

# UCA SNOW FINE ARTS CENTER

## RENOVATIONS

### CONWAY, AR

ISSUED FOR CONSTRUCTION

#### PROJECT DIRECTORY



**OWNER:**  
UNIVERSITY OF CENTRAL ARKANSAS  
201 DONAGHEY AVE  
CONWAY, AR 72035



**ARCHITECT:**  
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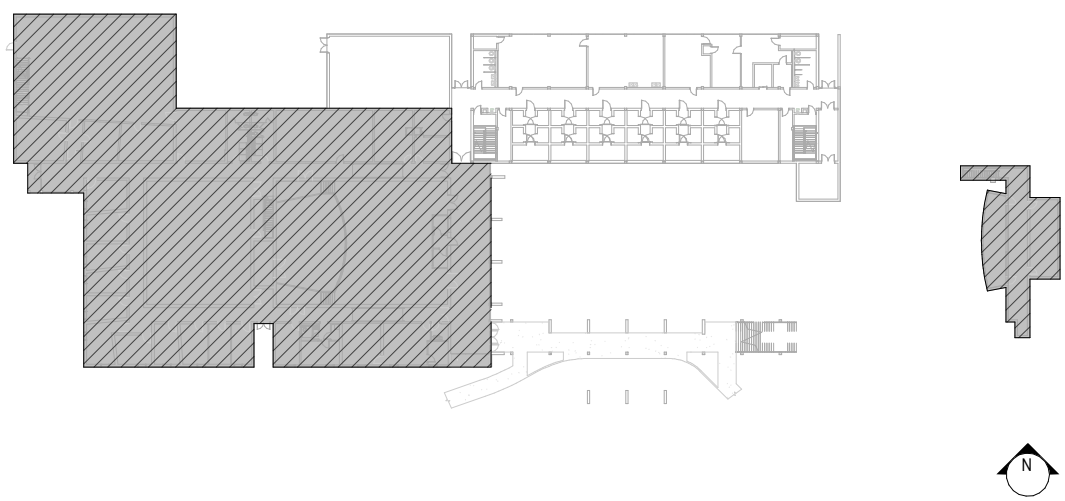


**MEP FA CONSULTANT:**  
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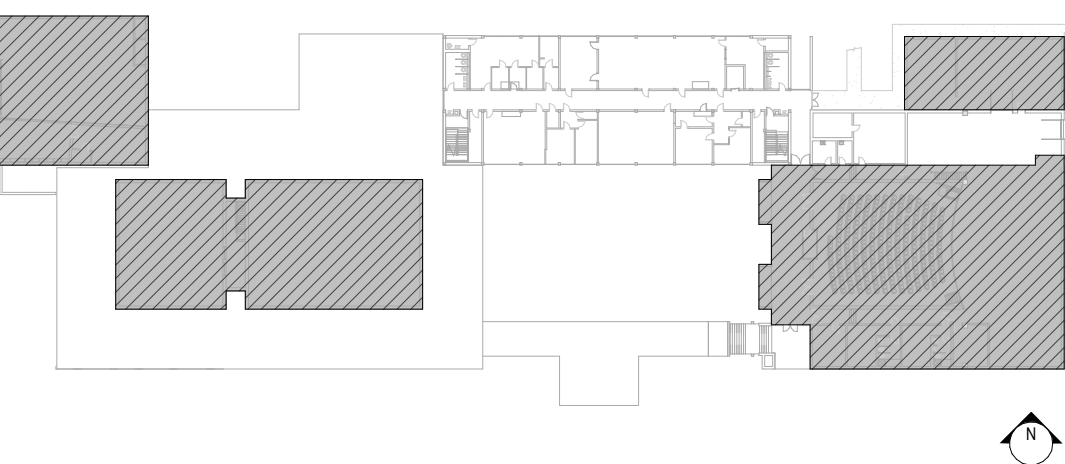


**STRUCTURAL CONSULTANT:**  
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BUILDING 2, 1 ALLIED DRIVE  
LITTLE ROCK, AR 72202  
501.666.6776  
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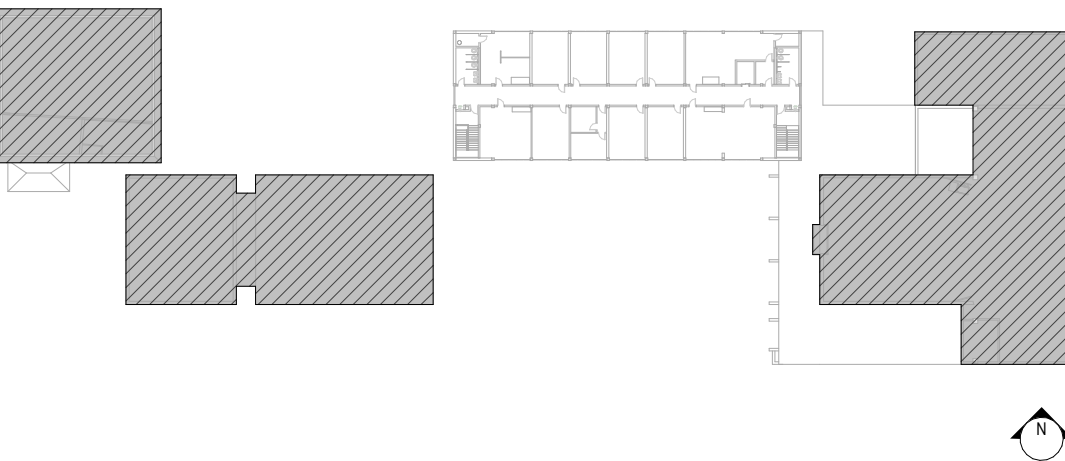
INACCESSIBLE ZONES DURING CONSTRUCTION



1 LEVEL 1 OVERALL PLAN  
SCALE: 1" = 80'-0"



2 LEVEL 2 OVERALL PLAN  
SCALE: 1" = 80'-0"



3 LEVEL 3 OVERALL PLAN  
SCALE: 1" = 80'-0"

#### LIST OF DRAWINGS

- GENERAL
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- ARCHITECTURAL
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  - M1.1A LEVEL 1 PLAN - PART A - HVAC
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  - M1.3B LEVEL 1 PLAN - PART B - HVAC PIPING
  - M1.4B LEVEL 2 PLAN - PART B - HVAC DUCTWORK
  - M1.5B LEVEL 2 PLAN - PART B - HVAC PIPING
  - M1.6C LEVEL 2 PLAN - PART C - HVAC
  - M1.7B LEVEL 3 PLAN - PART B HVAC DUCTWORK
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  - M1.9 ENLARGED MECHANICAL ROOM PLANS
  - M2.1 HVAC SECTIONS
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- PLUMBING
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  - E1.01 1ST FLOOR - RENOV PLAN - ELECTRICAL
  - E1.02 2ND FLOOR - RENOV PLAN PART B - ELECTRICAL
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  - E1.04 3RD FLOOR - RENOV PLAN PART B - ELECTRICAL
  - E1.05 PARTIAL ROOF PLAN - SYSTEMS
  - E2.01 ELECTRICAL DETAILS AND LEGENDS



VICINITY MAP

#### CERTIFICATION STATEMENT

I HEREBY CERTIFY THAT THESE PLANS AND SPECIFICATIONS HAVE BEEN PREPARED BY ME, OR UNDER MY SUPERVISION. I FURTHER CERTIFY THAT TO THE BEST OF MY KNOWLEDGE THESE PLANS AND SPECIFICATIONS ARE AS REQUIRED BY LAW AND IN COMPLIANCE WITH THE "ARKANSAS FIRE PREVENTION CODE" FOR THE STATE OF ARKANSAS.

*Joanna Nabholz*

JOANNA NABHOLZ, AIA FOR  
H+N ARCHITECTS, PLLC

H+N ARCHITECTS

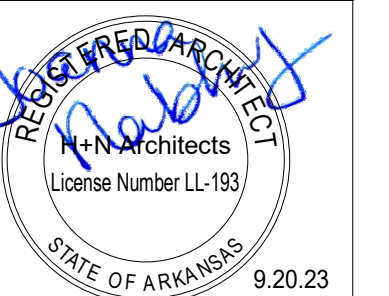
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UCA SNOW FINE ARTS CENTER  
RENOVATIONS  
CONWAY, AR

VERIFY SCALE  
INCH ON ORIGINAL DRAWING  
0 1"



Date: 09/20/23

Title: COVER PAGE

Sheet Number:

**AO.00**

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#	Date	Description
		Revision History

ABBREVIATIONS

Table of abbreviations for construction terms, including categories like AT (Centerline), FA (Fire Alarm), and others.

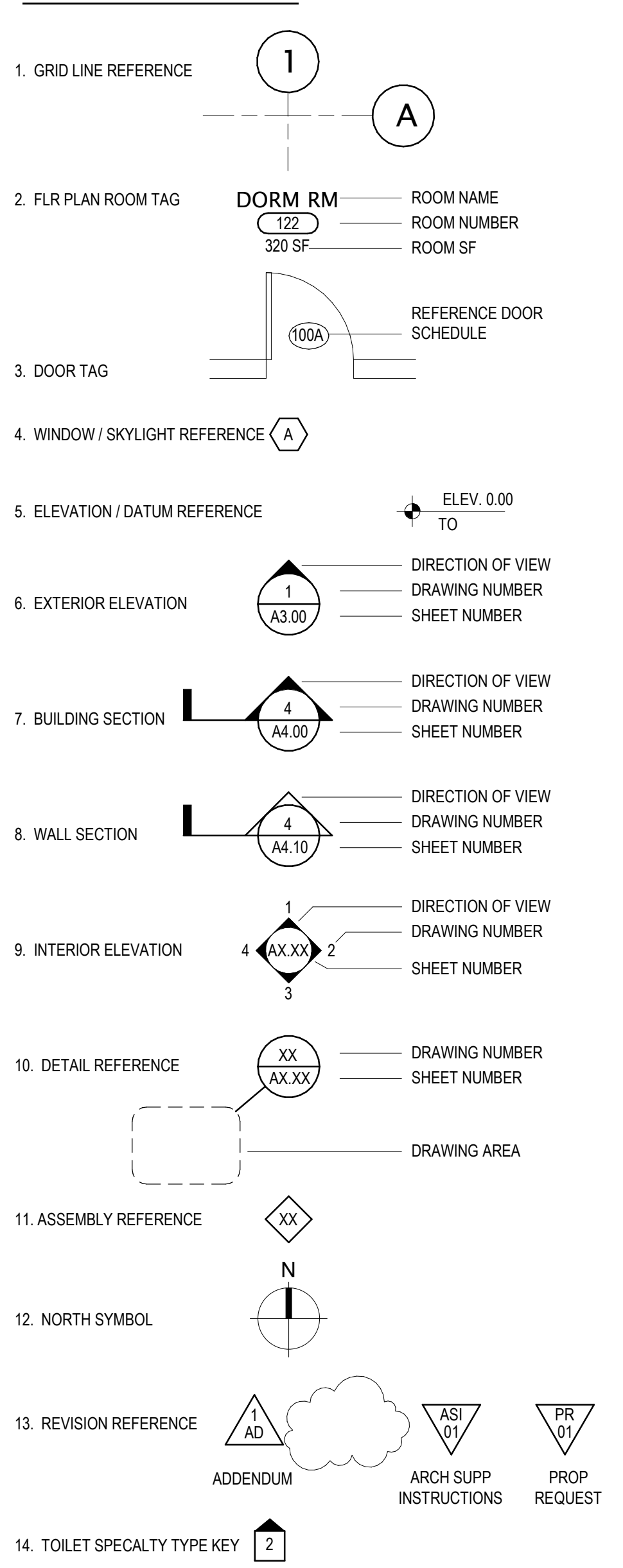
ABBREVIATIONS

THESE DOCUMENTS MAY USE INDUSTRY STANDARD OR COMMON ABBREVIATIONS. CONTACT THE ARCHITECT REGARDING ANY QUESTIONS OR AMBIGUITY.

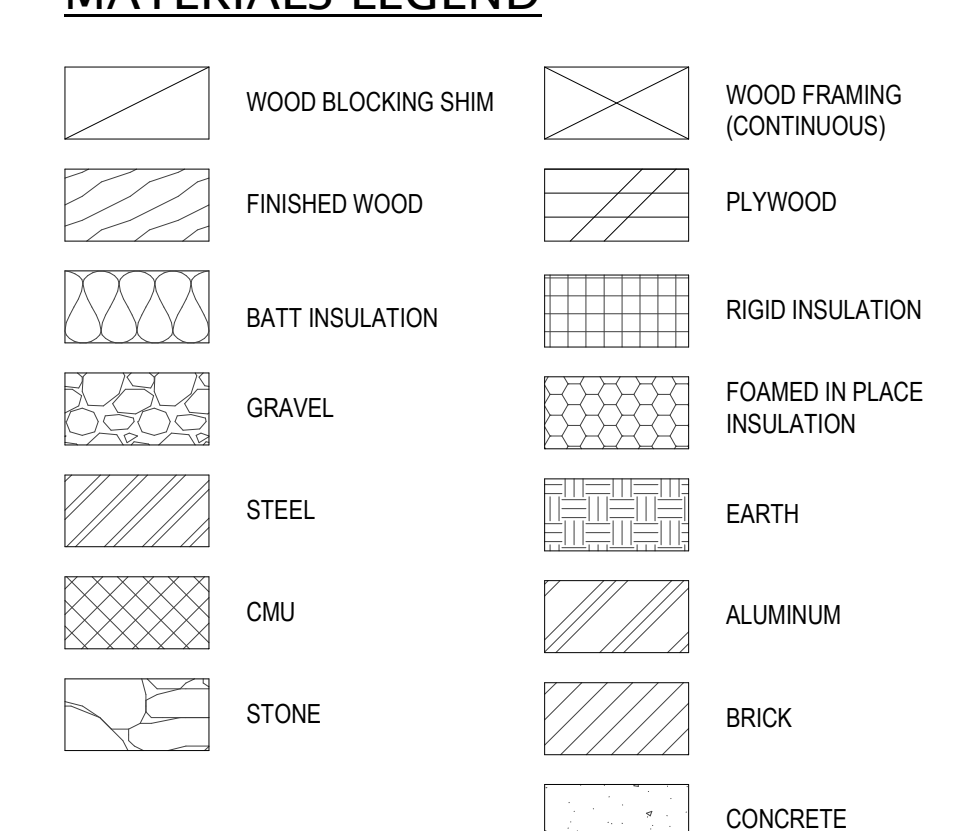
SYMBOLS & GRAPHICS

THESE DOCUMENTS MAY USE INDUSTRY STANDARD GRAPHICS & SYMBOLS. CONTACT THE ARCHITECT REGARDING ANY QUESTIONS OR AMBIGUITY.

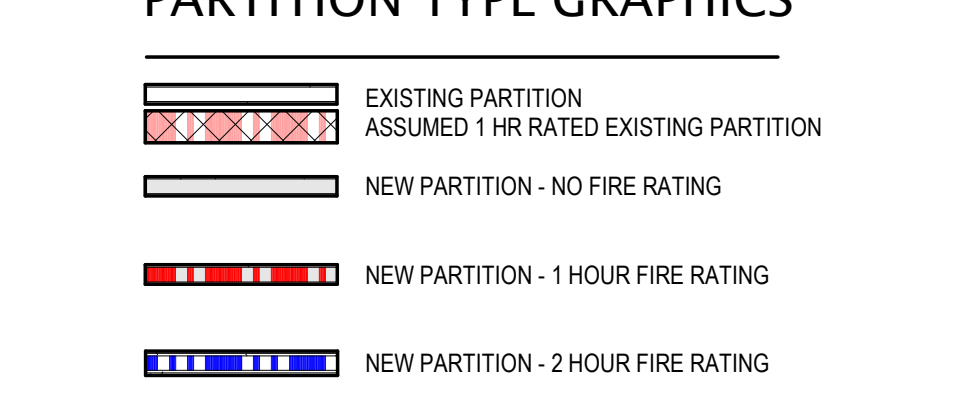
SYMBOLS LEGEND



MATERIALS LEGEND



PARTITION TYPE GRAPHICS



GENERAL NOTES

- 1. CODES: ALL WORK SHALL CONFORM APPLICABLE LAND USE AND BUILDING CODES AS AMENDED BY AUTHORITIES HAVING JURISDICTION.
2. DO NOT SCALE DIMENSIONS FROM DRAWINGS. USE CALCULATED DIMENSIONS ONLY. NOTIFY THE ARCHITECT IMMEDIATELY IF ANY CONFLICTS EXIST.
3. CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO INITIATING THE WORK. NOTIFY THE ARCHITECT OF ANY DISCREPANCIES.
4. VERIFY ALL ROUGH-IN DIMENSIONS FOR EQUIPMENT. PROVIDE ALL BUCK-OUT, BLOCKING, BACKING, AND JACKS REQUIRED FOR INSTALLATIONS.
5. CONTRACTOR SHALL LIMIT HIS STORAGE, STAGING, AND PARKING TO THE AREA(S) DESIGNATED DURING THE PRE-CONSTRUCTION MEETINGS.
6. CONTRACTOR TO PAY FOR ALL FEES AND COSTS (TEMPORARY & PERMANENT) ASSOCIATED WITH BUILDING PERMITS, UTILITY TAP FEES, METERS, METER SETTERS, INSPECTIONS, AND ALL OTHER ITEMS NOT SPECIFICALLY LISTED.

PROJECT NOTES FOR GENERAL & SUB CONTRACTORS

- 1. GENERAL CONTRACTOR IS RESPONSIBLE FOR ASSURING THAT "ALL" TRADES ARE AWARE OF THEIR RESPECTIVE FULL SCOPE OF WORK AND OVERALL COORDINATION. REFER TO ALL CONTRACT DRAWINGS, SPECIFICATIONS AND NOTES FOR ADDITIONAL RESPONSIBILITIES, DETAILS AND SCOPE OF WORK. CONTRACTORS & SUBCONTRACTORS MUST REVIEW ALL PORTIONS OF THE CONSTRUCTION DOCUMENTS IN PREPARING THEIR BIDS. ALL WORK SHALL BE PERFORMED BY PERSONNEL AWARE OF THEIR PROJECT RESPONSIBILITIES. EACH CONTRACTOR AND/OR SUBCONTRACTOR SHALL COORDINATE HIS OWN WORK WITH OTHER TRADES. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL WORK WITH ALL TRADES, AND EQUIPMENT INSTALLERS IN ORDER TO MAINTAIN PROPER USE AND ACCESS TO ALL ITEMS AND SPACES. GENERAL CONTRACTOR SHALL DIRECTLY SUPERVISE ALL PHASES OF CONSTRUCTION, AND HAVE FULL AUTHORITY TO ACT ON NECESSARY FIELD CONDITIONS TO PREVENT CONSTRUCTION DELAYS.
2. INFORMATION ON EXISTING CONDITIONS AND PROPOSED DESIGN SOLUTIONS DESCRIBED IN THE CONTRACT DOCUMENTS ARE BASED ON THE BEST NONDESTRUCTIVE TESTING AND VISUAL SITE INVESTIGATION OBSERVATIONS AVAILABLE IN AN OCCUPIED STRUCTURE. LOCATIONS OF COMPONENTS ARE APPROXIMATE AND INFORMATION PROVIDED IS DIAGRAMMATIC. IN SOME INSTANCES IT MAY HAVE BEEN IMPRACTICAL TO DETAIL ALL THE ITEMS IN THE SPECIFICATIONS OR ON THE DRAWINGS BECAUSE OF VARIANCES IN THE METHODS OF DRAWINGS, SERVICES AND CONNECTIONS NECESSARY TO PRODUCE SYSTEMS AND EQUIPMENT WHICH ARE COMPLETE, FUNCTIONAL, AND READY FOR PROPER OPERATIONS IN ACCORDANCE WITH THE REQUIREMENTS OF THE MANUFACTURER. ALL WORK SHALL BE PERFORMED WITHIN THE REQUIREMENTS OF THE GENERAL CONDITIONS, GENERAL REQUIREMENTS, DRAWINGS, SPECIFICATIONS AND NOTES. NO STATEMENTS HEREIN SHALL RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY AS DESCRIBED ELSEWHERE IN THE CONTRACT DOCUMENTS.
3. THE CONTRACT DOCUMENTS SHOW OR DESCRIBE THE GENERAL ARRANGEMENT OF PIPES, CONDUIT, EQUIPMENT, FIXTURES, COMPONENTS, APPURTENANCES BUT DO NOT IDENTIFY ALL REQUIRED FITTINGS AND OFFSETS THAT ARE NECESSARY TO PROPERLY COMPLETE THE INSTALLATION. LOCATION OF ITEMS ON THE DRAWINGS SHALL BE ALTERED BY THE CONTRACTOR WHERE NECESSARY TO AVOID INTERFERENCE AND CLEARANCE DIFFICULTIES. IT IS THE INTENT OF THE DRAWINGS/SPECIFICATIONS THAT THE CONTRACTOR PROVIDE ALL MATERIALS AND LABOR NORMALLY NECESSARY TO COMPLETE THE WORK DESCRIBED OR IMPLIED BY THE DOCUMENTS AT NO ADDITIONAL COST/TIME TO THE OWNER.
4. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL DIMENSIONS, CLEARANCES, INFORMATION AND ASSUMPTIONS ON EXISTING CONDITIONS. CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL CONTRACT DOCUMENTS PRIOR TO COMMENCING ANY AND ALL WORK. CONTRACTOR SHALL NOTIFY THE ARCHITECT OF ANY VARIANCES WITH ADEQUATE NOTICE SO THAT ALTERNATE SOLUTIONS CAN BE ESTABLISHED WITHOUT INTERRUPTING THE ESTABLISHED CONSTRUCTION SCHEDULE. DATA AND INFORMATION FURNISHED OR REFERRED TO IN THE CONSTRUCTION DOCUMENTS IS FOR THE CONTRACTOR'S USE.
5. PRIOR TO WORK THE CONTRACTOR SHALL EXAMINE AREAS AFFECTED BY THE PROJECT AND DOCUMENT PREEXISTING DAMAGE AND PROVIDE A COPY FOR THE ARCHITECT'S PROJECT RECORDS. SURFACES AND ITEMS DAMAGED BY THE CONTRACTOR SHALL BE REPAIRED/REPLACED WITH MATERIAL TO MATCH EXISTING. ALL EXISTING SURFACES WITHIN THE CONTRACT LIMITS ARE TO BE PATCHED, REFINISHED AND REPAINTED WITH MATERIALS COMPARABLE TO THE EXISTING SURFACE UNLESS OTHERWISE NOTED OR DIRECTED BY THE ARCHITECT. FINISHED SURFACES ARE TO BE INDISTINGUISHABLE FROM SURROUNDING AREA.
6. WHEN RECEIVING BIDS, THE GENERAL CONTRACTOR SHALL ENSURE THAT THEIR SUBCONTRACTORS ARE BIDDING A FULL SCOPE OF WORK. GENERAL CONTRACTOR TO PROVIDE ALL SUBCONTRACTORS WITH A FULL SET OF CONSTRUCTION DOCUMENTS. THE GENERAL CONTRACTOR SHALL SECURE WRITTEN QUALIFICATIONS AS MAY BE REQUIRED FOR EVIDENT AMBIGUITIES, DISCREPANCIES OR OMISSIONS WHERE A FUNCTIONAL AND COMPLETE SYSTEM CANNOT BE PROVIDED AS IS THE INTENT.
7. LARGE SCALE DETAILS HAVE PRECEDENCE. HOWEVER, WORK INDICATED IN SMALL SCALE DRAWINGS SHALL NOT BE OMITTED. SIMILARLY, NOTES TAKE PRECEDENCE OVER SCHEDULES, PIPING AND WIRE DIAGRAMS. HOWEVER, WORK SHOWN OR DESCRIBED BY OTHER METHODS SHALL NOT BE OMITTED. ALL CONFLICTS MUST BE BROUGHT TO THE ATTENTION OF THE ARCHITECT FOR CLARIFICATION.
8. ISSUES THAT CAN NOT BE RESOLVED WITHOUT CHANGING DIMENSIONS OF SPACES, CEILING HEIGHTS, ETC. SHALL BE REVIEWED WITH ARCHITECT FOR APPROVAL PRIOR TO PROCEEDING.
9. MECHANICAL PLUMBING, ELECTRICAL & FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE ENGINEERING DRAWINGS TO LOCATE WORK WITHOUT FIRST CONSULTING THE ARCHITECT. IT IS THE INTENT TO LOCATE VISIBLE WORK CENTERED, ALIGNED OR SPACED AS INDICATED - WHERE THE DRAWINGS DEPICT SUCH RELATIONSHIPS.
10. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL DIMENSIONS OF EQUIPMENT AND COMPONENTS BEING INSTALLED WITH THE PLACEMENT LOCATION AND EQUIPMENT REQUIREMENTS. APPROVED SHOP DRAWINGS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS.
11. SUBMITTALS AND SCHEDULES REQUIRED BY THE CONSTRUCTION DOCUMENTS SHALL BE CHECKED BEFORE SUBMISSION BY TECHNICALLY QUALIFIED EMPLOYEES OF THE CONTRACTOR FOR ACCURACY, COMPLETENESS AND COMPLIANCE WITH THE CONTRACT REQUIREMENTS. THESE DOCUMENTS SHALL BE SIGNED/STAMPED BY THE CONTRACTOR CERTIFYING TO THIS REVIEW, SHOP AND COORDINATION DRAWINGS FOR ALL EQUIPMENT AND COMPONENT INSTALLATION ARE REQUIRED. WHERE PAPER DOCUMENTS ARE REQUIRED, THE CONTRACTOR SHALL SUBMIT THE FOLLOWING NUMBER OF INDIVIDUAL SUBMITTALS/SCHEDULES FOR REVIEW: ONE COPY FOR THE ARCHITECT'S PROJECT RECORDS, ONE COPY FOR THE APPLICABLE ENGINEERING TRADES PROJECT RECORDS AND ONE COPY FOR THE OWNERS CLOSE-OUT DOCUMENTATION AND OTHER COPIES AS NEEDED FOR THE CONTRACTORS USE AND RECORDS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ASSURE THE TIMELY SUBMISSION/REVIEW OF "ALL" NECESSARY SUBMITTALS AND SCHEDULES. SUCH REVIEW/APPROVAL BY THE OWNER OR DESIGNEE SHALL NOT ALLEVIATE THE CONTRACTOR OF COMPLYING WITH THE TERMS AND CONDITIONS SPECIFIED IN THE CONTRACT DOCUMENTS.
12. PROVIDE PROPER ACCESS TO ALL INSTALLED EQUIPMENT AND COMPONENTS REQUIRING OPERATION, SERVICE, AND MAINTENANCE WHETHER DETAILED ON THE DRAWINGS OR NOT - DO NOT OBSTRUCT MECH & PLUMBING CHASE ACCESS. ACCESS MUST BE CONVENIENTLY PLACED AS DETERMINED BY THE ENGINEER. BRING CONFLICTS TO THE ATTENTION OF THE ARCHITECT IMMEDIATELY.
13. CONTRACTOR IS RESPONSIBLE FOR PROVIDING "ALL" MATERIALS AND LABOR NECESSARY TO COMPLETE THE WORK DESCRIBED OR IMPLIED BY THE CONSTRUCTION DOCUMENTS. ALL EQUIPMENT, MATERIALS, AND ARTICLES FURNISHED UNDER THE CONTRACT SHALL BE NEW AND FREE FROM DEFECTS, AND BE OF THE MOST SUITABLE GRADE, SIZE, AND CAPACITY FOR THE PURPOSE INTENDED, UNLESS SPECIFIED OR APPROVED BY THE ARCHITECT. ALL WORK TO BE PERFORMED WITHIN APPROVED TOLERANCES AND BE NEAT, STRAIGHT, PLUMB, LEVEL, SMOOTH, WARP FREE, UNLESS OTHERWISE SPECIFIED.
14. ALL MATERIALS ASSEMBLED AND EXECUTION SHALL BE IN CONFORMANCE WITH THE CONTRACT DOCUMENTS, MANUFACTURERS WRITTEN RECOMMENDATIONS, LATEST EDITIONS OF ALL APPLICABLE FEDERAL/STATE/CITY CODES/REGULATIONS/ORDINANCES, AND THE AUTHORITY HAVING JURISDICTION (A/HJ) ON THE APPLICABLE WORK. IN THE EVENT THAT CRITERIA REQUIREMENTS CONFLICT, THE MOST STRINGENT REQUIREMENTS SHALL BE MET.
15. ALL LUMBER IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED. PROVIDE ALL BUCK-OUT, BLOCKING, BACKING, AND JACKS REQUIRED FOR INSTALLATIONS.
16. ALL CONSTRUCTION DEBRIS TO BE REMOVED OFF-SITE AND DISPOSED OF LEGALLY BY THE CONTRACTOR. CONTRACTOR SHALL REMOVE FROM THE SITE ALL ITEMS WHICH THE OWNER DOES NOT INTEND TO REUSE. AT THE COMPLETION OF CONSTRUCTION, ALL AFFECTED AREAS SHALL BE LEFT CLEAN, POLISHED, AND SANITARY INCLUDING BUT NOT LIMITED TO FLOOR, WALLS, CEILINGS (INCLUDING ABOVE REMOVABLE TILES), FIXTURES, LENSES, WINDOWS, EQUIPMENT.

GENERAL DEMOLITION NOTES FOR GENERAL & SUB CONTRACTORS

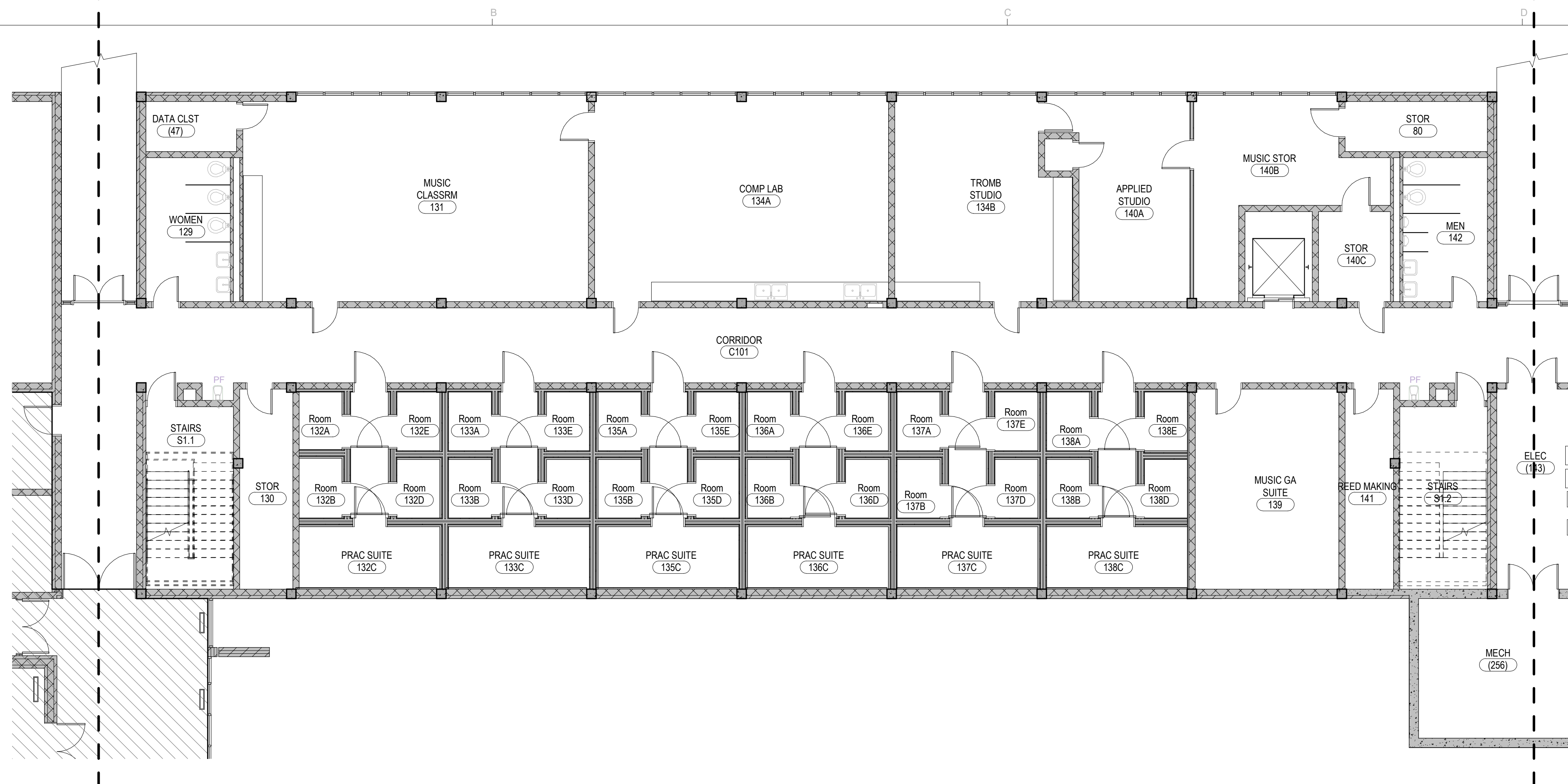
- 1. REMOVE EXISTING FLOORING MATERIAL THROUGHOUT AS NECESSARY FOR RELOCATED WALLS AND NEW FLOOR FINISHES SHOWN ON FINISH SCHEDULE. PATCH AND REPAIR AS REQUIRED FOR NEW FINISHES. LEVEL ANY UNEVEN SURFACES TO RECEIVE SCHEDULED FINISH.
2. REMOVE EXISTING CEILINGS AS INDICATED. SEE HVAC AND ELECTRICAL DEMOLITION SHEETS FOR MORE INFORMATION.
3. SAW CUT AND REMOVE CONCRETE SLAB AS REQUIRED FOR ELECTRICAL AND PLUMBING SCOPE OF WORK - REFER TO MEP SHEETS. PATCH AND REPAIR VAPOR BARRIER FOR CONTINUITY.
4. REMOVE EXISTING INTERIOR PARTITIONS AS SHOWN. REMOVE DOORS AND FRAMES ASSOCIATED WITH WALLS CALLED FOR REMOVAL. PATCH EXISTING FLOORS, WALLS AND CEILINGS AS REQUIRED FOR NEW CONSTRUCTION.

PARTITION TYPE NOTES

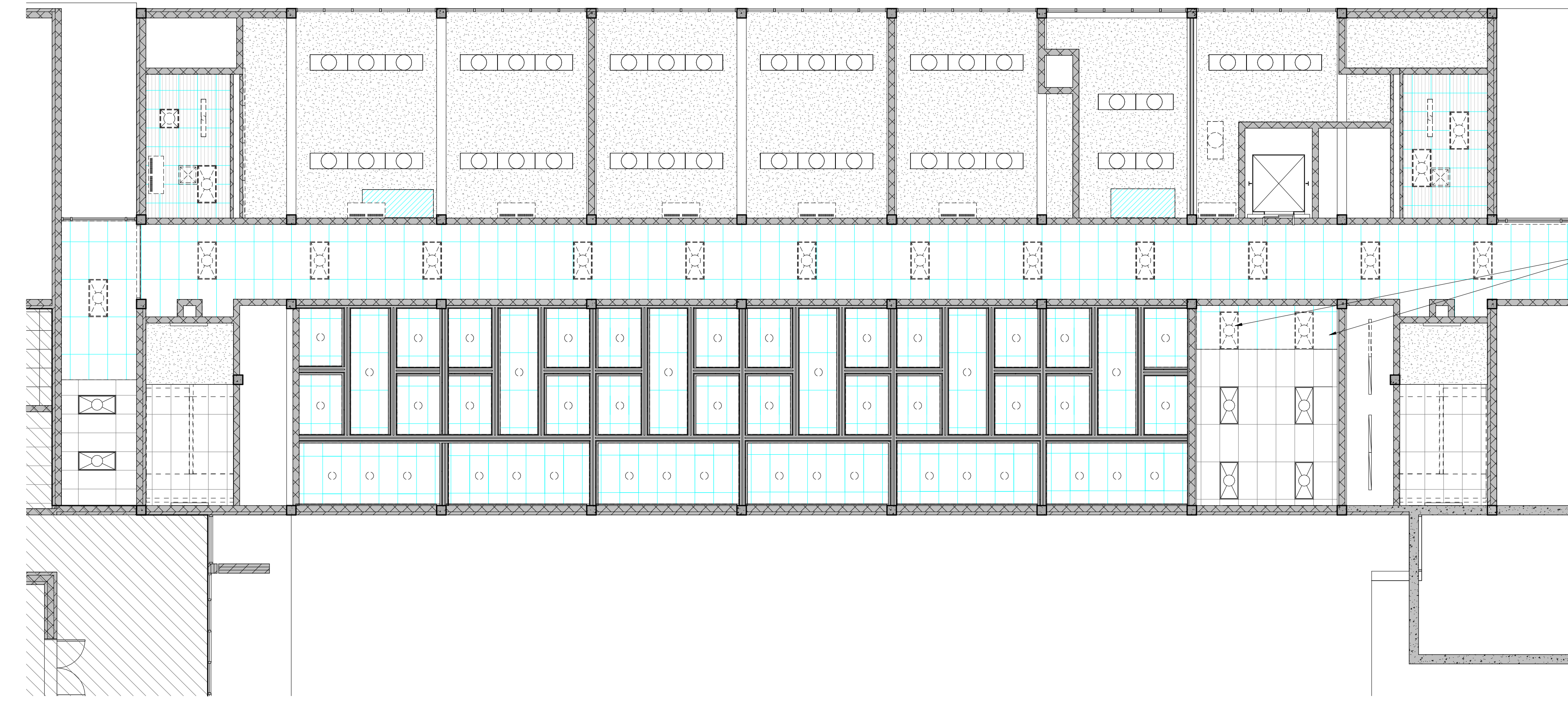
- 1. DIMENSIONS ARE TO CENTERLINES OF NEW PARTITIONS OR FINISHED FACE OF EXST PARTITIONS / WALLS UNLESS OTHERWISE NOTED.
2. UNLESS OTHERWISE SPECIFIED, FABRICATE HORIZONTAL CEILING AND SOFFIT FRAMING TO LIMIT FINISH SURFACE TO 1/360 DEFLECTION UNDER SUPERIMPOSED DEAD LOADS. USE 5/8" TYPE "C" GWB FOR FIRE RATED CEILINGS UNLESS OTHERWISE INDICATED.
3. UNLESS OTHERWISE SPECIFIED, FABRICATE WALL FRAMING TO LIMIT FINISH SURFACE TO 1/240 DEFLECTION UNDER SUPERIMPOSED DEAD LOADS.
4. AT METAL STUD PARTITIONS PROVIDE APPROPRIATE SIZE FRAMING & HORIZONTAL BRIDGING AT MIDPOINT OF STUD WHERE PARTITIONS EXCEED 12FT OR IN PARTITIONS OF ANY HEIGHT WHERE GWB DOES NOT CONTINUE TO THE TOP TRACK OR AS OTHERWISE RECOMMENDED BY THE METAL STUD SUPPLIER. THE METAL STUD SUPPLIER REQUIREMENTS SHALL BE INCLUDED WITH SUBMITTALS.
5. BRIDGING SHALL BE CONNECTED TO STUDS AS REQUIRED BY THE METAL STUD SUPPLIER & AT EACH END WHERE BRIDGING ABUTS DOOR OR WINDOW OPENINGS.
6. INTERIOR STUDS SHALL BE ANCHORED BACK TO THE STRUCTURAL FRAME WHERE STUDS ARE ADJACENT TO & EXTEND PAST THE FLOOR / ROOF ABOVE. INSTALL SLOTTED ATTACHMENT TO ALLOW DEFLECTION OR SUITABLE CLIP BY MFR OR THE STEEL NETWORK.
7. INSTALL DEFLECTION TRACK SYSTEM BY APPROVED METAL STUD SUPPLIER. ALLOWABLE VERTICAL DEFLECTION 1 1/2" (3/4" +/-). ACCEPTABLE SYSTEMS INCLUDED SLOTTED TRACK, DEEP LEG TRACK WITH BRIDGING IMMEDIATELY BELOW OR 2 PIECE DEEP LEG. REFER ALSO TO 05400 & 09255.
8. PRIOR TO STUD ERECTION, THE METAL STUD CONTRACTOR SHALL PROVIDE ADVANCE NOTICE TO OTHER TRADES THAT METAL STUD MODIFICATION IS SUBJECT TO COORDINATION & APPROVAL WITH THE METAL STUD SUPPLIER. THE METAL STUD CONTRACTOR SHALL COORDINATE OTHER TRADES MODIFICATIONS WITH THE METAL STUD SUPPLIER TO ENSURE THAT THE SIZE, SPACING, LOCATION OR OTHER MODIFICATION DOES NOT COMPROMISE THE REQUIRED LOADING OR DEFLECTION PERFORMANCE CRITERIA.
9. ABOVE PARTITIONS AT METAL DECK, DECK CLOSURES ARE TO BE AS FOLLOWS:
\* AT PARTITIONS THAT ARE NOT FIRE RATED & WHERE EXPOSED TO PUBLIC VIEW, INSTALL SOUND ATTENUATION IN DECK FLUTES & CASTLE CUT GWB TO MATCH DECK.
\* AT SOUND RATED PARTITIONS PROVIDE SOUND ATTENUATION INSULATION, FILLING IN DECK FLUTES ABOVE PARTITIONS (TYPICAL).
\* AT FIRE RATED PARTITIONS PROVIDE MINERAL FIBER SAFING AND SMOKE SEAL, FILLING IN DECK FLUTES ABOVE PARTITIONS (TYPICAL).
10. THE CONTRACTOR SHALL TAKE INTO CONSIDERATION THE DECK PROFILE & COORDINATE SUFFICIENT ATTACHMENT REQUIREMENTS WITH THE METAL STUD SUPPLIER IN PREPARING THEIR BID. METAL BRIDGING PLATES SHALL BE INSTALLED ACROSS METAL DECK FLUTES WHERE INTERIOR PARTITIONS RUN PARALLEL TO METAL DECK FLUTES & THE STUD TRACK DOES NOT SUFFICIENTLY CONTACT THE DECK SURFACE.
11. METAL FRAMING MANUFACTURER SHALL SUBMIT A CERTIFICATE INDICATING THAT THE MANUFACTURER HAS REVIEWED THE PROJECT DOCUMENTS, & THE FRAMING SUPPLIED CONFORMS TO THE REQUIREMENTS LISTED. THE METAL FRAMING MANUFACTURER SHALL SUBMIT A CHART LISTING THE PARTITION TYPES, MANUFACTURER PRODUCTS USED, THE ASSOCIATED UL FIRE RATING SYSTEM, & THE LIMITING HEIGHT.
12. THE METAL STUD SUPPLIER SHALL PROVIDE CALCULATIONS FOR OPENINGS MORE THAN 4-FEET WIDE - CALCULATIONS SHALL BE INCLUDED IN SUBMITTAL.
13. ALL PENETRATIONS IN FIRE RATED PARTITIONS & CEILINGS SHALL BE FIRE STOPPED TO MATCH WALL RATING - RATINGS SHALL BE AS PER CODE REQUIREMENTS. REFER ALSO TO LIFE SAFETY DRAWINGS FOR LOCATIONS OF FIRE RATED PARTITIONS.
14. WHERE RATED WALLS EXTEND TO ROOF DECK PROVIDE UL RATED CLOSURE ASSEMBLIES TO MAINTAIN WALL RATINGS.
15. MAINTAIN INTEGRITY OF ALL RATED & ACOUSTICAL PARTITIONS AS REQUIRED AT ELECTRIC CONDUITS, J-BOXES, PANELS, PLUMBING & FIRE EXTINGUISHERS.
16. PROVIDE HORIZONTAL METAL STUD BRACING AT CHASE WALLS. INSTALLATION SHALL BE ACCORDING TO THE METAL STUD SUPPLIER AND COORDINATED WITH PIPING & DUCT WORK TO FACILITATE MAINTENANCE PERSONAL ACCESS THROUGH CHASES.
17. PROVIDE CONTINUOUS BLOCKING FOR ALL EQUIPMENT RACKS, LIGHT FIXTURES, CASEWORK, COUNTERS, SHELVES, ACCESSORIES, DOOR STOPS & ALL EQUIPMENT OR ITEMS SUPPLIED BY THE CONTRACTOR OR BY THE OWNER, AS REQUIRED.
18. DOOR JAMBS SHALL BE 4" OFF ADJACENT WALL UNLESS OTHERWISE NOTED.
19. ADD 1/2" REVEALS (CLEAR DIM OF CHANNEL) WHERE GYPSUM BOARD ABUTS COLUMNS, BEAMS & OTHER STRUCTURAL ELEMENTS WHERE EXPOSED TO VIEW. SEE ALSO REFLECTED CEILING PLAN(S), CEILING DETAILS, INTERIOR ELEVATIONS, PLAN(S) & SECTION DETAILS.
20. INSTALL CONTROL JOINTS ACCORDING TO ASTM C 840 AS APPROVED BY ARCHITECT & AS INDICATED IN DRAWINGS.
21. REFER TO FINISH SCHEDULE FOR FINISHES (FINISHES ARE NOT SHOWN ON WALL / PARTITION TYPES).
22. ALL DIMENSIONS ARE TO THE PARTITION CENTER LINE UNLESS OTHERWISE SHOWN.
23. ANY DISCREPANCIES IN DIMENSIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT PRIOR TO CONSTRUCTION.
24. CORE DRILL ALL PENETRATIONS. SAW CUT PENETRATIONS WHERE CORE DRILLING IS NOT POSSIBLE. PENETRATIONS SHALL BE MINIMIZED & COORDINATED IN ADVANCE OF DRILLING / CUTTING WITH UL FIRE RATINGS.
25. IN ALL TOILET ROOMS, OR AREAS WHERE THERE IS CERAMIC TILE WAINSCOT, THE CONTRACTOR SHALL INSTALL DUROCK OR HI-IMPACT XP (MOLD/MILDEW/MOISTURE RESISTANT) GWB BY NATIONAL GYPSUM (OR APPROVED EQ) BENEATH THE TILE FINISH IN LIEU OF 5/8" GWB.
26. PRIOR TO INSTALLATION - THE CONTRACTOR SHALL PROMPTLY BRING TO THE ARCHITECT'S ATTENTION ANY OCCURRENCE WHERE STUD FLANGES MAY NEED TO BE CUT IN ORDER TO PROCEED WITH INSTALLATION.
27. REFER TO INTERIOR ELEVATIONS & EXTERIOR WALL SECTIONS FOR ADDITIONAL DETAILS.
28. BOX HEADERS SHALL BE INSULATED. THE CONTRACTOR SHALL PROVIDE THE ARCHITECT 3 DAYS ADVANCE NOTICE UPON COMPLETION & PRIOR TO CONCEALING THE WORK TO ALLOW VISUAL CONFIRMATION. THE CONTRACTOR SHALL TAKE NOTE OF GENERAL CONDITIONS 12.1 REQUIREMENT "UNCOVERING OF WORK."
29. PROVIDE BRACING & SUPPLEMENTAL FRAMING FOR FLOOR TO CEILING TOILET PARTITION PLASTERS.
30. PER IBC 703.7 - FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS, SMOKE BARRIERS & SMOKE PARTITIONS OR ANY OTHER WALL REED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE EFFECTIVELY & PERMANENTLY IDENTIFIED WITH SIGNS OR STENCILING. SUCH IDENTIFICATION SHALL:
- BE LOCATED IN AN ACCESSIBLE CONCEALED FLOOR, FLOOR-CEILING OR ATTIC SPACES.
- BE LOCATED WITHIN 15 FT OF ENDS OF WALLS & INTERVALS NOT EXCEEDING 30 FT HORIZONTALLY.
- INCLUDE LETTERING MIN 3" H & 3/8" STROKE, CONTRASTING COLOR.
- SUGGESTED WORDING: "FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS"

Vertical banner for H+N ARCHITECTS and UCA SNOW FINE ARTS CENTER RENOVATIONS. Includes contact information: 1109 Main St. | Conway, AR | 501.327.7525 | www.hnarch.com. Also includes a stamp: 'VERIFIED ARCHITECT' and 'H+N ARCHITECTS' with license number LL-193.

Table with 3 columns: #, Date, Description. Row 1: #, Date, Description. Row 2: #, Date, Description. Row 3: #, Date, Description.



**1 1ST FLOOR - DEMO PLAN**  
SCALE: 1/8" = 1'-0"



**2 1ST FLOOR RCP - DEMO PLAN**  
SCALE: 1/8" = 1'-0" Ref: A1.13

**GENERAL DEMO NOTES**

- EXISTING CEILING SYSTEM TO REMAIN. REPAIR AS REQUIRED.
- REFER TO RCP DEMO PLAN FOR ADDITIONAL SCOPE. SEE HVAC AND ELECTRICAL DEMOLITION SHEETS FOR MORE INFORMATION. SALVAGE EXISTING GRILLES AS REQUIRED. RELOCATE ANY MISC. WIRING, FROM ABOVE OR BELOW ACT SYSTEM.
- SALVAGE ALL EXISTING CAMERAS, WAPS, PROJECTION SCREENS, AND EQUIPMENT
- ALL INTERIOR WALL CUT OPENINGS TO BE 7'-6" A.F.F. UNLESS OTHERWISE INDICATED.
- CONTRACTOR SHALL FIELD INVESTIGATE EXISTING CONDITIONS PRIOR TO SUBMISSION OF THE PROPOSAL (BID). NOTIFY ARCHITECT SHOULD WORK CLARIFICATION BE REQUIRED. BY SUBMITTING HIS PROPOSAL (BID), THE CONTRACTOR ACCEPTS ALL EXISTING CONDITIONS & ASSUMES RESPONSIBILITY FOR CORRECTING UNSUITABLE CONDITIONS ENCOUNTERED, DURING THE WORK AT NO ADDITIONAL COST TO THE OWNER.
- REMOVE EXISTING MILLWORK, EQUIPMENT AND PLUMBING FIXTURES AS INDICATED. CAP PLUMBING FIXTURES AT SOURCE. SALVAGE EXISTING EQUIPMENT IF REQUESTED BY OWNER. REFER TO MEP FOR MORE INFORMATION. PATCH AND REPAIR ADJOINING FLOOR/WALL SURFACE WHERE MILLWORK WAS REMOVED (AS REQUIRED) AT PARTITIONS TO REMAIN.
- ITEMS NOT SPECIFICALLY SHOWN OR NOTED ARE TO REMAIN "AS-IS." DAMAGE TO EXISTING CONDITIONS (NOT PART OF THE WORK) ARE TO BE REPAIRED TO MATCH EXISTING CONDITIONS AT NO EXPENSE TO OWNER.
- CONTRACTOR SHALL LIMIT HIS STORAGE, STAGING, AND PARKING TO THE AREA(S) DESIGNATED DURING THE PRE-CONSTRUCTION MEETINGS. SEE OVERALL PLANS ON COVER SHEET FOR AREAS THAT ARE NOT TO BE ACCESSED.
- THE WORK SITE SHALL BE KEPT IN A NEAT, CLEAN, AND ORDERLY FASHION THROUGHOUT THE ENTIRE WORK SCHEDULE.
- THE CONTRACTOR SHALL PROVIDE AND PAY FOR ALL COSTS ASSOCIATED WITH TEMPORARY PUBLIC AND/OR PRIVATE UTILITIES NEEDED FOR PERFORMANCE OF THE WORK
- CONTRACTOR TO PAY FOR ALL FEES AND COSTS (TEMPORARY & PERMANENT) ASSOCIATED WITH BUILDING PERMITS, UTILITIES, TAP FEES, INSPECTIONS, AND ALL OTHER ITEMS NOT SPECIFICALLY LISTED.
- INSTALL ALL MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND CONSTRUCTION DETAILS.
- ALL MATERIALS SHALL BE INSTALLED TO CONFORM TO ALL LOCAL, STATE, & NATIONAL BUILDING CODES.

**DEMO LEGEND:**

- INTERIOR PARTITION - DEMO COMPLETE INCLUDING BUT NOT LIMITED TO DOORS, FRAMES & HARDWARE.
- EXIST INTERIOR PARTITIONS / WALLS TO REMAIN
- DEMO OPENING IN FLOOR OR CEILING ASSEMBLY TO ACCOMMODATE NEW CHASE
- AREA NOT IN SCOPE AND NOT ACCESSIBLE DURING CONSTRUCTION

**DEMO REFLECTED CEILING LEGEND:**

- DEMO FIXTURE/EQUIPMENT
- EXISTING CEILING TO REMAIN
- DEMO CEILING SYS

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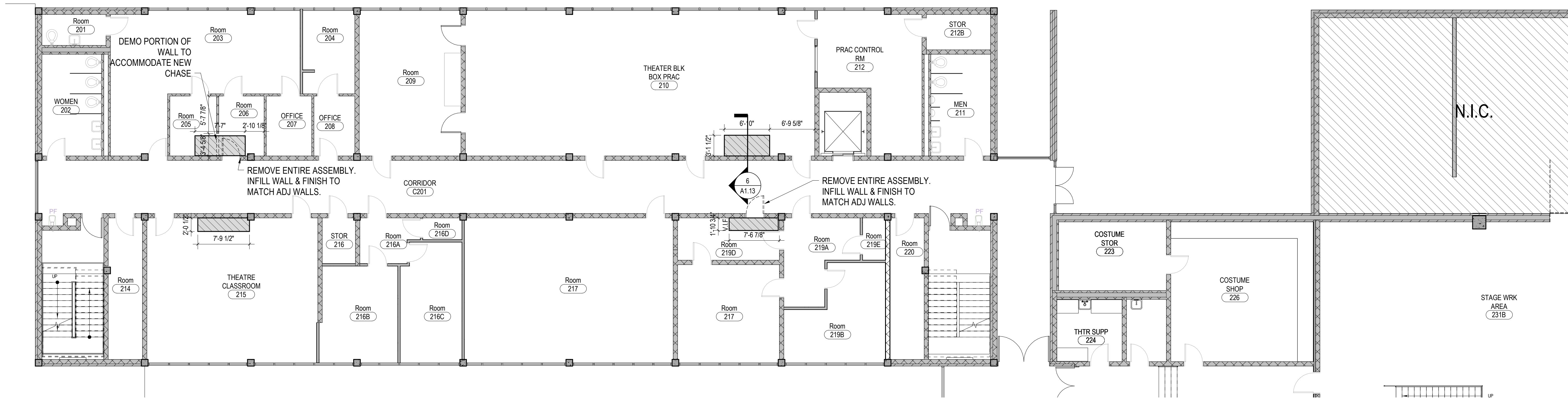
**UCA SNOW FINE ARTS CENTER RENOVATIONS**  
CONWAY, AR

VERIFY SCALE  
INCH ON ORIGINAL DRAWING  
0 1"

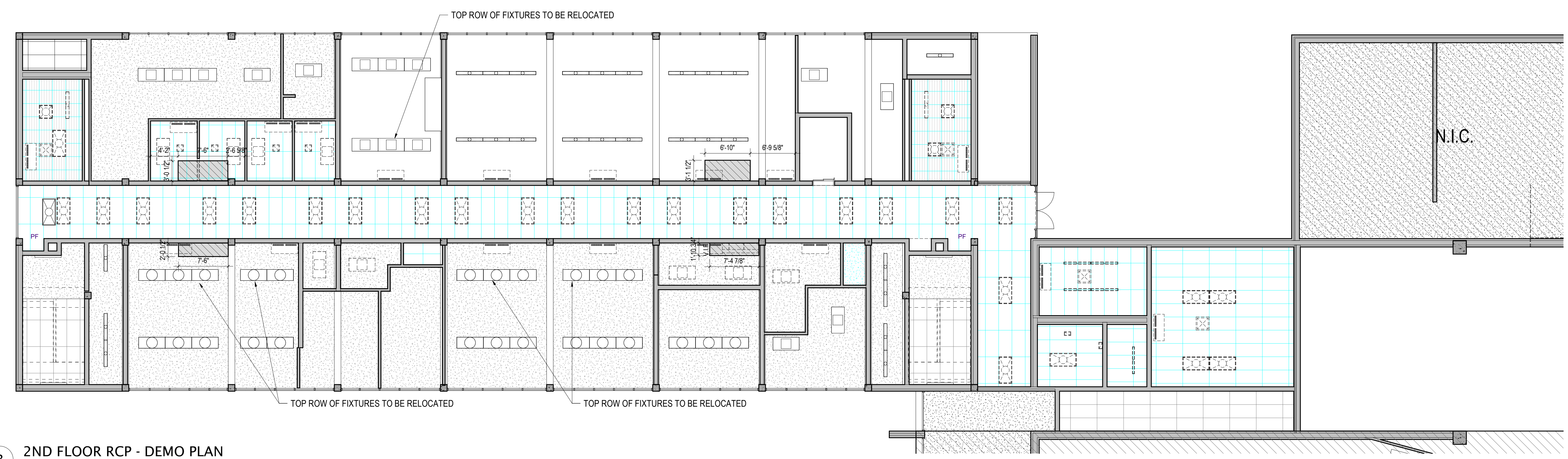


Date: 09/20/23  
Title: DEMO 1ST FLR PLANS  
Sheet Number:  
**.AD1.1**  
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#	Date	Description
		Revision History



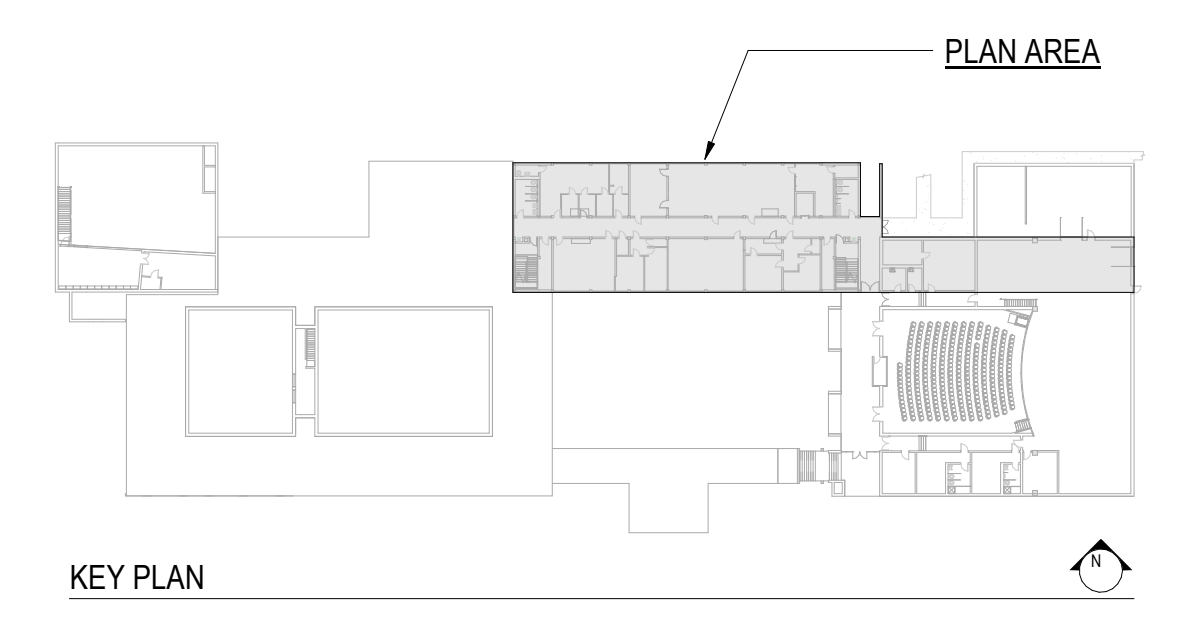
1 2ND FLOOR - DEMO PLAN  
SCALE: 1/8" = 1'-0"



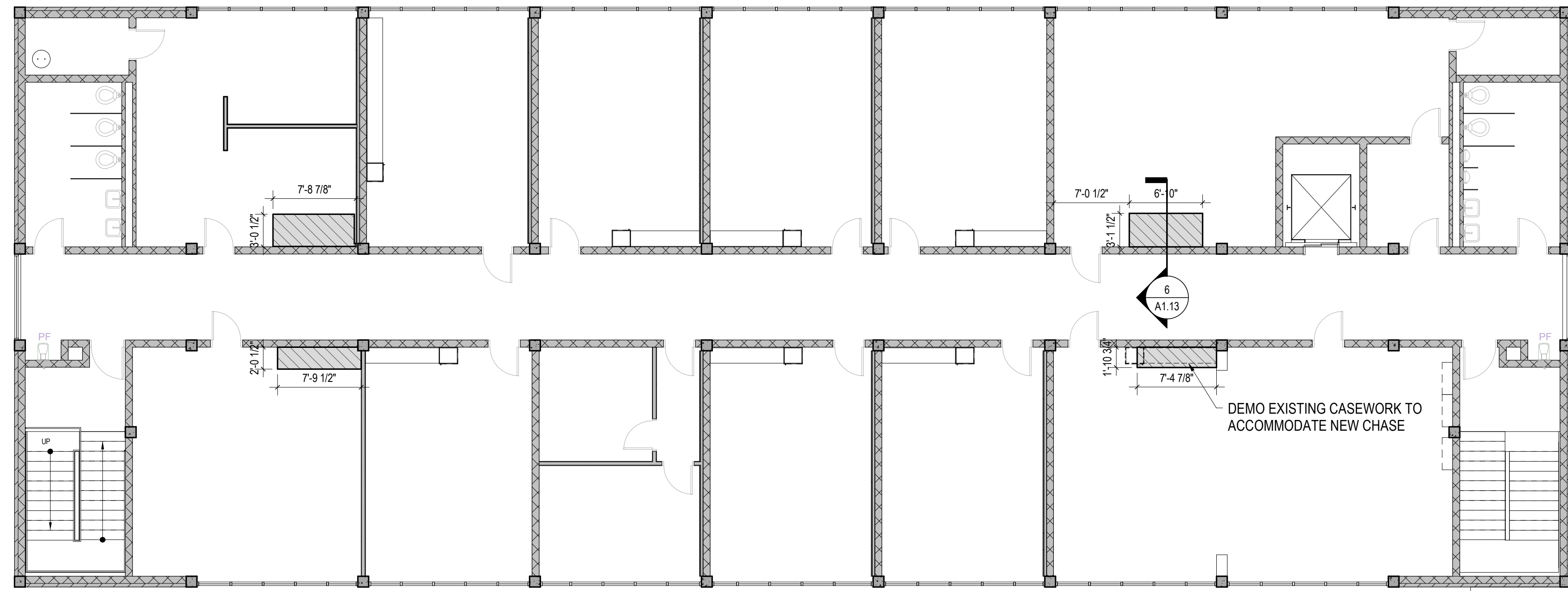
3 2ND FLOOR RCP - DEMO PLAN  
SCALE: 1/8" = 1'-0" Ref: A1.13

- DEMO LEGEND:**
- INTERIOR PARTITION - DEMO COMPLETE INCLUDING BUT NOT LIMITED TO DOORS, FRAMES & HARDWARE.
  - EXST INTERIOR PARTITIONS / WALLS TO REMAIN
  - DEMO OPENING IN FLOOR OR CEILING ASSEMBLY TO ACCOMMODATE NEW CHASE
  - AREA NOT IN SCOPE AND NOT ACCESSIBLE DURING CONSTRUCTION

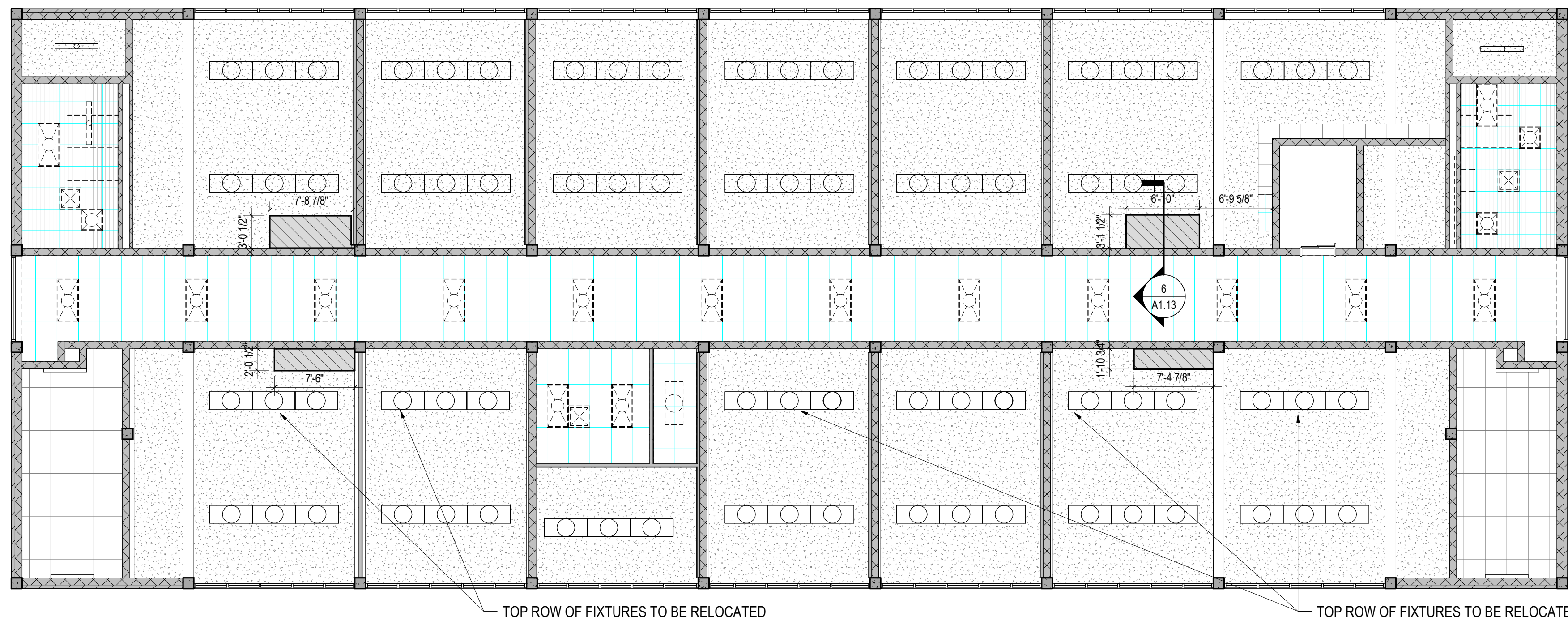
- DEMO REFLECTED CEILING LEGEND:**
- DEMO FIXTURE/EQUIPMENT
  - EXISTING CEILING TO REMAIN
  - DEMO CEILING SYS



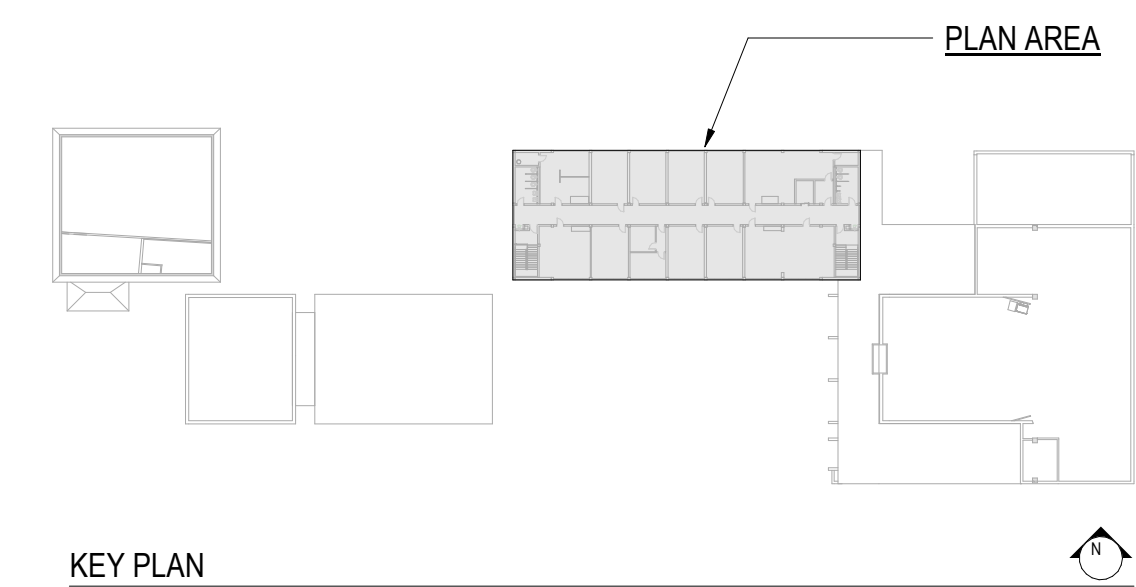
#	Date	Description



1 03 LEVEL 3 PLAN - DEMO  
SCALE: 1/8" = 1'-0"



3 3RD FLOOR RCP - DEMO PLAN  
SCALE: 1/8" = 1'-0"

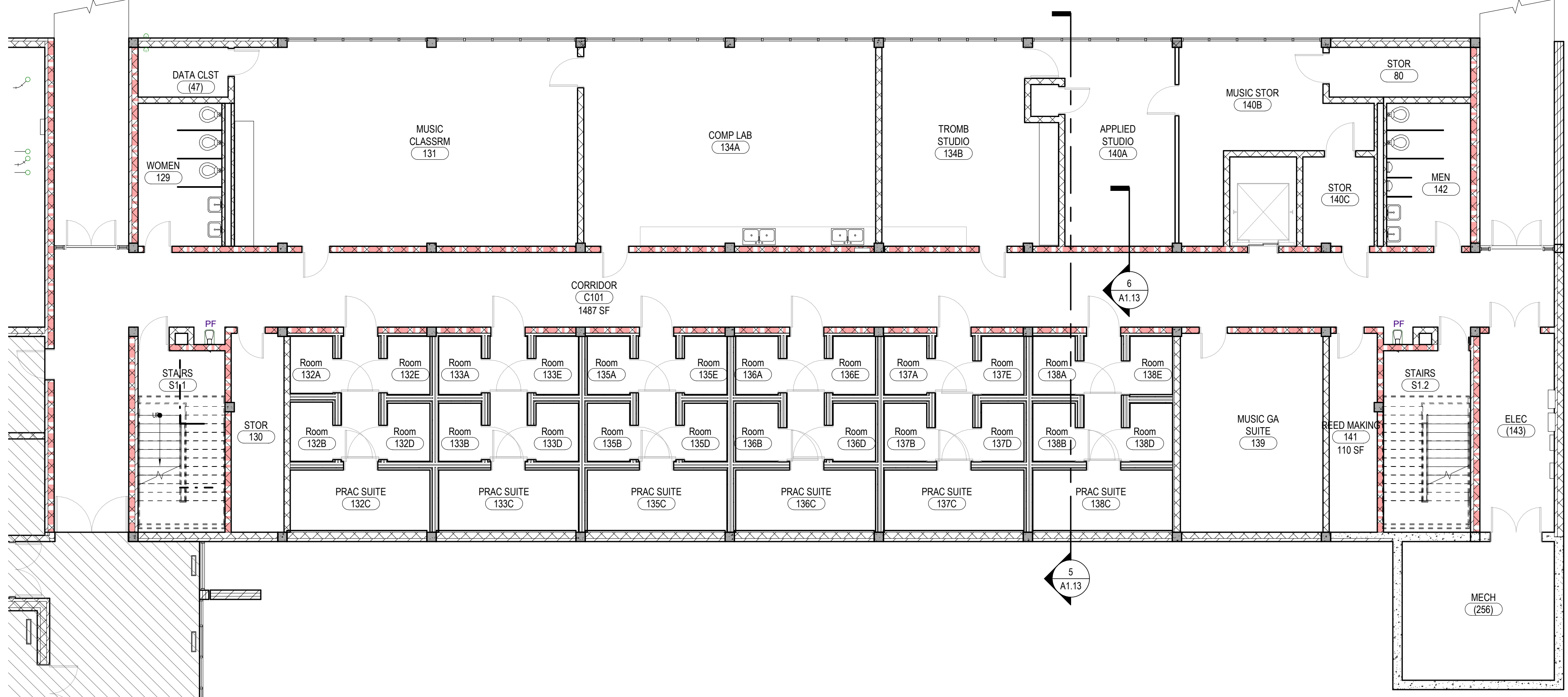


- DEMO LEGEND:**
- INTERIOR PARTITION - DEMO COMPLETE INCLUDING BUT NOT LIMITED TO DOORS, FRAMES & HARDWARE.
  - EXST INTERIOR PARTITIONS / WALLS TO REMAIN
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  - AREA NOT IN SCOPE AND NOT ACCESSIBLE DURING CONSTRUCTION

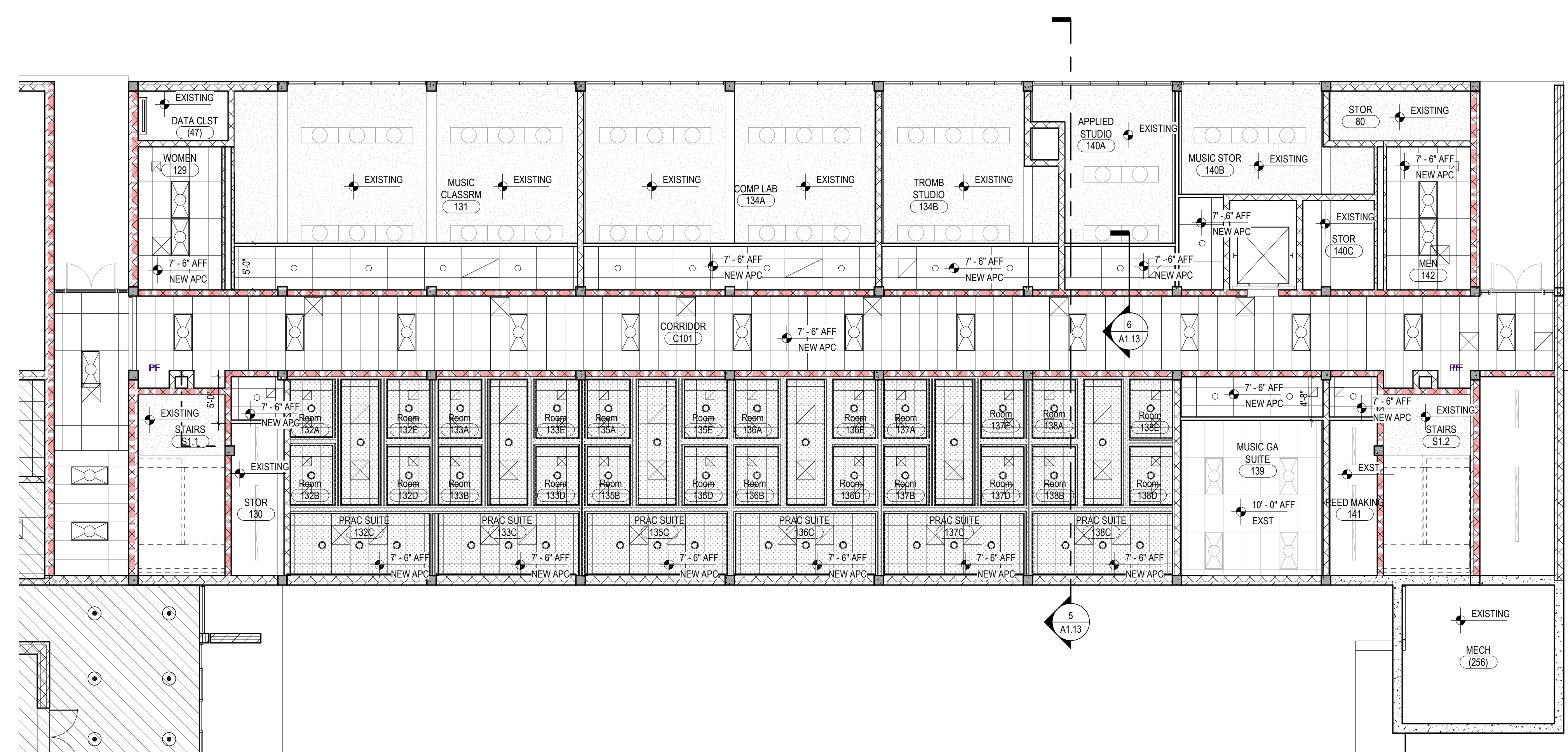
**DEMO REFLECTED CEILING LEGEND:**

- DEMO FIXTURE/EQUIPMENT
- EXISTING CEILING TO REMAIN
- DEMO CEILING SYS

#	Date	Description
		Revision History



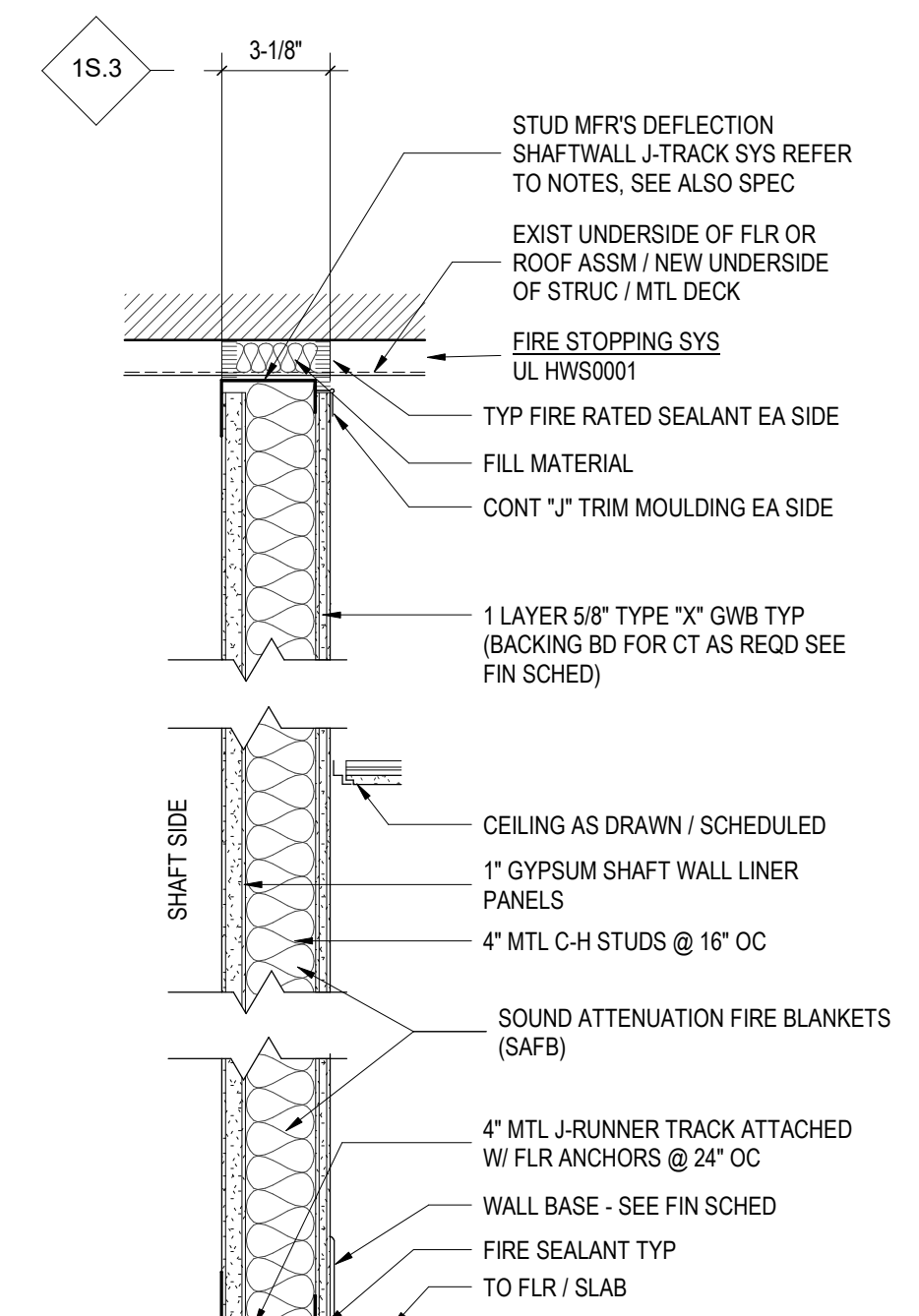
**1** 1ST FLOOR - RENOV PLAN  
SCALE: 1/8" = 1'-0"



**2** 1ST FLOOR RCP - RENOV PLAN  
SCALE: 1/8" = 1'-0"

**PARTITION TYPE GRAPHICS**

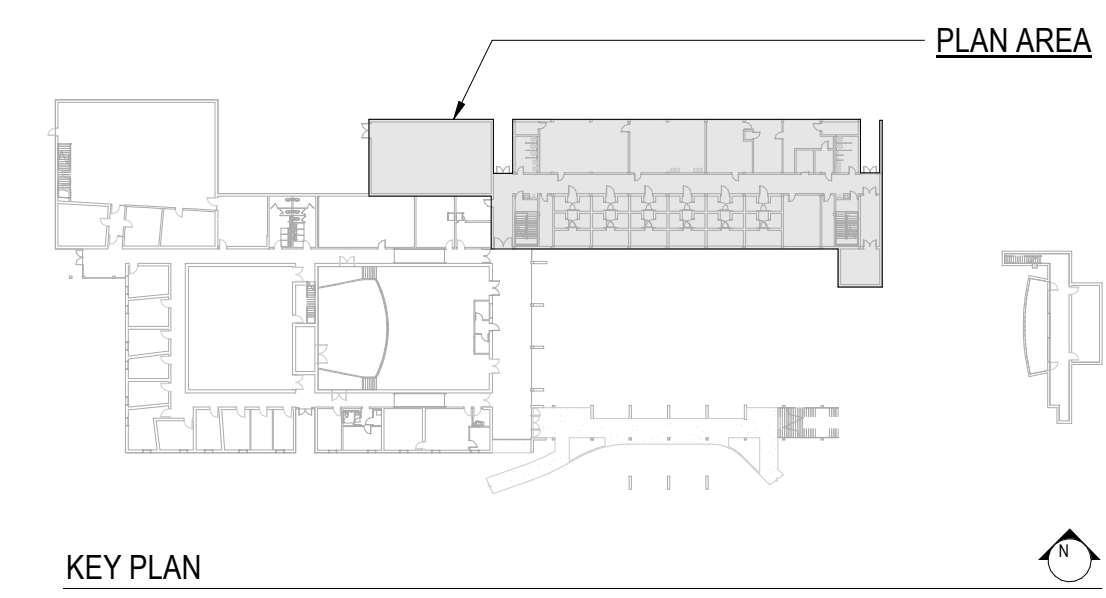
- EXISTING PARTITION
- ASSUMED 1 HR RATED EXISTING PARTITION
- NEW PARTITION - NO FIRE RATING
- NEW PARTITION - 1 HOUR FIRE RATING
- NEW PARTITION - 2 HOUR FIRE RATING



**1-HR RATED SHAFTWALL UL DESIGN # 415**  
NOTE: TYPES ARE CONTINUOUS UNLESS A DIFFERENT TAG INDICATES CHANGE IN TYPE

1S.3 SAME AS SHOWN EXCEPT W/ 2-1/2" STUDS

**NOTE:** FOR GENERAL PARTITION NOTES REFER TO DRAWING A0.00 GENERAL INFORMATION



**REFLECTED CEILING NOTES:**

1. ACOUSTICAL CEILING SUSPENSION GRIDS TO BE CENTERED IN AREA UNLESS OTHERWISE NOTED. ARCHITECT TO BE CONSULTED IN ADVANCE OF INSTALLATION WHERE LAYOUT RESULTS IN A TILE WIDTH LESS THAN 4 INCHES WIDE.
2. CEILING LIGHTS, HVAC DIFFUSERS & OTHER OBJECTS ON / IN THE CEILING ARE SHOWN GRAPHICALLY FOR ALIGNMENT PURPOSES ONLY. WHERE QUANTITIES OR TYPES DIFFER THE CONTRACTOR IS TO MAINTAIN A UNIFORM LAYOUT BOTH IN SPACING & SYMMETRY WITH RESPECT TO THE OTHER CEILING OBJECTS DEPICTED HERE OR ON SHEETS IN THE CONSTRUCTION DRAWING SET. IF THERE IS ANY QUESTION WHEN DEVIATING FROM THE RELATIONSHIPS AS ILLUSTRATED, NOTIFY & CONSULT THE ARCHITECT.
3. IF THERE IS ANY QUESTION AS TO A CEILING HEIGHT OR SOFFIT HEIGHT, NOTIFY & CONSULT THE ARCHITECT.
4. GC COORD: CEILING MOUNTED OBJECTS LOCATED ON ACOUSTICAL TILE CEILINGS ILLUSTRATED HERE OR ON OTHER SHEETS IN THE DRAWING SET SHALL BE LOCATED CENTER OF TILE.
5. ALL ACOUSTIC CEILINGS TO BE SUSPENDED AT 7'-6" AFF UNLESS NOTED OTHERWISE.

**REFLECTED CEILING LEGEND:**

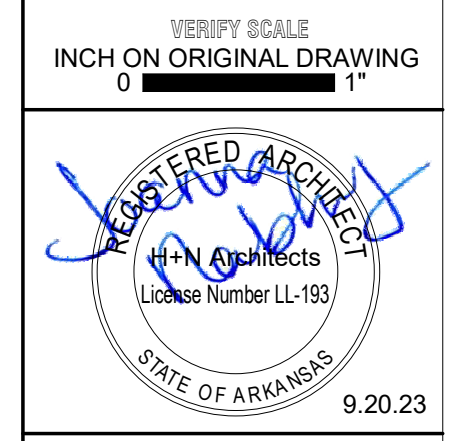
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|---|---------------------------|
| EXISTING SUSPENDED CEILING SYS                  | FLUSH MOUNT LED CAN LIGHT |
| NEW SUSPENDED CEILING SYS                       | RECESSED CAN LIGHT        |
| EXISTING CEILING                                | CANOPY                    |
| 2' X 4' FLAT PANEL                              | HVAC RETURN AIR GRILL     |
| LINEAR STRIP LIGHT                              | HVAC SUPPLY AIR GRILL     |
| NEW SUSPENDED CEILING WITH R-30 BATT INSULATION | EXIT SIGN                 |

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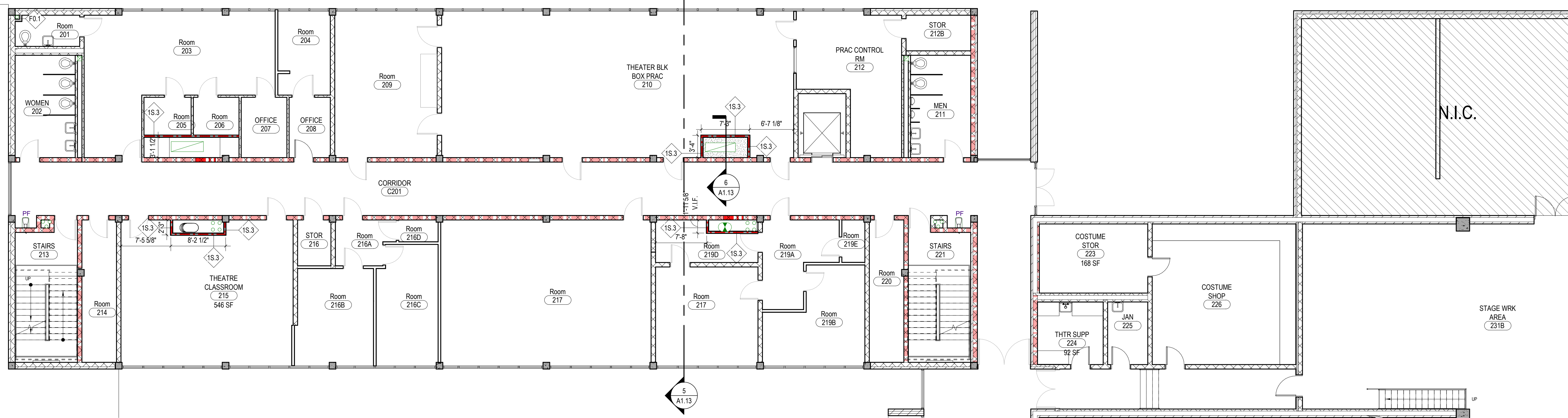
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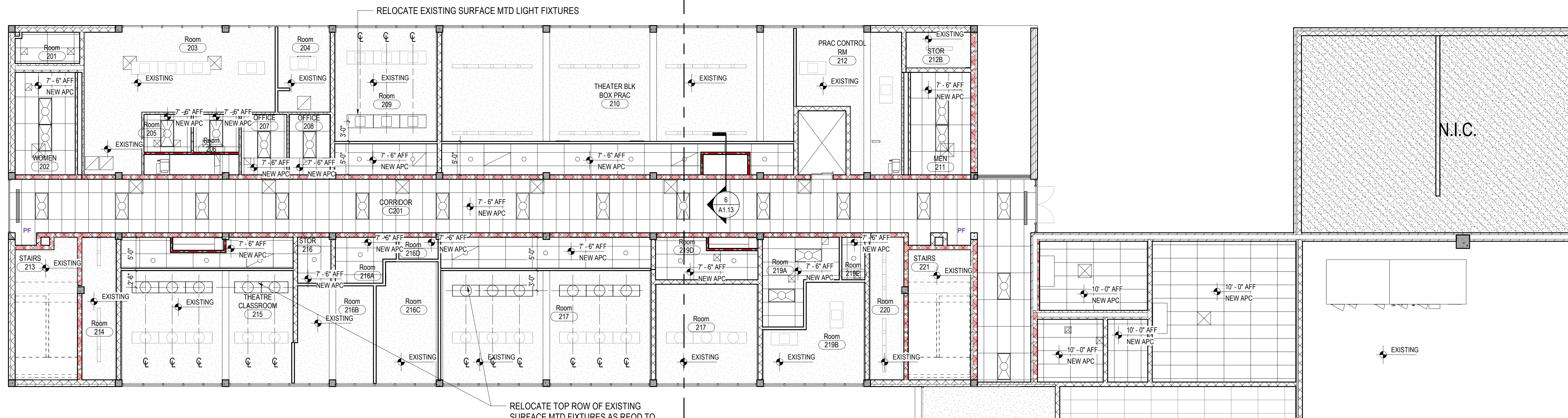


Date: 09/20/23  
Title: 1ST FLR RENOV FLR PLANS  
Sheet Number:  
**A1.01**  
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#	Date	Description



1 2ND FLOOR - RENOV PLAN  
SCALE: 1/8" = 1'-0"



2 2ND FLOOR RCP - RENOV PLAN  
SCALE: 1/8" = 1'-0"

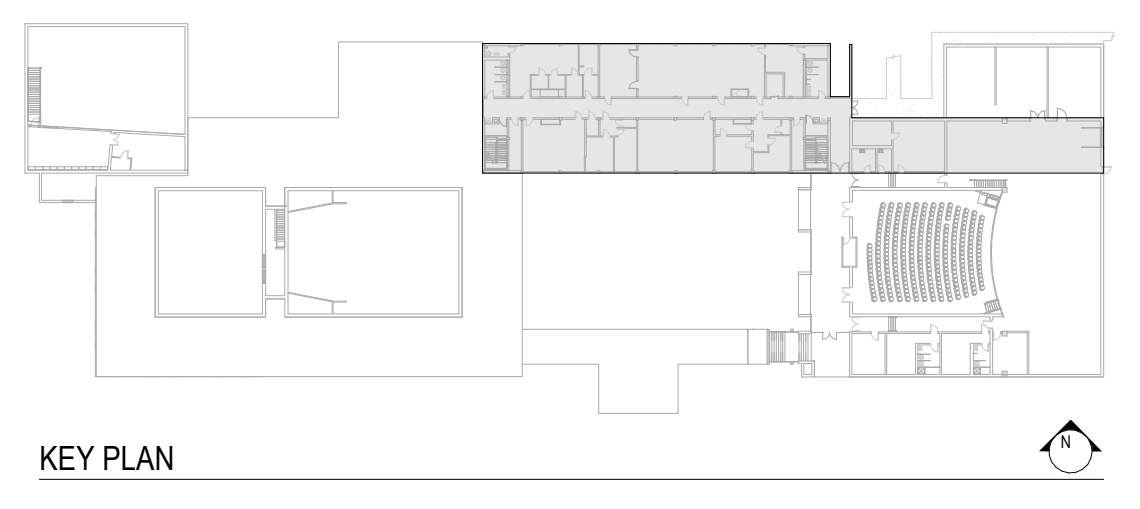
**PARTITION TYPE GRAPHICS**

	EXISTING PARTITION
	ASSUMED 1 HR RATED EXISTING PARTITION
	NEW PARTITION - NO FIRE RATING
	NEW PARTITION - 1 HOUR FIRE RATING
	NEW PARTITION - 2 HOUR FIRE RATING

- REFLECTED CEILING NOTES:**
- ACOUSTICAL CEILING SUSPENSION GRIDS TO BE CENTERED IN AREA UNLESS OTHERWISE NOTED. ARCHITECT TO BE CONSULTED IN ADVANCE OF INSTALLATION WHERE LAYOUT RESULTS IN A TILE WIDTH LESS THAN 4 INCHES WIDE.
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  - ALL ACOUSTIC CEILINGS TO BE SUSPENDED AT 7'-6" AFF UNLESS NOTED OTHERWISE.

**REFLECTED CEILING LEGEND:**

	EXISTING SUSPENDED CEILING SYS		FLUSH MOUNT LED CAN LIGHT
	NEW SUSPENDED CEILING SYS		RECESSED CAN LIGHT
	EXISTING CEILING		CANOPY
	2' X 4' FLAT PANEL		HVAC RETURN AIR GRILL
	LINEAR STRIP LIGHT		HVAC SUPPLY AIR GRILL
			EXIT SIGN



#	Date	Description

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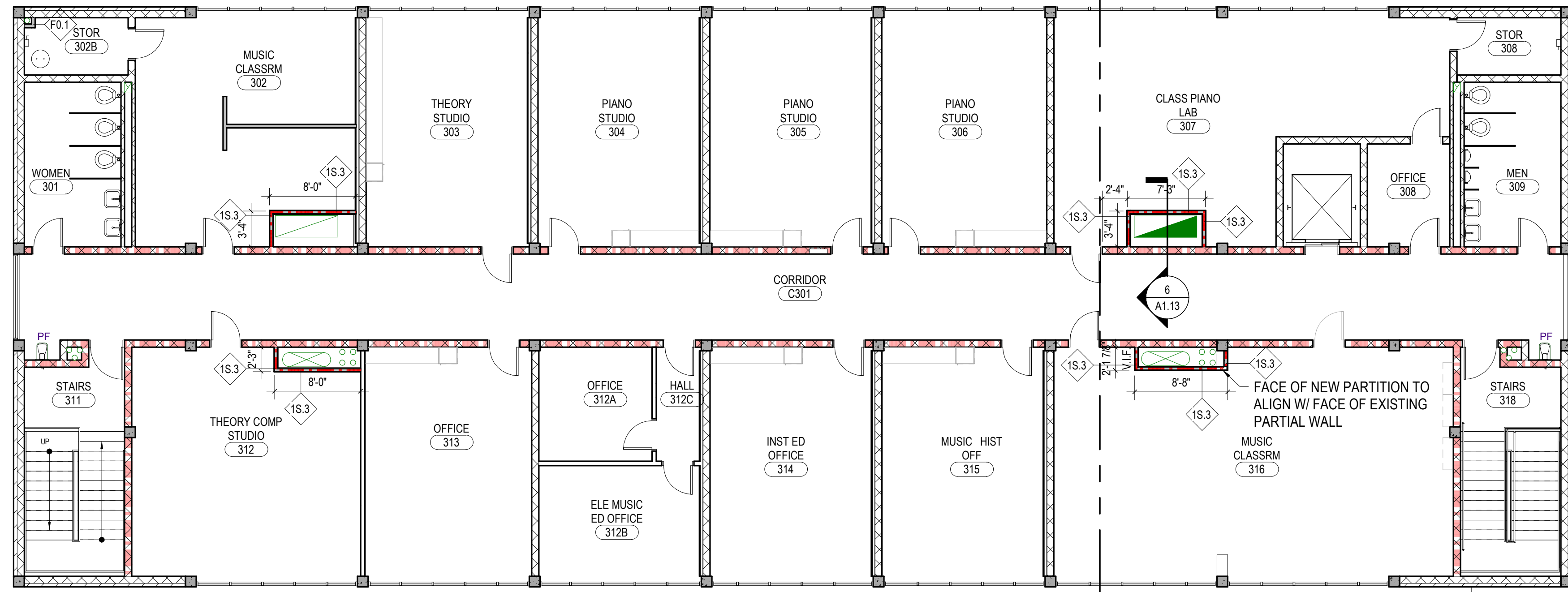
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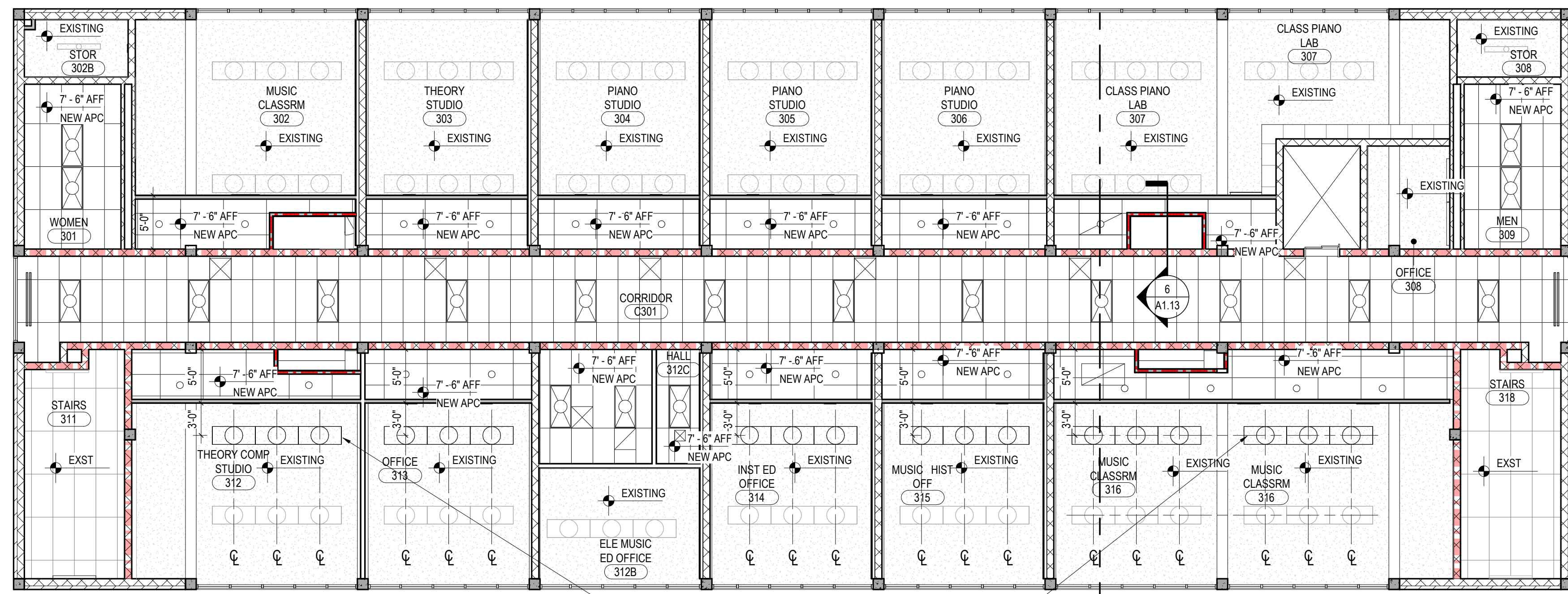
VERIFY SCALE  
INCH ON ORIGINAL DRAWING  
0" = 1"

**REGISTERED ARCHITECT**  
H+N Architects  
License Number LL-193  
STATE OF ARKANSAS  
9.20.23

Date: 09/20/23  
Title: 2ND FLR RENOV FLR PLANS  
Sheet Number:  
**A1.12**  
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1 3RD FLOOR - RENOV PLAN  
SCALE: 1/8" = 1'-0"



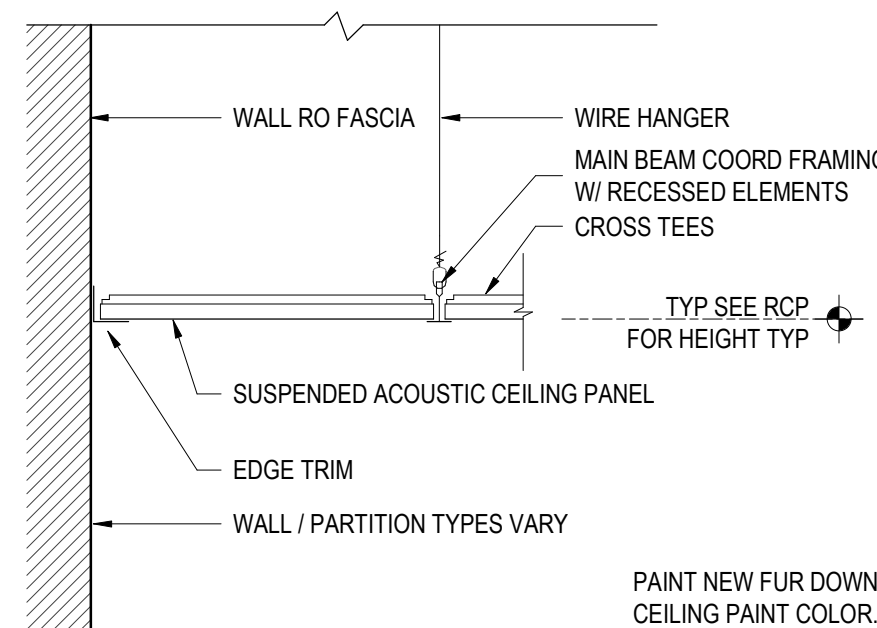
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SCALE: 1/8" = 1'-0"

REFLECTED CEILING NOTES:

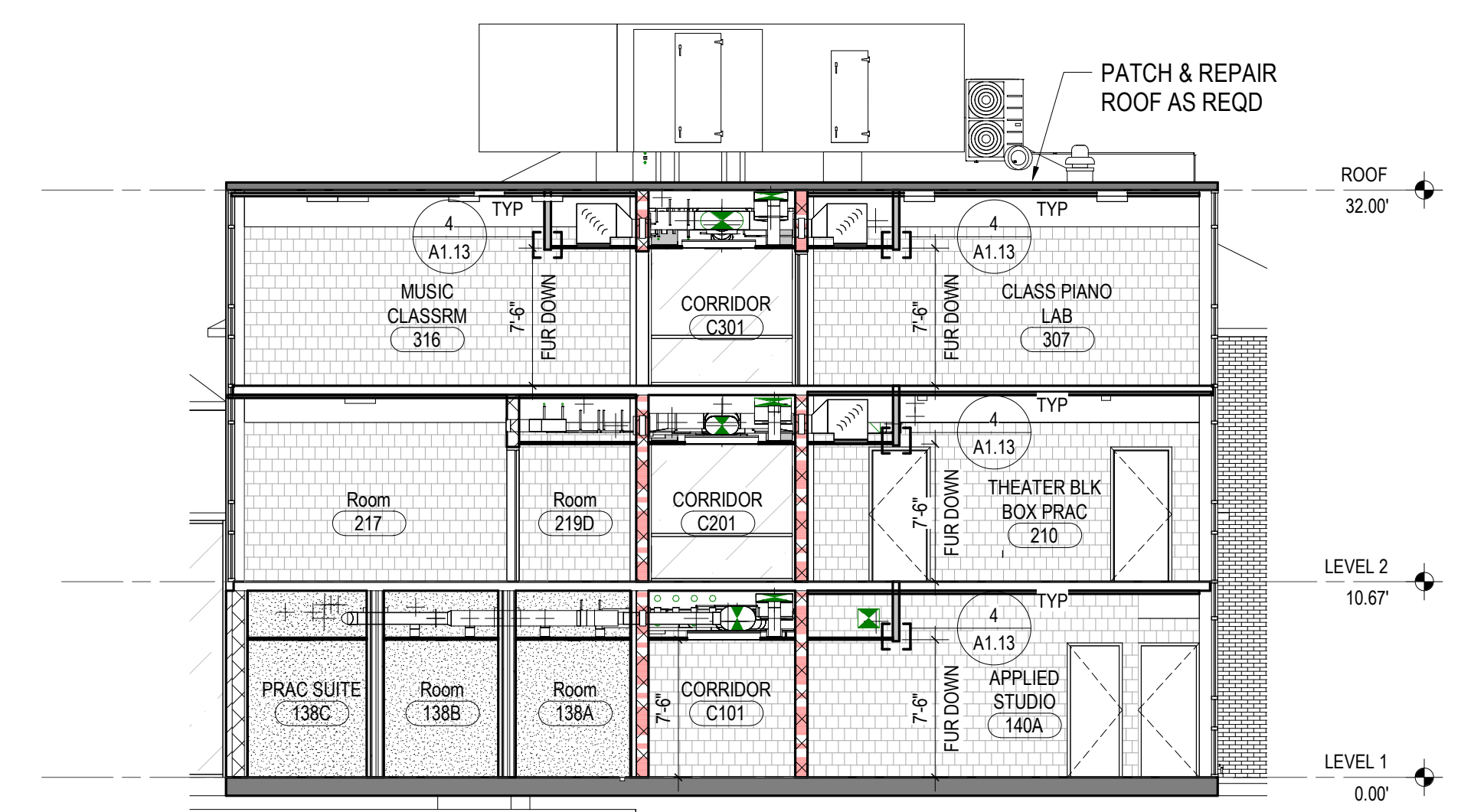
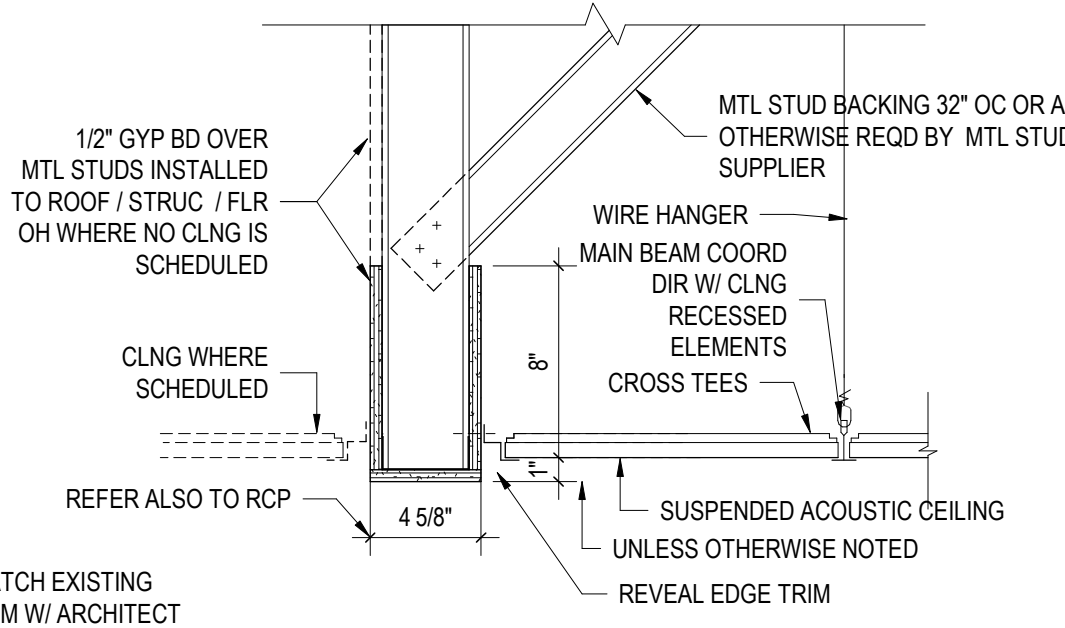
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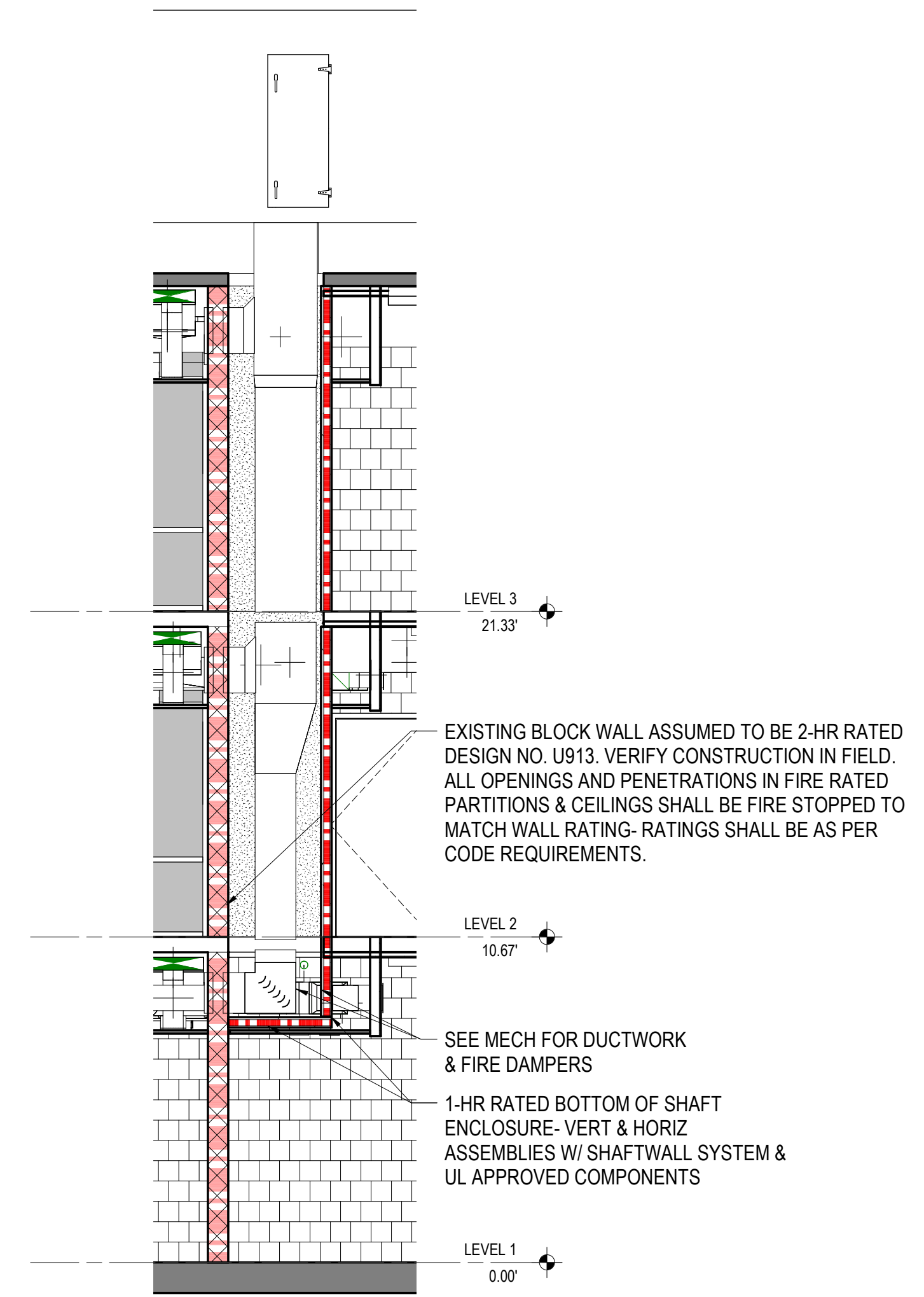
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|--|--------------------------------|--|---------------------------|
|  | EXISTING SUSPENDED CEILING SYS |  | FLUSH MOUNT LED CAN LIGHT |
|  | NEW SUSPENDED CEILING SYS      |  | RECESSED CAN LIGHT        |
|  | EXISTING CEILING               |  | CANOPY                    |
|  | 2' X 4' FLAT PANEL             |  | HVAC RETURN AIR GRILL     |
|  | LINEAR STRIP LIGHT             |  | HVAC SUPPLY AIR GRILL     |
|  |                                |  | EXIT SIGN                 |



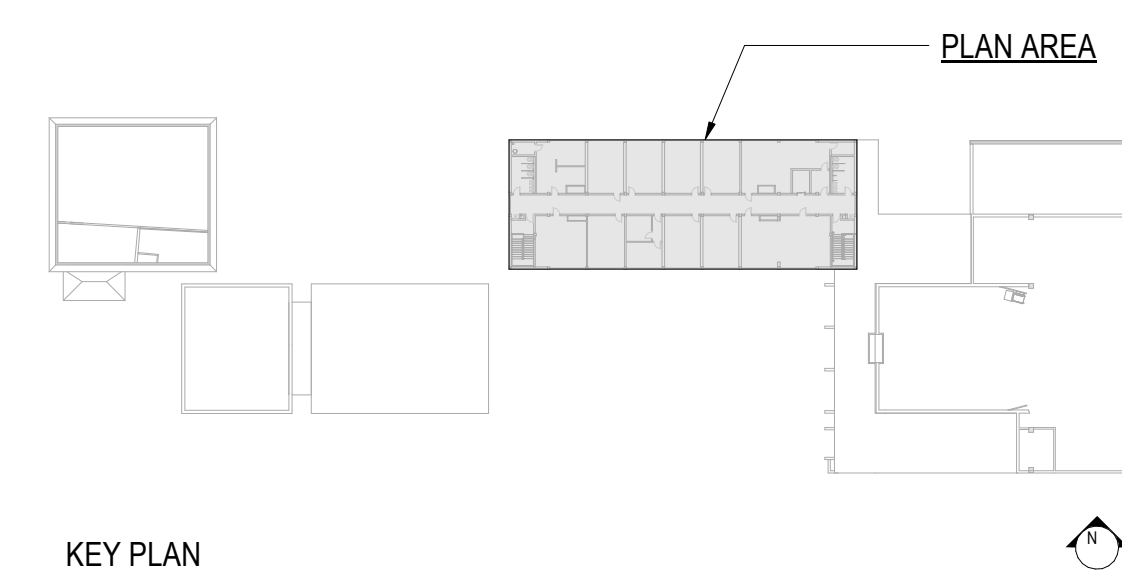
4 TYP CELNG DETAILS  
SCALE: 1 1/2" = 1'-0"



5 BUILDING SECTION  
SCALE: 1/8" = 1'-0"



6 RATED MECH SHAFT SECTION\_TYP  
SCALE: 1/4" = 1'-0"

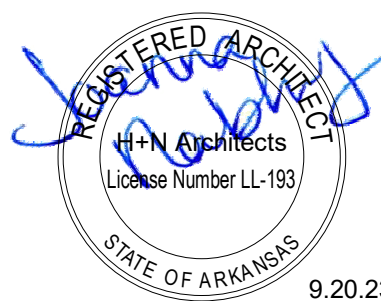


KEY PLAN



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VERIFY SCALE  
INCH ON ORIGINAL DRAWING  
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Date: 09/20/23

Title: 3RD FLR RENOV FLR PLANS

Sheet Number:

**A1.13**

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#	Date	Description



**STRUCTURAL DESIGN CRITERIA**

INTERNATIONAL BUILDING CODE (IBC 2021)  
 AMERICAN CONCRETE INSTITUTE (ACI)  
 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

1. EXISTING FLOOR/ROOF SUPPORT:  
 DEAD LOAD: MATERIAL AS INDICATED IN DETAILS  
 LIVE LOAD: 20 PSF ROOF  
 NEW RTU PER MEP

**ADHESIVE SET ANCHORS, REINFORCING BARS, & DOWEL NOTES**

- USE HILTI'S HY270 SYSTEM OR APPROVED EQUAL FOR ATTACHMENT TO HOLLOW AND GROUT-FILLED MASONRY UNITS.
- USE HILTI'S HY200 SYSTEM OR APPROVED EQUAL FOR ATTACHMENT INTO SOLID SURFACES ONLY. (E.G., SOLID CONCRETE.)
- FOR REBAR AND DOWEL EMBEDMENT, USE HY200 ADHESIVE, OR APPROVED EQUAL AS NOTED ABOVE.
- USE HILTI'S THREADED RODS OR APPROVED EQUAL UNLESS SPECIFICALLY NOTED OTHERWISE. SUBSTITUTION OF A 36 ALL-THREAD ROD WILL **NOT** BE ALLOWED. RODS ANCHORING INTO UNREINFORCED MASONRY SHALL BE BENT AT 22 1/2° ANGLE UNO.
- WHERE BASE MATERIAL IS HOLLOW BLOCK, BRICK OR OTHER MATERIAL CONTAINING POCKETS OR VOIDS, A SCREEN TUBE, PER MANUFACTURERS RECOMMENDATIONS, SHALL BE EMPLOYED IN THE SYSTEM.
- FOLLOW MANUFACTURERS REQUIREMENTS FOR MINIMUM DEPTH OF BASE MATERIAL, MINIMUM EDGE DISTANCES, AND MINIMUM BOLT/BAR SPACING.
- UNLESS SPECIFIED OTHERWISE, ANCHORS SHALL BE EMBEDDED IN THE APPROPRIATE SUBSTRATE WITH A MINIMUM EMBEDMENT OF 8 TIMES THE NOMINAL ANCHOR DIAMETER OR THE EMBEDMENT DEPTH REQUIRED TO SUPPORT THE INTENDED LOAD.
- POST-INSTALLED ANCHORS SHALL ONLY BE USED WHERE SPECIFIED ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL FROM THE ENGINEER-OF-RECORD PRIOR TO INSTALLING POST-INSTALLED ANCHORS IN PLACE OF MISSING OR MISPLACED CAST-IN-PLACE ANCHORS. CARE SHALL BE TAKEN IN PLACING POST-INSTALLED ANCHORS TO AVOID CONFLICTS WITH EXISTING REINFORCING. HOLES SHALL BE DRILLED AND CLEANED IN ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS. SUBSTITUTION REQUESTS FOR PRODUCTS OTHER THAN THOSE SPECIFIED BELOW SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER-OF-RECORD ALONG WITH CALCULATIONS THAT ARE PREPARED & SEALED BY A REGISTERED PROFESSIONAL ENGINEER. THE CALCULATIONS SHALL DEMONSTRATE THAT THE SUBSTITUTED PRODUCT IS CAPABLE OF ACHIEVING THE PERTINENT EQUIVALENT PERFORMANCE VALUES (MINIMUM) OF THE SPECIFIED PRODUCT USING THE APPROPRIATE DESIGN PROCEDURE AND/OR STANDARD(S) AS REQUIRED BY THE BUILDING CODE. PROVIDE CONTINUOUS SPECIAL INSPECTION FOR ALL ADHESIVES AND MECHANICAL ANCHORS PER THE PRODUCT'S APPLICABLE ICC-ES OR IAPMO-ES EVALUATION REPORT (ICC-ES ESR). CONTACT MANUFACTURER'S REPRESENTATIVE FOR THE INITIAL TRAINING AND INSTALLATION OF ANCHORS AND FOR PRODUCT RELATED QUESTIONS AND AVAILABILITY.
  - CONCRETE ANCHORS
    - MECHANICAL ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 308.4 AND ICC-ES AC108 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION.
    - ADHESIVE ANCHORS SHALL HAVE BEEN TESTED AND QUALIFIED FOR USE IN ACCORDANCE WITH ACI 308.4 AND ICC-ES AC108 FOR CRACKED AND UNCRACKED CONCRETE RECOGNITION.

**GENERAL INFORMATION**

- SUBSTITUTION OF EXPANSION OR ADHESIVE ANCHORS FOR EMBEDDED ANCHORS SHALL NOT BE PERMITTED UNLESS SPECIFICALLY APPROVED IN WRITING BY THE STRUCTURAL ENGINEER OF RECORD PRIOR TO PLACING OF CONCRETE CONTAINING THE ANCHORS.
- THE CONTRACTOR SHALL INSURE THAT NO CONSTRUCTION LOAD EXCEEDS THE DESIGN LIVE LOADS INDICATED ON THE STRUCTURAL DRAWINGS AND THAT THESE LOADS ARE NOT PLACED ON THE STRUCTURAL MEMBERS PRIOR TO THE TIME THAT ALL FRAMING MEMBERS AND THEIR CONNECTIONS ARE IN PLACE.
- THE SIZE AND LOCATION OF EQUIPMENT PADS AND PENETRATIONS THROUGH THE STRUCTURE FOR MECHANICAL, ELECTRICAL, AND PLUMBING WORK SHALL BE VERIFIED BY THE CONTRACTOR. OPENINGS AND PENETRATIONS NOT SPECIFICALLY SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE SUBJECT TO APPROVAL BY THE STRUCTURAL ENGINEER OF RECORD.
- REFER TO MEP DRAWINGS FOR ADDITIONAL INFORMATION TO BE COORDINATED WITH THE STRUCTURAL DRAWINGS.
- PRIOR TO FABRICATION AND/OR ERECTION OF ANY MATERIALS, THE CONTRACTOR SHALL FIELD VERIFY ALL PERTINENT EXISTING DIMENSIONS, ELEVATIONS, AND CONDITIONS AND SHALL REPORT ANY DISCREPANCIES TO THE STRUCTURAL ENGINEER OF RECORD IMMEDIATELY UPON DISCOVERY.
- THE PREPARATION OF THE SUBGRADE INCLUDING ALL PROOF-ROLLING AND UNDERCUTTING AND THE SELECTION, PLACEMENT, COMPACTION AND TESTING OF ALL FILL MATERIAL SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL REPORT FOR THIS PROJECT.
- THE GENERAL CONTRACTOR SHALL VERIFY THE SITE CONDITIONS INCLUDING UNDERGROUND UTILITIES BEFORE STARTING WORK AND SHALL NOTIFY THE STRUCTURAL ENGINEER OF RECORD OF ANY CONDITIONS ENCOUNTERED CONTRADICTORY TO THOSE SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS.
- THE GENERAL CONTRACTOR SHALL COORDINATE THE MECHANICAL, ELECTRICAL, PLUMBING AND CIVIL WORK WITH THE STRUCTURAL CONTRACT DOCUMENTS AND SHALL REPORT ANY SUSPECTED DISCREPANCIES OR OMISSIONS TO THE ENGINEER IMMEDIATELY. THE STRUCTURAL CONTRACT DOCUMENTS DO NOT INCLUDE SHOP DRAWINGS, VENDOR DRAWINGS NOR ANY MATERIAL PREPARED AND SUBMITTED BY THE CONTRACTOR OR SUBCONTRACTORS.
- REFERENCE TO STANDARD SPECIFICATIONS OF ANY TECHNICAL SOCIETY, ORGANIZATION OR ASSOCIATION OR TO CODES OF LOCAL OR STATE AUTHORITIES SHALL MEAN THE LATEST STANDARD, CODE SPECIFICATION OR TENTATIVE SPECIFICATION ADOPTED AND PUBLISHED AT THE DATE OF TAKING BIDS UNLESS SPECIFICALLY STATED OTHERWISE.
- FOR DIMENSIONS NOT SHOWN ON THE STRUCTURAL CONTRACT DOCUMENTS, SEE THE MECHANICAL DRAWINGS. THE CONTRACTOR SHALL REVIEW THE STRUCTURAL DRAWINGS FOR SECTIONS AND DETAILS THAT ARE LABELED AS "TYPICAL" AND ARE NOT NECESSARILY REFERENCED ON THE STRUCTURAL PLANS WHERE THEY APPLY.

**EXISTING CONSTRUCTION**

- BEFORE FABRICATION AND ERECTION OF ANY MATERIALS, FIELD VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, AND CONDITIONS AS SHOWN ON THE DRAWINGS AND REPORT ANY DISCREPANCIES TO THE ENGINEER OF RECORD AT ONCE.

**SUBMITTAL PROCEDURES**

- TRANSMIT SUBMITTALS SUFFICIENTLY IN ADVANCE OF RELATED CONSTRUCTION ACTIVITIES TO AVOID UNNECESSARY DELAY. THE STRUCTURAL ENGINEER OF RECORD MAY WITHHOLD ACTION ON A SUBMITTAL REQUIRING COORDINATION WITH OTHER SUBMITTALS UNTIL ALL RELATED SUBMITTALS ARE RECEIVED.
- SUBMIT DIGITAL COPIES THROUGH THE ARCHITECT FOR THE "SHOP DRAWINGS" REVIEW.
- CONTRACTOR SHALL COMPLY WITH DIVISION ONE SECTION - "SUBMITTALS"
- NO REPRODUCTIONS OF THE CONSTRUCTION DOCUMENTS ARE ACCEPTABLE FOR USE AS SHOP DRAWINGS.
- ACTION STAMP: THE STRUCTURAL ENGINEER OF RECORD WILL STAMP EACH SUBMITTAL WITH A UNIFORM ACTION STAMP TO INDICATE THE ACTION TAKEN IN ONE OF FOUR OPTIONS LISTED BELOW:

APPROVED .....	WORK COVERED BY THE SUBMITTAL COMPLIES WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.
APPROVED AS NOTED .....	WORK COVERED BY THE SUBMITTAL MAY PROCEED PROVIDED IT COMPLIES WITH NOTATIONS OR CORRECTIONS ON THE SUBMITTAL AND REQUIREMENTS OF THE CONTRACT DOCUMENTS
REVISE AND RESUBMIT .....	WORK COVERED BY THE SUBMITTAL DOES NOT COMPLY WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND MUST BE CHANGED TO COMPLY AND RESUBMIT THE ENTIRE SUBMITTAL.
REJECTED .....	WORK COVERED BY THE SUBMITTAL IS TOTALLY UNACCEPTABLE AND MAY NOT PROCEED.

**SPECIAL INSPECTION ITEMS**

- SPECIAL INSPECTION SHALL BE PROVIDED BY THE OWNER ACCORDING TO SECTION 1704 OF IBC 2021. THE APPROVED SPECIAL INSPECTOR SHALL DEMONSTRATE COMPETENCE FOR INSPECTION OF THE PARTICULAR TYPE OF CONSTRUCTION OR OPERATION REQUIRING SPECIAL INSPECTION. THE SPECIAL INSPECTOR SHALL SEND REPORTS TO THE OWNER, THE BUILDING OFFICIAL, THE STRUCTURAL ENGINEER OF RECORD, AND THE CONTRACTOR. THE SPECIAL INSPECTOR SHALL BRING NON-CONFORMING ITEMS TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR AND NOTE ALL SUCH ITEMS IN THE REPORTS. ANY UNRESOLVED ITEM ABOUT TO BE COVERED BY THE WORK SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S CONSTRUCTION MANGER AS WELL AS THE STRUCTURAL ENGINEER OF RECORD. THE SPECIAL INSPECTOR SHALL SUBMIT A FINAL SIGNED REPORT STATING WHETHER OR NOT THE WORK REQUIRING SPECIAL INSPECTION WAS, TO THE BEST OF THE INSPECTOR'S KNOWLEDGE, IN CONFORMANCE WITH THE APPROVED PLANS AND SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE SPECIAL INSPECTION AGENCY REGARDING INDIVIDUAL INSPECTIONS FOR ITEMS LISTED ON THE SCHEDULE AND AS NOTED ON THE BUILDING DEPARTMENT APPROVED PLANS. ADEQUATE NOTICE AND ACCESS TO APPROVED PLANS SHALL BE PROVIDED SO THAT THE SPECIAL INSPECTOR HAS TIME TO BECOME FAMILIAR WITH THE PROJECT.
  - THIS SECTION INCLUDES ADMINISTRATIVE AND PROCEDURAL REQUIREMENTS NECESSARY FOR COMPLIANCE WITH THE INTERNATIONAL BUILDING CODE, CHAPTER 17, STRUCTURAL TESTS AND SPECIAL INSPECTIONS.
  - THE OWNER WILL ENGAGE ONE OR MORE QUALIFIED SPECIAL INSPECTORS AND/OR TESTING AGENCIES TO CONDUCT STRUCTURAL TESTS AND SPECIAL INSPECTIONS SPECIFIED IN THE SPECIFICATION AND RELATED SECTIONS, AND AS MAYBE SPECIFIED IN OTHER DIVISIONS OF THESE SPECIFICATIONS.
  - STRUCTURAL TESTING AND SPECIAL INSPECTION SERVICES ARE REQUIRED TO VERIFY COMPLIANCE WITH REQUIREMENTS SPECIFIED OR INDICATED. THESE SERVICES DO NOT RELIEVE CONTRACTOR OF RESPONSIBILITY FOR COMPLIANCE WITH OTHER CONSTRUCTION DOCUMENT REQUIREMENTS.
    - SPECIFIC QUALITY ASSURANCE AND CONTROL REQUIREMENTS FOR INDIVIDUAL CONSTRUCTION ACTIVITIES ARE SPECIFIED IN THE SECTIONS THAT SPECIFY THOSE ACTIVITIES. REQUIREMENTS IN THOSE SECTIONS MAY ALSO COVER PRODUCTION OF STANDARD PRODUCTS.
    - SPECIFIED TESTS, INSPECTIONS, AND RELATED ACTIONS DO NOT LIMIT CONTRACTOR'S OTHER QUALITY ASSURANCE AND CONTROL PROCEDURES THAT FACILITATE COMPLIANCE WITH THE CONSTRUCTION DOCUMENT REQUIREMENTS.
    - REQUIREMENTS FOR CONTRACTOR TO PROVIDE QUALITY - ASSURANCE AND - CONTROL SERVICES REQUIRED BY ENGINEER, OWNER, OR AUTHORITIES HAVING JURISDICTION ARE NOT LIMITED BY PROVISIONS OF THIS SECTION.
  - STRUCTURAL STEEL (PER SECTION 1705.2).
    - SHOP FABRICATION OF STEEL MEMBERS.
    - STEEL MATERIAL ID MARKINGS & CONFORMANCE TO ASTM STANDARDS.
    - ALL STRUCTURAL FIELD WELDING PER AWS D1.1, EXCEPT AS FOLLOWS:
- ADDITIONALLY, COMPLIANCE IS REQUIRED WITH FIELD QUALITY CONTROL PROVISIONS OF THE FOLLOWING SPECIFICATION SECTIONS:
  - STRUCTURAL STEEL: SECTION 05 1200.

**STEEL FRAMING NOTES**

- UNLESS SPECIFICALLY NOTED OTHERWISE, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH AISC SPECIFICATIONS, LATEST EDITION.
- ALL STRUCTURAL STEEL HSS SQUARE/RECT SECTIONS SHALL BE ASTM A500, GRADE B (Fy=46 ksi). ALL STRUCTURAL STEEL WIDE FLANGE SHALL BE ASTM A992 GRADE 50, CHANNEL SHAPES AND ALL OTHER MISCELLANEOUS STEEL SHALL BE ASTM A36 OR A572. ALL STRUCTURAL STEEL HSS ROUND SHALL BE ASTM A500, GRADE B (Fy=42 ksi). ALL BASE PLATES SHALL BE ASTM A572-50.
- ALL STRUCTURAL BOLTS CONNECTING STRUCTURAL STEEL SHALL BE ASTM A325 TYPE 1 WITH THREADS ALLOWED IN THE SHEAR PLANE, EXCEPT ANCHOR BOLTS SHALL BE ASTM F1554 GR55, MUST MEET S1 WELDABILITY REQUIREMENT OR GR36 AS NOTED.
- WELD ELECTRODES SHALL BE E70XX.
- DO NOT WELD BOTTOM FLANGE BRACES UNTIL ALL DEAD LOADS ARE IN PLACE.
- UNLESS DETAILED OTHERWISE, ALL SHOP CONNECTIONS SHALL BE WELDED. UNLESS DETAILED OTHERWISE, ALL FIELD CONNECTIONS SHALL BE MADE USING 3/4", AND 1" WHERE INDICATED, ASTM A325-N (OR ASTM F1852) HIGH STRENGTH BOLTS ("N" INDICATES BEARING TYPE WITH THREADS INCLUDED IN SHEAR PLANE), WASHERS SHALL BE INSTALLED UNDER NUTS WHEN REQUIRED BY THE SPECIFICATIONS OF STRUCTURAL JOINTS.
- WHERE FIELD AND SHOP WELDS ARE INDICATED ON THE DRAWINGS, THEY SHALL BE THE SIZE AND TYPE NOTED. ALL WELDING OF STRUCTURAL STEEL SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF AWS D1.1 CORRESPONDING TO THE AISC SPECIFICATION USED AND ALL WELDS INCLUDING FIELD WELDS SHALL BE MADE BY CERTIFIED WELDERS USING E70XX ELECTRODES.
  - HIGH STRENGTH BOLTS (3/4", AND 1", ASTM A325-N (OR ASTM F1852) SHALL BE TIGHTENED TO PROVIDE, WHEN ALL BOLTS IN THE JOINT ARE TIGHT, A MINIMUM BOLT TENSION OF 28k (FOR 3/4" BOLTS & 51k) FOR 1" BOLTS. ONE OF THE FOLLOW METHODS SHALL BE USED:
    - POWER WRENCHES ADJUSTED TO STALL OR CUT-OUT AT THE CORRECT TENSION.
    - MANUAL TORQUE WRENCHES WITH TORQUE INDICATION SET TO GIVE THE CORRECT TENSION.
    - MANUAL WRENCHES USING THE "TURN-OF-NUT" METHOD OF ASSURING THE CORRECT BOLT TENSION.
    - DIRECT-TENSION INDICATORS
- UNLESS SPECIFICALLY NOTED OTHERWISE, ALL HIGH-STRENGTH BOLTS (A325, F1852, AND A490) AND TWIST OFF BOLTS SHALL BE PRE-TENSIONED TO MEET SLIP-CRITICAL REQUIREMENTS EVEN IF THE JOINT IS DESIGNED AS A "SNUG-TIGHT" BEARING CONNECTION. ALL JOINTS SHALL BE DESIGNED TO BE BEARING TYPE CONNECTIONS UNLESS NOTED OTHERWISE.
- ALL STEEL MEMBERS EXPOSED TO WEATHER SHALL BE HOT-DIPPED GALV. GALVANIZED OR PAINTED WITH TNESEC EPOXY SYSTEM OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL OTHER STEEL MEMBERS SHALL BE FURNISHED WITH A SHOP COAT OF TNESEC RED OR GRAY OXIDE PRIMER OR SIMILAR SYSTEM MEETING THE REQUIREMENTS FOR PAINTING STRUCTURAL STEEL IN THE PROJECT SPECIFICATIONS. ALL PRIMERS SHALL BE COMPATIBLE WITH TOP COATINGS SPECIFIED.
- BEARING ENDS OF ALL COLUMNS SHALL BE SQUARE CUT.
- ALL HANGERS, CLIPS, INSERTS, ETC. SUSPENDED FROM THE FLOOR STRUCTURE OR THE ROOF STRUCTURE (BEAMS, JOISTS, AND DECK) SHALL BE INSTALLED PRIOR TO THE APPLICATION OF THE SPRAYED-ON FIREPROOFING. PATCH ANY FIREPROOFING DAMAGED AFTER THE INITIAL APPLICATION.
- FIELD CUTTING, DRILLING, OR OTHER MODIFICATION OF STRUCTURAL STEEL COMPONENTS IS NOT PERMITTED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER OF RECORD. WHERE BEAM PENETRATIONS CANNOT BE AVOIDED OR WHERE CUTTING IS REQUIRED, THE CONTRACTOR SHALL SUBMIT, TO THE STRUCTURAL ENGINEER OF RECORD, ALL PERTINENT INFORMATION INCLUDING PENETRATION SHAPE, SIZE, LOCATION, AND METHOD OF CUTTING THE OPENINGS.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR INCLUDING THE COSTS FOR ALL MISCELLANEOUS STEEL IN THEIR BID REGARDLESS OF WHETHER OR NOT THOSE ITEMS ARE INDICATED ON THE STRUCTURAL DRAWINGS. THESE COSTS SHALL INCLUDE, BUT ARE NOT LIMITED TO, MISCELLANEOUS STEEL ITEMS SHOWN ON CIVIL, MECHANICAL, PLUMBING, AND ELECTRICAL DRAWINGS.
- SUBMIT STEEL SHOP DRAWINGS FOR REVIEW.**

**Bernhard TME**  
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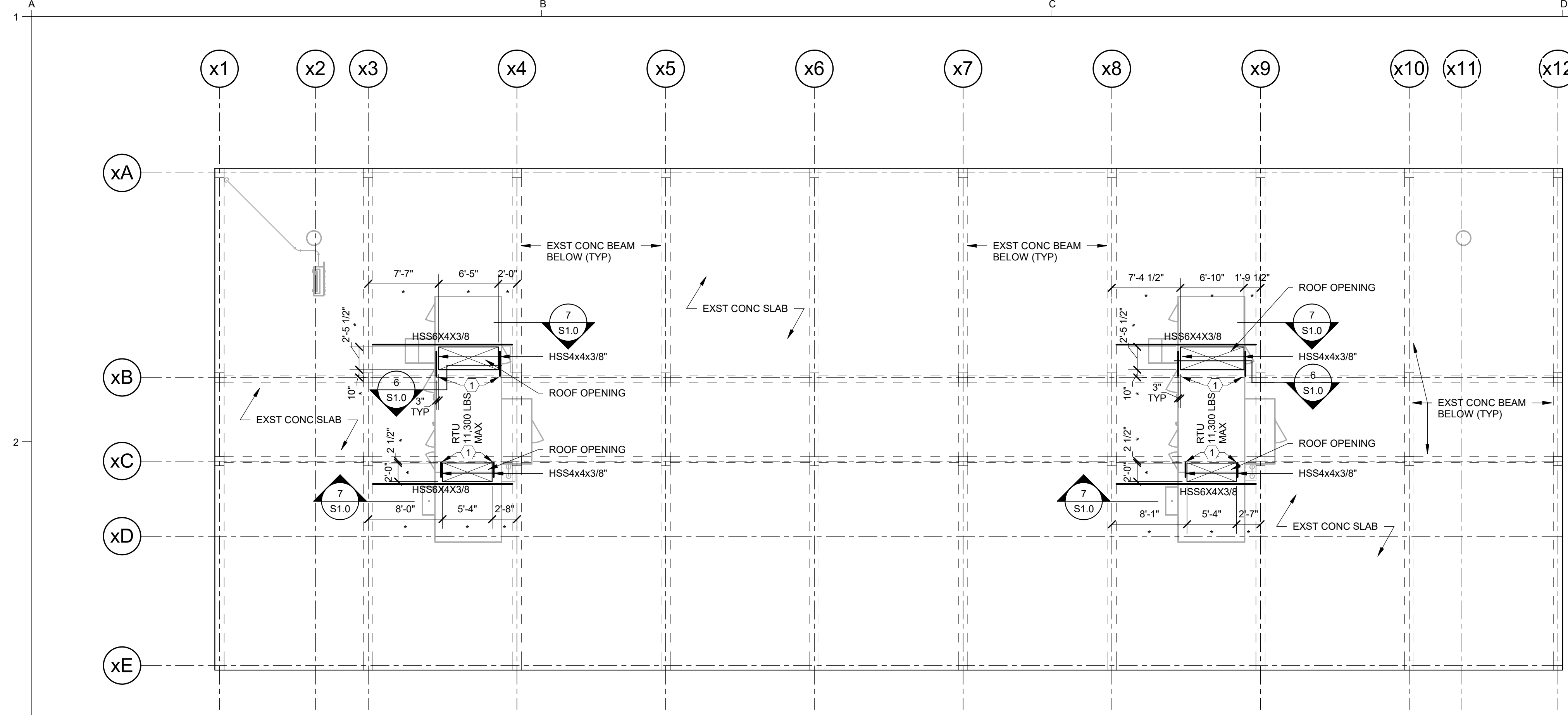
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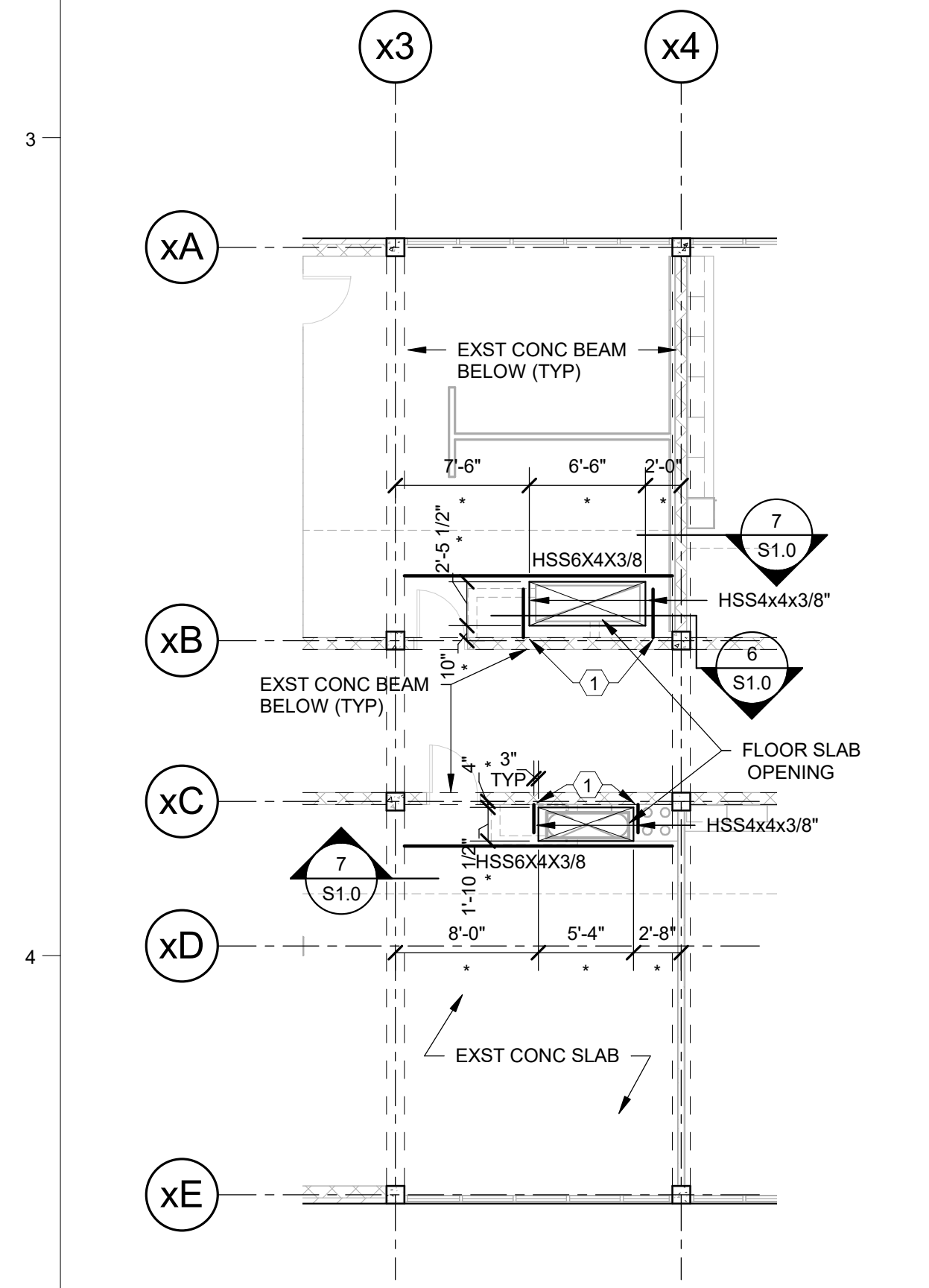
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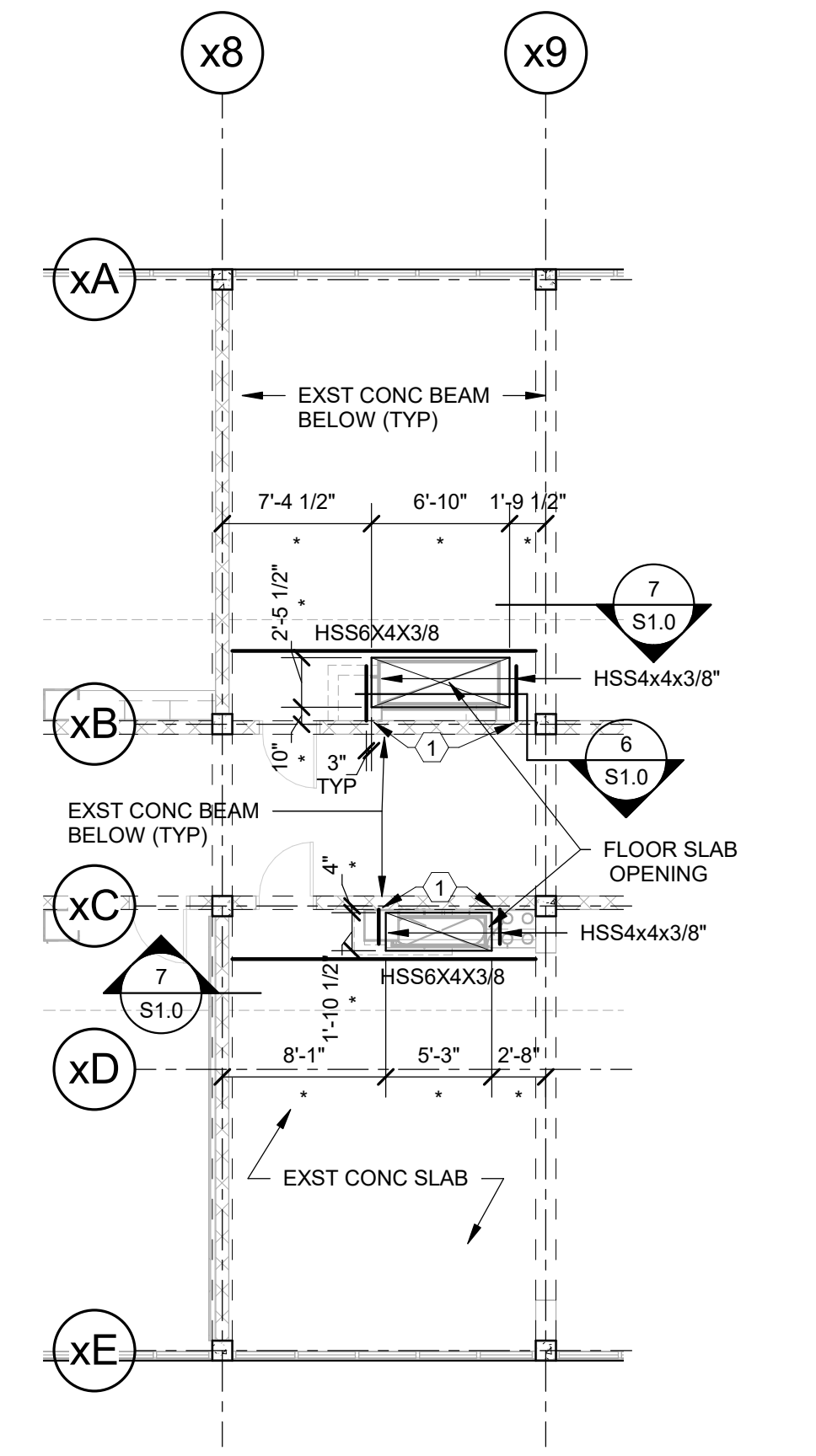
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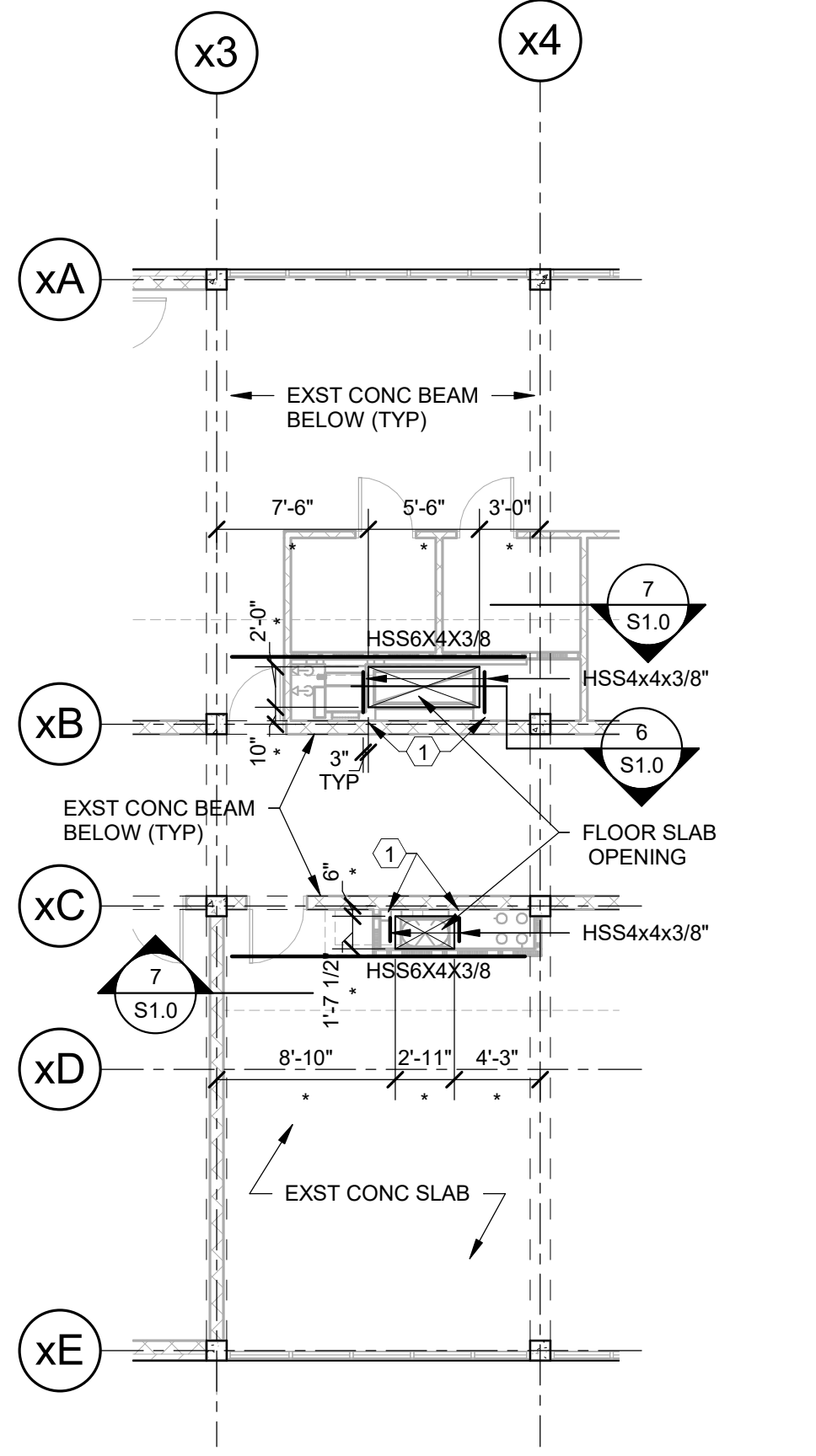
**1 ROOF PLAN**  
1/8" = 1'-0"



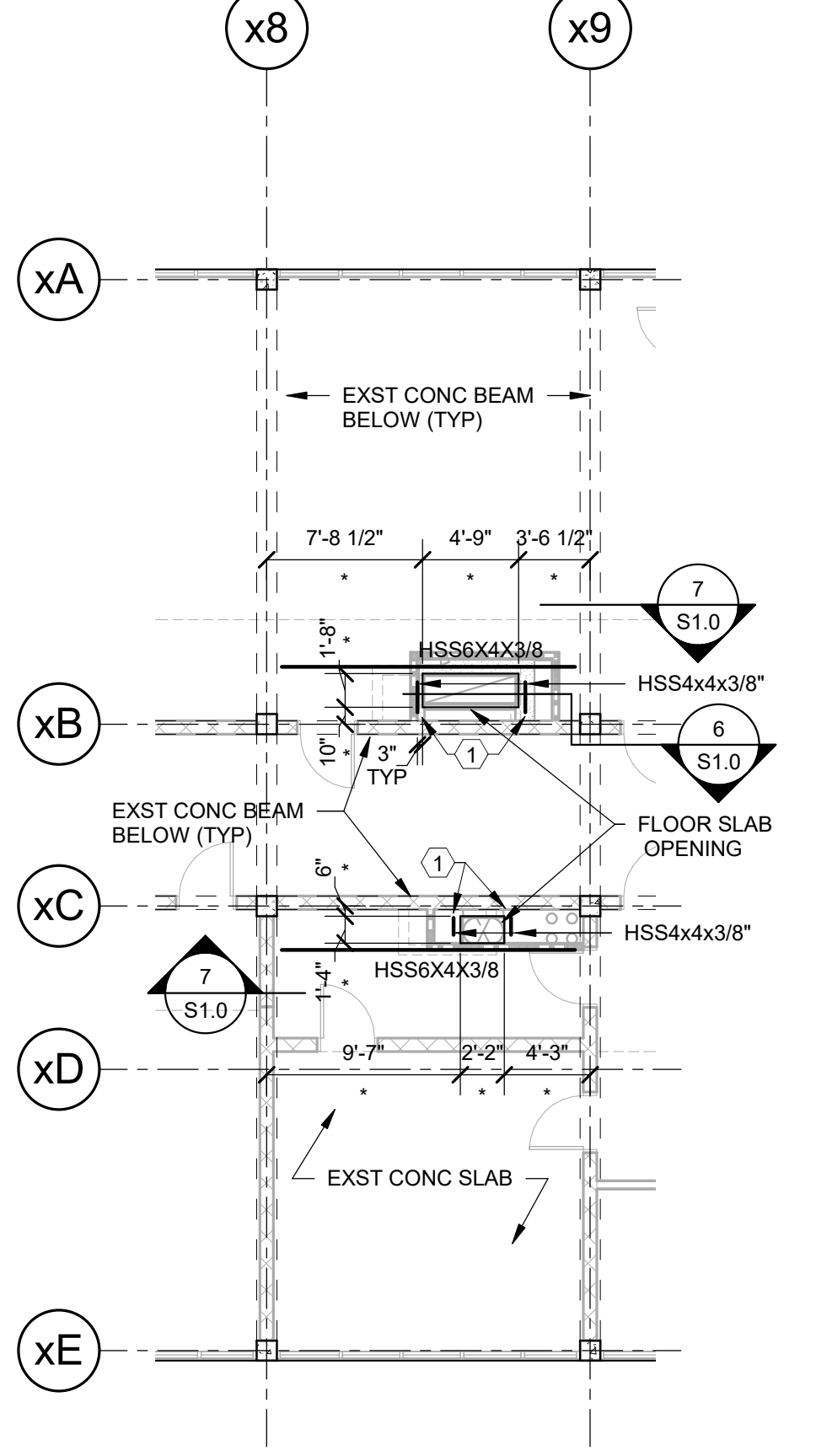
**2 3RD FLOOR - PARTIAL PLAN**  
1/8" = 1'-0"



**3 3RD FLOOR - PARTIAL PLAN**  
1/8" = 1'-0"



**4 2ND FLOOR - PARTIAL PLAN**  
1/8" = 1'-0"



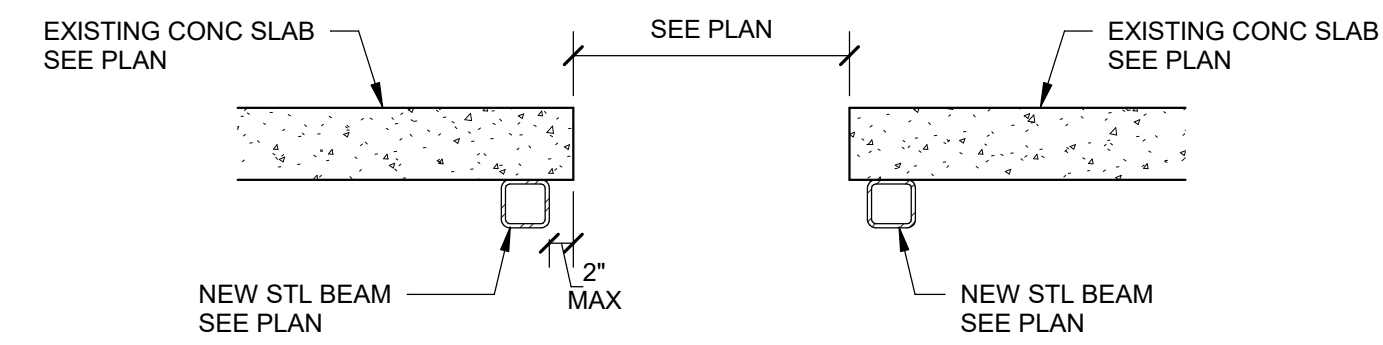
**5 2ND FLOOR - PARTIAL PLAN**  
1/8" = 1'-0"

**SHEET NOTES:**  
 1. GC TO FIELD VERIFY LOCATIONS OF EXISTING CONC BEAMS/COLS CUTTING OF EXISTING BEAMS/COLUMNS NOT ALLOWED UNLESS DETAILED OTHERWISE  
 2. ALL STEEL TO BE PAINTED PER THE STRUCTURAL NOTES ON S0.1 AND SPECIFICATIONS  
 3. \* = VERIFY w/MEP

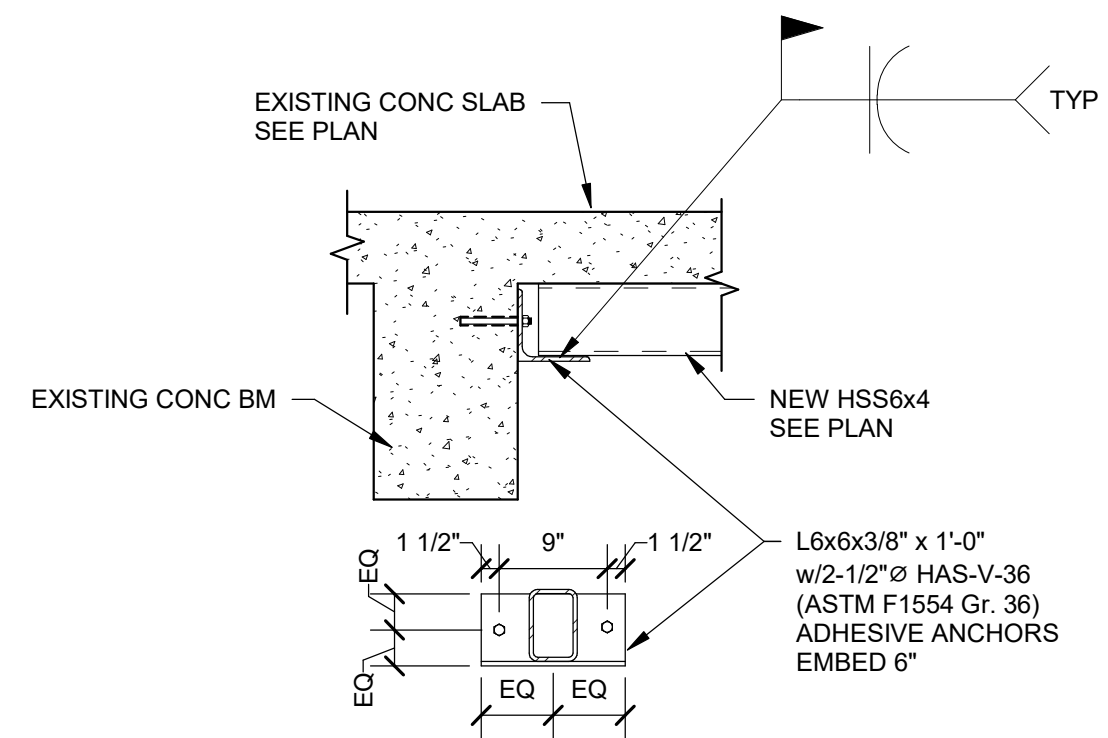
**KEYED NOTES:**  
 ① SEE 8/S1.0 FOR HSS4x4 CONN

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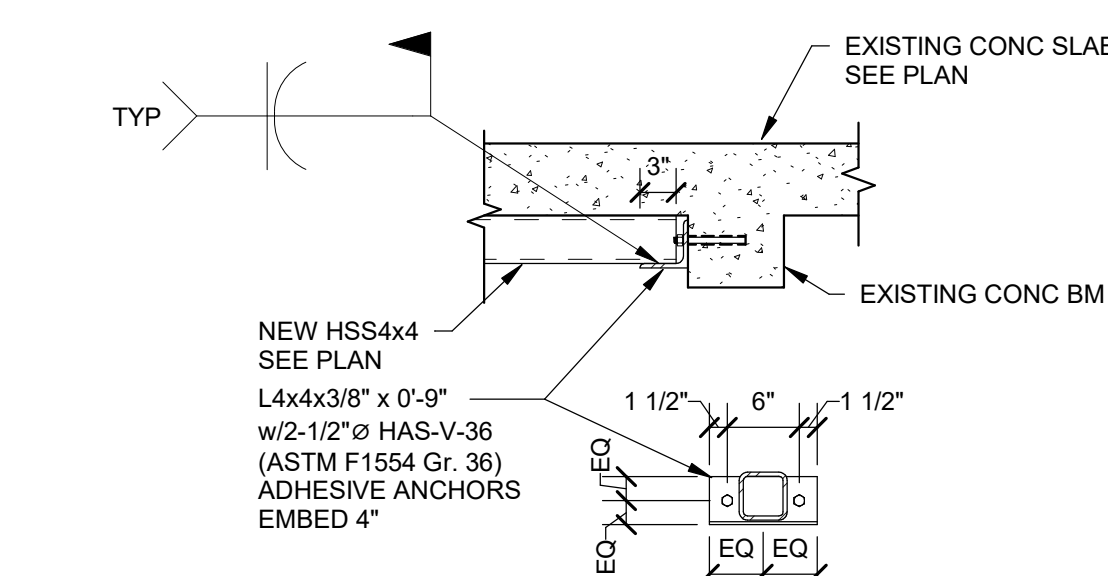
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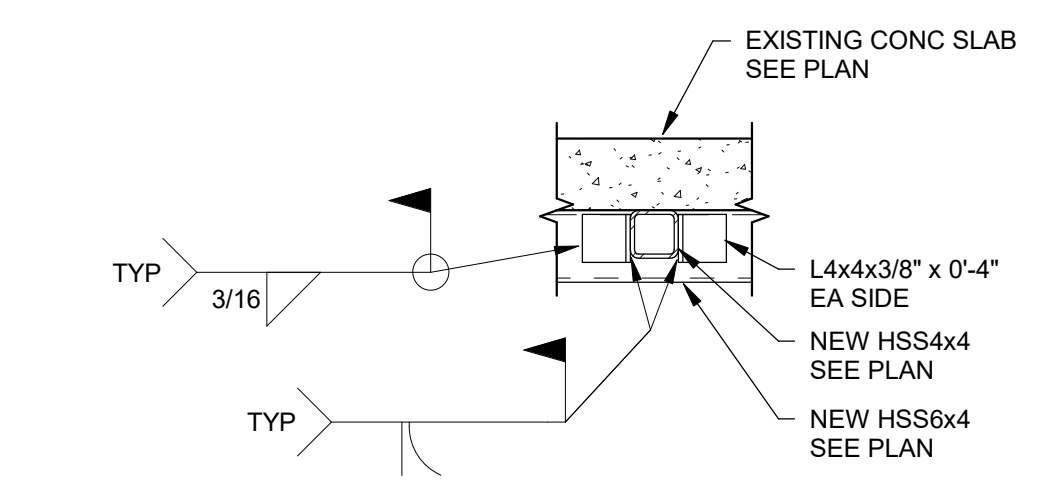
**6 TYP OPENING THRU EXISTING CONC SLAB**  
3/4" = 1'-0"



**HSS6x4 CONN**  
**7 FRAMING CONN AT EXST CONC BEAM**  
3/4" = 1'-0"



**HSS4x4 CONN**  
**8 FRAMING CONN AT EXST CONC BEAM**  
3/4" = 1'-0"



**HSS4x4 CONN**  
**9 FRAMING CONN AT EXST CONC BEAM**  
3/4" = 1'-0"

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**HVAC GENERAL DEMOLITION NOTES**

1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC KEYED DEMOLITION NOTES**

- 1 EXISTING CHILLED WATER PUMP AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 2 EXISTING HEATING WATER PUMP AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 3 EXISTING PLATE-AND-FRAME HEAT EXCHANGER AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 4 DEMOLISH SECTIONS OF EXISTING DISTRICT CHILLED WATER SYSTEMS AS REQUIRED FOR INSTALLATION OF NEW VALVES AND BYPASS.
- 5 DEMOLISH SECTION OF EXISTING SUPPLY AIR DUCTWORK AS REQUIRED FOR INSTALLATION OF NEW HOT WATER RE-HEAT COIL.
- 6 EXISTING PIPING IN EXISTING TRENCH.
- 7 EXISTING CHEMICAL SHOT FEEDER TO BE RE-USED.
- 8 EXISTING COMBINATION HEATING / CHILLED WATER PIPING TO BE DEMOLISHED AND CAPPED AT RISERS.
- 9 EXISTING UN-USED BARBER-COLEMAN CONTROL PANEL IN THIS APPROXIMATE LOCATION TO BE DEMOLISHED AS REQUIRED.

**1 LEVEL 1 PLAN - DEMO PART A - HVAC**  
SCALE: 1/8" = 1'-0"

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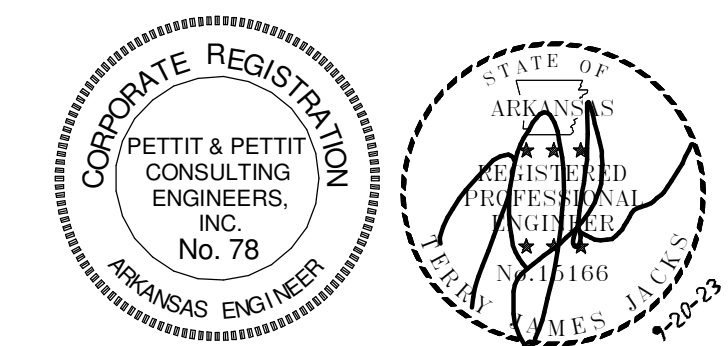
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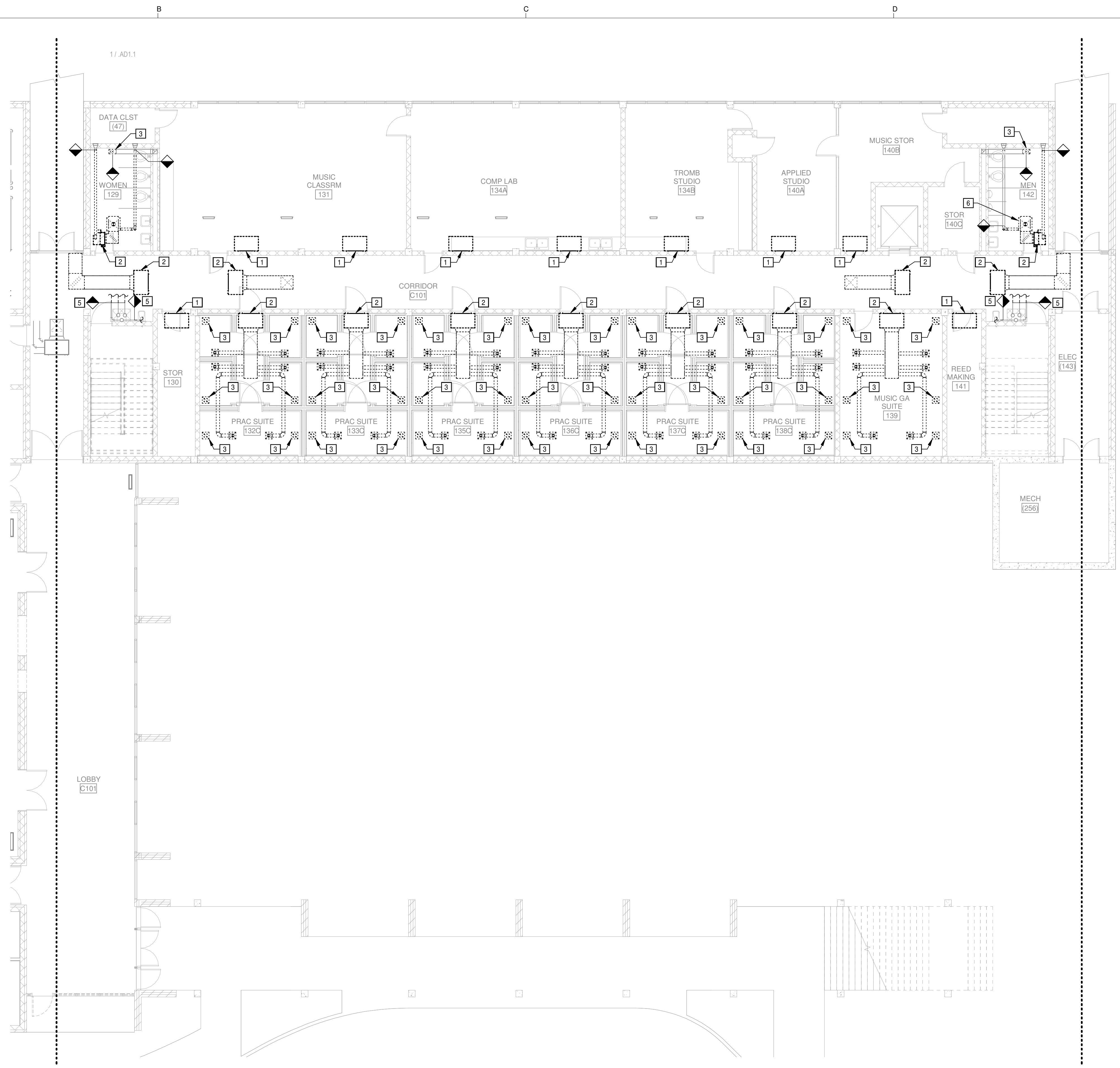
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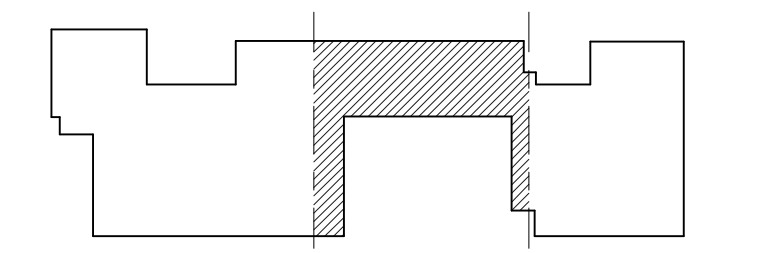
**HVAC GENERAL DEMOLITION NOTES**

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2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC KEYED DEMOLITION NOTES**

- 1 EXISTING FAN COIL UNIT, ASSOCIATED PIPING, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY.
- 2 EXISTING FAN COIL UNIT, ASSOCIATED DUCTWORK, PIPING, AIR DEVICES, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY.
- 3 EXISTING EXHAUST AIR DEVICE AND ASSOCIATED DUCTWORK TO BE DEMOLISHED TO POINT INDICATED, PREPARE DUCTWORK FOR NEW EXHAUST AIR DEVICE CONNECTION.
- 4 EXISTING RETURN AIR DEVICES AND ASSOCIATED DUCTWORK TO BE DEMOLISHED COMPLETELY.
- 5 EXISTING PIPING TO BE DEMOLISHED BACK TO RISERS AND CAPPED.

**1** LEVEL 1 PLAN - DEMO PART B - HVAC  
SCALE: 1/8" = 1'-0"



**KEY PLAN - AREA "B"**



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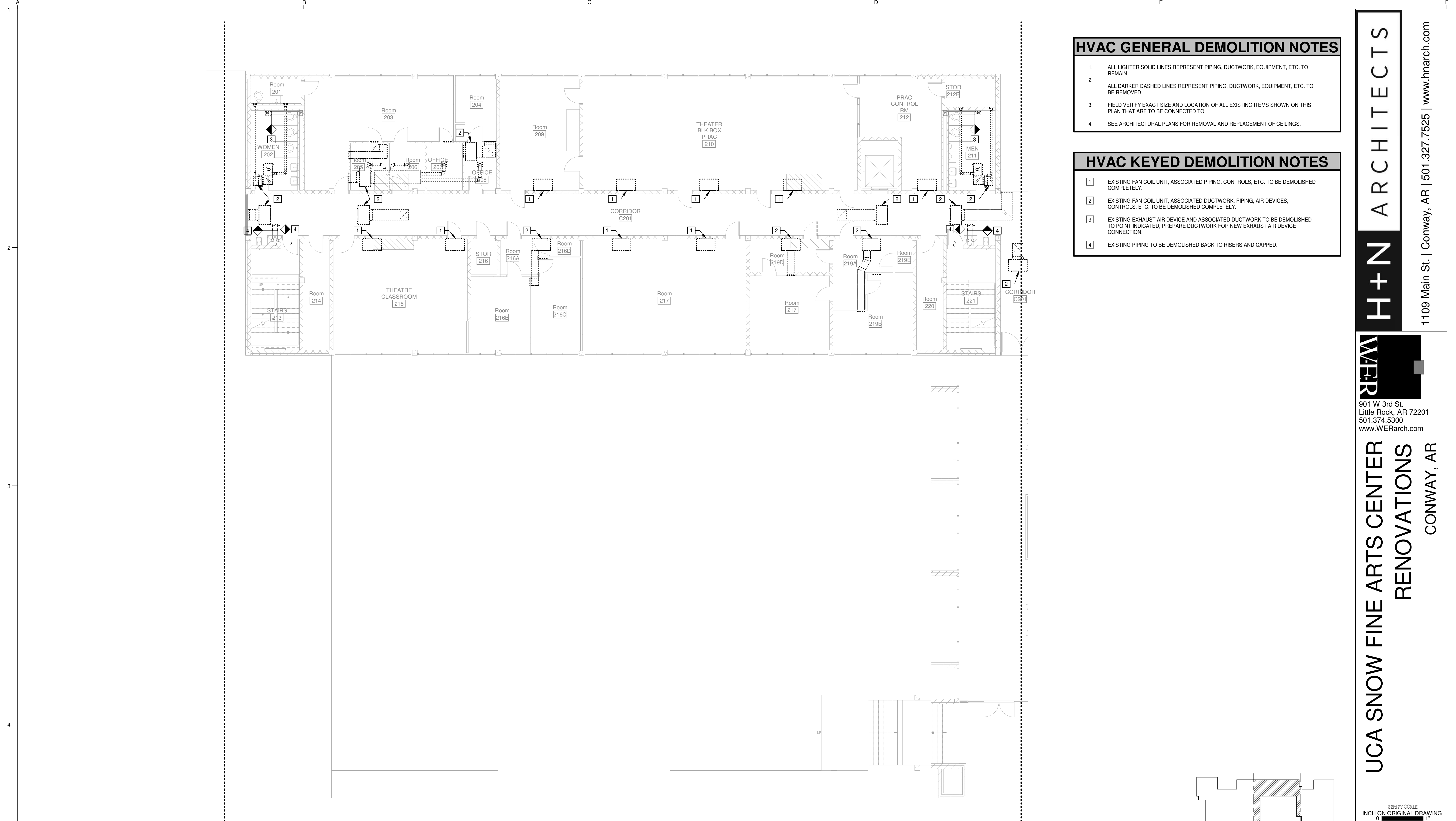
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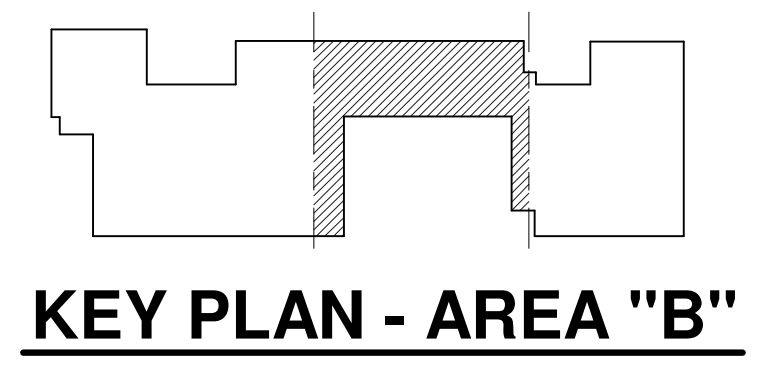
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**HVAC KEYED DEMOLITION NOTES**

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2. EXISTING FAN COIL UNIT, ASSOCIATED DUCTWORK, PIPING, AIR DEVICES, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY.
3. EXISTING EXHAUST AIR DEVICE AND ASSOCIATED DUCTWORK TO BE DEMOLISHED TO POINT INDICATED, PREPARE DUCTWORK FOR NEW EXHAUST AIR DEVICE CONNECTION.
4. EXISTING PIPING TO BE DEMOLISHED BACK TO RISERS AND CAPPED.

**1** LEVEL 2 PLAN - DEMO PART B - HVAC  
SCALE: 1/8" = 1'-0"



VERIFY SCALE  
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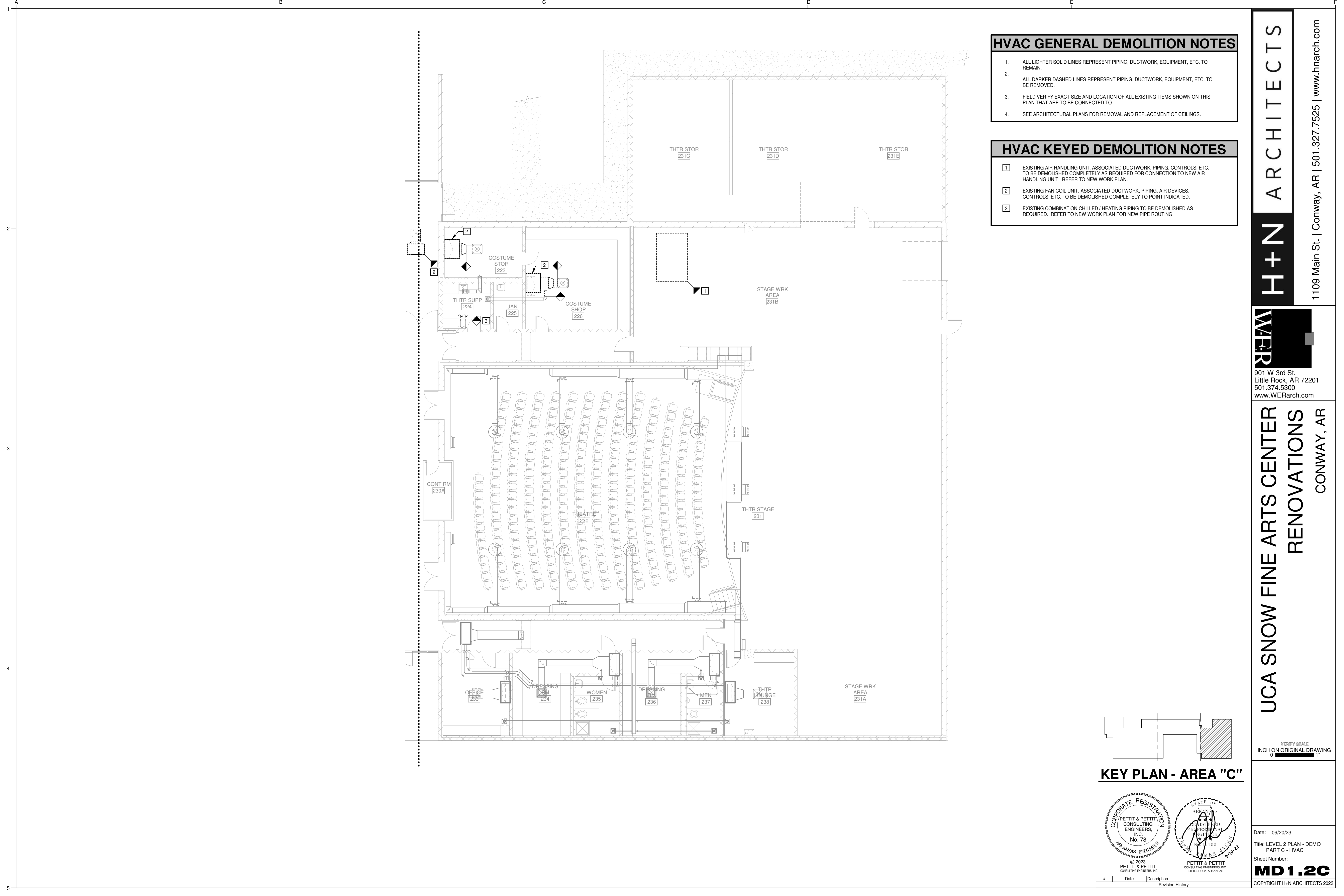
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**HVAC GENERAL DEMOLITION NOTES**

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2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC KEYED DEMOLITION NOTES**

1. EXISTING AIR HANDLING UNIT, ASSOCIATED DUCTWORK, PIPING, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY AS REQUIRED FOR CONNECTION TO NEW AIR HANDLING UNIT. REFER TO NEW WORK PLAN.
2. EXISTING FAN COIL UNIT, ASSOCIATED DUCTWORK, PIPING, AIR DEVICES, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY TO POINT INDICATED.
3. EXISTING COMBINATION CHILLED / HEATING PIPING TO BE DEMOLISHED AS REQUIRED. REFER TO NEW WORK PLAN FOR NEW PIPE ROUTING.

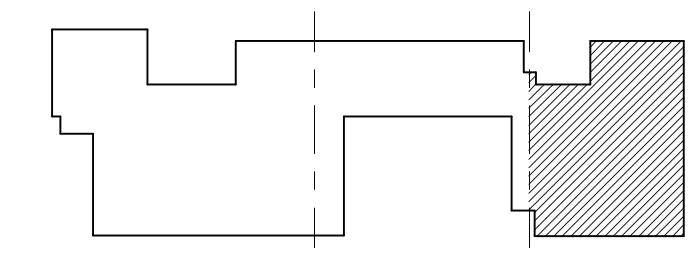
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**KEY PLAN - AREA "C"**

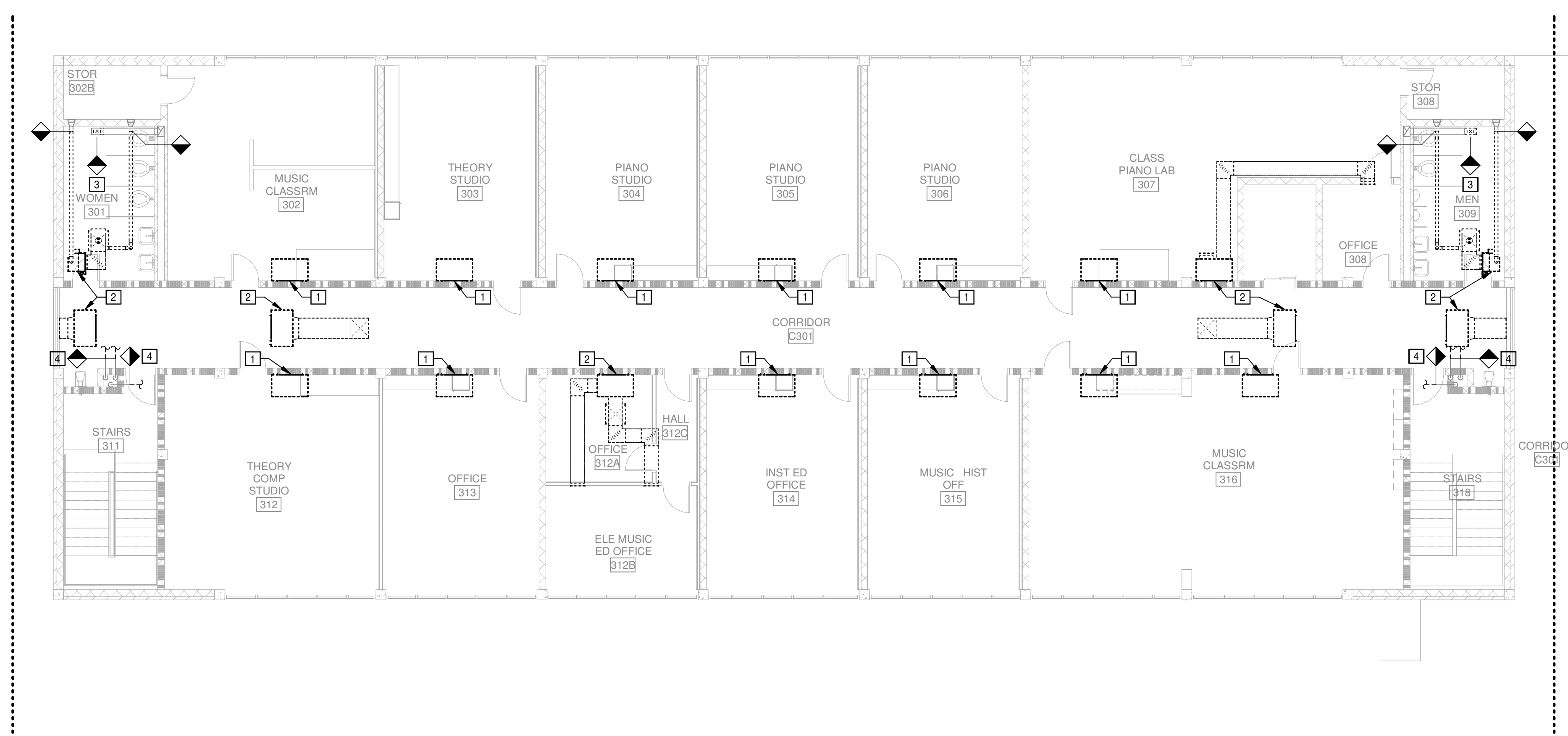
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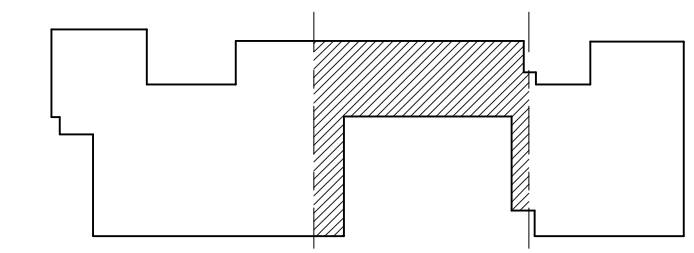
**HVAC GENERAL DEMOLITION NOTES**

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2. ALL DARKER DASHED LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO BE REMOVED.
3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. SEE ARCHITECTURAL PLANS FOR REMOVAL AND REPLACEMENT OF CEILINGS.

**HVAC KEYED DEMOLITION NOTES**

- 1 EXISTING FAN COIL UNIT, ASSOCIATED PIPING, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY.
- 2 EXISTING FAN COIL UNIT, ASSOCIATED DUCTWORK, PIPING, AIR DEVICES, CONTROLS, ETC. TO BE DEMOLISHED COMPLETELY.
- 3 EXISTING EXHAUST AIR DEVICE AND ASSOCIATED DUCTWORK TO BE DEMOLISHED TO POINT INDICATED, PREPARE DUCTWORK FOR NEW EXHAUST AIR DEVICE CONNECTION.
- 4 EXISTING PIPING TO BE DEMOLISHED BACK TO RISERS AND CAPPED.

1 LEVEL 3 PLAN - DEMO PART B - HVAC  
SCALE: 1/8" = 1'-0"



KEY PLAN - AREA "B"



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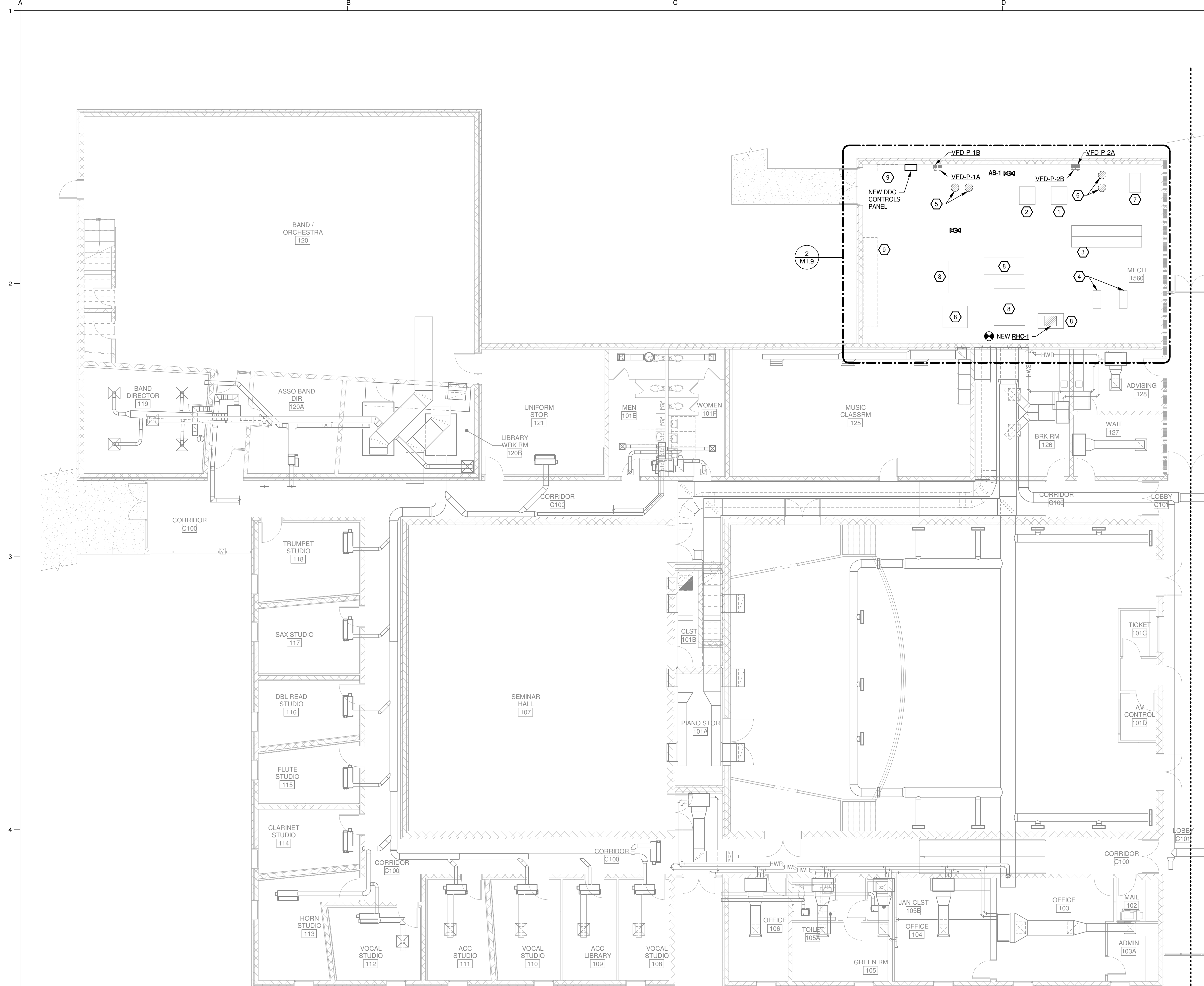
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Title: LEVEL 3 PLAN - DEMO PART B - HVAC

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**MD 1.3B**

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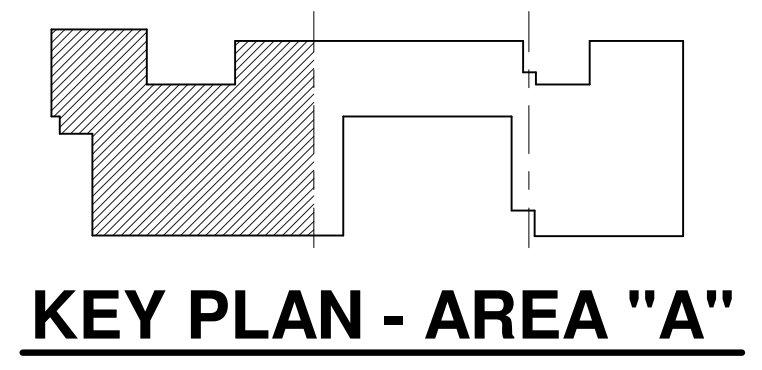
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- ### HVAC GENERAL NOTES
1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
  2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
  3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
  4. REFER TO M1.9 FOR PROJECT PHASING PLAN.

- ### HVAC KEYED NOTES
- 1 EXISTING BOILER **B-1** TO REMAIN.
  - 2 EXISTING BOILER **B-2** TO REMAIN.
  - 3 EXISTING CHILLER **CH-1** TO REMAIN.
  - 4 EXISTING COOLING TOWER PUMPS TO REMAIN.
  - 5 NEW HEATING WATER SECONDARY PUMPS **P-1A** AND **P-1B** ON EXISTING CONC. PAD. MODIFY PAD AS REQUIRED FOR NEW PUMPS.
  - 6 NEW CHILLED WATER SECONDARY PUMPS **P-2A** AND **P-2B** ON EXISTING CONC. PAD. MODIFY PAD AS REQUIRED FOR NEW PUMPS.
  - 7 EXISTING CHILLED WATER PRIMARY PUMP **P-3** TO REMAIN.
  - 8 EXISTING AIR HANDLING UNIT TO REMAIN.
  - 9 EXISTING ELECTRICAL SWITCHGEAR TO REMAIN.

**1** LEVEL 1 PLAN - RENOV PART A - HVAC  
 SCALE: 1/8" = 1'-0"



**KEY PLAN - AREA "A"**

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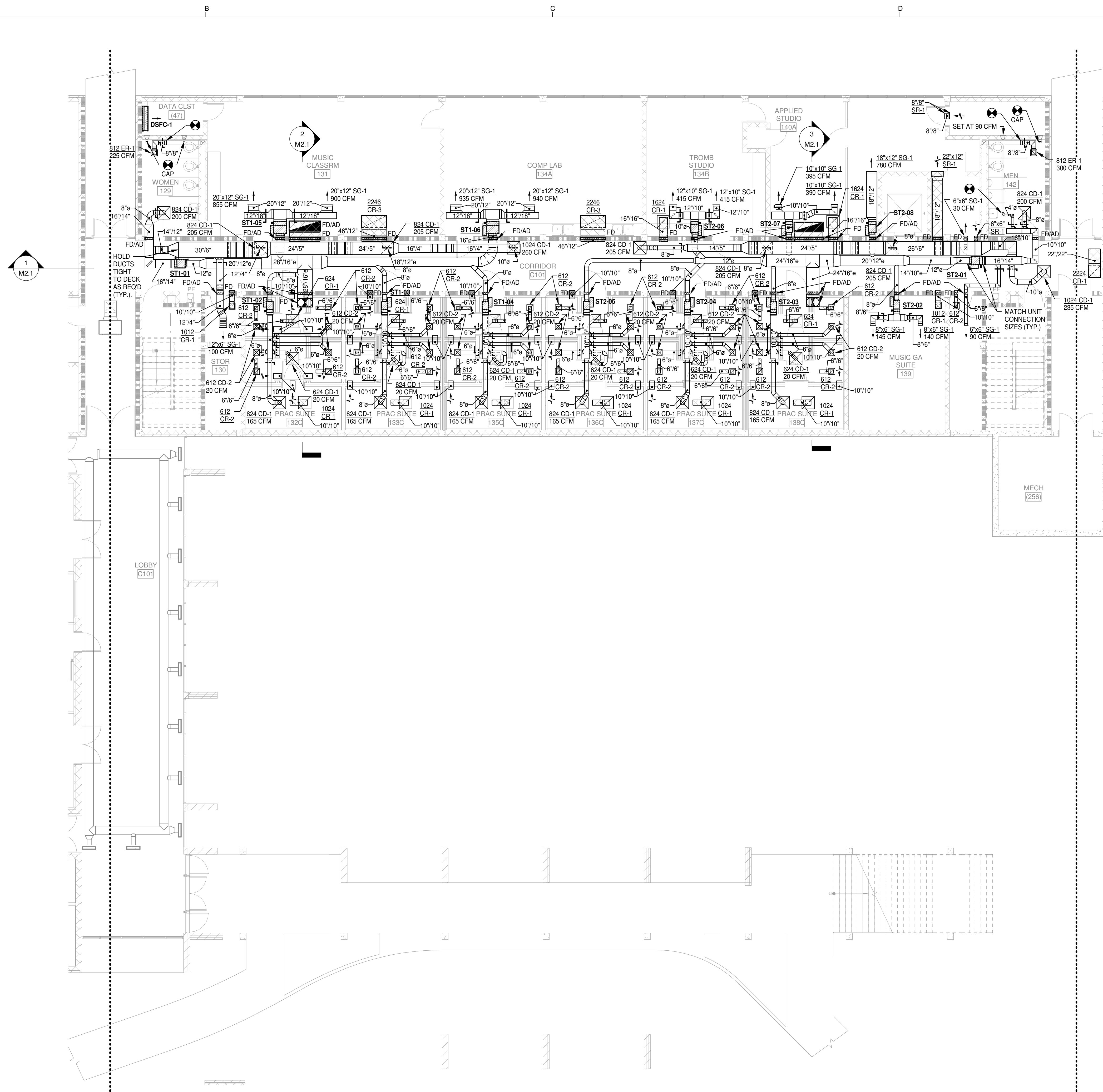
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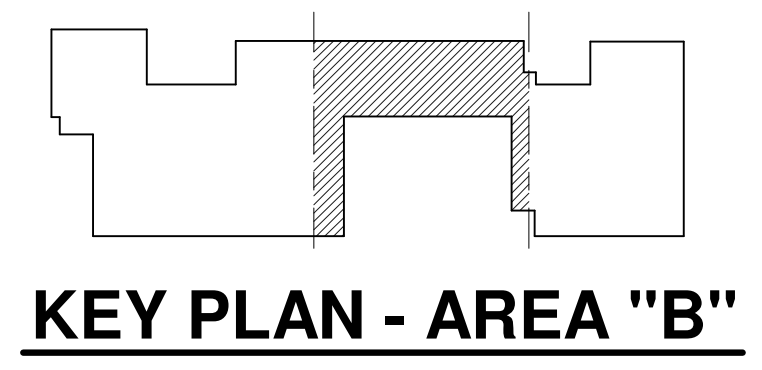




- ### HVAC GENERAL NOTES
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  2. ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
  3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
  4. REFER TO M1.9 FOR PROJECT PHASING PLAN.

- ### HVAC SUPPLY DUCTWORK NOTES
1. ALL LOW PRESSURE SUPPLY AIR DUCTWORK DOWNSTREAM OF THE VARIABLE AIR VOLUME (VAV) SUPPLY AIR TERMINAL BOXES SHALL BE INTERNALLY LINED.

**1** LEVEL 1 PLAN - RENOV PART B - HVAC DUCTWORK  
SCALE: 1/8" = 1'-0"



#	Date	Description

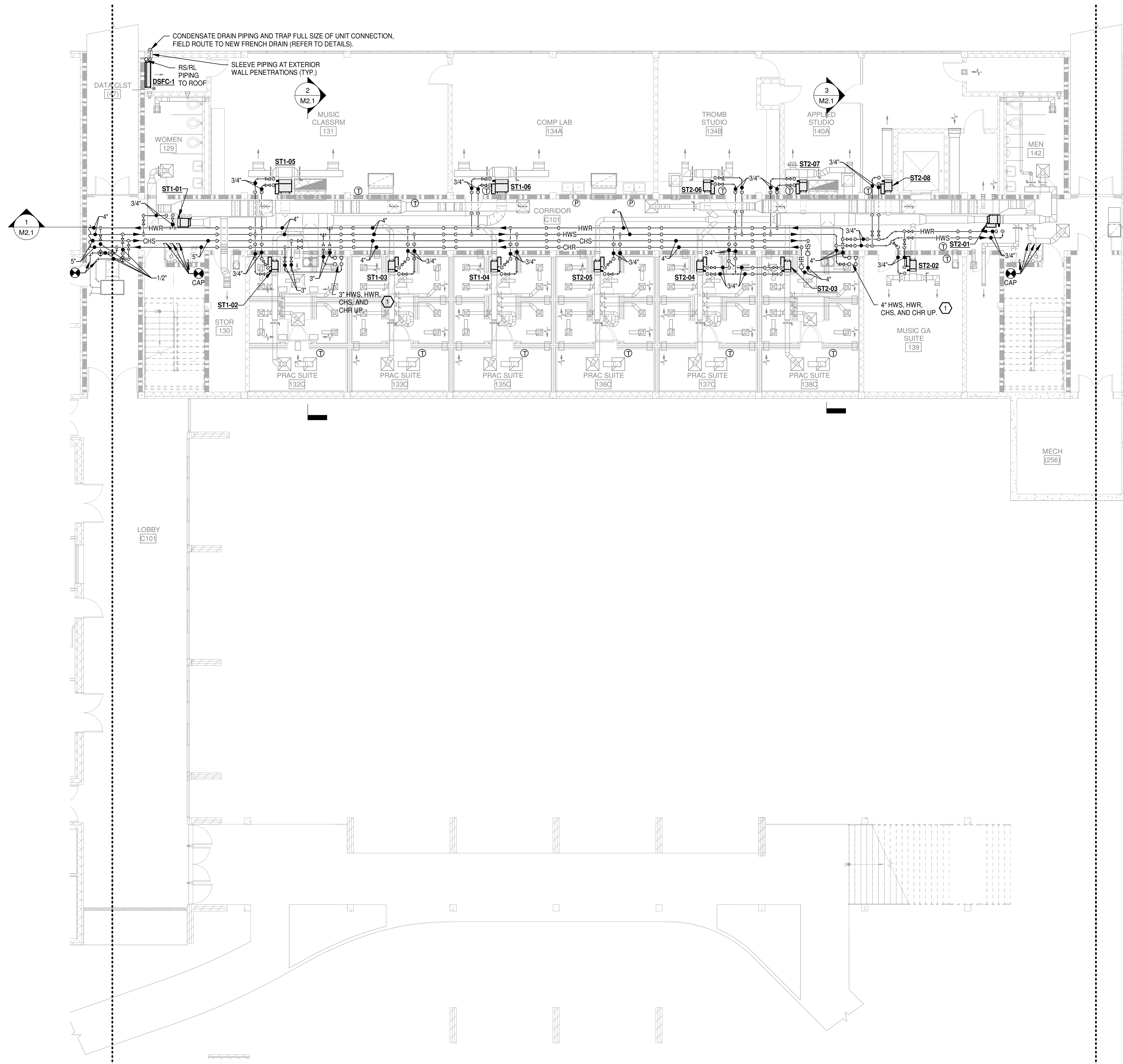
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Sheet Number:  
**M1.2B**  
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**HVAC GENERAL NOTES**

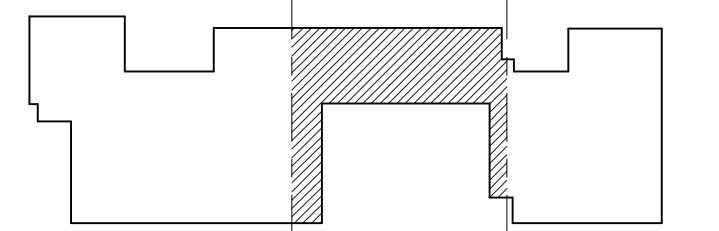
1. ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
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3. FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
4. REFER TO M1.9 FOR PROJECT PHASING PLAN.

**HVAC THERMOSTAT WIRING NOTES**

1. NEW THERMOSTAT / HUMIDISTAT WIRING TO BE ROUTED IN WIREMOLD AT BLOCK WALLS AND/OR AT OTHER SOLID WALLS THAT WOULD REQUIRE SAW CUTTING OR OTHER DESTRUCTIVE METHODS TO INSTALL NEW WIRING INTO THE WALL INTERIOR SPACE. WIREMOLD COLOR SHALL MATCH WALL COLOR (OR WIREMOLD COLOR SHALL BE AS OTHERWISE DIRECTED BY ARCHITECT / OWNER, FIELD VERIFY BEFORE INSTALLING).

**HVAC KEYED NOTES**

① PROVIDE HOSE BIBB WITH CAP DOWNSTREAM OF FLOOR VALVE FOR PIPE DRAINAGE.



**KEY PLAN - AREA "B"**



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**1 LEVEL 1 PLAN - RENOV PART B - HVAC PIPING**  
 SCALE: 1/8" = 1'-0"

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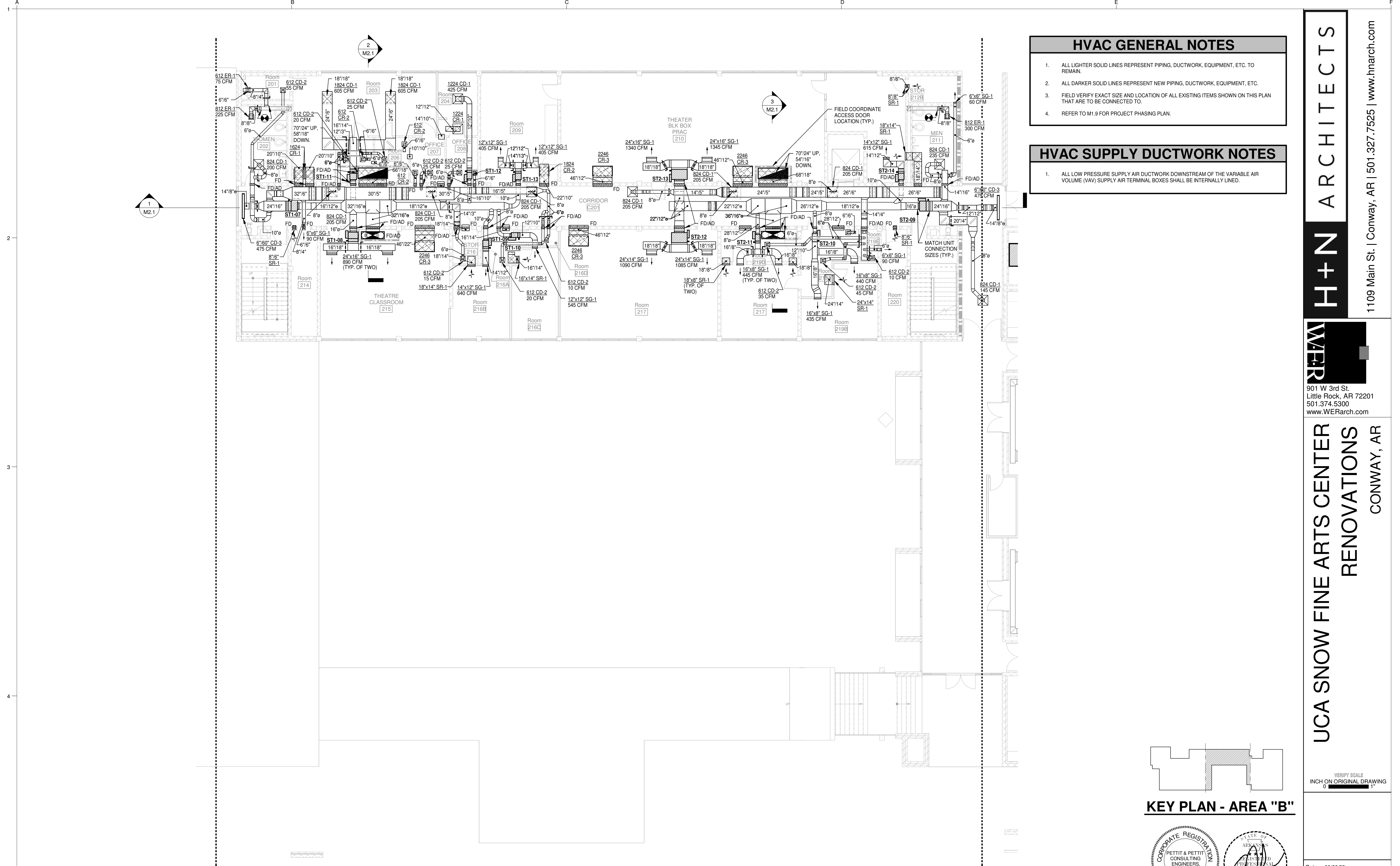
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 Sheet Number:  
**M1.3B**  
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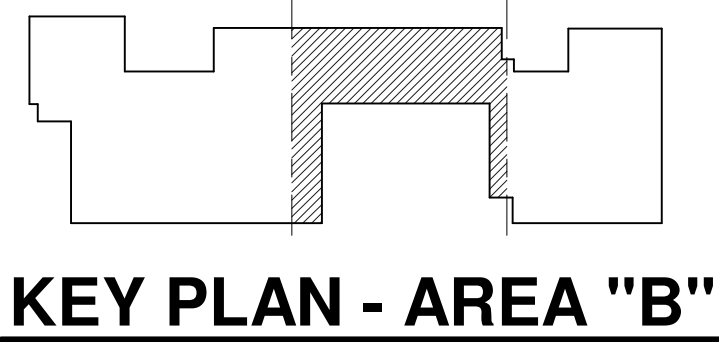
**HVAC GENERAL NOTES**

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**HVAC SUPPLY DUCTWORK NOTES**

1. ALL LOW PRESSURE SUPPLY AIR DUCTWORK DOWNSTREAM OF THE VARIABLE AIR VOLUME (VAV) SUPPLY AIR TERMINAL BOXES SHALL BE INTERNALLY LINED.

**1 LEVEL 2 PLAN - RENOV PART B - HVAC DUCTWORK**  
SCALE: 1/8" = 1'-0"

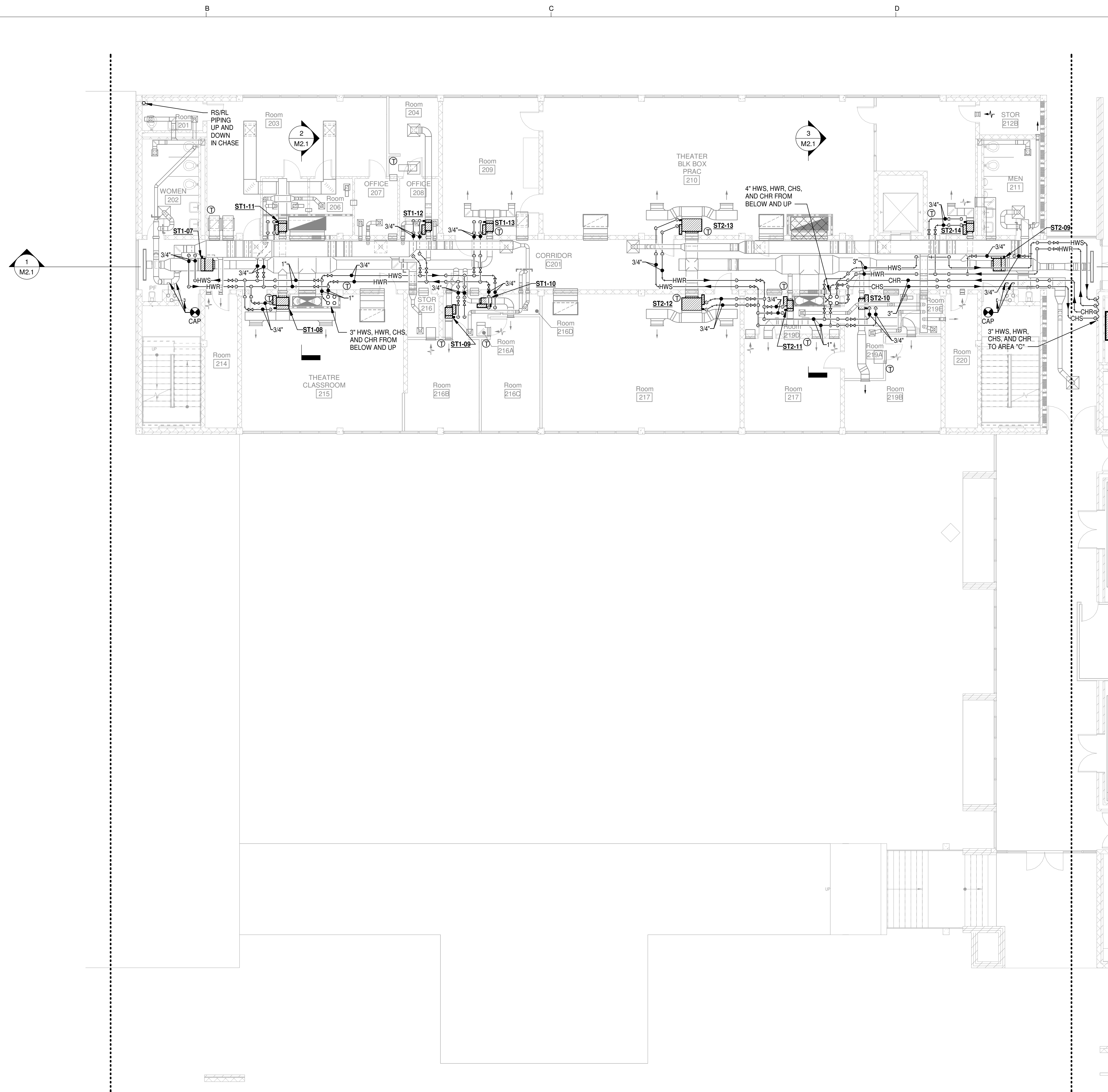


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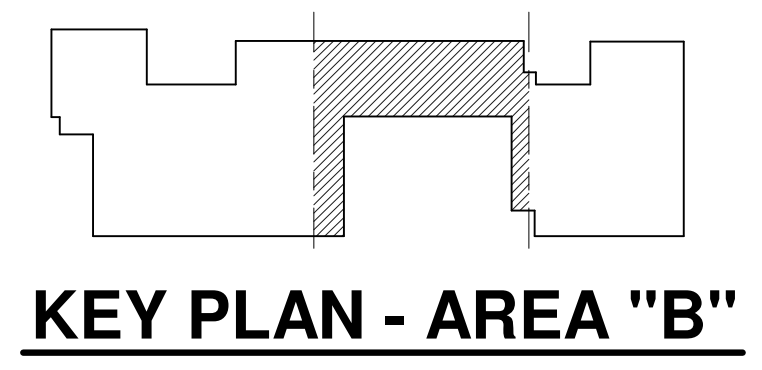
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- ### HVAC THERMOSTAT WIRING NOTES
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**1** LEVEL 2 PLAN - RENOV PART B - HVAC PIPING  
SCALE: 1/8" = 1'-0"



**KEY PLAN - AREA "B"**

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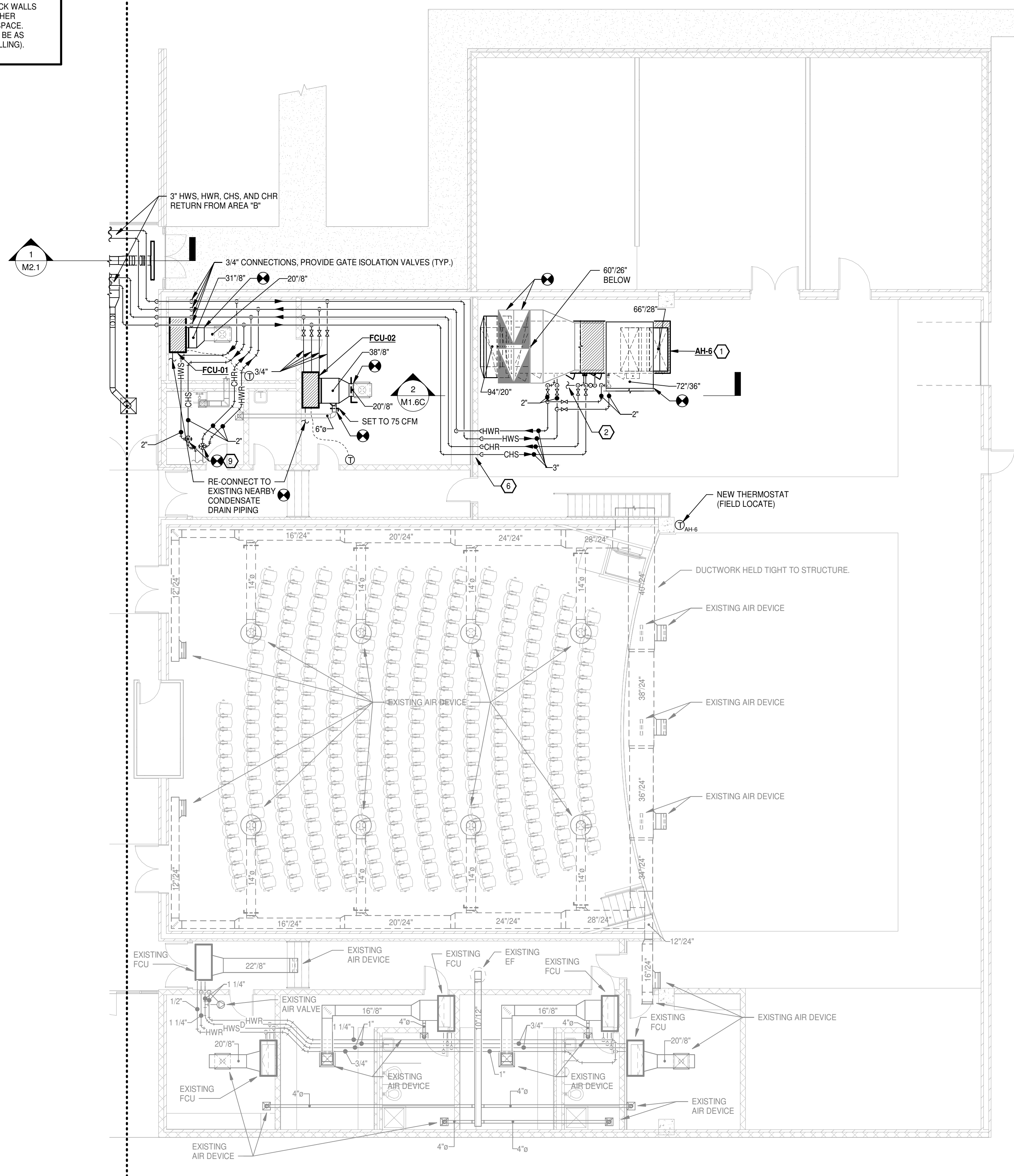
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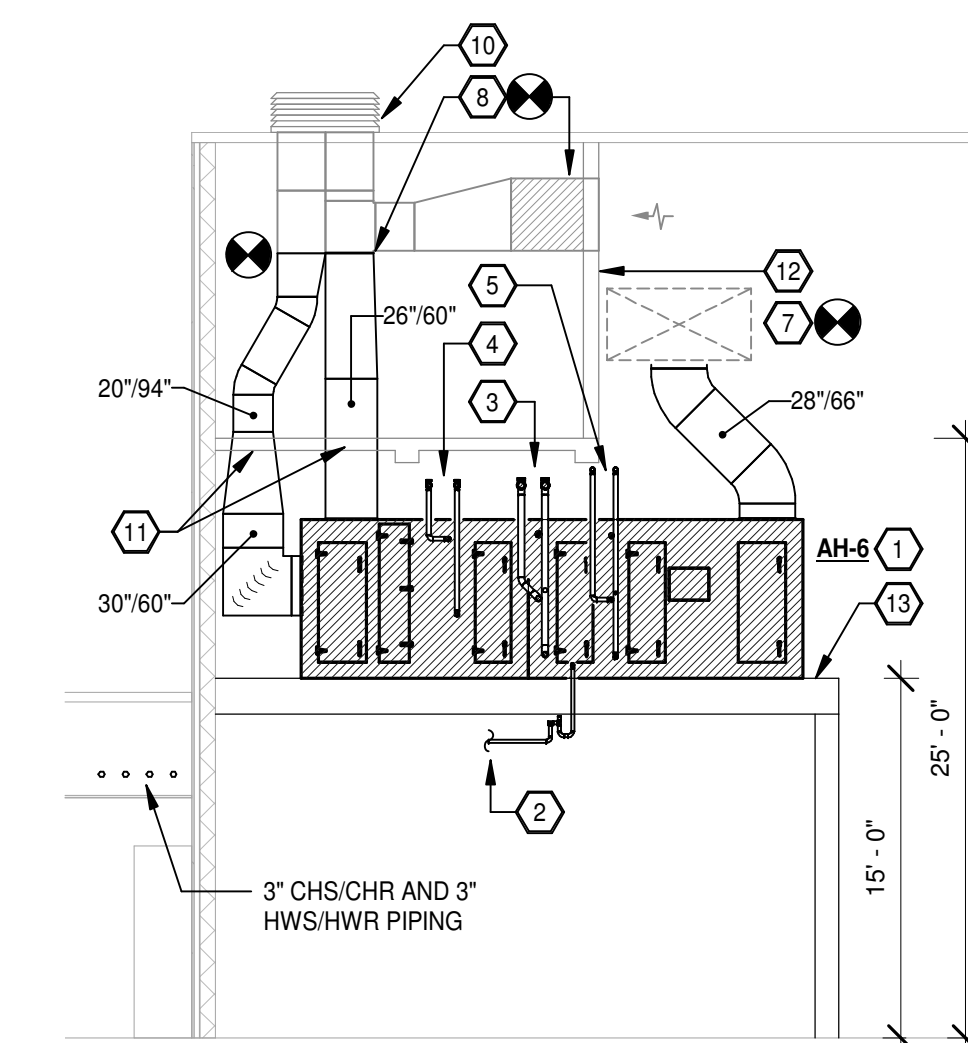
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Title: LEVEL 2 PLAN - PART B - HVAC PIPING	
Sheet Number:	
<b>M1.5B</b>	
#	Description
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## HVAC THERMOSTAT WIRING NOTES

- NEW THERMOSTAT / HUMIDISAT WIRING TO BE ROUTED IN WIREMOLD AT BLOCK WALLS AND/OR AT OTHER SOLID WALLS THAT WOULD REQUIRE SAW CUTTING OR OTHER DESTRUCTIVE METHODS TO INSTALL. NEW WIRING INTO THE WALL INTERIOR SPACE WIREMOLD COLOR SHALL MATCH WALL COLOR (OR WIREMOLD COLOR SHALL BE AS OTHERWISE DIRECTED BY ARCHITECT / OWNER, FIELD VERIFY BEFORE INSTALLING).



**1** LEVEL 2 PLAN - RENOV PART C - HVAC  
SCALE: 1/8" = 1'-0"



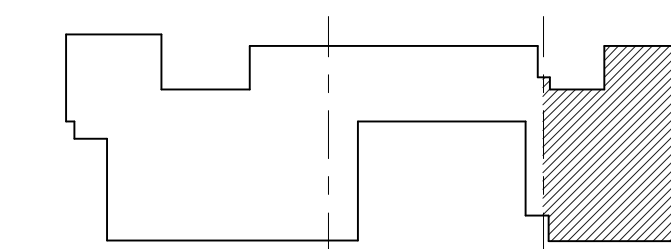
**2** AH-6 SECTION  
SCALE: 1/8" = 1'-0"

## HVAC KEYED NOTES

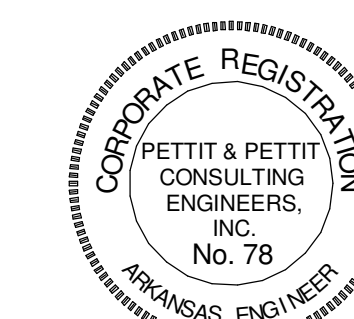
- NEW AIR HANDLING UNIT AH-6 INSTALLED ON NEW STRUCTURAL FRAME BENEATH EXISTING EQUIPMENT ROOM. CONNECT TO EXISTING SUPPLY AND RETURN DUCTWORK.
- RUN NEW CONDENSATE DRAIN FULL SIZE TO EXISTING CONDENSATE DRAIN PIPING.
- EXTEND 3" CHS/CHR PIPING TO AH-6
- EXTEND 2" HWS/HWR PIPING TO AH-6 IFB PREHEAT COIL.
- EXTEND 2" HWS/HWR PIPING TO AH-6 REHEAT COIL.
- CORE DRILL WALL AS REQUIRED TO ROUTE PIPING THROUGH WALL. FIRE CAULK ALL VOIDS.
- CONNECT TO EXISTING SUPPLY DUCTWORK AND SUPPLY DUCT SILENCER.
- CONNECT TO EXISTING RETURN DUCTWORK AND RETURN DUCT SILENCER.
- NEW 3-WAY CHANGE-OVER CONTROL VALVE TO SERVE EXISTING 2-PIPE FAN COIL UNITS.
- EXISTING ROOFTOP VENTILATOR TO REMAIN.
- EXISTING MECHANICAL ROOM FLOOR TO BE DEMOLISHED AS REQUIRED TO ROUTE NEW OUTSIDE AIR DUCTWORK AND RETURN AIR DUCTWORK.
- EXISTING MECHANICAL ROOM ABOVE TO REMAIN.
- STRUCTURAL FRAME WITH ACCESS PLATFORM AND OSHA HANDRAILS. SEE STRUCTURAL SHEETS FOR DETAILS.

## HVAC GENERAL NOTES

- ALL LIGHTER SOLID LINES REPRESENT PIPING, DUCTWORK, EQUIPMENT, ETC. TO REMAIN.
- ALL DARKER SOLID LINES REPRESENT NEW PIPING, DUCTWORK, EQUIPMENT, ETC.
- FIELD VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING ITEMS SHOWN ON THIS PLAN THAT ARE TO BE CONNECTED TO.
- REFER TO M1.9 FOR PROJECT PHASING PLAN.



**KEY PLAN - AREA "C"**

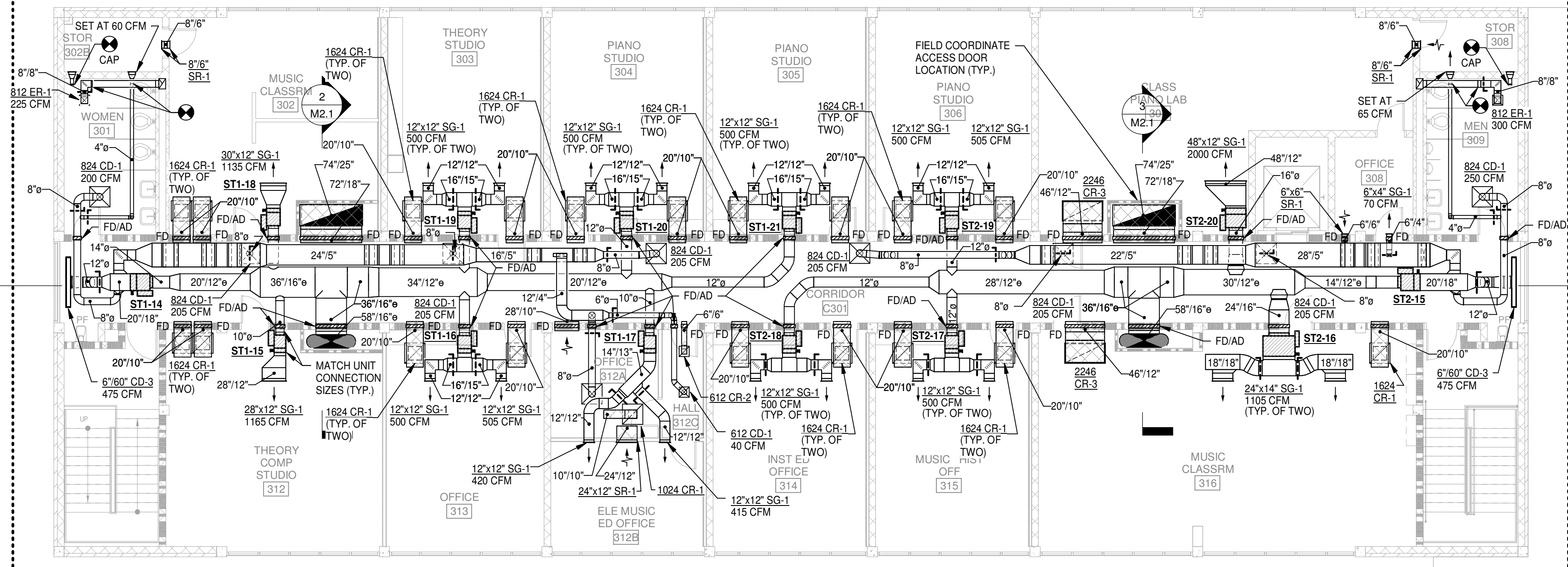


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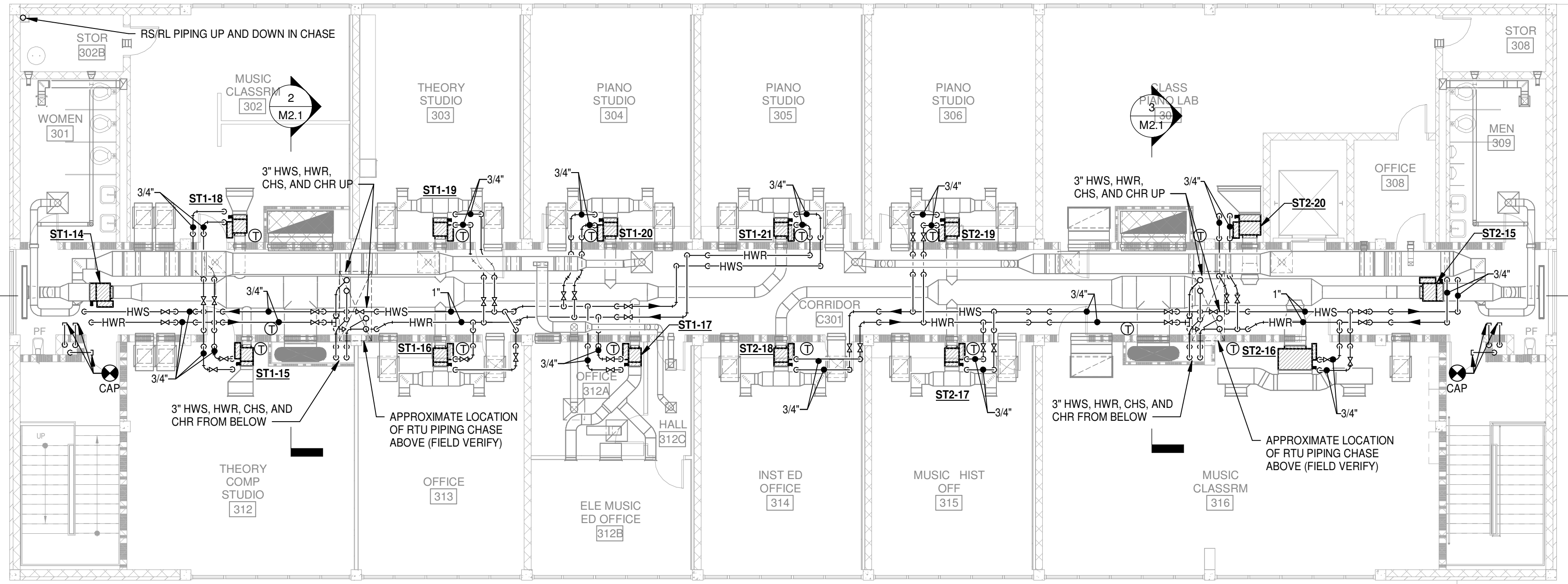
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**1** LEVEL 3 PLAN - RENOV PART B - HVAC DUCTWORK  
SCALE: 1/8" = 1'-0"



**2** LEVEL 3 PLAN - RENOV PART B - HVAC PIPING  
SCALE: 1/8" = 1'-0"

**HVAC GENERAL NOTES**

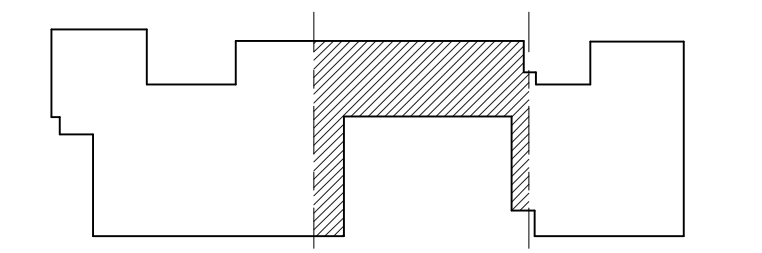
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**HVAC THERMOSTAT WIRING NOTES**

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**HVAC SUPPLY DUCTWORK NOTES**

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**KEY PLAN - AREA "B"**

VERIFIED SCALE  
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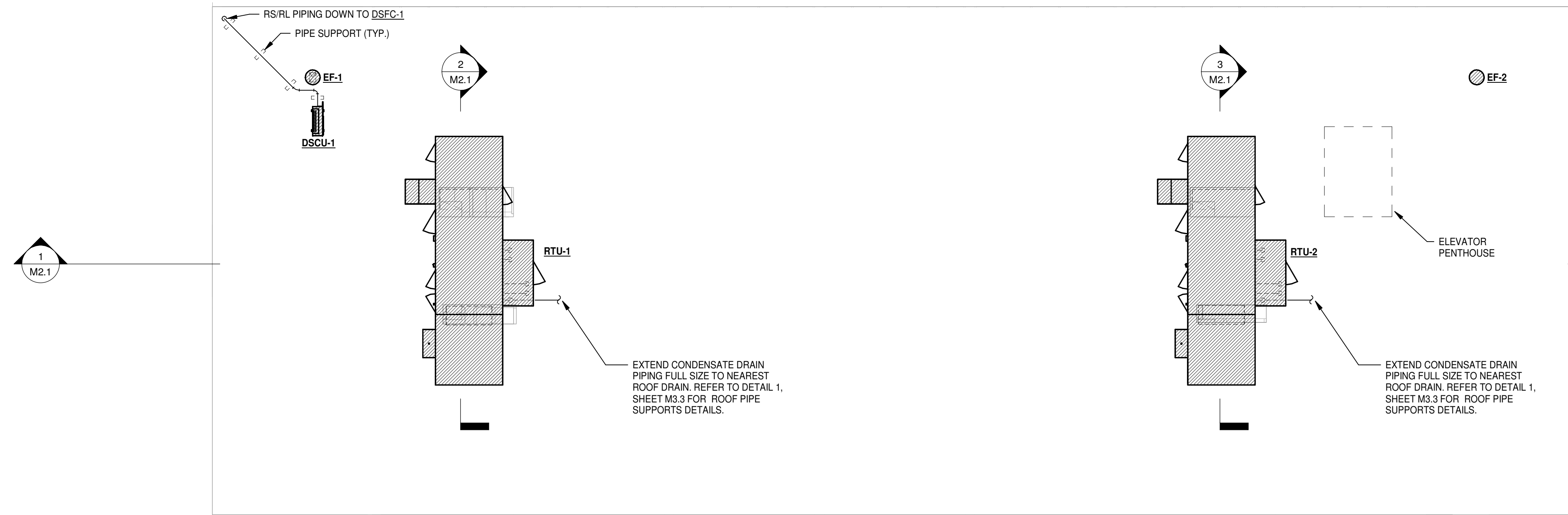
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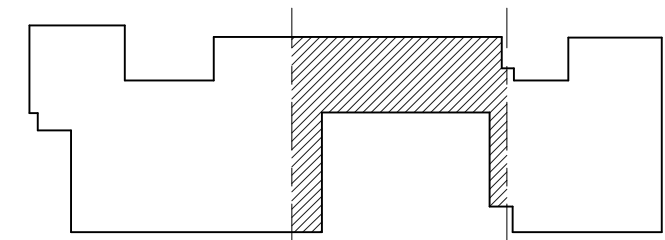
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TITLE: LEVEL 3 PLAN - PART B - HVAC DUCTWORK  
SHEET NUMBER:  
**M1.7B**  
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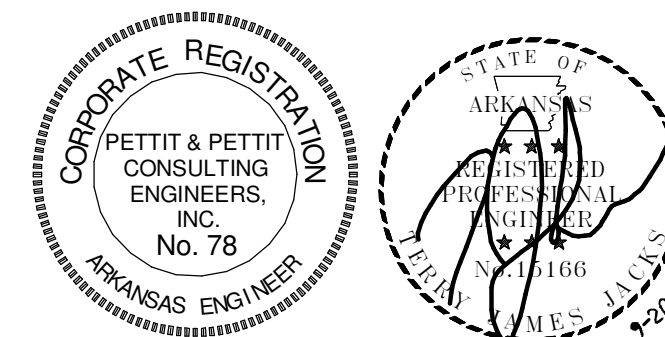
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  4. REFER TO M1.9 FOR PROJECT PHASING PLAN.



**KEY PLAN - AREA "B"**



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 B - HVAC  
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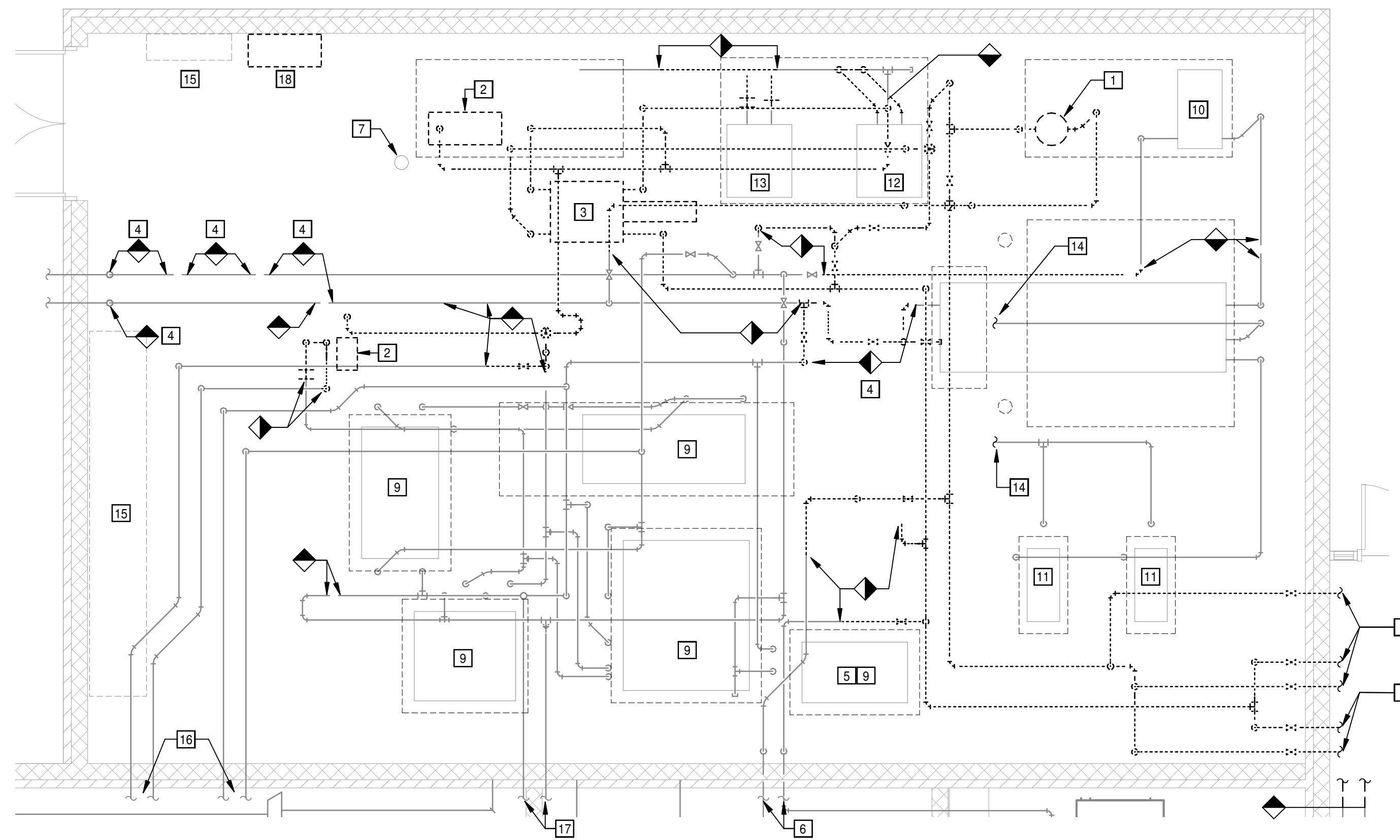
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### PROJECT PHASING PLAN

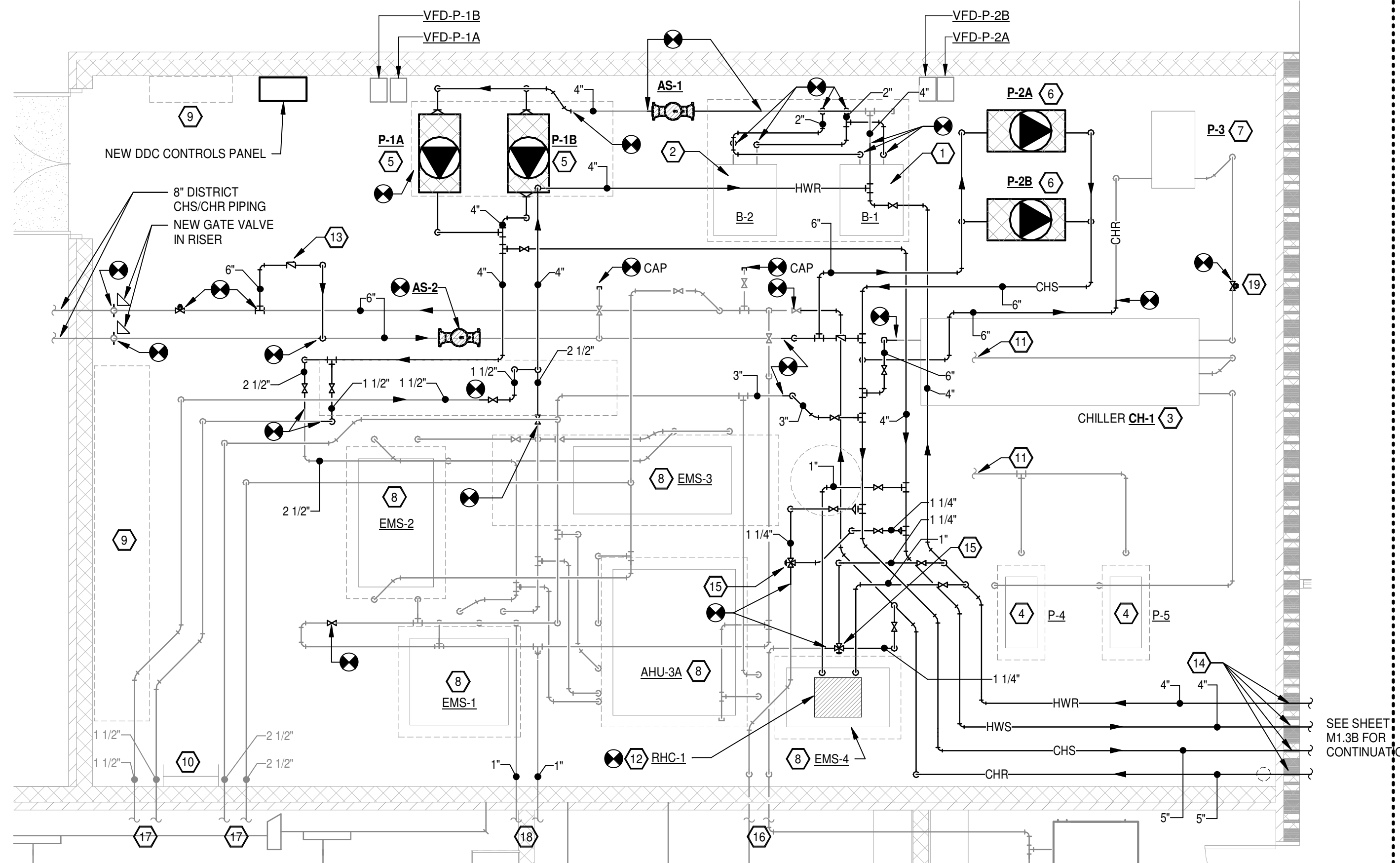
THIS PROJECT IS TO BE PHASED IN A MANNER THAT PRIORITIZES THE MECHANICAL ROOM REVISIONS DURING THE PERIOD OF TIME THE BUILDING WILL BE COMPLETELY EMPTY FROM DECEMBER 16TH, 2023 THROUGH JANUARY 10TH, 2024. WHILE THE BUILDING WILL BE COMPLETELY EMPTY, AREA "A" OF THE BUILDING HOUSES EXPENSIVE MUSICAL INSTRUMENTS, SO RESTORING THE HEATING WATER LOOP WHICH SERVES AREA "A" OF THE BUILDING MUST OCCUR BY DECEMBER 22ND, 2023. THE REMAINDER OF THE MECHANICAL ROOM RE-PIPING SHALL OCCUR PRIOR TO JANUARY 10TH, 2024. EQUIPMENT AND CONTROLS SHALL BE IN PLACE AT THAT TIME IN ORDER FOR EQUIPMENT SERVING AREA "A" TO BE FUNCTIONAL.

THE REMAINDER OF THE PROJECT SHALL OCCUR BETWEEN DECEMBER 22ND AND MAY 12TH, 2024. THIS INCLUDES EQUIPMENT, PIPING, DUCTWORK, CONTROLS, ELECTRICAL AND ASSOCIATED ARCHITECTURAL MODIFICATIONS IN AREAS "B" AND "C".

ALL BUILDING AND UTILITY SHUTDOWNS OUTSIDE OF THE TIMEFRAMES LISTED ABOVE SHALL BE CAREFULLY COORDINATED WITH UCA FACILITIES MANAGEMENT 1 WEEK IN ADVANCE OF THE PROPOSED SHUTDOWN.



**1 ENLARGED MECHANICAL ROOM PLAN - DEMOLITION**  
SCALE: 1/4" = 1'-0"



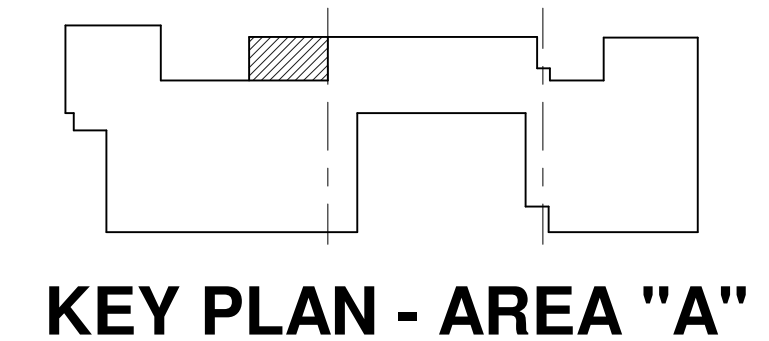
**2 ENLARGED MECHANICAL ROOM PLAN - NEW**  
SCALE: 1/4" = 1'-0"

### HVAC KEYED DEMOLITION NOTES

- 1 EXISTING CHILLED WATER PUMP AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 2 EXISTING HEATING WATER PUMP AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 3 EXISTING PLATE-AND-FRAME HEAT EXCHANGER AND ASSOCIATED PIPING TO BE DEMOLISHED TO POINT INDICATED.
- 4 DEMOLISH SECTIONS OF EXISTING DISTRICT CHILLED WATER SYSTEMS AS REQUIRED FOR INSTALLATION OF NEW VALVES AND BYPASS.
- 5 DEMOLISH SECTION OF EXISTING SUPPLY AIR DUCTWORK AS REQUIRED FOR INSTALLATION OF NEW HOT WATER RE-HEAT COIL.
- 6 EXISTING 1-1/4" CH/HWS / CH/HWR PIPING IN EXISTING TRENCH.
- 7 EXISTING CHEMICAL SHOT FEEDER TO BE RE-USED.
- 8 EXISTING COMBINATION HEATING / CHILLED WATER PIPING TO BE DEMOLISHED AND CAPPED AT RISERS. EXISTING PIPING OPENINGS IN WALL NOT RE-USED FOR NEW PIPING SHALL BE PATCHED WITH 2 LAYERS OF 5/8" TYPE X GYP BOARD AND FIRE CAULK.
- 9 EXISTING AIR HANDLING UNIT TO REMAIN.
- 10 EXISTING CHILLED WATER PUMP P-3 TO REMAIN.
- 11 EXISTING CONDENSER WATER PUMP TO REMAIN.
- 12 EXISTING BOILER B-1 AND ASSOCIATED PRIMARY PUMP TO REMAIN.
- 13 EXISTING BOILER B-2 AND ASSOCIATED PRIMARY PUMP TO REMAIN.
- 14 EXISTING CONDENSER WATER PIPING UP TO COOLING TOWER ON ROOF TO REMAIN.
- 15 EXISTING ELECTRICAL SWITCHGEAR TO REMAIN.
- 16 EXISTING 2-1/2" CHS/CHR AND 1-1/2" HWS/HWR PIPING SERVING WEST WING TO REMAIN.
- 17 EXISTING 1" CHS/CHR PIPING TO REMAIN.
- 18 EXISTING UN-USED BARBER-COLEMAN CONTROL PANEL IN THIS APPROXIMATE LOCATION TO BE DEMOLISHED AS REQUIRED.

### HVAC KEYED NOTES

- 1 EXISTING BOILER B-1 TO REMAIN.
- 2 EXISTING BOILER B-2 TO REMAIN.
- 3 EXISTING CHILLER CH-1 TO REMAIN.
- 4 EXISTING COOLING TOWER PUMPS TO REMAIN.
- 5 NEW HEATING WATER SECONDARY PUMP P-1A AND P-1B ON EXISTING CONC. PAD. MODIFY PAD AS REQUIRED FOR NEW PUMP.
- 6 NEW CHILLED WATER SECONDARY PUMPS P-2A AND P-2B ON EXISTING CONC. PAD. MODIFY PAD AS REQUIRED FOR NEW PUMP.
- 7 EXISTING CHILLED WATER PRIMARY PUMP P-3 TO REMAIN.
- 8 EXISTING AIR HANDLING UNIT TO REMAIN.
- 9 EXISTING ELECTRICAL SWITCHGEAR TO REMAIN.
- 10 EXISTING ROOF ACCESS LADDER TO REMAIN.
- 11 EXISTING CONDENSER WATER PIPING ROUTED TO COOLING TOWER ON ROOF TO REMAIN.
- 12 NEW REHEAT COIL RHC-1 ADDED TO THE 20"x24" SUPPLY DUCT ASSOCIATED WITH EXISTING AIR HANDLING UNIT EMS-4. PROVIDE TRANSITION AS REQUIRED.
- 13 BUILDING DECOUPLER. REFER TO RISER DIAGRAM AND CONTROLS DIAGRAM FOR DETAILS.
- 14 NEW PIPING ROUTED THROUGH EXISTING OPENING IN MECHANICAL ROOM WALL. ENLARGE AS REQUIRED. REPAIR VOIDS AROUND PIPING WITH 2 LAYERS OR TYPE X GYP BOARD AND FIRE CAULK.
- 15 NEW 3-WAY CHANGEOVER VALVE SERVING EXISTING 2-PIPE FAN COIL SYSTEM.
- 16 EXISTING 1-1/4" PIPING SERVING 2-PIPE FAN COIL SYSTEM ROUTED IN TUNNEL.
- 17 EXISTING 2-1/2" CHS/CHR AND 1-1/2" HWS/HWR PIPING SERVING THE WEST WING TO REMAIN.
- 18 EXISTING 1" CHS/CHR PIPING TO REMAIN.
- 19 CHILLER ISOLATION VALVE.



**KEY PLAN - AREA "A"**

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VERIFIED SCALE  
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**KEY PLAN - AREA "A"**

UCA SNOW FINE ARTS CENTER  
RENOVATIONS  
CONWAY, AR

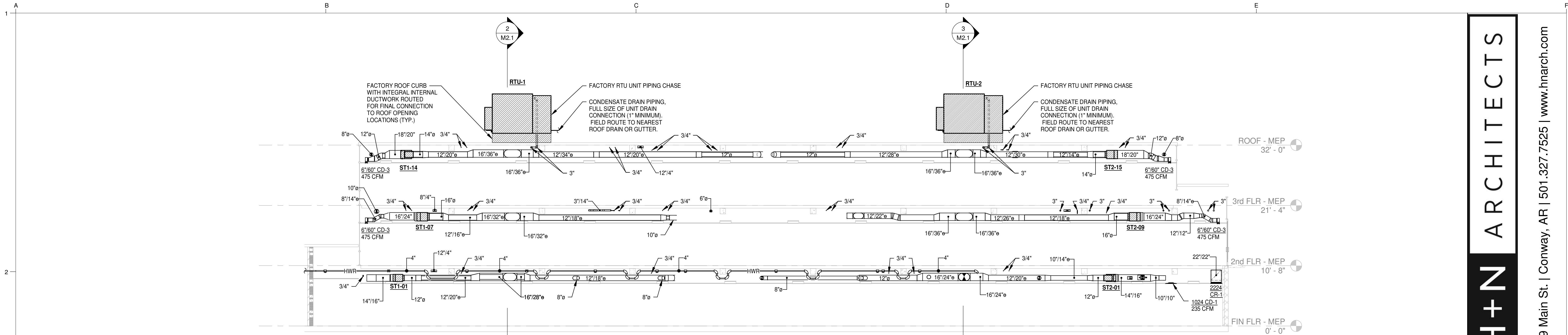
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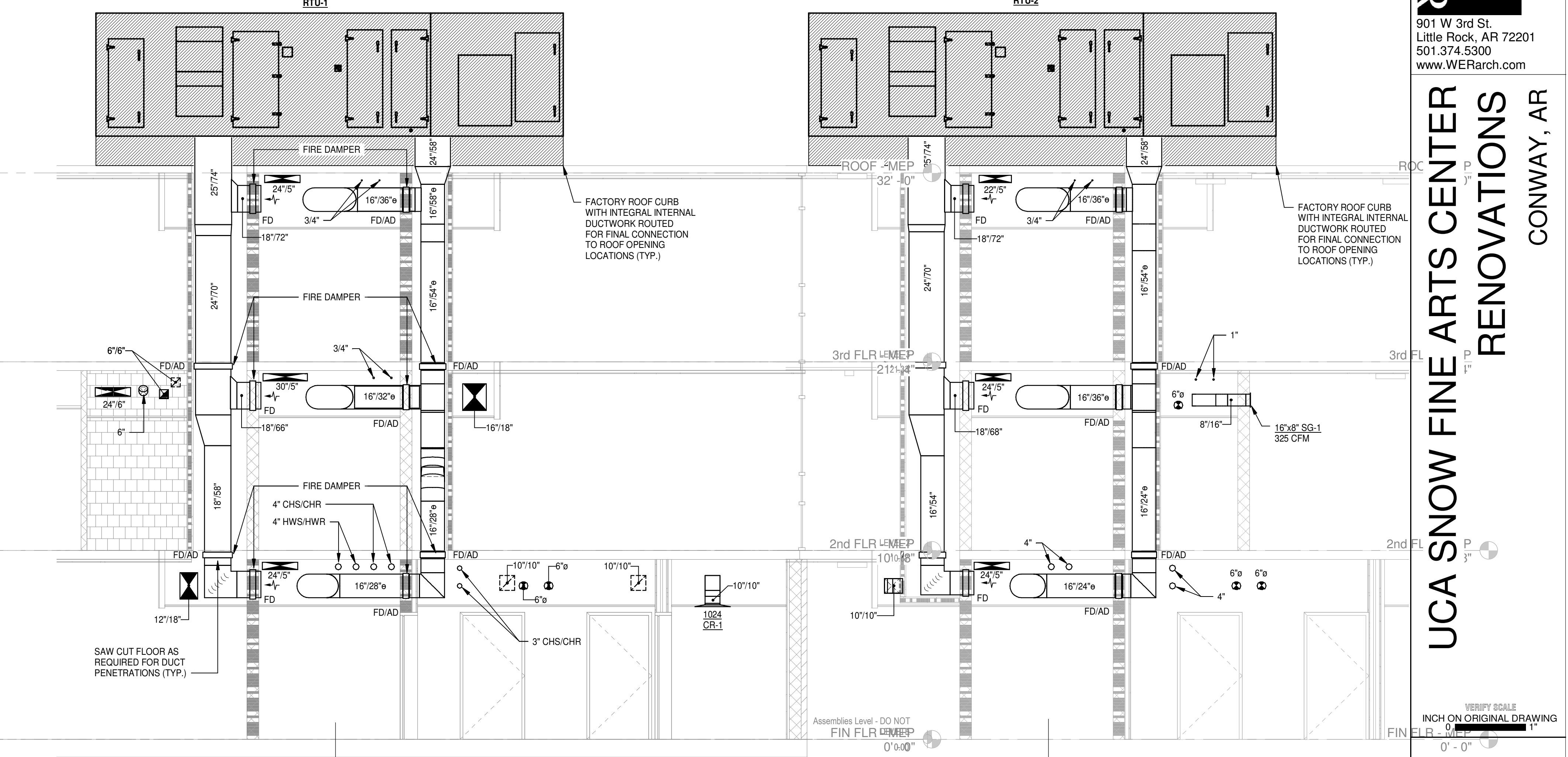




**1 CORRIDOR SECTION EAST-WEST**  
SCALE: 1/8" = 1'-0"

LEGEND	
	CEILING DIFFUSER
	RETURN AIR GRILLE (RA)
	EXHAUST REGISTER (ER)
	SIZE - DESIGNATION CUBIC FEET PER MINUTE
	FLEXIBLE DUCT CONNECTOR
	TURNING VANES
	SPLITTER DAMPER (TEE)
	INTERNALLY INSULATED DUCTWORK
	MANUAL DAMPER
	FIRE DAMPER (FD), FIRE DAMPER / ACCESS DOOR (FD/AD)
	OPPOSED BLADE DAMPER
	DIAMETER
	SPIRAL OVAL
	THERMOSTAT / HUMIDISTAT (WITH UNIT NUMBER)
	HUMIDISTAT
	PRESSURE SENSOR
	DETAIL TOP NUMBER REFERS TO THE DETAIL NUMBER, BOTTOM NUMBER REFERS TO THE SHEET WHERE DETAIL IS SHOWN
	SECTION
	DUCT SMOKE DETECTOR
	CONNECT TO EXISTING
	DEMOLITION TERMINATION
	AIR VENT (AUTO/HAND)
	BUTTERFLY VALVE
	AUTOMATIC CONTROL VALVE (3-WAY)
	AUTOMATIC CONTROL VALVE
	CHECK VALVE
	FLEXIBLE CONNECTOR (BRAIDED)
	GATE VALVE
	GLOBE VALVE (STRAIGHT)
	PLUG VALVE
	PRESSURE GAUGE (W/COCK)
	PRESSURE GAUGE
	PRESSURE RELIEF VALVE
	PRESSURE AND TEMPERATURE TAP
	REDUCER (CONCENTRIC)
	REDUCER (ECCENTRIC)
	STRAINER (WITH BLOW DOWN VALVE)
	THERMOMETER
	UNION (FLANGED, SCREWED)
	CHS - CHILLED WATER SUPPLY
	CHR - CHILLED WATER RETURN
	HWS - HEATING WATER SUPPLY
	HWR - HEATING WATER RETURN
	RS/RL - REFRIGERANT SUCTION / REFRIGERANT LIQUID
	D - DRAIN

- GENERAL NOTES**
- DUE TO THE SMALL SCALE OF THIS DRAWING, IT IS NOT POSSIBLE TO INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED. THE CONTRACTOR SHALL INVESTIGATE THE STRUCTURAL AND FINISH CONDITIONS AFFECTING THE WORK AND SHALL COORDINATE AND ARRANGE HIS WORK ACCORDINGLY.
  - ROUND BRANCH DUCT RUNOUTS SHALL BE SAME SIZE AS DIFFUSER THROAT UNLESS OTHERWISE NOTED.
  - FLEXIBLE DUCT MAY BE USED FOR FINAL CONNECTIONS TO DIFFUSERS. A MAXIMUM LENGTH OF THREE FEET (3') SHALL BE USED.
  - ALL CEILING-MOUNTED SUPPLY DIFFUSERS SHALL HAVE FOUR-WAY (4-WAY) PATTERN UNLESS OTHERWISE INDICATED.
  - WHERE MANUAL DAMPERS ARE INSTALLED IN EXTERNALLY INSULATED DUCTWORK, PROVIDE STAND-OFF BRACKET TO PREVENT COMPRESSION OF INSULATION BY DAMPER OPERATOR HANDLE.
  - PROVIDE TURNING VANES IN ALL 90-DEGREE ELBOWS.
  - PROVIDE SLEEVES THROUGH WALLS AND FLOORS. SEAL EXCESS OPENING WITH WATER-PROOF SEALANT. COORDINATE LOCATIONS AND SIZES OF SLEEVES WITH GENERAL CONTRACTOR. SLEEVES SHALL PROVIDE A MAXIMUM OF 1" CLEARANCE BETWEEN DUCT OR PIPE AND SLEEVE. SEAL PENETRATION IN FIRE/SMOKE RATED WALLS AND FLOOR WITH AN APPROVED FIRE/SMOKE BLOCK SEALANT.
  - EXTERNALLY INSULATE SUPPLY, RETURN, RELIEF, AND OUTSIDE AIR DUCTWORK UNLESS NOTED OTHERWISE. INTERNALLY LINED DUCT IS SHOWN CROSSHATCHED ON THE FLOOR PLAN.
  - EXHAUST DUCTWORK SHALL BE UN-INSULATED, UNLESS NOTED OTHERWISE.
  - EXTERNALLY INSULATE LOW-VELOCITY ROUND RUNOUT DUCTWORK.
  - INSULATE THE TOP OF ALL SUPPLY AIR DIFFUSERS WITH A MINIMUM OF 1/2" THICK FIBERGLASS DUCT WRAP.
  - MOUNT THERMOSTATS AT 48" A.F.F. OR MATCH LIGHT SWITCH HEIGHT.
  - ARRANGE PIPING TO ALLOW FOR PROPER SERVICE AND ACCESS TO EQUIPMENT. INSTALL UNIONS AND ISOLATION VALVES TO ALLOW FOR REMOVAL OF EQUIPMENT WITHOUT DISTURBING MAINS.
  - REFER TO REFLECTED CEILING PLAN FOR EXACT DIFFUSER LOCATIONS.
  - REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE AND SMOKE RATED PARTITIONS.
  - COORDINATE LOCATION OF DUCTS AND DIFFUSERS WITH STRUCTURAL FRAMING MEMBERS. OFFSET DUCTS AS REQUIRED TO CLEAR STRUCTURAL MEMBERS.
  - COORDINATE LOCATIONS AND ELEVATION OF DUCT RUNS WITH PLUMBING, SPRINKLER, AND ELECTRICAL CONTRACTORS.
  - PROVIDE ACCESS DOORS IN DUCTS FOR ALL FIRE DAMPERS. PROVIDE CEILING ACCESS DOORS FOR DAMPERS ABOVE GYP. BOARD CEILINGS. PROVIDE WALL ACCESS DOORS FOR DAMPERS AT CHASES AS WHERE DAMPER INSTALLED AT FLOOR LEVEL AND NOT ACCESSIBLE FOR SERVICE FROM BELOW.
  - DUCT DIMENSIONS ARE REQUIRED FREE AREA AND DO NOT ACCOUNT FOR INTERNAL INSULATION THICKNESS. INCREASE DUCT SIZES WHERE INTERNAL INSULATION IS SHOWN TO ACHIEVE THE REQUIRED FREE AREA.



**2 RTU-1 SECTION**  
SCALE: 1/4" = 1'-0"

**3 RTU-2 SECTION**  
SCALE: 1/4" = 1'-0"

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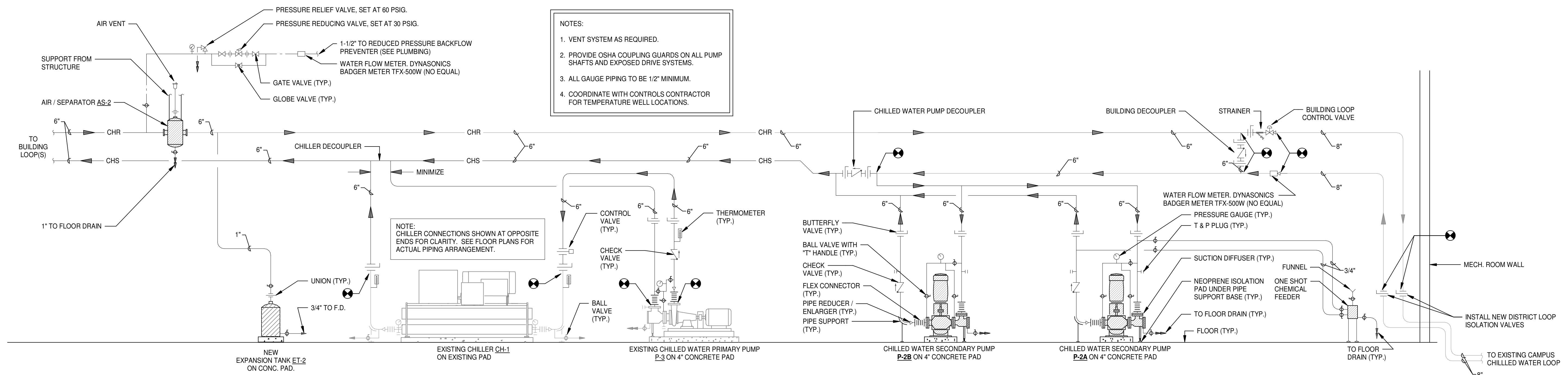
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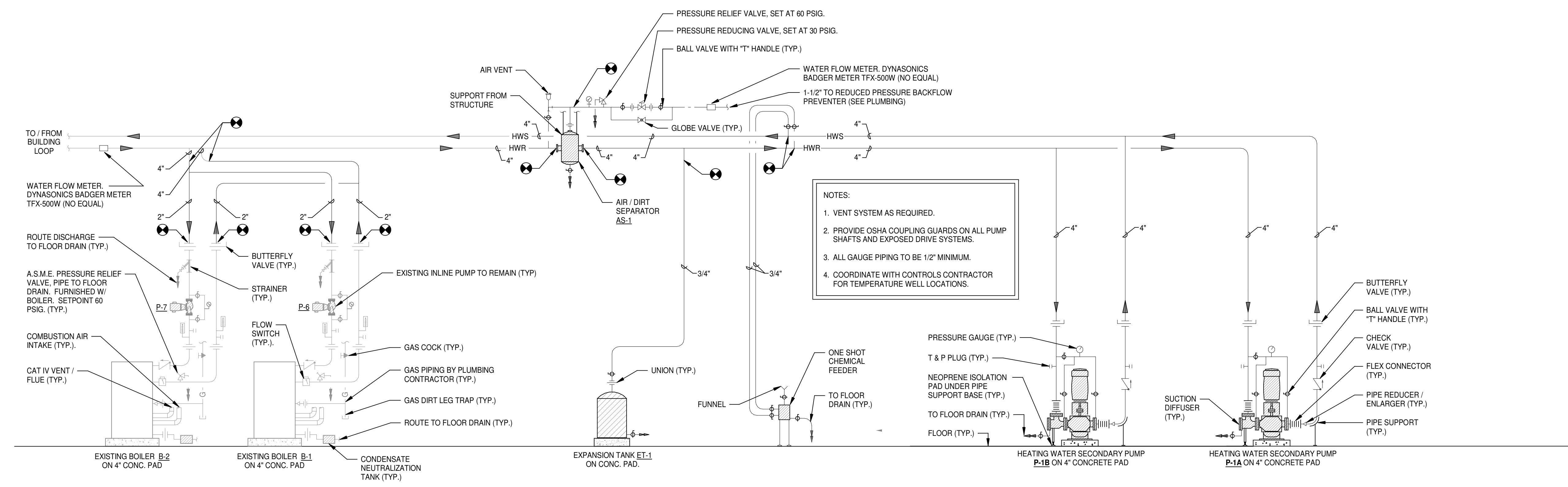
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**1 CHILLED WATER FLOW DIAGRAM**  
N.T.S.



**2 HEATING HOT WATER FLOW DIAGRAM**  
N.T.S.

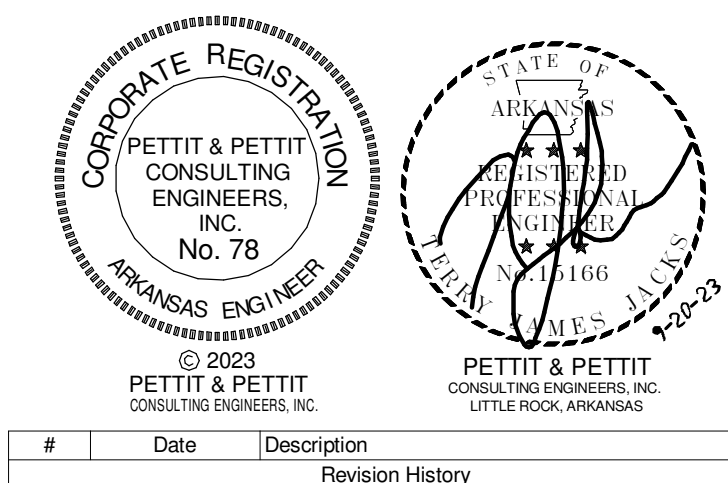
**NOTES:**  
 1. VENT SYSTEM AS REQUIRED.  
 2. PROVIDE OSHA COUPLING GUARDS ON ALL PUMP SHAFTS AND EXPOSED DRIVE SYSTEMS.  
 3. ALL GAUGE PIPING TO BE 1/2" MINIMUM.  
 4. COORDINATE WITH CONTROLS CONTRACTOR FOR TEMPERATURE WELL LOCATIONS.

**NOTES:**  
 1. VENT SYSTEM AS REQUIRED.  
 2. PROVIDE OSHA COUPLING GUARDS ON ALL PUMP SHAFTS AND EXPOSED DRIVE SYSTEMS.  
 3. ALL GAUGE PIPING TO BE 1/2" MINIMUM.  
 4. COORDINATE WITH CONTROLS CONTRACTOR FOR TEMPERATURE WELL LOCATIONS.



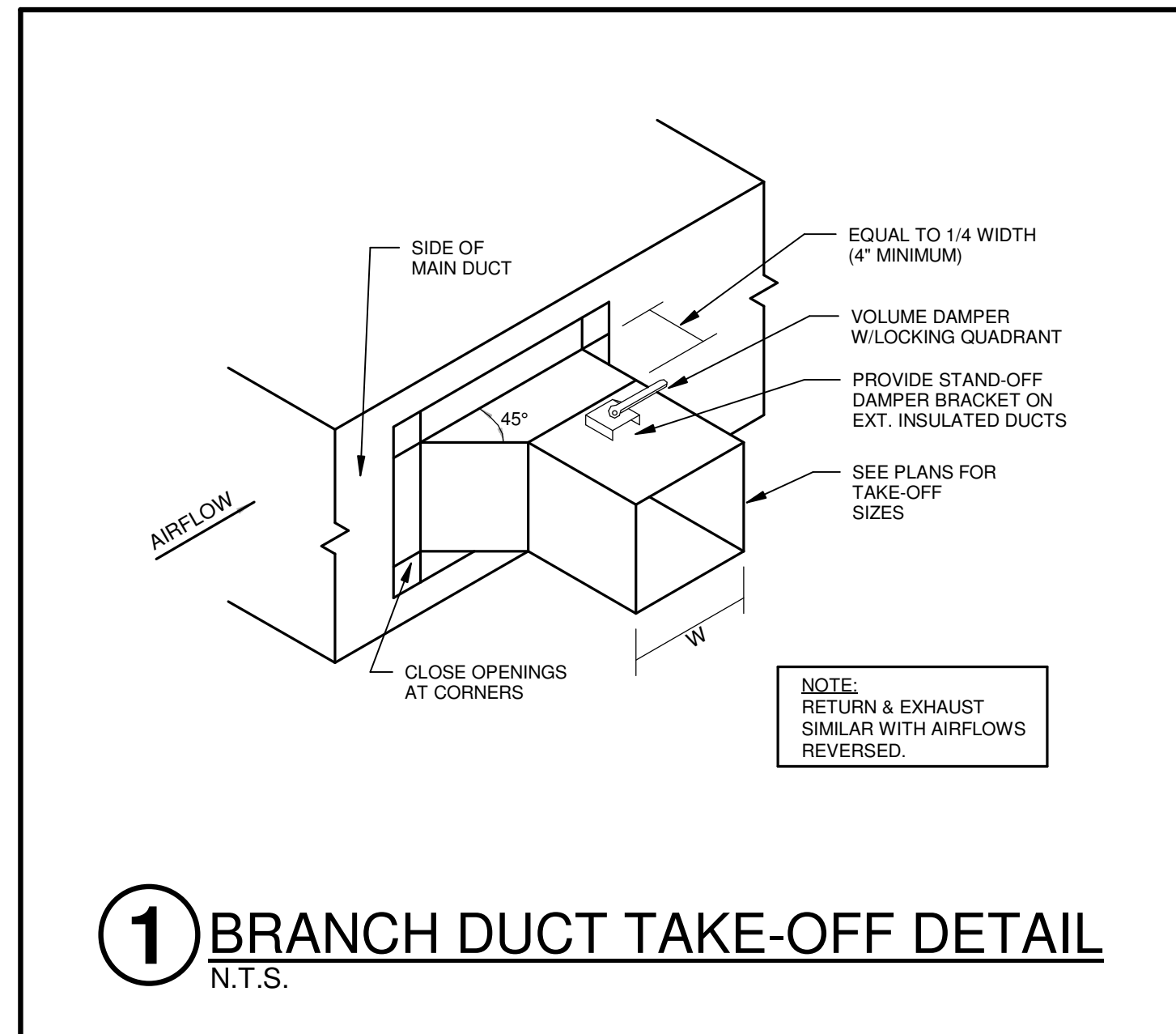
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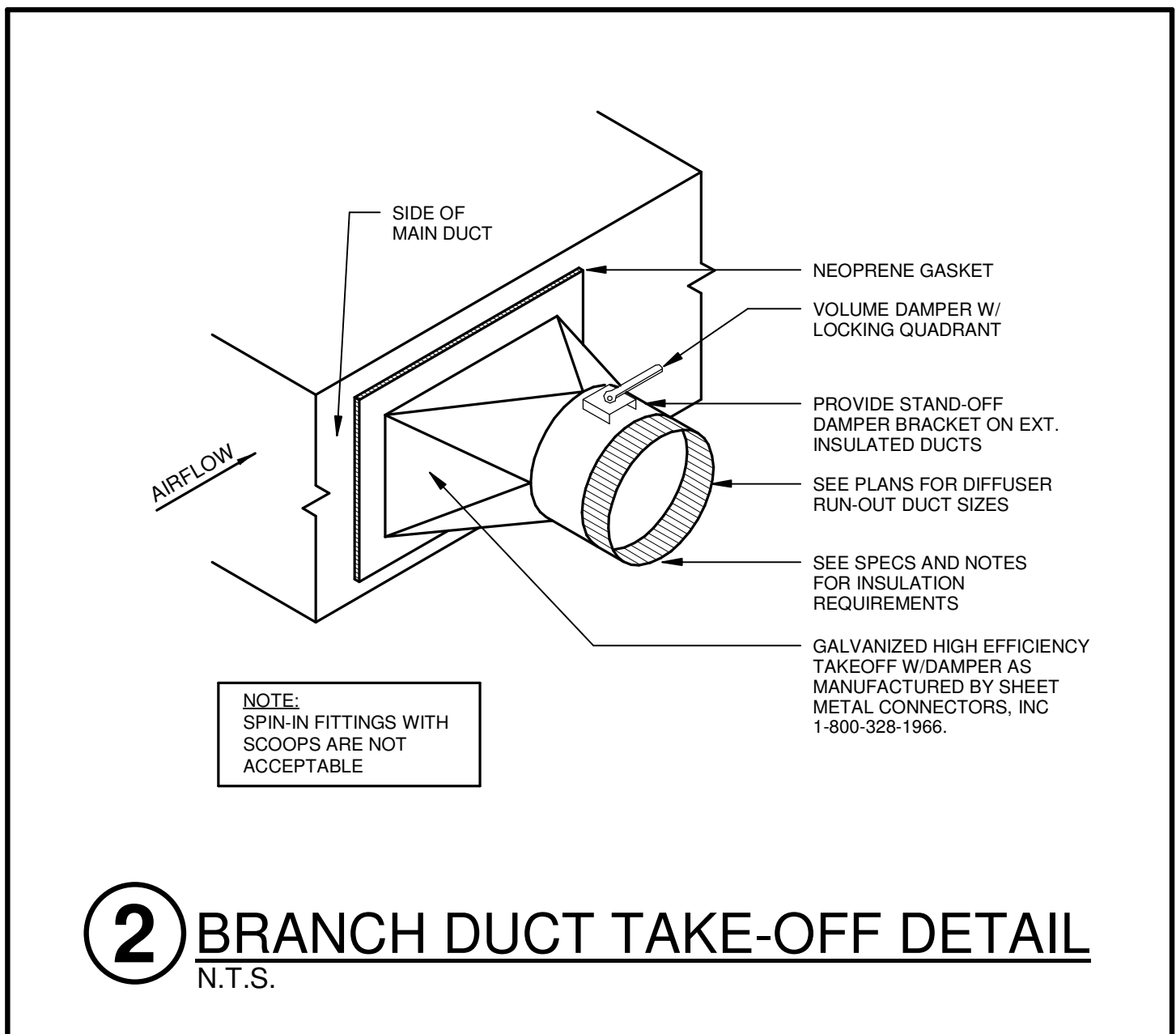


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 Sheet Number:  
**M2.2**  
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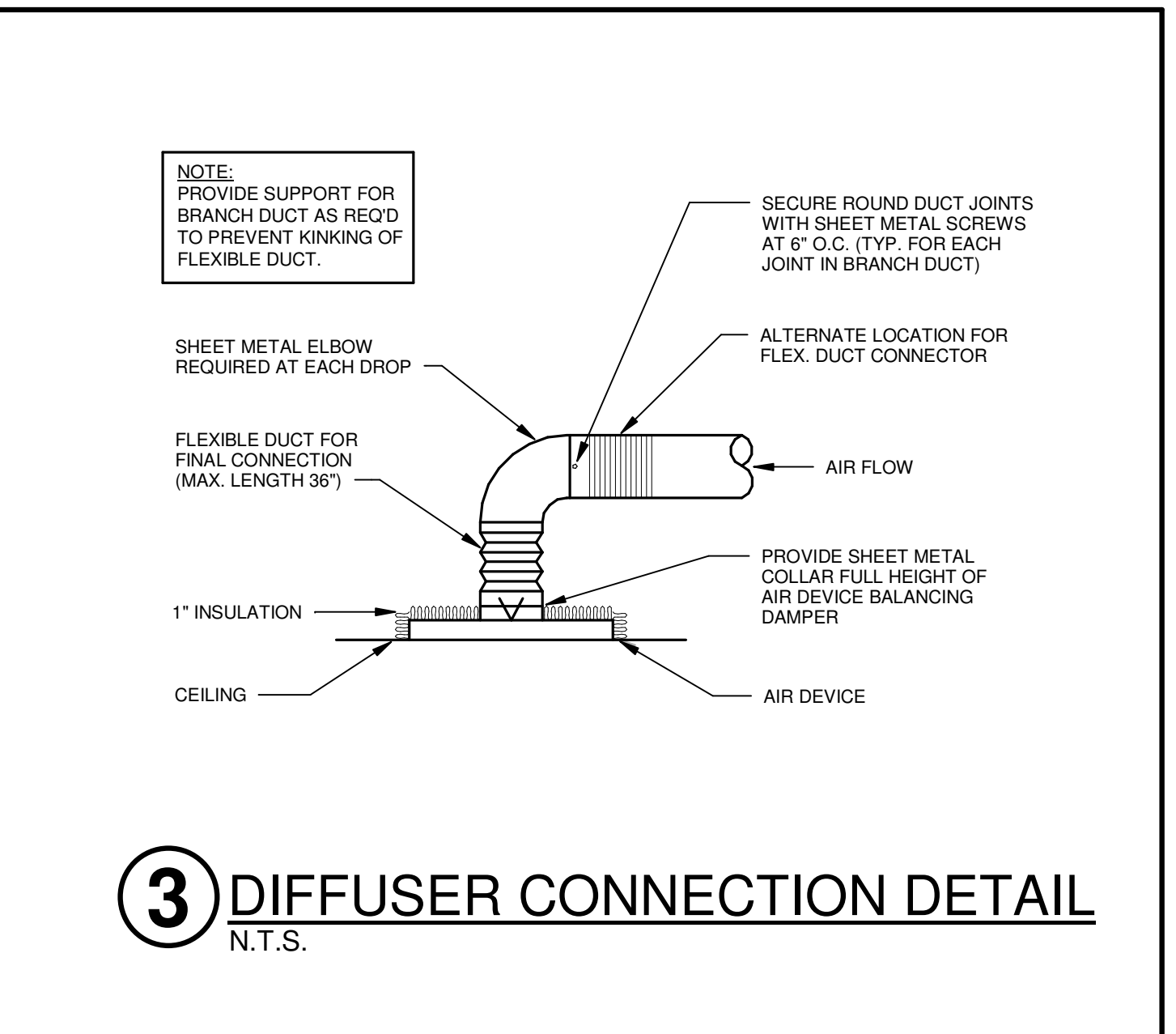
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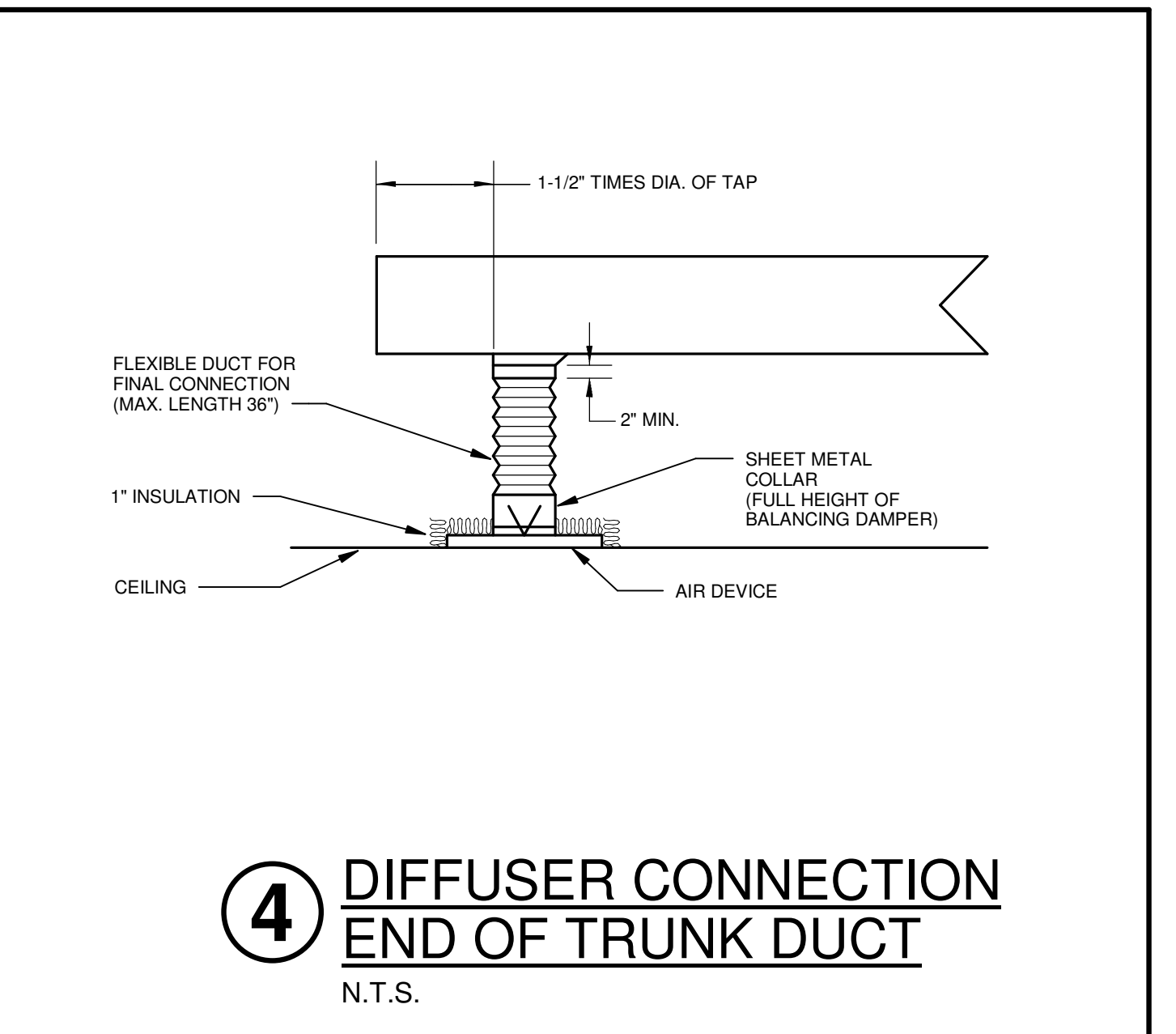
**1** BRANCH DUCT TAKE-OFF DETAIL  
N.T.S.



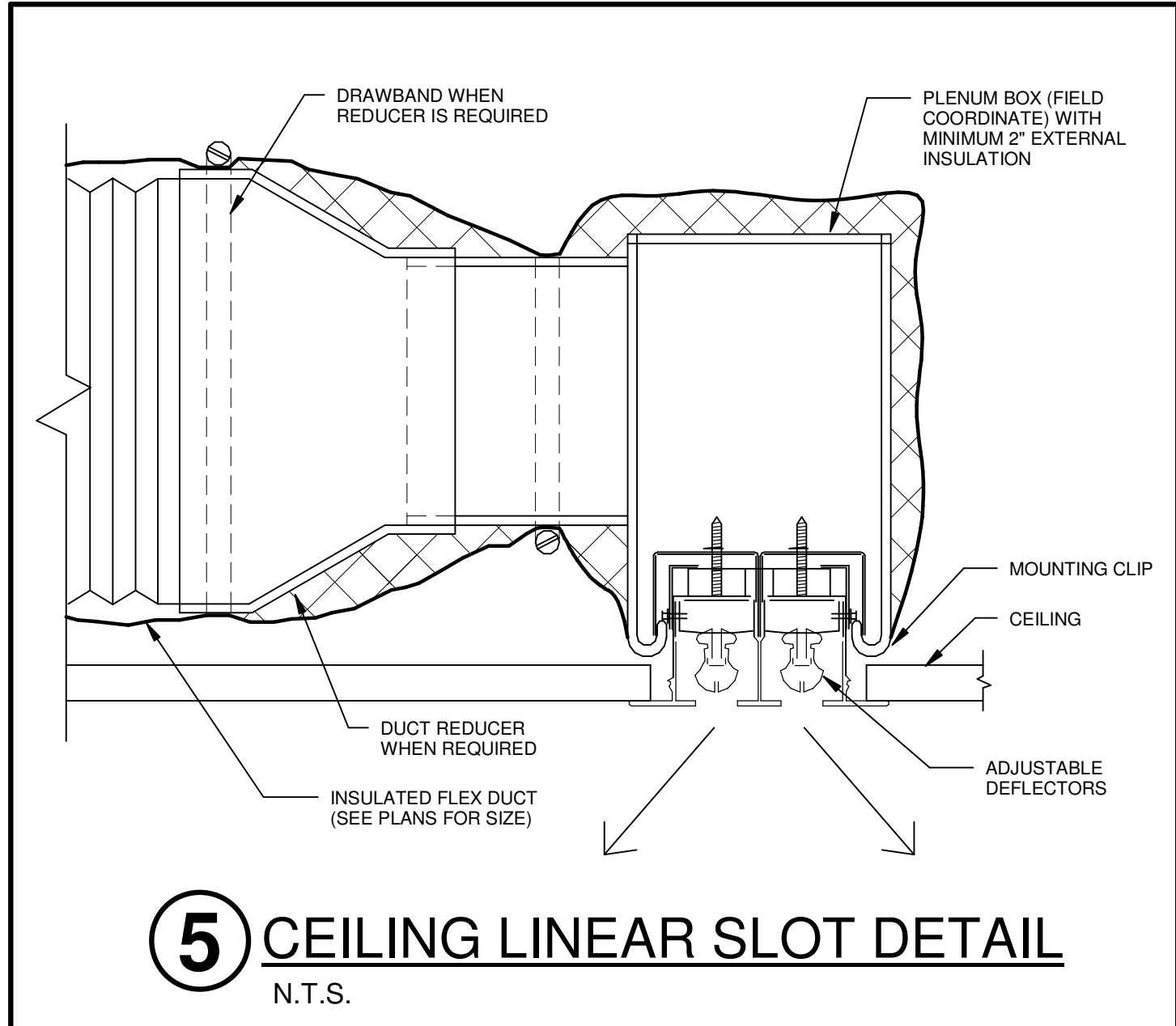
**2** BRANCH DUCT TAKE-OFF DETAIL  
N.T.S.



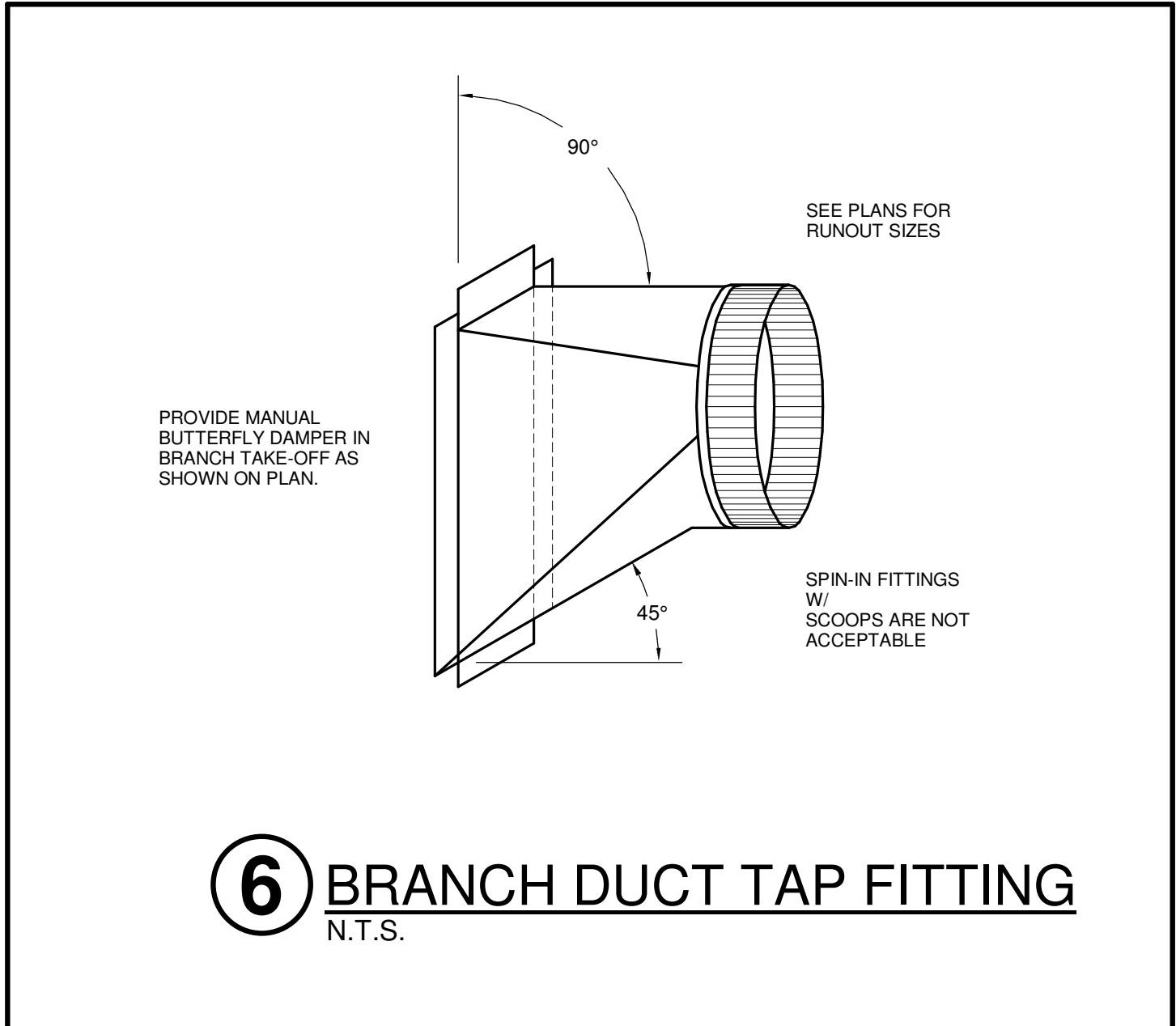
**3** DIFFUSER CONNECTION DETAIL  
N.T.S.



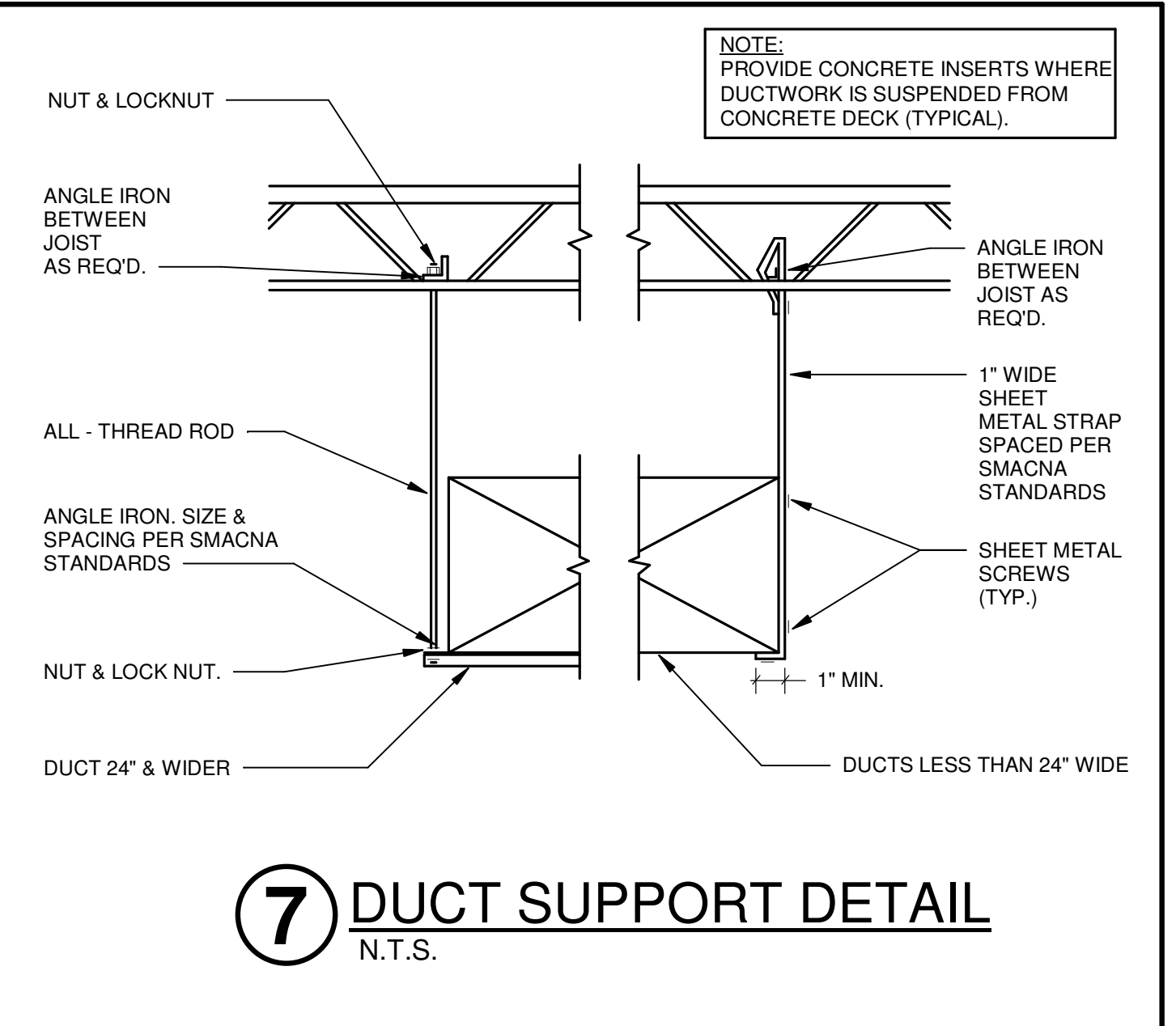
**4** DIFFUSER CONNECTION END OF TRUNK DUCT  
N.T.S.



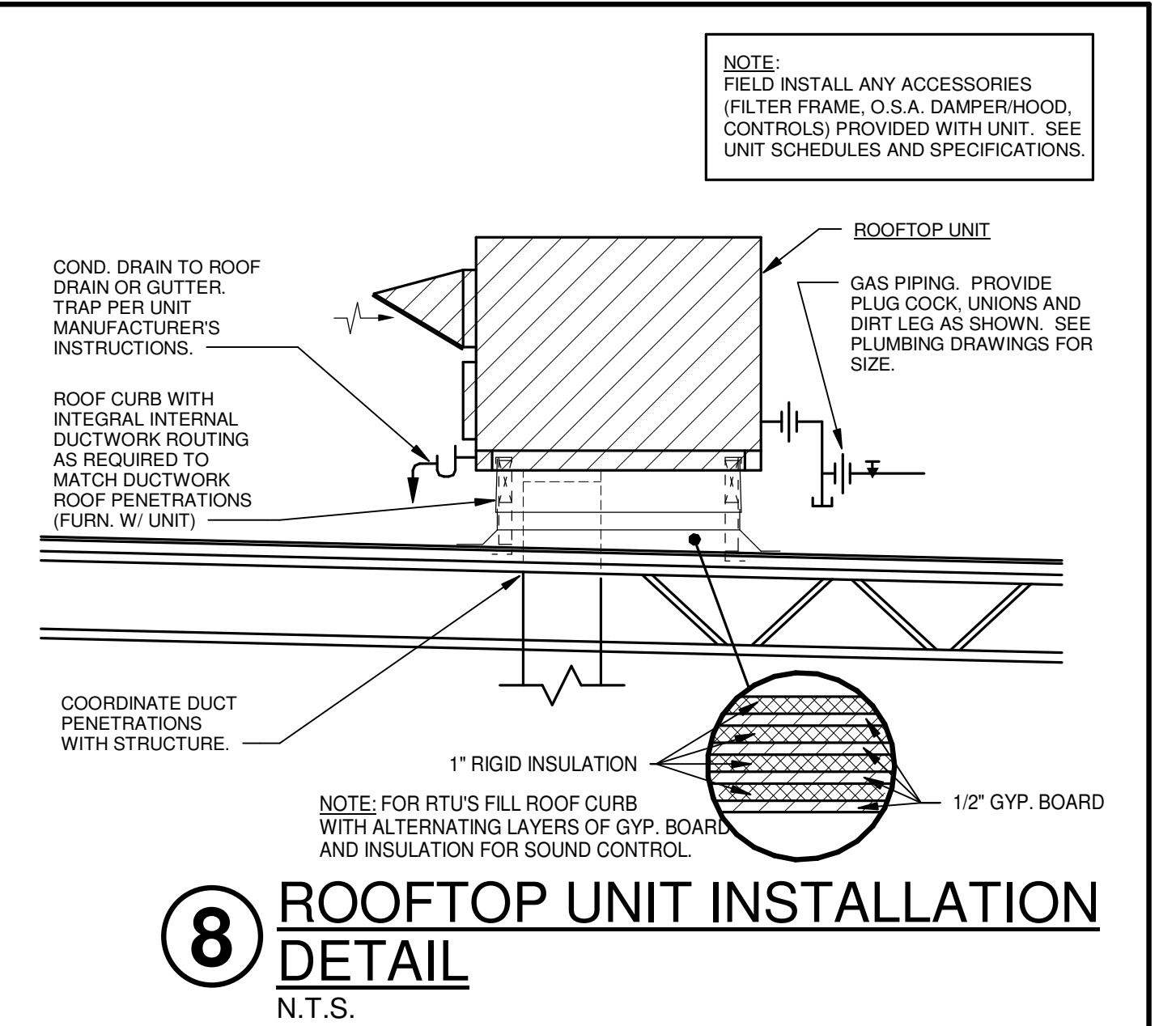
**5** CEILING LINEAR SLOT DETAIL  
N.T.S.



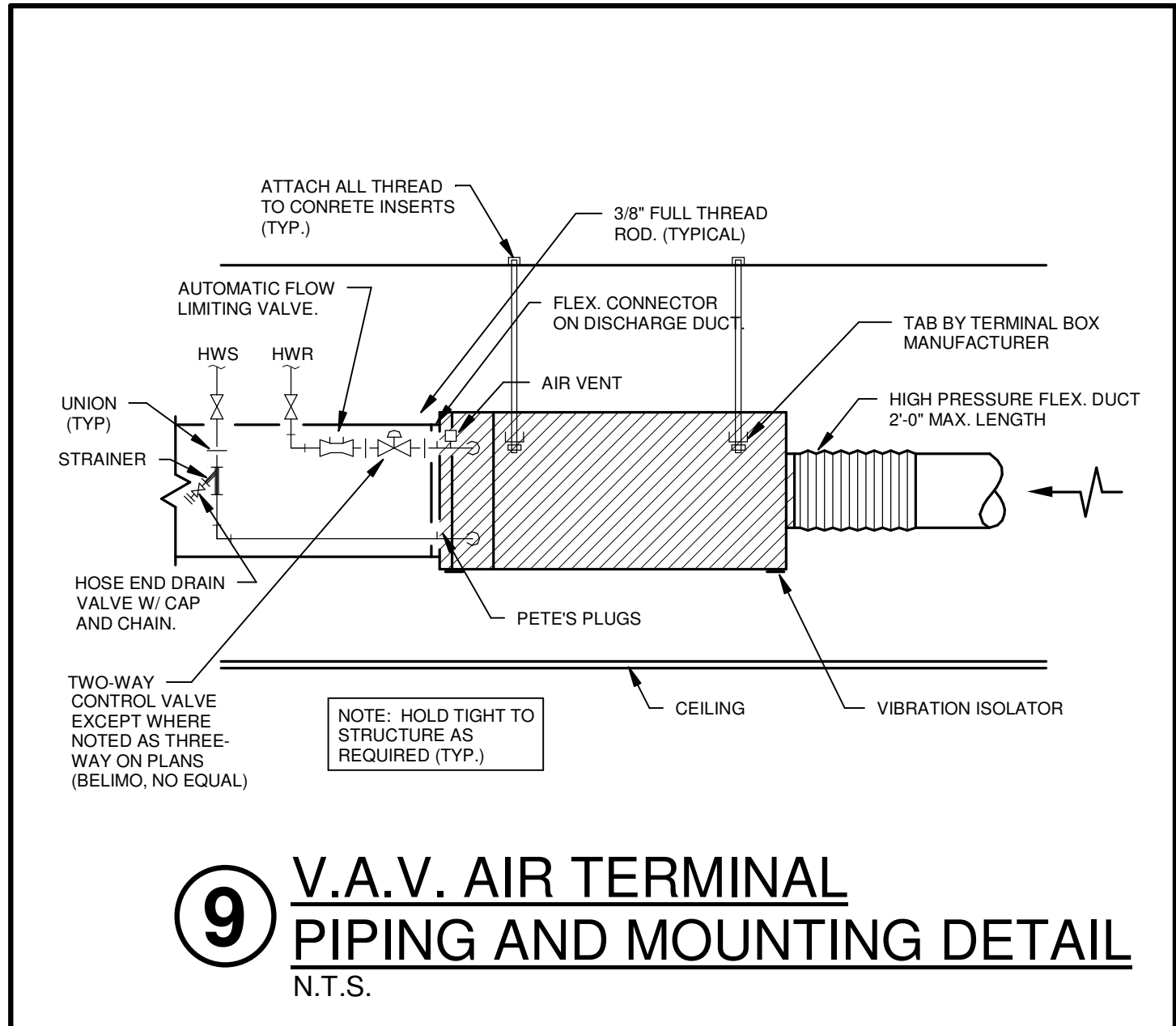
**6** BRANCH DUCT TAP FITTING  
N.T.S.



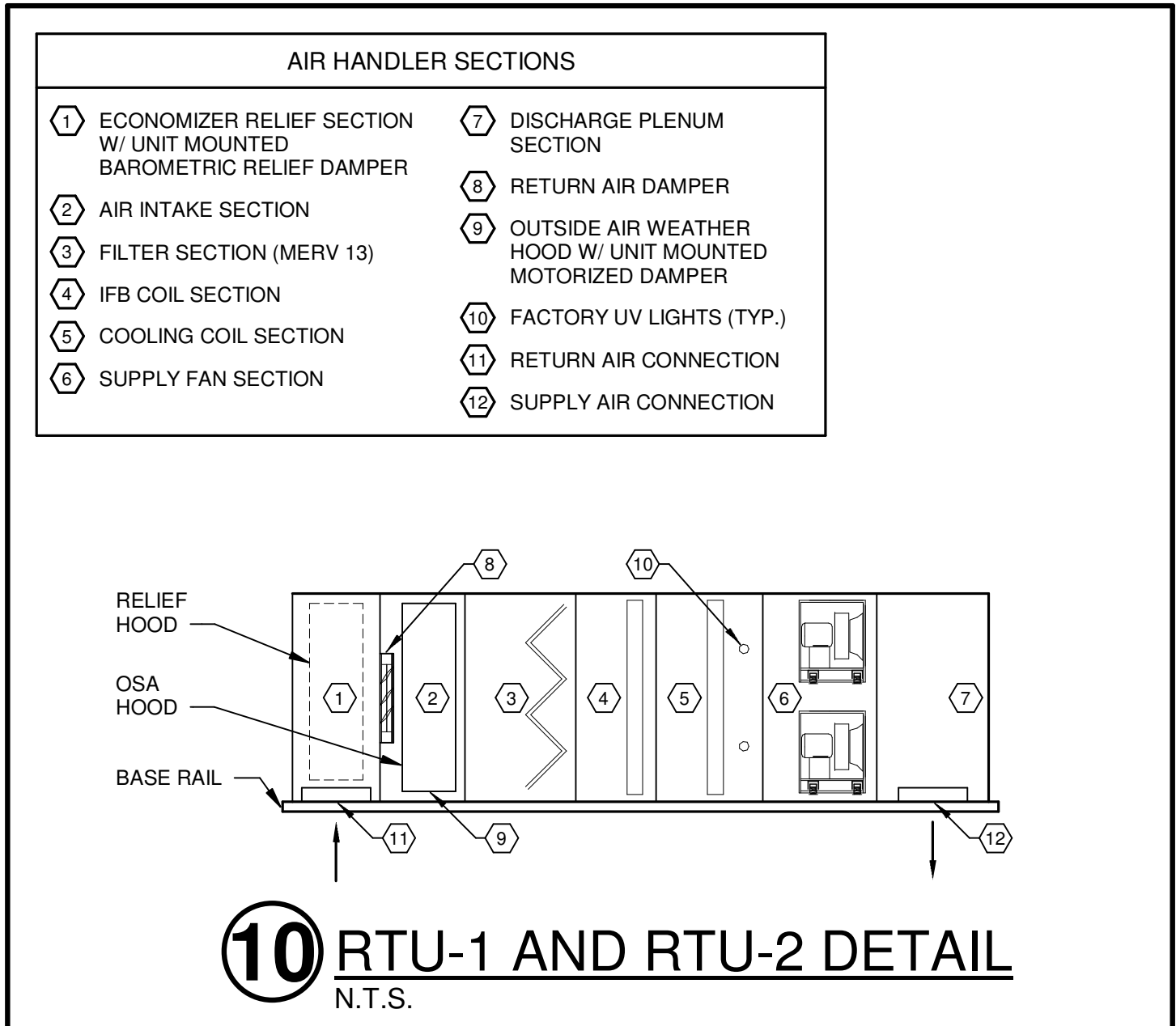
**7** DUCT SUPPORT DETAIL  
N.T.S.



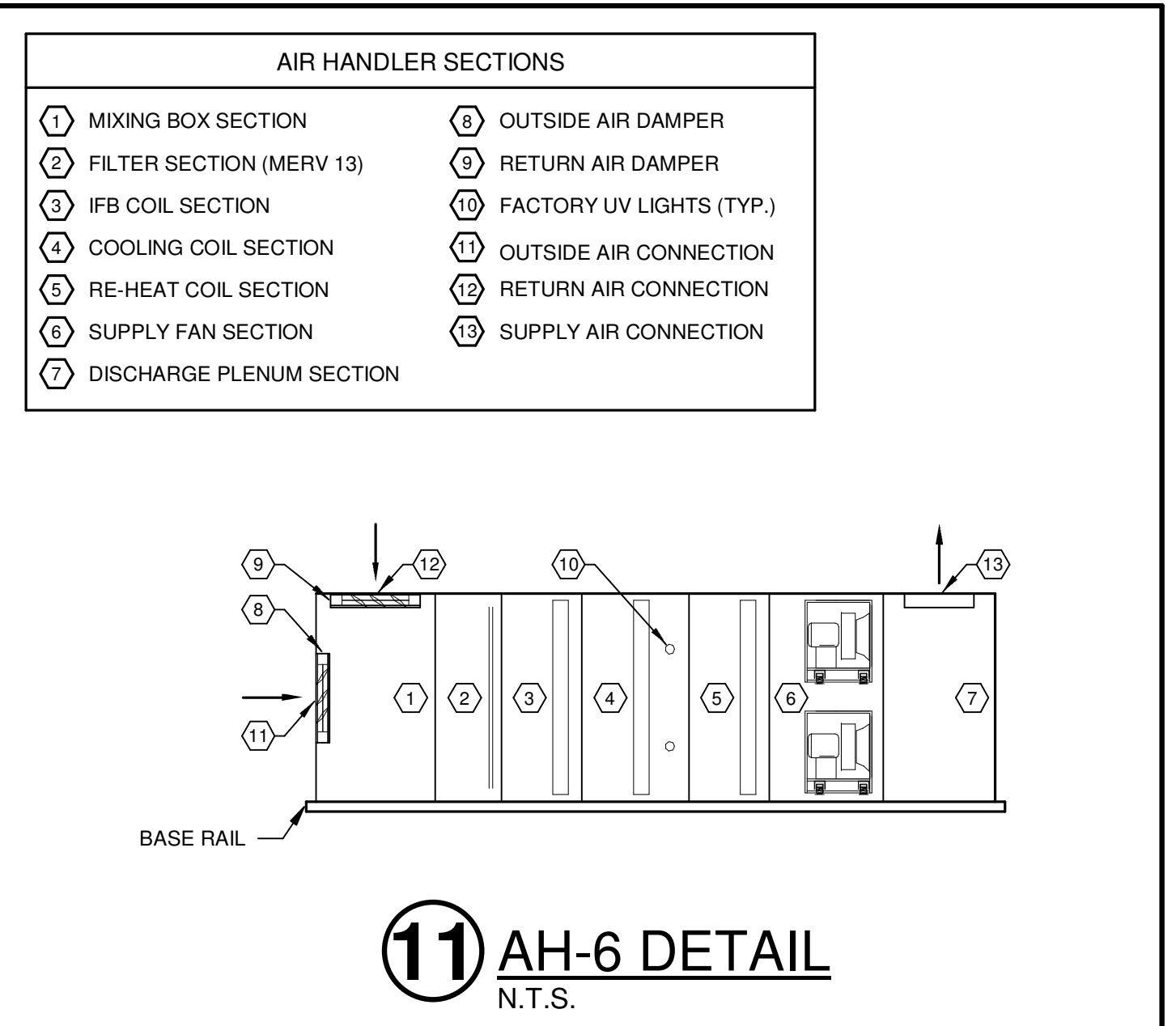
**8** ROOFTOP UNIT INSTALLATION DETAIL  
N.T.S.



**9** V.A.V. AIR TERMINAL PIPING AND MOUNTING DETAIL  
N.T.S.



**10** RTU-1 AND RTU-2 DETAIL  
N.T.S.

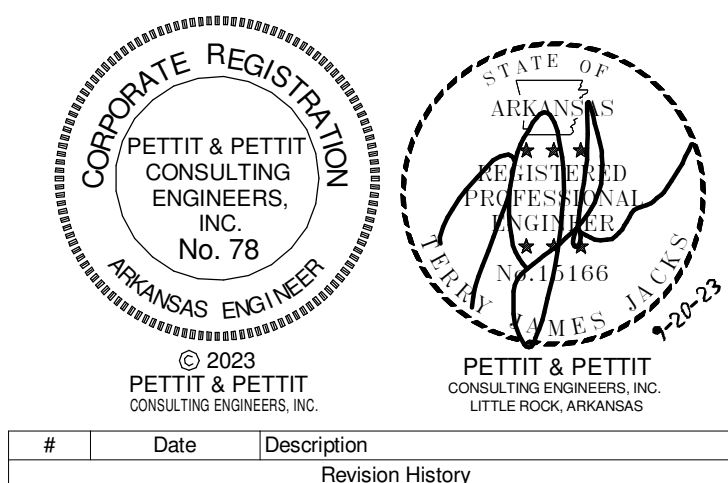


**11** AH-6 DETAIL  
N.T.S.



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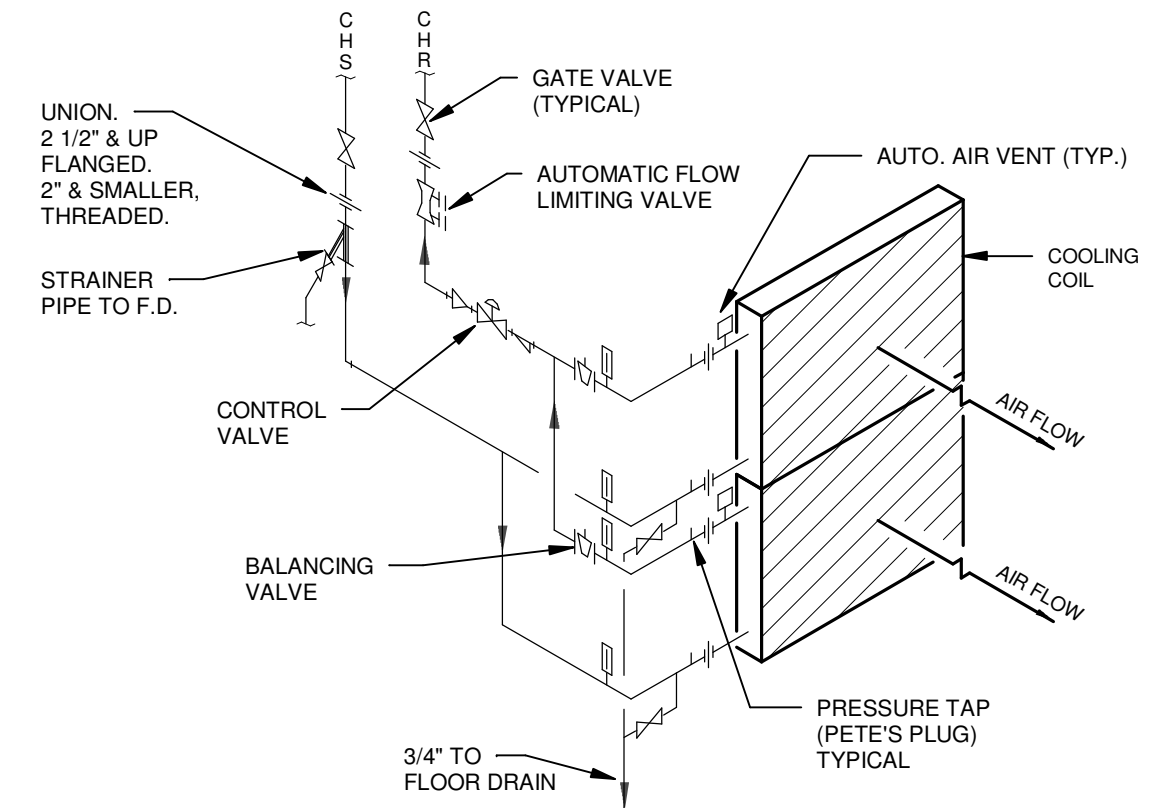
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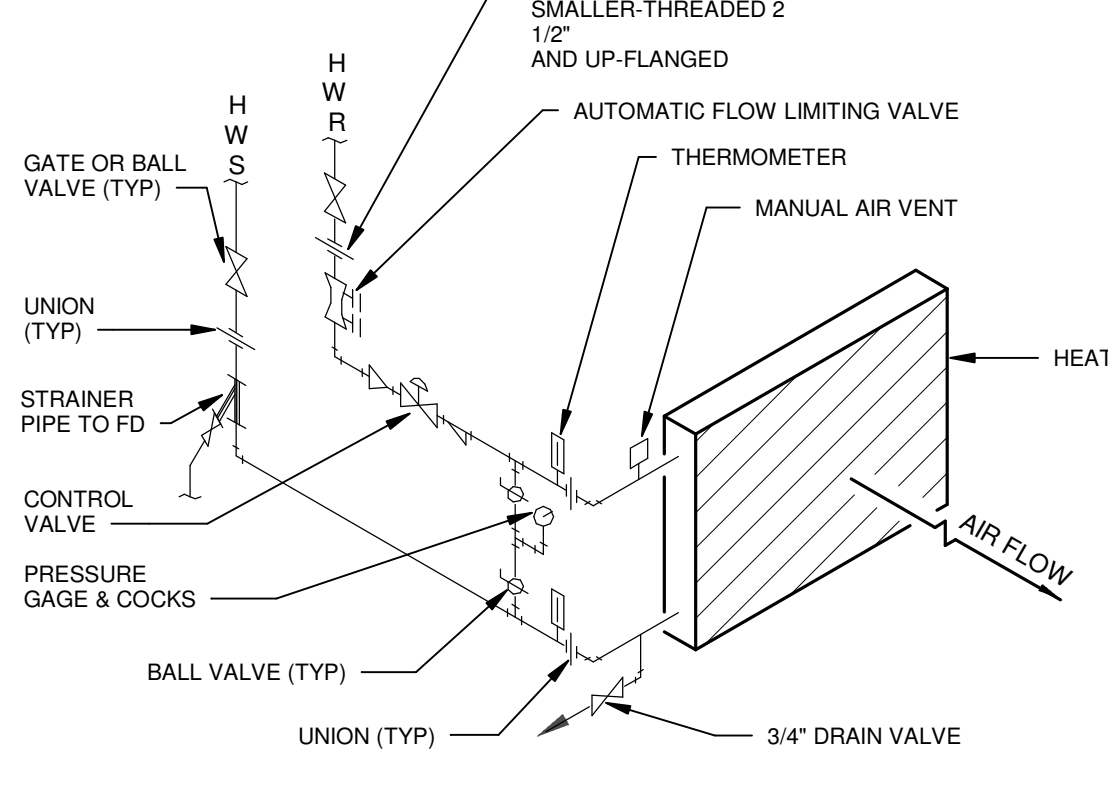
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NOTE:  
FOR VALVES 2 1/2" AND LARGER, PROVIDE BUTTERFLY VALVES IN LIEU OF GATE VALVES. SEE PLANS FOR PIPE SIZES.



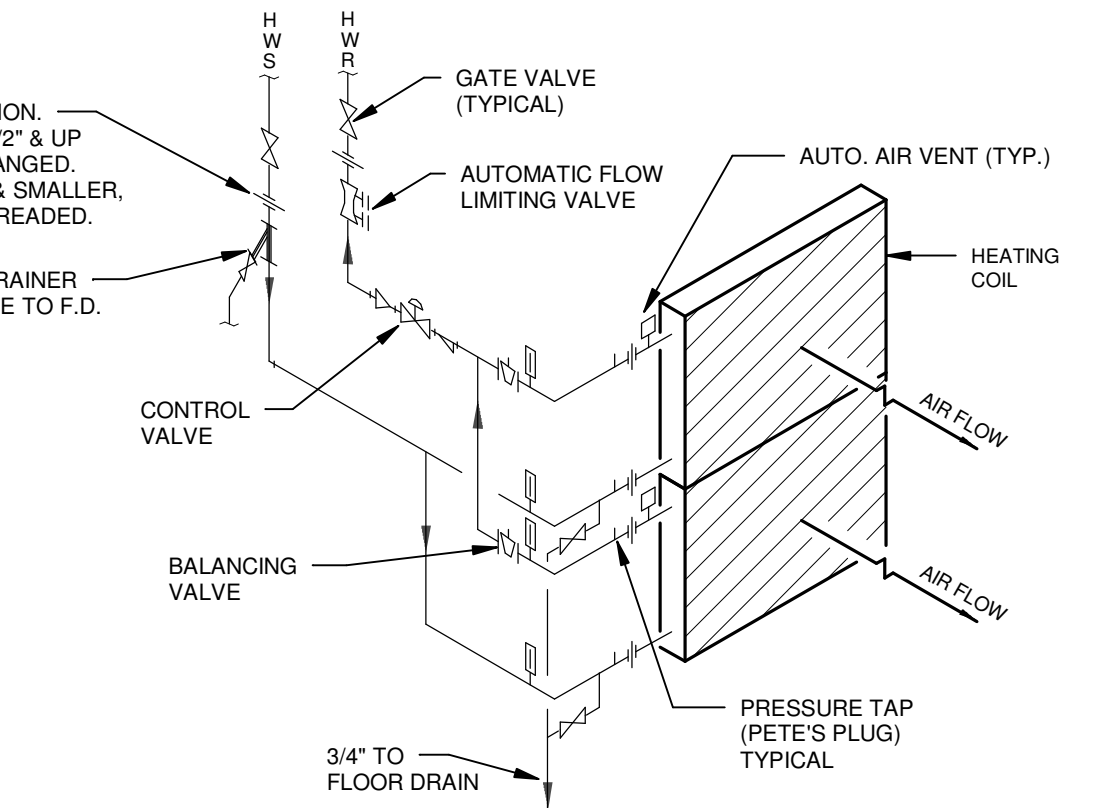
**1** CHILLED WATER COIL PIPING DIAGRAM  
N.T.S.

NOTE:  
FOR VALVES 2 1/2" AND LARGER, PROVIDE BUTTERFLY VALVES IN LIEU OF GATE VALVES. SEE PLANS FOR PIPE SIZES.

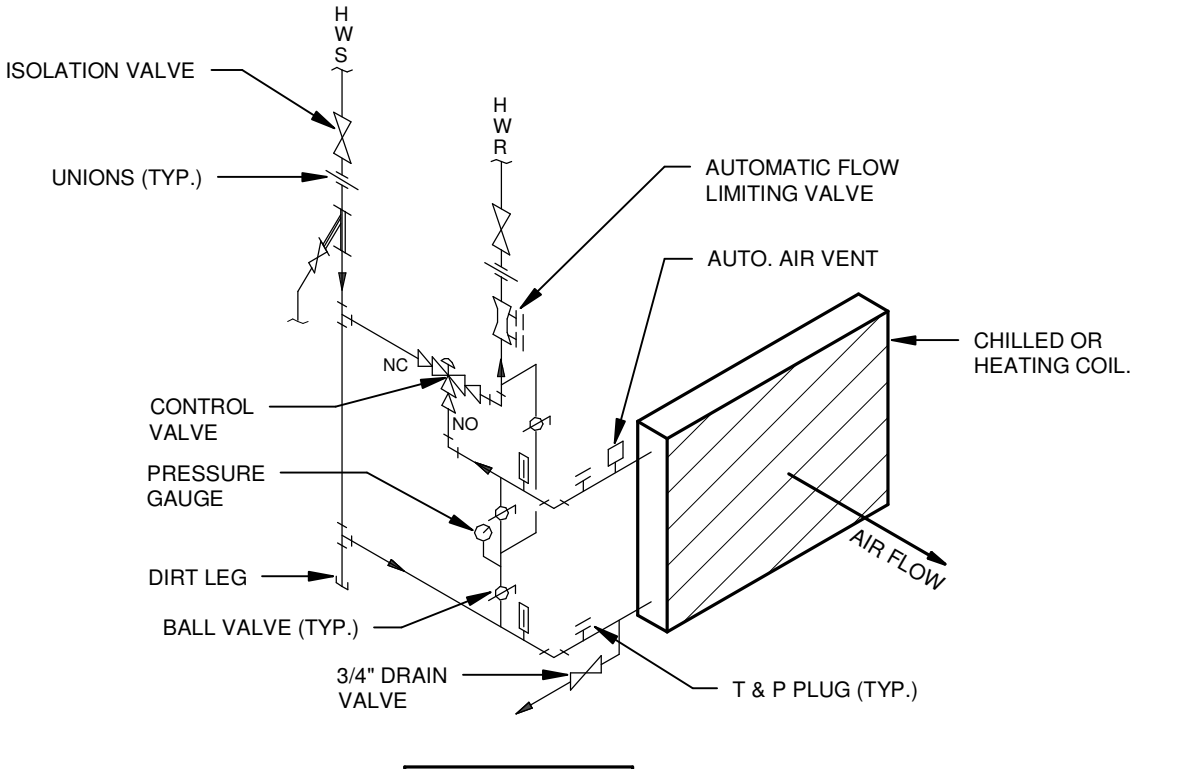


**2** HOT WATER COIL PIPING DIAGRAM  
N.T.S.

NOTE:  
FOR VALVES 2 1/2" AND LARGER, PROVIDE BUTTERFLY VALVES IN LIEU OF GATE VALVES. SEE PLANS FOR PIPE SIZES.

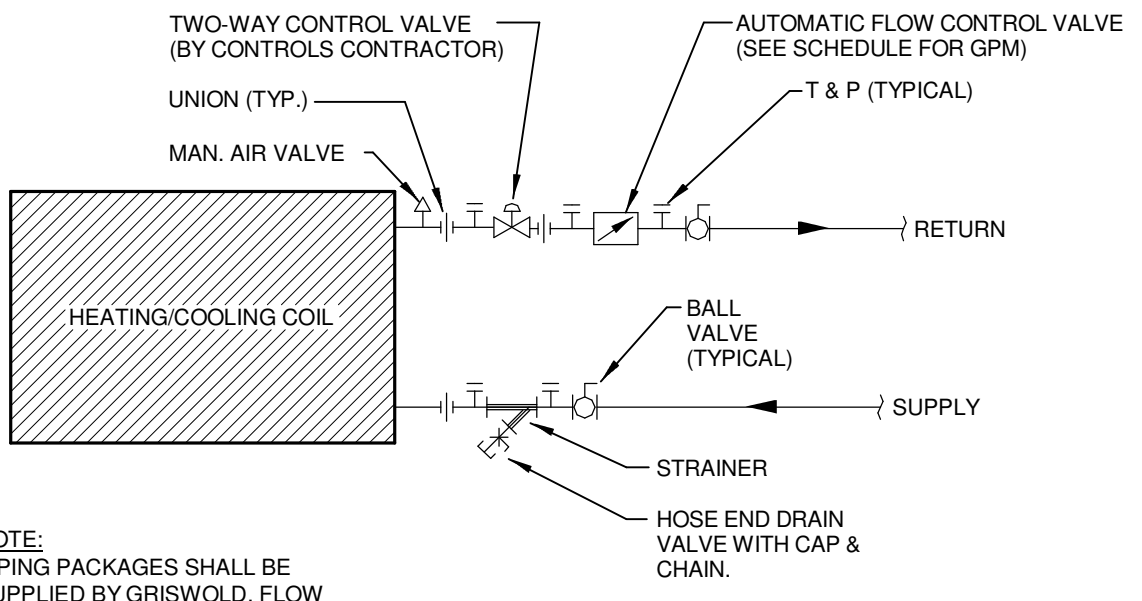


**3** HOT WATER COIL PIPING DIAGRAM  
N.T.S.



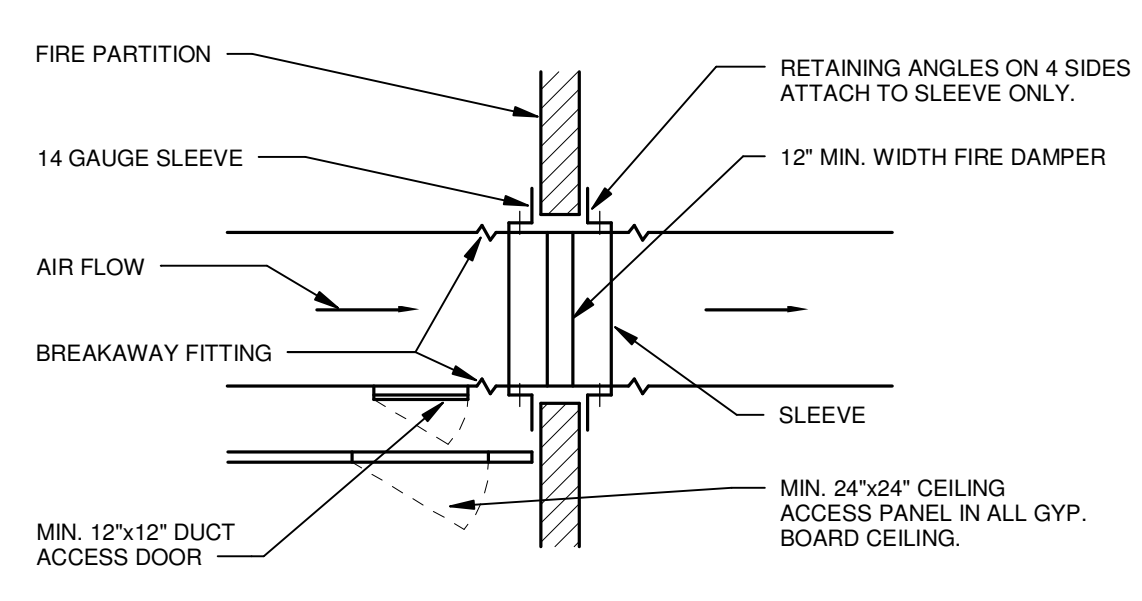
**4** HOT WATER COIL PIPING DETAIL (3-WAY)  
N.T.S.

NOTE:  
SEE PLANS FOR PIPE SIZES.



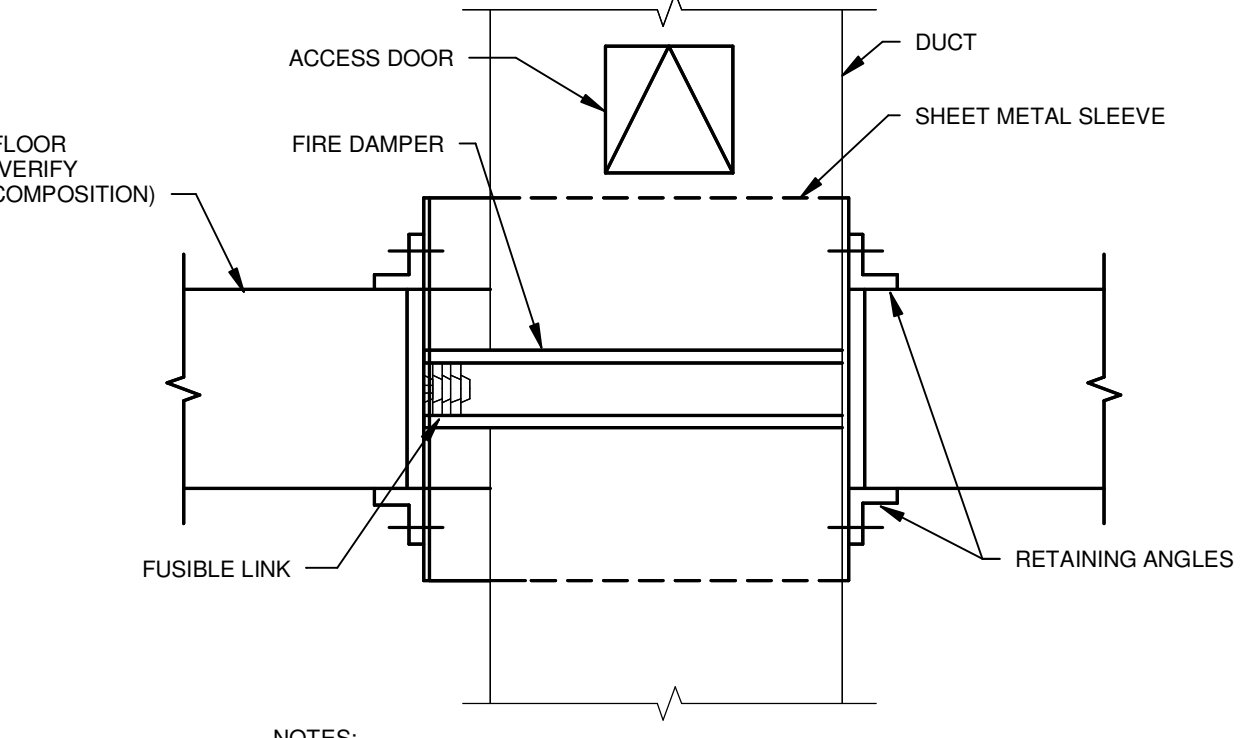
**5** FAN COIL UNIT PIPING DETAIL  
N.T.S.

NOTE:  
PIPING PACKAGES SHALL BE SUPPLIED BY GRISWOLD, FLOW DESIGN, OR APPROVED EQUAL.



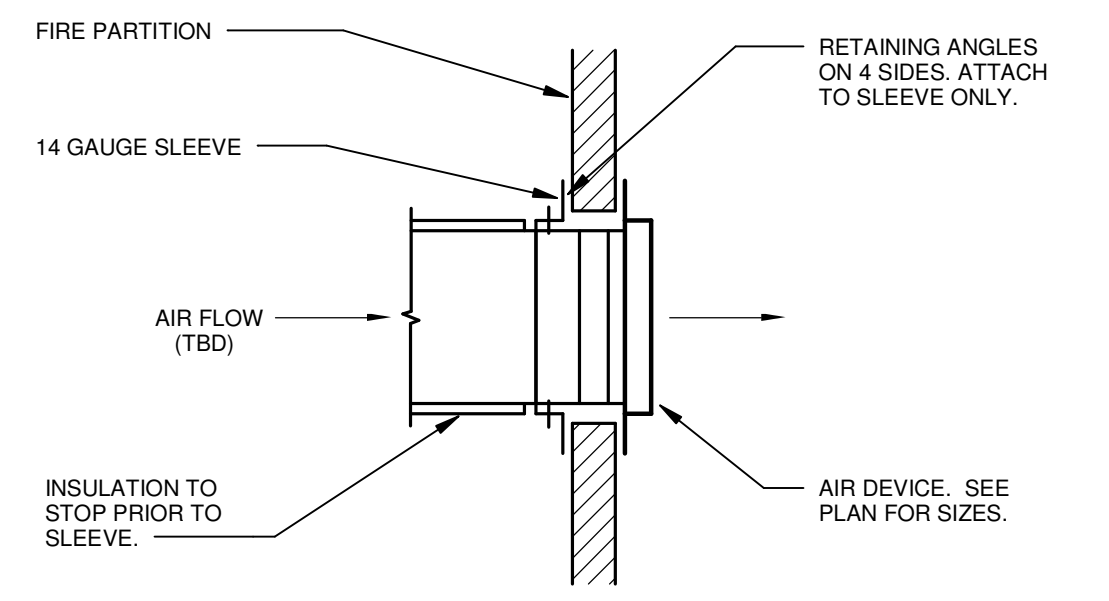
**6** FIRE DAMPER DETAIL  
N.T.S.

NOTE:  
SEE FIRE DAMPER MANUFACTURER'S INSTRUCTIONS FOR INSTALLATION.



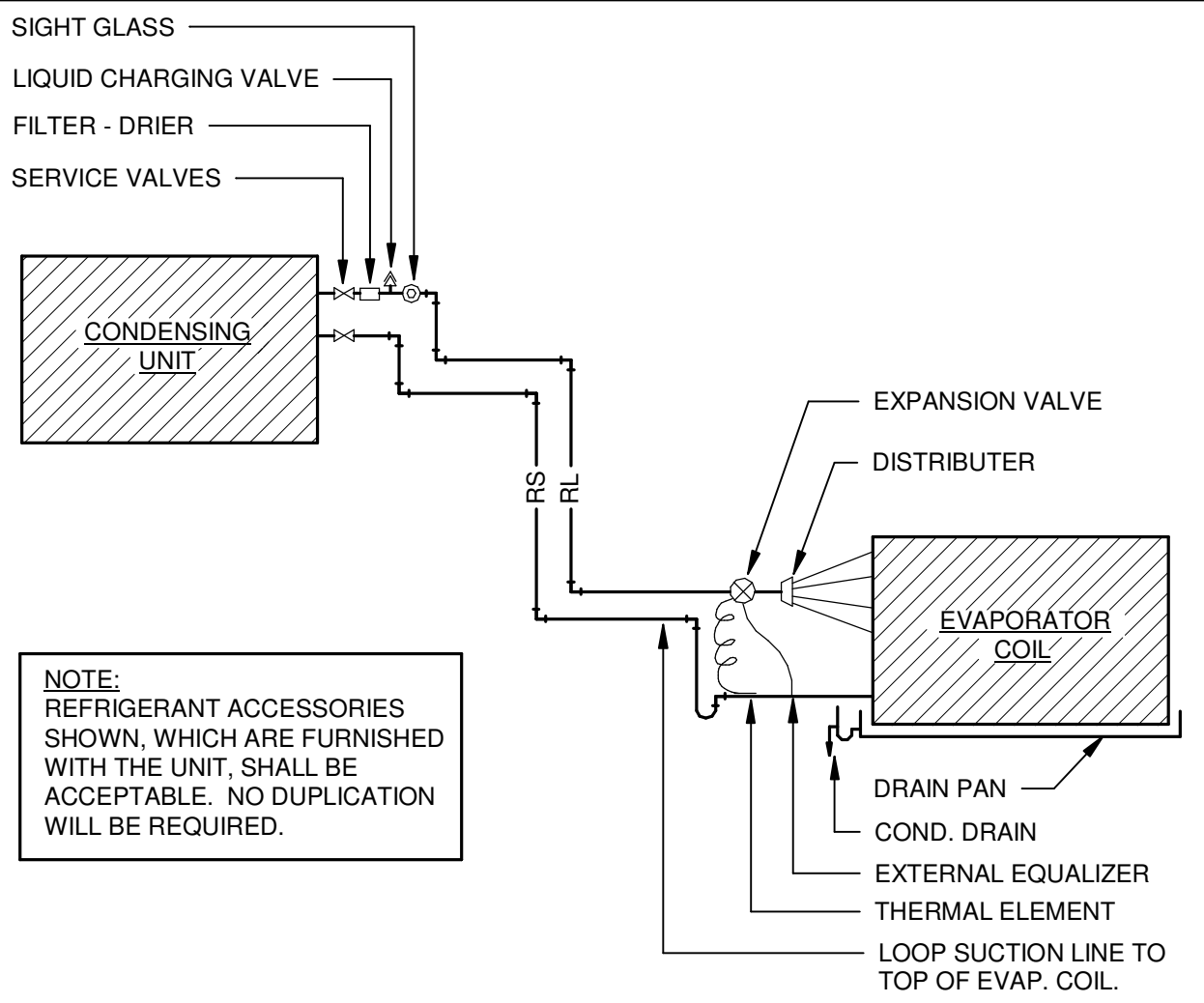
**7** FIRE DAMPER INSTALLATION DETAIL  
N.T.S.

- NOTES:
1. ALL DAMPERS MUST HAVE U.L. 555 LABEL
  2. PROVIDE MINIMUM 14"x14" ACCESS DOOR IN ALL DUCTS WHEN SIZE PERMITS. FOR SMALLER DUCTS, MAKE PANEL 2" LESS THAN DUCT.
  3. DAMPERS SHALL BE TYPE "B" OR "C" WITH 24 GA. MIN. STEEL CHANNEL FRAMES.
  4. PROVIDE CEILING OR WALL ACCESS PANELS FOR DAMPERS ABOVE GYP. BOARD CEILINGS OR IN CHASE WALLS
  5. FLOOR INSTALLATION SHOWN, WALL INSTALLATION SIMILAR.



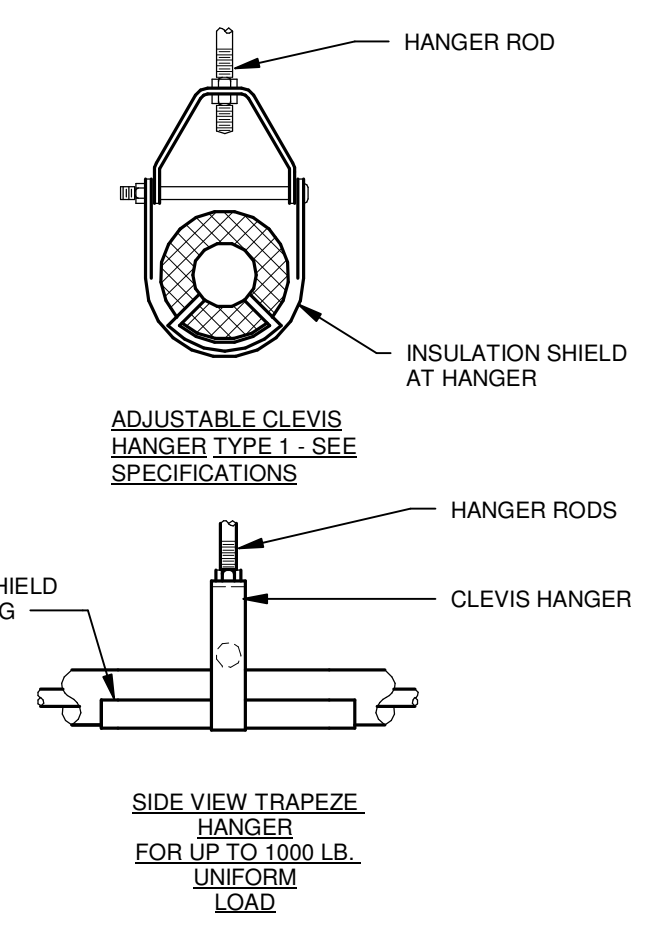
**8** SIDEWALL AIR DEVICE DUCT PENETRATION DETAIL  
N.T.S.

NOTE:  
DUCT PENETRATION TO BE INSTALLED IN ACCORDANCE WITH SECTION 712 OF THE 2021 ARKANSAS FIRE PREVENTION CODE.



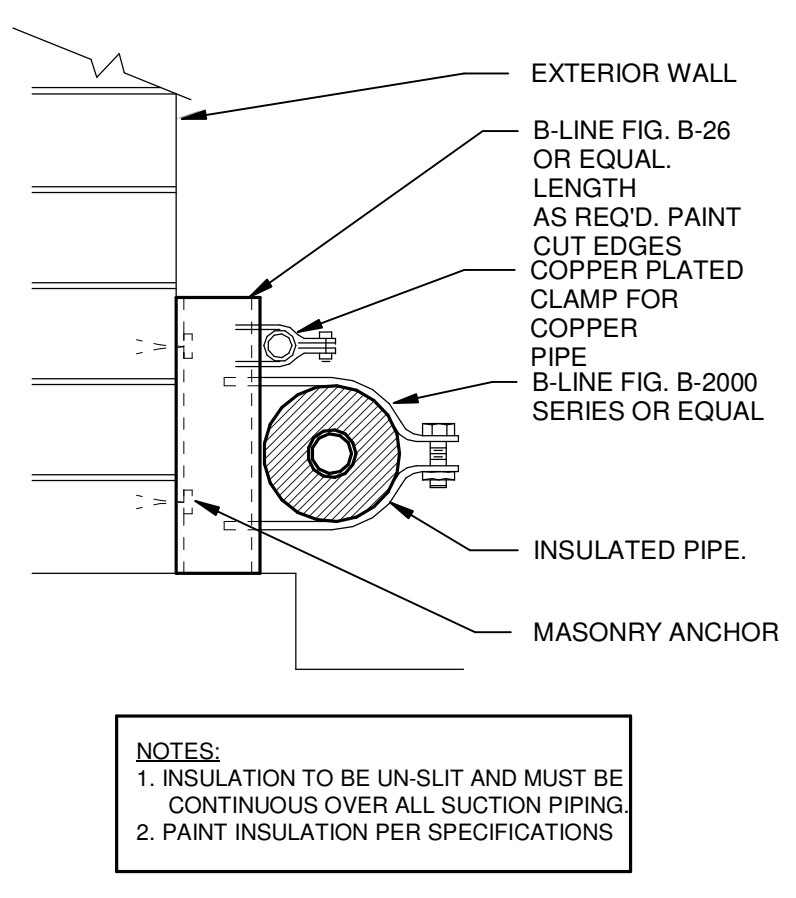
**9** REFRIGERANT PIPING DIAGRAM  
N.T.S.

NOTE:  
REFRIGERANT ACCESSORIES SHOWN, WHICH ARE FURNISHED WITH THE UNIT, SHALL BE ACCEPTABLE. NO DUPLICATION WILL BE REQUIRED.



**10** PIPING HANGER DETAIL  
N.T.S.

NOTES:  
SEE SPECIFICATIONS FOR HANGER REQUIREMENTS



**11** REFRIGERANT PIPE SUPPORT DETAIL  
N.T.S.

NOTES:  
1. INSULATION TO BE UN-SUIT AND MUST BE CONTINUOUS OVER ALL SUCTION PIPING  
2. PAINT INSULATION PER SPECIFICATIONS



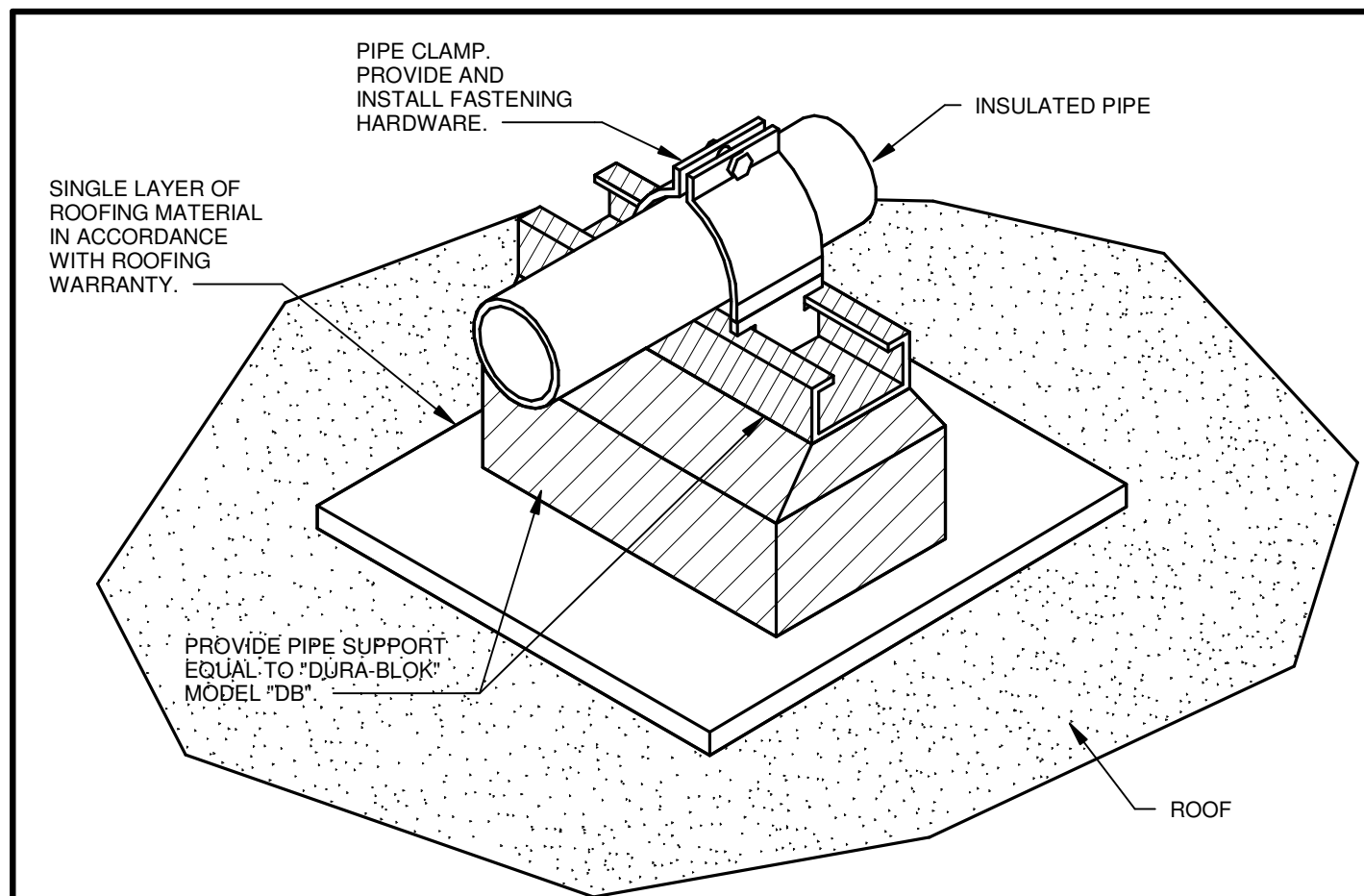
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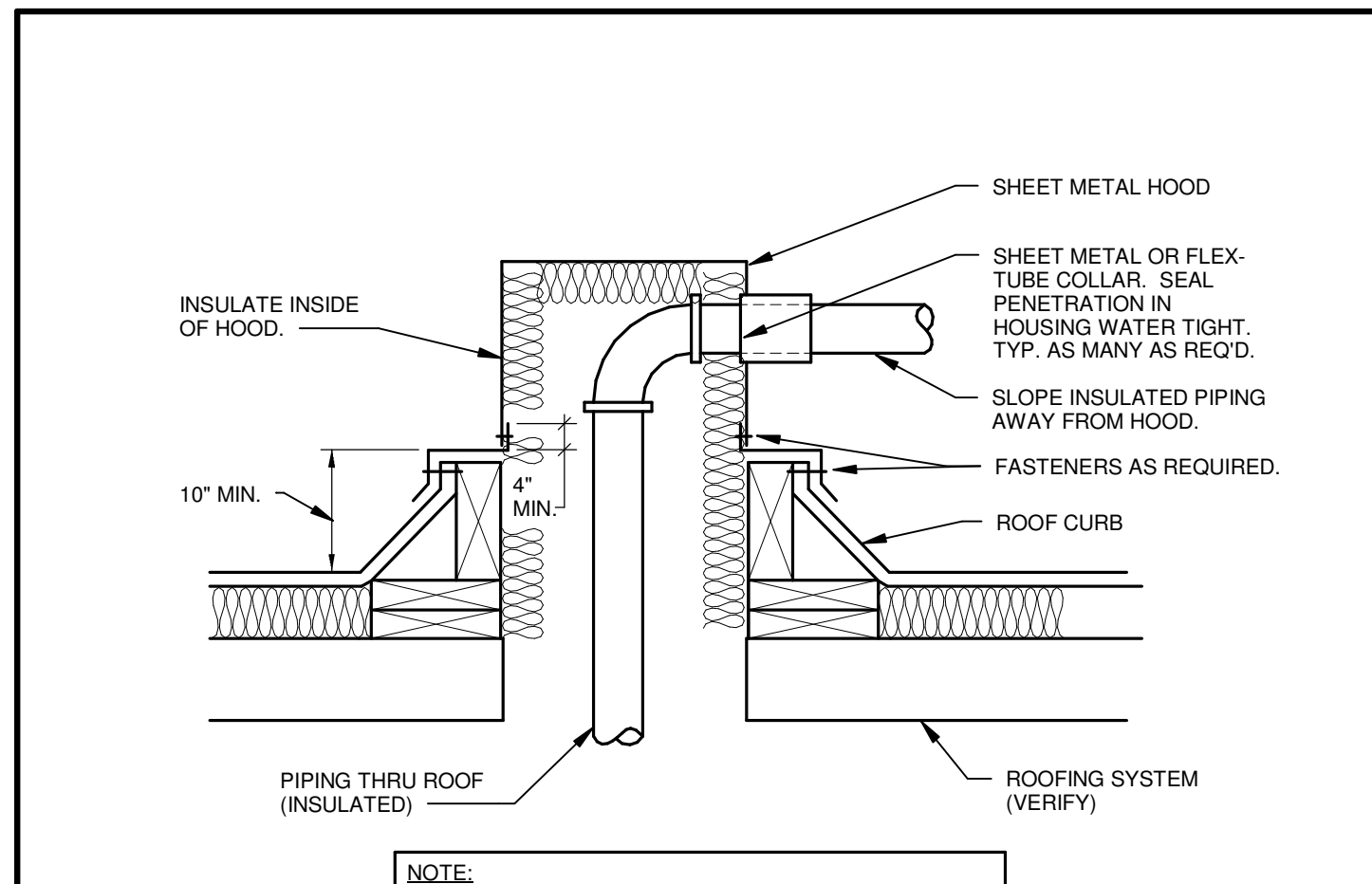
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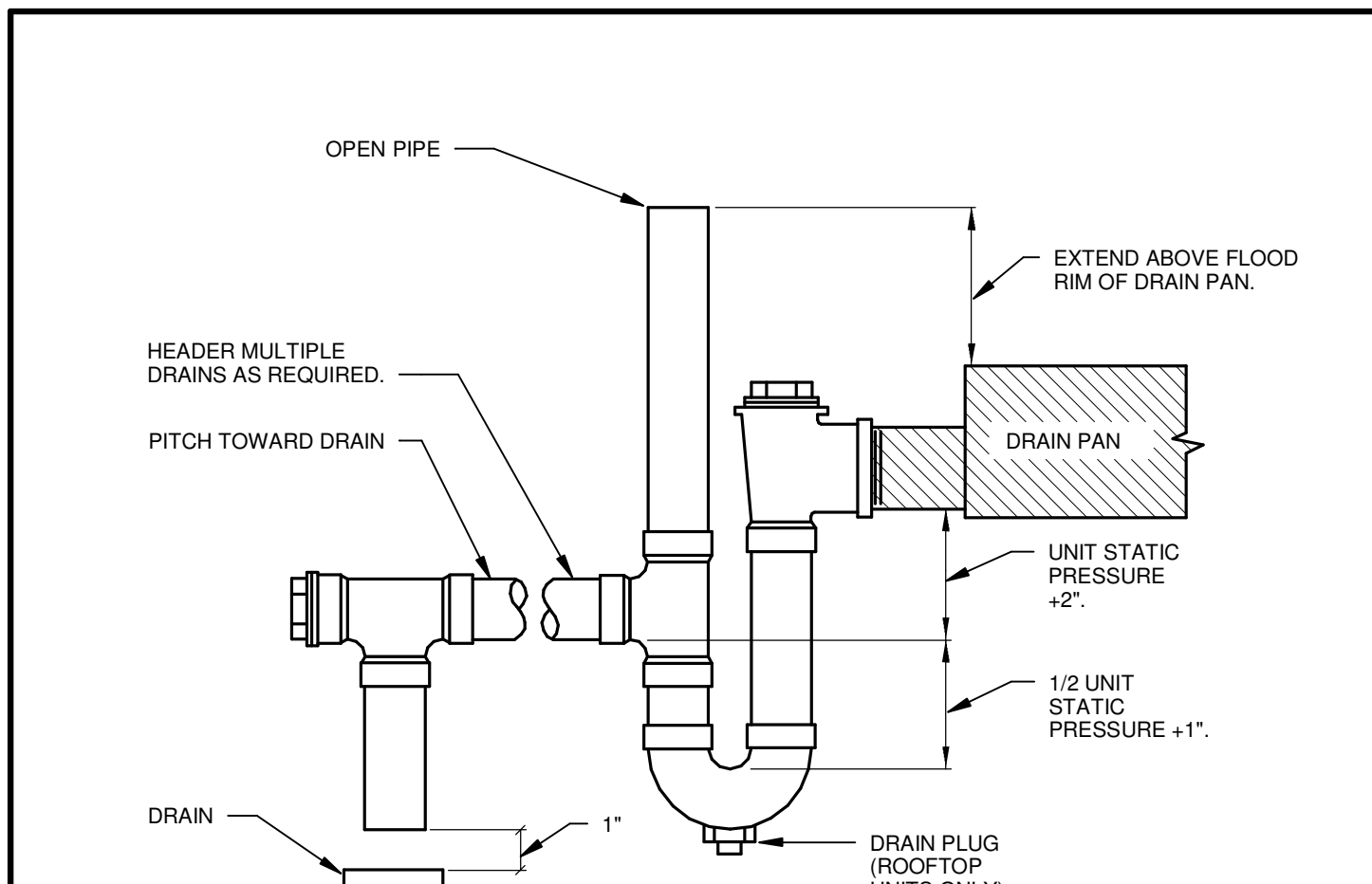
**1** ROOF PIPE SUPPORT DETAIL  
N.T.S.

NOTE:  
INSTALL SUPPORTS AT A MAXIMUM SPACING OF 5'-0"  
FOR RIGID PIPING. INSTALL SUPPORTS AT A  
MAXIMUM SPACING OF 5'-0" FOR P.V.C. PIPING.

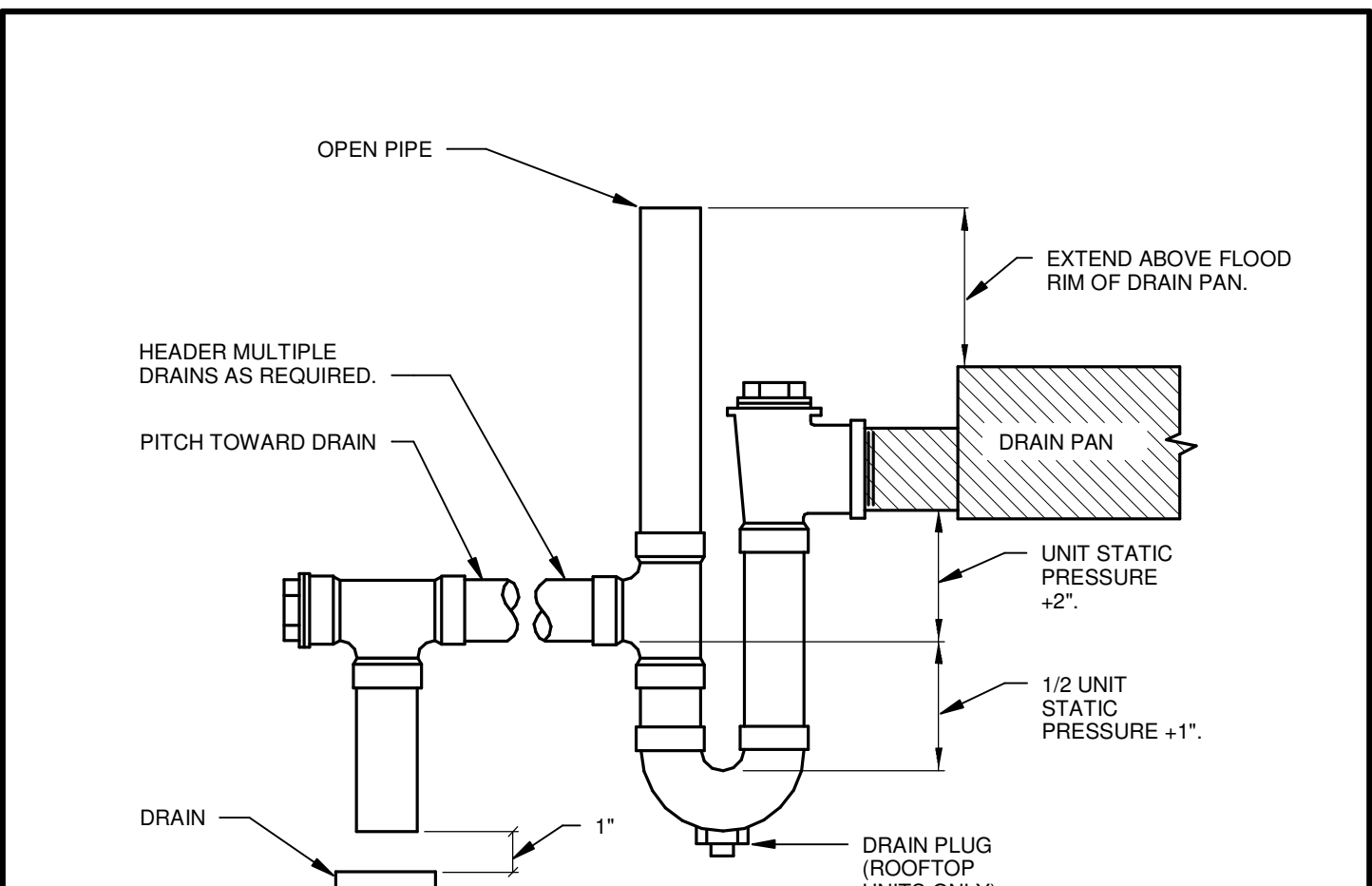


**2** ROOF PIPING PENETRATION DETAIL  
N.T.S.

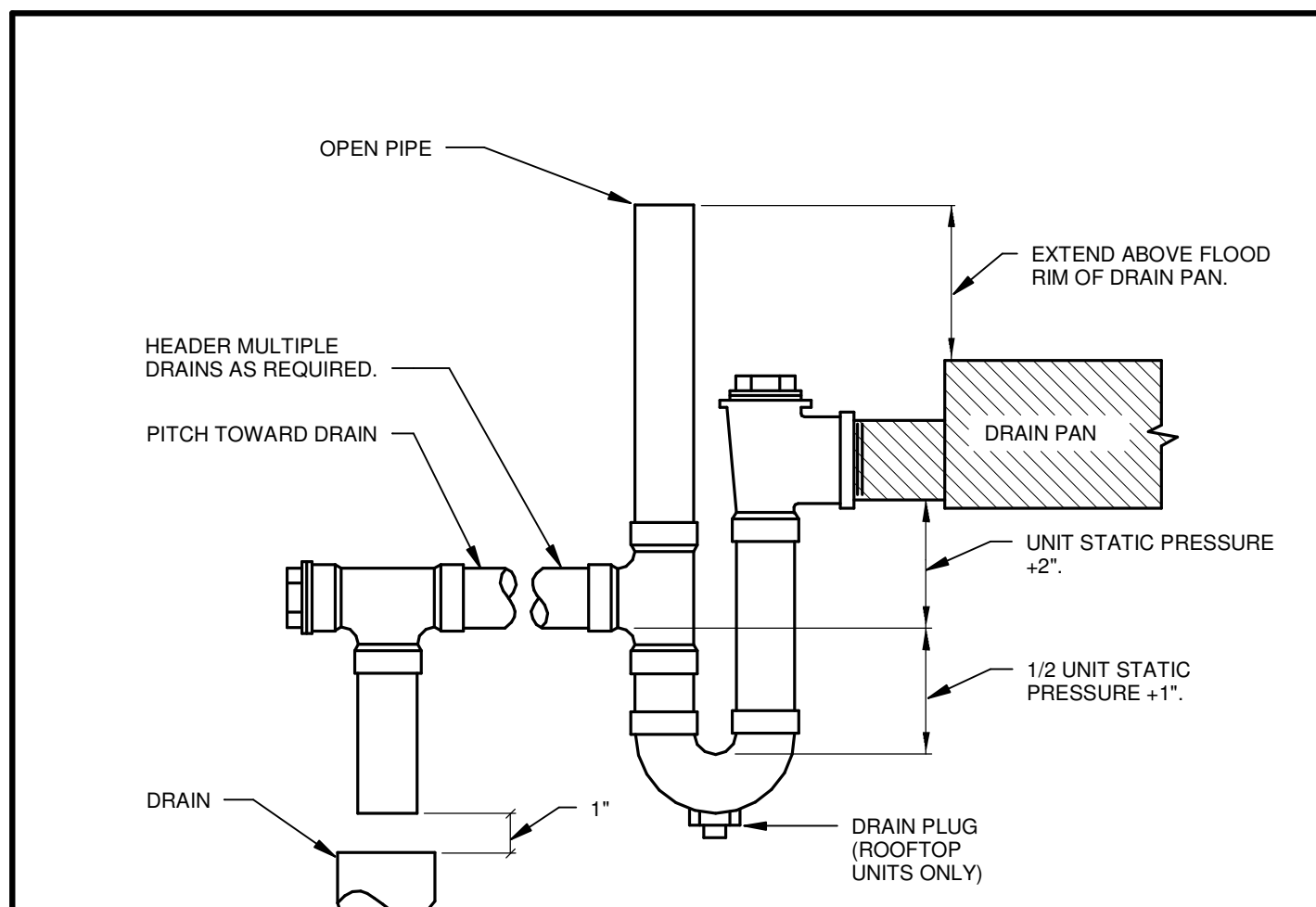
NOTE:  
VERIFY WITH ARCHITECTURAL PLANS AND WITH ROOF  
MANUFACTURER REQUIREMENTS.



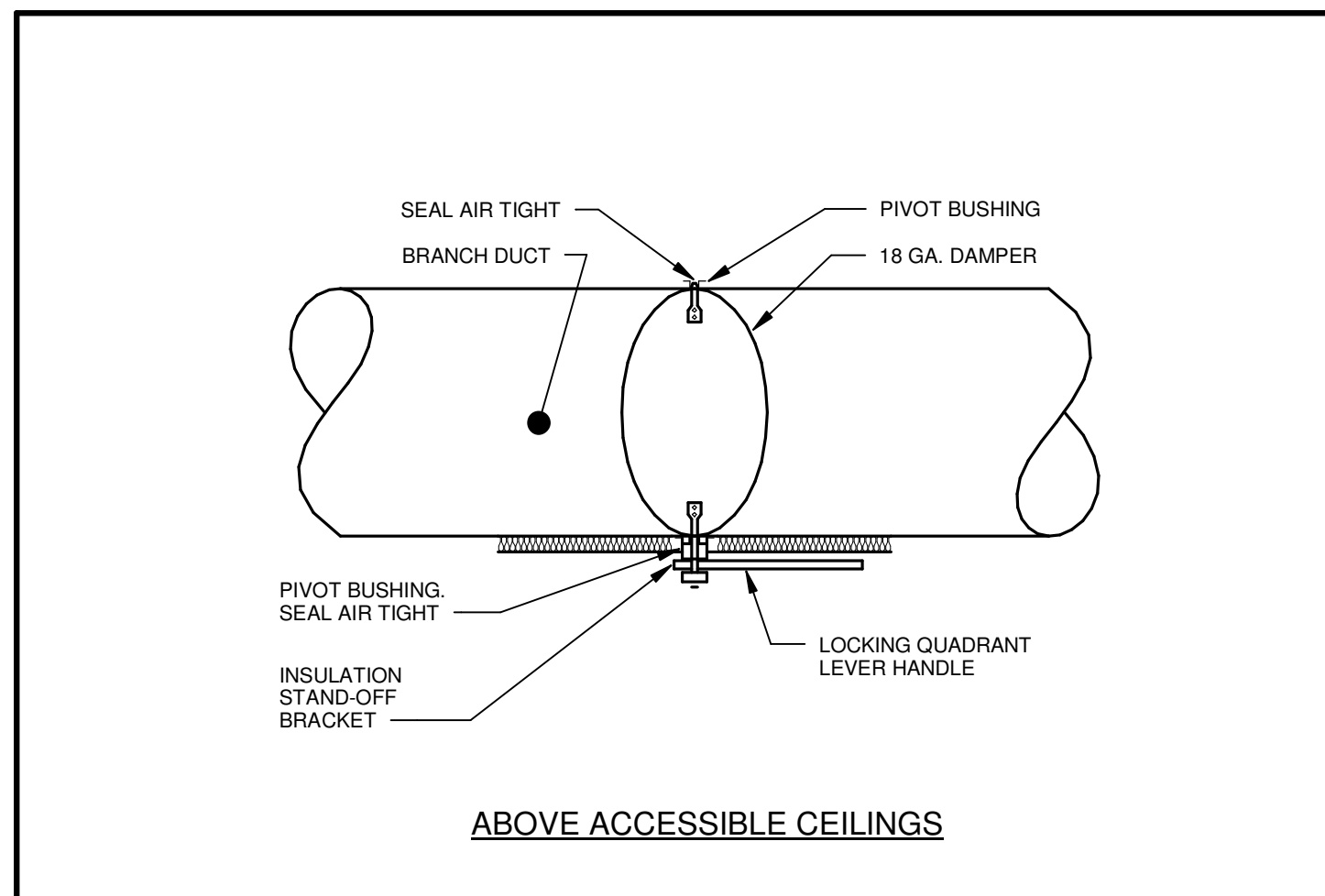
**3** R.T.U. DRAIN PIPING  
N.T.S.



**4** A.H.U. DRAIN PIPING  
N.T.S.

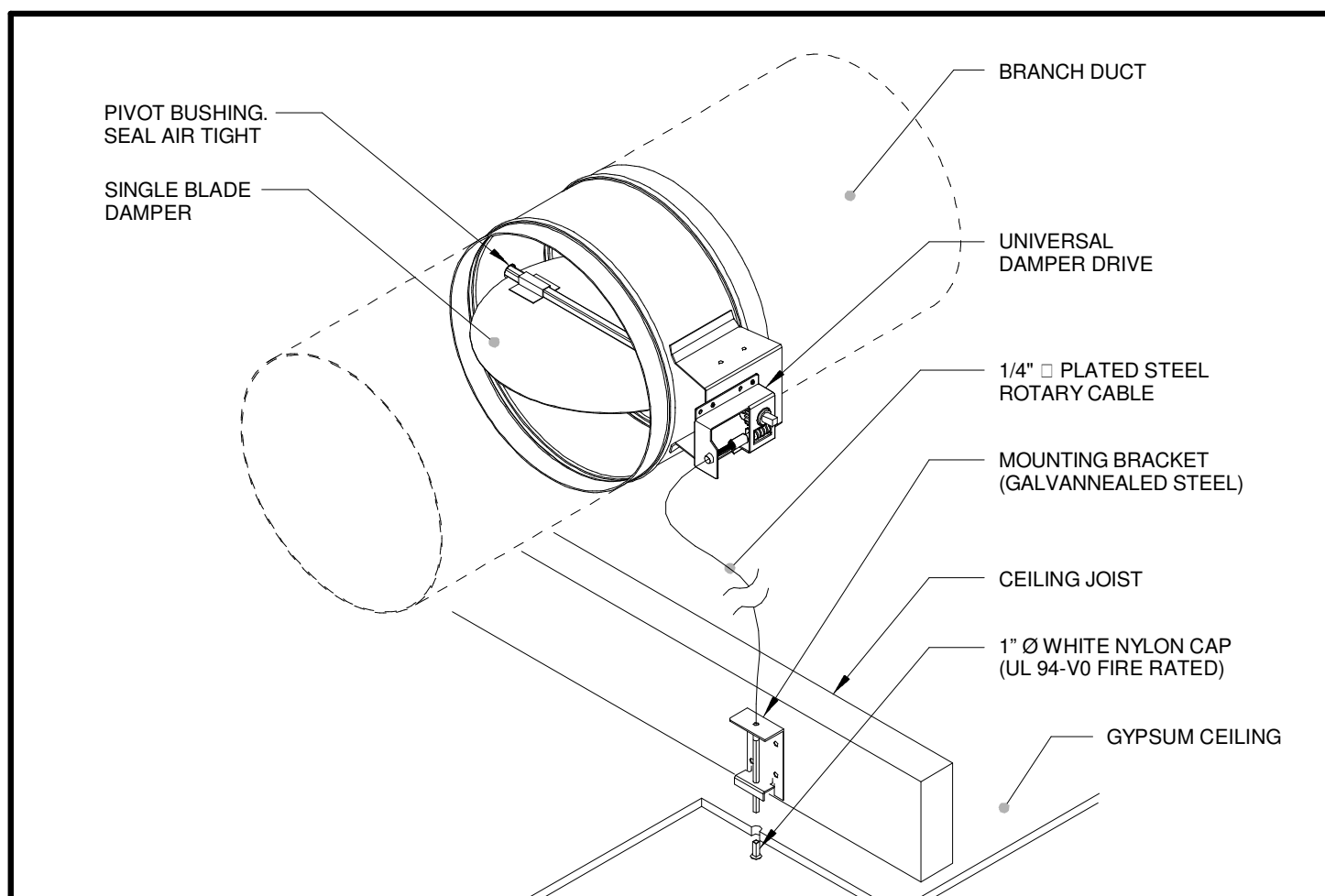


**5** FAN COIL DRAIN PIPING  
N.T.S.



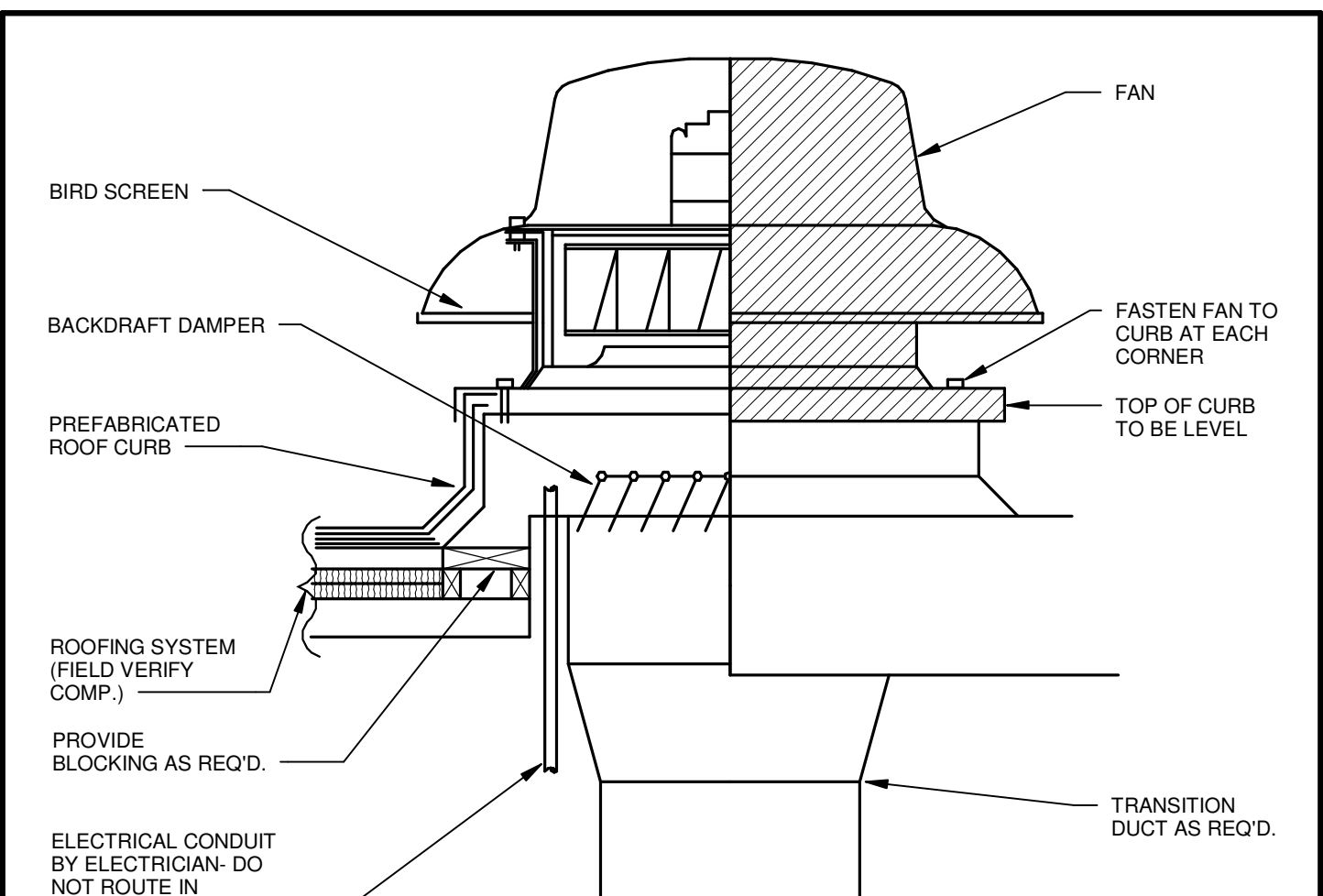
**6** MANUAL DAMPER OPERATOR DETAIL  
N.T.S.

ABOVE ACCESSIBLE CEILINGS

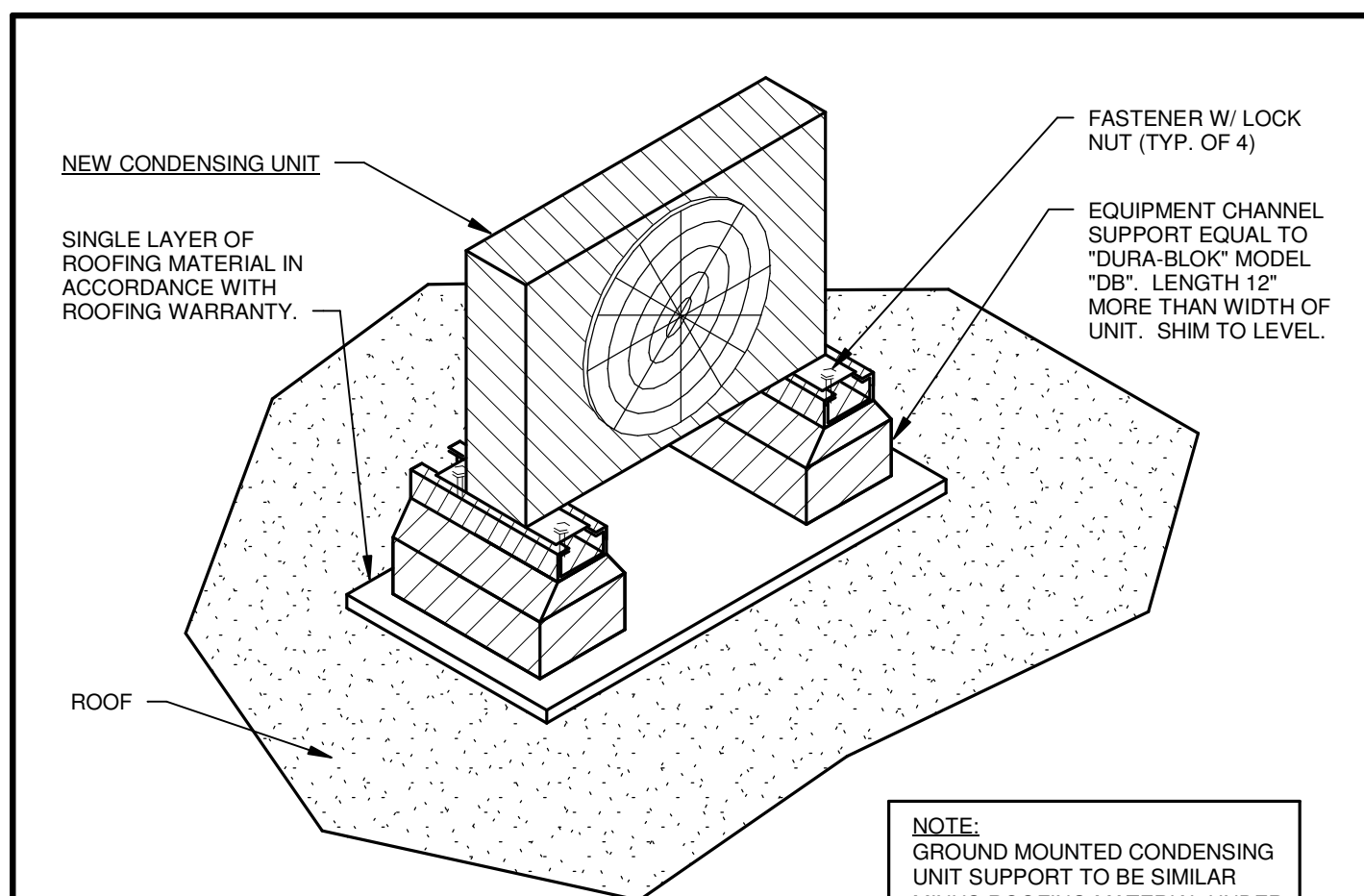


**7** MANUAL DAMPER OPERATOR DETAIL  
N.T.S.

ABOVE NON-ACCESSIBLE CEILINGS

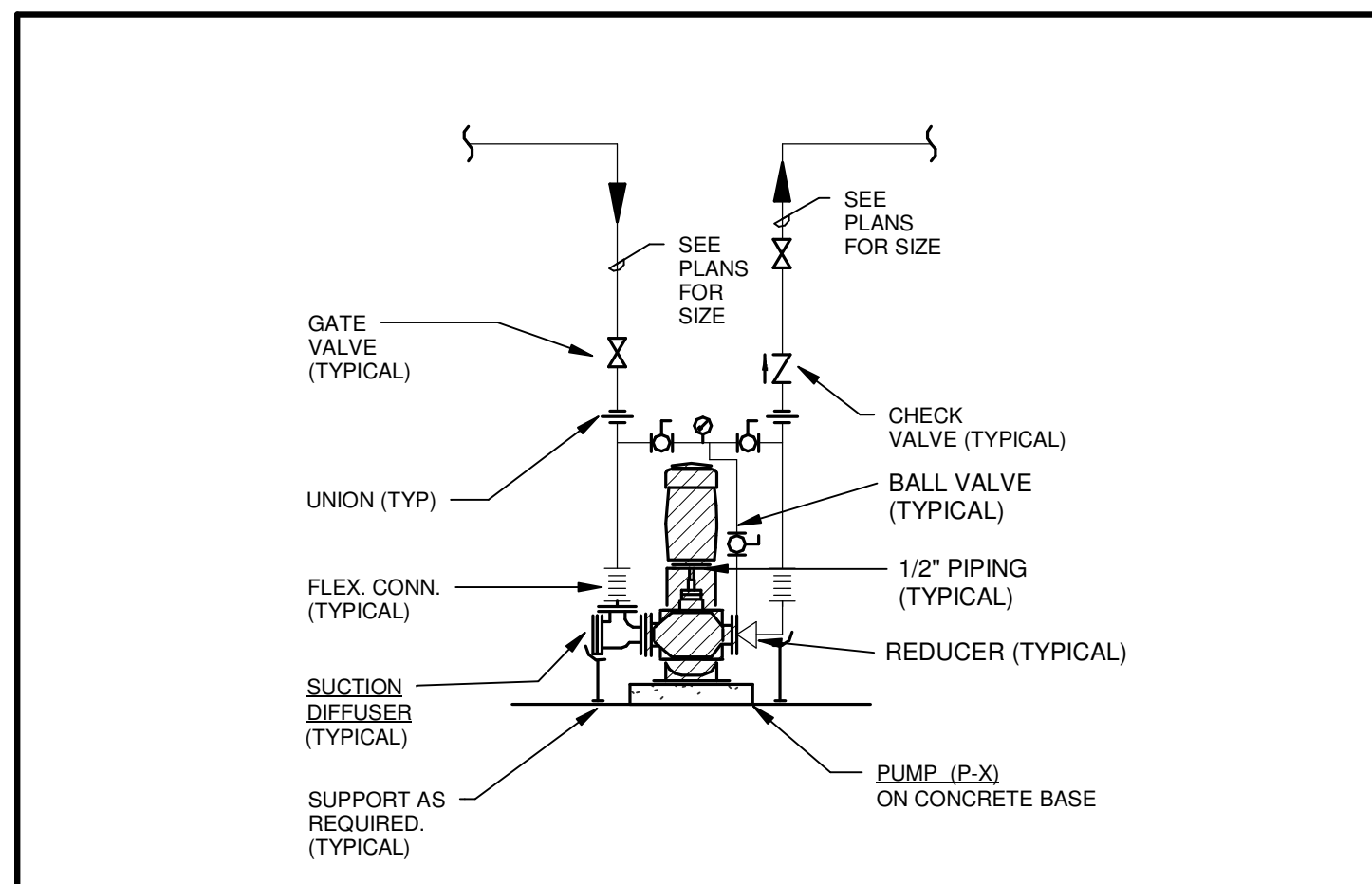


**8** EXHAUST FAN DETAIL  
N.T.S.

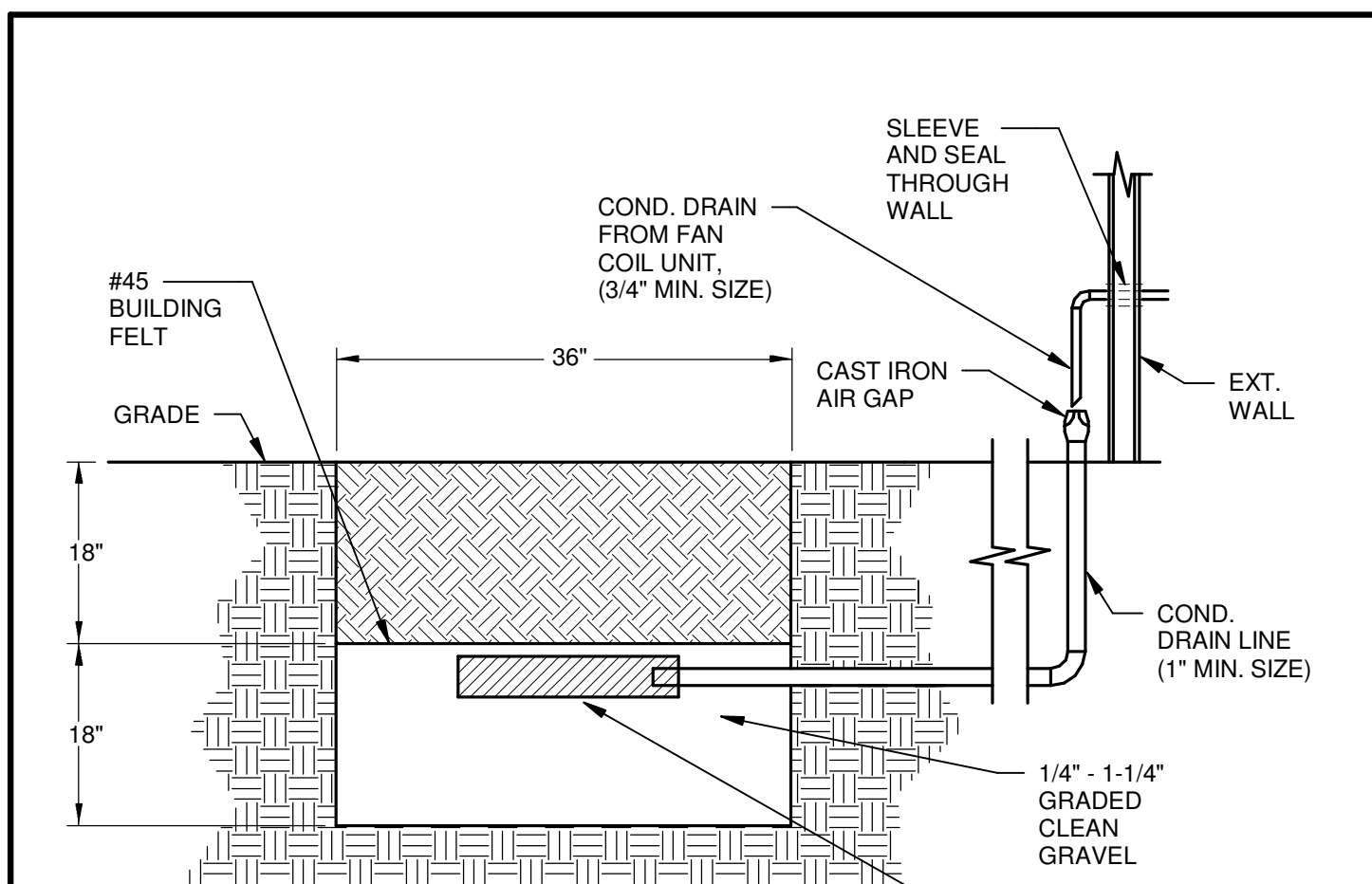


**9** MINI-SPLIT CONDENSING UNIT ROOF SUPPORT DETAIL  
N.T.S.

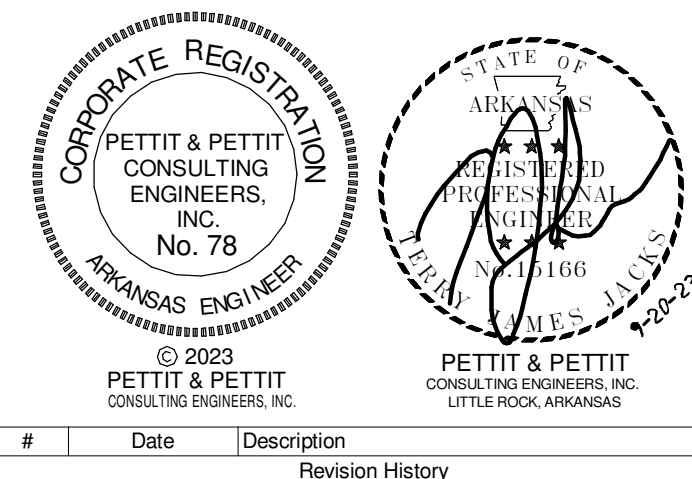
NOTE:  
GROUND MOUNTED CONDENSING  
UNIT SUPPORT TO BE SIMILAR  
MINUS ROOFING MATERIAL UNDER  
DURA-BLOK CHANNEL SUPPORTS.



**10** VERTICAL IN-LINE PUMP DETAIL  
N.T.S.



**11** FRENCH DRAIN DETAIL  
N.T.S.



#	Date	Description



## INDOOR VAV AIR HANDLING UNIT SCHEDULE

DESIG.	MFR/DIMS	WEIGHT	AREA SERVED	LOCAT.	TYPE	OSA	PRE-HEATING WATER COIL										CHILLED WATER COIL										RE-HEAT WATER COIL										FAN DATA					MOTOR DATA					REMARKS
							CFM	EAT/LAT	EWT/LWT	GPM	W.P.D.	MBH	ROW/FIN	FACE VELOCITY	APD	EAT	LAT	MBH TOTAL	MBH SENS.	EWT	LWT	GPM	W.P.D.	ROW/FIN	FACE VELOCITY	APD	EAT/LAT	EWT/LWT	GPM	W.P.D.	MBH	ROW/FIN	FACE VELOCITY	APD	CFM	ESP/TSP	TYPE	DIA.	QUA.	BHP	HP	VOLT/PH					
AH-6	TEMPROL / (251 x 80 x 79.5)	9,500 LBS.	THEATRE SPACES	INDOOR PLATFORM	HORIZONTAL	---	15.0"/54.8"	160"/130.4"	38.0	4.7"	556.6	3R/9 FPI	826.4 FPM	1.07"	82.0" d.b. 68.5" w.b.	54.4" d.b. 54.3" w.b.	558.2	382.7	45" F	55.0" F	111.0	3.8"	6R/11 FPI	487.5 FPM	0.86"	54.8"/94.3"	160"/130.0"	39.0	3.2'	566.7	2R/8 FPI	487.5 FPM	0.16"	13,000 (TOTAL)	0.6"/3.91"	BI	18"	4	2.9 (x4)	3 (EACH)	208 / 3ø	(1) (2) (3) (4) (5) (6) PROVIDE WITH 9" MIN. BASE RAIL.					

- (1) PROVIDE UNIT WITH INVERTER DUTY FANWALL MOTOR SYSTEM FOR SUPPLY FANS). ABB ACH580 VARIABLE FREQUENCY DRIVE (VFD) AND SUPPLY FAN ISOLATION / BYPASS SYSTEM TO BE PROVIDED WITH UNIT.  
 (2) PROVIDE UNIT WITH 4" PLEATED MERV 13 FILTERS (85% MINIMUM ASHRAE EFFICIENCY). UNIT SHALL NOT BE OPERATED AT ANY TIME WITHOUT FILTER MEDIA INSTALLED AS RECOMMENDED BY MANUFACTURER.  
 (3) PROVIDE UNIT PIPING AND WIRING CONNECTIONS AND DOUBLE WALL INSULATED HINGED ACCESS DOORS ON SIDE OF UNIT THAT WILL ALLOW GREATEST ACCESSIBILITY. SEE PLANS FOR UNIT ORIENTATIONS.  
 (4) PROVIDE UNIT WITH FULLY MODULATING OSA DAMPER AND FULLY MODULATING RETURN DAMPER.  
 (5) PROVIDE UNIT WITH SUPPLY AND RETURN SMOKE DETECTORS.  
 (6) PROVIDE UNIT WITH FACTORY ULTRAVIOLET (UV) LIGHTS.

## FANCOIL UNIT SCHEDULE

UNIT	MFR/MDL	TYPE	CFM	ESP	CHILLED WATER COIL (4 ROW)										HEATING WATER COIL (1 ROW)										MOTOR		REMARKS
					EAT	EWT	LWT	GPM	PD	TH(MBH)	SH(MBH)	PIPE SIZE	EAT	EWT	LWT	GPM	PD	MBH	PIPE SIZE	H.P.	VOLT/PHASE						
FC-01	INTERNATIONAL/CBY06	HORIZONTAL TELESCOPING HIDEAWAY	430	.25"	75.0°F d.b. 63.0°F w.b.	45°F	54.4°F	2.5	4.5"	11.8	9.5	1/2"	70°F d.b.	160°F	126.2°F	0.75	0.6'	12.5	1/2"	1/12	115V/1Ø	REFER TO SPECIFICATIONS - PROVIDE CONDENSATE OVERFLOW SWITCH					
FC-02	INTERNATIONAL/CBY08	HORIZONTAL TELESCOPING HIDEAWAY	465	.25"	75.0°F d.b. 63.0°F w.b.	45°F	54.1°F	3.0	6.8"	13.7	10.7	1/2"	70°F d.b.	160°F	129.3°F	1.0	1.2'	15.1	1/2"	1/6	115V/1Ø	REFER TO SPECIFICATIONS - PROVIDE CONDENSATE OVERFLOW SWITCH					

## CHILLER SCHEDULE (WATER COOLED)

DESIG.	MFR/MDL	TYPE	TONS	INPUT KW	IPLV (EER)	EVAPORATOR						CONDENSER						ELECTRICAL DATA			POWER DATA			REMARKS
						GPM	P.D.	EWT	LWT	GPM	P.D.	EWT	LWT	QTY.	HP	LRA	RLA	VOLT/PH	MOP	MCA				
																					COMPRESSOR			
CH-1	TRANE / RTHB215ALD00E00MOUNN3L2FLFV00U	WATER-COOLED SCREW	215	--	--	516	--	54"	44"	665	--	85"	95"	1	--	669	447	208/3ø	1,000	559	EXISTING EQUIPMENT TO REMAIN. RATINGS FOR REFERENCE ONLY.			

## EXHAUST FAN SCHEDULE

DESIG.	MFR/MDL	SERVES	LOCAT.	TYPE	FAN DATA						MOTOR DATA				REMARKS	
					CFM	S.P.	RPM	DRIVE	TYPE	DIA.	SONES	RPM	BHP	HP		VOLT/PH
EF-1	GREENHECK / G-100HP-VG	TOILETS	ROOF	CENTRIFUGAL DOWNBLAST	750	1.0"	2303	DIRECT	CENT.	11.13"	13.9	2500	0.36	1/2	120V / 1Ø	PROVIDE WITH ECM MOTOR, BACKDRAFT DAMPER, FACTORY ROOF CURB, AND FACTORY DISCONNECT.
EF-2	GREENHECK / G-120-VG	TOILETS	ROOF	CENTRIFUGAL DOWNBLAST	900	1.0"	1487	DIRECT	CENT.	13.06"	12.0	1725	0.29	1/2	120V / 1Ø	PROVIDE WITH ECM MOTOR, BACKDRAFT DAMPER, FACTORY ROOF CURB, AND FACTORY DISCONNECT.

## VARIABLE FREQUENCY DRIVE SCHEDULE

DESIGNATION	SERVES	MFR/MDL	TYPE	APPLICATION	RATED HORSEPOWER	VOLTAGE	PHASE	AMPS	MINIMUM EFFICIENCY	REMARKS
VFD-P-1A	HEATING WATER PUMP	ABB ACH-580	WALL-MOUNTED	VARIABLE TORQUE PWM	10	208	3	30.8	96%	FURNISH WITH MANUAL VERTICAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, AND EMS INTERFACE.
VFD-P-1B	HEATING WATER PUMP	ABB ACH-580	WALL-MOUNTED	VARIABLE TORQUE PWM	10	208	3	30.8	96%	FURNISH WITH MANUAL VERTICAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, AND EMS INTERFACE.
VFD-P-2A	CHILLED WATER PUMP	ABB ACH-580	WALL-MOUNTED	VARIABLE TORQUE PWM	25	208	3	74.8	96%	FURNISH WITH MANUAL VERTICAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, AND EMS INTERFACE.
VFD-P-2B	CHILLED WATER PUMP	ABB ACH-580	WALL-MOUNTED	VARIABLE TORQUE PWM	25	208	3	74.8	96%	FURNISH WITH MANUAL VERTICAL BYPASS, INPUT DISCONNECT SWITCH, INPUT LINE REACTORS, AND EMS INTERFACE.

## HOT WATER BOILER SCHEDULE

DESIG.	MFR/MDL	TYPE	FUEL	INPUT MBH	OUTPUT MBH	EWT	LWT	GPM	P.D.	REMARKS
B-1	RAYPACK / H7-1006	SEALED COMBUSTION	NATURAL GAS	999 MBH	961 MBH	150"	180"	64	--	EXISTING EQUIPMENT TO REMAIN. RATINGS FOR REFERENCE ONLY.
B-2	RAYPACK / H4-0500A	SEALED COMBUSTION	NATURAL GAS	500 MBH	420 MBH	150"	180"	28	--	EXISTING EQUIPMENT TO REMAIN. RATINGS FOR REFERENCE ONLY.

## AIR / DIRT SEPARATOR SCHEDULE

DESIG.	MFR/MDL	TYPE	SERVES	SYSTEM FLOW	PRESS. DROP	VOLUME	INLET / OUTLET CONNECTIONS	DRAIN	WEIGHT	REMARKS
AS-1	SPIROTHERM VHT500	COALESCING AIR / DIRT SEPARATOR	HEATING WATER	390 GPM	4.1 FT. AT 8 FPS	28.9 GAL.	5 IN.	1 IN.	479 LBS.	(1) (2) (3) (4) (5)
AS-2	SPIROTHERM VDN800FA	COALESCING AIR / DIRT SEPARATOR	CHILLED WATER	535 GPM	3.4 FT. AT 8 FPS	40 GAL.	8 IN.	1 IN.	686 LBS.	(1) (2) (3) (4) (5)

- (1) PROVIDE COALESCING TYPE AIR / DIRT SEPARATOR. CENTRIFUGAL TYPES ARE NOT ACCEPTABLE.  
 (2) SEPARATOR VESSEL SHALL BE CERTIFIED FOR 150 LB. WORKING PRESSURE WITH CLASS 150 STEEL WELD NECK RAISED FACE FLANGES.  
 (3) SEPARATOR VESSEL SHALL INCLUDE STRUCTURED COALESCING MEDIA FILLING THE ENTIRE VESSEL. PARTIALLY FILLED VESSELS OR VESSELS WITH LOOSE MEDIA ARE NOT ACCEPTABLE.  
 (4) SEPARATOR VESSEL SHALL REMOVE 100% OF FREE AND ENTRAINED AIR AND 99.6% OF DISSOLVED AIR AS TESTED BY INDEPENDENT LABORATORY.  
 (5) SEPARATOR VESSEL SHALL REMOVE 80% OF THE 30 MICRON PARTICLES WITHIN 100 COMPLETE SYSTEM CIRCULATIONS, AND SHALL BE CAPABLE OF REMOVING PARTICLES OF 5 MICRON SIZE.

## AIR DEVICE SCHEDULE

DESIG.	MFR/MDL	TYPE	FACE SIZE	FINISH	FREE AREA	ACCESS.	REMARKS
CD-1	TITUS PMC	PERF. FACE CEILING SUPPLY	SEE PLANS	FINISH PER ARCHITECT	---	OPPOSED BLADE DAMPER	24"/24" SQUARE PANEL FACE, MODULAR CORE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, 18"/18" SQUARE NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS). (1)
CD-2	TITUS PMC	PERF. FACE CEILING SUPPLY	SEE PLANS	FINISH PER ARCHITECT	---	OPPOSED BLADE DAMPER	12"/12" SQUARE PANEL FACE, MODULAR CORE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, SQUARE NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS). (1)
CD-3	TITUS ML39	LINEAR SLOT CEILING SUPPLY	AS NOTED	FINISH PER ARCHITECT	---	OPPOSED BLADE DAMPER	61.25"/6.75" FACE, 60"/6" DUCT CONNECTION, FLUSH END CAP BORDERS, 3-1" SLOTS. PROVIDE MANUFACTURER'S CONCEALED MOUNTING FRAME HARDWARE FOR GYPSUM LOCATIONS, RE: ARCH. FOR CEILING TYPES. (2)
CR-1	TITUS PAR	PER. FACE CEILING RETURN	SEE PLANS	FINISH PER ARCHITECT	51%	OPPOSED BLADE DAMPER	24"/24" SQUARE PANEL FACE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, 22"/22" SQUARE NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS).
CR-2	TITUS PAR	PER. FACE CEILING RETURN	SEE PLANS	FINISH PER ARCHITECT	51%	OPPOSED BLADE DAMPER	12"/12" SQUARE PANEL FACE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, 10"/10" SQUARE NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS).
CR-3	TITUS PAR	PER. FACE CEILING RETURN	SEE PLANS	FINISH PER ARCHITECT	51%	OPPOSED BLADE DAMPER	24"/48" SQUARE PANEL FACE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, 22"/46" RECTANGULAR NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS).
ER-1	TITUS PAR	PER. FACE CEILING EXHAUST	SEE PLANS	FINISH PER ARCHITECT	51%	OPPOSED BLADE DAMPER	12"/12" SQUARE PANEL FACE, PERFORATED SCREEN 3/16" DIAMETER HOLES ON 1/4" STAGGERED CENTERS, 10"/10" SQUARE NECK (MATCH CONNECTION SIZE AS INDICATED ON PLANS).
SG-1	TITUS 300 RL	SIDEWALL LINEAR BAR SUPPLY	SEE PLANS	FINISH PER ARCHITECT	---	OPPOSED BLADE DAMPER	3/4" BLADE SPACING, DOUBLE DEFLECTION.
SR-1	TITUS 350 RL	SIDEWALL LINEAR BAR RETURN	SEE PLANS	FINISH PER ARCHITECT	---	OPPOSED BLADE DAMPER	3/4" BLADE SPACING, 35 DEGREE DEFLECTION.

- (1) PROVIDE MANUFACTURER'S MOUNTING FRAME FOR GYPSUM LOCATIONS, REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.  
 (2) PROVIDE LINEAR SLOT DIFFUSERS WITH FULLY INSULATED PLENUM.

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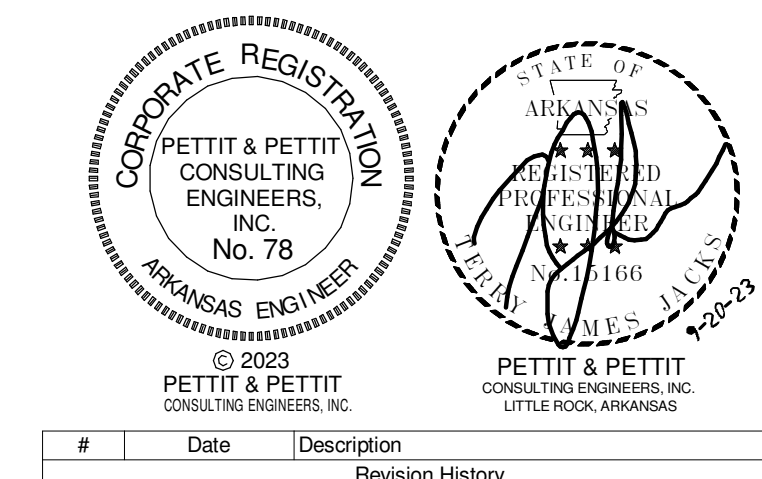
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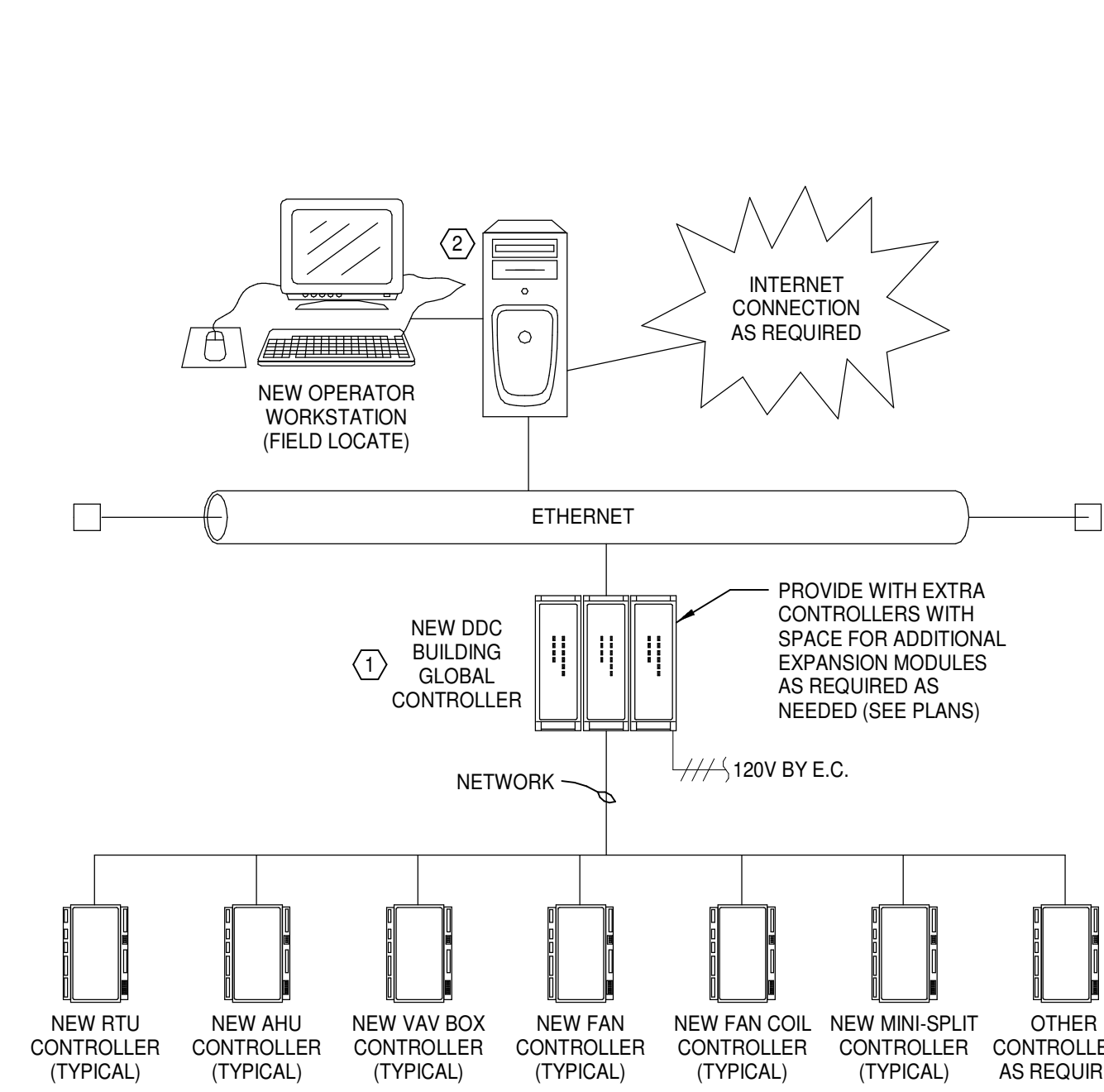
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#	Date	Description

Revision History



**1** BUILDING AUTOMATION SYSTEM (BAS) RISER DIAGRAM

- KEYED NOTES**
- NEW ALERTON BAS CONTROLLER IN EXISTING FIRST FLOOR MECH. ROOM.
  - NEW CONTROLS WORKSTATION, WITH CONTROLS HARDWARE, SOFTWARE, AND CONTROLS SYSTEM GRAPHICS.
- GENERAL BAS CONTROL SYSTEM NOTE**
- ELECTRICAL CONTRACTOR TO PROVIDE ALL WIRING, CONDUIT, JUNCTION BOXES, ETC. AS REQUIRED FOR COMPLETE CONTROLS INSTALLATION. CONTROLS CONTRACTOR TO PROVIDE ALL WORKSTATIONS, HARDWARE, SOFTWARE, FINAL TERMINATIONS, PROGRAMMING, TESTING, AND FIELD START-UP OF DDC CONTROLS SYSTEMS AS INDICATED ON PLANS TO OWNERS' / ENGINEER'S SATISFACTION.

**VAV TERMINAL SEQUENCE OF OPERATION**

**VAV TERMINALS WITH HOT WATER REHEAT**

AIR TERMINAL MODE OF OPERATION IS EITHER "OCCUPIED" OR "UNOCCUPIED" BASED UPON WEEKLY SCHEDULE OR OPERATOR COMMAND.

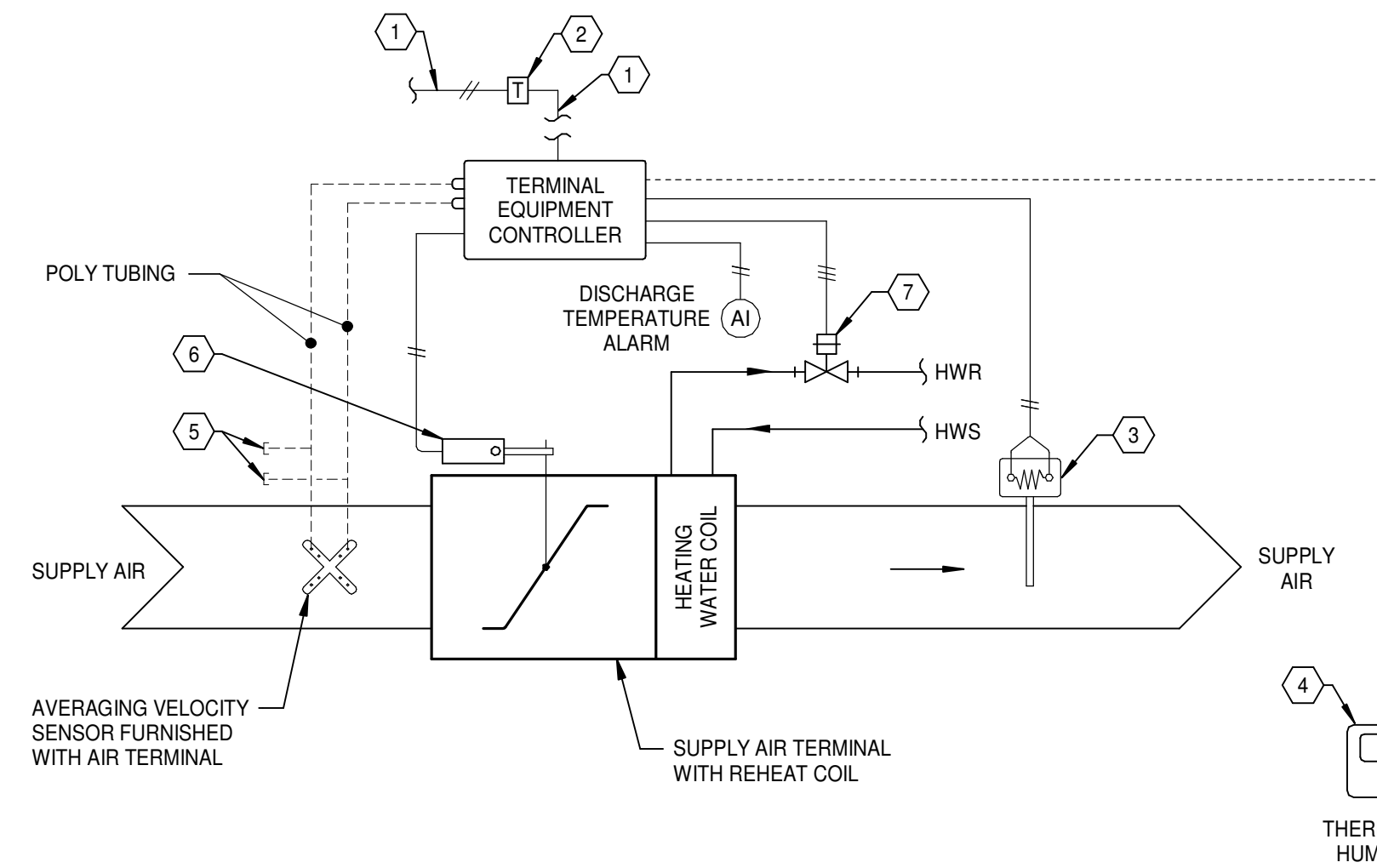
**OCCUPIED CYCLE:** DURING THE OCCUPIED MODE OF OPERATION, THE SPACE TEMPERATURE SETPOINT SHALL BE ADJUSTABLE BY THE OCCUPANT AT THE THERMOSTAT BETWEEN A MINIMUM OF 68°F (ADJ.) AND A MAXIMUM OF 75°F (ADJ.). ON A RISE IN SPACE TEMPERATURE ABOVE THE SETPOINT, THE VAV CONTROLLER WILL MODULATE THE AIR VALVE TO PROVIDE MAXIMUM CFM. AS SPACE TEMPERATURE DECREASES BELOW THE HEATING SETPOINT, THE VAV CONTROLLER WILL MODULATE THE AIR VALVE TO ITS MINIMUM POSITION. AS THE SPACE TEMPERATURE CONTINUES TO FALL BELOW THE HEATING SETPOINT WITH THE AIR VALVE AT MINIMUM POSITION, THE CONTROLLER SHALL MODULATE THE AIR VALVE TO ITS HEATING MINIMUM AIRFLOW. AT THIS POINT, THE HEATING VALVE SHALL BE MODULATED OPEN AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT THE HEATING SETPOINT.

**UNOCCUPIED CYCLE:** DURING THE UNOCCUPIED CYCLE, THE AIR VALVE ON THE TERMINAL UNIT SHALL DRIVE TO THE UNOCCUPIED MINIMUM CFM. THE SYSTEM FAN AND HEAT SHALL CYCLE TO MAINTAIN A REDUCED SPACE TEMPERATURE (NSB).

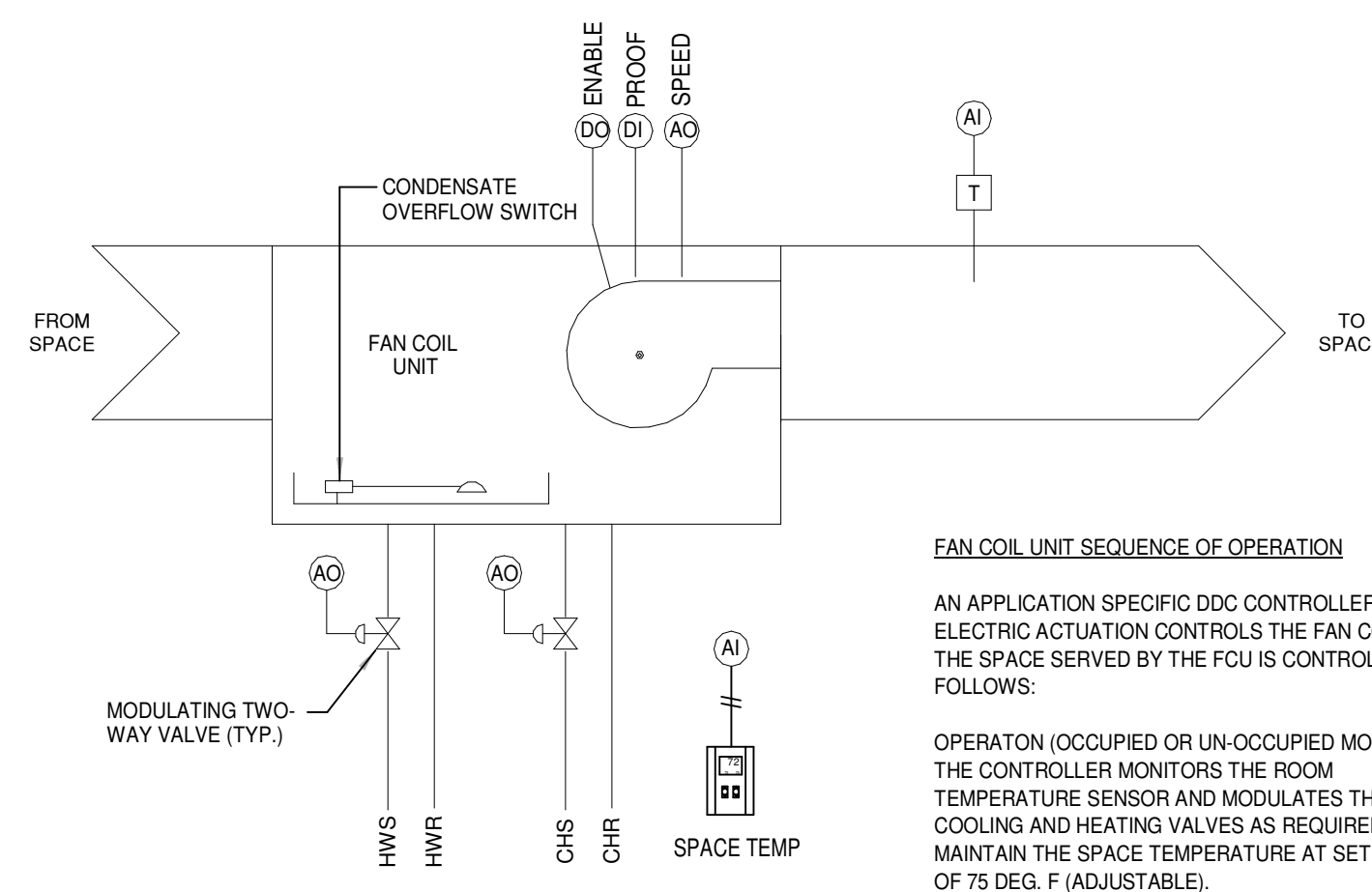
**UNOCCUPIED CYCLE OVERRIDE:** DURING THE UNOCCUPIED CYCLE, THE LOCAL USER SHALL BE PROVIDED WITH AN OVERRIDE FUNCTION ON EACH LOCAL THERMOSTAT. THE OVERRIDE FUNCTION SHALL FUNCTION FOR A TWO (2) HOUR PERIOD.

**FREEZE PROTECTION SEQUENCE OF OPERATION**

UPON ACTIVATION OF A FREEZE STAT IN ANY AIR HANDLING UNIT SERVING THIS BUILDING, ALL VAV TERMINAL BOX HEATING WATER CONTROL VALVES SHALL BE FULLY OPENED. UPON RESET OF THE ACTIVATED FREEZE STAT, THE VALVES SHALL RETURN TO NORMAL OPERATION.



**2** SUPPLY AIR TERMINAL W/ HOT WATER REHEAT (TYPICAL)



**FAN COIL UNIT SEQUENCE OF OPERATION**

AN APPLICATION SPECIFIC DDC CONTROLLER USING ELECTRIC ACTUATION CONTROLS THE FAN COIL UNIT. THE SPACE SERVED BY THE FCU IS CONTROLLED AS FOLLOWS:

**OPERATION (OCCUPIED OR UN-OCCUPIED MODE)**

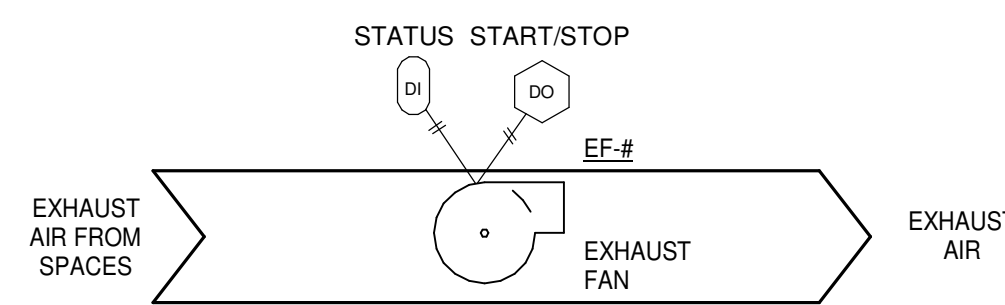
THE CONTROLLER MONITORS THE ROOM TEMPERATURE SENSOR AND MODULATES THE FCU COOLING AND HEATING VALVES AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE AT SET POINT OF 75 DEG. F (ADJUSTABLE).

**3** 4-PIPE FAN COIL UNIT CONTROL DIAGRAM

**EXHAUST FAN - SEQUENCE OF OPERATION (TYPICAL)**

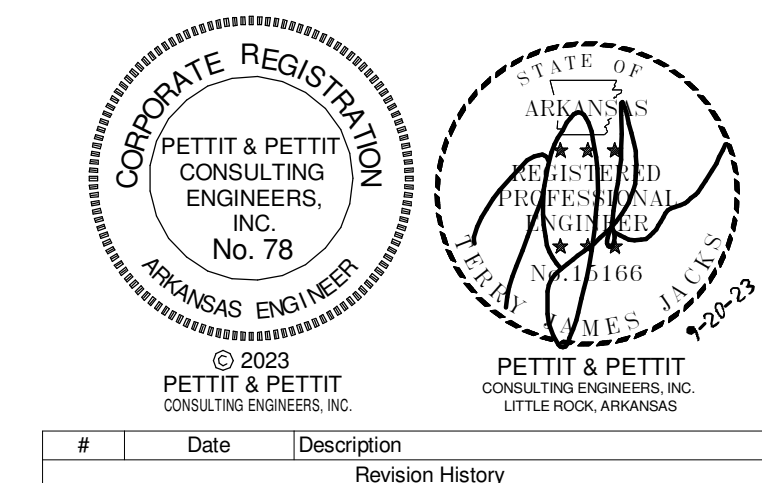
EXHAUST FANS SHALL OPERATE INTERLOCKED WITH A SIGNAL FROM THE BUILDING AUTOMATION SYSTEM.

THE EXHAUST FAN SHALL SHUT DOWN UPON A SIGNAL FROM THE BUILDING FIRE ALARM SYSTEM.



**4** EXHAUST FAN (TYPICAL) CONTROL DIAGRAM

- HVAC CONTROL VALVE NOTES**
- NEW CONTROL VALVES TO BE BELIMO (NO EQUAL), 2-10VDC, NORMALLY CLOSED OPERATION (2V CLOSED, 10V OPEN).



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# VARIABLE AIR VOLUME AIR HANDLING UNIT - SEQUENCE OF OPERATION

## RTU-1 (RTU-2 SIMILAR)

### GENERAL DESCRIPTION:

ROOFTOP VAV AIR HANDLING UNIT SHALL BE ROOF-MOUNTED AND SHALL SERVE INDIVIDUAL VAV SUPPLY AIR TERMINAL BOXES WITHIN THE INTERIOR SPACES. UNIT TO BE FACTORY PROVIDED WITH VARIABLE FREQUENCY DRIVE (VFD).

### UNIT CONTROLS:

UNIT SHALL BE PROVIDED WITH A STANDALONE UNIT CONTROLLER THAT SHALL INTERFACE WITH THE BACNET BUILDING AUTOMATION SYSTEM (BAS) SYSTEMS. UNIT CONTROLLER SHALL BE CAPABLE OF OPERATING UNIT WITHOUT REQUIRING CONSTANT BACNET COMMUNICATION TO MAINTAIN NORMAL UNIT OPERATION. IF COMMUNICATION WITH THE BAS IS LOST, THE ROOFTOP AIR HANDLING UNIT SHALL USE ITS DEFAULT SETPOINTS AND OPERATE IN THE OCCUPIED COOLING MODE.

THE BAS SHALL SEND THE ROOFTOP AIR HANDLING UNIT A DISCHARGE AIR TEMPERATURE (DAT) COOLING SETPOINT AND A DUCT STATIC PRESSURE SETPOINT. THE BAS SHALL ALSO SEND START-UP, MORNING WARM-UP, OCCUPIED, UNOCCUPIED, HEATING / COOLING, TIMED OVERRIDE, COAST DOWN, NIGHT SETBACK, PURGE, AND PRIORITY SHUT-DOWN COMMANDS.

### OCCUPIED MODE:

THE OCCUPIED MODE SHALL BE DETERMINED BY THE OWNER'S BUILDING SCHEDULE. WHEN THE AIR HANDLING UNIT IS IN OCCUPIED MODE, THE SUPPLY FAN(S) SHALL OPERATE CONTINUOUSLY, THE VARIABLE FREQUENCY DRIVE(S) (VFD) SHALL MODULATE THE SUPPLY FAN(S) AS REQUIRED BETWEEN THE MINIMUM AND MAXIMUM FAN SPEED SETPOINTS (ADJUSTABLE) TO MAINTAIN THE DUCT STATIC PRESSURE, AND THE COOLING VALVE AND HEATING VALVE SHALL MODULATE IN SEQUENCE TO MAINTAIN THE COOLING DISCHARGE AIR TEMPERATURE. THE SUPPLY FAN(S) SHALL BE OFF WHENEVER THE ROOFTOP AIR HANDLING UNIT MIXED AIR LOW LIMIT IS TRIPPED, THE STOP / AUTO INTERLOCK IS OPEN, OR THE SUPPLY FAN STATUS INDICATES A FAILURE (AFTER A TWO MINUTE DELAY). THE LOW LIMIT AND THE FAN FAILURE REQUIRE A MANUAL RESET. THE OUTDOOR AIRFLOW, AS MEASURED AT THE AIRFLOW MEASURING STATION, SHALL BE MAINTAINED AT A VALUE EQUAL TO OR HIGHER THAN THE MINIMUM REQUIRED OUTDOOR AIRFLOW SETPOINT SECTION OF THE AHU SYSTEM LEVEL OPERATION SECTION OF THIS SPECIFICATION.

### UNOCCUPIED MODE:

THE UNOCCUPIED MODE SHALL BE DETERMINED BY THE OWNER'S BUILDING SCHEDULE. WHEN THE AIR HANDLING UNIT IS IN THE UNOCCUPIED MODE, THE SUPPLY FAN(S) SHALL MODULATE DOWN TO MAINTAIN ASSOCIATED VAV TERMINAL BOX MINIMUM AIR FLOW RATES. THE OUTDOOR AIR DAMPER SHALL BE CLOSED. THE ZONE TERMINAL RE-HEAT SHALL MODULATE TO MAINTAIN THE BUILDING UNOCCUPIED TEMPERATURE SETPOINT.

### OVERRIDE MODE:

IF DURING THE COURSE OF AN UNOCCUPIED MODE PERIOD THE LOCAL USER UTILIZES THE OVERRIDE FUNCTION AT THE LOCAL USER THERMOSTAT, THE AIR HANDLING UNIT SHALL RETURN TO OCCUPIED MODE STATUS FOR A PERIOD OF TWO (2) HOURS (ADJ.).

### VFD CONTROL:

WHEN THE SUPPLY FAN(S) ARE ON, THE VFD(S) SHALL SLOWLY RAMP (ADJ.) UP AND MODULATE TO MAINTAIN THE DUCT STATIC PRESSURE SETPOINT.

### SUPPLY FANS:

THE ROOFTOP AIR HANDLING UNIT WILL BE FACTORY SUPPLIED WITH DIRECT DRIVE SUPPLY FAN(S).

### COOLING VALVE CONTROL:

THE COOLING VALVE SHALL MODULATE TO MAINTAIN THE UNIT SUPPLY AIR DISCHARGE TEMPERATURE OF 55°F (ADJ.). THE COOLING VALVE SHALL BE CLOSED IF THE SUPPLY FAN(S) ARE OFF, THE SUPPLY AIR SENSOR HAS FAILED, OR IF THE AIR HANDLING UNIT IS IN THE HEATING MODE (THE COOLING COIL CONTROL VALVE SHALL BE CLOSED IF OUTSIDE AIR TEMPERATURE IS ABOVE 40°F (ADJ.), IF OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.), THEN THE COOLING COIL CONTROL VALVE SHALL BE FULLY OPENED TO HELP PREVENT FREEZING).

### HEATING VALVE INTEGRAL FACE & BYPASS DAMPER CONTROL:

WHEN THE PRE-HEAT COIL LEAVING AIR TEMPERATURE DROPS TO BELOW 50°F (ADJ.), THE HEATING VALVE SHALL MODULATE OPEN AS NEEDED AND THE FACE AND BYPASS DAMPER SHALL MODULATE IN CONCERT TO MAINTAIN THE PRE-HEAT COIL LEAVING AIR TEMPERATURE SETPOINT OF 55°F (ADJ.). WHEN THE OUTDOOR AIR TEMPERATURES ARE BELOW 40°F (ADJ.), THEN THE BYPASS DAMPER ONLY SHALL BE MODULATED AND THE HEATING WATER VALVE SHALL OPERATE AT 100% OPEN.

### MINIMUM REQUIRED OUTDOOR AIRFLOW SETPOINT:

DURING OCCUPIED TIMES, THE AIR HANDLER OUTDOOR AIR DAMPER SHALL MAINTAIN A MINIMUM OPEN POSITION TO DELIVER REQUIRED OUTDOOR AIRFLOW TO EACH INDIVIDUAL VAV ZONE. SEE THE OSA CFM LISTED ON THE AIR HANDLER UNIT SCHEDULE. COORDINATE WITH ENGINEER.

### DISCHARGE DUCT STATIC PRESSURE SETPOINT:

THE DISCHARGE DUCT STATIC PRESSURE SHALL BE SENSED DIRECTLY AT A POINT APPROXIMATELY TWO-THIRDS (2/3) THE TRUNK DUCT OVERALL LENGTH. THE SENSOR SHALL BE MOUNTED IN A NON-TURBULENT LOCATION. THE BUILDING AUTOMATION SYSTEM SHALL CONTINUOUSLY MONITOR THE DAMPER POSITION OF ALL VAV TERMINAL UNITS. WHEN ANY VAV TERMINAL UNIT DAMPER IS MORE THAN 95% (ADJ.) OPEN, THE SUPPLY FAN DISCHARGE DUCT STATIC PRESSURE SETPOINT SHALL BE RESET UPWARDS BY 0.1" W.C. (ADJ.) OF THE MAXIMUM SYSTEM STATIC PRESSURE SETPOINT AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL NO VAV TERMINAL UNIT DAMPER IS MORE THAN 95% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET UPWARD TO THE SYSTEM MAXIMUM SETTING OR THE SUPPLY FAN VFD(S) ARE AT THEIR MAXIMUM SETTING.

WHEN ALL VAV TERMINAL UNIT DAMPERS ARE LESS THAN 85% (ADJ.) OPEN, THE SUPPLY FAN DISCHARGE DUCT STATIC PRESSURE SETPOINT SHALL BE RESET DOWNWARD BY 0.1" W.C. (ADJ.) OF THE MAXIMUM SYSTEM STATIC PRESSURE SETPOINT AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL ALL DAMPERS ARE MORE THAN 85% OPEN OR THE STATIC PRESSURE SETPOINT HAS RESET DOWNWARD TO THE SYSTEM MINIMUM SETTING OR THE VFD(S) ARE AT THEIR MINIMUM SETTING.

THE CONTROL BANDS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, AND ADJUSTMENT FREQUENCIES SHALL BE ADJUSTED TO MAINTAIN STATIC PRESSURE OPTIMIZATION WITH STABLE SYSTEM CONTROL AND MAXIMUM COMFORT CONTROL.

### COOLING:

THE UNIT IS PROVIDED WITH A CHILLED WATER COIL FOR COOLING.

COOLING DAT RESET: THE COOLING DAT SETPOINT MAY BE RESET BY THE SPACE TEMPERATURE, RETURN AIR TEMPERATURE, OUTSIDE AIR TEMPERATURE, SPACE RELATIVE HUMIDITY, OR EXTERNAL VOLTAGE/mA SIGNALS. A LINEAR RELATIONSHIP BETWEEN THE DAT AND THE RESET VARIABLE WILL BE CREATED FOR THE MINIMUM AND MAXIMUM DAT SETPOINTS. AS THE RESET VARIABLE CHANGES THE DAT WILL ADJUST ACCORDING TO THE RELATIONSHIP. MINIMUM RESET SETPOINT IS 53°F (ADJ.) AND MAXIMUM RESET SETPOINT IS 65°F (ADJ.).

### HEATING:

THE UNIT IS PROVIDED WITH A HEATING HOT WATER COIL FOR HEATING.

HEATING DAT RESET: THE HEATING DAT SETPOINT MAY BE RESET BY SPACE TEMPERATURE, RETURN AIR TEMPERATURE, OUTSIDE AIR TEMPERATURE, NETWORK, OR EXTERNAL VOLTAGE/mA SIGNALS. A LINEAR RELATIONSHIP BETWEEN THE DAT AND THE RESET VARIABLE WILL BE CREATED FOR THE MINIMUM AND MAXIMUM DAT SETPOINTS. AS THE RESET VARIABLE CHANGES THE DAT WILL ADJUST ACCORDING TO THE RELATIONSHIP. WHEN THE AIR HANDLING UNIT IS IN THE HEATING MODE OR THE NIGHT SETBACK MODE, THE HEATING VALVE SHALL MODULATE OPEN TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT THE DISCHARGE HEATING SETPOINT (ADJUSTABLE).

### LOW LIMIT TEMPERATURE DETECTOR:

IN THE EVENT THE LOW LIMIT TEMPERATURE DETECTOR DETECTS MIXED AIR TEMPERATURE BELOW 35 DEG. F, THE SUPPLY AIR FAN(S) SHALL STOP, THE DAMPERS SHALL CLOSE, AND AN ALARM SHALL SOUND AT THE BAS WORKSTATION. THE LOW LIMIT TEMPERATURE DETECTOR SHALL REQUIRE A MANUAL RESET.

### NIGHT SETBACK / MORNING WARM-UP HEATING MODE:

THE AIR HANDING UNIT SHALL INDEX FROM UNOCCUPIED MODE TO OCCUPIED MODE AT A TIME DETERMINED BY THE BAS SYSTEM SO THAT THE SETPOINT IS MET DURING THE ENTIRE PORTION OF THE BUILDING OCCUPIED HOURS (ADJUSTABLE).

### ECONOMIZER MODE:

ECONOMIZER MODE SHALL OPERATE BASED UPON ENTHALPY SETPOINT. DURING ECONOMIZER MODE, THE OUTSIDE AIR DAMPER SHALL MODULATE FULLY OPEN, THE RETURN AIR DAMPER SHALL MODULATE CLOSED, AND THE BAROMETRIC RELIEF DAMPERS SHALL OPEN AS REQUIRED TO MAINTAIN SPACE SETPOINT. WHEN THE OUTSIDE AIR CONDITIONS ARE ABOVE THE ENTHALPY SETPOINT, THE OUTSIDE AIR DAMPER SHALL CLOSE TO THE MINIMUM POSITION REQUIRED, THE RETURN AIR DAMPER SHALL FULLY OPEN, AND THE UNIT SHALL RESUME NORMAL COOLING/HEATING OPERATION.

### SUPPLY AIR DISCHARGE TEMPERATURE RESET:

THE SUPPLY AIR DISCHARGE TEMPERATURE SHALL BE SENSED DIRECTLY AT THE DISCHARGE OF THE AIR HANDLING UNIT. THE BUILDING AUTOMATION SYSTEM SHALL CONTINUOUSLY MONITOR THE SPACE RELATIVE HUMIDITY AS INDICATED ON PLANS AND THE DAMPER POSITION OF ALL VAV TERMINAL UNITS. WHEN IN COOLING MODE AND ALL OF THE VAV TERMINAL UNITS HAVE BEEN REDUCED DOWN TO THE MINIMUM SETTING OF THE VAV TERMINAL UNIT, THE UNIT SUPPLY AIR TEMPERATURE SHALL BE RESET UPWARDS BY 0.5°F (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL ALL OF THE VAV TERMINAL UNIT DAMPERS ARE AT LEAST 85% OPEN (ADJ.) BUT NO VAV TERMINAL UNIT DAMPER IS MORE THAN 97% OPEN (ADJ.). UPON ANY VAV TERMINAL UNIT DAMPER OPENING TO 98% OPEN (ADJ.) OR MORE, THEN THE UNIT SUPPLY AIR TEMPERATURE SHALL BE RESET DOWNWARDS BY 0.5°F (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) UNTIL ALL OF THE VAV TERMINAL UNIT DAMPERS ARE AT LEAST 85% OPEN (ADJ.) BUT NO VAV TERMINAL UNIT DAMPER IS MORE THAN 97% OPEN (ADJ.). THE BUILDING AUTOMATION SYSTEM SHALL OVERRIDE AND RESET THE UNIT SUPPLY AIR TEMPERATURE DOWNWARDS BY 0.5°F (ADJ.) AT A FREQUENCY OF 10 MINUTES (ADJ.) IF THE SPACE RELATIVE HUMIDITY INCREASES TO MORE THAN 60%RH. THE MAXIMUM ALLOWABLE SUPPLY AIR DISCHARGE TEMPERATURE RESET SHALL BE 80°F (ADJ.) FOR THE UNIT SUPPLY AIR DISCHARGE TEMPERATURE. THE SUPPLY AIR DISCHARGE TEMPERATURE RESET SEQUENCE SHALL BE ALLOWED TO BE ENABLED OR DISABLED AT ANY TIME BY THE OWNER THRU A RADIO BUTTON IN THE UNIT CONTROL GRAPHICS AT THE BAS WORKSTATION.

### AIR HANDLING UNIT SYSTEM LEVEL CONTROL:

1. VAV TERMINAL BOX RE-HEAT INTERLOCK CONTROL:

A. VAV TERMINAL BOX RE-HEAT SHALL BE DISABLED FROM, OR ENABLED FOR LOCAL CONTROL BY THE VAV TERMINAL BOX STANDALONE CONTROLLER.

B. AT A MINIMUM, ALL VAV TERMINAL BOXES BEING SERVED BY AN AIR HANDLING UNIT SHALL BE CONTROLLED AS A GROUP. PROVIDE MORE GROUPS AS DESIGNATED IN THE POINTS LIST, DRAWINGS, OR ELSEWHERE IN THIS SPECIFICATION.

C. THE INTERLOCK SHALL BE CONTROLLED BY COMPARING THE OUTSIDE AIR AMBIENT TEMPERATURE TO THE INTERLOCK SETPOINT (ADJUSTABLE). IF EACH AIR HANDLING UNIT CONTROLLER IS INDIVIDUALLY SENSING THE OUTSIDE AIR AMBIENT TEMPERATURE SERVING THE UNIT, THEN THE TEMPERATURE SENSOR FOR THAT AIR HANDLING UNIT SHALL BE USED FOR THE COMMAND AND OTHER PROCESSES.

D. THE INTERLOCK SHALL BE CONTROLLED BY A SYSTEM OPERATOR INTERLOCK FOR EACH GROUP OF BOXES.

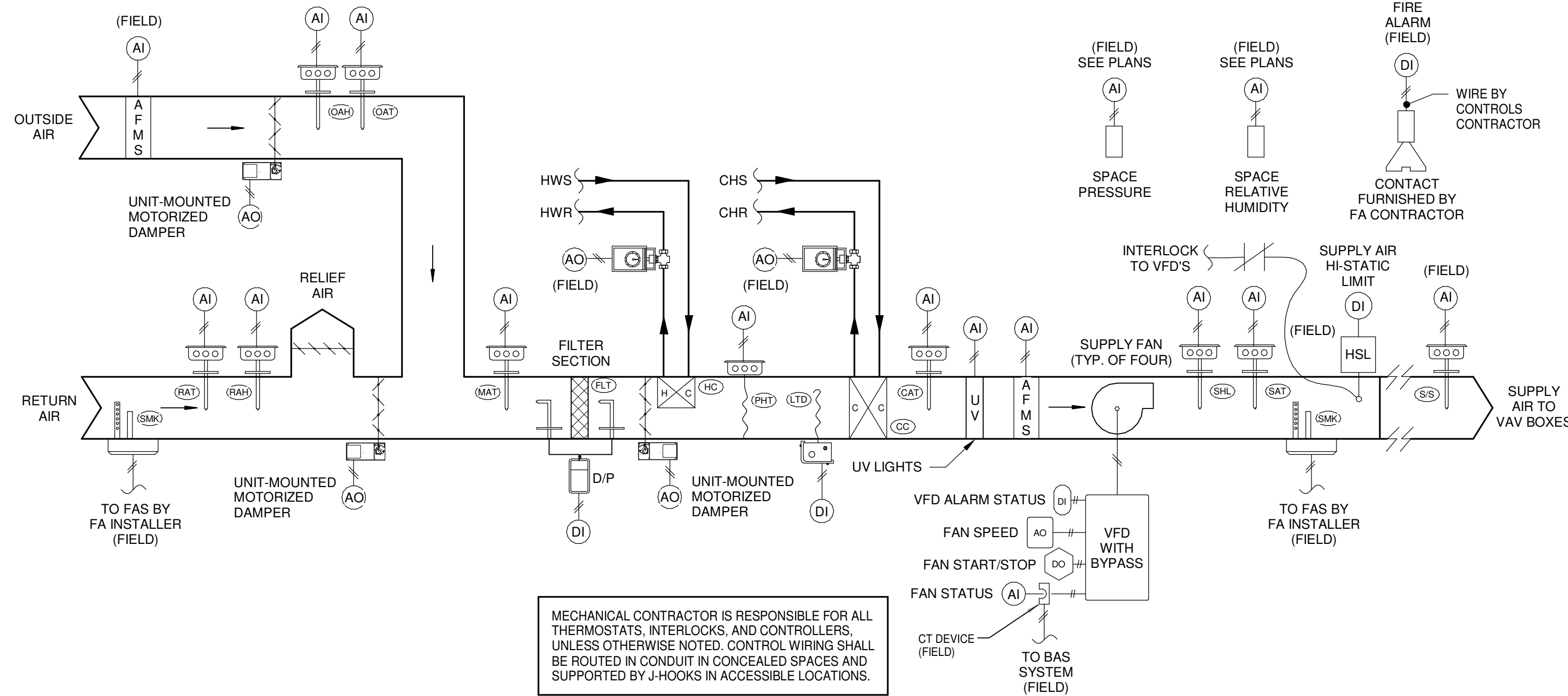
### THE FOLLOWING POINTS SHALL BE MONITORED AND ALARMED AT THE AIR HANDLING UNIT CONTROLLER AND THE BAS:

- |                                  |                                  |
|----------------------------------|----------------------------------|
| 1. SUPPLY AIR TEMP.              | 12. RETURN AIR TEMP.             |
| 2. MIXED AIR TEMP.               | 13. RETURN AIR RELATIVE HUMIDITY |
| 3. OUTSIDE AIR TEMP.             | 14. SENSORS NORMAL / FAIL STATUS |
| 4. OUTSIDE AIR RELATIVE HUMIDITY | 15. LOW LIMIT STATUS             |
| 5. SPACE RELATIVE HUMIDITY       | 16. COOLING VALVE OPEN %         |
| 6. SPACE PRESSURE                | 17. HEATING VALVE OPEN %         |
| 7. VFD OUTPUT %                  | 18. HEAT / COOL MODE             |
| 8. SUPPLY FAN MODULATION         | 19. DAMPER MINIMUM POSITION %    |
| 9. FAN STATUS                    | 20. FILTER NORMAL / DIRTY        |
| 10. COOLING AIR TEMP.            | 21. SUPPLY AIR STATIC PRESSURE   |
| 11. HEATING AIR TEMP.            | 22. DDC LOOP PARAMETERS          |

### THE FOLLOWING POINTS SHALL BE OPERATOR ADJUSTABLE AND / OR AUTOMATICALLY RESET BY THE BAS PROGRAM:

- HEATING SETPOINT - HEAT RESET SETPOINT
- COOLING SETPOINT - COOL RESET SETPOINT
- MIN. POSITION SETPOINT - STATIC PRESS. SETPOINT
- DAMPER OPEN/CLOSE - COOL/HEAT DISABLE

THE SYSTEM SHALL SHUT DOWN IMMEDIATELY UPON DETECTION OF SMOKE FROM DETECTORS LOCATED IN THE SUPPLY AND RETURN AIR STREAMS OR IF FIRE ALARM SYSTEM IS ACTIVATED.



## 1 AIR HANDLING UNIT RTU-1 (RTU-2 SIMILAR) W/ HOT WATER & CHILLED WATER COILS

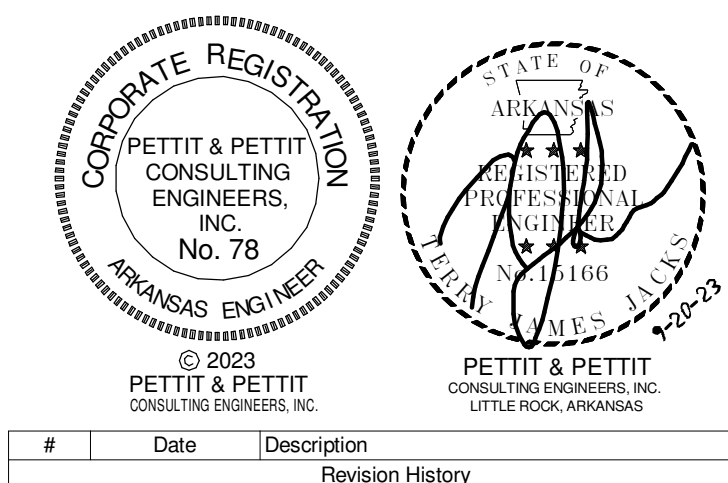
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# VARIABLE AIR VOLUME AIR HANDLING UNIT - SEQUENCE OF OPERATION

## AH-6

### GENERAL DESCRIPTION:

INTERIOR VAV AIR HANDLING UNIT SHALL BE MOUNTED ON A STRUCTURAL PLATFORM AND SHALL SERVE INDIVIDUAL AREAS WITHIN THE INTERIOR SPACES AS A SINGLE ZONE VAV SYSTEM. UNIT TO BE FACTORY PROVIDED WITH VARIABLE FREQUENCY DRIVE (VFD).

### UNIT CONTROLS:

UNIT SHALL BE PROVIDED WITH A STANDALONE UNIT CONTROLLER THAT SHALL INTERFACE WITH THE BACNET BUILDING AUTOMATION SYSTEM (BAS) SYSTEMS. UNIT CONTROLLER SHALL BE CAPABLE OF OPERATING UNIT WITHOUT REQUIRING CONSTANT BACNET COMMUNICATION TO MAINTAIN NORMAL UNIT OPERATION. IF COMMUNICATION WITH THE BAS IS LOST, THE VAV AIR HANDLING UNIT SHALL USE ITS DEFAULT SETPOINTS AND OPERATE IN THE OCCUPIED COOLING MODE.

THE BAS SHALL SEND THE VAV AIR HANDLING UNIT A DISCHARGE AIR TEMPERATURE (DAT) COOLING SETPOINT AND A DUCT STATIC PRESSURE SETPOINT. THE BAS SHALL ALSO SEND START-UP, MORNING WARM-UP, OCCUPIED, UNOCCUPIED, HEATING / COOLING, TIMED OVERRIDE, COAST DOWN, NIGHT SETBACK, PURGE, AND PRIORITY SHUT-DOWN COMMANDS.

### OCCUPIED MODE:

THE OCCUPIED MODE SHALL BE DETERMINED BY THE OWNER'S BUILDING SCHEDULE. WHEN THE AIR HANDLING UNIT IS IN OCCUPIED MODE, THE SUPPLY FAN(S) SHALL OPERATE CONTINUOUSLY. THE VARIABLE FREQUENCY DRIVE(S) (VFD) SHALL MODULATE THE SUPPLY FAN(S) AS REQUIRED BETWEEN THE MINIMUM AND MAXIMUM FAN SPEED SETPOINTS (ADJUSTABLE) TO MAINTAIN THE DUCT STATIC PRESSURE. AND THE COOLING VALVE AND PRE-HEAT / HEATING VALVES SHALL MODULATE IN SEQUENCE TO MAINTAIN THE UNIT DISCHARGE AIR TEMPERATURE. THE SUPPLY FAN(S) SHALL BE OFF WHENEVER THE AIR HANDLING UNIT MIXED AIR LOW LIMIT IS TRIPPED, THE STOP / AUTO INTERLOCK IS OPEN, OR THE SUPPLY FAN STATUS INDICATES A FAILURE (AFTER A TWO MINUTE DELAY). THE LOW LIMIT AND THE FAN FAILURE REQUIRE A MANUAL RESET. THE OUTDOOR AIRFLOW, AS MEASURED AT THE AIRFLOW MEASURING STATION, SHALL BE MAINTAINED AT A VALUE EQUAL TO OR HIGHER THAN THE MINIMUM REQUIRED OUTDOOR AIRFLOW SETPOINT SECTION OF THE AHU SYSTEM LEVEL OPERATION SECTION OF THIS SPECIFICATION.

### UNOCCUPIED MODE:

THE UNOCCUPIED MODE SHALL BE DETERMINED BY THE OWNER'S BUILDING SCHEDULE. WHEN THE AIR HANDLING UNIT IS IN THE UNOCCUPIED MODE, THE SUPPLY FAN(S) SHALL MODULATE DOWN TO MINIMUM AIR FLOW RATE REQUIRED TO MAINTAIN THE BUILDING UNOCCUPIED TEMPERATURE SETPOINT (ADJUSTABLE). THE OUTDOOR AIR DAMPER SHALL BE CLOSED.

### OVERRIDE MODE:

IF DURING THE COURSE OF AN UNOCCUPIED MODE PERIOD THE LOCAL USER UTILIZES THE OVERRIDE FUNCTION AT THE LOCAL USER THERMOSTAT, THE AIR HANDLING UNIT SHALL RETURN TO OCCUPIED MODE STATUS FOR A PERIOD OF TWO (2) HOURS (ADJ.).

### VFD CONTROL:

WHEN THE SUPPLY FAN(S) ARE ON, THE VFD(S) SHALL SLOWLY RAMP (ADJ.) UP AND MODULATE TO MAINTAIN THE DUCT STATIC PRESSURE SETPOINT.

### SUPPLY FANS:

THE AIR HANDLING UNIT WILL BE FACTORY SUPPLIED WITH DIRECT DRIVE SUPPLY FAN(S).

### COOLING VALVE CONTROL:

THE COOLING VALVE SHALL MODULATE TO MAINTAIN THE UNIT SUPPLY AIR DISCHARGE TEMPERATURE OF 55°F (ADJ.). THE COOLING VALVE SHALL BE CLOSED IF THE SUPPLY FAN(S) ARE OFF, THE SUPPLY AIR SENSOR HAS FAILED, OR IF THE AIR HANDLING UNIT IS IN THE HEATING MODE (THE COOLING COIL CONTROL VALVE SHALL BE CLOSED IF OUTSIDE AIR TEMPERATURE IS ABOVE 40°F (ADJ.)), IF OUTSIDE AIR TEMPERATURE IS BELOW 40°F (ADJ.) THEN THE COOLING COIL CONTROL VALVE SHALL BE FULLY OPENED TO HELP PREVENT FREEZING).

### HEATING VALVE INTEGRAL FACE & BYPASS DAMPER CONTROL:

WHEN THE PRE-HEAT COIL LEAVING AIR TEMPERATURE DROPS TO BELOW 50°F (ADJ.), THE HEATING VALVE SHALL MODULATE OPEN AS NEEDED AND THE FACE AND BYPASS DAMPER SHALL MODULATE IN CONCERT TO MAINTAIN THE PRE-HEAT COIL LEAVING AIR TEMPERATURE SETPOINT OF 55°F (ADJ.). WHEN THE OUTDOOR AIR TEMPERATURES ARE BELOW 40°F (ADJ.), THEN THE BYPASS DAMPER ONLY SHALL BE MODULATED AND THE HEATING WATER VALVE SHALL OPERATE AT 100% OPEN.

### MINIMUM REQUIRED OUTDOOR AIRFLOW SETPOINT:

DURING OCCUPIED TIMES, THE AIR HANDLER OUTDOOR AIR DAMPER SHALL MAINTAIN A MINIMUM OPEN POSITION TO DELIVER REQUIRED OUTDOOR AIRFLOW TO THE ZONES SERVED. SEE THE OSA CFM LISTED ON THE AIR HANDLER UNIT SCHEDULE. COORDINATE WITH ENGINEER.

### DISCHARGE DUCT STATIC PRESSURE SETPOINT:

THE DISCHARGE DUCT STATIC PRESSURE SHALL BE SENSED DIRECTLY AT A POINT APPROXIMATELY TWO-THIRDS (2/3) THE TRUNK DUCT OVERALL LENGTH. THE SENSOR SHALL BE MOUNTED IN A NON-TURBULENT LOCATION.

THE CONTROL BANDS, SETPOINT INCREMENT VALUES, SETPOINT DECREMENT VALUES, AND ADJUSTMENT FREQUENCIES SHALL BE ADJUSTED TO MAINTAIN STATIC PRESSURE OPTIMIZATION WITH STABLE SYSTEM CONTROL AND MAXIMUM COMFORT CONTROL.

### COOLING:

THE UNIT IS PROVIDED WITH A CHILLED WATER COIL FOR COOLING.

COOLING DAT RESET: THE COOLING DAT SETPOINT MAY BE RESET BY THE SPACE TEMPERATURE, RETURN AIR TEMPERATURE, OUTSIDE AIR TEMPERATURE, SPACE RELATIVE HUMIDITY, OR EXTERNAL VOLTAGE/MA SIGNALS. A LINEAR RELATIONSHIP BETWEEN THE DAT AND THE RESET VARIABLE WILL BE CREATED FOR THE MINIMUM AND MAXIMUM DAT SETPOINTS. AS THE RESET VARIABLE CHANGES THE DAT WILL ADJUST ACCORDING TO THE RELATIONSHIP. MINIMUM RESET SETPOINT IS 53°F (ADJ.) AND MAXIMUM RESET SETPOINT IS 65°F (ADJ.).

### HEATING:

THE UNIT IS PROVIDED WITH A HEATING HOT WATER COIL FOR HEATING.

HEATING DAT RESET: THE HEATING DAT SETPOINT MAY BE RESET BY SPACE TEMPERATURE, RETURN AIR TEMPERATURE, OUTSIDE AIR TEMPERATURE, NETWORK, OR EXTERNAL VOLTAGE/MA SIGNALS. A LINEAR RELATIONSHIP BETWEEN THE DAT AND THE RESET VARIABLE WILL BE CREATED FOR THE MINIMUM AND MAXIMUM DAT SETPOINTS. AS THE RESET VARIABLE CHANGES THE DAT WILL ADJUST ACCORDING TO THE RELATIONSHIP. WHEN THE AIR HANDLING UNIT IS IN THE HEATING MODE OR THE NIGHT SETBACK MODE, THE HEATING VALVE SHALL MODULATE OPEN TO MAINTAIN THE DISCHARGE AIR TEMPERATURE AT THE DISCHARGE HEATING SETPOINT (ADJUSTABLE).

### LOW LIMIT TEMPERATURE DETECTOR:

IN THE EVENT THE LOW LIMIT TEMPERATURE DETECTOR DETECTS MIXED AIR TEMPERATURE BELOW 35 DEG. F, THE SUPPLY AIR FAN(S) SHALL STOP. THE DAMPERS SHALL CLOSE, AND AN ALARM SHALL SOUND AT THE BAS WORKSTATION. THE LOW LIMIT TEMPERATURE DETECTOR SHALL REQUIRE A MANUAL RESET.

### NIGHT SETBACK / MORNING WARM-UP HEATING MODE:

THE AIR HANDLING UNIT SHALL INDEX FROM UNOCCUPIED MODE TO OCCUPIED MODE AT A TIME DETERMINED BY THE BAS SYSTEM SO THAT THE SETPOINT IS MET DURING THE ENTIRE PORTION OF THE BUILDING OCCUPIED HOURS (ADJUSTABLE).

### ECONOMIZER MODE:

### ECONOMIZER MODE:

ECONOMIZER MODE SHALL OPERATE BASED UPON ENTHALPY SETPOINT. THE EXISTING DUCTWORK CONNECTIONS TO THE RETURN AIR AT THE ROOF LEVEL PENTHOUSE HAVE BEEN PROVIDED WITH A RELIEF DAMPER ASSEMBLY(S) (QUANTITY OF TWO) FOR ECONOMIZER OPERATION. CONTRACTOR SHALL FIELD REPLACE EXISTING RELIEF DAMPER ACTUATORS AT EXISTING RELIEF DAMPER ASSEMBLY(S) AND THE UNIT CONTROLLER SHALL ACTIVATE ECONOMIZER MODE ONCE THE OUTSIDE AIR ENTHALPY IS LESS THAN THE RETURN AIR ENTHALPY. DURING ECONOMIZER MODE, THE OUTSIDE AIR DAMPER SHALL MODULATE FULLY OPEN, THE RETURN AIR DAMPER SHALL MODULATE CLOSED, AND THE RELIEF AIR DAMPERS SHALL OPEN AND MODULATE TO MAINTAIN A BUILDING PRESSURE DIFFERENTIAL OF 0.04"W.G. (ADJUSTABLE). WHEN THE OUTSIDE AIR CONDITIONS ARE ABOVE THE ENTHALPY SETPOINT, THE OUTSIDE AIR DAMPER SHALL CLOSE TO THE MINIMUM POSITION REQUIRED. THE RETURN AIR DAMPER SHALL FULLY OPEN, THE RELIEF AIR DAMPERS SHALL CLOSE, AND THE UNIT SHALL RESUME NORMAL COOLING/HEATING OPERATION.

### AIR HANDLING UNIT SYSTEM LEVEL CONTROL:

1. THE INTERLOCK SHALL BE CONTROLLED BY COMPARING THE OUTSIDE AIR AMBIENT TEMPERATURE TO THE INTERLOCK SETPOINT (ADJUSTABLE). IF EACH AIR HANDLING UNIT CONTROLLER IS INDIVIDUALLY SENSING THE OUTSIDE AIR AMBIENT TEMPERATURE SERVING THE UNIT, THEN THE TEMPERATURE SENSOR FOR THAT AIR HANDLING UNIT SHALL BE USED FOR THE COMMAND AND OTHER PROCESSES.

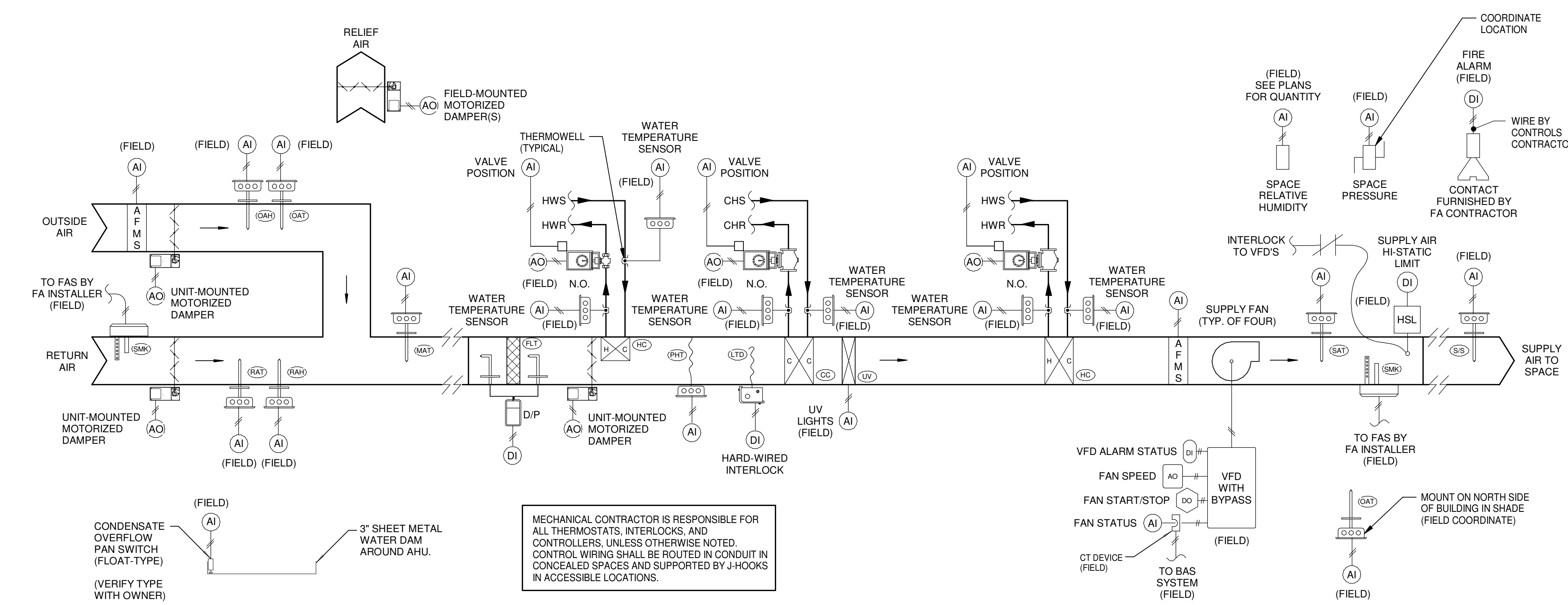
### THE FOLLOWING POINTS SHALL BE MONITORED AND ALARMED AT THE AIR HANDLING UNIT CONTROLLER AND THE BAS:

- |                                  |                                  |
|----------------------------------|----------------------------------|
| 1. SUPPLY AIR TEMP.              | 12. RETURN AIR TEMP.             |
| 2. MIXED AIR TEMP.               | 13. RETURN AIR RELATIVE HUMIDITY |
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| 4. OUTSIDE AIR RELATIVE HUMIDITY | 15. LOW LIMIT STATUS             |
| 5. SPACE RELATIVE HUMIDITY       | 16. COOLING VALVE OPEN %         |
| 6. SPACE PRESSURE                | 17. HEATING VALVE OPEN %         |
| 7. VFD OUTPUT %                  | 18. HEAT / COOL MODE             |
| 8. SUPPLY FAN MODULATION         | 19. DAMPER MINIMUM POSITION %    |
| 9. FAN STATUS                    | 20. FILTER NORMAL / DIRTY        |
| 10. COOLING AIR TEMP.            | 21. SUPPLY AIR STATIC PRESSURE   |
| 11. HEATING AIR TEMP.            | 22. DDC LOOP PARAMETERS          |

### THE FOLLOWING POINTS SHALL BE OPERATOR ADJUSTABLE AND / OR AUTOMATICALLY RESET BY THE BAS PROGRAM:

- HEATING SETPOINT - HEAT RESET SETPOINT
- COOLING SETPOINT - COOL RESET SETPOINT
- MIN POSITION SETPOINT - STATIC PRESS. SETPOINT
- DAMPER OPEN/CLOSE - COOL/HEAT DISABLE

THE SYSTEM SHALL SHUT DOWN IMMEDIATELY UPON DETECTION OF SMOKE FROM DETECTORS LOCATED IN THE SUPPLY AND RETURN AIR STREAMS OR IF FIRE ALARM SYSTEM IS ACTIVATED.



# 1 AIR HANDLING UNIT AH-6 W/ HOT WATER & CHILLED WATER COILS

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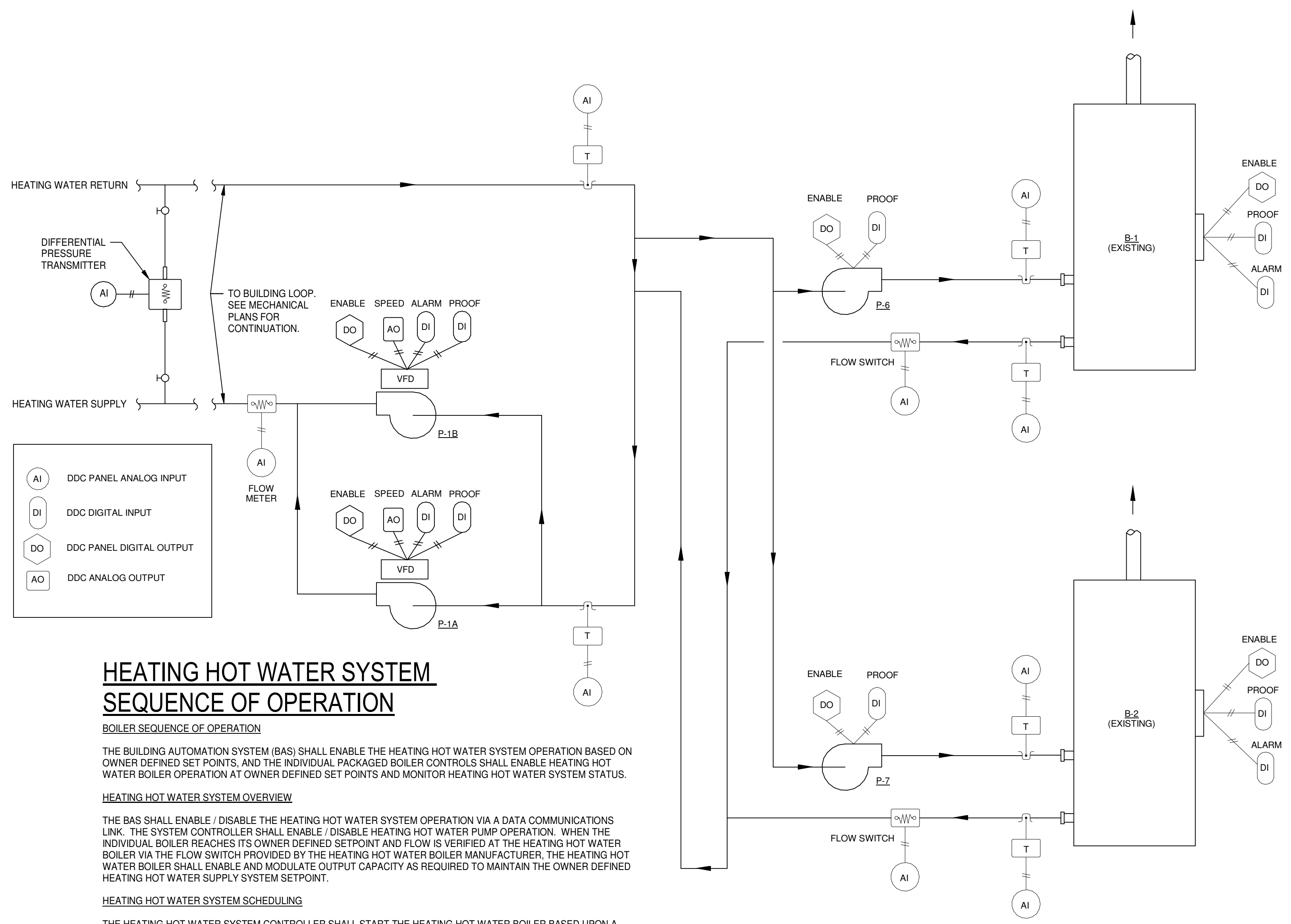
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AI DDC PANEL ANALOG INPUT  
 DI DDC DIGITAL INPUT  
 DO DDC PANEL DIGITAL OUTPUT  
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### HEATING HOT WATER SYSTEM SEQUENCE OF OPERATION

**BOILER SEQUENCE OF OPERATION**  
 THE BUILDING AUTOMATION SYSTEM (BAS) SHALL ENABLE THE HEATING HOT WATER SYSTEM OPERATION BASED ON OWNER DEFINED SET POINTS, AND THE INDIVIDUAL PACKAGED BOILER CONTROLS SHALL ENABLE HEATING HOT WATER BOILER OPERATION AT OWNER DEFINED SET POINTS AND MONITOR HEATING HOT WATER SYSTEM STATUS.

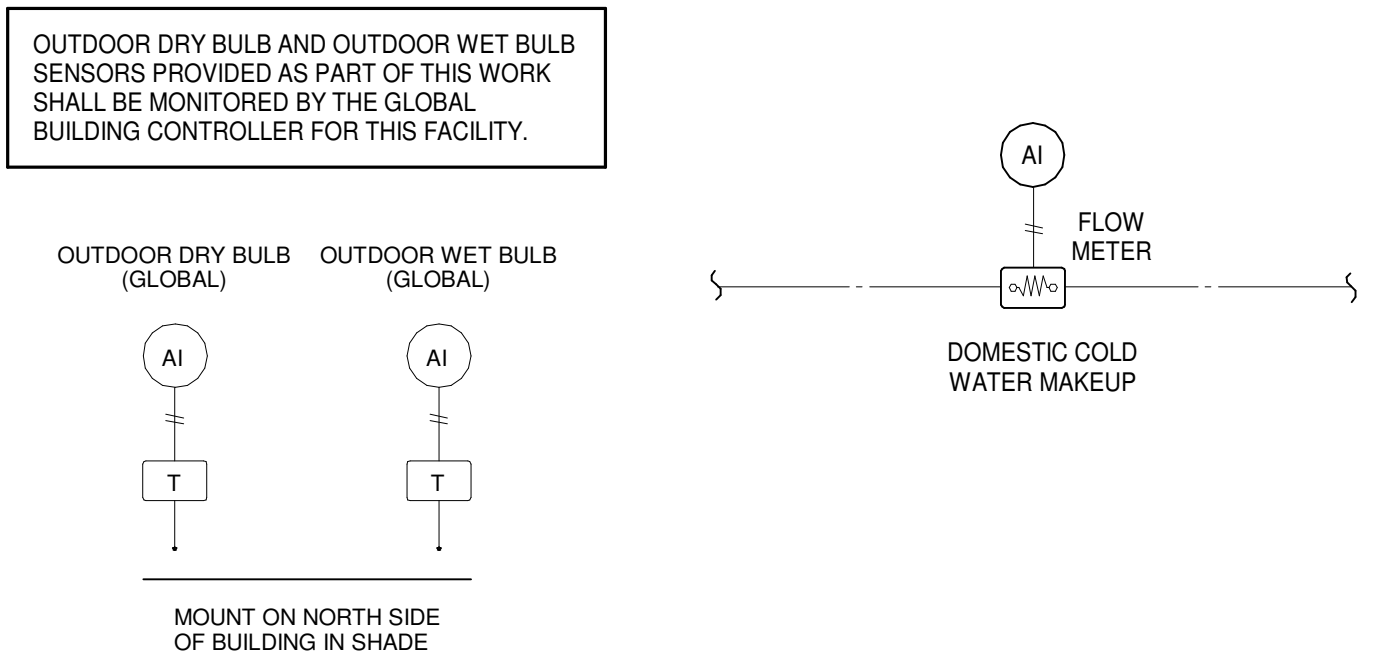
**HEATING HOT WATER SYSTEM OVERVIEW**  
 THE BAS SHALL ENABLE / DISABLE THE HEATING HOT WATER SYSTEM OPERATION VIA A DATA COMMUNICATIONS LINK. THE SYSTEM CONTROLLER SHALL ENABLE / DISABLE HEATING HOT WATER PUMP OPERATION. WHEN THE INDIVIDUAL BOILER REACHES ITS OWNER DEFINED SETPOINT AND FLOW IS VERIFIED AT THE HEATING HOT WATER BOILER VIA THE FLOW SWITCH PROVIDED BY THE HEATING HOT WATER BOILER MANUFACTURER, THE HEATING HOT WATER BOILER SHALL ENABLE AND MODULATE OUTPUT CAPACITY AS REQUIRED TO MAINTAIN THE OWNER DEFINED HEATING HOT WATER SUPPLY SYSTEM SETPOINT.

**HEATING HOT WATER SYSTEM SCHEDULING**  
 THE HEATING HOT WATER SYSTEM CONTROLLER SHALL START THE HEATING HOT WATER BOILER BASED UPON A GRAPHICAL CALENDAR TIME OF DAY SCHEDULING APPLICATION WITH THE OPTION TO USE OUTSIDE AMBIENT TEMPERATURE LOCKOUT. THE HEATING WATER PLANT SHALL START IN RESPONSE TO THE OPTIMUM START, NIGHT SETBACK, OR TIMED OVERRIDE OPERATION OF THE BUILDING AIR HANDLING UNITS.

**HEATING HOT WATER BOILER SEQUENCE OF OPERATION**  
 UPON A CALL FOR HEATING, THE INDIVIDUAL PACKAGED ON-BOARD BOILER CONTROLLERS SHALL ENABLE AND DISABLE HEATING HOT WATER BOILERS AS REQUIRED BY OWNER DEFINED SETPOINTS. THE PACKAGED ON-BOARD BOILER CONTROLS SHALL MODULATE FIRING RATE TO MAINTAIN THE SYSTEM LEAVING WATER TEMPERATURE SETPOINT OF 180 DEG. F (ADJ.).

**VARIABLE SPEED PUMPING SEQUENCE OF OPERATION**  
 THE BAS SHALL MONITOR THE HEATING HOT WATER DIFFERENTIAL PRESSURE SENSOR. THE HEATING HOT WATER SYSTEM CONTROLLER SHALL CYCLE THE SYSTEM HEATING HOT WATER PUMPS BETWEEN PRIMARY / STANDBY POSITIONS WEEKLY TO ENSURE EQUAL PUMP RUN TIME (OWNER SHALL BE ABLE TO OVERRIDE PUMP SEQUENCING). THE PRIMARY HEATING HOT WATER PUMP SHALL BE ENABLED BY THE HEATING HOT WATER SYSTEM CONTROLLER. WHEN ENABLED, THE PRIMARY HEATING HOT WATER PUMP SHALL START AND SHALL RUN CONTINUOUSLY. WHILE RUNNING, THE PRIMARY HEATING HOT WATER PUMP VARIABLE FREQUENCY DRIVE SHALL MODULATE PUMP SPEED AS REQUIRED TO MAINTAIN THE HEATING HOT WATER MINIMUM DIFFERENTIAL PRESSURE SETPOINT OF 15 PSI (ADJ.). IF, FOR ANY REASON, THE PRIMARY HEATING HOT WATER PUMP FAILS TO START OR THE PUMP STATUS DOES NOT MATCH ITS COMMANDED VALUE, THE STANDBY HEATING HOT WATER PUMP SHALL BE STARTED AUTOMATICALLY AND AN ALARM FOR THE FAILED PUMP SHALL BE GENERATED AT THE BAS WORKSTATION.

**FREEZE PROTECTION SEQUENCE OF OPERATION**  
 UPON ACTIVATION OF A FREEZE STAT IN ANY AIR HANDLING UNIT SERVING THIS BUILDING, THE PRIMARY PUMP SHALL BE ENABLED AND SHALL RUN AT FULL FLOW WITH ALL OF THE AIR HANDLING UNIT AND VAV TERMINAL BOX HEATING WATER CONTROL VALVES FULLY OPENED. UPON RESET OF THE ACTIVATED FREEZE STAT, THE SYSTEM SHALL RETURN TO NORMAL OPERATION.



HEATING WATER SYSTEM CONTROL DIAGRAM

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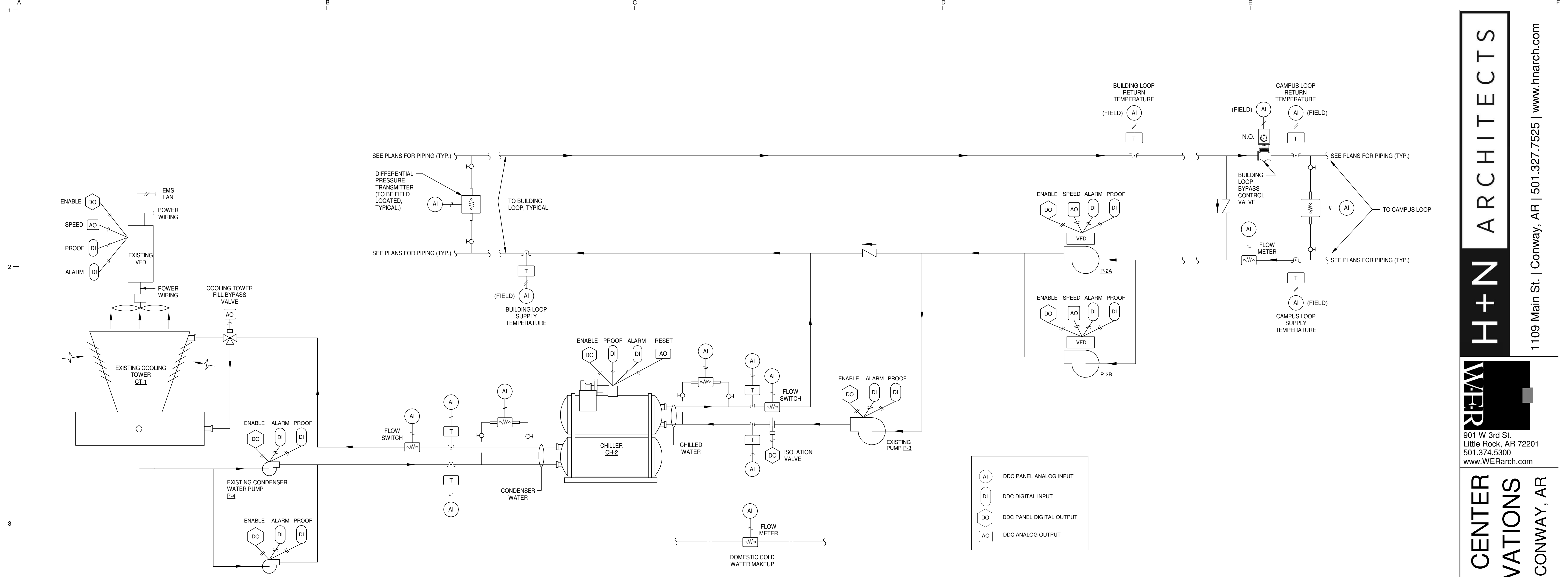
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**1 CHILLED WATER SYSTEM CONTROL DIAGRAM**

**CAMPUS CHILLED WATER SYSTEM SEQUENCE OF OPERATION**

THE BUILDING SHALL BE SUPPLIED WITH CHILLED WATER BY DEFAULT BY THE CAMPUS CHILLED WATER LOOP. THE BAS SHALL BE CAPABLE OF SWITCHING FROM CAMPUS CHILLED WATER TO THE LOCAL CHILLER / COOLING TOWER REMOTELY. REFER TO LOCAL CHILLED WATER SYSTEM AND CONDENSER WATER SYSTEM SEQUENCE OF OPERATION THIS SHEET.

**VARIABLE SPEED PUMPING SEQUENCE OF OPERATION**

THE BAS SHALL MONITOR THE WATER DIFFERENTIAL PRESSURE SENSOR(S) FOR THE SYSTEMS SERVED. CHILLED WATER SECONDARY PUMPS P-2A (DUTY) AND P-2B (STANDBY) SHALL BE DUTY ROTATED EVERY 2 WEEKS AND ENABLED BY THE BAS CONTROLLER. WHEN ENABLED, THE CHILLED WATER SECONDARY PUMP SHALL START AND SHALL RUN CONTINUOUSLY TO MAINTAIN THE BUILDING DIFFERENTIAL PRESSURE SETPOINT. WHILE RUNNING, THE CHILLED WATER SECONDARY PUMP VARIABLE FREQUENCY DRIVE SHALL MODULATE PUMP SPEED AS REQUIRED TO MAINTAIN THE BUILDING WATER MINIMUM DIFFERENTIAL PRESSURE SETPOINT OF 15 PSI (ADJUSTABLE). IF, FOR ANY REASON, THE CHILLED WATER SECONDARY PUMP FAILS TO START OR THE PUMP STATUS DOES NOT MATCH ITS COMMANDED VALUE, AN ALARM FOR THE FAILED PUMP SHALL BE GENERATED AT THE BAS WORKSTATION, AND THE STANDBY PUMP SHALL BE INITIATED.

THE BUILDING LOOP BYPASS CONTROL VALVE SHALL BE ENABLED UPON OWNER DEFINED SETPOINTS (ADJUSTABLE) AND / OR OPERATOR COMMAND (PROVIDE RADIO BUTTON IN THE CONTROL GRAPHICS FOR BYPASS MODE ACTIVATION / DEACTIVATION) FROM THE BAS. ONCE ENABLED, THE BUILDING LOOP BYPASS CONTROL VALVE SHALL MODULATE CLOSED AS REQUIRED TO MODULATE THE CAMPUS LOOP CHILLED WATER SUPPLY FLOW OR MAINTAIN THE OWNER DEFINED LEAVING WATER TEMPERATURE SETPOINT OF 55 DEGF (ADJ.). ONCE OWNER DEFINED SETPOINTS HAVE BEEN MET AND / OR BAS OPERATOR COMMAND HAS RESTORED THE BUILDING LOOP BYPASS CONTROL VALVE TO NORMAL OPERATION, THE CAMPUS LOOP CHILLED WATER SYSTEM SHALL BE FULLY UTILIZED TO SERVICE THE BUILDING AIR HANDLING UNITS. THE CHILLED WATER LOOP SUPPLY AND RETURN TEMPERATURES SHALL BE MONITORED AT THE BAS WORKSTATION.

UPON ACTIVATION OF A FREEZE STAT IN ANY AIR HANDLING UNIT SERVING THIS BUILDING, THE BUILDING LOOP BYPASS CONTROL VALVE SHALL BE CLOSED AND PUMP P-2A (DUTY) OR P-2B (STANDBY) SHALL BE ENABLED AND SHALL RUN AT FULL FLOW WITH ALL OF THE AIR HANDLING UNIT CHILLED WATER CONTROL VALVES FULLY OPENED. UPON RESET OF THE ACTIVATED FREEZE STAT, THE SYSTEM SHALL RETURN TO NORMAL OPERATION.

**LOCAL CHILLED WATER SYSTEM SEQUENCE OF OPERATION**

**CHILLER SEQUENCE OF OPERATION**

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL ENABLE THE LOCAL CHILLED WATER SYSTEM OPERATION BASED ON OWNER'S PREFERENCE. ONCE THE CHILLER HAS BEEN ENABLED, THE CHILLER'S CHILLED WATER ISOLATION VALVE SHALL BE OPENED, THE CHILLER'S ASSOCIATED CONDENSER WATER PUMP SHALL BE STARTED, AND THE PRIMARY CHILLED WATER SYSTEM PUMP P-3 SHALL BE STARTED. UPON PROOF OF FLOW, THE CHILLER SHALL BE STARTED. ONCE STARTED, THE CHILLER SHALL UTILIZE ITS INTERNAL CONTROLS TO MAINTAIN A CHILLED WATER SYSTEM LEAVING CHILLED WATER SETPOINT OF 42 DEG. F. (ADJ.).

THE BAS SHALL ENABLE / DISABLE THE CHILLED WATER SYSTEM OPERATION VIA A DATA COMMUNICATIONS LINK. THE CHILLED WATER PLANT SHALL START IN RESPONSE TO THE OPTIMUM START, NIGHT SETBACK, OR TIMED OVERRIDE OPERATION OF THE BUILDING AIR HANDLING UNITS. IF ANY COMPONENT OF THE CHILLED WATER SYSTEM FAILS TO START ONCE ENABLED, AN ALARM SHALL BE INDICATED AT THE BAS OPERATOR WORKSTATION.

**VARIABLE SPEED PUMPING SEQUENCE OF OPERATION**

THE BAS SHALL MONITOR THE WATER DIFFERENTIAL PRESSURE SENSOR(S) FOR THE SYSTEMS SERVED. CHILLED WATER SECONDARY PUMPS P-2A (DUTY) AND P-2B (STANDBY) SHALL BE DUTY ROTATED EVERY 2 WEEKS AND ENABLED BY THE BAS CONTROLLER. WHEN ENABLED, THE CHILLED WATER SECONDARY PUMP SHALL START AND SHALL RUN CONTINUOUSLY TO MAINTAIN THE BUILDING DIFFERENTIAL PRESSURE SETPOINT. WHILE RUNNING, THE CHILLED WATER SECONDARY PUMP VARIABLE FREQUENCY DRIVE SHALL MODULATE PUMP SPEED AS REQUIRED TO MAINTAIN THE BUILDING WATER MINIMUM DIFFERENTIAL PRESSURE SETPOINT OF 15 PSI (ADJUSTABLE). IF, FOR ANY REASON, THE CHILLED WATER SECONDARY PUMP FAILS TO START OR THE PUMP STATUS DOES NOT MATCH ITS COMMANDED VALUE, AN ALARM FOR THE FAILED PUMP SHALL BE GENERATED AT THE BAS WORKSTATION, AND THE STANDBY PUMP SHALL BE INITIATED.

**CHILLED WATER SUPPLY TEMPERATURE RESET SEQUENCE OF OPERATION**

THE BAS SHALL CONTINUOUSLY MONITOR THE CHILLER LOADING, THE BUILDING HUMIDISTATS, THE CHILLED WATER VALVE POSITIONS, AND THE CHILLED WATER PUMP SPEED(S). IF THE CHILLER LOAD DROPS TO BELOW 80% CAPACITY, THE BAS SHALL INITIATE A CHILLED WATER SUPPLY TEMPERATURE RESET SEQUENCE. THE CHILLED WATER SUPPLY TEMPERATURE SHALL BE RESET UPWARDS BY 0.5 DEG. F IN 15 MINUTE INCREMENTS UNTIL THE CHILLED WATER SUPPLY TEMPERATURE REACHES A MAXIMUM TEMPERATURE OF 40 DEG. F (ADJ.). THE BAS SHALL START TO RESET THE CHILLED WATER SUPPLY TEMPERATURE DOWNWARDS BACK TO THE NORMAL OPERATING TEMPERATURE OF 42 DEG. F (ADJ.) IN 15 MIN. INCREMENTS (ADJ.) ONCE CHILLED WATER SUPPLY TEMPERATURE HAS BEEN RETURNED TO 42 DEG. F (ADJ.), THE CHILLED WATER SYSTEM SHALL RETURN TO NORMAL OPERATION. THE OPERATOR SHALL BE ABLE TO ENABLE / DISABLE THE CHILLED WATER SUPPLY TEMPERATURE RESET SEQUENCE AT ANY TIME.

**CONDENSER WATER SYSTEM SEQUENCE OF OPERATION**

**CONDENSER WATER SYSTEM SEQUENCE OF OPERATION**

THE BUILDING AUTOMATION SYSTEM (BAS) SHALL ENABLE THE LOCAL CHILLED WATER SYSTEM OPERATION BASED ON OWNER DEFINED SCHEDULE. ONCE A CHILLER HAS BEEN ENABLED, THE CONDENSER WATER SYSTEM SHALL ALSO BE ENABLED. IF ANY COMPONENT OF THE CONDENSER WATER SYSTEM FAILS TO START ONCE ENABLED, AN ALARM SHALL BE INDICATED AT THE BAS OPERATOR WORKSTATION.

**COOLING TOWER SEQUENCE OF OPERATION**

ONCE ENABLED, THE COOLING TOWER FAN SHALL BE MODULATED VIA VARIABLE FREQUENCY DRIVE TO MAINTAIN A CONDENSER WATER SUPPLY TEMPERATURE OF THE OUTDOOR WET BULB PLUS 5 DEG. F WITH A MINIMUM SUPPLY WATER TEMPERATURE OF 65 DEG. F AND A MAXIMUM SUPPLY WATER TEMPERATURE OF 85 DEG. F. IF REQUIRED, THE COOLING TOWER WATER BYPASS VALVE SHALL BE MODULATED TO AVOID OVER-COOLING THE CONDENSER WATER SUPPLY TO THE CHILLER.

**COOLING TOWER FREE COOLING SEQUENCE OF OPERATION**

WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE DROPS BELOW 40 DEG. F (ADJ.) FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE CONDENSER WATER SUPPLY TEMPERATURE SHALL BE RESET DOWNWARD TO 40 DEG. F (ADJ.). THE COOLING TOWER FANS SHALL MODULATE AS REQUIRED TO MAINTAIN THE CONDENSER WATER SUPPLY TEMPERATURE. WHEN THE OUTDOOR AMBIENT WET BULB TEMPERATURE RISES TO 44 DEG. F (ADJ.) OR ABOVE FOR A PERIOD OF MORE THAN 15 MINUTES (ADJ.), THE LEAVING CONDENSER WATER TEMPERATURE SHALL RETURN TO ITS NORMAL RANGE OF A MAXIMUM OF 85 DEG. F AND A MINIMUM OF 65 DEG. F. DURING THIS TRANSITION, THE COOLING TOWER FANS SHALL BE DISABLED AND THE TOWER WATER BYPASS VALVE SHALL OPEN TO BYPASS THE COOLING TOWER FILL TO QUICKLY RAISE THE CONDENSER WATER SUPPLY TEMPERATURE BACK TO THE MINIMUM TEMPERATURE OF 65 DEG. F.

**CONSTANT SPEED CONDENSER WATER PUMP SEQUENCE OF OPERATION**

THE EXISTING CONDENSER WATER PUMPS P-4 AND P-5 ARE CONSTANT SPEED PUMPS AND SHALL BE DUTY-ROTATED EVERY 2 WEEKS. ONCE ENABLED, THE CONDENSER WATER PUMPS SHALL RUN AT CONSTANT SPEED.

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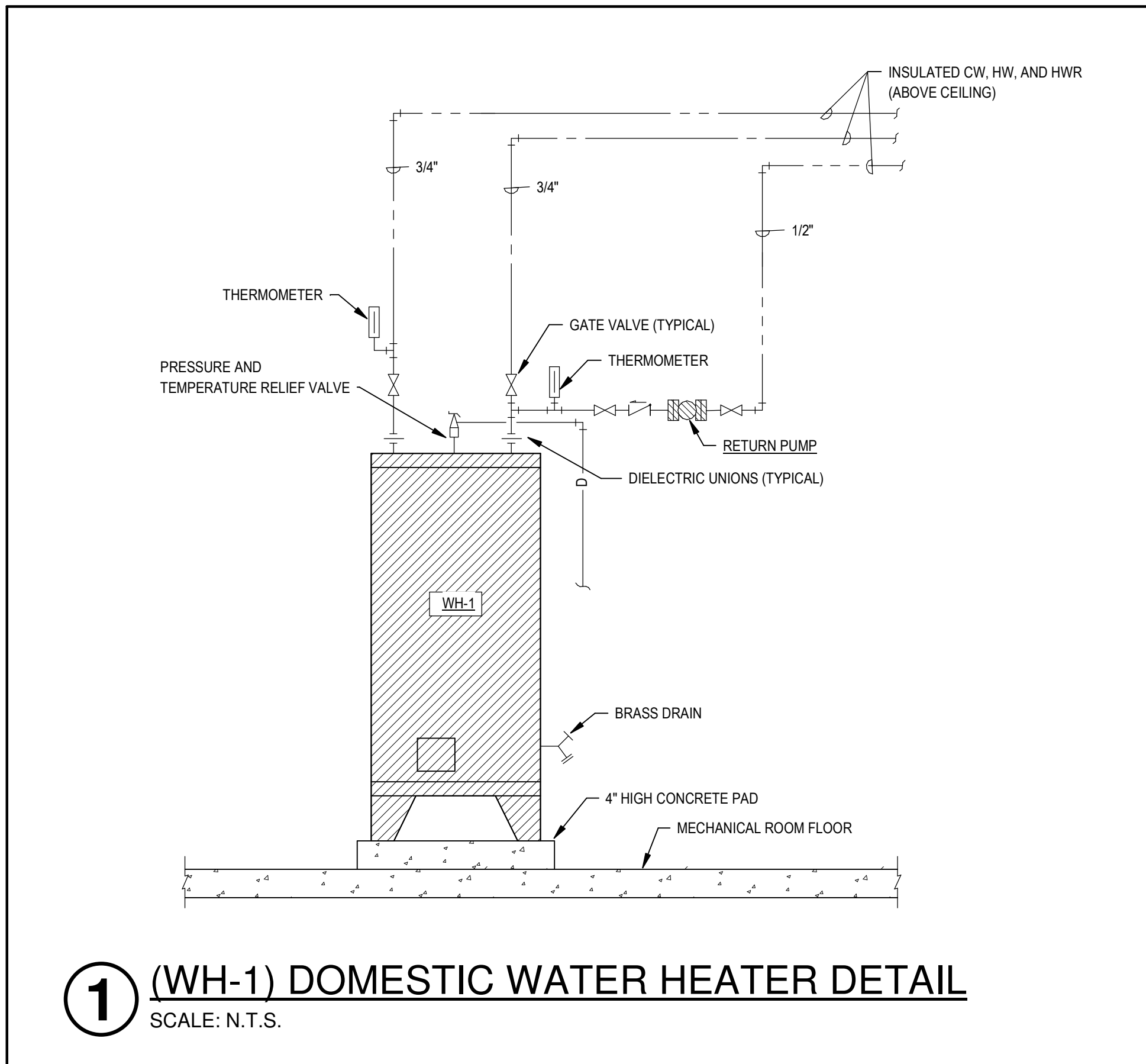
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 ARKANSAS ENGINEER

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 REGISTERED PROFESSIONAL ENGINEER  
 No. 1166  
 JAMES J. JONES  
 P-2623

#	Date	Description



**1 (WH-1) DOMESTIC WATER HEATER DETAIL**  
SCALE: N.T.S.

FIXTURE LEGEND	
SYMBOL	DESCRIPTION
	NEW FIXTURE
	ROUGH IN AND FINAL CONNECT ONLY
	EXISTING FIXTURE TO REMAIN
	EXISTING FIXTURE TO BE REMOVED
	EXISTING FIXTURE (RELOCATED, OR REPAIRED - SEE NOTES)

- ### PLUMBING GENERAL NOTES
- THE CONTRACTOR SHALL, PRIOR TO THE START OF ANY WORK UNDER THIS CONTRACT, JOB SITE VERIFY SIZE, LOCATION, ETC. OF ANY EXISTING PIPING NOTED, SHOWN OR IMPLIED, TO WHICH NEW PIPING IS RELATED OR CONNECTED.
  - HOT AND COLD WATER SUPPLIES TO FIXTURES SHALL BE AS FOLLOWS, UNLESS SHOWN OR NOTED OTHERWISE.
 

WATER CLOSET	1"
URINAL	1"
LAVATORY	1/2"
SERVICE SINK	3/4"
ELECTRIC WATER COOLER	1/2"
SINK	1/2"
SHOWER	1/2"
FREEZE-PROOF WALL HYDRANT	3/4"
CLINICAL SINK	1-1/4" & 1/2"
ICE MACHINE	1/2"
SUPPLY AND DRAIN UNIT (WASHER BOX)	1/2"
HOSE BIBB	3/4"
EMERGENCY SHOWER EYEWASH	1-1/4"
  - INSTALL WATER HAMMER ARRESTORS EQUAL TO ZURN "SHOKTROL" AT EACH QUICK CLOSING VALVE, AND AT EACH GROUP OF PLUMBING FIXTURES, AND AS NOTED ON DRAWINGS SIZED AS PER MANUFACTURERS RECOMMENDATIONS. (MUST BE ACCESSIBLE WHERE POSSIBLE, ABOVE CEILING IF NECESSARY)
  - ALL SUPPLIES TO FIXTURE SHALL BE PROVIDED WITH HIGH EAR COUPLING EQUAL TO MUELLER CO. No. C-100HE (1/2", 3/4" OR 1" SIZE) AT THE WALL (ANCHOR TO CROSS MEMBER SUPPORT) BEFORE PIPE ENTERS ROOM SPACE TO ASSURE NO PIPE MOVEMENT WITHIN WALL CAVITY.
  - ALL FLOOR DRAINS SHALL BE PROVIDED WITH DEEP SEAL TYPE TRAP WITH NOT LESS THAN FOUR INCH (4") WATER SEAL AND BE PROVIDED WITH TRAP PRIMER.
  - ALL VENTS THROUGH ROOF (V.T.R.) SHALL BE PROVIDED WITH #8 (24" X 24" SIZE) FLASHING. WHERE STANDING SEAM TYPE IS USED THE FLASHING SHALL BE IN ACCORDANCE WITH THE ROOFING MANUFACTURERS RECOMMENDATION AND AS DETAILED ON THE ARCHITECTURAL DRAWINGS. CLOSE COORDINATION WITH THE ROOFING CONTRACTOR SHALL BE MAINTAINED TO ASSURE THE VENT PENETRATION IS CENTERED WITHIN THE METAL ROOF PANELS. TYPICALLY FOR METAL OR OTHER SPECIAL MATERIAL, ROOFS - USE MANUFACTURED RUBBER BOOT WITH STAINLESS STEEL HARDWARE TYPE THAT IS ARCHITECT APPROVED AND MUST BE COMPATIBLE WITH ROOFING SYSTEM AND ROOF WARRANTY.
  - FLUSH VALVES SHALL BE MOUNTED SUCH THAT THE DIMENSION FROM FLUSH VALVE CENTERLINE TO FINISHED FLOOR SHALL BE 39". (DOES NOT APPLY TO ELECTRONIC FLUSH VALVES) WHERE HANDICAPPED GRAB BARS ARE INSTALLED ON BACK WALL AT CLOSET, FLUSH VALVE SHALL BE MOUNTED AT STANDARD HEIGHT. SEE SPECIFICATIONS AND WATER CLOSET DETAIL.
  - WHERE THIS SYMBOL OCCURS ON THE DRAWINGS, REFERENCE SHOULD BE MADE TO THE KEYED NOTES ON THAT SAME SHEET AND THE CORRESPONDING NUMBER OF THAT NOTE.
  - WHERE PLUMBING FIXTURES ARE LOCATED ON EXTERIOR WALL, WATER PIPING SHALL BE INSTALLED ON THE THERMAL SIDE OF THE WALL INSULATION.
  - CLOSE COORDINATION AND COOPERATION SHALL BE MAINTAINED BETWEEN TRADES WITH REGARD TO PLUMBING, HVAC, FIRE PROTECTION AND ELECTRICAL PLANS.
  - PROVIDE CLEANOUT CLEARANCE IN ACCORDANCE WITH THE ARKANSAS STATE PLUMBING CODE, BUT DO NOT LOCATE IN FOOT TRAFFIC PATHWAYS. DO NOT LOCATE CLEANOUTS IN FLOORS WITH CARPET. (FIELD COORDINATE) LOCATE FLOOR CLEANOUT NEAR WALLS, IN JANITORS ROOM, STORAGE ROOM, ETC., DO NOT LOCATE NEAR DOORWAYS.
  - PROVIDE FIRE STOPPING OR FIRE STOP SLEEVE DEVICES AT ALL RATED ASSEMBLIES - SEE ARCHITECTURAL SPECIFICATIONS AND ARCHITECTURAL DRAWINGS FOR DETAILS.
  - TRAP PRIMERS - LOCATE TRAP PRIMERS REASONABLY CLOSE TO PLUMBING FIXTURE (10' TO 20') - DO NOT CONNECT TRAP PRIMER TO WATER LINE LARGER THAN 1 1/2" SIZE - TRY TO LOCATE TRAP PRIMER LOWER THAN PLUMBING FIXTURES. FIELD VERIFY EXACT TRAP PRIMER LOCATIONS AND WATER PIPE ROUTING. TRAP PRIMER SHALL TYPICALLY BE PRECISION PLUMBING PRODUCTS MODEL # P2-500. WHERE FLOOR DRAINS OCCUR NEAR WATER CLOSETS - USE VACUUM BREAKER TRAP PRIMER - SLOAN "TP" - MODEL VBF-72A - EXPOSED 3/8" TUBING SHALL BE VERY MINIMAL AND CHROME PLATED WITH CAST CHROME FLANGE TO WALL.
  - COORDINATE EXACT LOCATIONS OF ALL PLUMBING PIPING WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS.
  - VERIFY WITH ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF ALL "ADA" PLUMBING FIXTURES
  - ALL JANITORS ROOMS SHALL HAVE FLOOR DRAINS.
  - ALL SANITARY SEWER RISERS SHALL HAVE CLEANOUT AT THE BASE (WALL CLEANOUT OR FLOOR CLEANOUT)
  - ALL STORM DRAIN PIPING SHALL HAVE CLEANOUT PLUGS AT EACH 90° TURN ABV CEILINGS AND HAVE A FLOOR OR WALL CLEANOUT AT THE BASE OF ALL RISERS.
  - INSTALL PIPING EXPANSION JOINTS IN ALL PIPING THAT CROSSES BUILDING EXPANSION JOINTS. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS AND PLUMBING ROOF PLAN FOR BUILDING EXPANSION JOINT LOCATIONS.
  - TWO-WAY CLEANOUTS SHALL BE INSTALLED AT THE JUNCTION OF THE BUILDING DRAIN AND THE BUILDING SEWER (TYP ALL AREAS) - MUST BE INSTALLED TO MEET PLUMBING CODES, EVEN IF NOT SHOWN ON DRAWING - VERIFY AND COORDINATE WITH CIVIL UTILITY DRAWINGS.

### PLUMBING LEGEND

SYMBOL	DESCRIPTION		
	SOIL, WASTE, OR SANITARY SEWER		UNION
	SS SANITARY SEWER (ON SITE)		FD FLOOR DRAIN
	SANITARY VENT		RD ROOF DRAIN
	CWV COMBINATION WASTE AND VENT		AD ACCESS DOOR
	W WATER (ON SITE)		VTR VENT THRU ROOF
	COLD WATER		HB HOSE BIBB
	HOT WATER		FPWH FREEZE PROOF WALL HYDRANT
	HOT WATER RETURN		CO CLEANOUT PLUG
	SD STORM DRAIN		FCO FLOOR CLEANOUT
	D INDIRECT DRAIN		AFCO FLOOR CLEANOUT WITH ACID RESISTANT PIPING AND FITTINGS
	G NATURAL GAS (LOW PRESSURE GAS)		WCO WALL CLEANOUT
	FLOW DIRECTION		ECO EXTERIOR CLEANOUT
	GATE VALVE		Denotes - SANITARY VENT STACK THRU ROOF
	GLOBE VALVE		RISER DESIGNATION
	CHECK VALVE		NEW CONNECTION TO EXISTING
	BALL VALVE		EXISTING PIPING TO BE REMOVED OR ABANDONED
	PLUG COCK - GAS COCK		EXISTING PIPING TO REMAIN
	PRESSURE REDUCING VALVE		CAP AND SEAL AIR OR WATER TIGHT
	STRAINER		TERMINATION POINT OF DEMOLITION

### PROJECT PHASING PLAN

THIS PROJECT IS TO BE PHASED IN A MANNER THAT PRIORITIZES THE MECHANICAL ROOM REVISIONS DURING THE PERIOD OF TIME THE BUILDING WILL BE COMPLETELY EMPTY FROM DECEMBER 16TH, 2023 THROUGH JANUARY 10TH, 2024. WHILE THE BUILDING WILL BE COMPLETELY EMPTY, AREA "A" OF THE BUILDING HOUSES EXPENSIVE MUSICAL INSTRUMENTS, SO RESTORING THE HEATING WATER LOOP WHICH SERVES AREA "A" OF THE BUILDING MUST OCCUR BY DECEMBER 22ND, 2023. THE REMAINDER OF THE MECHANICAL ROOM RE-PIPING SHALL OCCUR PRIOR TO JANUARY 10TH, 2024. EQUIPMENT AND CONTROLS SHALL BE IN PLACE AT THAT TIME IN ORDER FOR EQUIPMENT SERVING AREA "A" TO BE FUNCTIONAL.

THE REMAINDER OF THE PROJECT SHALL OCCUR BETWEEN DECEMBER 16TH AND MAY 12TH, 2024. THIS INCLUDES EQUIPMENT, PIPING, DUCTWORK, CONTROLS, ELECTRICAL AND ASSOCIATED ARCHITECTURAL MODIFICATIONS IN AREAS "B" AND "C".

ALL BUILDING AND UTILITY SHUTDOWNS OUTSIDE OF THE TIMEFRAMES LISTED ABOVE SHALL BE CAREFULLY COORDINATED WITHUCA FACILITIES MANAGEMENT 1 WEEK IN ADVANCE OF THE PROPOSED SHUTDOWN.

### WATER HEATER SCHEDULE

- WH-1 WATER HEATER - A.O. SMITH MODEL DEL-20, COMMERCIAL ELECTRIC, 20 GALLON TANK CAPACITY, 5 KW INPUT, 208 VOLT (1) PHASE. FURNISH T&P RELIEF VALVE. FURNISH CASH ACME - VR-801 VACUUM RELIEF VALVE. FURNISH GALVANIZED STEEL DRIP PAN - 26" 30".

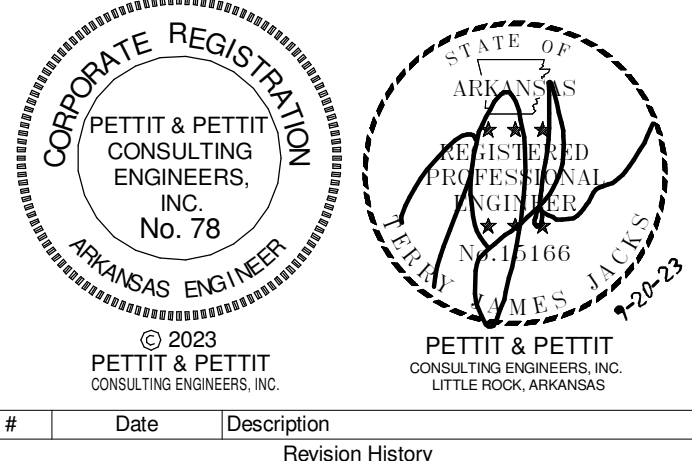
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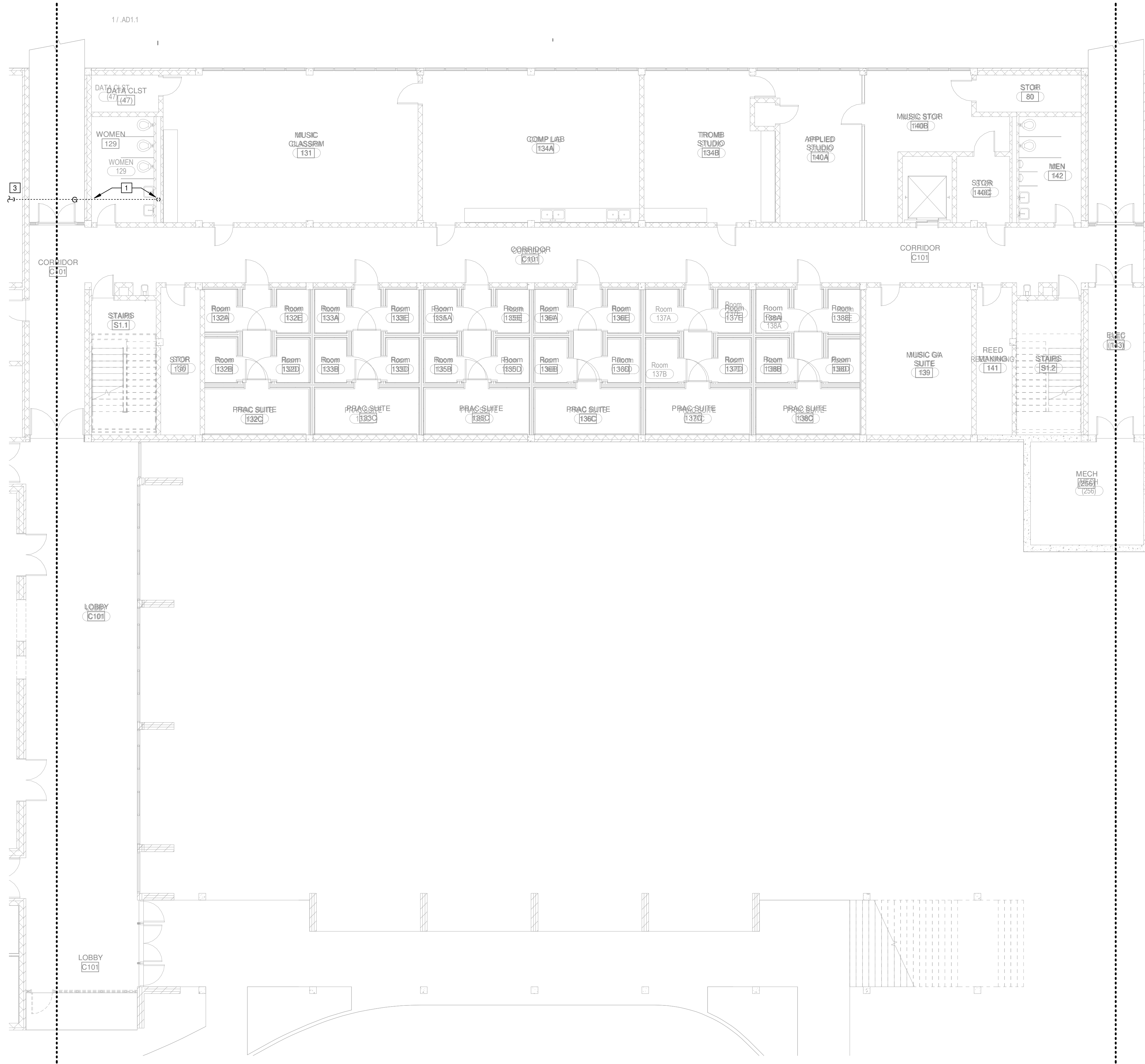
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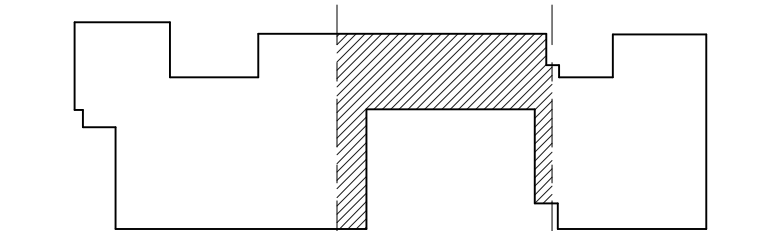
**1** LEVEL 1 PLAN - DEMO PART B - PLUMBING  
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**GENERAL PLUMB. DEMO. NOTES**

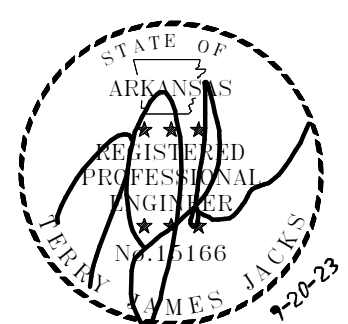
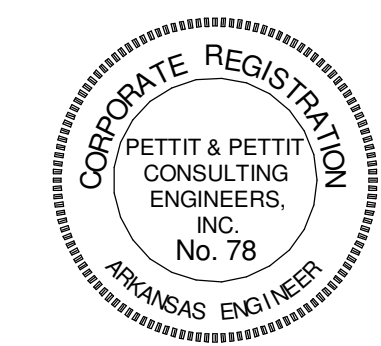
1. FIELD VERIFY EXISTING PLUMBING FIXTURE LOCATIONS, TYPE ETC.-VERIFY EXISTING PLUMBING PIPING LOCATIONS, SIZES, ETC.
2. CUT WALLS, FLOORS OR CEILINGS AS REQUIRED TO INSTALL NEW PIPING. ALL FURRING AND REPAIRING SHALL BE BY THE GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH THE GENERAL CONTRACTOR.
3. REWORK EXISTING WATER, SANITARY, ACID WASTE, AND VENT PIPING AS REQUIRED TO INSTALL NEW PLUMBING FIXTURES.
4. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED, CAP ALL PIPING WITHIN WALLS, FLOORS OR CEILINGS ARE REQUIRED FOR CONCEALMENT.
5. REMOVE ALL EXPOSED EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE.
6. EXISTING PIPE, TO WHICH NEW PIPE IS CONNECTED, SHALL BE RODDED, FLUSHED AND CLEANED FROM POINT OF CONNECTION TO MAIN OUTSIDE BUILDING.
7. EXISTING FLOOR DRAINS WITHIN SCOPE OF CONSTRUCTION SHALL BE THOROUGHLY CLEANED AND BUFFED. EXISTING PIPING SHALL BE RODDED AND CLEANED TO THE POINT OF CONNECTION TO THE MAIN.
8. ALL PLUMBING FIXTURES, VALVES, PIPING, AND EQUIPMENT WHICH ARE TO BE REMOVED AND NOT RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO STORAGE ON SITE AS DIRECTED BY THE OWNER.

**PLUMBING DEMO. KEYED NOTES**

1. DEMOLISH EXISTING GAS LINE.
2. DISCONNECT AND DEMOLISH EXISTING GAS WATER HEATER. DEMOLISH EXISTING GAS LINE. PREP ALL OTHER EXISTING WATER LINES FOR CONNECTION TO NEW ELECTRIC WATER HEATER.
3. DEMOLISH GAS LINE BACK AND CAP BEFORE IT REACHES THE CORRIDOR.



**KEY PLAN - AREA "B"**



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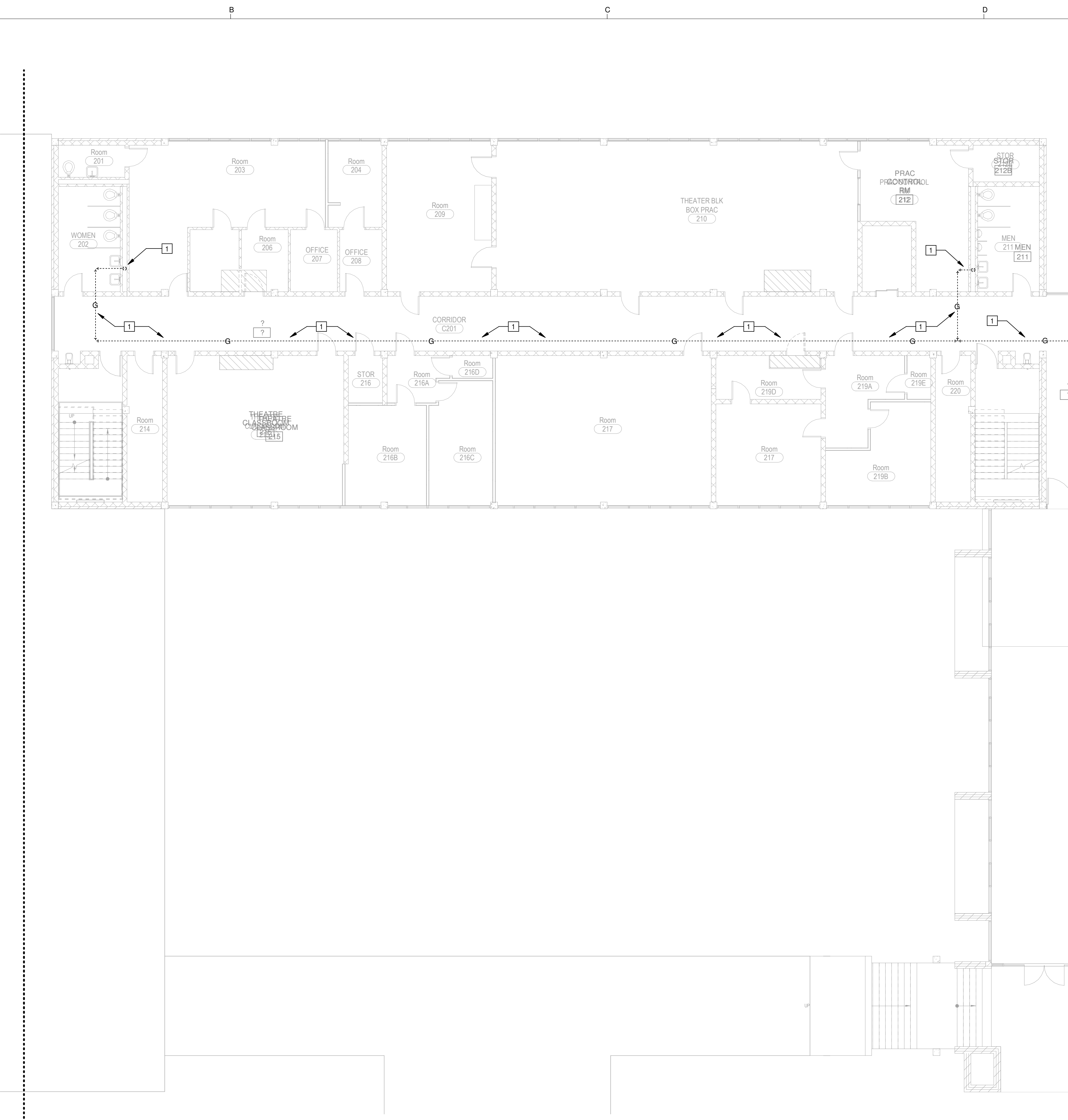
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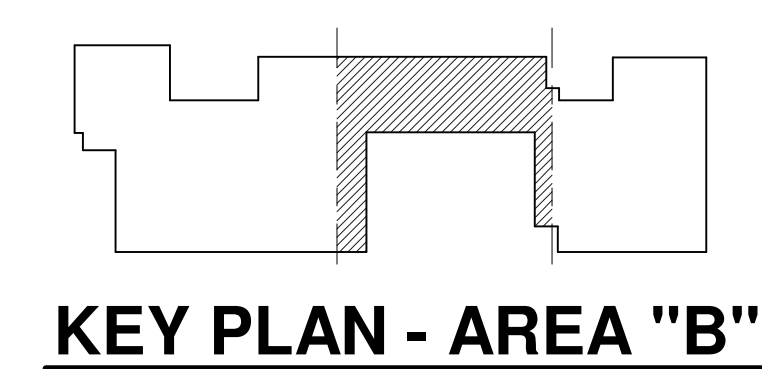
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- GENERAL PLUMB. DEMO. NOTES**
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  4. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED, CAP ALL PIPING WITHIN WALLS, FLOORS OR CEILINGS ARE REQUIRED FOR CONCEALMENT.
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  8. ALL PLUMBING FIXTURES, VALVES, PIPING, AND EQUIPMENT WHICH ARE TO BE REMOVED AND NOT RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO STORAGE ON SITE AS DIRECTED BY THE OWNER.

- PLUMBING DEMO. KEYED NOTES**
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  3. DEMOLISH GAS LINE BACK AND CAP BEFORE IT REACHES THE CORRIDOR.

**1** LEVEL 2 PLAN - DEMO PART B - PLUMBING  
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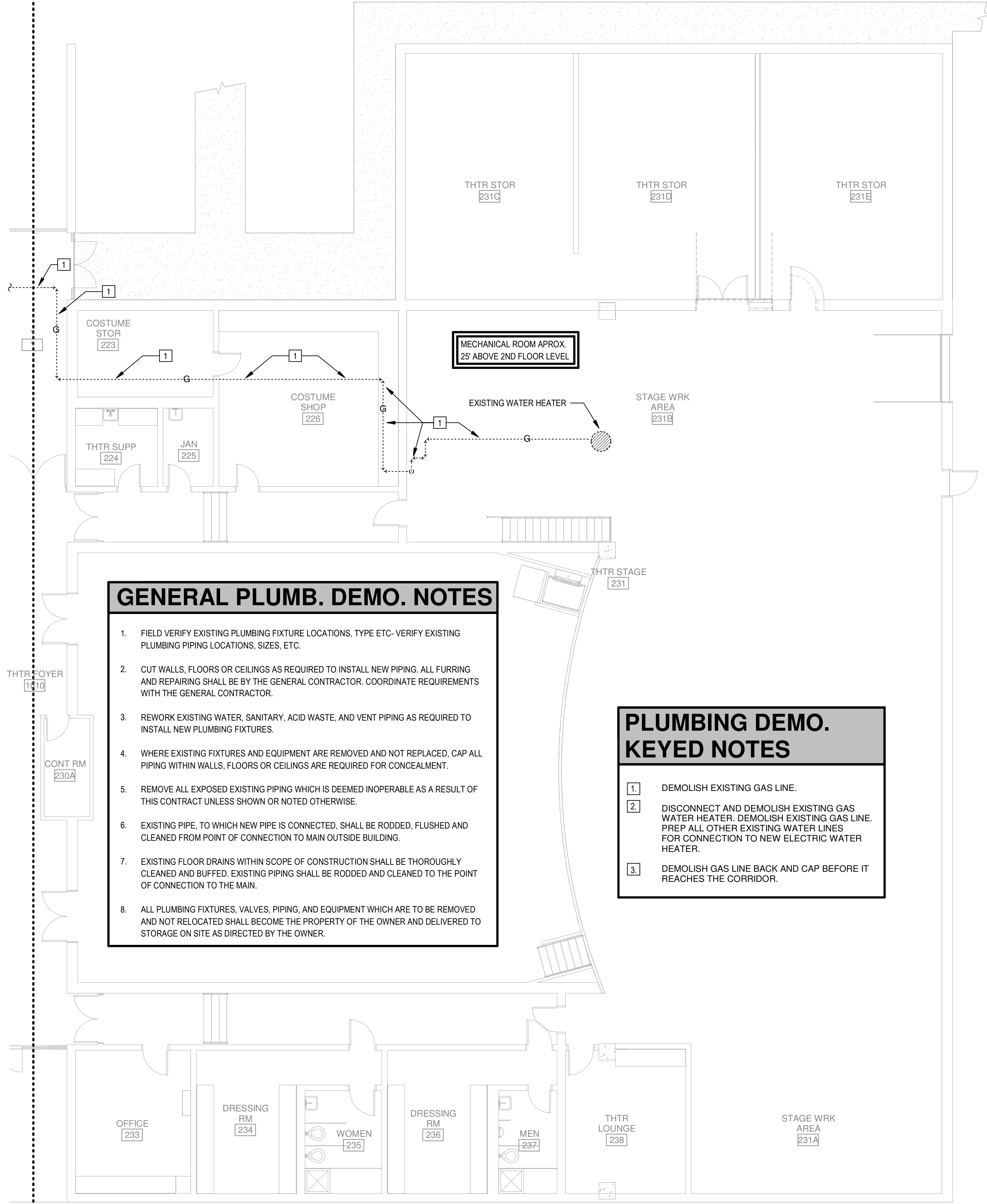
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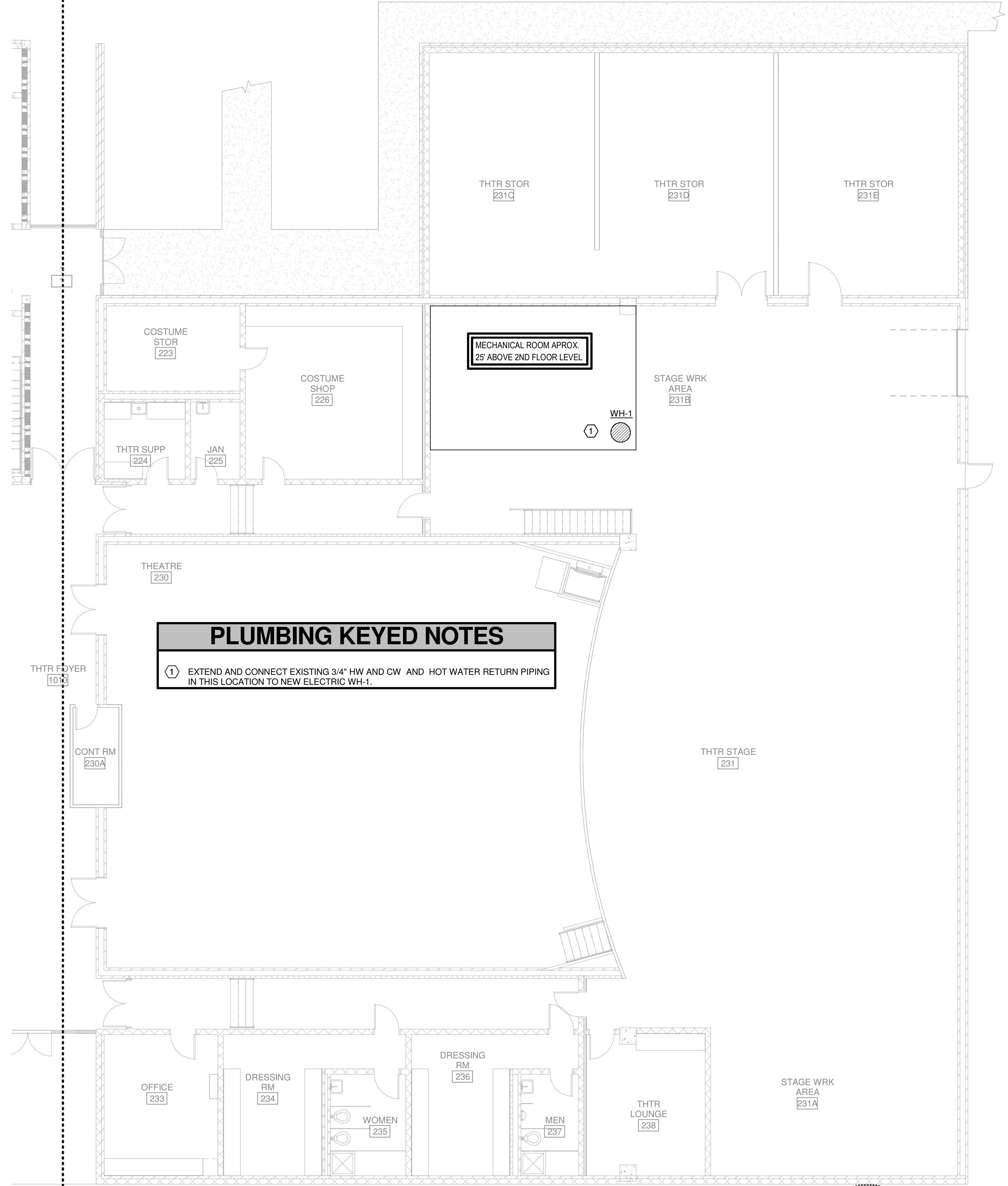
**GENERAL PLUMB. DEMO. NOTES**

1. FIELD VERIFY EXISTING PLUMBING FIXTURE LOCATIONS, TYPE ETC- VERIFY EXISTING PLUMBING PIPING LOCATIONS, SIZES, ETC.
2. CUT WALLS, FLOORS OR CEILINGS AS REQUIRED TO INSTALL NEW PIPING. ALL FURRING AND REPAIRING SHALL BE BY THE GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH THE GENERAL CONTRACTOR.
3. REWORK EXISTING WATER, SANITARY, ACID WASTE, AND VENT PIPING AS REQUIRED TO INSTALL NEW PLUMBING FIXTURES.
4. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED, CAP ALL PIPING WITHIN WALLS, FLOORS OR CEILINGS ARE REQUIRED FOR CONCEALMENT.
5. REMOVE ALL EXPOSED EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE.
6. EXISTING PIPE, TO WHICH NEW PIPE IS CONNECTED, SHALL BE RODDED, FLUSHED AND CLEANED FROM POINT OF CONNECTION TO MAIN OUTSIDE BUILDING.
7. EXISTING FLOOR DRAINS WITHIN SCOPE OF CONSTRUCTION SHALL BE THOROUGHLY CLEANED AND BUFFED. EXISTING PIPING SHALL BE RODDED AND CLEANED TO THE POINT OF CONNECTION TO THE MAIN.
8. ALL PLUMBING FIXTURES, VALVES, PIPING, AND EQUIPMENT WHICH ARE TO BE REMOVED AND NOT RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO STORAGE ON SITE AS DIRECTED BY THE OWNER.

**PLUMBING DEMO. KEYED NOTES**

1. DEMOLISH EXISTING GAS LINE.
2. DISCONNECT AND DEMOLISH EXISTING GAS WATER HEATER, DEMOLISH EXISTING GAS LINE. PREP ALL OTHER EXISTING WATER LINES FOR CONNECTION TO NEW ELECTRIC WATER HEATER.
3. DEMOLISH GAS LINE BACK AND CAP BEFORE IT REACHES THE CORRIDOR.

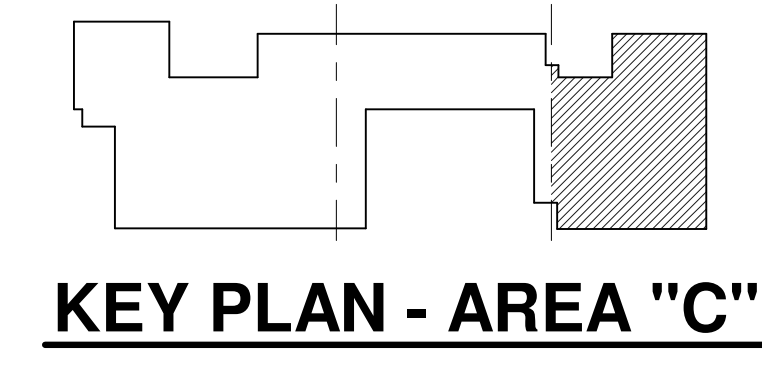
1 LEVEL 2 PLAN - DEMO PART C - PLUMBING  
SCALE: 1/8" = 1'-0"



**PLUMBING KEYED NOTES**

1. EXTEND AND CONNECT EXISTING 3/4" HW AND CW AND HOT WATER RETURN PIPING IN THIS LOCATION TO NEW ELECTRIC WH-1.

2 LEVEL 2 PLAN - RENOV PART C - PLUMBING  
SCALE: 1/8" = 1'-0"



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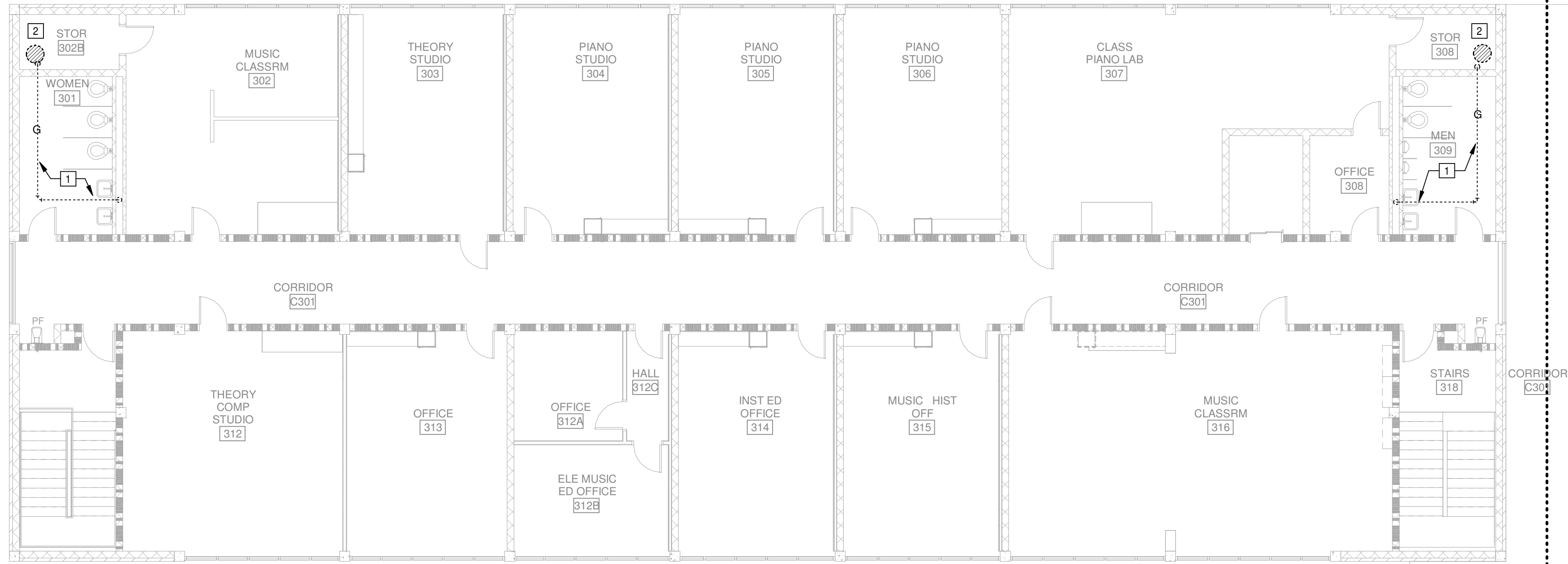
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VERIFY SCALE  
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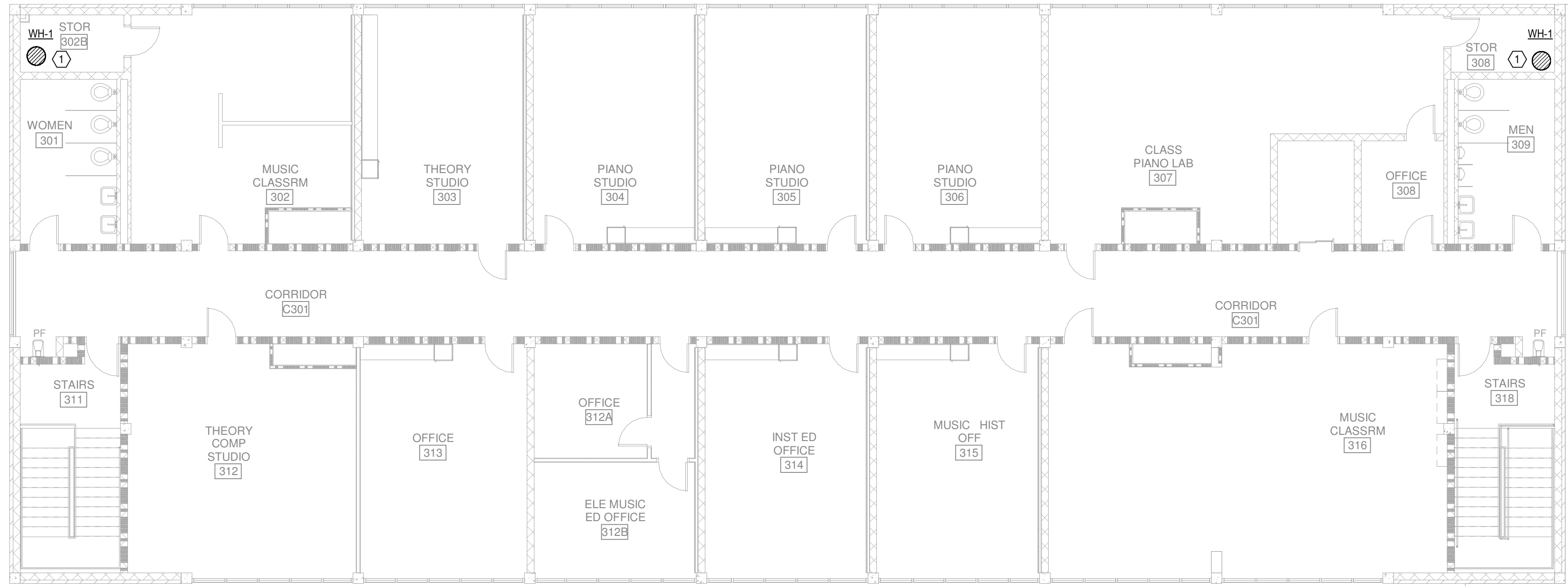
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1 LEVEL 3 PLAN - DEMOLITION PART B - PLUMBING  
SCALE: 1/8" = 1'-0"

CLOSELY COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF NEW WH-1'S

CLOSELY COORDINATE WITH ELECTRICAL CONTRACTOR FOR INSTALLATION OF NEW WH-1'S



2 LEVEL 3 PLAN - RENOVATION PART B - PLUMBING  
SCALE: 1/8" = 1'-0"

**GENERAL PLUMB. DEMO. NOTES**

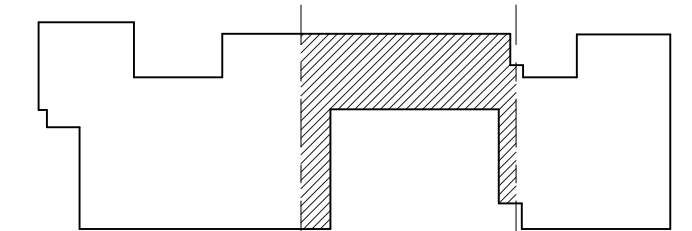
1. FIELD VERIFY EXISTING PLUMBING FIXTURE LOCATIONS, TYPE ETC- VERIFY EXISTING PLUMBING PIPING LOCATIONS, SIZES, ETC.
2. CUT WALLS, FLOORS OR CEILINGS AS REQUIRED TO INSTALL NEW PIPING. ALL FURRING AND REPAIRING SHALL BE BY THE GENERAL CONTRACTOR. COORDINATE REQUIREMENTS WITH THE GENERAL CONTRACTOR.
3. REWORK EXISTING WATER, SANITARY, ACID WASTE, AND VENT PIPING AS REQUIRED TO INSTALL NEW PLUMBING FIXTURES.
4. WHERE EXISTING FIXTURES AND EQUIPMENT ARE REMOVED AND NOT REPLACED, CAP ALL PIPING WITHIN WALLS, FLOORS OR CEILINGS ARE REQUIRED FOR CONCEALMENT.
5. REMOVE ALL EXPOSED EXISTING PIPING WHICH IS DEEMED INOPERABLE AS A RESULT OF THIS CONTRACT UNLESS SHOWN OR NOTED OTHERWISE.
6. EXISTING PIPE, TO WHICH NEW PIPE IS CONNECTED, SHALL BE RODDED, FLUSHED AND CLEANED FROM POINT OF CONNECTION TO MAIN OUTSIDE BUILDING.
7. EXISTING FLOOR DRAINS WITHIN SCOPE OF CONSTRUCTION SHALL BE THOROUGHLY CLEANED AND BUFFED. EXISTING PIPING SHALL BE RODDED AND CLEANED TO THE POINT OF CONNECTION TO THE MAIN.
8. ALL PLUMBING FIXTURES, VALVES, PIPING, AND EQUIPMENT WHICH ARE TO BE REMOVED AND NOT RELOCATED SHALL BECOME THE PROPERTY OF THE OWNER AND DELIVERED TO STORAGE ON SITE AS DIRECTED BY THE OWNER.

**PLUMBING DEMO. KEYED NOTES**

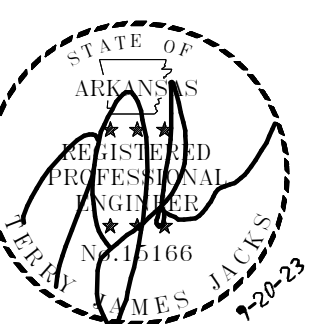
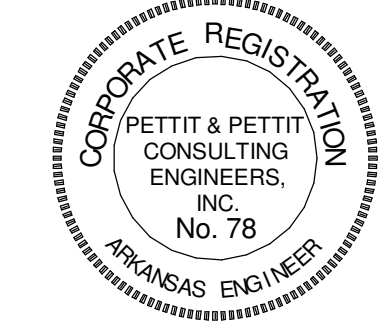
1. DEMOLISH EXISTING GAS LINE.
2. DISCONNECT AND DEMOLISH EXISTING GAS WATER HEATER. DEMOLISH EXISTING GAS LINE. PREP ALL OTHER EXISTING WATER LINES FOR CONNECTION TO NEW ELECTRIC WATER HEATER.
3. DEMOLISH GAS LINE BACK AND CAP BEFORE IT REACHES THE CORRIDOR.

**PLUMBING KEYED NOTES.**

1. EXTEND AND CONNECT EXISTING 3/4" HW AND CW AND HOT WATER RETURN PIPING IN THIS LOCATION TO NEW ELECTRIC WH-1.



**KEY PLAN - AREA "B"**



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Date: 09/20/23  
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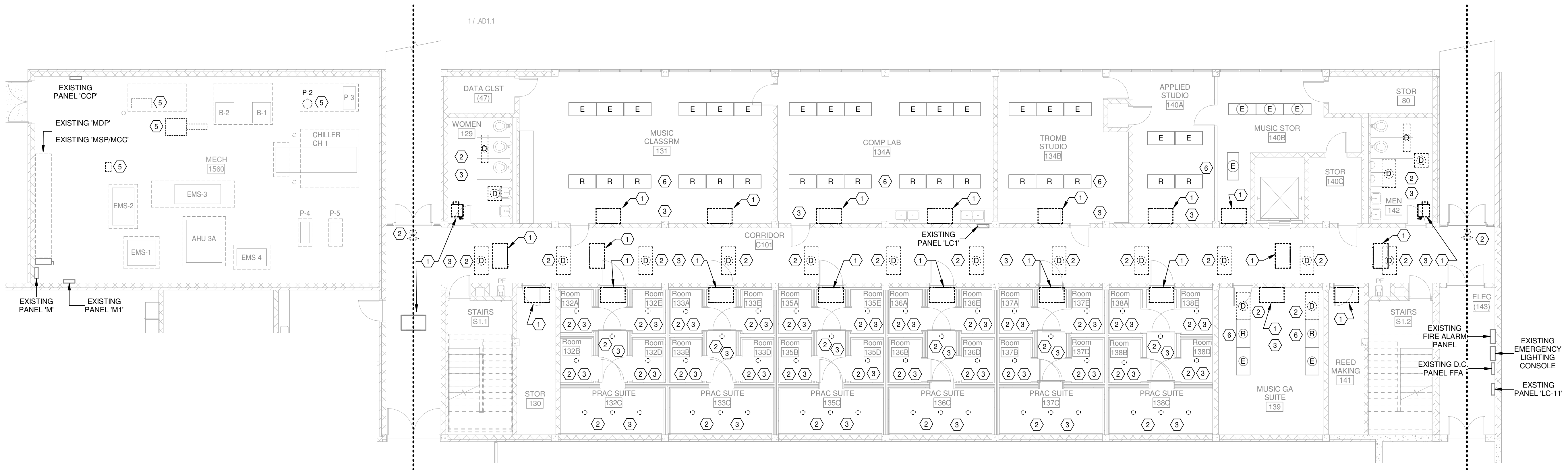
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Sheet Number:  
**ED 1.1**  
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DEMOLITION KEYED NOTES

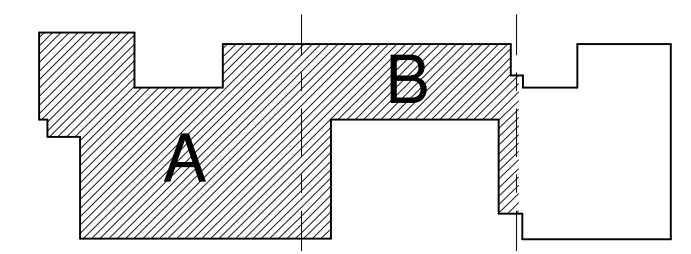
- 1 ALL ELECTRICAL DEVICES, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED HVAC EQUIPMENT. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED. LABEL CIRCUIT AS SPARE IF REQUIRED.
- 2 DEMOLISHED EXISTING LIGHTING FIXTURES IN THIS SPACE. CIRCUIT AND SWITCHING SHALL BE REUSED. SEE NEW PLANS FOR MORE DETAIL.  
THE CEILING IN THESE SPACES ARE BEING REMOVED AND RE-INSTALLED FOR INSTALLATION OF NEW HVAC DUCTWORK. THE CONTRACTOR SHALL REMOVE AND RE-INSTALL ALL LOW VOLTAGE WHERE CEILINGS ARE BEING REPLACED IN EXACT LOCATION. EXTEND WIRE AND CONDUIT AS NEEDED. ALL DEVICES SHALL BE PROTECTED DURING CONSTRUCTION. THE CONTRACTOR SHALL REWORK ANY EXISTING CONDUIT AND WIRE AS NEEDED TO INSTALL THE NEW DUCTWORK ABOVE THE CEILING. SOME OF THE DUCTWORK WILL TAKE A SIGNIFICANT AMOUNT OF SPACE ABOVE THE CEILING. CONDUIT WILL HAVE TO BE RE-WORKED TO ACCOMMODATE NEW DUCTWORK.
- 3 ALL ELECTRICAL DEVICE, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED AH-6 COMPLETELY. LABEL CIRCUIT AS SPARE. SEE SHEET E1.04 FOR MORE INFORMATION ON.
- 4 DEMOLISH EXISTING PUMP. REMOVE ALL ELECTRICAL DEVICES, CONDUIT AND WIRE COMPLETELY. LABEL CIRCUIT HAS SPARE.
- 5 EXISTING LIGHT FIXTURES 'R' TO BE RELOCATED AS NEEDED TO INSTALL NEW FURR DOWN. EXTEND WIRE AND CONDUIT AS NEEDED.
- 6 RELOCATE ALL EXISTING ELECTRICAL DEVICE TO THE NEW CHASE WALL. EXTEND WIRE AND CONDUIT AS NEEDED.

GENERAL DEMOLITION NOTES

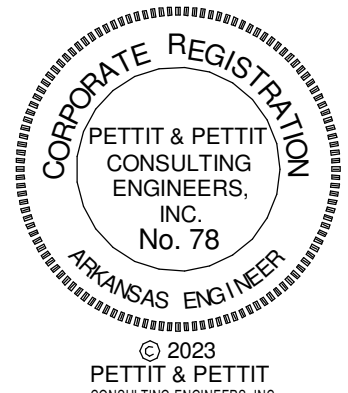
- 1 THE ELECTRICAL CONTRACTOR SHALL BE REQUIRED TO VISIT THE SITE TO FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS PRIOR TO BID.
- 2 THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL DEMOLITION INDICATED ON THESE DRAWINGS. ALL WIRING DEVICES, LIGHT FIXTURES, WIRE, & CONDUIT THAT IS TO BE REMOVED SHALL BE STORED AS DIRECTED BY THE OWNER OR RELOCATED AS SHOWN ON THE NEW FLOOR PLAN. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED, AND ALL OUTAGES WHICH MAY RESULT SHALL BE COORDINATED WITH THE OWNER PRIOR TO THE WORK.
- 3 ALL EXISTING BRANCH CIRCUITS NOT USED SHALL BE REMOVED BACK TO SERVING PANELBOARD. THE CIRCUIT BREAKERS SHALL BE LABELED AS SPARE.
- 4 DASHED LINES INDICATE EXISTING FIXTURES, EQUIPMENT, DEVICES, ETC., TO BE DEMOLISHED UNLESS OTHERWISE NOTED.
- 5 HALF TONE LINES INDICATED EXISTING FIXTURES, EQUIPMENT, DEVICES ETC., TO REMAIN, UNLESS OTHERWISE NOTED.



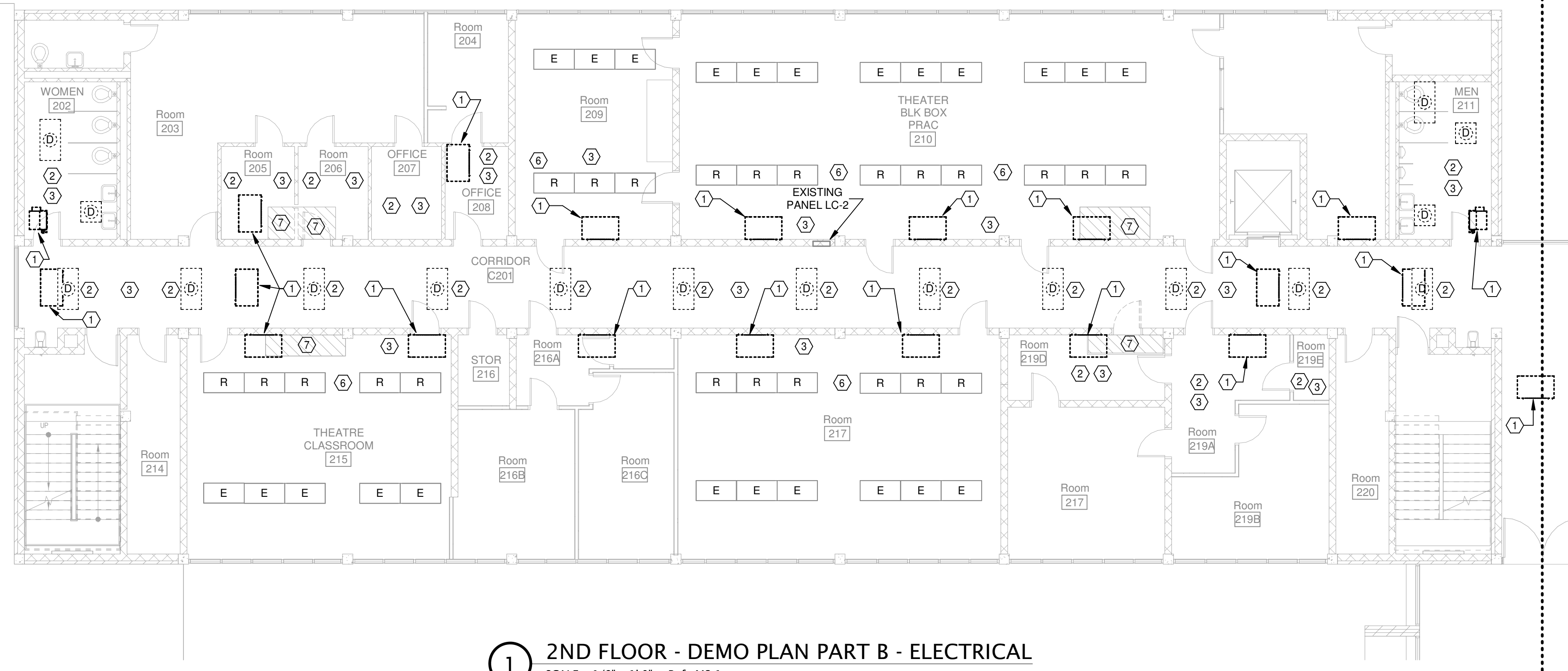
1 1ST FLOOR - DEMO PLAN PART A AND B - ELECTRICAL  
SCALE: 1/8" = 1'-0" Ref: M2.1



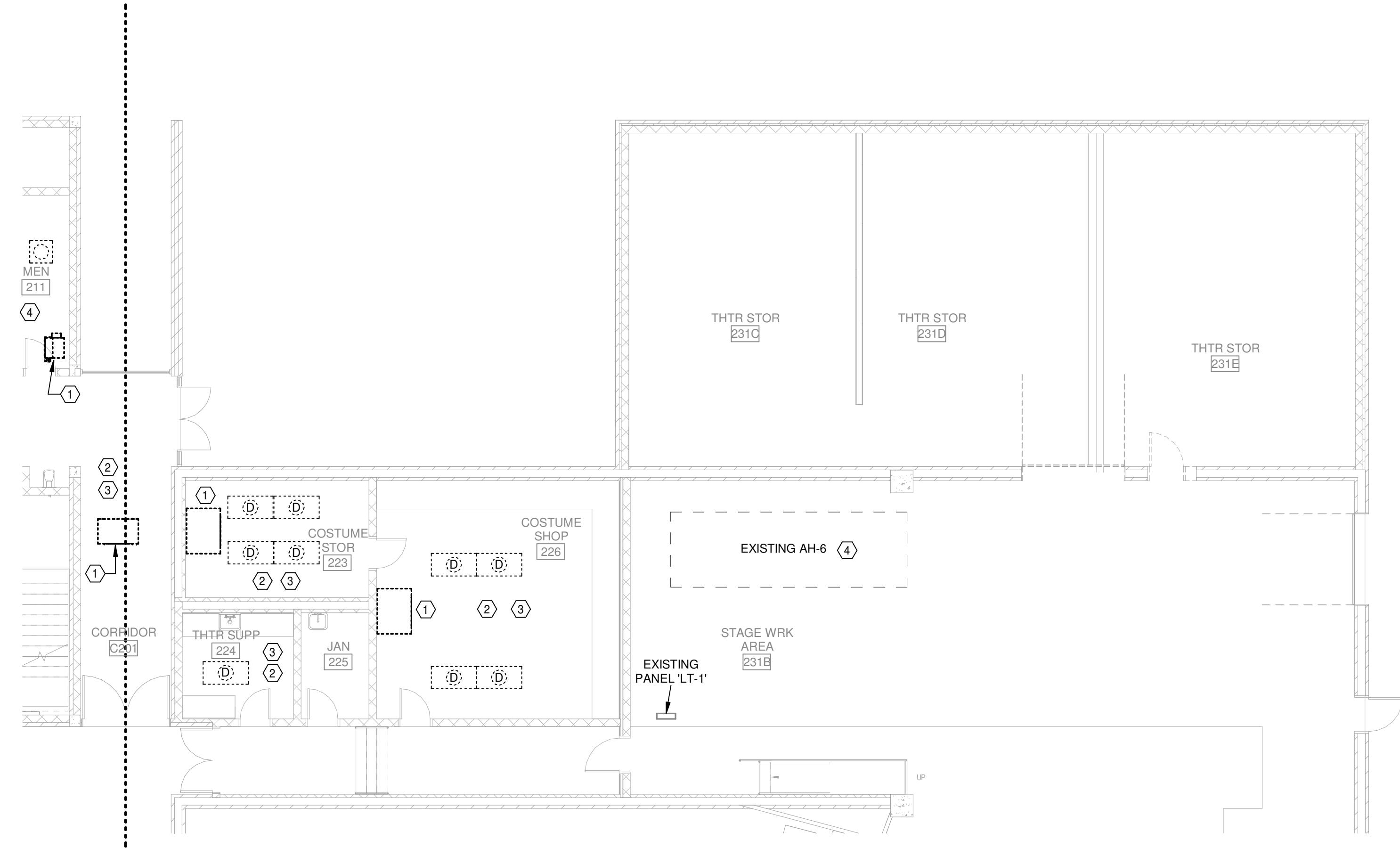
KEY PLAN - AREA "A" AND "B"



#	Date	Description

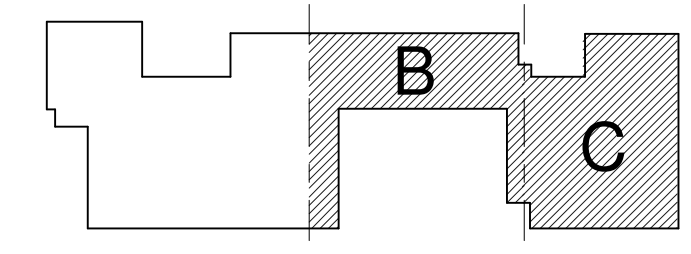


**1 2ND FLOOR - DEMO PLAN PART B - ELECTRICAL**  
 SCALE: 1/8" = 1'-0" Ref: M2.1

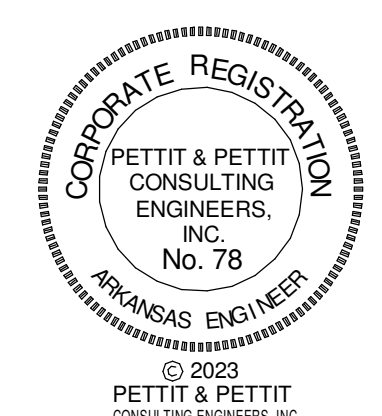


**2 2ND FLOOR - DEMO PLAN C - ELECTRICAL**  
 SCALE: 1/8" = 1'-0" Ref: M2.1

- ### DEMOLITION KEYED NOTES
- 1 ALL ELECTRICAL DEVICES, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED HVAC EQUIPMENT. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED. LABEL CIRCUIT AS SPARE IF REQUIRED.
  - 2 DEMOLISHED EXISTING LIGHTING FIXTURES IN THIS SPACE. CIRCUIT AND SWITCHING SHALL BE REUSED. SEE NEW PLANS FOR MORE DETAIL.
  - 3 THE CEILING IN THESE SPACES ARE BEING REMOVED AND RE-INSTALLED FOR INSTALLATION OF NEW HVAC DUCTWORK. THE CONTRACTOR SHALL REMOVE AND RE-INSTALL ALL LOW VOLTAGE WHERE CEILINGS ARE BEING REPLACED IN EXACT LOCATION. EXTEND WIRE AND CONDUIT AS NEEDED. ALL DEVICES SHALL BE PROTECTED DURING CONSTRUCTION. THE CONTRACTOR SHALL REWORK ANY EXISTING CONDUIT AND WIRE AS NEEDED TO INSTALL THE NEW DUCTWORK ABOVE THE CEILING. SOME OF THE DUCTWORK WILL TAKE A SIGNIFICANT AMOUNT OF SPACE ABOVE THE CEILING. CONDUIT WILL HAVE TO BE RE-WORKED TO ACCOMMODATE NEW DUCTWORK.
  - 4 ALL ELECTRICAL DEVICE, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED AH-6 COMPLETELY. LABEL CIRCUIT AS SPARE. SEE SHEET E1.04 FOR MORE INFORMATION ON.
  - 5 DEMOLISH EXISTING PUMP. REMOVE ALL ELECTRICAL DEVICES, CONDUIT AND WIRE COMPLETELY. LABEL CIRCUIT HAS SPARE.
  - 6 EXISTING LIGHT FIXTURES 'R' TO BE RELOCATED AS NEEDED TO INSTALL NEW FURR DOWN. EXTEND WIRE AND CONDUIT AS NEEDED.
  - 7 RELOCATE ALL EXISTING ELECTRICAL DEVICE TO THE NEW CHASE WALL. EXTEND WIRE AND CONDUIT AS NEEDED.



**KEY PLAN - AREA "B" AND "C"**



Date: 09/20/23  
 Title: 2ND FLOOR - DEMO PLAN - ELECTRICAL  
 Sheet Number:  
**ED 1.2**

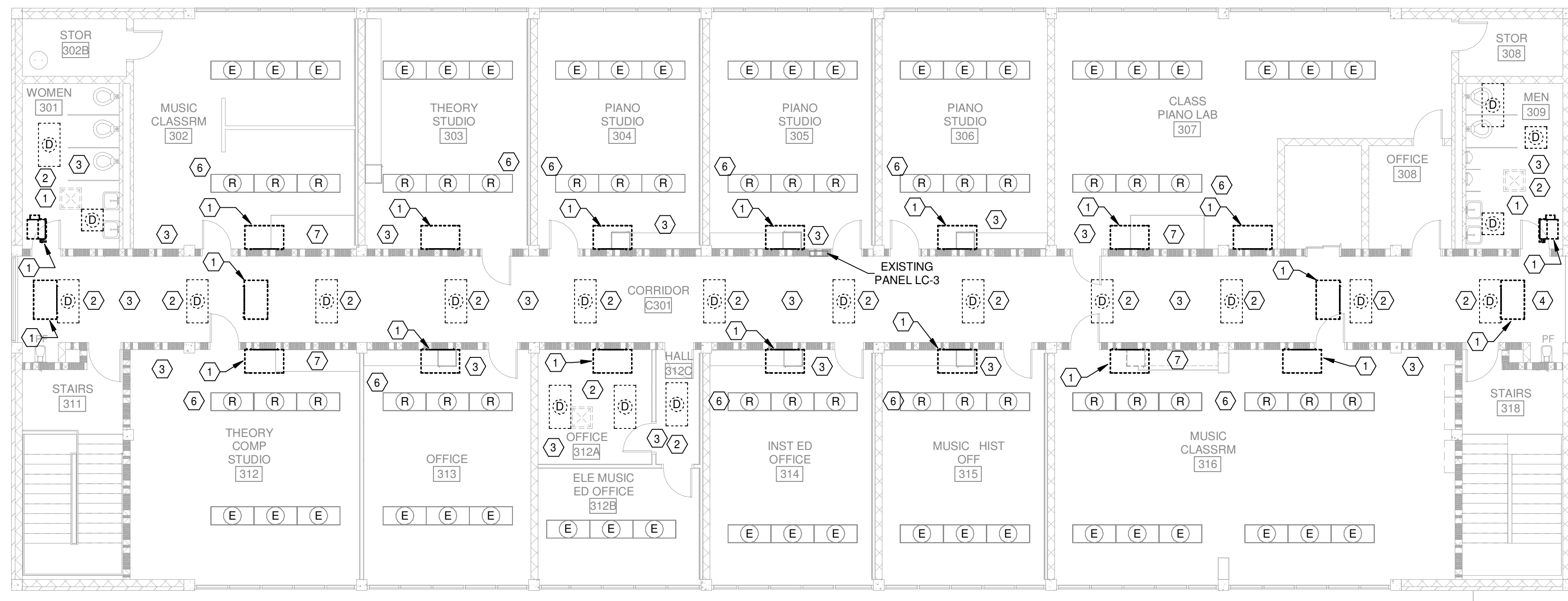
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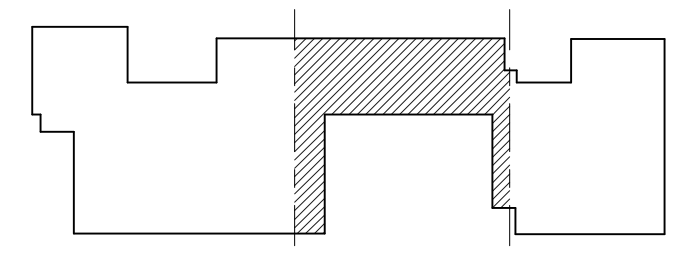
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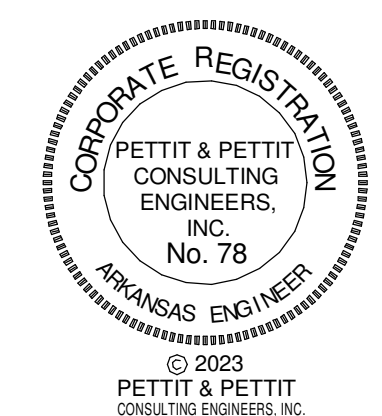


**1** 3RD FLOOR - DEMO PLAN PART B - ELECTRICAL  
 SCALE: 1/8" = 1'-0" Ref: M2.1

- ### DEMOLITION KEYED NOTES
- 1 ALL ELECTRICAL DEVICES, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED HVAC EQUIPMENT. APPROPRIATE MEASURES SHALL BE TAKEN TO ASSURE CONTINUITY OF EXISTING CIRCUITS WHERE REQUIRED. LABEL CIRCUIT AS SPARE IF REQUIRED.
  - 2 DEMOLISHED EXISTING LIGHTING FIXTURES IN THIS SPACE. CIRCUIT AND SWITCHING SHALL BE REUSED. SEE NEW PLANS FOR MORE DETAIL.
  - 3 THE CEILING IN THESE SPACES ARE BEING REMOVED AND RE-INSTALLED FOR INSTALLATION OF NEW HVAC DUCTWORK. THE CONTRACTOR SHALL REMOVE AND RE-INSTALL ALL LOW VOLTAGE WHERE CEILINGS ARE BEING REPLACED IN EXACT LOCATION. EXTEND WIRE AND CONDUIT AS NEEDED. ALL DEVICES SHALL BE PROTECTED DURING CONSTRUCTION. THE CONTRACTOR SHALL REWORK ANY EXISTING CONDUIT AND WIRE AS NEEDED TO INSTALL THE NEW DUCTWORK ABOVE THE CEILING. SOME OF THE DUCTWORK WILL TAKE A SIGNIFICANT AMOUNT OF SPACE ABOVE THE CEILING. CONDUIT WILL HAVE TO BE RE-WORKED TO ACCOMMODATE NEW DUCTWORK.
  - 4 ALL ELECTRICAL DEVICES, CONDUIT AND WIRE SHALL BE REMOVED FROM DEMOLISHED AH-6 COMPLETELY. LABEL CIRCUIT AS SPARE. SEE SHEET E1.04 FOR MORE INFORMATION ON.
  - 5 DEMOLISH EXISTING PUMP. REMOVE ALL ELECTRICAL DEVICES, CONDUIT AND WIRE COMPLETELY. LABEL CIRCUIT AS SPARE.
  - 6 EXISTING LIGHT FIXTURES 'R' TO BE RELOCATED AS NEEDED TO INSTALL NEW FURR DOWN. EXTEND WIRE AND CONDUIT AS NEEDED.
  - 7 RELOCATE ALL EXISTING ELECTRICAL DEVICES TO THE NEW CHASE WALL. EXTEND WIRE AND CONDUIT AS NEEDED.



**KEY PLAN - AREA "B"**



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 TITLE: 3RD FLOOR - DEMO PLAN PART B - ELECTRICAL  
 SHEET NUMBER: **ED 1.3**  
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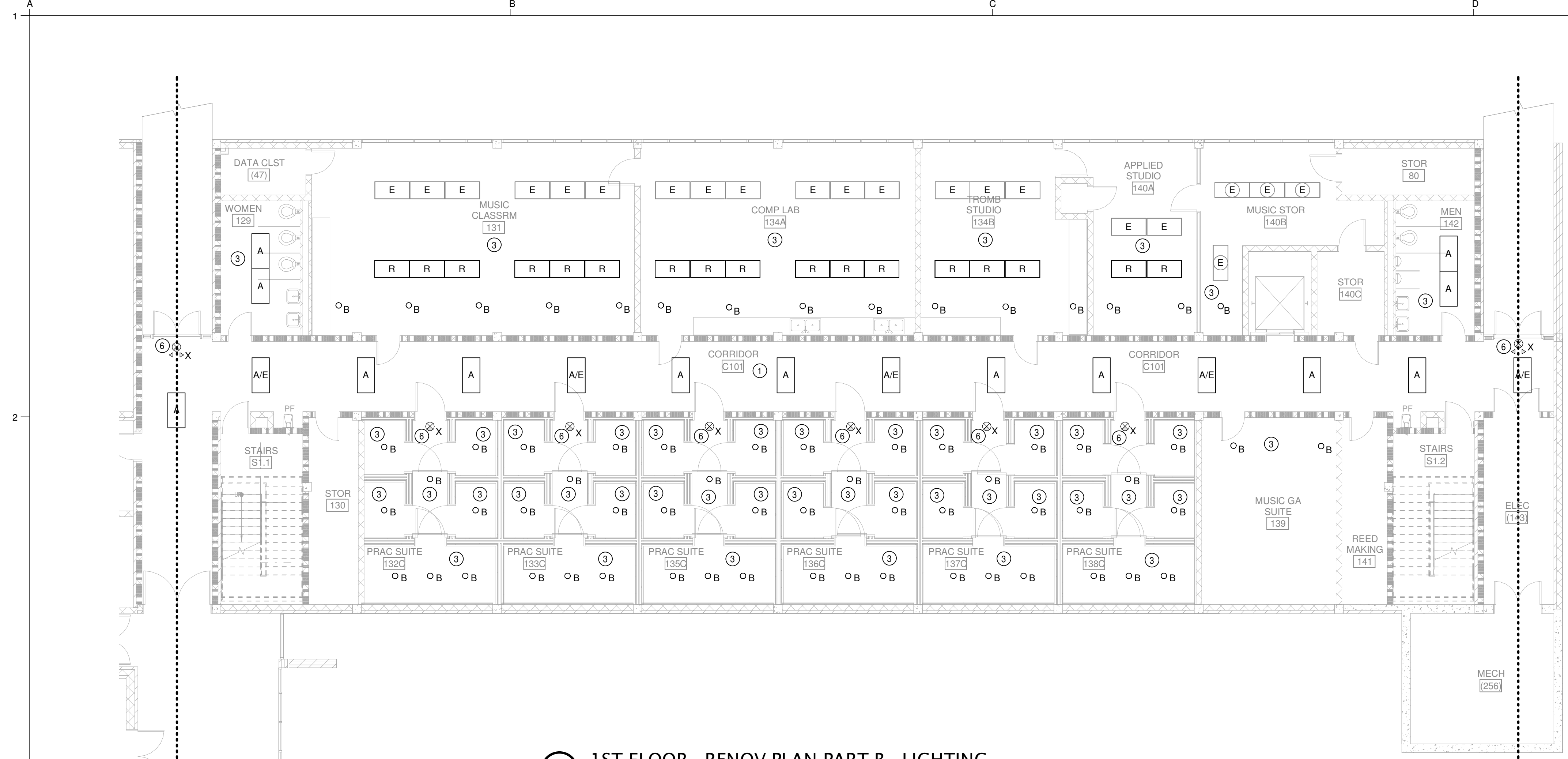
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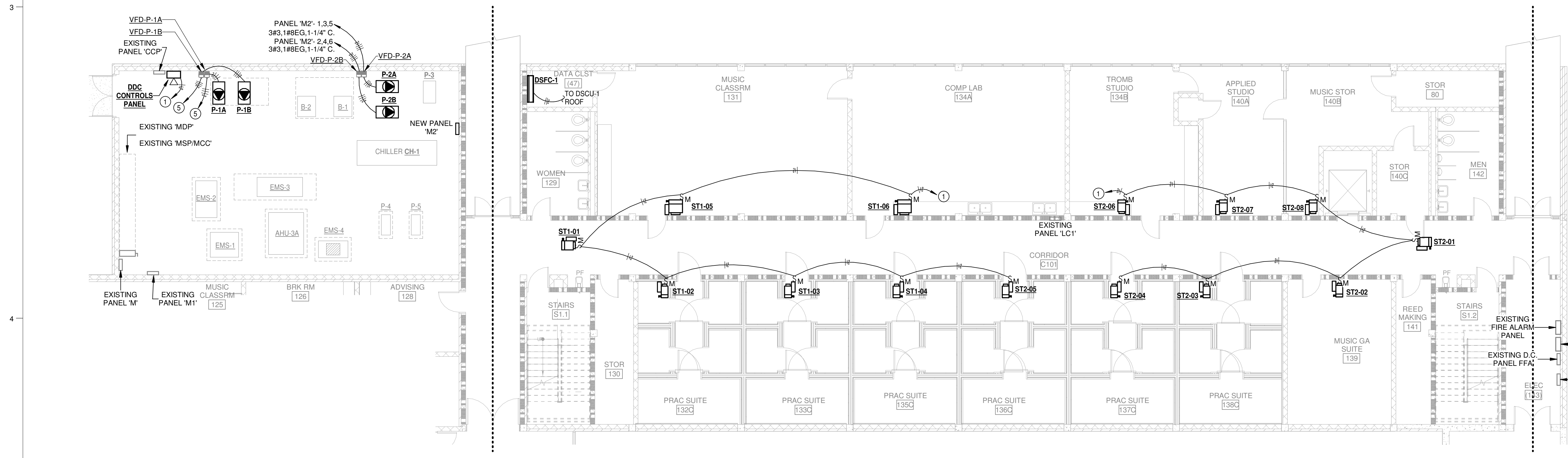
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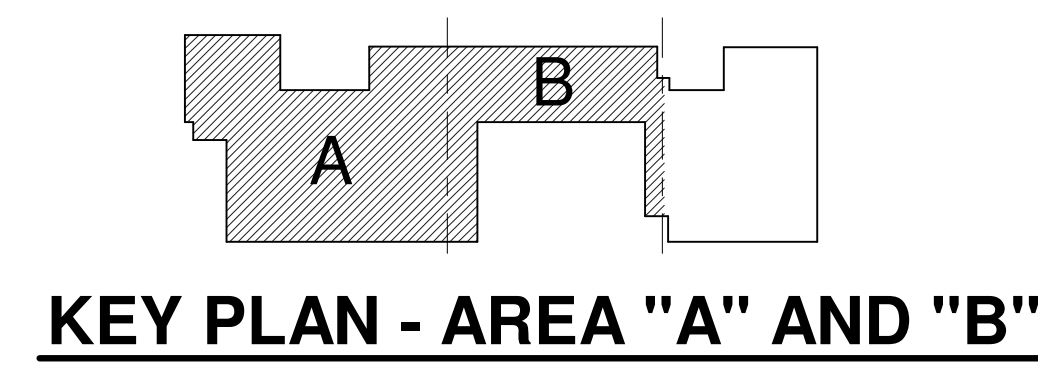
LIGHT FIXTURE SCHEDULE				
TYPE MARK	MANUFACTURER	MODEL	ELECTRICAL DATA	DESCRIPTION
A	COOPER	24FP4750C	120 V/1-27 VA	2X4 LED FLAT PANEL
A/E	COOPER	24FP4750C-EL14W	120 V/1-27 VA	2X4 LED FLAT PANEL WITH EMERGENCY
B	COOPER	SMD6 LED	120 V/1-10 VA	SURFACE MOUNTED DOWNLIGHT. COORDINATE EXACT LOCATION WITH ARCHITECT.
E	EXISTING	EXISTING	<varies>	EXISTING FIXTURE TO REMAIN
R	EXISTING	EXISTING	<varies>	EXISTING FIXTURE TO BE RELOCATED. COORDINATE EXACT LOCATION WITH ARCHITECT.
X	LITHONIA	ECBR LED M6	120 V/1-1 VA	COMBO EXIT.

- ### ELECTRICAL KEYED NOTES
- CONNECT TO NEAREST 20A 120V SPARE CIRCUIT.
  - PROVIDE AND INSTALL 60A/3P BREAKER IN EXISTING PANEL LT-1 FOR NEW AH-6. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. VFD PROVIDED BY DIVISION 23.
  - CONNECT NEW FIXTURE IN SPACE TO EXISTING LIGHTING CIRCUIT AND SWITCHING.
  - CONNECT TO SPARE IN EXISTING 'MSP'. PROVIDE AND INSTALL 30A/2P BREAKER. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - CONNECT TO SPARE IN EXISTING 'MCC'. PROVIDE AND INSTALL 60A/3P BREAKER/FUSE. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - CONNECT NEW COMBO EXIT SIGN TO THE EXISTING LIGHTING CIRCUIT.
  - CONNECT THE NEW DUCT DETECTORS TO THE EXISTING SIMPLEX 4020 FIRE ALARM SYSTEM. DUCT DETECTORS SHALL SHUT UNIT DOWN UPON ACTIVATION.

**1** 1ST FLOOR - RENOV PLAN PART B - LIGHTING  
SCALE: 1/8" = 1'-0" Ref. M2.1



**2** 1ST FLOOR - RENOV PLAN PART A AND B - SYSTEMS  
SCALE: 1/8" = 1'-0" Ref. M2.1



**KEY PLAN - AREA "A" AND "B"**

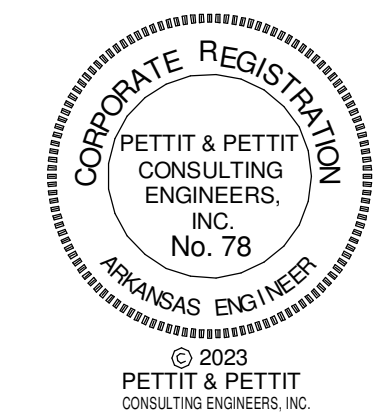
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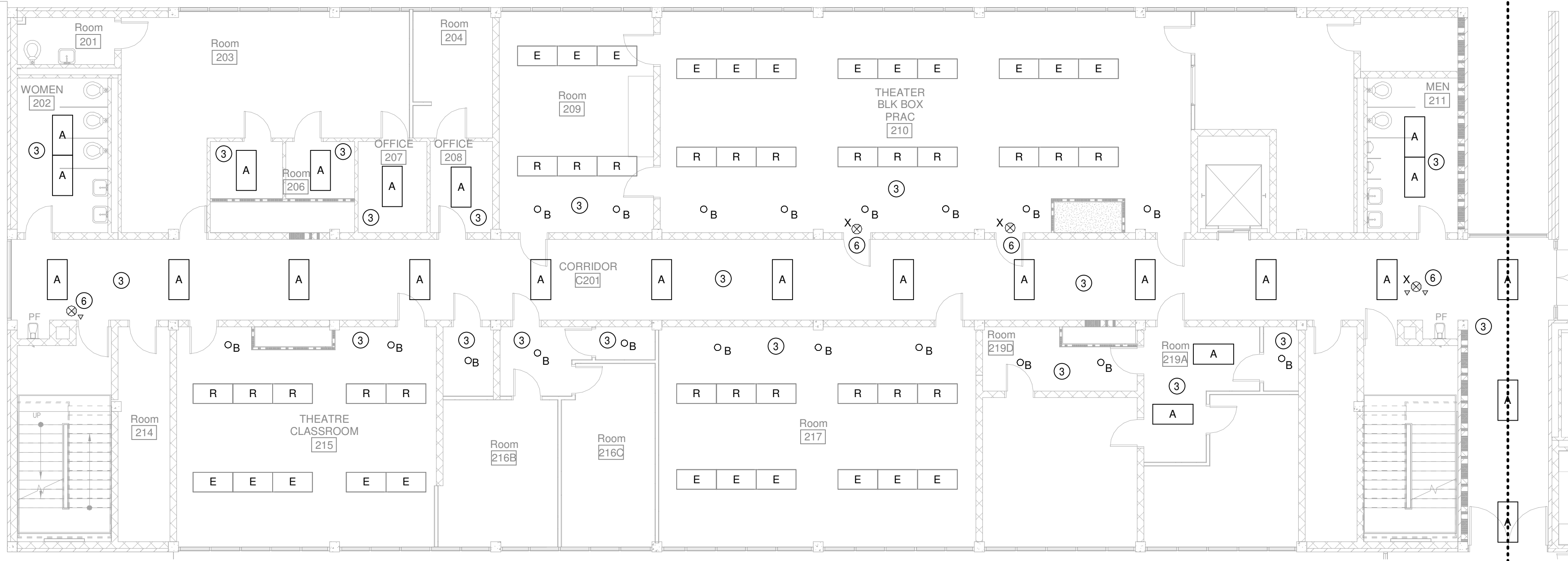
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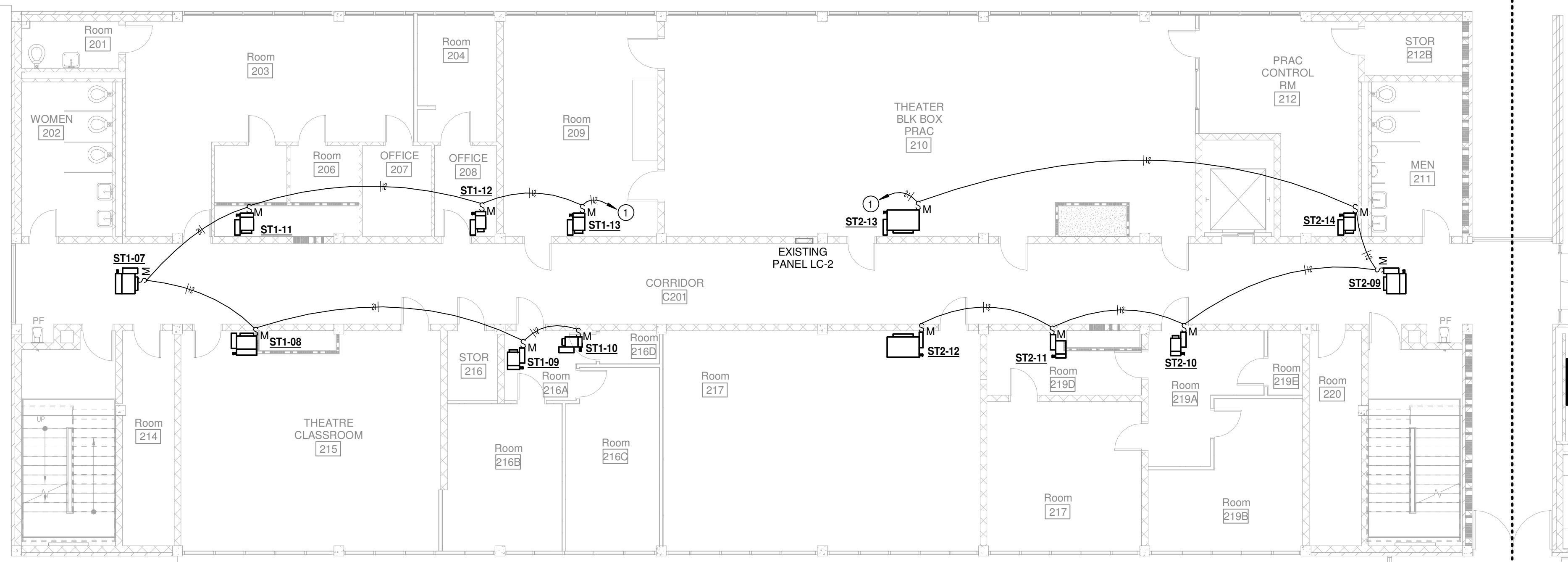
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 Title: 1ST FLOOR - RENOV PLAN - ELECTRICAL  
 Sheet Number:  
**E1.01**  
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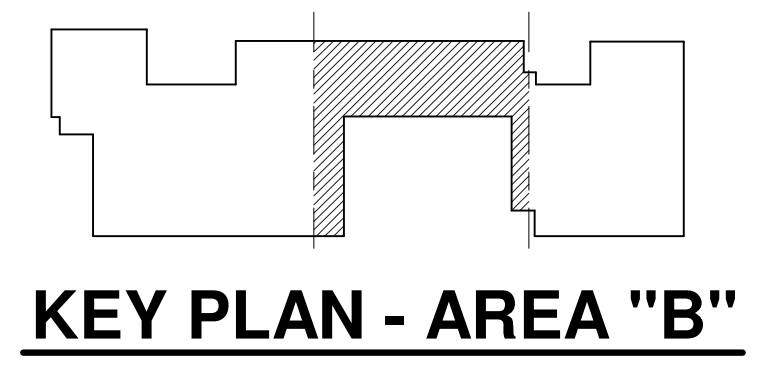


**1** 2ND FLOOR - RENOV PLAN PART B - LIGHTING  
SCALE: 1/8" = 1'-0" Ref: M2.1



**2** 2ND FLOOR - RENOV PLAN PART B - SYSTEMS  
SCALE: 1/8" = 1'-0" Ref: M2.1

- ### ELECTRICAL KEYED NOTES
- ① CONNECT TO NEAREST 20A 120V SPARE CIRCUIT.
  - ② PROVIDE AND INSTALL 60A/3P BREAKER IN EXISTING PANEL LT-1 FOR NEW AH-6. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. VFD PROVIDED BY DIVISION 23.
  - ③ CONNECT NEW FIXTURE IN SPACE TO EXISTING LIGHTING CIRCUIT AND SWITCHING.
  - ④ CONNECT TO SPARE IN EXISTING 'MSP'. PROVIDE AND INSTALL 30A/2P BREAKER. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑤ CONNECT TO SPARE IN EXISTING 'MCC'. PROVIDE AND INSTALL 60A/3P BREAKER/FUSE. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑥ CONNECT NEW COMBO EXIT SIGN TO THE EXISTING LIGHTING CIRCUIT.
  - ⑦ CONNECT THE NEW DUCT DETECTORS TO THE EXISTING SIMPLEX 4020 FIRE ALARM SYSTEM. DUCT DETECTORS SHALL SHUT UNIT DOWN UPON ACTIVATION.

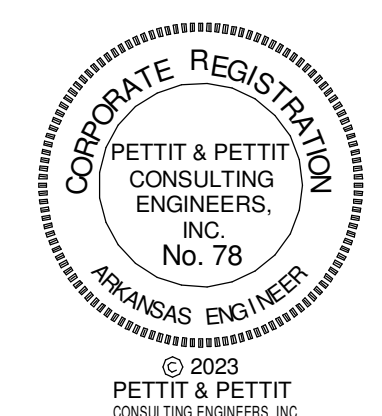
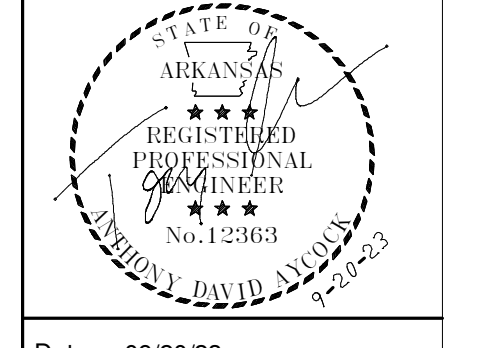


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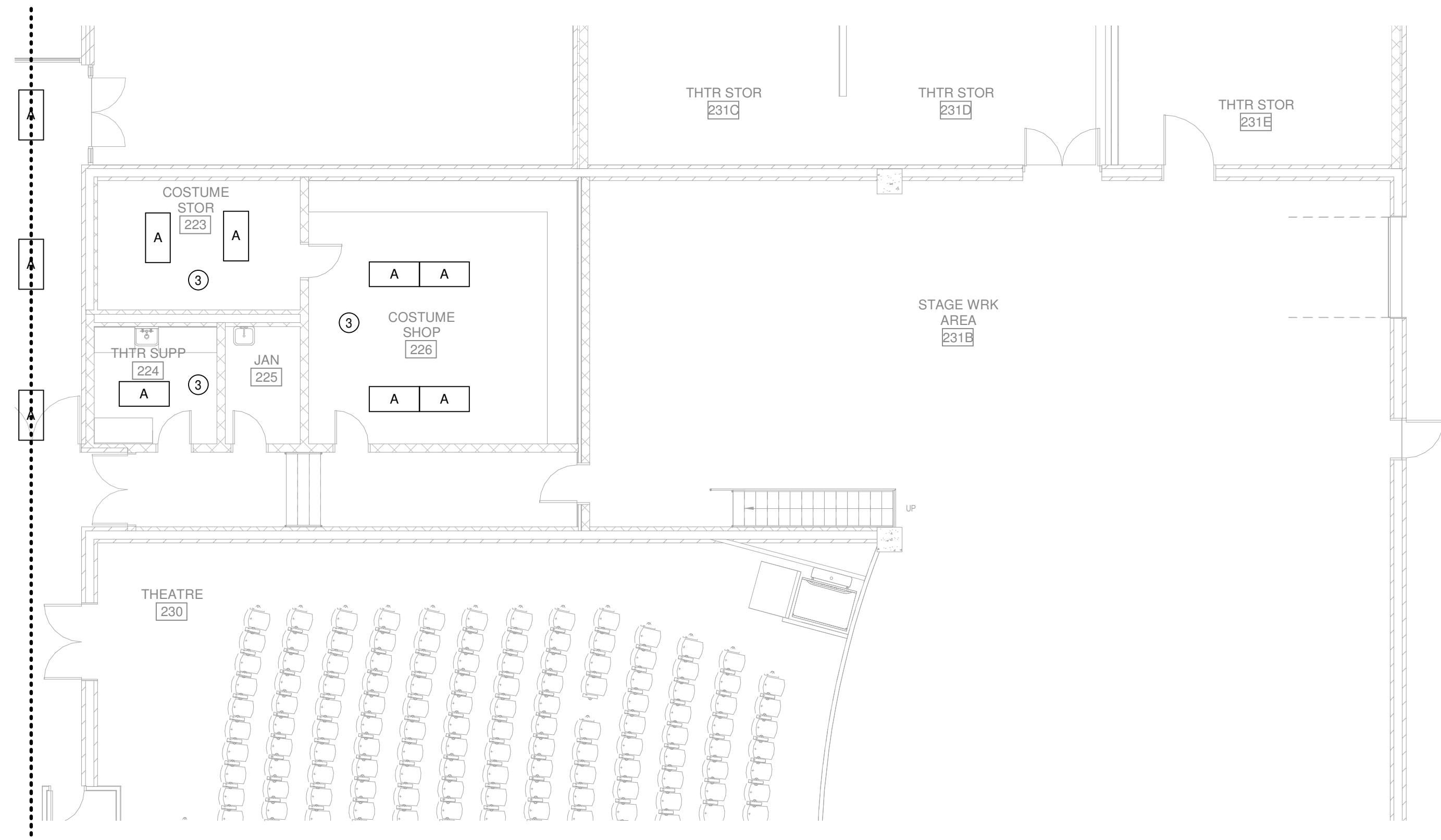
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INCH ON ORIGINAL DRAWING  
0 1 1"



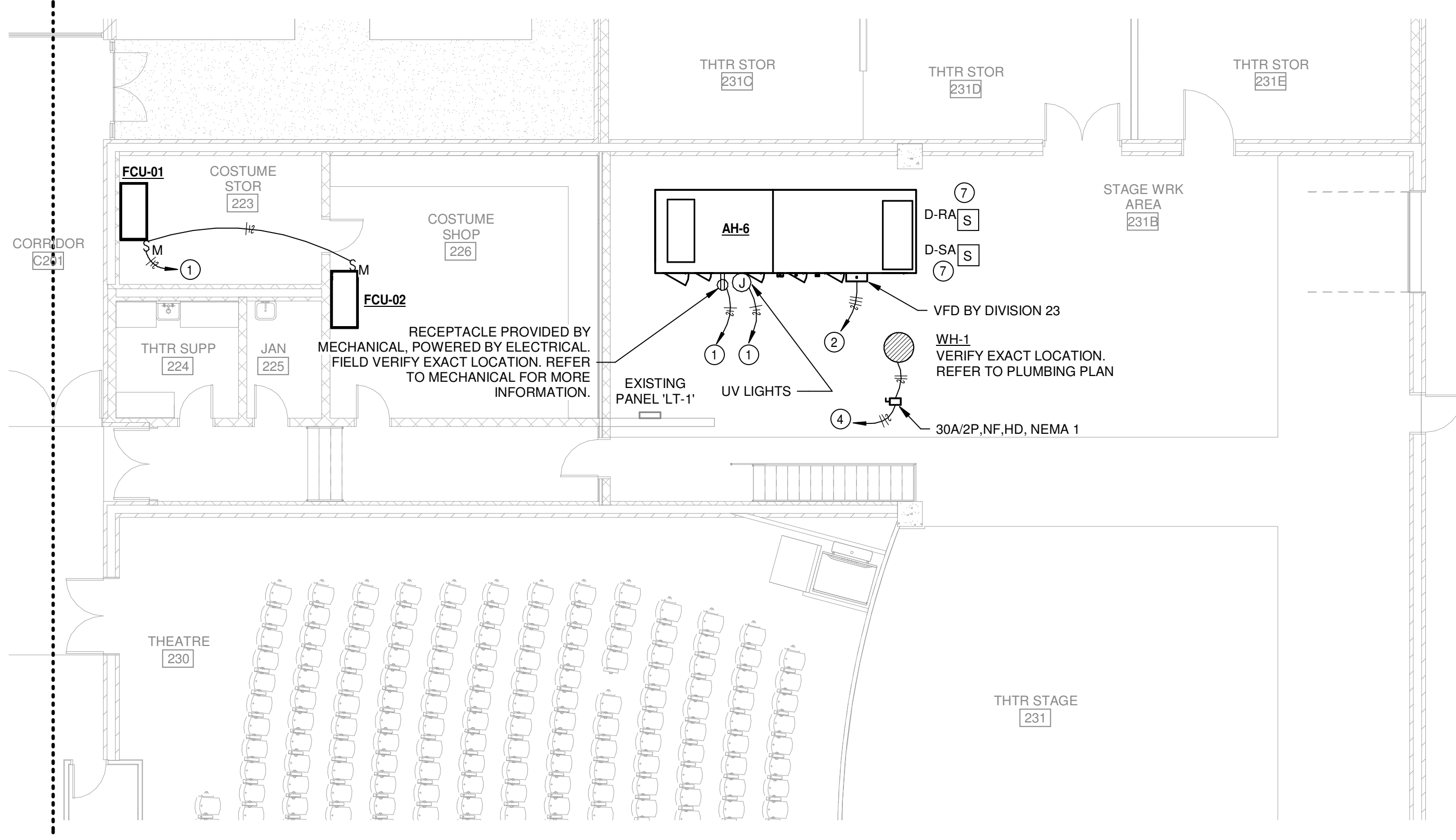
Date: 09/20/23  
Title: 2ND FLOOR - RENOV PLAN PART B - ELECTRICAL  
Sheet Number:  
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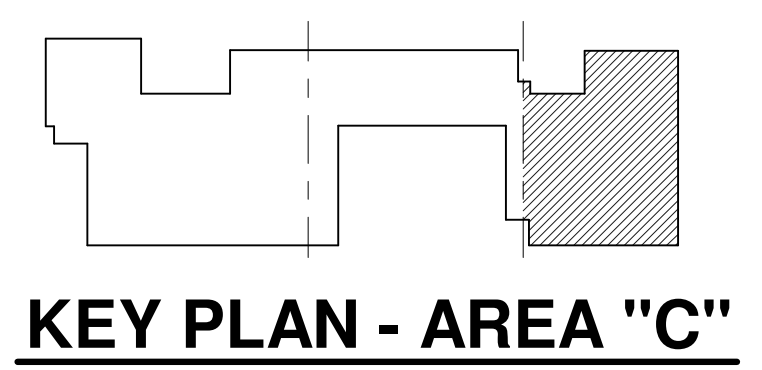


- ### ELECTRICAL KEYED NOTES
- ① CONNECT TO NEAREST 20A 120V SPARE CIRCUIT.
  - ② PROVIDE AND INSTALL 60A/3P BREAKER IN EXISTING PANEL LT-1 FOR NEW AH-6. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. VFD PROVIDED BY DIVISION 23.
  - ③ CONNECT NEW FIXTURE IN SPACE TO EXISTING LIGHTING CIRCUIT AND SWITCHING.
  - ④ CONNECT TO SPARE IN EXISTING 'MSP'. PROVIDE AND INSTALL 30A/2P BREAKER. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑤ CONNECT TO SPARE IN EXISTING 'MCC'. PROVIDE AND INSTALL 60A/3P BREAKER/FUSE. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑥ CONNECT NEW COMBO EXIT SIGN TO THE EXISTING LIGHTING CIRCUIT.
  - ⑦ CONNECT THE NEW DUCT DETECTORS TO THE EXISTING SIMPLEX 4020 FIRE ALARM SYSTEM. DUCT DETECTORS SHALL SHUT UNIT DOWN UPON ACTIVATION.

**1** 2ND FLOOR - RENOV PLAN - PART C - LIGHTING  
 SCALE: 1/8" = 1'-0" Ref: M2.1



**2** 2ND FLOOR - RENOV PART C - SYSTEMS  
 SCALE: 1/8" = 1'-0" Ref: M2.1



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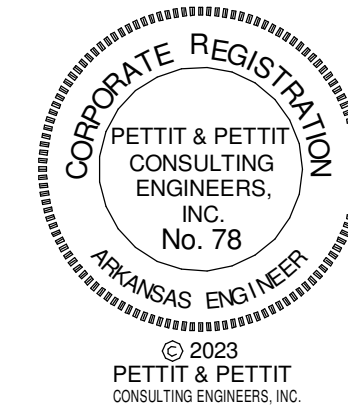
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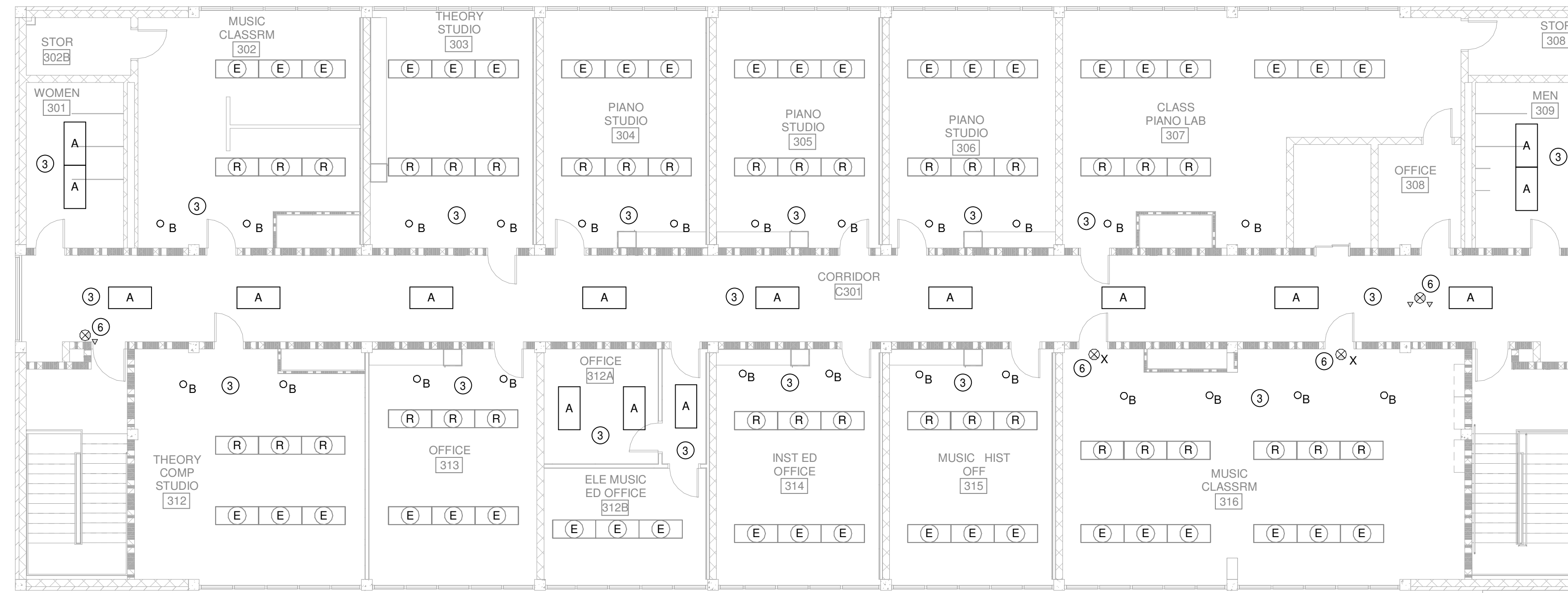
VERIFY SCALE  
 INCH ON ORIGINAL DRAWING  
 0" = 1"



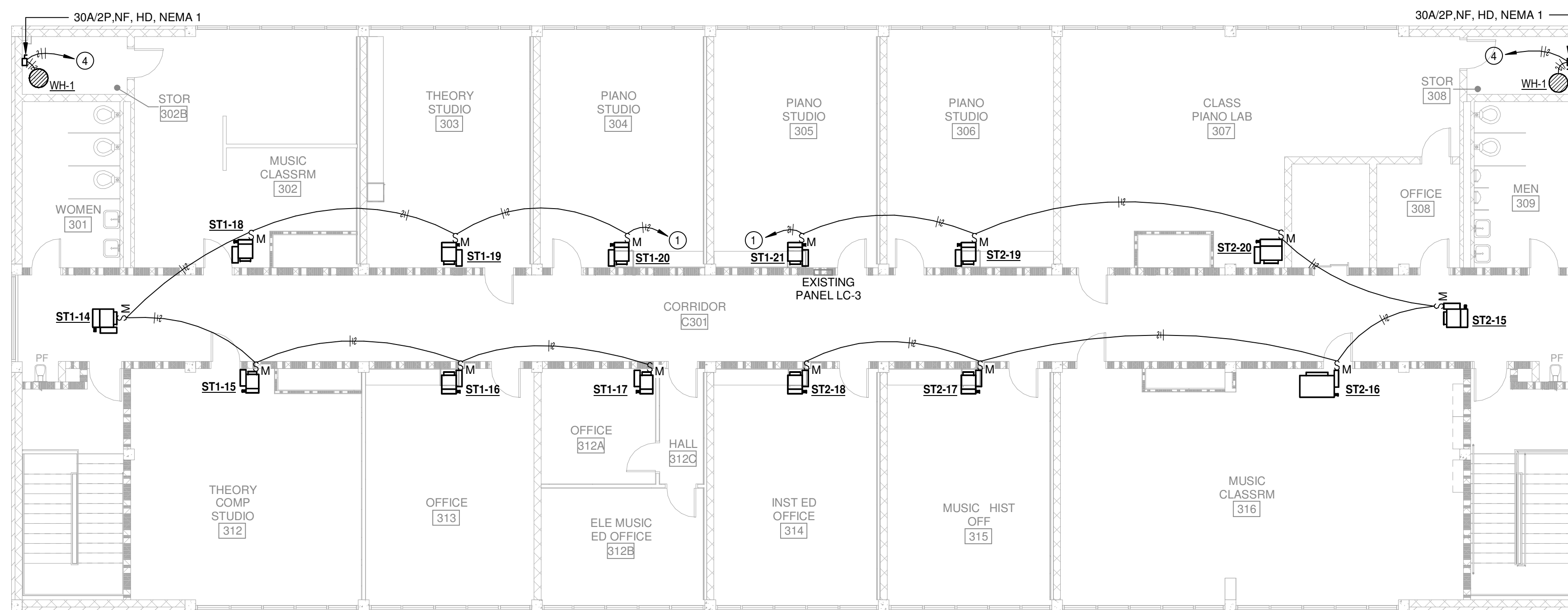
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 Sheet Number:  
**E1.03**  
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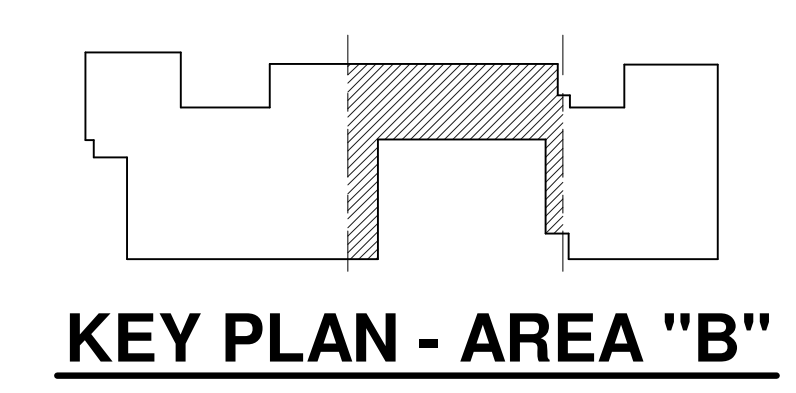


**1** 3RD FLOOR - RENOV PLAN PART B - LIGHTING  
SCALE: 1/8" = 1'-0" Ref: M2.1



**2** 3RD FLOOR - RENOV PLAN PART B - SYSTEMS  
SCALE: 1/8" = 1'-0" Ref: M2.1

- ### ELECTRICAL KEYED NOTES
- ① CONNECT TO NEAREST 20A 120V SPARE CIRCUIT.
  - ② PROVIDE AND INSTALL 60A/3P BREAKER IN EXISTING PANEL LT-1 FOR NEW AH-6. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. VFD PROVIDED BY DIVISION 23.
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  - ④ CONNECT TO SPARE IN EXISTING 'MSP'. PROVIDE AND INSTALL 30A/2P BREAKER. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑤ CONNECT TO SPARE IN EXISTING 'MCC'. PROVIDE AND INSTALL 60A/3P BREAKER/FUSE. WIRE SIZE SHALL BE 3#6, 1#10EG, 1" C. CONTRACTOR SHALL VERIFY ALL INSTALLATION REQUIREMENTS PRIOR TO BID. THIS MAY REQUIRE MODIFYING THE EXISTING GEAR.
  - ⑥ CONNECT NEW COMBO EXIT SIGN TO THE EXISTING LIGHTING CIRCUIT.
  - ⑦ CONNECT THE NEW DUCT DETECTORS TO THE EXISTING SIMPLEX 4020 FIRE ALARM SYSTEM. DUCT DETECTORS SHALL SHUT UNIT DOWN UPON ACTIVATION.



KEY PLAN - AREA "B"

VERIFY SCALE  
INCH ON ORIGINAL DRAWING  
0 1 1"

STATE OF ARKANSAS  
REGISTERED PROFESSIONAL ENGINEER  
No. 123463  
DAVID J. JONES  
8-24-2023

DATE: 09/20/23  
TITLE: 3RD FLOOR - RENOV PLAN PART B - ELECTRICAL  
SHEET NUMBER:  
**E1.04**  
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ROOF PLAN GENERAL NOTES

- HVAC BRANCH CIRCUIT SHALL BE ROUTED THROUGH CURBS. ALL CONDUIT ON ROOF SHALL BE RIGID STEEL CONDUIT. ALL CONDUIT SHALL BE INSTALLED ON COPPER B-LINE C/PORIT RUBBER BLOCKS. NOT CONDUIT TO BE MOUNTED DIRECTLY ON ROOF.



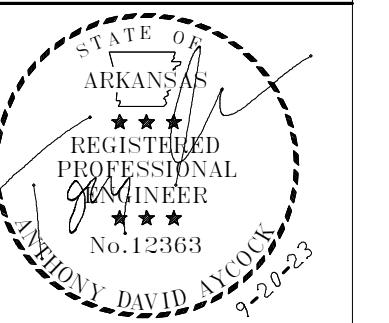
1 ROOF PLAN - SYSTEMS  
SCALE: 1/8" = 1'-0" Ref: M2.1



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Date: 09/20/23

Title: PARTIAL ROOF PLAN - SYSTEMS

Sheet Number:

**E1.05**

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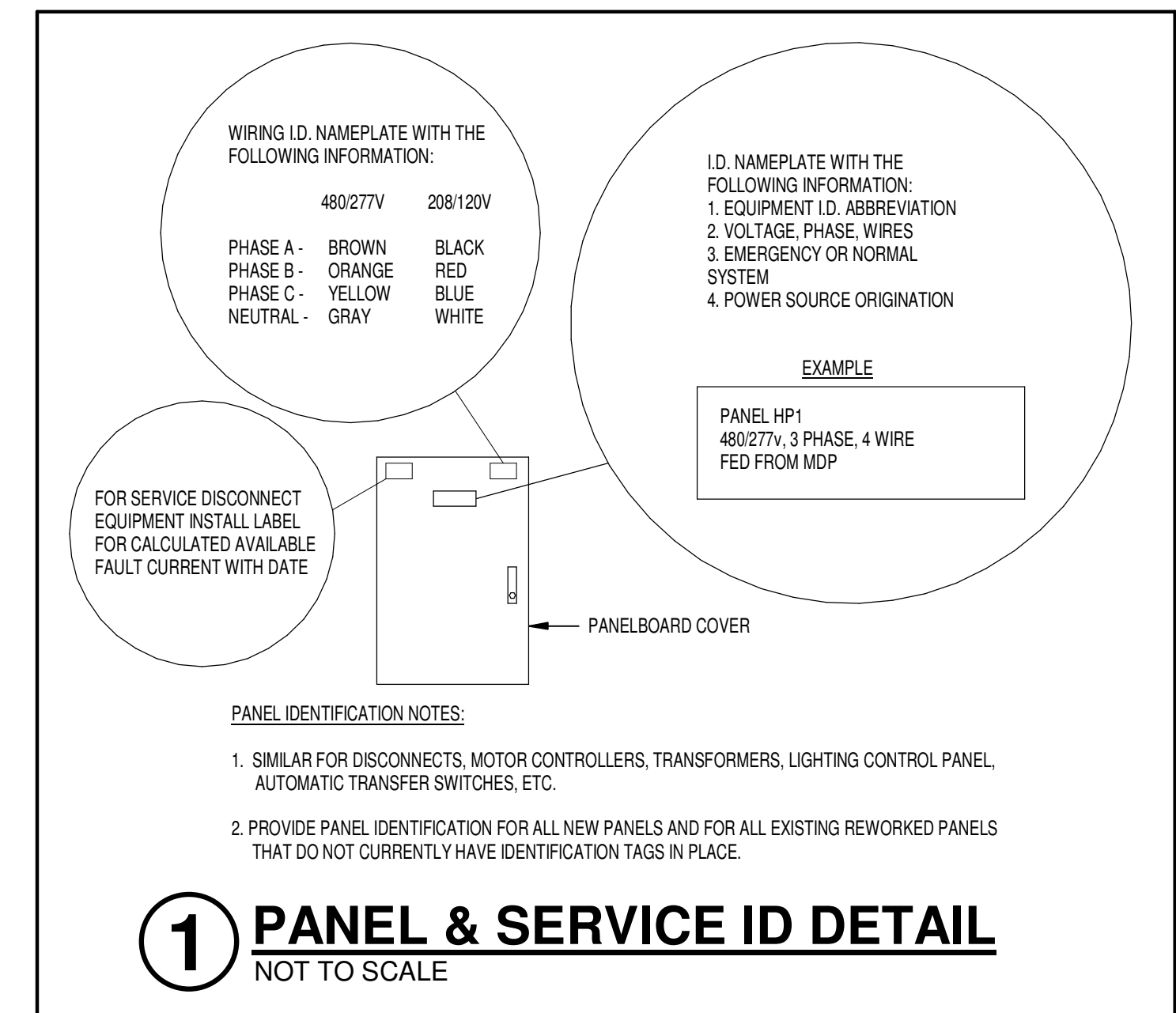
#	Date	Description
Revision History		

<b>Panelboard:</b>		PANEL 'M2'	<b>VOLTAGE:</b> 120/208 Wye		<b>COPPER BUS RATING:</b> 400 A		<b>MAINS TYPE:</b> MLO	
<b>LOCATION:</b>		MECH 1560	<b>PHASE:</b> 3		<b>GROUND BUS:</b> Yes		<b>MCB RATING:</b>	
<b>MOUNTING:</b>		SURFACE	<b>WIRES:</b> 4		<b>MINIMUM A.I.C. RATING:</b>		<b>FED FROM:</b>	
<b>ENCLOSURE:</b>		TYPE 1	<b>MFR. AND TYPE:</b>		SQUARE D NQ	<b>SUBFEED LUGS:</b>		<b>NEUTRAL RATING:</b> 100.00%
Circuit Number	Load Name	BRKR	A	B	C	BRKR	Load Name	Circuit Number
1	VFD-P-2A	110A/3P	3699	3699			110A/3P	VFD-P-2B
3				3699	3699			
5						3699		
7	RTU-2	100A/3P	7133	7133			100A/3P	RTU-1
9				7133	7133			
11						7133		
13	DSCU-1	30A/2P	2278	1176			20A/1P	*EF-2
15					2278	75		20A/1P
17	*EF-1	20A/1P					20A/1P	RTU-1 OUTLET
19	RTU-2 OUTLET	20A/1P	180	75			20A/1P	RTU-1 UV LIGHTING
21								
23								
25								
27								
29								
31								
33	SPARE	20A/1P		0				
35	SPARE	20A/1P			0	0	20A/1P	SPARE
37	SPARE	20A/1P	0	0			20A/1P	SPARE
39	SPARE	20A/1P			0	0	20A/1P	SPARE
41	SPARE	20A/1P			0	0	20A/1P	SPARE
<b>Total Load:</b>			25373 VA	24017 VA	23020 VA			
<b>Total Amps:</b>			213 A	201 A	192 A			
Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals				
Lighting	0 VA	0.00%	0 VA	<b>Total Connected Load:</b>		72410 VA		
Receptacles	360 VA	100.00%	360 VA	<b>Total Estimated Demand:</b>		72410 VA		
HVAC	69548 VA	100.00%	69548 VA	<b>Total Connected Current:</b>		201 A		
Power	0 VA	0.00%	0 VA	<b>Total Est. Demand Current:</b>		201 A		
Other	2502 VA	100.00%	2502 VA					
Motor	0 VA	0.00%	0 VA					
Heating	0 VA	0.00%	0 VA					
Existing Load	0 VA	0.00%	0 VA					
<b>Notes:</b>		DENOTES LOCK OUT/TAG OUT						

- ### GENERAL NOTES
- ALL WORK SHALL COMPLY WITH THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE.
  - CIRCUITS OF DIFFERENT PHASES MAY SHARE EQUIPMENT GROUND. EQUIPMENT GROUND CONDUCTOR SIZE SHALL NOT BE LESS THAN #12 AWG OR AS INDICATED ON THE DRAWINGS.
  - ALL CONDUCTORS #10 AND SMALLER SHALL BE SOLID COPPER THW, THHN, THWN, AND ALL CONDUCTORS #8 AND LARGER SHALL BE STRANDED COPPER USING BOLTED LUGS AT TERMINALS.
  - MINIMUM WIRE SIZE SHALL BE #12 AWG UNLESS OTHERWISE NOTED.
  - PULL ALL THE CONDUCTORS THROUGH RACEWAY AT THE SAME TIME.
  - MINIMUM CONDUIT SIZE SHALL BE 3/4" UNLESS OTHERWISE NOTED. SEE SPECS FOR CONDUIT REQUIREMENTS. ALL CONDUIT SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
  - 6'-0" MAXIMUM LENGTH ON FLEXIBLE CONDUIT.
  - USE COMPRESSION FITTINGS ON CONDUIT. SET SCREW FITTINGS ARE NOT ALLOWED.
  - PROVIDE PULL STRING AND PROTECTIVE BUSHINGS IN ALL SPARE CONDUITS.
  - LABEL ALL CIRCUITS ON PANEL SCHEDULES.
  - TURN ALL UNUSED CIRCUIT BREAKERS TO OFF POSITION.
  - FIRE PROOF ALL PENETRATIONS MADE THROUGH FIRE RATED WALLS.
  - ALL DEVICES SHALL BE RATED 20 AMP MINIMUM. VERIFY COLOR WITH ARCHITECT.
  - CONNECT DEVICES BY WRAPPING WIRE AROUND SCREW TERMINAL IN A CLOCKWISE DIRECTION AND TIGHTEN SCREW. BACK-CONNECTED SPRING DEVICES ARE NOT ALLOWED.
  - ALL BOXES SHALL BE INDEPENDENTLY SUPPORTED TO THE BUILDINGS STRUCTURE.
  - CONTRACTOR SHALL REFER TO THE ARCHITECTURAL ELEVATIONS AND MILLWORK DETAILS FOR EXACT LOCATIONS OF ALL WIRING DEVICES AND LIGHT FIXTURES.
  - CONTRACTOR SHALL REFER TO THE ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF ALL LAY-IN LIGHT FIXTURES.
  - THE SPECIFICATIONS ARE AS BINDING ON THE CONTRACTOR AS THE DRAWINGS. THE CONTRACTOR SHALL READ THE SPECIFICATIONS AND SHALL INCLUDE ALL ITEMS REQUIRED BY THE SPECIFICATIONS BEFORE SUBMITTING A BID.
  - ELECTRICAL CONTRACTOR SHALL CLOSELY COORDINATE WITH MECHANICAL AND PLUMBING CONTRACTORS FOR EXACT LOCATION OF HVAC AND PLUMBING EQUIPMENT.
  - ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SIZING OF ALL MOTOR OVERLOAD DEVICES (HEATERS) IN STARTERS BASED ON ACTUAL NAMEPLATE RATINGS ON THE MOTOR BEING INSTALLED.
  - PROVIDE TAMPER RESISTANT DEVICES AS REQUIRED BY CODE.
  - NEW CIRCUIT BREAKERS INSTALLED IN EXISTING PANELS SHALL MATCH EXISTING PANEL MANUFACTURER AND AIC RATING. UPDATE PANELBOARD CIRCUIT DIRECTORIES TO REFLECT CHANGES.

### SYMBOL LEGEND

	DUPLEX RECEPTACLE AT 18" A.F.F. GFI - GROUND FAULT CIRCUIT INTERRUPTER WP - PROVIDED WITH WEATHERPROOF IN-USE TYPE COVER
	DATA OUTLET
	JUNCTION BOX
	BRANCH CIRCUIT HOMERUN HOT-NEUTRAL-GROUND PANEL AND CIRCUIT NUMBER INDICATED ON PLAN
	PANELBOARD
	DISCONNECT SWITCH
	AIR SAMPLING SUPPLY/SIMPLEX 4020
	AIR SAMPLING RETURN/SIMPLEX 4020



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Date: 09/20/23

Title: ELECTRICAL DETAILS AND LEGENDS

Sheet Number:

**E2.01**

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