

# INTERIOR ALTERATIONS

# EASTERN CENTER FOR ARTS AND TECHNOLOGY

## LIST OF DRAWINGS

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- A002 COMPOSITE FLOOR PLAN NEW CODE
- A003 DEMOLITION PLAN
- A101 FLOOR PLANS AND ENLARGED FLOOR PLANS
- A102 SCHEDULES AND DETAILS
- A601 REFLECTED CEILING PLANS
- S-1 ROOF REINFORCEMENT DETAILS

### PLUMBING

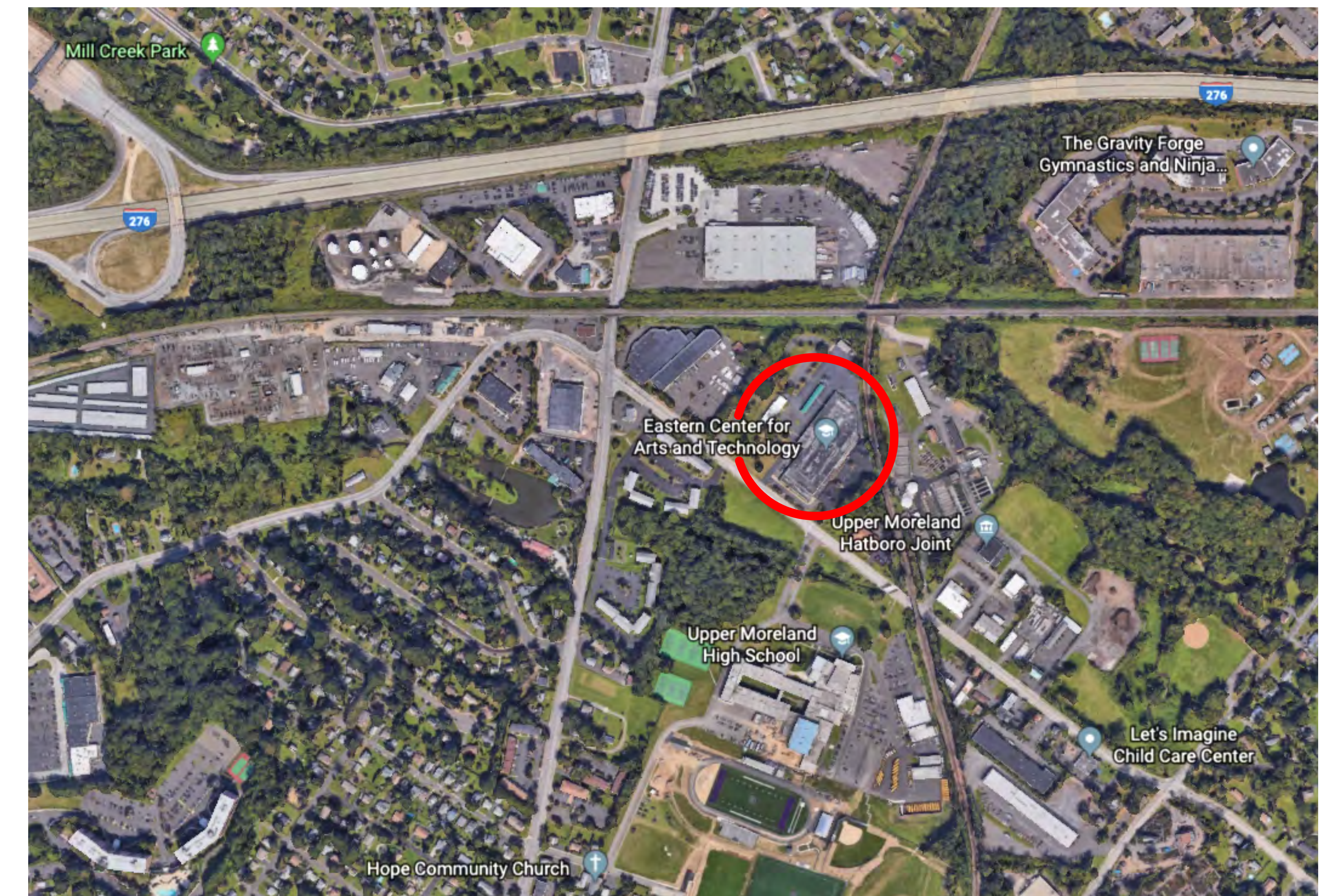
- P0.1 COVER SHEET
- P1.1 PARTIAL DEMOLITION PLANS - AREA 'A' & 'B'
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- E7.3 DETAILS
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- E8.2 SECTIONS



**BRESLIN RIDYARD FADERO ARCHITECTS**

**ALLENTOWN, PA**

**FEBRUARY 1, 2022**



INTERIOR ALTERATIONS - PHASE 3  
FOR THE  
EASTERN CENTER for ARTS and TECHNOLOGY  
WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

DATE	DRAWN	DESIGNED	CHECKED	CONTR. NO.
02/01/2022	KMM	KMM	KMM	684

A001



COMPOSITE PLAN EXISTING 1  
SCALE: 1/16" = 1'-0"

**NOTE:**

1. The Composite plans are provided for general information only and are not to be used for bidding or construction purposes. The Contractor shall refer to all other drawings for the basis of bidding and construction.

**COMPOSITE PLAN LEGEND**

	RENOVATION AREAS
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**PHASING SCHEDULE**

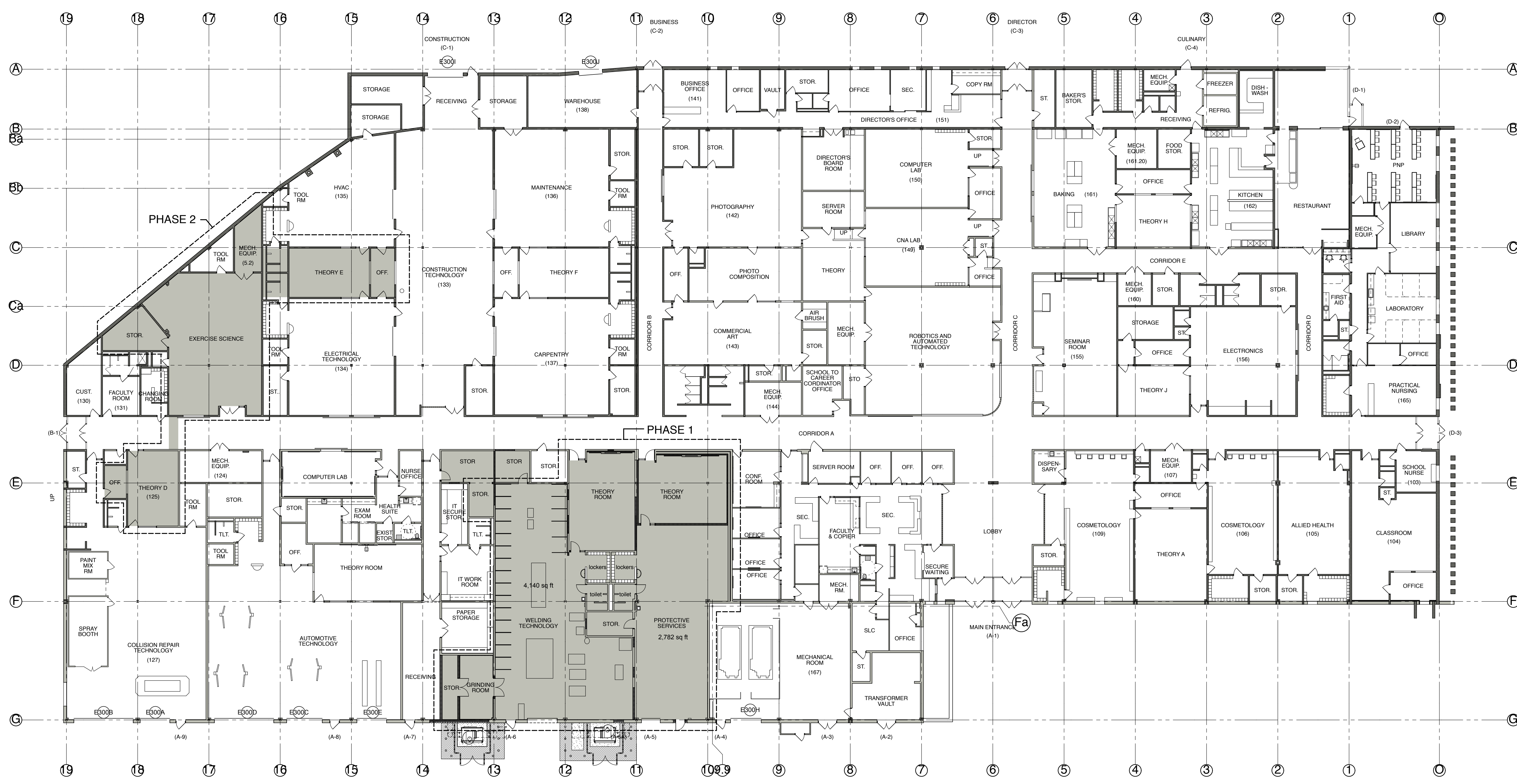
PHASE 1 - BEGIN WORK APRIL 18, 2022, SUBSTANTIAL COMPLETION AUGUST 24, 2022
PHASE 2 - BEGIN WORK JUNE 6, 2022, SUBSTANTIAL COMPLETION AUGUST 26, 2022



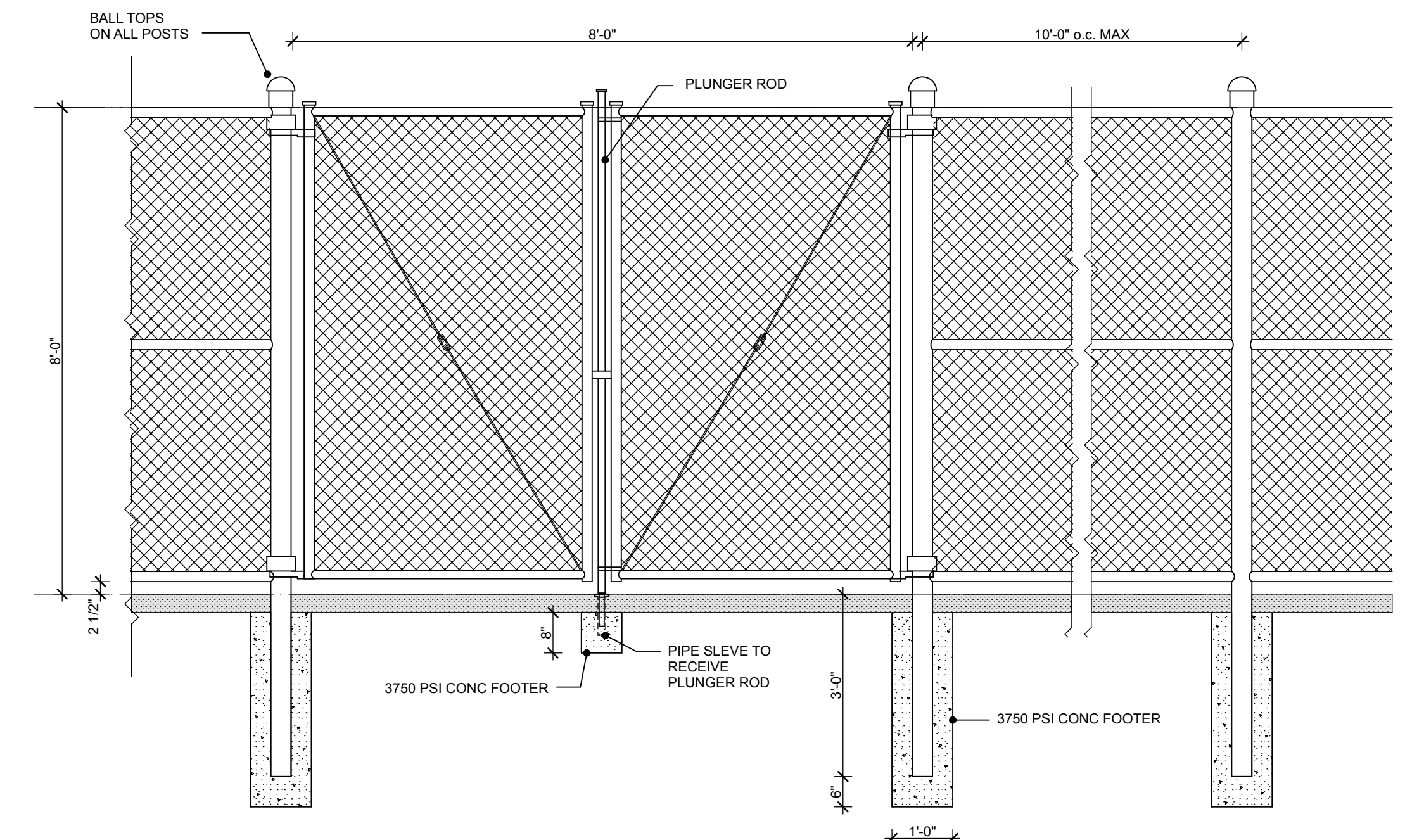
INTERIOR ALTERATIONS - PHASE 3  
FOR THE  
EASTERN CENTER for ARTS and TECHNOLOGY  
WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

DATE	02/01/2022	DRAWN	KMM	CHECKED	KMM	CONT. NO.	004
		DESIGNED	KMM				

A002



COMPOSITE PLAN NEW  
SCALE: 1/16" = 1'-0"



VINYL COATED CHAINLINK FENCE AND GATE DETAIL  
SCALE: 1/2" = 1'-0"

GENERAL NOTES

THE CONTRACTOR MUST NOTIFY THE ARCHITECT IN WRITING OF ANY AND ALL DISCREPANCIES & ERRORS WITH ANY AND ALL OF THE CONSTRUCTION DRAWINGS PRIOR TO BEGINNING THE WORK. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL DIMENSIONS, FLOOR TO FLOOR HEIGHTS, TOP OF STEEL ELEVATIONS, MASONRY OPENING LOCATIONS AND SIZES, COLUMN LOCATIONS, ETC.

THE CONTRACTOR SHALL COMPLY WITH AND PERFORM THEIR WORK IN ACCORDANCE WITH ALL APPLICABLE LAWS, STATUTES, ORDINANCES, LAWFUL ORDERS OF GOVERNMENTAL AUTHORITIES, BUILDING CODES, RULES AND REGULATIONS, UNLESS THE CONTRACT DOCUMENTS REQUIRE A HIGHER OR GREATER STANDARD, IN WHICH CASE THE CONTRACTOR SHALL CONFORM TO SUCH HIGHER OR GREATER STANDARD IN ACCORDANCE WITH THE GENERAL CONDITIONS. IF THE CONTRACTOR RECOGNIZES THAT PORTIONS OF THE CONTRACT DOCUMENTS DO NOT MEET THE STANDARDS ESTABLISHED THEREBY, THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT AND THE OWNER IN WRITING BEFORE PROCEEDING WITH THE WORK.

EACH CONTRACTOR SHALL ACQUAINT HIMSELF WITH THE WORK TO BE DONE AND MATERIALS AND EQUIPMENT TO BE INSTALLED BY HIMSELF AND OTHERS AND COORDINATE, IN ADVANCE, PRIOR TO INSTALLING ANY SYSTEM OR PORTION THEREOF.

EACH CONTRACTOR WHO FAILS TO COORDINATE THE INSTALLATION OF HIS WORK WITH THE OTHER TRADES, SHALL BEAR ALL COSTS OF EACH TRADE FOR DISCONNECTING, REMOVAL AND RE-INSTALLATION OF AFFECTED SYSTEMS, EQUIPMENT OR PORTION THEREOF.

ALL CONCRETE FLOORS NOT SCHEDULED TO RECEIVE A FINISH SHALL BE SEALED IN ACCORDANCE WITH THE SPECIFICATIONS.

ALL MASONRY WALLS ARE DIMENSIONED TO THE NOMINAL FACE OF MASONRY. ALL STUD WALLS ARE DIMENSIONED TO THE FACE OF STUD. ALL TILE CEILINGS, SOFFITS, FASCIA, ETC. ARE DIMENSIONED TO THE FINISH SURFACE, UNLESS NOTED OTHERWISE.

ALL CMU WALLS SHALL HAVE CONTROL JOINTS AS SPECIFIED OR AS SHOWN ON THE DRAWINGS. ALL LOCATIONS MUST BE REVIEWED WITH THE ARCHITECT BEFORE STARTING MASONRY WORK. PROVIDE CONTROL JOINT AT ALL LOCATIONS WHERE CMU REDUCES IN THICKNESS TO PASS A COLUMN, PIPE, OR OTHER OBSTRUCTION.

UNLESS NOTED OTHERWISE, THE GENERAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL STRUCTURAL STEEL, MISCELLANEOUS STEEL, AND LOOSE UNITS THAT ARE NECESSARY TO SUPPORT, ALL MASONRY OPENINGS, PASSAGES, WINDOWS, ETC., AND TO FRAME ALL WALL AND FLOOR OPENINGS. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR REVIEWING ALL DRAWINGS OF ALL CONTRACTS TO DETERMINE THE QUANTITY, SIZE, AND LOCATIONS OF ALL MASONRY OPENINGS, AND ALL WALL AND FLOOR OPENINGS.

ALL PENETRATIONS THROUGH WALLS SHALL BE SEALED WITH FIRE STOPPING INSULATION & SEALANT BY THE CONTRACTOR RESPONSIBLE FOR THE PENETRATION.

SEE WALL SECTIONS AND REFLECTED CEILING PLANS FOR ADDITIONAL FASCIA AND SOFFITS NOT LISTED ON THE FINISH SCHEDULE OR SHOWN ON THE PLANS.

REFER TO THE INTERIOR ELEVATIONS AND PLUMBING / HEATING DRAWINGS FOR RECESSED/SEMI-RECESSED PLUMBING/HEATING EQUIPMENT AND WALL GRILLE LOCATIONS NOT SHOWN ON THE ARCHITECTURAL PLANS. VERIFY EXACT LOCATION WITH THE ARCHITECT PRIOR TO CONSTRUCTING WALLS.

CODE AND AREA DATA

ALL CONSTRUCTION HAS BEEN DESIGNED IN ACCORDANCE WITH THE PENNSYLVANIA UNIFORM CONSTRUCTION CODE (UCC). THE CODES IN USE UNDER THE UCC ARE THE 2015 INTERNATIONAL CODES ISSUED BY THE INTERNATIONAL CODE COUNCIL. NO SUPPLEMENTS TO THE 2015 CODES WERE ADOPTED FOR USE.

**BUILDING CONSTRUCTION:**  
2015 ICC INTERNATIONAL BUILDING CODE

**PLUMBING CONSTRUCTION:**  
2015 ICC INTERNATIONAL PLUMBING CODE

**HVAC CONSTRUCTION:**  
2015 ICC INTERNATIONAL MECHANICAL CODE

**ELECTRICAL CONSTRUCTION:**  
2014 ICC INTERNATIONAL ELECTRICAL CODE NFPA-70

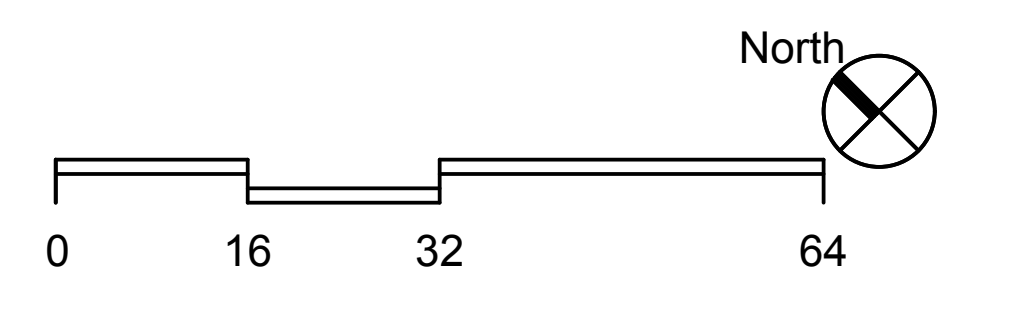
ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES - ICC/ANSI A117.1 - 2012

**USE AND OCCUPANCY CLASSIFICATION**  
EDUCATIONAL (E)  
BUSINESS (B)  
BUSINESS GROUPS ARE ANCILLARY AND SUPPORTIVE TO THE BUILDINGS PRIMARY GROUP E OCCUPANCY AND ARE NOT CONSIDERED SEPARATE OCCUPANCIES

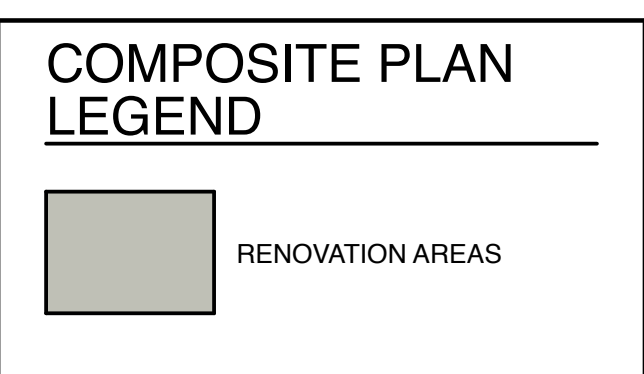
**BUILDING AREA:**  
FIRST FLOOR 88,832 S.F.

**RENOVATION AREA:**  
TOTAL = 9,923 S.F.

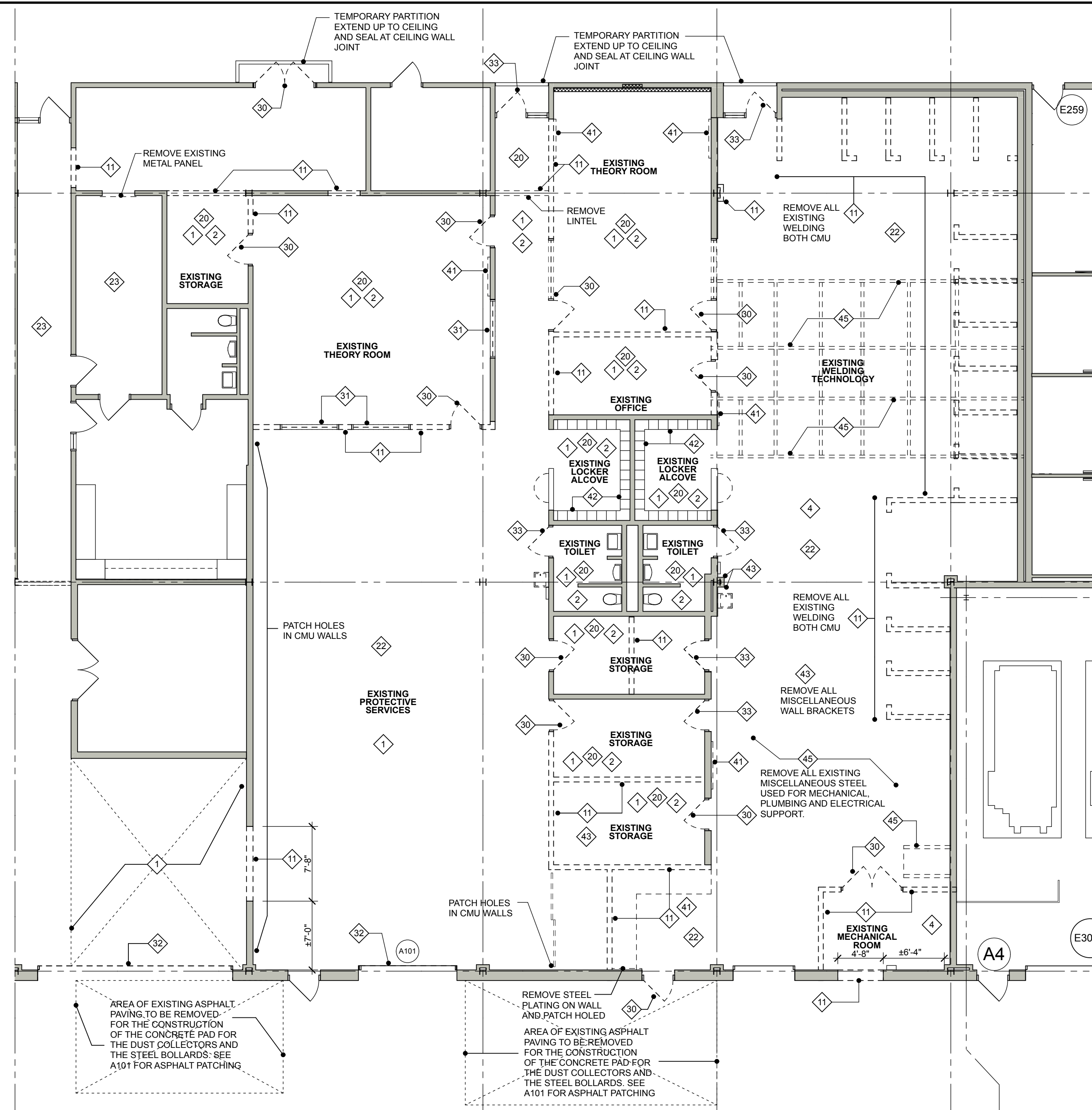
**CONSTRUCTION TYPE:**  
NEW CONSTRUCTION SHALL BE OF TYPE 1B CONSTRUCTION REFER TO THE INTERNATIONAL BUILDING CODE, TABLE 1020 FOR FIRE RESISTANCE RATING REQUIREMENTS FOR CORRIDORS AND DOOR OPENINGS. DOORS WILL BE 20 MIN FIRE RATED. THE HOLLOW METAL FRAMES ARE EXISTING.



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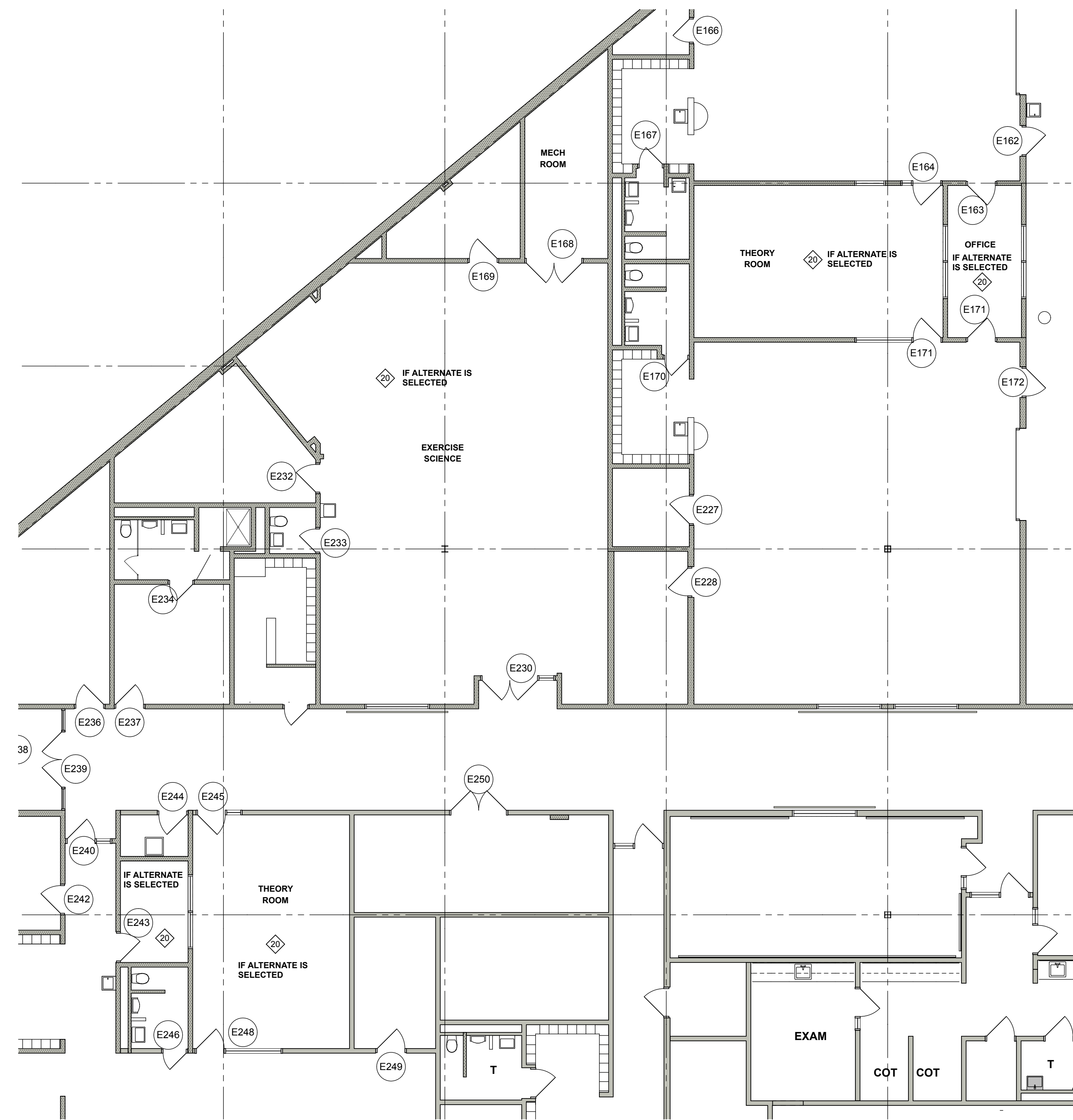
**PHASING SCHEDULE**  
PHASE 1 - BEGIN WORK APRIL 11, 2022, SUBSTANTIAL COMPLETION AUGUST 24, 2022  
PHASE 2 - BEGIN WORK JUNE 6, 2022, SUBSTANTIAL COMPLETION AUGUST 26, 2022



DEMOLITION PLAN - AREA 'A'

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

1



DEMOLITION PLAN - AREA 'B'

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

2

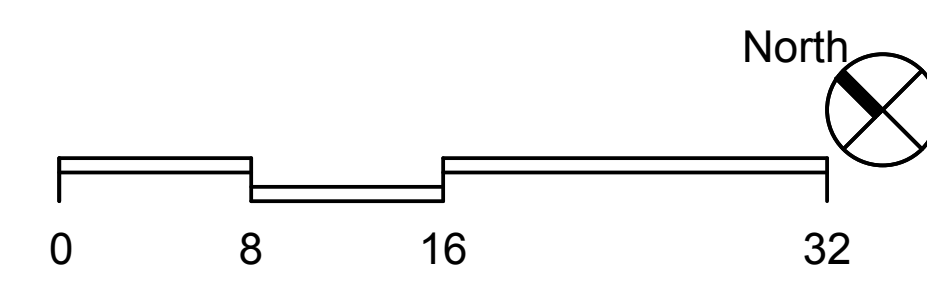
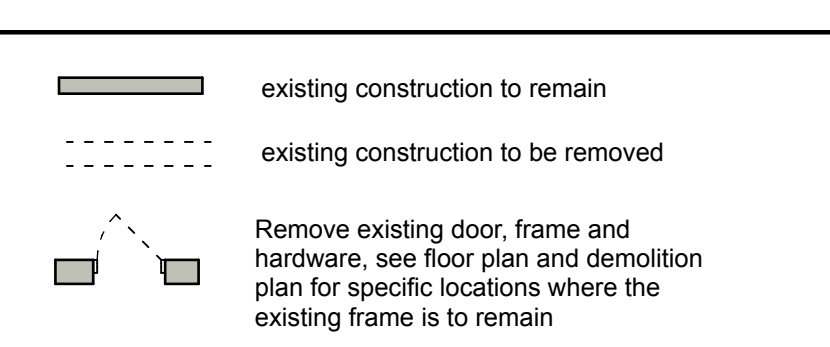
GENERAL DEMOLITION NOTES

- The Drawings generally indicate the demolition required to accommodate the new construction but are not all inclusive. The full extent of demolition work must be determined in the field based on the actual conditions encountered and as required for the satisfactory provision and proper execution of the work.
- Unless otherwise indicated, each Prime Contractor shall be responsible for the demolition and removal of those existing materials and systems which would normally be handled and/or installed by the tradesman employed in the Work of his respective Contract. Furthermore, each Prime Contractor shall be responsible for all cutting, patching, and repair work incidental to his respective demolition and removal, unless noted otherwise.
  - Each Prime Contractor shall provide openings for their respective work (i.e. louvers, grilles, equipment, etc.), as indicated on the Drawings and/or required by their work, and shall perform all related patching complete and ready for finish by GC.
- Refer to ALL Contract Drawings, including but not limited to, Architectural ("A") Electrical ("E") and Specifications, for additional information pertinent to demolition and removal required under the Contract Documents.
- Should a Contractor encounter a material, during the progress/demolition on this project they suspect may contain asbestos, and the material must be removed or penetrated to accommodate the new construction, the Contractor shall immediately notify the Owner and Architect in writing before any work on the material is performed. The Owner will have the material tested and have it removed, under separate contract, if the test results warrant removal.
- Where removal of existing block/brick wall is indicated to be removed, the General Contractor shall remove the block/brick wall to a depth below the surface of adjacent floor slabs to allow the satisfactory infill and patching of the floor slab across the area of removal, and allow for the installations of indicated finishes.
- Materials resulting from demolition and removal operations shall become the property of the Contractor and shall be completely removed from the site, unless noted otherwise on the drawings or selected by the Owner to be retained by the Owner.
- Storage of debris and other materials resulting from demolition operations shall not be permitted on site, unless noted otherwise.
- When an existing item is removed (i.e. windows, doors, handrails, frames, tackboards, markerboards, ductwork etc.), the Contractor shall also remove the accompanying sealant, adhesives, and all anchors. All sealant residue shall be completely removed and the walls are to be cleaned, patched and repaired to match adjacent wall finishes.
- All extraneous items not required or needed in the renovated areas (i.e. door wall bumpers, floor stops, dead electric outlets, switches, conduits, floor outlets, wall and/or ceiling grilles, etc.) shall be removed by the respective contractors and the surfaces patched to match the adjacent existing and/or new finishes.
- At removal of existing finishes including, but not limited to, vinyl tile, vinyl cove base, carpet, etc., the General Contractor shall remove all mastic, adhesives, anchors, etc., and prepare the substrate as required for installation of new finishes. See Plans and Specifications for locations and requirements.
- All temporary facilities and/or work indicated on Demolition Plans (i.e. temporary exit protection, transitions, fencing, etc.), shall be removed at the appropriate time to provide for the construction and completion of new work. All surfaces affected by temporary construction shall be patched/ repaired/ replaced to match adjacent surfaces.
- Contractors shall protect all floors, walls, ceilings and furnishings and adjacent structures throughout the demolition work. Any damages shall be repaired to match existing conditions at no cost to the Owner.
- Existing walls to remain at intersecting walls being removed shall be patched and repaired to match adjoining surfaces. At cmu, remove and tooth in new cmu to like new finish. All existing walls shall be cleaned and prepared to receive new finishes.
- Infill cmu to enclose gaps at all beams and pipes in cmu walls.

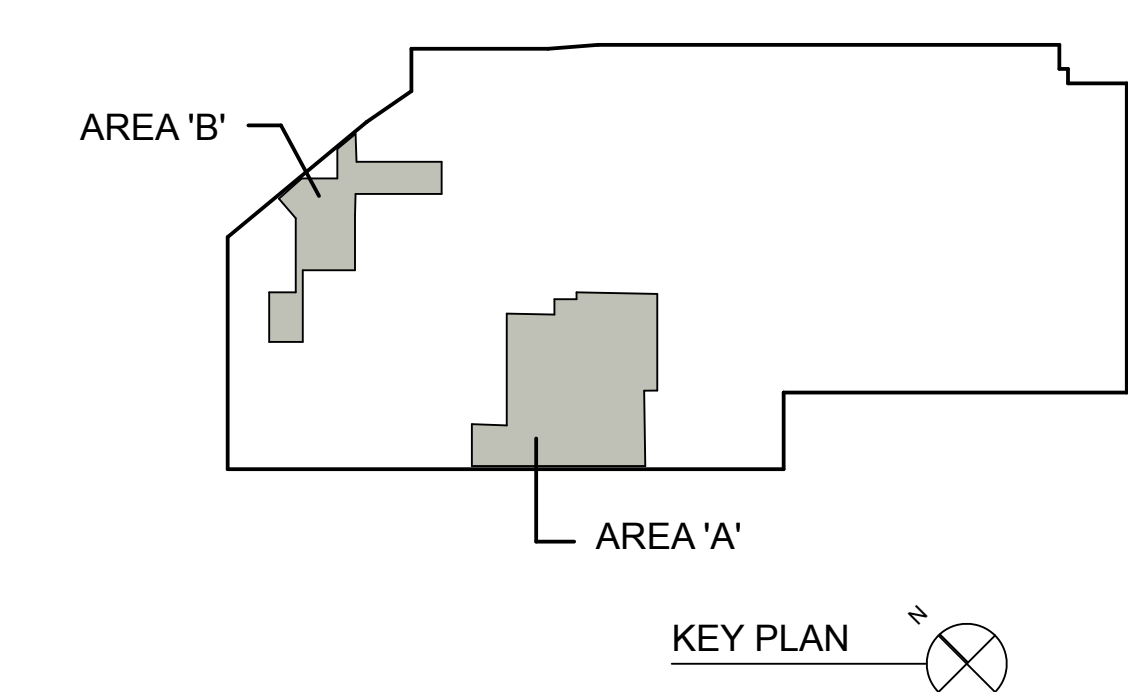
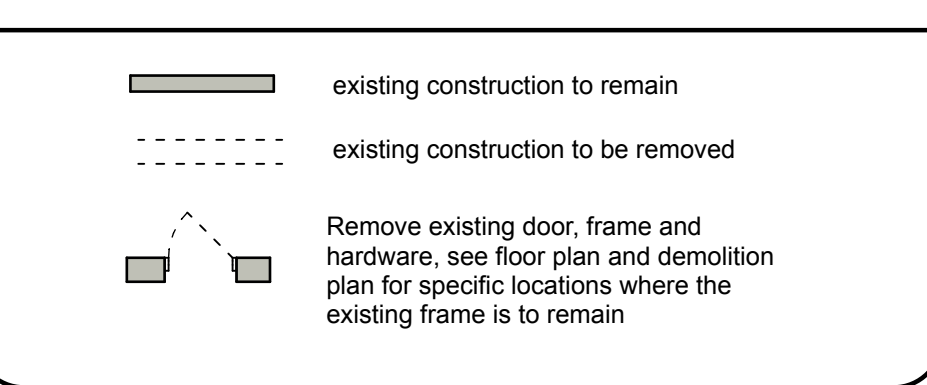
SELECTIVE DEMOLITION NOTES

FLOOR AND BASE	WALL	CEILING	DOOR AND WINDOW	MISCELLANEOUS
<ul style="list-style-type: none"> <li>Remove existing floor finish. Remove all adhesives and residue down to existing concrete slab. Grind concrete floor slab to achieve a uniform level finish.</li> <li>Remove existing base material, clean existing exposed walls surfaces to match adjacent surfaces.</li> <li>Grind out crack in straight line min 1" deep and 2" wide. Infill with epoxy grout level with adjacent surfaces.</li> </ul>	<ul style="list-style-type: none"> <li>Remove portion of existing wall construction to the extent shown dashed in its entirety. Patch floor and walls to remain as required for new finishes and to match adjoining finishes.</li> <li>Remove section of existing interior masonry wall construction if wall extends below floor slab remove minimum 8" below finish floor. Infill with concrete to match adjacent areas. Removal at sides and faces to be tooth removed and tooth in new cmu to form clean opening or face unless noted otherwise.</li> <li>Remove existing chainlink gate and partition.</li> </ul>	<ul style="list-style-type: none"> <li>Remove existing acoustic tile/plaster/gyp board ceiling and support system.</li> <li>Remove existing plaster/gyp-board soffit and fascia</li> <li>Remove existing acoustic material from roof deck and roof structure. Clean and prepare existing surfaces as required to receive paint.</li> <li>Remove existing acoustic tile and grid as needed for HVAC Duct modifications. Reinstall grid and acoustic panels.</li> </ul>	<ul style="list-style-type: none"> <li>Remove existing door(s), H.M. frame, glazing, sealants, hinges, strike plates, thresholds, sill, trim, catches &amp; misc. hardware.</li> <li>Remove existing window(s) including sill, trim, sealant, ect.</li> <li>Remove existing garage door including guides, bracing, motor and electrical connections</li> <li>Remove existing door and hardware. Existing frame to remain.</li> </ul>	<ul style="list-style-type: none"> <li>Remove existing casework including trim and wall support brackets.</li> <li>Remove existing tackboard/chalkboard/dry marker board, steel plating including all trim, fasteners &amp; mastic</li> <li>Remove existing lockers, existing concrete base to remain.</li> <li>Remove existing wall bracket, miscellaneous framing for shelving</li> <li>Remove shelf and rod.</li> <li>Remove existing steel framing for hvac / electrical equipment support.</li> </ul>

DEMOLITION PLAN LEGEND



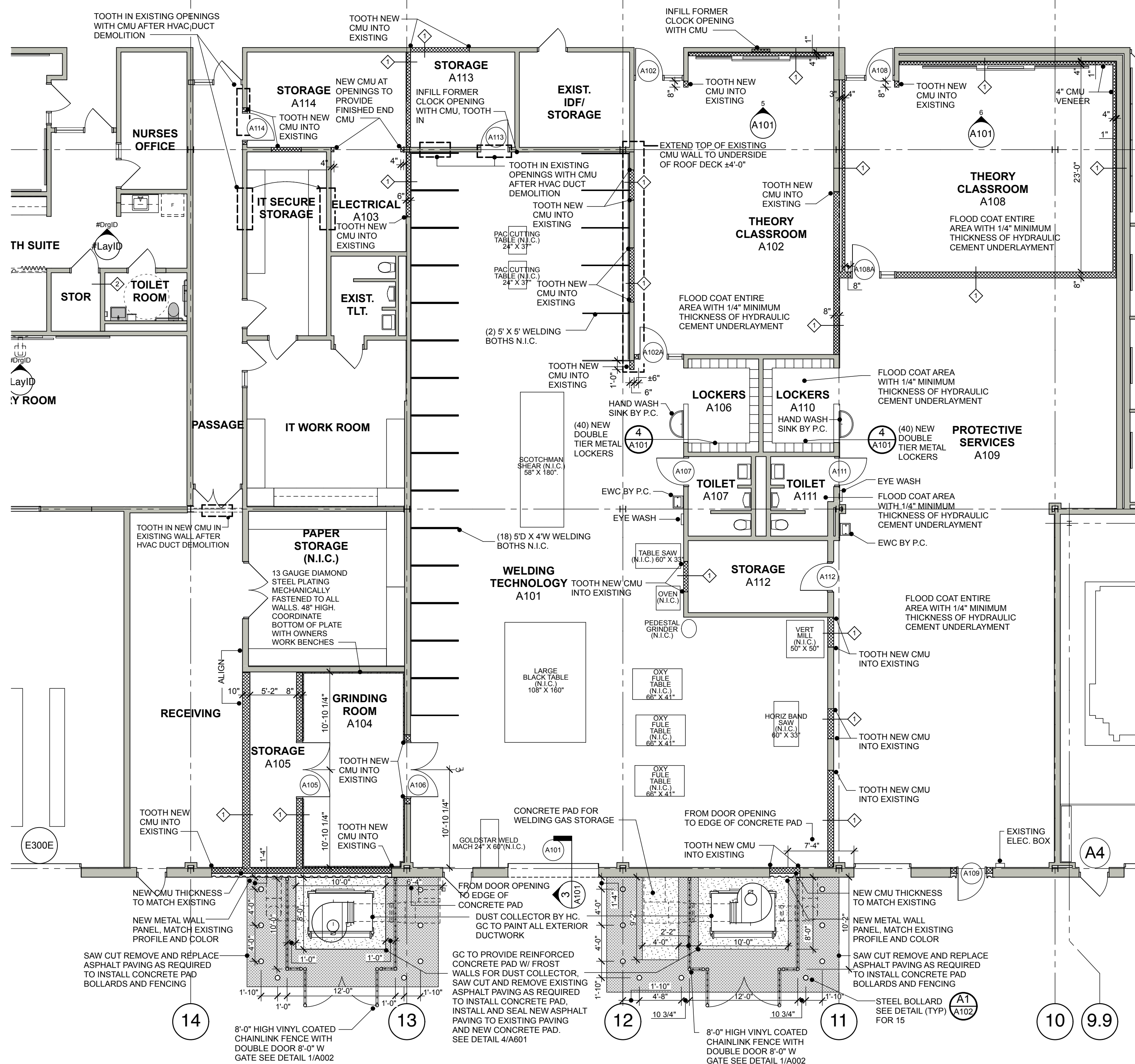
DEMOLITION PLAN LEGEND



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FOR THE  
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WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

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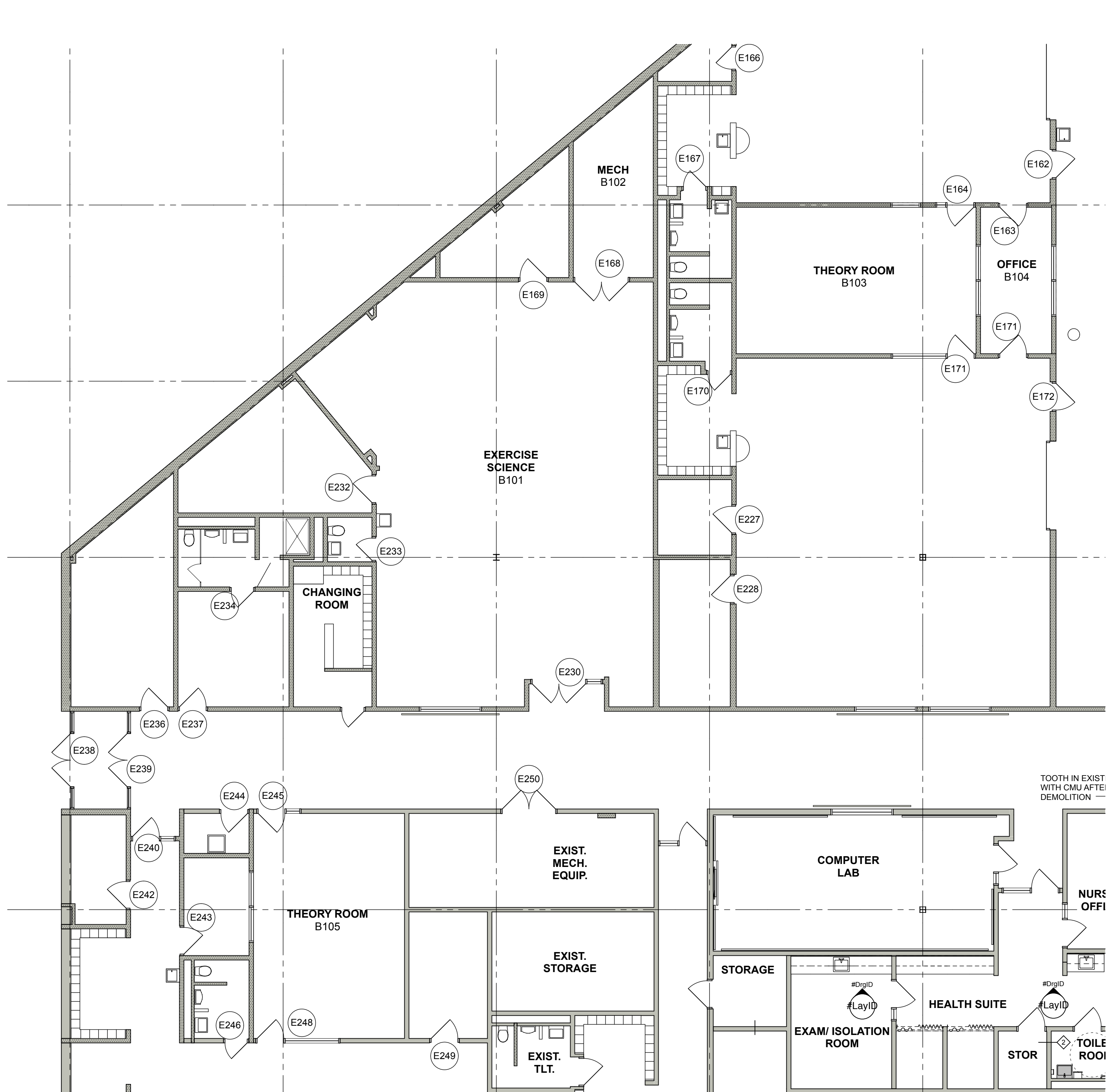
A003



**FLOOR PLAN - AREA 'A'**

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

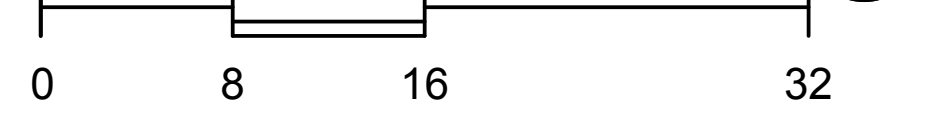
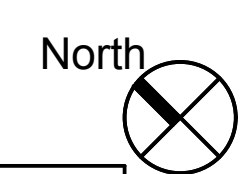
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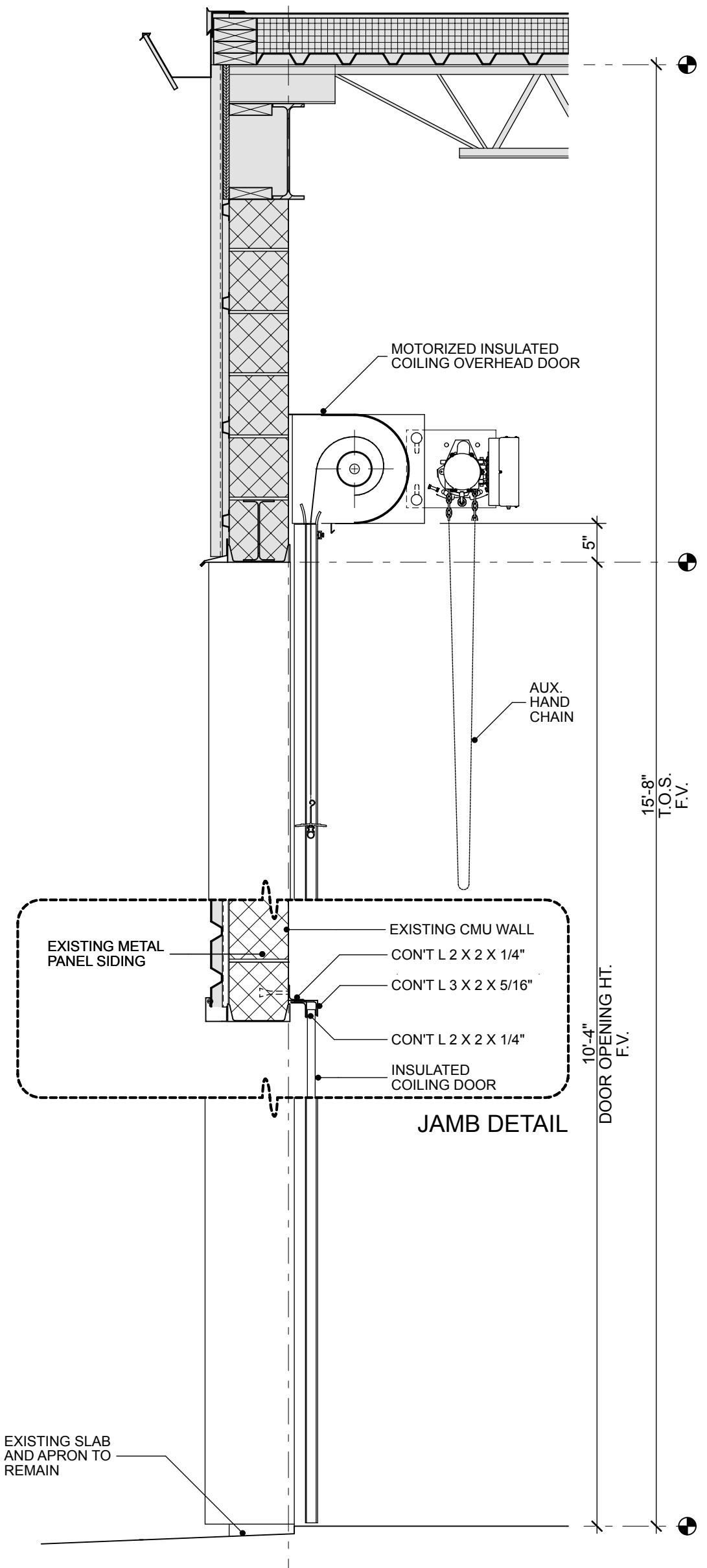
**FLOOR PLAN - AREA 'B'**

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

2



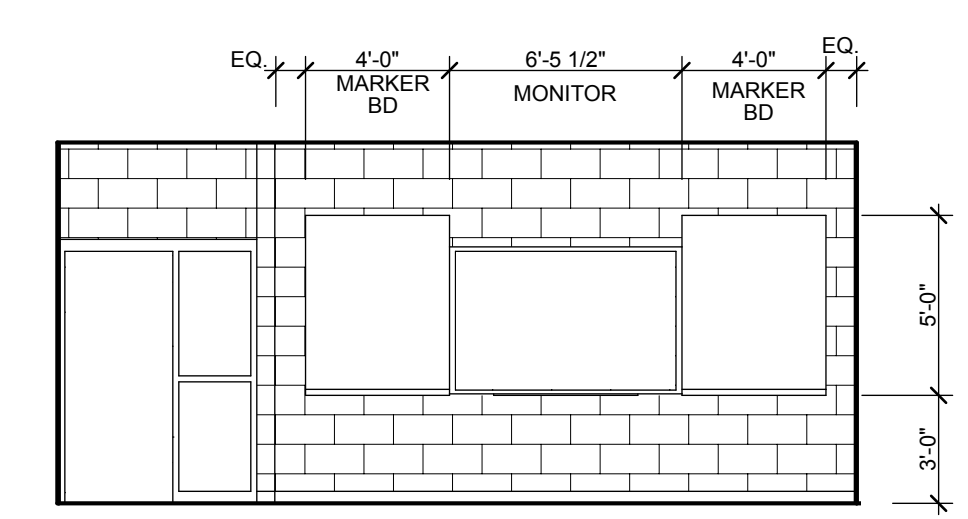
FLOOR PLAN DRAWING LEGEND	
	CONCRETE BLOCK (CMU)
	COLUMN GRID LINE
	SECTION NUMBER
	WALL SECTION
	OFFICE
	ROOM NAME
	ROOM NUMBER
	1/8" NOTES
	PARTITION TYPE
	DOOR NUMBER



**OVERHEAD COILING GARAGE DOOR DETAIL**

SCALE: 3/4" = 1'-0"

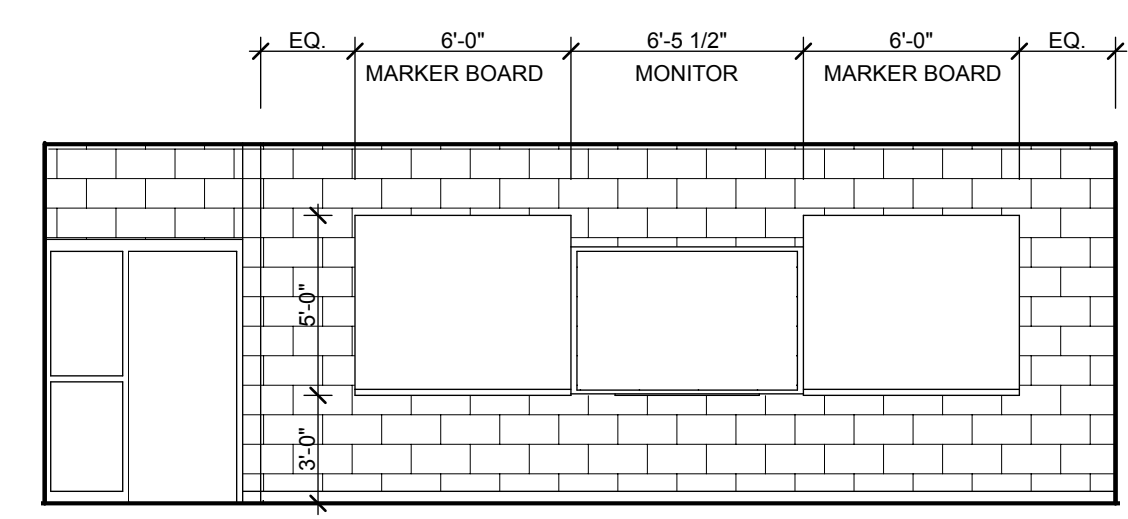
3



**THEORY CLASSROOM A102**

SCALE: 3/16" = 1'-0"

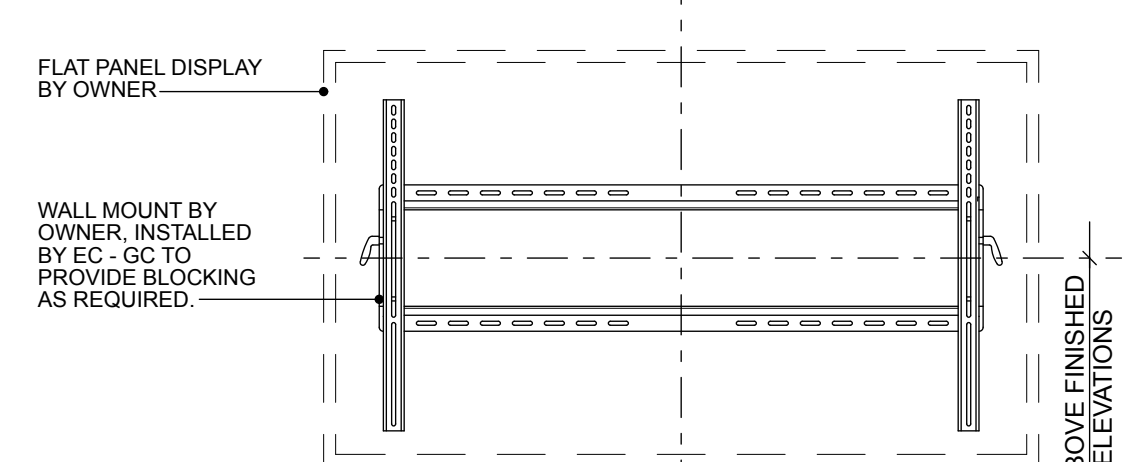
5



**THEORY CLASSROOM A108**

SCALE: 3/16" = 1'-0"

6



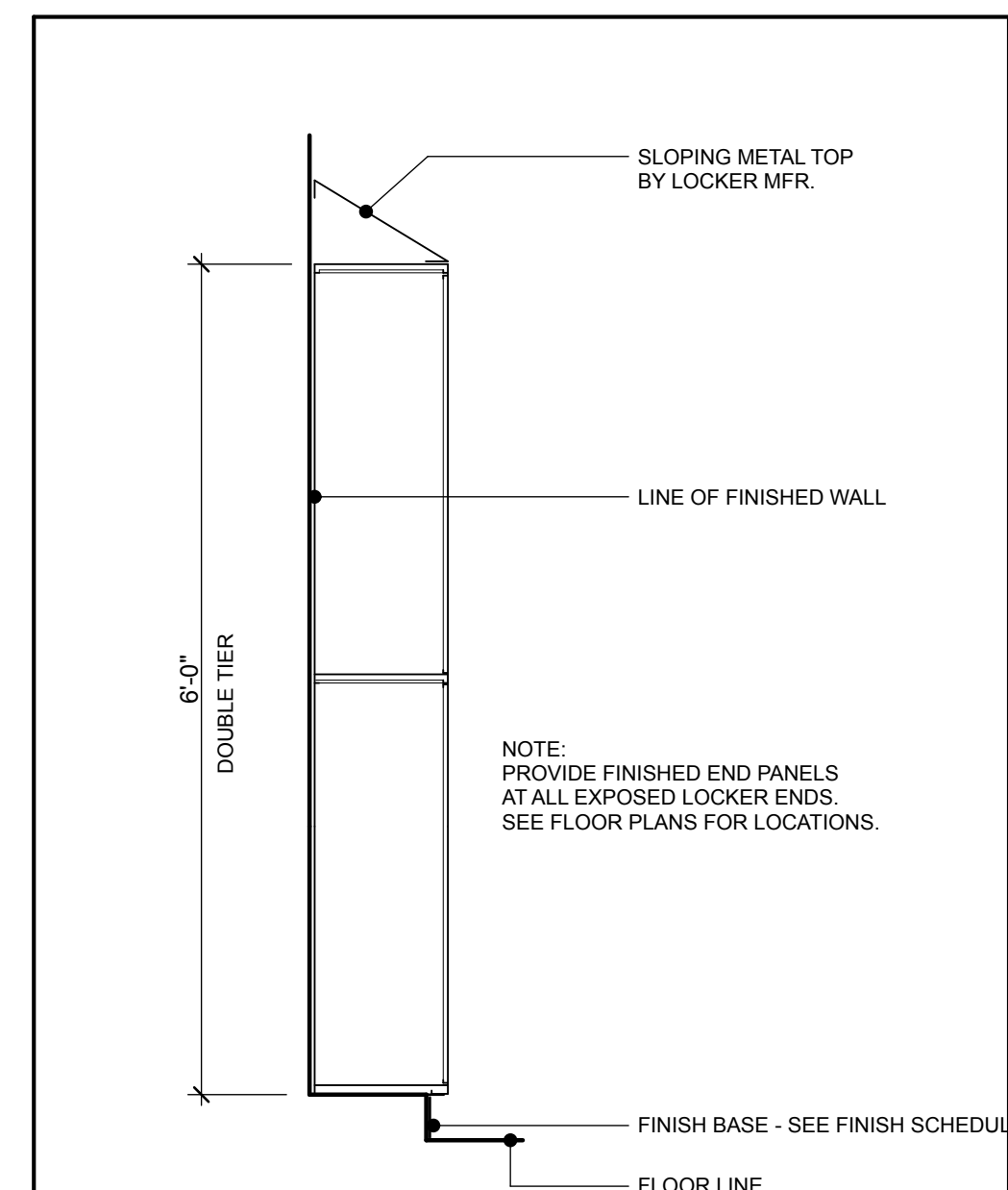
**TYPICAL TV WALL MOUNT/  
ELEC. WALL BOX  
COORDINATION DETAIL**

SCALE: 1" = 1'-0"

7

**MONITOR MOUNTING NOTES:**

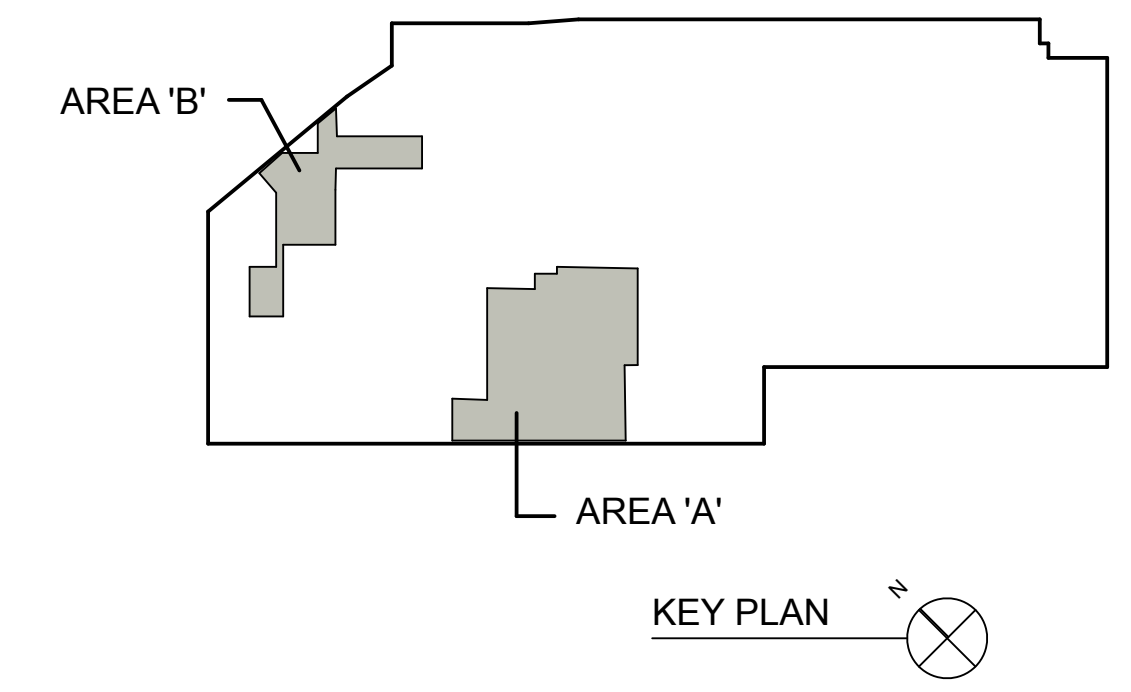
- GC TO MOCKUP A SAMPLE MONITOR INSTALLATION SHOWING COORDINATION OF ELECTRICAL DEVICES BY E.C. AND MONITOR WALL BRACKETS PROVIDED BY OWNER. MOCKUP SHALL BE DONE PRIOR TO INSTALLATION OF ALL ELECTRICAL DEVICES AND MONITORS THROUGHOUT THE BUILDING.
- PROVIDE BLOCKING IN WALLS AT MONITORS TO FIRMLY SECURE BRACKETS TO WALL.
- PROVIDE HEAVY GAUGE METAL STUD FRAMING AS REQUIRED AT MONITOR LOCATIONS.



**LOCKER DETAIL**

SCALE: 3/4" = 1'-0"

4



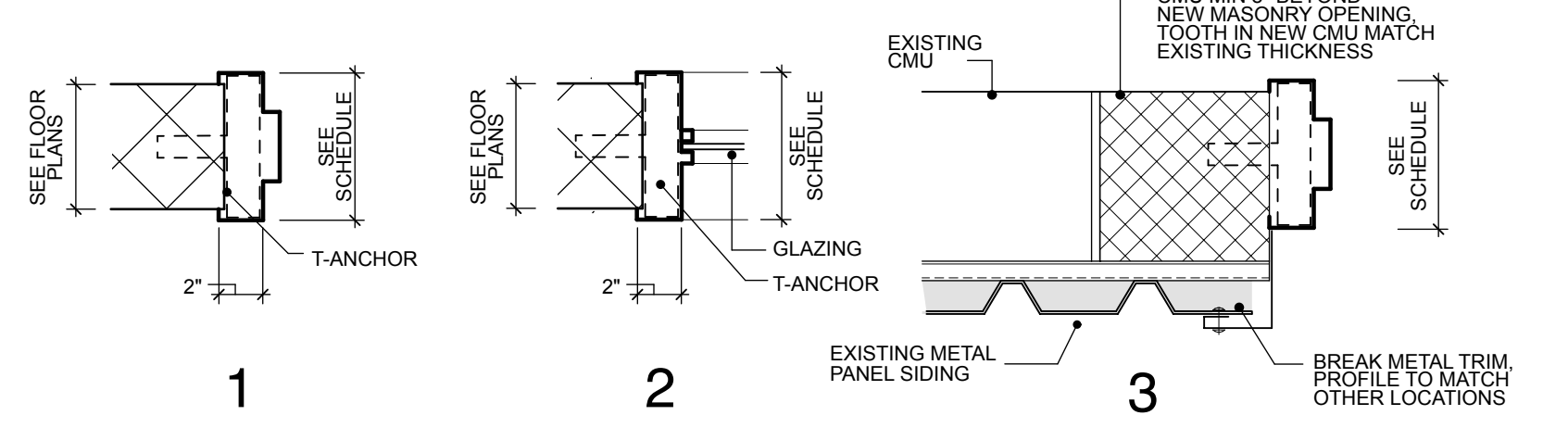
**KEY PLAN**

DATE	DRAWN	DESIGNED	CHECKED	CONTR. NO.
02/01/2022	KMM	KMM	KMM	004

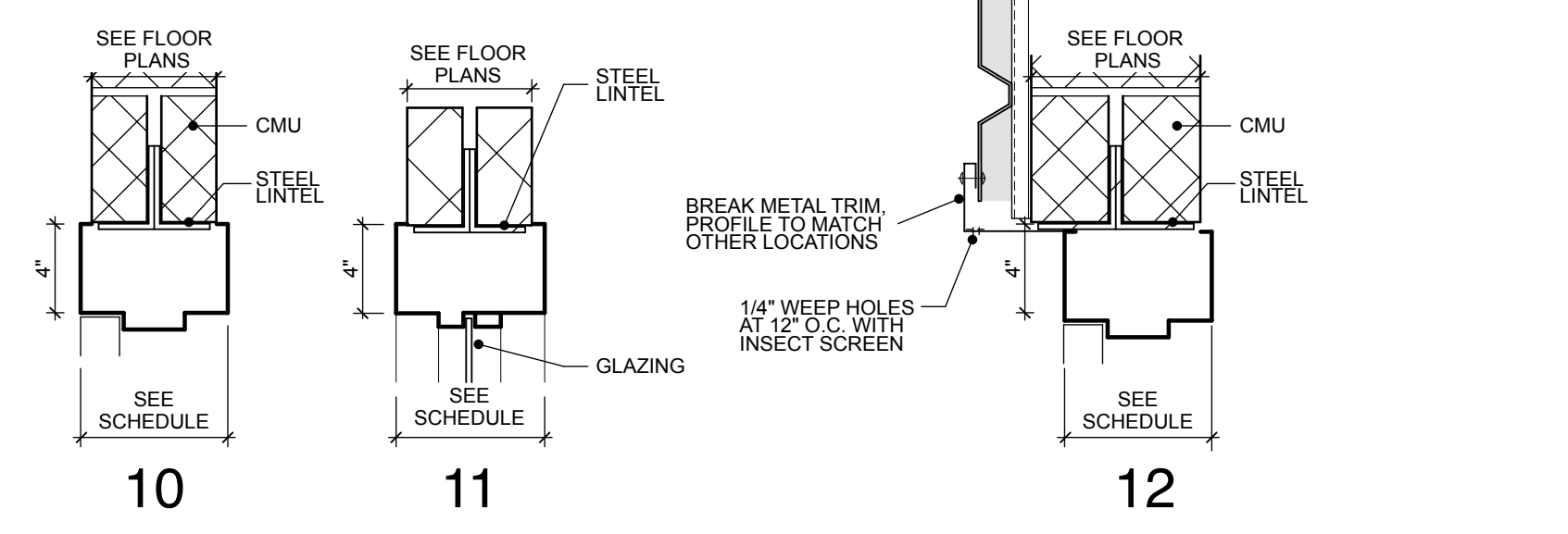


DOOR SCHEDULE table with columns: DOOR NUMBER, elev., mat., size, jamb, head, glaz., type, mat., size, Louver, glazing, UL label, sill, ADA Sign, REMARKS, DOOR NUMBER

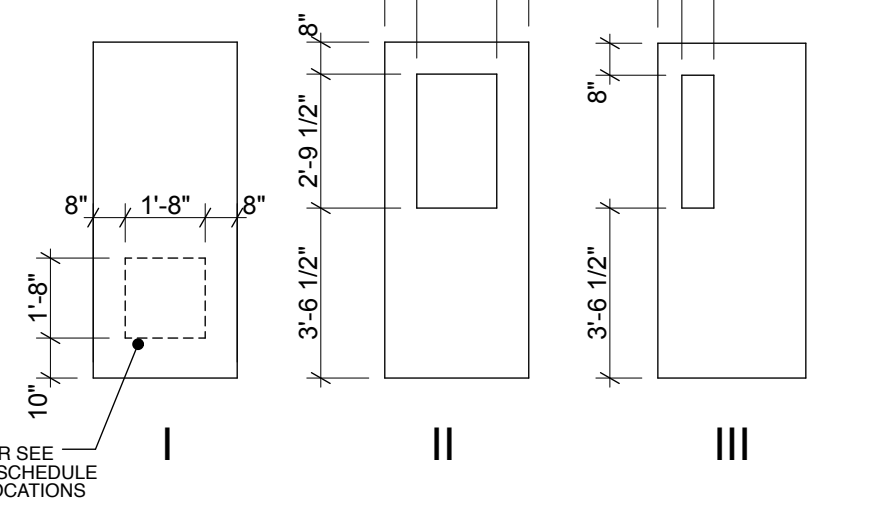
JAMBS - HM



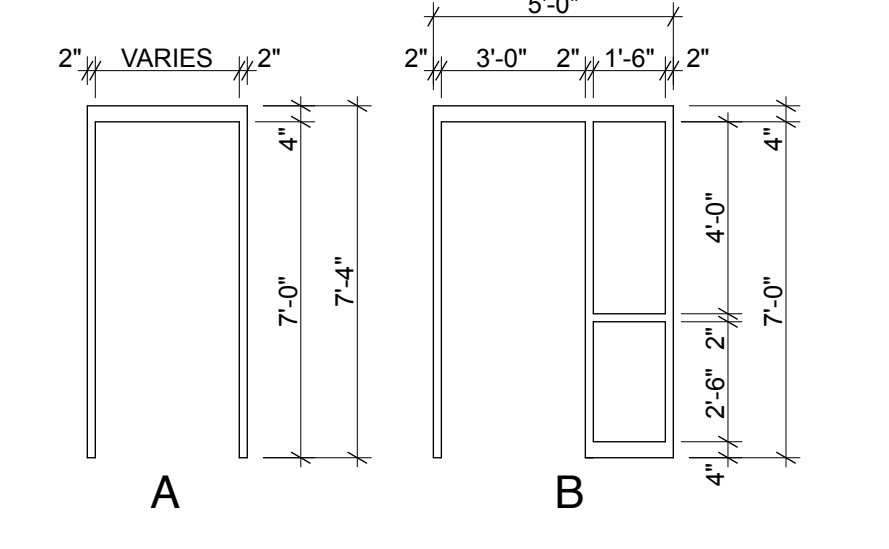
HEADS - HM



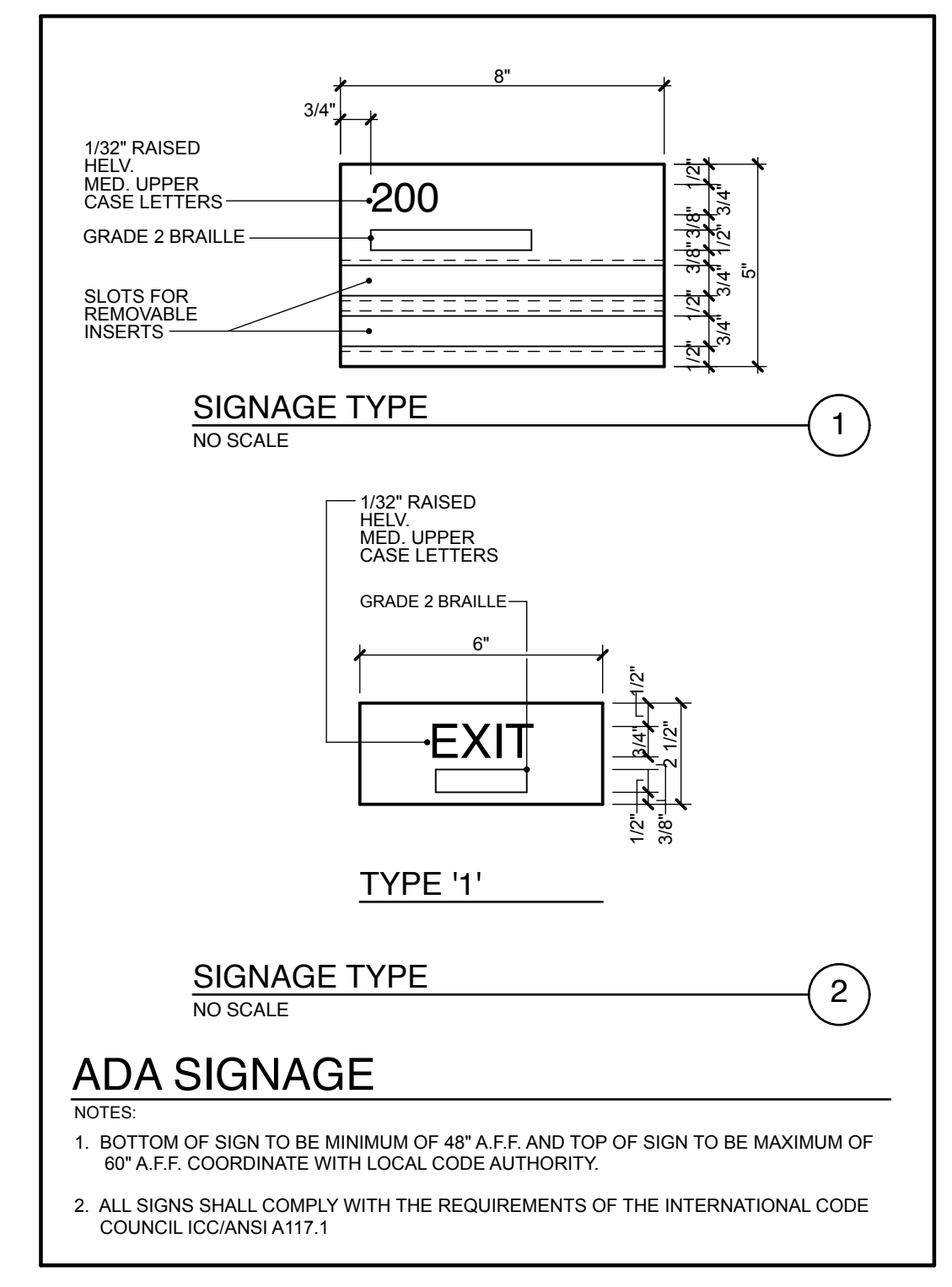
DOOR TYPES



FRAME TYPE



DOOR SCHEDULE LEGEND table with entries: HM - HOLLOW METAL GALV H.M., CT - CLEAR TEMPERED GLASS, 20 MIN - THE TIME IN MINUTES OF THE FIRE RESISTANCE OR FIRE PROTECTION RATING OF THE GLAZING ASSEMBLY



FINISH SCHEDULE table with columns: ROOM NO., ROOM NAME, FLOOR FIN., BASE, WALLS, SPECIAL FINISHES (NORTH WALL, EAST WALL, SOUTH WALL, WEST WALL), CEILING, FASCIA / SOFFITS, NOTES, ROOM NO.

FINISH SCHEDULE ABBREVIATIONS

Table of abbreviations: CMU CONCRETE MASONRY UNIT, CONC CONCRETE, EXIST EXISTING, EXP STRUCT EXPOSED STRUCTURE, GYP BD GYPSUM BOARD, PNT PAINT, RB RUBBER BASE, EPX FLR EPOXY FLOORING, TS TRICKBOARD, VCT VINYL COMPOSITION TILE

ACOUSTIC PANEL TYPES

AP-1 24" X 48" SQUARE EDGED LAY-IN

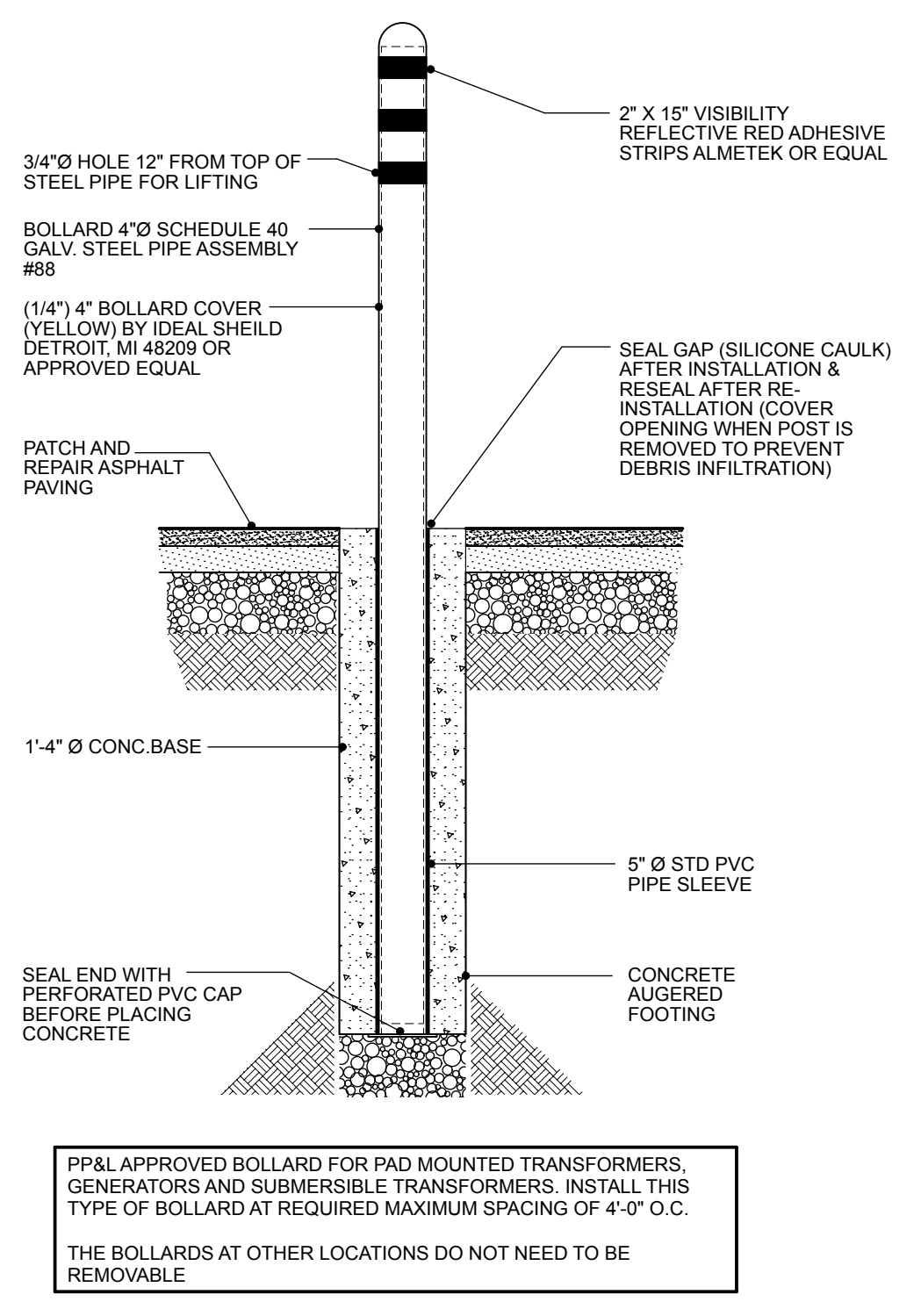
FINISH SCHEDULE GENERAL NOTES

1. ALL EXPOSED GYP BD AND CMU TO BE PAINTED UNLESS NOTED OTHERWISE

PARTITION TYPES

Table with columns: NO., DESCRIPTION. Includes a diagram of a partition wall with CMU and steel lintel.

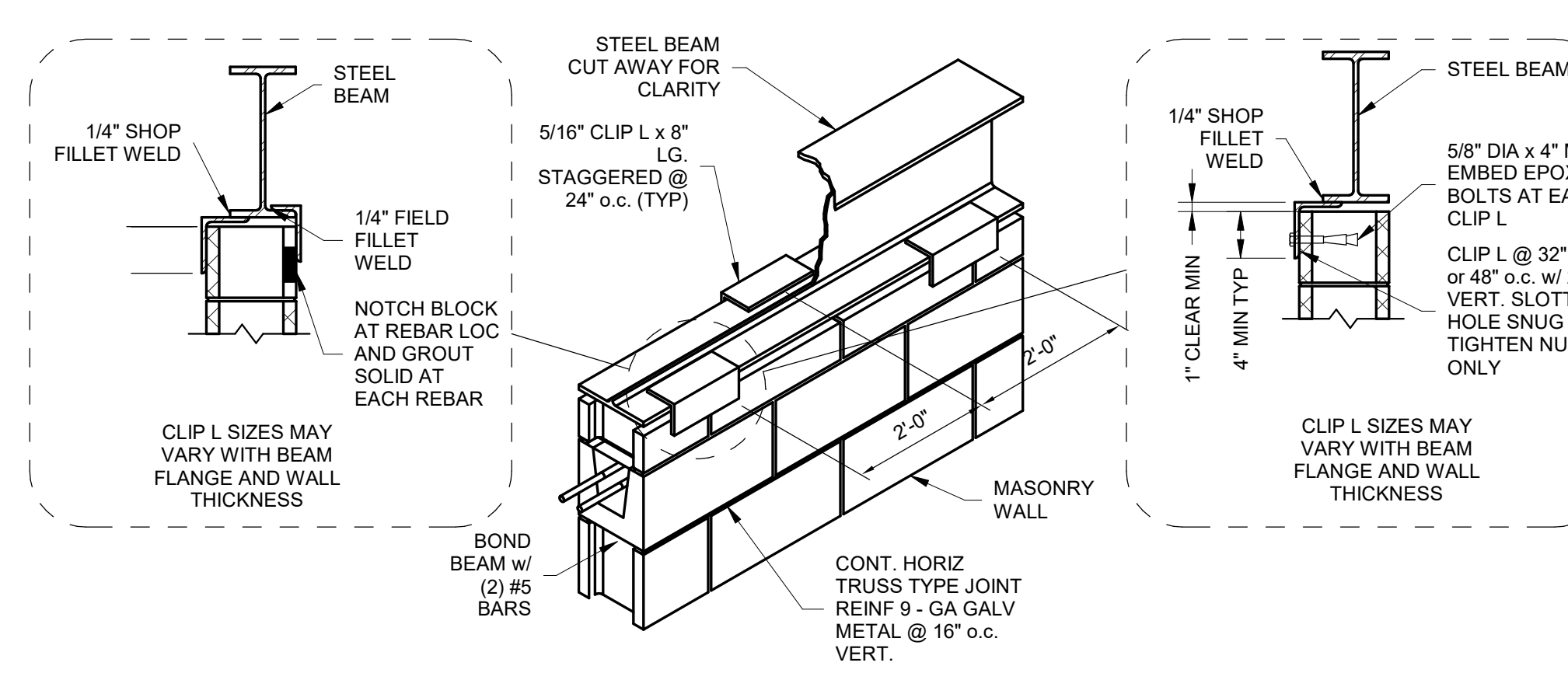
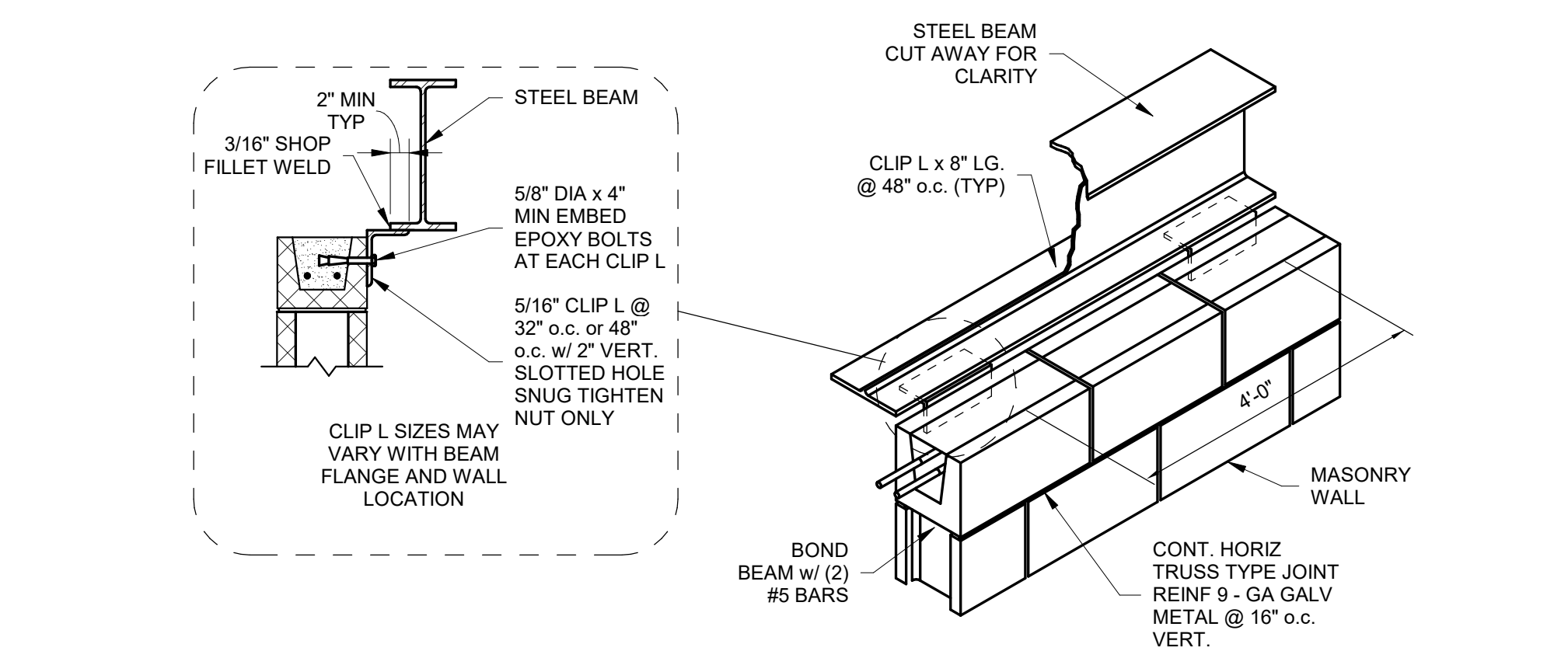
PARTITION TYPE GENERAL NOTES: 1. SEE INTERIOR ELEVATIONS AND FINISH SCHEDULE FOR FINISHES. 2. ALL PARTITIONS TO EXTEND TIGHT TO UNDERSIDE OF METAL DECK U.N.O. 3. ALL NEW WALLS MORE THAN 4'-0\"/>



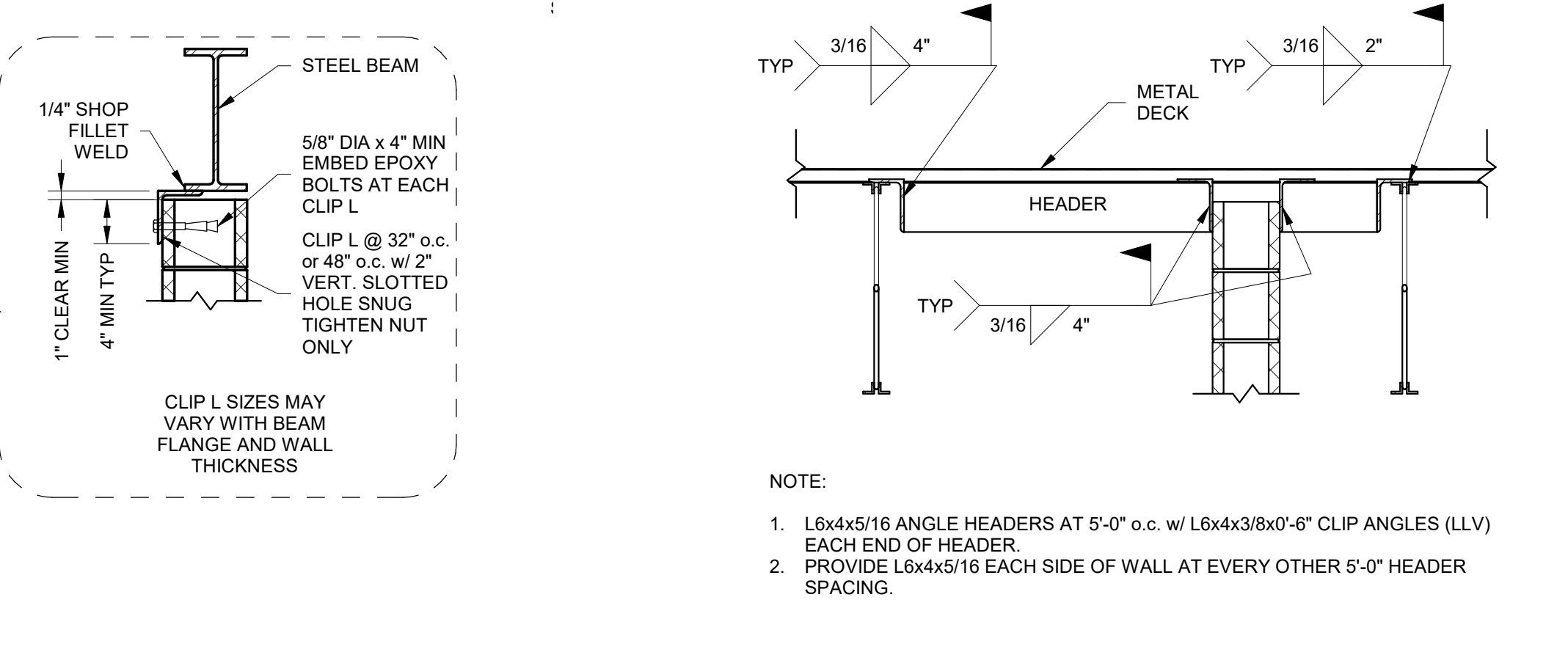
STEEL BOLLARD DETAIL A1 SCALE: 3/4\"/>

STEEL LINTEL SCHEDULE FOR NON-LOADBEARING MASONRY WALLS table with columns: WALL THICKNESS, CLEAR SPAN (4'-0\"/>

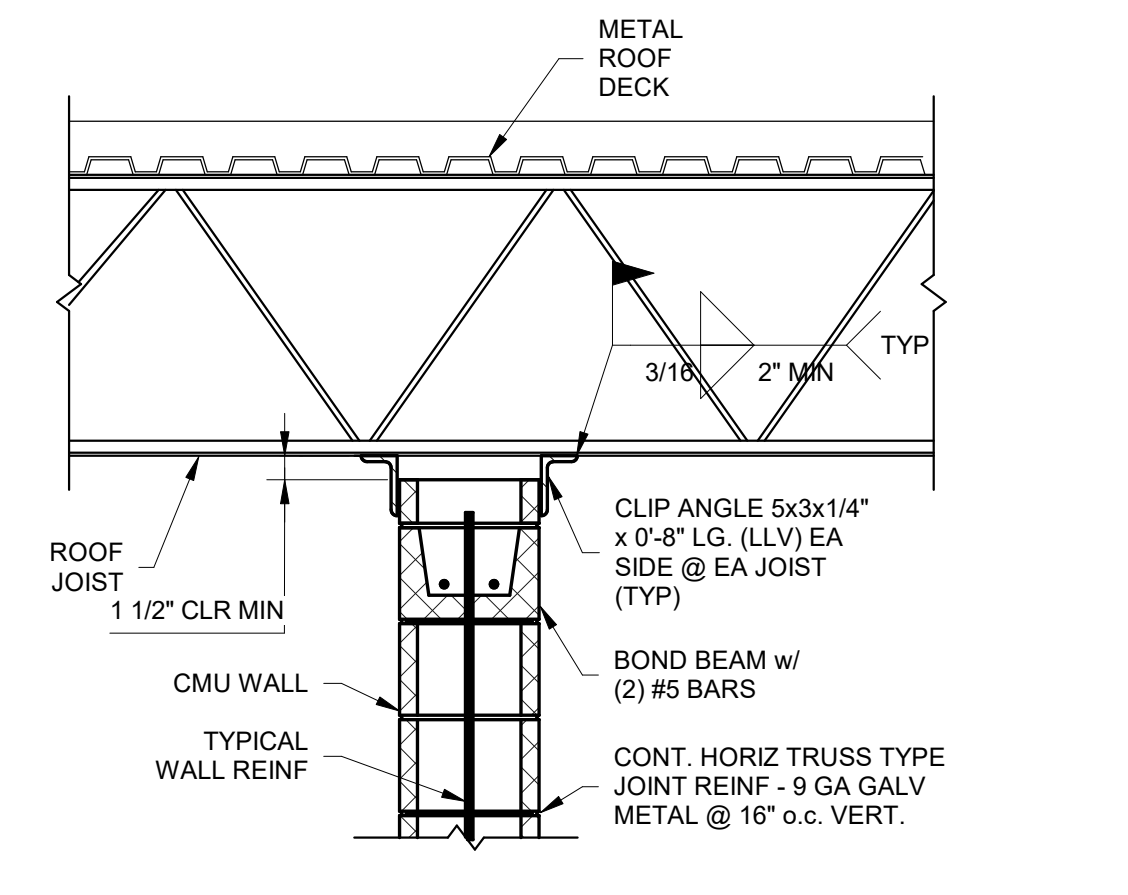
NOTES: 1. THE GENERAL CONTRACTOR SHALL PROVIDE AND INSTALL STEEL LINTELS IN ALL MASONRY WALLS, INCLUDING THE FOLLOWING (REF. CONTRACT DOCUMENTS). 2. ABOVE ALL METAL FRAMES IN MASONRY WALLS. 3. ABOVE ALL NEW OPENINGS, PASSAGES, ROLL-UP OR OVERHEAD DOORS IN MASONRY WALLS. 4. ABOVE ALL NEW DUCTWORK PASSING THROUGH MASONRY WALLS. 5. ABOVE ALL BUILT-IN ITEMS (SUCH AS CABINET HEATERS, CONVECTORS, LOUVERS, ACCESS PANELS, BRICK GRILLES, WINDOWS, ETC.) 6. AT ALL LOCATIONS WHERE NOTED ON THE PLANS AND/OR WALL SECTIONS. SIZES TO BE AS INDICATED IN THE SCHEDULE ABOVE. LENGTH TO BE FULL OPENING AND A MINIMUM 8\"/>



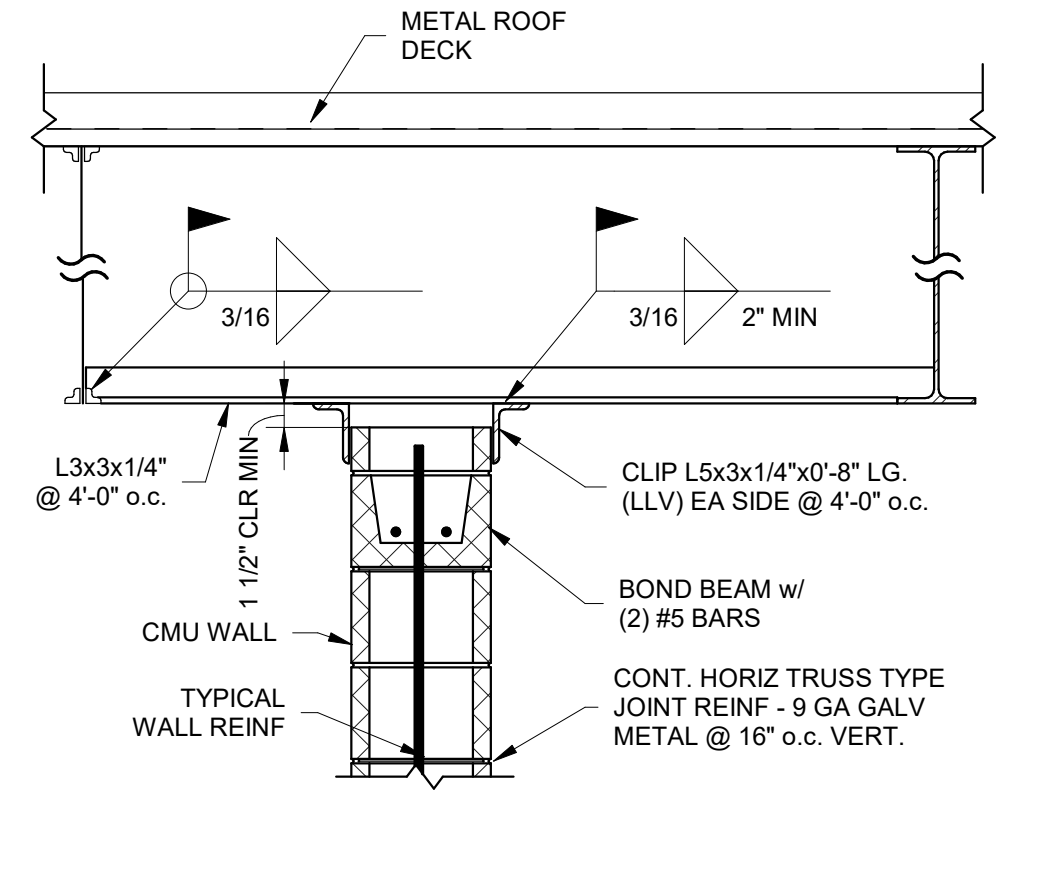
Typical Steel Beam Supporting Masonry Wall SCALE: 3/4\"/>



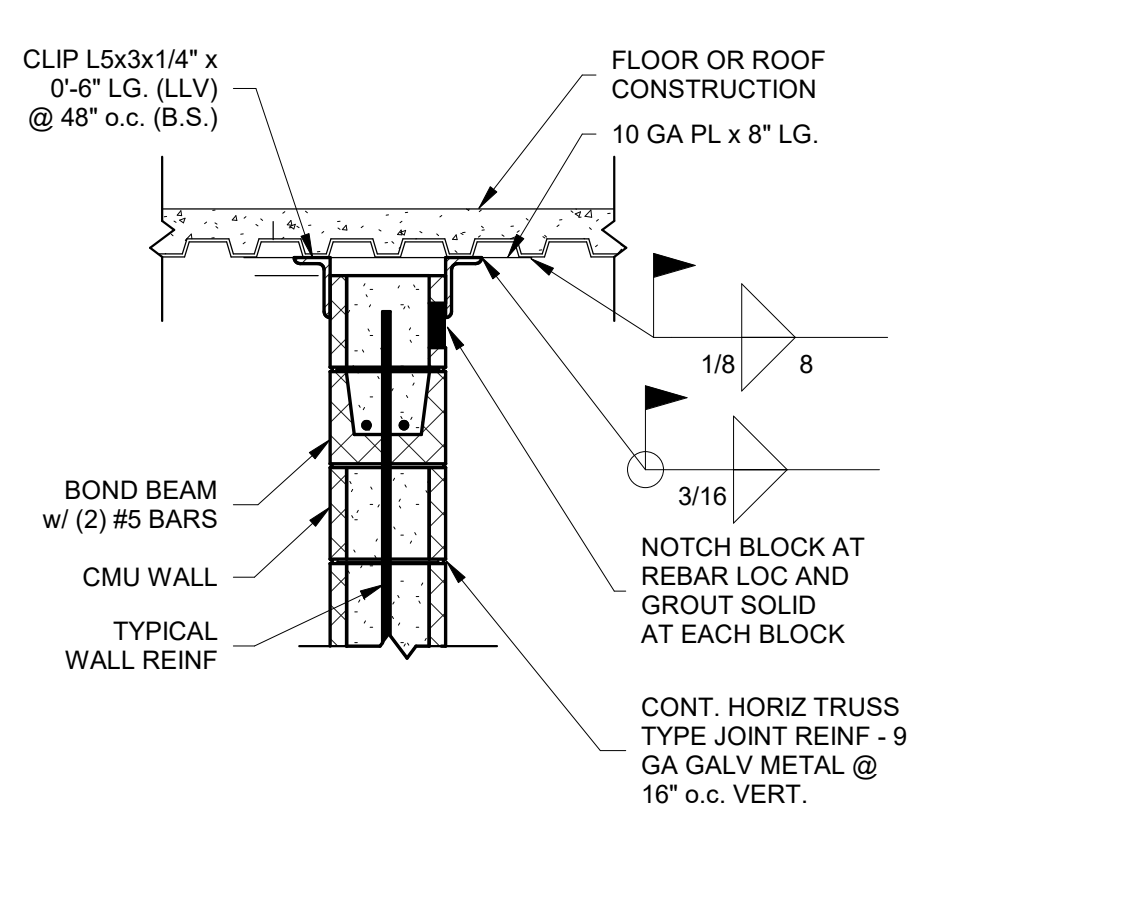
Typical Masonry Partition Wall Bracing SCALE: 3/4\"/>



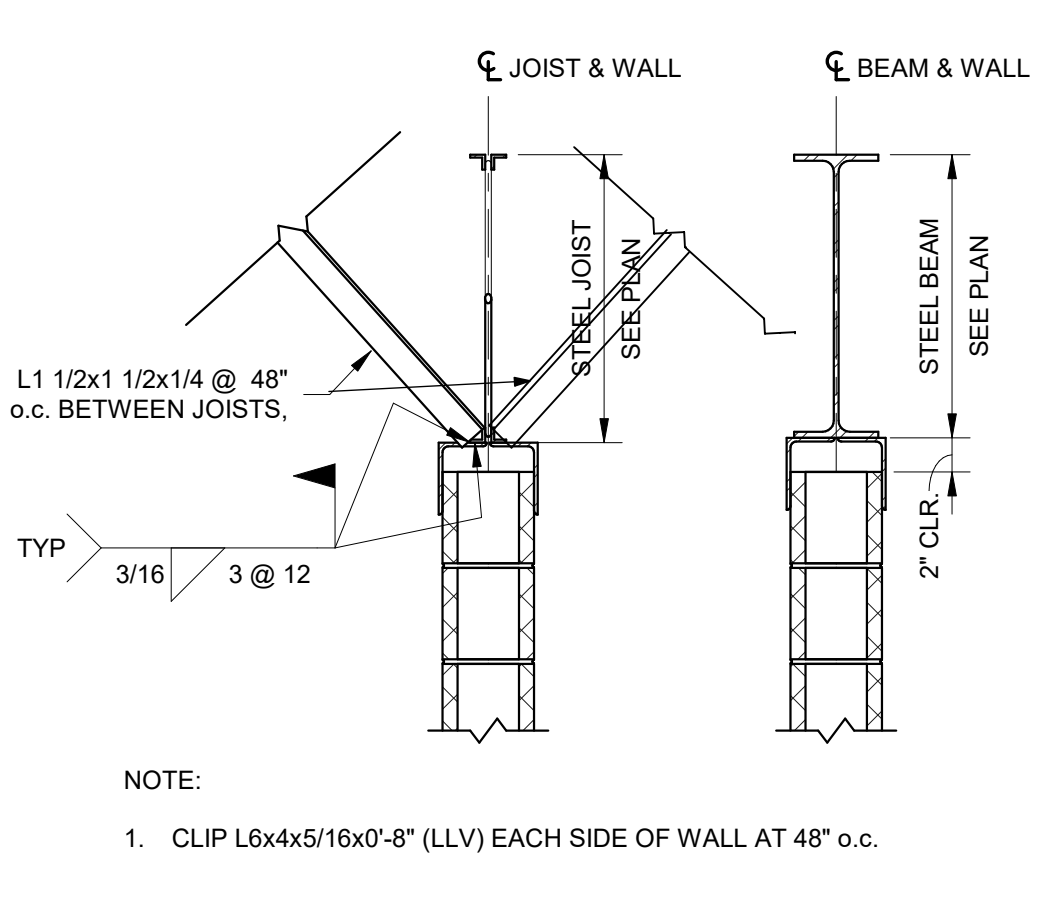
Typical Top Of Masonry Wall Bracing At Bar Joist SCALE: 3/4\"/>



Typical Top Of Masonry Wall Bracing At Metal Deck SCALE: 3/4\"/>



Typical Top Of Masonry Wall Bracing At Metal Deck SCALE: 3/4\"/>



Typical Masonry Partition Wall Bracing SCALE: 3/4\"/>

INTERIOR ALTERATIONS - PHASE 3 FOR THE EASTERN CENTER for ARTS and TECHNOLOGY WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

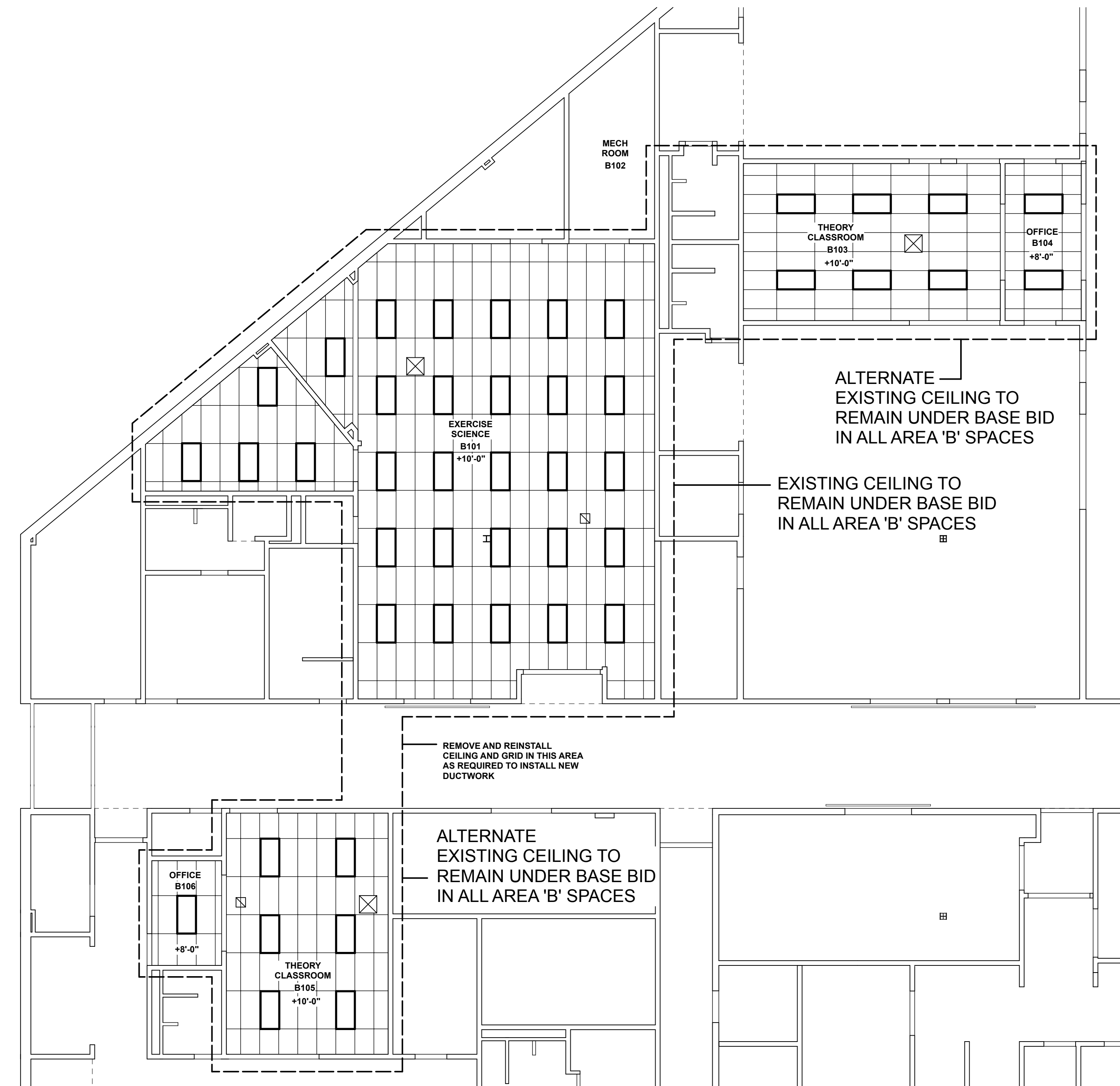
Table with columns: DATE, DRAWN, CHECKED, COMM. NO. Includes a grid for revision tracking.



REFLECTED CEILING PLAN - AREA 'A'

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

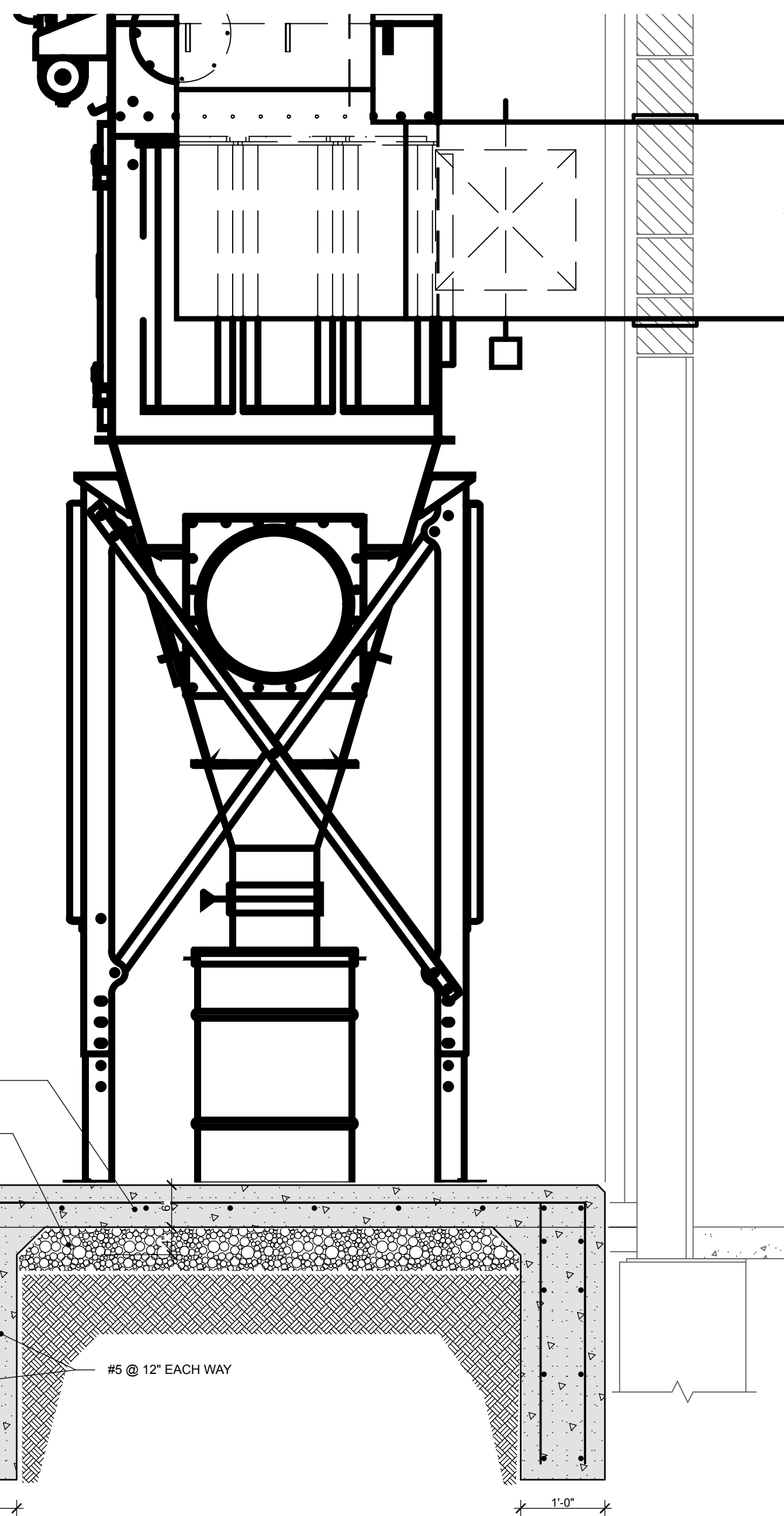
1



REFLECTED CEILING PLAN - AREA 'B'

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

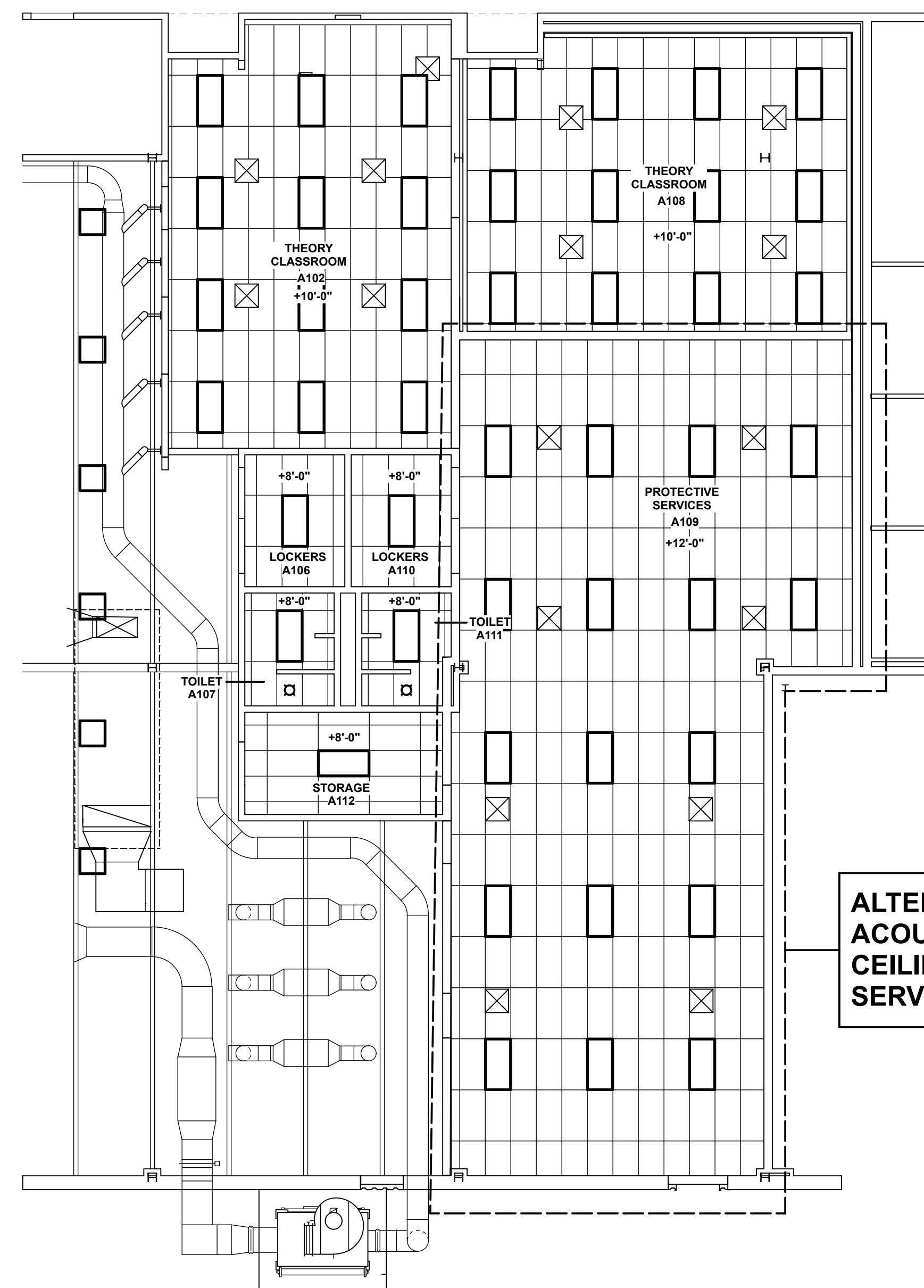
2



SECTION AT CONCRETE PAD FOR DUST COLLECTOR

SCALE: 3/4" = 1'-0"

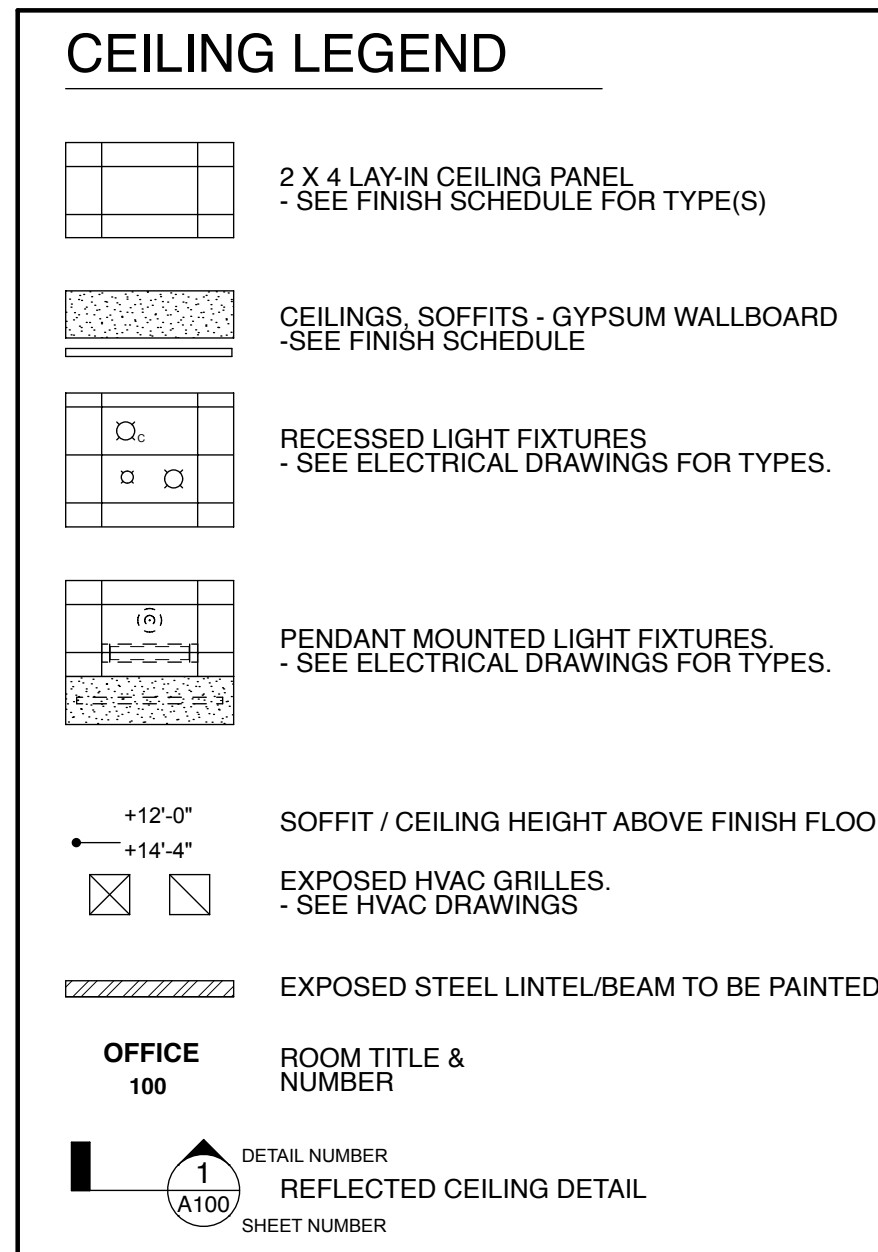
4



REFLECTED CEILING PLAN (ALTERNATE)

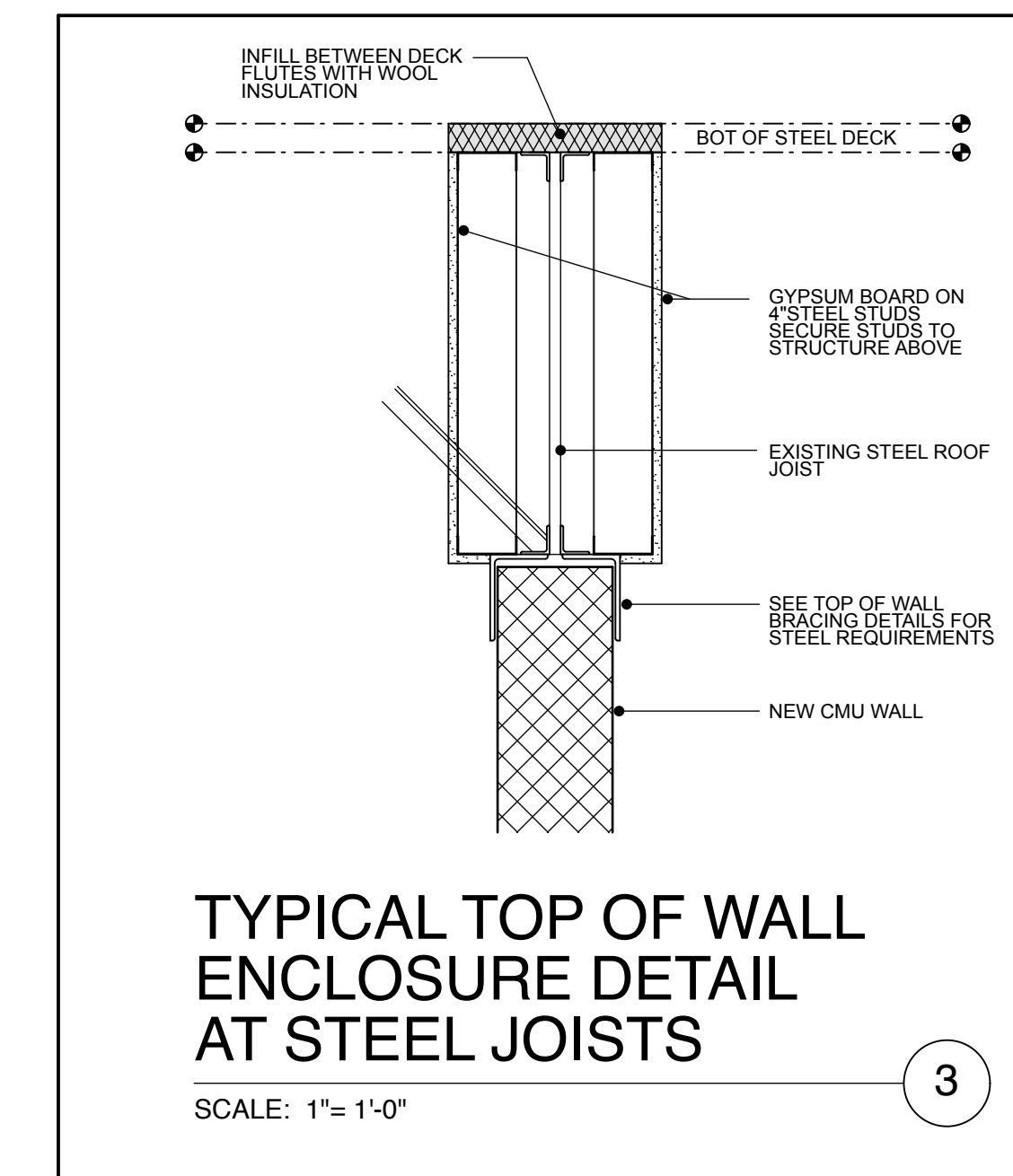
SCALE 1/8"=1'-0"

ALTERNATE:  
ACOUSTIC PANEL  
CEILING IN PROTECTIVE  
SERVICES A109



GENERAL REFLECTED CEILING NOTES:

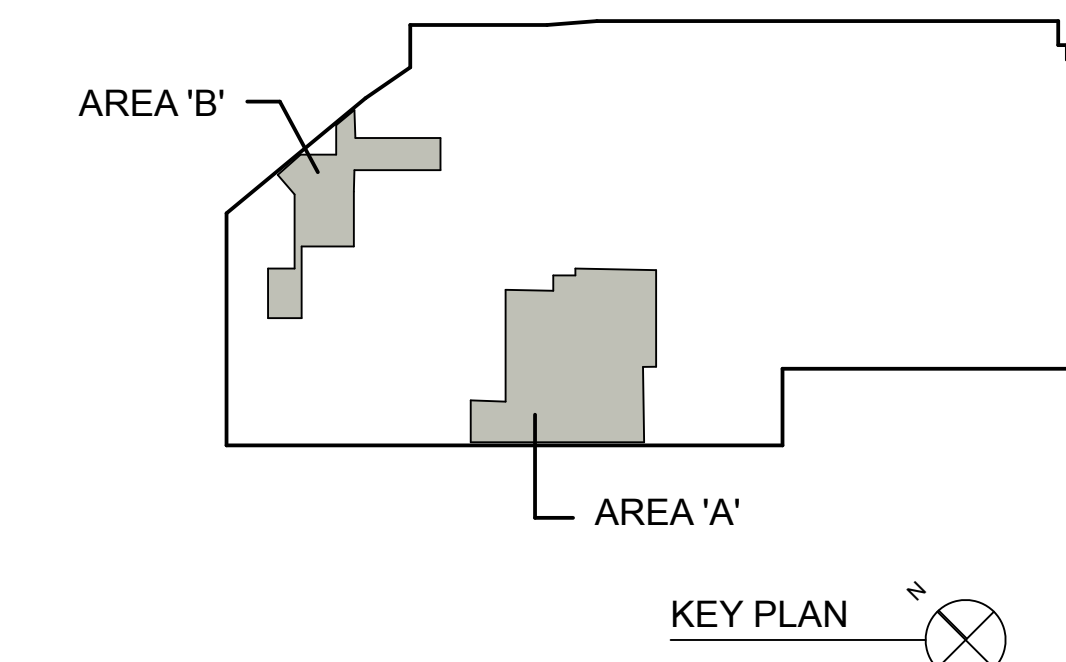
1. ALL ACOUSTIC PANEL CEILINGS ARE TO BE CENTERED IN SPACES PROVIDED FOR PANEL CEILINGS WITH PANELS EQUALLY CUT ON OPPOSITE SIDES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
2. LIGHT FIXTURES ARE TO BE CENTERED IN EACH PANEL UNLESS OTHERWISE INDICATED ON THE DRAWINGS. SEE ELECTRICAL SPECIFICATIONS AND DRAWINGS FOR FIXTURE TYPES AND SIZES.
3. WHERE SURFACE MOUNTED LIGHT FIXTURES ARE USED, ELECTRICAL CONTRACTOR SHALL CHECK THAT NO DOOR SWING IS OBSTRUCTED BY ANY LIGHT FIXTURE. INCLUDING EXIT SIGNS. ELECTRICAL CONTRACTOR SHALL NOTIFY ARCHITECT PRIOR TO RELOCATING ANY LIGHT FIXTURE.
4. REFER TO FINISH SCHEDULE FOR ALL CEILING TYPES.
5. REFER TO ELECTRICAL AND MECHANICAL DRAWING FOR LIGHT FIXTURES AND DIFFUSERS NOT INDICATED ON REFLECTED CEILING PLANS.
6. ALL SOFFIT AND FASCIA DIMENSIONS ON REFLECTED CEILING PLANS ARE FINISH TO FINISH (UNLESS NOTED OTHERWISE).
7. ALL CONTROL JOINTS TO BE CONTINUOUS THROUGH, SOFFITS AND FASCIA UNLESS NOTED OTHERWISE.
8. DETAILS, LEGENDS AND NOTES INDICATED ON THIS DRAWING ARE TYPICAL FOR ALL REFLECTED CEILING PLANS.



TYPICAL TOP OF WALL ENCLOSURE DETAIL AT STEEL JOISTS

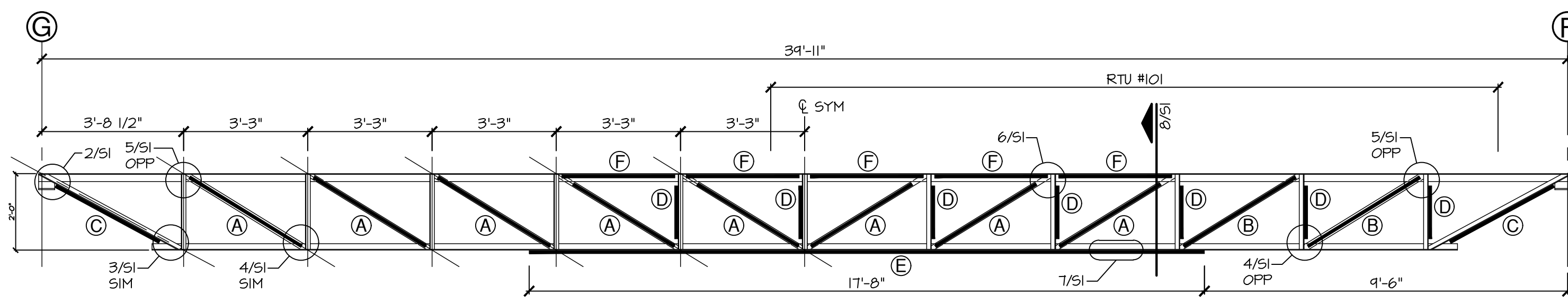
SCALE: 1"=1'-0"

3

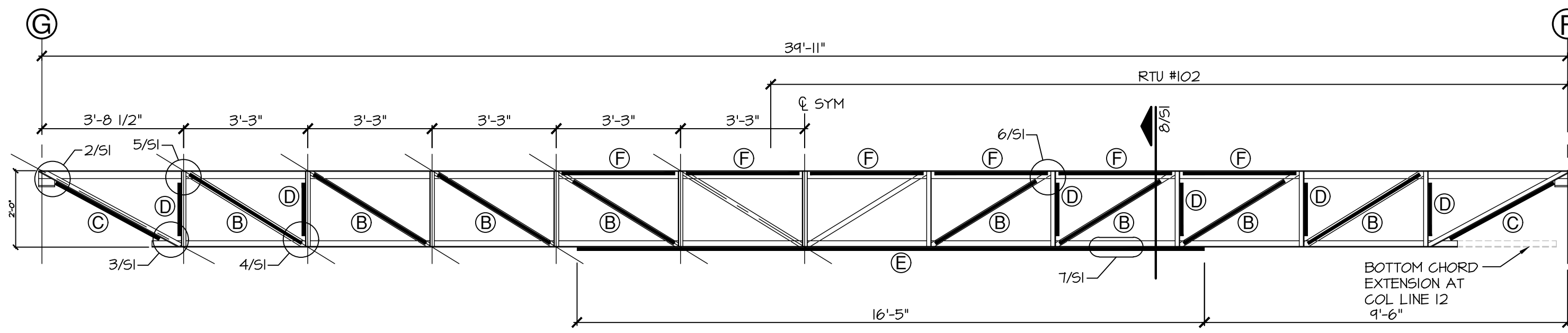


KEY PLAN

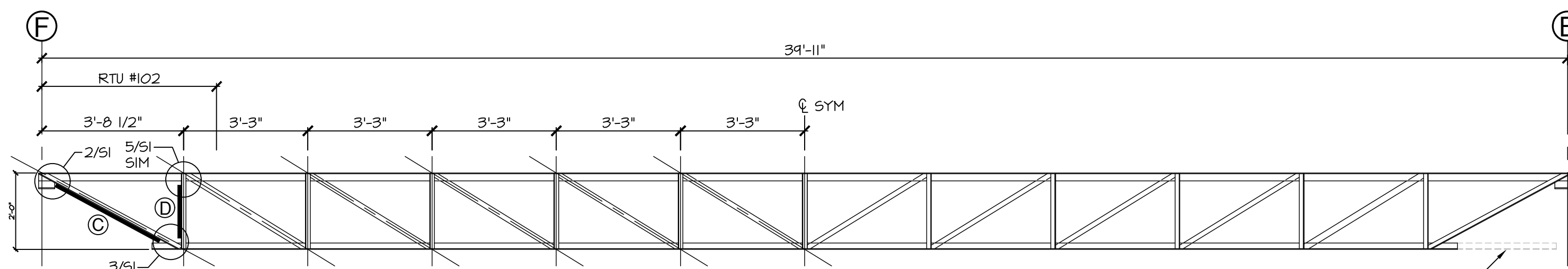




TRUSS ELEVATION T-1  
SCALE: 3/8"=1'-0"



TRUSS ELEVATION T-2  
SCALE: 3/8"=1'-0"

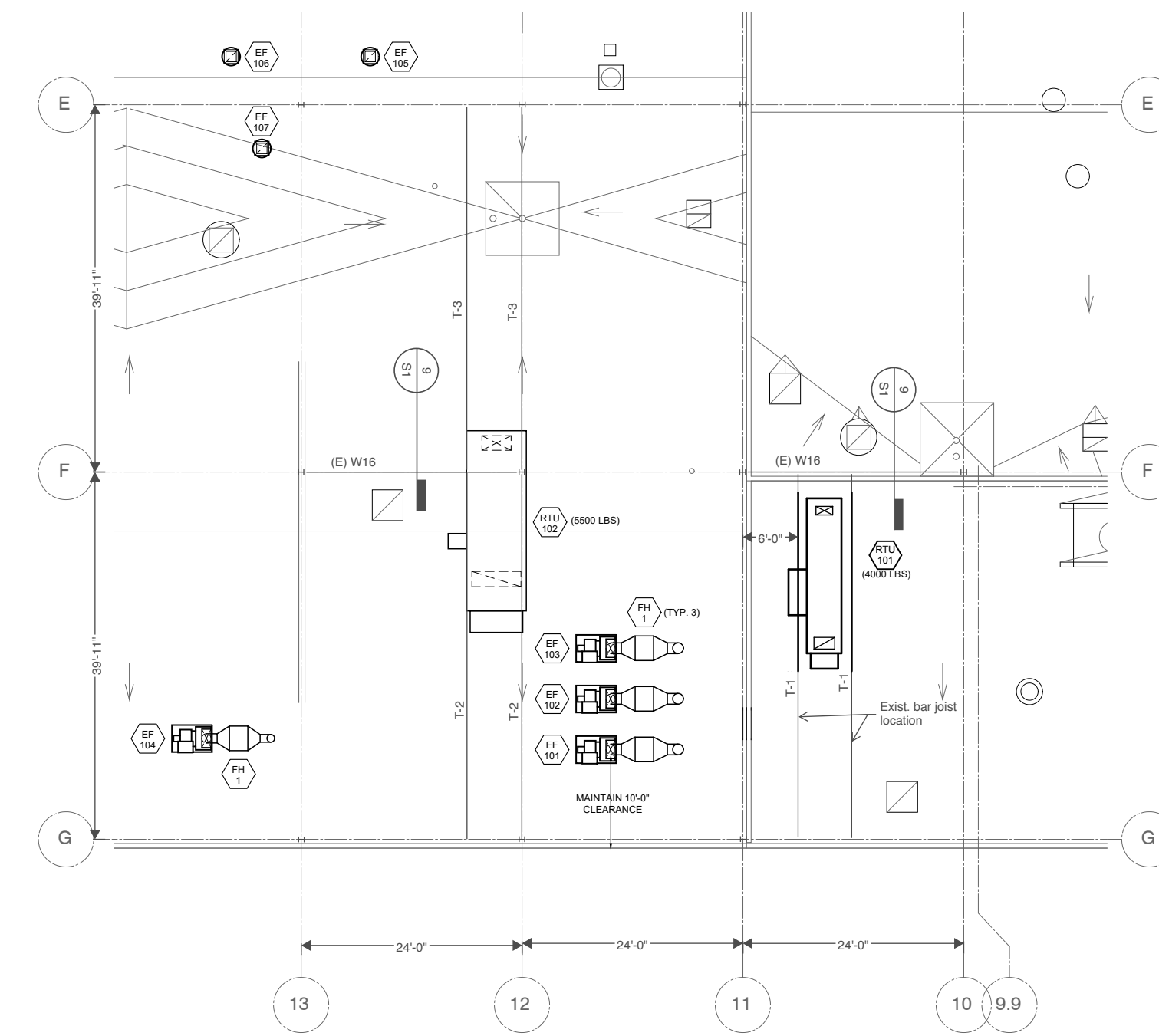


TRUSS ELEVATION T-3  
SCALE: 3/8"=1'-0"

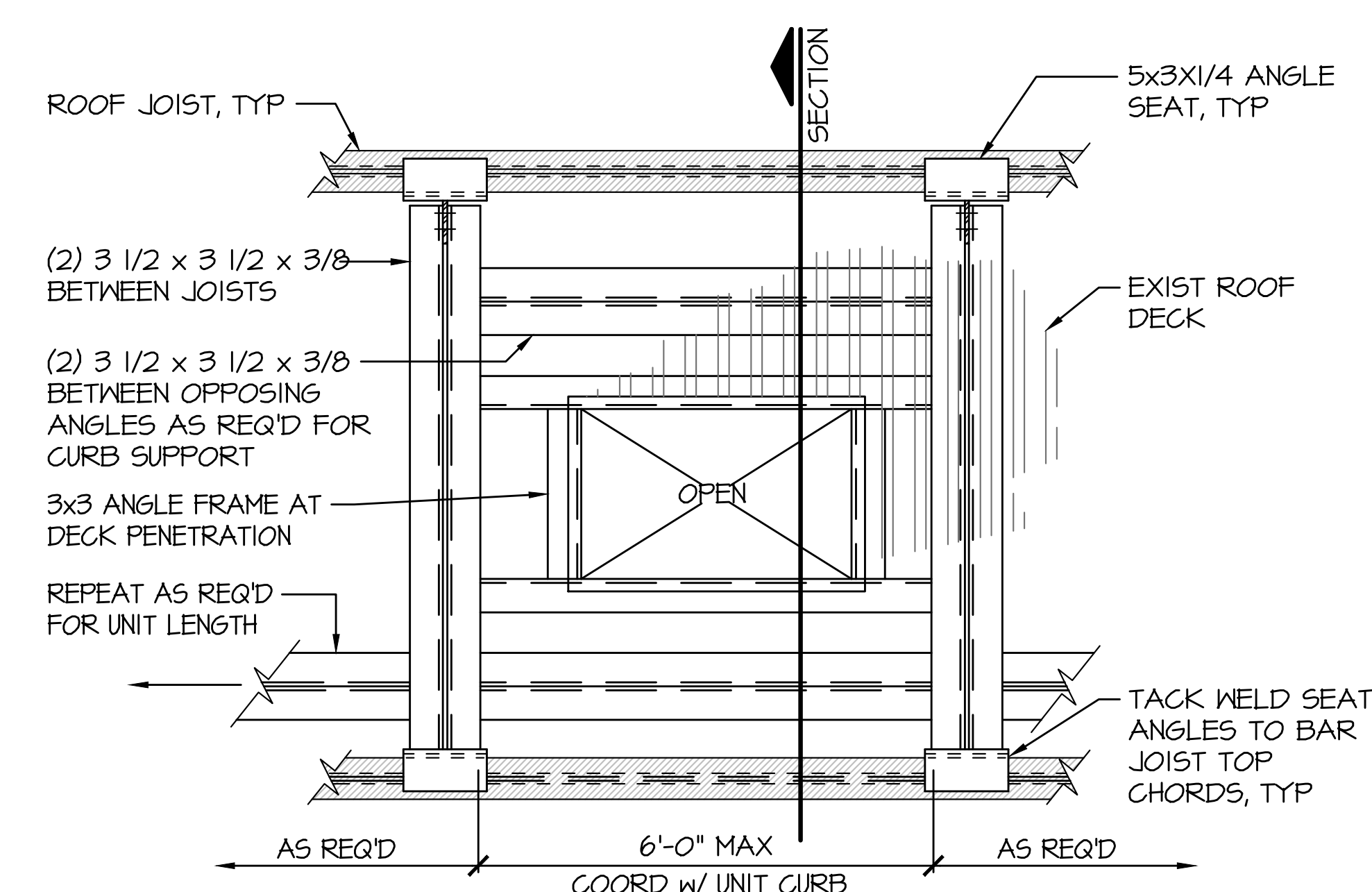
**REINFORCEMENT SCHEDULE**

MARK	REINFORCEMENT
(A)	(2) 3/8"x3/8" BAR OR (2) 1/2"Ø ROD
(B)	(2) 1/2"x1/2" BAR OR (2) 5/8"Ø ROD
(C)	(1) 2 1/2"x1/4" BAR
(D)	(1) 2 1/4"x3/16" BAR
(E)	C4x5.4 (TOE UP)
(F)	(2) 1/8"Ø ROD

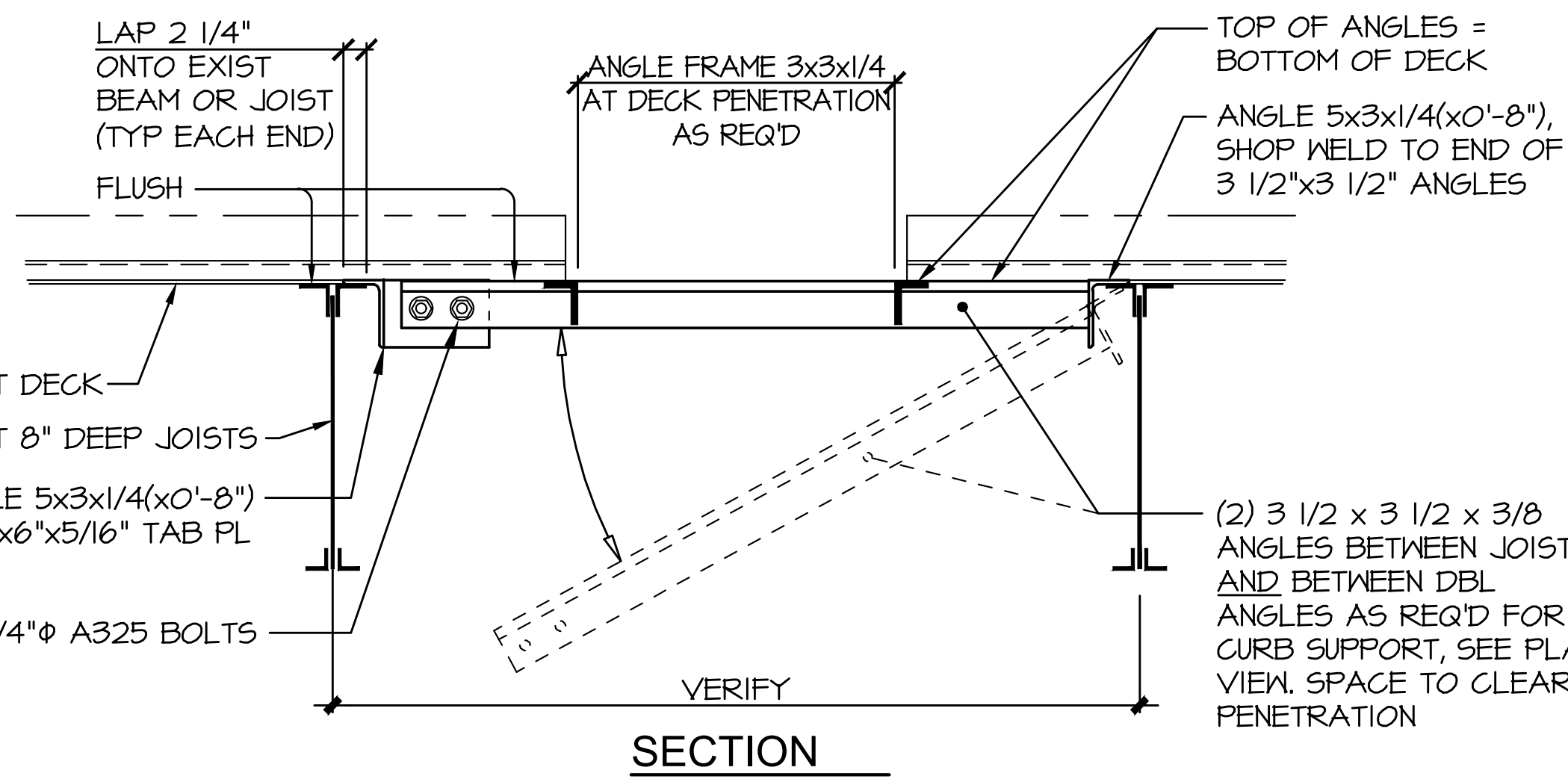
ABOVE REINFORCEMENT IS BASED ON RTU 101 HAVING AN OPERATING HEIGHT OF 4,000 LBS AND RTU 102 HAVING AN OPERATING HEIGHT OF 5,500 LBS.  
ANY CHANGE IN OPERATING HEIGHT FOR THE FINAL UNIT SELECTION MUST BE SUBMITTED TO THE ARCHITECT FOR RE-EVALUATION OF THE ROOF FRAMING.



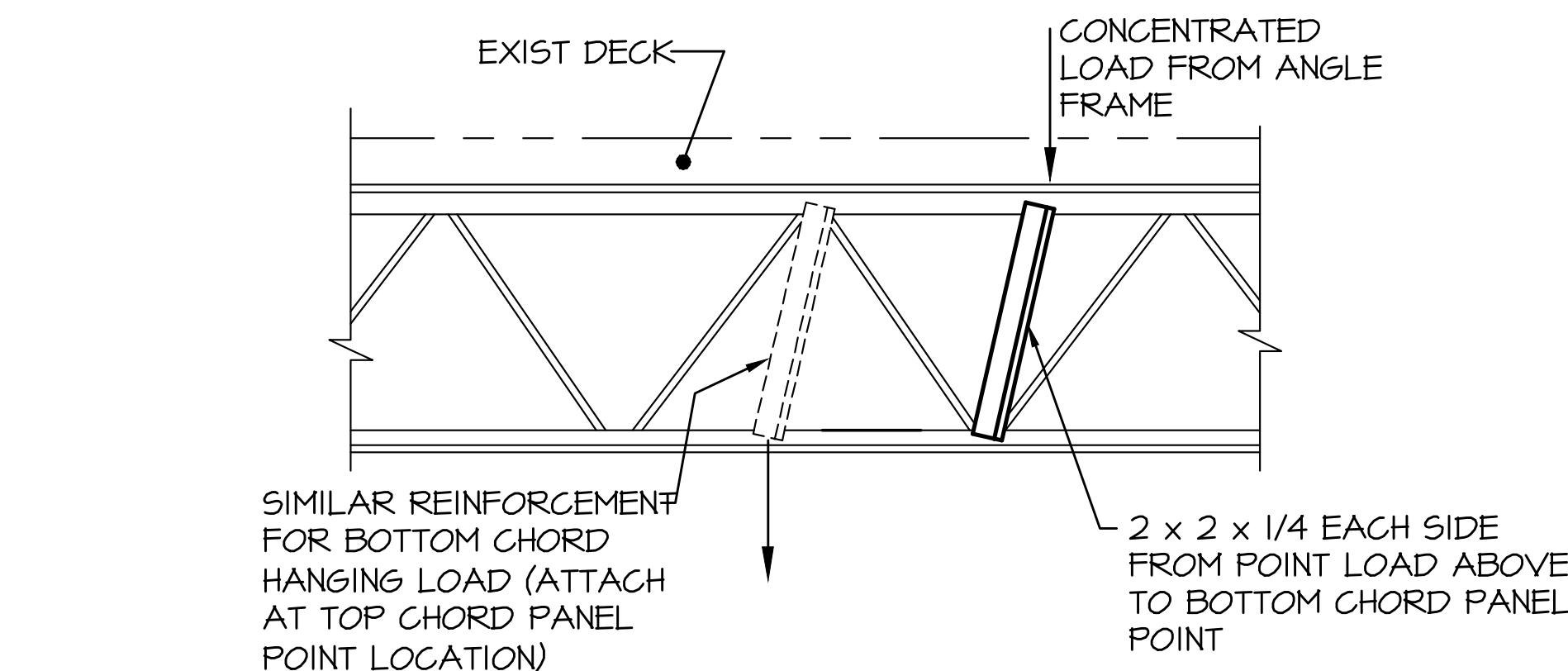
PARTIAL ROOF PLAN  
SCALE 1/16"=1'-0"



PLAN VIEW - ANGLE FRAME AT ROOF OPENINGS AND CURBS

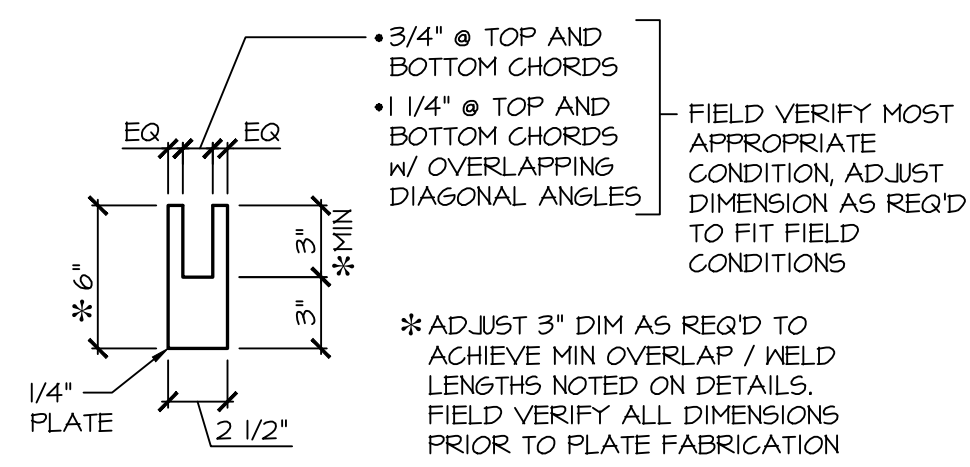


SECTION

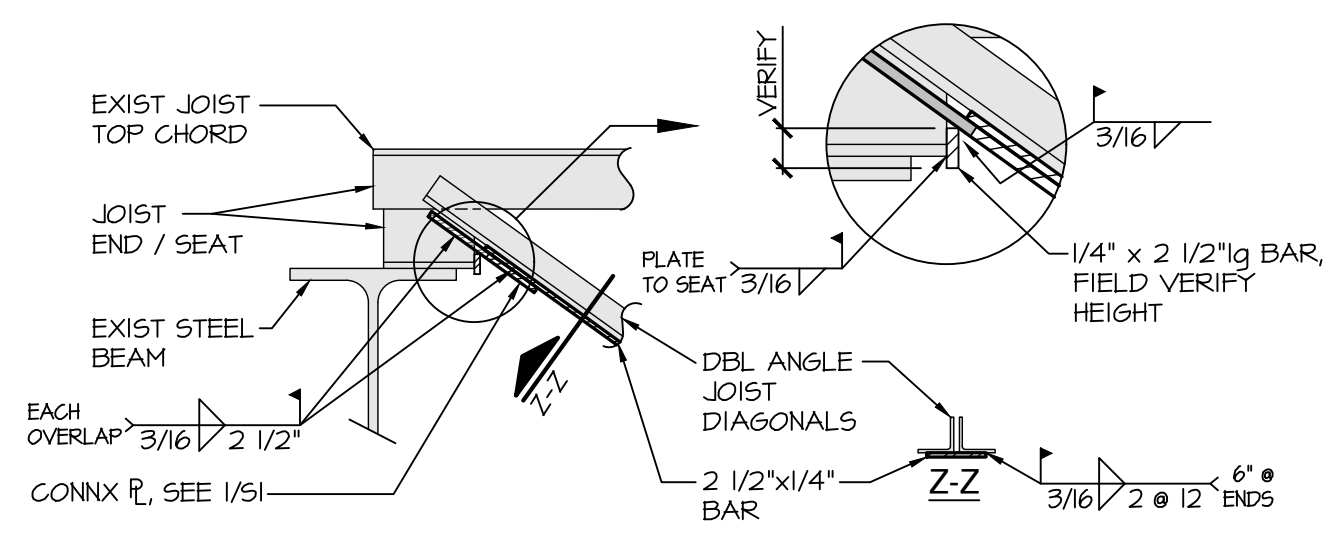


JOIST REINF DETAIL FOR POINT LOADS

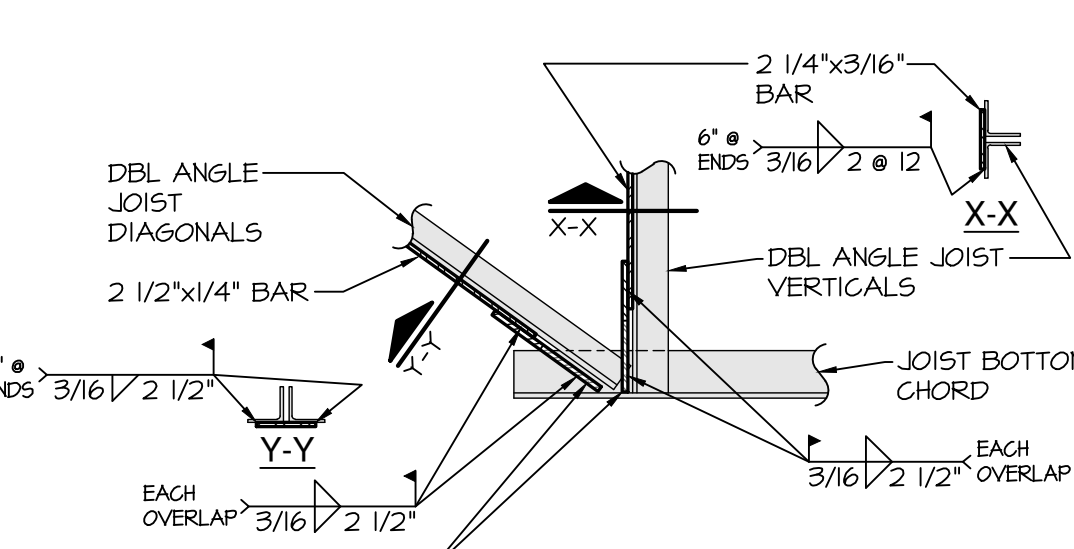
II  
SI  
TYPICAL ROOF OPENING PLAN AND SECTION  
SCALE: 3/4"=1'-0"



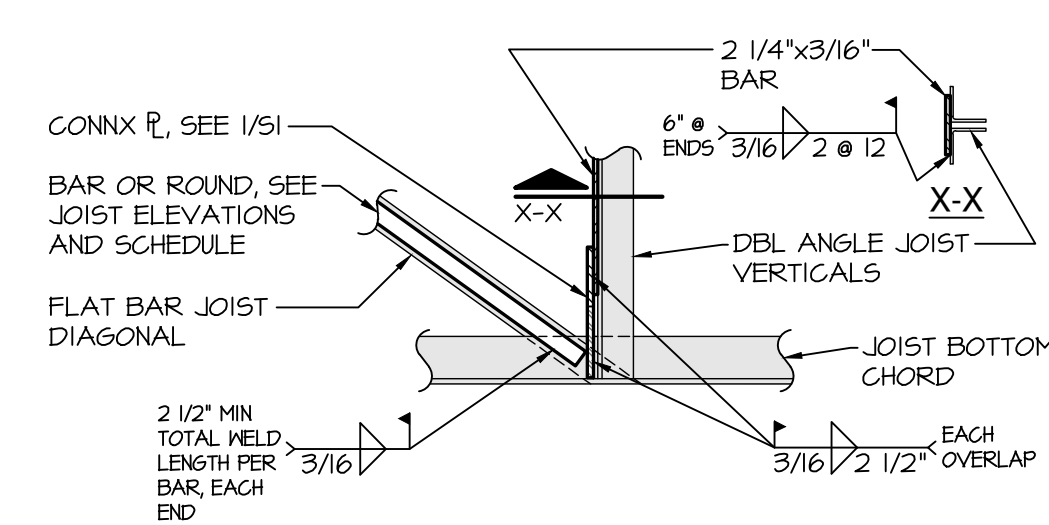
1  
SI  
CONNX PLATE DETAIL  
SCALE: 1/2"=1'-0"



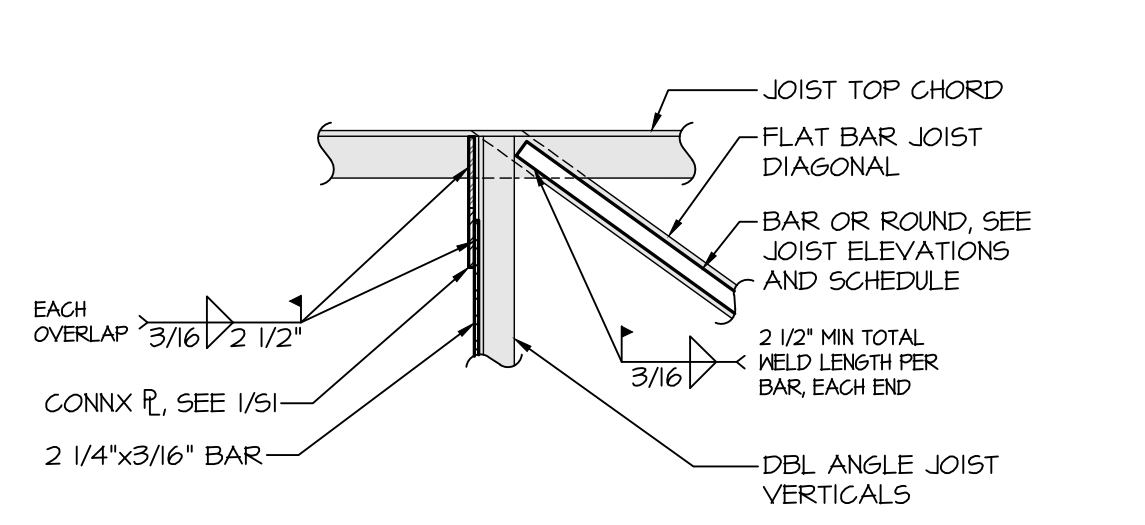
2  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



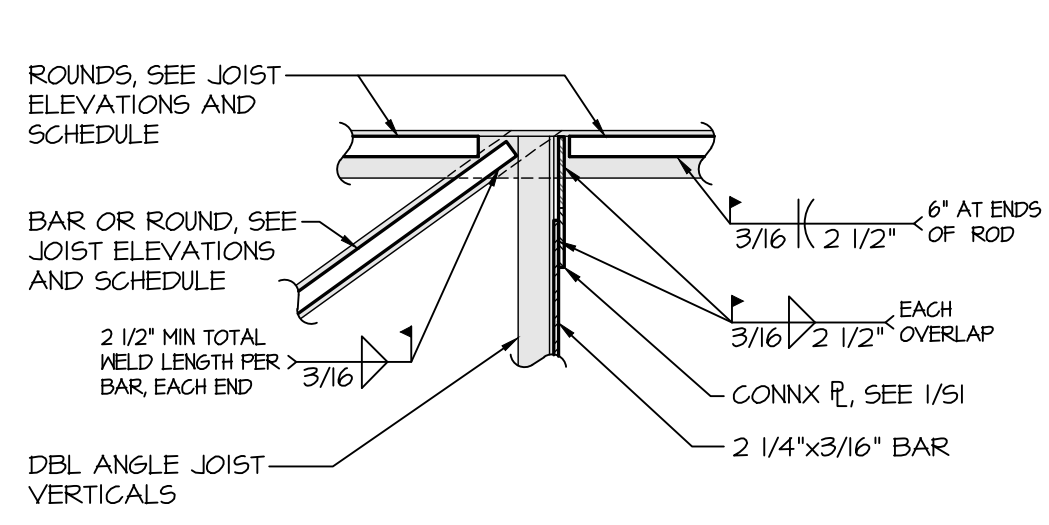
3  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



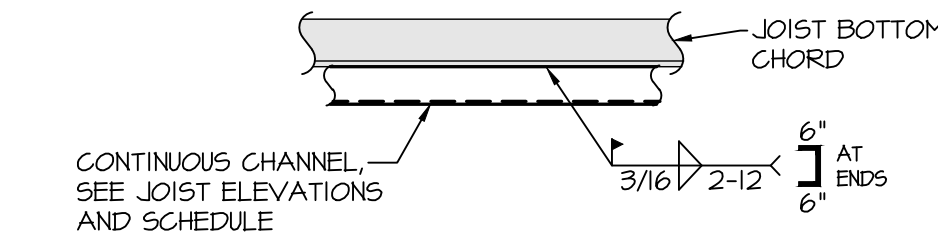
4  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



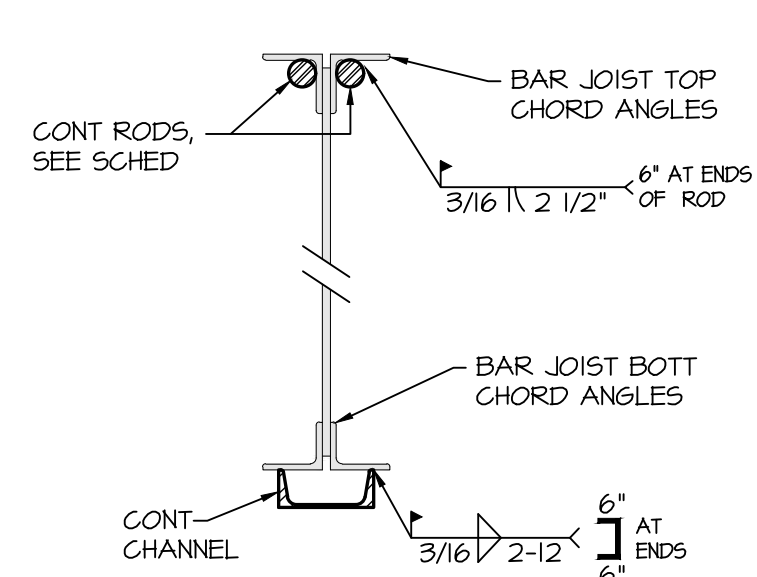
5  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



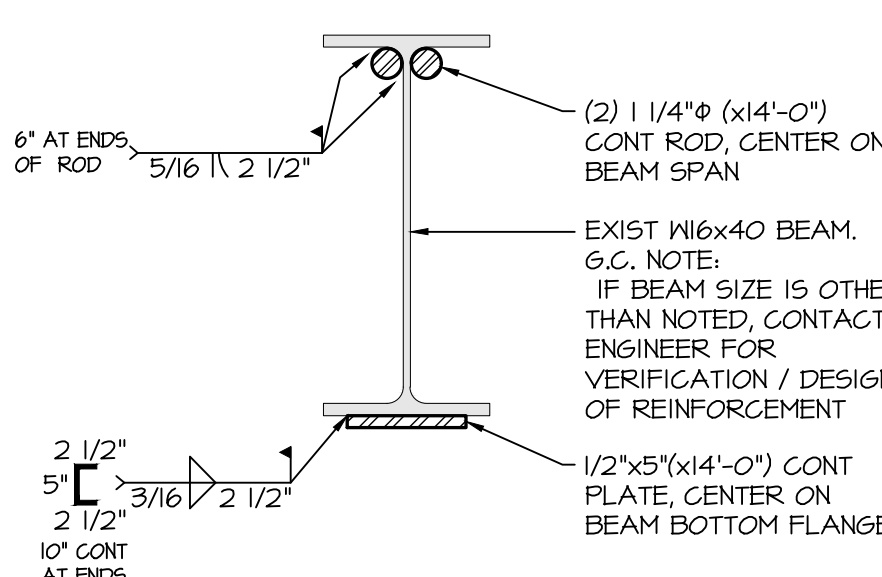
6  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



7  
SI  
DETAIL  
SCALE: 1/2"=1'-0"



8  
SI  
JOIST SECTION  
NONE



9  
SI  
BEAM SECTION  
NONE



INTERIOR ALTERATIONS - PHASE 3  
FOR THE  
EASTERN CENTER for ARTS and TECHNOLOGY  
WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

ROOF REINFORCEMENT DETAILS

DATE	DESIGNED	CHECKED	CONTR. NO.
02/01/2022	KMM	KMM	684



**EQUIPMENT TYPES**

ATS	AUTOMATIC TRANSFER SWITCH
BW	BUSWAY
C	CONTACTOR
DS	DISCONNECT SWITCH
ECB	ENCLOSED CIRCUIT BREAKER
IDF	INTERMEDIATE DISTRIBUTION FRAME
LCP	LIGHTING CONTROL PANEL
MCC	MOTOR CONTROL CENTER
MS	MOTOR STARTER
PDU	POWER DISTRIBUTION UNIT
PNL	ELECTRICAL PANEL
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
T OR TRAN	TRANSFORMER
UPS	UNINTERRUPTIBLE POWER SUPPLY

**ELECTRICAL SYMBOLS**

<p><b>LIGHTING</b></p> <p>S SINGLE POLE SWITCH          3-WAY SWITCH          4-WAY SWITCH          KEY SWITCH          LOW-VOLTAGE LIGHTING CONTROL SWITCH, ZONE a          SWITCH WITH ELECTRONIC TIMER          DIMMER SWITCH          3-WAY DIMMER SWITCH          SWITCH WITH MOTION SENSOR          EMERGENCY BATTERY BACKUP UNIT          EMERGENCY HEADS          EXIT SIGN, ARROWS AS SHOWN          EXIT SIGN W/ WIREGUARD</p> <p>SHOWN ON LIGHTING PLANS</p> <p>LUMINAIRES</p> <p>LUMINAIRE TYPE A IN CONTROL ZONE b          WALL-MOUNT LUMINAIRE          NORMAL/EMERGENCY LUMINAIRE          EMERGENCY-ONLY LUMINAIRE          MOTION SENSOR - CEILING-MOUNTED US          MOTION SENSOR - CEILING-MOUNTED MT          MOTION SENSOR - AISLE TYPE          MOTION SENSOR - ADJUSTABLE SWIVEL NECK - CORNER CEILING OR WALL MOUNTED MT          NETWORK LIGHTING CONTROL HUB WITH ONE DATA JACK</p> <p><b>FIRE ALARM</b></p> <p>SMOKE DETECTOR          HEAT DETECTOR          BEAM SMOKE DETECTOR TRANSMITTER          BEAM SMOKE DETECTOR RECEIVER          DUCT SMOKE DETECTOR          FIREFIGHTER TELEPHONE JACK          MANUAL PULL STATION          AUDIOVISUAL ALARM          VISUAL ALARM          VISUAL ALARM - CEILING MOUNTED          VOICE/VISUAL ALARM          VOICE/VISUAL ALARM - CEILING MOUNTED SPEAKER          FIRE ALARM CONTROL PANEL          ANNUNCIATOR PANEL          DOOR HOLDER          FLOW SWITCH INTERFACE          INPUT INTERFACE MODULE          OUTPUT INTERFACE MODULE          TAMPERSWITCH INTERFACE          PRESSURE SWITCH INTERFACE</p> <p><b>SECURITY (BY OWNER)</b></p> <p>DOOR CONTACT          DOOR INTERCOM STATION          CARD READER          KEYPAD          ELECTRIC DOOR STRIKE          ELECTRIC LATCH RETRACTION HARDWARE          POWER TRANSFER DEVICE          MAGNETIC DOOR LOCK          MASTER DOOR INTERCOM STATION          MASTER DOOR INTERCOM STATION          MOTION SENSOR - CEILING-MOUNTED US          MOTION SENSOR - CEILING-MOUNTED MT          MOTION SENSOR - CEILING-MOUNTED IR          MOTION SENSOR - AISLE TYPE          MOTION SENSOR - REQUEST TO EXIT          VIDEO SURVEILLANCE CAMERA</p> <p>SHOWN ON POWER OR LOW-VOLTAGE PLANS</p>	<p><b>GENERAL ELECTRIC</b></p> <p>SC CONTACTOR ON/OFF CONTROL SWITCH          SP SWITCH WITH PILOT LIGHT          SF FAN SWITCH          MS MOTOR STARTER          DS DISCONNECT SWITCH          CS COMBINATION STARTER          DR DUPLEX RECEPTACLE          G GROUND FAULT INTERRUPTER          C COUNTERTOP HEIGHT          E ELECTRICAL WATER COOLER - GFI          CM CEILING MOUNTED          W WEATHERPROOF          TR TAMPER RESISTANT          X-Y NEMA X-Y          # MOUNT # ABOVE FINISH FLOOR          S SURFACE MOUNT          T TELEVISION          U USB          CR CORD REEL FED FROM RECEPT. AT REEL          CD CORD DROP WITH NEMA 5-20 OR AS SHOWN</p> <p>DOUBLE-DUPLEX RECEPTACLE          SPECIAL RECEPTACLE          POWER RECEPTACLE, AMPERAGE          RANGE RECEPTACLE</p> <p>DEVICES IN CONCEALED RECESSED FLOOR BOX          FURNITURE CONNECTION, WITH 3/4" FMC          JUNCTION BOX          TRANSFORMER          POWER POLE          TIME CLOCK          HAND DRYER          HAIR DRYER          RECESSED BOX AND 3/4" CONDUIT FOR HC PROVIDED THERMOSTAT          EMERGENCY STOP BUTTON</p> <p>TWO-COMPARTMENT SURFACE RACEWAY, PROVIDE 3/4" CONDUIT TO HIGH-VOLTAGE AND 1 1/4" TO LOW-VOLTAGE SECTIONS, FOR EACH 30' OF RACEWAY.</p> <p>PANEL          BASEBOARD HEATER          MOTOR          WIRING CONCEALED EXCEPT WHERE RUN IN OPEN STRUCTURE          WIRING BELOW SLAB OR GRADE          EMERGENCY SYSTEM WIRING          HOME RUN/CIRCUIT TAG          MULTICONDUCTOR WIRING          CONDUIT RISE          CONDUIT DROP</p> <p><b>COMMUNICATIONS</b></p> <p>TELEVISION CABLE OUTLET          SINGLE DATA OUTLET          DATA OUTLET WITH N JACKS          SINGLE TELEPHONE OUTLET          TELEPHONE OUTLET WITH N JACKS          COMBINED OUTLET WITH TWO DATA JACKS AND TWO TELEPHONE JACKS          COMBINED OUTLET WITH M DATA JACKS AND N TELEPHONE JACKS          BOX WITH BLANK PLATE AND 1.25" CONDUIT TO ACCESSIBLE CEILING SPACE          WIRELESS COMMUNICATIONS SYSTEM ANTENNA, PROVIDE SINGLE DATA JACK ABOVE CEILING          RECESSED AV BOX WITH DUPLEX RECEPTACLE AND 1-1/4" CONDUIT TO FROM BOX TO ACCESSIBLE CEILING</p> <p><b>PAGING AND PROGRAM (BY OWNER)</b></p> <p>CEILING MOUNTED SPEAKER          ADDRESSABLE SPEAKER          HORN SPEAKER          ADDRESSABLE SPEAKER          WALL MOUNTED BELL          WALL MOUNTED CLOCK          CLOCK/SPEAKER UNIT          VOLUME CONTROL</p> <p><b>GAS DETECTION</b></p> <p>GAS DETECTION INDICATOR          GAS DETECTOR</p>
---	---

**COMMON ABBREVIATIONS**

A/E	ARCHITECT/ENGINEER	HC	HVAC CONTRACTOR
AB CLG	ABOVE CEILING	HCP	HANDICAPPED
ABV	ABOVE	HGT	HEIGHT
AFF	ABOVE FINISHED FLOOR	HR	HOUR
AFI	ARC-FAULT INTERRUPTER	IR	INFRARED
AFR	ABOVE FINISHED ROOF	JB	JUNCTION BOX
ALT	ALTERNATE	KES	KITCHEN EQUIPMENT SUPPLIER
ATS	AUTOMATIC TRANSFER SWITCH	LV	LOW-VOLTAGE
BFC	BELOW FINISHED CEILING	MC	MECHANICAL CONTRACTOR
CIG	COUNTERTOP GFI	MCA	MINIMUM CIRCUIT AMPACITY
CD	CORD DROP	MCCP	MAXIMUM OVERCURRENT PROTECTION
CL	CENTERLINE	MT	MULTITECHNOLOGY
CLG	CEILING	MO	MICROWAVE OVEN
CM	CEILING MOUNTED	NA	NOT APPLICABLE
COL	COLUMN	NE	NORMAL/EMERGENCY (NORMALLY ON)
CT	COUNTERTOP HEIGHT-44" AFF UNO OR CURRENT TRANSFORMER	NIC	NOT IN CONTRACT
CR	CORD REEL	NTS	NOT TO SCALE
DBF	DOWN BELOW FLOOR	OF CI	OWNER FURNISHED CONTRACTOR INSTALLED
DET	DETAIL	PC	PLUMBING CONTRACTOR
DIA	DIAMETER	PIR	PASSIVE INFRARED
DIM	DIMENSION	SE	SERVICE ENTRANCE
DN	DOWN	SECT	SECTION
DW	DISHWASHER	SHT	SHEET
DWG	DRAWING	SIM	SIMILAR
EC	ELECTRICAL CONTRACTOR	SPD	SURGE PROTECTION DEVICE
EL	ELEVATION	SPEC	SPECIFICATION
ELEV	ELEVATOR	SS	SERVICE SINK
EMER	EMERGENCY	STD	STANDARD
EO	EMERGENCY ONLY (NORMALLY OFF)	SUSP	SUSPENDED
EWC	ELECTRIC WATER COOLER (PROVIDE GFI RECEPTACLE)	TBR	TO BE REMOVED
EX	EXISTING	TL	TASK LIGHT
FA	FIRE ALARM	TR	TAMPERS RESISTANT
FBO	FURNISHED BY OWNER	TSTAT	THERMOSTAT
FLR	FLOOR	UNO	UNLESS NOTED OTHERWISE
FPC	FIRE PROTECTION CONTRACTOR	US	ULTRASONIC
FSC	FOOD SERVICE CONTRACTOR	W	WITH
GC	GENERAL CONTRACTOR	W/O	WITHOUT
GFI	GROUND-FAULT INTERRUPTER	W	WALL-MOUNTED
GND	GROUND	WP	WEATHERPROOF

**COMMON SYMBOLS**

	PLAN NORTH
	SECTION ID
	SHEET NO. WHERE SECTION IS
	DIRECTIONAL VIEW OF SECTION
	REVISION CLOUD
	REVISION NUMBER
	ELEVATION
	100.00'
	DIRECTION OF VIEW
	SHEET NO. WHERE EL. IS DRAWN
	ELEVATION ID
	KEYNOTE
	DETAIL ID
	SHEET NO. WHERE DETAIL IS
	ROOM/SPACE NO.
	EQUIPMENT TAG SHOWING TYPE AND ID. SEE EQUIPMENT SCHEDULES FOR DETAILS
	PROVIDE NEW
	EXISTING TO REMAIN
	REMOVE EXISTING
	CONNECT TO EXISTING
	EXISTING TO BE REMOVED

**DRAWING LIST**

P0.1	Cover Sheet
P1.1	Partial Demolition Plans - Area 'A' & 'B'
P2.1	Partial Drainage Plans - Area 'A' & 'B'
P3.1	Partial Supply Plans - Area 'A' & 'B'
P8.1	Schedules & Details
H0.1	Cover Sheet
H1.1	Partial Demolition Plans - Area 'A' & 'B'
H2.1	Partial New Work Plans - Area 'A' & 'B'
H2.2	Partial Roof Plan - Area 'A'
H5.1	Enlarged Plan - New Work - Welding Technology Area
H6.1	Controls Flow Diagram
H7.1	Details
H7.2	Details
H8.1	Schedules
E0.1	Cover Sheet
E0.2	Electric Notes
E0.3	Overall Plan
E1.1	Partial Demolition Plan - Areas 'A' & 'B'
E2.1	Partial Lighting Plan - Areas 'A' & 'B'
E3.1	Partial Power Plan - Areas 'A' & 'B'
E3.2	Partial Roof Plan - Area 'A'
E4.1	Partial Low-Voltage Plan - Areas 'A' & 'B'
E5.1	Enlarged Plan - Power - Welding Technology Area
E7.1	Details
E7.2	Details
E7.3	Details
E8.1	Schedules
E8.2	Schedules



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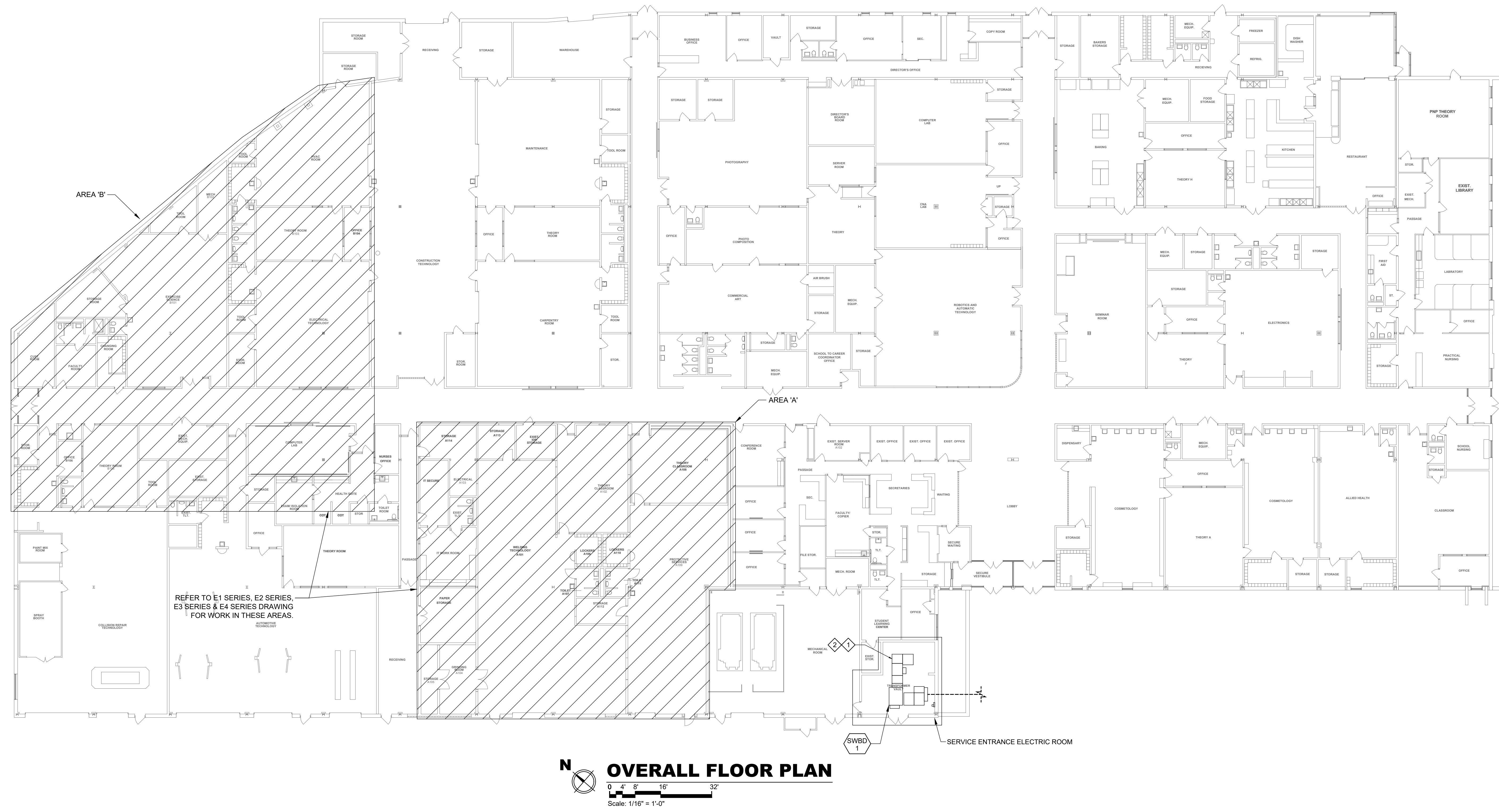
**INTERIOR ALTERATIONS - PHASE 3**  
 FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

COVER SHEET	Comm. no. 084
Drawn MM	Designed MCD
Checked DB	Checked DB
Drawn MM	Designed MCD
Checked DB	Checked DB
Drawn MM	Designed MCD
Checked DB	Checked DB

LVE - 21146

**E0.1**





**KEY NOTES**

- ◇ FEED WELDING TECHNOLOGY PNL WT FROM SPARE 400A SWITCH, SEE PARTIAL SINGLE LINE DIAGRAM.
- ◇ EXTEND FEEDERS TO BUSWAY BW1 FED FROM EXISTING 400A SWITCH, SEE PARTIAL SINGLE LINE DIAGRAM.

**INTERIOR ALTERATIONS - PHASE 3**

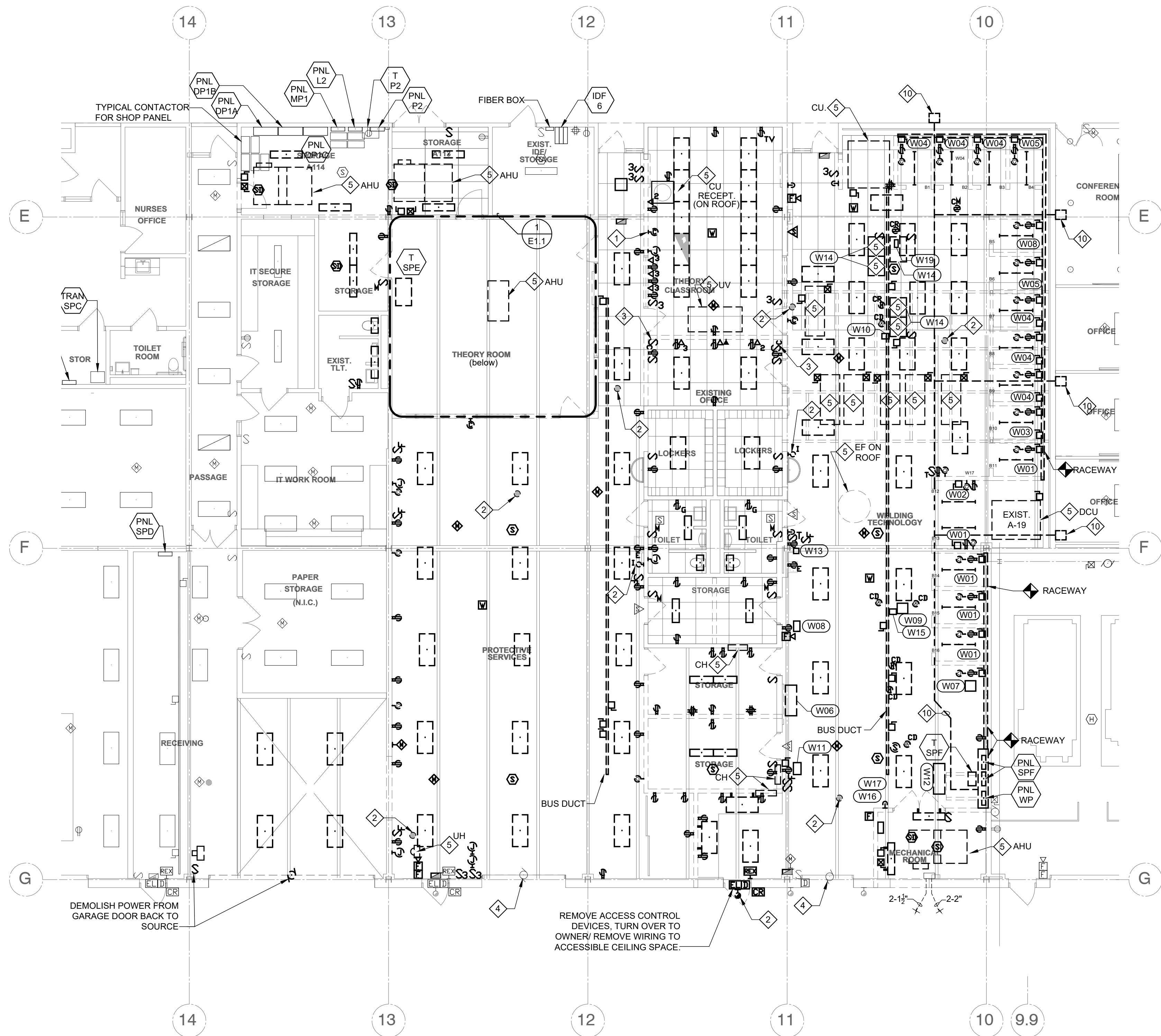
FOR THE  
**EASTERN CENTER FOR ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONMOUTH COUNTY, PENNSYLVANIA



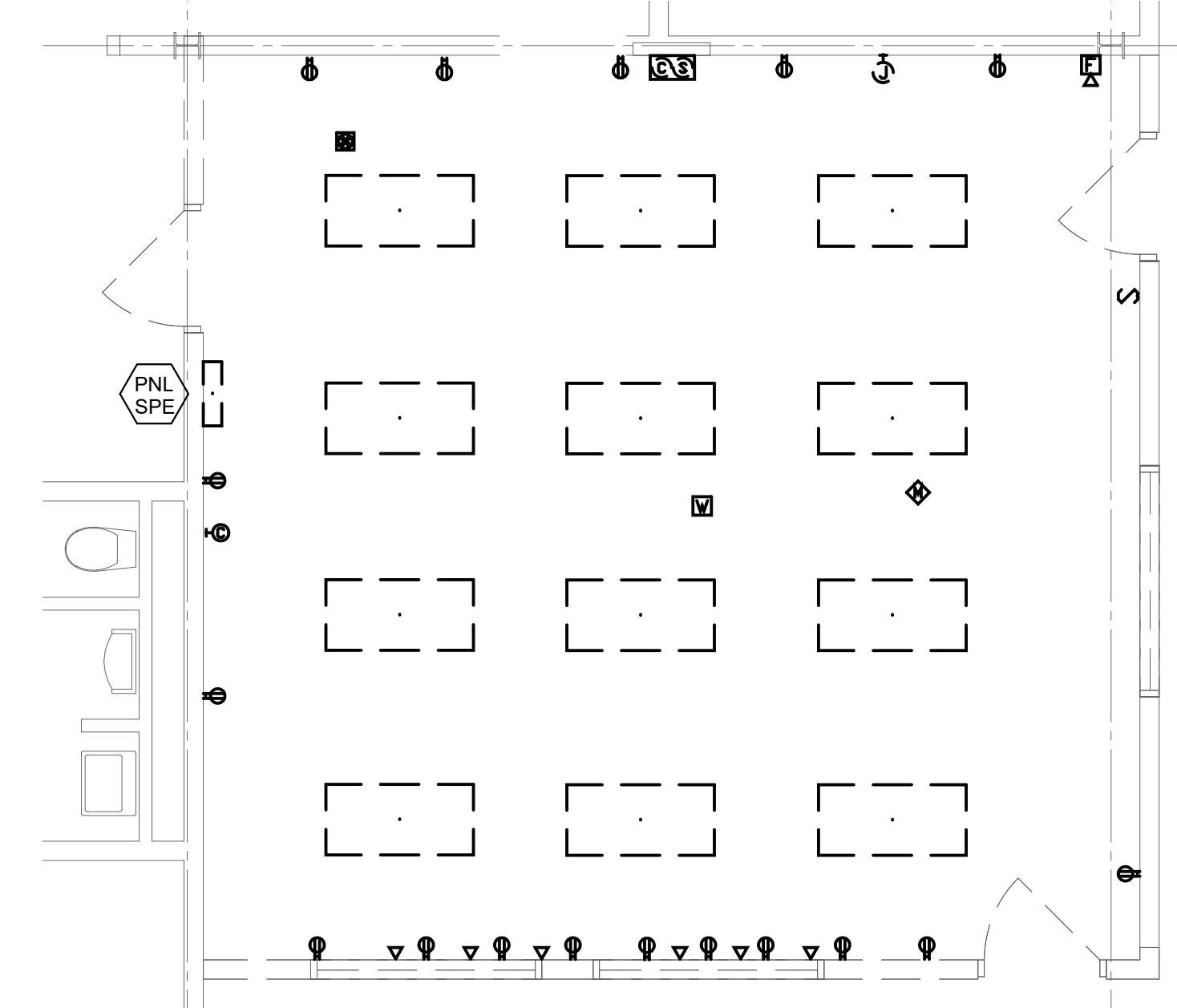
OVERALL PLAN		Comm. no.
drawn	MM	094
date	02/11/2022	
Designed	MCD	Checked
		DB

LVE - 21146

**E0.3**



**PARTIAL DEMOLITION PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"



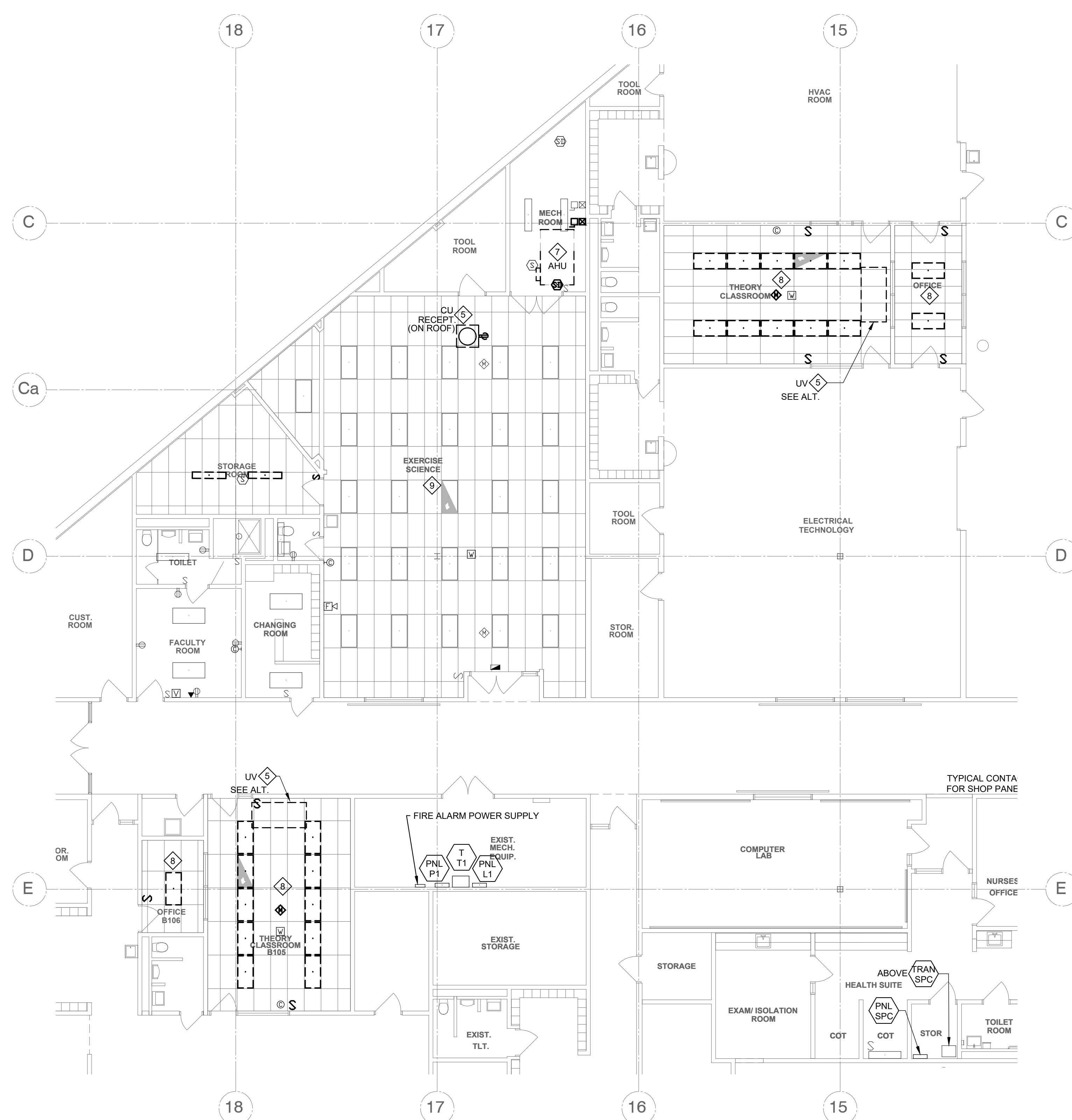
**THEORY CLASSROOM - DEMOLITION PLAN**  
 Scale: 1/4" = 1'-0"

**PLAN NOTES**

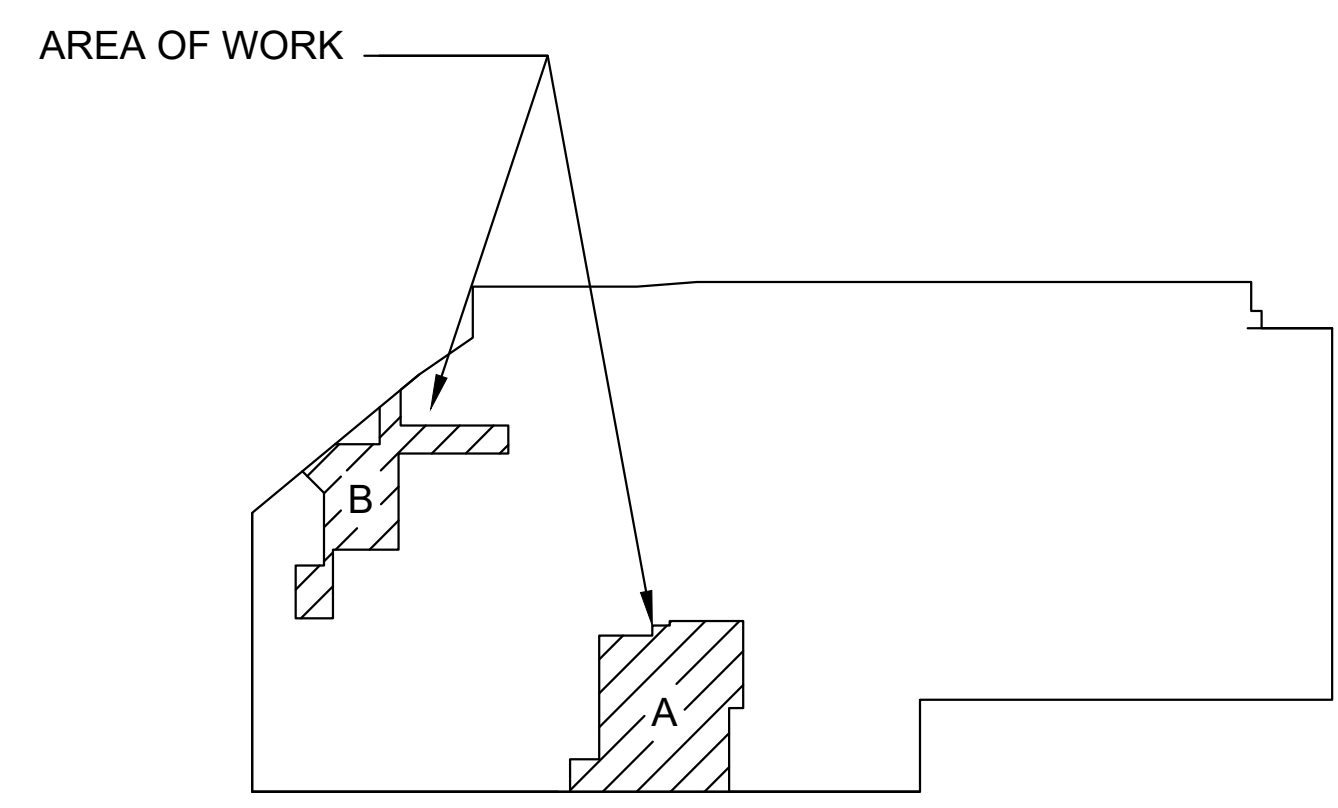
1. REMOVE ABANDON-IN-PLACE WALL AND CEILING MOUNTED BOXES, STARTERS, DISCONNECTS, AND RACEWAYS. PATCH & PAINT TO MATCH EXISTING.
2. DEMOLISH LIGHTING AND CONTROLS AS SHOWN IN CLASSROOMS, STORAGE ROOMS, TOILET ROOMS, AND LIKE SPACES. CONNECT NEW LUMINAIRES TO EXISTING LIGHTING CIRCUITS THRU NEW LUTRON VIVE LIGHTING CONTROLS. OR AS SHOWN ON THE LIGHTING PLANS. IN THE SHOPS REPLACE POWER PACKS, OCCUPANCY SENSORS, BARROL TYPE KEY SWITCH.
3. DEMOLISH WIRING DEVICES & POWER EQUIPMENT AS SHOWN. REMOVE BRANCH CIRCUIT WIRING BACK TO SOURCE. EXTEND FEEDERS AS SHOWN ON POWER PLANS & SINGLE LINE DIAGRAMS.
4. DEMOLISH TELEDATA DEVICES. REMOVE WIRING BACK TO SOURCE. PROVIDE NEW AS SHOWN ON LV DRAWINGS.
5. DEMOLISH FIRE ALARM DEVICES. REMOVE WIRING TO ACCESSIBLE CEILING SPACE. EXTEND WIRING TO NEW DEVICES AS SHOWN ON LV DRAWINGS.
6. PATCH OPENINGS CREATED FROM DEMOLITION.
7. AS PART OF DEMOLITION IN THE WELDING SHOP, DEMOLISH ABANDON IN PLACE FORMER WELDING SHOP POWER DISTRIBUTION SYSTEM WITHIN AND AROUND THE SHOP. FIELD VERIFY THE EXTENT OF DEMOLITION. NOT ALL ABANDON CONDUITS AND BOXES MAY BE SHOWN ON PLAN. ASSUME AT A MINIMUM THAT THERE IS A CONDUIT SYSTEM, WITH ABANDON IN PLACE WIRING, EXTENDING FROM A LOCATION AT THE PANELS, THRU JUNCTION BOXES IN THE CEILING AND ON THE WALLS, TO CONDUITS STUBS OUT IN EACH BOOTH AND IN THE WALL AROUND THE WELDING SHOP.

**KEY NOTES**

- ◇ RELOCATE DEVICE AS SHOWN ON LOW-VOLTAGE PLANS.
- ◇ RELOCATE LUMINAIRE AS SHOWN ON LIGHTING PLAN. EXTEND CIRCUIT TO NEW LOCATION.
- ◇ RELOCATE SHOP ON/OFF CONTACTOR CONTROLS AS SHOWN ON POWER PLANS.
- ◇ REMOVE POWER FROM MOTORIZED DOOR. REFEED AS SHOWN ON POWER PLANS.
- ◇ REMOVE POWER FROM HVAC EQUIPMENT & CONTROLS. REMOVE CONTROLS & WIRING BACK TO SOURCE.
- ◇ DISCONNECT POWER FROM HVAC EQUIPMENT & CONTROLS. REMOVE CONTROLS. EXTEND CIRCUIT THRU NEW CONTROLS TO HVAC EQUIPMENT SHOWN ON POWER PLANS.
- ◇ REMOVE POWER FROM HVAC EQUIPMENT & CONTROLS. EXTEND EXISTING CIRCUIT THROUGH NEW CONTROLS TO NEW EQUIPMENT.
- ◇ SEE ALTERNATE. REMOVE LIGHTING AND CONTROLS FROM CEILING TO BE REPLACED. TEMPORARILY SECURE LOW-VOLTAGE DEVICES IN THE CEILING. AFTER NEW CEILING IS INSTALLED RELOCATE LOW-VOLTAGE DEVICES IN THE CEILING. PROVIDE NEW LIGHTING AS SHOWN ON THE LIGHTING PLANS.
- ◇ SEE ALTERNATE. TEMPORARILY SECURE LIGHTING TO AND LOW-VOLTAGE DEVICES TO STRUCTURE ABOVE. AFTER NEW CEILING IS INSTALLED RELOCATE LIGHTING AND LOW-VOLTAGE DEVICES IN THE CEILING.
- ◇ REMOVE FORMER WELDING SHOP ABANDON IN PLACE POWER DISTRIBUTION SYSTEM. SEE PLAN NOTES FOR ADDITIONAL COMMENTS.



**PARTIAL DEMOLITION PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"



**KEY PLAN**  
 NOT TO SCALE

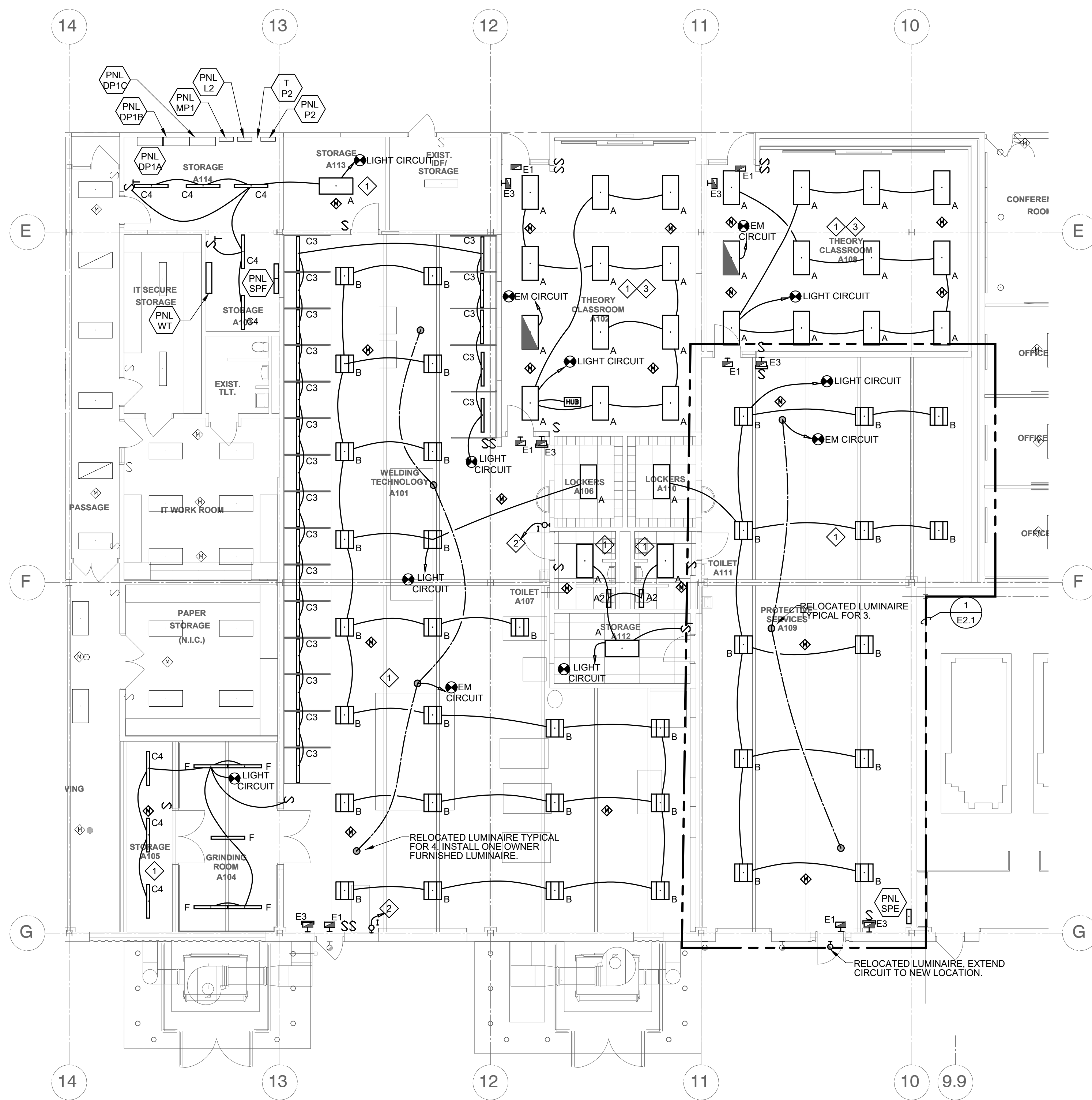
**INTERIOR ALTERATIONS - PHASE 3**

FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

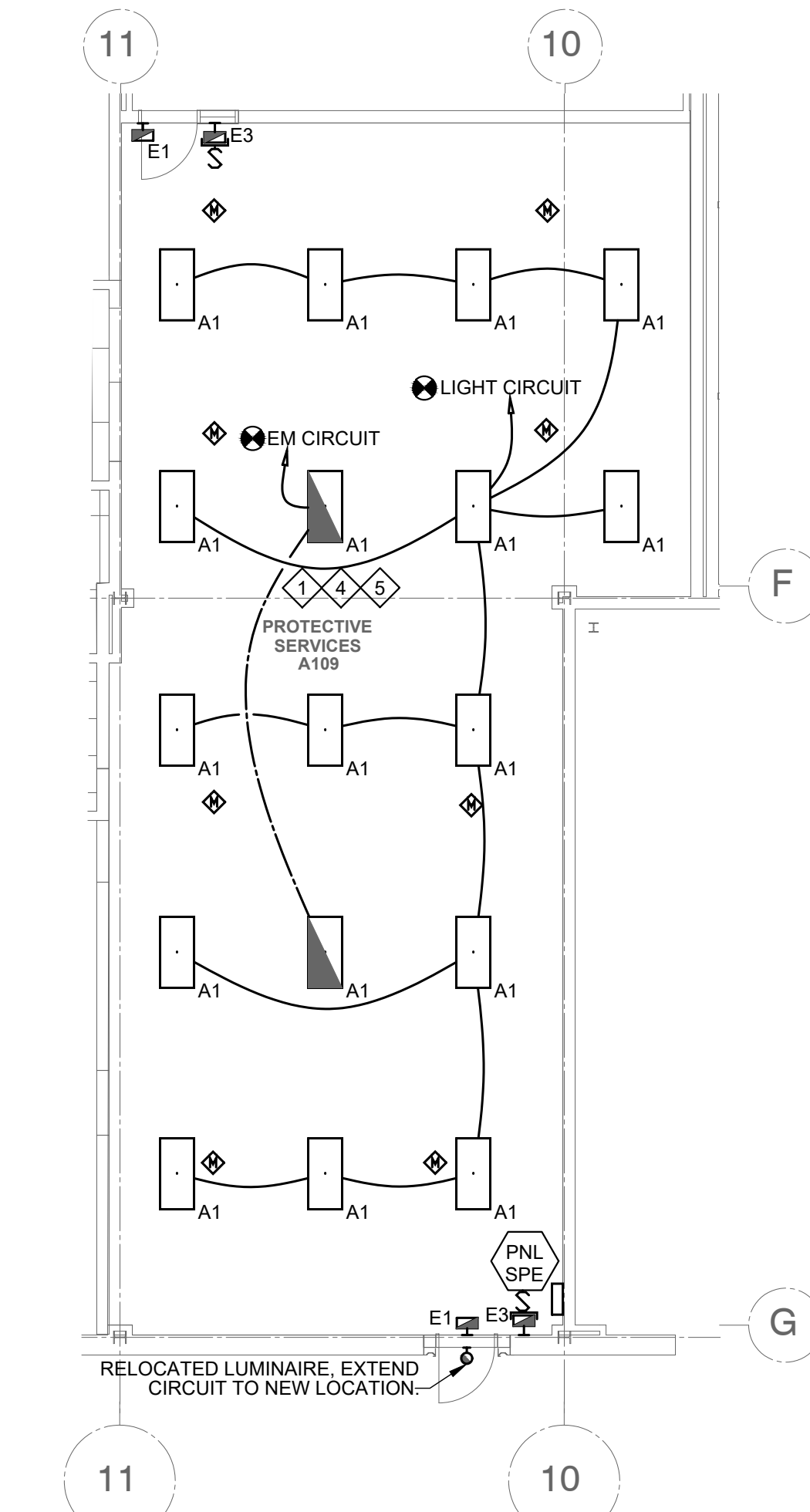
DATE	02/01/2022	DRAWN	MM	DESIGNED	MCD	CHECKED	DB	COMM. NO.	084
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LVE - 21146

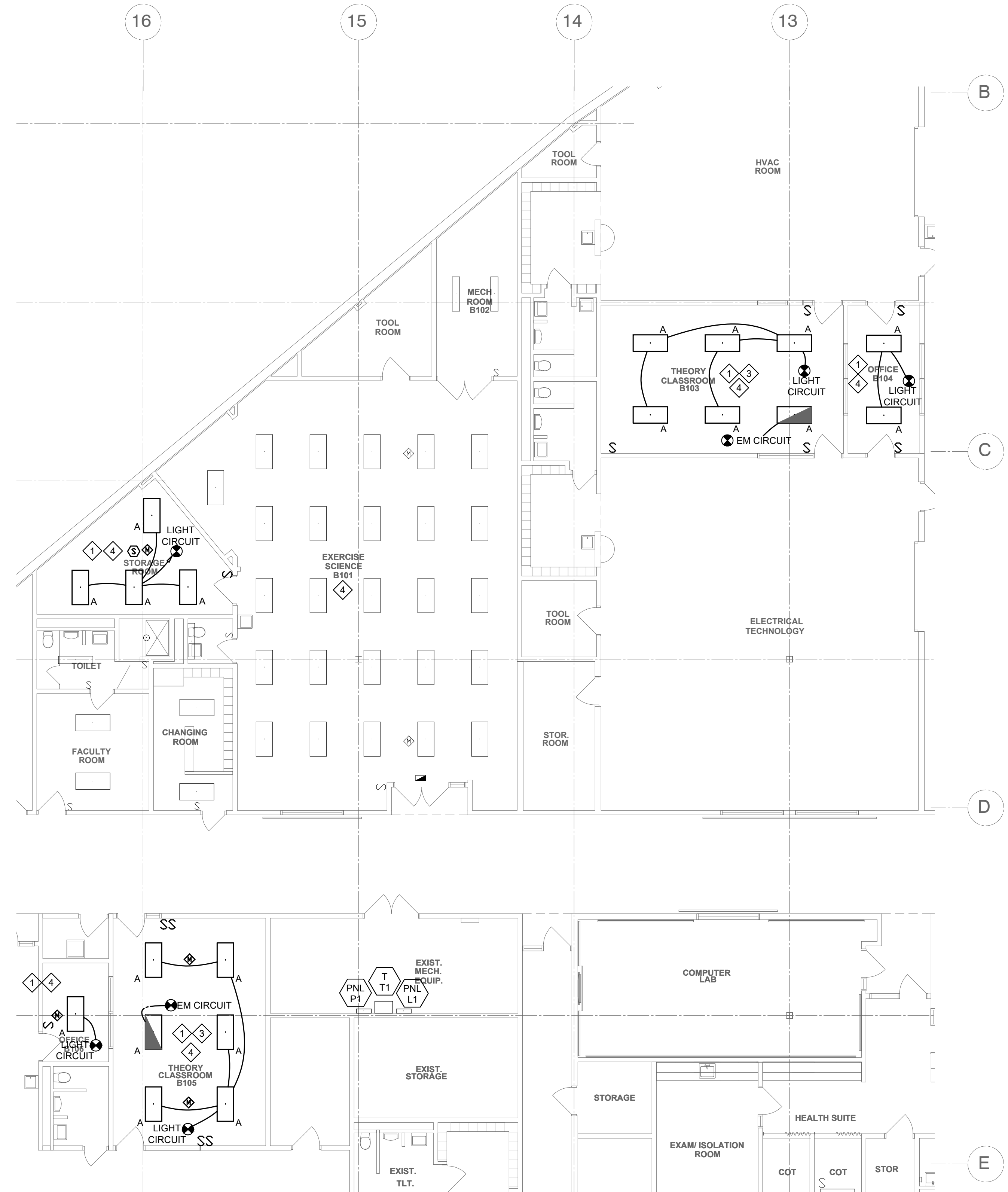
**E1.1**



**PARTIAL LIGHTING PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"



**PARTIAL LIGHTING PLAN - AREA 'A' - ALTERNATE**  
 Scale: 1/8" = 1'-0"



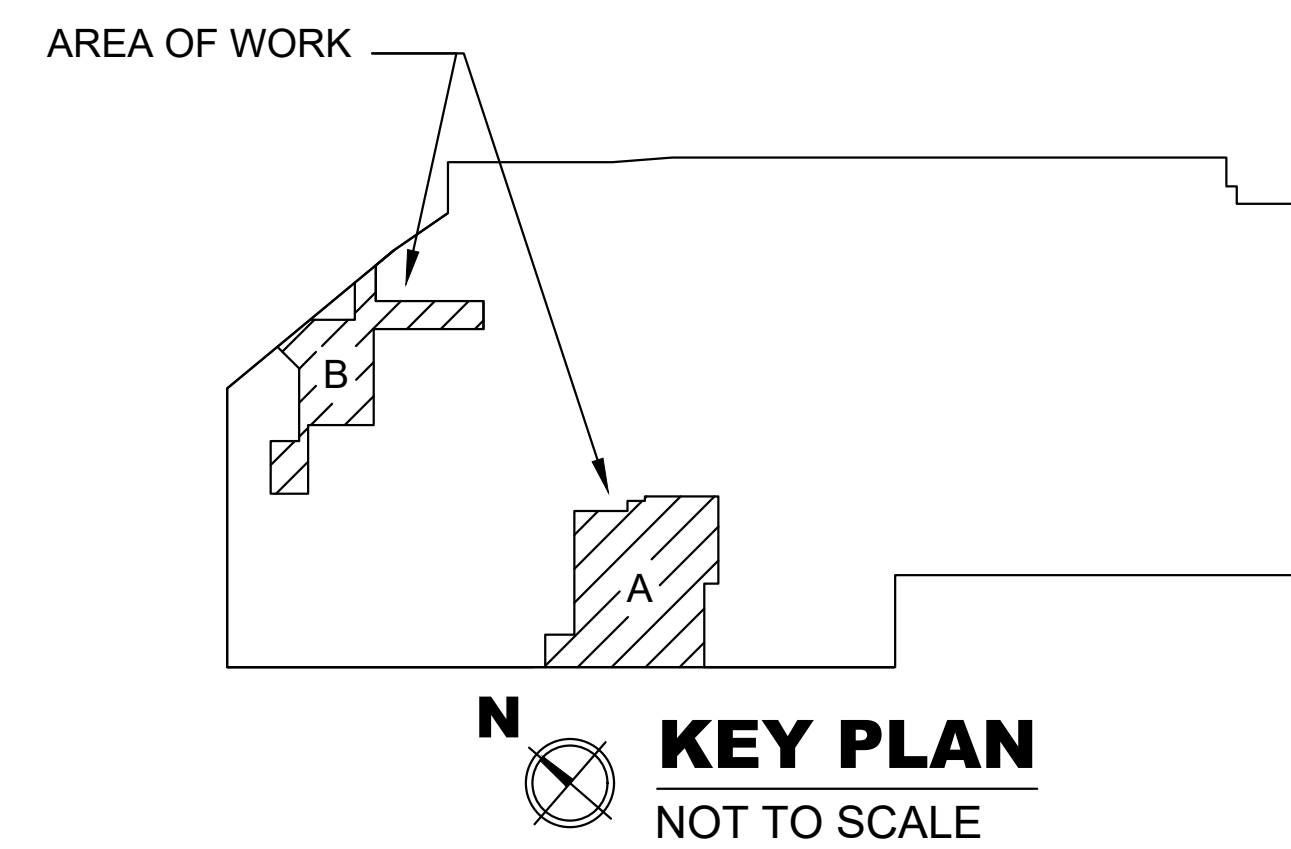
**PARTIAL LIGHTING PLAN - AREA 'B' - ALTERNATE**  
 Scale: 1/8" = 1'-0"

**PLAN NOTES**

1. CIRCUIT EXIT SIGNS FROM LOCAL EXIT SIGN CIRCUIT.
2. ADJUST FOOTCANDLE LEVELS FOR LUMINAIRE TYPES AS NOTED IN THE LUMINAIRE SCHEDULE.
3. REFER TO ARCHITECTURAL CEILING PLANS FOR NEW AND EXISTING CEILING GRID AND LUMINAIRE LAYOUT IN THE GRIDS.

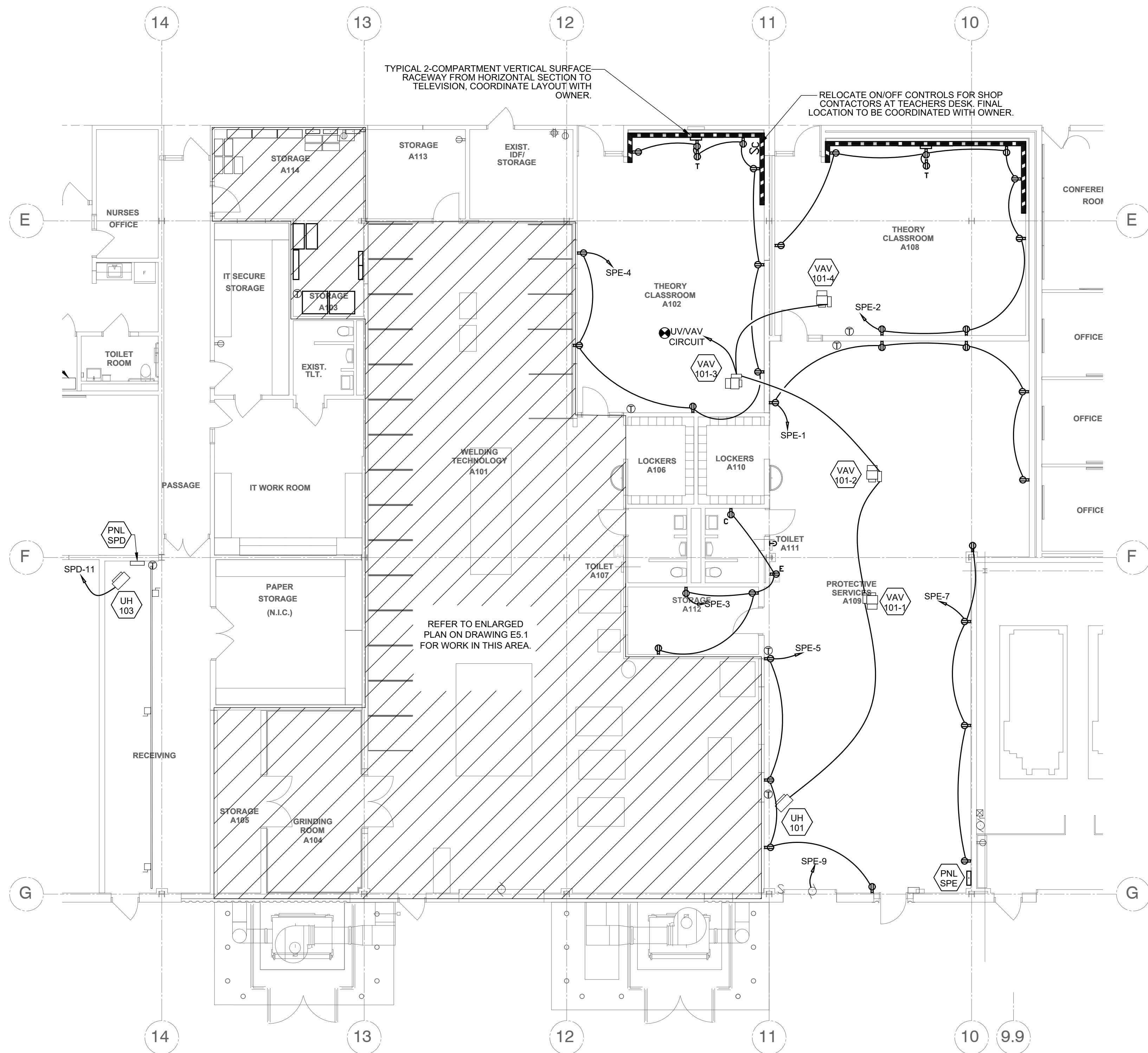
**KEY NOTES**

- 1. PROVIDE LUTRON VIVE LIGHTING CONTROLS WITH DIMMING POWER PACK FOR EACH SWITCH SHOWN & EACH EMERGENCY LUMINAIRE. SEE ELECTRICAL NOTES ON E02 FOR ADDITIONAL REQUIREMENTS.
- 2. CONNECT INDICATOR LIGHT TO LOCAL RECEPTACLE CIRCUIT IN SHOP.
- 3. IN THEORY ROOMS PROVIDE:  
 -277V LIGHTING ZONE 1 ALONG THE TEACHING WALL  
 -LIGHTING ZONE 2 CONSISTING OF EMERGENCY POWER PACK FOR 120V NORMAL EMERGENCY LIGHTING AND 277V LIGHTING GENERAL LIGHTING.
- 4. INSTALL NEW OR EXISTING LIGHTING AND CONTROLS AS SHOWN ON PLAN FOR ALTERNATE.
- 5. PROVIDE 1 NORMAL POWER PACKS AND 1 EMERGENCY POWER PACKS FOR A TOTAL OF 2 ZONES.



**KEY PLAN**  
 NOT TO SCALE

DATE	DRAWN	DESIGNED	CHECKED	COMM. NO.
02/01/2022	MM	MCD	DB	084



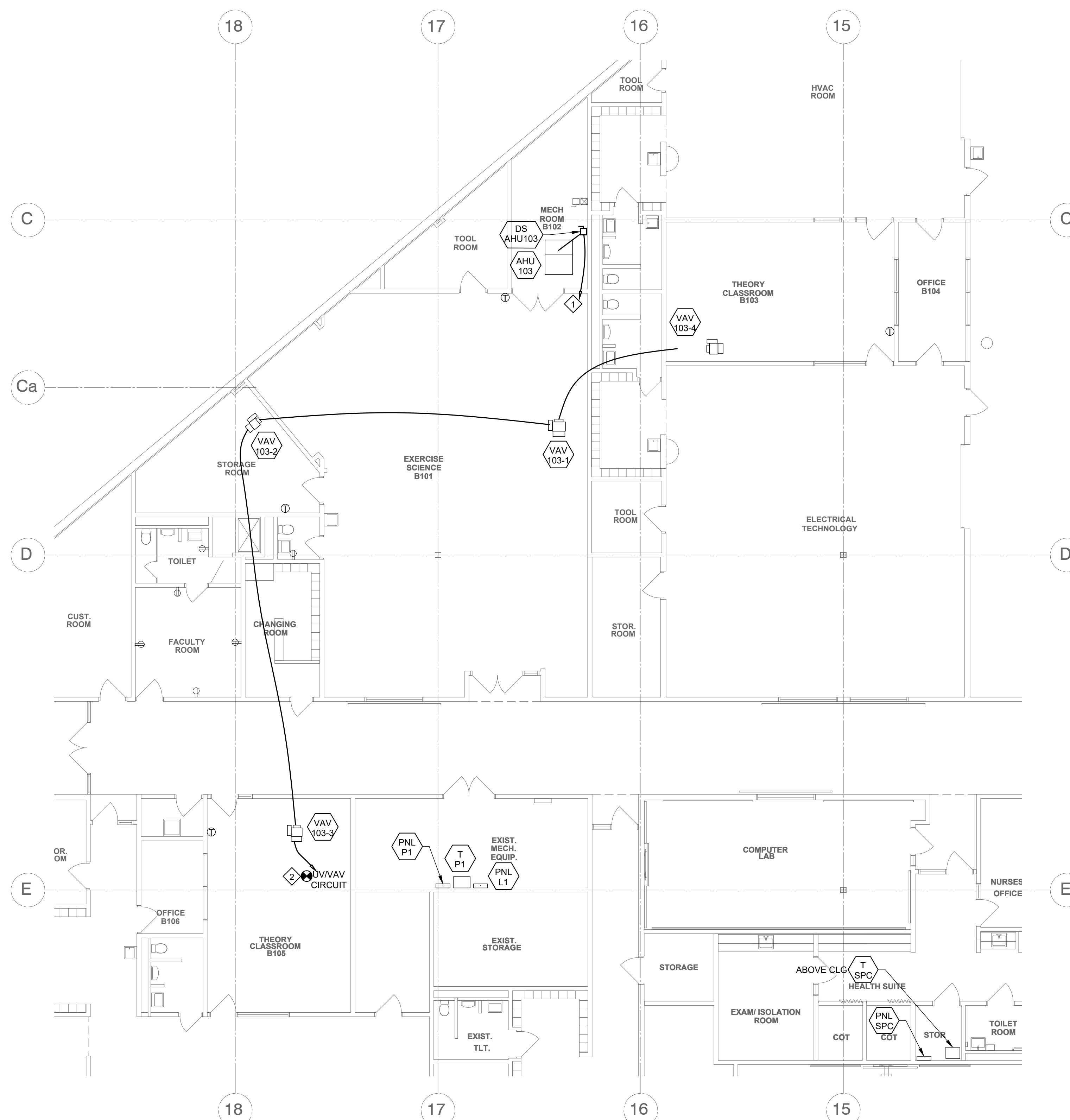
**PARTIAL POWER PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"

**PLAN NOTES**

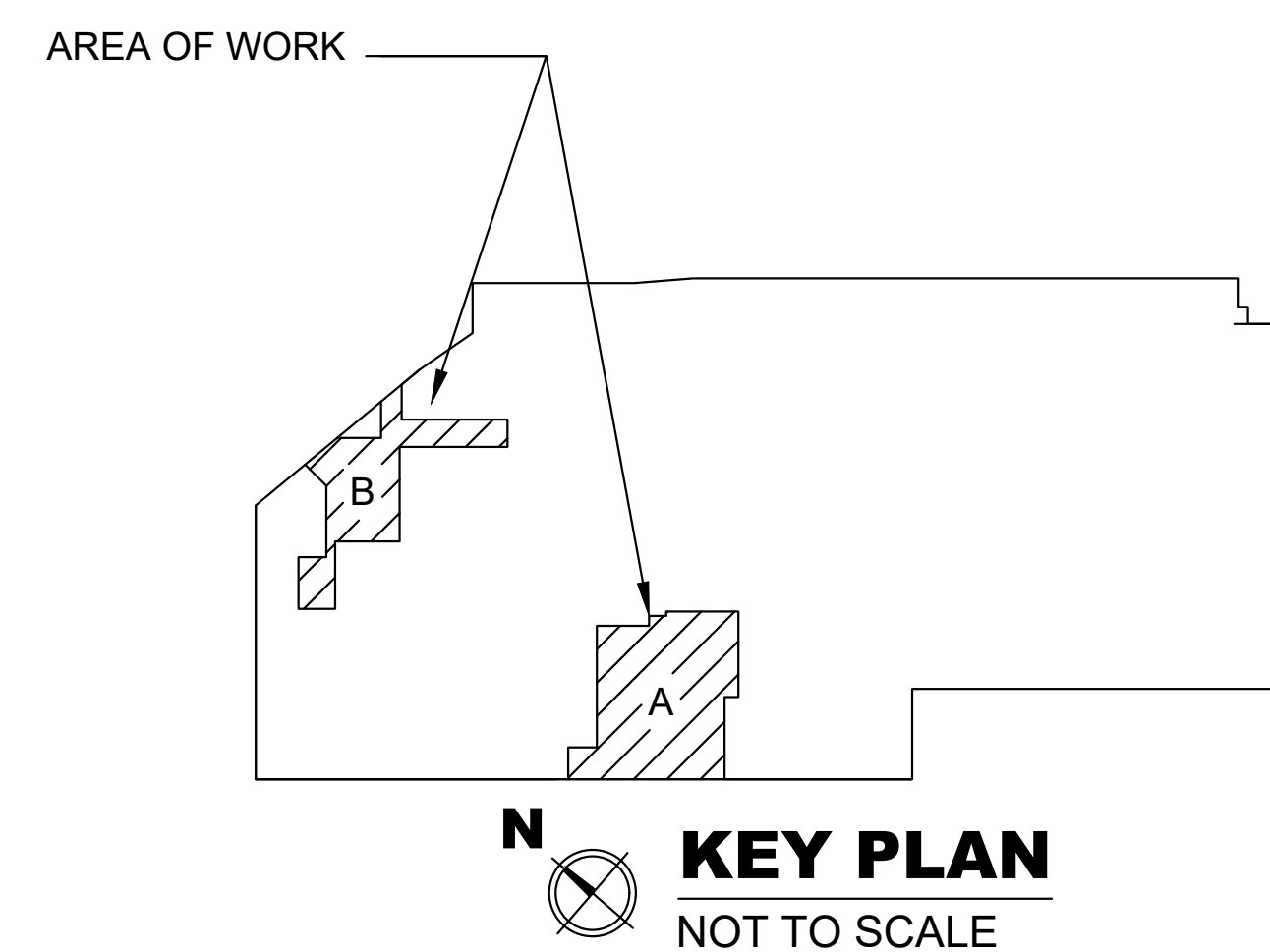
1. PROVIDE CONTROL OF PROTECTIVE SERVICES CONTACTOR FROM EM STOP BUTTONS & RELOCATED ON/OFF CONTROL SWITCH IN THEORY CLASSROOM A108 & STORAGE A114.
2. PROVIDE RECESSED BOX & 3/4" CONDUIT TO ACCESSIBLE CEILING SPACE FOR THERMOSTATS. COORDINATE LOCATION WITH HC.
3. PROTECTIVE SERVICES A109 RECEPTACLES SHALL BE MOUNTED AT 2" TO TOP OF BOX.

**KEY NOTES**

- ◇ EXTEND EXISTING CIRCUIT THROUGH NEW CONTROLS TO NEW EQUIPMENT.
- ◇ PROVIDE CIRCUITING TO VAV'S AS PART OF ALTERNATE.



**PARTIAL POWER PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"



**KEY PLAN**  
 NOT TO SCALE

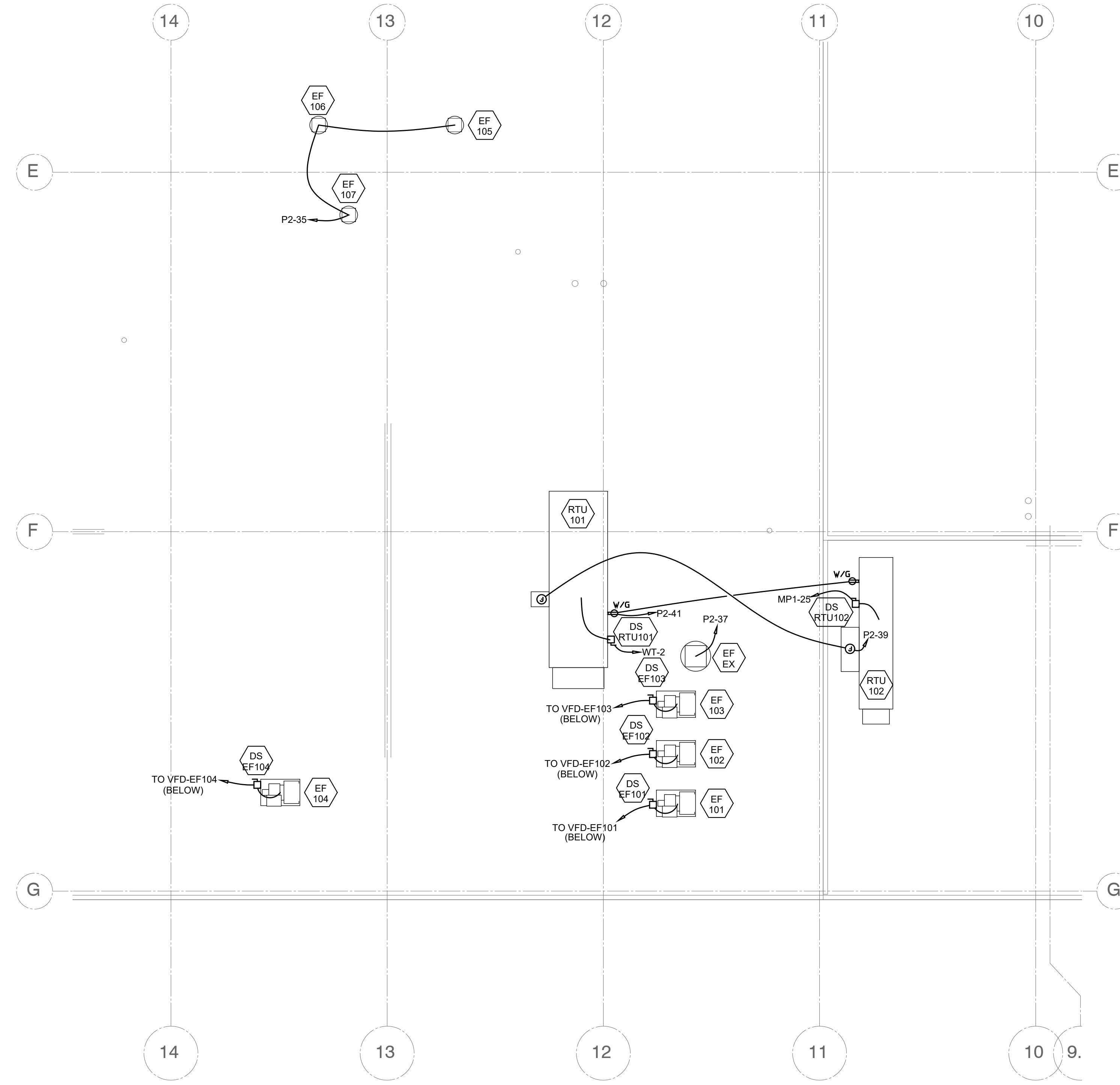
**INTERIOR ALTERATIONS - PHASE 3**

FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

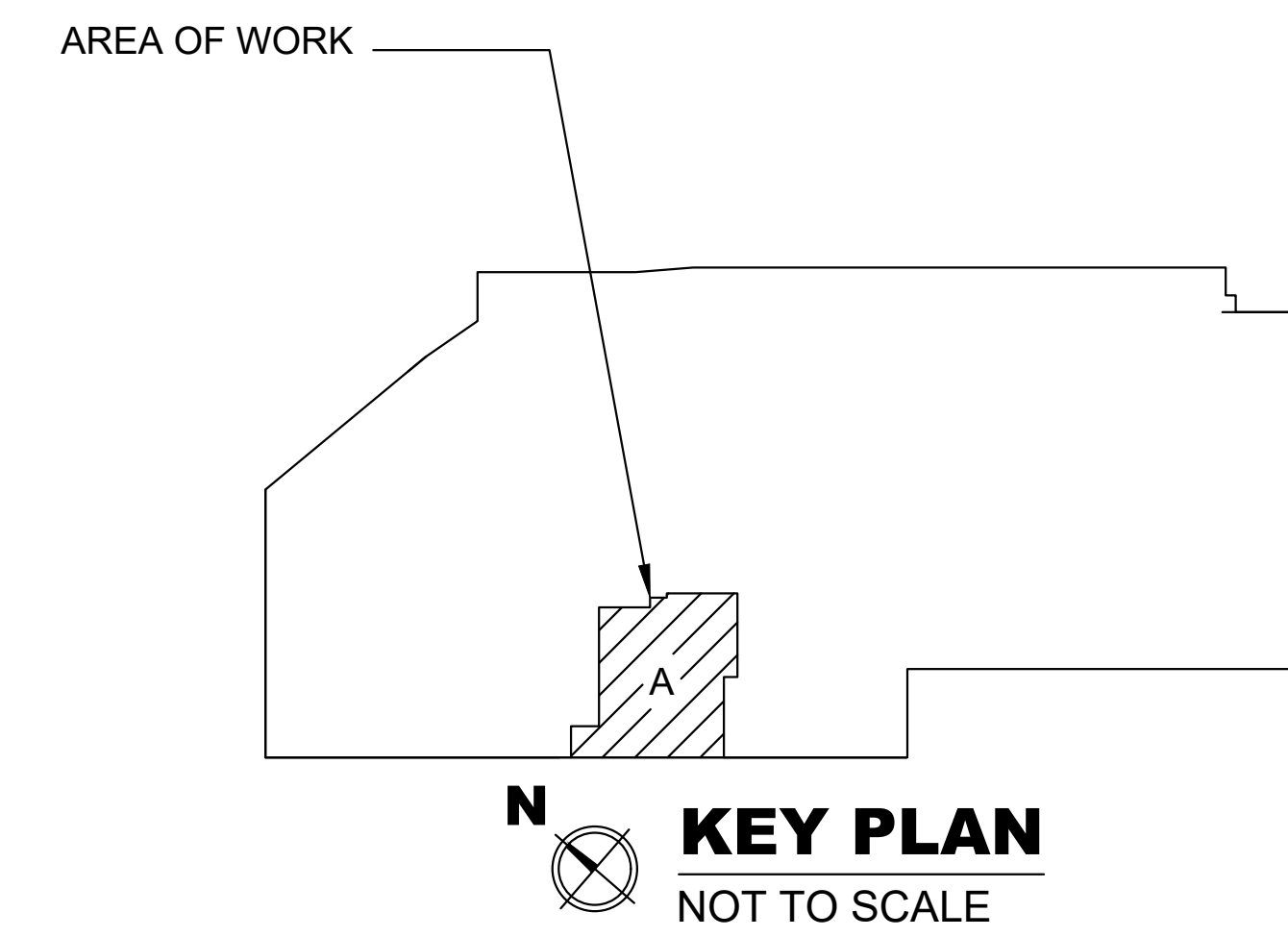
DATE	02/01/2022	DRAWN	MM	DESIGNED	MCD	CHECKED	DB	COMM. NO.	084
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LVE - 21146

**E3.1**



**PARTIAL ROOF PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"



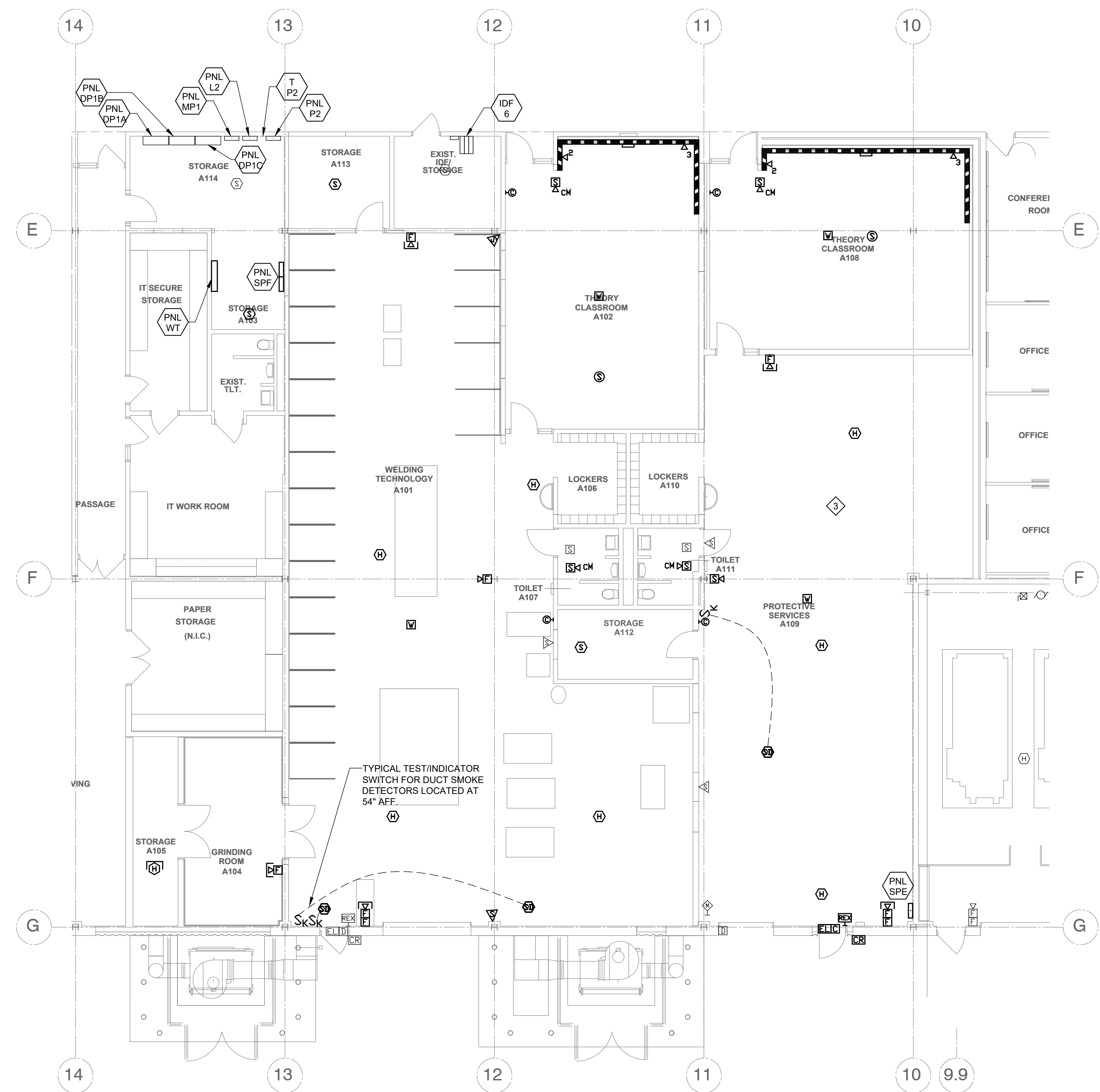
**INTERIOR ALTERATIONS - PHASE 3**  
 FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

PARTIAL ROOF PLAN - AREA 'A'		Comm. no.	084
Drawn	MM	Checked	DB
02/01/2022		Designed	MCD

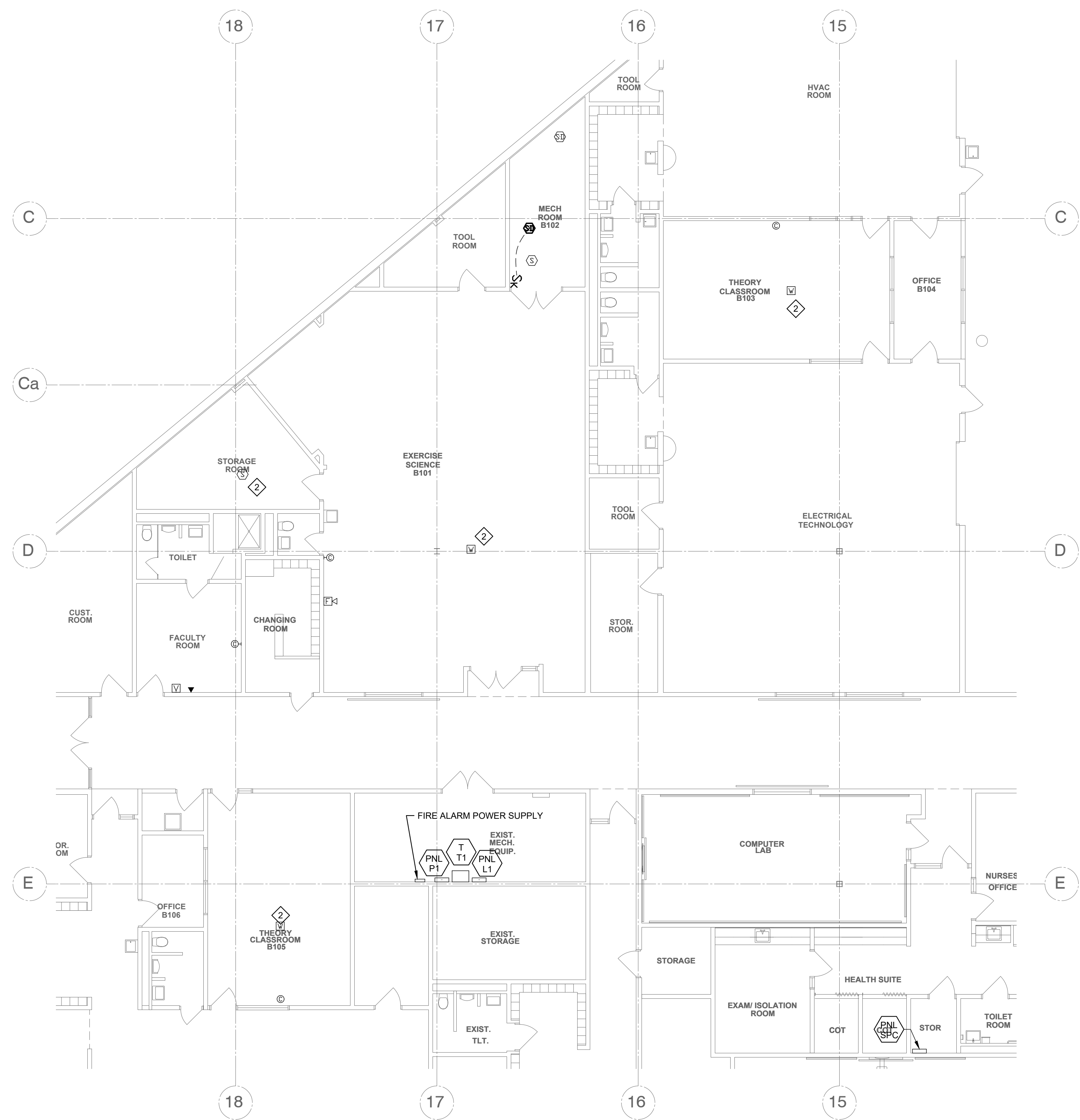
LVE - 21146

**E3.2**

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**PARTIAL LOW-VOLTAGE PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"



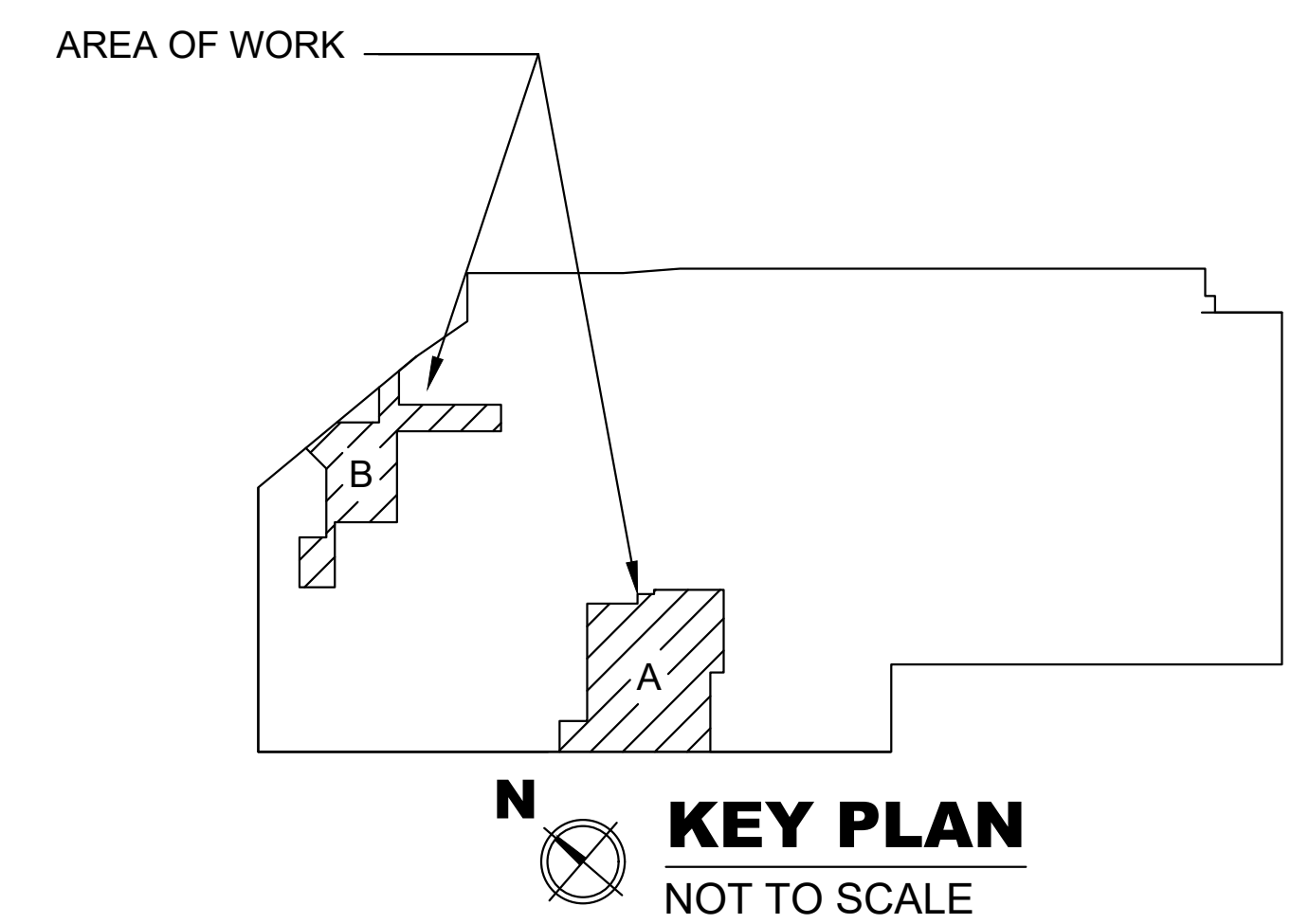
**PARTIAL LOW-VOLTAGE PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"

**PLAN NOTES**

1. FEED NEW DATA JACKS FROM PATCH PANELS IN IDF-6.
2. NEW WORK ASSOCIATED WITH CLOCKS, PAGING, SECURITY, & ACCESS CONTROL BY OWNER.

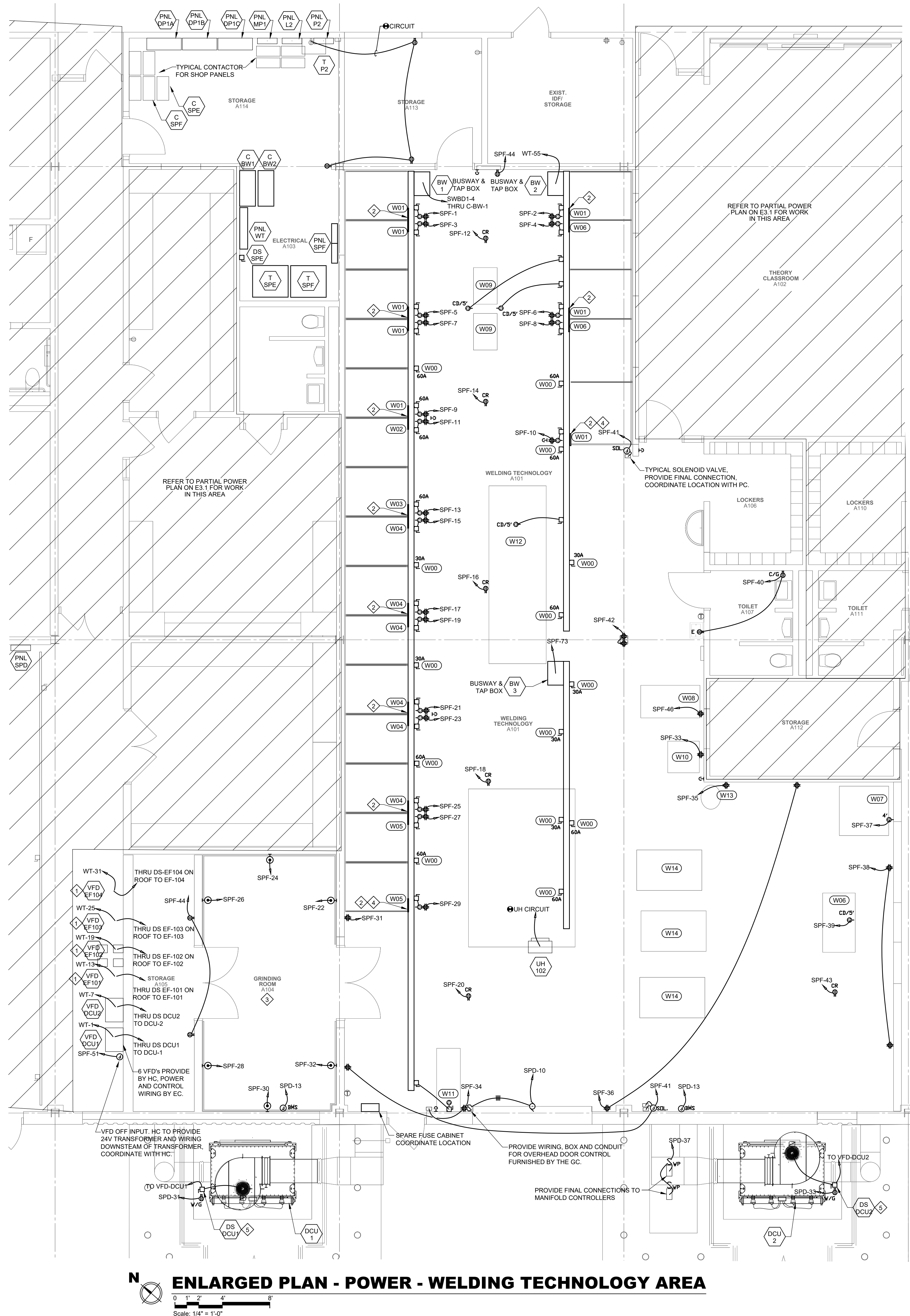
**KEY NOTES**

- ◊ NOT USED
- ◊ RELOCATE DEVICE IN NEW CEILING AS PART OF ALTERNATE.
- ◊ RELOCATE HORN/STROBE DEVICES IN CEILING IF ALTERNATE FOR NEW CEILING IS ACCEPTED.



PARTIAL LOW-VOLTAGE PLAN - AREAS 'A' & 'B'		Comm. no.
db	02/01/2022	094
Drawn	MM	Checked
Designed	MCD	DB





**ENLARGED PLAN - POWER - WELDING TECHNOLOGY AREA**  
 Scale: 1/4" = 1'-0"

**Welding Shop Equipment Schedule**

Tag	Description	Type	*Special Requirements	Power connection	**Disconnect	Circuit	Voltage	Wire	Load (VA)
W00			Spare bus disconnect	-	See floor plans	To bus duct disconnect	See floor plans		
W01	Welder - Miller	Synowave 2800X	EC to provide matching plug	NEMA L15-60R	60AF/60AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	21618
W02	Welder - Lincoln Electric	275 Precision Tig	EC to provide matching plug	NEMA L15-60R	60AF/60AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	22960
W03	Welder - Miller	XMT 350 Mpa	EC to provide matching plug	NEMA L15-60R	60AF/50AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	11700
W04	Welder - Miller	XMT 304 CCOV DC Inverter Arc Welder	EC to provide matching plug	NEMA L15-60R	60AF/40AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	12200
W05	Welder - Miller	XMT 350 CCOV	EC to provide matching plug	NEMA L15-60R	60AF/40AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	14200
W06	Band Saw - Ellis	Mitre Horizontal Band Saw B62150R(S/P)	EC to provide matching plug	CD5 - NEMA L5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	1000
W07	Vertical Mill - Balogh Industrial	VM-455 Gashed Head Mill/Drill 15108206	EC to provide matching plug	NEMA L5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	1300
W08	Planetary Grinder - Dayton	Tungsten grinder 148P-081800346	EC to provide matching plug	NEMA L5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	1100
W09	PAC cutting table - Hypertherm	Powermax1650 G3 Series Plasma Cutting System	EC to provide matching plug	CD5 - NEMA L15-60R	60AF/50AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	18290
W10	Table Saw - Makita	LT1230 12" Chop Saw B51896C7	-	NEMA 5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	1200
W11	Welder - Miller	GoldStar652 welding station MG470073C	EC to provide 100A pin and sleeve device with mechanical interlock and unfused circuit lock. 480V/3P/4W, aluminum housing, angled sleeve, NEMA 4X devices	100A Pin	100AT1/100AF	To bus duct disconnect	480V	3 #3 + #8G, in 1.25" C.	48200
W12	Shear - Scotsman	6503-24M FieldAngle Shear and Punch 7969F0309	EC to provide matching plug	CD5 - NEMA L15-20R	30AT120AF	To bus duct disconnect	480V	3 #10 + #10G, in 1" C.	4673
W13	Oven - DryBrid	Metallworking Oven, plug-in	-	NEMA 5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	750
W14	Cray Fume Tables	Down Draft Tables	Provide ON/OFF switch adjacent to table	NEMA 5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	400
W15	Portable Exhaust Fan - Ace Industrial Products	120" Fan System	EC to provide cord and matching plug	NEMA 5-20R	-	See floor plan	120V	2 #10 + #12G, in 3/4" C.	400
W16	Welder - Miller	PipeWorx 400 MIG Welder MJ464019V	EC to provide cord and matching plug	NEMA L15-60R	60AF/50AT	To bus duct disconnect	480V	3 #8 + #10G, in 1" C.	21200
W17	Wire Feeder - Miller	70 Series 24V Wire Feeder	EC to provide cord and matching plug	NEMA 5-20R	-	See floor plan	120V	2 #12 + #12G, in 3/4" C.	1300
W18	Welder - Miller	Cosmatek 1.3	-	NEMA 5-20R	-	See floor plan	120V	2 #12 + #12G, in 3/4" C.	1300
W19	Bevel Cutter - Victor	VCA200 Plasma Bevel Cutter CM029361	EC to provide cord and matching plug	NEMA 5-20R	-	See floor plan	120V	2 #12 + #12G, in 3/4" C.	1200

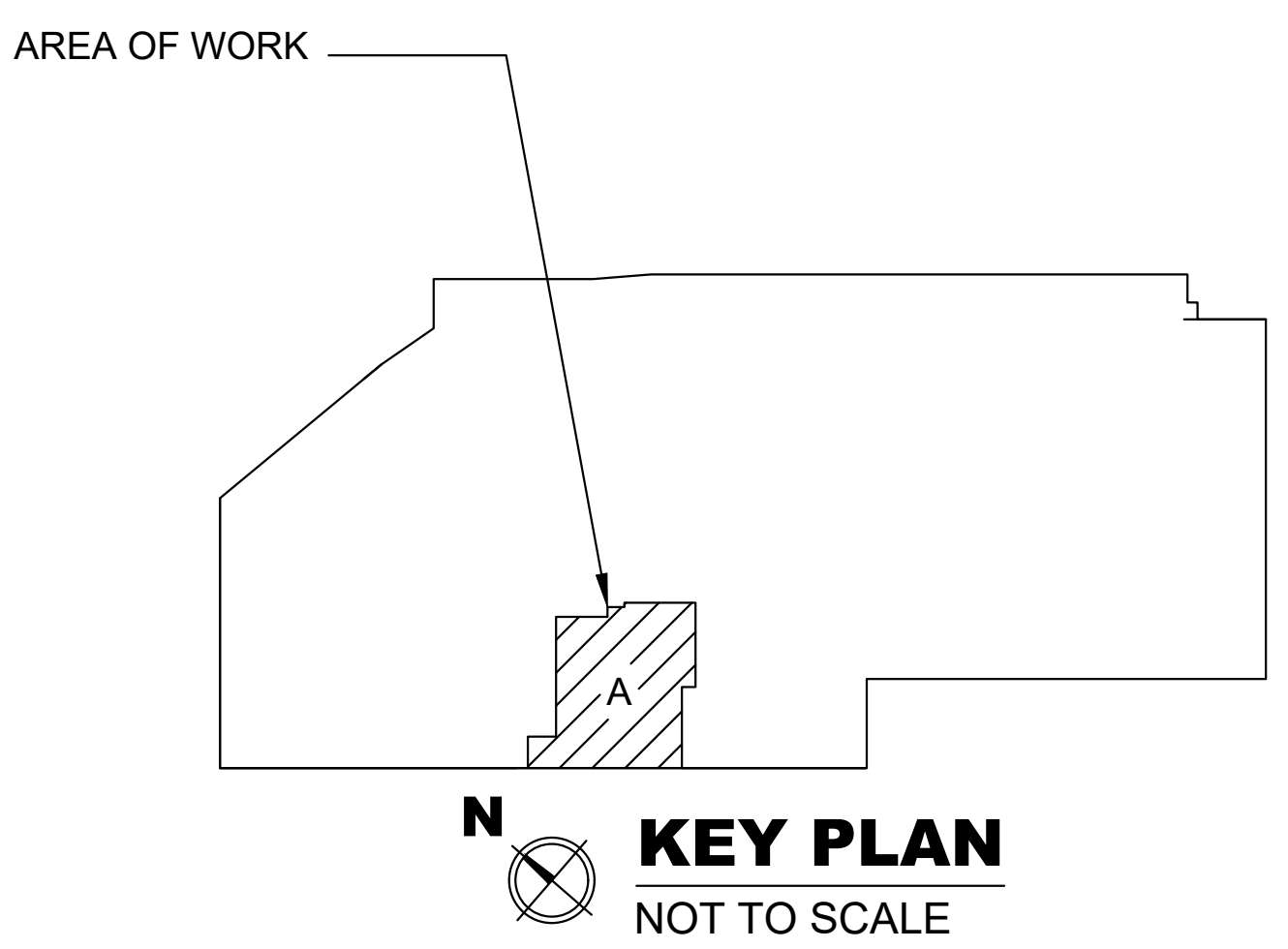
\* Terminate matching plug on existing equipment cord  
 \*\* Disconnects shall be splash type

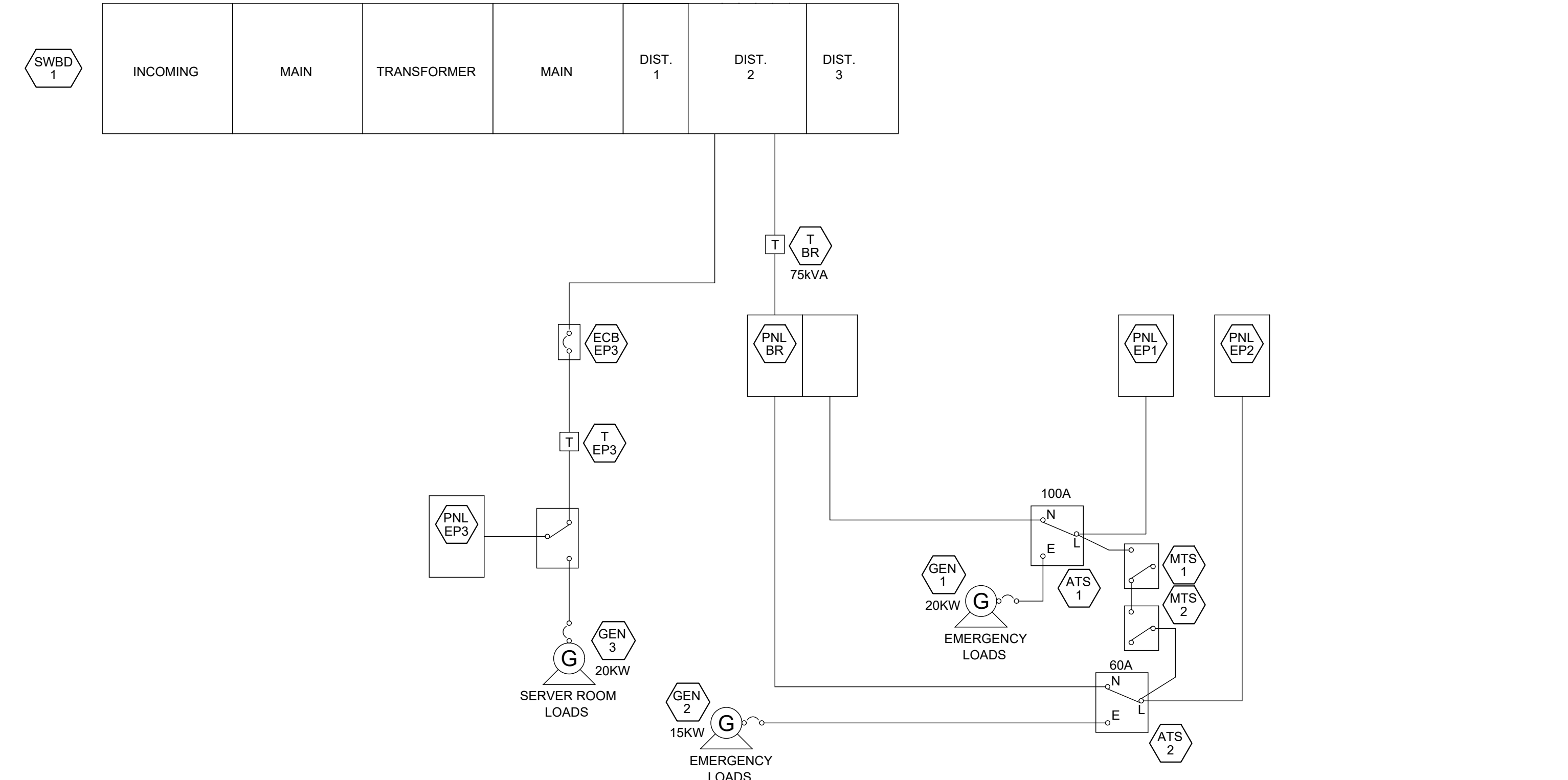
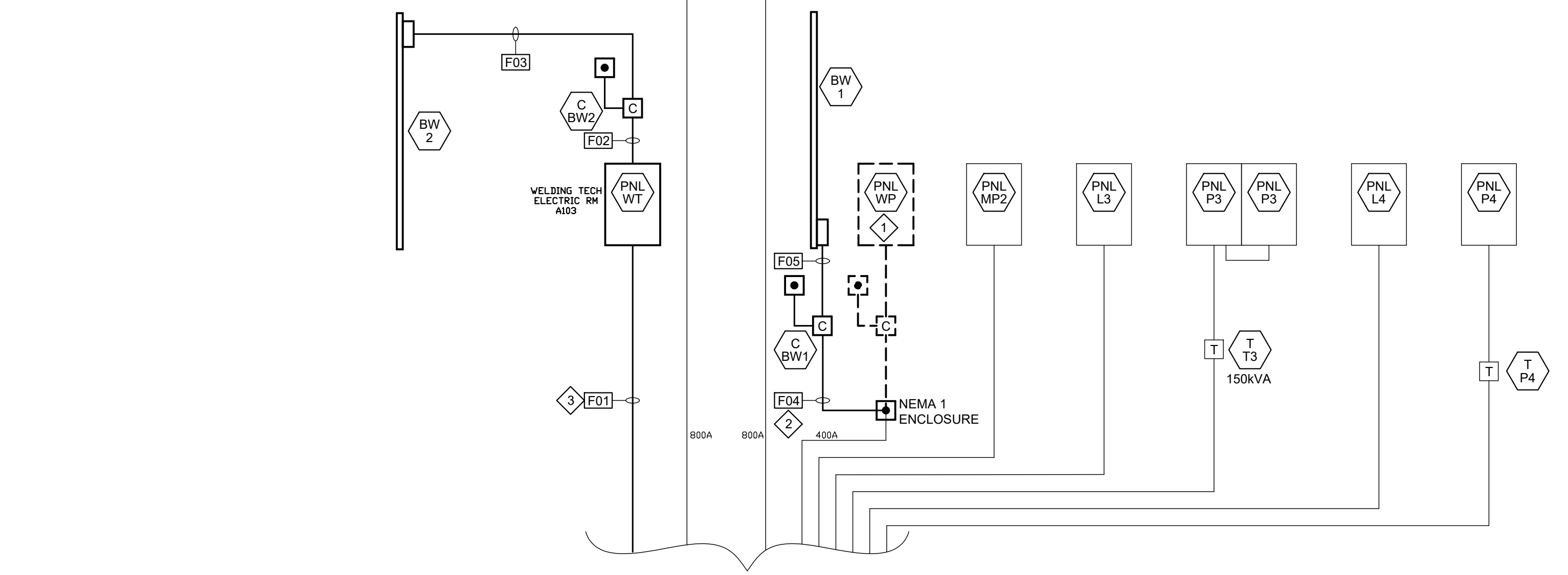
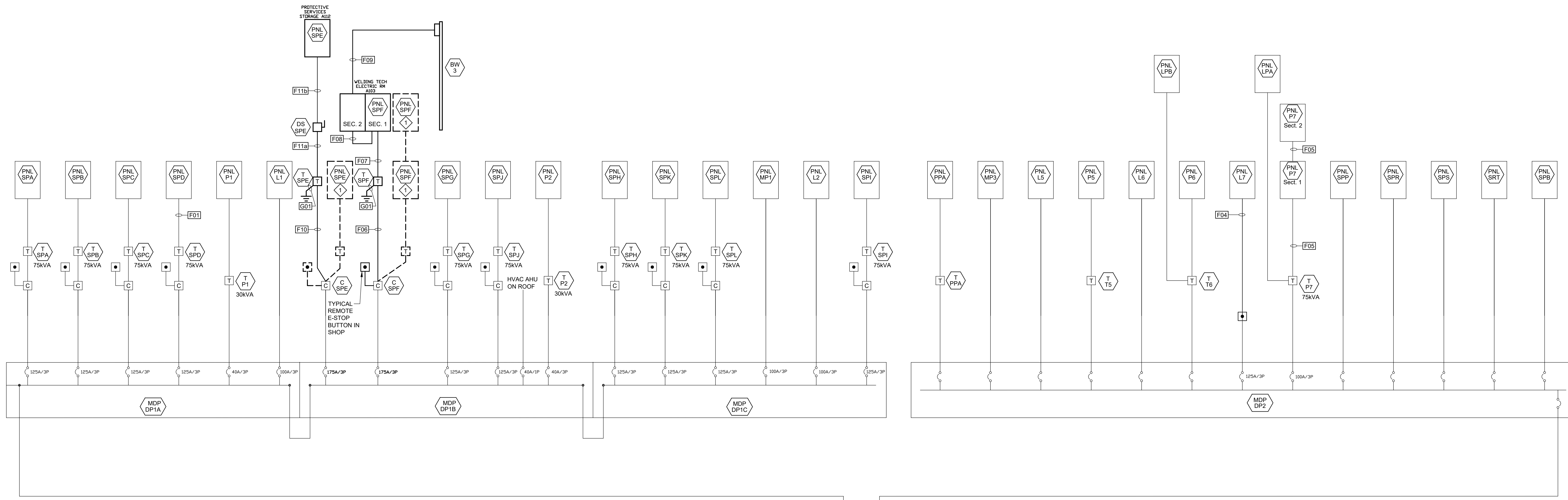
**KEY NOTES**

- 1. STACK VFD-EF-102 AND VFD-EF-104 BELOW VFD-EF-103 AND VFD-EF-101. COORDINATE LAYOUT WITH HC.
- 2. PROVIDE 2" WIDE UNI-STRUT SUPPORT SYSTEM FROM ROOF STRUCTURE TO TOP BOOTH FOR MECHANICAL PIPES, ELECTRICAL CONDUITS AND DEVICES. COORDINATE LAYOUT WITH MC.
- 3. PROVIDE FINAL CONNECTIONS TO OWNER FURNISHED FURNITURE WITH LFMC. INSTALL LFMC SNUG TO WALL AND UNDERSIDE OF FURNITURE.
- 4. REDUCE GROUND BAR SIZE AS DETAILED AND SPECIFIED TO 8" OR 10" IN LENGTH.
- 5. PEDESTAL MOUNTED EQUIPMENT. COORDINATE FINAL LOCATION IN THE FIELD WITH NEW MECHANICAL WORK IN THIS AREA TO ALLOW CODE REQUIRED WORKING CLEARANCE IN FRONT OF ELECTRICAL EQUIPMENT.

**PLAN NOTES**

- 1. SHOP WALL MOUNTED RECEPTACLES SHALL BE AT CT HEIGHT, UNLESS NOTED OTHERWISE.
- 2. PROVIDE CT BOX AND CONDUIT TO ACCESSIBLE CEILING SPACE FOR THERMOSTATS, COORDINATE WITH HC.
- 3. PROVIDE ADDITIONAL GROUNDINGS AND BONDING IN AND AROUND THE WELDING SHOP AS INDICATED IN THE ELECTRICAL NOTES.
- 4. COORDINATE HVAC EQUIPMENT, CONTROLS AND DEVICE LOCATIONS WITH HC.
- 5. WELDING TECHNOLOGY A101 WALL MOUNTED RECEPTACLES SHALL BE AT CT HEIGHT.





**PARTIAL SINGLE LINE DIAGRAM**  
NO SCALE

- KEY NOTES**
- DEMOLISH PANEL, BACK BOX AND BRANCH CIRCUITS AND FEEDERS.
  - TO SWBD-1, DISTRIBUTION SECTION #2, EXISTING 400A T BUCKET #5. PROVIDE NEW FUSES, WITH BLOWN FUSE INDICATION.
  - TO SWBD-1, DISTRIBUTION SECTION #2, EXISTING 400A T BUCKET #4. REMOVE ABANDON WIRING IN SWBD FROM SWITCH; PROVIDE NEW FUSES, WITH BLOWN FUSE INDICATION.

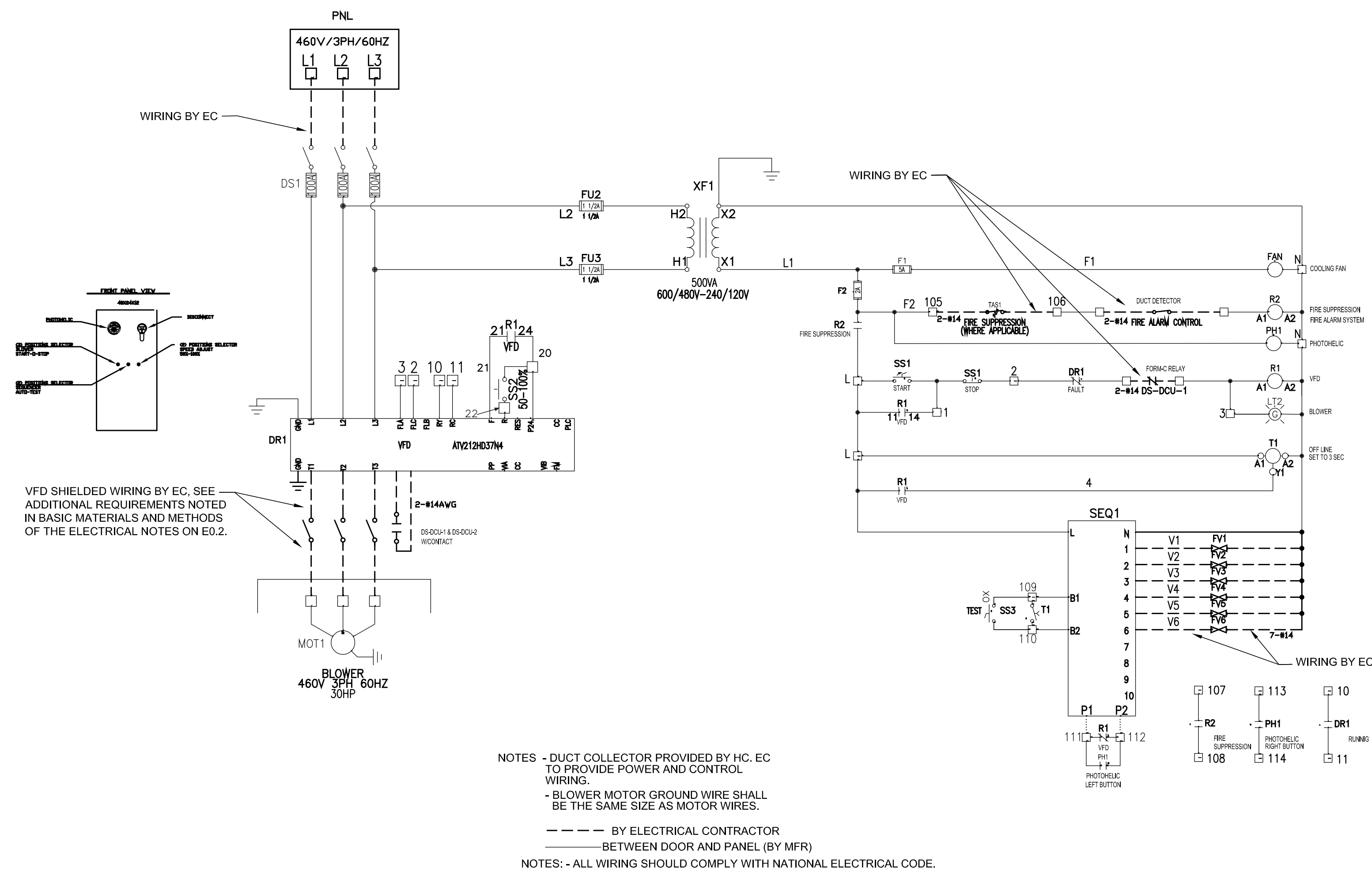
**Feeder Schedule**

Tag	Overcurrent Protection	Phase Wires (per conduit)	Ground	Conduit	Number of Conduits
F01	400A	4 - 600KCMIL	#3	4"	1
F02	400A	3 - 600KCMIL	#3	4"	1
F03	400A	3 - 600KCMIL	#3	4"	1
F04	400A	3 - 600KCMIL	#3	4"	1
F05	400A	3 - 600KCMIL	#3	4"	1
F06	175A	3 - 3/0	#6	2.5"	1
F07	225A	4 - 4/0	#4	2.5"	1
F08	225A	4 - 4/0	#4	2.5"	1
F09	200A	4 - 3/0	#6	2.5"	1
F10	175A	3 - 3/0	#6	2.5"	1
F11a	200A	4 - 4/0	#6	2.5"	1
F11b	200A	4 - 4/0	#6	2.5"	1
G01	Bond to steel	-	#2	1"	1

**INTERIOR ALTERATIONS - PHASE 3**  
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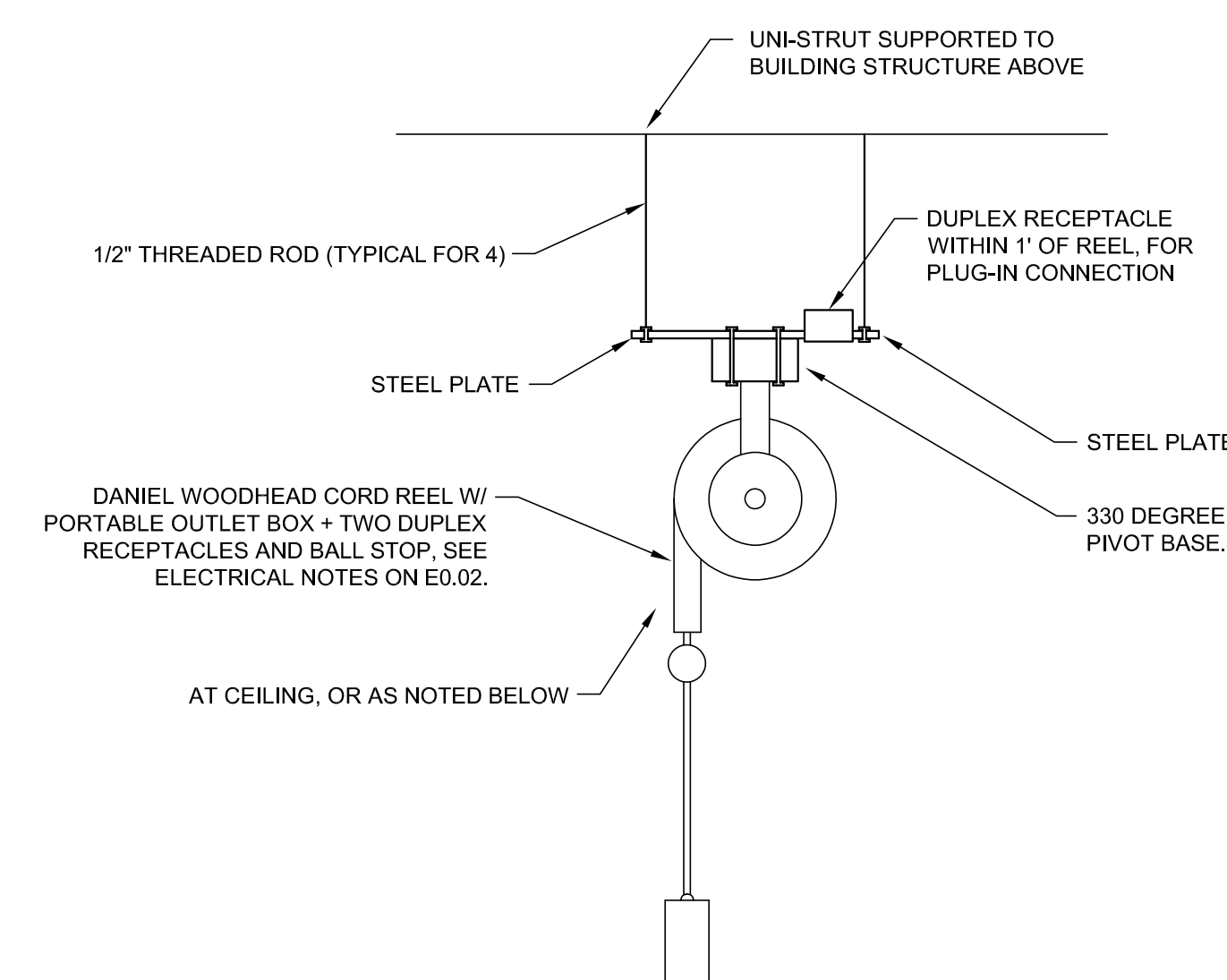
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date	drawn	designed	checked	comm. no.
02/01/2022	MM	MCD	DB	084



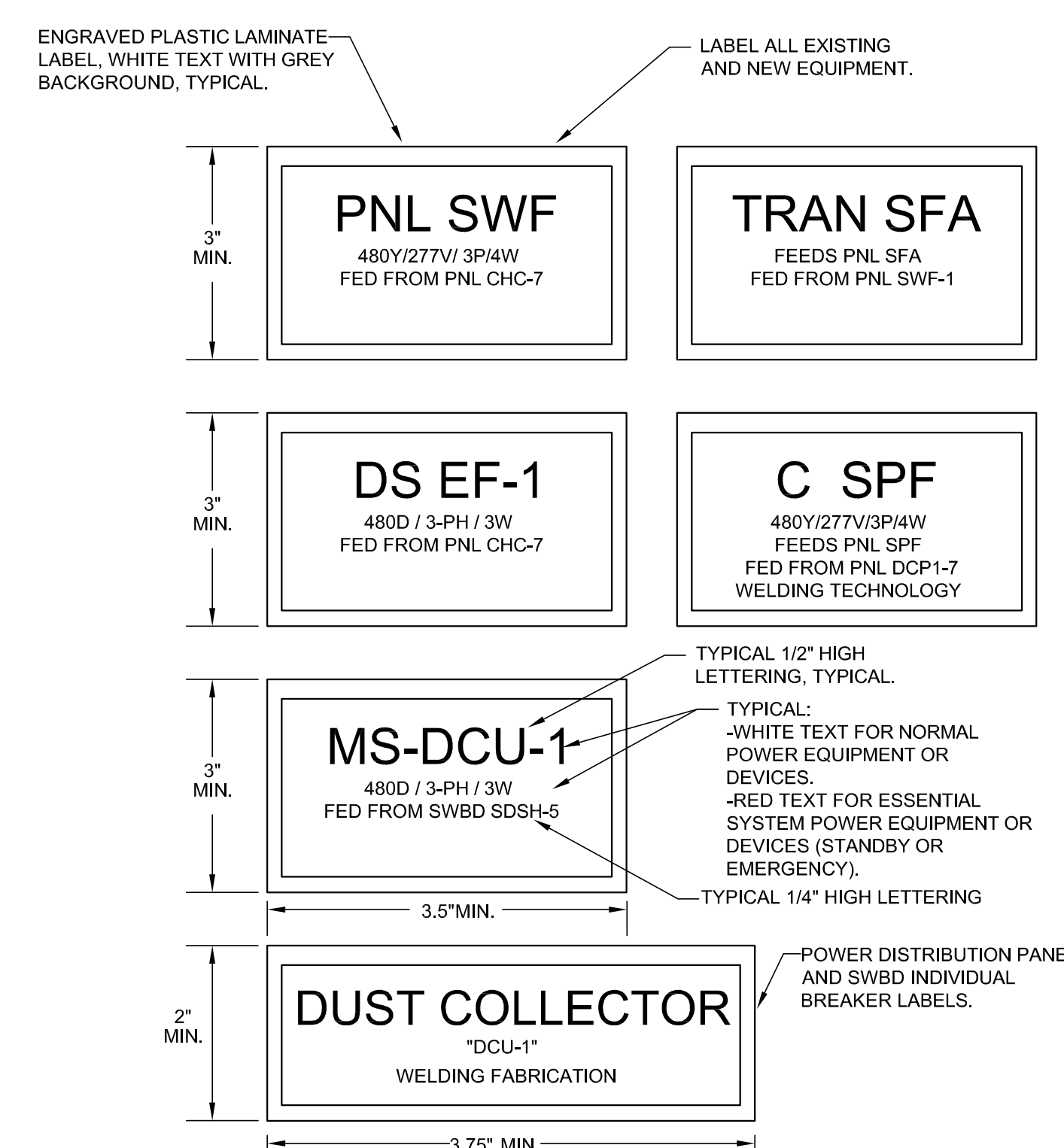
**DUST COLLECTOR UNITS 1 & 2 WIRING DIAGRAM**

NO SCALE



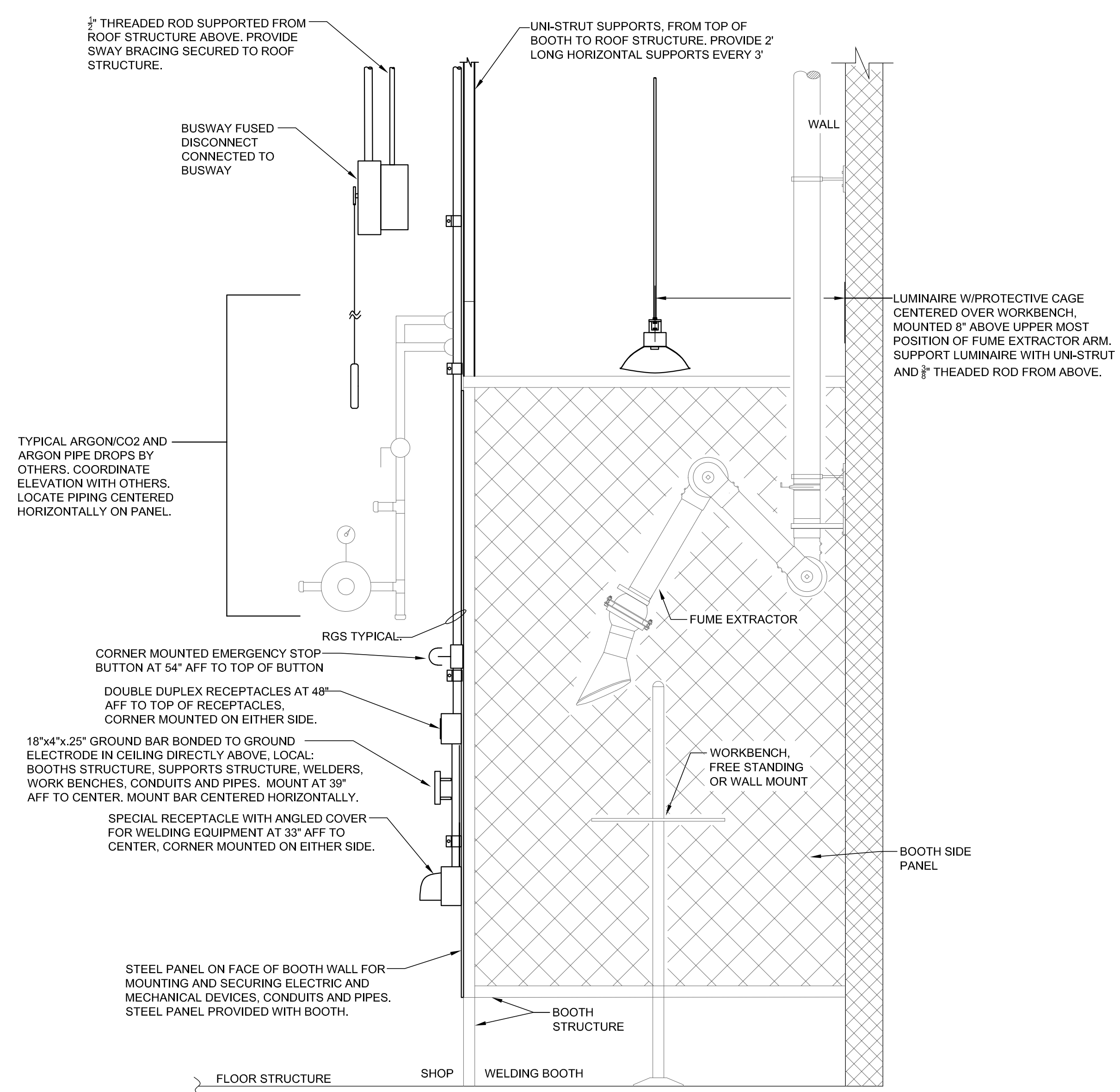
**CORD REEL MOUNTING DETAIL**

NO SCALE  
NOTE:  
1. COORDINATE FINAL LOCATION AND MOUNTING HEIGHT OF REEL ABOVE THE CEILING WITH NEW WORK AND ARCHITECT/OWNER.



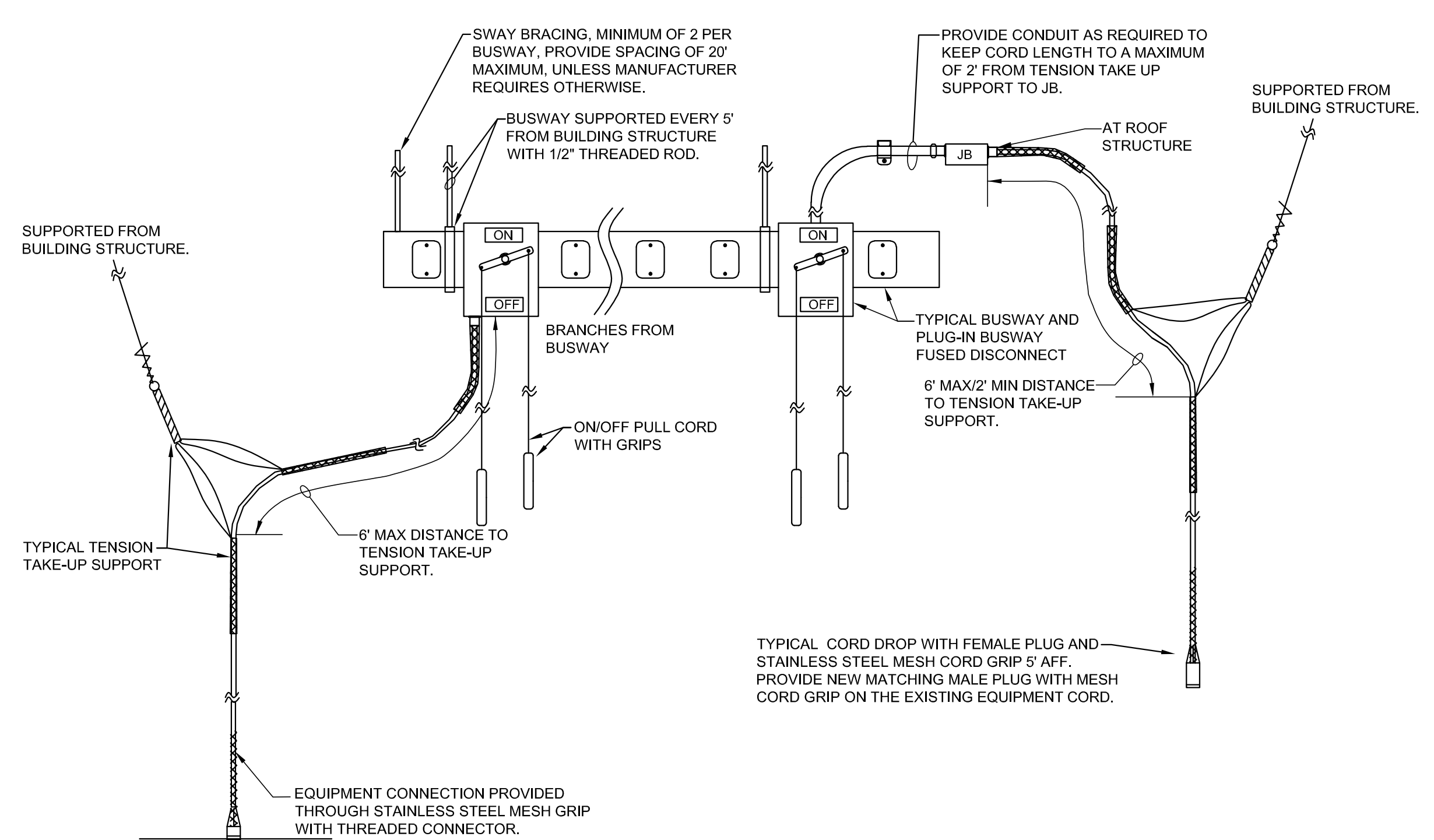
**TYPICAL EQUIPMENT LABEL DETAIL**

NOT TO SCALE  
NOTE:  
IDENTIFY PANELBOARDS, SWITCHBOARD SWITCHES, POWER DISTRIBUTION PANEL BREAKERS, SAFETY SWITCHES, TRANSFORMERS, CONTACTORS AND MOTOR STARTERS WITH ENGRAVED LABELS. INDICATE EQUIPMENT ID, VOLTAGE AND LOCATION EQUIPMENT IS FED FROM AND WHAT IS FED THRU THE EQUIPMENT (FOR TRANSFORMERS AND CONTACTORS).



**TYPICAL WELDING BOOTH DETAIL**

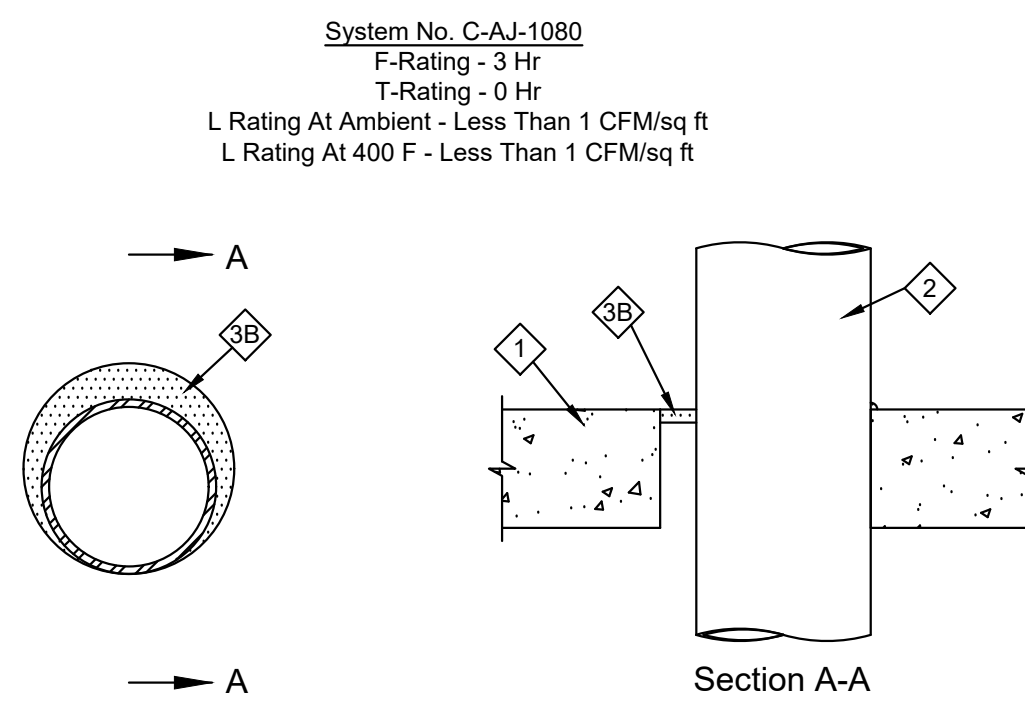
NOT TO SCALE  
NOTES  
1. PROVIDE CAST METAL DEVICE BACK BOXES WHERE SURFACE MOUNTED BELOW 8'.  
2. REFER TO ELECTRICAL NOTES FOR ADDITIONAL REQUIREMENTS AND GROUNDING.  
3. UNI-STRUT SUPPORT FROM TOP OF BOOTH TO ROOF STRUCTURE SHALL BE SIZED TO HANDLE MECHANICAL PIPING, DEVICES AND ELECTRICAL CONDUITS AND DEVICES. COORDINATE UNI-STRUT SUPPORT SYSTEM WITH MC.  
4. COORDINATE SUPPORTS, LAYOUT AND OTHER NEW WORK IN THE BOOTH AREA WITH ALL PRIME CONTRACTORS TO AVOID CONFLICTS.  
5. PROVIDE MOCK-UP OF A SINGLE BOOTH PRIOR TO NEW WORK. CLEARLY SHOW SUPPORTS, RACEWAYS, BOXES, DEVICES, LIGHTING, GROUNDING AND COORDINATION WITH OTHER TRADES. CONTINUE WITH BOOTH WORK AFTER THE OWNER, ARCHITECT AND ENGINEER HAVE REVIEWED MOCK-UP AND REVIEW COMMENTS HAVE BEEN IMPLEMENTED.



**TYPICAL WELDING SHOP BUSWAY DETAIL - CORD DROP**

NOT TO SCALE  
1. PROVIDE CONDUIT FROM BUSWAY DISCONNECT TO RECEPTACLES OR TO JUNCTION BOXES JUST ABOVE DROP CORDS. COMPLY WITH THE TYPICAL WELDING SHOP BUSWAY DETAIL-WELDING RECEPTACLE.  
2. PROVIDE STAIN RELIEF THREADED FITTINGS FOR CORDS AT THE EQUIPMENT CONNECTION, JUNCTION BOXES ALONG WITH TAKE UP SUPPORTS.  
3. PROVIDE HUBBELL, KELLEMS GALVANIZED STEEL WIRE TAKE UP SUPPORTS SIZED FOR TENSION AND KELLEMS STAINLESS STEEL CABLE GRIPS AND CORD DELUXE ALUMINUM STRAIGHT MALE GRIPS WITH STAINLESS STEEL MESH SIZED FOR CABLES OR CORDS.  
4. REFER TO ELECTRICAL NOTES FOR ADDITIONAL INFORMATION ON BUSWAYS.  
5. COORDINATE BUSWAY HEIGHT ABOVE FINISHED FLOOR WITH NEW WORK. EXISTING CONDITIONS AND TO ALLOW ACCESS FROM BELOW WITH 8' LADDER (8' TO 10' AFF), FINAL LOCATION SHALL BE COORDINATED WITH ARCHITECT/ENGINEER.

Details	Checked DB	Comm. no. 084
Designed MCD	Drawn MM	Scale 1/8"=1'-0"
Date 02/01/2022		

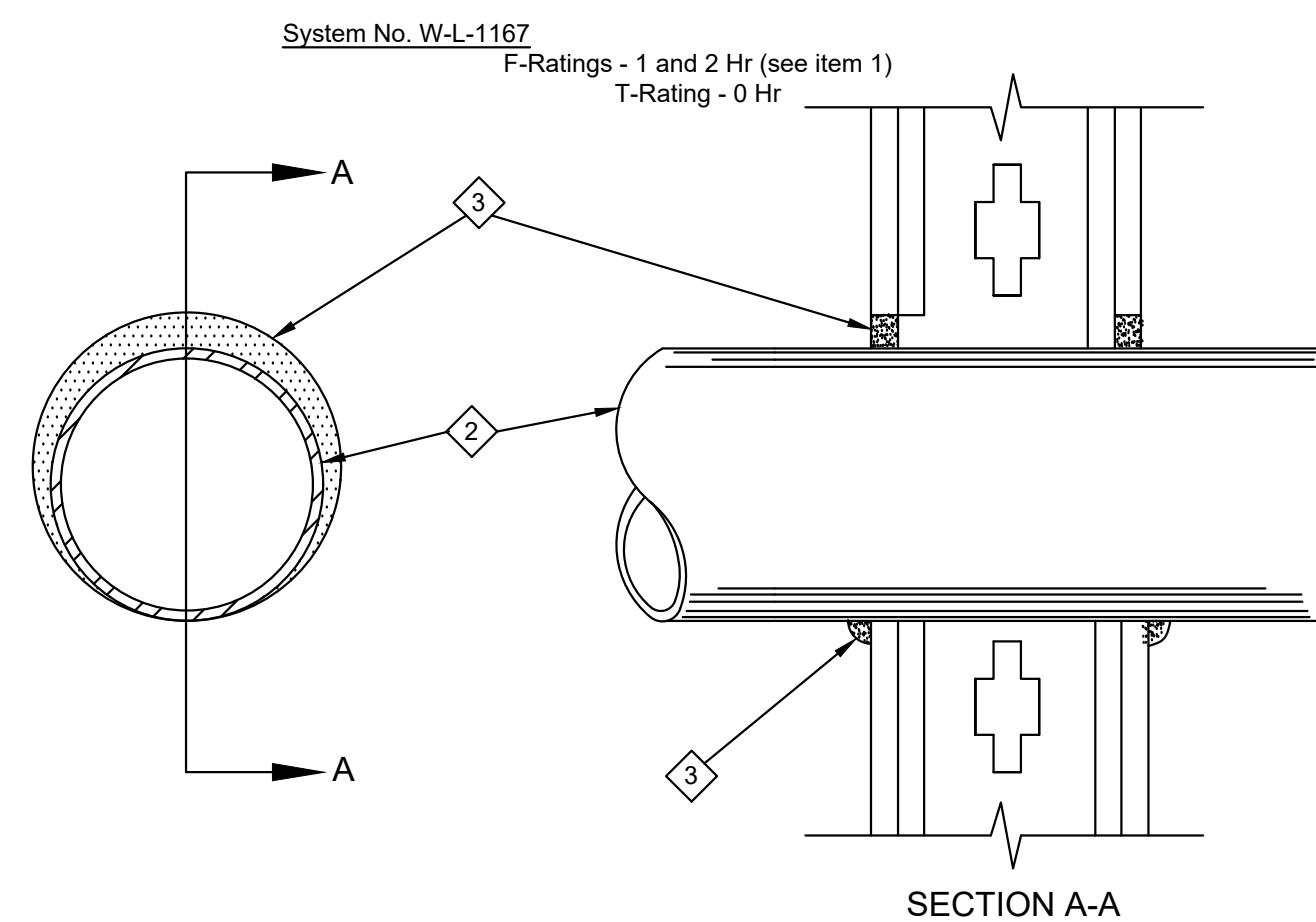


**FIRE-RATED PENETRATION DETAIL**  
NO SCALE

- Floor or Wall Assembly - Min 4-1/2 in. thick reinforced lightweight or normal weight (100-150 pcf) concrete. Wall may also be constructed of any UL Classified Concrete Block\* Max diam of opening is 32 in. See Concrete Block (CAZT) category in the Fire Resistance Directory for names of manufacturers.
- Through Penetrants - One metallic pipe, conduit or tubing to be centered within the firestop system. The annular space shall range from min 2 in. (point contact) to max 2 in. Pipe, conduit or tubing to be rigidly supported on both sides of floor or wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
  - Steel Pipe - Nom 30 in. diam (or smaller) Schedule 5 (or heavier) steel pipe.
  - Iron Pipe - Nom 30 in. diam (or smaller) cast or ductile iron pipe.
  - Conduit - Nom 4 in. diam (or smaller) electrical metallic tubing or nom 6 in. diam (or smaller) rigid galv steel conduit.
  - Copper Tubing - Nom 6 in. diam (or smaller) Type M (or heavier) copper tubing.
  - Copper Pipe - Nom 6 in. diam (or smaller) Regular (or heavier) copper pipe.
- Firestop System - The firestop system shall consist of the following:
  - Packing Material - (Optional, Not Shown) - Mineral wool batt insulation, polyethylene backer rod or glass fiber batt insulation friction fitted into annular space. Packing material to be recessed from top surface of floor or both surfaces of wall as required to accommodate the required thickness of fill material.
  - Fill Void or Cavity Material - Caulk - Min 1/2 in. thickness of fill material applied within the annulus, flush with top surface of floor or with both surfaces of wall. At point contact location, apply min 1/4 in. diam bead of sealant at the pipe/concrete interface on the top surface of the floor or both surfaces of wall.
 

SPECIFIED TECHNOLOGIES INC - SpecSeal 100, 101, 102, 105, 120 or 129 Sealant

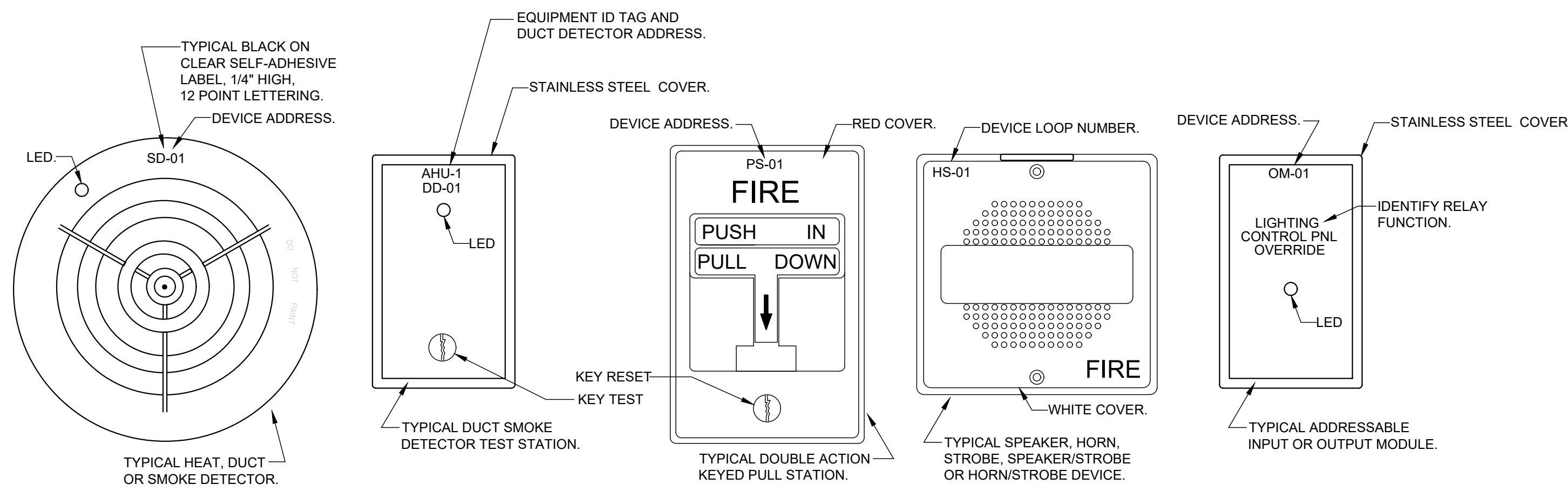
\*Bearing the UL Classification Mark



**FIRE-RATED PENETRATION DETAIL**  
NO SCALE

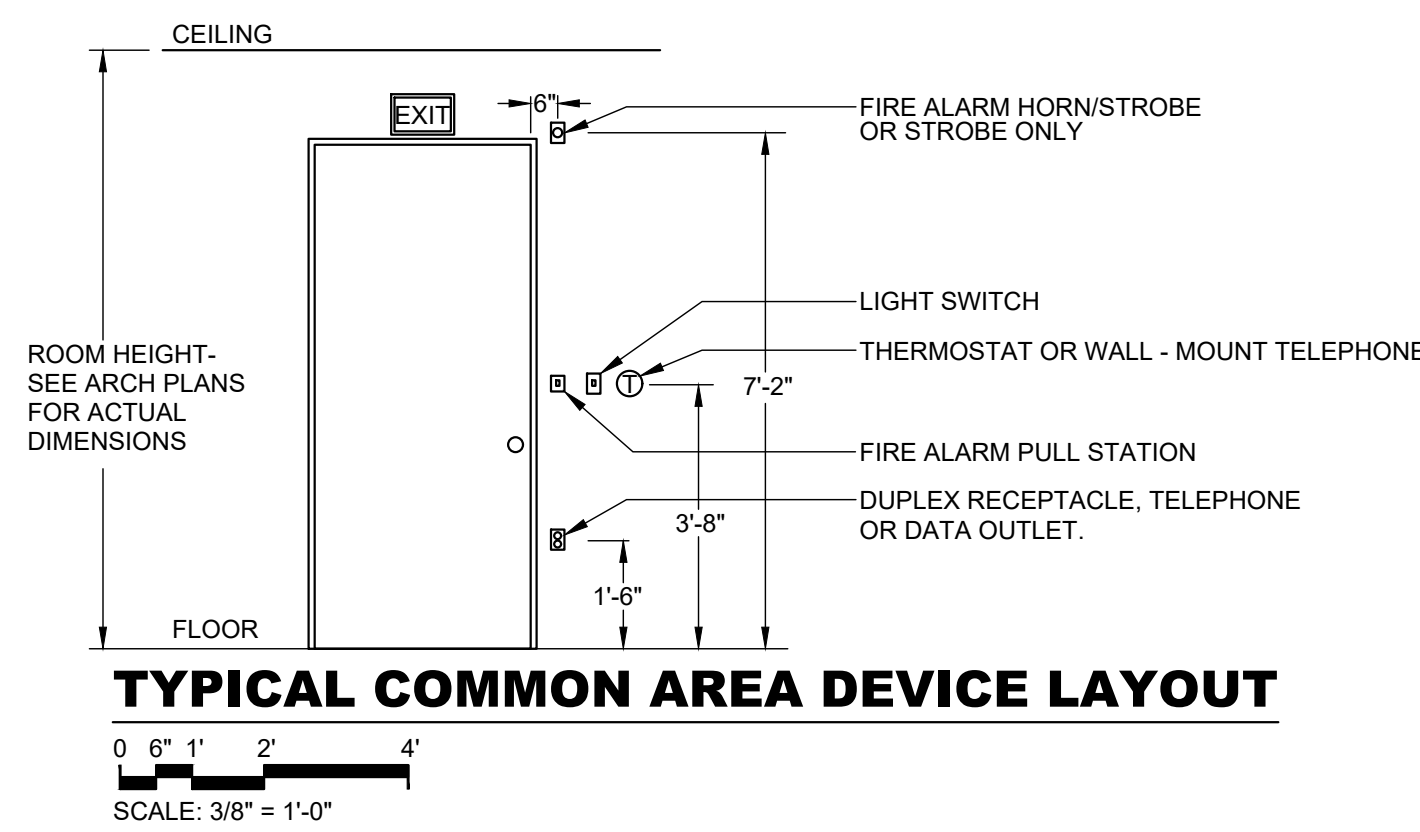
- KEY NOTES**
- Wall Assembly - The 1 or 2 hr fire-rated gypsum wallboard/steel wall assembly shall be constructed of the materials and in the manner described in the individual U300 or U400 Series Wall or Partition Design in the UL Fire Resistance Directory and shall include the following construction features:
    - Studs - Wall framing may consist of either wood studs or steel channel studs. Wood studs to consist of nom 2 by 4 in. lumber spaced 16 in. OC with nom 2 by 4 in. lumber end plates and cross braces. Steel studs to be min 3-1/2 in. wide by 1-3/8 in. deep channels spaced max 24 in. OC.
    - Gypsum Board\* - The gypsum wallboard type, thickness, number of layers, fastener type and sheet orientation shall be as specified in the individual U300 or U400 Series Design in the UL Fire Resistance Directory. Max diam of opening is 14 in. The hourly F Rating of the firestop system is equal to the hourly fire rating of the wall assembly in which it is installed.
  - Through Penetrant - One metallic pipe, conduit or tubing installed either concentrically or eccentrically within the firestop system. The annular space between pipe, conduit or tubing and periphery of opening shall be min of 0 in. (point contact) to max 1-3/8 in. Pipe, conduit or tubing to be rigidly supported on both sides of wall assembly. The following types and sizes of metallic pipes, conduits or tubing may be used:
    - Steel Pipe - Nom 12 in. diam (or smaller) Schedule 10 (or heavier) steel pipe
    - Iron Pipe - Nom 12 in. diam (or smaller) service weight (or heavier) cast iron soil pipe, nom 12 in. diam (or smaller) or Class 50 (or heavier) ductile iron pressure pipe.
    - Conduit - Nom 6 in. diam (or smaller) steel conduit or nom 4 in. diam (or smaller) steel electrical metallic tubing.
    - Copper Tubing - Nom 4 in. diam (or smaller) Type L (or heavier) copper tubing.
    - Copper Pipe - Nom 4 in. diam (or smaller) Regular (or heavier) copper pipe.
  - Fill Void or Cavity Material - Caulk - Min 5/8 in. thickness of fill material applied within the annulus, flush with both surfaces of wall. Min 1/2 in. diam bead of caulk applied to the penetrant/wallboard interface at the point contact location on both sides of wall. MINNESOTA MINING & MFG CO - FD-150+
 

\*Bearing the UL Classification Mark



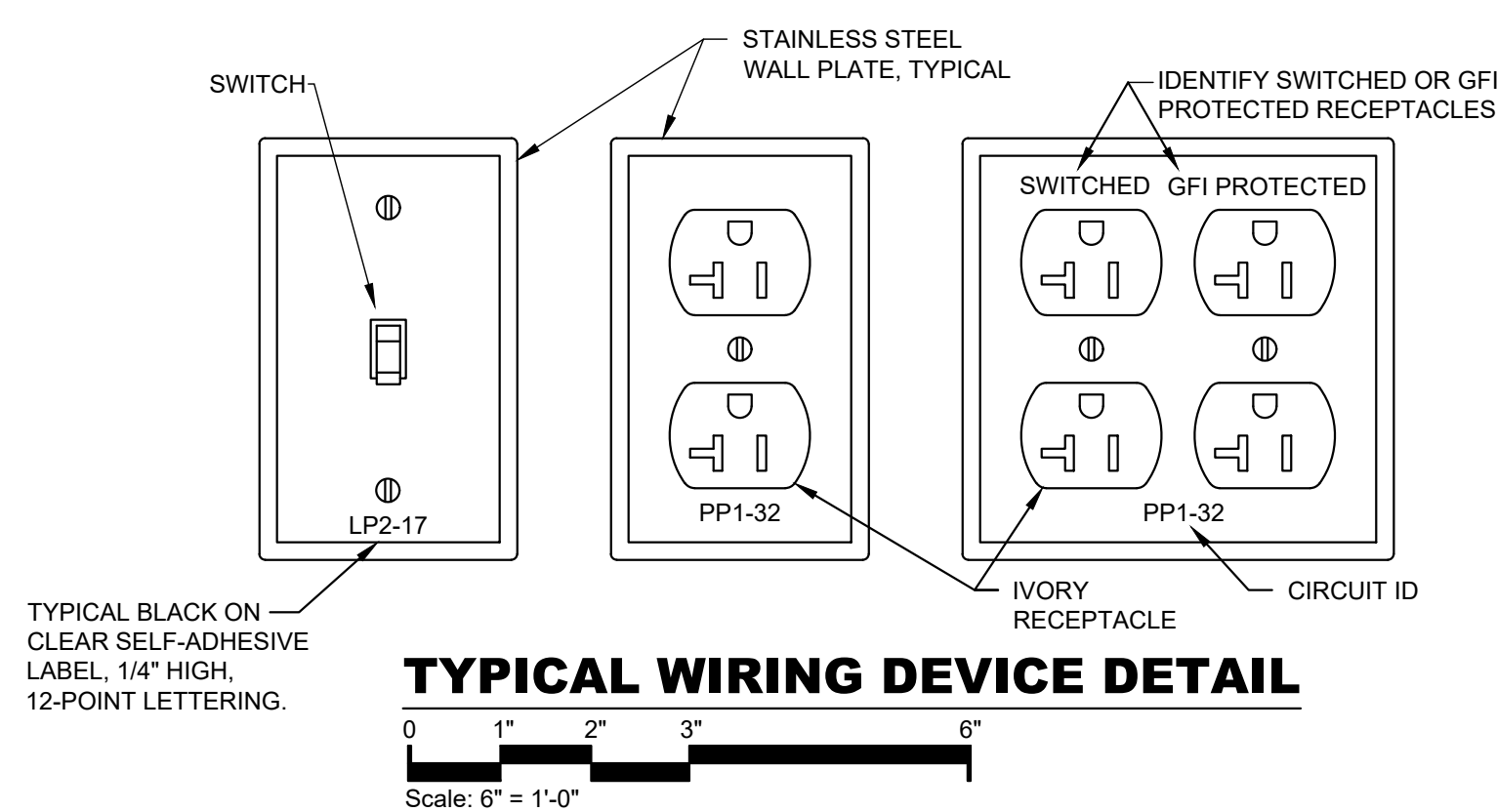
**TYPICAL FIRE ALARM DEVICE DETAIL**

- NOT TO SCALE
- NOTES:**
- IDENTIFY ALL NEW AND EXISTING NON-ADDRESSABLE FIRE ALARM DEVICES WITH THE NON-ADDRESS LOOP NUMBER.
  - IDENTIFY ALL NEW AND EXISTING ADDRESSABLE DEVICES WITH DEVICE ADDRESS.
  - INCREASE TEXT SIZE FOR DEVICES LOCATED ABOVE 10' AFF TO 1/2" HIGH 14 POINT LETTERING.



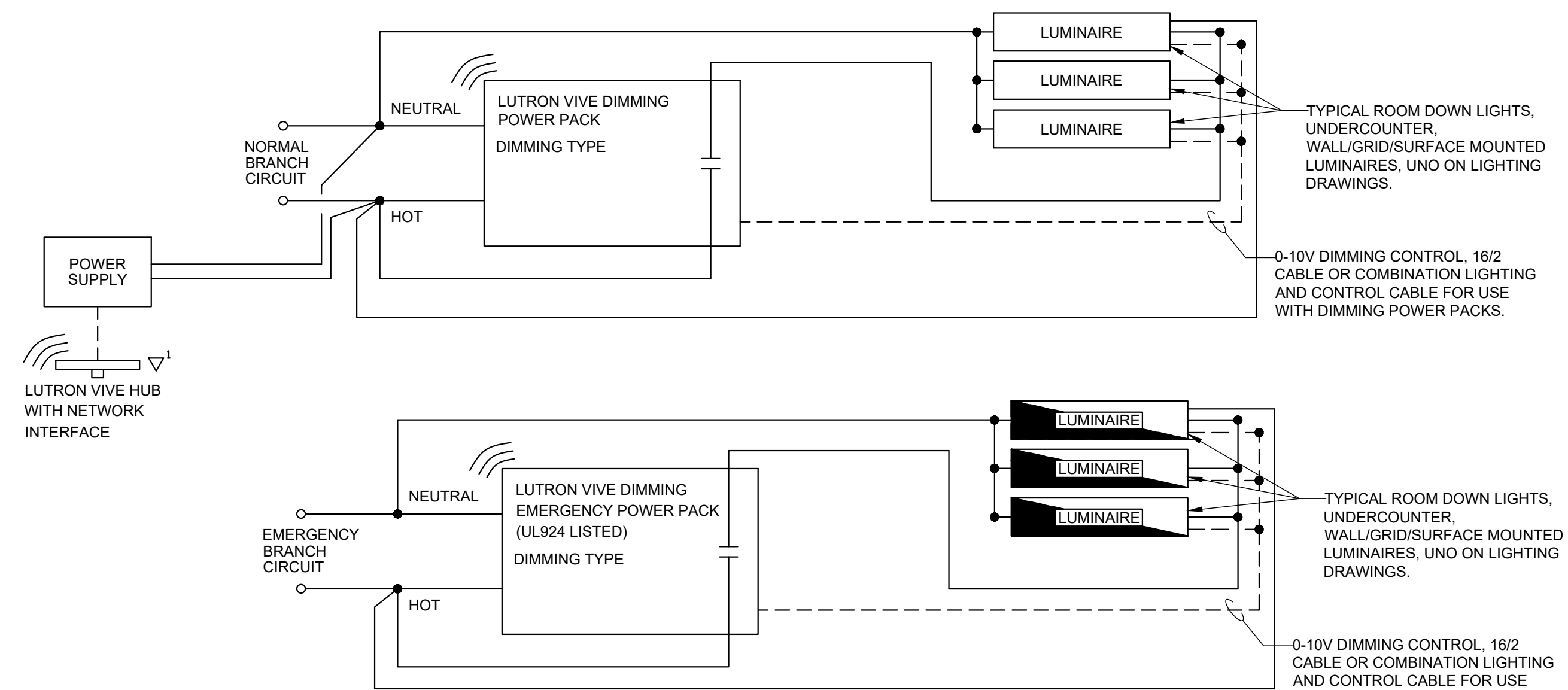
**TYPICAL COMMON AREA DEVICE LAYOUT**

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



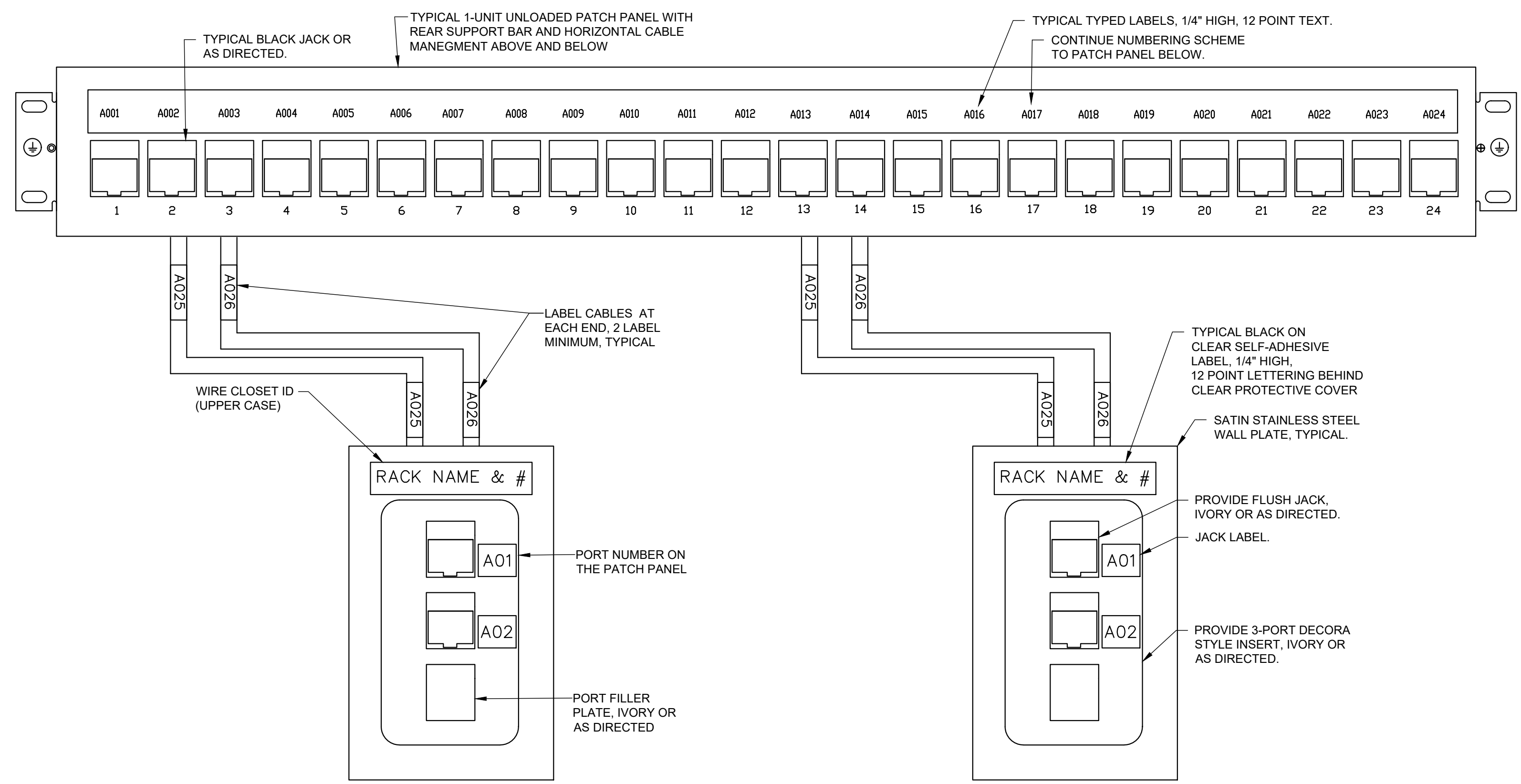
**TYPICAL WIRING DEVICE DETAIL**

- Scale: 6" = 1'-0"
- NOTES:**
- LABEL THE FRONT AND BACK OF EACH COVERPLATE.
  - COORDINATE DEVICE COLORS, COVERPLATE MATERIAL TYPE WITH ARCHITECT PRIOR TO INSTALLATION.



**TYPICAL LUTRON POWER PACK DETAILS**

- No Scale
- NOTES:**
- PROVIDE LUTRON VIVE SYSTEM, INCLUDING NEW HUB, PECO SWITCHES, POWER PACKS, WIRING AND PROGRAMMING. COMPONENTS TO MATCH THOSE USED ELSEWHERE IN THE BUILDING. SYSTEM SHALL BE STANDALONE IN EACH SPACE, BUT CAPABLE OF FUTURE INTEGRATION TO A NETWORKED SYSTEM.
  - PROVIDE VIVE SYSTEM IN SHOPS, THEORY ROOMS, STORAGE ROOM AND LIKE SPACES.
  - PROVIDE PROGRAMMING OF SYSTEM COMPONENTS AS COORDINATED WITH OWNER.
  - PROVIDE DEDICATED POWER PACKS FOR 277V LIGHTING AND 120V LIGHTING. POWER PACKS SHALL BE AT AN ACCESSIBLE LOCATION ABOVE THE CEILING AT MAIN ENTRANCE TO ROOM. IN THEORY ROOMS PROVIDE 2 NORMAL LIGHTING POWER PACKS AND 1 EMERGENCY POWER PACK FOR EACH EMERGENCY LUMINAIRE.
  - COMPLY WITH MANUFACTURER'S RECOMMENDED WIRING REQUIREMENTS.
  - PROVIDE DEDICATED 120V EMERGENCY POWER PACK IN THEORY ROOMS AND LIKE SPACES 120V NORMALLY ON EMERGENCY LIGHTING. SET SCHEDULE FOR EMERGENCY LUMINAIRE TO BE ON WHEN BUILDING IS IN USE, OR ON 24/7, IF DIRECTED. SET LOCAL EMERGENCY LIGHTING SHALL TURN ON TO 100% OUTPUT UPON LOSS OF NORMAL POWER TO THE LOCAL HUB AND LOCAL NORMAL LIGHTING.
  - INSTALL LUTRON WIRELESS DIMMERS, SWITCHES AND LIGHTING CONTROL DEVICES AS SHOWN ON THE DRAWINGS. SET HIGH LEVEL TRIM FOR THEORY ROOMS AND STORAGE ROOMS TO 50FC AVERAGE.



**TYPICAL TELEDATA LABELING DETAIL**

- NOT TO SCALE
- NOTES:**
- PROVIDE PRODUCTS BY LEVITON. FILL UNUSED OPENINGS WITH ELECTRICAL IVORY, OR AS DIRECTED BLANK MODULES.
  - PATCH PANELS ARE TO BE LABELED IN CONSECUTIVE ORDER STARTING AT RACK LETTER, PORT 001. FACE PLATE SHALL IDENTIFY RACK LETTER AND PORT NUMBER FOR EACH JACK.
  - LABELING SCHEME SHOWN IS AN EXAMPLE. PROVIDE LABELING OF TELEDATA CABLES, PATCH PANELS, AND JACKS AS DEFINED BY OWNER IN WRITING IN A COORDINATION MEETING WITH SCHOOL DISTRICT'S DIRECTOR OF TECHNOLOGY OR OTHER IT STAFF.
  - PROVIDE ADDITIONAL PATCH PANELS AS REQUIRED, FOR EACH UNLOADED PANEL, PROVIDE 24 CATEGORY 6 JACKS.

Details	Checked/DB	Comm. no. 084
Designed/MCD	Drawn/MM	02/01/2022

### Luminaire Schedule

1. All luminaires must be listed and labeled by an NRTL, as required by the NEC.

Type	Manuf.	Model	Mounting	Description	Source	Color	CRI	Lumens	Lumen Maint	Driver	Voltage	VA	W
A	KB Lighting	LEDPNL2X4-35W-5KMV-PRM-CP	Recessed	2'x4' Edge-Lit flat panel, furnished by Owner, installed by Electrical Contractor, earthquake clips, 138LPW, DLC premium, set dimming high trim to 70%	LED	5000K	80	4000	L70 /80,000H	0-10V	277-120V	44	35
A1	KB Lighting	LEDPNL2X4-35W-5KMV-PRM-CP	Recessed	2'x4' Edge-Lit flat panel, furnished by Owner, installed by Electrical Contractor, earthquake clips, 138LPW, DLC premium.	LED	5000K	80	4836	L70 /80,000H	0-10V	277-120V	44	35
A2	KB Lighting	LEDPNL6X24	Recessed	2'x6" Edge-Lit flat panel, furnished by Owner, installed by Electrical Contractor, earthquake clips, 138LPW, DLC premium, set dimming high trim level to 70%	LED	5000K	80	2000	L70 /80,000H	0-10V	277-120V	25	20
B	Columbia	PEL2-50LX-HE-FAW-U1-EDU-xx	Surface	2'x3' High Performance High Bay luminaire, Uplight options from 1,000 lumens, 161LPW, Frosted acrylic lens, Aircraft Cable accessory, -40° C (-40° F) up to 65° C (165° F) ambient operation, set dimming high trim to 70% output, 12 spare lenses turn over to Owner	LED	5000K	80	11,752	L70 /80,000H	0-10V	277-120V	88	73
C3	Lithonia	CLX-L36-HEF-SBLGV-FDL-ND-GZ10-HA-GALVW-WGCLX-xx	Surface	4'x48" linear, premium efficiency, narrow distribution, high ambient temperature (50C), high CRI, diffuse flat acrylic lens, 48" lower and wireguard, glanzvarized finish housing, cap, lower, and wireguard, 5276 delivered lumens, 12 spare lens, 6 lowers and wireguards, mounted to unistrut structure, set dimming high trim to 90%	LED	5000K	90	6750	L70 /80,000H	0-10V	277-120V	60	48
C4	Lithonia	CLX-L48-HEF-FDL-HA-xx	Pendant	4'x48" linear, premium efficiency, general distribution, high ambient temperature (50C), diffuse flat acrylic lens, white housing, adjustable aircraft cable, 3768 delivered lumens	LED	5000K	80	4000	L70 /80,000H	0-10V	277-120V	31	25
E	Emergi-lite Lithonia McPhibben Sure-lites	Preceptor LE series CX series Premier series	Surface, universal	Single-faced exit sign, universal mount, white die-cast aluminum housing, red lettering, concealed chevron knockouts, AC	LED	-	-	-	-	-	277-120V	4	4
E3	Emergi-lite Everglow McPhibben Sure-lites	Premier series	Wall/ Surface	Floor proximity electric exit sign, 6" lettering, located 12" above the floor, white face and white body, low-profile, single sided, red legend, field-selectable chevrons, for use in classrooms and shops. Plastic housing and face, wireguard where shown on the floor plans.	LED	-	-	-	-	-	277-120V	4	4
F	Kerall	SCA-4-0/0-45L850K-DCC-DV-SYM/A-2-xx	Surface	1'x4' high abuse, one piece 14-gauge housing/base, diffused acrylic inner lens/250" clear tempered glass outer lens, piano hinged lensed door, standard allen head stainless steel head, continuous gasket around lens, unistrut luminaire support secure to building structure, provide 100% 250" spare outer tempered glass lenses turn over to Owner, set dimming high trim to 70%	LED	5000K	80	4815	L70 /80,000H	0-10V	277-120V	58	46

### Disconnect Switch Schedule

*Tag	Voltage	Size	Fuses	Enclosure	Phase Wires	Ground	Conduit	Comments
DS-DCU-1	480Δ	60A	50A	NEMA 3R	3 #8	#8	1.5"	Provide contact, VFD cable from VFD to motor
DS-DCU-2	480Δ	60A	50A	NEMA 3R	3 #8	#8	1.5"	Provide control wiring thru contact to VFD
DS-RTU-101	480Δ	30A	17.5A	NEMA 3R	3 #10	#10	3/4"	Provide control wiring thru contact to motor
DS-RTU-102	480Δ	30A	10A	NEMA 3R	3 #10	#10	3/4"	Provide control wiring thru contact to motor
DS-AHU-103	480Δ	30A	6A	NEMA 1	3 #10	#10	3/4"	DS by HC. Provide VFD cable from VFD thru DS to motor
DS-EF-101	480Δ	30A	6A	NEMA 3R	3 #12	#12	1.0"	Provide control wiring from VFD to DS on/off contact
DS-EF-102	480Δ	30A	6A	NEMA 3R	3 #12	#12	1.0"	DS by HC. Provide VFD cable from VFD thru DS to motor
DS-EF-103	480Δ	30A	6A	NEMA 3R	3 #12	#12	1.0"	Provide control wiring from VFD to DS on/off contact
DS-EF-104	480Δ	30A	4.5A	NEMA 3R	3 #12	#12	1.0"	DS by HC. Provide VFD cable from VFD thru DS to motor
DS-SPE	208Y	200A	200A	NEMA 1	2 #14	-	75"	Provide control wiring from VFD to DS on/off contact

Notes: 1 For all switches, provide hasp for padlocking in off position.  
 2 For all switches, provide ground lugs.  
 3 For all outdoor switches, provide watertight threaded conduit hub kit.  
 4 For fused switches, provide class R fuse rejection kit.  
 5 For all fuses, verify fuse sizes match equipment nameplate.  
 6 Each disconnect for DCUs & EF's shall have contacts to indicate open or closed handle/blade position. Provide control wiring from VFD contact to DS contact to indicate blade position.

\*HVAC equipment disconnects shall have contacts to indicate open or closed handle/blade position. Provide control wiring from VFD contact to DS contact to indicate blade position at the VFD.

### Busway Schedule

Tag	Description	Busway Electrical	*Special Requirements	Distribution Switches	Total (VA)	Connected Load (A)
BW-1	Busway 1	400A, 480Δ/3PH/3W	Mechanically Held	NEMA 1, hinged door	120V, remote on/off selector switches and Emergency stop buttons	268168
BW-2	Busway 2	400A, 480Δ/3PH/3W	Mechanically Held	NEMA 1, hinged door	120V, remote on/off selector switches and Emergency stop buttons	323
BW-3	Busway 3	200A, 208Y/3PH/3W	Mechanically Held	NEMA 1	120V, remote on/off selector switches and Emergency stop buttons	173663
					Fused disconnects	209
					Fused disconnects	0

See Welding Technology Plans and Equipment Schedule for busway length, disconnect and fuse sizes.

### Contactors Schedule

Tag	Description	Rating	Type	Enclosure	Control	Comments
C-BW-1	Busway 1 contactor	400A, 480Δ/3PH/3W	Mechanically Held	NEMA 1, hinged door	120V, remote on/off selector switches and Emergency stop buttons	Provide fused CPT, Red PTT 'ON' pilot light, E-stop/on-off selector switch control
C-BW-2	Busway 2 contactor	400A, 480Δ/3PH/3W	Mechanically Held	NEMA 1, hinged door	120V, remote on/off selector switches and Emergency stop buttons	Provide fused CPT, Red PTT 'ON' pilot light, E-stop/on-off selector switch control
C-SPE	PHL-SPE contactor	175 480Δ/3PH/3W	Mechanically Held	NEMA 1	120V, remote on/off selector switches and Emergency stop buttons	Existing to remain, relocate on/off switch in door of contactor, provide E-stop control
C-SPE	PHL-SPE contactor	175 480Δ/3PH/3W	Mechanically Held	NEMA 1	120V, remote on/off selector switches and Emergency stop buttons	Existing to remain, provide control from relocated on/off switch, and new E-stop buttons

Provide emergency stop buttons at locations shown on the drawing. Emergency stop buttons to consist of a red cast aluminum 60 MM mushroom button, IP 65, emergency stop legend plate, contact block and mounting collar. Emergency stop button to mount in a cast metal junction box, stainless steel coverplate. Emergency stop buttons to have a 3mm or 4mm aluminum red button with the word "Emergency" inscribed in the button or on a circular legend on the coverplate at the base of the button. Use of local controls shall provide on/off of associated contactor.

### Transformer Schedule

Tag	Size	Primary Voltage	Secondary Voltage	Notes
T-SPE	75kVA	480Δ	208Y/120V	dry type, DOE 2016 compliant, isolation pads
T-SPE	75kVA	480Δ	208Y/120V	dry type, DOE 2016 compliant, isolation pads



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INTERIOR ALTERATIONS - PHASE 3  
 FOR THE  
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 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

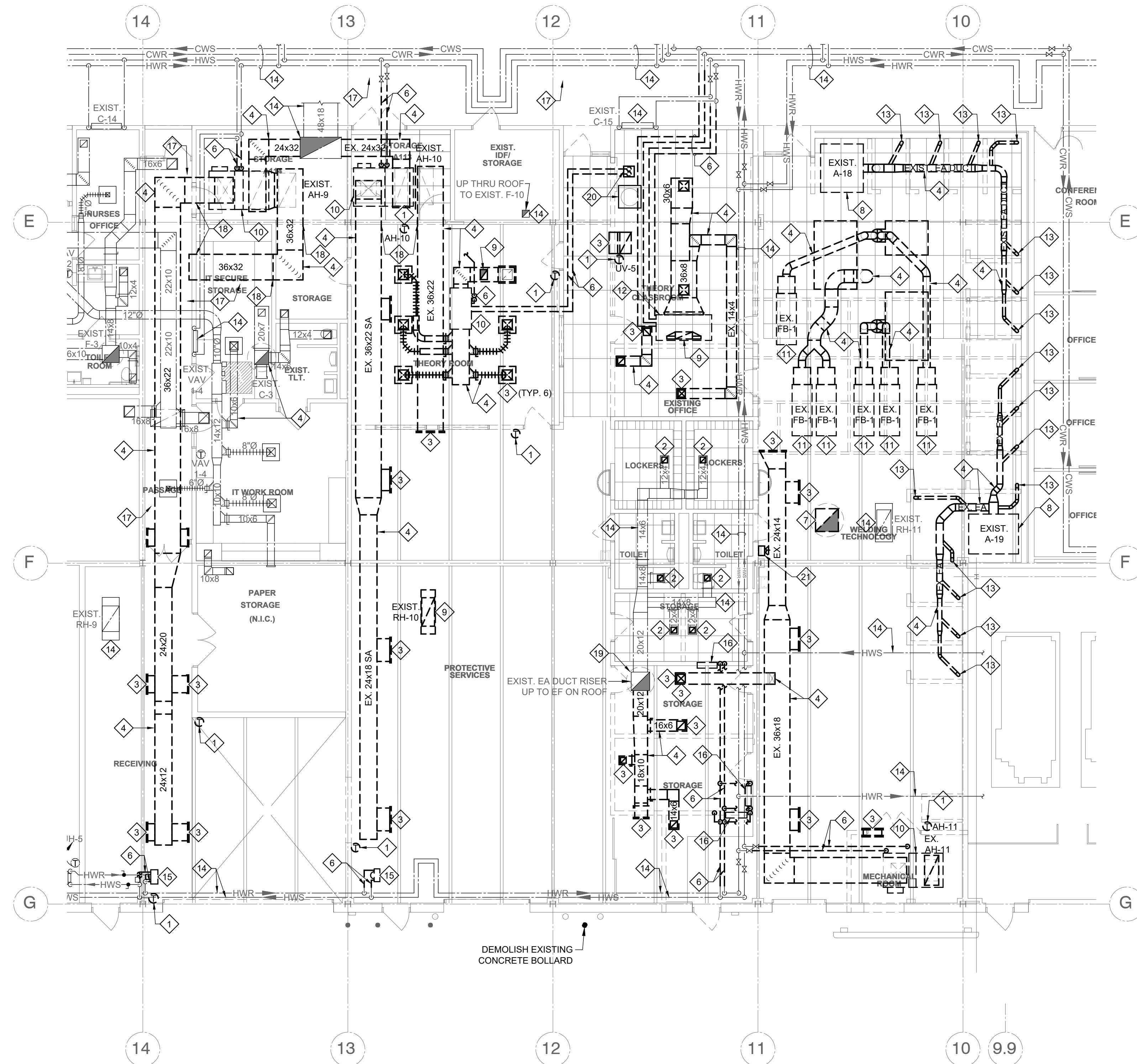
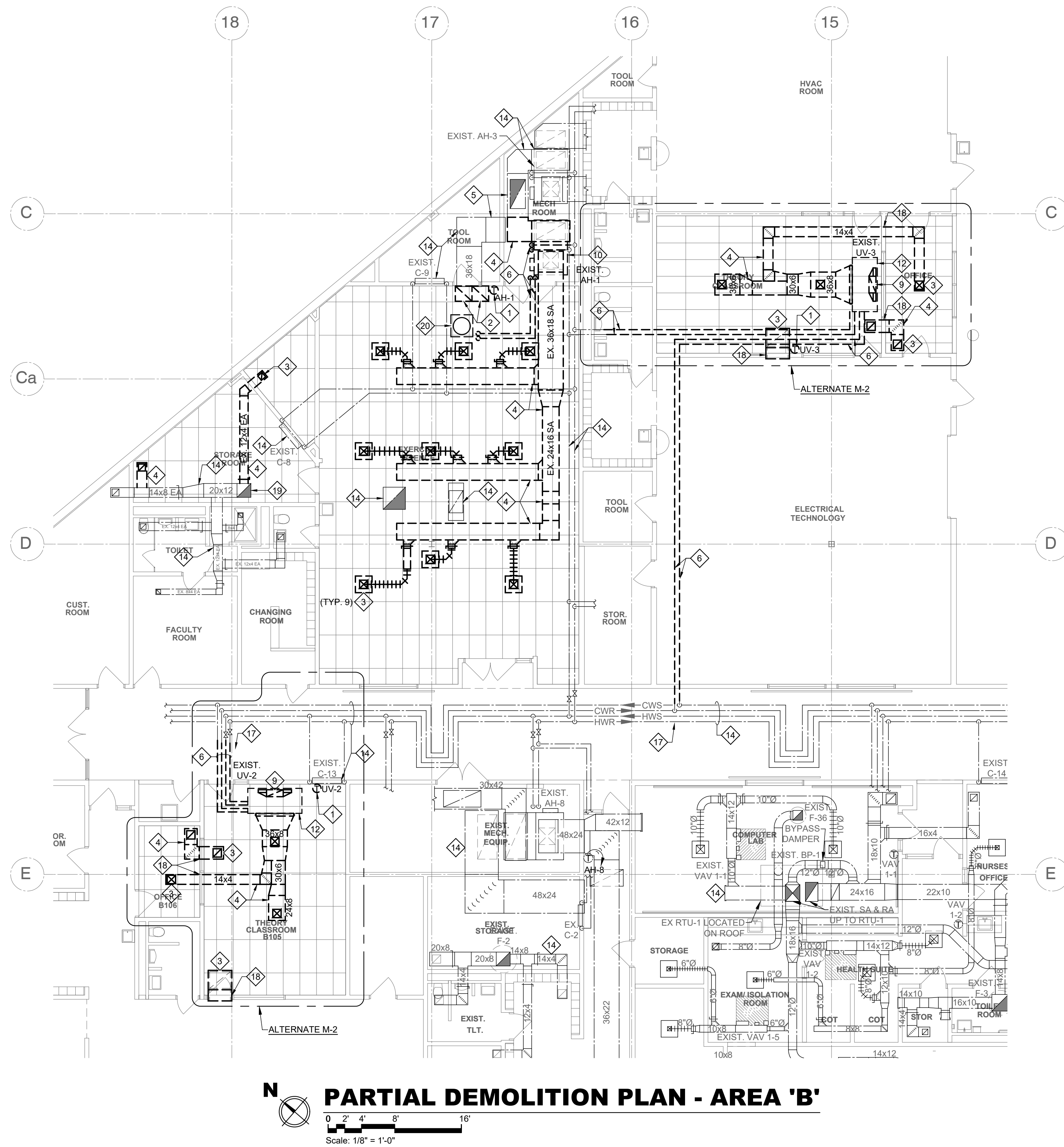
Schedules			
drawn MM	designed MCD	checked EB	comm. no. 084
date 02/01/2022			

LVE - 21146

E8.1







**KEYNOTES - DEMOLITION**

- 1 REMOVE EXISTING THERMOSTAT INCLUDING ALL ASSOCIATED WIRING OR PNEUMATIC TUBING BACK TO SOURCE. PATCH WALL TO MATCH EXISTING CONSTRUCTION AND FINISH.
- 2 REPLACE EXISTING GRILLE, REGISTER, OR DIFFUSER. PROVIDE NEW GRILLE, REGISTER OR DIFFUSER. RE-CONNECT TO EXISTING DUCT.
- 3 REMOVE EXISTING GRILLE, REGISTER, OR DIFFUSER INCLUDING BRANCH DUCT BACK TO MAIN. WHERE EXISTING MAIN DUCTWORK IS SHOWN TO REMAIN, CAP BRANCH DUCT TAKE-OFF.
- 4 REMOVE EXISTING DUCTWORK AS SHOWN. REMOVE ALL ASSOCIATED DUCT ACCESSORIES INCLUDING FIRE DAMPERS, ATC DAMPER, DUCT HANGERS AND INSULATION. WHERE DUCTWORK IS SHOWN TO BE REMOVED BACK TO ACTIVE MAIN, CAP EXISTING TAKE-OFF AT MAIN. WHERE DUCTWORK PENETRATES AN EXISTING WALL OR FLOOR, PATCH EXISTING WALL OR FLOOR PENETRATIONS TO MATCH EXISTING CONSTRUCTION AND FIRE RATING.
- 5 NOT USED.
- 6 REMOVE EXISTING PIPING AS SHOWN. REMOVE ALL ASSOCIATED VALVES, PIPING SPECIALTIES, HANGERS AND INSULATION. WHERE PIPING IS TO BE REMOVED BACK TO AN ACTIVE MAIN, CAP TAKE-OFFS AT MAINS. WHERE PIPING PENETRATES AN EXISTING WALL OR FLOOR, PATCH EXISTING WALL OR FLOOR PENETRATIONS TO MATCH EXISTING CONSTRUCTION AND FIRE RATING.
- 7 REMOVE EXISTING ROOF EXHAUST FAN INCLUDING ALL ASSOCIATED DUCTWORK, CONTROLS, DAMPERS AND ROOF CURB. PATCH EXISTING ROOF PENETRATION TO MATCH EXISTING CONSTRUCTION. E.C. TO REMOVE POWER WIRING AND CONDUIT BACK TO SOURCE.
- 8 REMOVE EXISTING DUST COLLECTOR AND ALL ASSOCIATED DUCTWORK AND CONTROLS. REMOVE EXISTING COMPRESSED AIR PIPING BACK TO MAIN. CAP PIPING AT EXISTING MAIN. E.C. TO REMOVE POWER WIRING.
- 9 REMOVE EXISTING ROOF VENT (GRAVITY RELIEF VENT, OUTSIDE AIR INTAKE HOOD, OR GOOSENECK) INCLUDING ALL ASSOCIATED DUCTWORK, CONTROLS, DAMPER, AND ROOF CURB. PATCH EXISTING ROOF PENETRATION TO MATCH EXISTING CONSTRUCTION.
- 10 REMOVE EXISTING AIR HANDLING UNIT INCLUDING ALL ASSOCIATED DUCTWORK, PIPING, CONTROLS, DAMPERS, AND SUPPORTS. E.C. TO DISCONNECT POWER WIRING BACK TO SOURCE.
- 11 REMOVE EXISTING AIR CLEANER UNIT AND ASSOCIATED DUCTWORK AND CONTROLS. E.C. TO REMOVE POWER WIRING BACK TO SOURCE.
- 12 REMOVE EXISTING CLASSROOM UNIT VENTILATOR AND ALL ASSOCIATED PIPING AND CONTROLS. E.C. TO REMOVE POWER WIRING BACK TO SOURCE.
- 13 REMOVE EXISTING WELDING FUME CAPTURE ARM AND ASSOCIATED DUCTWORK, HANGERS, AND SUPPORTS.
- 14 EXISTING TO REMAIN.
- 15 REMOVE EXISTING HOT WATER UNIT HEATER AND ALL ASSOCIATED PIPING AND CONTROLS. E.C. TO REMOVE POWER WIRING AND CONDUIT BACK TO SOURCE.
- 16 REMOVE EXISTING HOT WATER CONVECTOR AND ALL ASSOCIATED PIPING, VALVES, AND CONTROLS.
- 17 H.C. TO REMOVE AND RE-INSTALL CEILING FOR DEMOLITION WORK IN THIS AREA.
- 18 H.C. TO PATCH EXISTING WALL TO MATCH EXISTING CONSTRUCTION AND FINISH.
- 19 EXISTING EXHAUST FAN AND ASSOCIATED CONTROLS TO REMAIN.
- 20 REMOVE EXISTING CONDENSING UNIT, ROOF CURB, AND ALL ASSOCIATED REFRIGERANT PIPING AND CONTROLS. RECLAIM REFRIGERANT. REMOVE EXISTING PIPE PORTAL & ROOF CURB. E.C. TO REMOVE POWER WIRING AND CONDUIT BACK TO SOURCE. H.C. TO PATCH EXISTING ROOF.
- 21 ATC CONTRACTOR TO RELOCATE EXISTING GAS DETECTION ALARM AND MONITORING SYSTEM INCLUDING STROBE LIGHT.

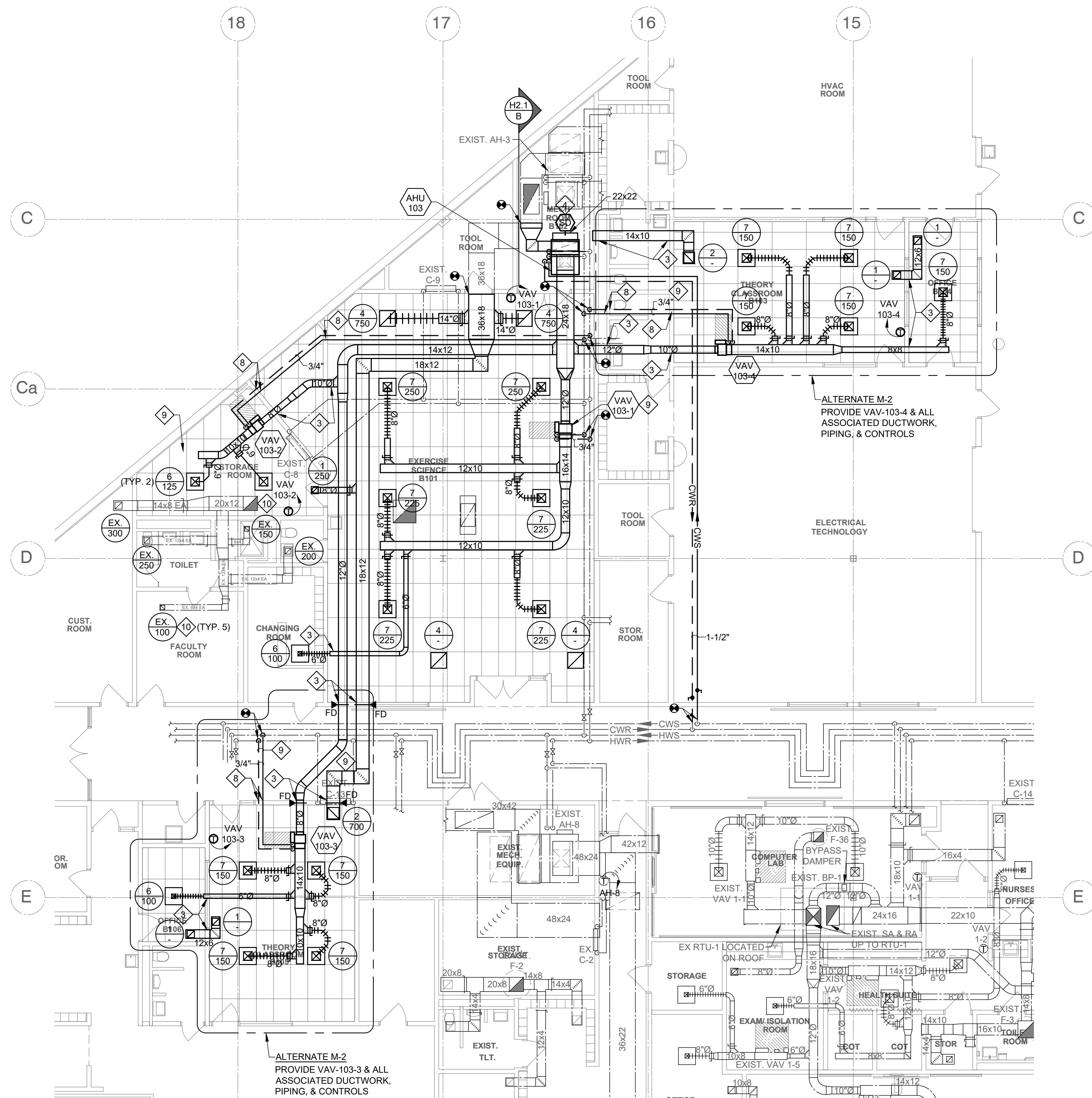


**INTERIOR ALTERATIONS - PHASE 3**  
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 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

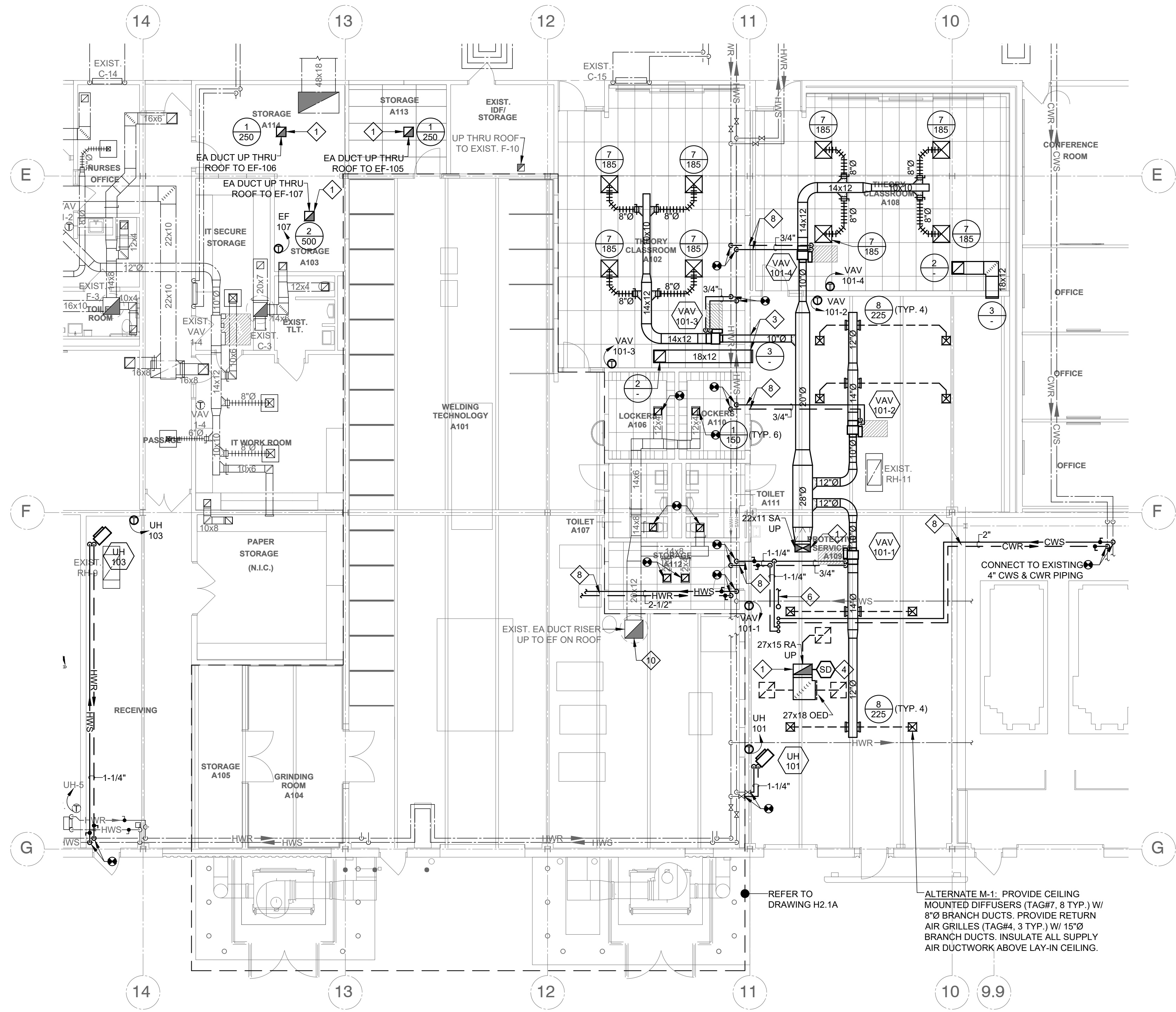
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02/11/2022	MEV	DCD	084

LVE - 21146  
**H1.1**

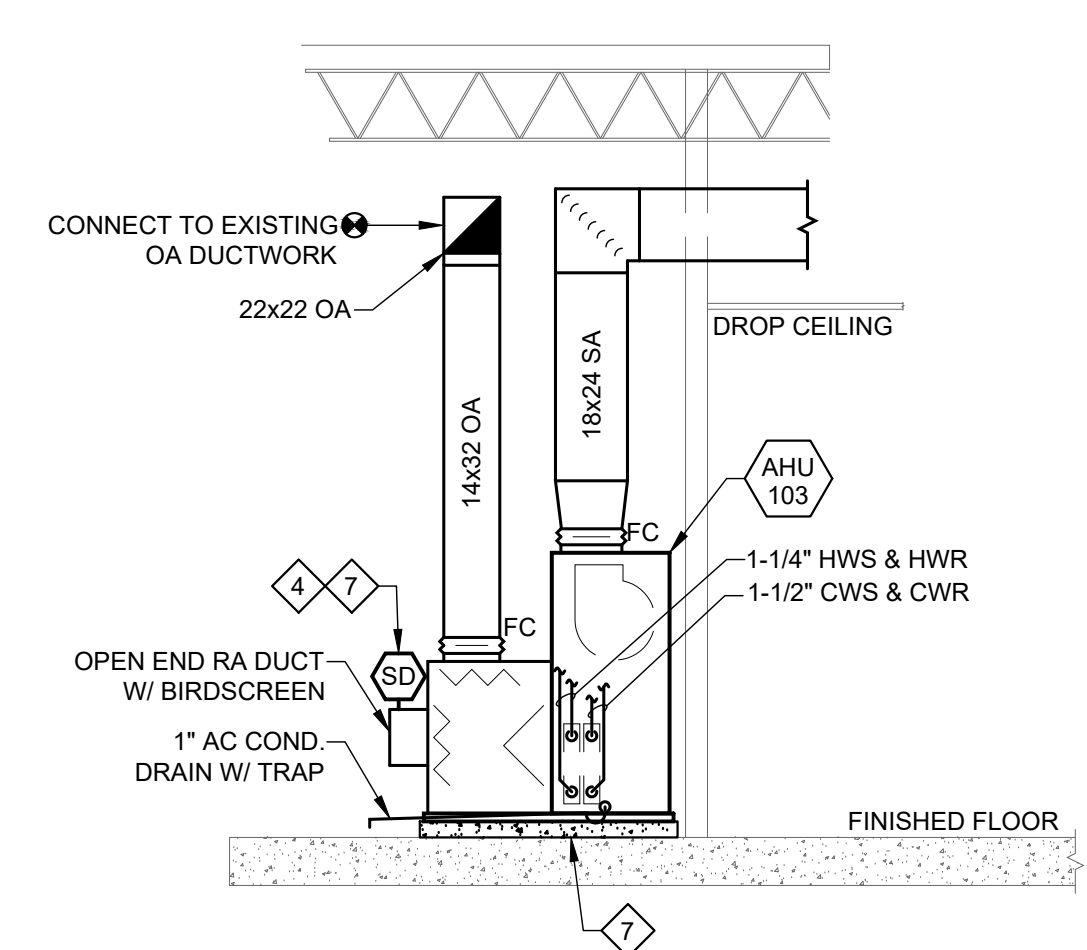




**PARTIAL NEW WORK PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"

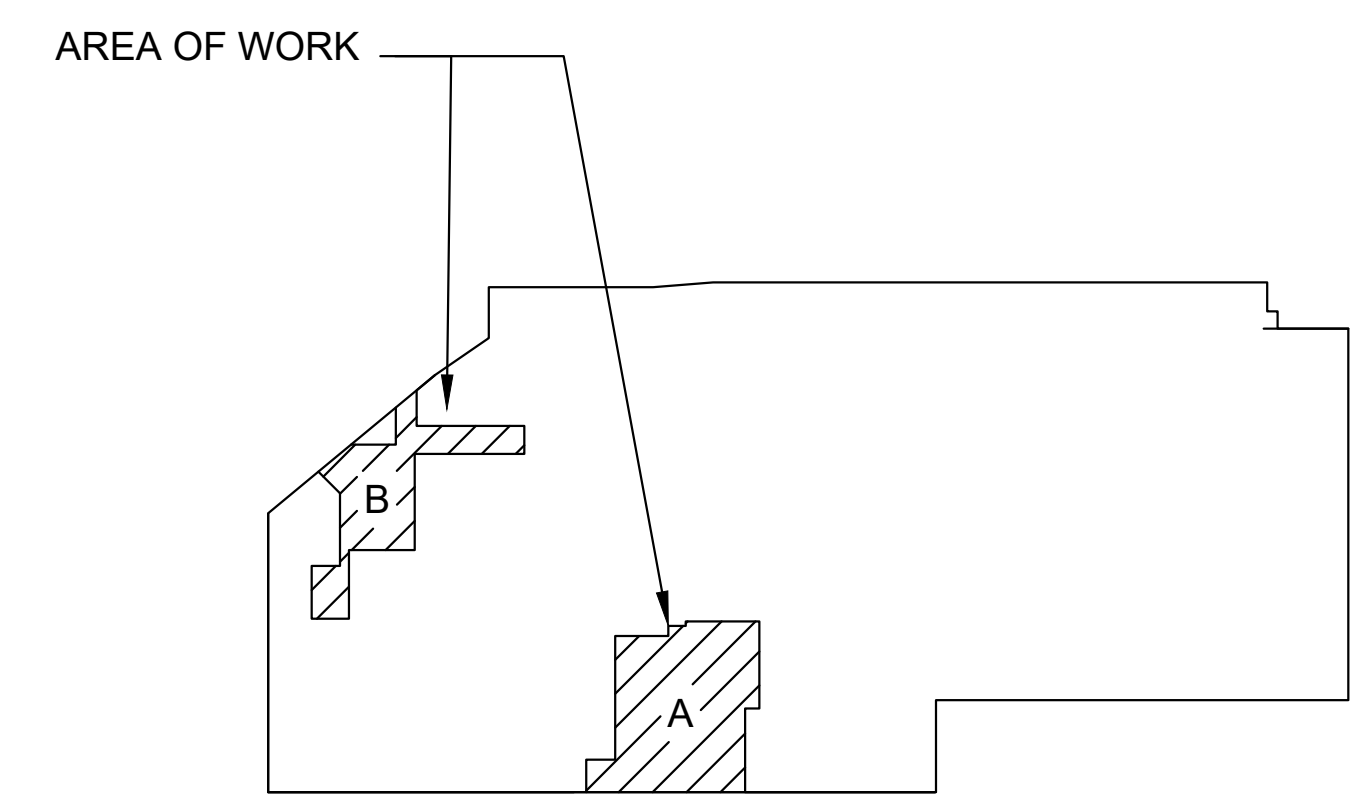


**PARTIAL NEW WORK PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"

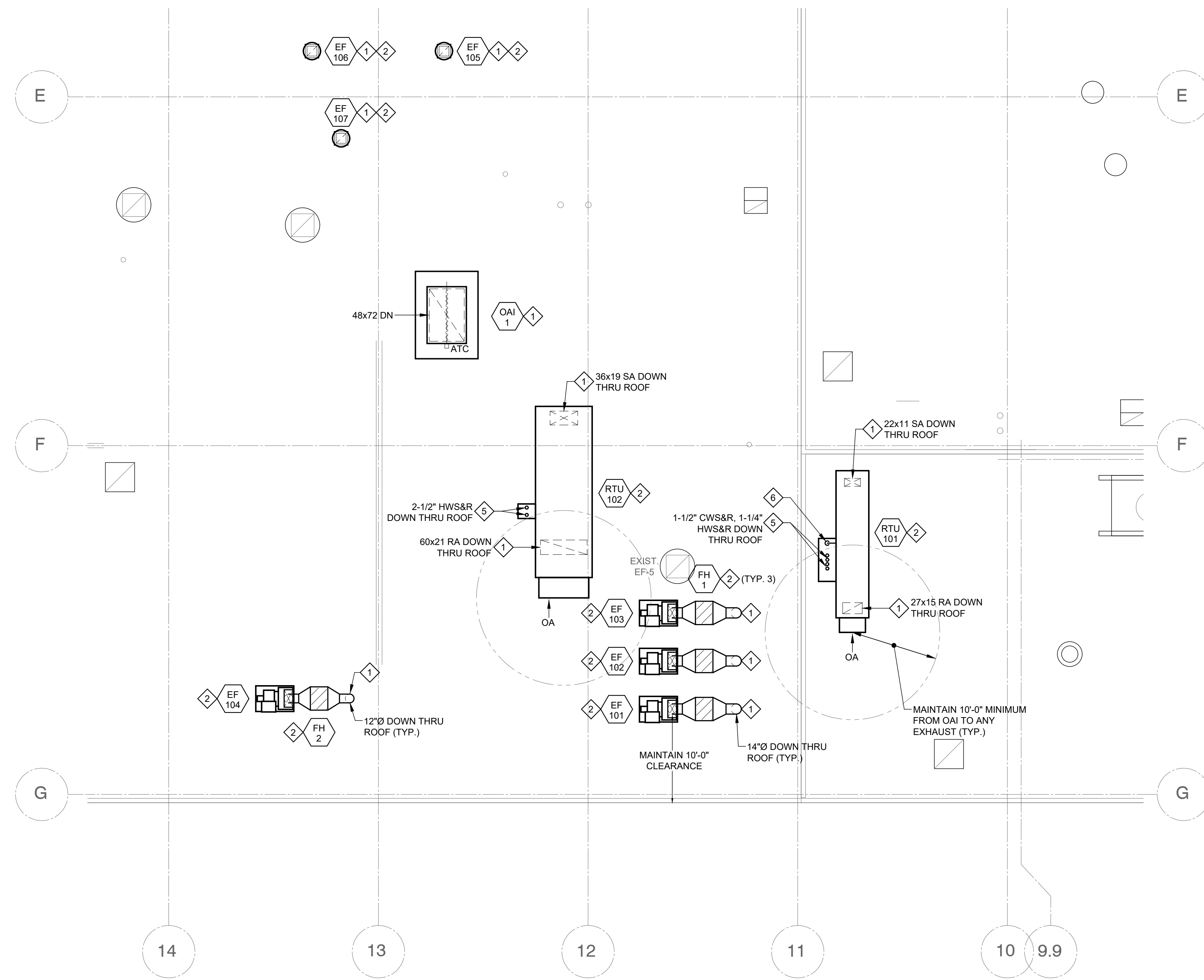


**SECTION VIEW B**  
**H2.1**  
 Scale: 1/4" = 1'-0"

- KEYNOTES**
- ◇ CUT AND PATCH EXISTING ROOF TO INSTALL DUCT RISERS. PROVIDE 4"x4"x1/4" STEEL ANGLE FRAMING ON ALL SIDES OF ROOF OPENING.
  - ◇ PROVIDE NEW ROOF CURB TO SUPPORT EQUIPMENT. CUT AND PATCH EXISTING ROOF.
  - ◇ CUT AND PATCH EXISTING MASONRY WALL TO INSTALL DUCTWORK, GRILLE, OR LOUVER. PROVIDE LINTEL TO SUPPORT MASONRY. REFER TO STRUCTURAL DRAWINGS FOR LINTEL SIZING REQUIREMENTS.
  - ◇ E.C. TO FURNISH DUCT SMOKE DETECTOR. H.C. TO INSTALL IN DUCTWORK.
  - ◇ PROVIDE ELECTRIC HEAT TRACE ON HOT WATER AND CHILLED WATER PIPING ABOVE ROOF LINE. HEAT TRACE AT 5 WATTS/FT. PROVIDE DISCONNECT SWITCH, THERMOSTAT, AND WARNING SIGNS.
  - ◇ EXTEND 1-1/4" AC CONDENSATE DRAIN PIPING BELOW ROOF TO EXISTING 4" RWC.
  - ◇ PROVIDE NEW 4" CONCRETE EQUIPMENT PAD.
  - ◇ CUT AND PATCH EXISTING WALL TO ROUTE PIPING TO DESIRED LOCATION. PROVIDE PIPE SLEEVE THRU MASONRY CONSTRUCTION.
  - ◇ H.C. TO REMOVE AND RE-INSTATE EXISTING ACOUSTIC TILE CEILING IN THIS AREA TO PERFORM MECHANICAL WORK.
  - ◇ RE-BALANCE EXISTING GRD'S AND EXISTING FAN.

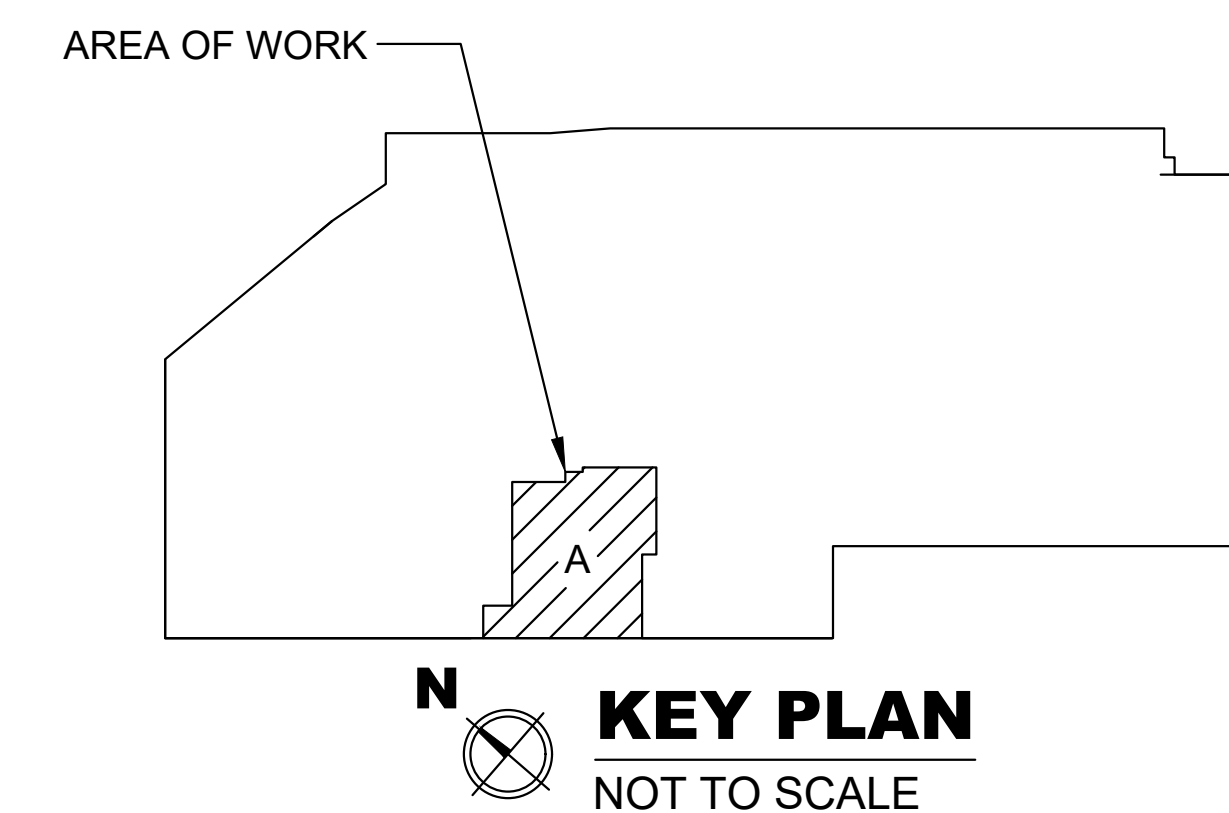


**KEY PLAN**  
 NOT TO SCALE



**PARTIAL ROOF PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"

- KEYNOTES**
- 1 CUT AND PATCH EXISTING ROOF TO INSTALL DUCT RISERS. PROVIDE 4"x4"x1/4" STEEL ANGLE FRAMING ON ALL SIDES OF ROOF OPENING.
  - 2 PROVIDE NEW ROOF CURB TO SUPPORT EQUIPMENT. CUT AND PATCH EXISTING ROOF.
  - 3 CUT AND PATCH EXISTING MASONRY WALL TO INSTALL DUCTWORK, GRILLE, OR LOUVER. PROVIDE LINTEL TO SUPPORT MASONRY. REFER TO STRUCTURAL DRAWINGS FOR LINTEL SIZING REQUIREMENTS.
  - 4 E.C. TO FURNISH DUCT SMOKE DETECTOR. H.C. TO INSTALL IN DUCTWORK.
  - 5 PROVIDE ELECTRIC HEAT TRACE ON HOT WATER AND CHILLED WATER PIPING ABOVE ROOF LINE. HEAT TRACE AT 5 WATTS/FT. PROVIDE DISCONNECT SWITCH, THERMOSTAT, AND WARNING SIGNS.
  - 6 EXTEND 1-1/4" AC CONDENSATE DRAIN PIPING BELOW ROOF TO EXISTING 4" RWC.
  - 7 PROVIDE NEW 4" CONCRETE EQUIPMENT PAD.
  - 8 CUT AND PATCH EXISTING WALL TO ROUTE PIPING TO DESIRED LOCATION. PROVIDE PIPE SLEEVE THRU MASONRY CONSTRUCTION.
  - 9 H.C. TO REMOVE AND RE-INSTATE EXISTING ACOUSTIC TILE CEILING IN THIS AREA TO PERFORM MECHANICAL WORK.
  - 10 RE-BALANCE EXISTING GRD'S AND EXISTING FAN.



**INTERIOR ALTERATIONS - PHASE 3**

FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA



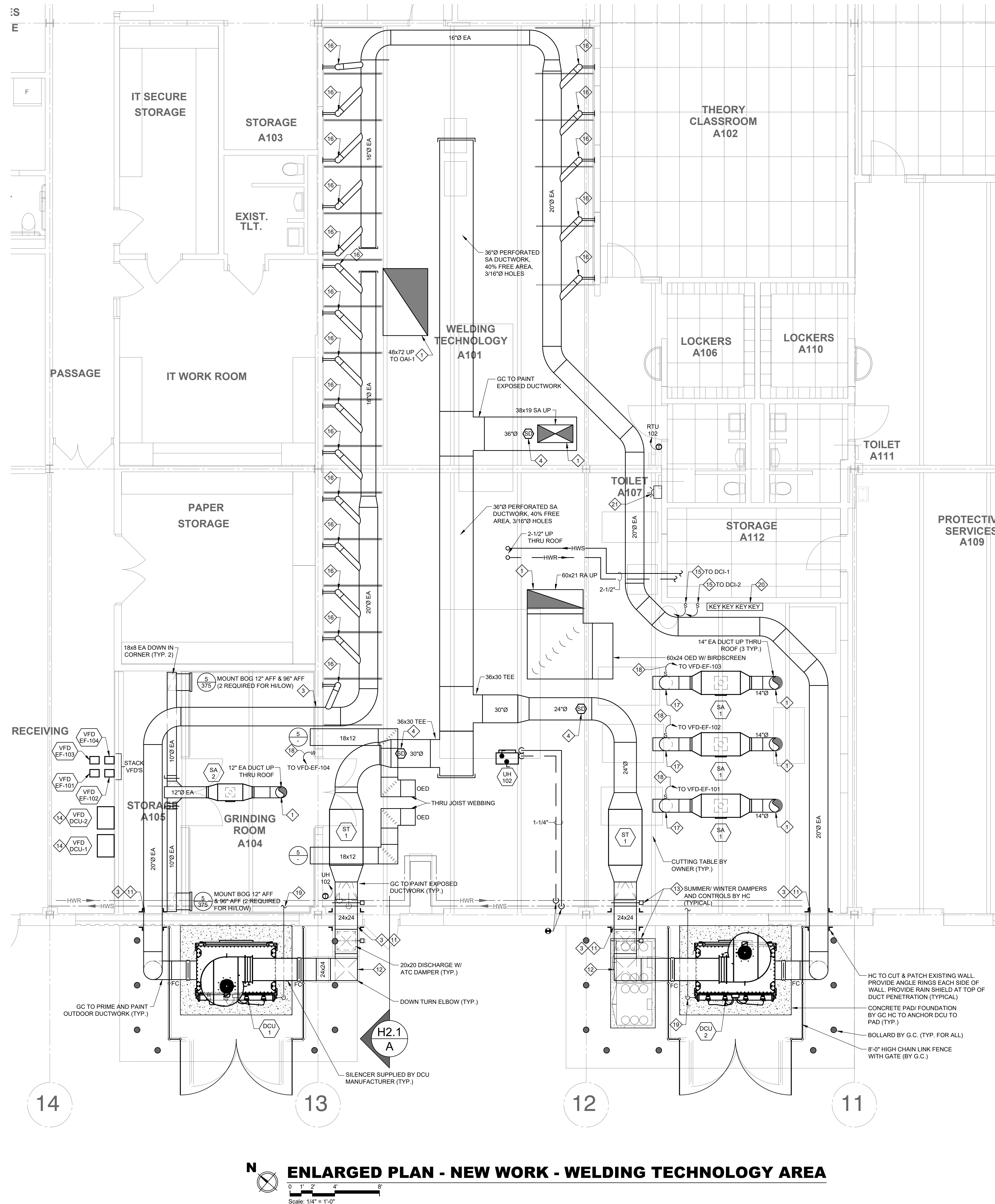
Lehigh Valley Engineering  
 Mechanical and Electrical Consultants  
 410 S. 22ND STREET, SUITE 100  
 ALLENTOWN, PA 18101  
 T 610.866.3920 F 610.866.3930  
 E lve@lve.cc W www.lve.cc

PARTIAL ROOF PLAN - AREA 'A'

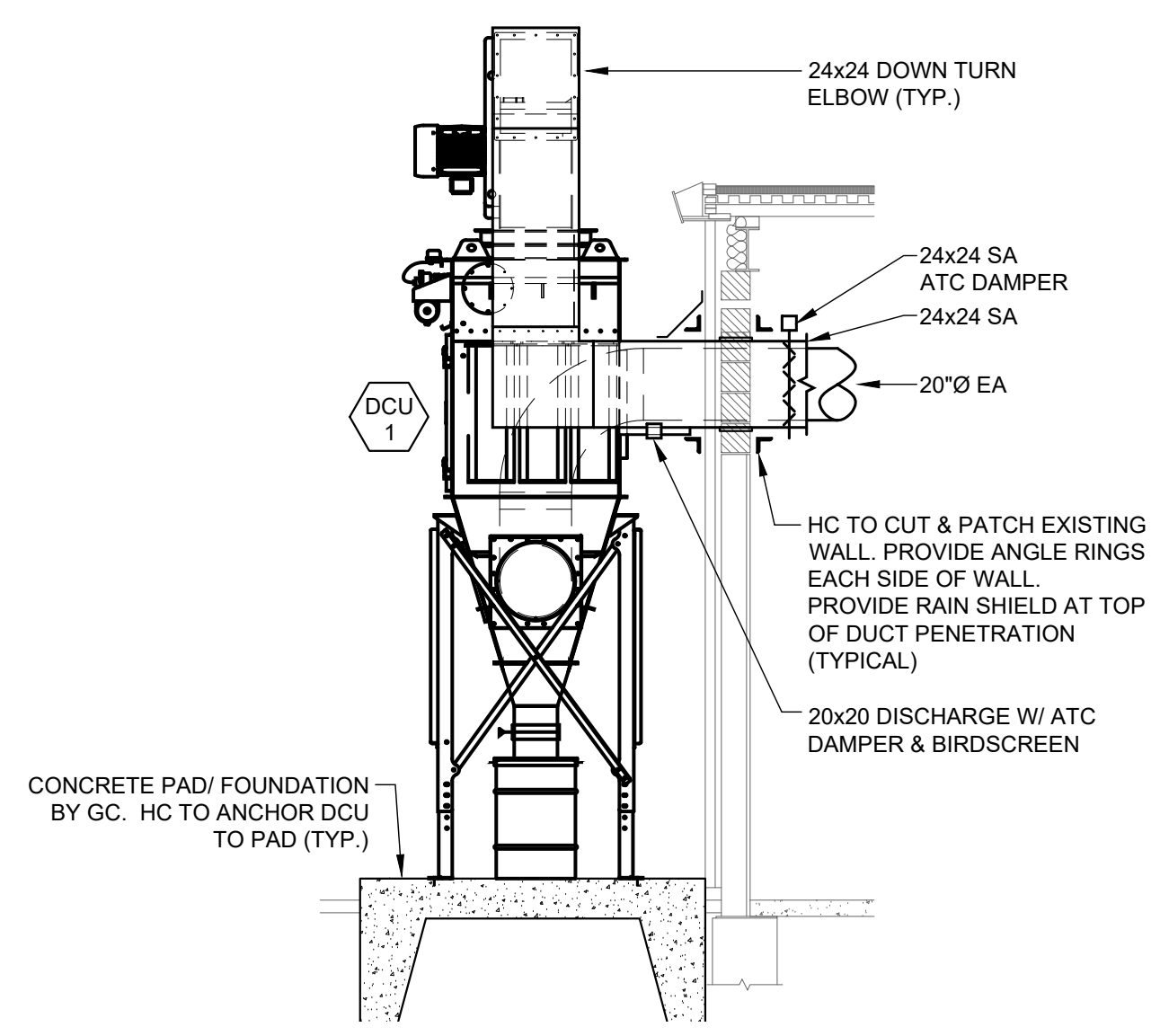
date	02/01/2022	drawn	MEW	checked	DCD	comm. no.	084
		designed	DCD				

LVE - 21146

**H2.2**



**ENLARGED PLAN - NEW WORK - WELDING TECHNOLOGY AREA**  
 Scale: 1/4" = 1'-0"

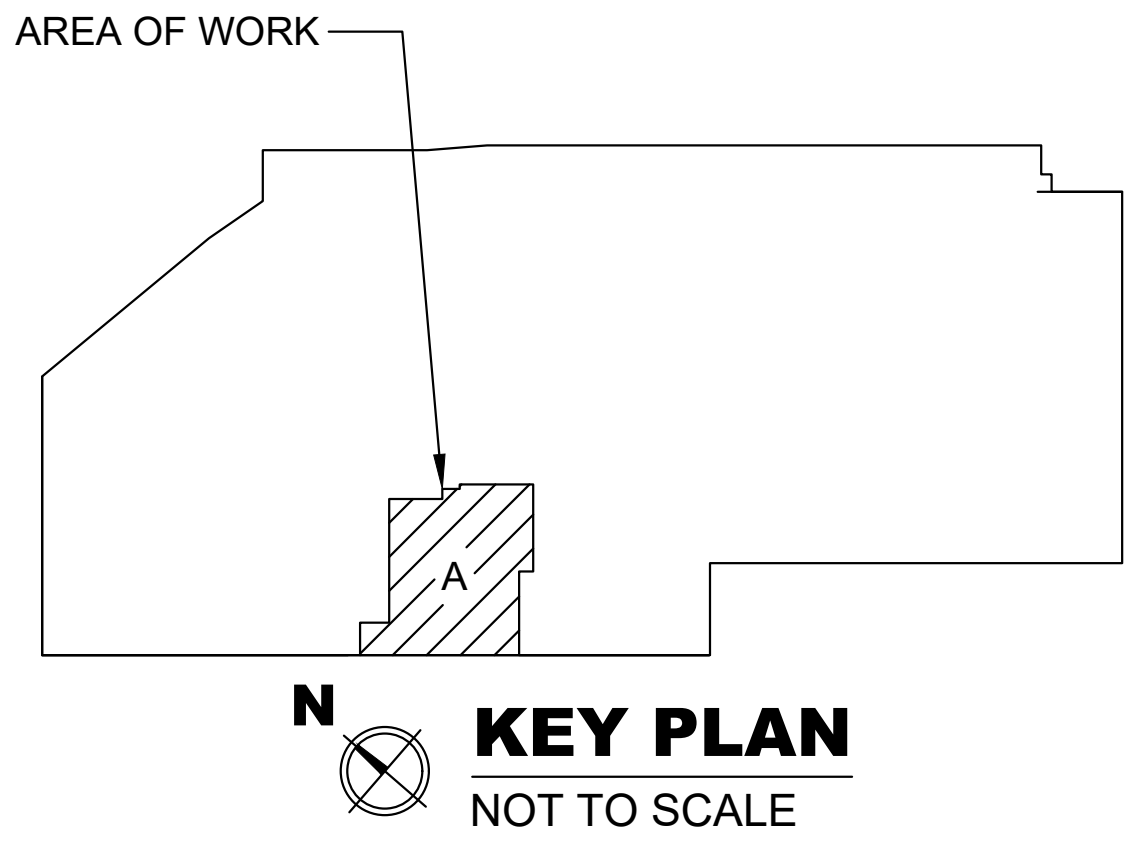


**SECTION VIEW A**  
**H5.1**  
 Scale: 1/4" = 1'-0"

- KEYNOTES**
1. CUT AND PATCH EXISTING ROOF TO INSTALL DUCT RISERS. PROVIDE 4"x4"x1/4" STEEL ANGLE FRAMING ON ALL SIDES OF ROOF OPENING.
  2. PROVIDE NEW ROOF CURB TO SUPPORT EQUIPMENT. CUT AND PATCH EXISTING ROOF.
  3. CUT AND PATCH EXISTING MASONRY WALL TO INSTALL DUCTWORK, GRILLE, OR LOUVER. PROVIDE LINTEL TO SUPPORT MASONRY. REFER TO STRUCTURAL DRAWINGS FOR LINTEL SIZING REQUIREMENTS.
  4. E.C. TO FURNISH DUCT SMOKE DETECTOR. H.C. TO INSTALL IN DUCTWORK.
  5. PROVIDE ELECTRIC HEAT TRACE ON HOT WATER AND CHILLED WATER PIPING ABOVE ROOF LINE. HEAT TRACE AT 5 WATTS/FT. PROVIDE DISCONNECT SWITCH, THERMOSTAT, AND WARNING SIGNS.
  6. EXTEND 1-1/4" AC CONDENSATE DRAIN PIPING BELOW ROOF TO EXISTING 4" RWC.
  7. PROVIDE NEW 4" CONCRETE EQUIPMENT PAD.
  8. CUT AND PATCH EXISTING WALL TO ROUTE PIPING TO DESIRED LOCATION. PROVIDE PIPE SLEEVE THRU MASONRY CONSTRUCTION.
  9. H.C. TO REMOVE AND RE-INSTATE EXISTING ACOUSTIC TILE CEILING IN THIS AREA TO PERFORM MECHANICAL WORK.
  10. RE-BALANCE EXISTING GRD'S AND EXISTING FAN.
  11. INSULATE AND FLASH AROUND DUCTWORK OPENING THRU WALL. PROVIDE COUNTER FLASHING ON TOP OF DUCT.
  12. PROVIDE 24 GA GALVANIZED SHEET METAL SLOPED JACKET ON TOP OF OUTDOOR RECTANGULAR DUCTWORK.
  13. SUMMER/WINTER ATC DAMPERS AND CONTROL WIRING BY H.C.
  14. DUST COLLECTION CONTROL PANEL FURNISHED BY DCU MRF, MOUNTED BY H.C. POWER WIRING TO DCU.
  15. PROVIDE LOW VOLTAGE START/STOP SWITCH AND WIRING TO DCU VFD AND TO SHOP EMERGENCY STOP SWITCH (SHOP EMERGENCY STOP SWITCH BY E.C.)
  16. 6" DIAMETER WELDING FUME SOURCE CAPTURE ARM FURNISHED BY OWNER. INSTALLED BY H.C. (HENSEL MODEL V6-A)
  17. 14"Ø ROUTE EXHAUST DUCT DOWN TO CUTTING TABLES. H.C. TO PROVIDE SUITCASE LATCH AND FINAL CONNECTION TO CUTTING TABLE. (CUTTING TABLE BY OWNER)
  18. PROVIDE LOW VOLTAGE VARIABLE SPEED CONTROL SWITCH AND WIRING TO EXHAUST FAN VFD AND TO SHOP EMERGENCY STOP SWITCH (SHOP EMERGENCY STOP SWITCH BY E.C.)
  19. COMPRESSED AIR PIPING TO DCU-1 AND DCU-2 BY P.C. AIR REGULATORS AND FILTERS FURNISHED BY DCU MANUFACTURER.
  20. PROVIDE NEMA 4 VENTED ENCLOSURE WITH FILTER FOR MOUNTING OF VFD REMOTE KEYPADS (FOR EF-101 THRU EF-104)
  21. ATC CONTRACTOR TO RELOCATE EXISTING GAS DETECTION ALARM AND MONITORING SYSTEM INCLUDING STROBE LIGHTS.

- SPECIAL NOTES**
1. REFER TO KEYNOTE 16. H.C. TO PROVIDE ONE MOCK-UP PRIOR TO INSTALLING FUME ARMS. FIELD VERIFY MOUNTING HEIGHT AND BRACKET LOCATION WITH OWNER.

- ALTERNATES**
- ALTERNATE M-3: H.C. TO FURNISH DCU-1, DCU-2, AND WELDING FUME EXTRACTORS (20 TYP.) IN LIEU OF OWNER FURNISHED EQUIPMENT.



**KEY PLAN**  
 NOT TO SCALE

## ATC DEVICE SCHEDULE

ITEM	DESCRIPTION	NOTES
SA-DP1	SUPPLY AIR STATIC PRESSURE SENSOR	SET POINT = 0.50"
SA-DP2	SUPPLY AIR STATIC PRESSURE SENSOR, H1-LIMIT	SET POINT = 1.50"
SAT1	SUPPLY AIR TEMPERATURE SENSOR PRIMARY	-
SAT2	SUPPLY AIR TEMPERATURE SENSOR SECONDARY	-
OAT1	OUTDOOR AIR TEMPERATURE SENSOR - GLOBAL	-
OA-H1	OUTDOOR AIR HUMIDITY SENSOR - GLOBAL	-
RAT	RETURN AIR TEMPERATURE SENSOR	-
RAH	RETURN AIR HUMIDITY SENSOR	-
MAT	MIXED AIR TEMPERATURE SENSOR	-
LAT	COIL LEAVING AIR TEMPERATURE SENSOR	-
LFT	LOW TEMPERATURE SAFETY (FREEZE-STAT)	-
RCO	RETURN AIR CARBON DIOXIDE SENSOR	-
OCO	OUTDOOR AIR CARBON DIOXIDE SENSOR - GLOBAL	-
FLT-DP	DIRTY FILTER SWITCH (OR DP SENSOR)	-
SD	SMOKE DETECTOR	FURNISHED BY EC
EAD	EXHAUST AIR DAMPER	DAMPER BY ATC
RAD	RETURN AIR DAMPER	DAMPER BY AHU MANUFACTURER
OAD	OUTDOOR AIR DAMPER	DAMPER BY AHU MANUFACTURER
FBD	FACE AND BY-PASS DAMPER	-
SAD	SUPPLY AIR DAMPER	BY ATC CONTRACTOR
CT	MOTOR CURRENT SENSOR	-
R	CONTROL RELAY	-
MS	MOTOR STARTER	-
SS	START/STOP SWITCH	BY ATC
NPBI	NEEDLE POINT BI-POLAR IONIZER	BY ATC
AMS1	AIRFLOW MEASURING STATION	BY ATC
AMSV	AIRFLOW MEASURING RING	BY VAV BOX MANUFACTURER
VAV	VARIABLE-AIR-VOLUME UNITARY CONTROLLER	BY ATC
V-1	HOT WATER CONTROL VALVE 2 WAY MODULATING	-
V-2	CHILLED WATER CONTROL VALVE 2 WAY MODULATING	-
V-3	HOT WATER CONTROL VALVE 2 WAY MODULATING TERMINAL UNITS	-
V-4	HOT WATER CONTROL VALVE 2 POSITION TERMINAL UNITS	-
VFD	VARIABLE FREQUENCY DRIVE	BY UNIT MANUFACTURER (UNO, REFER TO 5)
ZT	ZONE TEMPERATURE SENSOR	-
KEY	REMOTE KEY PAD	FURNISHED BY VFD MANUFACTURER
BMS-COM	BMS COMMUNICATION INTERFACE	BAGNET COMMUNICATION CARD BY CHILLER MANUFACTURER (OR VFD MANUFACTURER AS APPLICABLE)

## CONTROL NOTES

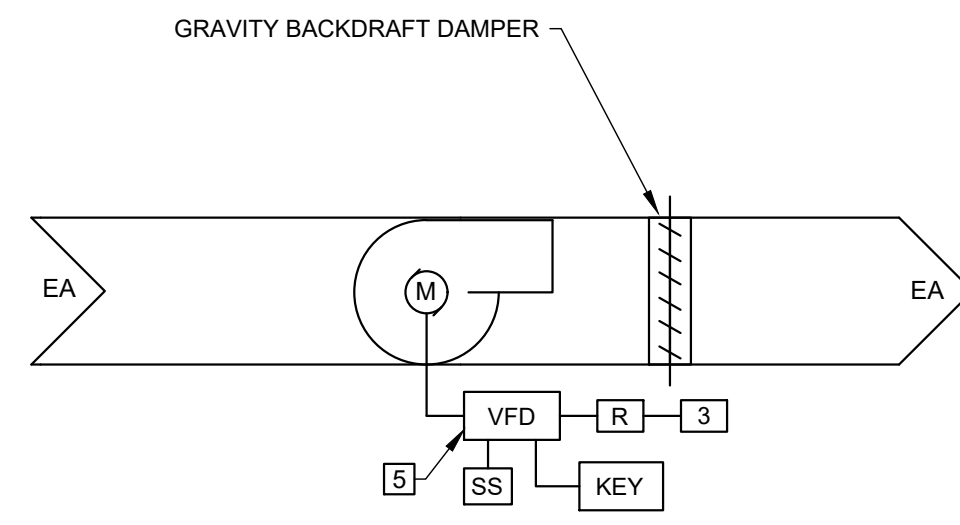
- EXISTING GLOBAL INPUTS.
- AHU CONTROL PANEL BY ATC CONTRACTOR.
- DUCT DETECTOR FURNISHED BY EC (OR FIRE ALARM CONTRACTOR). CONTROL WIRING FOR UNIT SHUT-DOWN BY ATC CONTRACTOR.
- DAMPERS BY AHU MANUFACTURER, ACTUATOR BY ATC CONTRACTOR.
- AIR FLOW MEASURING STATION BY ATC CONTRACTOR.
- VAV DDC CONTROLLER BY ATC.

## SPECIAL NOTES

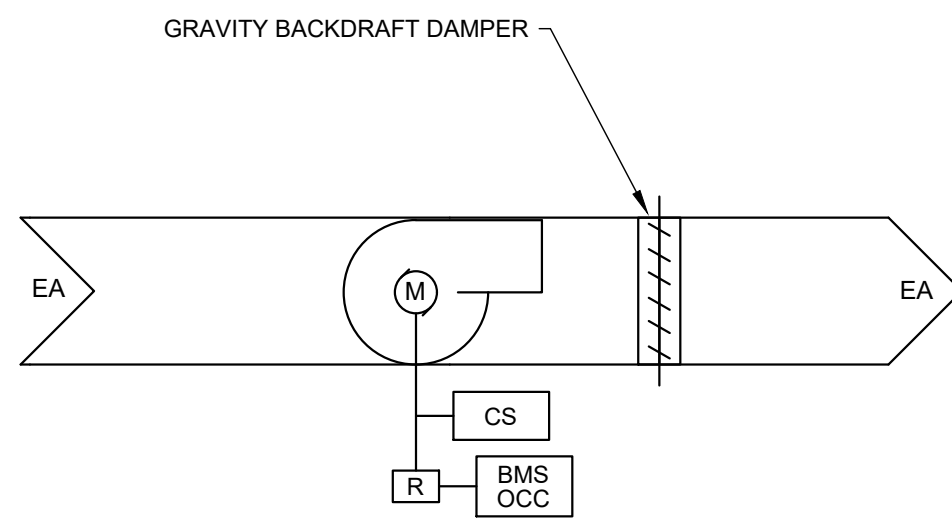
- H.C. TO PROVIDE BAFFLE PLATE ACROSS TOP OF COILS, FROM HW COIL TO CW COIL.
- H.C. TO PROVIDE BAFFLE PLATE AT TOP OF HW COIL TO SHIELD FREEZE-STAT BULB.
- WIRE TO EMERGENCY STOP SWITCH BY E.C.
- PROVIDE NEEDLE POINT BI-POLAR IONIZER, TOP PRODUCT INNOVATION TYPE C6.0 OR EQUAL.
- VFD FURNISHED BY H.C.

## GENERAL NOTES

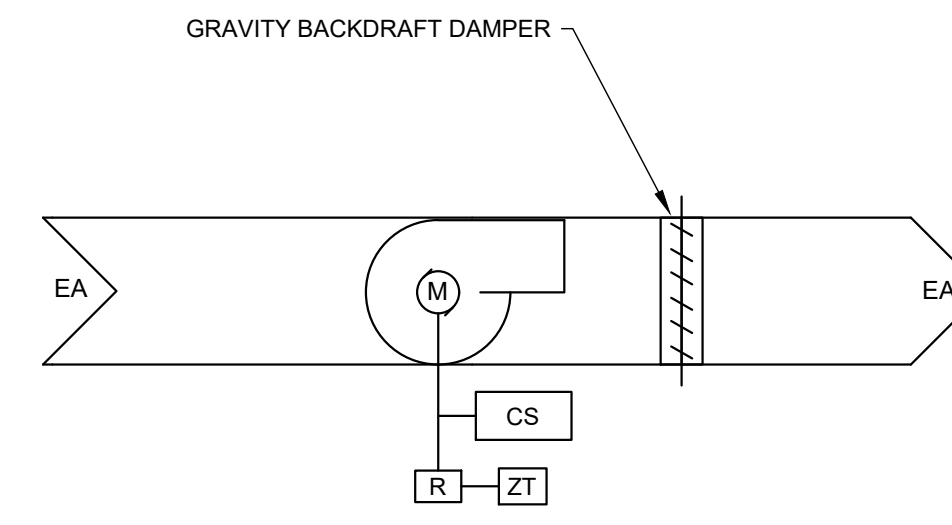
- ALL CONTROL COMPONENTS, DEVICES, SENSORS, VALVES, DAMPERS, AND WIRING SHALL BE BY ATC UNLESS NOTED OTHERWISE. WHERE NOTES INDICATE "BY ATC", NOTE IS INTENDED FOR CLARIFICATION PURPOSES.



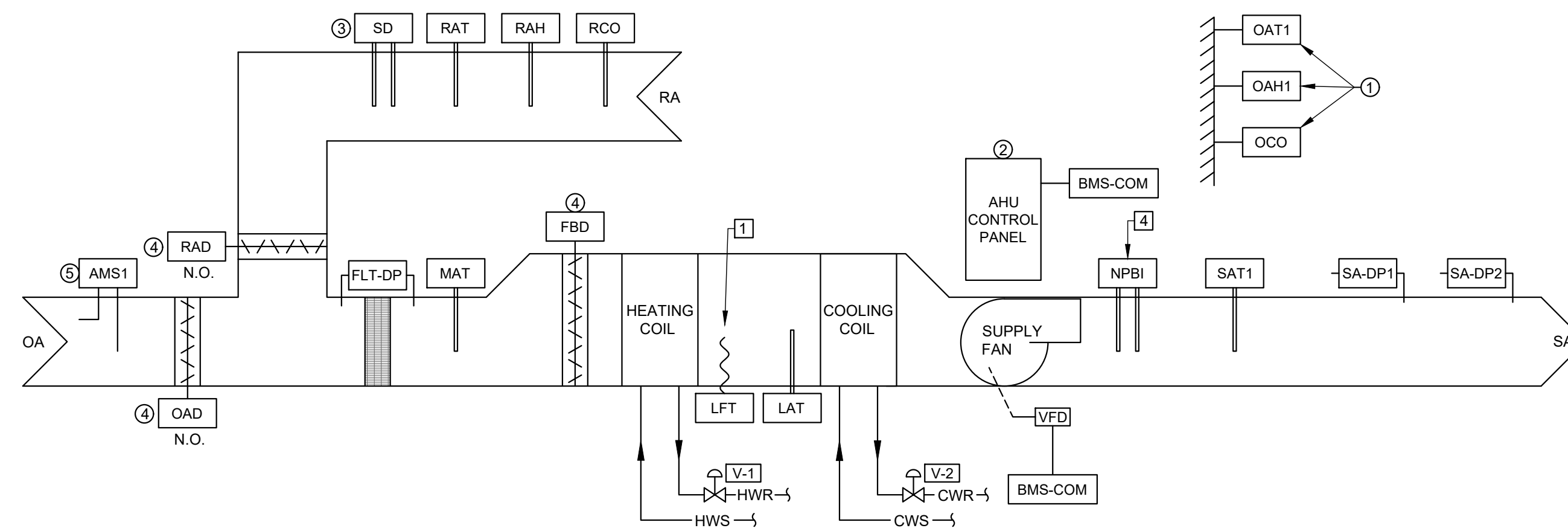
**EXHAUST FAN**  
TYPICAL FOR EF-101, 102, 103, 104



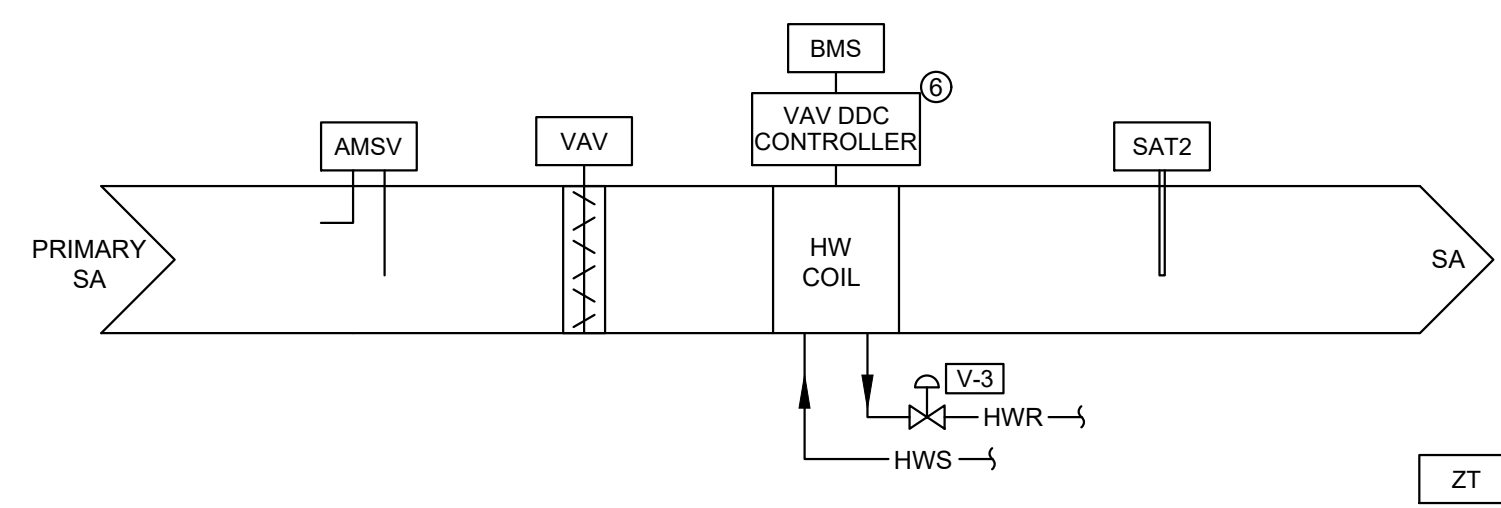
**EXHAUST FAN**  
TYPICAL FOR EF-105, 106



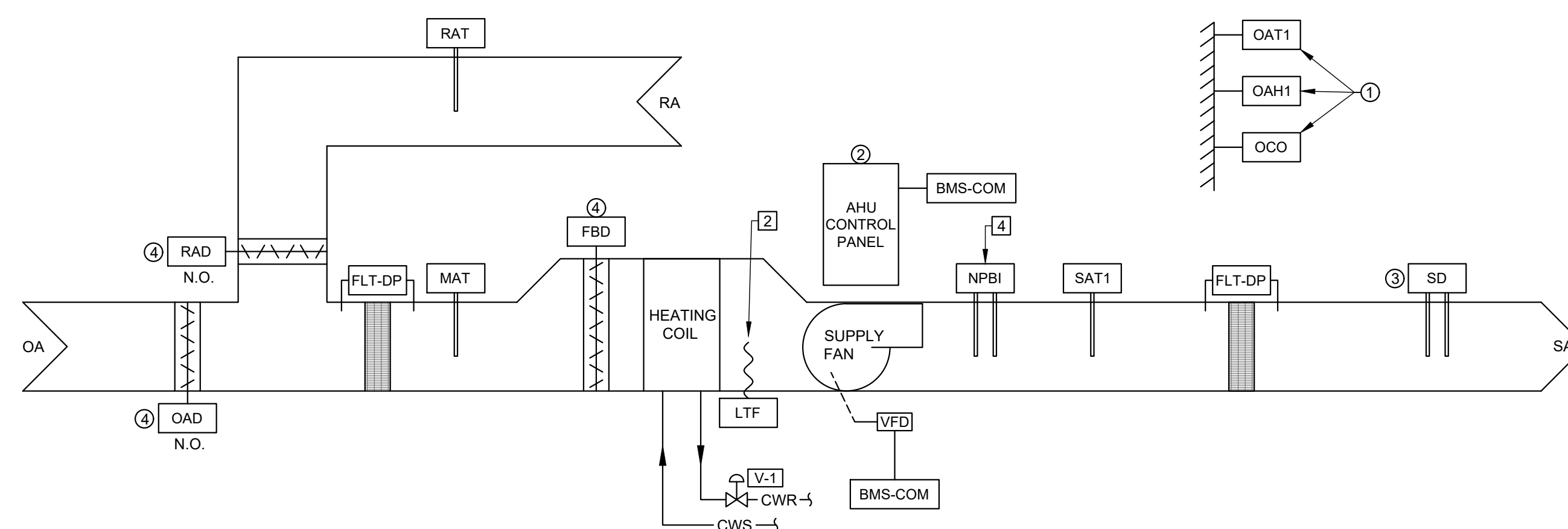
**EXHAUST FAN**  
TYPICAL FOR EF-107



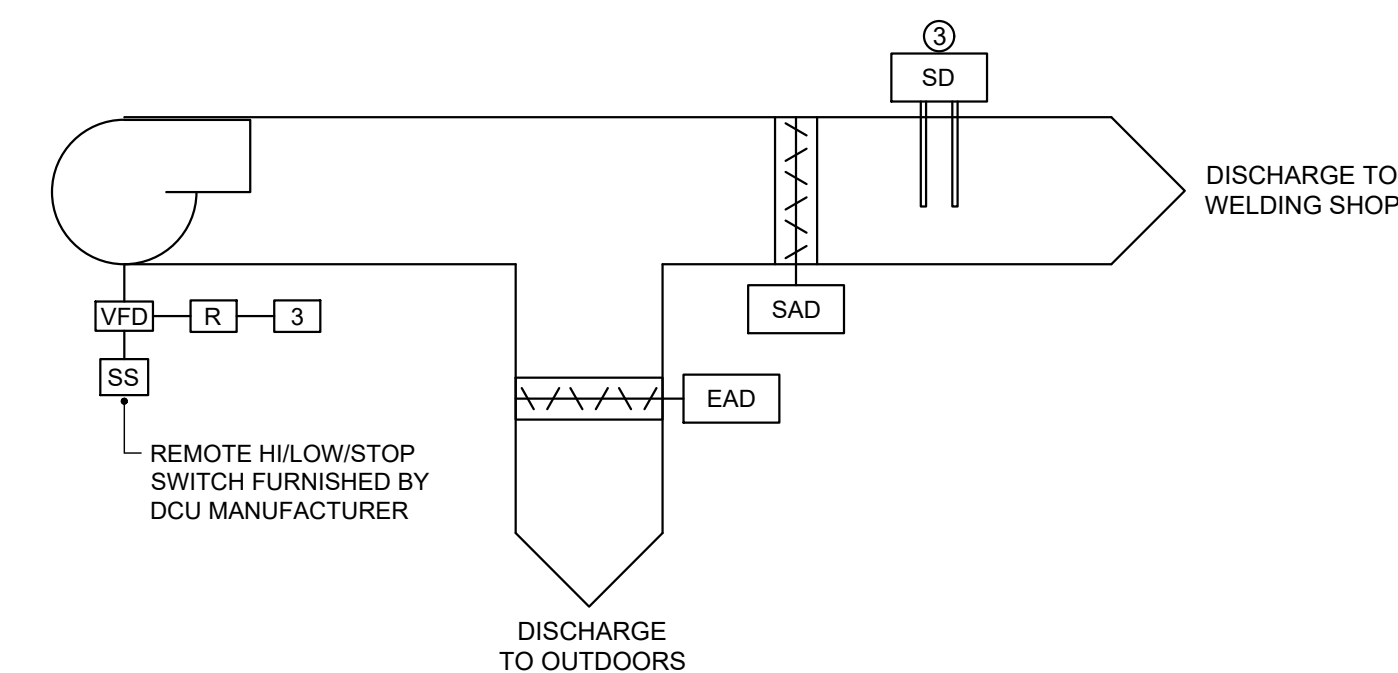
**AHU 4 PIPE, VAV**  
TYPICAL FOR: AHU-101 & RTU-101



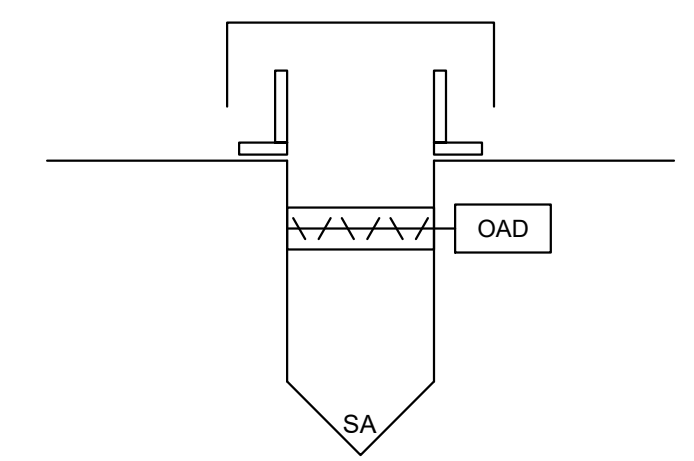
**VARIABLE AIR VOLUME TERMINAL WITH HOT WATER HEAT**  
TYPICAL FOR ALL VAV'S



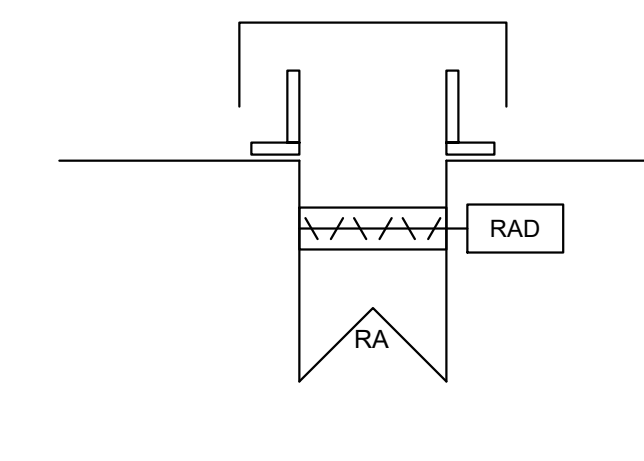
**AHU 2 PIPE, SINGLE ZONE**  
TYPICAL FOR: RTU-102



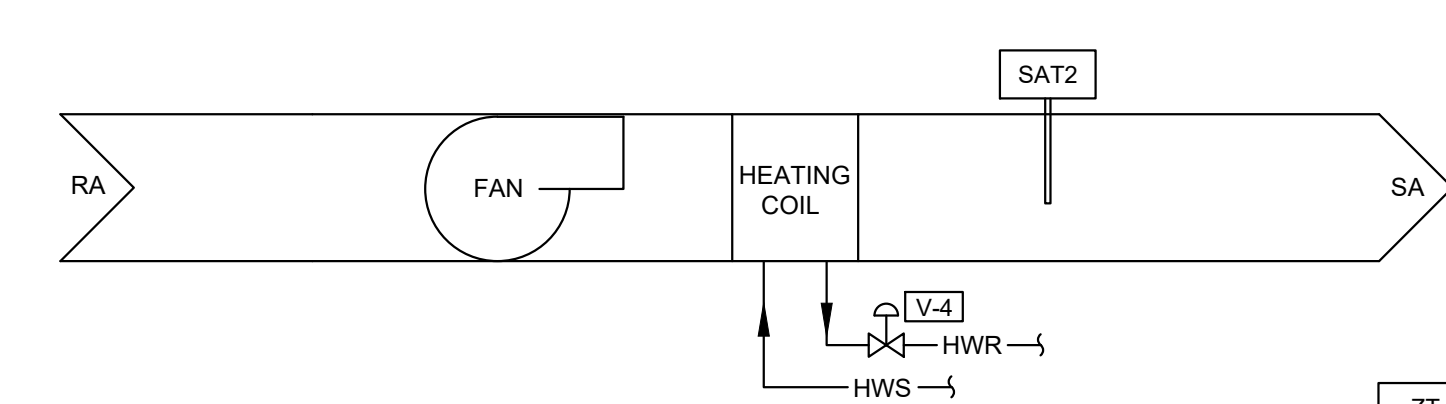
**DUST COLLECTION UNIT**  
TYPICAL FOR DCU-1, DCU-2



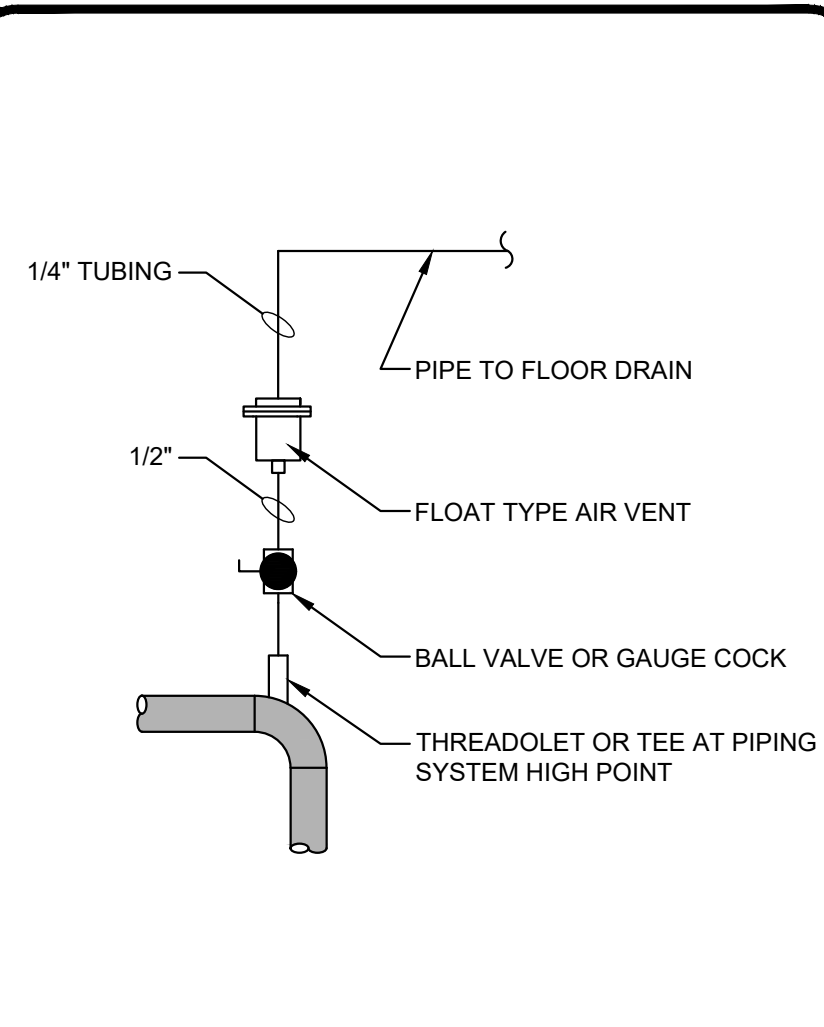
**OUTSIDE AIR INTAKE**  
TYPICAL FOR OAI-1



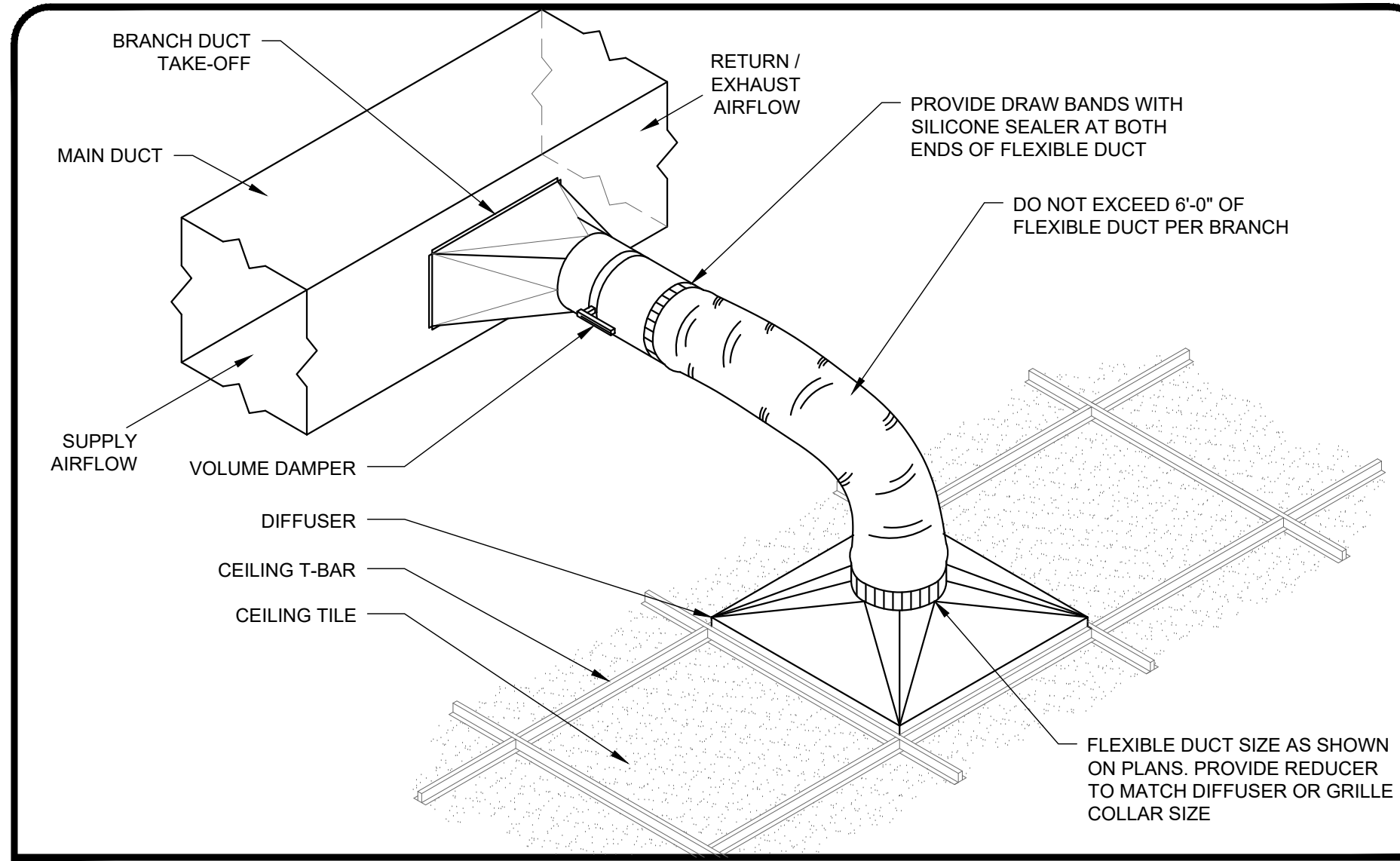
**RELIEF VENT**  
TYPICAL FOR EXISTING RV-1



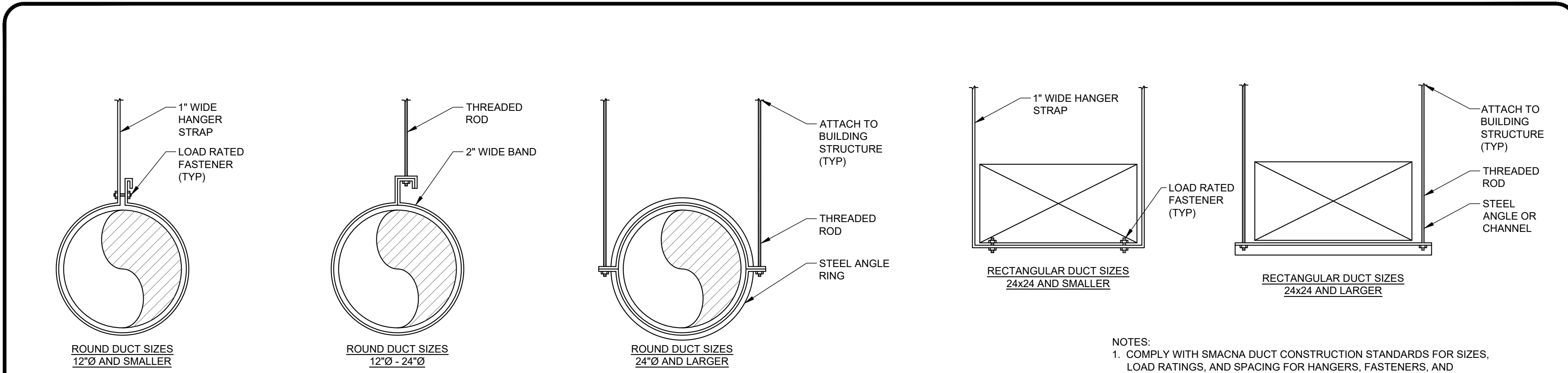
**HOT WATER UNIT HEATER**  
TYPICAL FOR ALL HWS & UHS



**AUTOMATIC AIR VENT PIPING DETAIL**

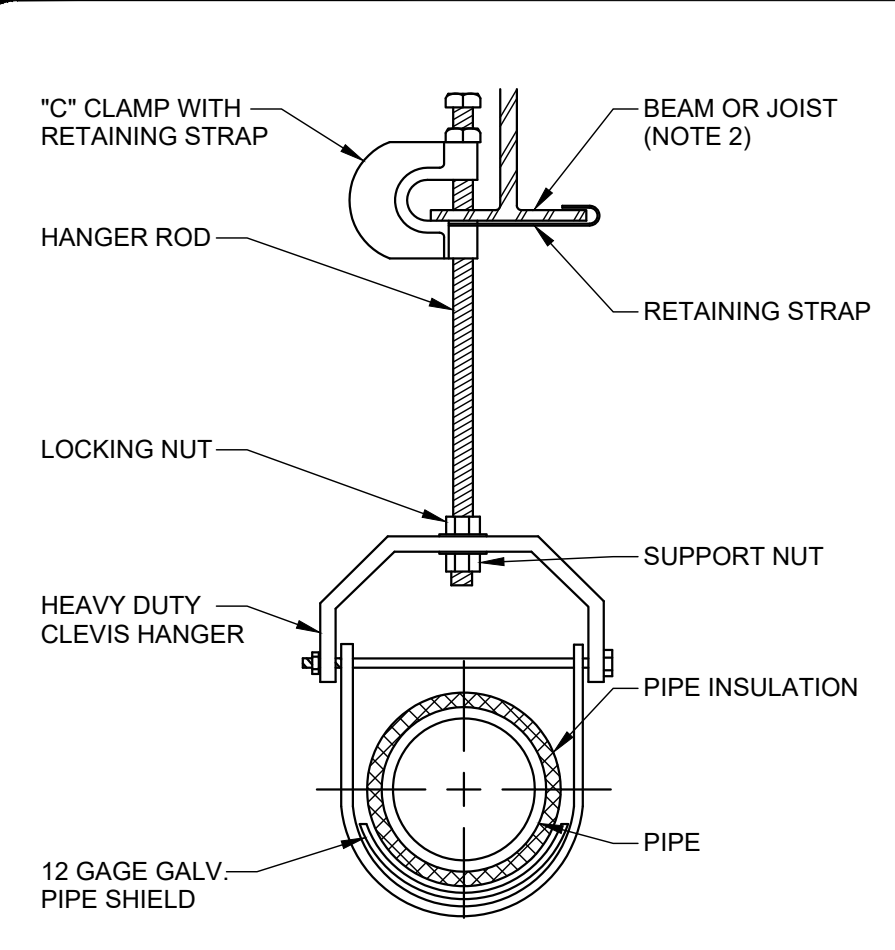


**DIFFUSER BRANCH DUCT DETAIL**  
NOT TO SCALE



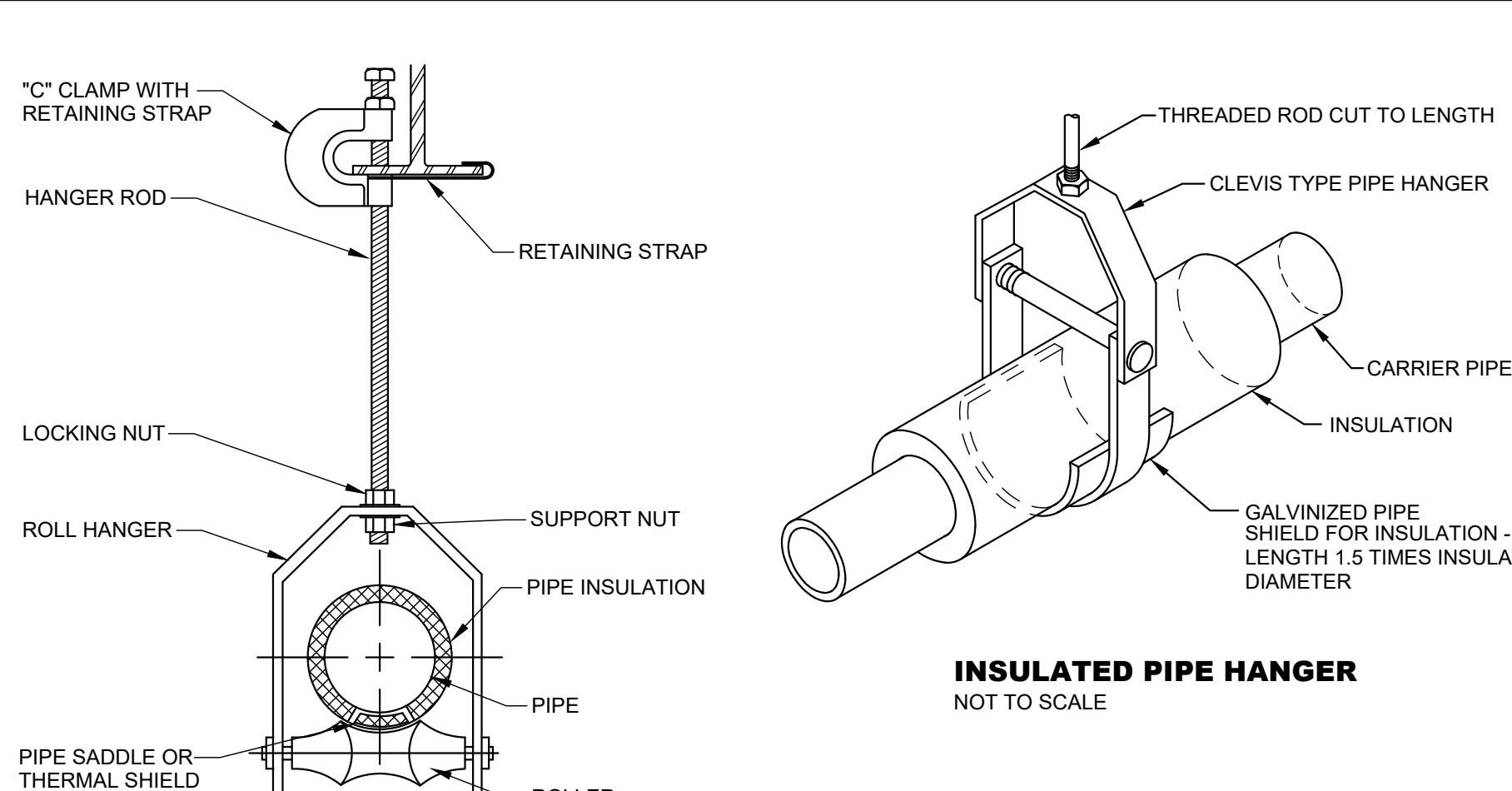
**DUCT HANGER DETAILS**  
NOT TO SCALE

NOTES:  
1. COMPLY WITH SMACNA DUCT CONSTRUCTION STANDARDS FOR SIZES, LOAD RATINGS, AND SPACING FOR HANGERS, FASTENERS, AND BUILDING ATTACHMENTS.  
2. HANGER AND FASTENERS MATERIALS SHALL MATCH OR BE COMPATIBLE WITH DUCT MATERIALS.  
3. PRIME AND PAINT HANGERS EXPOSED WITHIN FINISHED SPACES.



**CLEVIS HANGER DETAIL**

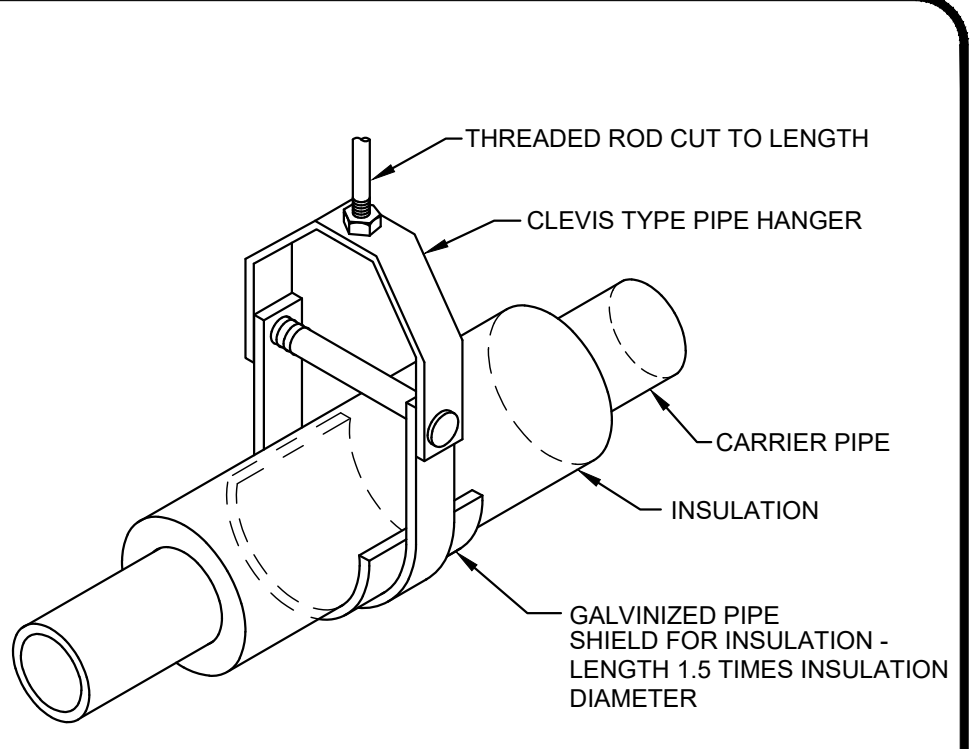
NOTES:  
1. FOR PIPE SIZE 6" AND SMALLER.  
2. ATTACH TO TOP CHORD AT PANEL POINTS FOR BAR JOISTS.



**ROLLER HANGER DETAIL**

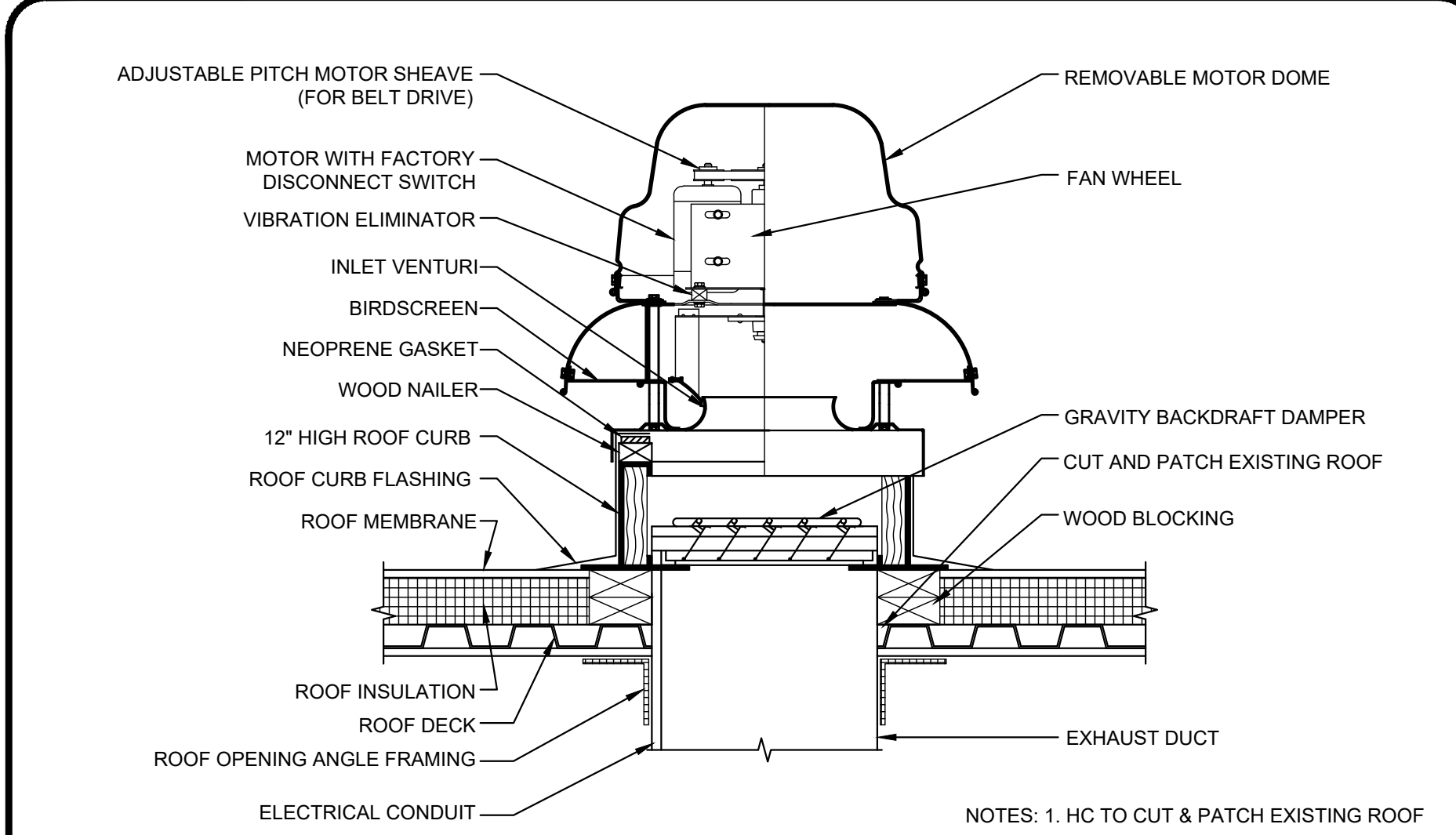
NOTES:  
1. FOR PIPE SIZE 8" AND LARGER.  
2. APPLY THERMAL INSERT FOR COLD PIPING.

**PIPE SUPPORT HANGER DETAILS**  
NOT TO SCALE



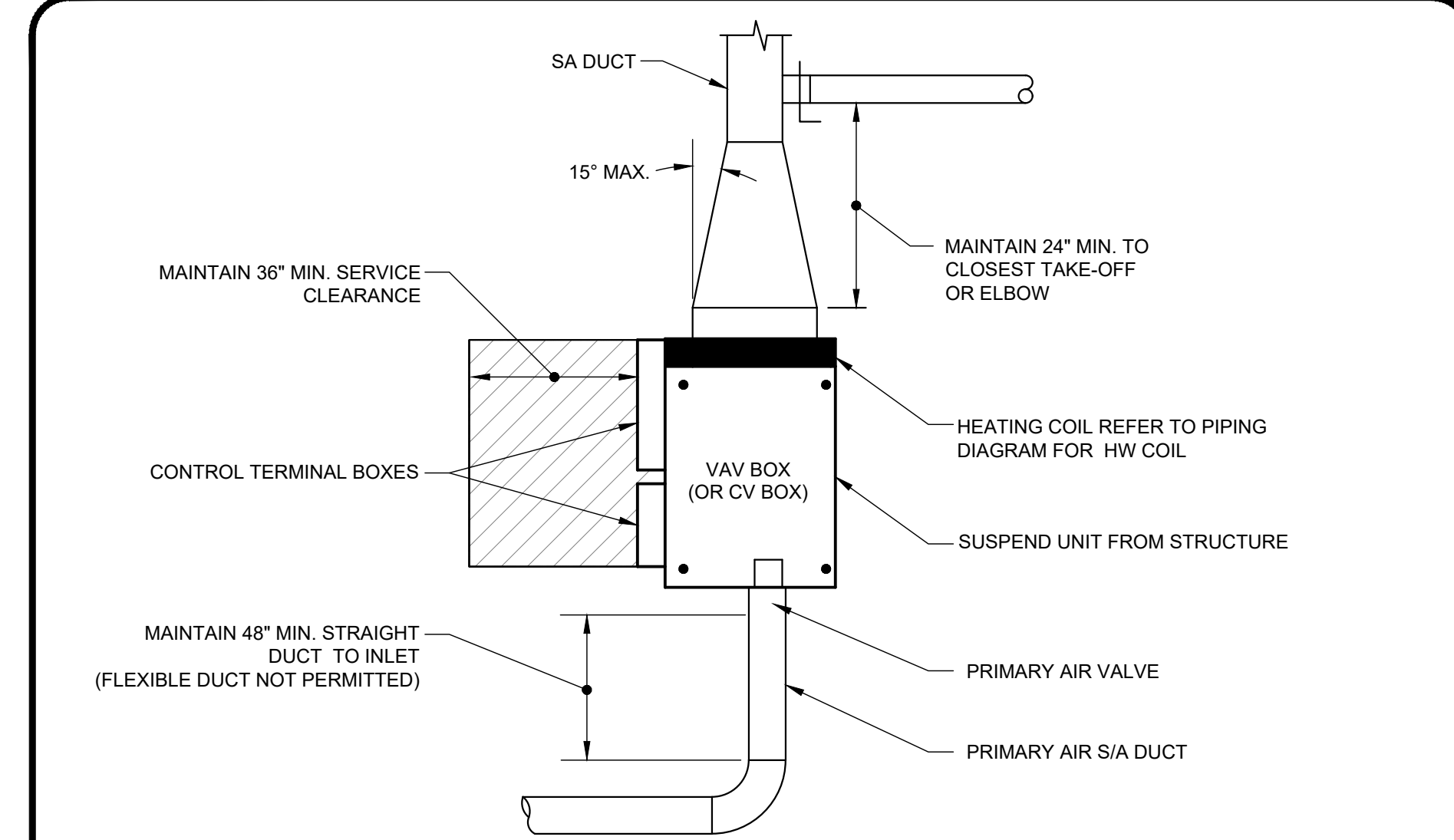
**INSULATED PIPE HANGER**

NOT TO SCALE

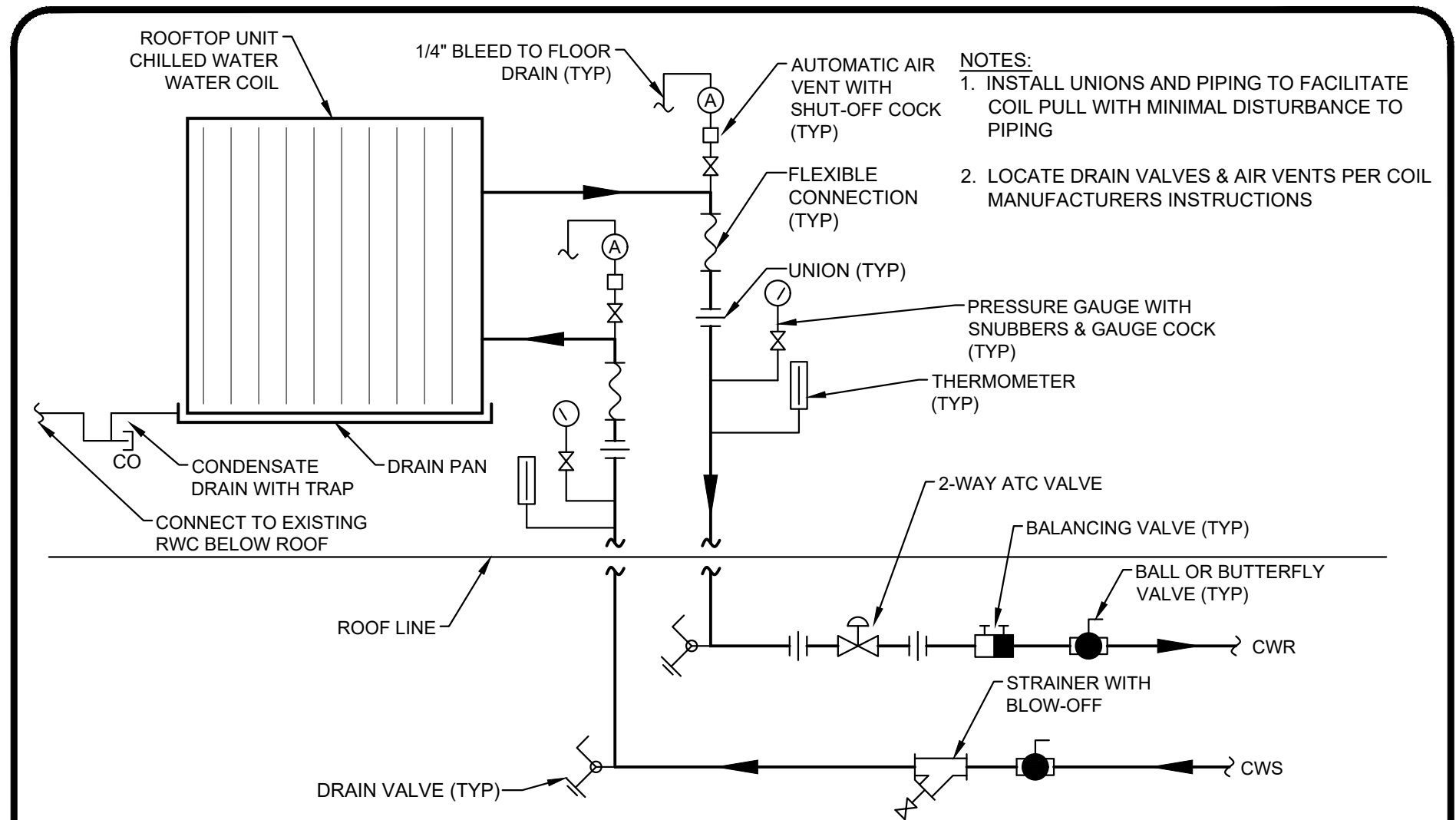


**EXHAUST FAN ROOF CURB DETAIL**  
NOT TO SCALE

NOTES:  
1. HC TO CUT & PATCH EXISTING ROOF

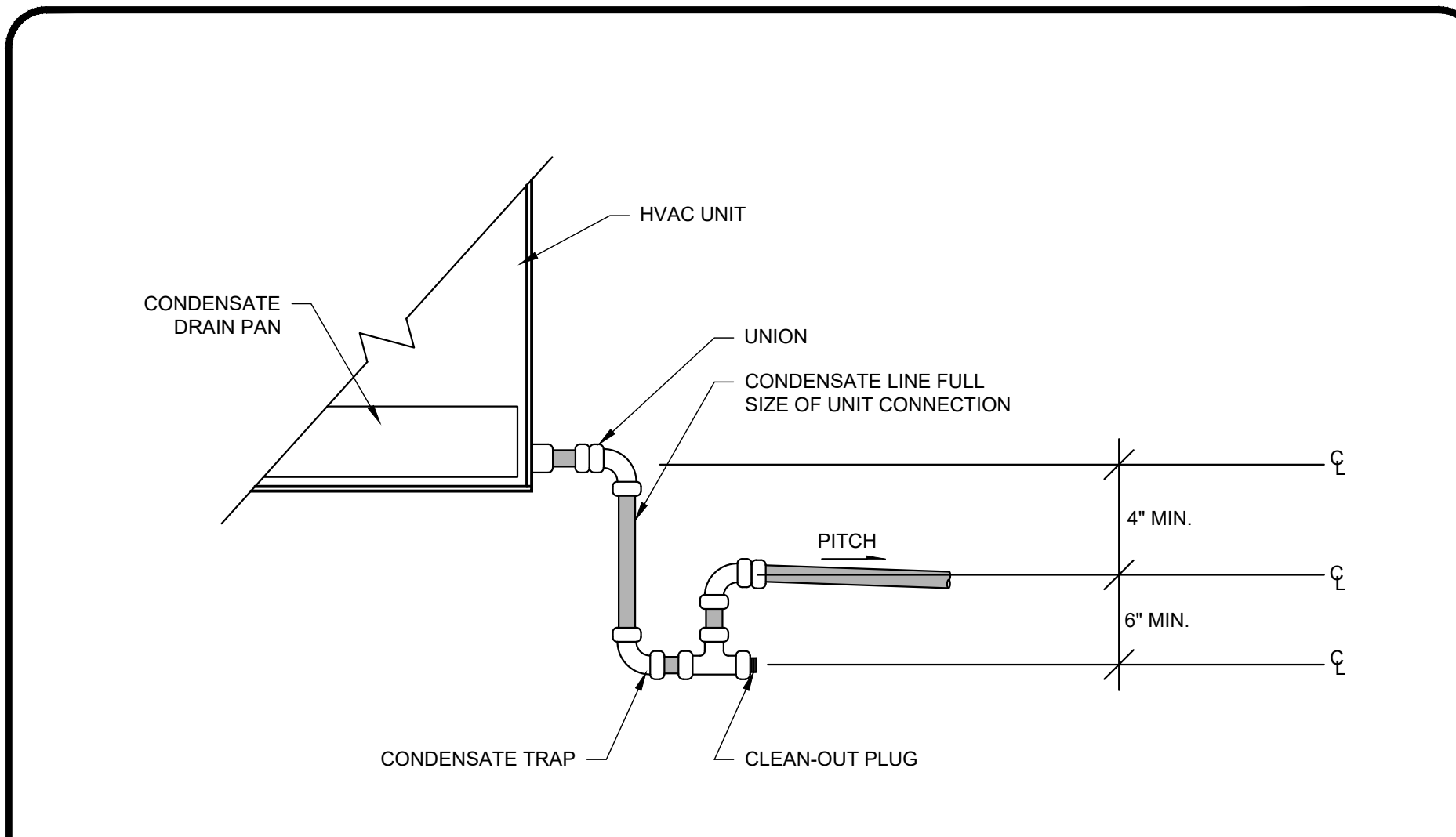


**VAV BOX DETAIL**  
NOT TO SCALE

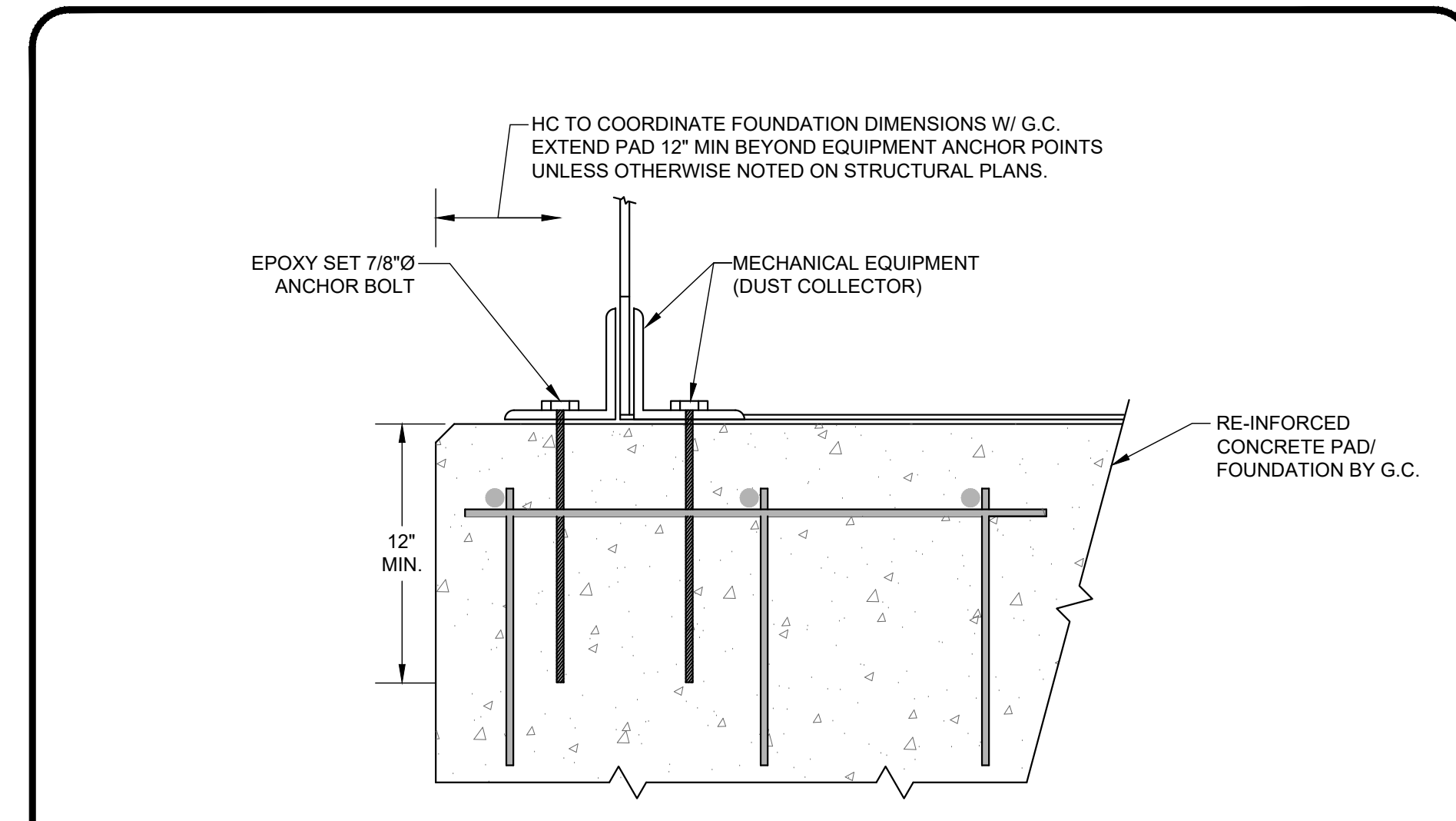


**ROOFTOP CW COIL PIPING DIAGRAM: 2-WAY VALVE**  
NOT TO SCALE

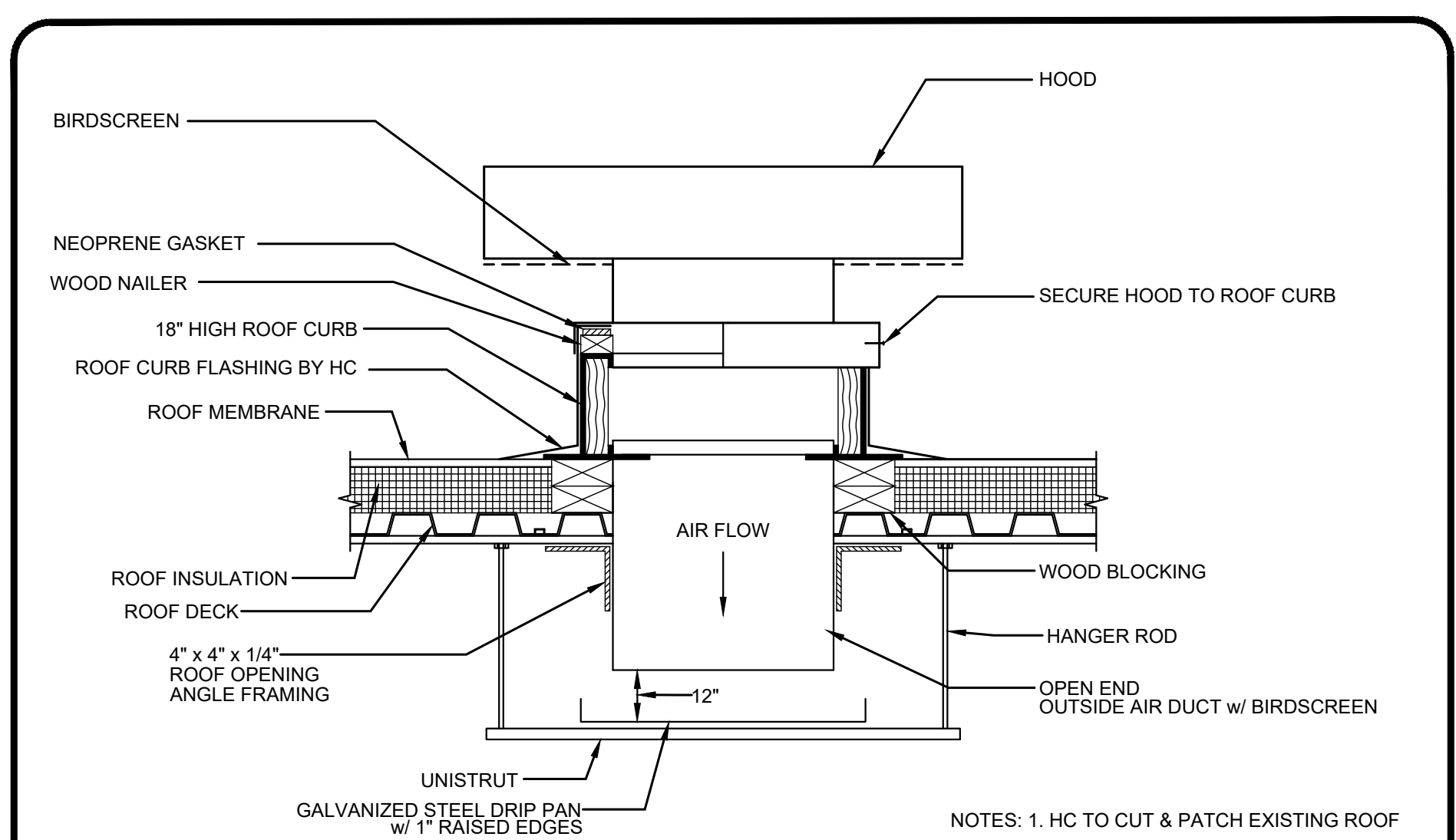
NOTES:  
1. INSTALL UNIONS AND PIPING TO FACILITATE COIL PULL WITH MINIMAL DISTURBANCE TO PIPING.  
2. LOCATE DRAIN VALVES & AIR VENTS PER COIL MANUFACTURERS INSTRUCTIONS.



**CONDENSATE TRAP DETAIL**  
NOT TO SCALE

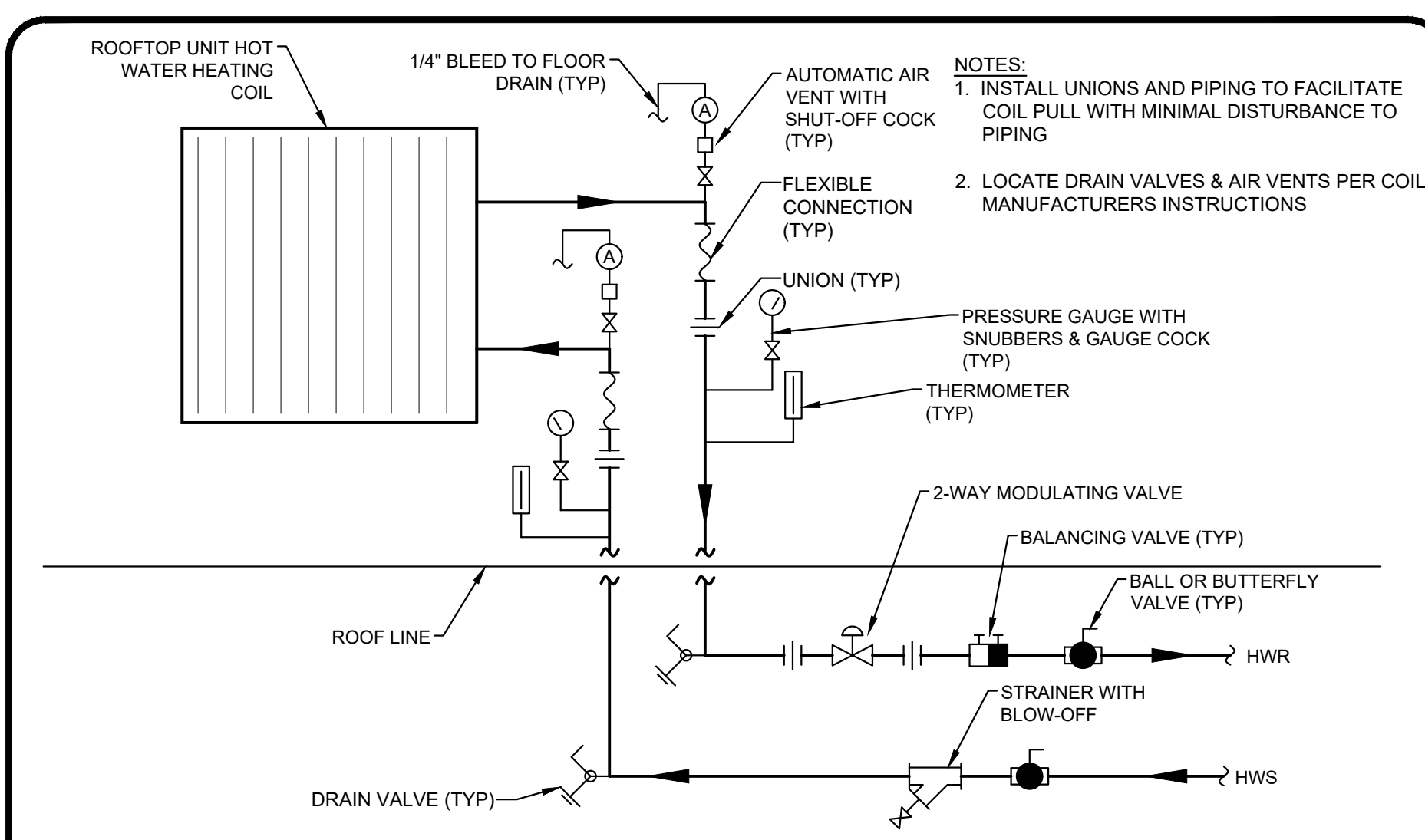


**DUST COLLECTOR ANCHOR DETAIL**  
NOT TO SCALE



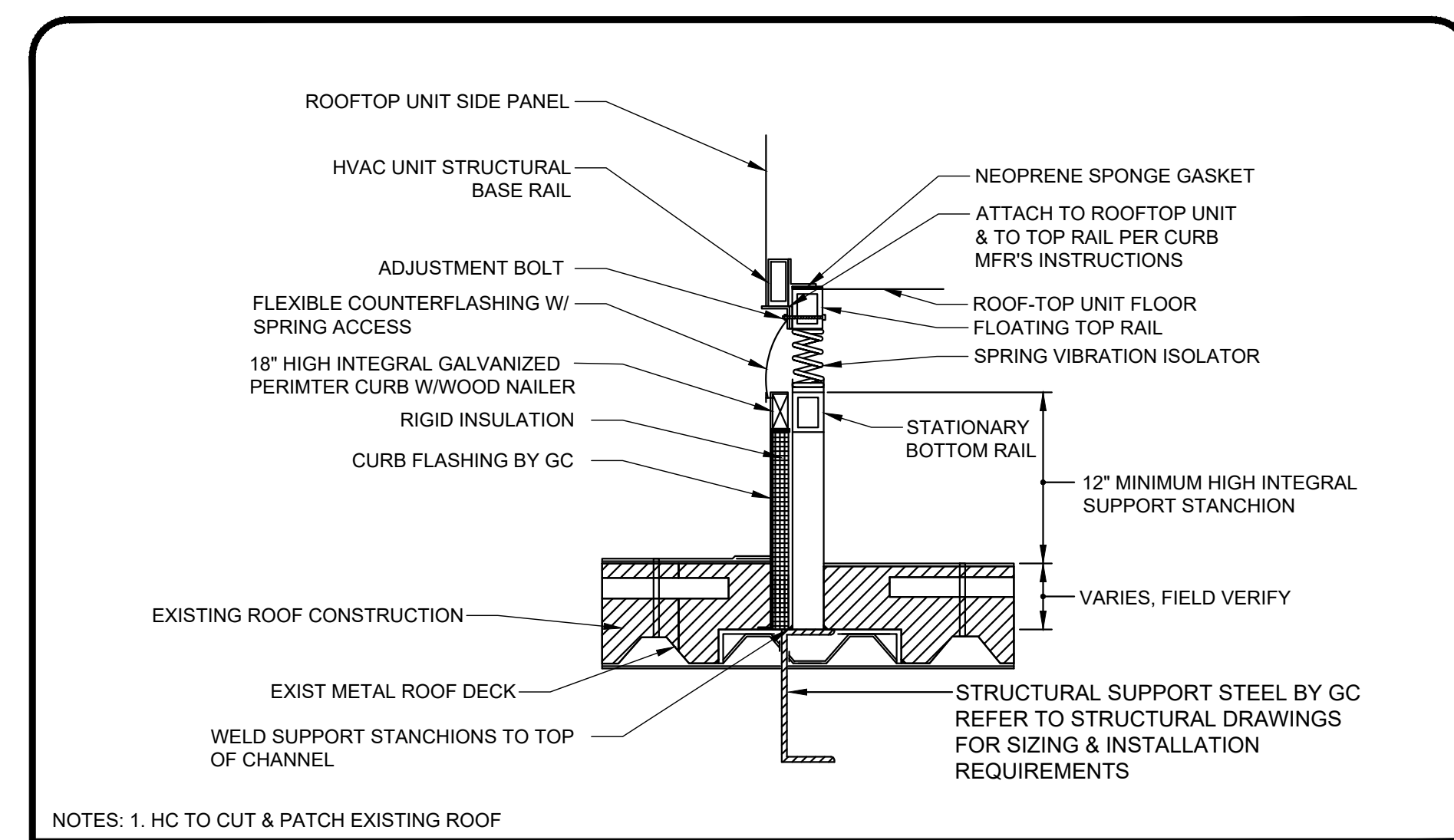
**OUTSIDE AIR INTAKE DETAIL**  
NOT TO SCALE

NOTES:  
1. HC TO CUT & PATCH EXISTING ROOF



**ROOFTOP HW COIL PIPING DIAGRAM: 2-WAY VALVE**  
NOT TO SCALE

NOTES:  
1. INSTALL UNIONS AND PIPING TO FACILITATE COIL PULL WITH MINIMAL DISTURBANCE TO PIPING.  
2. LOCATE DRAIN VALVES & AIR VENTS PER COIL MANUFACTURERS INSTRUCTIONS.



**ROOFTOP AIR HANDLING UNIT VIBRATION ISOLATION CURB DETAIL**  
NOT TO SCALE

NOTES:  
1. HC TO CUT & PATCH EXISTING ROOF

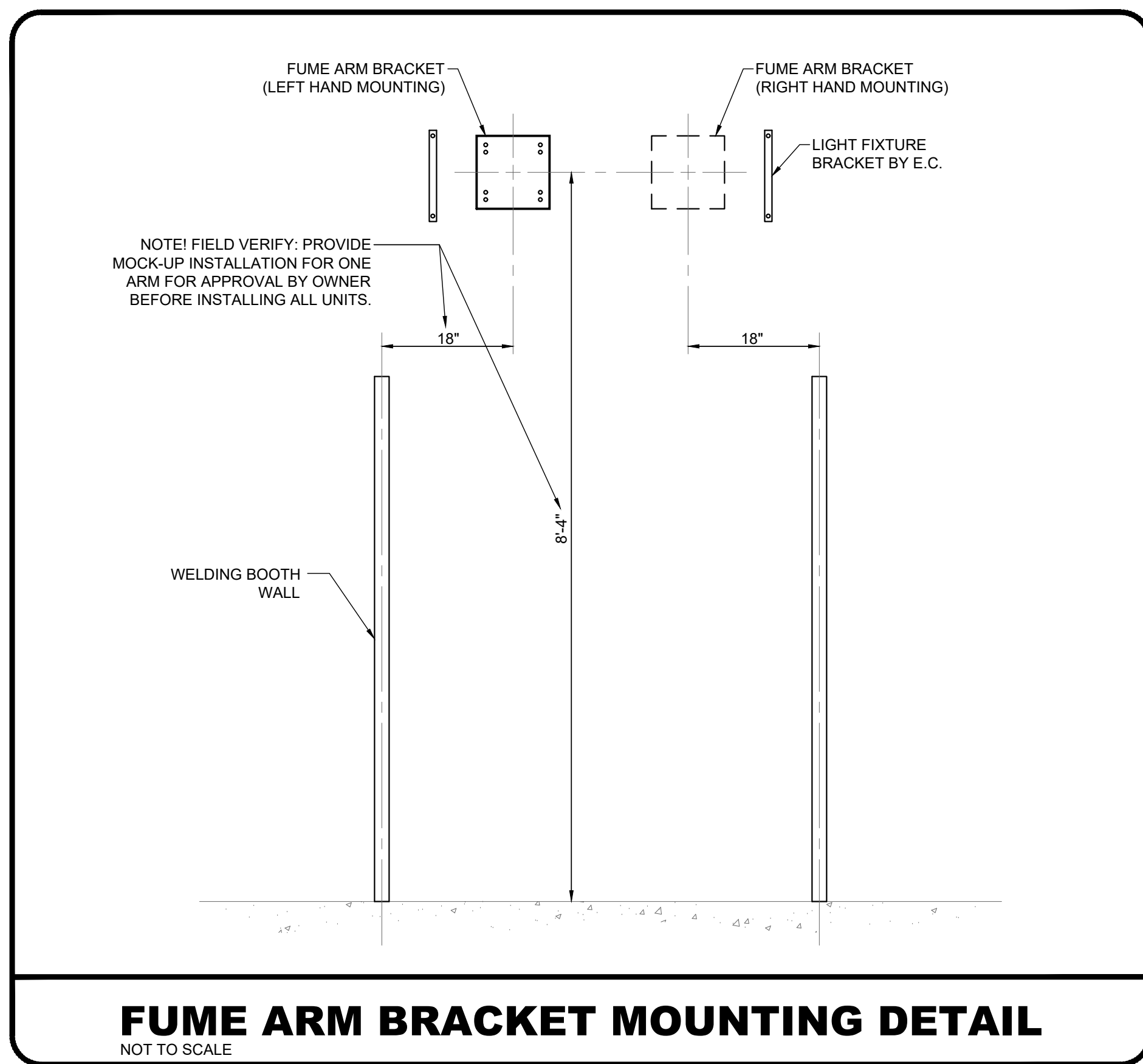
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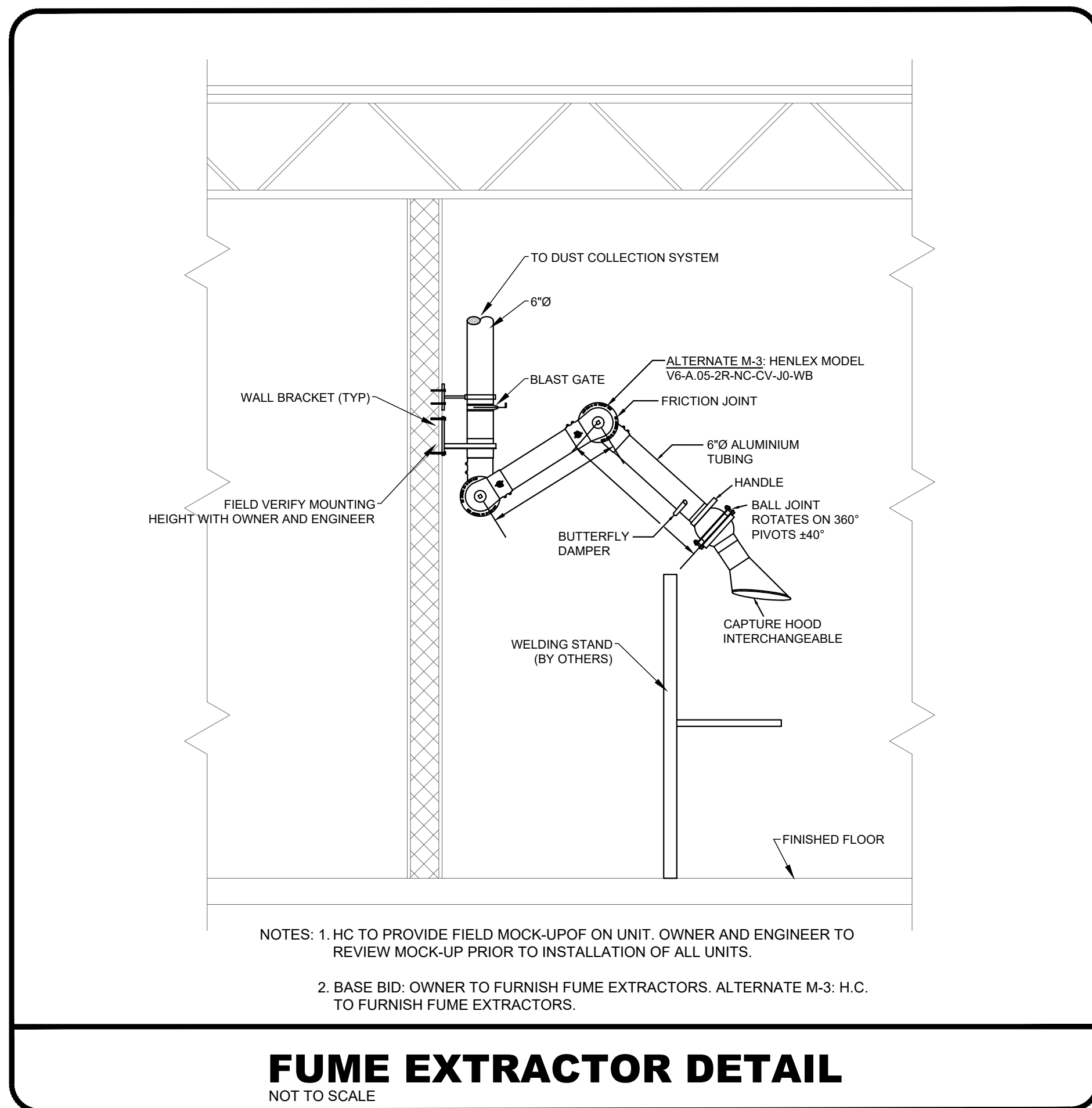
**INTERIOR ALTERATIONS - PHASE 3**  
FOR THE  
**EASTERN CENTER FOR ARTS and TECHNOLOGY**  
WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

DETAILS		Comm. no.	684
Drawn	MLV	Checked	DCD
Designed	DCD	Checked	DCD

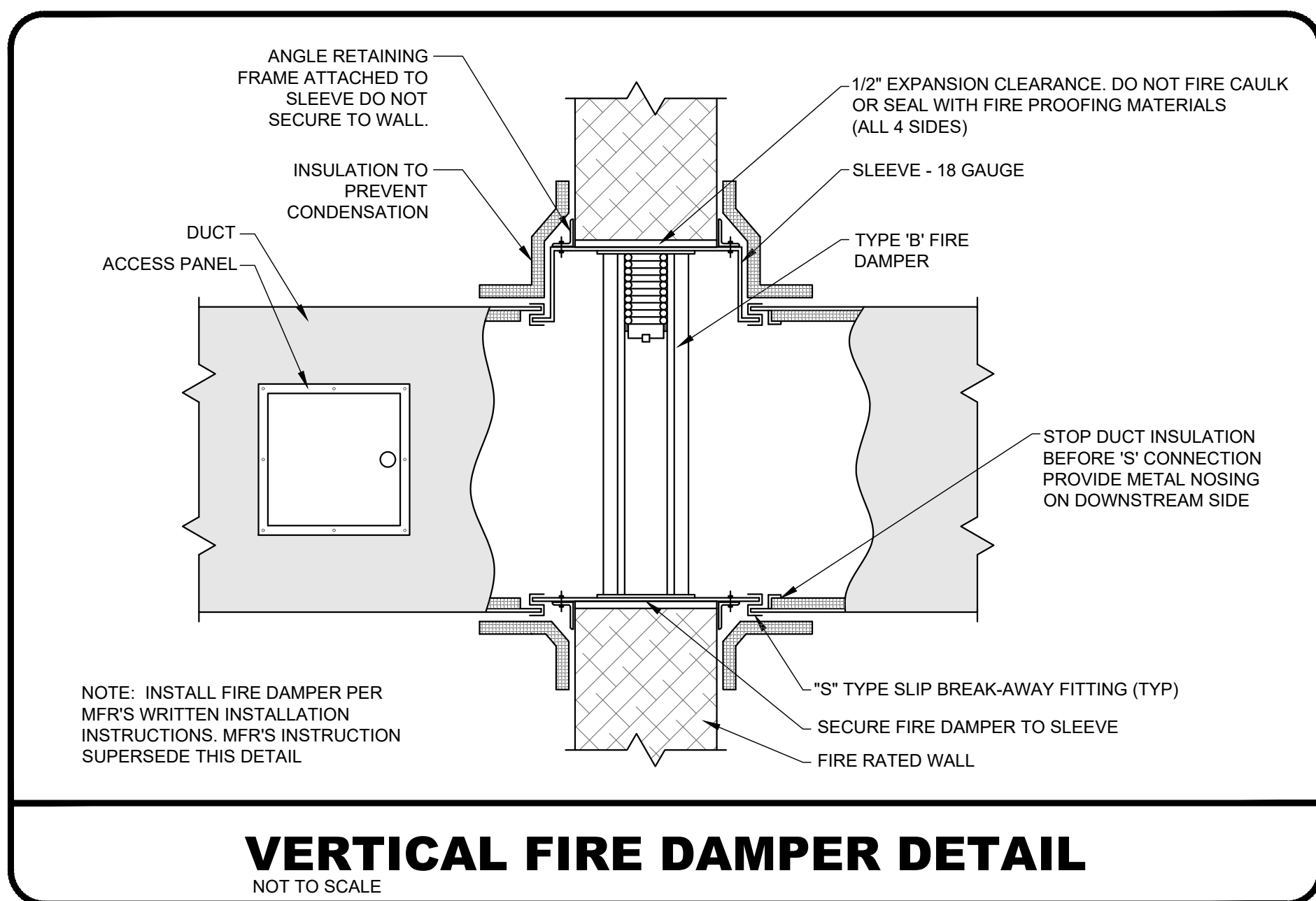
LVE - 21146  
**H7.1**



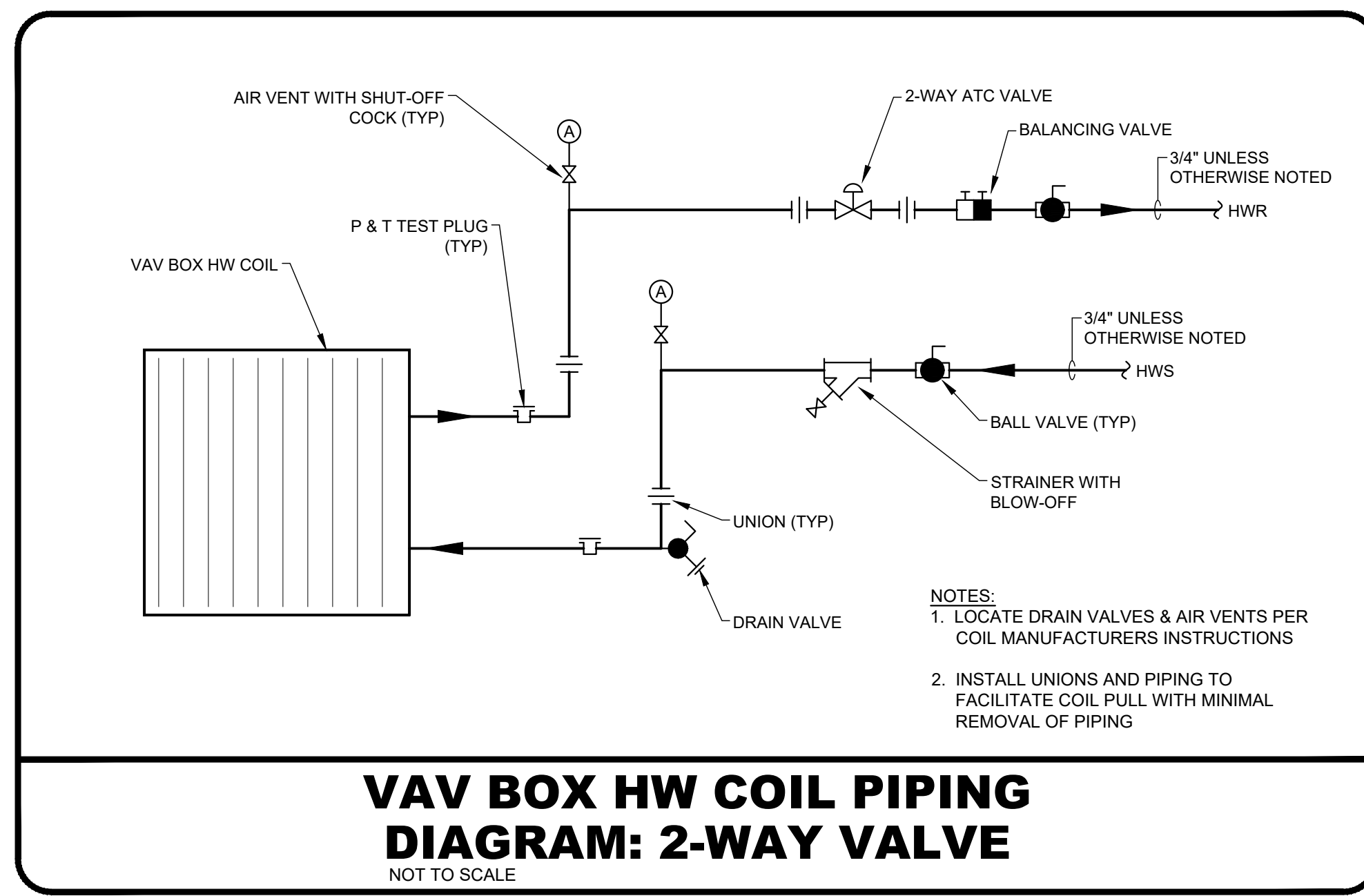
**FUME ARM BRACKET MOUNTING DETAIL**  
NOT TO SCALE



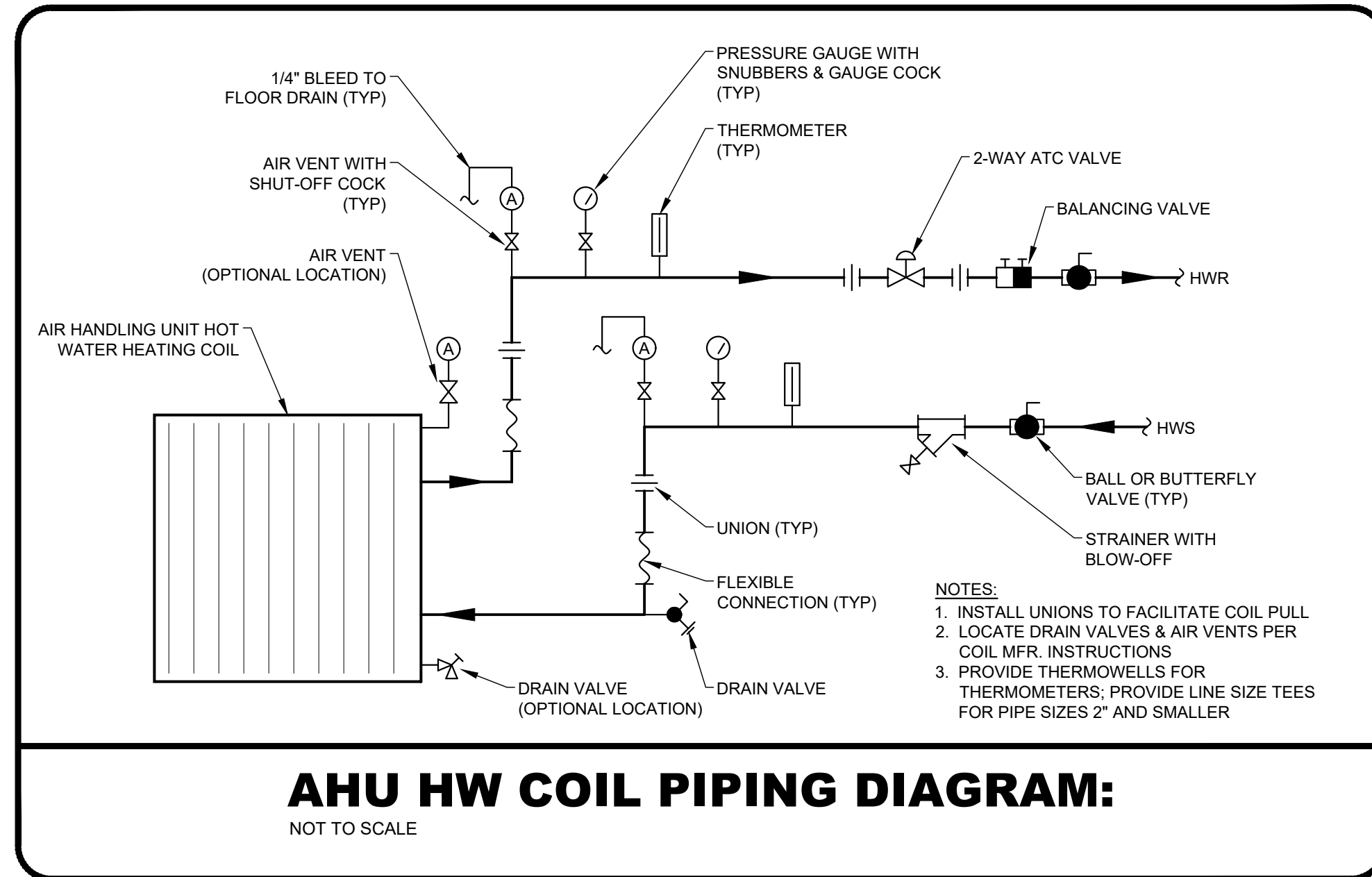
**FUME EXTRACTOR DETAIL**  
NOT TO SCALE



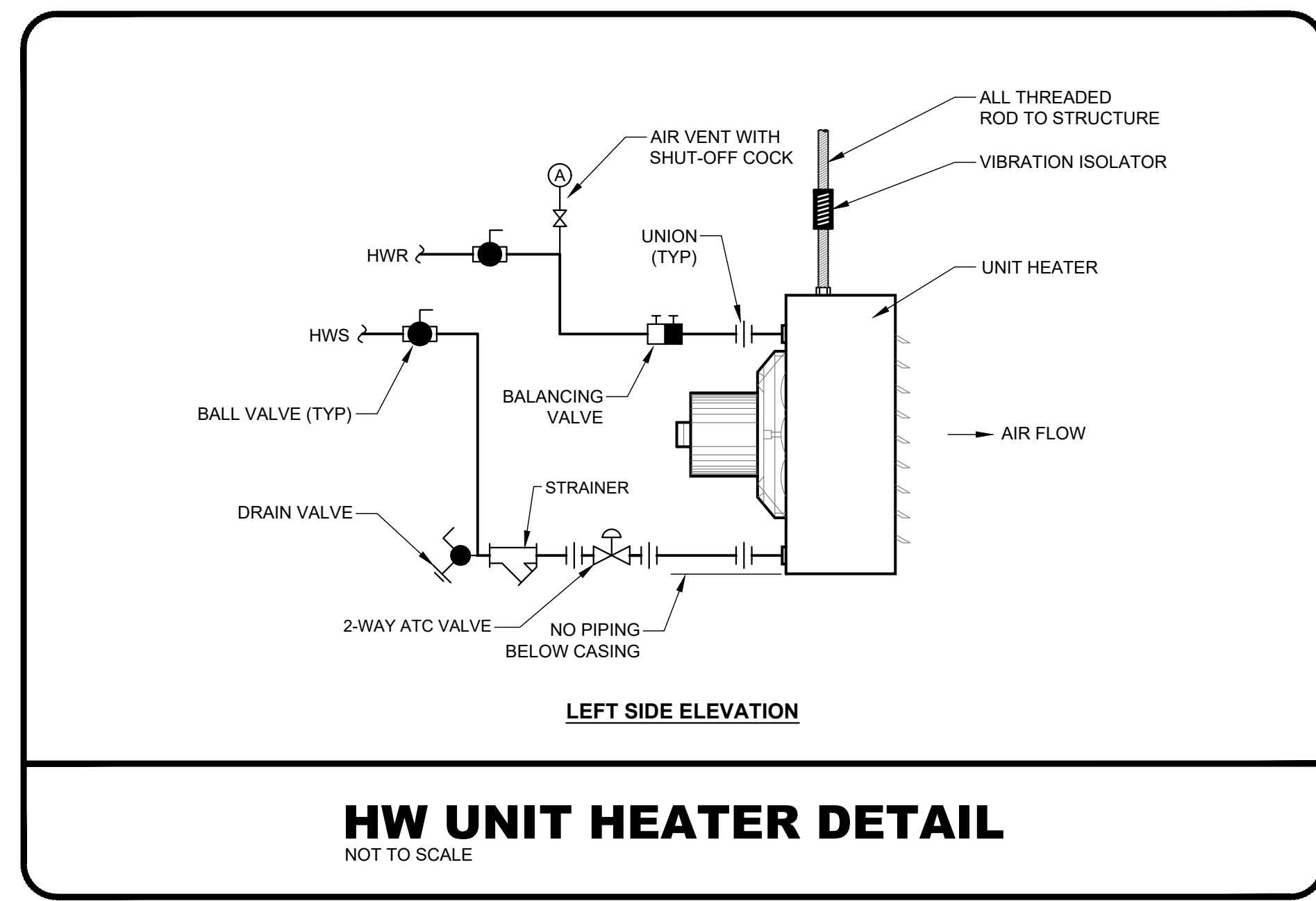
**VERTICAL FIRE DAMPER DETAIL**  
NOT TO SCALE



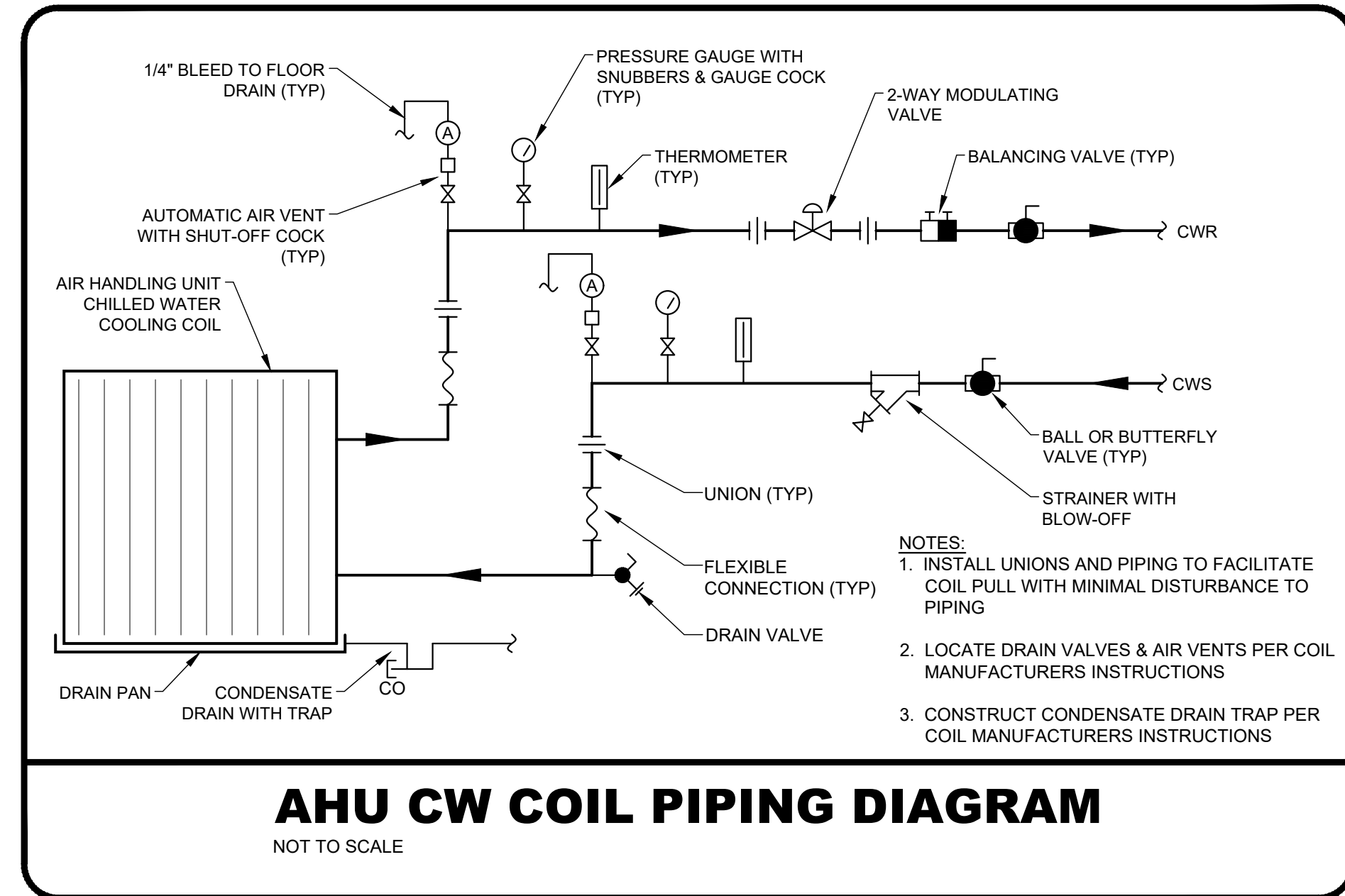
**VAV BOX HW COIL PIPING DIAGRAM: 2-WAY VALVE**  
NOT TO SCALE



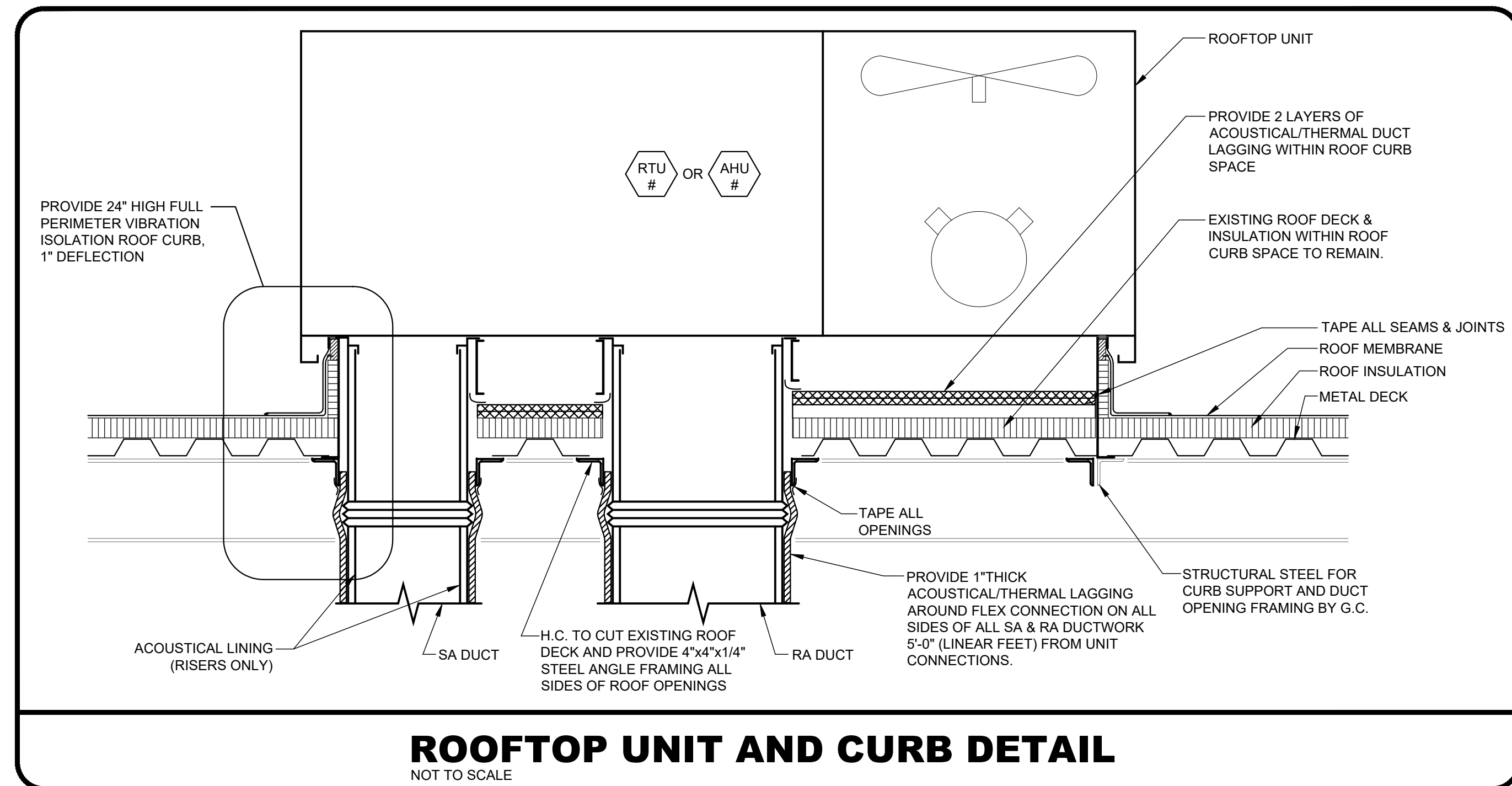
**AHU HW COIL PIPING DIAGRAM:**  
NOT TO SCALE



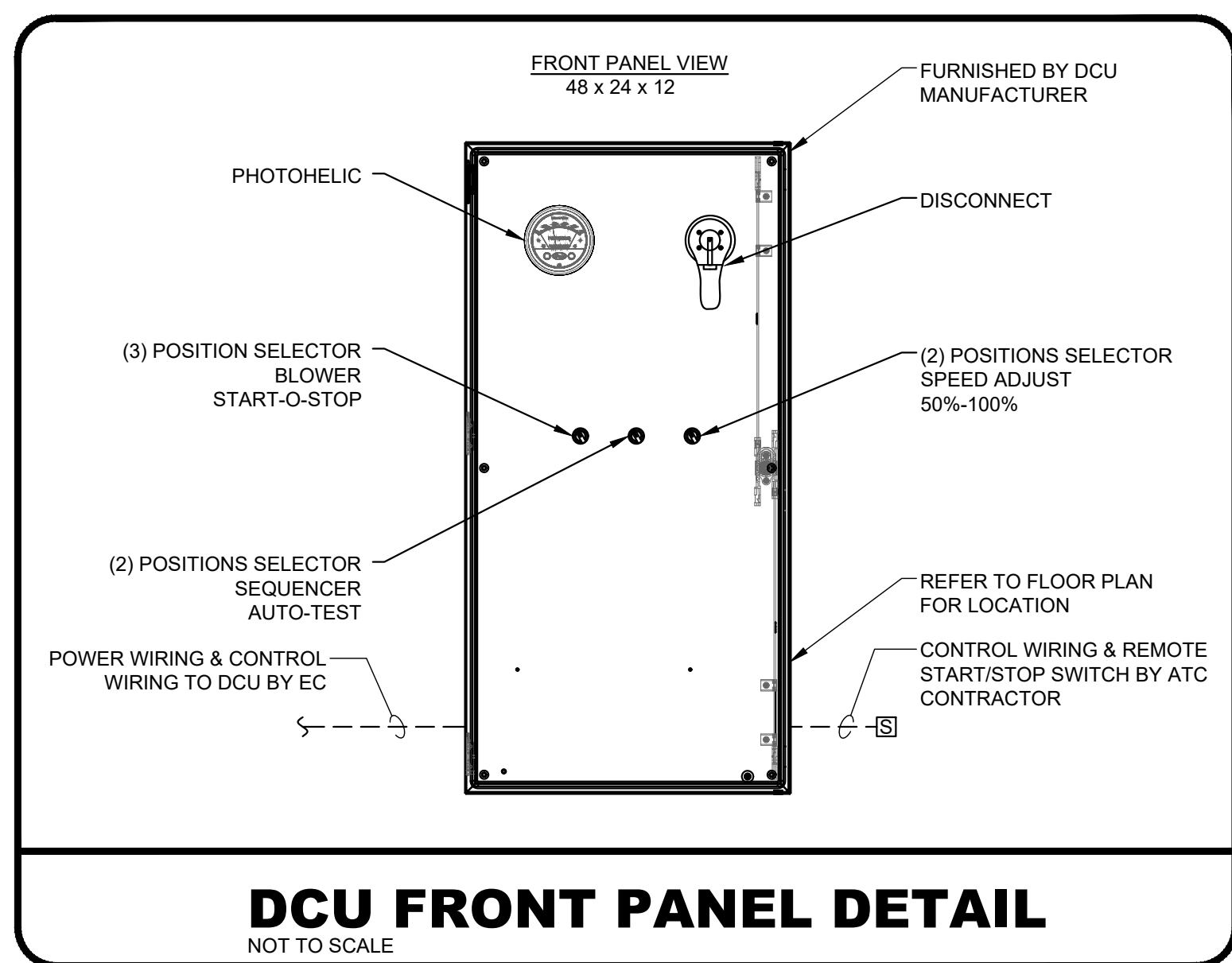
**HW UNIT HEATER DETAIL**  
NOT TO SCALE



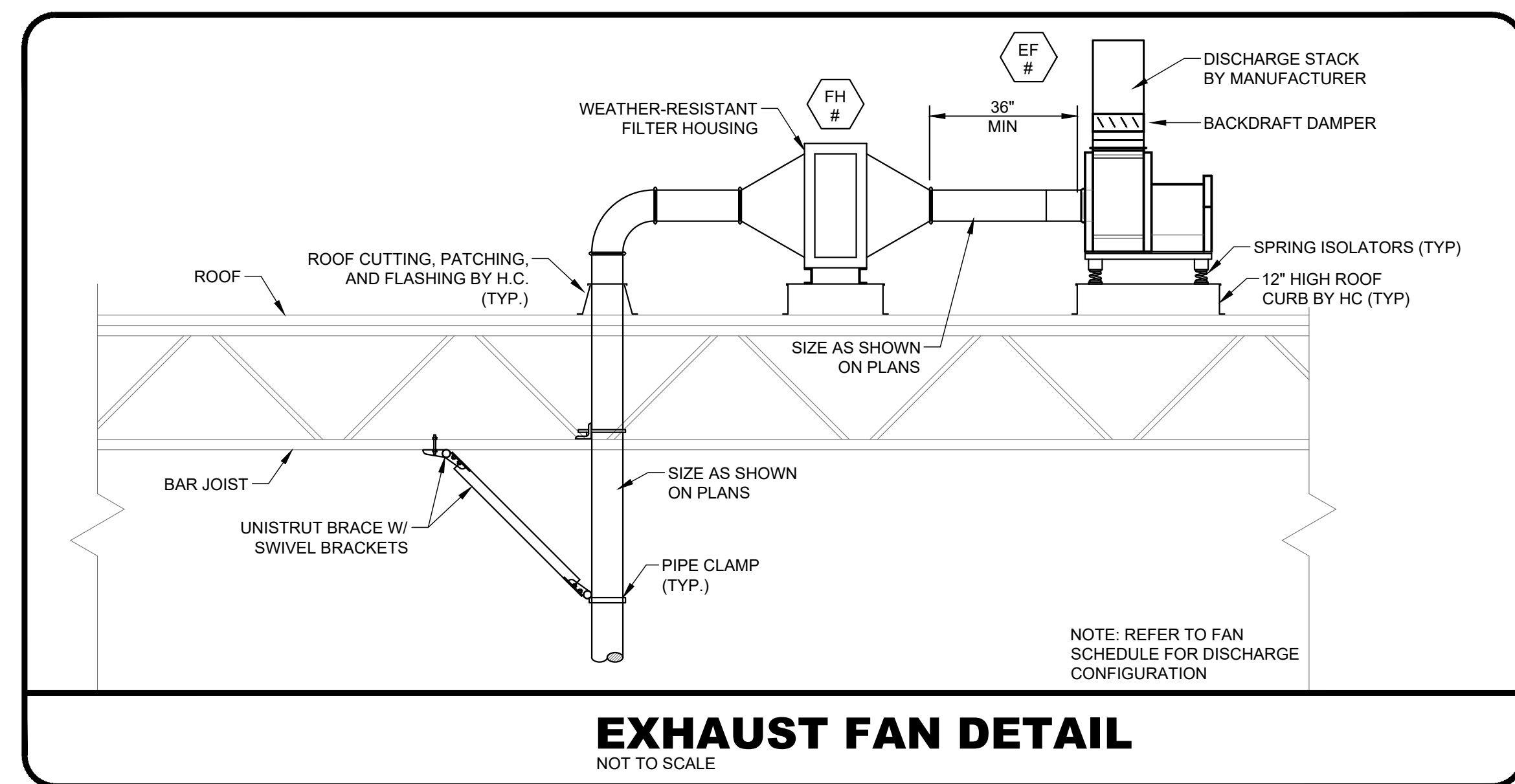
**AHU CW COIL PIPING DIAGRAM**  
NOT TO SCALE



**ROOFTOP UNIT AND CURB DETAIL**  
NOT TO SCALE



**DCU FRONT PANEL DETAIL**  
NOT TO SCALE



**EXHAUST FAN DETAIL**  
NOT TO SCALE



PLUMBING SPECIFICATION

GENERAL

THE ITEMS INCLUDED IN THE GENERAL REQUIREMENTS FOR MECHANICAL AND ELECTRICAL WORK OF THIS SPECIFICATION ARE A PART OF THESE SPECIFICATIONS FOR THE PLUMBING WORK.

REMOVALS

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING PIPING AND EQUIPMENT SHOWN ON THE ARCHITECTURAL AND PLUMBING DEMOLITION DRAWINGS OR CONFLICTS WITH NEW CONSTRUCTION OR NEW MECHANICAL SYSTEMS. EXISTING PIPING TO OBSOLETE EQUIPMENT SHALL BE DISCONNECTED, REMOVED AND CAPPED IN ACCORDANCE WITH GENERAL DEMOLITION NOTES.

ANY REMOVALS WHICH REQUIRE SYSTEMS TO BE SHUT-DOWN SHALL BE COORDINATED WITH OWNER AND KEPT AT A MINIMUM.

THE OWNER SHALL HAVE THE OPTION TO KEEP ANY SALVAGEABLE ITEMS REMOVED FROM THE BUILDING. IF OWNER DOES NOT WISH TO KEEP ANY ITEMS THEY SHALL BE DISCARDED PROPERLY OFF SITE BY THIS CONTRACTOR.

DESCRIPTION OF PLUMBING SYSTEM

THE LAYOUT AND SIZES OF ALL MAINS AND PRINCIPAL BRANCHES OF ALL PIPING SYSTEMS ARE AS SHOWN ON THE DRAWINGS. SMALL BRANCHES SHALL BE AS DIRECT AS POSSIBLE, FOLLOWING THE LINES OF THE BUILDING AND SHALL BE SIZED IN ACCORDANCE WITH DRAWINGS AND LOCAL APPLICABLE PLUMBING CODE.

SANITARY WASTE, VENT AND SUPPLY PIPING SYSTEMS SHALL BE EXTENDED FROM MAINS TO FIXTURES OR EQUIPMENT AS REQUIRED.

SANITARY WASTE AND VENT PIPING ABOVE FLOOR

TYPE DWV COPPER TUBE (NOT PERMITTED FOR URINAL WASTE), SERVICE WEIGHT NO-HUB CAST IRON PIPE AND FITTINGS WITH NO-HUB HEAVY DUTY COUPLINGS, SCHEDULE 40 PVC WITH PVC DRAINAGE PATTERN SOCKET FITTINGS AND SOLVENT-CEMENTED JOINTS. NOTE: OBTAIN APPROVAL TO INSTALL PVC FROM LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION. PVC IS NOT PERMITTED IN RETURN AIR PLENUM SPACE.

SANITARY WASTE AND VENT PIPING BELOW FLOOR

SERVICE WEIGHT CAST IRON PIPE AND FITTINGS WITH COMPRESSION GASKETS, SCHEDULE 40 PVC WITH PVC DRAINAGE PATTERN SOCKET FITTINGS AND SOLVENT-CEMENTED JOINTS. NOTE: OBTAIN APPROVAL TO INSTALL PVC FROM LOCAL AUTHORITY HAVING JURISDICTION PRIOR TO INSTALLATION.

DO NOT ENCLOSE, COVER, OR PUT PIPING INTO OPERATION UNTIL IT HAS BEEN INSPECTED AND APPROVED BY AUTHORITIES HAVING JURISDICTION.

TEST SANITARY DRAINAGE, VENT AND STORM PIPING ACCORDING TO PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION OR, IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURES DESCRIBED IN THE APPLICABLE PLUMBING CODE.

REPAIR LEAKS AND DEFECTS WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY RESULTS ARE OBTAINED.

DOMESTIC WATER PIPING (ABOVE FLOOR)

ALL HOT AND COLD WATER LINES ABOVE GRADE, SHALL BE HARD DRAWN COPPER TUBING, TYPE "L", ASTM SPECIFICATION B-88, LATEST REVISION. ALL TUBING SHALL BE OF DOMESTIC MANUFACTURE AND SHALL HAVE NAME OF MANUFACTURER STAMPED THEREON.

FITTINGS ON COPPER TUBING SHALL BE SOLDER JOINT TYPE WROUGHT COPPER, OR CAST BRONZE. FITTINGS SHALL BE ASSEMBLED WITH NO LEAD SOLDER USING A NON-CORROSIVE FLUX, AND AS RECOMMENDED BY THE MANUFACTURER OF THE TUBING AND FITTINGS. USE OF SELF-CLEANING FLUX IS PROHIBITED.

SUITABLE ADAPTERS SHALL BE USED WHERE NECESSARY FOR CONNECTIONS TO FITTINGS, VALVES OR OTHER ACCESSORIES HAVING THREADED ENDS.

TEST DOMESTIC WATER PIPING ACCORDING TO PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION OR, IN THE ABSENCE OF A PRESCRIBED METHOD, THE PROCEDURES DESCRIBED IN THE APPLICABLE PLUMBING CODE.

REPAIR LEAKS AND DEFECTS IN NEW PIPING AND PORTIONS OF EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED WITH NEW MATERIALS AND RETEST PIPING, OR PORTION THEREOF, UNTIL SATISFACTORY RESULTS ARE OBTAINED.

PURGE NEW DOMESTIC WATER PIPING AND PORTIONS OF THE EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED BY USING, COMPLY WITH PURGING AND DISINFECTING PROCEDURES PRESCRIBED BY AUTHORITIES HAVING JURISDICTION OR, IN THE ABSENCE OF PRESCRIBED METHOD, THE PROCEDURES DESCRIBED IN EITHER AWWA C651 OR AWWA C652, OR AS DESCRIBED IN THE APPLICABLE PLUMBING CODE.

VALVES

VALVES SHALL BE FULL PORT BALL VALVES, ACCESSIBLY LOCATED AND EQUAL IN AREA TO PIPE ON WHICH THEY ARE PLACED. PROVIDE VALVES ON ALL BRANCHES AT ALL SUPPLY WATER EQUIPMENT AND WHERE INDICATED ON DRAWINGS. VALVES SHALL BE EQUAL TO JOMAR, JENKINS, CRANE, FAIRBANKS, HAMMOND OR NIBCO, INC.

VALVES SHALL BE BRASS BODY SOLDERED CONNECTIONS. BALL VALVE SUITABLE FOR A WATER WORKING PRESSURE OF 125 POUNDS.

PIPE PENETRATIONS

SLEEVE AND SEAL ALL PIPE PENETRATIONS OF WALLS AND FLOORS. SEAL ALL PENETRATIONS THROUGH FIRE RATED WALLS WITH AN APPROVED FIRE PROOF SEALANT. INSTALL SLEEVE AND MECHANICAL SLEEVE SEAL FOR PIPE PENETRATIONS THROUGH FOUNDATION WALLS.

PIPE HANGERS

ALL HANGERS AND SUPPORTS FOR PLUMBING PIPING, INCLUDING SUPPORT SPACING, MATERIAL AND SEISMIC REQUIREMENTS, SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE INTERNATIONAL BUILDING AND PLUMBING CODE AND LOCAL AUTHORITY HAVING JURISDICTION.

CLEANOUTS

CLEANOUTS SHALL BE THE SAME NOMINAL SIZE AS THE PIPE THEY SERVE, WITH THE EXCEPTION OF PIPING LARGER THAN 4 INCHES, IN WHICH CASE, THE CLEANOUT SHALL BE A MINIMUM OF 4 INCHES.

CUTTING AND PATCHING

ALL CUTTING AND PATCHING OF EVERY NATURE REQUIRED IN CONNECTION WITH THIS CONTRACT SHALL BE DONE BY THE CONTRACTOR WITH MECHANICS EXPERIENCED IN THEIR RESPECTIVE LINES OF WORK. ALL PATCHING SHALL MATCH ADJACENT FINISHES.

UNIONS

UNIONS SHALL BE INSTALLED ADJACENT TO ALL EQUIPMENT AND WHEREVER THEIR USE WILL FACILITATE EASY REMOVAL OF EQUIPMENT FOR REPAIR OR REPLACEMENT.

UNIONS SHALL BE STANDARD WEIGHT, ALL BRASS, GROUND JOINT FOR SOLDERED OR SWEATED TYPE CONNECTIONS.

WHERE COPPER WATER PIPE CONNECTS TO STEEL OR GALVANIZED STEEL TANKS OR DEVICES, FURNISH AND INSTALL EPCO OR APPROVED EQUAL DIELECTRIC UNIONS.

PIPING INSULATION

INSULATION SHALL BE AS MANUFACTURED BY ARMSTRONG CORK COMPANY, GUSTIN BACON COMPANY, JOHNS-MANVILLE, OWENS CORNING, PPG, OR APPROVED EQUAL.

ALL INTERIOR COLD WATER AND HOT WATER PIPING INCLUDING MAINS, RUNOUTS AND RISERS, EXPOSED OR CONCEALED, AND INTERIOR STORM PIPING INCLUDING ROOF DRAIN BODIES SHALL BE INSULATED WITH FIBERGLASS HAVING A 3-1/2 POUNDS PER CUBIC FOOT DENSITY MINIMUM. INSULATION SHALL HAVE A MAXIMUM K FACTOR OF 0.24 AT 75 DEGREES F. MEAN TEMPERATURE. THICKNESSES SHALL BE 1-1/2" FOR PIPING UP TO 2-1/2" & 2" THICK FOR PIPING LARGER THAN 2-1/2". PROVIDE VAPOR BARRIER ON COLD WATER AND HOT WATER. REPAIR EXISTING INSULATION DAMAGED OR REMOVED DUE TO THE NEW CONSTRUCTION AND ALTERATIONS.

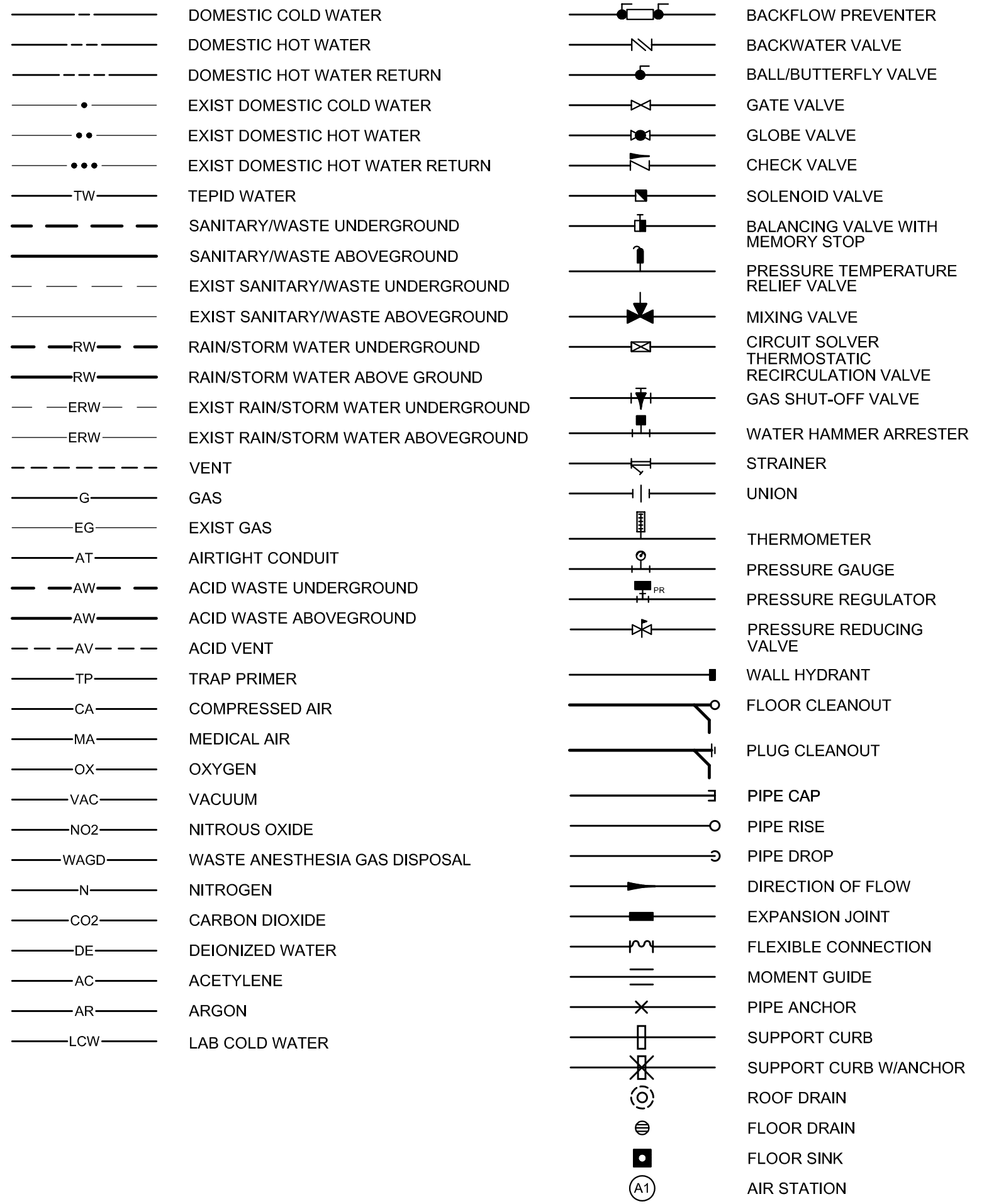
ALL VALVES AND FITTINGS SHALL BE INSULATED WITH MOLDED FIBERGLASS FITTINGS EQUAL IN THICKNESS TO THE INSULATION ON THE ADJOINING PIPE. THE FINISH OF THE FITTING SHALL OVERLAP THE ADJOINING PIPE COVERING BY TWO INCHES. INSULATION ON ALL FITTINGS SHALL BE COVERED WITH VAPOR BARRIER WHERE REQUIRED.

INSULATION SHALL BE RUN CONTINUOUS WITHOUT INTERRUPTION, INCLUDING PIPE HANGER LOCATIONS.

GENERAL PLUMBING NOTES

- 1. PROVIDE ALL LABOR, MATERIAL, AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN THIS SECTION OF WORK IN ACCORDANCE WITH ALL APPLICABLE CODES.
2. THE PLUMBING DRAWINGS SHALL BE CONSIDERED AS BEING DIAGRAMMATIC AND ARE NOT TO BE SCALED FOR THE ACCURATE CUTTING OF PIPE OR ITS EXACT PLACEMENT...
3. VERIFY THE EXACT LOCATION OF ALL EXISTING LINES AND ALL INVERTS PRIOR TO THE INSTALLATION OF ANY NEW PIPING.
4. ALL FIXTURES SHALL BE COMPLETE AND INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC. TRAPS FOR ALL LAVATOIRES AND SINKS SHALL BE REMOVABLE. LOCATE VALVES IN A READILY ACCESSIBLE LOCATION...
5. UNLESS NOTED OTHERWISE ON THE DRAWINGS, ALL WASTE PIPING BELOW GRADE SHALL BE A MINIMUM OF 2" IN SIZE.
6. SECURE ALL PERMITS, INSPECTION CERTIFICATES, ETC., AND PAY ALL CHARGES CONNECTED WITH SAME.
7. ALL MATERIALS SHALL BE NEW AND SHALL FIT THE SPACE AVAILABLE. VERIFY DIMENSIONS AT SITE.
8. ALL PIPING, APPARATUS, EQUIPMENT, ETC. SHALL BE PROPERLY SUPPORTED, BRACED VERTICALLY AND HORIZONTALLY IN ACCORDANCE WITH APPLICABLE CODES AND AS REQUIRED TO PREVENT EXCESSIVE MOVEMENT DURING SEISMIC CONDITIONS.
9. REMOVE EXISTING CEILING TILES AND GRID OR PORTION OF EXISTING PLASTER OR GYPSUM BOARD AS REQUIRED TO OBTAIN ACCESS TO CEILING SPACE TO ACCOMPLISH INDICATED PLUMBING WORK...
10. ALL VALVES, CLEANOUTS, ETC., SHALL BE LOCATED AND INSTALLED TO PERMIT ACCESS FOR SERVICE WITHOUT DAMAGE TO BUILDING OR FINISHED MATERIALS.
11. PROVIDE CLEANOUTS ON ALL ACCESSIBLE TRAPS, AT THE BASE OF ALL SOIL/WASTE STACKS, AT EACH CHANGE OF DIRECTION OF PIPING GREATER THAN 45 DEGREES AND LOCATED AT INTERVALS NOT TO EXCEED THE MAXIMUM PERMITTED BY THE APPLICABLE PLUMBING CODE...
12. STERILIZE NEW DOMESTIC WATER PIPING AND PORTIONS OF THE EXISTING PIPING THAT HAVE BEEN ALTERED, EXTENDED, OR REPAIRED PRIOR TO USING...
13. ALL DOMESTIC WATER PIPING SHALL BE HUNG LEVEL WITHOUT PITCH.
14. COPPER PIPING SHALL BE PROTECTED AGAINST CONTACT WITH DISSIMILAR METALS, ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER PLATED...
15. WATER PIPING SHALL NOT BE RUN IN AREAS SUBJECT TO FREEZING TEMPERATURES...
16. ALL WATER PIPING SHALL BE INSULATED AND ALL WATER PIPING INSTALLED ABOVE THE CEILING SHALL BE BELOW THE BUILDING INSULATION.
17. PROVIDE DRAIN VALVES AT ALL LOW POINTS OF DOMESTIC WATER PIPING SYSTEMS FOR COMPLETE DRAINAGE AND INDICATE LOCATION OF SAME ON RECORD DRAWINGS.
18. ALL PLUMBING FIXTURES MUST BE VENTED IN ACCORDANCE WITH APPLICABLE PLUMBING CODE INCLUDING LOCAL CODES.
19. REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATION OF DOORS, WINDOWS, FIXTURES, WALL DIMENSIONS, ETC.
20. THE ARCHITECTURAL DRAWINGS, INCLUDING INTERIOR ELEVATIONS, SHALL GOVERN THE ARRANGEMENT, LOCATION, AND MOUNTING HEIGHTS OF ALL FIXTURES AND EQUIPMENT...
21. ALL FIRE RATED FLOOR AND WALL PENETRATIONS SHALL BE SEALED WITH FIRE RESISTANT CAULKING / MATERIALS...
22. CAULK AROUND ALL PLUMBING FIXTURES INSTALLED. CAULK SHALL BE NON-HARDENING, NON-YELLOWING, MILDEW RESISTANT SILICONE AND IN A COLOR SELECTED BY THE ARCHITECT.
23. ANY REFERENCE TO "GC" OR "GENERAL CONTRACTOR" SHALL MEAN THE APPROPRIATE GENERAL TRADES CONTRACTOR...
24. ALL POTABLE WATER PIPING, DEVICES AND EQUIPMENT SHALL BE NSF-61 COMPLIANT.
25. NO DEAD-LEG SUPPLY (3X PIPE DIA. MAXIMUM) SHALL BE IN PLACE UPON COMPLETION OF PROJECT.
26. ANY REQUIRED SHUT-DOWNS SHALL NOT BE INITIATED WITHOUT WRITTEN APPROVAL FROM OWNER AND ENGINEER.

PLUMBING SYMBOLS



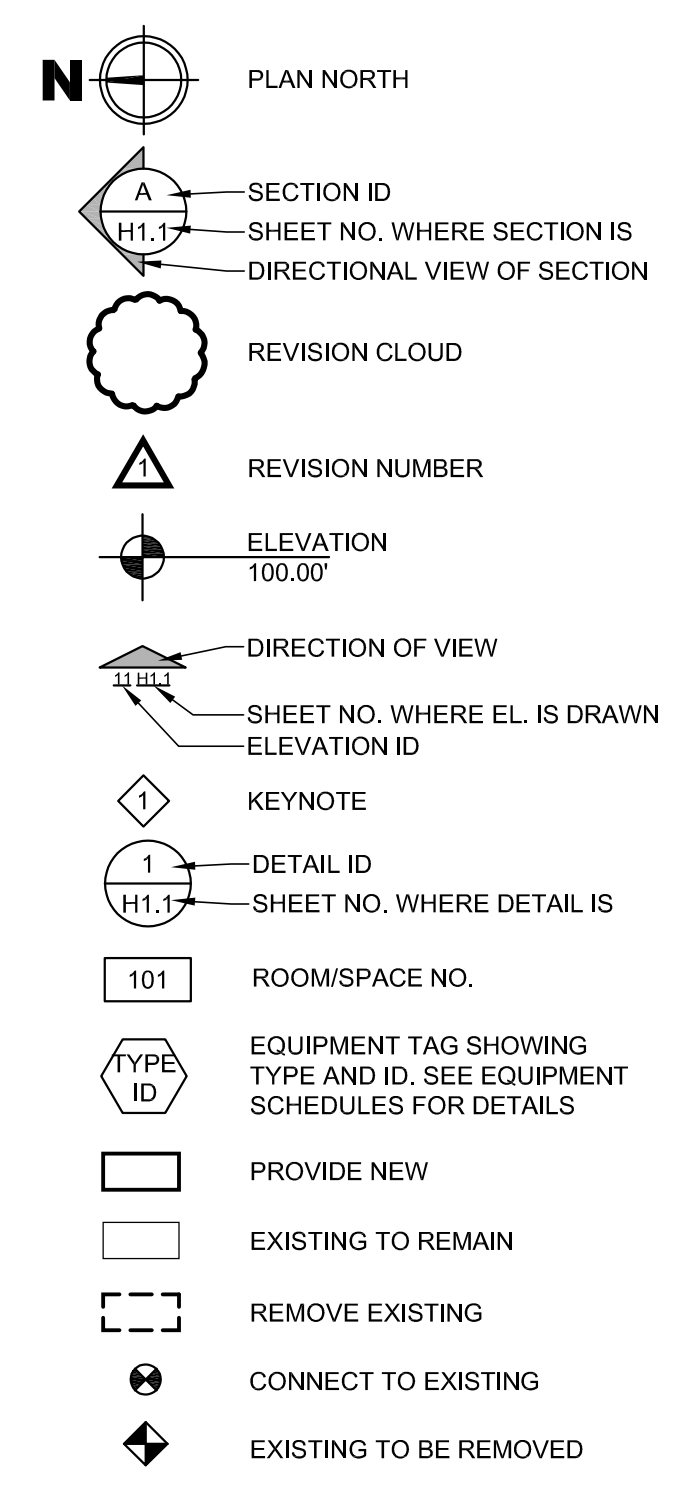
PLUMBING ABBREVIATIONS

Table mapping abbreviations (e.g., AD, AFG, AFR) to their full names (e.g., AREA DRAIN, ABOVE FINISHED GRADE).

COMMON ABBREVIATIONS

Table mapping abbreviations (e.g., AE, AB CLG, ABV) to their full names (e.g., ARCHITECT/ENGINEER, ABOVE CEILING).

COMMON SYMBOLS



DRAWING LIST

Table listing drawing sheets (e.g., P0.1, P1.1) and their titles (e.g., Cover Sheet, Partial Demolition Plans).

BRESLIN RIDYARD FADERO ARCHITECTS PLANNERS ALLENTOWN PENNSYLVANIA

INTERIOR ALTERATIONS - PHASE 3

EASTERN CENTER for ARTS and TECHNOLOGY WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

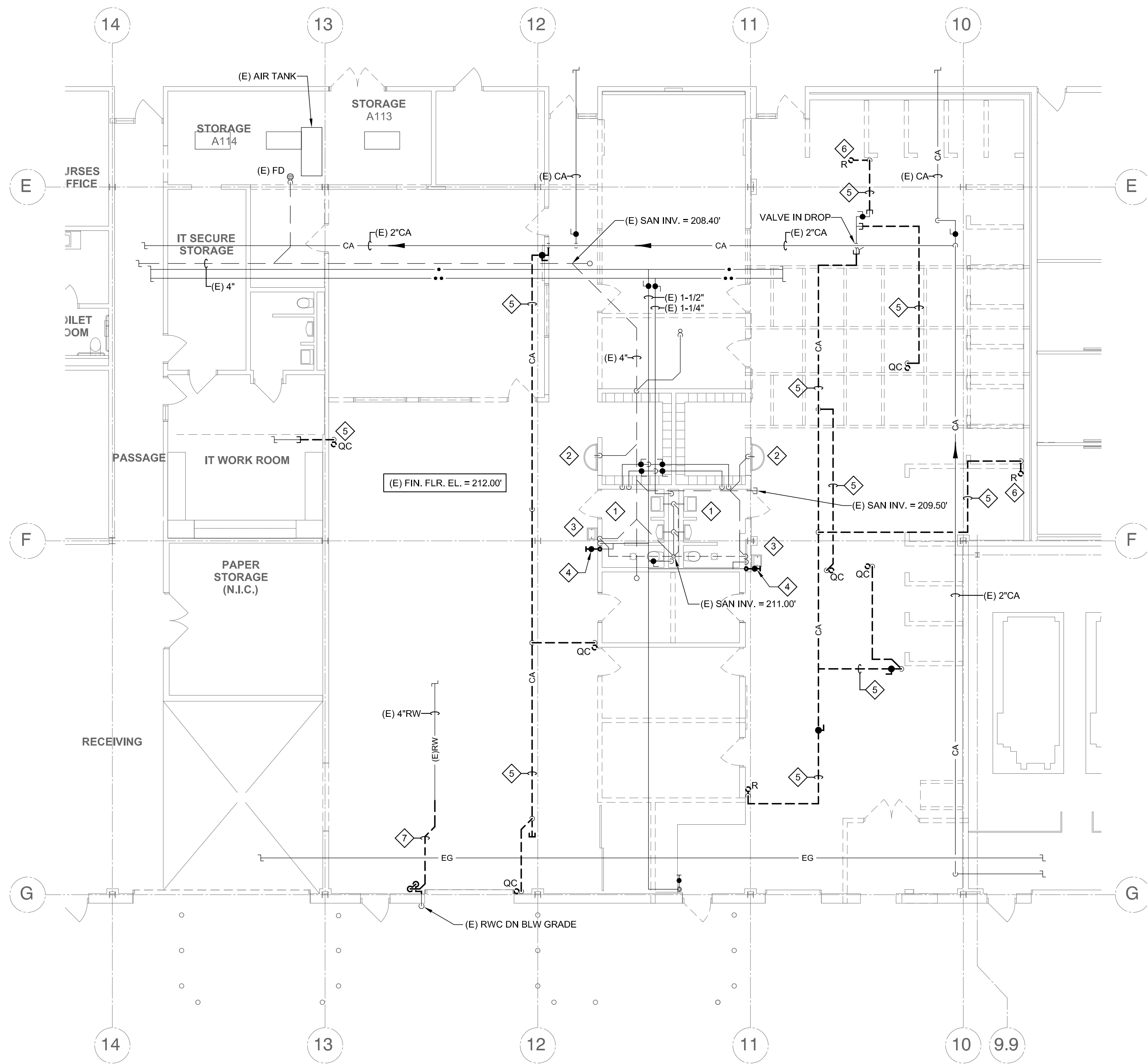
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LVE - 21146 P0.1

Lehigh Valley Engineering Mechanical and Electrical Consultants

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**PARTIAL DEMOLITION PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"

- DEMOLITION KEYNOTES:**  
 REFER TO GENERAL DEMOLITION NOTES ON DWG. P0.1 FOR ADDITIONAL DEMOLITION REQUIREMENTS.
- ◇ EXISTING PLUMBING FIXTURES IN TOILET ROOM TO REMAIN.
  - ◇ DISCONNECT AND REMOVE EXISTING SEMI-CIRCULAR WASH FOUNTAIN AND ALL RELATED TRIM IN ITS ENTIRETY. CAP WASTE AND SUPPLY PIPING IN WALL FOR NEW FIXTURE.
  - ◇ DISCONNECT AND REMOVE EXISTING ELECTRIC WATER COOLER IN ITS ENTIRETY. CAP WASTE, VENT AND SUPPLY PIPING IN WALL FOR NEW FIXTURE.
  - ◇ DISCONNECT AND REMOVE EXISTING HOSE BIBB IN ITS ENTIRETY. CAP SUPPLY PIPING IN WALL FOR NEW FIXTURE.
  - ◇ DISCONNECT AND REMOVE EXISTING COMPRESSED AIR PIPING IN ITS ENTIRETY AND CAP AT ACTIVE MAIN.
  - ◇ DISCONNECT AND REMOVE OBSOLETE COMPRESSED AIR REGULATOR SERVING DUST COLLECTING EQUIPMENT AND ALL RELATED APPURTENANCES IN THEIR ENTIRETY AND CAP PIPING AT ACTIVE MAIN.
  - ◇ DISCONNECT AND REMOVE EXISTING PORTION OF RAINWATER PIPING AS REQUIRED TO CORRECTLY ROUTE TO EXISTING EXTERIOR DROP.

**GENERAL DEMOLITION NOTES**

SELECTIVE DEMOLITION INCLUDES, BUT IS NOT LIMITED TO, REMOVAL AND LEGAL DISPOSAL OF EQUIPMENT AND SYSTEMS MADE OBSOLETE AND/OR REPLACED BY NEW WORK. SELECTIVE DEMOLITION INCLUDES REMOVAL AND RELOCATION OR RE-INSTALLATION, DISCONNECTIONS AND RE-CONNECTIONS OF SERVICES, SUPPORTS AND SUBSEQUENT FINAL SUPPORTS, TEMPORARY CAPPING, AND RE-ROUTING OF TEMPORARY SERVICES TO PERMIT NEW OR RENOVATION WORK TO PROCEED.

THE DEMOLITION WORK INDICATED ON THE DRAWINGS IS INTENDED TO ASSIST THE CONTRACTOR AND GIVE GENERAL INFORMATION. NOT ALL DEMOLITION OR TEMPORARY CONNECTIONS ARE SHOWN. PRIOR TO SUBMITTING BID, THE CONTRACTOR SHALL VISIT THE PROJECT SITE AND REVIEW ORIGINAL DRAWINGS IF AVAILABLE. CONTRACTOR IS RESPONSIBLE TO DETERMINE THE FULL EXTENT OF SELECTIVE DEMOLITION, AND INCLUDE ALL REQUIRED SELECTIVE DEMOLITION WORK IN HIS BID, WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS. NO ADDITIONAL COSTS WILL BE GRANTED FOR SELECTIVE DEMOLITION. LEGALLY DISPOSE OF ALL ITEMS AND MATERIALS, EXCEPT ANY ITEMS SPECIFICALLY DESIGNATED BY THE OWNER TO BE SALVAGED. REMOVE AND PLACE THE DESIGNATED SALVAGED EQUIPMENT IN A LOCATION DIRECTED BY THE OWNER.

REFER TO GENERAL CONSTRUCTION TRADE DEMOLITION DRAWINGS AS WELL AS THE PLUMBING DRAWINGS FOR EXTENT OF THE AREA TO BE DEMOLISHED AND FOR FIXTURES AND EQUIPMENT REQUIRED TO BE REMOVED DUE TO THE NEW CONSTRUCTION AND RENOVATIONS.

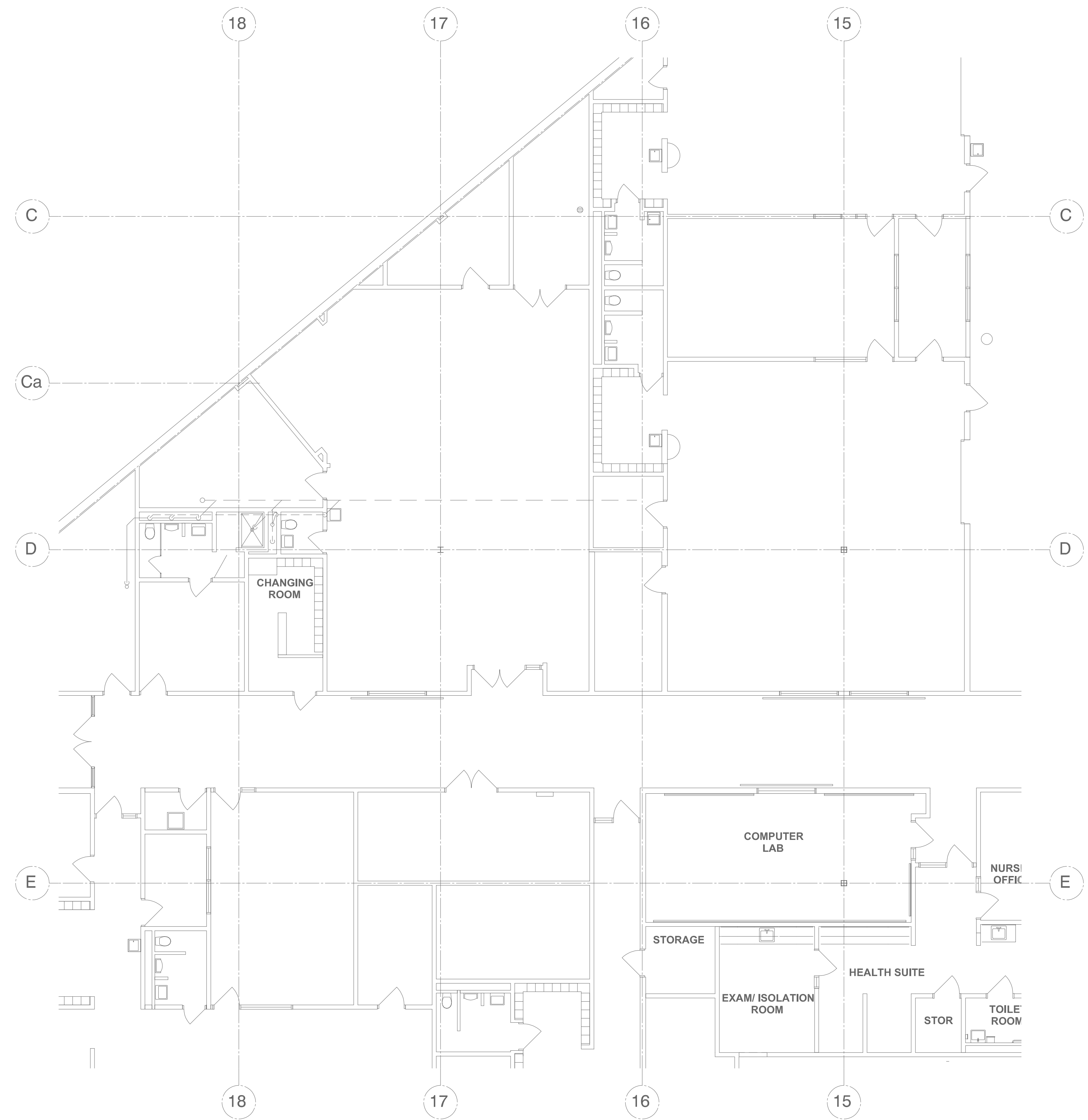
PIPING MADE OBSOLETE BY THE NEW CONSTRUCTION SHALL BE REMOVED, INCLUDING INSULATION, HANGERS, AND SUPPORTS, AND CAPPED ABOVE CEILINGS AT ACTIVE MAINS, BELOW FLOORS OR IN WALLS SO THAT IT IS COMPLETELY CONCEALED AT THE COMPLETION OF THE PROJECT. DISCONNECT PIPING FROM OBSOLETE FIXTURES OR EQUIPMENT WHICH IS TO BE REMOVED BY OTHERS AND CAP AND REMOVE PIPING IN SAME MANNER. EXISTING FLOOR DRAINS AND CLEANOUTS ARE TO REMAIN UNLESS OTHERWISE NOTED. PIPING REMOVED FROM THE EXISTING PLUMBING SYSTEM SHALL NOT BE USED IN THE INSTALLATION OF THE NEW SYSTEM.

IN ALL AREAS WHERE PATCHING IS REQUIRED, THE PLUMBING CONTRACTOR SHALL PATCH THE SUB-SURFACE WHERE THE NEW SURFACE IS TO BE FINISHED BY THE GENERAL CONTRACTOR. THIS SUB-SURFACE MUST BE PROVIDED SO THAT IT DOES NOT INHIBIT THE INSTALLATION OF OR AFFECT THE APPEARANCE OF THE NEW FINISH. IF A NEW FINISH WILL NOT BE PROVIDED BY THE GENERAL CONTRACTOR, THE PLUMBING CONTRACTOR IS RESPONSIBLE TO PATCH THE SURROUNDING FINISHED SURFACE TO MATCH EXISTING. PATCH EXISTING OPENINGS FROM DEMOLISHED PIPING IN FIRE RATED FLOORS AND WALLS AS REQUIRED TO MAINTAIN FIRE RATING.

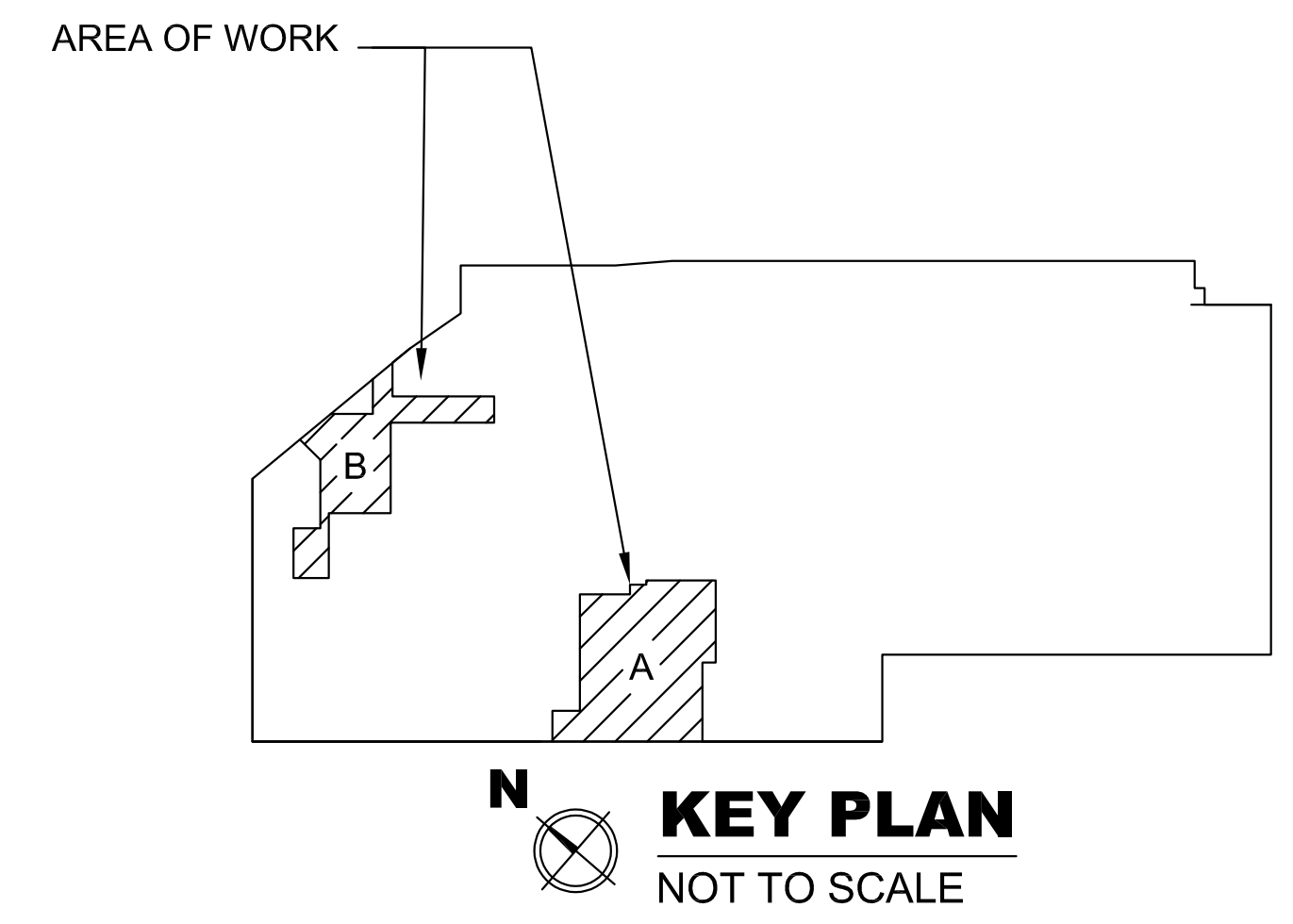
PLUMBING CONTRACTOR SHALL REMOVE/REPLACE EXISTING CEILING TILES AND GRID AS REQUIRED TO ACCOMPLISH INDICATED PLUMBING WORK, UNLESS SPECIFICALLY INDICATED OTHERWISE. REFER TO THE ARCHITECTURAL DRAWINGS FOR FINISH TREATMENT OF SPACES.

WHERE NEW SANITARY PIPING IS INSTALLED BELOW NEW OR EXISTING WALL FOOTINGS, PROVIDE SLEEVE AND ENCASE IN CONCRETE AS REQUIRED BY THE STRUCTURAL ENGINEER. VERIFY ALL EXISTING CONDITIONS AND COORDINATE EXACT LOCATION OF NEW OPENINGS FOR PIPING REQUIRED TO PENETRATE EXISTING GRADE BEAMS OR FOUNDATION WALLS WITH THE STRUCTURAL ENGINEER.

REMOVE OBSOLETE VENTS THRU ROOF IN THEIR ENTIRETY INCLUDING ALL OBSOLETE VENT PIPING IN ACCESSIBLE CEILING SPACE. PATCH RESULTING OPENINGS IN THE ROOF AS REQUIRED BY THE TYPE OF ROOF CONSTRUCTION. PROVIDE NEW ROOF INSULATION AND MATERIALS TO MATCH EXISTING. THE PLUMBING CONTRACTOR SHALL RETAIN THE SERVICES OF A QUALIFIED ROOFING CONTRACTOR IN ACCORDANCE WITH ORIGINAL ROOFING MANUFACTURER'S INSTALLATION AND WARRANTY REQUIREMENTS.

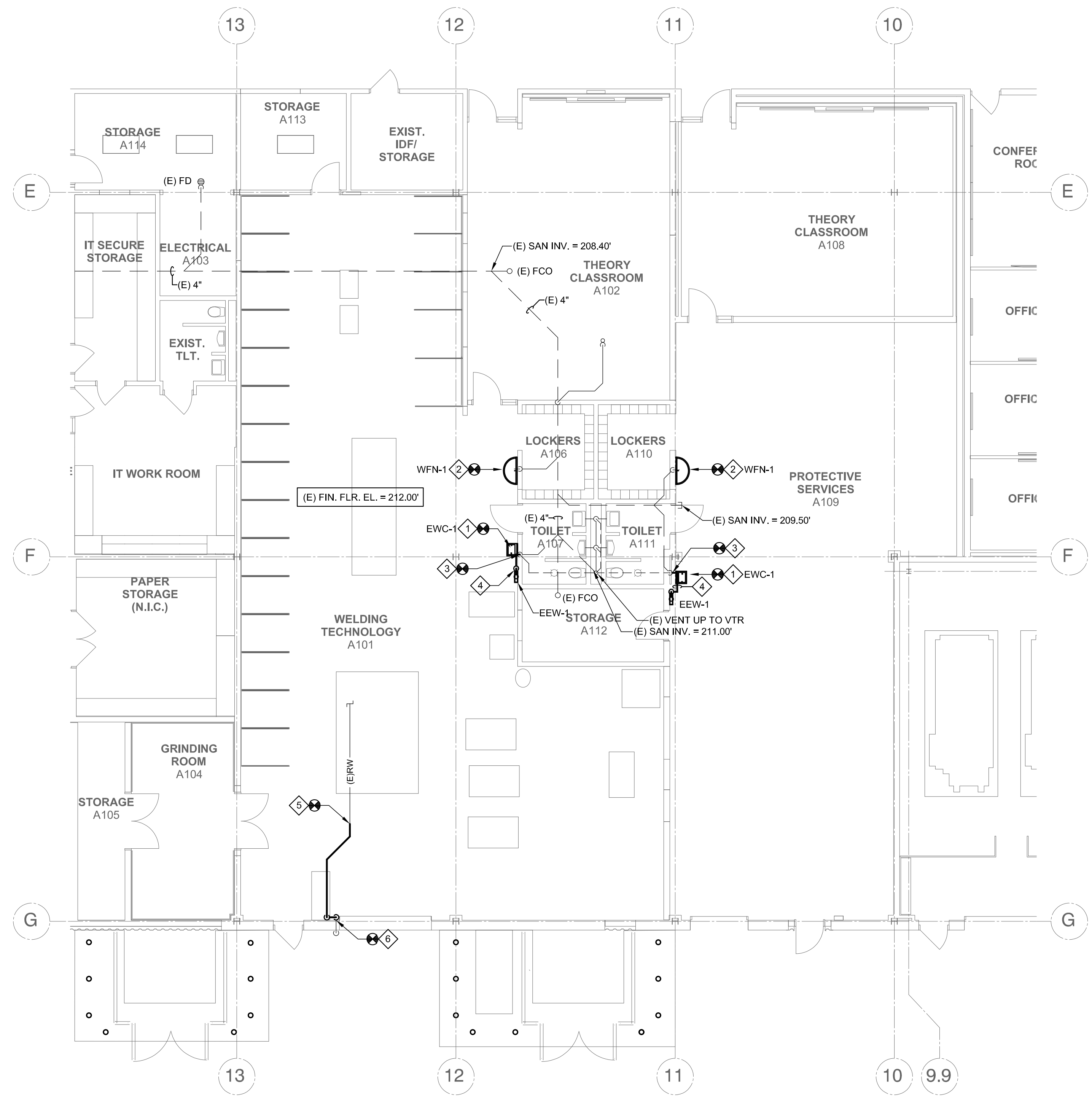


**PARTIAL DEMOLITION PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"



**INTERIOR ALTERATIONS - PHASE 3**  
 FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

DATE 02/01/2022	DRAWN JH	DESIGNED NFZ	CHECKED NFZ	COMM. NO. 684
	PARTIAL DEMOLITION PLANS - AREAS 'A' & 'B'			

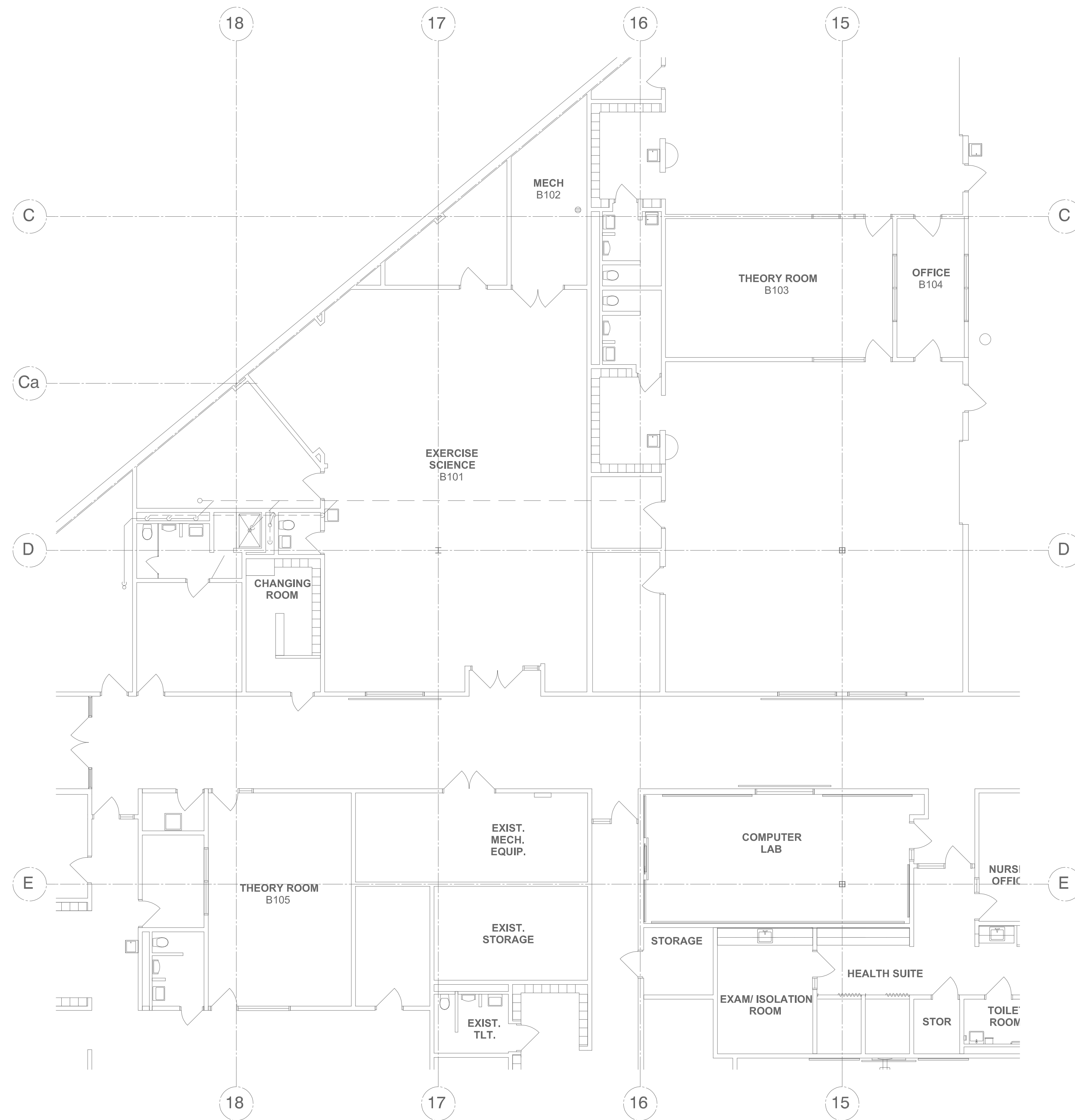


**PARTIAL DRAINAGE PLAN - AREA 'A'**

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

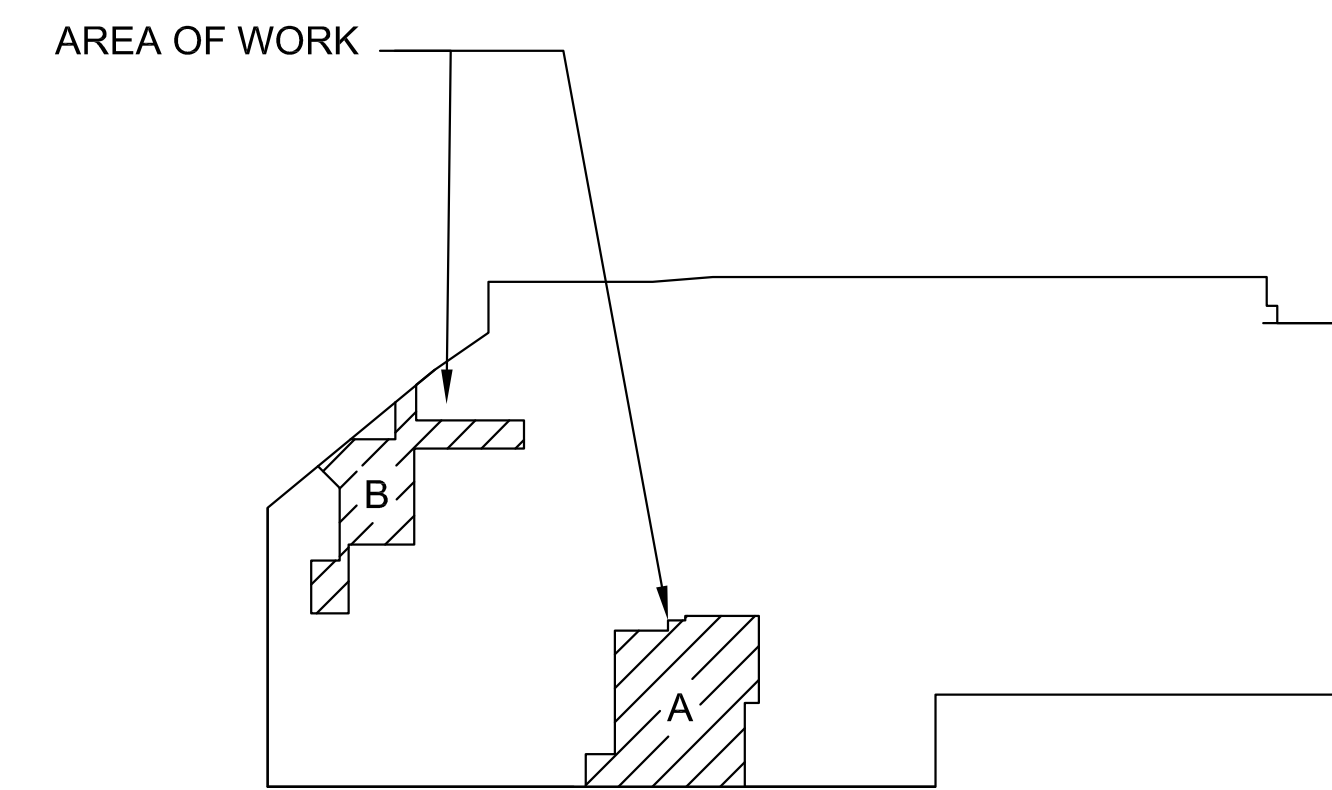
**KEYNOTES:**

- 1. REWORK EXISTING WASTE AND VENT TO SERVE NEW ELECTRIC WATER COOLER. CUT AND PATCH WALL AS REQUIRED PER GENERAL DEMOLITION NOTES.
- 2. REWORK EXISTING WASTE PIPING TO SERVE NEW SEMI-CIRCULAR WASH FOUNTAIN. CUT AND PATCH WALL AS REQUIRED PER GENERAL DEMOLITION NOTES.
- 3. CONNECT NEW 2" WASTE FROM NEW EEW-1 TO EXISTING WASTE PIPING SERVING ELECTRIC WATER COOLER. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD. CUT AND PATCH WALL AS REQUIRED PER GENERAL DEMOLITION NOTES.
- 4. RACK WASTE PIPING ALONG WALL AND ROUTE BENEATH ELECTRIC WATER COOLER.
- 5. CONNECT NEW 4" RWC TO EXISTING STORM DRAINAGE IN CEILING SPACE. VERIFY EXACT SIZE, LOCATION AND INVERT OF CONNECTION POINT IN FIELD.
- 6. CONNECT NEW 4" RWC TO EXISTING STORM DRAINAGE EXITING THE STRUCTURE. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD. COORDINATE DROP LOCATION WITH GARAGE DOOR HARDWARE AND WELDING EQUIPMENT ALONG WALL.



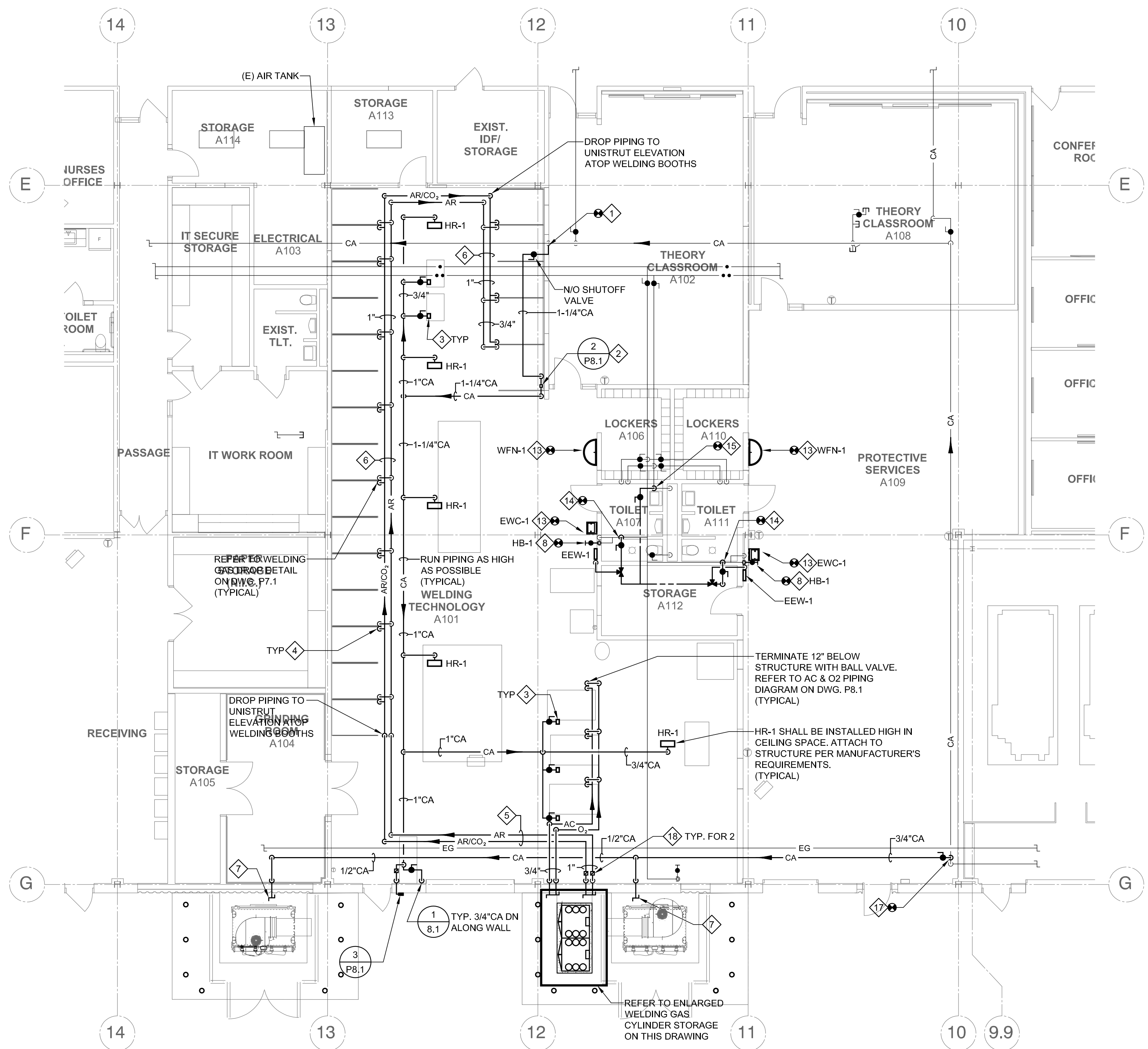
**PARTIAL DRAINAGE PLAN - AREA 'B'**

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

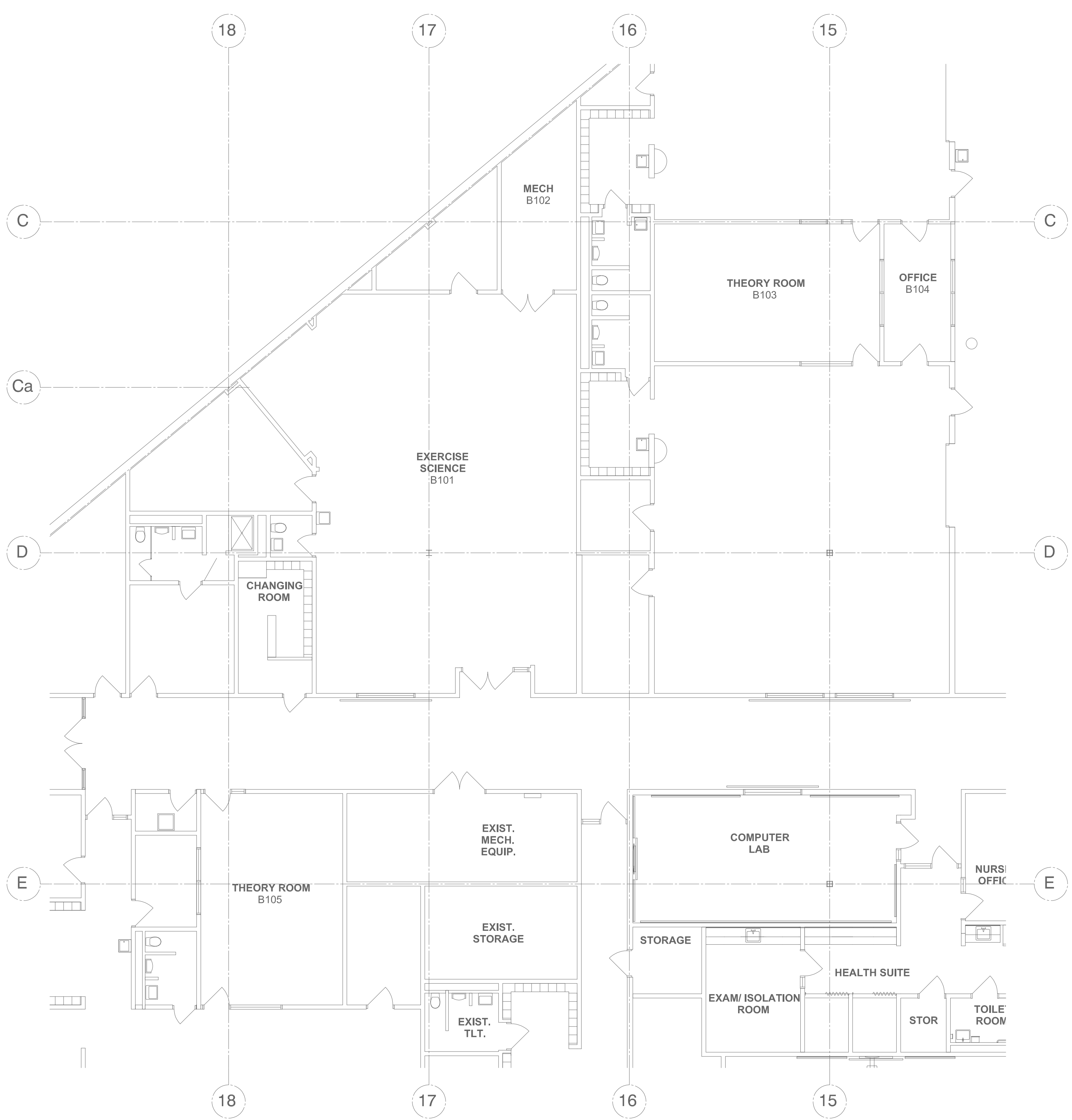


**KEY PLAN**  
NOT TO SCALE

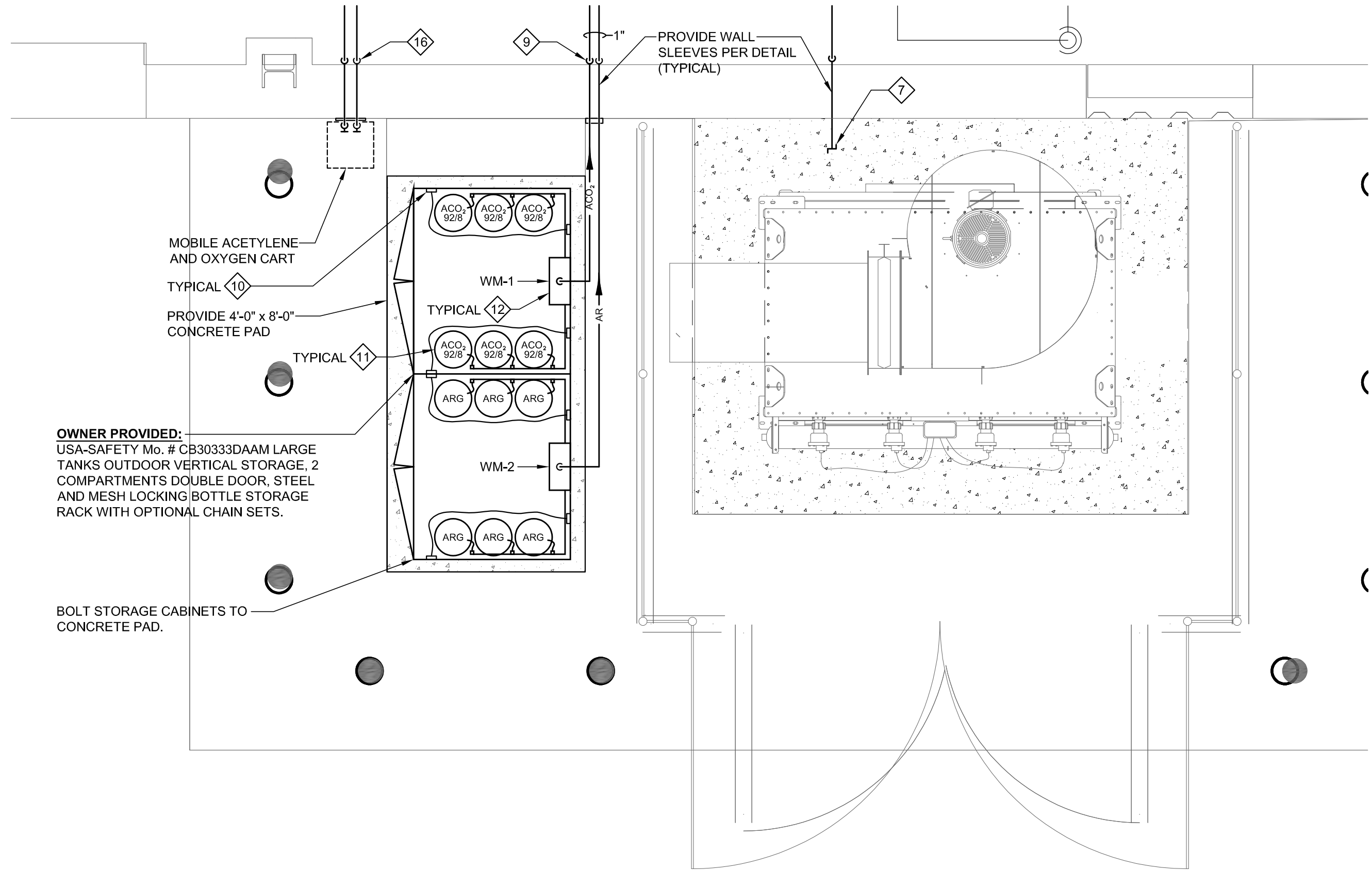
PARTIAL DRAINAGE PLANS - AREAS 'A' & 'B'	Drawn	JH	Checked	NEZ	Comm. no.	084
	Date	02/11/2022	Designed	NEZ		



**PARTIAL SUPPLY PLAN - AREA 'A'**  
 Scale: 1/8" = 1'-0"



**PARTIAL SUPPLY PLAN - AREA 'B'**  
 Scale: 1/8" = 1'-0"



**ENLARGED WELDING GAS CYLINDER STORAGE**  
 Scale: 1/8" = 1'-0"

**KEYNOTES:**

1. CONNECT NEW 1-1/4"CA TO EXISTING COMPRESSED AIR IN CEILING SPACE. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD.
2. PROVIDE 1-1/4"CA DROP DN ALONG WALL TO SOLENOID SHUT-OFF VALVE ASSEMBLY.
3. PROVIDE 3/4"CA QUICK CONNECTION OUTLET. SUPPORT FROM ROOF STRUCTURE. COORDINATE HOSE LENGTH AND SIZE WITH EXACT EQUIPMENT MANUFACTURER'S REQUIREMENTS IN FIELD.
4. DROP 1/2"ARGON AND 1/2"ARGON/CARBON DIOXIDE TO APPROXIMATELY 48" AFF. TERMINATE WITH BALL VALVE, PRESSURE REGULATOR AND DRIP LEG. (TYPICAL)
5. INSTALL WELDING GAS PIPING THRU STRUCTURE AND ABOVE EXISTING GARAGE DOOR. COORDINATE EXACT ROUTING IN FIELD.
6. ARGON AND ARGON/CARBON DIOXIDE PIPE LOCATION SHOWN IS FOR CLARITY ONLY. PIPING SHALL BE RACKED VERTICALLY ALONG UNISTRUT ALONG TOP OF WELDING BOOTHS. COORDINATE EXACT ROUTING IN FIELD.
7. 1/2"CA FOR DUST COLLECTOR. P.C. SHALL MAKE FINAL CONNECTION AND TERMINATE WITH BALL VALVE AND DRIP LEG. VERIFY EXACT LOCATION OF CONNECTION POINT IN FIELD.
8. REWORK EXISTING COLD WATER SUPPLY PIPING TO SERVE NEW HOSE BIBB. CUT AND PATCH AS REQUIRED PER GENERAL DEMOLITION NOTES.
9. 1"ARGON AND 1"ARGON/CARBON DIOXIDE RACKED VERTICALLY ALONG WALL.
10. P.C. SHALL PROVIDE RESTRAINTS FOR FULL WELDING CYLINDERS PER REQUIREMENTS OF NFPA AND OSHA. COORDINATE LOCATION WITH OWNER AND EXTERIOR STORAGE CABINETS.
11. FULL ARGON 92% / CO2 8% - A2C122 CYLINDERS.
12. MOUNT MANIFOLDS TO STORAGE CAGE WALL. CUT HOLES IN STORAGE CABINET AS REQUIRED TO RUN PIPING. COORDINATE EXACT QUANTITY, SIZE AND LOCATIONS IN FIELD.
13. REWORK EXISTING SUPPLY PIPING AS REQUIRED TO SERVE NEW FIXTURE. CUT AND PATCH EXISTING WALL AS REQUIRED PER GENERAL DEMOLITION NOTES.
14. CONNECT NEW 1/2"COLD WATER TO EXISTING SUPPLY PIPING IN CEILING SPACE. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD.
15. CONNECT NEW 1/2"HOT WATER TO EXISTING SUPPLY PIPING IN CEILING SPACE. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD.
16. 3/4" ACETYLENE AND 3/4" OXYGEN RACKED VERTICALLY ALONG WALL.
17. CONNECT NEW 3/4"CA TO EXISTING COMPRESSED AIR IN CEILING SPACE. VERIFY EXACT SIZE AND LOCATION OF CONNECTION POINT IN FIELD.
18. PROVIDE SOLENOID VALVE IN PIPING FOR EACH WELDING SERVICE. SOLENOID VALVES SHALL BE ASCO, NORMALLY CLOSED, GENERAL PURPOSE, 120 VOLT AC, SUITABLE FOR THE LINES IN WHICH THEY ARE TO BE INSTALLED. POWER WIRING FOR THE VALVES SHALL BE BY THE EC LOW VOLTAGE WIRING SHALL BE BY THE PC.

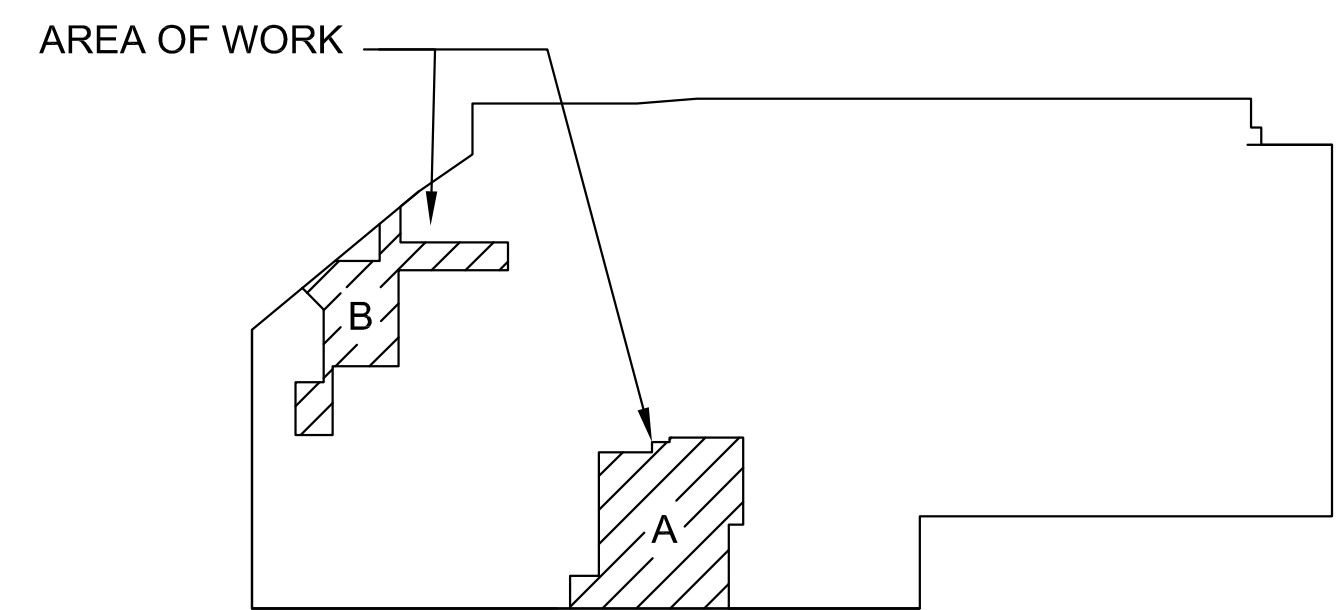
**WELDING GAS LEGEND**

AR	ARGON
AR/CO2	ARGON/CARBON DIOXIDE - (92/8 MIXTURE)
O2	OXYGEN
AC	ACETYLENE

**WELDING GAS SCHEDULE**

(REFER TO PLUMBING FIXTURE AND EQUIPMENT SCHEDULE ON DWG. P8.1)

(WM-1) ARGON/CARBON DIOXIDE AUTOMATIC CHANGE-OVER MANIFOLD  
 (WM-2) ARGON AUTOMATIC CHANGE-OVER MANIFOLD



**KEY PLAN**  
 NOT TO SCALE

**INTERIOR ALTERATIONS - PHASE 3**

FOR THE  
**EASTERN CENTER for ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

PARTIAL SUPPLY PLANS - AREAS 'A' & 'B'		comm. no.	684
designed	JH	checked	NFZ
drawn	JH	approved	NFZ
date	02/01/2022		

LVE - 21146

**PLUMBING FIXTURE SCHEDULE**

**ELECTRIC WATER COOLER (EWC-1)**

ELKAY, Mo. LVRC8WSK, WALL MOUNT, SINGLE ADA COOLER, EZH2O BOTTLE FILLING STATION, VANDAL RESISTANT, FILTERED, STAINLESS STEEL WITH ALL STANDARD EQUIPMENT. PROVIDE:  
 a. PVC P-TRAP AS REQUIRED WITH CLEANOUT AND WATER SUPPLY SHUT-OFF VALVE.  
 b. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS. INSTALL UNIT AT ADULT ADA HEIGHT IN ACCORDANCE WITH THE MANUFACTURER.

**WASHFOUNTAIN (WFN-1)**

BRADLEY, Mo. SN2004A-ASTA-TMA-LSD-BS SENTRY, STAINLESS STEEL, 54" SEMI-CIRCULAR, 4 STATION, ADA COMPLIANT WITH ALL STANDARD EQUIPMENT INCLUDING VOLUME CONTROL VALVE, COMBINATION STOP STRAINER AND CHECK VALVES, LIQUID SOAP DISPENSER, THERMOSTATIC MIXING VALVE.

**HOSE BIBB (HB-1)**

WOODFORD, Mo. 24-C-BR ANTI-SIPHON ROUGH BRASS WALL FAUCET WITH 3/4" HOSE THREAD ON VACUUM BREAKER OUTLET AND OPTIONAL METAL WHEEL HANDLE AND LOOSE TEE KEY. INSTALL UNITS APPROXIMATELY 24" ABOVE FINISHED FLOOR UNLESS DIRECTED OTHERWISE.

**EMERGENCY EYE/FACEWASH (EEW-1)**

HAWS MODEL No. 7656WCSM EYEWASH UNIT WITH AXION MSR EYE/FACE WASH HEAD WITH INVERTED DIRECTIONAL LAMINAR FLOW FOR ZERO VERTICAL VELOCITY SUPPLIED BY AN INTEGRAL 4.2 GPM FLOW CONTROL, SURFACE MOUNTED 18 GAUGE, TYPE 304 STAINLESS STEEL CABINET FOR WHEELCHAIR ACCESSIBILITY AND POLISHED CHROME-PLATED BRASS PULL-DOWN VALVE WITH UNIVERSAL SIGN. VERIFY EXACT LOCATION ON WALL WITH OWNER. PROVIDE HAWS Mo. 9201EW AXION LEAD FREE THERMOSTATIC MIXING VALVE IN CEILING SPACE, COORDINATE LOCATION WITH FLOOR PLANS.

**HOSE REEL (HR-1)**

REELCRAFT HEAVY DUTY SPRING RETRACTABLE HOSE REEL, MODEL No. HD76070 OLP, 3/8" DIAMETER HOSE, 70 FT. HOSE LENGTH. VERIFY MANUFACTURER OF HOSE REELS AND AIR COUPLINGS WITH THE ARCHITECT AND OWNER.

**MANIFOLDS AS MANUFACTURED BY WESTERN ENTERPRISES**

**ARGON (AR) - PART #BHL-345**, 3 x 3 STAGGERED CONFIGURATION AUTOMATIC SWITCHOVER MANIFOLD (CGA-880), WALL MOUNTED WITH ALL STANDARD EQUIPMENT INCLUDING PRESSURE GAUGES, RED/GREEN STATUS LIGHTS ON FRONT OF CABINET, 115/24 VAC POWER SUPPLY WITH DUAL DRY CONTACTS FOR REMOTE CHANGEOVER ALARM FUNCTION, RIGHT AND LEFT BRASS HEADERS CONFIGURED WITH STAGGERED 5" ON CENTERS BETWEEN CYLINDERS AND INCLUDES MASTER SHUT-OFF VALVES, HEADER VALVES FOR EACH CYLINDER AND STAINLESS STEEL FLEXIBLE PIGTAILS WITH CHECK VALVES. PROVIDE INTEGRAL PRESSURE REDUCING WITHIN MANIFOLD SYSTEM, DELIVERY PRESSURE: 30-125 PSIG.

**ARGON/CARBON DIOXIDE (AR/CO2) - PART #BHL-345-DDC**, 3 x 3 STAGGERED CONFIGURATION AUTOMATIC SWITCHOVER MANIFOLD FOR 50% ARGON/50% CARBON DIOXIDE MIXER GASES (CGA-880), WALL MOUNTED WITH ALL STANDARD EQUIPMENT INCLUDING PRESSURE GAUGES, RED/GREEN STATUS LIGHTS ON FRONT OF CABINET, 115 VAC, 500 SCFH INTERNAL GAS HEATER TO PREVENT REGULATOR FREEZE-UPS, 115/24 VAC POWER SUPPLY WITH DUAL DRY CONTACTS FOR REMOTE CHANGEOVER ALARM FUNCTION, RIGHT AND LEFT BRASS HEADERS CONFIGURED WITH STAGGERED 5" ON CENTERS BETWEEN CYLINDERS AND INCLUDES MASTER SHUT-OFF VALVES, HEADER VALVES FOR EACH CYLINDER AND STAINLESS STEEL FLEXIBLE PIGTAILS WITH CHECK VALVES. PROVIDE INTEGRAL PRESSURE REDUCING WITHIN MANIFOLD SYSTEM, DELIVERY PRESSURE: 30-125 PSIG. PROVIDE INTEGRAL HEATER AND EXPLOSION PROOF.

**REMOTE AUDIO/VISUAL**

INSTALLATION OF ALL MANIFOLDS, PIPING AND MISCELLANEOUS APPURTENANCES SHALL BE IN STRICT ACCORDANCE WITH ALL MANUFACTURER'S REQUIREMENTS.

**CONTACT AIRGAS USA**

**PLUMBING FIXTURE CONNECTIONS**

ITEM NO.	FIXTURE	MINIMUM PIPING CONNECTIONS					
		TRAP & TRAP ARM	WASTE	VENT	C.W.	H.W.	T.W.
EWC-1	ELECTRIC WATER COOLER (WALL HUNG)	1-1/2"	2"	1-1/2"	1/2"	-	-
WFN-1	WASHFOUNTAIN (SEMI-CIRCULAR-ADA)	-	2"	2"	3/4"	3/4"	-
EEW-1	EMERGENCY EYEWASH (WALL MTD)	1-1/4"	1-1/4"	1-1/4"	-	-	1/2"
HB-1	HOSE BIBB	-	-	-	3/4"	-	-

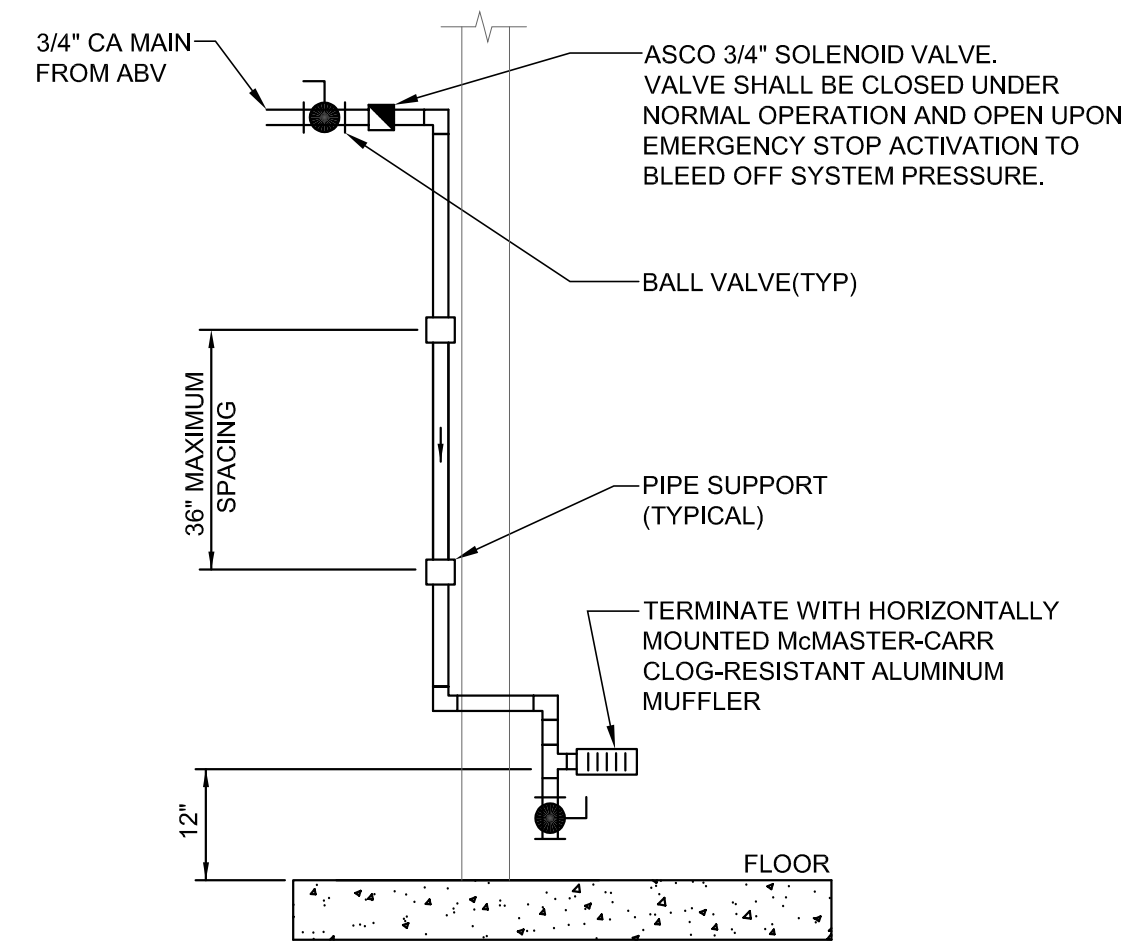
1. WET VENT OR COMBINATION DRAIN AND VENT. REFER TO FLOOR PLAN.
2. CONNECTION SIZES ARE TO BE AS SHOWN ON SCHEDULE, EXCEPT AS OTHERWISE NOTED OR SHOWN ON PLANS.

**WATER HAMMER ARRESTER SCHEDULE**

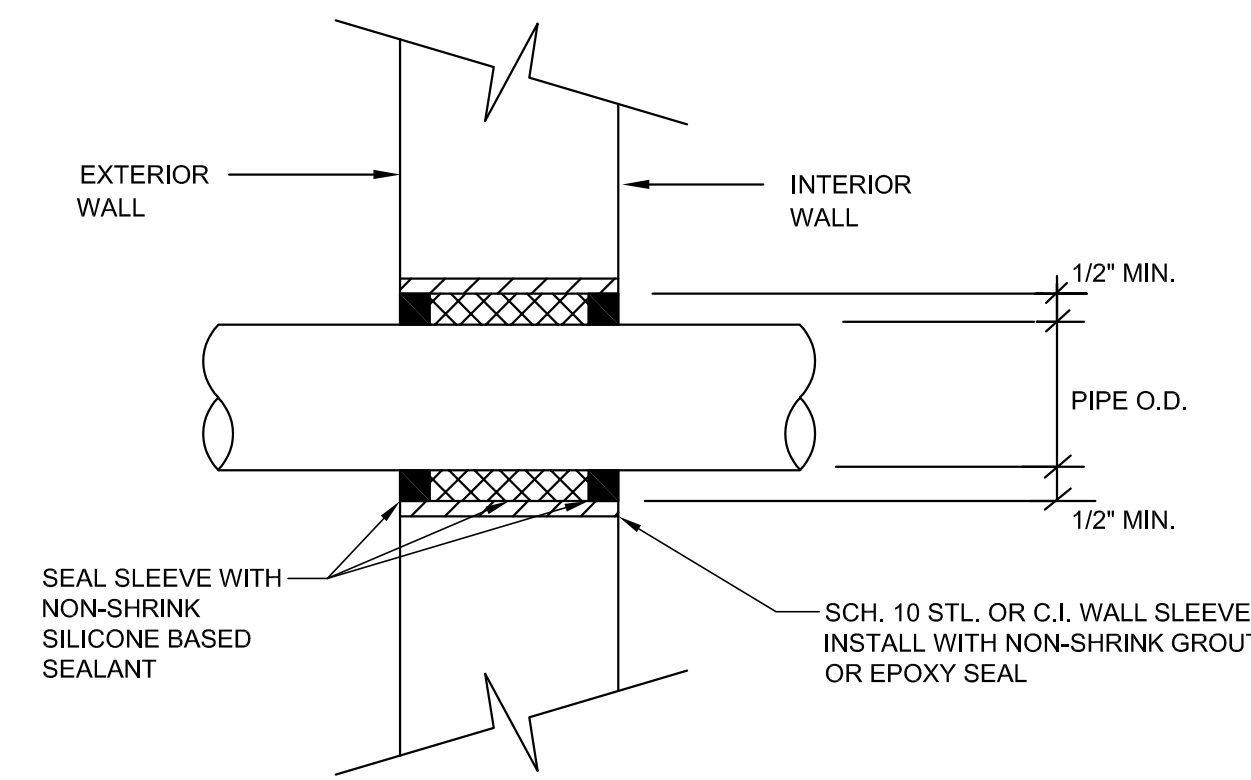
SYMBOL	FIXTURE UNITS	SMITH FIGURE NO.	SYMBOL	FIXTURE UNITS	SMITH FIGURE NO.
A	1-11	5005	D	61-113	5030
B	12-32	5010	E	114-154	5040
C	33-40	5020	F	155-330	5050

**WELDING GENERAL NOTES**

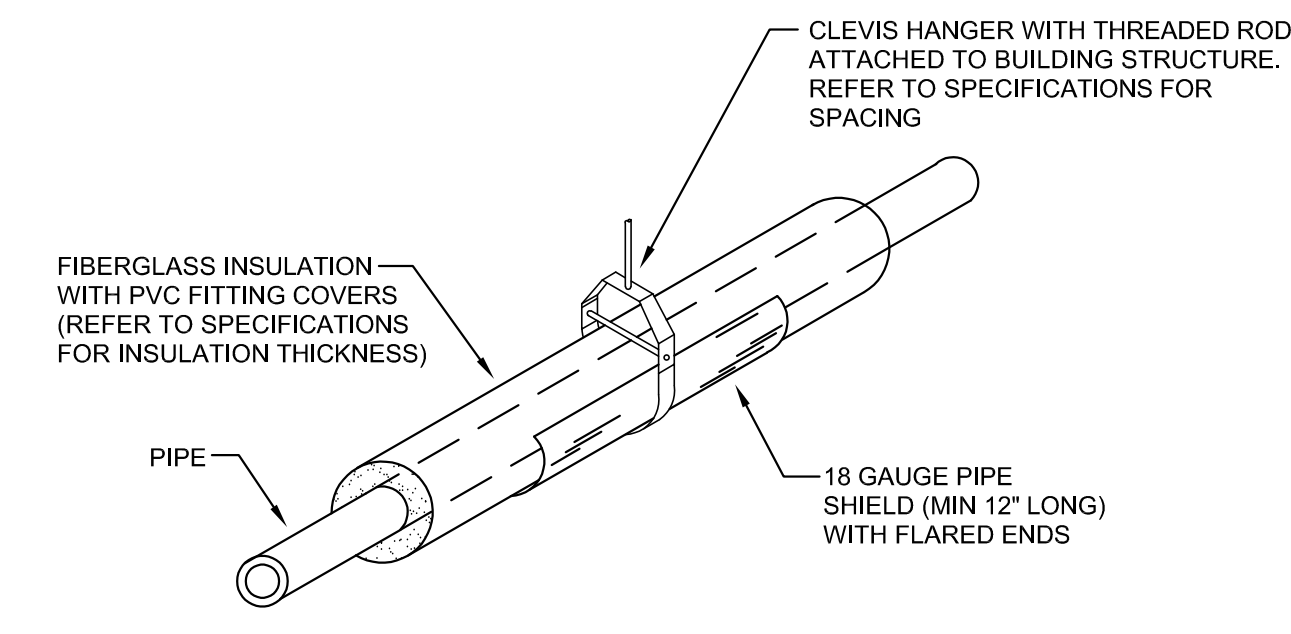
1. WELDING GAS CYLINDERS SHALL BE PROVIDED BY THE OWNER.
2. PROVIDE RESTRAINTS FOR BOTTLES IN ACCORDANCE WITH NFPA AND OSHA REQUIREMENTS.
3. ALL BRANCHES SHALL TEE OFF TOP OF PIPE MAIN.
4. WIRING FOR WELDING GAS MANIFOLDS IS BY THE EC. COORDINATE WORK WITH EC.
5. PROVIDE A BALL VALVE IMMEDIATELY UPSTREAM OF QUICK CONNECT TERMINATION (TYPICAL FOR ALL SERVICES).
6. ABOVE GRADE OXYGEN, ARGON, ARGON/CO2 AND CO2 PIPING SHALL BE COPPER TUBE OF SIZE INDICATED. PIPE AND FITTING SHALL BE FACTORY CLEANED, SEALED AND LABELED FOR OXYGEN SERVICE. WALL THICKNESS SHALL BE TYPE 'K'. FITTINGS SHALL BE WROUGHT COPPER SOLDER JOINT WITH SILVER BRAZING ALLOY. ABOVE GRADE ACETYLENE PIPING SHALL BE SCHEDULE 40 BLACK STEEL PIPE FACTORY CLEANED, SEALED AND LABELED FOR ACETYLENE SERVICE. COPPER PIPING IS NOT PERMITTED FOR ACETYLENE PIPING, VALVES AND FITTINGS. INTERIOR AND EXTERIOR ACETYLENE PIPING SHALL BE PAINTED WITH (2) COATS OF RUST INHIBITIVE PAINT. COLOR AS SELECTED BY ARCHITECT. PERFORM FIELD TESTS AND INSPECTIONS AND REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST.
7. COMPRESSED AIR PIPING SYSTEM - SCHEDULE 40, STEEL PIPE CONFORMING TO ASTM A53, TYPE E OR S, GRADE B, BLACK OR HOT-DIP ZINC COATED WITH ENDS THREADED ACCORDING TO ASME B1.20.1, PROVIDE MALLEABLE-IRON THREADED FITTINGS (ASME B16.3, CLASS 150 OR 300) AND MALLEABLE-IRON THREADED UNIONS (ASME B16.39, CLASS 150 OR 300). ALL BALL GLOBE AND CHECK VALVES SHALL COMPLY WITH REQUIREMENTS IN DIVISION 22, SECTION "GENERAL-DUTY VALVES FOR PLUMBING PIPING". COMPLY WITH REQUIREMENTS IN DIVISION 22, SECTION "HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT" FOR PIPE HANGERS AND SUPPORT DEVICES. EXTERIOR COMPRESSED AIR PIPING SHALL BE PAINTED WITH (2) COATS OF RUST INHIBITIVE PAINT. COLOR AS SELECTED BY ARCHITECT. PERFORM FIELD TESTS AND INSPECTIONS AND REPAIR LEAKS AND RETEST UNTIL NO LEAKS EXIST. INSPECT FILTER AND PRESSURE REGULATOR FOR PROPER OPERATION AND PREPARE TEST REPORTS.
8. WELDING GAS SYSTEM SHALL BE IN COMPLIANCE WITH OSHA-STANDARD 1910.253, COMPRESSED GAS ASSOCIATION (CGA) - SAFE HANDLING OF COMPRESSED GASES, NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) AND INTERNATIONAL FIRE CODE (IFC).
9. WELDING VALVE SHALL BE FULL PORT STAINLESS STEEL THREADED AND 3 - PIECE FOR WELDING GAS WITH FLOATING BALL VALVE.



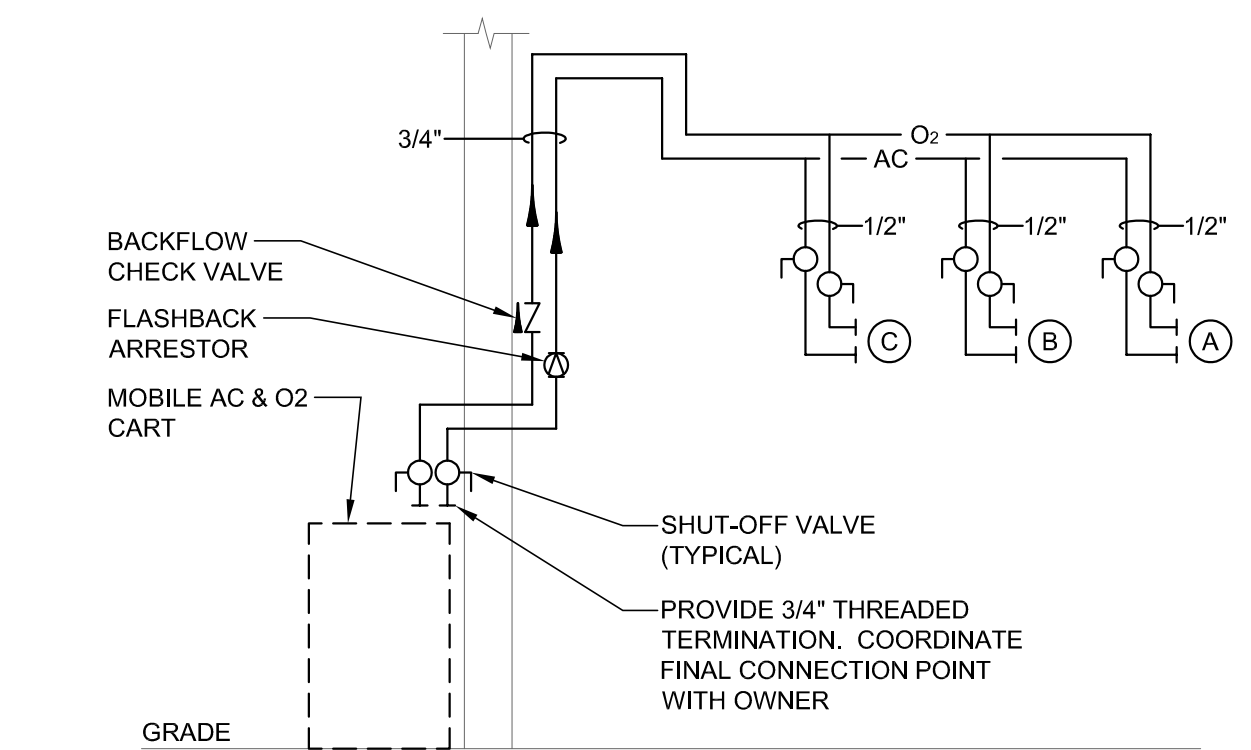
**3 COMPRESSED AIR PURGE ASSEMBLY**  
 P3.1 NO SCALE



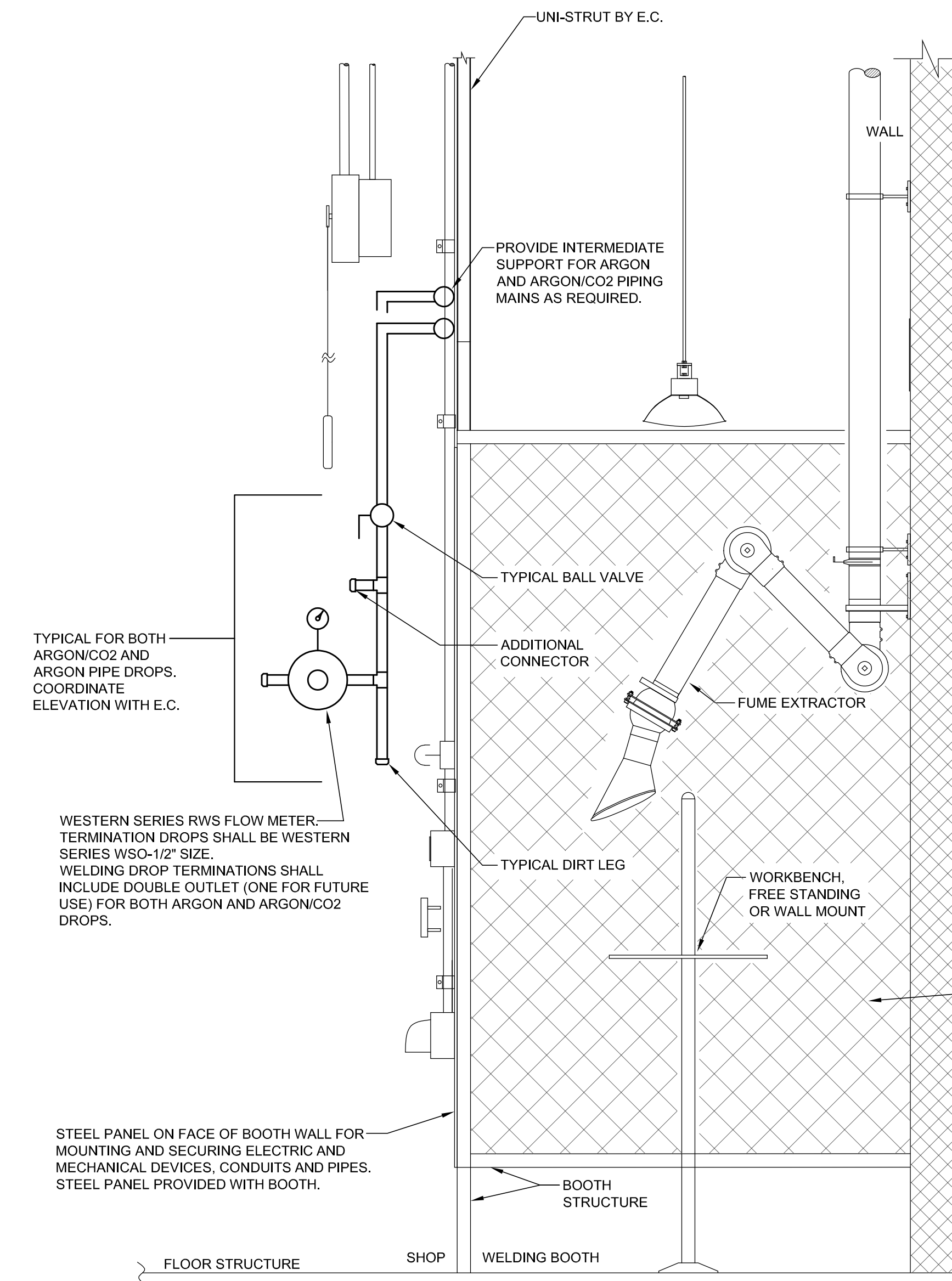
**EXTERIOR WALL SLEEVE DETAIL**  
 NOT TO SCALE



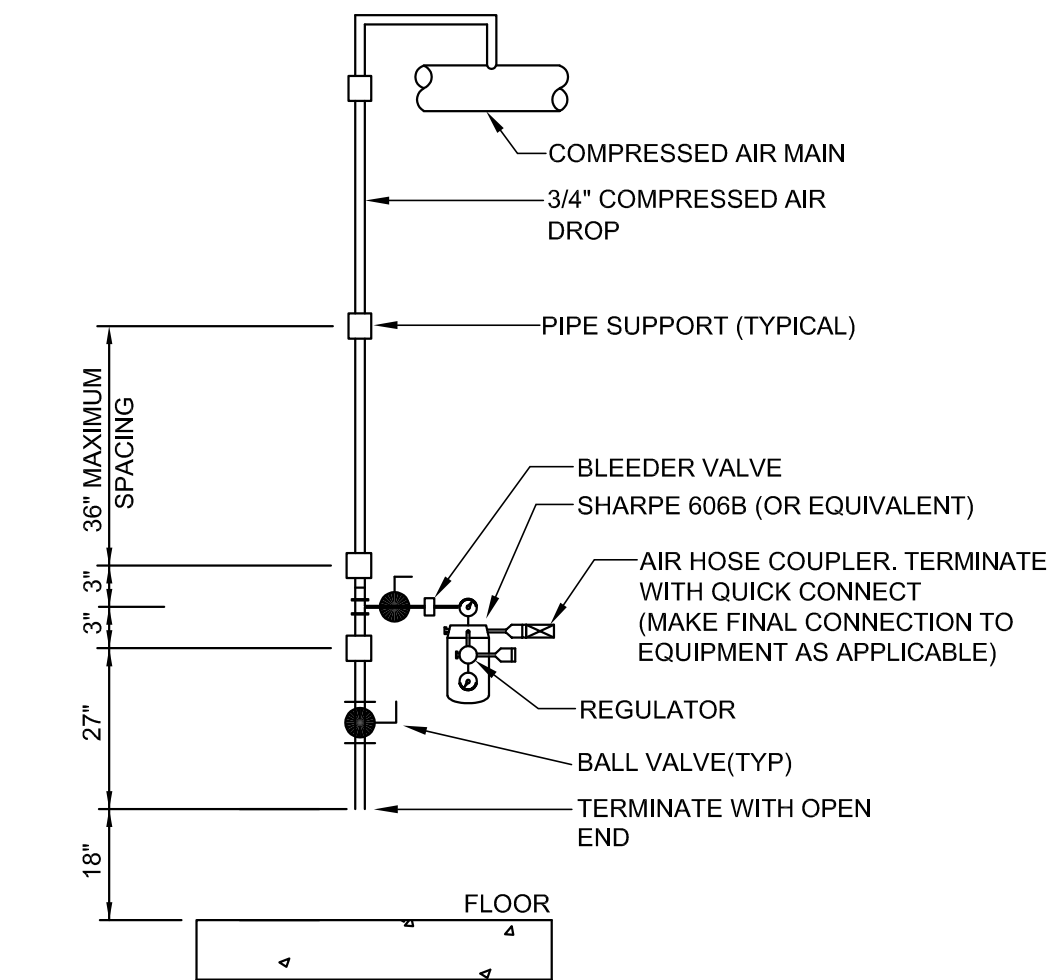
**TYPICAL PIPING HANGER DETAIL**  
 NO SCALE



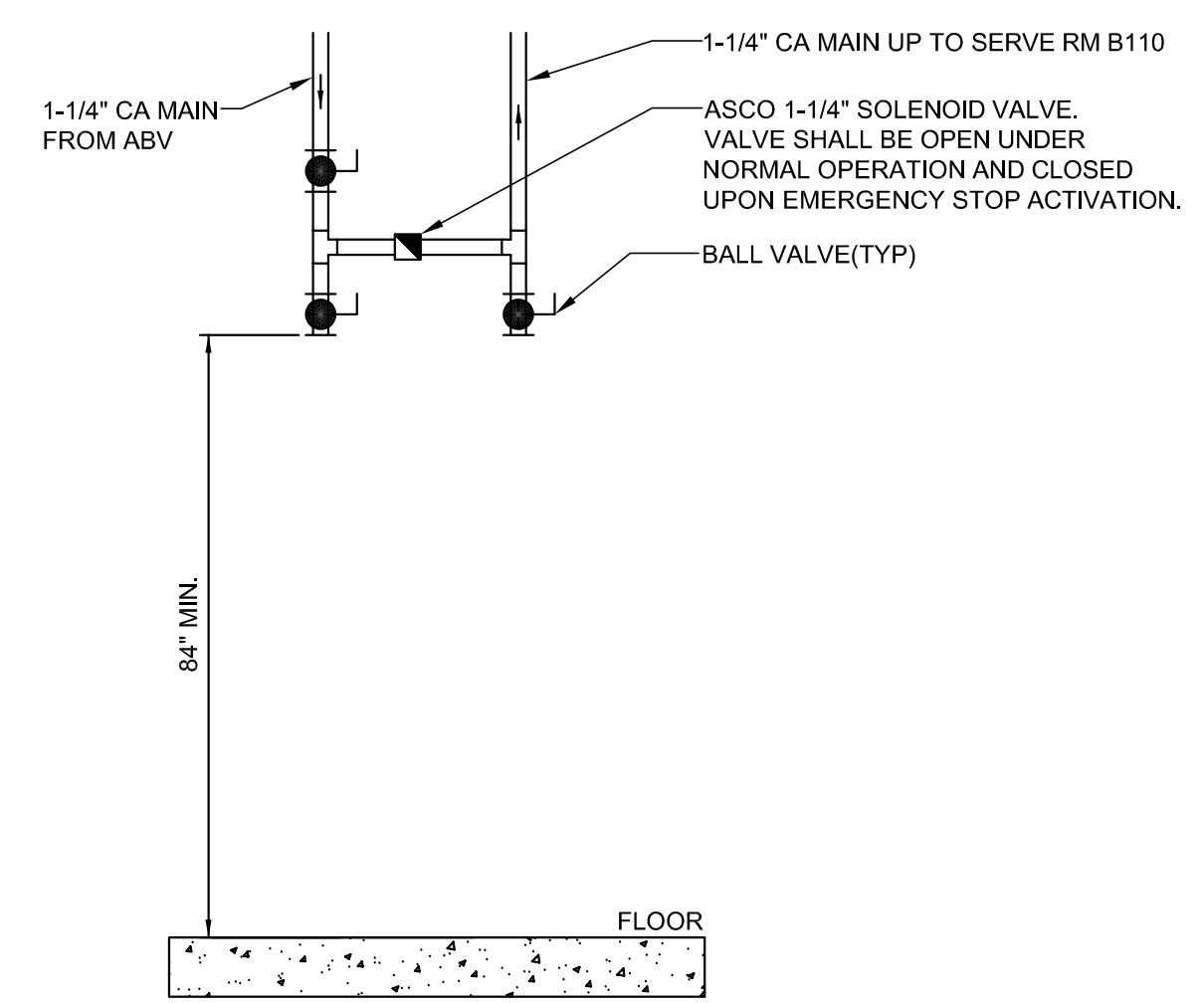
**AC & O2 PIPING DIAGRAM**  
 NO SCALE



**TYPICAL WELDING GAS DROP DETAIL**  
 NOT TO SCALE  
 NOTES:  
 ARGON AND ARGON/CO2 PIPE MAINS SHALL BE RACKED ALONG UNISTRUT BY P.C.



**1 COMPRESSED AIR DROP ALONG PERIMETER WALLS**  
 P3.1 NO SCALE



**2 COMPRESSED AIR SOLENOID DETAIL**  
 P3.1 NO SCALE

BRESLIN RIDYARD FADERO • ARCHITECTS • PLANNERS • ALLENTOWN PENNSYLVANIA

**INTERIOR ALTERATIONS - PHASE 3**  
 FOR THE  
**EASTERN CENTER FOR ARTS and TECHNOLOGY**  
 WILLOW GROVE, MONTGOMERY COUNTY, PENNSYLVANIA

**SCHEDULES & DETAILS**

dtb	02/11/2022	Drawn	JH	Checked	NFZ	Comm. no.	684
		Designed	NFZ				

LVE - 21146  
**P8.1**

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