



ADDENDUM NO. 5

FROM: Barganier Davis Sims Architects Associated
624 South McDonough Street
Montgomery, Alabama 36104

TO: Plan Holders

DATE: July 28, 2017

RE: Goodwill Hall – Renovation & Band Rehearsal Hall Addition
For Auburn University
AU Project No: 15-255
ABC Job No: 2016 – 111

CHANGES TO SPECIFICATIONS:

1. Refer to advertisement for bid and addendum No.1. The bid date shall be revised to August 3, 2017. Time and location shall remain unchanged.
2. Refer to HVAC SECTION 232115 BELOW GRADE AND EXPOSED SITE PIPING – see attached, revised pages 1-11.

CHANGES TO DRAWINGS:

1. Refer to attached revised Drawings L1.1 and revised drawing A5.2 for details through concrete steps on site.
2. Refer to Drawing A9.1. At all devices (mechanical, electrical, fire alarm, etc.) located on the walls of Rehearsal Hall 100, devices shall be extended out from the metal stud wall to the face of slatted wood panel system as indicated in detail 6/A9.1. This includes power outlets, data outlets, thermostats, switches, fire alarm devices, etc.
3. Refer to Drawing A1.1, Percussion Storage 101. Casework on the east wall shall be securely floor mounted. The wall at this location is wire mesh in the base bid.
4. Refer to Drawings A1.1 and A3.7. Prefinished metal soffit panels at covered area outside of door 103A and as shown on Section 2/A3.7 shall be equal to: PAC CLAD Series 850 soffit half vent.

5. Refer to AS1.1, Egress Plan. Refer to note, "Contractor to construct temporary, approval, protected exit way with covered roof and temporary wall on east side to protect building occupants in case of an emergency egress from the existing building. Submit Construction details to architect for review prior to construction", Note: The protected exit way shall meet the requirements of International Building Code (IBC) 2015, Section 3306.

END OF ADDENDUM

SECTION 23 21 15 - HVAC BELOW GRADE AND EXPOSED SITE PIPING

1.0 GENERAL

1.1 SUMMARY

- A. The General Provisions, Supplemental General Provisions, section 23 01 00, Division 1 Specifications and Special Provisions apply to all Work specified in this Section.
- B. This section describes the basic materials and installation methods for the HVAC below grade site piping systems. Comply with other Division 23 sections and drawings as applicable. Refer to other divisions for coordination of work.
- C. Furnish and install all components of the HVAC site piping systems specified herein, as indicated on the drawings, and as required to provide complete and operating systems.

1.2 DESCRIPTION OF WORK

- A. Work Included: Provide complete operating mechanical piping systems including pipe, tube, fittings, and appurtenances as indicated and in compliance with these Specifications.
- B. Applications: Applications of piping systems include, but are not limited to, the systems as listed below:

<u>System</u>	<u>Working Pressure</u>	<u>Operating Temperatures</u>
Chilled Water		
High	350 psig	35 to 100°F
Medium	300 psig	35 to 100°F
Low	150 psig	35 to 100°F
Heating Water		
High	350 psig	70 to 250°F
Medium	300 psig	70 to 250°F
Low	150 psig	70 to 250°F

1.3 QUALITY ASSURANCE

- A. Welding: Qualify welding procedures, welders, and operators in accordance with ANSI B31.1, Paragraph 127.5, for shop and job site welding of piping work. Make welded joints on the piping system with continuous welds, without backing rings and with pipe ends beveled before welding. Gas cuts shall be true and free from burned metal. Before welding, surfaces shall be thoroughly cleaned. The piping shall be carefully aligned and no weld metal shall project inside the pipe.

2.0 PRODUCTS

2.1 PIPING MATERIALS

~~A. General: Provide pipe and tube of type, joint, grade, size, and weight (wall thickness, schedule or class) indicated for each service. Comply with applicable governing regulations and industry standards.~~

~~1. Ductile Iron: ANSI/AWWA C151/A21.51-02 with mechanical joints and internal cement liner~~

~~2. Steel Pipe: ASTM A53, ASTM A106, or ASTM A120, black or hot dipped galvanized as specified.~~

2.2 PIPING / TUBING FITTINGS

A. General: Provide factory-fabricated fittings of type, materials, grade, class, and pressure rating indicated for each service and pipe size. Provide sizes and types matching pipe, tube, valve, and equipment connections. Where not otherwise indicated, comply with governing regulations, industry standards, and where applicable, with pipe manufacturer's instructions for selections.

1. Ductile Iron: AWWA C110, **AWWA C153** or AWWA C111 with restraint mechanical joints fittings with gaskets. No unrestrained joints shall be used.
2. Wrought Steel Butt-welding Fittings: ANSI B16.9, only long radius elbows shall be used.

B. Miscellaneous Piping Materials/Products:

1. Welding Materials: Comply with ASME Boiler and Pressure Vessels Code, Section II, Part C, for welding materials.
2. Brazing Materials: American Welding Society, AWS A5.B, Classification BCup-5.
3. Gaskets for Flanged Joints: 1/8" thick gaskets. Ring-type shall be used between raised face flanges and full face-type between flat face flanges with punched bolt holes and pipe opening. Gaskets shall be Garlock Style 3400 compressed non-asbestos or equal.

2.3 BELOW GRADE AND EXPOSED PRE-INSULATED PIPE CONDUIT SYSTEM

A. General: Furnish a complete system of factory fabricated piping and fittings for the specified service.

B. Manufacturers: Basis of design is *Thermacor*. Other acceptable manufacturers include Energy Task Force, Perma-Pipe and Rovanco.

C. Service & Piping Materials:

1. Below Grade Chilled Water Piping – Class 350 cement lined Ductile Iron
2. Below Grade Heating Water Piping – Schedule 40 Steel

- D. Insulation: polyurethane foam or injected into the annular space between carrier pipe and jacket and bonded to both. Insulation shall be rigid, closed cell polyurethane with 2.0 to 3.0 pounds per cubic foot density and coefficient of thermal conductivity (K-Factor) not to exceed 0.16 and shall conform to ASTM C-591. *Insulation thickness shall be determined by carrier pipe length and shall not be less than 1.5".*
- E. Jacketing: ~~High impact seamless polyvinyl chloride (PVC) class 12454B compound conforming to ASTM 1784, Type 1, Grade 1 for pipe sizes 12" and smaller.~~ High density polyethylene (HDPE) casing Type III, category 5, class C, conforming to ASTM D-1248 **for all pipe sizes.**
- F. End Seals: Provide high temperature black mastic end seal on each end of each length of pre-insulated pipe. *End seals shall be factory applied, sealed to jacket and pipe with pressure test certification.* Provide extra mastic end seal material during installation for field cut pipe. At no time during installation should insulation be directly exposed to elements. *Straight run joints shall be field insulated to match the system, covered with a HDPE sleeve and sealed with heat shrink tape per manufacturer's recommendations. All material shall be furnished by the preinsulated pipe manufacturer.*
- G. Provide all necessary expansion loops, expansion elbows, anchors, wall sleeves and all necessary accessories for field assembly and insulation of fittings and straight joints.
- H. Any piping that is exposed above grade provide integral electrically heated heat trace freeze protection.
- I. Any exposed piping exposed to sunlight shall have UV coating.

2.4 ISOLATION VALVES

- A. General: Furnish all valves located below grade with *cast iron valve box with bell bottom* and appropriate access. *Valve box shall be by East Jordan Iron Works, Neenah Foundry or approved equal.*
- B. Provide gate valves for each new branch line to isolate the new branch line from the utility main.
- C. Gate Valve:
 - 1. Conform to AWWA Standard C515
 - 2. Resilient wedge gate valve with non-rising stem and 2 inch square operating nut
 - 3. Valve shall be *ductile iron* body epoxy-coated interior and exterior surfaces. Epoxy shall be in conformance with AWWA C550 and be NSF 61 Certified
 - 4. Stem shall be bronze with integral collars. Stem shall have two O-rings above collar and one O-ring below collar
 - 5. *Valve manufacturer shall provide a letter stating that the valve can handle continuous temperature of 225°F and excursion up to 250°F.*
 - 6. *Provide minimum 2" pre-molded rigid close cell foam insulation with vapor barrier.*
 - 7. Manufacturer: Basis of design is M&H ~~Series 700~~, or approved equal. ~~by Clow, Kennedy or Mueller~~

3.0 EXECUTION

3.1 PIPING INSTALLATION

~~A. General:~~

- ~~1. Industry Practices: Install pipe, tube, and fittings in accordance with recognized industry practices which will achieve permanently leak-proof piping systems, capable of performing each indicated service without failure or degradation of service. Install each run with a minimum of joints and couplings, but with adequate and accessible unions or flanged connections to permit disassembly for maintenance/replacement of valves and equipment. Reduce sizes (where indicated) by use of reducing fittings. Align accurately at connections. Coordinate piping locations with other trades to avoid conflict. Give ductwork preference unless directed otherwise by the Engineer.~~
- ~~2. Systems: Provide fittings at changes in direction. Where pipes of different sizes join, provide reducing elbows, tees, or couplings. Bushings will not be acceptable.~~
- ~~3. Expansion and Contraction: Install loops, offsets, sizing joints, and expansion joints, as necessary, to avoid strain resulting from expansion and contraction of piping systems on fixtures and equipment. Provide mechanical grooved connections required by the application to reduce vibration at equipment connections. Provide expansion joints in piping systems by mechanical grooved connections where required.~~

~~B. Steel Pipe: Ream steel pipe after cutting and before threading. Thread with clean-cut taper threads of length to engage all threads in fittings and leave no full-cut threads exposed after make-up.~~

C. Excavation, Installation, and Backfill for Underground Pipe:

1. Layout: Pipes shall be laid and pipe joints made in presence of the General Contractor and field measurements, layouts, batter board alignment, grade establishments, and similar locations shall be performed by a Professional Engineer in the employ of the Contractor. The Contractor's engineer shall be on the job during all underground work. A "Bench-Mark" reference shall be provided by the General Contractor.
2. Pipe Grading: Lay and maintain all pipes at required lines and grades during the course of the Work.
3. Trench: Excavate the trench to the depth required. Properly brace and de-water the trench and keep it free of water during installation, testing pipe, and backfilling. No water shall be discharged onto the street or freeway without approval by the Owner.
4. Excavation: The trench shall be at least 18" wider than the maximum diameter of the pipe or largest bell and the pipe shall be laid in the center of the trench. The trench shall be excavated to a depth sufficient to provide for pipe cushions or

supports as specified. Trench width may be increased as required and piling left in place until sufficient compacted backfill is in place. Properly sheet and brace all open trenches to render them secure and remove all such sheeting and bracing before completing the backfill. Comply with all applicable national, state, and local codes and regulations. The quantity of excavation required to install sheeting and the installation and removal of sheetings and bracings will not be regarded as Extra Work. All costs incurred for this excavation and the installation of sheeting shall be included in the Contract Price.

5. Grading: Upon completion of excavation and prior to the laying of the pipe, the trench bottom shall be brought up to the required elevation with a pipe cushion, except where the cushion has been eliminated by the General Contractor. Pipe cushions shall be select material deposited in the trench and shall be compacted, leveled off, and shaped to obtain a smooth compacted bed along the laying length of the pipe. Pipe cushion material shall be as follows:
6. ~~6. Anchors: Pipes shall have concrete anchors at each change in direction and/or as directed. Any change in direction exceeding 15 degrees shall be anchored. Concrete anchors shall rest against solid (virgin) ground with the required area of bearing on pipe and ground to provide suitable anchoring.~~
7. Backfill: Backfill trenches only after piping has been inspected, tested, and approved by the General Contractor. Backfill shall be provided as recommended in the geo-technical report included in these Contract Documents, or, in the absence of a geo-technical report, as required by site conditions. Refer to Division 2 or elsewhere in the Contract Documents for additional trenching and backfill requirements. *Valves shall not be backfilled until approved by AU facilities representatives witness of pressure test and valve operation.*
8. Existing Surfaces: Restore existing streets, driveways, and sidewalks damaged during the excavation work to acceptable condition, subject to approval by the Owner, Architect, and/or Engineer.
9. Safety: Provide street and sidewalk excavations with approved barricades, warning lights, and cover plates as required by the local authorities.

3.2 CLEANING, FLUSHING, TESTING, AND INSPECTING

- A. Cleaning & Flushing: The mechanical contractor shall adhere to Auburn University Water Treatment procedures as laid out in Appendix J of the Auburn University Design and Construction Standards and as follows:
 1. It is to be performed in conjunction with and under the technical direction of the Utilities & Energy Water Treatment department.
 2. General Guidelines– Closed Loop Treatment
 - a. Submittals - Provide product data for all chemical treatment materials, chemicals and equipment. Product data shall include chemical explanation, MSDS, layouts of feeding equipment and equipment detail sheets.
 - b. Quality Assurance

- i. Retain the resources of the chemical water treatment contractor who is already under contract with the client or has been prequalified by the client.
 - ii. The water treatment chemical and service supplier shall be a recognized specialist, active in the field of industrial water treatment for at least five years, whose major business is in the field of water treatment, and who has full time service personnel within the area of the job site. Laboratory facilities shall be available. Service personnel shall be degreed specialists in the fields of mechanical or chemical engineering or chemistry.
 - iii. Furnish and install all equipment and material on this project in accordance with the requirements of the authority having jurisdiction, suitable for its intended use on this project, approved by the U.S. Environmental Protection Agency (EPA), and local Department of Environmental Protection, and so certified by the manufacturer.
 - iv. If not already known, analyze the water from the local water supplier to be used on the project, before establishing treatment procedures.
 - v. The cleaning sequence will not be deemed completed until fully signed off and agreed upon by the Auburn University Water Treatment Department, as well as, the Plant Operations Group.
 - c. Safety
 - All chemical and analytical reagents supplied by the vendor shall meet all applicable government regulations. The bidders shall submit an MSDS for all proposed products with the initial technical proposal. The vendor shall be responsible for providing up to date MSDS for all chemicals supplied including reagents.
 - ii. The mechanical contractor shall be responsible for the safe cleanup of any chemical spills relating to products supplied by the vendor and caused by failure or malfunction of the chemical feed equipment or due to the actions of the field service personnel. Cleanup shall be performed in accordance with all current government regulations and good safety practices. Vendor shall maintain a 24 hour hot line for emergency situations. Bidder shall provide the phone number and procedure to access the hot line including estimated response time in the event of an emergency.
 - d. Technical Services
 - i. Mechanical contractor shall be responsible for handling of all water treatment chemicals.
 - ii. All chemical deliveries shall be made to the point of use by the vendor or an ahead of time agreed up on location such as the mechanical contractors lay down yard. The contractor shall remove, following local, state and federal governances all chemical containment systems as instructed by the vendor.
 - e. Underground Laterals - Chilled Water/Ductile Lined
 - i. Materials
 - Pump Strainer shall be fine mesh (3/64-inch maximum).
 - Sterilization Chemicals shall be non-oxidizing biocide which has halogen like effects such as 2,2-dibromo-3-nitropropionamide, also known as DBNPA.
 - Use GE Betz Spectrus NX108 or equivalent.
 - Water Treatment Chemical shall be GE Betz Corrrshield MD407 or equivalent.
 - ii. Preparation

- Contractor shall provide a minimum notice of fourteen (14) days to the water treatment vendor to allow for delivery of chemicals.
 - Contractor will notify the University Project Lead three (3) working days prior to filling for pressure testing and cleaning of new water pipes. The new piping system shall not be connected/operated until the chemical clean-up is performed.
 - Contractor shall determine supply and return diameters. If the supply and return lines are less than six inches (6") they do not require sterilization, however, they do require flushing with system chilled water before they are put into service.
 - Contractor shall install a two (2") inch bypass inside the mechanical room before the building isolation valves to aid in cleaning, flushing and treatment of the laterals.
- iii. Sterilization/Flushing Sequence
- If filling of the pipe is to occur as the pipe sections are constructed, then sterilization shall be accomplished as the pipe is constructed, otherwise, sterilization can be done at the end of each job as long as no water is put into the pipe for any reason. Once a section of pipe between isolation valves is complete, the piping shall be hydro tested, sterilized and treated, in that order. Under no circumstance shall the pipe remain untreated for more than one week after initial filling.
 - All water shall be metered into the pipe and amounts shall be tabulated and given to University Project Lead to indicate the volume of water in each pipe section between isolation valves. Pipe quantities and sizes shall also be tabulated to verify piping is filled completely.
 - Two twelve (12) ounce bottles of the system water shall be taken for laboratory analysis prior to the start of the addition of biocide for sterilization or flushing. University Project Lead will be responsible for providing the sample bottles to the mechanical contractor.
 - Biocide shall be added to pipe at a concentration of 50 ppm based on total water volume in the pipe.
 - Place the re-circulation pump at the low point of the area to be cleaned so that adequate venting can occur at the high point of the system.
 - At the high point crossover, contractor to provide a ball valve and sample point for ease of water testing and for venting air from the system.
 - Circulate the solution for at least twenty four (24) hours or as recommended by the University Project Lead, whichever is less. Balance valves shall be included to ensure pump is operated with sufficient head. Valve shall be manually modulated to obtain proper flow from pump. Pump differential head and certified pump curves shall be utilized to determine pump flow. Biocide shall be circulated to maintain a minimum pipe flow as shown in the following table. Flow rate shall be determined based on the largest diameter piping in the system.
 - **MINIMUM CLEANING WATER**

<i>Pipe Size (in)</i>	<i>Flow (gpm)</i>
2	45
4	100

6	250
10	500
14	960
15 thru 30	1,250

- Following cleaning, drain systems as quickly as possible. Flush with clean water until the University Project Lead or the chemical vendor verifies the water is back to city water quality.
 - Remove strainer(s).
 - Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required. Under no circumstance shall cross overs or ball valves be left underground. Where crossovers and valves are used, they must be removed, plugged, sealed and adequately insulated prior to burial.
- iv. Water Treatment
- Within 48 hours following the completion of the cleaning sequence, the water treatment chemicals shall be added and circulated as recommended by the University Project Lead.
 - Two additional twelve (12) ounce bottles shall be gathered for laboratory analysis once treated water is in the pipe.
- v. Flushing Sequence for Lines Less than 6" in Diameter
- If filling of the pipe is to occur as the pipe sections are constructed, then sterilization shall be accomplished as the pipe is constructed, otherwise, sterilization can be done at the end of each job as long as no water is put into the pipe for any reason. Once a section of pipe between isolation valves is complete, the piping shall be hydro tested, sterilized and treated, in that order. Under no circumstance shall the pipe remain untreated for more than one week after initial filling.
 - All water shall be metered into the pipe and amounts shall be tabulated and given to University Project Lead to indicate the volume of water in each pipe section between isolation valves. Pipe quantities and sizes shall also be tabulated to verify piping is filled completely.
- vi. Two twelve (12) ounce bottles of the system water shall be taken for laboratory analysis prior to the start flushing process. University Project Lead will be responsible for providing the sample bottles to the mechanical contractor.
- vii. System water is to be introduced to the new pipe and allowed to fill the lines and flush until it runs clear at the bypass outlined in Section 2.2, Paragraph B, Subparagraph 4 above, in the mechanical room risers of the new or retrofitted building.
- viii. Two additional twelve (12) ounce bottles shall be gathered for laboratory analysis once treated water is in the pipe.
- ix. Under no circumstance shall cross overs or ball valves be left underground. Where crossovers and valves are used, they must be removed, plugged, sealed and adequately insulated prior to burial, except in the case where the University Project Lead deems it necessary for underground main protection; mainly in the case of extended lay-up periods.

f. Underground Laterals – Hot Water

- i. Materials
 - Pump Strainer shall be fine mesh (3/64-inch maximum).
 - Cleaning and Sterilization Chemicals shall be liquid alkaline compound with emulsifying agents and detergents to remove grease and petroleum products. Use GE Betz Ferroquest FQ7101 or equivalent.
 - Water Treatment Chemical shall be GE Betz Corrshield NT402 or equivalent.
- ii. Preparation
 - Contractor shall provide a minimum notice of fourteen (14) days to the water treatment vendor to allow for delivery of chemicals.
 - Contractor will notify the University Project Lead three (3) working days prior to filling and cleaning of new water pipes. The new piping system shall not be connected/operated until the chemical clean-up is performed.
 - Contractor shall determine supply and return diameters. If the supply and return lines are less than six inches (6") they do not require cleaning, however, they do require flushing with system hot water before they are put into service.
 - Contractor shall install a two (2") inch bypass inside the mechanical room before the building isolation valves to aid in cleaning, flushing and treatment of the laterals.
- iii. Cleaning/Flushing Sequence
 - If filling of the pipe is to occur as the pipe sections are constructed, then sterilization shall be accomplished as the pipe is constructed, otherwise, sterilization can be done at the end of each job as long as no water is put into the pipe for any reason. Once a section of pipe between isolation valves is complete, the piping shall be hydro tested, sterilized and treated, in that order. Under no circumstance shall the pipe remain untreated for more than one week after initial filling.
 - All water shall be metered into the pipe and amounts shall be tabulated and given to University Project Lead to indicate the volume of water in each pipe section between isolation valves. Pipe quantities and sizes shall also be tabulated to verify piping is filled completely.
 - Two twelve (12) ounce bottles of the system water shall be taken for laboratory analysis prior to the start of the addition of cleaning chemical or flushing. University Project Lead will be responsible for providing the sample bottles to the mechanical contractor.
 - System cleaner shall be added to the piping section at a concentration as recommended by University Project Lead following the hydro test. A water volume equal to the calculated amount of cleaner to be added shall be drained from the pipe to allow for addition of cleaner.
 - Place the re-circulation pump at the low point of the area to be cleaned so that adequate venting can occur at the high point of the system.

- At the high point crossover, contractor to provide a ball valve and sample point for ease of water testing and for venting air from the system.
- Circulate the solution for at least twenty four (24) hours or Less if recommended by University Project Lead. Balance valves shall be included to ensure pump is operated with sufficient head. Valve shall be manually modulated to obtain proper flow from pump. Pump differential head and certified pump curves shall be utilized to determine pump flow. Cleaner shall be circulated to maintain a minimum pipe flow as shown in the following table. Flow rate shall be determined based on the largest diameter piping in the system.

- **MINIMUM CLEANING WATER**

Pipe Size (in) Flow (gpm)

a.

2	45
4	100
6	250
10	500
14	960
15 thru 30	1,250

- Twenty four (24) hours following the start of the cleaning process, two twelve (12) ounce bottles of system water shall be gathered for laboratory analysis. Following cleaning, drain systems as quickly as possible.
 - Flush with clean water until the University Project Lead or the chemical vendor verifies the water is back to city water quality.
 - Two twelve (12) ounce bottles of system water shall be gathered for laboratory analysis following city water flushing.
 - Remove strainer(s).
 - Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required. Under no circumstance shall cross overs or ball valves be left underground. Where crossovers and valves are used, they must be removed, plugged, sealed and adequately insulated prior to burial.
- iv. Water Treatment
- Within 48 hours following the completion of the cleaning sequence, the water treatment chemicals shall be added and circulated as recommended by the University Project Lead.
 - Two additional twelve (12) ounce bottles shall be gathered for laboratory analysis once treated water is in the pipe.
- v. Flushing Sequence for Lines Less than 6" in Diameter
- If filling of the pipe is to occur as the pipe sections are constructed, then sterilization shall be accomplished as the pipe is constructed, otherwise, sterilization can be done at the end of each job as long as no water is put into the pipe for any reason. Once a section of pipe between isolation

valves is complete, the piping shall be hydro tested, sterilized and treated, in that order. Under no circumstance shall the pipe remain untreated for more than one week after initial filling.

- All water shall be metered into the pipe and amounts shall be tabulated and given to University Project Lead to indicate the volume of water in each pipe section between isolation valves. Pipe quantities and sizes shall also be tabulated to verify piping is filled completely.
- Two twelve (12) ounce bottles of the system water shall be taken for laboratory analysis prior to the start flushing process. University Project Lead will be responsible for providing the sample bottles to the mechanical contractor.
- System water is to be introduced to the new pipe and allowed to fill the lines and flush until it runs clear at the bypass outlined in Section 2.6, Paragraph B, Subparagraph 4 above, in the mechanical room risers of the new or retrofitted building.
- Two additional twelve (12) ounce bottles shall be gathered for laboratory analysis once treated water is in the pipe.
- Under no circumstance shall cross overs or ball valves be left underground. Where crossovers and valves are used, they must be removed, plugged, sealed and adequately insulated prior to burial, except in the case where the University Project Lead deems it necessary for underground main protection; mainly in the case of extended lay-up periods.

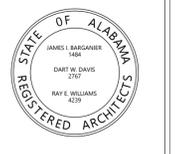
B. Piping Tests:

1. General: Perform tests before piping is concealed from view. Tests may be performed in sections. Tests shall be witnessed by the General Contractor and local inspectors and the test results presented to the Engineer for acceptance and approval prior to concealing piping from view. Provide all necessary equipment for testing, including pumps and gauges.
2. Test water systems hydrostatically to a pressure of 150 psig or 1-1/2 times working pressure, whichever is greater, for a period of 4 hours. Repair all leaks, replacing materials as necessary and repeat tests until systems are proven tight.

- C. Inspecting: Visually inspect each run of each system for completion of joints, adequate hangers, supports, and inclusion of accessories and appurtenances.

END OF SECTION

No.	Revision	Date
1	Adm. #2	7-13-17
2	Adm. #3	7-20-17
3	Adm. #4	7-25-17
4	Adm. #5	7-27-17



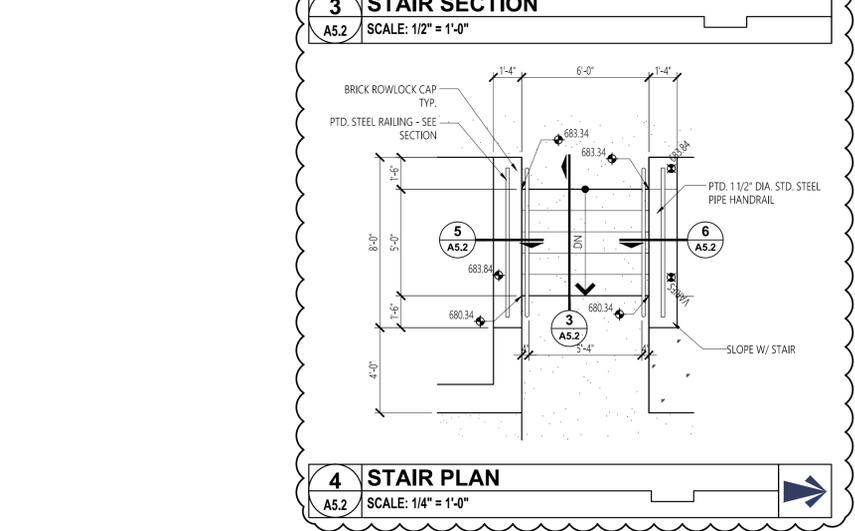
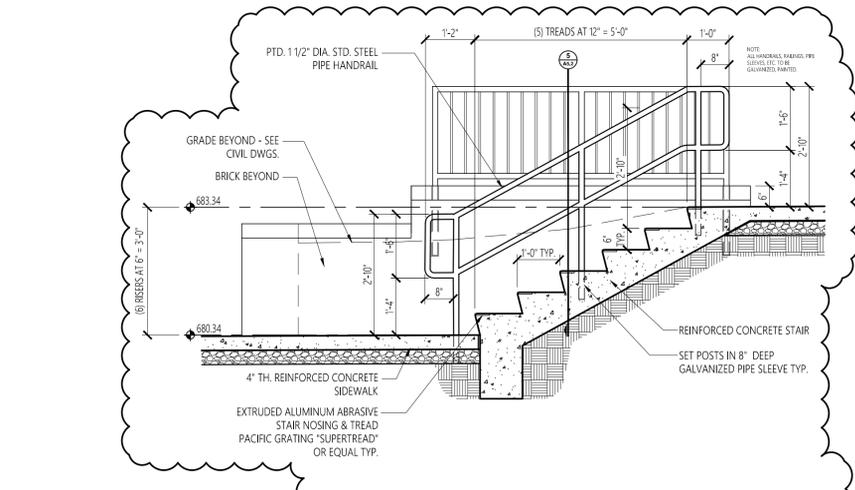
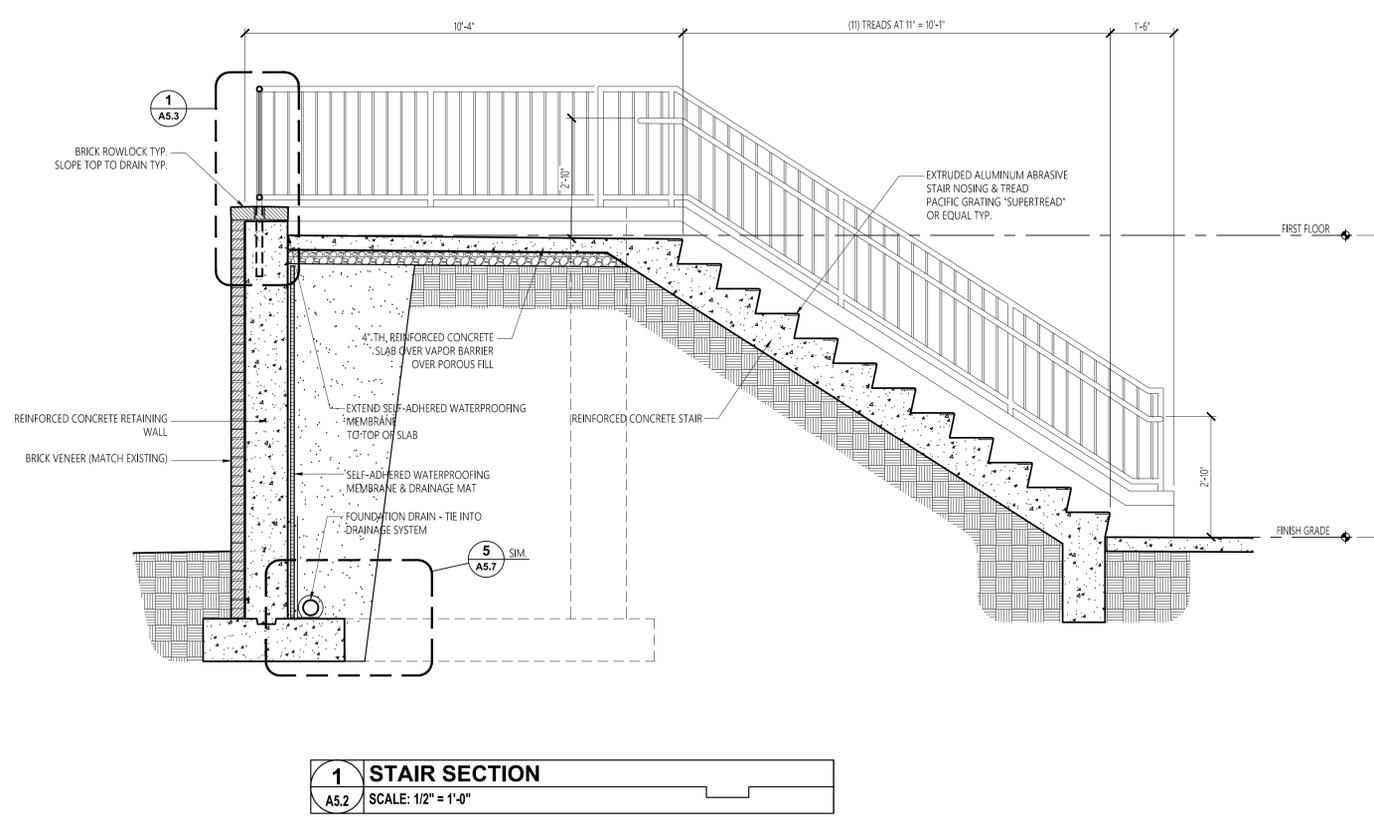
Project Number: 2015-255
BARGANIER DAVIS SIMS
Drawn By:

**GOODWIN HALL - RENOVATION
AND
BAND REHEARSAL HALL ADDITION**
Project Number 15-255

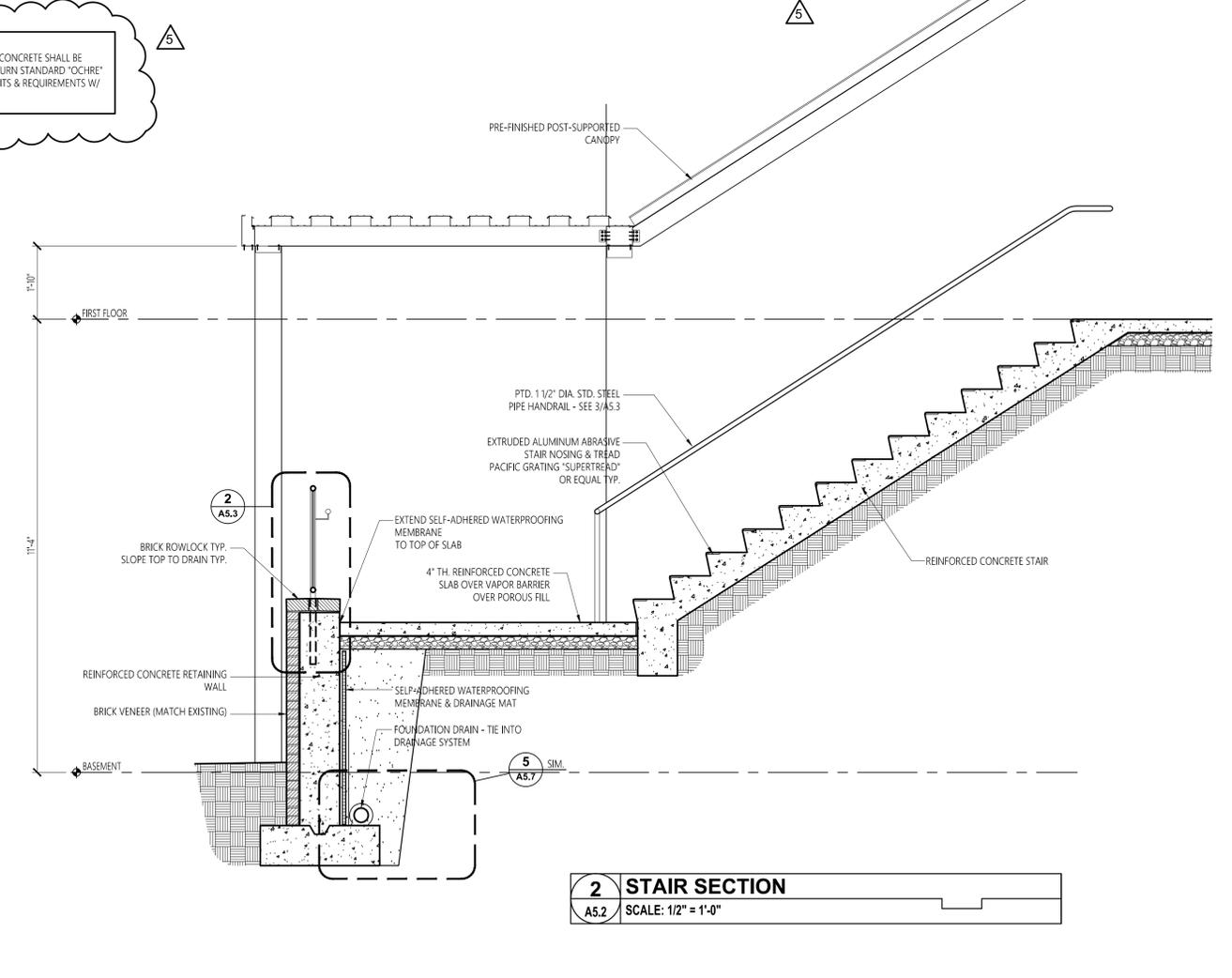
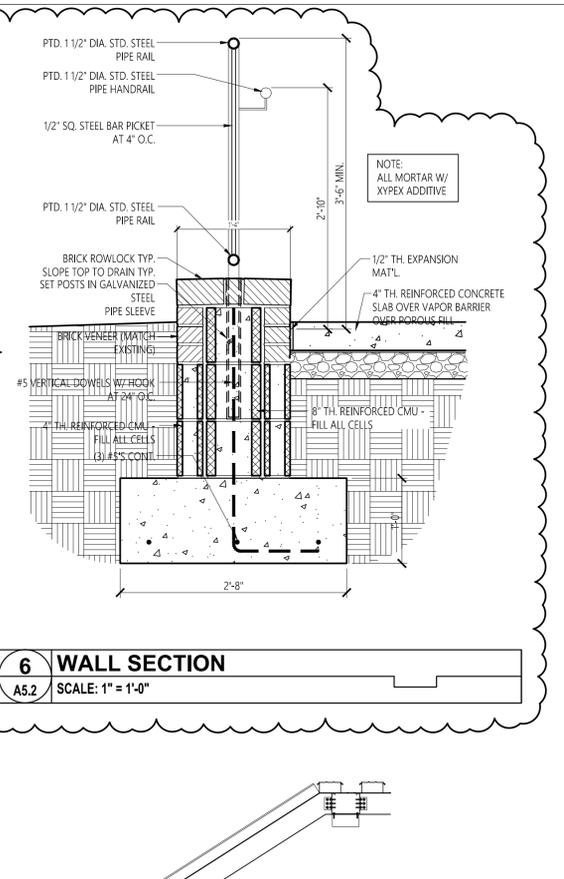
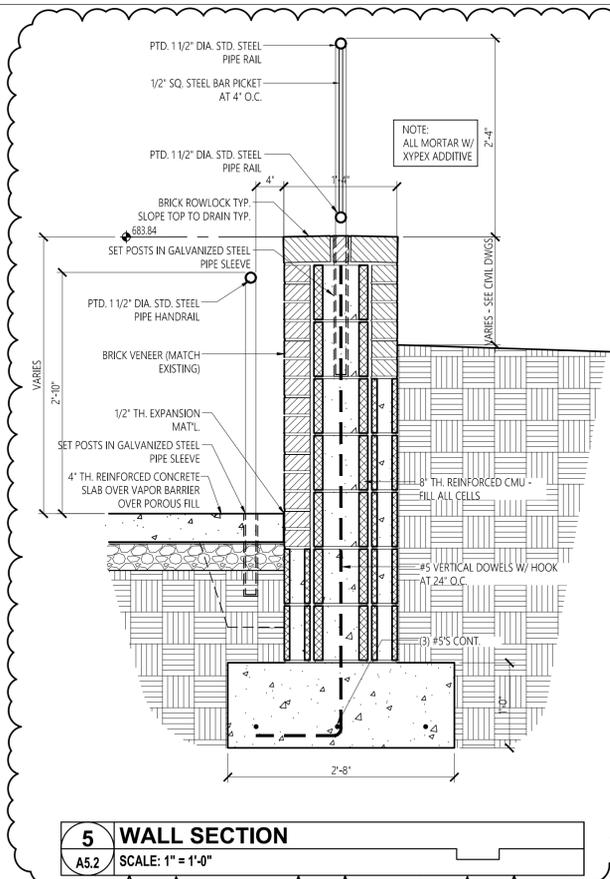
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DRAWN BY:
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DATE:
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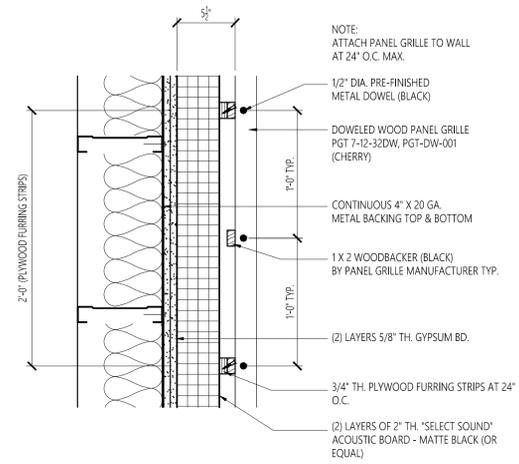


NOTE:
ALL NEW EXPOSED CONCRETE SHALL BE
UNIVERSITY OF AUBURN STANDARD "OCHRE"
COLOR. VERIFY LIMITS & REQUIREMENTS W/
ARCHITECT.

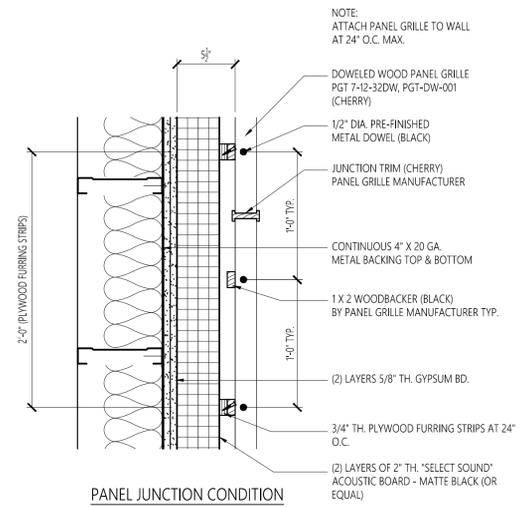


GENERAL NOTES

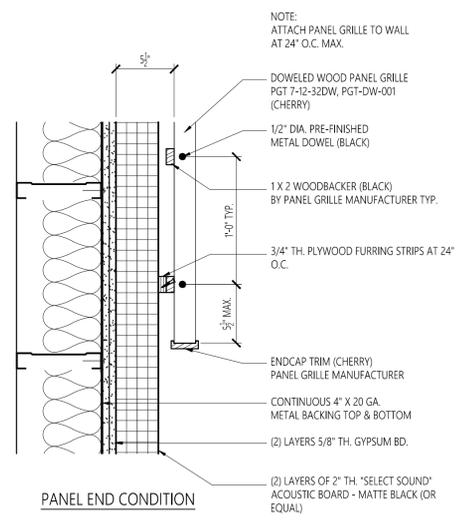
1. FURNISH & INSTALL DOWELED WOOD PANEL GRILLE PGT 7-12-32DW, PG-DW-001 BY RULON INTERNATIONAL 404-694-1402 OR APPROVED EQUAL.



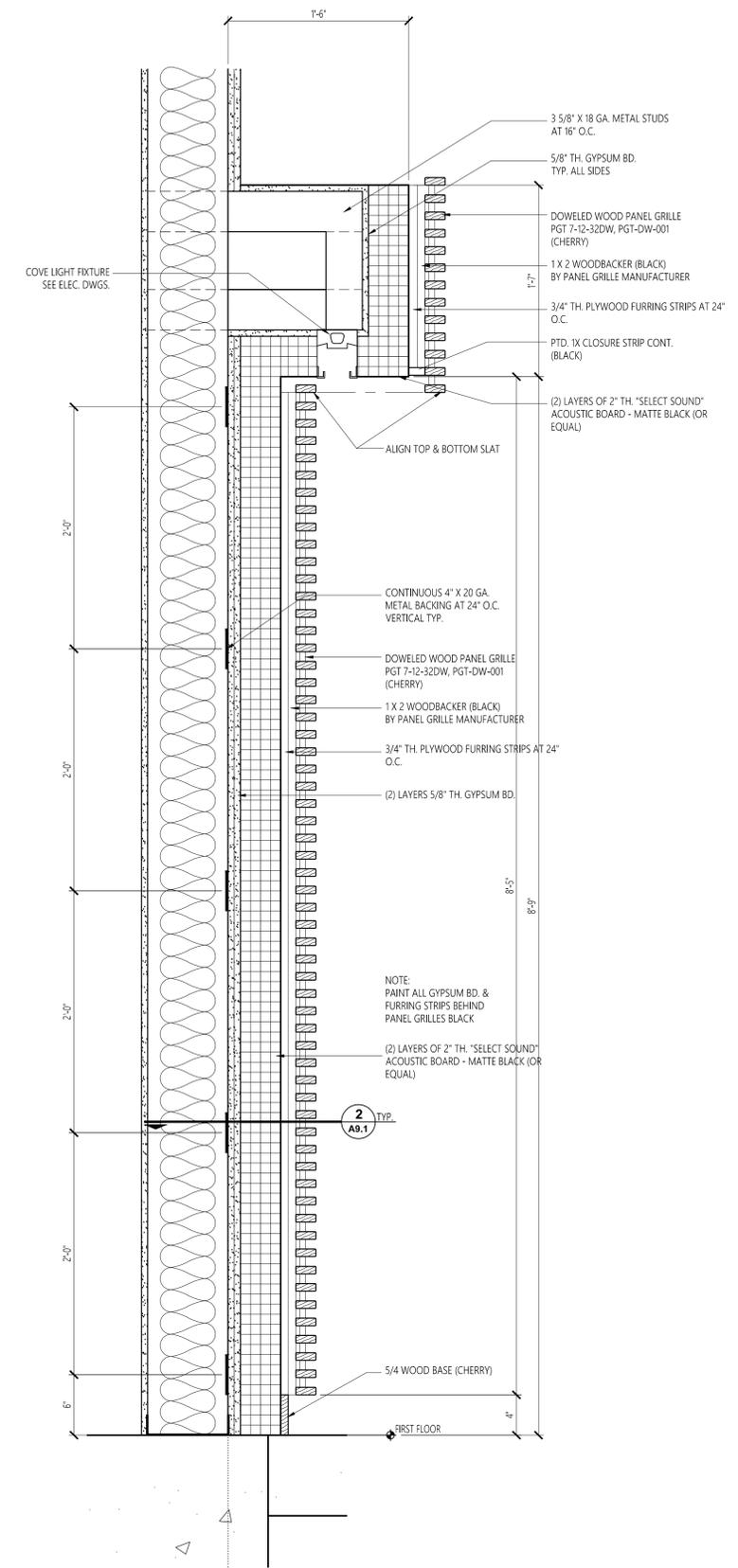
2 PANEL-GRILLE PLAN SECTION
A9.1 SCALE: 1 1/2" = 1'-0"



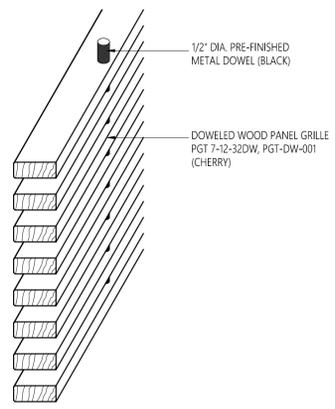
3 PANEL-GRILLE PLAN SECTION
A9.1 SCALE: 1 1/2" = 1'-0"



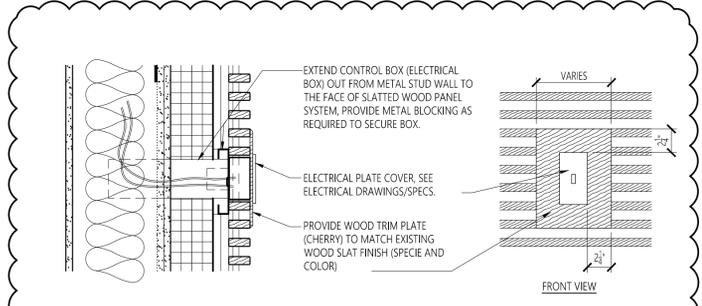
4 PANEL-GRILLE PLAN SECTION
A9.1 SCALE: 1 1/2" = 1'-0"



1 SECTION DETAIL
A9.1 SCALE: 1 1/2" = 1'-0"

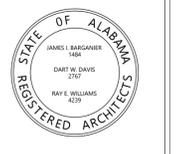


5 PANEL-GRILLE ISOMETRIC
A9.1 NO SCALE



6 SECTION DETAIL - CONTROL PLATES
A9.1 SCALE: 1 1/2" = 1'-0"

No.	Revision	Date
1	Addm. #2	7-13-17
2	Addm. #3	7-20-17
3	Addm. #4	7-25-17
4	Addm. #5	7-27-17



Project Number: 2015-255
BARGANIER DAVIS SIMS
Drawn By:

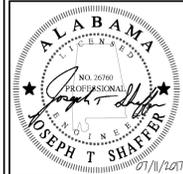
**GOODWIN HALL - RENOVATION
AND
BAND REHEARSAL HALL ADDITION**
Project Number 15-255

SHEET TITLE:
**PANEL GRILLE
DETAILS**

DRAWN BY:
-
CHECKED BY:
-
DATE:
6-14-2017
FILE NUMBER:
-
PROJECT NUMBER:
16-111
SHEET NUMBER:

A9.1

No.	Revision	Date
1	ABC Comments	07/11/2017
2	Addendum 2	07/13/2017
3	Addendum 3	07/20/2017
4	Addendum 4	07/25/2017
5	Addendum 5	07/27/2017



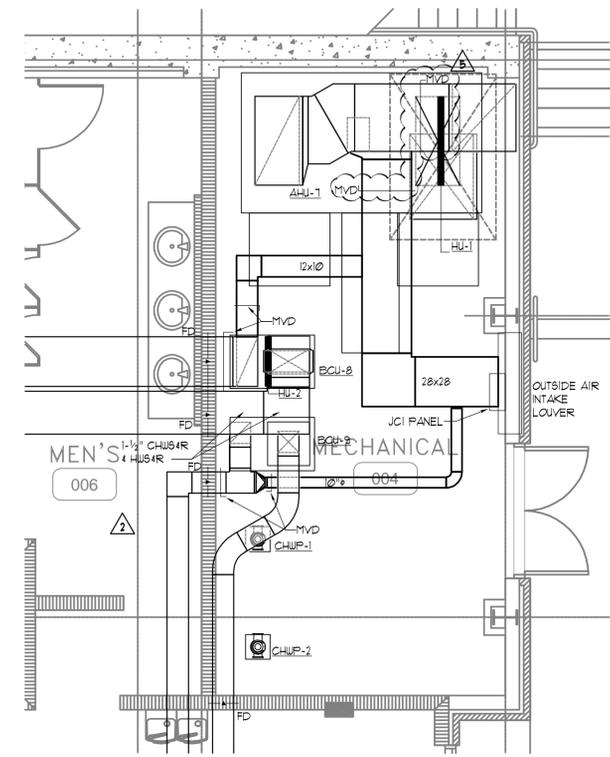
**GOODWIN HALL - RENOVATION
AND
BAND REHEARSAL HALL ADDITION**
Project Number 15-255

SHEET TITLE:
LOWER LEVEL FLOOR PLANS - MECHANICAL

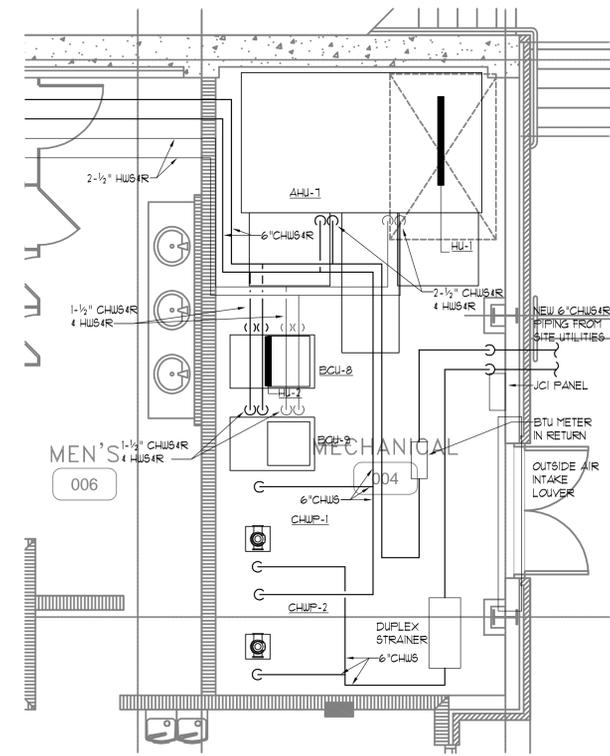
DRAWN BY:
MJL
CHECKED BY:
JTS
DATE:
6-14-2017
FILE NUMBER:
-

PROJECT NUMBER:
15-255

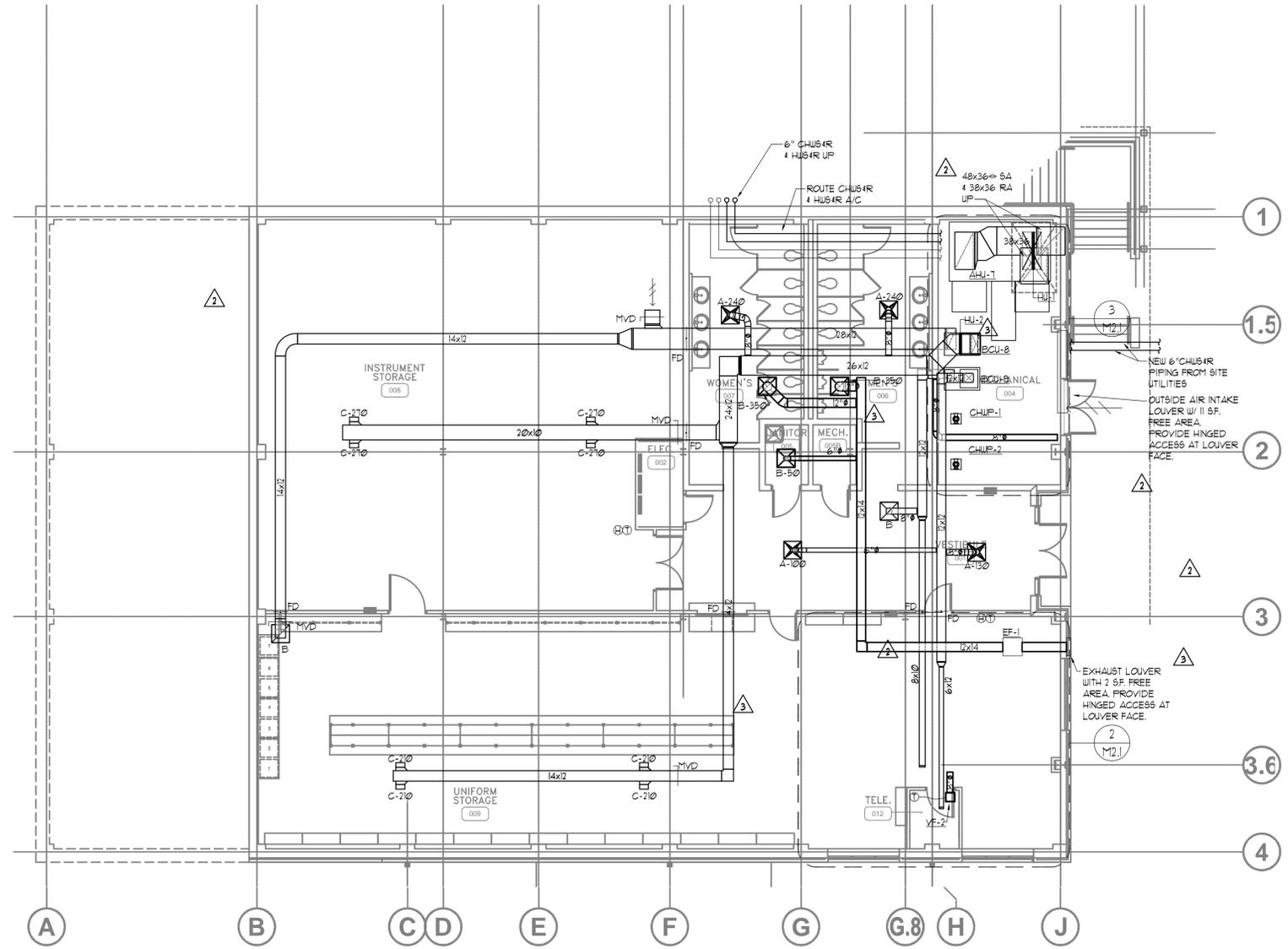
SHEET NUMBER:
M2.1
XX OF XX



3 ENLARGED DUCTWORK PLAN - MECHANICAL ROOM
SCALE: 1/4" = 1'-0"
NORTH

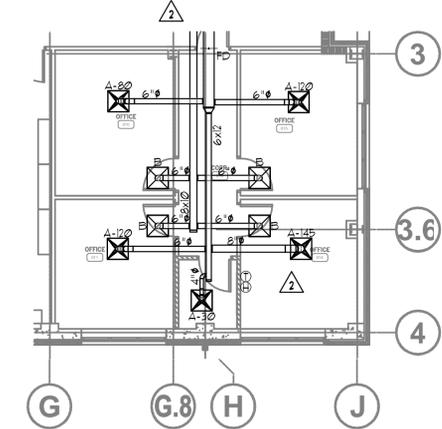


4 ENLARGED PIPING PLAN - MECHANICAL ROOM
SCALE: 1/4" = 1'-0"
NORTH



1 LOWER LEVEL FLOOR PLAN - MECHANICAL
SCALE: 1/8" = 1'-0"
NORTH

MECHANICAL GENERAL NOTES:
1. SEE M01-M04 FOR LEGEND, NOTES, SCHEDULES, & DETAILS.
2. DETAILS ARE APPLICABLE EVEN IF NOT DIRECTLY REFERENCED.



2 LOWER LEVEL FLOOR PLAN - MECHANICAL - ALTERNATE #3
SCALE: 1/4" = 1'-0"
NORTH