

**Pisgah Forest Elementary School – HVAC Piping Improvements  
Transylvania County Schools  
Brevard, North Carolina**

**ADDENDUM NUMBER 1**

***McGill Associates Project No. 22.00607***

This **ADDENDUM NUMBER 1** is being issued this **February 23, 2023** to parties who hold Contract Documents for the subject project with Transylvania County Schools. This Addendum Number 1 shall become a part of the Contract Documents and its receipt shall be acknowledged on the bid documents at the time of bidding.

The following additions, revisions and/or clarifications shall be made to the Contract Documents:

**GENERAL**

1. The pre-bid meeting was held at the site on February 15, 2023. Representatives from Bolton Construction and Superior Mechanical Services were in attendance.
2. Contractor is responsible for all permitting fees.
3. The required conduct at the project site includes:
  - a. All Transylvania County school buildings and grounds are tobacco free. No use of tobacco products including smoking, chewing, or vaping is permitted on school property.
  - b. No consumption or possession of alcohol or drugs not prescribed by a physician is permitted on school property.
  - c. All contractor and subcontractor personnel shall wear a shirt or badge identifying at least the firm they are employed by.
  - d. Any conduct not appropriate for a K-12 school is prohibited. Personnel engaging in misconduct may be immediately excluded from the jobsite.
4. School has an addressable fire alarm system. Contractor will coordinate with owner for any areas of active work to be locked out. Owner will operate fire alarm system.
5. Scans of original construction drawings are available to bidders. Contact engineer for dropbox link.
6. **Bid is postponed until March 14, 2023 at 2:00 pm.**

**PROJECT MANUAL**

1. Modified Agreement (EJCDC-C-520)

***Article 3: Delete article 3.02 and replace with the following:***

FEBRUARY 23, 2023  
PISGAH FOREST ELEMENTARY SCHOOL – HVAC PIPING IMPROVEMENTS  
TRANSYLVANIA COUNTY SCHOOLS  
BREVARD, NORTH CAROLINA

3.02 Dates for Substantial Completion and Final Payment

- A. The Work must be substantially completed (including chilled water system operational) 10 calendar days prior to the first day of school for students in the 2024/ 2025 school year and completed and ready for final payment in accordance with the Modified General Conditions within 30 calendar days from date of substantial completion above.

2. Bid Form

Delete bid form and replace with the attached bid form. Only article 6.01 has been modified.

3. As a substitute for pipe joining methods specified in section 232113, mechanical pipe joining methods may be submitted by bidders to engineer for approval no later than March 2, 2023. Submittal shall be complete with equipment and fittings to be used and the contractor's experience with using these materials and equipment. No pipe joining method other than as specified or as approved will be permitted. Since approval will be based in part on the bidder's demonstrated experience the any approval will be for a particular pipe joining method by a particular bidder only. A pipe joining method approved for one bidder will not necessarily be approved for another.
4. Specification section 232500 (attached) is added.

5. Drawings

- 1) Cover sheet is reissued with revisions as noted.
- 2) Drawing M-001 is reissued with revisions as noted.
- 3) Drawing MD-101 is reissued with revisions as noted.
- 4) Drawing M-101 is reissued with revisions as noted.
- 5) Drawing M-102 is reissued with revisions as noted.
- 6) Drawing M-501 is reissued with revisions as noted.
- 7) Drawing M-502 is reissued with revisions as noted.
- 8) Drawing M-503 is added.
- 9) Drawing E- 102 is added.

ADDENDUM NUMBER 1 issued this the 23<sup>rd</sup>, day of February 2023.

END OF ADDENDUM NO. 1

# BID FORM

*HVAC PIPING IMPROVEMENTS, PISGAH FOREST ELEMENTARY SCHOOL  
TRANSYLVANIA COUNTY SCHOOLS  
TRANSYLVANIA COUNTY, NORTH CAROLINA*

*MCGILL PROJECT NO. 22.00607*

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**ARTICLE 1 – BID RECIPIENT**

This Bid is submitted to:

**Alan Justice**  
**Facilities, Athletic, Transportation Director CDPT**  
**225 Rosenwald Lane, Brevard, NC 28712**

The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

**ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS**

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for **60** days after the date of the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

**ARTICLE 3 – BIDDER'S REPRESENTATIONS**

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____
_____	_____

B. Bidder has visited the Project Site and has become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures, including Underground Facilities, at or contiguous to the Site which have been included as a part of the Contract Documents.

E. Bidder has obtained and carefully studied (or accepts the consequences for not doing so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

- F. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- H. Bidder has correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder or, if no written response was made by Engineer, that Bidder has resolved the issue to its satisfaction prior to the submittal of its Bid.
- J. The Bidding Documents are sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.
- K. Bidder will submit written evidence of its authority to do business in the state where the Project is located not later than the date of its execution of the Agreement.
- L. Bidder has not relied upon any information provided by the Engineer except information which is part of the Bidding Documents and is in writing and in the form of a formal addendum.
- M. The submission of a Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of the Bid Documents and the Instructions to Bidders, and that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents.

#### **ARTICLE 4 – FURTHER REPRESENTATIONS**

4.01 Bidder further represents that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not sought by collusion to obtain for itself any advantage over any other Bidder or over Owner.

**ARTICLE 5 - BASIS OF BID**

Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

**LUMP SUM BASE BID**

Lump Sum Base Bid Price: \_\_\_\_\_

\_\_\_\_\_ dollars

(words)

(\$ \_\_\_\_\_)

(numbers)

**ARTICLE 6 – TIME OF COMPLETION**

**6.01** Bidder agrees that the work will be substantially completed (including chilled water system operational) 10 calendar days prior to the first day of school for students in the 2024/ 2025 school year and completed and ready for final payment in accordance with the Modified General Conditions within 30 calendar days from the date of substantial completion above.

**6.02** Bidder accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the Contract Time.

**ARTICLE 7 – ATTACHMENTS TO THIS BID**

**7.01** The following documents are attached to, incorporated herein by reference, and made a condition of this Bid:

- A. Required Bid security in the form of a certified check, money order, or Bid Bond
- B. Non-Collusive Affidavit
- C. Affidavit of Compliance – North Carolina – E-Verify Statutes

**ARTICLE 8 – BID SUBMITTAL**

**8.01** This Bid submitted by:

If Bidder is:

An Individual

Name (typed or printed): \_\_\_\_\_

By: \_\_\_\_\_ (SEAL)  
*(Individual's signature)*

Doing business as: \_\_\_\_\_

A Partnership

Partnership Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of general partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

A Corporation

Corporation Name: \_\_\_\_\_ (SEAL)

State of Incorporation: \_\_\_\_\_  
Type (General Business, Professional, Service, Limited Liability): \_\_\_\_\_

By: \_\_\_\_\_  
*(Signature -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_ (CORPORATE SEAL)

Attest \_\_\_\_\_

Date of Authorization to do business in *State Where Project is Located* is \_\_\_\_/\_\_\_\_/\_\_\_\_.

A Joint Venture

Name of Joint Venture: \_\_\_\_\_

First Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of first joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

Second Joint Venturer Name: \_\_\_\_\_ (SEAL)

By: \_\_\_\_\_  
*(Signature of second joint venture partner -- attach evidence of authority to sign)*

Name (typed or printed): \_\_\_\_\_

Title: \_\_\_\_\_

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address \_\_\_\_\_

\_\_\_\_\_

Phone No. \_\_\_\_\_ Fax No. \_\_\_\_\_

SUBMITTED on \_\_\_\_\_, 20\_\_\_\_.

State Contractor License No. \_\_\_\_\_.



**PART 1 - GENERAL****1.1 SECTION INCLUDES:**

- A. The HVAC contractor shall retain a water treatment chemical company to provide water treatment chemical feed equipment and chemicals for the circulating water systems as defined herein and as may be required to maintain the integrity of the piping systems and mechanical equipment.
- B. Include all materials and equipment necessary to install complete the following systems:
  - 1. Chemical treatment systems for the following closed systems:
    - a. Hot Water Heating System.
    - b. Chilled Water System.

**1.2 QUALITY ASSURANCE:**

- A. The water treatment chemical and service supplier shall be a recognized specialist, active in the field of industrial water treatment for at least ten years, whose major business is in the field of water treatment, and who has full time service personnel within the trading area of the job site. Also refer to Part 3 - Execution of this section for full requirements.

**1.3 SUBMITTALS:**

- A. Product Data: Submit manufacturer's published technical product data for chemical treatment materials, chemicals, and equipment.
- B. Shop Drawings: Indicate system schematic, equipment locations, and controls schematics, electrical characteristics and connection requirements.
- C. Manufacturer's Installation Instructions: Indicate placement of equipment in systems, piping configuration, and connection requirements.
- D. Manufacturer's Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.
- E. Submit certificate of compliance from Authority having jurisdiction indicating approval of chemicals and their proposed disposal.
- F. Record actual locations of equipment and piping, including sampling points and location of chemical injectors.

- G. Operation and Maintenance Data: Include data on chemical equipment including spare parts lists, procedures, and treatment programs. Include step by step instructions on test procedures including target concentrations. Include material safety data sheets, and compile all submitted data information manual.

#### **1.4 REGULATORY REQUIREMENTS:**

- A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems, and for addition to public sewage systems.

#### **1.5 MAINTENANCE SERVICE:**

- A. Furnish service and maintenance of treatment systems for one year from Date of Substantial Completion.
- B. Provide monthly technical service visits to perform field inspections and make water analysis on site. Detail findings in writing on proper practices, chemical treating requirements, and corrective actions needed. Submit two copies of field service report after each visit.
- C. Provide laboratory and technical assistance services during this maintenance period.
- D. Include a minimum two hour training course for operating personnel, instructing them on installation, care, maintenance, testing, and operation of water treatment systems. Arrange course at start up of systems.
- E. Provide on site inspections of equipment during scheduled or emergency shutdown to properly evaluate success of water treatment program, and make recommendations in writing based upon these inspections.

### **PART 2 - PRODUCTS**

#### **2.1 ACCEPTABLE MANUFACTURERS:**

- A. Manufacturers: Subject to compliance with requirements, provide one of the following:
  - 1. Betz Entec
  - 2. Calgon
  - 3. Culligan
  - 4. Dow
  - 5. Nalco

#### **2.2 MATERIALS:**

- A. Piping System Cleaner:

1. Liquid alkaline compound with emulsifying agents and detergents to remove grease and petroleum products - sodium tripoly phosphate and sodium molybdate.
  2. Biocide - chlorine release agents such as sodium hypochlorite or calcium hypochlorite; or microbiocides such as quaternary ammonia compounds, tributyl tin oxide, methylene bis (thiocyanate), or isothiazolones
- B. Closed System Treatment:
1. Sequestering agent to reduce deposits and adjust PH - polyphosphate.
  2. Corrosion inhibitors - selected by installer to be compatible with existing piping systems.
  3. Conductivity enhancers

### 2.3 **BY-PASS POT FEEDER:**

- A. Five gallon 125 PSIG design tank with quick opening cap, strainer kit, inlet valve, outlet valve, and drain cock.

### 2.4 **WATER TEST KIT:**

- A. Complete in case required for calcium hardness, PH sulfite, P & M alkalinity, chloride, sequestrant phosphate and conductance.

## **PART 3 - EXECUTION**

### 3.1 **CLOSED SYSTEMS:**

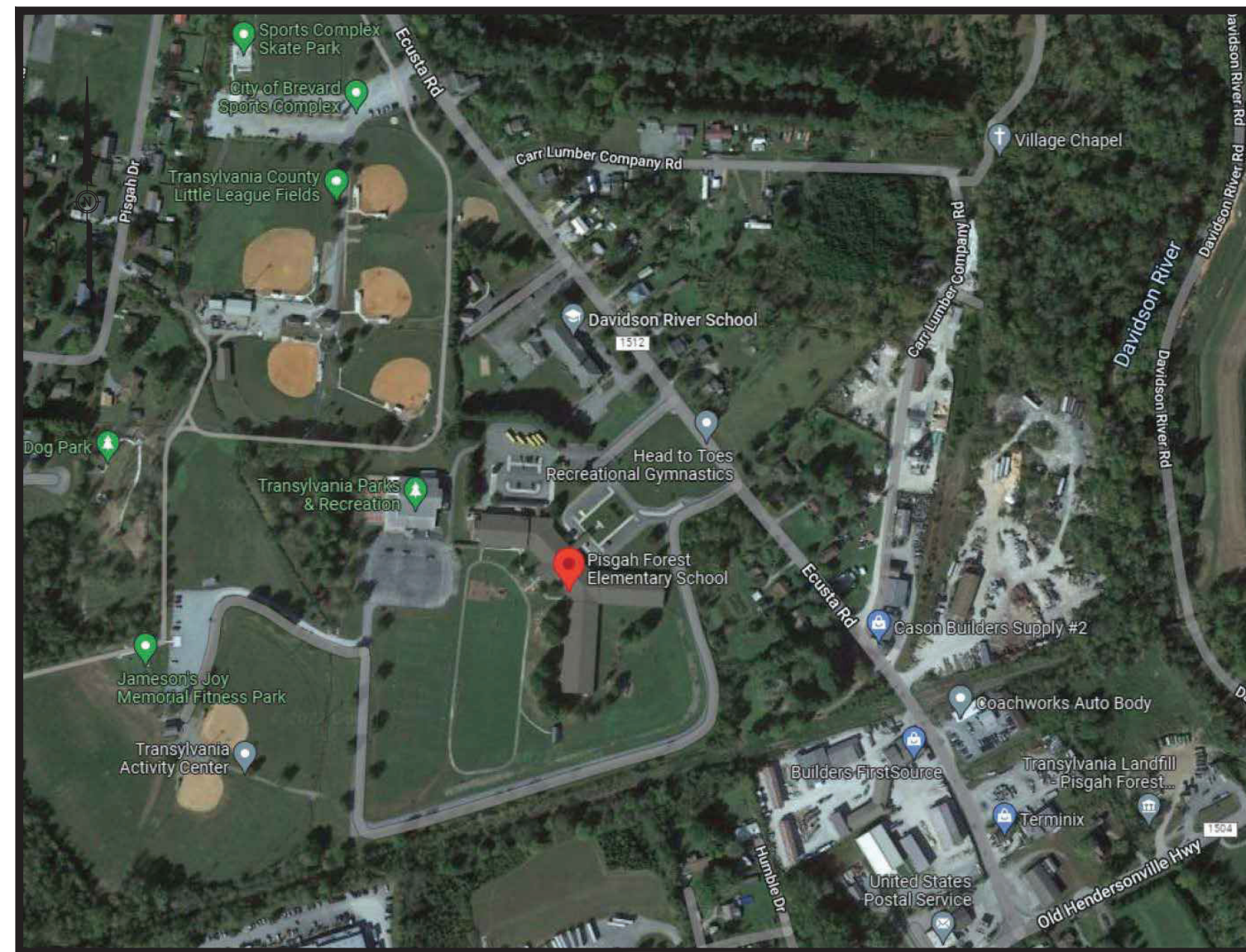
- A. Install by-pass pot feeder in each closed system, across main pump balancing valve and/or as shown on contract documents.
- B. Provide one years supply of closed system treatment for prevention of corrosion including consulting services of a water treating technician during initial start-up.

**END OF SECTION 232500**

# PISGAH FOREST ELEMENTARY HVAC PIPING IMPROVEMENTS

# TRANSYLVANIA COUNTY SCHOOLS

## TRANSYLVANIA COUNTY, NORTH CAROLINA



VICINITY MAP

### BIDDING DOCUMENTS



Digitally signed by Daniel L. Griffie  
Date: 2023.02.23 15:27:00-0500

FEBRUARY 2023



55 Broad Street  
Asheville, NC 28801  
828.252.0575  
NC Firm License # C-0459  
mcgillassociates.com

### SCHEDULE OF DRAWINGS

G-001	....	COVER SHEET
G-002	....	APPENDIX B 2018 BUILDING CODE SUMMARY
LS-101	....	WALL RATING SUMMARY
M-001	....	MECHANICAL LEGEND
MD-101	....	WEST WING PIPING PLAN - DEMOLITION
MD-102	....	CENTRAL AREA PIPING PLAN - DEMOLITION
MD-103	....	SOUTH WING PIPING PLAN - DEMOLITION
MD-104	....	EAST WING PIPING PLAN - DEMOLITION
MD-401	....	ENLARGED PIPING PLANS - DEMOLITION
M-101	....	WEST WING PIPING PLAN - NEW WORK
M-102	....	CENTRAL AREA PIPING PLAN - NEW WORK
M-103	....	SOUTH WING PIPING PLAN - NEW WORK
M-104	....	EAST WING PIPING PLAN - NEW WORK
M-301	....	CHILLED AND HOT WATER SYSTEM ISOMETRIC - NEW WORK
M-401	....	ENLARGED PIPING PLANS - NEW WORK
M-501	....	DETAILS
M-502	....	DETAILS
M-503	....	DETAILS
M-601	....	SCHEDULES
M-701	....	CONTROLS
E-001	....	ELECTRICAL, LEGEND, NOTES, SCHEDULES, AND ABBREVIATIONS
E-101	....	ELECTRICAL PLAN - WEST WING - NEW WORK
E-102	....	ELECTRICAL PLAN - CENTRAL AREA - NEW WORK
E-401	....	MAIN MECHANICAL AREA PLAN - ELECTRICAL PLANS
E-601	....	ELECTRICAL DETAILS AND NOTES
E-602	....	ELECTRICAL SCHEDULES AND DIAGRAMS

### HVAC LEGEND

#### GENERAL HVAC

- SPECIFIC OR NEW WORK NOTES
- REVISION NOTES
- DEMOLITION NOTES
- COLUMN LINE IDENTIFICATION
- EXISTING WORK TO REMAIN
- NEW WORK (OR EXISTING WORK TO BE REMOVED ON DEMOLITION PLAN)
- EC ELECTRICAL CONTRACTOR
- GC GENERAL CONTRACTOR
- MC MECHANICAL CONTRACTOR
- PC PLUMBING CONTRACTOR
- AFF ABOVE FINISH FLOOR
- BFF BELOW FINISHED FLOOR
- BOS BOTTOM OF STRUCTURE
- CL CENTER LINE
- EX EXISTING
- FLA FULL LOAD AMPS
- HSKP HOUSEKEEPING PAD
- OA OUTSIDE AIR
- UON UNLESS OTHERWISE NOTED

#### ELECTRICAL WORK FOR HVAC

- MOTOR
- DISCONNECT SWITCH, WITH CLEARANCE, FUSIBLE OR NON-FUSIBLE AND NUMBER OF POLES AS INDICATED ON DRAWINGS.
- MOTOR STARTER, NEMA SIZE AS NOTED
- COMBINATION MOTOR STARTER, NEMA SIZE AS NOTED
- EMERGENCY STOP SWITCH

#### GENERAL PIPE & FITTING SYMBOLS

- BLIND FLANGE
- DIRECTION OF FLOW
- PIPE CAP
- PIPE TURNING DOWN
- PIPE TURNING UP
- TEE WITH BRANCH OFF TOP OF MAIN
- TEE WITH BRANCH OFF BOTTOM OF MAIN

#### VALVES

- BALL VALVE
- BUTTERFLY VALVE
- CHECK VALVE, SWING (SCV)
- DRAIN VALVE (HOSE END)
- TRIPLE DUTY VALVE (TDV)
- VALVE IN VERTICAL PIPE (NOTED AS TO TYPE)

#### PIPING SPECIALTIES

- STRAINER WITHOUT BLOWDOWN VALVE
- Y PATTERN STRAINER WITH BLOWDOWN VALVE
- UNION
- COMPANION FLANGE

#### METERS, GAUGES AND THERMOMETERS

- THERMOMETER
- PRESSURE GAUGE AND BALL VALVE

#### HYDRONIC PIPE AND SPECIALTIES

- AUTOMATIC AIR VENT (AAV)
- PRESSURE REDUCING VALVE (PRV)
- SAFETY OR RELIEF VALVE
- COOLING COIL DRAIN (CONDENSATE)
- DRAIN LINE
- CHEMICAL FEED
- CHILLED WATER SUPPLY
- CHILLED WATER RETURN
- HOT WATER SUPPLY
- HOT WATER RETURN
- EXPANSION TANK LINE

#### HYDRONIC PUMPS

- IN-LINE PUMP

#### HVAC INSTRUMENTATION & CONTROLS

- TEMPERATURE SENSOR
- FLOW MEASURING SENSOR
- AUTOMATIC CONTROL VALVE - 2 WAY
- AUTOMATIC CONTROL VALVE - 3 WAY

#### HVAC EQUIPMENT

- AHU AIR HANDLING UNIT
- AS AIR SEPARATOR
- B BOILER
- BT BUFFER TANK
- CH CHILLER
- CP CONDENSATE PUMP
- ET EXPANSION TANK
- F FAN
- P PUMP
- RF RETURN FAN
- UH UNIT HEATER

### RATED WALL LEGEND

- 1 HR WALL
- 2 HR WALL
- 4 HR WALL
- NON RATED PARTITION TO STRUCTURE

### SEISMIC NOTE

NOTHING ADDED UNDER THIS PROJECT WOULD REQUIRE SEISMIC RESTRAINT.

### GENERAL NOTES - SCOPE OF WORK

- THE EXISTING 2 PIPE HYDRONIC SYSTEM IS TO BE REPLACED WITH A 4 PIPE HYDRONIC SYSTEM. SYSTEM WILL OPERATE AS A 2 PIPE SYSTEM PENDING FUTURE AHU REPLACEMENT PROJECT. EITHER THE CHILLED WATER SYSTEM OR HOT WATER SYSTEM WILL OPERATE BUT NOT BOTH SIMULTANEOUSLY.
- NO HYDRONIC PIPING IS TO BE REUSED EXCEPT AS SPECIFICALLY NOTED.
- NO HYDRONIC PIPING OR EQUIPMENT IS TO BE ABANDONED IN PLACE EXCEPT WHERE SPECIFICALLY NOTED.
- NO CONTROL VALVES ON THE HYDRONIC SYSTEM ARE TO BE REUSED.
- NO HYDRONIC PUMPS WILL BE REUSED.
- NO AIR SEPARATORS OR EXPANSION TANKS WILL BE REUSED.
- EXISTING BOILERS WILL BE REUSED.
- EXISTING CHILLER WILL BE REUSED.
- EXISTING AHU'S WILL BE REUSED.
- EXISTING FCU'S WILL BE REUSED.
- EXISTING UH'S WILL BE REUSED.
- EXISTING 2 PIPE HYDRONIC SYSTEM IS TO REMAIN IN SERVICE UNTIL 4 NEW PIPE SYSTEM IS COMPLETE AND READY FOR SWITCHOVER. SYSTEM OUTAGES AS REQUIRED FOR SWITCHOVER WILL BE COORDINATED WITH THE SCHOOL CALENDAR. IF THEY OCCUR DURING THE SCHOOL YEAR THEY WILL OCCUR EVENINGS, WEEKENDS AND SCHOOL HOLIDAYS.
- ALL EXISTING AND NEW PIPE IS RUN ABOVE EXISTING LAYIN CEILINGS EXCEPT WHERE SPECIFICALLY NOTED. CEILINGS SHALL BE REMOVED, PROTECTED AND REINSTALLED AS REQUIRED FOR THE WORK. WHERE EXISTING PIPE IS NOTED TO RUN ABOVE EXISTING HARD CEILINGS IT MAY BE ABANDONED IN PLACE AND CAPPED ON BOTH ENDS.

#### ACCESS TO SITE

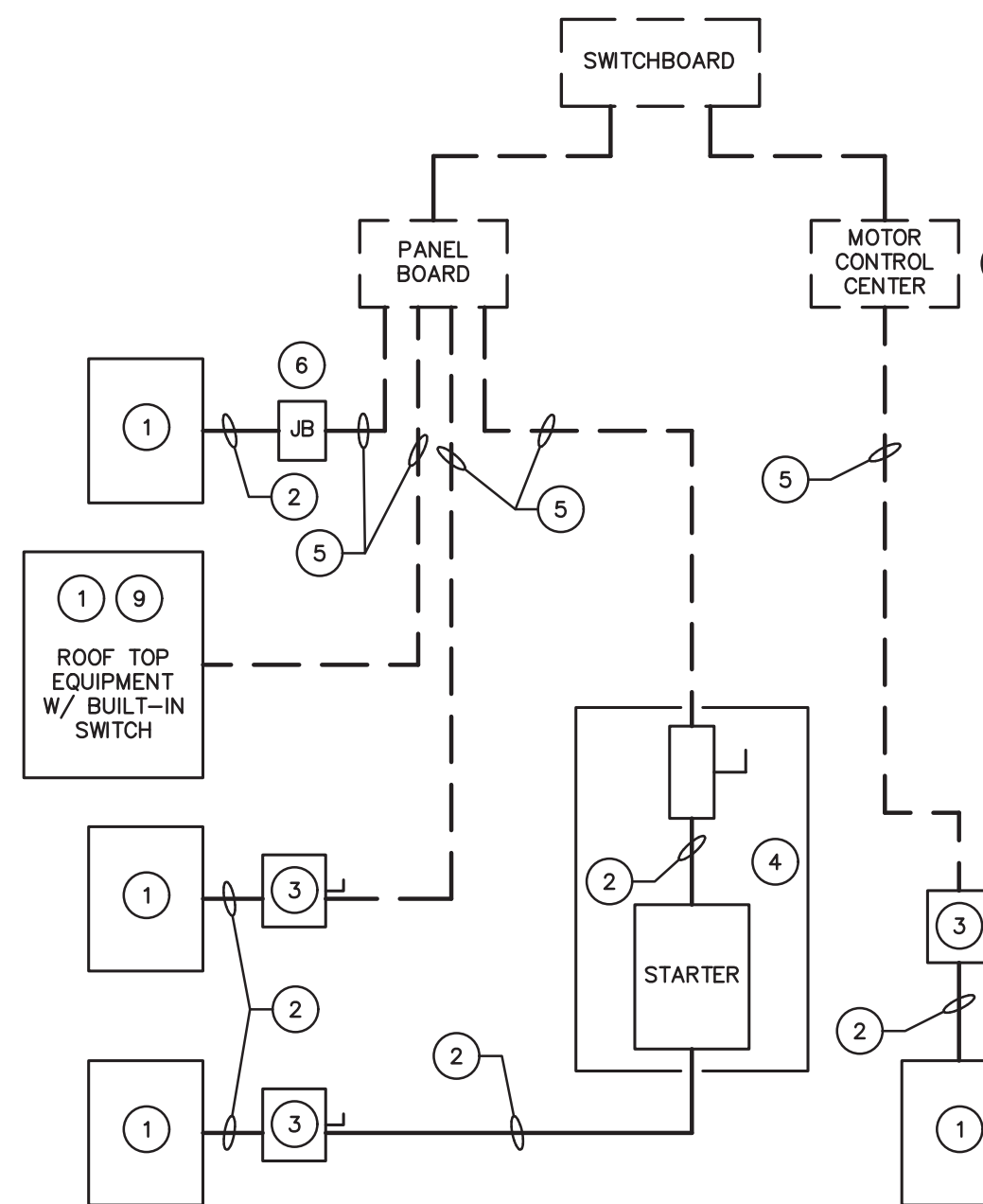
- THE PROJECT SITE IS AN EXISTING SCHOOL.
- THE SITE WILL BE PRIMARILY AVAILABLE FOR CONTRACT WORK DURING THE SUMMER BREAK AND OTHER SCHOOL BREAKS. THERE MAY BE LIMITED OCCUPANCY BY ADMINISTRATIVE AND OTHER PERSONNEL DURING THAT TIME.
- DURING THE SCHOOL YEAR (1) CLASSROOM (OR OTHER AREA) AT A TIME WILL BE MADE AVAILABLE FOR CONTRACTOR'S USE. ACTIVITY THAT WOULD UNREASONABLY INTERFERE WITH THE OPERATIONS OF THE SCHOOL WILL NOT BE PERMITTED DURING THE SCHOOL DAY.
- CURRENT SCHOOL CALENDAR IS AVAILABLE AT THE TRANSYLVANIA COUNTY SCHOOLS WEBSITE. CALENDAR IS SUBJECT TO REVISION DUE TO WEATHER AND OTHER CAUSES.
- ALL SYSTEM SHUTDOWNS THAT IMPACT AREAS OUTSIDE OF THE CONTRACTOR'S WORK AREA WILL BE COORDINATED IN ADVANCE WITH THE SCHOOL AND SHALL BE MINIMIZED.

### HVAC GENERAL NOTES

- THE FOLLOWING NOTES ARE GENERAL IN NATURE AND PERTAIN TO THE ENTIRE PROJECT. WHERE THERE ARE EXCEPTIONS, ADDITIONS OR REVISIONS TO THESE NOTES SUCH ARE SO NOTED ON THE PARTICULAR DRAWING WHERE THEY OCCUR. REFER TO SPECIFICATION SECTION 230000 FOR GENERAL REQUIREMENTS OF ALL HVAC WORK.
- THE DRAWINGS SHALL BE WORKED IN CONJUNCTION WITH THE PROJECT MANUAL, THE PROJECT MANUAL FORMS A PART OF THE CONTRACT DOCUMENTS AND CONTAINS ADDITIONAL INFORMATION REQUIRED TO CONSTRUCT THE WORK OF THIS CONTRACT.
- ALL REFERENCES TO SPECIFIC CONTRACTORS AND/OR SUBCONTRACTORS ARE SOLELY FOR THE CONTRACTOR'S CONVENIENCE AS TO THE GENERAL INTENT OF THE DIVISION OF WORK ACCORDING TO OFFICE AND COMMON CONSTRUCTION PRACTICE. IT IS AT THE PRIME CONTRACTOR'S DISCRETION TO APPOINT THE WORK AND BE SOLELY RESPONSIBLE FOR ITS COMPLETE AND ACCURATE EXECUTION.
- PRIOR TO COMMENCING ANY WORK THE CONTRACTOR SHALL COORDINATE ALL WORK WITH THE WORK OF OTHER TRADES. CONFLICTS ARISING FROM FAILURE TO DO SO SHALL BE RECTIFIED BY THE CONTRACTORS AT NO ADDITIONAL COST.
- THE DRAWINGS ARE DIAGRAMMATIC AND SHOULD NOT BE SCALED FOR EXACT WORK. IT IS THE INTENT OF THE CONTRACT DOCUMENTS TO ESTABLISH OVERALL SCOPE, MATERIALS AND QUALITY LEVEL FOR COMPLETE AND OPERATIONAL HVAC SYSTEMS. THEREFORE, THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS REQUIRED FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL CLOSELY EXAMINE ALL CONTRACT DOCUMENTS OF ALL TRADES TO UNDERSTAND WORK REQUIRED AND TO AVOID INTERFERENCE WITH EXISTING AND NEW WORK SUCH AS DUCTS, PIPING, LIGHTING FIXTURES, STRUCTURAL BEAMS, ETC. THESE DRAWINGS ARE BASED ON DOCUMENTS MADE AVAILABLE BY THE CLIENT, THE CONTRACTOR SHALL FIELD VERIFY ALL LAYOUTS AND MAKE NECESSARY ADJUSTMENTS AT NO ADDITIONAL COST.
- THE HVAC CONTRACTOR SHALL PROVIDE ALL TOOLS, MATERIALS, EQUIPMENT AND NECESSARY FACILITIES, AND PERFORM ALL LABOR AND SERVICES OF EVERY DESCRIPTION AS MAY BE NECESSARY TO COMPLETE THE SCOPE OF WORK DEFINED IN THE DOCUMENTS.
- PERFORM ALL WORK IN STRICT ACCORDANCE WITH OSHA, ALL APPLICABLE STATE AND LOCAL CODES, AND THE GENERAL AND SUPPLEMENTARY CONDITIONS OF THE CONTRACT. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOGNIZED INDUSTRY STANDARDS.
- UNLESS ITEMS OF MATERIAL, EQUIPMENT OR WORK ARE SPECIFICALLY NOTED TO BE PROVIDED OR FURNISHED BY OTHERS, THEY SHALL BE PROVIDED UNDER THIS CONTRACT.
- PROTECT ALL EQUIPMENT AND MATERIALS FROM DAMAGE THAT ARE STORED OR SET IN PLACE ON THE JOBSITE.
- INSTALL ALL EQUIPMENT AND DEVICES REQUIRING ACCESS IN A MANNER TO BE READILY ACCESSIBLE. EQUIPMENT SHALL BE INSTALLED SO IT IS ACCESSIBLE FOR MAINTENANCE AND REPLACEMENT WITHOUT REMOVAL OF RELATIVELY FIXED BUILDING ELEMENTS OR OTHER EQUIPMENT. PRIOR TO INSTALLATION OF SUCH ITEMS, THE HVAC CONTRACTOR SHALL VERIFY SERVICE CLEARANCE REQUIREMENTS AND REPORT ANY INADEQUACIES TO THE ARCHITECT/ENGINEER.
- PRIOR TO BID, THE CONTRACTOR SHALL EXAMINE ALL PROJECT SPECIFICATIONS, DRAWINGS, AND SHALL PERFORM A THOROUGH SITE VISIT TO DEVELOP A COMPLETE UNDERSTANDING OF THE PROJECT SCOPE INCLUDING EXISTING CONDITIONS. FAILURE TO DO SO SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO PERFORM ALL WORK REQUIRED. THE CONTRACTOR SHALL, UPON REVIEW OF THE DOCUMENTS AND PRIOR TO INSTALLATION OF ANY WORK, ADVISE THE ENGINEER OF ANY DISCREPANCIES WHICH WILL AFFECT THE WORK REQUIRED. ANY EQUIPMENT, TRIM, HARDWARE AND/OR DEVICES CUSTOMARILY USED IN THIS TYPE AND CLASS OF WORK NECESSARY FOR THE SATISFACTORY COMPLETION OF THE WORK (AS DETERMINED BY THE ARCHITECT/ENGINEER) SHALL BE FURNISHED AND INSTALLED BY THE HVAC CONTRACTOR AS PART OF HIS TOTAL WORK WHETHER OR NOT SPECIFICALLY MENTIONED OR SHOWN IN THE DOCUMENTS.
- WORK INDICATED AS HAVING MINOR DETAILS OBVIOUSLY OMITTED FOR CLARITY SHALL BE INCLUDED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- THE HVAC CONTRACTOR SHALL VERIFY ALL ELECTRICAL CHARACTERISTICS OF HVAC EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO ORDERING.
- CONTRACTOR SHALL MAINTAIN ON SITE, AN EXTRA SET OF DRAWINGS AND SPECIFICATIONS FOR THE PURPOSE OF RECORDING CHANGES AND VARIATIONS DAILY, AS WELL AS ADDITIONAL INFORMATION SPECIFIED, AS INDICATED IN SPECIFICATION SECTION 230000. RECORD DRAWINGS SHALL IDENTIFY LOCATION OF MAJOR CONTROL LINES, ACCESS DOORS, TAGGED VALVES, SYSTEMS CONCEALED IN WALLS AND CEILINGS. ALL ITEMS TO BE CONCEALED SHALL BE IDENTIFIED WITH FIELD MEASURED LOCATING DIMENSIONS, AND INSPECTED BY OWNER PRIOR TO COMPLETING ENCLOSURE.
- THE HVAC CONTRACTOR SHALL PROVIDE ALL MECHANICAL IDENTIFICATION PER THE SPECIFICATIONS.
- SEAL SMOKE-TIGHT ALL DUCT AND PIPE PENETRATIONS THROUGH SMOKE RATED WALLS AND ALL FLOORS.
- THE HVAC CONTRACTOR SHALL PROVIDE ALL MISCELLANEOUS STEEL SHAPES, HANGER RODS, STRAPS, ETC. REQUIRED FOR ALL HVAC SYSTEM INSTALLATIONS. ALL MECHANICAL SUPPORTS SHALL BE IN FULL COMPLIANCE WITH THE SEISMIC PROVISIONS OF THE CODE.
- ALL EQUIPMENT INSTALLED ON FLOOR OR FINISHED GRADE SHALL BE MOUNTED ON A SITE POURED CONCRETE HOUSEKEEPING PAD. PAD SHALL BE 4" THICK AND EXTEND PAST EQUIPMENT EDGES BY 4". REINFORCE PAD WITH 6,6,10,10 WIRE MESH AND DOWEL INTO FLOOR SLAB WITH 5/8" REBAR SPACED MAXIMUM OF 2 FOOT ON CENTER. NO PAD SHALL HAVE FEWER THAN 4 DOWELS.
- CHILLED WATER PIPING SHALL BE BLACK STEEL SCHEDULE 40, ASTM A53.
- CHILLED WATER PIPE FITTINGS SHALL BE FORGED STEEL WELDING TYPE, ASTM A234.
- BUTTERFLY VALVES SHALL BE BUBBLE TIGHT AT 150 PSI AND 200 F. CONSTRUCTION SHALL BE DUCTILE IRON BODY, EPDM SEAT, DUCTILE IRON OR ALUMINUM BRONZE DISC, 304 OR 316 SS STEM. PROVIDE 9" LEVER HANDLE WITH INFINITELY ADJUSTABLE THROTTLING PLATE WITH LOCK NUT AND MEMORY STOP. VALVES IN INSULATED PIPING SHALL HAVE EXTENDED NECK.
- CHILLED WATER PIPING SHALL BE INSULATED WITH 2" THICKNESS RIGID CLOSED CELL POLYISOCYANURATE PIPE INSULATION, K VALUE 0.19 BTU-IN/HR-FT<sup>2</sup>-F. ASTM C-591. INSULATE FITTINGS WITH MOLDED SECTIONS SPECIFICALLY MADE FOR THAT PURPOSE OR MITERED SECTIONS WITH NOT LESS THAN 5 SECTIONS PER 90 DEGREE BEND. COVER ALL INSULATION WITH 0.16 INCH EMBOSSED ALUMINUM JACKET. FITTING JACKET SHALL BE DIE SHAPED FITTING COVERS WITH FACTORY ATTACHED PROTECTIVE LINER. BANDS SHALL BE 0.15 INCH THICK ALUMINUM. LOCATE ALL LONGITUDINAL SEAMS AT BOTTOM OF PIPE.
- ALL WORK, INCLUDING JOINT CONNECTIONS AND TESTING SHALL BE IN ACCORDANCE WITH 2018 NC MECHANICAL CODE.
- HEAT TRACE ALL EXTERIOR PIPING WITH 4 W/ FT. SELF REGULATING HEAT TAPE. DO NOT ATTACH HEAT TAPE TO PIPE AND DO NOT COIL HEAT TAPE AROUND PIPE. INTENT IS TO ALLOW OWNER TO REPLACE HEAT TAPE WITHOUT REMOVING INSULATION.
- PROVIDE MANUAL AIR VENTS WITH BALL VALVE AND HOSE CONNECTION AT ALL HIGH POINTS OF PIPING.
- ALL WALL & FLOOR PENETRATIONS ARE TO BE SEALED FOR THEIR FIRE RESISTANCE RATING WHICH INCLUDES EXISTING PLUMBING WORK AS REQUIRED - SEE DETAIL 3/M-502.

#### NOTES:

- EQUIPMENT OF TRADES OTHER THAN ELECTRICAL.
- CONDUIT AND WIRING BY HVAC, PLUMBING CONTRACTOR OR OTHER TRADES.
- IF AN ADDITIONAL DISCONNECT IS REQUIRED BY NEC, IT SHALL BE PROVIDED AND INSTALLED BY THE EQUIPMENT CONTRACTOR.
- A COMBINATION STARTER OR VFD MAY BE USED IN LIEU OF A SEPARATE DISCONNECT SWITCH AND STARTER. LOCATE ADJACENT TO EQUIPMENT.
- FEEDEE CIRCUIT WIRING AND CONDUIT IN ELECTRICAL WORK. SEE PANEL BOARD SCHEDULES FOR WIRE AND BREAKER SIZES.
- WIRING TROUGH OR JUNCTION BOX (EQUIPMENT ROOMS, EQUIPMENT AREAS, ETC.) MAY BE SHOWN ON ELECTRICAL PLANS FOR SOME EQUIPMENT. IF NO STARTER OR DISCONNECT IS SUPPLIED, A WIRING TROUGH OR JUNCTION BOX SHALL BE INSTALLED ADJACENT TO EQUIPMENT. THE ELECTRICAL CONTRACTOR SHALL PROVIDE LINE SIDE WIRING TO THE WIRING TROUGH OR JUNCTION BOX. LOAD SIDE WIRING WILL BE PROVIDED BY MECHANICAL CONTRACTOR OR OTHER TRADES.
- PROJECTS UTILIZING AN MCC, THE STARTER CB OR VFD IN THE MCC ARE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- IN ALL CASES THE EQUIPMENT CONTRACTOR SHALL MAKE FINAL CONNECTIONS, START UP AND TEST EQUIPMENT.
- IF THE ROOF TOP EQUIPMENT IS NOT PROVIDED WITH BUILT-IN SWITCH, THE ELECTRICAL CONTRACTOR SHALL PROVIDE A DISCONNECT SWITCH.
- IN A SINGLE PRIME CONTRACT, IT IS THE RESPONSIBILITY OF THE PRIME CONTRACTOR TO COORDINATE BETWEEN THE ELECTRICAL AND OTHER TRADES.



MECH/ELEC DIVISION OF WORK  
NOT TO SCALE

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Asheville, NC 28801  
828.252.0575  
NC Firm License # C-0459  
mcgillassociates.com



SIGNED AND DATED:  
Digitally signed by  
**Daniel L. Griffie**  
Date: 2023.02.23  
15:38:09 -05'00'

THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED IN ACCORDANCE WITH THE STANDARD CERTIFICATION REQUIREMENTS FOUND IN NC ADMINISTRATIVE CODE 21-56.103(E). THIS DIGITAL SIGNATURE HAS BEEN FOUND BY THE NC BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS TO MEET THESE STANDARDS. PLEASE CONTACT THE SIGNER IF YOU NEED ASSISTANCE IN VALIDATING THE SIGNATURE.

NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	APPENDUM NO. 1

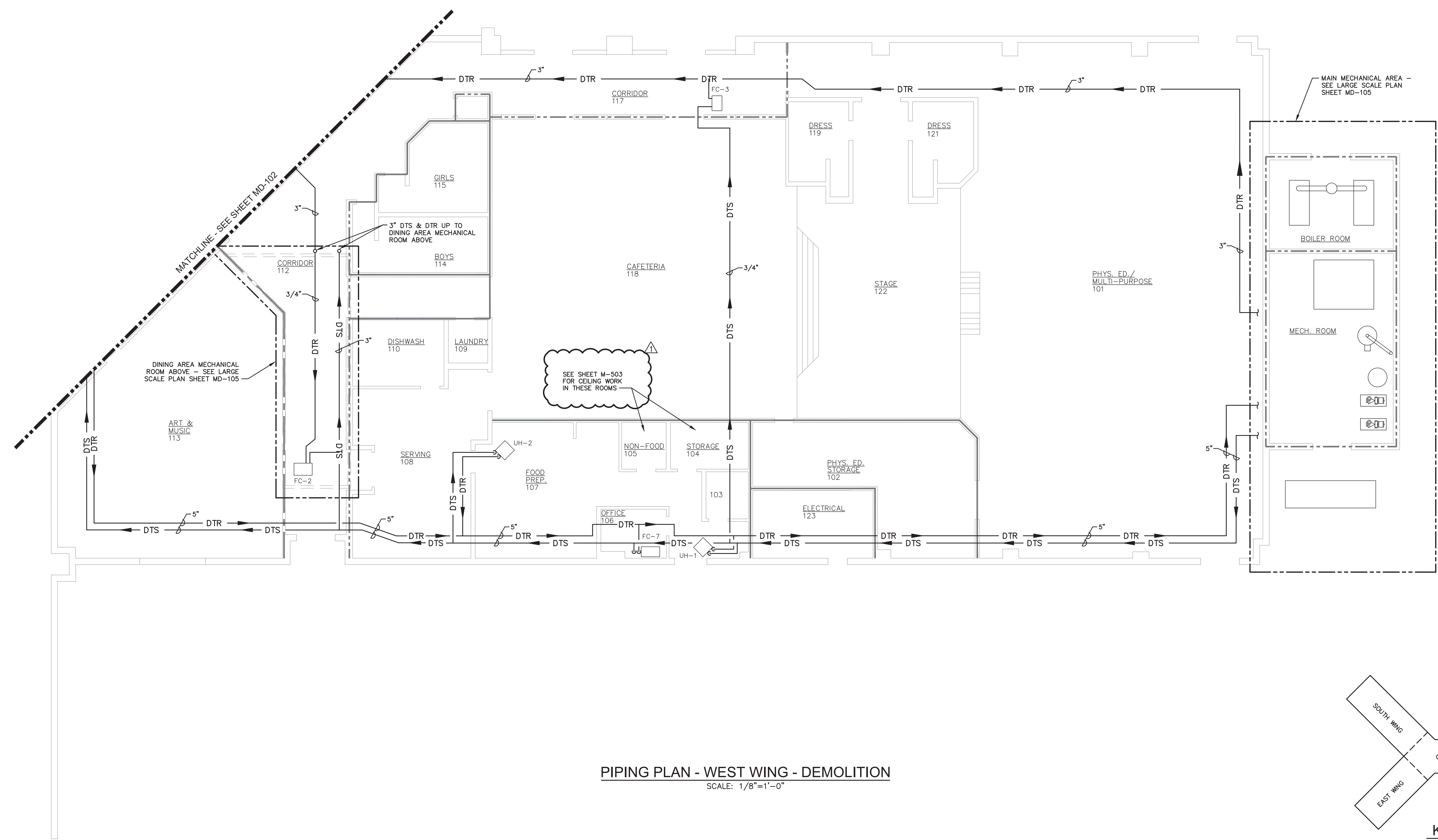
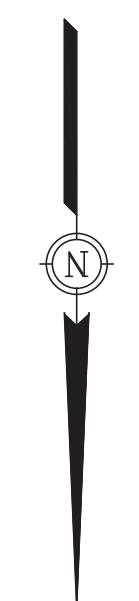
PISGAH FOREST ELEMENTARY  
HVAC PIPING IMPROVEMENTS

**TRANSYLVANIA COUNTY SCHOOLS**  
TRANSYLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER <b>M. CATHEY</b>	DESIGNER <b>D. GRIFFEE</b>
PROJECT MANAGER <b>D. GRIFFEE</b>	REVIEWER <b>B. WIGGINS</b>

DATE <b>FEBRUARY 2023</b>	PROJECT # <b>22.00607</b>	FUNDING # <b>N/A</b>
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SHEET  
**M-001**



PIPING PLAN - WEST WING - DEMOLITION  
SCALE: 1/8"=1'-0"

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Date: 2023.02.23 15:39:01 -05'00'

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NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	ADDENDUM NO. 1

PISGAH FOREST ELEMENTARY  
HVAC PIPING IMPROVEMENTS

**TRANSYLVANIA COUNTY SCHOOLS**  
TRANSYLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER M. CATHEY	DESIGNER D. GRIFFEE
PROJECT MANAGER D. GRIFFEE	REVIEWER B. WIGGINS

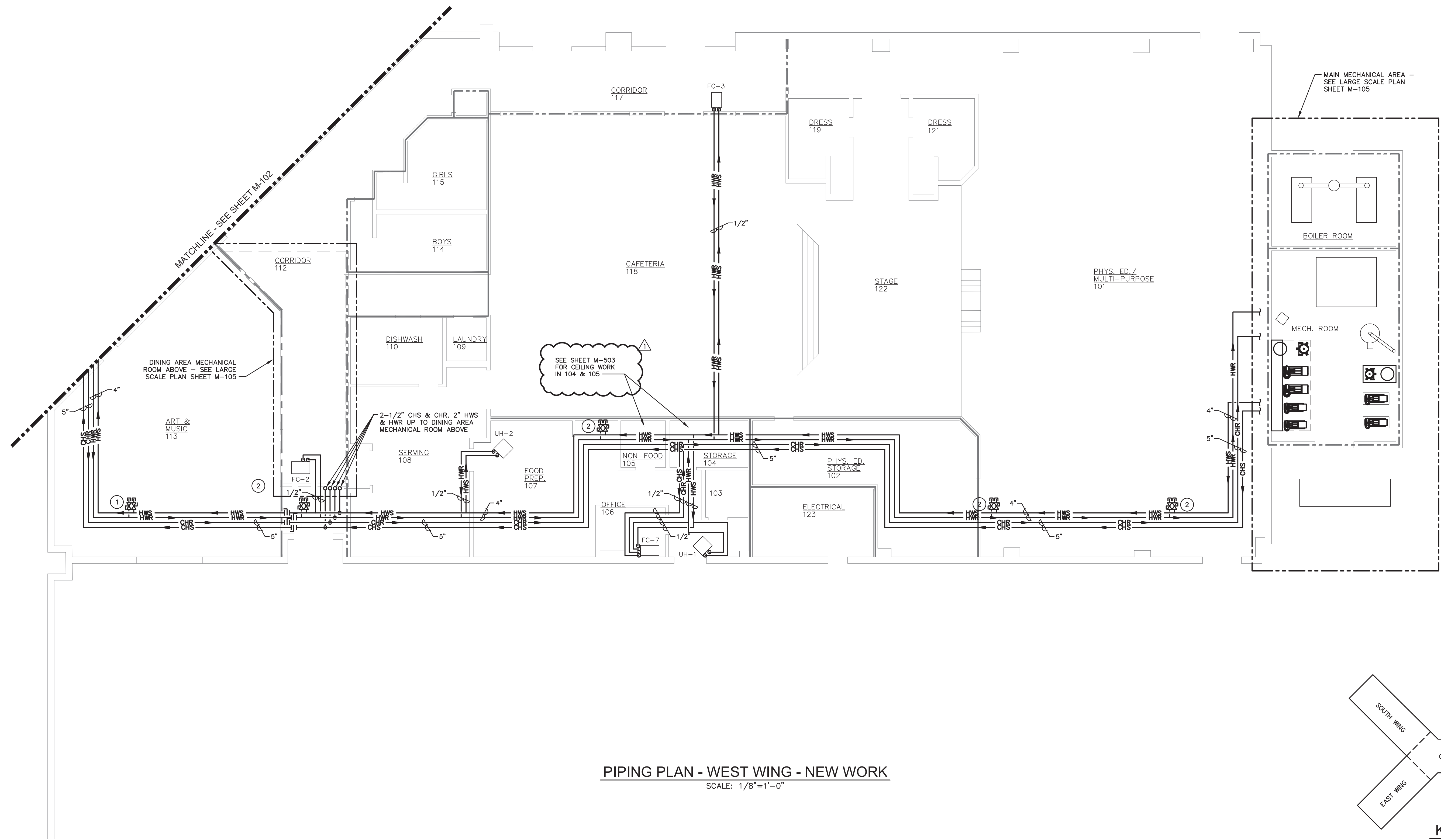
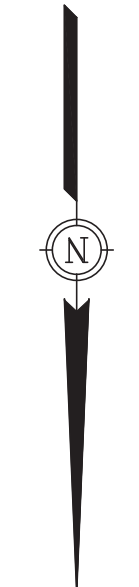
PIPING PLAN - WEST WING - DEMOLITION

DATE FEBRUARY 2023	PROJECT # 22.00607	FUNDING # N/A
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SHEET  
**MD-101**

**DRAWING NOTES:**

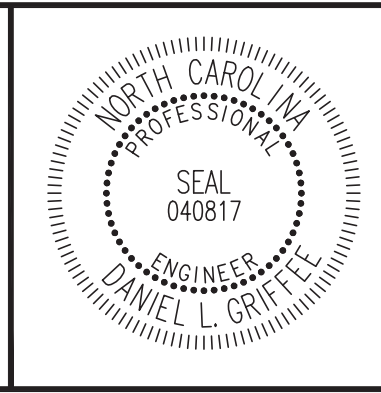
- ① 1" BRANCH WITH VALVE AND CAP, LEAVE VALVE OPEN.
- ② 1-1/2" BRANCH WITH VALVE AND CAP, LEAVE VALVE OPEN.



**PIPING PLAN - WEST WING - NEW WORK**  
SCALE: 1/8"=1'-0"

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15:40:03 -0500

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NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	ADDENDUM NO. 1

PISGAH FOREST ELEMENTARY  
HVAC PIPING IMPROVEMENTS

**TRANSYLVANIA COUNTY SCHOOLS**  
TRANSYLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER: M. CATHEY  
DESIGNER: D. GRIFFEE  
PROJECT MANAGER: D. GRIFFEE  
REVIEWER: B. WIGGINS

DATE: FEBRUARY 2023	PROJECT #: 22.00607	FUNDING #: N/A
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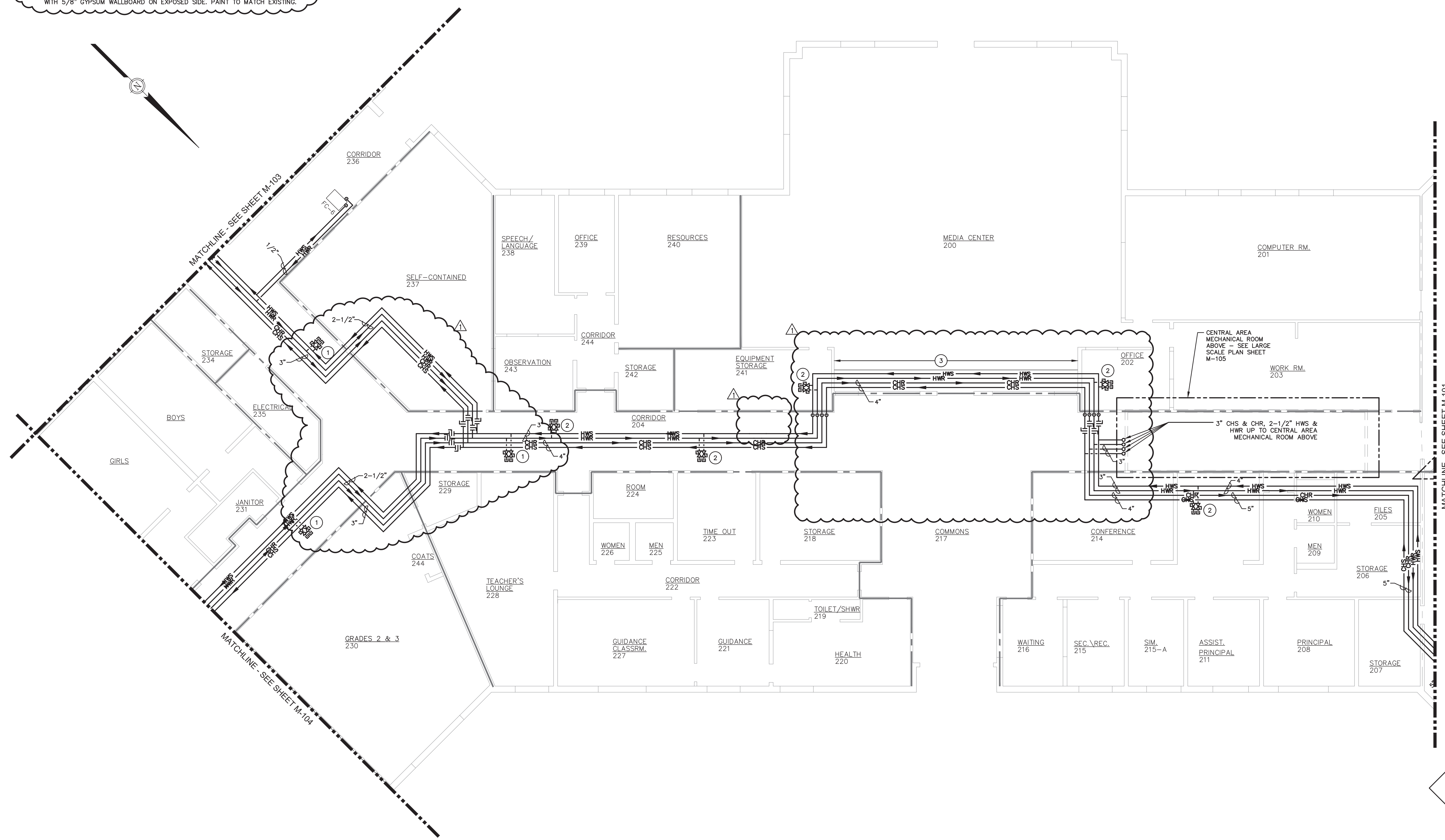
SHEET  
**M-101**

P:\2022\22.00607-TRANSYLVANIA COUNTY SCHOOLS-PISGAH FOREST HVAC PIPING IMPROVEMENTS\MECHANICAL\22.00607 M-101 - M104 FLOOR PLANS NEW WORK.DWG PLOT DATE 2/23/2023 9:05 AM SONIA ROBERTS

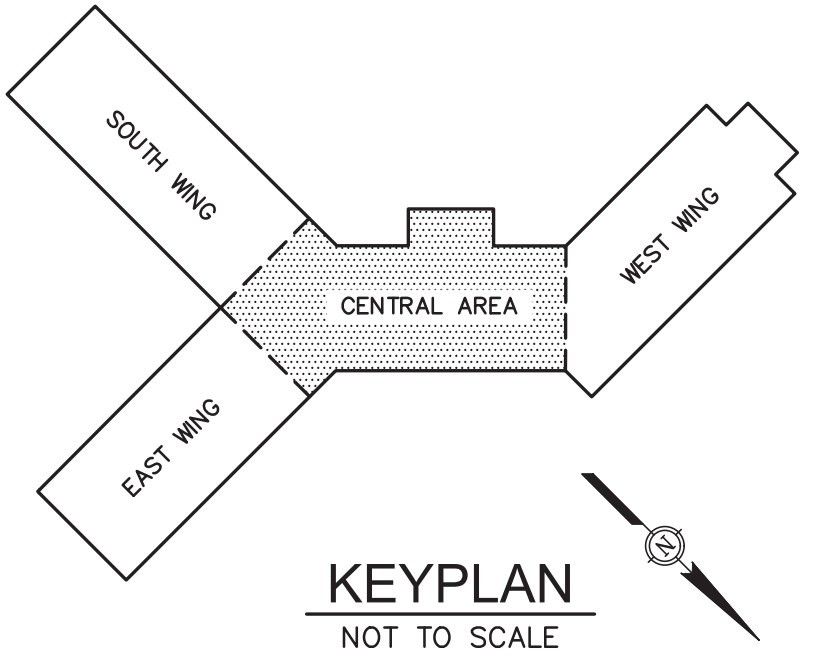
22.00607 TRANSYLVANIA COUNTY SCHOOLS - PISGAH FOREST ELEMENTARY HVAC PIPING IMPROVEMENTS

**DRAWING NOTES:**

- 1 3/4" BRANCH WITH VALVE AND CAP, LEAVE VALVE OPEN.
- 2 1-1/2" BRANCH WITH VALVE AND CAP, LEAVE VALVE OPEN.
- 3 INSTALL THIS PIPE BELOW EXISTING CEILING AND CONCEAL PIPE IN NEW SOFFIT. SOFFIT CONSTRUCTION SHALL BE 20 GAGE, 3 5/8" INCH METAL STUDS ON 16" CL WITH 5/8" GYPSUM WALLBOARD ON EXPOSED SIDE. PAINT TO MATCH EXISTING.



**PIPING PLAN - CENTRAL AREA - NEW WORK**  
SCALE: 1/8"=1'-0"



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NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	ADDENDUM NO. 1

PISGAH FOREST ELEMENTARY  
HVAC PIPING IMPROVEMENTS

**TRANSYLVANIA COUNTY SCHOOLS**  
TRANSYLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER M. CATHEY	DESIGNER D. GRIFFIE
PROJECT MANAGER D. GRIFFIE	REVIEWER B. WIGGINS

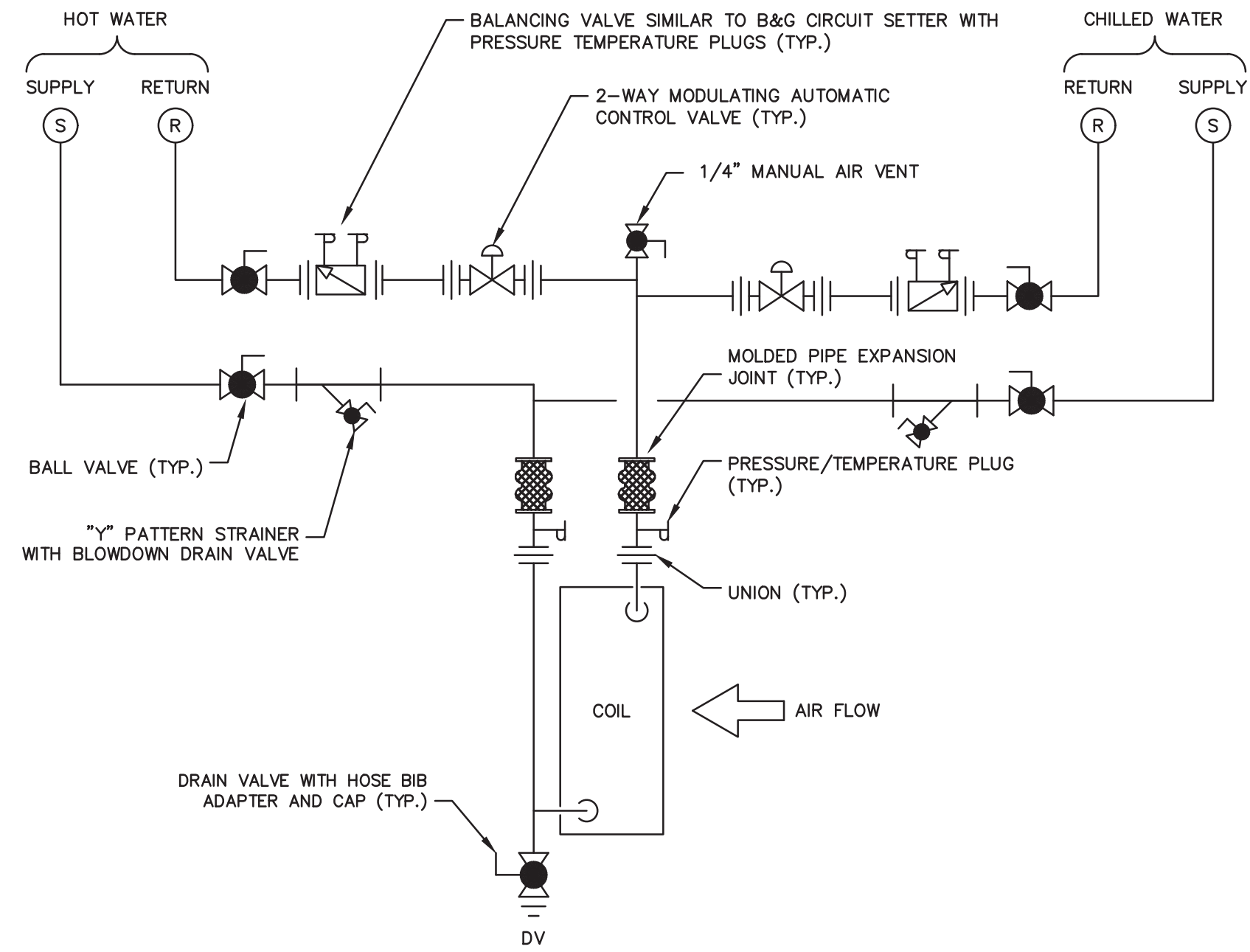
DATE FEBRUARY 2023	PROJECT # 22.00607	FUNDING # N/A
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SHEET  
**M-102**

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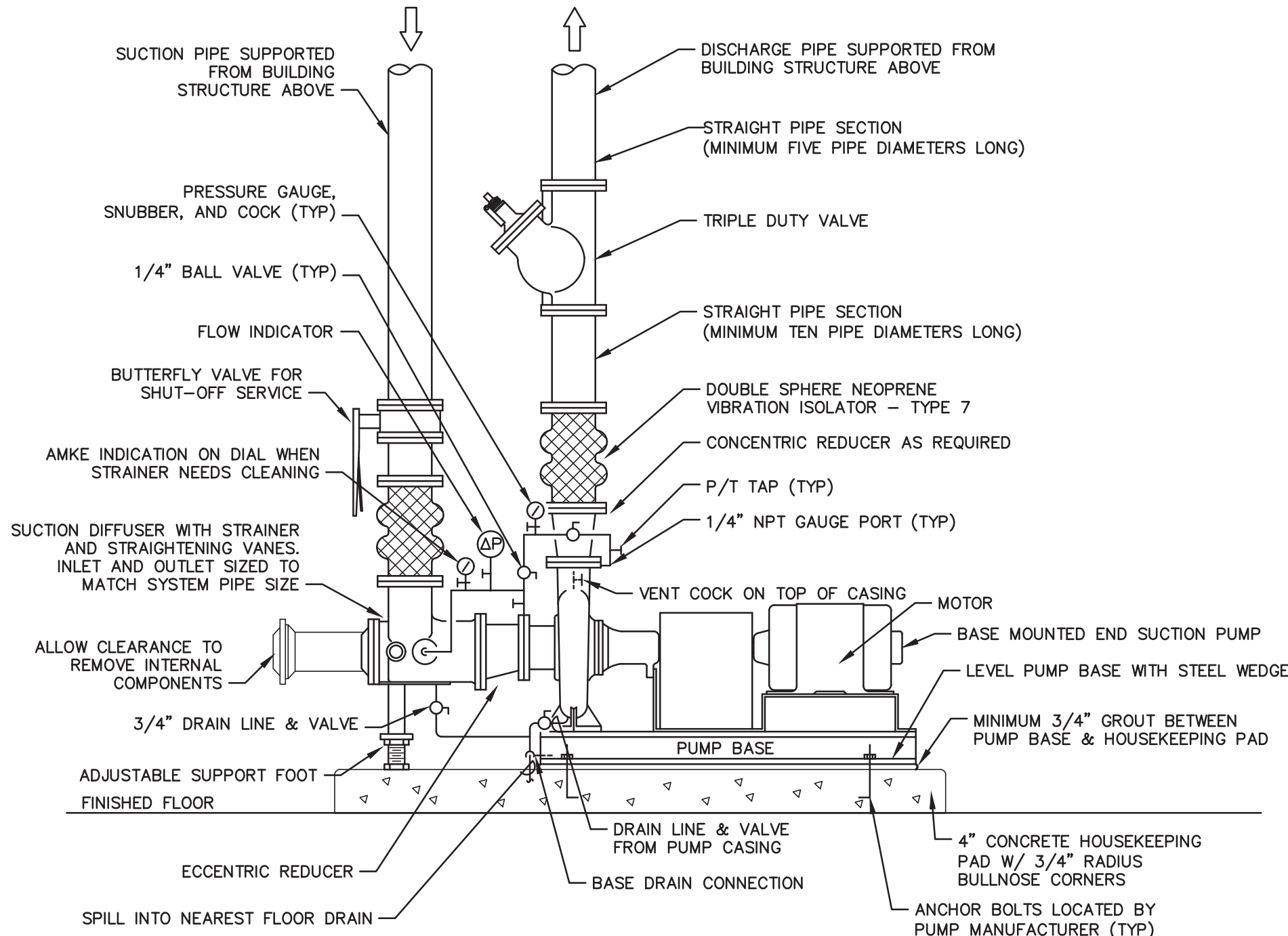
22.00607 TRANSYLVANIA COUNTY SCHOOLS-PISGAH FOREST ELEMENTARY HVAC PIPING IMPROVEMENTS



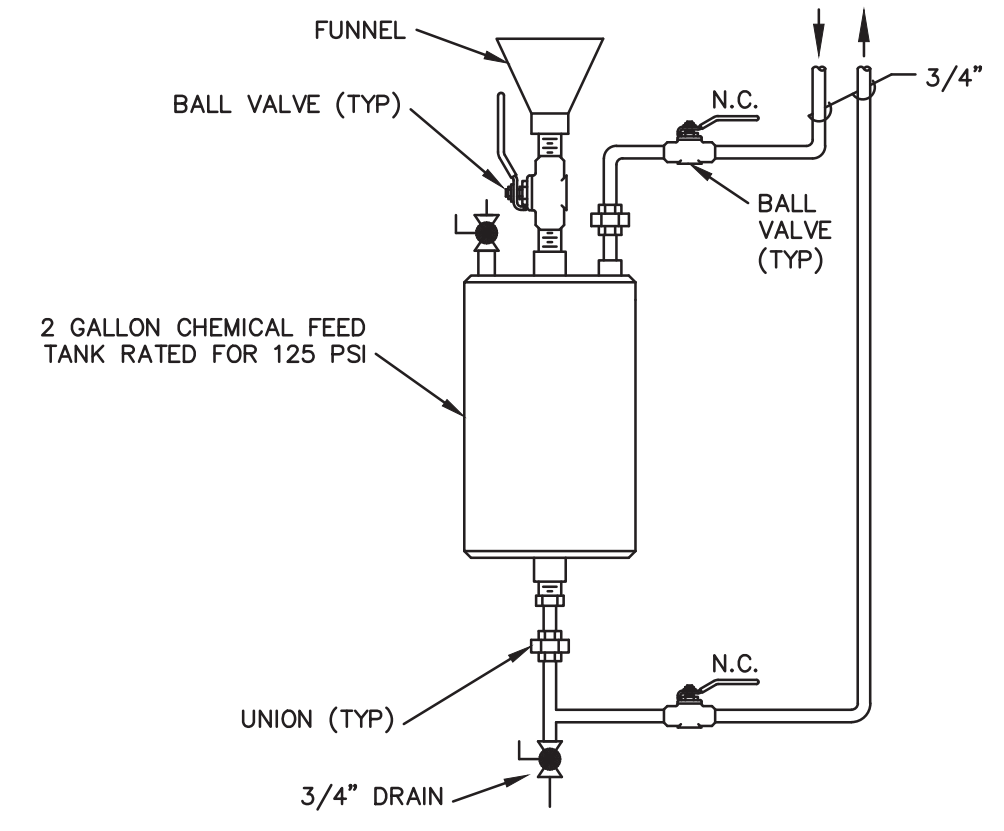


- NOTES:
1. ALL SUPPLY AND RETURN PIPE AND TRIM (EXCEPT CONTROL VALVE) TO BE FULL SIZE FROM MAIN TO FINAL UNION CONNECTIONS AT COIL. (SEE PLANS FOR PIPE SIZES)
  2. MAKE CONNECTIONS TO OBTAIN COUNTER FLOW AND TO ALLOW COIL REMOVAL WITHOUT DISASSEMBLING PIPE.
  3. SEAL ALL PIPE PENETRATIONS TO CABINET AIR TIGHT.
  4. LOCATE ALL VALVES, STRAINERS, UNIONS AND FLANGES SO THEY ARE ACCESSIBLE.

**1 WATER COIL, 2-WAY VALVE, 2" AND SMALLER DETAIL**  
 (M-501) SCALE: NONE  
 FOR ALL COILS OTHER THAN AHU-1

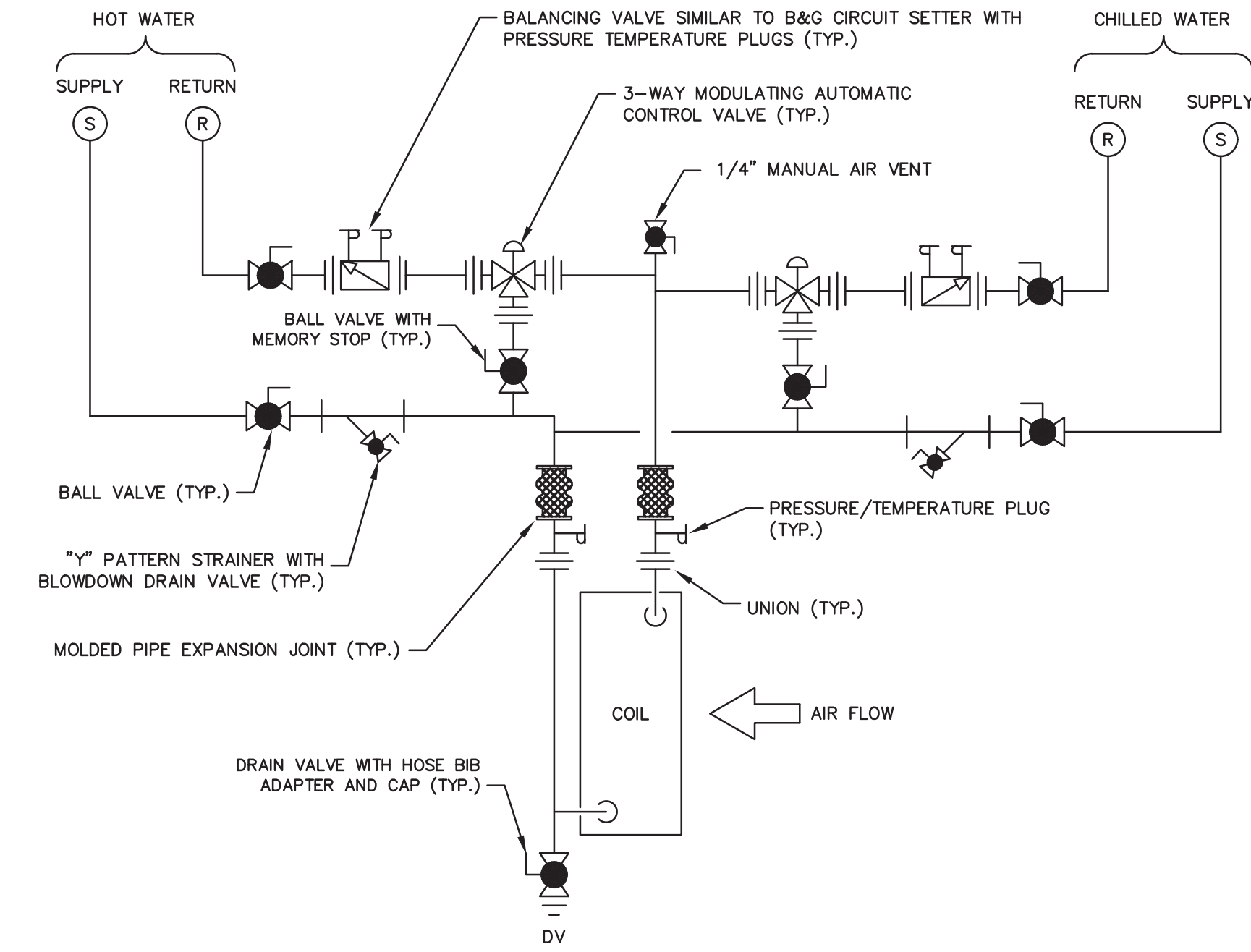


**3 END SUCTION PUMP DETAIL (SLAB ON GRADE)**  
 (M-501) SCALE: NONE



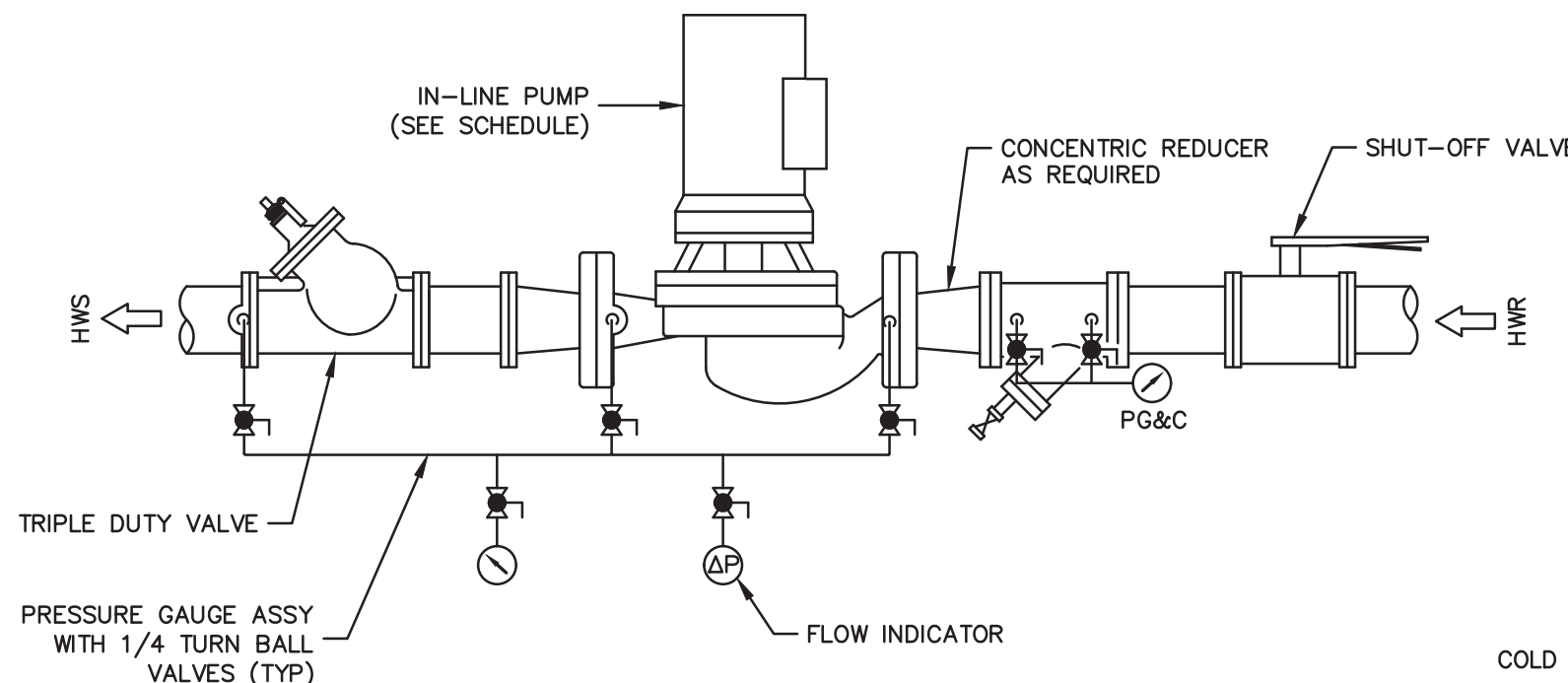
- NOTE:
1. EXTERIOR SHALL BE PAINTED WITH CORROSION RESISTANT PAINT.
  2. ALL BALL VALVES SHALL BE FULL PORT.
  3. PROVIDE CHEMICAL FEEDER WITH LEGS.

**6 CHEMICAL BYPASS POT FEEDER DETAIL**  
 (M-501) SCALE: NONE

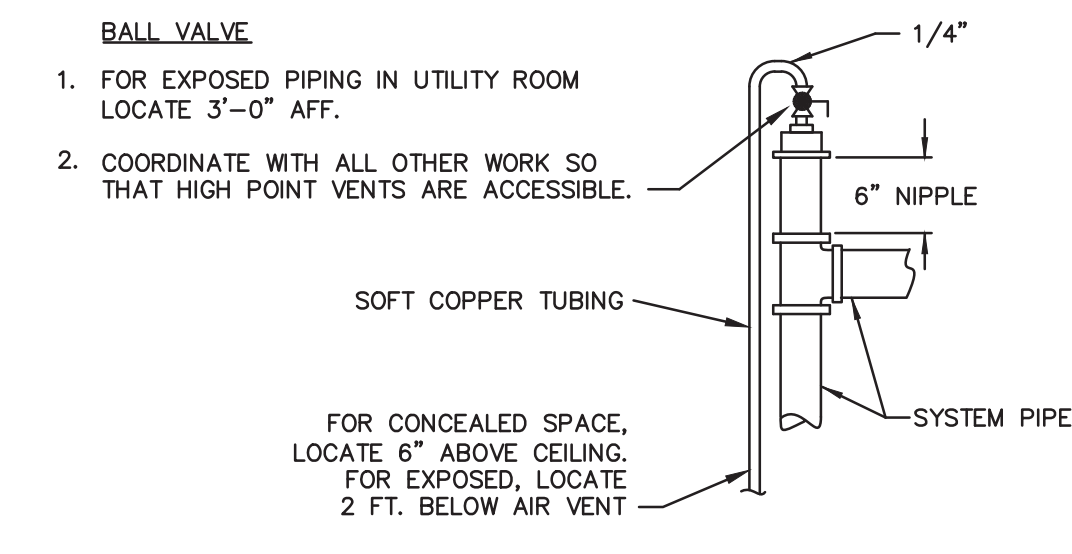


- NOTES:
1. ALL SUPPLY AND RETURN PIPE AND TRIM (EXCEPT CONTROL VALVE) TO BE FULL SIZE FROM MAIN TO FINAL UNION CONNECTIONS AT COIL. (SEE PLANS FOR PIPE SIZES)
  2. MAKE CONNECTIONS TO OBTAIN COUNTER FLOW AND TO ALLOW COIL REMOVAL WITHOUT DISASSEMBLING PIPE.
  3. SEAL ALL PIPE PENETRATIONS TO CABINET AIR TIGHT.
  4. LOCATE ALL VALVES, STRAINERS, UNIONS AND FLANGES SO THEY ARE ACCESSIBLE.

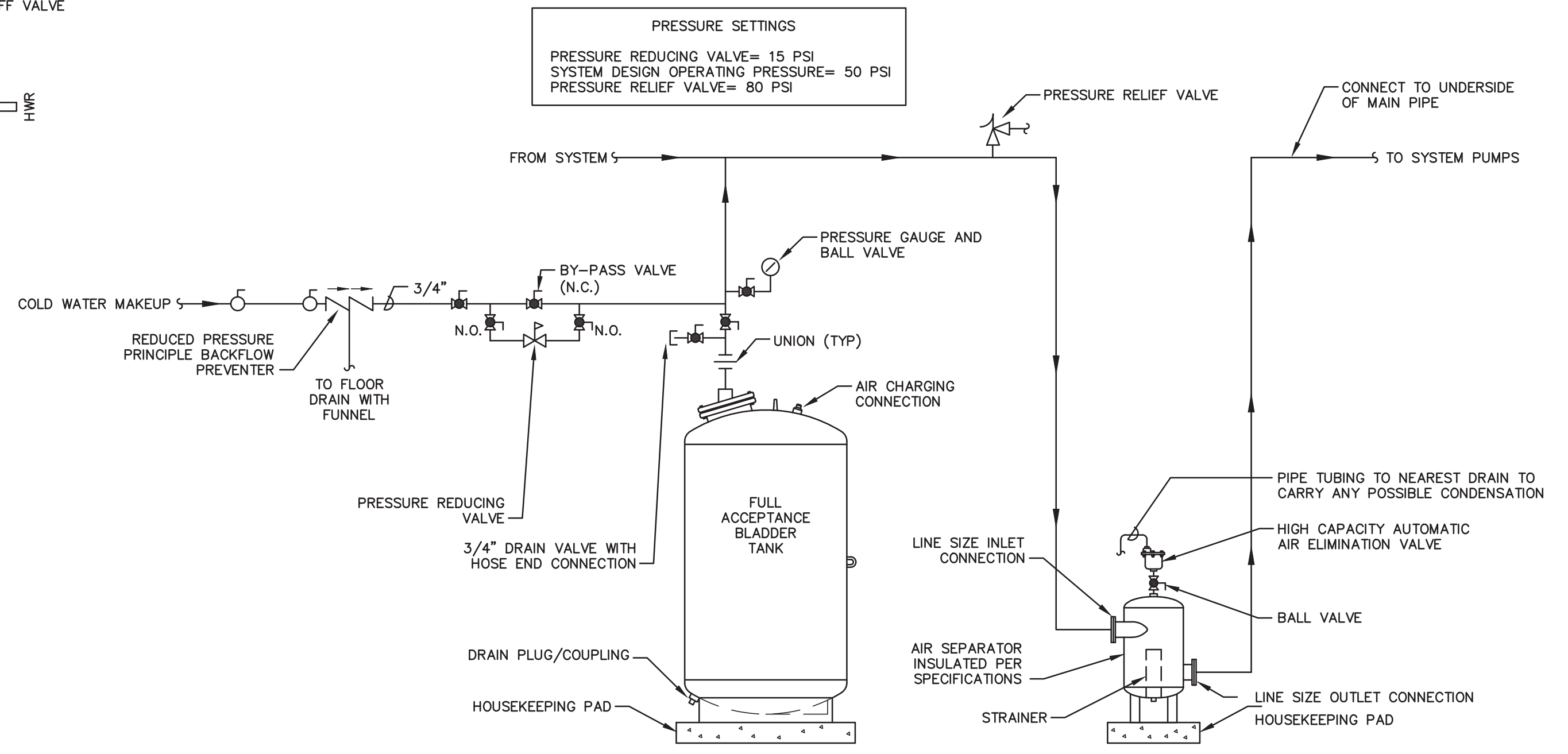
**2 WATER COIL, 3-WAY VALVE, 2" AND SMALLER DETAIL**  
 (M-501) SCALE: NONE  
 FOR AHU-1



**4 IN-LINE PUMP DETAIL**  
 (M-501) SCALE: NONE



**5 MANUAL AIR VENT DETAIL**  
 (M-501) SCALE: NONE



- NOTE:
1. REFER TO MANUFACTURER DETAILS FOR FINAL EQUIPMENT CONNECTIONS.
  2. WHERE SURGE TANK IS SHOWN IN PLACE OF AIR SEPARATOR, SUBSTITUTE FLOOR MOUNTED SURGE TANK FOR AIR SEPARATOR.

**7 EXPANSION TANK, AIR SEPARATOR, AND MAKE-UP WATER DETAIL**  
 (M-501) SCALE: NONE

P:202202.00607-TRANSPYLVANIACOUNTYSCHOOLS-PISGAHFORESTELEMENTARYHVACPIPINGIMPROVEMENTS

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 Digitally signed by Daniel L. Griffie  
 Date: 2023.02.23 15:42:41 -05'00'

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NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	ADDENDUM NO. 1

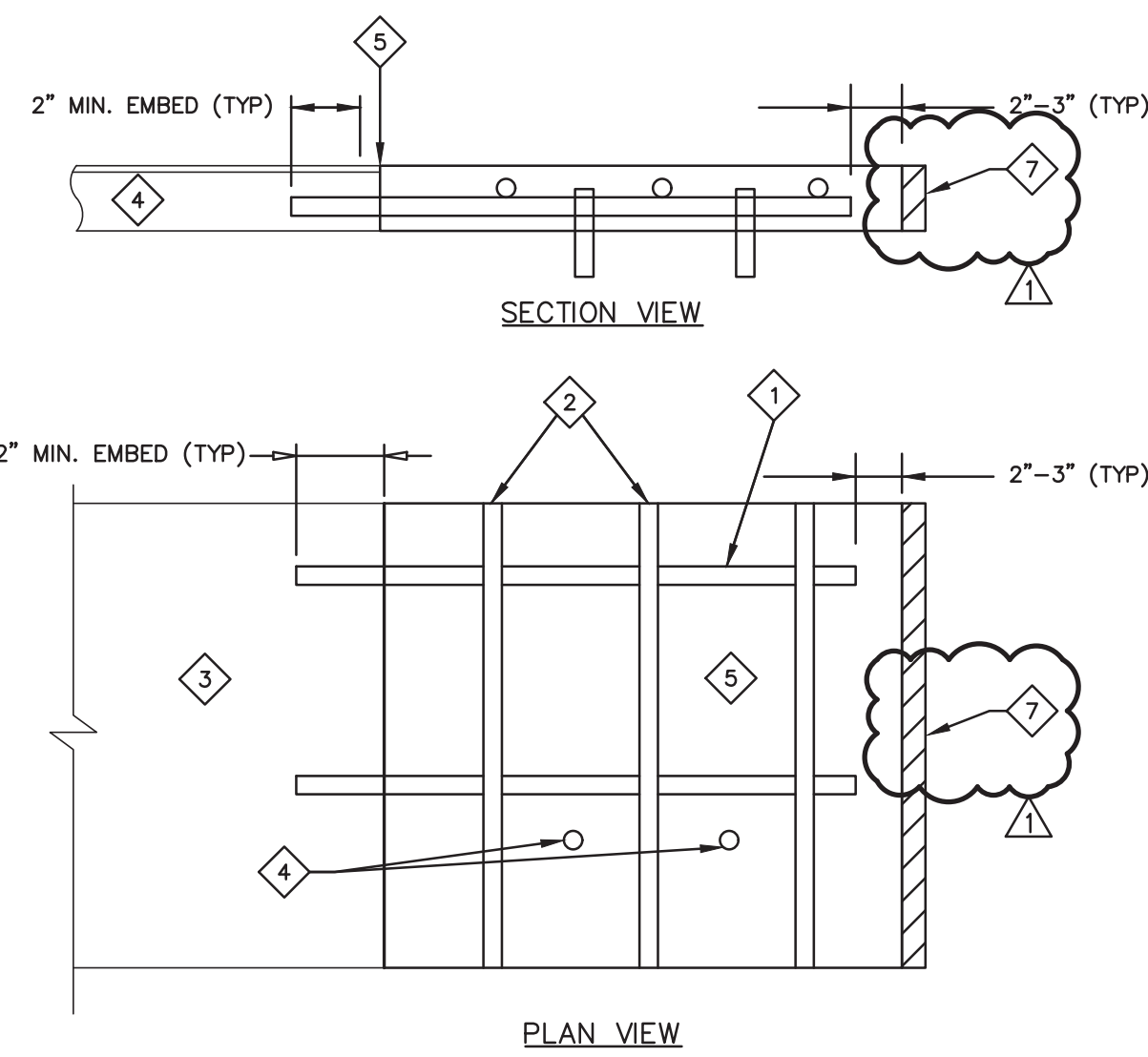
**PISGAH FOREST ELEMENTARY  
 HVAC PIPING IMPROVEMENTS**

**TRANSPYLVANIA COUNTY SCHOOLS**

TRANSPYLVANIA COUNTY, NORTH CAROLINA

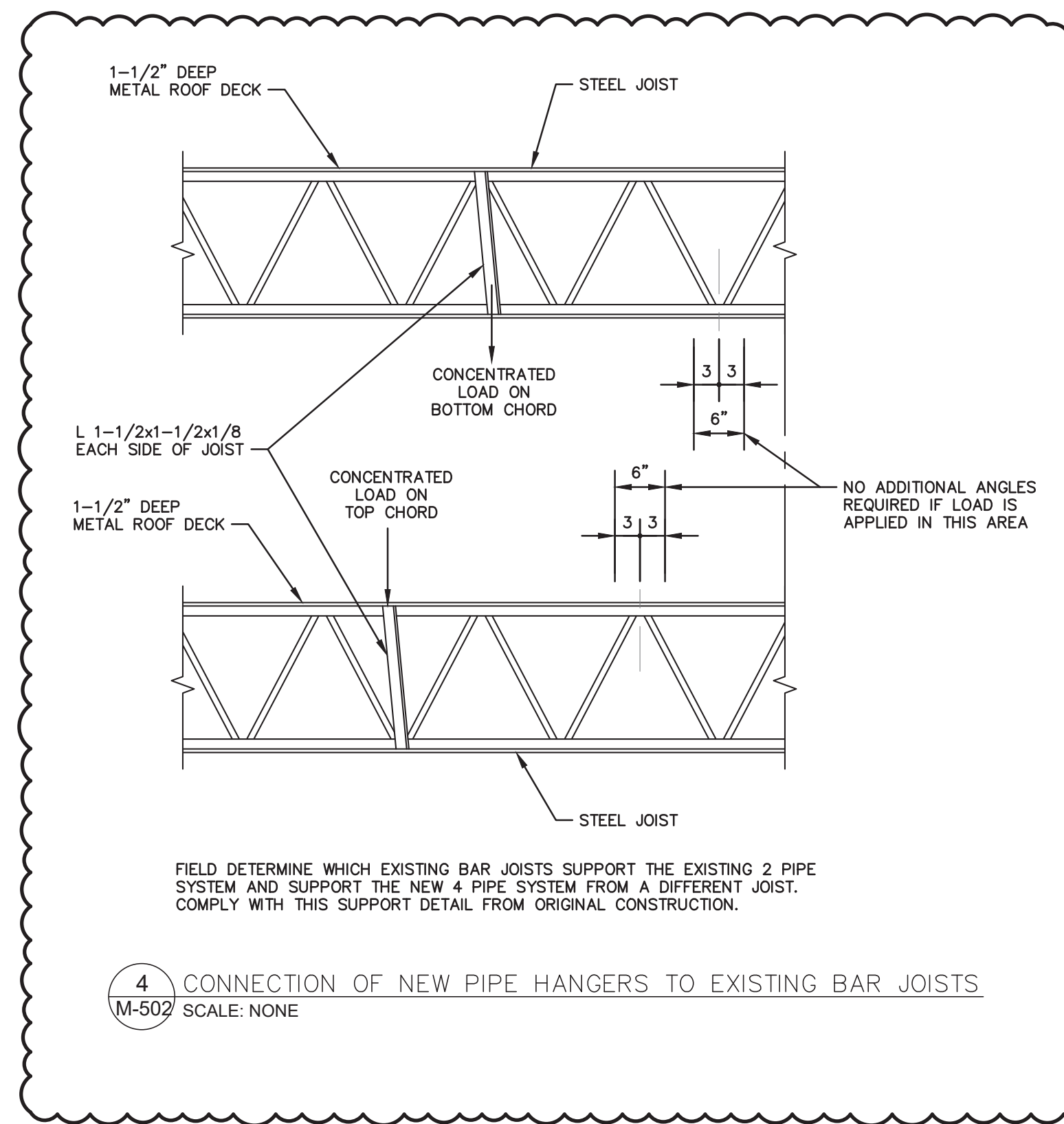
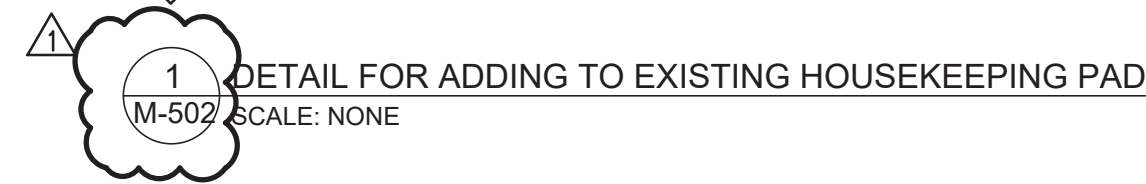
<b>NOT TO SCALE</b>		<b>DETAILS</b>	
OFFICE MANAGER M. CATHEY	DESIGNER D. GRIFFEE	DATE FEBRUARY 2023	PROJECT # 22.00607
PROJECT MANAGER D. GRIFFEE	REVIEWER B. WIGGINS	FUNDING # N/A	

SHEET  
**M-501**



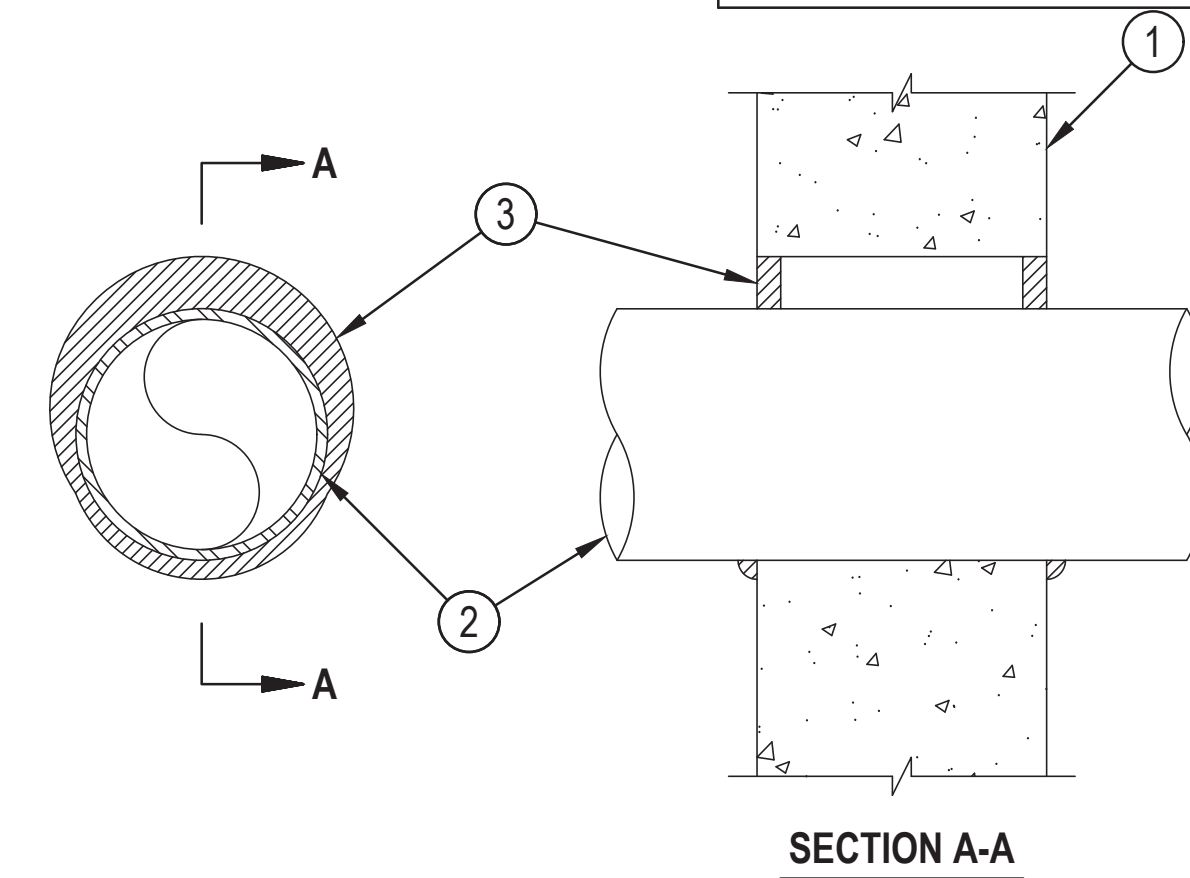
**DETAIL NOTES:**

- 1 1/2" REBAR EPOXIED INTO EXISTING PAD @ 24" MAX.  $\phi$  AT APPROXIMATE CENTERLINE OF SLAB.
- 2 1/2" REBAR MAX. 12"  $\phi$ , MINIMUM 1 REBAR. REBAR SHALL BE GRADE 40 (40,000 PSI MINIMUM YIELD STRENGTH).
- 3 EXISTING HOUSEKEEPING PAD TO REMAIN.
- 4 DOWEL INTO EXISTING CONCRETE PAD MIN. 4 PLACES WITH 1/2" REBAR WITH 2" EMBED IN EXISTING SLAB AND NEW PAD.
- 5 MATCH HEIGHT OF EXISTING PAD. PAD IS APPROX. 6" HIGH ON SIDE BEING ADDED TO. CLEAN FACE OF EXISTING PAD OF DIRT AND DEBRIS WHERE NEW PAD MEETS EXISTING PAD AND COAT WITH A CONCRETE BONDING AGENT PRIOR TO POURING NEW CONCRETE.
- 6 MINIMUM COMPRESSIVE STRENGTH OF NEW CONCRETE 3,000 PSI AT 28 DAYS.
- 7 EXPANSION JOINT BETWEEN PAD EXTENSION AND EXISTING WALL.



**System No. W-J-1067**

ANSI/UL1479 (ASTM E814)	CAN/ULC S115
F Rating — 1 and 2 Hr (See Items 1 and 3)	F Rating — 1 and 2 Hr (See Items 1 and 3)
T Rating — 0 Hr	FT Rating — 0 Hr
L Rating At Ambient — Less Than 1 CFM/sq ft	FH Rating — 1 and 2 Hr (See Items 1 and 3)
L Rating At 400 F — Less Than 1 CFM/sq ft	FTH Rating — 0 Hr
	L Rating At Ambient — Less Than 1 CFM/sq ft
	L Rating At 400 F — Less Than 1 CFM/sq ft



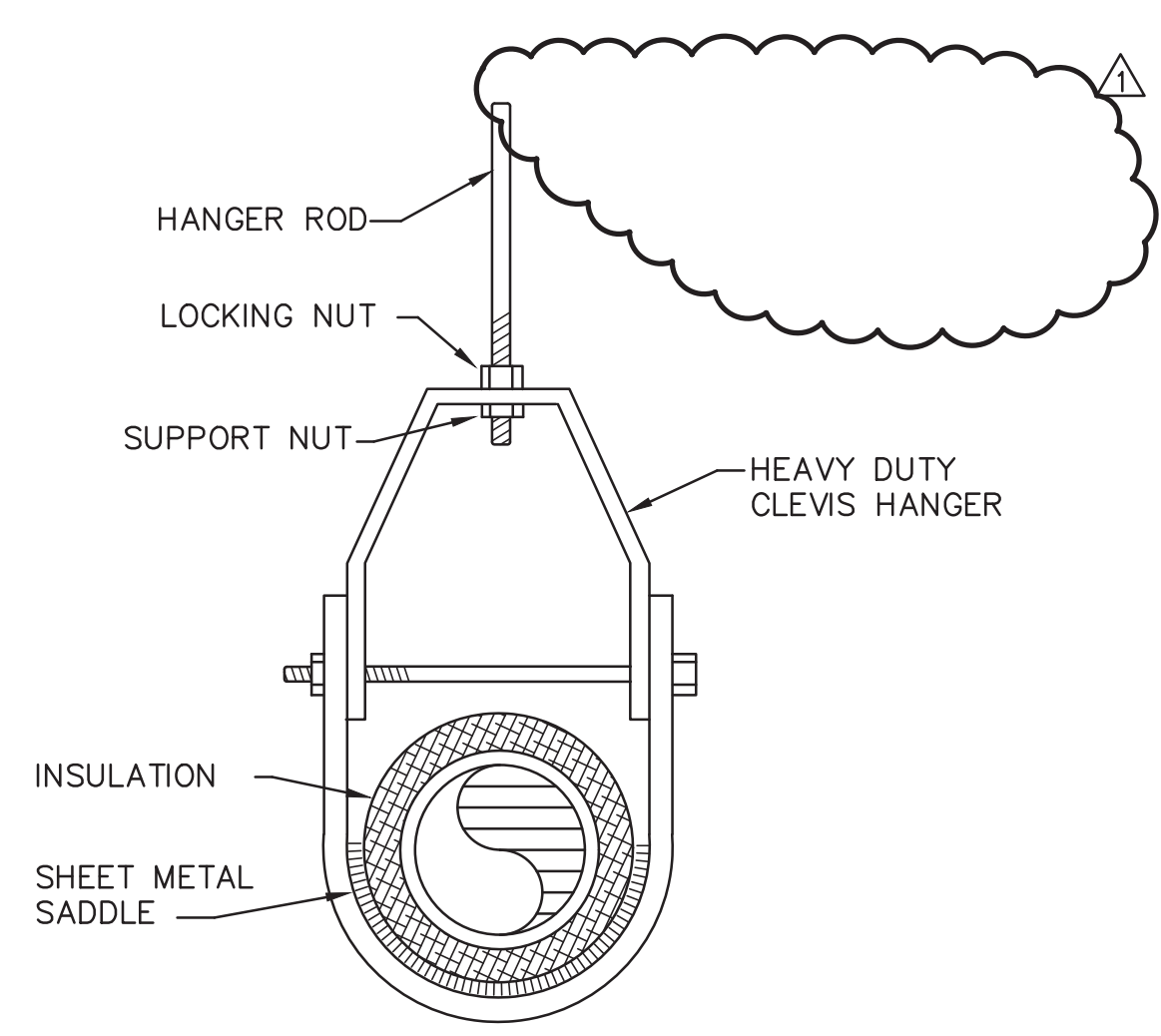
- Wall Assembly — Min 3-3/4 in. and 5 in. (95 and 127 mm) thick reinforced lightweight or normal weight (100-150 pcf or 1600-2400 kg/m<sup>3</sup>) concrete for 1 and 2 h rated assemblies, respectively. Wall may also be constructed of any UL Classified Concrete Blocks\*. Max diam of opening is 32-1/4 in. (819 mm).  
See Concrete Blocks (CAZT) category in the Fire Resistance Directory for names of manufacturers.
- Through—Penetrants — One metallic pipe, conduit or tubing to be centered within the firestop system. The annular space shall be min 0 in. to max 2-1/4 in. (57 mm). Pipe may be installed with continuous point contact. Pipe, conduit or tube may be installed at an angle not greater than 45 degrees from perpendicular. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
  - A. Steel Pipe — Nom 30 in. (762 mm) diam (or smaller) Schedule 10 (or heavier) steel pipe.
  - B. Iron Pipe — Nom 30 in. (762 mm) diam (or smaller) cast or ductile iron pipe.
  - C. Conduit — Nom 4 in. (102 mm) diam (or smaller) steel electrical metallic tubing or 6 in. (152 mm) diam (or smaller) steel conduit.
  - D. Copper Tubing — Nom 6 in. (152 mm) diam (or smaller) Type L (or heavier) copper tubing.
  - E. Copper Pipe — Nom 6 in. (152 mm) diam (or smaller) Regular (or heavier) copper pipe.
- Fill, Void or Cavity Material\* — Min 5/8 in. (16 mm) thickness of fill material applied within the annulus, flush with both surfaces of wall. At the point or continuous contact locations between pipe and wall, a min 1/2 in. (13 mm) diam bead of fill material shall be applied at the pipe-wall interface on both surfaces of wall.  
HILTI CONSTRUCTION CHEMICALS, DIV OF HILTI INC — FS-One Sealant or FS-ONE MAX Intumescent Sealant

\* Indicates such products shall bear the UL or cUL Certification Mark for jurisdictions employing the UL or cUL Certification (such as Canada), respectively.



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Underwriters Laboratories, Inc.  
January 21, 2015

ACCEPTABLE FIRE STOPPING  
MANUFACTURER SHALL BE ANY  
UL LISTED MANUFACTURER  
INCLUDING 3M, PROSET, AND HILTI



2  
M-502 SCALE: NONE

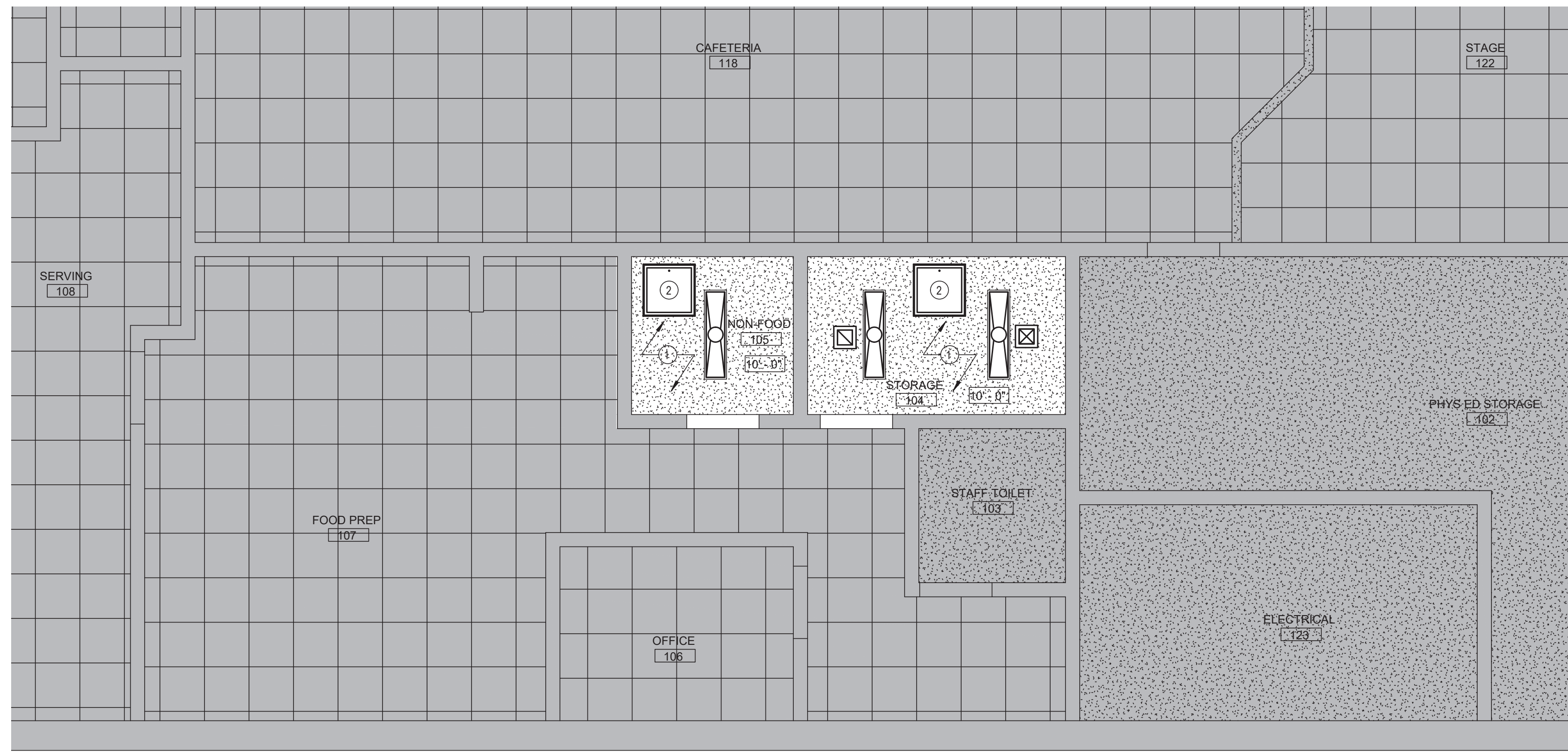
3  
M-502 SCALE: NONE

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<p>55 Broad Street Asheville, NC 28801 828.252.0575 NC Firm License # C-0459 mcgillassociates.com</p>		<p>SIGNED AND DATED: Digitally signed by Daniel L. Griffie Date: 2023.02.23 15:44:07 -0500'</p> <p>THIS DOCUMENT HAS BEEN DIGITALLY SIGNED AND SEALED IN ACCORDANCE WITH THE STANDARD CERTIFICATION REQUIREMENTS FOUND IN NC ADMINISTRATIVE CODE 21-56.1103(E). THIS DIGITAL SIGNATURE HAS BEEN FOUND BY THE NC BOARD OF EXAMINERS FOR ENGINEERS AND SURVEYORS TO MEET THESE STANDARDS. PLEASE CONTACT THE SIGNER IF YOU NEED ASSISTANCE IN VALIDATING THE SIGNATURE.</p>	<p>1 2/23/2023 DLG ADDENDUM NO. 1</p>		<p>8' 0' 4' 8' 16'</p> <p>GRAPHIC SCALE 1/8"=1'-0"</p>	<p>MECHANICAL DETAILS</p>		<p>SHEET M-502</p>
			<p>OFFICE MANAGER M. CATHEY</p> <p>DESIGNER D. GRIFFEE</p>			<p>PROJECT MANAGER D. GRIFFEE</p> <p>REVIEWER B. WIGGINS</p>		

PISGAH FOREST ELEMENTARY  
HVAC PIPING IMPROVEMENTS

**TRANSYLVANIA COUNTY SCHOOLS**  
TRANSYLVANIA COUNTY, NORTH CAROLINA



**2 REFLECTED CEILING PLAN - NEW WORK**  
 M-503 SCALE: 1/4"=1'-0"

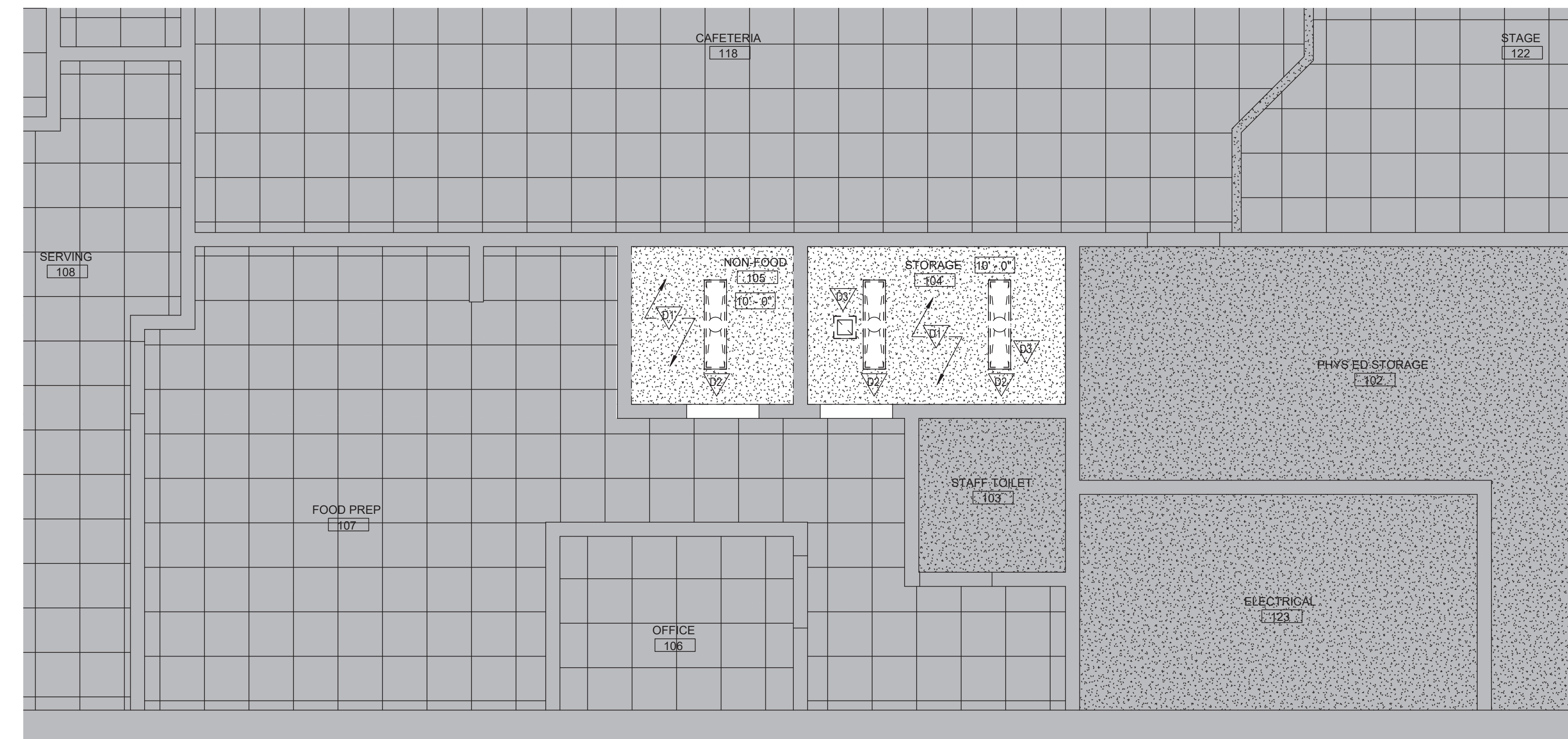
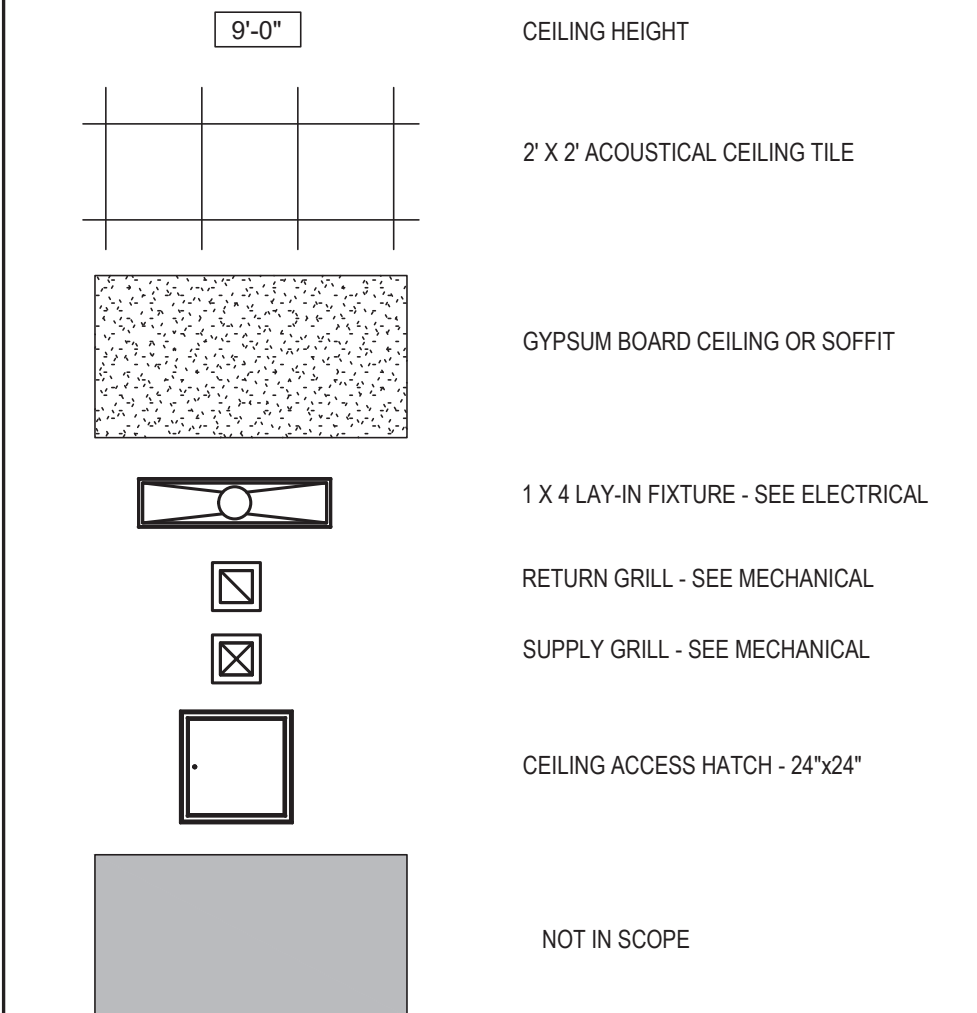
**CEILING KEYNOTES - NEW WORK**

- 1 PROVIDE & INSTALL NEW GYPSUM BOARD CEILING. 5/8" MOISTURE RESISTANT GWB ON 3/8" METAL STUDS @ 18" O.C. SECURED TO EXISTING ROOM PERIMETER WALLS & STRUCTURE ABOVE. MATCH EXISTING CEILING HEIGHT 10' - 0" AFF (VERIFY).
- 2 PROVIDE & INSTALL 24"x24" CEILING ACCESS PANEL.
- 3 REINSTALL EXIST. LIGHTS & AIR DISTRIBUTION DEVICES.

**REFLECTED CEILING PLAN NOTES**

1. IN CEILINGS THAT ARE DEMOLISHED, KEEP LIGHTING, REGISTERS, AND LOW VOLTAGE EQUIPMENT INTACT FOR REUSE.
2. EMERGENCY AND EXIT LIGHTING TO BE COORDINATED WITH THE LOCAL BUILDING OFFICIAL.

**CEILING LEGEND - NEW WORK**

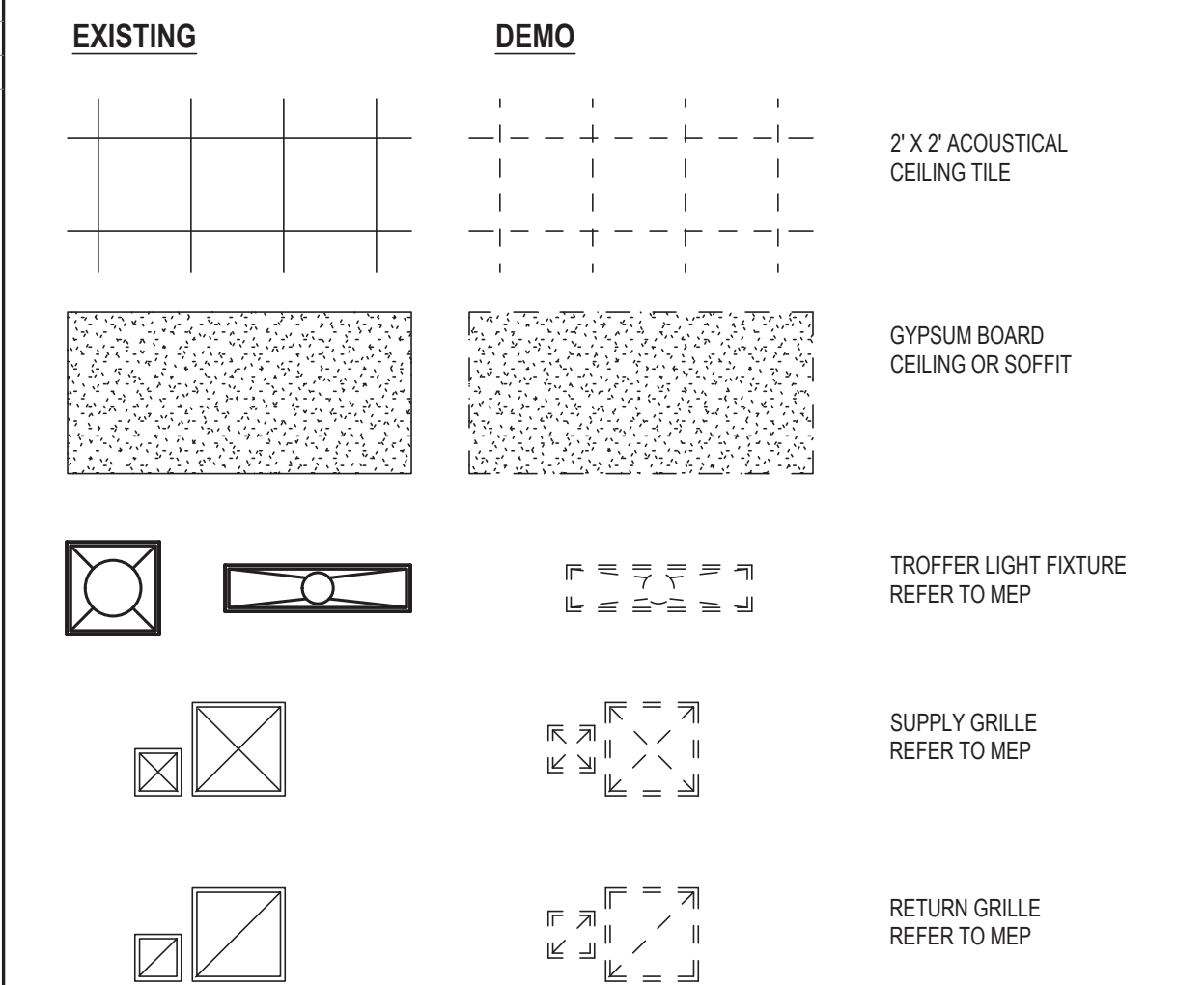


**1 REFLECTED CEILING PLAN - DEMOLITION**  
 M-503 SCALE: 1/4"=1'-0"

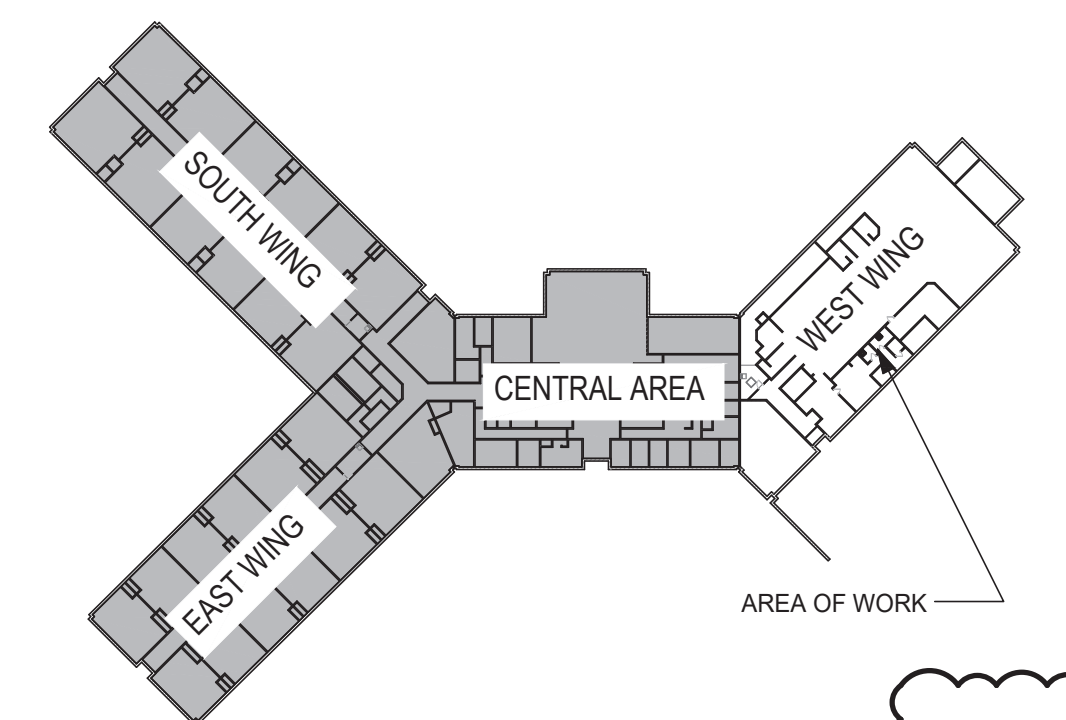
**CEILING KEYNOTES - DEMOLITION**

- D1 REMOVE EXISTING CEILING COMPLETE
- D2 REMOVE EXISTING LIGHT FIXTURE COMPLETE SAVE FOR REUSE.
- D3 REMOVE EXISTING HVAC DIFFUSER COMPLETE SAVE FOR REUSE.

**CEILING LEGEND - DEMOLITION**



**KEY PLAN**



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NO.	DATE	BY	DESCRIPTION
1	2/23/2023	DLG	ADDENDUM NO. 1

PISGAH FOREST ELEMENTARY  
 HVAC PIPING IMPROVEMENTS  
**TRANSYLVANIA COUNTY SCHOOLS**  
 TRANSYLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER M. CATHEY		DESIGNER D. GRIFFEE	
PROJECT MANAGER D. GRIFFEE		REVIEWER B. WIGGINS	

DATE FEBRUARY 2023	PROJECT # 22.00607	FUNDING # N/A
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DETAILS

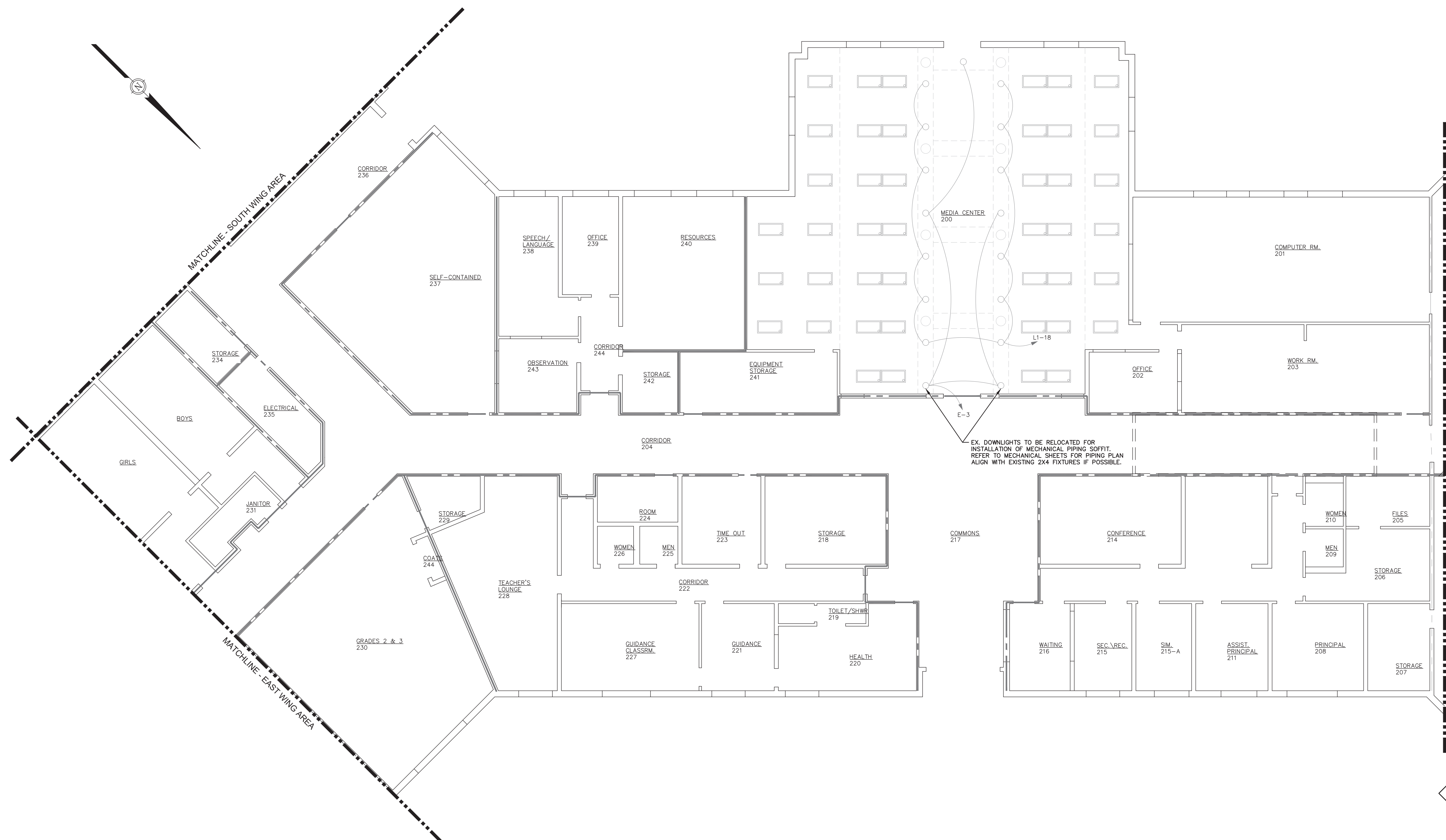
**SHEET**  
**M-503**

P:\2022\22.00607-TRANSYLVANIA COUNTY SCHOOLS-PISGAH FOREST HVAC PIPING IMPROVEMENTS\MECHANICAL\22.00607 M-503 DETAIL 5.DWG PLOT DATE 2/23/2023 9:06 AM SONIA ROBERTS

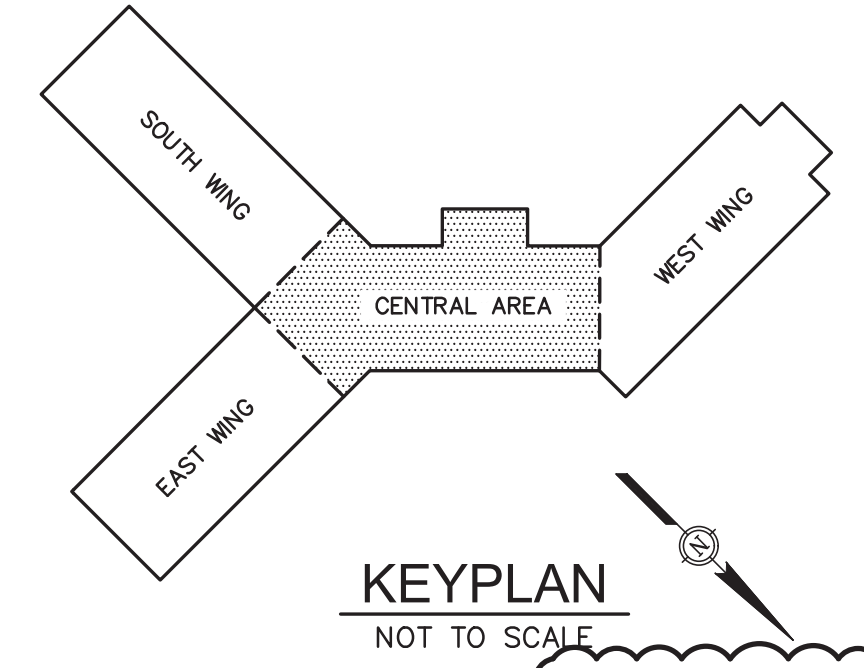
22.00607 TRANSYLVANIA COUNTY SCHOOLS - PISGAH FOREST ELEMENTARY HVAC PIPING IMPROVEMENTS

P:\2022\22.00607-TRANSLVANIA\KCSCH-PISGAH FOREST HVAC PIPING IMPROVEMENTS\ELECTRICAL\FLOOR PLANS NEW WORK\DWG PLOT DATE 2/23/2023 9:26 AM SONIA ROBERTS

22.00607 TRANSLVANIA COUNTY SCHOOLS -PISGAH FOREST ELEMENTARY HVAC PIPING IMPROVEMENTS

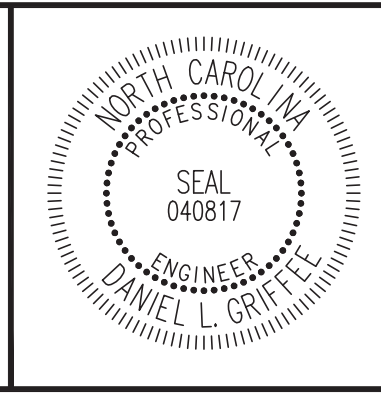


**ELECTRICAL PLAN - CENTRAL AREA - NEW WORK**  
SCALE: 1/8"=1'-0"



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Date: 2023.02.23 15:34:27 -05'00'

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**TRANSLVANIA COUNTY SCHOOLS**  
TRANSLVANIA COUNTY, NORTH CAROLINA

OFFICE MANAGER M. CATHEY	DESIGNER D. GRIFFEE
PROJECT MANAGER D. GRIFFEE	REVIEWER B. WIGGINS

DATE FEBRUARY 2023	PROJECT # 22.00607	FUNDING # N/A
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SHEET  
**E-102**