"H-1C"** as indicated on Sheet **"H-A104"**). In addition, this allowance will be used to relocate, repair, etc. any lawn irrigation lines which are disturbed by the new work. The funds from this allowance can be used when approved in writing by the Owner after consultation with the Architect and Owner. Any unused funds in this allowance will be returned to the Owner at the end of the project.

**ITEM 7 - AD#1:** To the Project Manual, Section **051200, STRUCTURAL STEEL**.

**ADD:** The State of Texas has passed a statute, Senate Bill #1289, that requires State Agencies to purchase iron and steel made in the United States for certain governmental entity projects. This project falls under this statute. The Specifications calling for steel to be used in this project construction will fall under this statute. A "pdf" file of this Bill is available for download from the Texas Legislature Website at <http://www.capitol.state.tx.us/tlodocs/85R/billtext/pdf/SB01289F.pdf#navpanes=0>

**ITEM 8 - AD#1:** To the Project Manual and Drawings.

**ADD:** As clarification, on Sheets **"B-A303"**, **"F-A304"**, and **"F-A305"**, the 1¼" diameter steel pipe handrailing is 1.66" O.D. in lieu of the 1.625" O.D. indicated. The steel pipe handrailing at Bolin Science Hall is included as part of **Alternate #1** (aluminum handrailing as specified in Section **055200, ALUMINUM HANDRAILS AND**

**RAILINGS**, is in the **Base Bid**). The steel pipe handrailing at Fain Fine Arts is also included in the Base Bid.

**ADD:** As clarification, all wall mounted handrailing shall turn 90 degrees and return to the wall on each end.

**ADD:** On details **"FF-A305-01"** and **"FF-A305-02"** at the bottom of the stairs, the 1'-0" long section of handrailing shall be the clear dimension between vertical supports.

**ITEM 9 - AD#1:** To the Project Manual and Drawings, Sheet **"B-A107"**.

**ADD:** As clarification, on details **"B-A107-05"**, **"B-A107-06"**, **"B-A107-09"**, and **"B-A107-10"**, the exterior handrailing shall be painted 1¼" diameter (1.66" O.D.) steel pipe handrailing.

**ADD:** As clarification, on details **"B-A107-05"** and **"B-A107-06"**, the height of the concrete curb along each side of the ramp/landings shall be 2" above the ramp surface.

**DELETE:** On detail **"B-A107-06"**, the indication of infilling the handrails with a steel angle frame and steel mesh – these items will not be required on these handrails.

ADD: As clarification, on detail “**B-A107-05**”, the section cut shall be keyed “**B-A107-06**” in lieu of “**CP101-06**” indicated.

ADD: As clarification, on detail “**B-A107-06**”, the section cut shall be keyed “**B-A107-05**” in lieu of “**CP101-05**” indicated.

ADD: As clarification, on detail “**B-A107-09**”, the handrailing extensions at the top & bottom of the Stairs shall match those indicated on detail “**B-A107-06**”.

ADD: As clarification, on detail “**B-A107-10**”, the height of the handrailing shall be 3'-0" in lieu of 2'-10" indicated, matching the dimension indicated on detail “**B-A107-09**”.

**ITEM 10 - AD#1:** To the Project Manual and Drawings.

ADD: As clarification, as part of this Contract, the regrading and leveling of the existing grades around any new site work or Building construction shall be provided, removing any large debris, rocks, etc. Also, in general, regrading work shall be done in such a manner that positive drainage is provided away from site improvements and Building additions. The Contract shall include hydro-mulching, sod, or landscaping work as described in **ITEM #5** above.

ADD: On Sheet “**B-A104**” on the “**Enlarged Floor Plan – Bolin Science Hall – First Floor – Area “B-1A” – New**”, the site grading around the new addition and concrete ramp/sidewalks shall, in general, be as indicated on attachment “**AD#1-03**” included with this Addendum. The CM@R shall verify all existing contour lines and spot elevations and make adjustments to the new grading as necessary.

**ITEM 11 - AD#1:** To the Drawings, Sheet “**FF-A103**” and “**FF-A105**”.

ADD: As clarification, on the “**Enlarged Floor Plan – Fain Fine Arts – First Floor – Area “FF-1A” – New**”, “**Enlarged Floor Plan – Fain Fine Arts – First Floor – Area “FF-1C” – New**”, and “**Enlarged Floor Plan – Fain Fine Arts – First Floor – Area “FF-1D” – New**”, the interior elevations for the new handrailing at the existing ramps located near the north and south entries into the “Auditorium” shall be “**FF-A111-05**” and “**FF-A111-05 Sim.**” in lieu of the interior elevations indicated.

ADD: As clarification, on the “**Enlarged Floor Plan – Fain Fine Arts – First Floor – Area “FF-1D” – New**”, detail keys shall be as follows: “**FF-A110-02**” in lieu of “**FF-A111-02**” indicated; “**FF-A110-03**” in lieu of “**FF-A111-03**” indicated; “**FF-A110-03 Sim.**” in lieu of “**FF-A111-03 Sim.**” indicated; “**FF-A110-04**” in lieu of “**FF-A111-04**” indicated; “**FF-A110-04 Sim.**” in lieu of “**FF-A111-04 Sim.**” indicated; “**FF-A110-05**” in lieu of “**FF-A111-05**” indicated; “**FF-A110-05 Sim.**” in lieu of “**FF-A111-05 Sim.**” indicated; “**FF-A110-06**” in lieu of “**FF-A111-06**” indicated; and “**FF-A110-06 Sim.**” in lieu of “**FF-A111-06 Sim.**” Indicated.

**ITEM 12 - AD#1:** To the Drawings, Sheets “**B-MG101**”, “**B-MG102**”, and “**B-MG103**”, “**Bolin Science Hall – Mechanical Floor Plans**”, and the Project Manual.

ADD: As part of the scope of work involving the replacement of flex ductwork, the CM@R is to replace any ceiling tiles that are damaged during the work - the new ceiling tiles shall match the existing. The CM@R shall include in the Contract the installation of new ceiling tiles equal to 5% of the total ceiling area associated with the ductwork replacement work. Any unused ceiling tiles at the completion of the work shall be delivered and stored as directed by the Owner.

**ITEM 13 - AD#1:** To the Drawings, Sheet “**FF-AD105**”, “**Enlarged Floor Plan – Fain Fine Arts – Area “FF-1D” – Demolition**” and Sheet “**FF-A105**”, “**Enlarged Floor Plan – Fain Fine Arts – Area “FF-1D” – New**”.

ADD: The face brick associated with the existing masonry walls at ramps, planters, etc. that are being removed shall be cleaned, salvaged, and used for patch material where new walls are being constructed to existing walls to remain (planters, low seating, etc.). The masonry walls associated with the new ramps shall have “matching” face brick that will have distinct banding, patterns, face brick color percentages, etc. that will be slightly different from the existing face brick in the space to account for the difference in the “matching” of existing and new. The banding, patterns, color percentages, etc. will be determined prior to the construction of a field mock-up for review and approval.

**ITEM 14 - AD#1:** To the Drawings, Sheet “**FF-A110**”.

ADD: On all details the notation “Where Keyed Sim.: Opposite Hand”.

ADD: As clarification, all new handrailing shall be painted 1¼" diameter (1.66" O.D.) steel pipe handrailing.

ADD: As clarification, all wall mounted handrailing shall turn 90 degrees and return to the wall on each end.

ADD: On details “**FF-A110-03**”, “**FF-A110-04**”, and “**FF-A110-05**”, the “outer” wythe of the face brick shall extend down and past the concrete slab/turn-down so that there is not exposed concrete, similar to the details indicated on Sheet “**H-A106**”. Provide metal ties/reinforcing as specified to the concrete for the face brick veneer.

ADD: As clarification on detail “**FF-A110-06**”, the height of the new masonry wall shall match the existing height to which the new wall adjoins. CM@R shall verify the existing height prior to wall construction. Also, the concrete slab near the top of the masonry wall shall be 4” thick and shall be constructed as detailed on Sheet “**S301**”.

**ITEM 15 - AD#1**: To the Drawings, Sheet “**FF-A111**”.

ADD: As clarification, all new handrailing shall be painted 1¼” diameter (1.66” O.D.) steel pipe handrailing.

ADD: As clarification, all wall mounted handrailing shall turn 90 degrees and return to the wall on each end.

ADD: On details “**FF-A111-01**” and “**FF-A111-02**”, the distance between the ramp surface and the bottom rail shall be 2”.

ADD: On details “**FF-A111-02**” and “**FF-A111-04**”, a bottom rail shall be provided on the new handrailing at the existing landing area. The distance between the ramp surface and this bottom rail shall be 2”.

DELETE: On detail “**FF-A111-03**” the indication of wall mounted handrailing.

ADD: The handrailing in detail “**FF-A111-03**” shall be as shown as detailed in “**FF-A111-02**” (opposite hand). Maintain 1½” clearance between the handrailing and the adjacent masonry wall.

**ITEM 16 - AD#1**: To the Drawings, Sheet “**H-A104**”.

ADD: As clarification, on the “**Enlarged Floor Plan – Hardin Administration Building – First Floor – Area “H-1B” – New**”, the detail key for the cross-section of the east ramp run (oriented north-south) shall be “**H-A107-03**” in lieu of “**H-A202-03**” indicated.

DELETE: On the “**Enlarged Floor Plan – Hardin Administration Building – First Floor – Area “H-1C” – New**”, the detail keys for the new ramps leading to openings #H18 and #H20.

ADD: The details keys for the north and south ramps shall be “**H-A108-07**” and “**H-A109-02**” (see **ITEM 20** below).

**ITEM 17 - AD#1**: To the Drawings, Sheet “**H-A105**”.

DELETE: On the “**Enlarged Floor Plan – Hardin Administration Building – First Floor – Area “H-1A” – New**”, the detail keys for the new ramps in “**Akin Auditorium HN-108**”.

ADD: The details keys for the south ramp shall be “**H-A108-07**”, “**H-A108-01 Sim.**”, and “**H-A108-03**”.

ADD: The details keys for the north ramp shall be “**H-A108-02**”, “**H-A108-02 Sim.**”, and “**H-A108-03**”.

**ITEM 18 - AD#1**: To the Drawings, Sheets “**H-A106**” and “**H-A107**”.

ADD: As clarification, all new handrailing shall be painted 1¼” diameter (1.66” O.D.) steel pipe handrailing.

ADD: As clarification, all wall mounted handrailing shall turn 90 degrees and return to the wall on each end.

**ITEM 19 - AD#1**: To the Drawings, Sheet “**H-A108**”.

ADD: As clarification, on details “**H-A108-01**”, “**H-A108-02**”, “**H-A108-03**”, “**H-A108-06**”, and “**H-A108-07**”, provide a 2” high x 4” wide concrete curb along ramps and landings.

ADD: As clarification on detail “**H-A108-03**”, the wall mounted wood handrail shall be as indicated in “**H-A108-08**”. The handrail shall turn 90 degrees and return to the wall at each end.

ADD: On details “**H-A108-01**”, “**H-A108-02**”, “**H-A108-04**”, and “**H-A108-05**” at each end of the handrailing, it shall turn 90 degrees and extend down to the finished floor. A 12” long section of handrailing, clear of any vertical supports, shall extend horizontally and parallel with the finished floor at each end.

**ITEM 20 - AD#1**: To the Drawings, Sheet “**H-A109**”.

DELETE: Details “**B-A109-01**” and “**H-A109-03**”.

ADD: As clarification, detail “**B-A109-02**” shall be labeled “**H-A109-02**” (also refer to **ITEM 16** above).

ADD: As clarification on detail “**H-A109-02**”, the top rail of the new handrailing adjacent to the existing masonry wall shall return to the wall on each end. Also, the new handrailing on the “open” side of the ramp shall extend along the new landing and adjoin the existing masonry wall. In addition, provide a 2” high x 4” wide concrete curb along the “open side” of the ramp and landing.

**ITEM 21 - AD#1**: To the Project Manual, Sections **144250**, **VERTICAL WHEEL CHAIR LIFTS**.

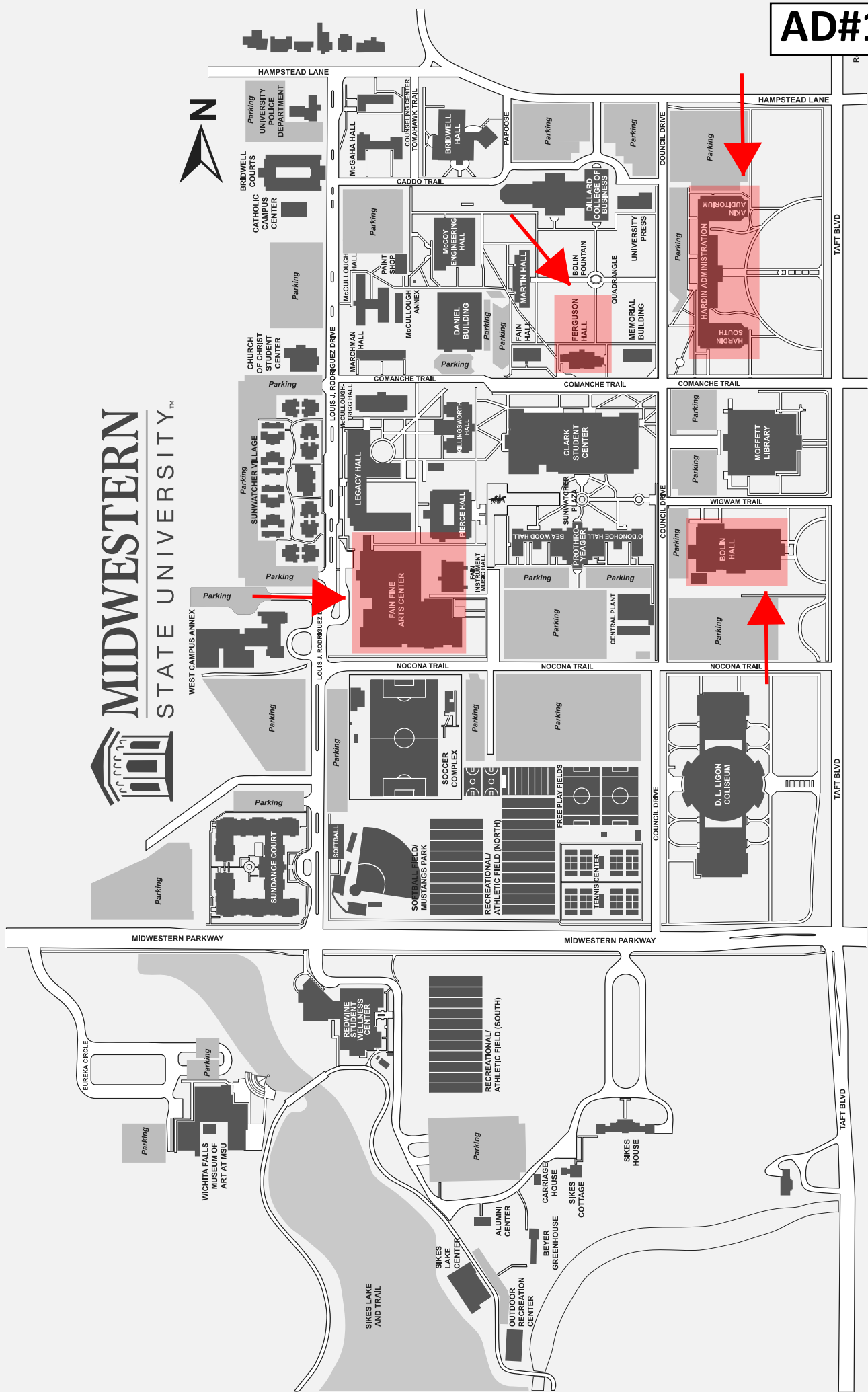
ADD: As clarification, on page **144250-2** under **Part 2.1(A) & (B)**, an acceptable alternate manufacturer of Vertical Wheel Chair Lifts is **Savaria** Lifts (Model #V-1504) distributed by **101 Mobility** of North Texas (contact Jennifer

Raney at 214-484-7181). However this approved manufacturer shall be responsible for meeting or exceeding all final requirements, details, installation methods, and specifications related to the specified products/systems. Once Bids are received, the Architect & Construction Manager-at-Risk shall evaluate any submitted products/systems other than those specified as per Section **012500, SUBSTITUTION PROCEDURES**, and then make a determination/recommendation in consultation with the Owner as to its use on this project.

**ITEM 22 - AD#1:** To the Project Manual and Mechanical/Electrical/Plumbing (MEP) Drawings.

ADD: The attached Addendum and associated revised drawings/Spec. Section from Campos Engineering

END OF ADDENDUM NO. 1



**MIDWESTERN**  
STATE UNIVERSITY™

MSU TAS/FIRE MARSHAL PROJECTS (HPA Project #16782.00)



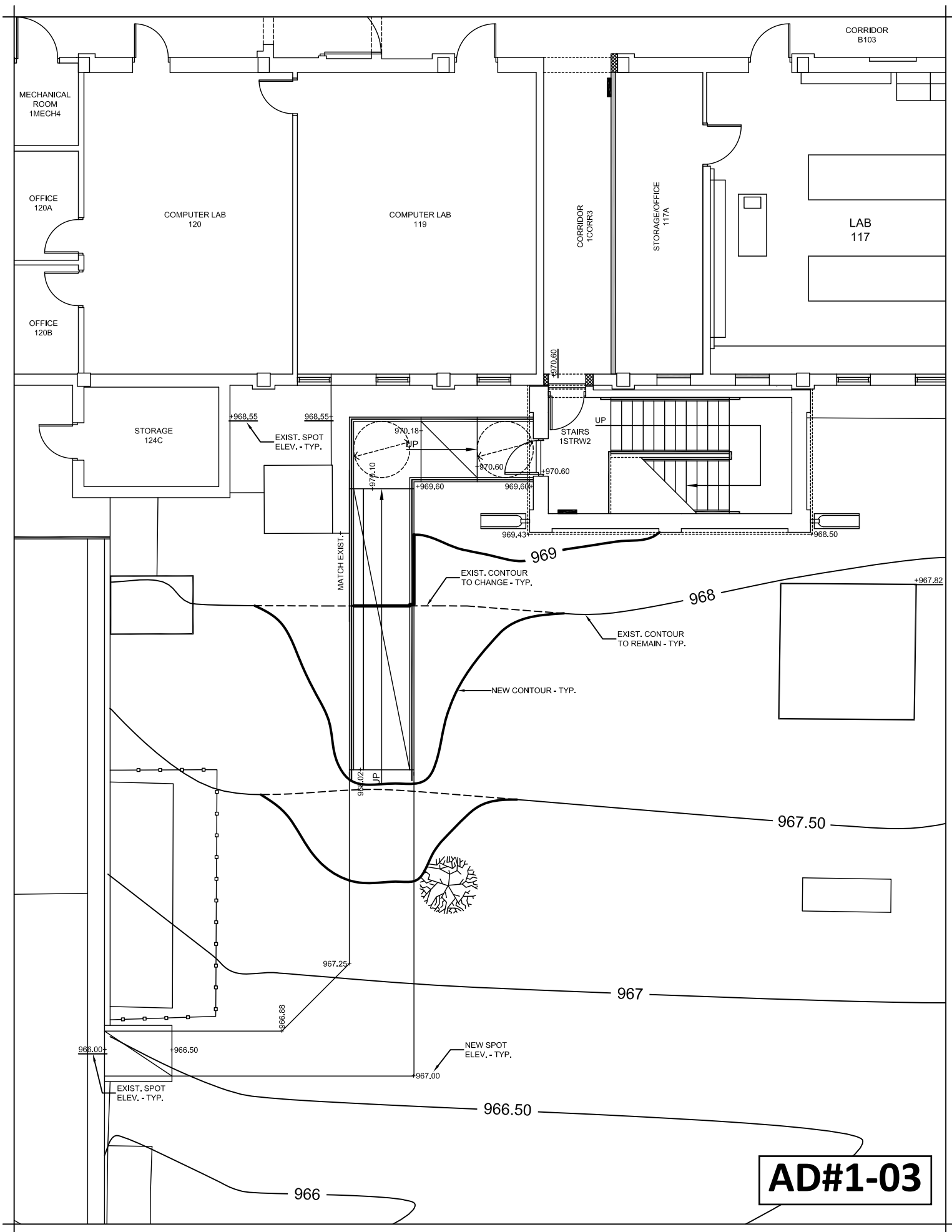
## BUILDINGS & PROJECTS

[illegible]

**KEYNOTES:**

1. Critical Task with Liquidated Damages
2. The Academic Calendar for 2018-19 has not been set by the University or approved by The Board of Regents. The listed specific date(s) will be within a week of timing.
3. Task listed with "Anytime" can be performed at any point during the listed time frame. In some cases, work occurring during a day could be limited by restrictions (i.e. "Mornings").
4. The dates for the Transformer Replacement at Bolin is to occur during one of the two time frames (both are at the end of the Spring Break Week). If the work cannot be scheduled for Spring Break of 2018, then it must occur during the Spring Break of 2019.

**AD#1-02**





## REVISION NARRATIVE

**Project:** D17-1263.00 MSU ADA Deferred Maintenance  
**Subject:** Addendum #1 - 08/02/2017  
**To:** Harper Perkins Architects, Inc.: Sam K. Kenshalo, Project Manager

---

Summarized below are the revisions made to the Contract Documents.

### Electrical

1. Sheet B-ED101 – Revised Drawing as follows:
  - a. Modify Key Note #5 to clarify existing transformer to be removed does not contain PCB.
  - b. Modify Key Note #7 by deleting “prior to demolition”
2. Sheet B-E101 – Revised Drawing as follows:
  - a. Modify Key Note #11 to indicate circuit homerun for heat trace and provision of GFP device.
  - b. Modify Key Note #15 to clarify quantity of conduits.
3. Sheet B-E102 – Revised Drawing as follows:
  - a. Adjusted location of lighting fixture in drawing 1/BE102 to conform on architect's RCP.
  - b. Changed notes in drawing 4/B-E102; removed transformer voltage, 277V inserted in MDP description, and noted that pvc is in ductbank.
4. Sheet B-E201 – Revised Drawing as follows:
  - a. Added drawing 5/B-E201 Partial Site Plan to indicate location of Switch A.
  - b. Modified details to clarify that there are two primary side conduit, and grounding is 3/0.
  - c. Increased the M.C.B. and wiring to 150A for new Kitchen panel “K1”.
5. Sheet H-ED101 – Revised Drawing as follows:
  - a. Indicate that an existing empty conduit is to be cut.
6. Sheet H-E101 – Revised Drawing as follows:
  - a. Adjusted lighting fixture in restroom to conform to architect's RCP.
  - b. Showed location of dimmers, existing panelboard, homerun circuits and corresponding changed in the Key Notes.
  - c. Modified Lighting Fixture Schedule.

### Mechanical

1. Sheet B-M101– Revised Drawing as follows:
  - a. Modified Detail 2 to relocated return grille to new reflected ceiling layout.

### Plumbing

1. Sheet FF-P101 – Revised Drawing as follows:
  - a. Modified Key notes #1, #2 and #3 to clarify the need to provide new plumbing appurtenances to the reinstalled plumbing fixtures.
2. Sheet FF-P102 – Revised Drawing as follows:
  - a. Modified Key notes #1, #2 and #3 to clarify the need to provide new plumbing appurtenances to the reinstalled plumbing fixtures.

3. Sheet H-P101– Revised Drawing as follows:
  - a. Modified Key note #2 to clarify the need to provide new plumbing appurtenances to the reinstalled plumbing fixtures.

## **Fire Protection**

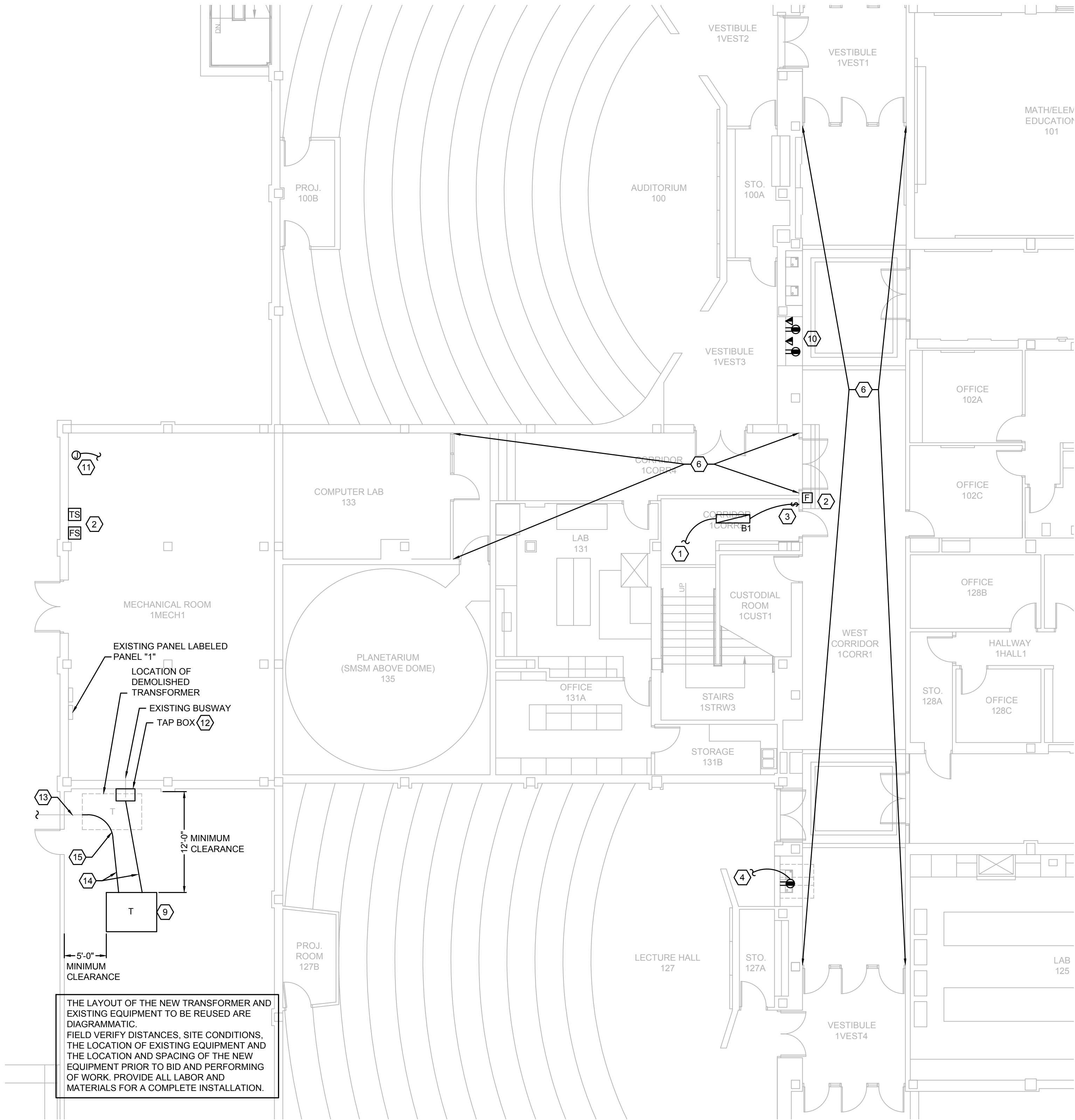
1. Sheet B-FP101 – Revised Drawing as follows:
  - a. Modified Key notes #1, to direct the contractor to the electrical sheet B-E101 for electrical information about the heat trace.
2. Specification Section 210010 General Requirements for Fire Suppression Systems:
  - a. Modified said specification section to remove the use of CPVC piping and the mention of housing facilities.

Please let us know if you have any questions or concerns.

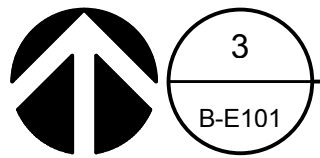
Sincerely,  
**Campos Engineering, Inc.**

Fred Crabtree, PE  
Project Manager/Mechanical Engineer





**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1C**  
**ELECTRICAL PLAN**

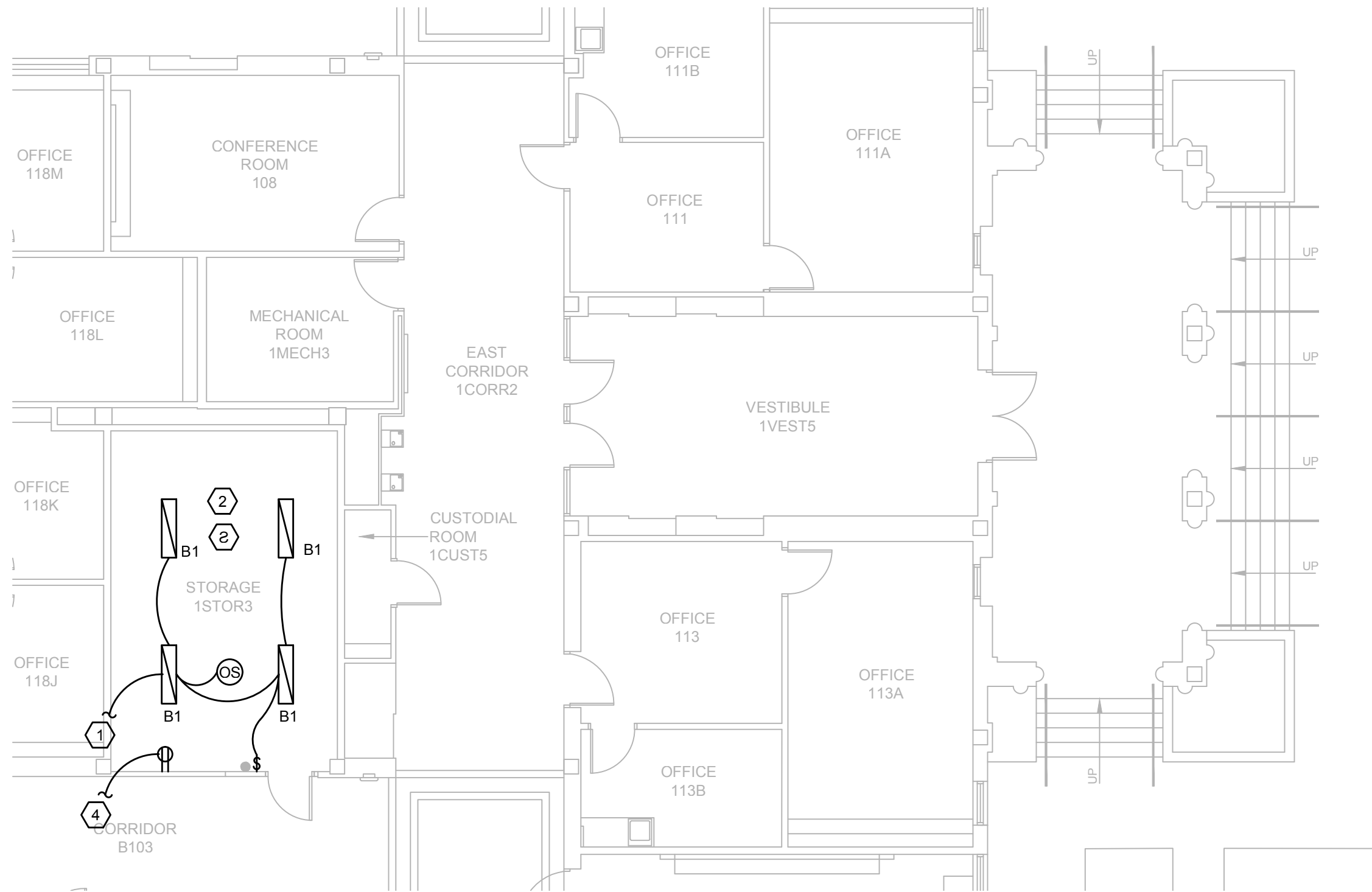


SCALE: 1/8" = 1'-0"

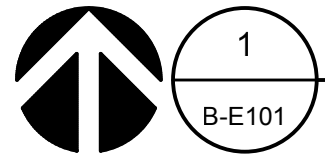
**LIGHT FIXTURE SCHEDULE**

| TYPE | DESCRIPTION                                      | LAMP        |            |     | MOUNTING        | ELECTRICAL |      | MANUFACTURER | CATALOG NUMBER             | NOTES |
|------|--------------------------------------------------|-------------|------------|-----|-----------------|------------|------|--------------|----------------------------|-------|
|      |                                                  | TYPE        | COLOR TEMP | CRI |                 | VOLTS      | VA   |              |                            |       |
| A1   | 2X2 LENSED TROFFER                               | FLUORESCENT | 4000K      | 85  | RECESSED GRID   | UNV        | 35   | HEW          | 50G-S22-2-17-F-AF12125-UNV |       |
| B1   | 1X4 SURFACE MOUNTED WRAP AROUND                  | FLUORESCENT | 4000K      | 85  | SURFACE         | UNV        | 65   | HEW          | 21-4-232-I-EB2-UNV         |       |
| B1E  | SAME AS B1 EXCEPT WITH EMERGENCY BATTERY BACK-UP |             |            |     |                 |            |      |              |                            |       |
| X1   | STANDARD LED EXIT SIGN                           | LED         | N/A        | N/A | SURFACE         | UNV        | 10   | HEW          | EXIT-R-EM-WHT-SDT          | 1,2   |
| E1   | INTERIOR EMERGENCY WALL PACK                     | LED         | N/A        | N/A | SURFACE         | UNV        | 10   | HEW          | EMER/LED-WMT-SDT           |       |
| F1   | EXTERIOR WALL MOUNTED LIGHT                      | LED         | 6350K      | N/A | WALL ABOVE DOOR | UNV        | 2.78 | HEW          | PGP-HTR                    |       |

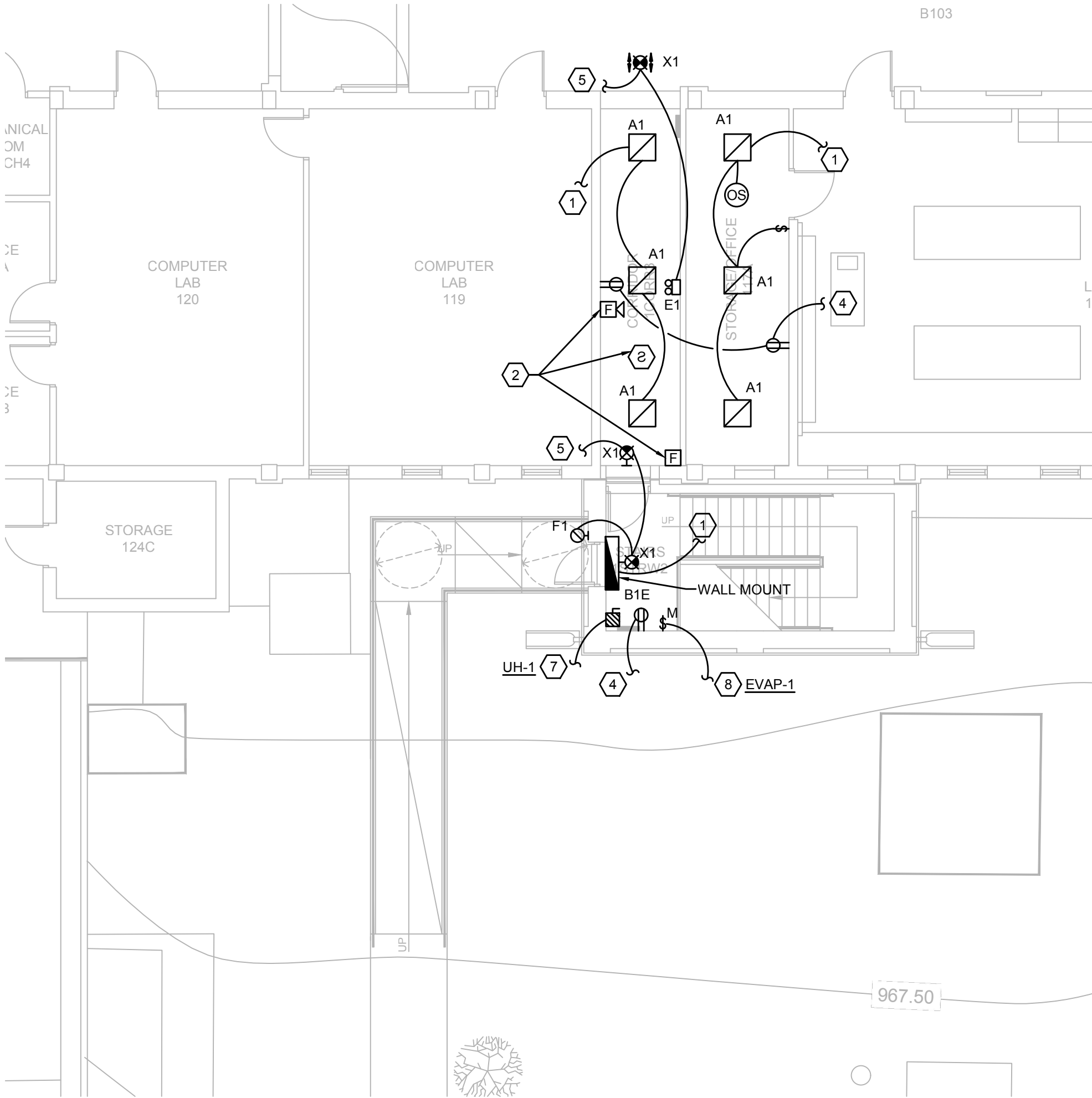
- NOTES:
- VERIFY MOUNTING, NUMBER OF FACES AND ARROW CONFIGURATION WITH PLANS PRIOR TO ORDERING FIXTURES.
  - VERIFY MOUNTING HEIGHT AND ORIENTATION WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.



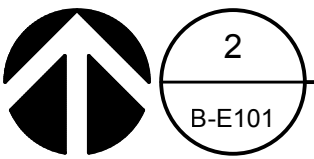
**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1B**  
**ELECTRICAL PLAN**



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



**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1A**  
**ELECTRICAL PLAN**



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

**GENERAL NOTES**

- REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.
- REFER TO MECHANICAL AND PLUMBING PLANS FOR LOCATIONS AND INFORMATION ON MECHANICAL AND PLUMBING EQUIPMENT.

**KEY NOTES**

- CONNECT NEW LIGHTS TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA (16A LOAD MAX. PER 20A CIRCUIT).
- NEW FIRE ALARM DEVICE. CONNECT TO EXISTING FIRE ALARM SYSTEM. VERIFY LOCATION WITH AHJ PRIOR TO INSTALLATION.
- RELOCATED LIGHT SWITCH. RECONNECT TO LIGHTING IN THIS AREA.
- CONNECT NEW RECEPTACLE TO NEAREST EXISTING 120V RECEPTACLE CIRCUIT (16.0A LOAD MAX. PER 20A CIRCUIT).
- CONNECT NEW EXIT SIGN AND EMERGENCY WALL PACK TO NEAREST AVAILABLE UNCONTROLLED LIGHTING CIRCUIT (16A LOAD MAX. PER 20A CIRCUIT).
- RE-INSTALL THE EXISTING LIGHT FIXTURES IN THIS AREA AFTER THE NEW SPRINKLER PIPING HAS BEEN INSTALLED.
- PROVIDE 30/NF/2 DISCONNECT SWITCH FOR UNIT HEATER, 208V, 1-PH, 2.5KW. USE CIRCUIT RC-37/39. FIELD VERIFY THAT THE EXISTING BREAKER IN THE PANEL IS 20A/2P. OTHERWISE REPLACE WITH NEW. ROUTE 2#10, #10G, 3/4" CONDUIT FROM BREAKER TO UNIT. FIELD COORDINATE ACTUAL LOCATION OF UNIT PRIOR TO ROUGH-IN. NEW CIRCUIT BREAKER SHALL MATCH THE EXISTING BREAKER AIC RATING.
- EVAPORATOR UNITS EVAP-1 AND EVAP-2, 208V, 1-PH, 0.2A, TO BE CIRCUITED FROM OUTDOOR UNIT CIRCUIT CU-2 (RC-34/36). ROUTE 3#12, #12G, 3/4" FROM OUTDOOR UNIT VIA MOTOR RATED SWITCH. REFER TO MANUFACTURER'S WIRING INSTRUCTIONS FOR MORE INFORMATION BEFORE START OF WORK.
- INSTALL NEW 2000KVA TRANSFORMER TO REPLACE THE EXISTING 2000KVA TRANSFORMER. PROVIDE ALL MATERIAL AND LABOR TO CONNECT THE NEW TRANSFORMER ASSEMBLY TO THE EXISTING PRIMARY AND SECONDARY SERVICES. COORDINATE THE WORK WITH THE OWNER FOR TIMING AND PHASING OF THE WORK IN ORDER TO MINIMIZE DISRUPTION OF SERVICE TO THE BUILDING. OBTAIN WRITTEN APPROVAL FROM THE OWNER AT MINIMUM OF FIVE BUSINESS DAYS PRIOR TO A SHUT DOWN OF SERVICE. SEE DRAWING B-E102 FOR ADDITIONAL DETAILS AND REQUIREMENTS.
- NEW LOCATION OF RELOCATED EXISTING VENDING MACHINES. REFER TO B-E101. EXTEND CIRCUIT TO NEW LOCATION. PROVIDE NEW OUTLETS. COORDINATE WITH OWNER FOR EXACT LOCATION BEFORE ROUGH IN.

- POWER CONNECTION TO 120V HEAT TRACE, HOMERUN CIRCUIT TO CKT 1 OF PANEL \*1\*. USE AVAILABLE EXISTING 30A/1P CIRCUIT BREAKER. USE 2#10, #10G, 3/4" (24A MAX. PER 30A CIRCUIT). REFER TO B-E101. COORDINATE WITH PIPE INSTALLER AND HEAT TRACE PROVIDER/INSTALLER FOR LOCATIONS AND REQUIREMENTS. PROVIDE GROUND FAULT PROTECTION DEVICE/CONTROLLER.
- PROVIDE NEW TAP BOX AND TAP KIT FOR CONNECTION OF EXISTING BUSWAY FEEDING THE EXISTING MDP IN THE MECHANICAL ROOM AND THE NEW FEEDERS COMING FROM THE NEW TRANSFORMER. FIELD VERIFY THE LOCATION OF THE EXISTING BUSWAY.
- REMOVE EXISTING PRIMARY CABLES BETWEEN SWITCH A AND EXISTING TRANSFORMER. PRESERVE DUCTBANK IN GOOD AND SAFE CONDITION FOR REUSE AND EXTENSION TO SERVE THE NEW TRANSFORMER. REFERENCE DRAWING B-E102 AND B-E201 FOR ADDITIONAL REQUIREMENTS.
- COORDINATE ROUTING OF UNDERGROUND WIRING WITH NEW EQUIPMENT AND EXISTING INSTALLATION.
- TWO NEW 4" DUCT IN CONCRETE DUCTBANK TO MATCH EXISTING AND EXTEND TO NEW TRANSFORMER. FIELD VERIFY EXISTING DUCT QUANTITIES AND SIZES, MATCH EXISTING. REFERENCE DRAWING B-E201.



DATE SIGNED:  
**HPA**  
ARCHITECTS PROGRAMMERS PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 940.787.1421 FAX: 940.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

**CEI** CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TASADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



|                   |             |          |
|-------------------|-------------|----------|
| DRAWN BY:         |             |          |
| DATE: 15 MAY 2017 |             |          |
| REVISIONS         |             |          |
| NO.               | DESCRIPTION | DATE     |
| 1                 | ADDENDUM 1  | 08/02/17 |
|                   |             |          |
|                   |             |          |
|                   |             |          |

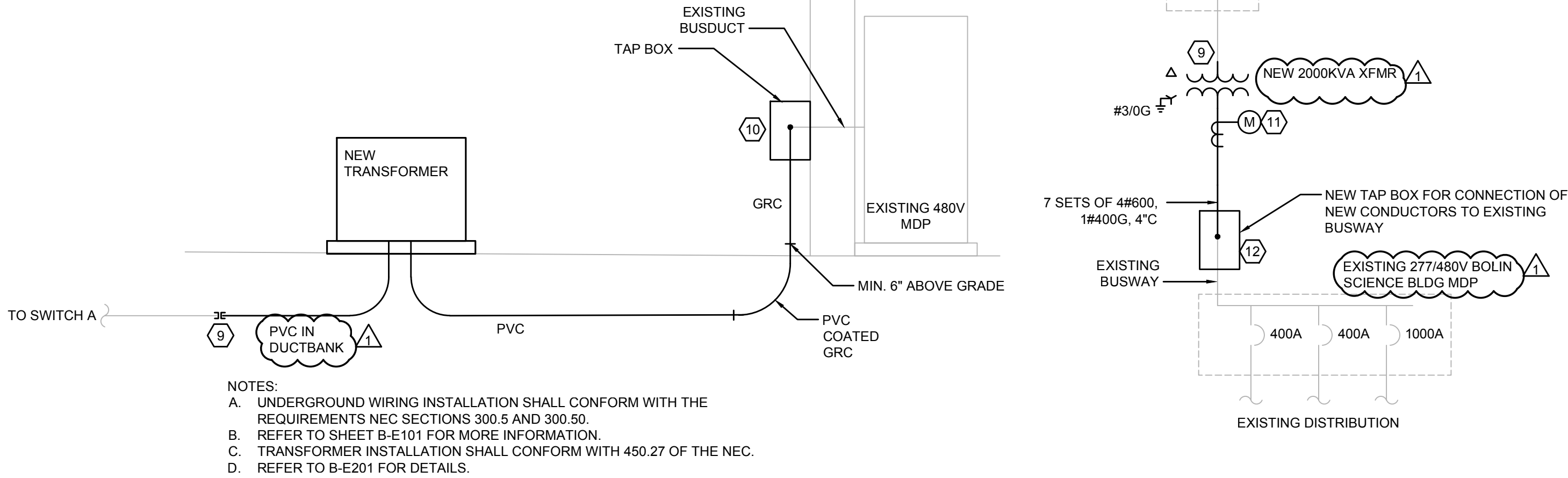
**16782.00**

© 2017 HARPER PERKINS ARCHITECTS

**B-E101**

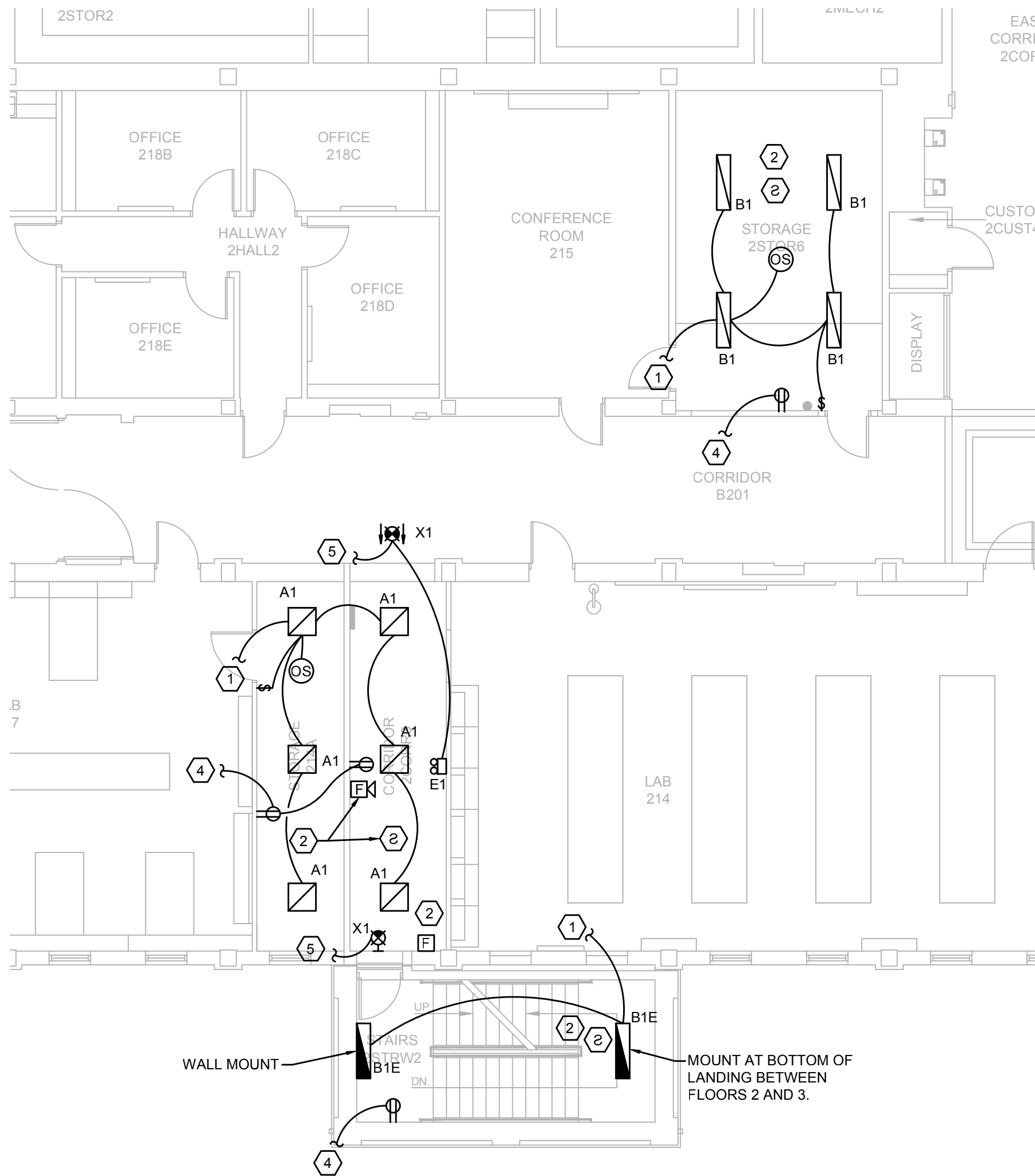


THE LAYOUT OF THE NEW TRANSFORMER AND EXISTING EQUIPMENT TO BE REUSED ARE DIAGRAMMATIC. FIELD VERIFY DISTANCES, SITE CONDITIONS, THE LOCATION OF EXISTING EQUIPMENT AND THE LOCATION AND SPACING OF THE NEW EQUIPMENT PRIOR TO BID AND PERFORMING OF WORK. PROVIDE ALL LABOR AND MATERIALS FOR A COMPLETE INSTALLATION.



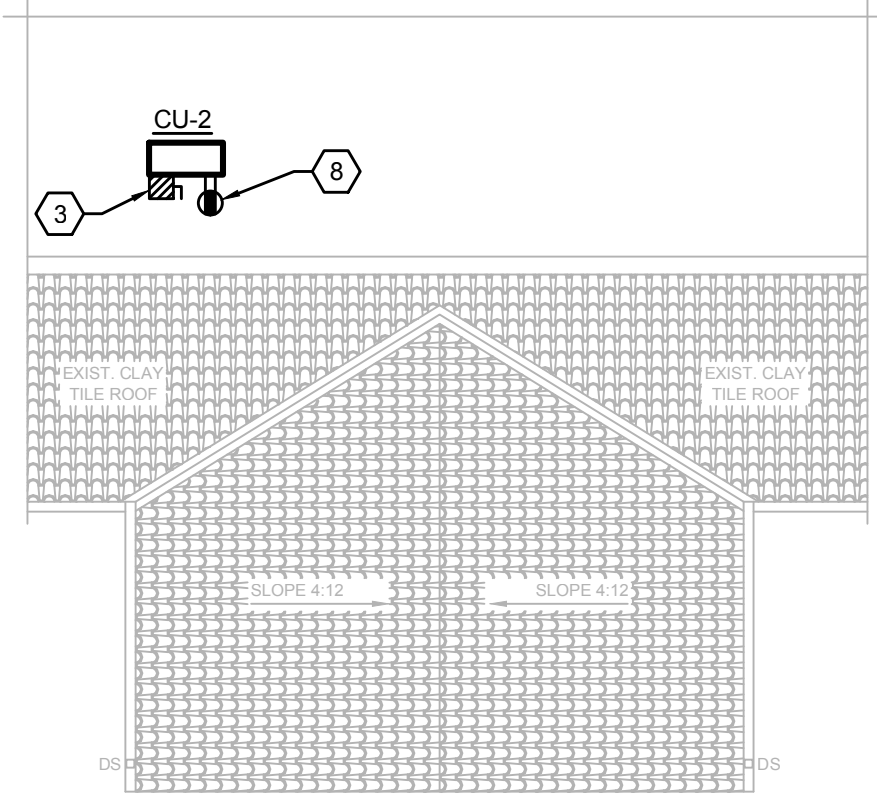
**BOLIN SCIENCE HALL - ELECTRICAL ONE LINE ELECTRICAL PLAN**

4  
B-E102 SCALE: NTS



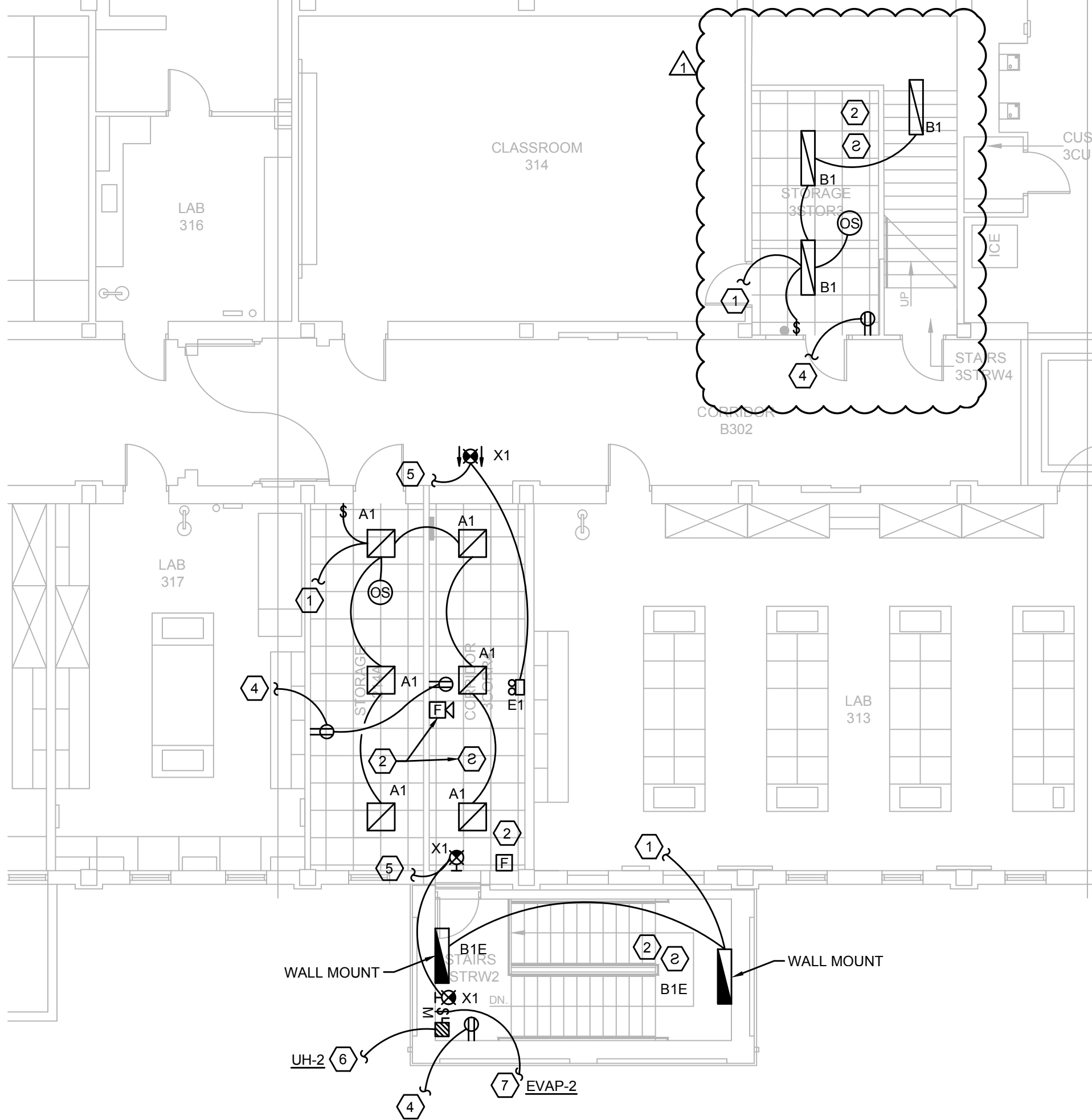
**BOLIN SCIENCE HALL - SECOND - AREA 2A ELECTRICAL PLAN**

2  
B-E102 SCALE: 1/8" = 1'-0"



**BOLIN SCIENCE HALL - ROOF LEVEL - AREA RA ELECTRICAL PLAN (PARTIAL VIEW)**

3  
B-E102 SCALE: 1/8" = 1'-0"



**BOLIN SCIENCE HALL - THIRD FLOOR - AREA 3A ELECTRICAL PLAN**

1  
B-E102 SCALE: 1/8" = 1'-0"

## GENERAL NOTES

1. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.
2. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOOR SHALL HAVE WEATHERPROOF ENCLOSURE.

## KEY NOTES #

1. CONNECT NEW LIGHTS TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA (16A LOAD MAX. PER 20A CIRCUIT).
2. NEW FIRE ALARM DEVICE. CONNECT TO EXISTING FIRE ALARM SYSTEM. VERIFY LOCATION WITH AHJ PRIOR TO INSTALLATION.
3. PROVIDE 30/NF/2 NEMA 3R DISCONNECT SWITCH FOR NEW CONDENSING UNIT SERVING STAIR TOWER (208V, 1-PH, 17.9A MCA, 25A MOCF). USE CIRCUIT RC-34/36, PROVIDE 25A/2P BREAKER IN THE PANEL AND ROUTE 2#10, #10G, 3/4" CONDUIT FROM BREAKER TO UNIT. FIELD COORDINATE ACTUAL LOCATION OF UNIT PRIOR TO ROUGH-IN. NEW CIRCUIT BREAKER SHALL MATCH THE EXISTING BREAKER AIC RATING.
4. USE SPARE CIRCUIT RN-13 FOR NEW RECEPTACLE. USE 2#12, 1#12G, 3/4"C.
5. CONNECT NEW EXIT SIGN AND EMERGENCY WALL PACK TO NEAREST AVAILABLE UNCONTROLLED LIGHTING CIRCUIT (16A LOAD MAX. PER 20A CIRCUIT).
6. PROVIDE 30/NF/2 DISCONNECT SWITCH FOR UNIT HEATER, 208V, 1-PH, 2.5KW. USE CIRCUIT RN-8/10, PROVIDE 20A/2P BREAKER IN THE PANEL. ROUTE 2#10, #10G, 3/4" CONDUIT FROM BREAKER TO UNIT.
7. EVAPORATOR UNITS EVAP-1 AND EVAP-2, 208V, 1-PH, 0.2A, TO BE CIRCUITED FROM OUTDOOR UNIT CIRCUIT CU-2 (RC-34/36). ROUTE 3#12, #12G, 3/4"C FROM OUTDOOR UNIT VIA MOTOR RATED SWITCH. REFER TO MANUFACTURER'S WIRING INSTRUCTIONS FOR MORE INFORMATION. COORDINATE WITH EQUIPMENT INSTALLER FOR LOCATION AND REQUIREMENTS.
8. PROVIDE NEW GFIMP WITH IN-USE COVER SERVICE RECEPTACLE NEAR NEW ROOF TOP UNIT. USE SPARE CIRCUIT RN-13, AND 2#12, 1#12G, 3/4"C.
9. REMOVE EXISTING CABLE FROM SWITCH A TO EXISTING TRANSFORMER. EXTEND EXISTING BUSDUCT TO NEW TRANSFORMER. INSTALL NEW 3#2 CABLE FROM EXISTING SWITCH A TO NEW TRANSFORMER. VISIT SITE AND FIELD VERIFY EXISTING DUCT SIZE AND TYPE. THE LOCATION OF SWITCH A, AND SITE CONDITIONS. INCLUDE ALL LABOR AND MATERIALS FOR A COMPLETE INSTALLATION.
10. REUSE EXISTING 480V BUSWAY SERVING MDP. UTILIZE TAP KIT TO PROVIDE A NEAT INSTALLATION. INSPECT, CLEAN, CHECK AND ADJUST BUSWAY MECHANICAL CONNECTIONS PER THE BUSWAY MANUFACTURER SPECIFICATIONS OR PER NETA RECOMMENDATIONS IF THE MANUFACTURER DATA IS UNAVAILABLE. REPORT DEFICIENCIES TO THE ENGINEER. PROVIDE ALL LABOR AND MATERIALS TO CORRECT DEFICIENCIES.
11. PROVIDE NEW METERING TRANSFORMERS TO SERVE EXISTING SCHNEIDER ELECTRIC PM750 METER. VERIFY REQUIREMENTS INCLUDING SIZE, CT RATIO, AND POLARITY REQUIREMENTS WITH THE MANUFACTURER. INSTALL PER MANUFACTURER'S REQUIREMENTS. CONNECT TO THE EXISTING WIRING SERVING THE CAMPUS REMOTE MONITORING SYSTEM. VERIFY PROPER OPERATION WITH OWNER AND ENGINEER. PROVIDE ALL LABOR AND MATERIALS FOR A COMPLETE OPERATING SYSTEM.
12. SIZE TAP BOX PER NEC AND TO PROVIDE SUFFICIENT SPACING BETWEEN CONNECTIONS FOR FUTURE INSPECTION AND MAINTENANCE. SECURE TAP BOX COVER WITH VANDAL RESISTANT HARDWARE AND SCREWS. PROVIDE NEMA 3R ENCLOSURE. SEAL ALL EXISTING AND NEW BUILDING PENETRATIONS WATER TIGHT.



DATE SIGNED:



TASADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



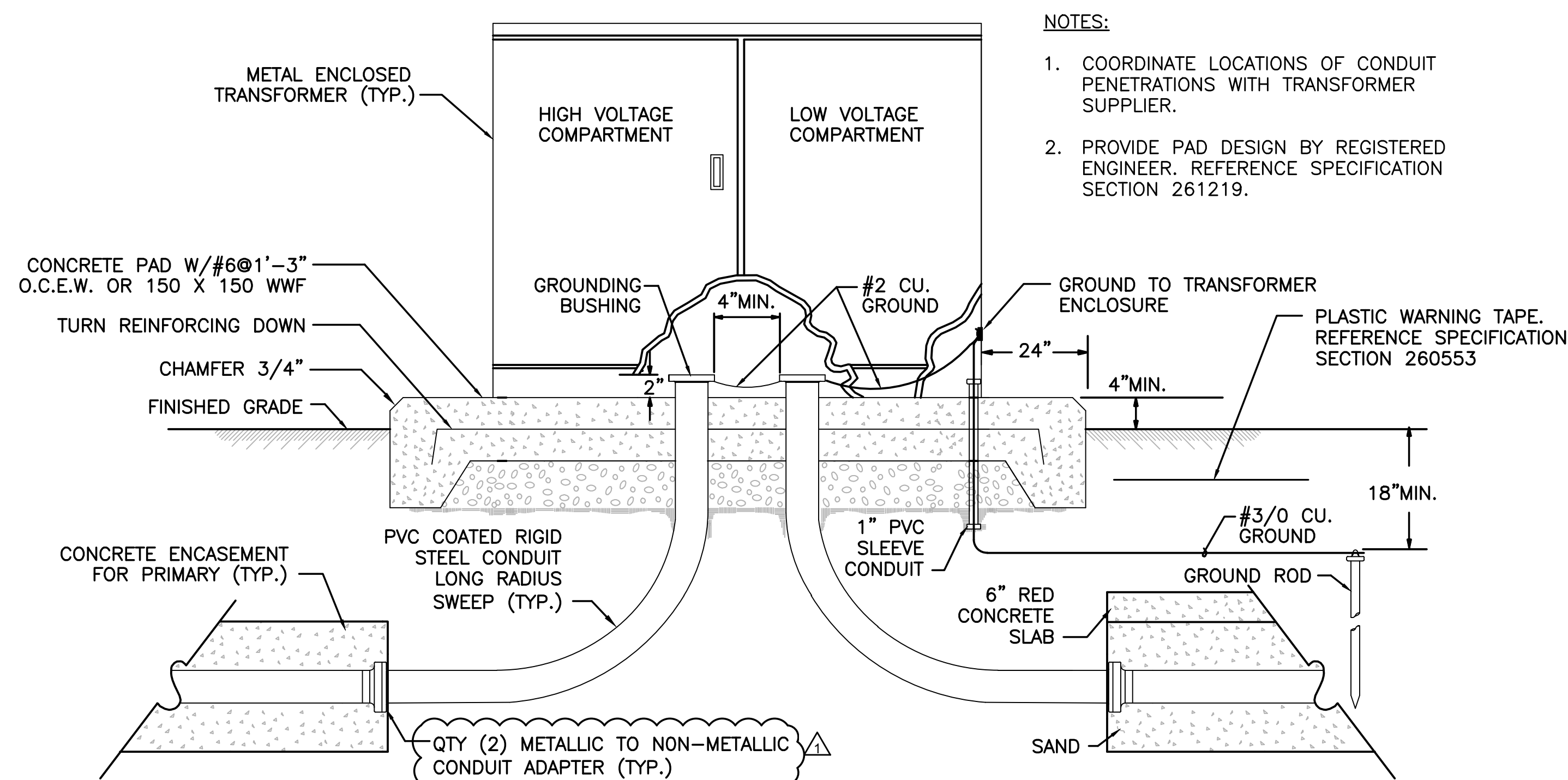
|                   |             |          |
|-------------------|-------------|----------|
| DRAWN BY:         |             |          |
| DATE: 15 MAY 2017 |             |          |
| REVISIONS         |             |          |
| NO.               | DESCRIPTION | DATE     |
| 1                 | ADDENDUM 1  | 08/02/17 |
|                   |             |          |
|                   |             |          |
|                   |             |          |

16782.00

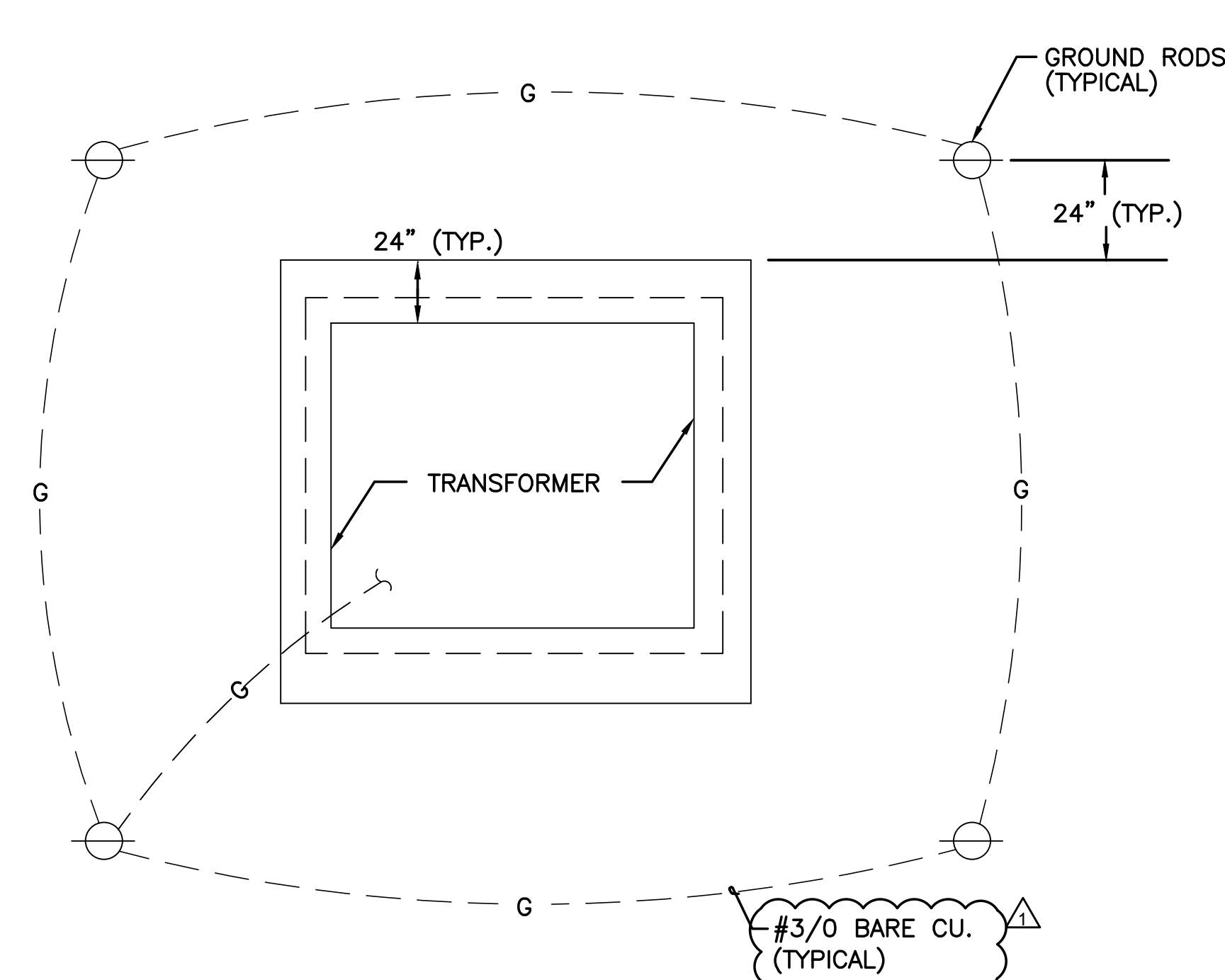
© 2017 HARPER PERKINS ARCHITECTS

B-E102

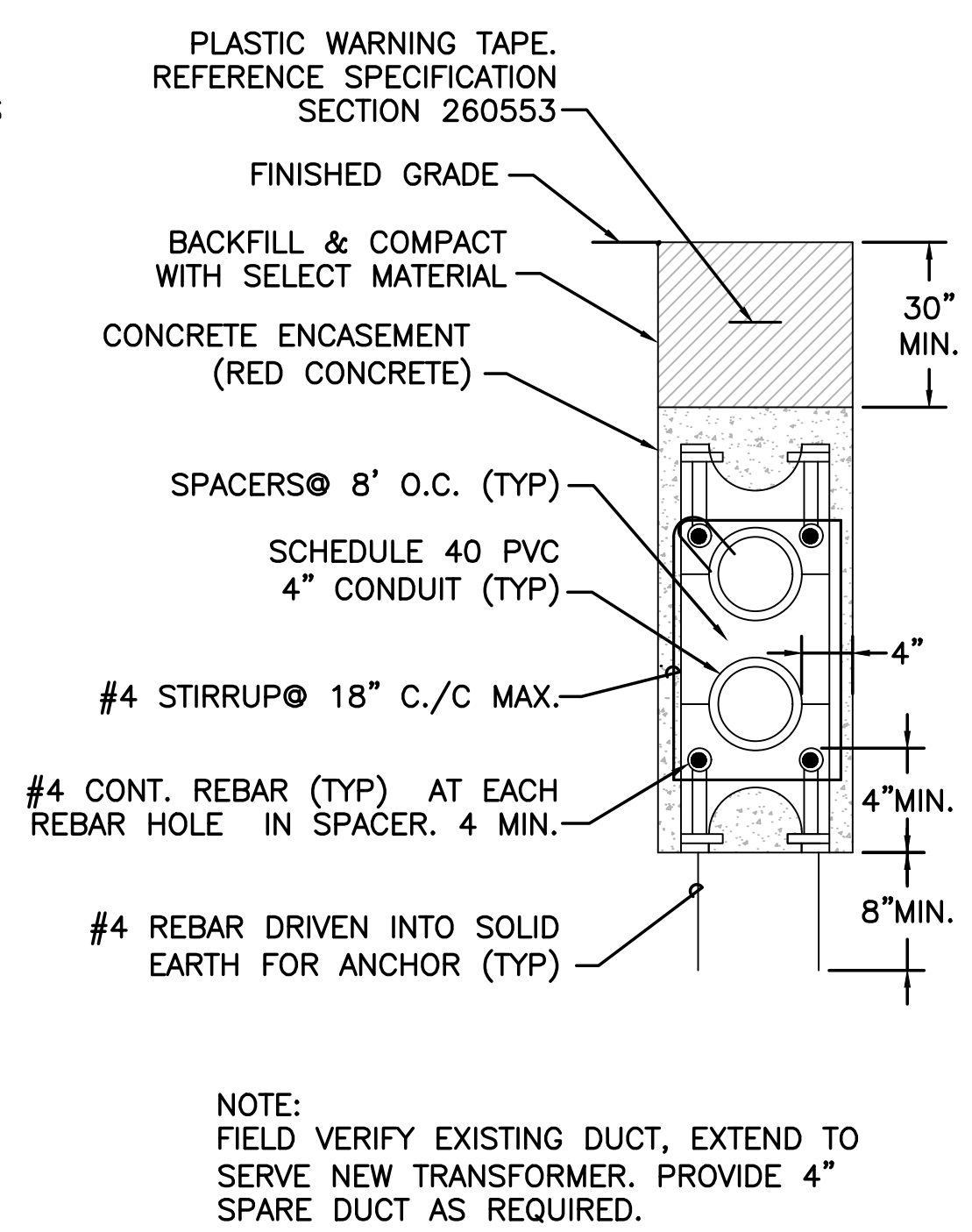




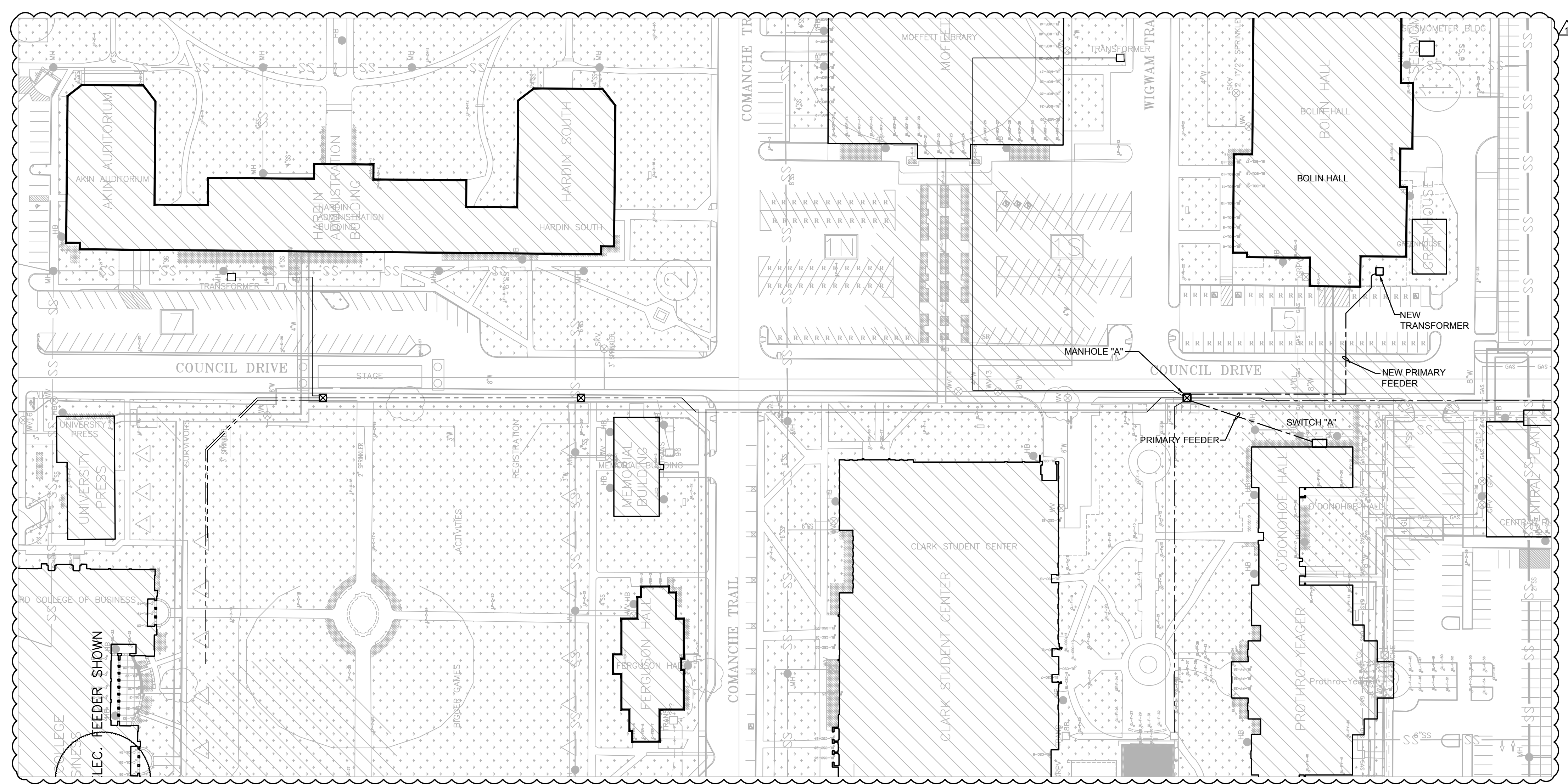
**1 TRANSFORMER DETAIL (TYPICAL)**  
B-E201 SCALE: NONE



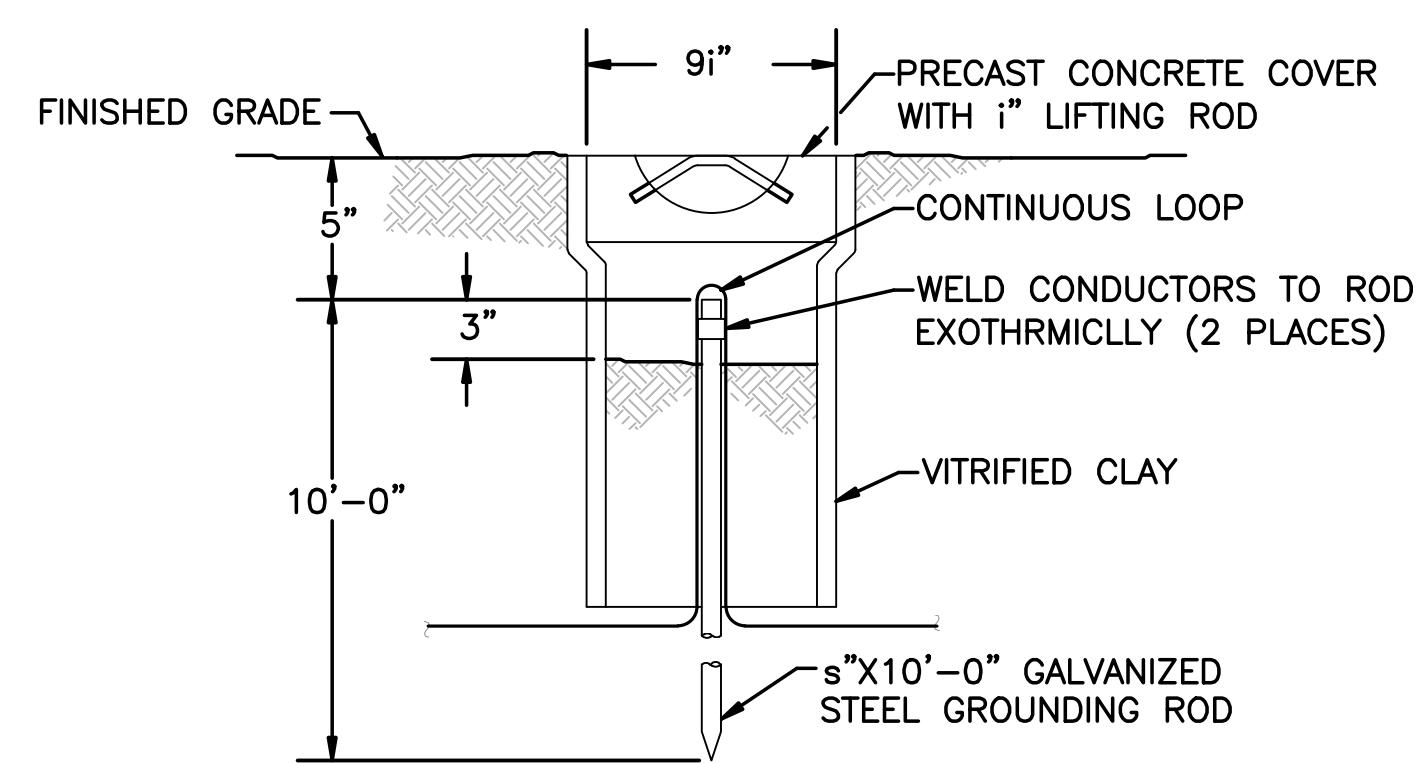
**2 TRANSFORMER GROUNDING DETAIL**  
B-E201 SCALE: NONE



**4 MEDIUM VOLTAGE DUCT**  
B-E201 SCALE: NONE



**5 PARTIAL SITE PLAN - BOLIN BLDG.**  
B-E201 SCALE: 1" = 60'



**3 GROUND ROD DETAIL**  
B-E201 SCALE: NONE

STATE OF TEXAS  
JOSEPH D. CAMPOS  
45515  
PROFESSIONAL ENGINEER  
08/02/2017

DATE SIGNED:  
**HPA**  
ARCHITECTS PROGRAMMERS PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 840.787.1421 FAX: 840.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

**CEI** CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TASADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS

MIDWESTERN STATE UNIVERSITY  
1922

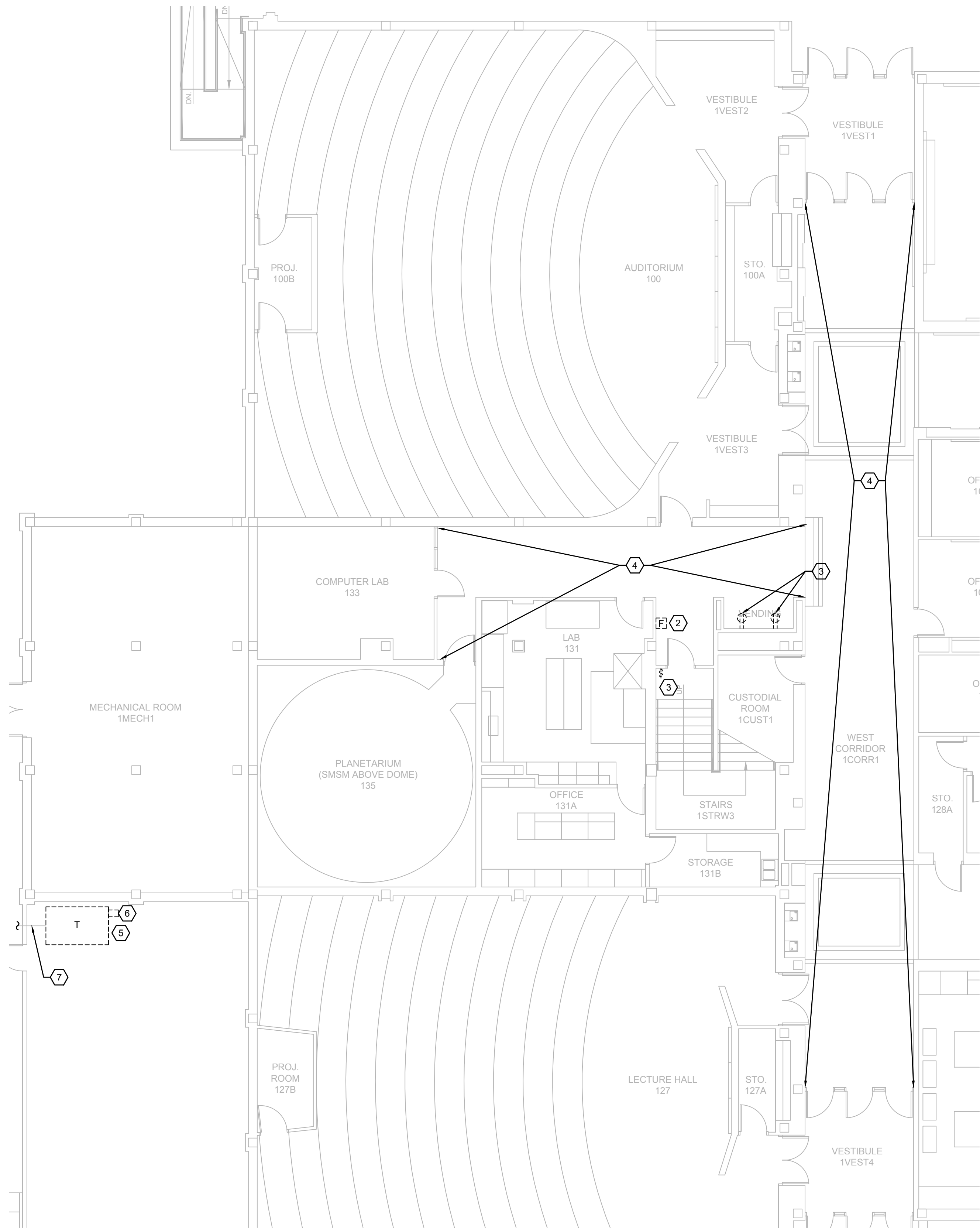
DRAWN BY:  
DATE: 15 MAY 2017

| REVISIONS |             |          |
|-----------|-------------|----------|
| NO.       | DESCRIPTION | DATE     |
| Δ         | ADDENDUM 1  | 08/02/17 |

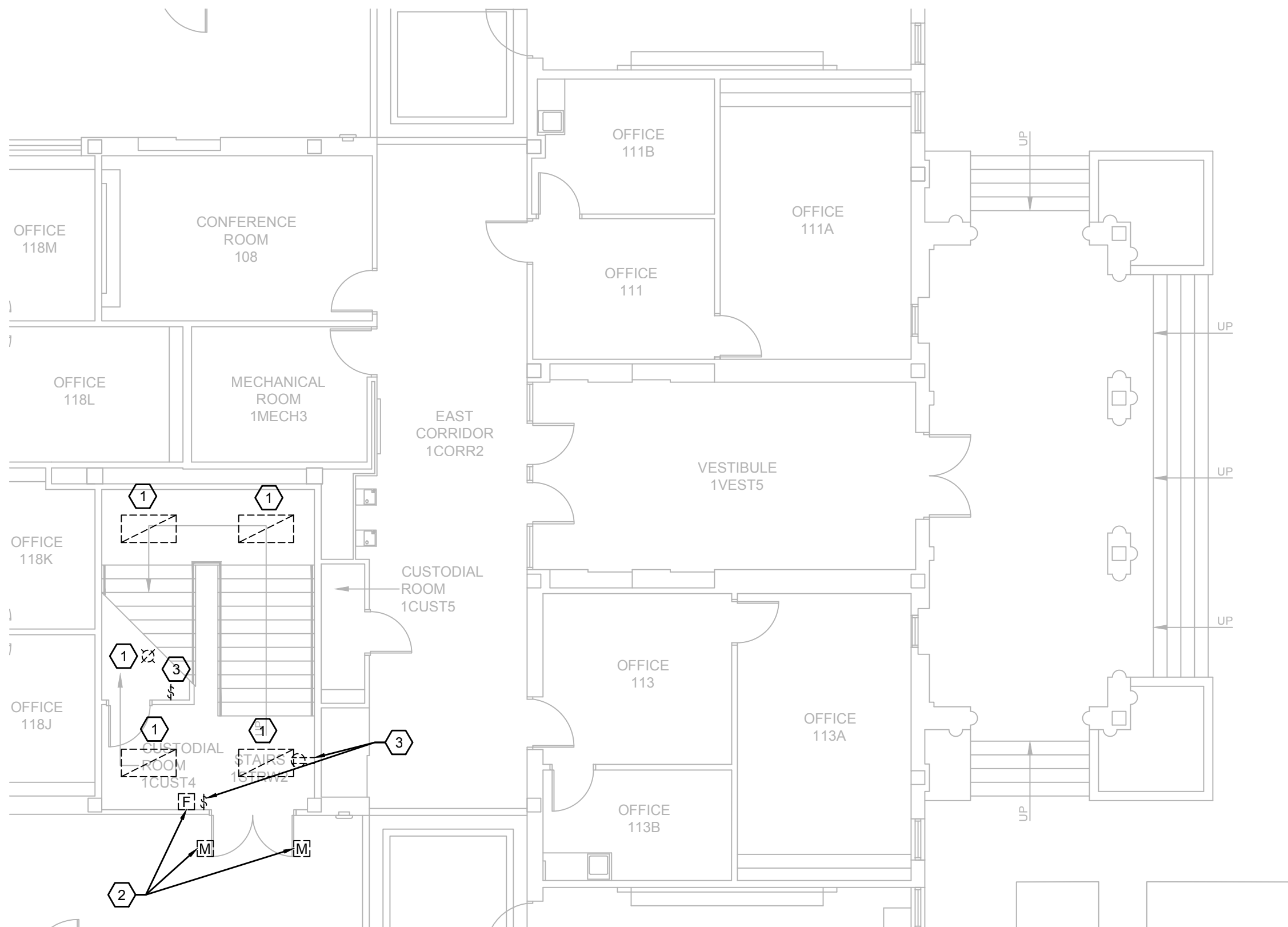
**16782.00**

© 2017 HARPER PERKINS ARCHITECTS  
**B-E201**

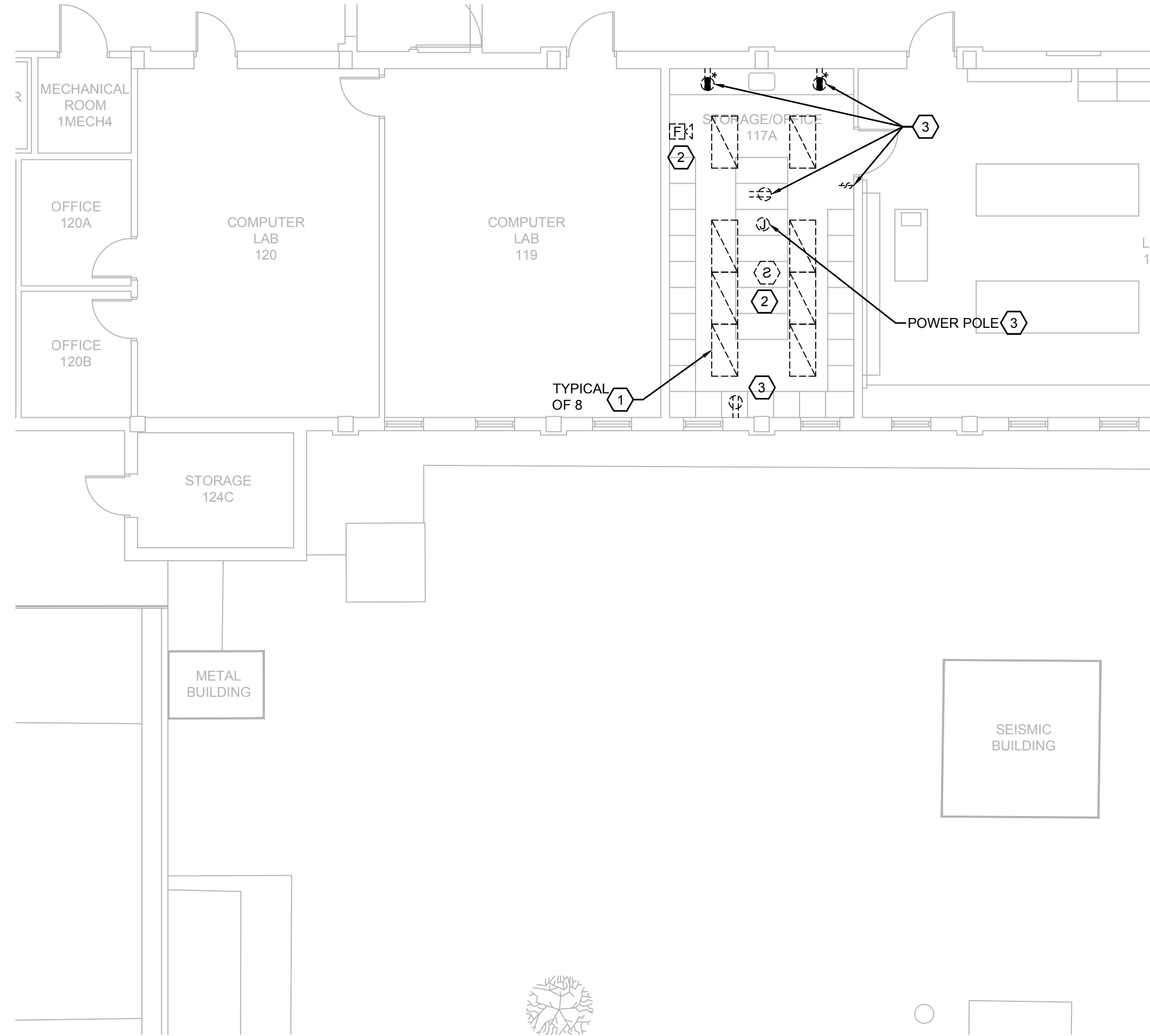




**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1C**  
**ELECTRICAL DEMOLITION PLAN**



**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1B**  
**ELECTRICAL DEMOLITION PLAN**



**BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1A**  
**ELECTRICAL DEMOLITION PLAN**

**GENERAL NOTES**

1. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

**KEY NOTES #**

1. REMOVE EXISTING LIGHTS. RETAIN CIRCUITING FOR RE-USE.
2. REMOVE EXISTING FIRE ALARM DEVICE. RETAIN FOR RE-USE IN NEW LOCATION.
3. REMOVE EXISTING WIRING DEVICE. RETAIN CIRCUITING FOR RE-USE.
4. REMOVE ALL LIGHTS IN THIS AREA AND STORE THEM DURING CONSTRUCTION FOR RE-INSTALLATION AFTER THE SPRINKLER PIPING HAS BEEN INSTALLED.
5. REMOVE EXISTING 2000KVA TRANSFORMER. APPLY ALL NECESSARY PRECAUTION TO PRESERVE THE PRIMARY DUCTBANK SERVING TRANSFORMER IN GOOD AND SAFE CONDITION. TIMING OF REMOVAL AND THE INSTALLATION OF THE NEW TRANSFORMER SHALL BE COORDINATED WITH OWNER TO MINIMIZE POWER DISRUPTION TO THE BUILDING. REF. DRAWING B-101. DISPOSE OF THE EXISTING TRANSFORMER IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. OWNER WILL PROVIDE TEST REPORT SHOWING TRANSFORMER DOES NOT CONTAIN PCB PRIOR TO REMOVAL.
6. REMOVE EXISTING TXU METER AND METERING CURRENT TRANSFORMERS (CTS) AND RETURN TO OWNER. PRESERVE IN GOOD CONDITION. PRESERVE EXISTING SCHNEIDER ELECTRIC PM750 METER AND WIRING FOR REUSE AND INSTALLATION IN THE NEW TRANSFORMER. REFERENCE BE-102 FOR ADDITIONAL REQUIREMENTS.
7. APPROXIMATE LOCATION OF EXISTING PRIMARY CABLE IN DUCTBANK. FIELD VERIFY EXACT LOCATION.

DATE SIGNED:  
**HPA**  
ARCHITECTS - PROGRAMMERS - PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 940.767.1421 FAX: 940.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

**CEI** CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR

**MIDWESTERN STATE UNIVERSITY**

3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS

DRAWN BY:

DATE: 15 MAY 2017

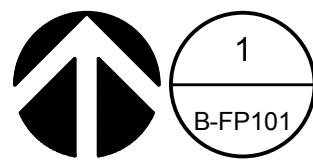
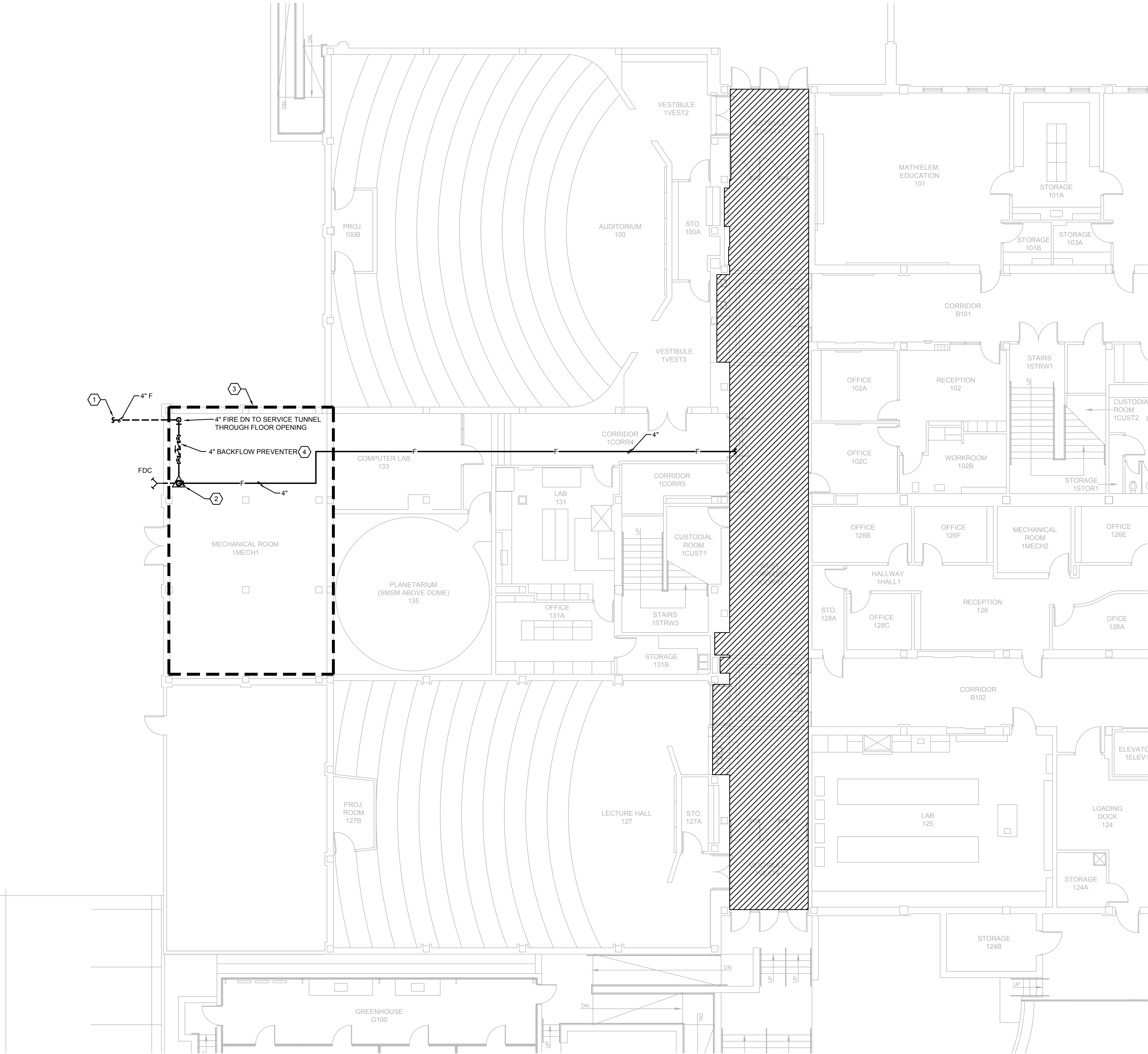
| REVISIONS |             |          |
|-----------|-------------|----------|
| NO.       | DESCRIPTION | DATE     |
| 1         | ADDENDUM 1  | 08/02/17 |
|           |             |          |
|           |             |          |
|           |             |          |

**16782.00**

© 2017 HARPER PERKINS ARCHITECTS

**B-ED101**





BOLIN SCIENCE HALL - FIRST FLOOR - AREA 1C  
FIRE PROTECTION PLAN

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

## GENERAL NOTES

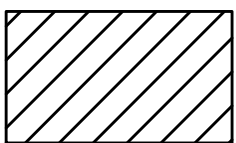
(NOT ALL NOTES APPLY TO EACH SHEET)

- REFER TO SYMBOL LEGEND AND GENERAL NOTES.
- REFER TO SPECIFICATIONS.
- REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

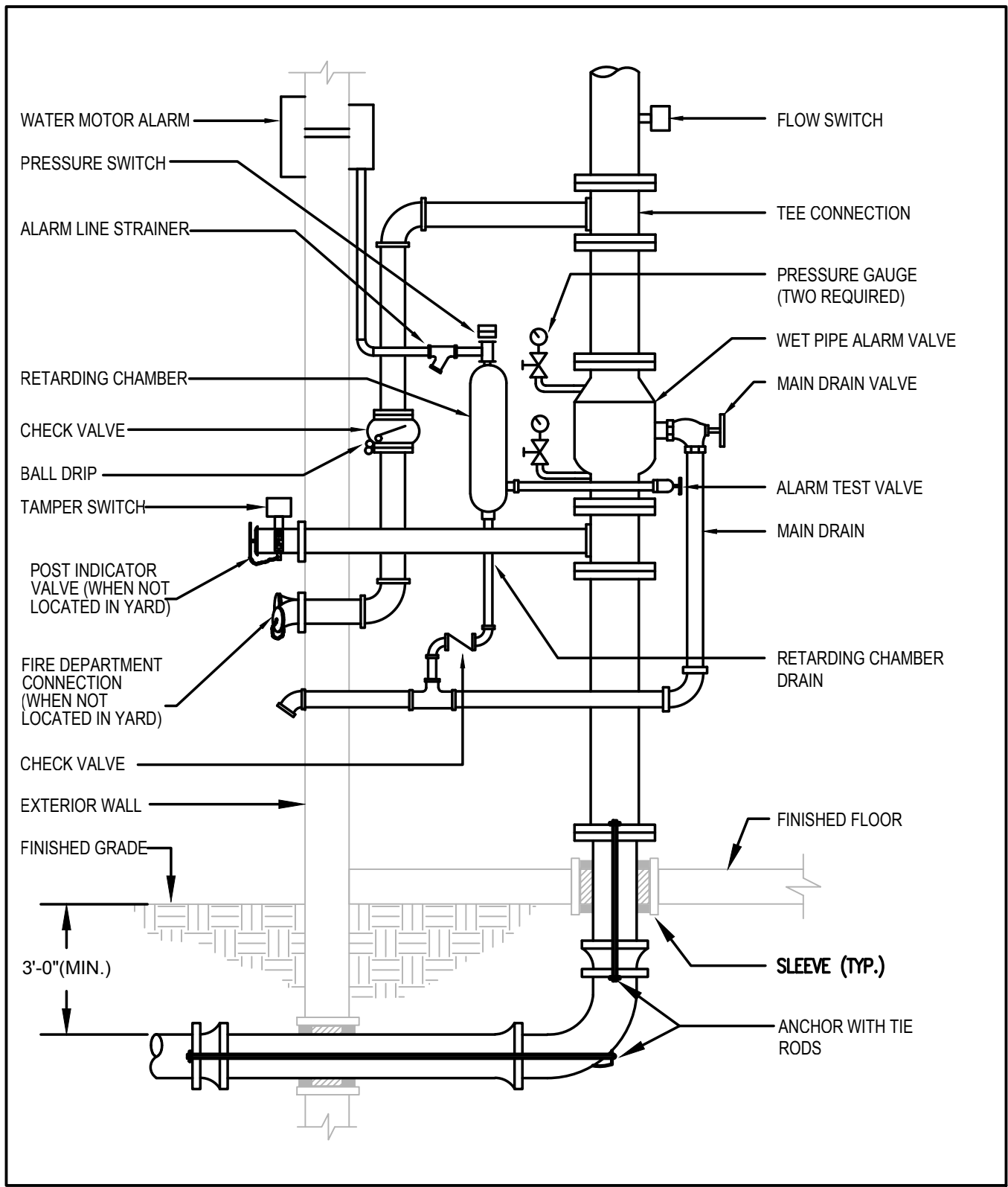
## KEY NOTES #

(NOT ALL NOTES APPLY TO EACH SHEET)

- CONNECT NEW 4" FIRE LINE TO MAIN WATER SERVICE LINE. HEAT TRACE THIS NEW FIRE LINE INSIDE THE SERVICE TUNNEL, APPROXIMATELY 100 FT. REFER TO SHEET B-E101 FOR ELECTRICAL INFORMATION. FIELD VERIFY EXACT LOCATION OF THE EXISTING WATER MAIN.
- NEW FIRE 4" RISER TO SERVE CORRIDOR 1CORR1 AND FUTURE EXPANSION OF THE FIRE SPRINKLER COVERAGE IN THE BUILDING. REFER TO DETAIL 2/B-FP101. THE LOCATION OF THE FIRE RISER IN THIS SPACE IS DIAGRAMMATIC IN NATURE AND CONTRACTOR HAS OPTION TO ALTER FIRE RISER LOCATION IN THIS SPACE AS NEEDED.
- PER FIRE PROTECTION GENERAL NOTES ON SHEET FP001, CONTRACTOR TO COORDINATE FIRE PROTECTION PIPE ROUTING WITH EXISTING FIELD CONDITIONS (EQUIPMENT, DUCTS, PIPE, SPACE RESTRICTIONS, ETC). THE PIPE ROUTING IN THIS SPACE IS DIAGRAMMATIC IN NATURE AND CONTRACTOR HAS OPTION TO ALTER ROUTING IN THIS SPACE AS NEEDED.
- HORIZONTAL BACKFLOW PREVENTOR SHOWN FOR DIAGRAMMATIC PURPOSES. RECOMMEND USING VERTICAL BACKFLOW PREVENTOR DUE TO SPACE CONSTRAINTS.



WET TYPE SPRINKLER SYSTEM.



## 2 TYPICAL FIRE RISER DETAIL

SCALE: NONE



DATE SIGNED:



HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 840.787.1421 FAX: 840.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers



1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



DRAWN BY:

DATE: 15 MAY 2017

REVISIONS

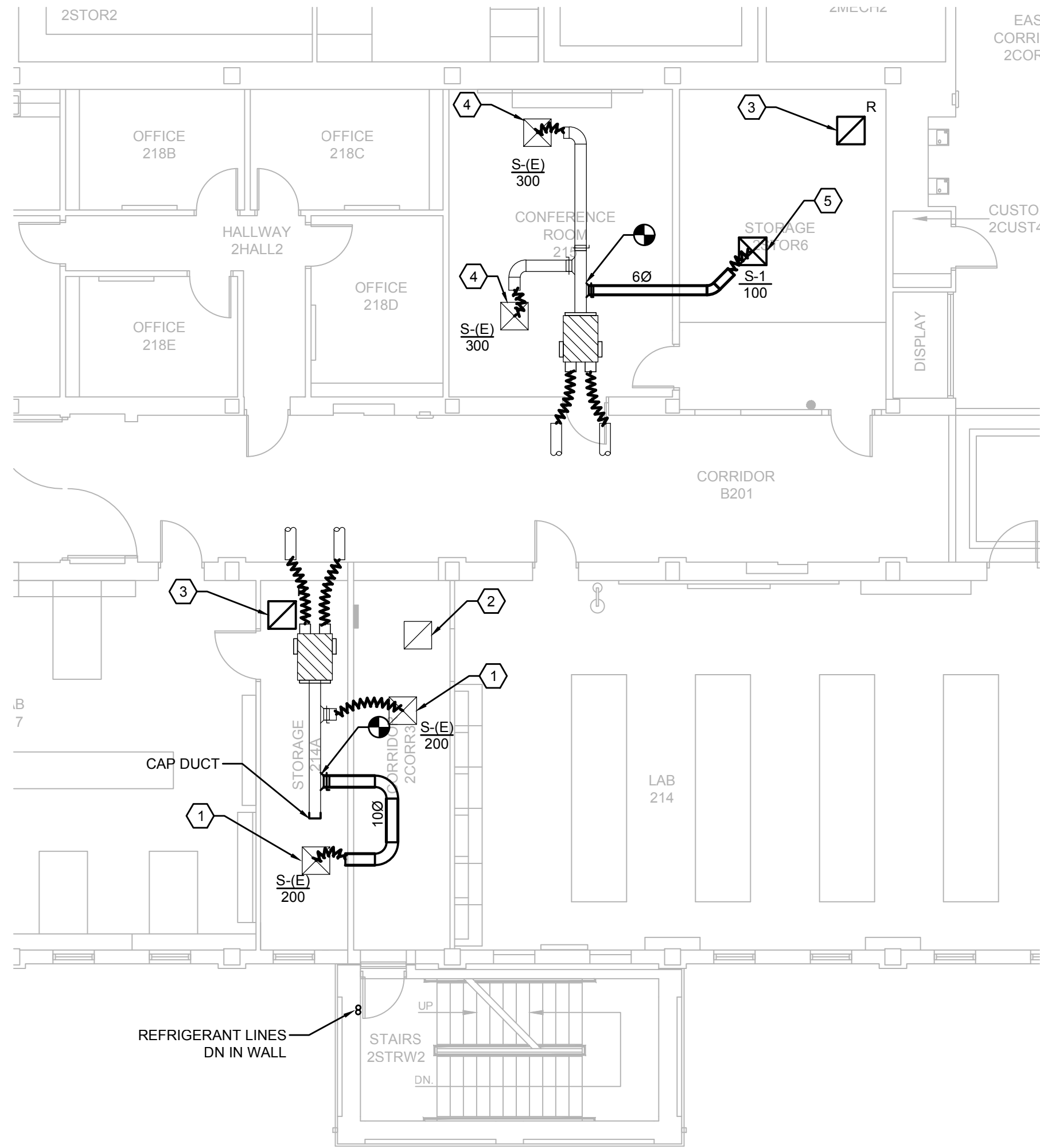
| NO. | DESCRIPTION | DATE     |
|-----|-------------|----------|
| 1   | ADDENDUM 1  | 08/02/17 |
|     |             |          |
|     |             |          |

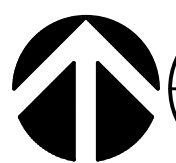
16782.00

© 2017 HARPER PERKINS ARCHITECTS

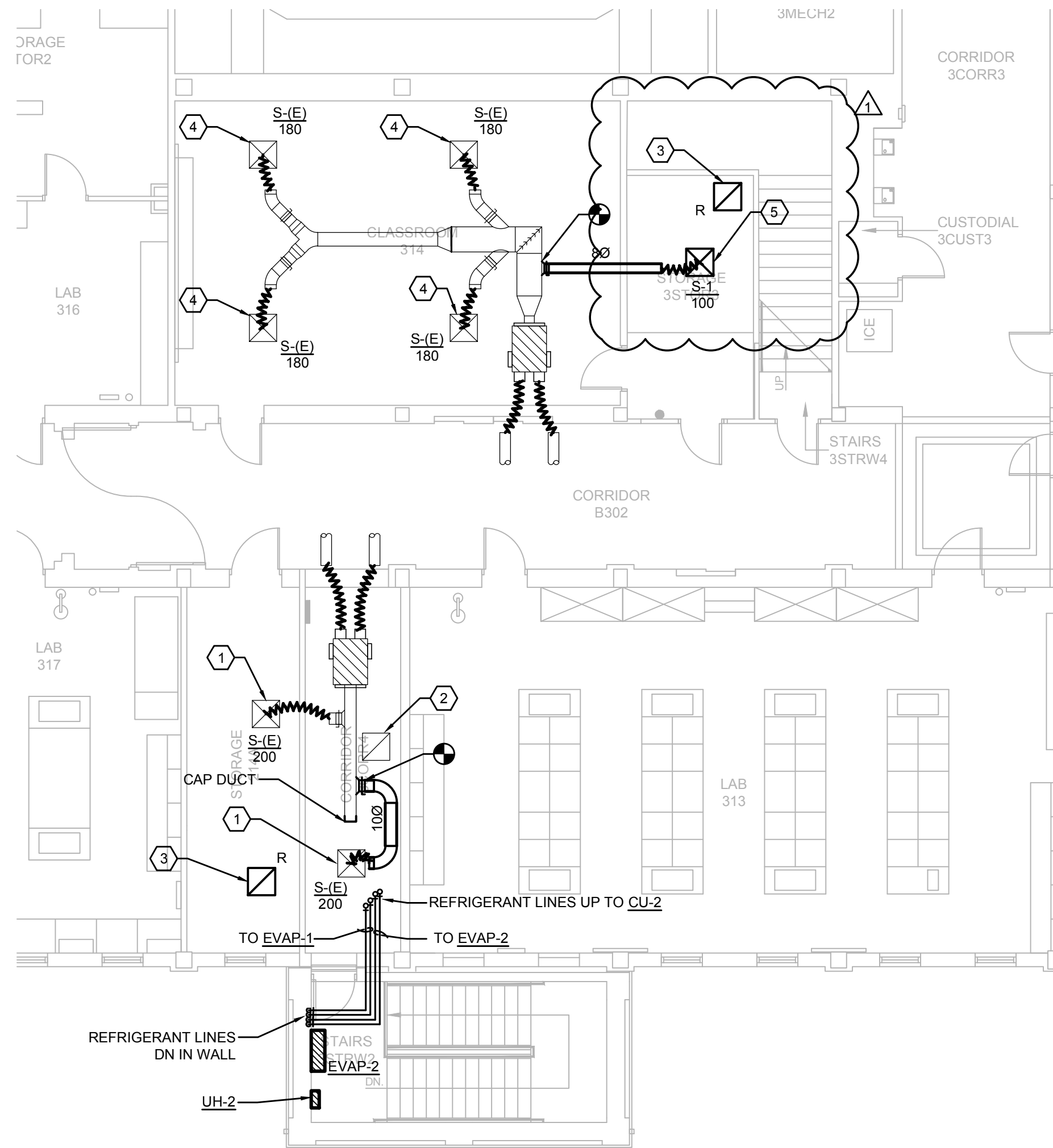
B-FP101

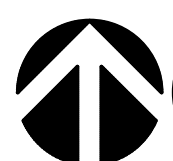




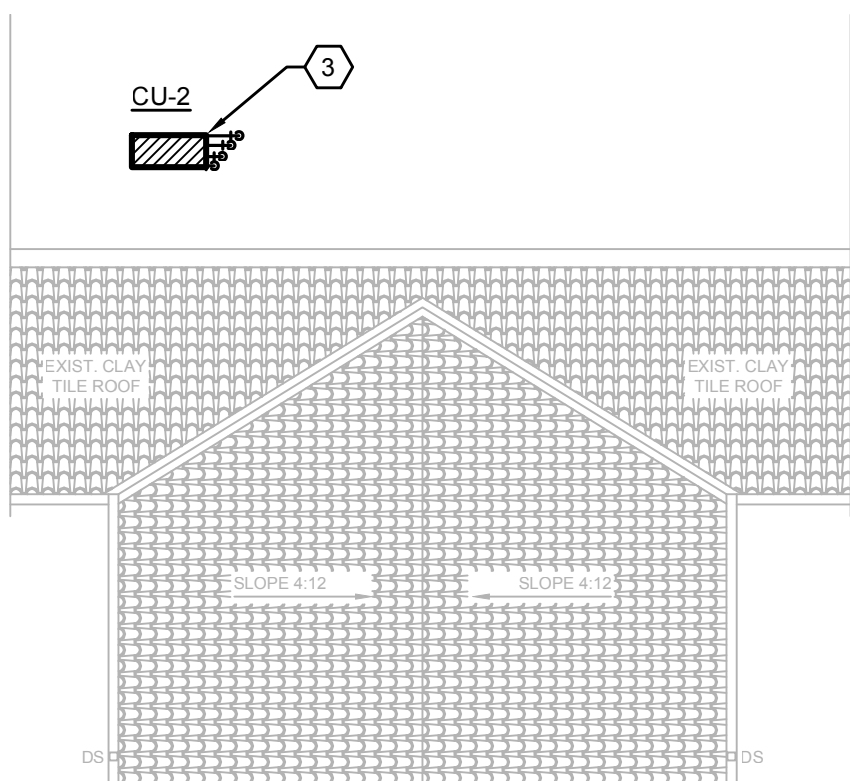
 1  
B-M102 SCALE: 1/8" = 1'-0"

**BOLIN SCIENCE HALL - FIRST SECOND - AREA 2A  
MECHANICAL PLAN**



 2  
B-M102 SCALE: 1/8" = 1'-0"

**BOLIN SCIENCE HALL - THIRD FLOOR - AREA 3A  
MECHANICAL PLAN**



 3  
B-M102 SCALE: 1/8" = 1'-0"

**BOLIN SCIENCE HALL - ROOF LEVEL - AREA RA  
MECHANICAL PLAN (PARTIAL VIEW)**

## GENERAL NOTES

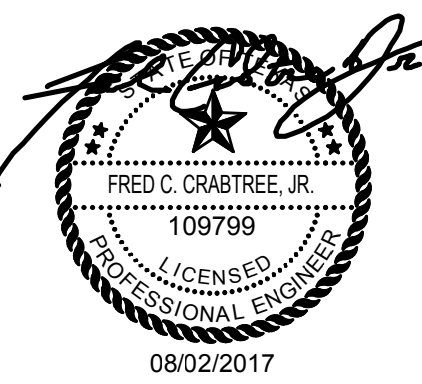
(NOT ALL NOTES APPLY TO EACH SHEET)

- REFER TO SYMBOL LEGEND AND GENERAL NOTES.
- REFER TO SPECIFICATIONS.
- REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

## KEY NOTES #

(NOT ALL NOTES APPLY TO EACH SHEET)

- RELOCATE SUPPLY DIFFUSER AND BALANCE AS SHOWN ON PLAN. INSTALL NEW DIFFUSER IF THE ONE REMOVED FROM DEMOLITION IS DAMAGED. REFER TO DEMOLITION NOTES. COORDINATE LOCATION OF DIFFUSER WITH CEILING PLANS AND OTHER TRADES. REBALANCE EXISTING DUAL DUCT MIXING BOX AS REQUIRED.
- RELOCATE RETURN AIR GRILLE. INSTALL NEW RETURN GRILLE IF THE ONE REMOVED FROM DEMOLITION IS DAMAGED. REFER TO DEMOLITION NOTES. COORDINATE LOCATION OF GRILLE WITH CEILING PLANS AND OTHER TRADES.
- NEW RETURN AIR GRILLE. COORDINATE LOCATION WITH CEILING PLANS AND OTHER TRADES. ENSURE RETURN AIR HAS A FREE PATH OUT OF THE NEW ROOM, IF NOT PROVIDE RETURN AIR BOOT AS REQUIRED.
- REBALANCE EXISTING SUPPLY DIFFUSER SHOWN SHOWN ON PLAN.
- NEW SUPPLY DIFFUSER. BALANCE AS SHOWN ON PLAN. COORDINATE LOCATION OF DIFFUSER WITH CEILING PLANS AND OTHER TRADES. RE-BALANCE EXISTING DUAL DUCT MIX BOX AS NEEDED.



DATE SIGNED:



HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 846.787.1421 FAX: 846.387.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TASADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
WICHITA FALLS, TEXAS  
3410 TAFT BOULEVARD



DRAWN BY:

DATE: 15 MAY 2017

REVISIONS

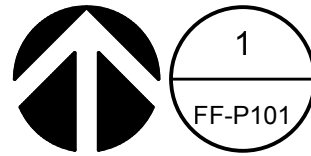
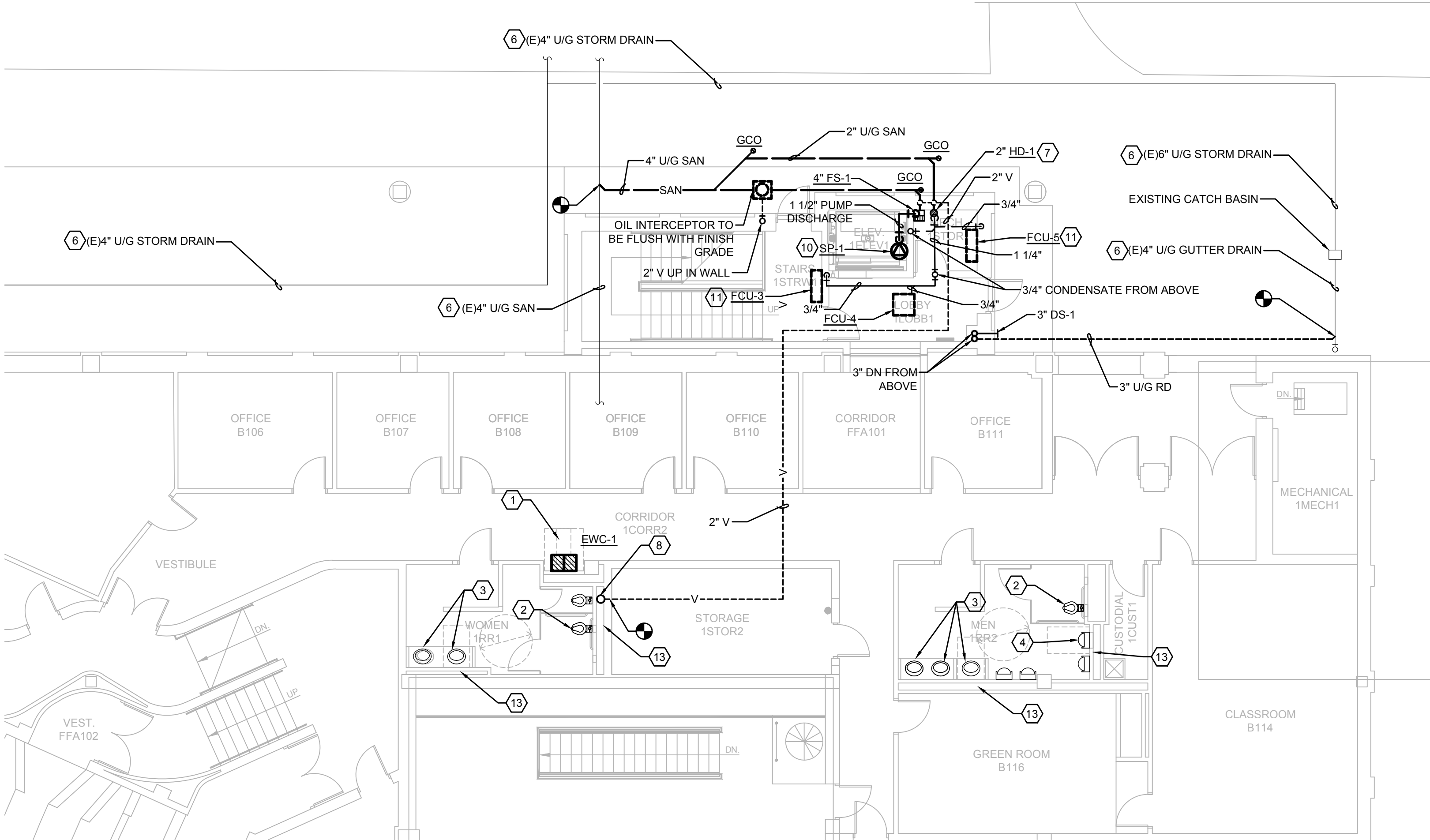
| NO. | DESCRIPTION | DATE     |
|-----|-------------|----------|
| 1   | ADDENDUM 1  | 08/02/17 |
|     |             |          |
|     |             |          |

16782.00

© 2017 HARPER PERKINS ARCHITECTS

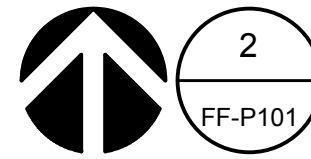
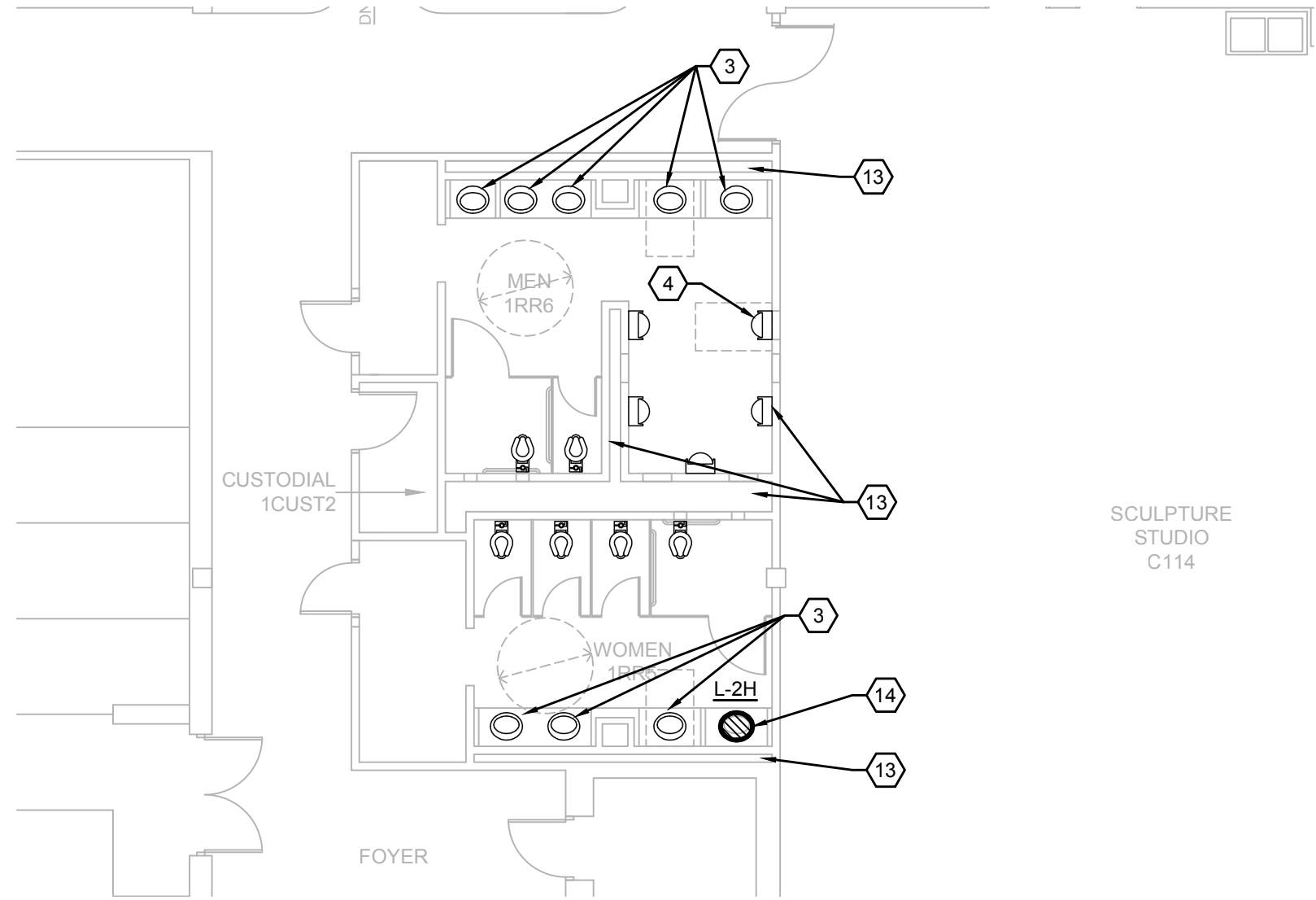
B-M102





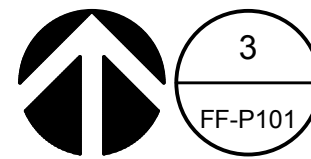
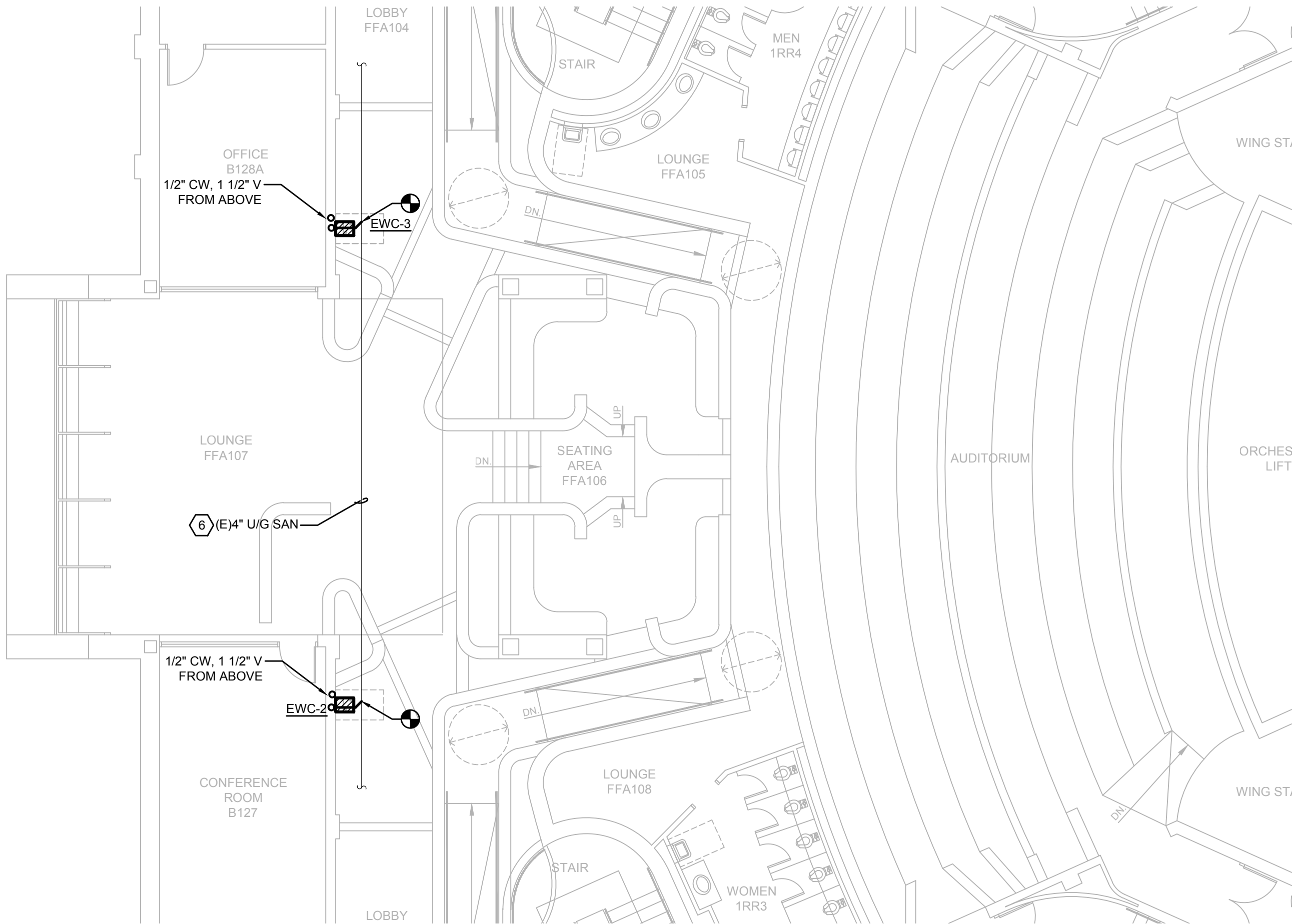
### FAIN FINE ARTS - FIRST FLOOR - AREA 1A PLUMBING PLAN

FF-P101 SCALE: 1/8" = 1'-0"



### FAIN FINE ARTS - FIRST FLOOR - AREA 1E PLUMBING PLAN

FF-P101 SCALE: 1/8" = 1'-0"



### FAIN FINE ARTS - FIRST FLOOR - AREA 1D PLUMBING PLAN

FF-P101 SCALE: 1/8" = 1'-0"

## GENERAL NOTES

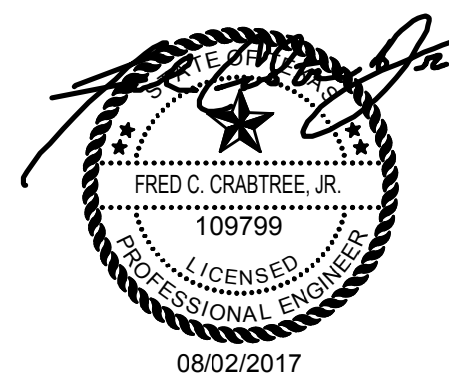
(NOT ALL NOTES APPLY TO EACH SHEET)

- REFER TO SYMBOL LEGEND AND GENERAL NOTES.
- REFER TO SPECIFICATIONS.
- REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

## KEY NOTES #

(NOT ALL NOTES APPLY TO EACH SHEET)

- NEW ADA COMPLIANT EWC. REUSE THE DOMESTIC, SANITARY AND VENT LINES CAPPED DURING DEMOLITION.
- REINSTALL WATER CLOSET AND FLUSH VALVE REMOVED AND KEPT DURING DEMOLITION. CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF WATER CLOSET WAS DESTROYED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.
- REINSTALL LAVATORY AND FAUCET REMOVED AND KEPT DURING DEMOLITION. PROVIDE NEW PLUMBING APPURTENANCES (P-TRAP, STOPS, ETC.). CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF LAVATORY WAS DESTROYED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF HANDICAPPED LAVATORY. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.
- REINSTALL URINAL AND FLUSH VALVE REMOVED AND KEPT DURING DEMOLITION. CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF URINAL WAS DAMAGED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.
- NEW SHOWER STALL. RECONNECT TO DOMESTIC, SANITARY AND VENT PIPE LINES CAPPED DURING DEMOLITION. INSTALL SHOWER HEAD AND VALVE AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.
- EXISTING UNDERGROUND PIPE. FIELD VERIFY EXACT LOCATION AND SIZE.
- HUB DRAIN TO BE INSTALLED AT LEAST 6 FEET A.F.F.
- EXISTING 4" VENT RISER. FIELD VERIFY EXACT LOCATION AND SIZE.
- EXISTING 2" CW RISER. FIELD VERIFY EXACT LOCATION AND SIZE.
- ELEVATOR SUMP SYSTEM INSTALLED AT BASE OF ELEVATOR SHAFT. REFER TO SHEET P-003 FOR INFORMATION ABOUT THE SUMP PUMP, OIL INTERCEPTOR AND ADDITIONAL REQUIREMENTS.
- PROVIDE FAN COIL UNIT WITH CONDENSATE PUMP.
- INSTALL NFHB BETWEEN 12 AND 18 INCHES FROM PARAPET AND AT LEAST 3'-0" AWAY FROM ROOF EDGE.
- REWORK WET WALL SERVICES AS REQUIRED FOR NEW/ RE-INSTALLED FIXTURE.
- NEW ADA COMPLIANT LAVATORY. REUSE THE DOMESTIC, SANITARY AND VENT LINES CAPPED DURING DEMOLITION.



DATE SIGNED:



TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



DRAWN BY:

DATE: 15 MAY 2017

REVISIONS

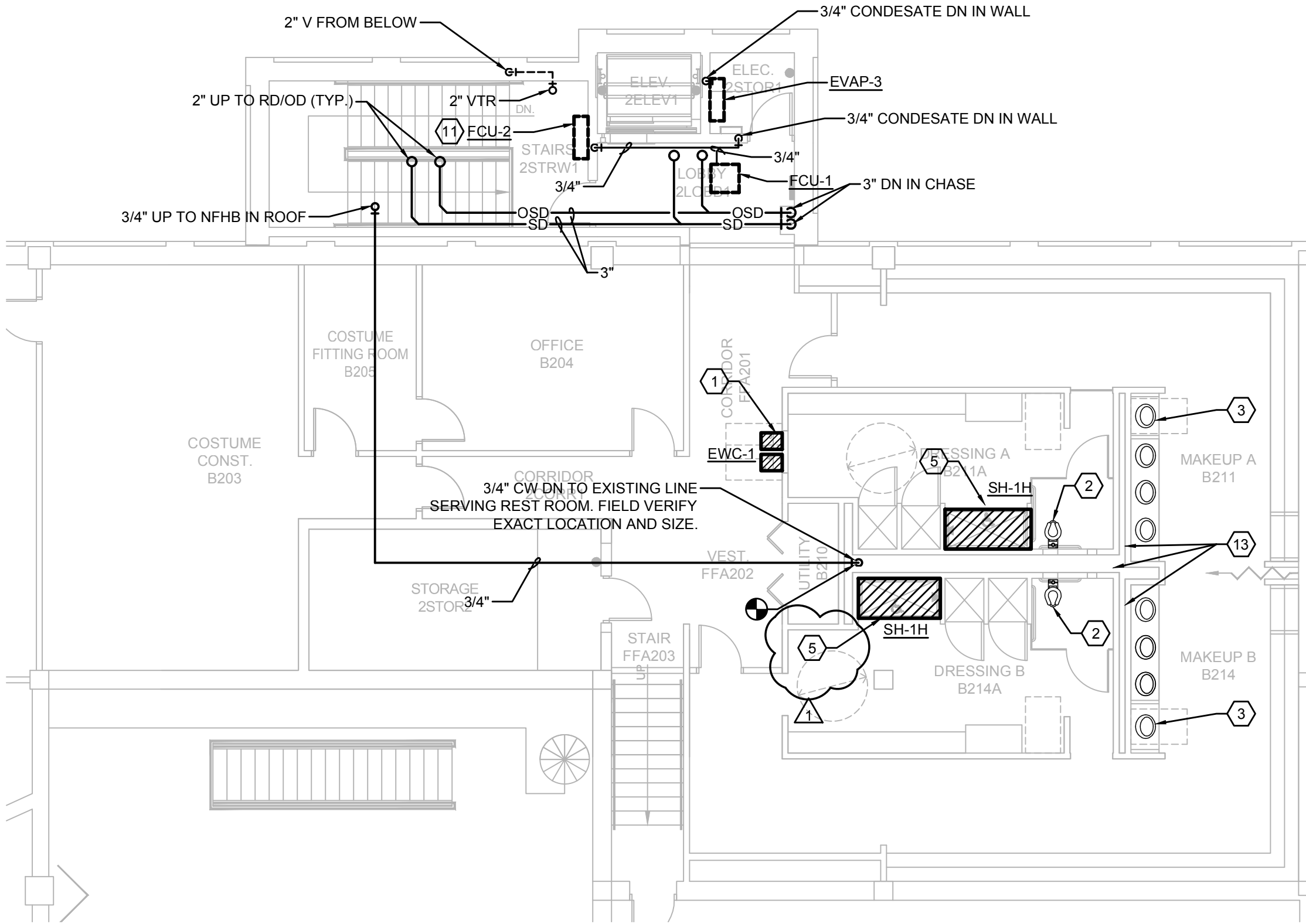
| NO. | DESCRIPTION | DATE    |
|-----|-------------|---------|
| 1   | ADDENDUM 1  | 7/31/17 |
|     |             |         |
|     |             |         |
|     |             |         |

16782.00

© 2017 HARPER PERKINS ARCHITECTS

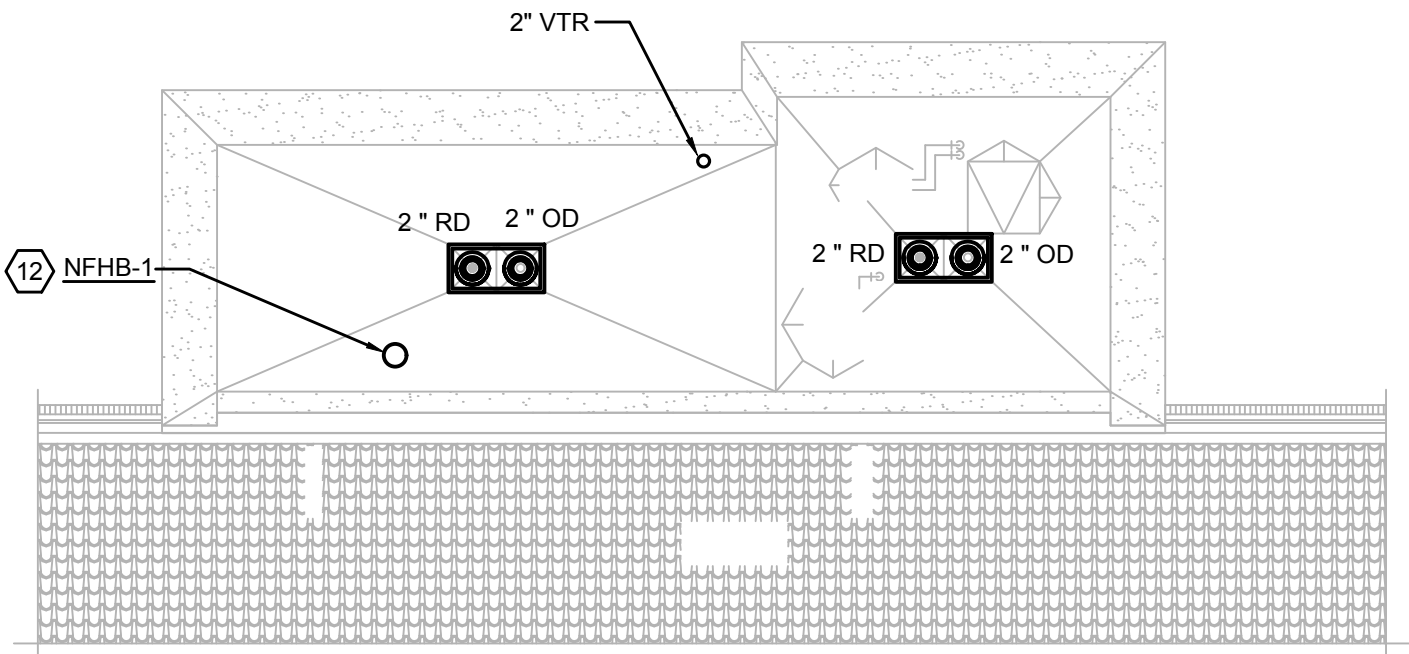
FF-P101





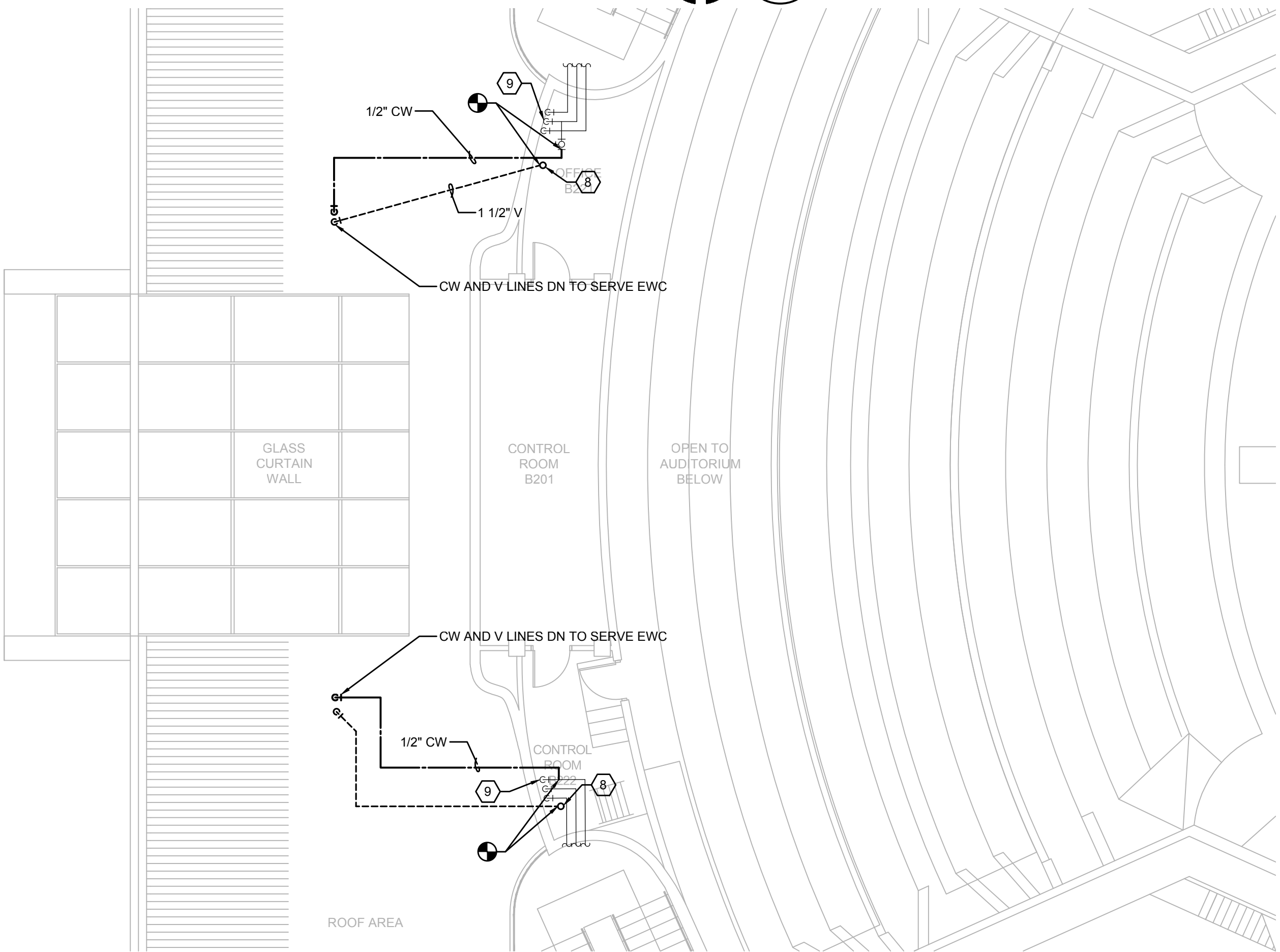
 1  
FF-P102 SCALE: 1/8" = 1'-0"

FAIN FINE ARTS - SECOND FLOOR - AREA 2A  
PLUMBING PLAN



 2  
FF-P102 SCALE: 1/8" = 1'-0"

FAIN FINE ARTS - ROOF - AREA R2A  
PLUMBING PLAN



 3  
FF-P102 SCALE: 1/8" = 1'-0"

FAIN FINE ARTS - SECOND - AREA 2D  
PLUMBING PLAN

GENERAL NOTES

(NOT ALL NOTES APPLY TO EACH SHEET)

A. REFER TO SYMBOL LEGEND AND GENERAL NOTES.

B. REFER TO SPECIFICATIONS.

C. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

KEY NOTES #

(NOT ALL NOTES APPLY TO EACH SHEET)

1. NEW ADA COMPLIANT EWC; REUSE THE DOMESTIC, SANITARY AND VENT PIPE LINES CAPPED DURING DEMOLITION.

2. REINSTALL WATER CLOSET AND FLUSH VALVE REMOVED AND KEPT DURING DEMOLITION. CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF WATER CLOSET WAS DESTROYED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.

3. REINSTALL LAVATORY AND FAUCET REMOVED AND KEPT DURING DEMOLITION. PROVIDE NEW PLUMBING APPURTENANCES (P-TRAP, STOPS, ETC.) CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF LAVATORY WAS DESTROYED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. REFER TO ARCHITECTURAL PLANS FOR LOCATION OF HANDICAPPED LAVATORY. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.

4. REINSTALL URINAL AND FLUSH VALVE REMOVED AND KEPT DURING DEMOLITION. CONNECT TO DOMESTIC, SANITARY AND VENT LINES PREVIOUSLY CAPPED. IF URINAL WAS DAMAGED DURING DEMOLITION REPLACE WITH ONE OF SAME MANUFACTURER, MODEL AND COLOR. MOUNT AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.

5. NEW SHOWER STALL RECONNECT TO DOMESTIC, SANITARY AND VENT PIPE LINES CAPPED DURING DEMOLITION. INSTALL SHOWER HEAD AND VALVE AT HANDICAPPED HEIGHT AS REQUIRED BY TEXAS ACCESSIBILITY STANDARDS AND ADA REQUIREMENTS.

6. EXISTING UNDERGROUND PIPE. FIELD VERIFY EXACT LOCATION AND SIZE.

7. HUB DRAIN TO BE INSTALLED AT LEAST 6 FEET A.F.F.

8. EXISTING 4" VENT RISER. FIELD VERIFY EXACT LOCATION AND SIZE.

9. EXISTING 2" CW RISER. FIELD VERIFY EXACT LOCATION AND SIZE.

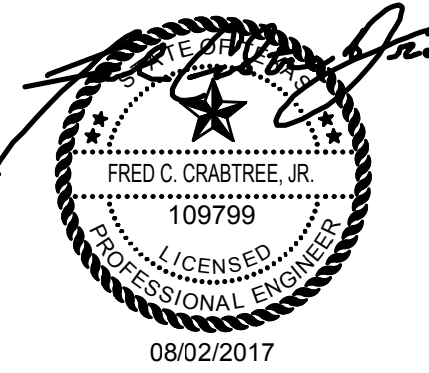
10. ELEVATOR SUMP SYSTEM INSTALLED AT BASE OF ELEVATOR SHAFT. REFER TO SHEET P-003 FOR INFORMATION ABOUT THE SUMP PUMP, OIL INTERCEPTOR AND ADDITIONAL REQUIREMENTS.

11. PROVIDE FAN COIL UNIT WITH CONDENSATE PUMP.

12. INSTALL NFHB BETWEEN 12 AND 18 INCHES FROM PARAPET AND AT LEAST 3'-0" AWAY FROM ROOF EDGE. VERIFY EXACT LOCATION WITH ARCHITECT PRIOR TO INSTALLATION.

13. REWORK WET WALL. SERVICES AS REQUIRED FOR NEW/ RE-INSTALLED FIXTURE.

14. NEW ADA COMPLIANT LAVATORY. REUSE THE DOMESTIC, SANITARY AND VENT LINES CAPPED DURING DEMOLITION.



DATE SIGNED:  
  
ARCHITECTS PROGRAMMERS PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 940.767.1421 FAX: 940.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

CAMPOS  
ENGINEERING, Inc.  
Consulting Engineers  
  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



|                                                                                       |             |         |
|---------------------------------------------------------------------------------------|-------------|---------|
| DRAWN BY:                                                                             |             |         |
| DATE: 15 MAY 2017                                                                     |             |         |
| REVISIONS                                                                             |             |         |
| NO.                                                                                   | DESCRIPTION | DATE    |
|  | ADDENDUM 1  | 7/31/17 |
|                                                                                       |             |         |
|                                                                                       |             |         |
|                                                                                       |             |         |

16782.00

© 2017 HARPER PERKINS ARCHITECTS

FF-P102





DATE SIGNED:  
**HPA**  
ARCHITECTS - PROGRAMMERS - PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 940.787.1421 FAX: 940.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

**CAMIPOS**  
**ENGINEERING, Inc.**  
Consulting Engineers  
**CEI**  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TASADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR  
**MIDWESTERN STATE UNIVERSITY**  
3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



|                   |             |          |
|-------------------|-------------|----------|
| DRAWN BY:         |             |          |
| DATE: 15 MAY 2017 |             |          |
| REVISIONS         |             |          |
| NO.               | DESCRIPTION | DATE     |
| 1                 | ADDENDUM 1  | 08/02/17 |
|                   |             |          |
|                   |             |          |
|                   |             |          |

16782.00

© 2017 HARPER PERKINS ARCHITECTS

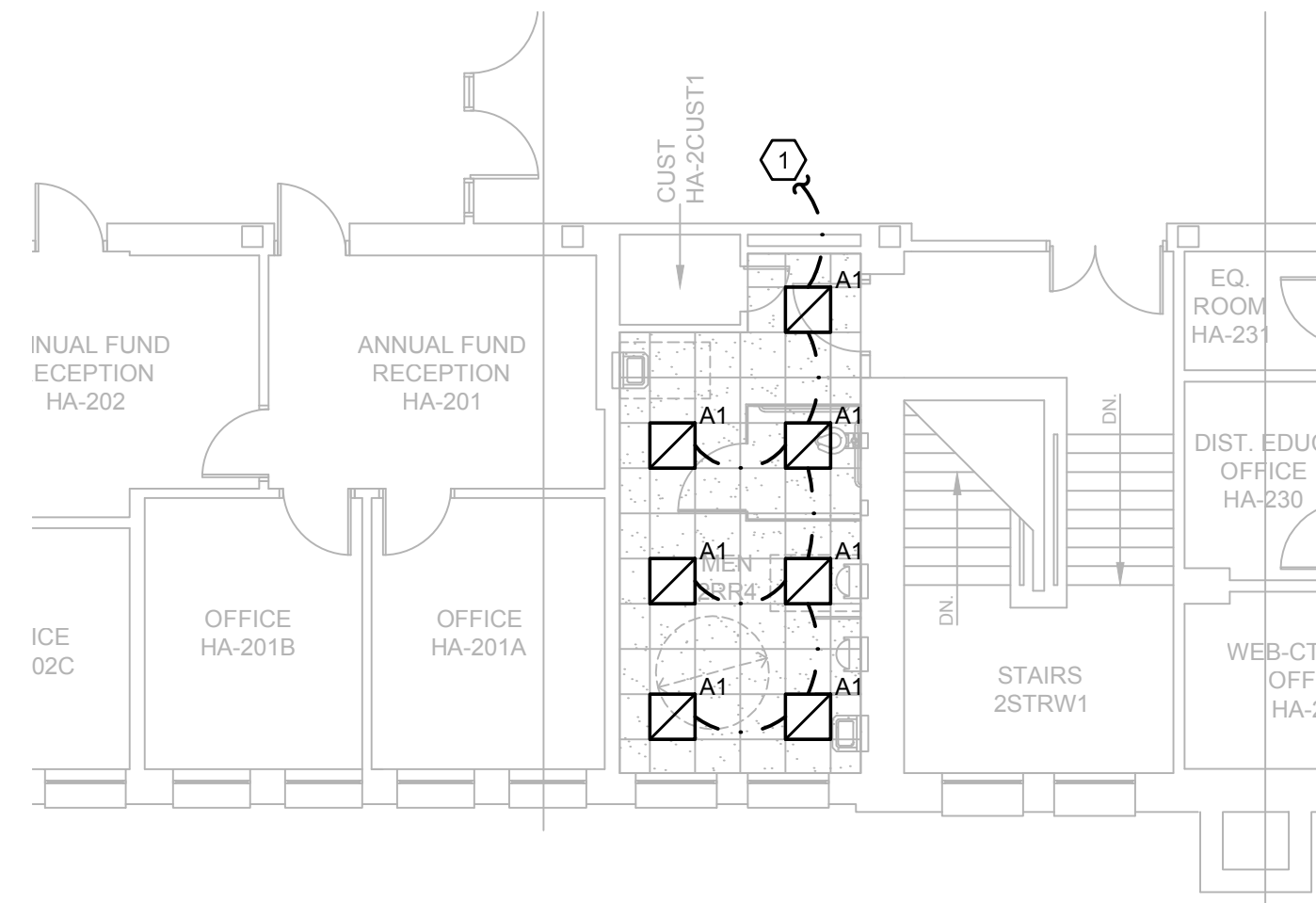
H-E101

## GENERAL NOTES

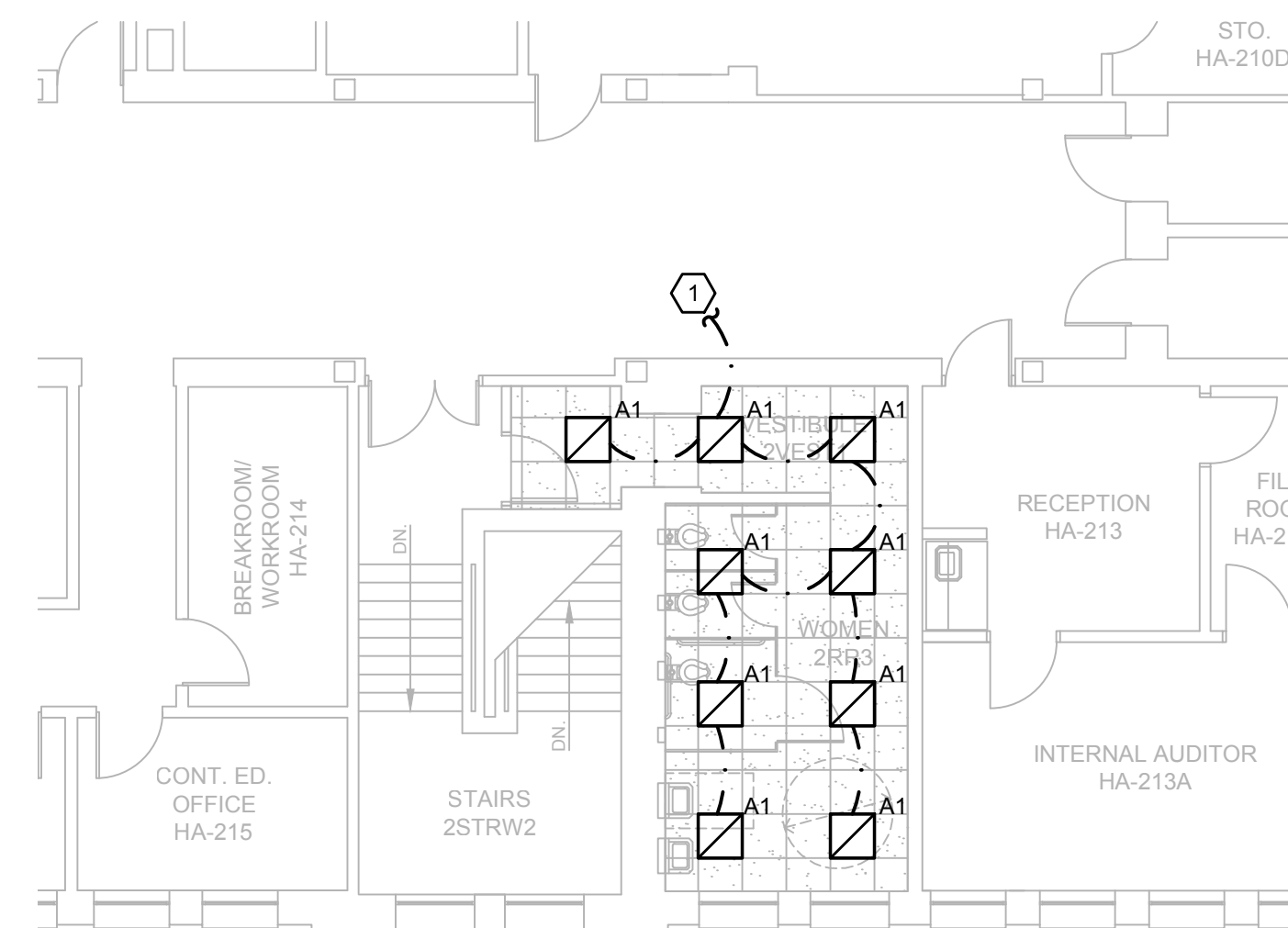
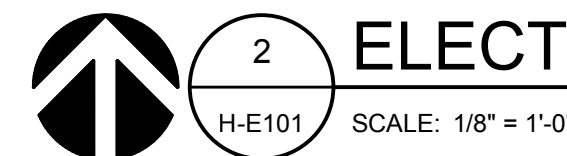
1. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.
2. EMERGENCY AND EXIT LIGHTS SHALL BE CIRCUITED AHEAD OF ANY SWITCHING DEVICE.

## KEY NOTES #

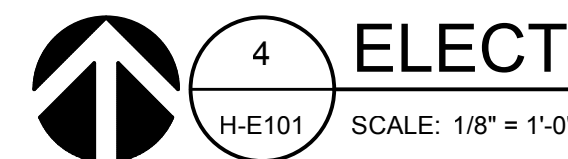
1. CONNECT NEW LIGHTS TO EXISTING LIGHTING CIRCUIT SERVING THIS AREA.
2. NEW FIRE ALARM DEVICE. CONNECT TO EXISTING FIRE ALARM SYSTEM. VERIFY LOCATION WITH AHJ PRIOR TO INSTALLATION.
3. HOMERUN CIRCUIT TO PANEL "J", USE AVAILABLE SPACE. PROVIDE 20A/1P CIRCUIT BREAKER, USE 2#12, 1#12G, 3/4"C.
4. NEW DIMMABLE 0-10V LED AISLE AND STEP LIGHTING (TYPE G1 & G2) TO BE INSTALLED PER MANUFACTURER'S RECOMMENDATION. PROVIDE ALL NECESSARY MATERIALS FOR A COMPLETE OPERATING SYSTEM. COORDINATE WITH ARCHITECT FOR LOCATION AND DETAILS. AISLE LIGHTING G1 TO BE CONTROLLED BY DIMMER ZONE "a", STEP LIGHTING G2 TO BE CONTROLLED BY DIMMER ZONE "b".
5. PROVIDE TWO ZONE WALL DIMMING STATION COMPATIBLE WITH FIXTURES G1 AND G2. DIMMING WALL STATION TO BE EQUAL TO GANGED (TWO) NXSW-ORLO AND NX CONTROLLER NXRC-2RD-UNV. HUBBELL NX SERIES NETWORKED LIGHTING CONTROLS. REFER TO MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR MORE DETAILS.



## HARDIN ADMIN BUILDING - SECOND FLOOR - AREA 2B ELECTRICAL PLAN



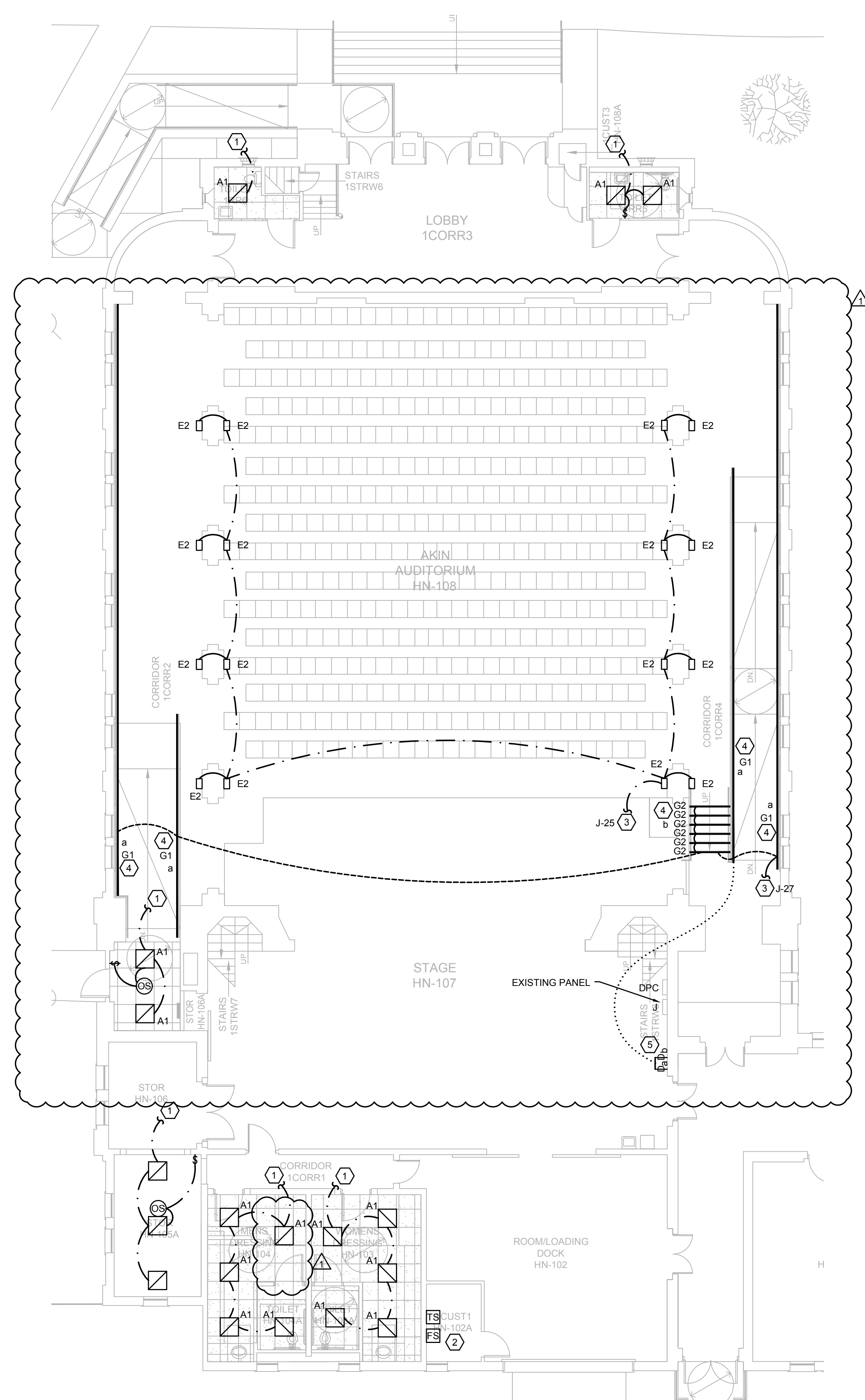
## HARDIN ADMIN BUILDING - SECOND FLOOR - AREA 2C ELECTRICAL PLAN



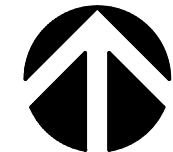
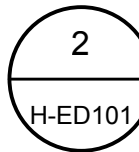
## LIGHT FIXTURE SCHEDULE

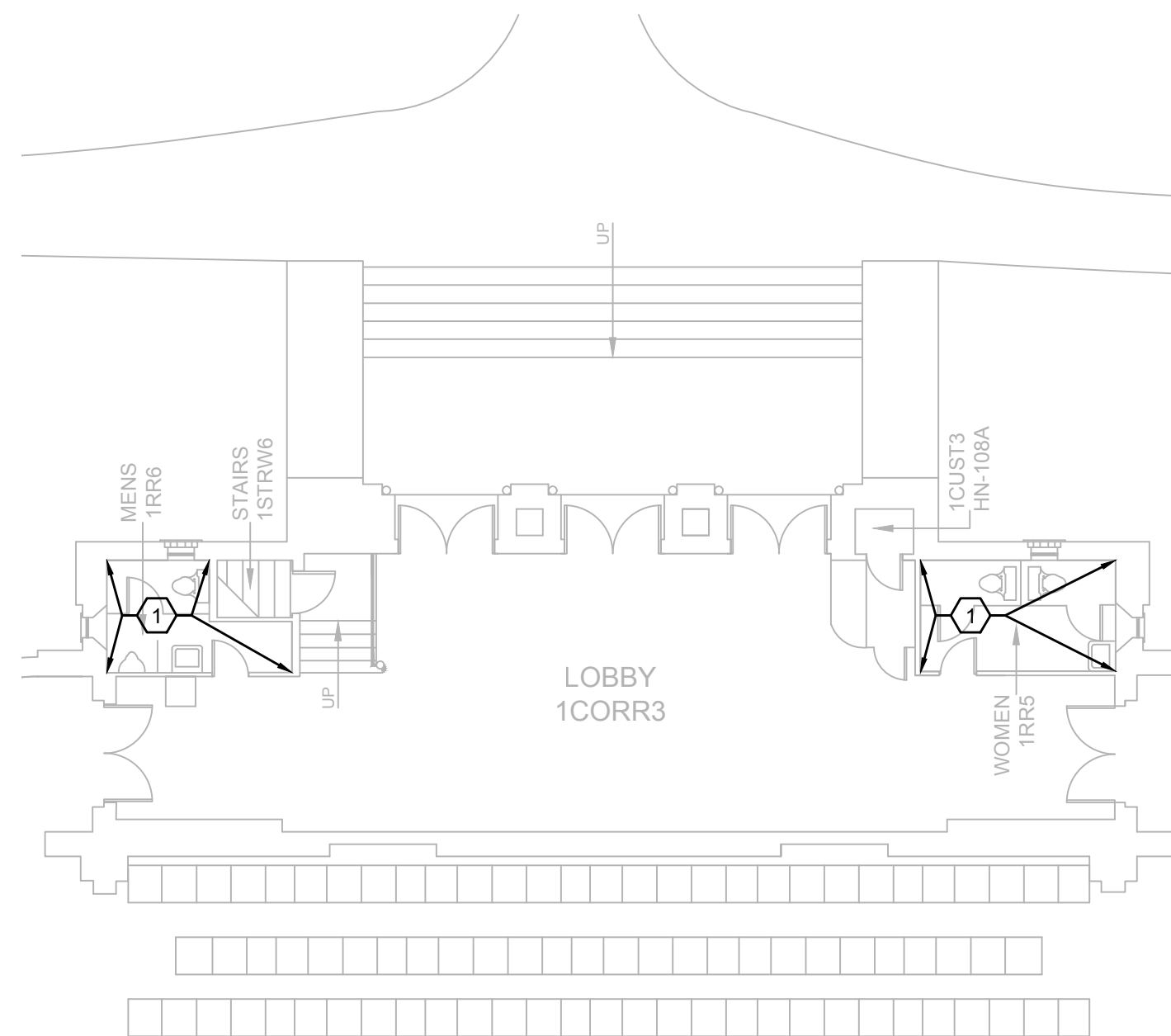
| TYPE | DESCRIPTION                 | TYPE        | LAMP COLOR TEMP | CRI | MOUNTING      | ELECTRICAL |        | MANUFACTURER                | CATALOG NUMBER             | NOTES                         |
|------|-----------------------------|-------------|-----------------|-----|---------------|------------|--------|-----------------------------|----------------------------|-------------------------------|
| A1   | 2X2 LENSED TROFFER          | FLUORESCENT | 4000K           | 85  | RECESSED GRID | UNV        | 35     | HEW                         | 50G-S22-2-17-F-AF12125-UNV |                               |
| G1   | LED PATHWAY, AISLE LIGHTING | LED         | N/A             | N/A | FLOOR         | 12V        | 1.8/FT | CALIFORNIA ACCENT LTG. INC. | AIL1800-4"-LED- -SLC       | PROVIDE DIMMABLE DRIVER, 120V |
| G2   | CARPETED STEP LIGHT         | LED         | N/A             | N/A | FLOOR         | 12V        | 1.8/FT | CALIFORNIA ACCENT LTG. INC. | STL6125-4-LED- -SL         | PROVIDE DIMMABLE DRIVER, 120V |
| E2   | EMERGENCY LED SCONCE        | LED         | 6350K           | NA  | WALL          | 120V       | 2.78   | DUAL LITE                   | PGZ                        | NORMAL OFF, EMERGENCY ON      |

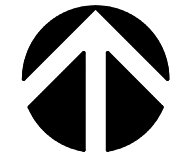
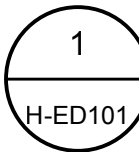
- GENERAL NOTES:
1. FOR EXT LIGHTS, VERIFY MOUNTING, NUMBER OF FACES AND ARROW CONFIGURATION WITH PLANS PRIOR TO ORDERING FIXTURES.
  2. VERIFY MOUNTING HEIGHT AND ORIENTATION WITH ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN.
  3. COORDINATE AND VERIFY FIXTURE/LAMP COLOR AND FINISH WITH ARCHITECT.
  4. COORDINATE EXACT LOCATION AND REQUIREMENTS WITH ARCHITECT PRIOR TO ROUGH-IN
  5. PROVIDE LIGHTING FIXTURE/ASSEMBLY COMPLETE WITH HARDWARE, CONNECTORS, DRIVERS, ETC. NECESSARY FOR A SATISFACTORY AND WORKABLE INSTALLATION.
  6. INSTALL PER MANUFACTURER'S RECOMMENDATION.

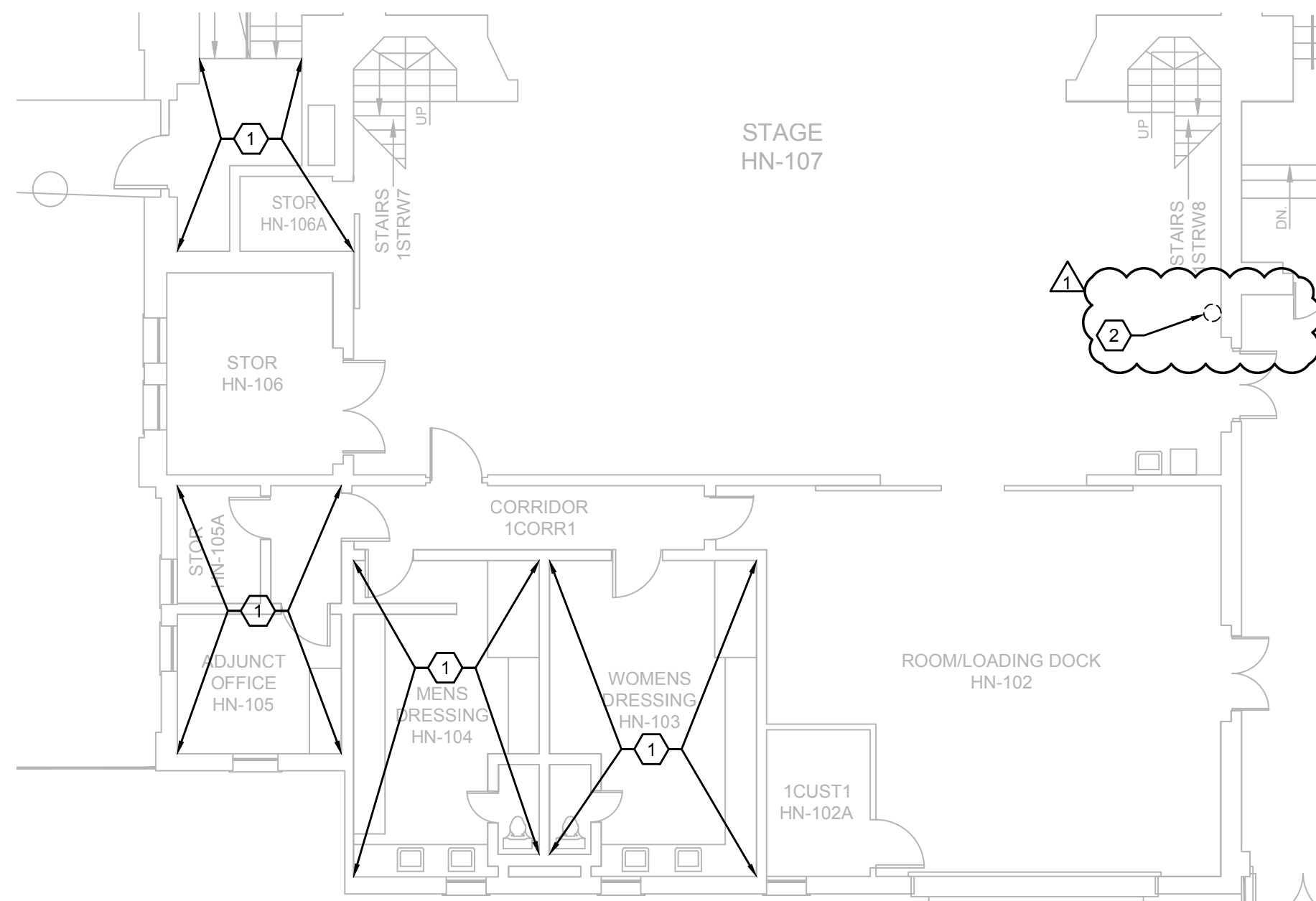


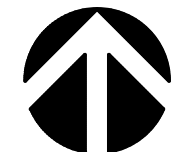
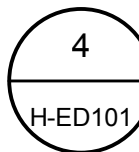


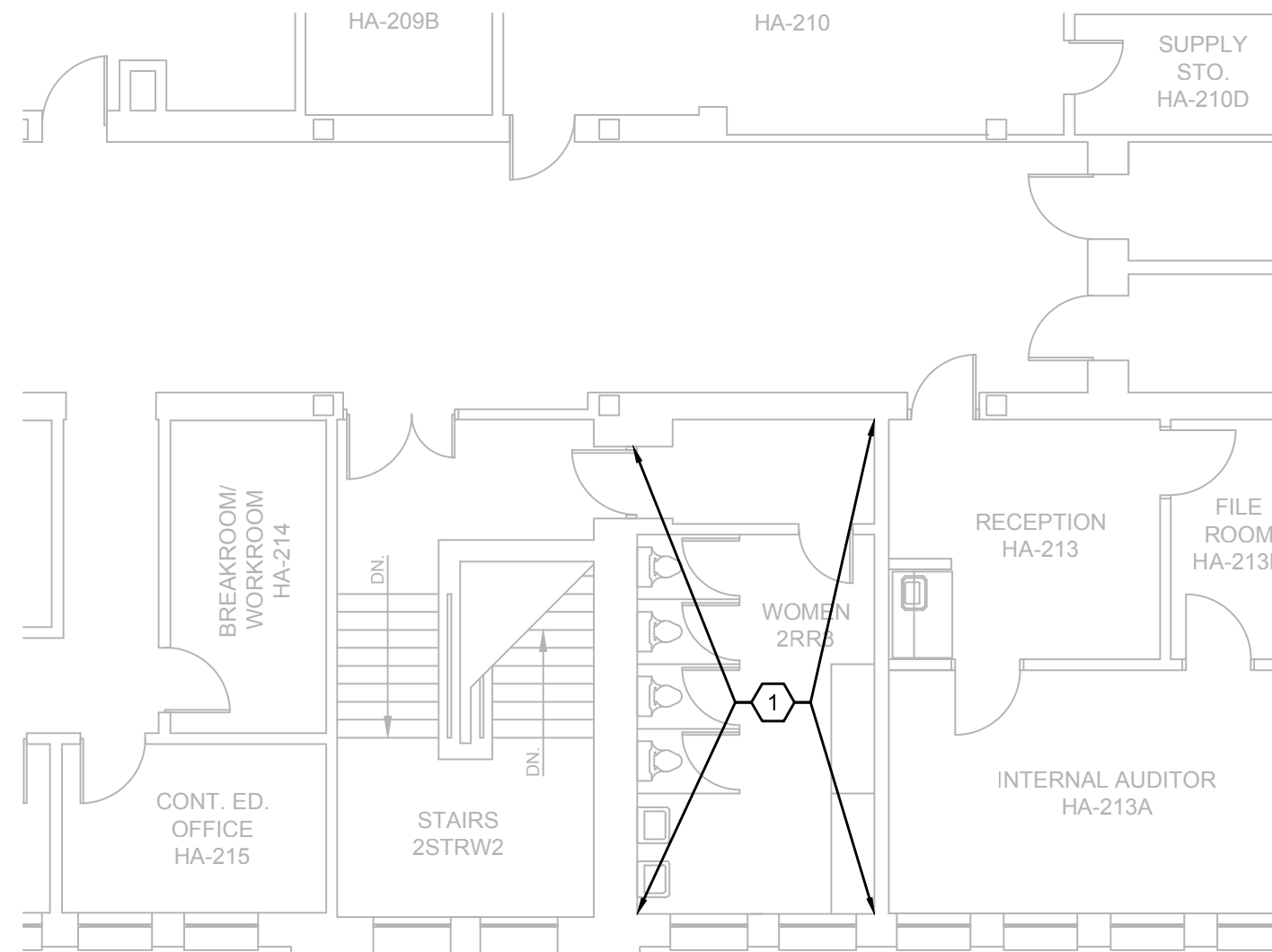
  **HARDIN ADMIN BUILDING - FIRST FLOOR - AREA 1B**  
**ELECTRICAL DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"

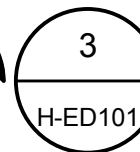


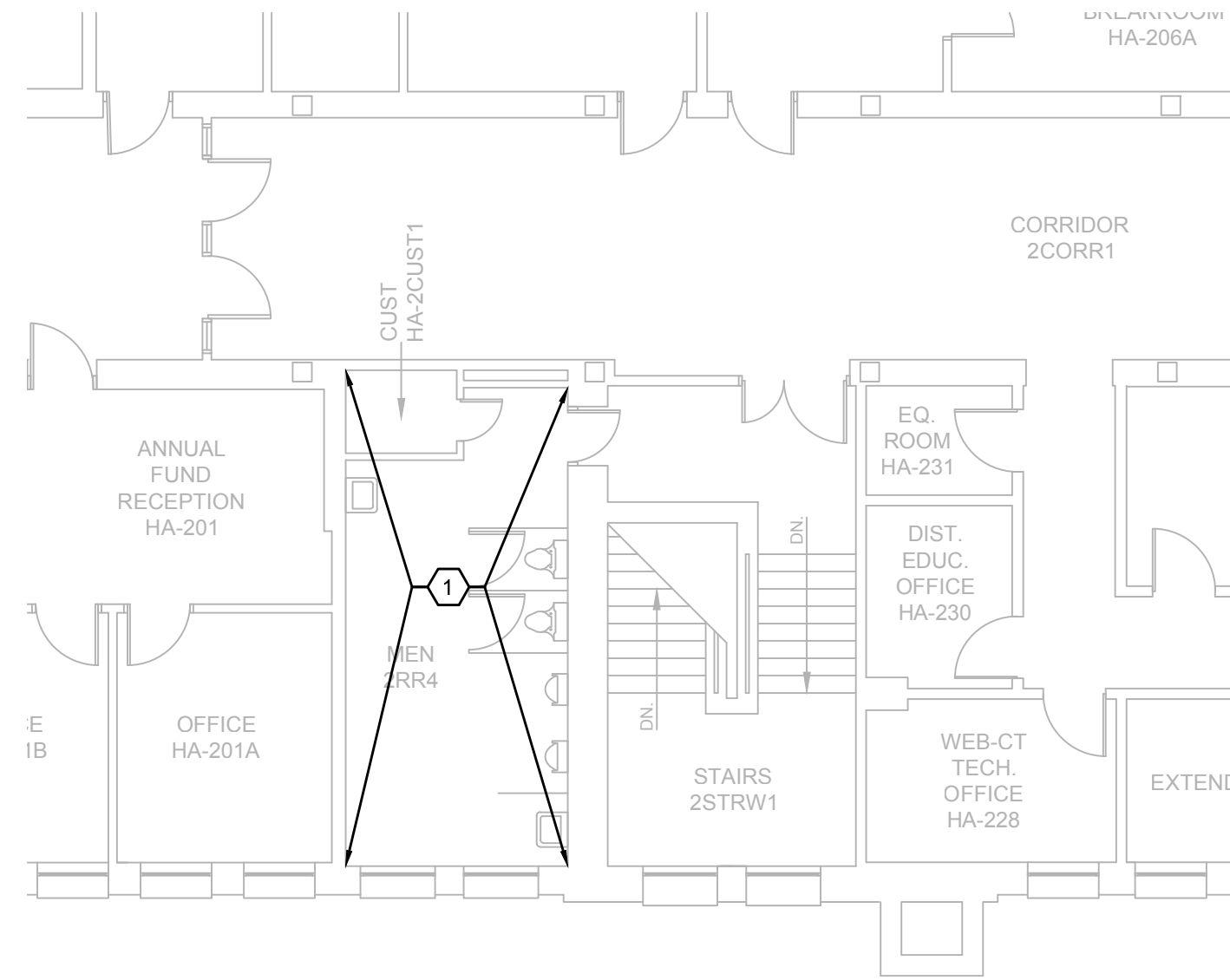
  **HARDIN ADMIN BUILDING - FIRST FLOOR - AREA 1A**  
**ELECTRICAL DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



  **HARDIN ADMIN BUILDING - SECOND FLOOR - AREA 2C**  
**ELECTRICAL DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



  **HARDIN ADMIN BUILDING - SECOND FLOOR - AREA 2B**  
**ELECTRICAL DEMOLITION PLAN**  
SCALE: 1/8" = 1'-0"



### GENERAL NOTES

1. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

### KEY NOTES #

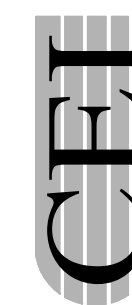
1. REMOVE ALL LIGHTS IN THIS AREA. RETAIN CIRCUITING FOR RE-USE WITH NEW LIGHTS. FIELD COORDINATE THE EXTENT OF THE CEILING DEMO WITH ARCHITECT PRIOR TO DEMOLITION.

2. CUT EXISTING EMPTY VERTICAL CONDUIT TO 6" AFF. CAP END.



DATE SIGNED:

**HPA**  
ARCHITECTS - PROGRAMMERS - PLANNERS  
HARPER PERKINS ARCHITECTS, INC.  
4724 OLD JACKSBORO HIGHWAY  
WICHITA FALLS, TEXAS 76302-3599  
VOICE: 940.767.1421 FAX: 940.397.0273  
E-MAIL: office@harperperkins.com WEB: www.harperperkins.com



**CAMPOS ENGINEERING, Inc.**  
Consulting Engineers  
1331 River Bend Drive  
Dallas, Texas 75247  
(214) 696-6291  
campos@camposengineering.com  
Registration No. F-001731  
CEI Project Number D17-1263.00

TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR

**MIDWESTERN STATE UNIVERSITY**

3410 TAFT BOULEVARD  
WICHITA FALLS, TEXAS



DRAWN BY:

DATE: 15 MAY 2017

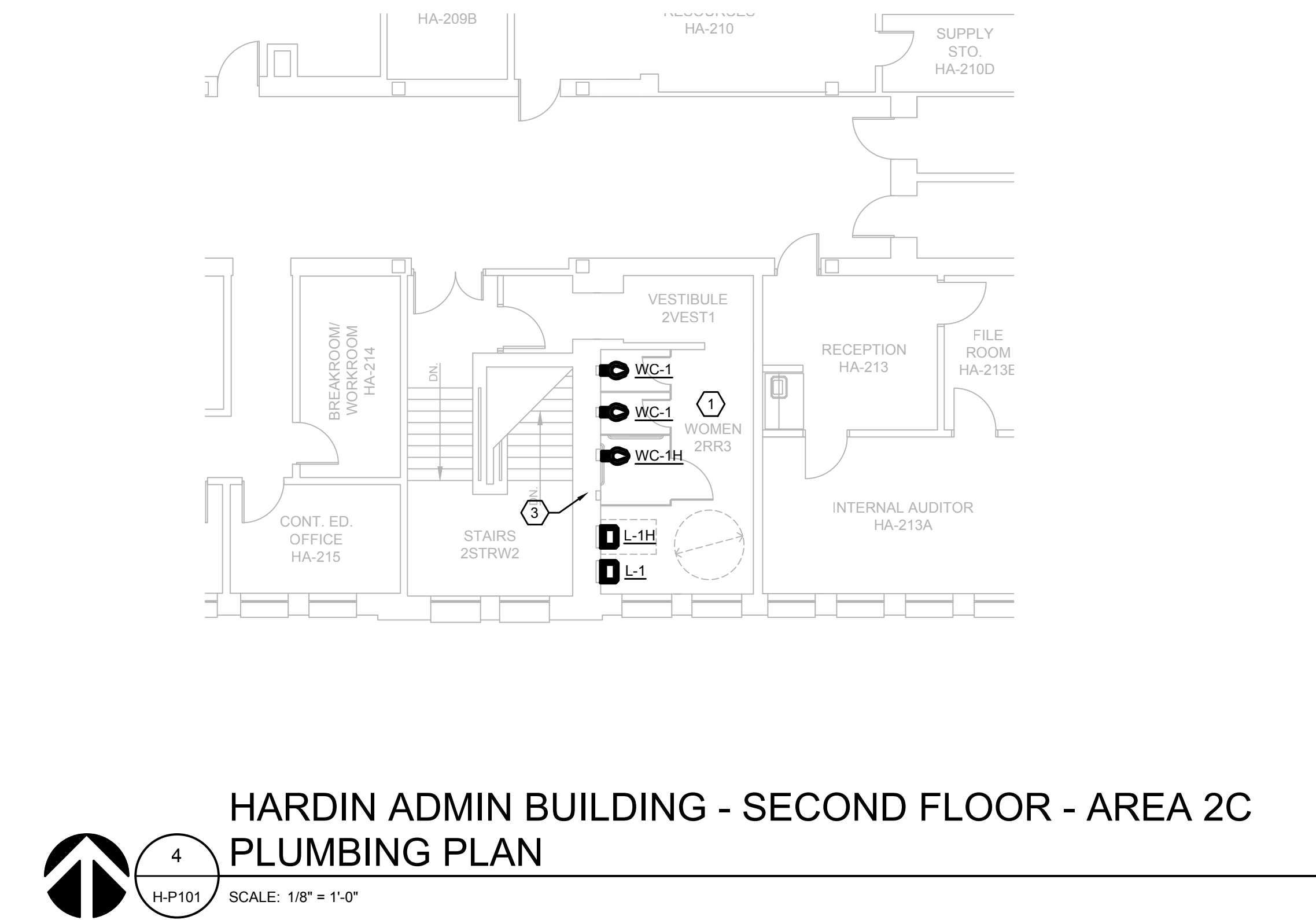
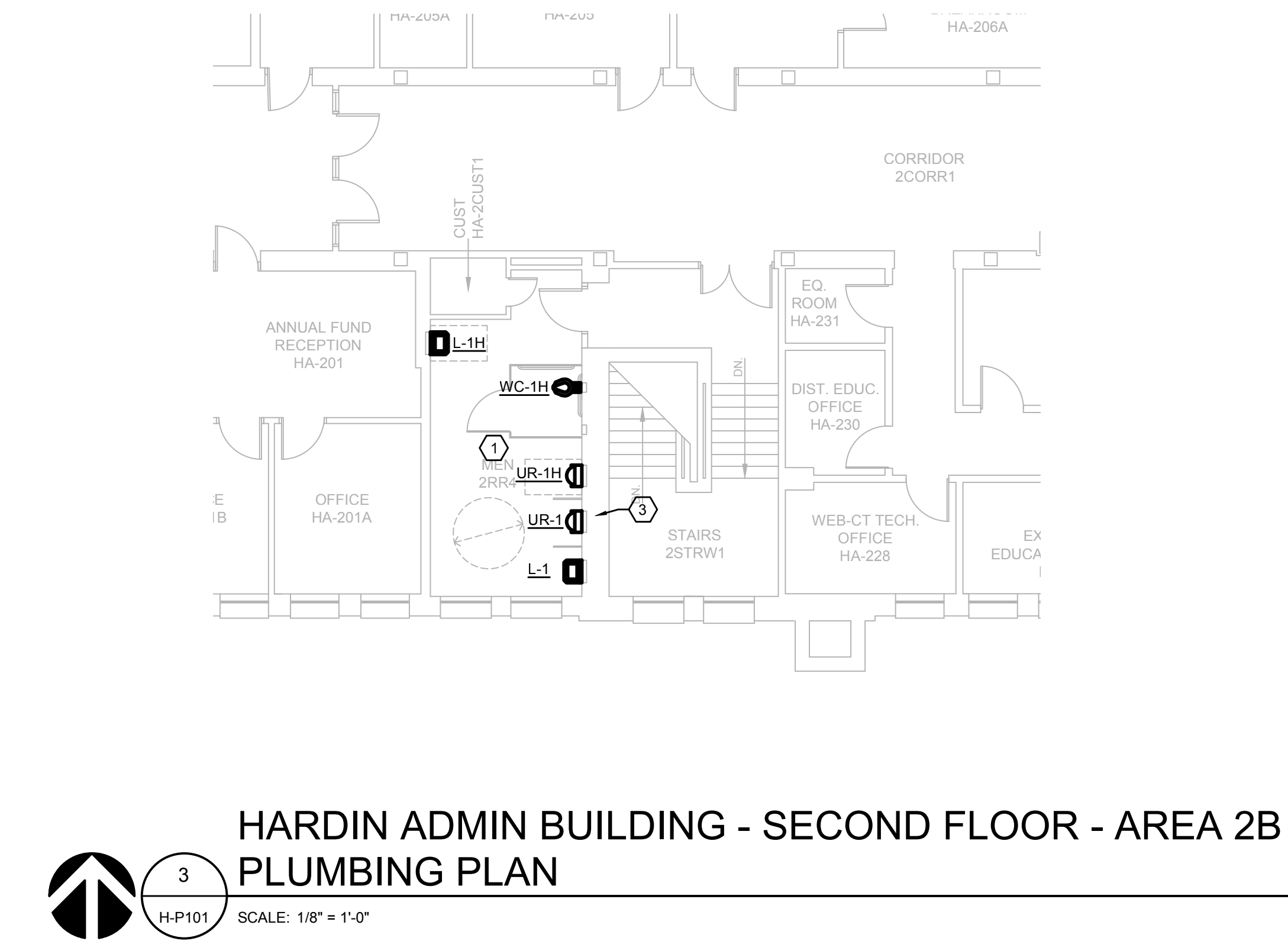
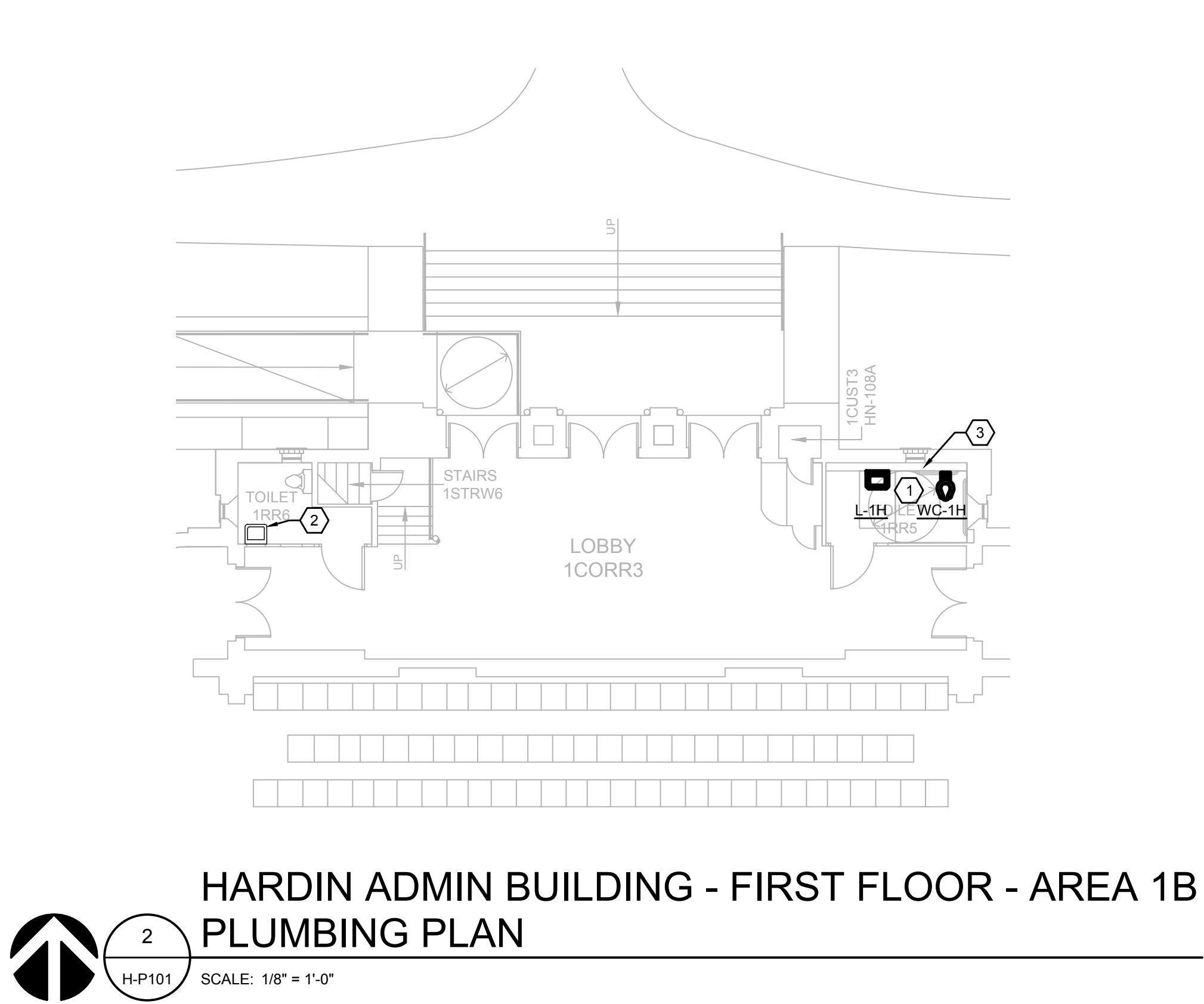
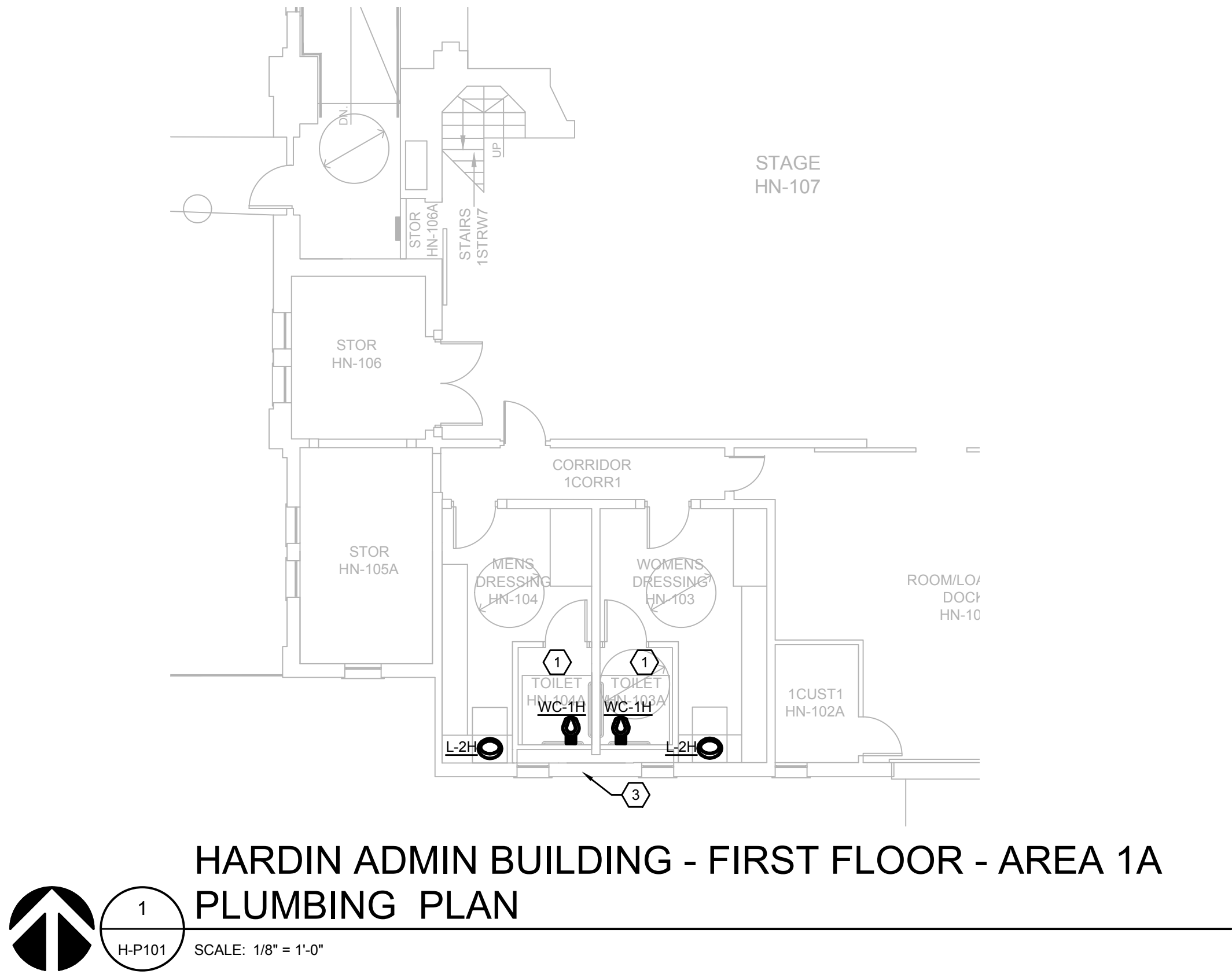
| REVISIONS |             |          |
|-----------|-------------|----------|
| NO.       | DESCRIPTION | DATE     |
| 1         | ADDENDUM 1  | 08/02/17 |
|           |             |          |
|           |             |          |

**16782.00**

© 2017 HARPER PERKINS ARCHITECTS

**H-ED101**





GENERAL NOTES

(NOT ALL NOTES APPLY TO EACH SHEET)

A. REFER TO SYMBOL LEGEND AND GENERAL NOTES.

B. REFER TO SPECIFICATIONS.

C. REFER TO ARCHITECTURAL OVERALL FLOOR PLANS FOR LOCATIONS SCOPE OF WORK AREAS WITHIN THE BUILDING.

KEY NOTES #

(NOT ALL NOTES APPLY TO EACH SHEET)

1. INSTALL NEW PLUMBING FIXTURES IN THIS RESTROOM. RECONNECT TO PLUMBING LINES CAPPED DURING DEMOLITION. UPSIZE DOMESTIC WATER CONNECTION FOR WATER CLOSETS IF NEEDED.

2. REINSTALL EXISTING LAVATORY AND FAUCET REMOVED DURING DEMOLITION. PROVIDE NEW PLUMBING APPURTENANCES (P-TRAP, STOPS, ETC.), CONNECT FIXTURE TO PLUMBING LINES CAPPED FOR REUSE DURING DEMOLITION.

3. REWORK WET WALL SERVICES TO NEW WET WALL.

FRED C. CRABTREE, JR.

1087599

LICENSED PROFESSIONAL ENGINEER

08/02/2017

DATE SIGNED:

HPA

ARCHITECTS PROGRAMMERS PLANNERS

HARPER PERKINS ARCHITECTS, INC.

4724 OLD JACKSBORO HIGHWAY

WICHITA FALLS, TEXAS 76302-3599

VOICE: 940.787.1421 FAX: 940.387.0273

E-MAIL: office@harperperkins.com WEB: www.harperperkins.com

CEI

CAMPOS ENGINEERING, Inc.

Consulting Engineers

1331 River Bend Drive

Dallas, Texas 75247

(214) 696-6291

campos@camposengineering.com

Registration No. F-001731

CEI Project Number D17-1263.00

TAS/ADA - FIRE MARSHAL DEFERRED MAINTENANCE PROJECTS FOR

MIDWESTERN STATE UNIVERSITY

3410 TAFT BOULEVARD

WICHITA FALLS, TEXAS

MIDWESTERN STATE UNIVERSITY

1922

WICHITA FALLS

DRAWN BY:

DATE: 15 MAY 2017

REVISIONS

| NO. | DESCRIPTION | DATE     |
|-----|-------------|----------|
| 1   | ADDENDUM 1  | 08/02/17 |
|     |             |          |
|     |             |          |
|     |             |          |

16782.00

© 2017 HARPER PERKINS ARCHITECTS

H-P101

SECTION 21 00 10 - GENERAL REQUIREMENTS FOR FIRE SUPPRESSION WORK

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The General Requirements for Fire Suppression Work are intended to be complementary to the General Requirements of the Construction Contract.
- B. Work Included: Design and install a complete fire suppression systems where shown on the drawings, as specified herein, and as needed for a complete and proper installation including, but not necessarily limited to the following summary of work:
  - 1. Design and install a wet-pipe fire suppression system for the areas of the building shown on the plans.
    - a. All piping shall be schedule 40 steel.
  - 2. All sprinklers shall be concealed type including sidewall sprinklers.
  - 3. Provide dry sprinklers for exterior covered breezeways, patios, and other ancillary spaces that are not heated.
  - 4. Provide wet standpipes with Fire Marshal approved hose connections in the stairwells and connect to Fire Department Connections as shown on the plans and located per the Fire Marshal.

1.2 QUALITY ASSURANCE AND APPLICABLE STANDARDS

- A. Use adequate numbers of skilled workers that are thoroughly trained and experienced in the necessary crafts and are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Without additional cost to the Architect/Engineer/Owner, provide such other labor and materials as are required to complete the work of this Section in accordance with the requirements of governmental agencies having jurisdiction, regardless of whether such materials and associated labor are called for elsewhere in these Contract Documents.
- C. Codes: Perform all work in accordance with the latest edition of the following codes:
  - 1. State and city building, fire, plumbing, and mechanical codes.
  - 2. National Electrical Code (NEC)
  - 3. National Fire Protection Association (NFPA)
  - 4. American with Disabilities Act (ADA)
  - 5. Texas Accessibility Standards (TAS)
  - 6. National Fire Protection Association (NFPA)
  - 7. All authorities having jurisdiction.
- D. Where conflicts occur between drawings, specifications, and code requirements, the most



stringent requirement shall take precedence.

- E. Standards: The specifications and standards of the following organizations are by reference made a part of these specifications. All work, unless otherwise indicated, shall comply with the requirements and recommendations wherever applicable:
  - 1. American National Standards Institute (ANSI)
  - 2. American Society for Testing and Materials (ASTM)
  - 3. American Society of Mechanical Engineers (ASME)
  - 4. Electrical Testing Laboratories (ETL)
  - 5. National Bureau of Standards (NBS)
  - 6. National Electrical Manufacturer's Association (NEMA)
  - 7. Underwriters Laboratories, Inc. (UL)
- F. Electrical Characteristics for Equipment: Equipment of differing electrical characteristics may be furnished provided such equipment is proposed on the "Alternate Manufacturer Evaluation Form", subsequently approved, and connecting electrical services, circuit breakers, and conduit sizes appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.
- G. When requested, provide the Owner's Authorized Representative with manufacturer's certificate that materials meet or exceed minimum requirements as specified.

### 1.3 REQUIREMENTS OF REGULATORY AGENCIES

- A. The requirements and recommendations of the latest edition of the Occupational Safety and Health Administration (OSHA) Act are by reference made a part of these specifications. All work shall comply with the requirements and recommendations wherever applicable.

### 1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. All Other Sections of Divisions 21, 22, 23 and 26 (as applicable).
- B. All other divisions of the contract documents. Refer to each division's specifications and drawings for all requirements

### 1.5 SUBMITTALS

- A. Comply with pertinent provisions of Division 01.
- B. Provide Specifications per Division 01 for all submitted alternate equipment.

Product Data: Submit the following:

- 1. Materials list of items proposed to be provided under Division 21.
- 2. Manufacturer's specifications and other data needed to prove compliance with the specified requirements. The term "Compliance" is understood to mean that the Contractor certifies that the submitted equipment will meet or exceed the contract

document requirements. Items that do not clearly meet this definition should be identified and explained as required in the following paragraph.

3. Identify the difference between the specified item or function and the proposed. Explain with enough detail so that the Architect/Engineer/Owner can easily determine that the item complies with the functional intent. List any disadvantages or advantages of the proposed item versus the specified item. Submit technical data sheets and pictures and diagrams to support and clarify. Organize in a clear and concise format. All substitutions shall be approved in writing by Architect/Engineer. The Architect/Engineer's decision shall be final.
  4. Allow a minimum of ten (10) working days for the review of submittals and each re-submittal.
  5. Compliance with the Contract documents shall be the sole responsibility of the Contractor. Items on equipment that are were not accepted by the Architect/Engineer in writing as an approved equal shall be replaced or revised to comply with the contract documents at the Contractor's expense.
  6. Manufacturer's recommended installation procedures which, when reviewed by the Architect/Engineer, shall become the basis for accepting or rejecting actual installation procedures used on the work.
  7. Sign the submittal as an indication of compliance with the contract documents. Any deviations from the contract documents shall be indicated on the submittal prior to signing. Any deviations not indicated shall be cause for rejection and removal of the non-complying equipment at the Contractor's expense.
- C. Submittals required of materials and equipment under this section shall include the following:
1. Piping and Accessories Materials
    - a. Clearly marked up manufacturer's data showing compliance with the specifications for:
      - 1) Piping material proposed for each system.
      - 2) Valves, cocks, and specialties.
      - 4) Fire suppression specialties.
      - 5) Flexible connectors for piping.
      - 6) Flanges.
    - b. 1/8" scale (minimum) fire suppression piping shop drawings showing coordinated piping routing and arrangements with all equipment, and accessories.
  2. Vibration Isolation and Sound Control Materials
    - a. Submit shop drawings showing the structural design and details of custom-fabricated work not covered by manufacturer's submitted data.
  3. Identification Materials

- a. Clearly marked-up product literature or samples showing compliance with specified materials for:
  - 1) Valve tagging.
  - 2) Pipe marking.
  - 3) Equipment marking.
- 4. Fire Protection System
  - a. Provide hydraulic calculations.
  - b. Provide clearly marked-up manufacturer's data showing compliance with the specifications for:
    - 1) All required system piping, valves and switches.
    - 2) Sprinkler heads for all areas and sprinkler cabinet.
    - 3) Fire department connections.
  - d. Submit all hydraulic calculations and drawings to be submitted to the Authority Having Jurisdiction and obtain stamp of approval prior to submission to the Architect/Engineer.
- 5. Heat Trace Cabling
  - a. Clearly marked-up product literature or samples showing compliance with specified materials for:
    - 1) Electrical characteristics.
    - 2) Installation methods.
- 6. Record Documents: Reference the requirements detailed in this section.
- 7. Operation and Maintenance Data: Reference the requirements detailed in this section.

D Resubmittals of rejected submittals shall be limited to one (1) in number. Costs for processing subsequent resubmittals in excess of the first resubmittal, resulting from the Contractor's disregard of Architect/Engineer's primary submittal rejection comments, shall be borne by the Contractor. Costs shall be based on Architect/Engineer's hourly rates as published in their current professional fee schedules and shall also include reimbursable costs for delivery, mailing, and photocopies at direct cost plus fifteen percent (15%).

E. Shop Drawings: Upon written request of the Contractor, the Architect/Engineer will provide directly to the Contractor electronic backgrounds of drawings required to produce shop drawings. The requirements to secure electronic files for shop drawing purposes are the same as for record drawing purposes. See 210010, Paragraph 1.15.H.2.

## 1.6 SUBSTITUTIONS

- A. The use of manufacturers' names and catalog numbers followed by the phrase "or equal" is generally used to establish a standard of quality and utility for the specified items and to provide a



dimensional reference for construction documents that are drawn to scale.

- B. Submittals for "equal" items shall, where applicable, include the following data that are not necessarily required for specified items:
  - 1. Performance characteristics.
  - 2. Materials.
  - 3. Finish.
  - 4. Certification of conformance with specified codes and standards.
  - 5. Manufacturer's specifications and other data needed to prove compliance with the specified requirements. The term "Compliance" is understood to mean that the Contractor certifies that the submitted equipment will meet or exceed the contract document requirements. Items that do not clearly meet this definition should be identified and explained as required in Paragraph 6 below.
  - 6. Identify the difference between the specified item or function and the proposed. Explain with enough detail so that the Architect/ Engineer/Owner can easily determine that the item complies with the functional intent. List any disadvantages or advantages of the proposed item versus the specified item. Submit technical data sheets and pictures and diagrams to support and clarify. Include shop drawings for all piping and fire suppression equipment per Paragraph 1.5 Submittals. Organize in a clear and concise format.
- C. Submittals of "equal" components or systems may be rejected if:
  - 1. The material or equipment would necessitate the alteration of any portion of the fire protection, architectural or structural design.
  - 2. Dimensions vary from the specified material or equipment in such a manner that accessibility or clearances are impaired or the work of other trades is adversely affected.
- D. Proposed substitutions for materials or equipment must be submitted ten (10) days prior to final bid date for consideration as approved equals. Otherwise, such substitutions will not be permitted. Only Prime Bidders are allowed to make proposals for substitutions. Manufacturers, distributors, and sub-contractors shall not make proposals to the Architect/Engineer for substitutions.
- E. No substitution shall be made unless authorized in writing by the Architect/Engineer. Should a substitution be accepted, and should the substitute material prove defective or otherwise unsatisfactory for the service intended, and within the guarantee period, replace this material or equipment with material or equipment specified, at no additional cost to the Architect/Engineer/Owner, and to the satisfaction of the Architect/Engineer.
- F. Contractors submitting bids on substitute materials and equipment must also provide a written performance guarantee certifying that the substitute materials and equipment will produce the specified effects and meet the approval of the Architect/Engineer.

#### 1.7 ORDINANCES, PERMITS, METERS, UTILITIES, AND ROYALTIES

- A. Procure all permits and licenses necessary for completion of this project and pay all lawful fees required and necessary pursuant in obtaining said permits and licenses. All required certificates of approvals and inspections by local governing and regulating authorities shall be obtained and paid

for by the Contractor.

- B. Pay all fees required for the connection of water service to utility mains, and any meter fees if required.
- C. Pay any royalty payments required or fees for the use of patented equipment or systems. Defend all law suits or claims for infringement of any patent rights and shall hold the Owner and Architect/Engineer harmless from loss as a result of said suits or claims.

#### 1.8 COMPATIBILITY OF EQUIPMENT

- A. Assume full responsibility for satisfactory operation of all component parts of the fire suppression systems to assure compatibility of all equipment and performance of the integrated systems in accordance with the requirements of the specifications. Should the Contractor consider any part of the specifications or drawings as rendering his acceptance of such responsibility impossible, prohibitive, or restrictive, he shall notify the Architect/Engineer before submitting his bid, and the bid shall be accompanied by a written statement of any objections or exceptions to the specifications and drawings.

#### 1.9 EXISTING UTILITIES AND TEMPORARY SERVICES FOR CONSTRUCTION

- A. Verify the location and capacity of existing utility services pertaining to work of Division 21. Relocate existing utilities unearthed by excavation as directed by the utility service companies affected.
- B. Temporary Services for Construction
  - 1. Provide temporary services in strict accordance with the provisions of these specifications.

#### 1.10 EXCAVATION AND BACKFILLING

- A. Perform all excavation and backfilling necessary for the installation of the work. This shall include shoring and pumping in ditches to keep them in dry condition until the work has been installed. Properly perform all shoring required to protect the excavation and to safeguard employees.
- B. Perform excavation and backfilling in strict accordance with the provisions of these specifications including trench safety requirements.
- C. Make all excavations to the proper depth, with allowances made for floor slabs, forms, beams, etc. Properly compact ground under piping before installing piping.
- D. Provide backfilling with selected soil, free from rocks and debris and pneumatically tamp with 6-inch layers to secure a field density ratio of 95 percent as defined by ASTM Designation D698-57T (Proctor Soil Compaction Test).
- E. Remove from the site, excavated materials not suitable and not used in the backfill.
- F. Field check and verify the locations of all underground utilities. Avoid disturbing these as far as possible. In the event existing utilities are damaged, repair them at no cost to the Architect/Engineer/Owner.
- G. In a lime-stabilized area, fully restore the lime stabilization after the excavation is complete.
- H. Replace concrete, curbs, paving, and other surface improvements cut during excavation to their

original condition.

#### 1.11 JOBSITE CONDITIONS

- A. Examine the areas and conditions under which work of this Section will be performed. Include required work to correct conditions detrimental to the timely and proper completion of all Division 21 Work. Do not proceed until unsatisfactory conditions are corrected.

#### 1.12 PREPARATION AND COORDINATION

- A. Perform coordination work in strict accordance with provisions of these specifications and the following:
  - 1. Coordinate as necessary with other trades to assure proper and adequate interface with all work.
  - 2. Where pipes and other fire suppression items are shown in conflict with locations of structural members and other equipment, include labor and materials required for extensions, offsets and supports to clear the encroachment.
  - 3. Although such work is not specifically indicated, provide all supplementary or miscellaneous items, appurtenances, and devices incidental to or necessary for a sound, secure, and complete installation.
  - 4. Coordinate accepted equipment changes from those scheduled or specified with other trades affected. Additional compensation to other trades for equipment changes is the responsibility of the Contractor making the change.
- B. Fire Suppression Drawings are diagrammatic. Follow the drawings as closely as actual construction and work of other trades will permit. Piping arrangements shall be designed for maximum economy consistent with good practice and other considerations. Install the systems arranged as shown on the drawings, except as otherwise approved in advance by the Architect/Engineer.
- C. Data indicated on the Drawings and in these Specifications are as exact as could be secured, but their absolute accuracy is not warranted. The exact locations, distances, levels, and other conditions will be governed by actual construction and the Drawings and Specifications should be used only for guidance in such regard.
- D. Where items are not specifically located on the Drawings, provide an RFI to the Architect/Engineer, and locate as determined in the field by the Architect/Engineer. Where such items are installed without such specific direction, relocate as directed by the Architect/Engineer, and at no additional cost to the Architect/Engineer/Owner.
- E. Verify all dimensions and distances. No additional compensation will be allowed because of differences between work shown on the Drawings and actual dimensions and distances at the jobsite.

#### 1.13 CONSTRUCTION REQUIREMENTS

- A. The drawings show the arrangements of work. Should project conditions necessitate rearrangement, or if the materials or equipment can be installed to a better advantage in a different manner, before proceeding with the work, prepare and submit five copies of Drawings of the proposed arrangement for the Architect/Engineer's review. Allow a minimum of ten (10) working days for review.



- B. Should the Contractor propose to install equipment requiring space conditions other than those shown, or rearrange the equipment, he shall assume responsibility for the rearrangement of the space and shall have the Architect/Engineer review the change before proceeding with the work. The request for such changes shall be accompanied by contractor-generated detailed shop drawings of the space in question. Identify monetary credits proposed or other benefits of the change. Allow a minimum of ten (10) working days for review.
- C. Properly locate and size all slots, holes, and openings in the building structure pertaining to the work and for the correct location of pipe sleeves, duct sleeves, fire dampers, etc., as applicable to the work.

#### 1.14 CUTTING AND PATCHING

- A. Perform cutting and patching associated with the work in strict accordance with the provisions of Division 1 of these Specifications and the following:
  - 1. Coordinate work to minimize cutting and patching work.
  - 2. Request for Architect/Engineer's Consent
    - a. Prior to cutting or coring of the building structure, submit a written request to the Architect/Engineer for permission to proceed with cutting. Include x-rays of any floor area where cutting or coring is proposed.
    - b. Contractor is cautioned that concrete floor may contain steel tendons, pipes, and electrical/telecom conduits, all of which can not be cut or damaged.
  - 3. Perform Architect/Engineer-approved cutting and demolition by methods that will prevent damage to other portions of the work and provide proper surfaces to receive installation of new work and repair.
  - 4. Perform fitting and adjusting of products to provide finished installation complying with the specified tolerances and finishes.
  - 5. Provide all core drilling of holes. Where sleeves and blockouts are required, they shall be cut or provided at locations required. On completion of this work or as work progresses, make all repairs and do all patching required as a result of work under this Contract. All patching shall be performed in a manner that will restore the surrounding work to its original condition to the satisfaction of the Architect/Engineer.
  - 6. Assume responsibility for the proper size of all sleeves and blockouts in the building structure pertaining to the work and for providing the correct location of pipe sleeves and blockouts.
  - 7. Where openings are cut through masonry walls, provide lintels or structural supports to protect the remaining masonry. Provide adequate support during the cutting operation to prevent any damage to the affected masonry.

#### 1.15 PROJECT RECORD DOCUMENTS

- A. Provide the record documents associated with the work of Division 21 in strict accordance with the provisions of these specifications.
- B. Throughout progress of the Division 21 Work, maintain an accurate record of changes in the

Contract Documents that apply to work of Division 21. Changes shall include all addendums issued during bidding. Maintain an accurate record of the location of fire suppression service lines and outlets and all outside utilities.

- C. Delegate the responsibility for maintenance of Record Documents to one person on the Contractor's staff as approved by the Architect/Engineer. Submit in writing at the pre-construction conference the name and credentials of the person responsible for record mark-ups and maintenance.
- D. Accuracy of Records
  - 1. Thoroughly coordinate changes within the Record Documents, making adequate and proper entries on each page of Specifications and each sheet of drawings and other documents where such entry is required to show the change properly. Match the symbology and format of the base documents.
  - 2. Accuracy of records shall be such that a future verification of items shown in the Contract Documents may rely reasonably on information obtained from the approved Project Record Documents.
- E. Maintain the job set of Record Documents completely protected from deterioration and from loss and damage until completion of the work and transfer of all recorded data to the final Project Record Documents.
- F. Making Entries on Drawings
  - 1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe the change by graphic line and note as required.
  - 2. Date all entries.
  - 3. Call attention to the entry by a "cloud" drawn around the area or areas affected.
  - 4. In the event of overlapping changes, use different colors for the overlapping changes.
  - 5. Make entries within 24 hours after receipt of information that the change has occurred.
  - 6. Maintain the base drawing format and use the same symbology.
  - 7. Convert field mark-ups to finished CADD record drawings when required in this section.
- G. Conversion of Schematic Layouts
  - 1. In some cases on the drawings, arrangements of equipment, piping, and similar items are shown schematically and are not intended to portray precise physical layout. Determine final physical arrangement subject to the Architect/Engineer's approval. However, design of future modifications of the facility may require accurate information as to the final physical layout of items that are shown only schematically on the drawings.
  - 2. Show on the job set of record drawings, by dimension accurate to within one inch, the centerline of each run of items such as all sleeves and piping, etc., below grade, in walls, or in the concrete slab. A surface mounted device indicates the exact location:
    - a. Clearly identify the item by accurate note such as "Fire Suppression Piping" and the like.

- b. Show, by symbol or note, the vertical location of the item "under slab," "in ceiling plenum," "exposed," and the like.
- c. Make all identification sufficiently descriptive that it may be related reliably to the specifications.

H. Final Project Record Documents

- 1. The purpose of the final Project Record Documents is to provide factual information regarding all aspects of the Work, both concealed and visible, to enable future modification of the Work to proceed without lengthy and expensive site measurement, investigation, and examination.
- 2. Provide CADD electronic files in ".dwg" Format using AutoCAD Release 2012 software (minimum). Upon written request and completion of a release form, the Engineer will provide AutoCAD Release 2012 electronic files of base Contract Drawings in dwg format. The Engineer will also provide a list of drawing layers and names that shall be maintained.
- 3. Provide completed record drawings on CD and one reproducible full-size sheet of each drawing.
- 4. Refer to Section 017700 for additional requirements.

1.16 OPERATION AND MAINTENANCE DATA

- A. Well before substantial completion, submit two copies of a preliminary draft of the proposed manual(s) to the Architect/Engineer for review and comments. Allow a minimum of ten (10) working days for review.
- B. Submit specified number copies of the approved manual to the Architect/Engineer prior to indoctrination of operation and maintenance personnel.
- C. Prepare in accordance with the following standards:

Format:

Size: 8½" x 11"

Paper: White bond, at least 20 lb. weight

Text: Neatly written or printed

Drawings: 11" in height preferable; bind in with text; foldouts acceptable; larger drawings are acceptable but fold to fit within the Manual and provide a drawing pocket inside rear cover or bind in with text.

Flysheets: Separate each section of the Manual with neatly prepared flysheets briefly describing contents of the ensuing section; flysheets may be in color.

Binding: Use heavy-duty plastic or fiberboard covers with binding mechanism concealed inside the manual; 3-ring binders will be acceptable; all binding is subject to the Architect/ Engineer's approval.

Measurements: Provide all measurements in U.S. standard units such as feet-and-inches, lbs, and cfm. Where items may be expected to be measured within ten years in accordance with metric formulae, provide additional measurements in the "International System of Units" (SI).

D. Provide front and back covers for each manual, using durable material approved by the Architect/Engineer, and clearly identified on or through the cover with at least the following information:

1. OPERATING AND MAINTENANCE INSTRUCTIONS

- a. Name and Address of Work
- b. Name of Contractor
- c. General subject of this manual
- d. Space for approval signature of the Architect/Engineer and approval date

E. Contents: Include at least the following:

1. Neatly typewritten index near the front of the manual, giving immediate information as to location within the manual of all emergency information regarding the installation.
2. Complete instructions regarding operation and maintenance of all equipment provided including lubrication, disassembly, and reassembly.
3. Complete nomenclature of all parts of all equipment.
4. Complete nomenclature and part number of all replaceable parts, name and address of nearest vendor, and all other data pertinent to procurement procedures.
5. Copy of all guarantees and warranties issued.
6. Manufacturer's bulletins, drawings, and descriptive data, clearly indicating the precise items included in this installation and deleting, or otherwise clearly indicating, all manufacturers' data with which this installation is not concerned.
7. Such other data as required in other sections of these specifications.

1.17 EQUIPMENT FOUNDATIONS

- A. Provide equipment foundations associated with the work in accordance with the provisions of these specifications.
- B. Provide concrete bases for all pad or floor mounted equipment. Bases shall be four inches (4") high above finished floors or grades (unless otherwise noted) and shall protrude two inches (2") beyond all sides of equipment and shall have exposed chamfered edges. Construct bases from ready-mixed hardrock concrete, ASTM C94, reinforced with #3 rebar, ASTM A615, Grade 40, at 18" on center each way.
- C. Field verify exact location of outdoor pad mounted equipment with the Architect/ Engineer. Supply necessary fill and grade site to provide natural drainage away from equipment.



1.18 PAINTING

- A. All equipment shall be delivered to the job with suitable factory finish. Should the finish be damaged in transit or during the installation, it shall be finished to match appearance of original finish. All work shall be subject to approval by Architect/Engineer.

1.19 TESTING AND INSPECTION

- A. Provide personnel and equipment, make required tests, and secure required approvals from the Architect/Engineer and governmental agencies having jurisdiction.
- B. Make written notice to the Architect/Engineer, adequately in advance, of each of the following stages of construction:
  - 1. When all rough-in is complete, but not covered;
  - 2. As specified in all Division 21 sections.
  - 3. At the completion of the work of Division 21.
- C. When material or workmanship is found to not comply with the specified requirements, remove the noncomplying items from the job site and replace them with items complying with the specified requirements at no additional cost to the Architect/Engineer/Owner. This shall be performed within 3 days after receipt of written notice of noncompliance.

1.20 WARRANTY

- A. Warranty all equipment and workmanship for a period of one year after date of substantial completion and replace or repair any faulty equipment or installation at no cost to the Architect/Engineer/Owner for such service during this period, all in accordance with requirements of Division 01.
- B. This warranty shall not void specific warranties issued by manufacturers for greater periods of time. Nor shall it void any rights guaranteed to the Owner by law.
- C. Warranties shall be in writing in a form satisfactory to the Owner, and shall be delivered to the Owner before final payment is made.

1.21 PROJECT COMPLETION

- A. Upon completion of the work of Division 21, thoroughly clean all exposed portions of the fire suppression installation, removing all traces of soil, labels, grease, oil, and other foreign material, and using only the type cleaner recommended by the manufacturer of the item being cleaned.

END OF SECTION 21 00 10