

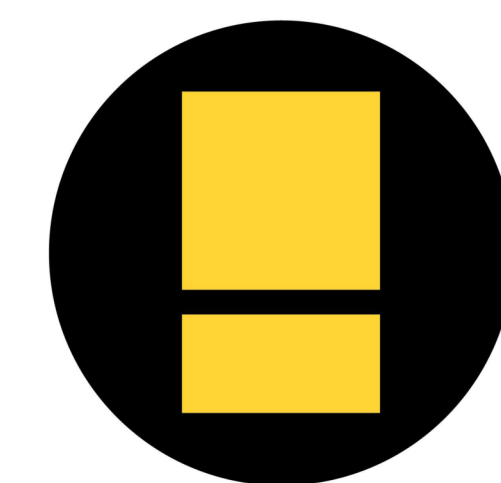


GREGORY ELEMENTARY SCHOOL - HVAC IMPROVEMENTS

RPS DISTRICT 205 PROJ #: 2400

4820 CAROL CT. ROCKFORD, IL 61108

IFB# 23-15



Larson & Darby Group

Architecture Engineering Interiors

BIDDING & CONSTRUCTION

Issued For

10-11-2022

Larson & Darby Group
Architecture Engineering Interiors



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ISSUED FOR:	DATE

DATE	10-11-2022
PROJECT NUMBER	32103-03
SHEET NUMBER	GO.0

PROJECT TEAM

CIVIL

ALL CIVIL DOCUMENTS ARE UNDER A SEPARATE COVER

LANDSCAPE

ALL LANDSCAPE DOCUMENTS ARE UNDER A SEPARATE COVER

ARCHITECTURAL

LARSON & DARBY GROUP
4949 HARRISON AVE, SUITE 100
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815.484.0739

STRUCTURAL

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PLUMBING

CS2 DESIGN GROUP
837 OAKTON STREET,
ELK GROVE, ILLINOIS

847.981.1800

FIRE PROTECTION

FIRE PROTECTION DOCUMENTS ARE SEALED BY THE FIRE PROTECTION CONTRACTOR AS THE DESIGNER OF RECORD

HEATING, VENTILATING AND AIR CONDITIONING

CS2 DESIGN GROUP
837 OAKTON STREET,
ELK GROVE, ILLINOIS

847.981.1800

ELECTRICAL

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SHEET INDEX

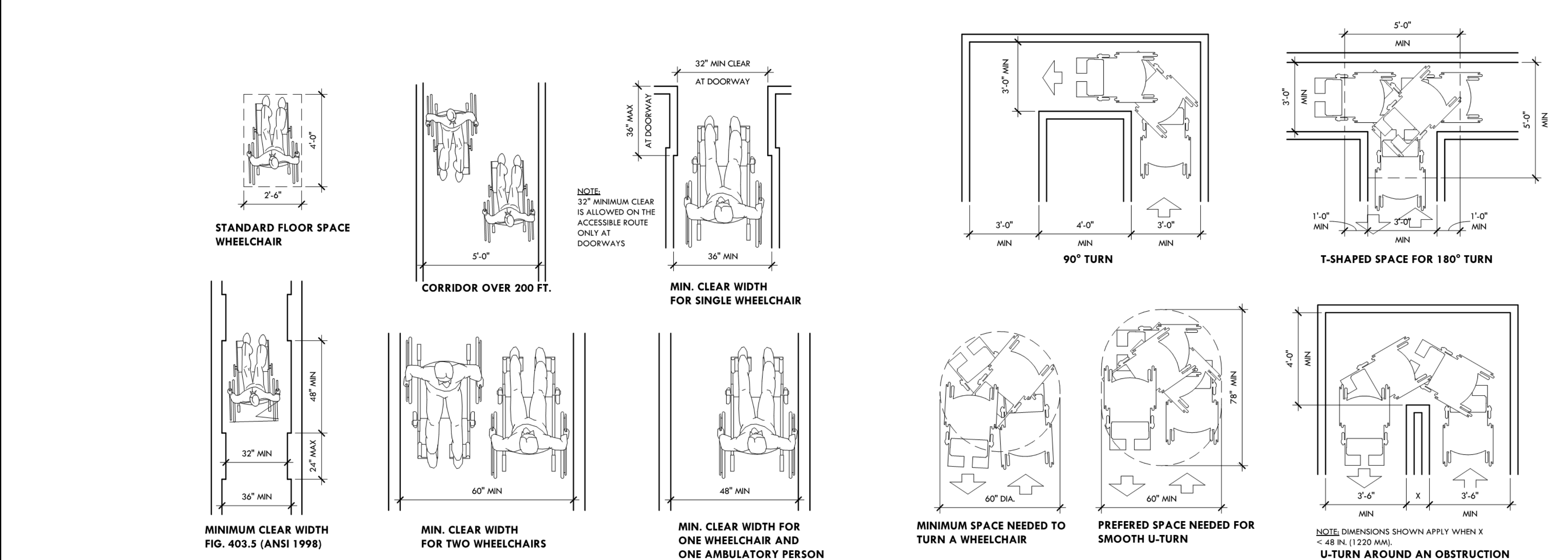
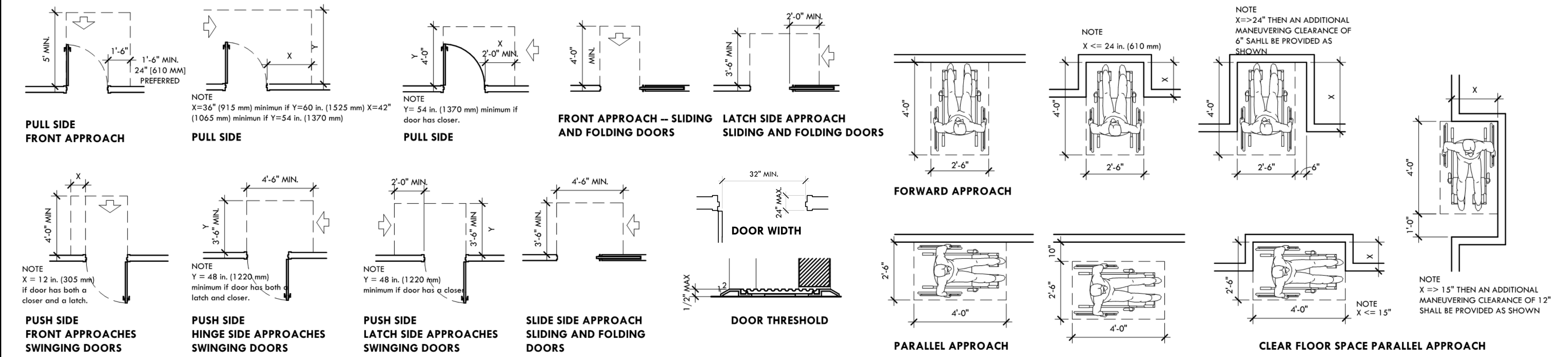
GENERAL	
G0.0	COVER SHEET
G0.1	PROJECT TEAM AND SHEET INDEX
G0.2	ABBREVIATIONS AND SYMBOLS
ARCHITECTURAL	
A1.1	OVERALL FIRST FLOOR PLAN
A1.2	FIRST FLOOR PLAN - AREA OF WORK
A1.3	ROOF PLAN
A8.1	PENETRATION DETAILS
PLUMBING	
P1.1	PLUMBING PLACEHOLDER
MECHANICAL	
MD1.1G	FIRST FLOOR HVAC DEMOLITION PLAN
MECHANICAL	
M1.1G	FIRST FLOOR HVAC PLAN
M1.2G	ROOF HVAC PLAN
M3.0	HVAC SCHEDULES
M3.1	HVAC SCHEDULES
M3.2	HVAC SCHEDULES
M4.0	HVAC DETAILS
M4.1	HVAC DETAILS
M4.2	HVAC DETAILS
M4.3	HVAC DETAILS
ME1.0	MECHANICAL / ELECTRICAL COORDINATION
ELECTRICAL	
E1.0G	FIRST FLOOR ELECTRICAL PLAN
E1.1G	FIRST FLOOR ELECTRICAL PLAN
E2.0G	ELECTRICAL PANEL AND RISER DIAGRAM
E3.0	ELECTRICAL NOTES, SYMBOLS, ABBREVIATIONS, DETAILS & SCHEDULE



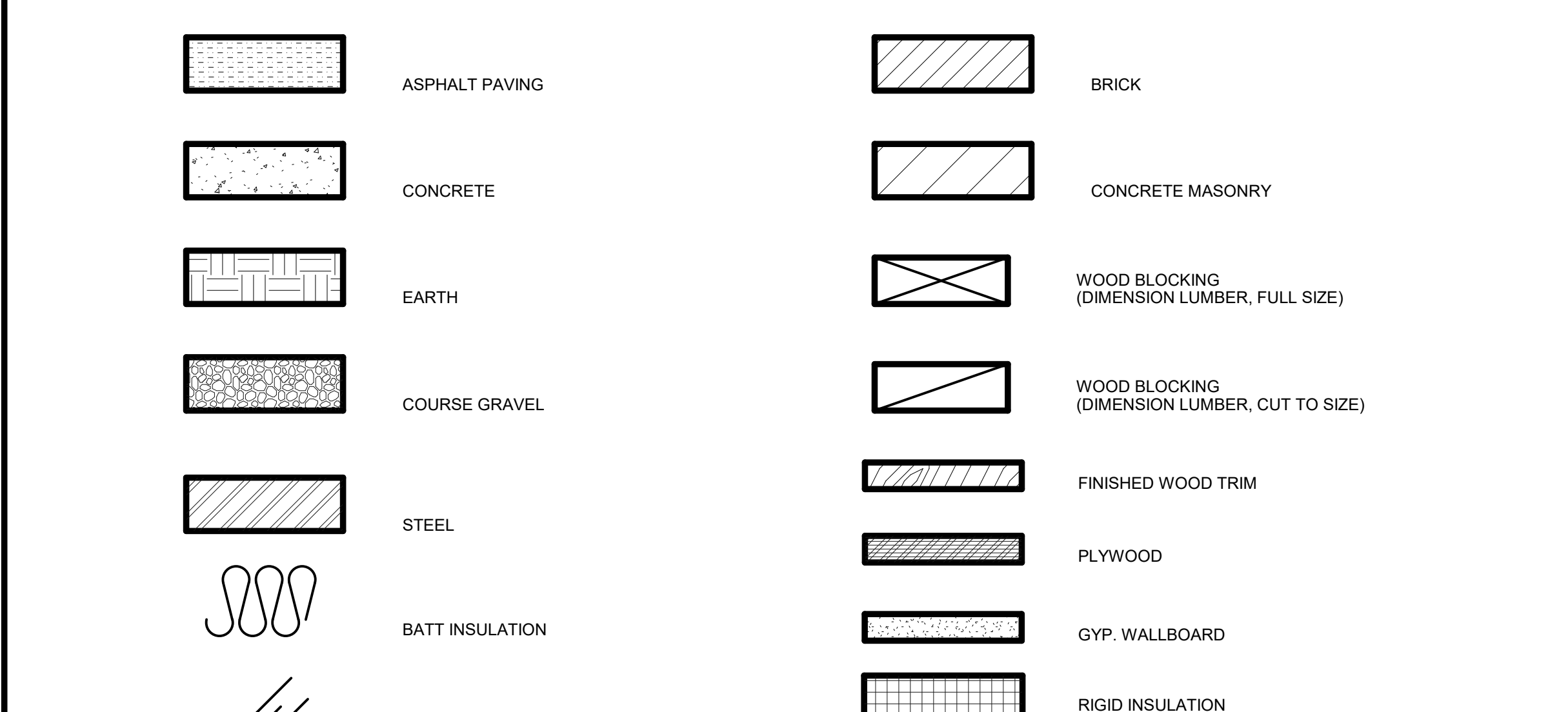
ABBREVIATIONS	
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A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	
AB	ANCHOR BOLT	CB	CATCH BASIN, CERAMIC BASE, CHALKBOARD	EA	EAST	GD	GUTTER, NATURAL GAS	KA	KILN DRIED, KNOCKED DOWN	PA	PAINT	SA	SOUTH	UA	UNDERCUT	UC	UNDERLATH	UN	UNLESS NOTED OTHERWISE	UR	URNAL
ACB	CEILING COORDINATING UNIT	CEB	CEMENTITIOUS BACKER BOARD	EAC	EACH	KIP	KILN DRIED, KNOCKED DOWN	KPC	PRECAST CONCRETE	PC	PRECAST CONCRETE	SAD	SUPPLY AIR	UC	UNDERCUT	UV	ULTRAVIOLET				
ACP	ACoustical CEILING PANEL	CC	CUBICLE CURTAIN	EB	EXPANSION BOLT	KIP	KILN DRIED, KNOCKED DOWN	PCF	POUNDS PER CUBIC FOOT	PCF	POUNDS PER CUBIC FOOT	SAD	SUPPLY AIR DIFFUSER	UR	URNAL						
ACT	ACoustical CEILING TILE	CD	COILING DOW	EF	EACH FACE, EXHAUST FAN	GAL	GALVANIC, GALVANIZE, GALVANIZED	KSF	KIPS PER SQUARE FOOT	KSF	KIPS PER SQUARE FOOT	SALV	SALVAGE	UV	ULTRAVIOLET						
ADJ	ADJUSTABLE, ADJUSTMENT	ED	ELECTRIC DRYER	EG	ELECTRIC GUTTER	ELB	ELECTRIC ELBOW	PCF	PORTLAND CEMENT FASTER	PCF	PORTLAND CEMENT FASTER	SAN	SANITARY								
A/E	ARCHITECT/ENGINEER	CG	CORNER GUARD	EFS	EXTERIOR INSULATION AND FINISH SYSTEM	G#HH	GRAB BAR (LENGTH IN INCHES)	KV	KILOVOLT	PE	PROFESSIONAL ENGINEER	SC	SOLID CORE	V	VOLT						
A/FF	AFTER FINISHED FLOOR	CI	CAST IRON, CURB INLET	EJ	EXPANSION JOINT	GC	GENERAL CONTRACTOR	kVA	KILOVOLT AMPERE	PL	PROPERTY LINE, PLATE	SCONC	SEALED CONCRETE	V	VOLT						
AGOR	AGGREGATE	CO	CONCRETE, CAST-IN-PLACE	EL	ELEVATION	GL	GROUND LAG	PLAM	PLASTIC LAMINATE	SCHMD	SCHIEDER	VA	VARIABLE AIR VOLUME	VA	VOLT AMPERE						
AHU	AUTHORITY HAVING JURISDICTION	CJ	CONSTRUCTION JOINT, CONTROL JOINT	ELAST	ELASTOMER	GFRG	GLASS FIBER-REINFORCED GYPSUM	GFRG	GLASS FIBER-REINFORCED GYPSUM	PLAS	PLASTER, PLASTIC	SCMJ	SOLID CONCRETE MASONRY UNIT	VAV	VARIABLE AIR VOLUME						
AHJ	AIR HANDLING UNIT	CL	CENTERLINE	ELEC	ELECTRIC, ELECTRICAL	GFRG	GLASS FIBER-REINFORCED GYPSUM	PLAS	PLASTER, PLASTIC	PLB	PLUMBING	SD	SOAP DISPENSER	VCT	VINYL COMPOSITION TILE						
AL, ALUM	ALUMINUM	CLG	CEILING	EW	ENTRANCE MAT	G/D	GUTTER / DOWNSPOUT	SE	STRUCTURAL ENGINEER	SDI	STEEL DECK INSTITUTE	VERT	VERTICAL	VERT	VERTICAL						
ALS	ARCHITECTURAL LOUVER	CLG HT	CEILING HEIGHT	EMER	EMERGENCY	GI	GALVANIZED IRON	FLV	PLYWOOD	SE	STRUCTURAL ENGINEER	VCT	VINYL COMPOSITION TILE	VERT	VERTICAL						
ALT	ALTERNATE	CLM	CONTRACT LIMIT LINE	EW	ELECTRICAL METALLIC TUBING	L	LAMINATE	PNL	PANEL	SECT	SECTION	VET	VINYL ENHANCED TILE	VET	VINYL ENHANCED TILE						
AMP	AMPERE	CLR	CLEAR	ENAM	ENAMEL	GPH	GALLONS PER HOUR	LEV	LAVATORY	POLY	POLYETHYLENE	SF	SQUARE FOOT (FEET)	VFD	VARIABLE FREQUENCY DRIVE						
AND	ANODIZED	COMP	COMPOSITE, COMPUTER	EP	EPOXY	EP	EPOXY	POS	POSITIVE	PORCL	PORCELAIN	SHT	SHEET	VIF	VINYL FIBER						
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	CW	CASEWORK/MILLWORK	EP	ELECTRICAL PANEL	EPDM	ETHYLENE PROPYLENE DIENE MONOMER	GYP	GAS-FREE WATER HEATER	PP	PUSH/PULL	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
APA	AMERICAN PLYWOOD ASSOCIATION	CMU	CONCRETE MASONRY UNIT	EPDM	ETHYLENE PROPYLENE DIENE MONOMER	EPDM	ETHYLENE PROPYLENE DIENE MONOMER	GYP	GAS-FREE WATER HEATER	PP	PUSH/PULL	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
APPROX	APPROXIMATE, APPROXIMATELY	EQ	EQUALIZER, CARBON MONOXIDE, CASED OPENING	EQ	EQUAL	EQ	EQUAL	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
ARCH	ARCHITECT	CJL	COLUMN	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
ASC	AFTER SUSPENDED CEILING	CONC	CONCRETE	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
ASTA	AMERICAN SOCIETY FOR TESTING AND MATERIALS	CONF	CONFERENCE	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AUTO	AUTOMATIC	CONN	CONNECTION	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AV	AUDIO VISUAL	COORD	COORDINATE	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AWC	AMERICAN WIRE GAUGE	COORD	COORDINATE	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AWI	ARCHITECTURAL WOODWORKING INSTITUTE	COORD	COORDINATE	EQ	EQUIPMENT	EQ	EQUIPMENT	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AWP	ACoustical WALL PANEL	CORR	CORRIDOR	EXP	EXPAND, EXPANSION, EXPOSED	EXP	EXPAND, EXPANSION, EXPOSED	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
AWW	AMERICAN WELDING SOCIETY	CPT	CONCRETE PIPE, CONTROL PANEL	EXP	EXPAND, EXPANSION, EXPOSED	EXP	EXPAND, EXPANSION, EXPOSED	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						
		CPT	CARPET	EXP	EXPAND, EXPANSION, EXPOSED	EXP	EXPAND, EXPANSION, EXPOSED	LL	LINE LOAD	PP	PUSH/PULL PLATE	SKY	SKYLIGHT	VOC	VOLATILE ORGANIC COMPOUND						

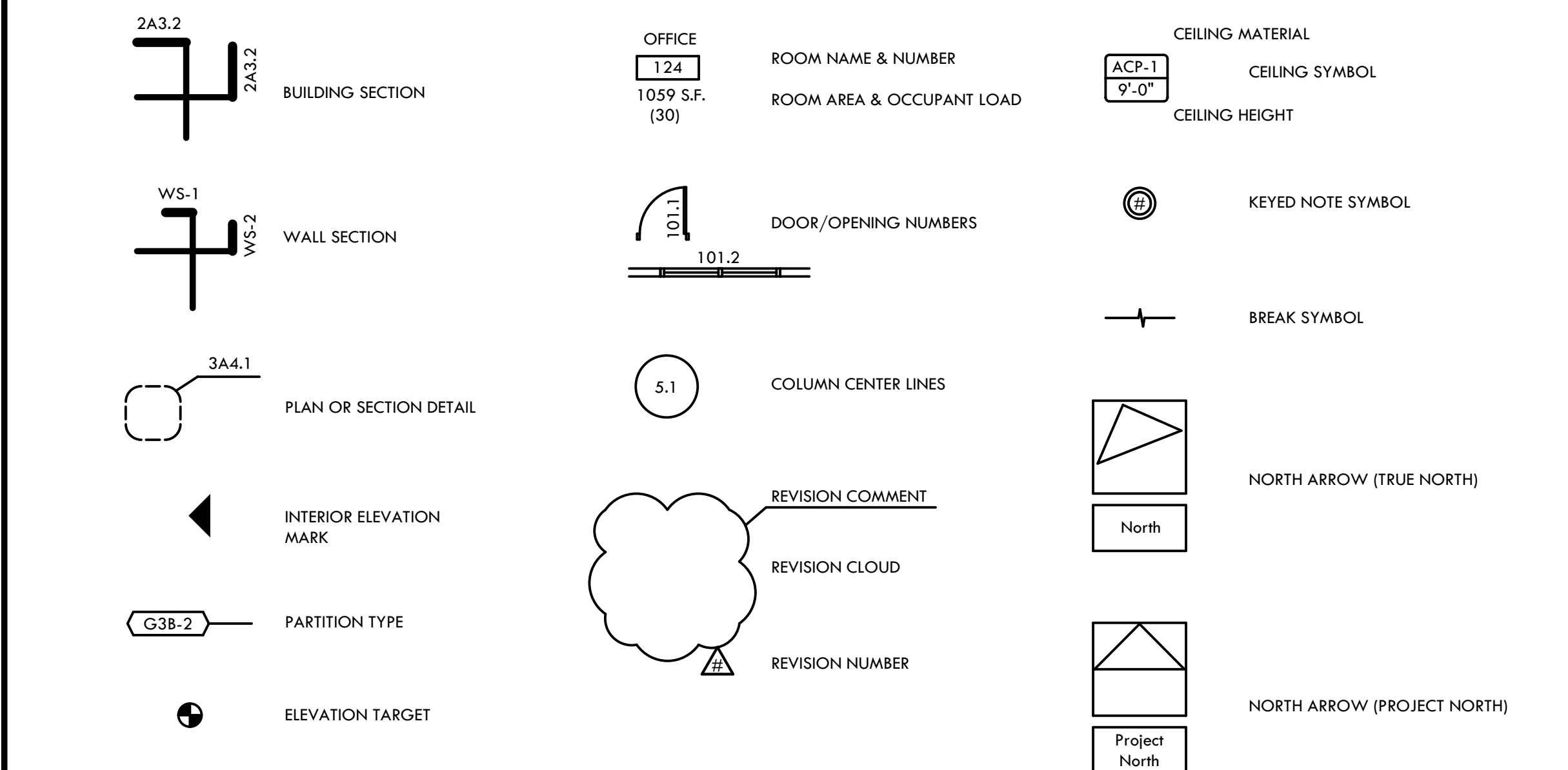
ACCESSIBILITY CLEARANCES	MATERIAL SYMBOLS
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MATERIAL SYMBOLS



SHEET SYMBOLS	
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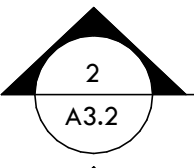

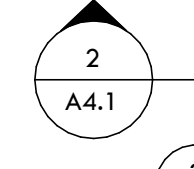
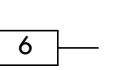
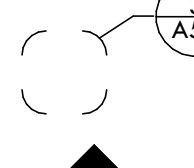

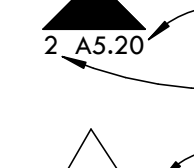
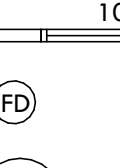
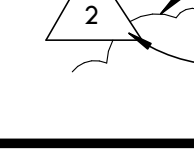
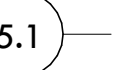


GENERAL NOTES - DEMOLITION

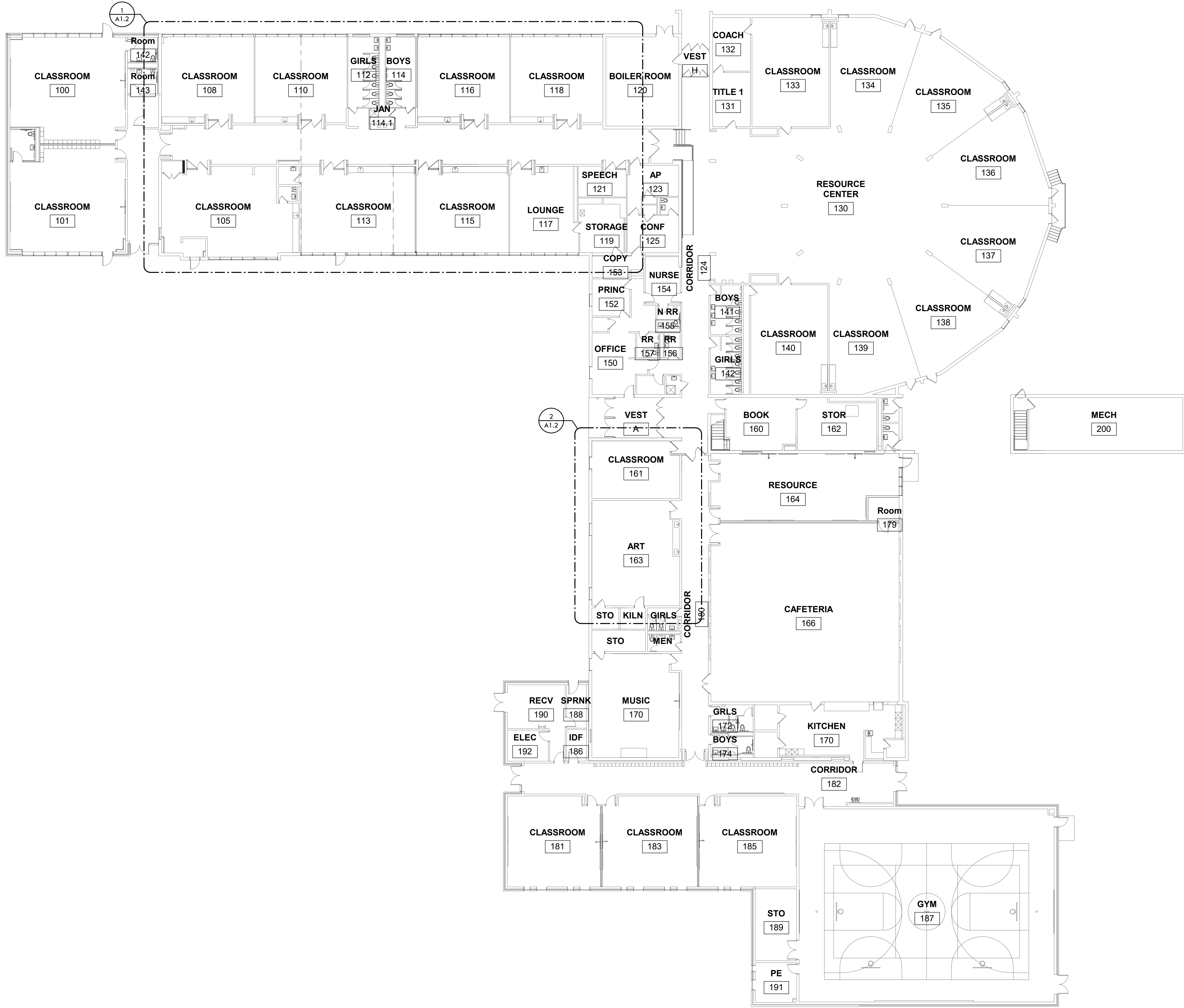
- BEFORE BEGINNING WORK AT THE SITE AND THROUGHOUT THE COURSE OF WORK, INSPECT AND VERIFY THE LOCATION AND CONDITION OF EVERY ITEM AFFECTED BY THE WORK UNDER THIS CONTRACT AND REPORT DISCREPANCIES TO THE ARCHITECT BEFORE BEGINNING WORK RELATED TO THAT BEING INSPECTED.
- BEFORE BEGINNING WORK AT THE SITE, INSPECT THE EXISTING BUILDING AND DETERMINE THE EXTENT OF EXISTING FINISHES, SPECIALTIES, EQUIPMENT, AND OTHER ITEMS WHICH MUST BE REMOVED AND REINSTALLED IN ORDER TO PERFORM THE WORK UNDER THIS CONTRACT.
- THE ARCHITECTURAL DRAWINGS SHOW PRINCIPLE AREAS WHERE WORK MUST BE ACCOMPLISHED UNDER THIS CONTRACT. INCIDENTAL WORK MAY ALSO BE NECESSARY IN AREAS NOT SHOWN ON THE ARCHITECTURAL DRAWINGS DUE TO CHANGES AFFECTING EXISTING MECHANICAL, ELECTRICAL, PLUMBING, AND OTHER SYSTEMS. SUCH INCIDENTAL WORK IS ALSO PART OF THIS CONTRACT. INSPECT THOSE AREAS AND ASCERTAIN WORK NEEDED AND DO THAT WORK IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS AT NO ADDITIONAL COST.
- PROTECT EXISTING FINISHES TO REMAIN FROM DAMAGE.
- REPAIR, PATCH, OR REFINISH AS APPLICABLE TO MATCH ADJACENT EXISTING FINISHES, THOSE FINISHES DAMAGED OR NEWLY EXPOSED DURING PERFORMANCE OF THE WORK UNDER THIS CONTRACT.
- WHERE MATCH EXISTING IS INDICATED, NEW CONSTRUCTION OR FINISHES, SHALL MATCH THE EXISTING IN EVERY PARTICULAR.
- WHERE PERMANENT REMOVAL OF EXISTING CASEWORK, DOORS AND FRAMES, EQUIPMENT, OR FURNISHINGS IS REQUIRED AND PREVIOUSLY CONCEALED SURFACES ARE TO REMAIN EXPOSED, PATCH PREVIOUSLY CONCEALED SURFACES TO MATCH ADJACENT EXPOSED SURFACES. WHERE SUCH SURFACES ARE SCHEDULED TO RECEIVE NEW FINISHES, PREPARE THE SURFACES TO RECEIVE THE NEW FINISHES.
- WHERE CUTTING OF EXISTING SURFACES OR REMOVAL OF EXISTING SURFACES IS REQUIRED TO PERFORM THE WORK UNDER THIS CONTRACT, AND NEW FINISH IS NOT INDICATED, FILL RESULTING OPENINGS AND PATCH THE SURFACE AFTER DOING THE WORK AND FINISH TO MATCH ADJACENT EXISTING SURFACES.
- REFER TO NEW WORK PLANS TO COORDINATE EXTENT OF DEMOLITION REQUIRED.
- REFER TO MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION DRAWINGS FOR ADDITIONAL DEMOLITION REQUIRED. CONTRACTOR TO NOTIFY ARCHITECT IMMEDIATELY UPON DISCOVERY OF CONFLICT OR DISCREPANCY WITH ITEMS INDICATED TO BE REMOVED.
- WHERE NOT SPECIFICALLY NOTED, CONTRACTOR SHALL MODIFY EXISTING FLOORING AND CEILING CONSTRUCTION TO REMAIN AS REQUIRED TO ABUT NEW CONSTRUCTION AND MATCH ADJACENT EXISTING CONDITIONS.
- COORDINATE SLAB REMOVAL AND REPLACEMENT WITH PLUMBING AND ELECTRICAL UNDERGROUND AND IN-SLAB WORK.
- WHERE AN ITEM IS SHOWN TO BE REMOVED OR DEMOED ALL MECHANICAL, ELECTRICAL, AND PLUMBING COMPONENTS SHALL BE REMOVED WITH IT UNLESS PIPING SHALL BE REMOVED TO WITHIN NEAREST WALL TO REMAIN AND CAPPED. ELECTRICAL WIRING AND CONDUIT SHALL BE REMOVED BACK TO NEAREST JUNCTION BOX TO REMAIN. DUCTS AND TERMINALS SHOULD BE REMOVED AS FAR AS NECESSARY FOR NEW DISTRIBUTION SYSTEM OR COMPONENTS TO TIE INTO, OR CAP WITHIN CONCEALED SPACE.

GENERAL NOTES - FLOOR PLAN

- DIMENSIONS ON FLOOR PLAN ARE BASED ON FACE OF FINISHED WALL TO FACE OF FINISHED WALL (NOMINAL).
- VERIFY ALL DIMENSIONS AND CONDITIONS AT JOB SITE. PORTIONS OF EXISTING CONSTRUCTION MAY HAVE BEEN REMOVED BY OWNER.
- MAINTAIN CONTINUOUS UTILITY SERVICE TO ALL SPACES IN THE BUILDING NOT AFFECTED BY THIS WORK. COORDINATE WITH OWNER ANY DISRUPTION IN SERVICES REQUIRED TO PERFORM WORK OR TO MODIFY EXISTING PIPING, DUCTWORK OR ANY ASSOCIATED EQUIPMENT.
- ALL EXPOSED PIPING INSULATION SHALL HAVE PVC SLEEVE. ALL EXPOSED CONDUITS, HANGERS, AND SUPPORTS SHALL BE PRIMED AND PAINTED TO MATCH CEILING.

LEGEND - FLOOR PLAN

	BUILDING SECTIONS		ROOM	ROOM NAME
	WALL SECTIONS		ELEVATION TARGET	ROOM NUMBER
	PLAN OR SECTION DETAIL		KEY NOTE	
	ELEVATION SHEET		DOOR / OPENING NUMBERS	
	ELEVATION DETAIL		FLOOR DRAIN	
	REVISION CLOUD		COLUMN CENTER LINES	
	REVISION TAG			



1 OVERALL FIRST FLOOR PLAN
SCALE: 1/16" = 1'-0"



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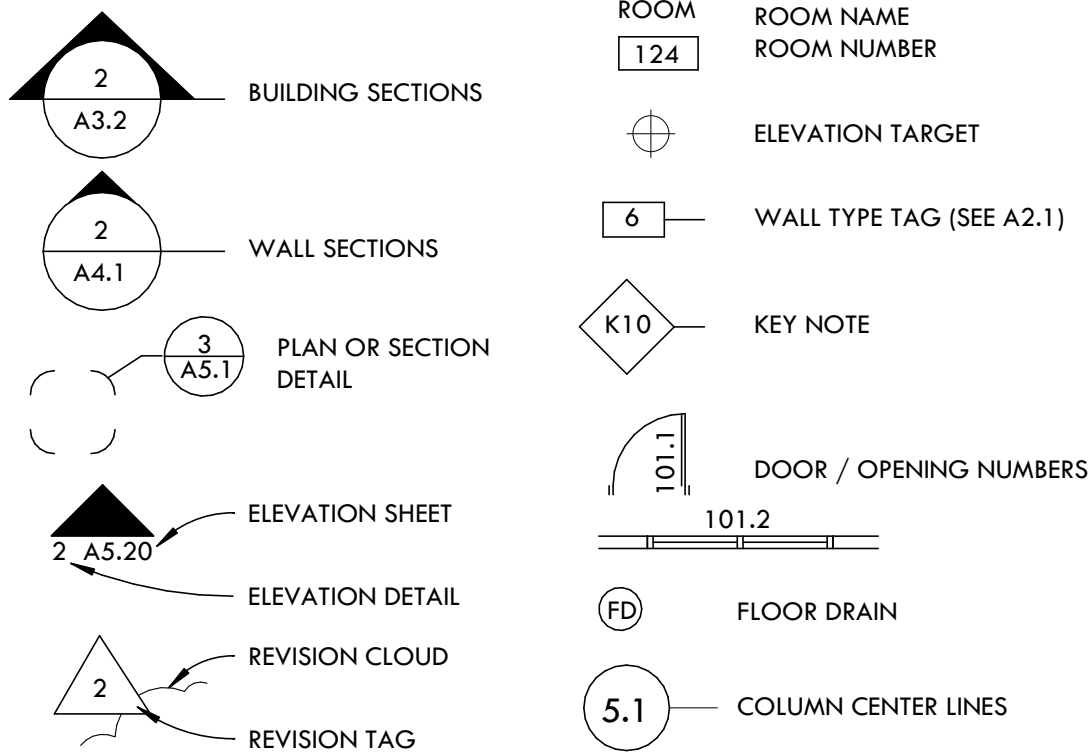
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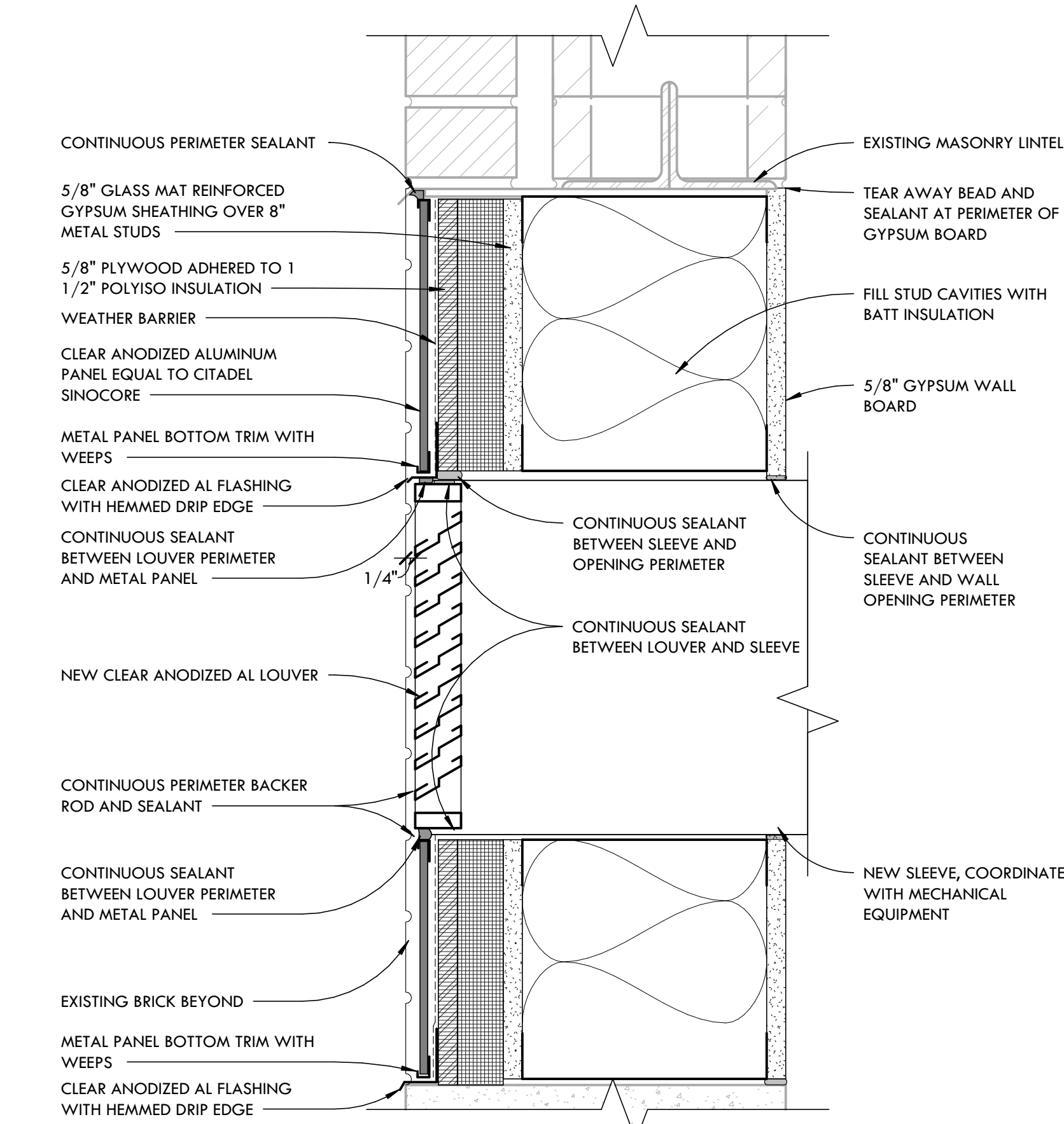
GENERAL NOTES - FLOOR PLAN

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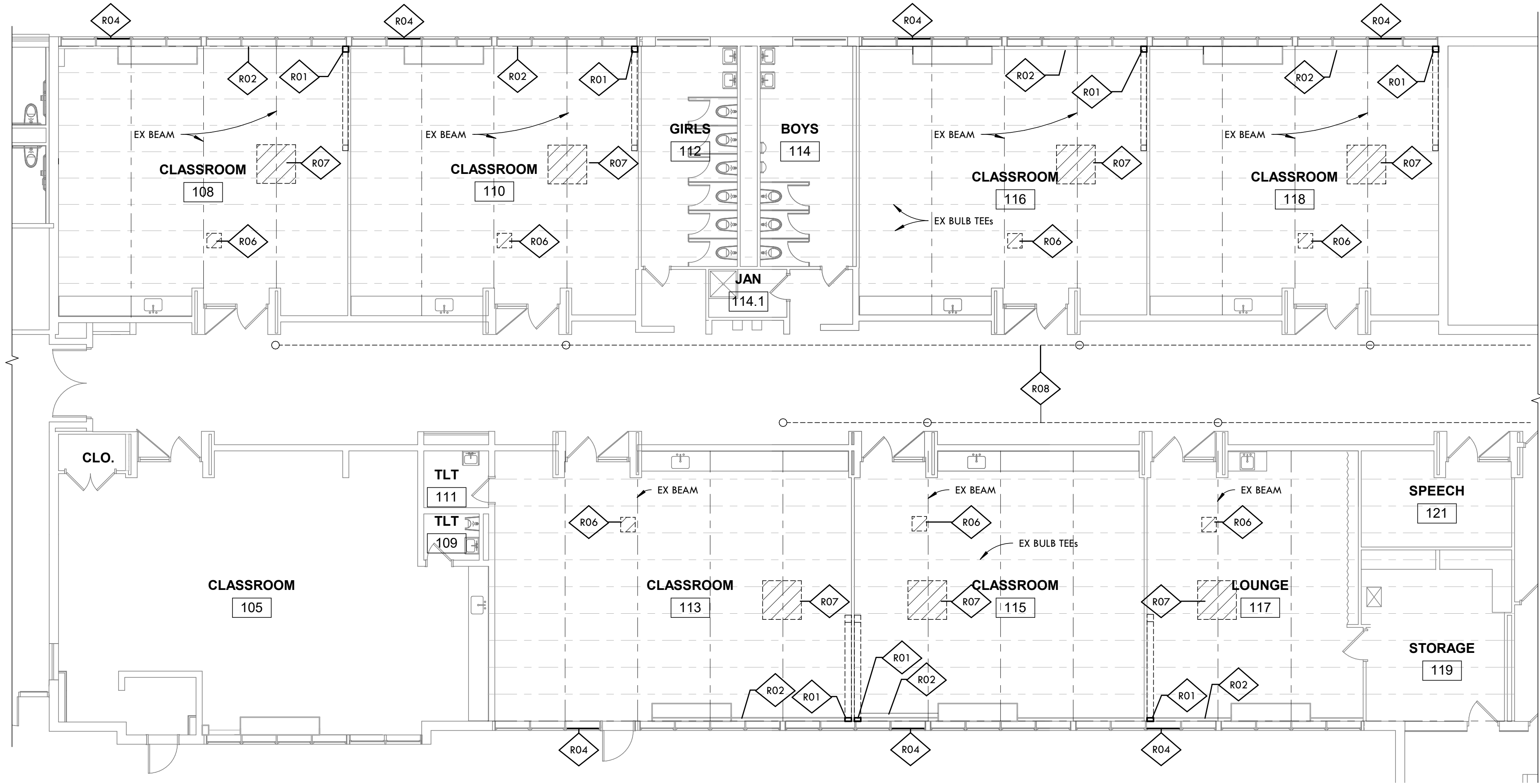
LEGEND - FLOOR PLAN



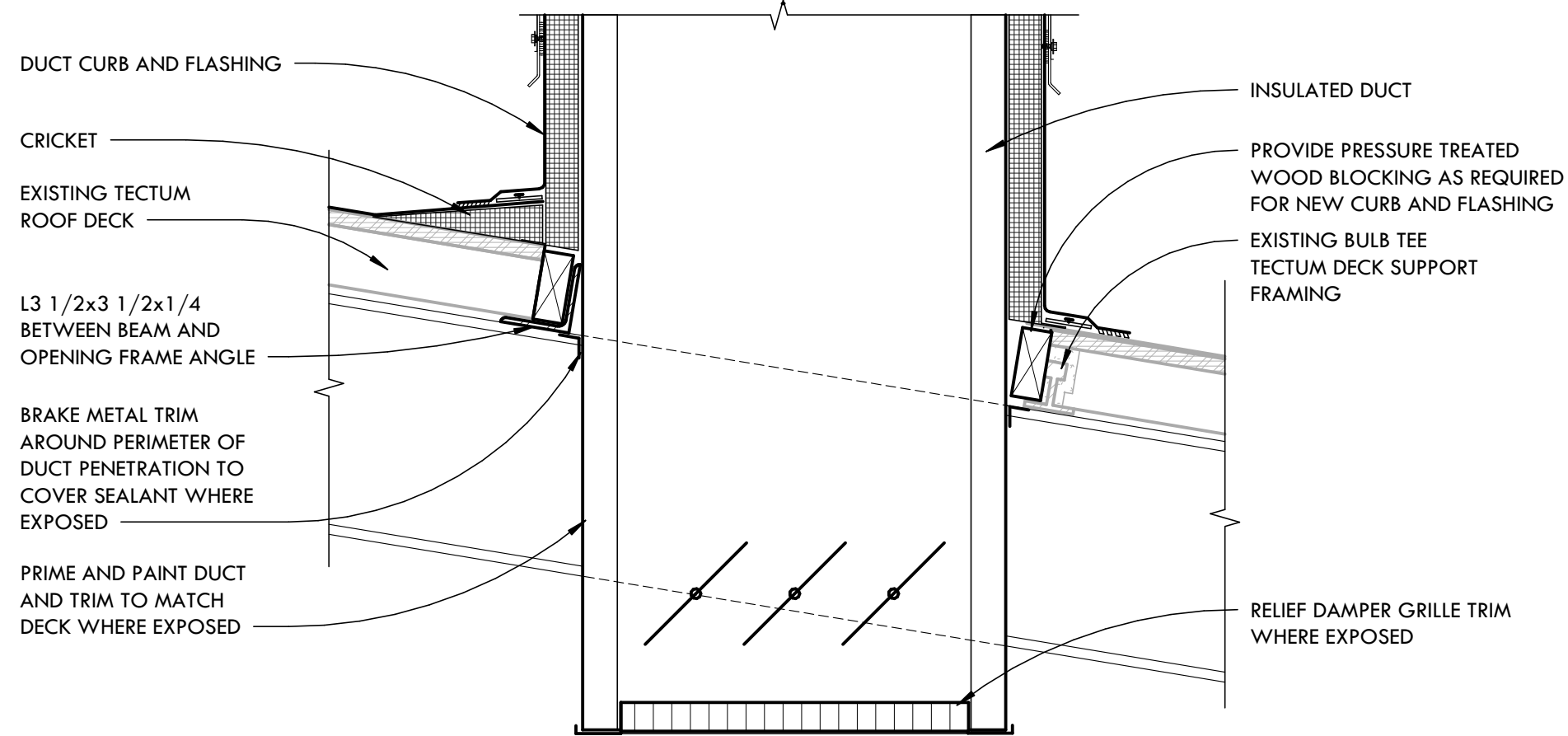
LEGEND - KEYNOTE	
KEY VALUE	KEYNOTE TEXT
R01	CONSTRUCT NEW VERTICAL METAL PIPE ENCLOSURE FROM HORIZONTAL PIPE COVER TO ROOF DECK/CEILING.
R02	USE EXISTING HORIZONTAL PIPE ENCLOSURE FLUSH WITH TOP OF EQUIPMENT FOR NEW REF PIPING.
R04	REPLACE WINDOW PANEL WITH NEW GLASS TO MATCH ADJACENT EXISTING GLASS. ACC UNIT REMOVED BY DISTRICT. CONTRACTOR TO FIELD VERIFY GLASS TYPE AND TINT PRIOR TO BID.
R06	LOCATION OF CEILING EXHAUST DUCT RELATIVE TO EXISTING BULB TEES AND BEAMS. SEE DETAILS 48.5/A1.2
R07	ACC UNIT ON ROOF ABOVE, COORDINATE WITH M SHEETS.
R08	CONDUIT RUNS ON CORRIDOR CEILING FOR ACCU. CIRCLES INDICATE JBOX FOR PENETRATION UP THROUGH ROOF. PAINT ALL NEW AND EXISTING CORRIDOR CONDUITS TO MATCH CEILING. COORDINATE WITH ELECTRICAL DRAWINGS. VERIFY EXISTING CONDITIONS PRIOR TO BID.
R09	RETURN GRILLE IN CEILING TILE FOR DUCTED RELIEF DAMPER.
R10	PATCH AND REPAIR WALL AND FLOOR FINISHES FROM REMOVAL OF PREVIOUS MECHANICAL UNIT.
R11	PROVIDE NEW HORIZONTAL METAL PIPE ENCLOSURE FLUSH WITH TOP OF NEW UNIT.
R12	NEW LOUVER THROUGH EXISTING WALL OPENING. INFILL AROUND NEW LOUVER, SEE DETAIL 6/A2.1.



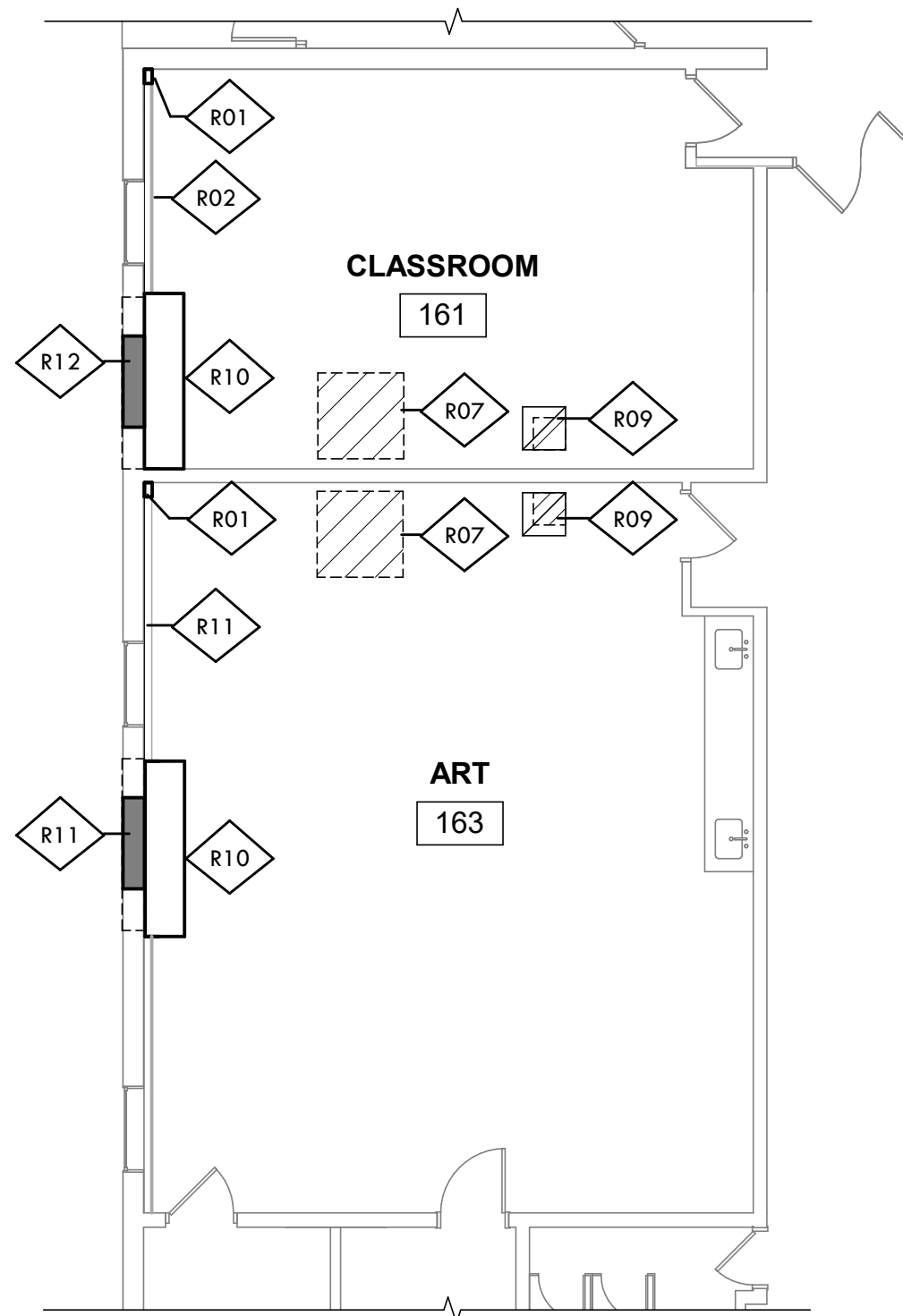
6 LOUVER INFILL DETAIL
SCALE: 3" = 1'-0"



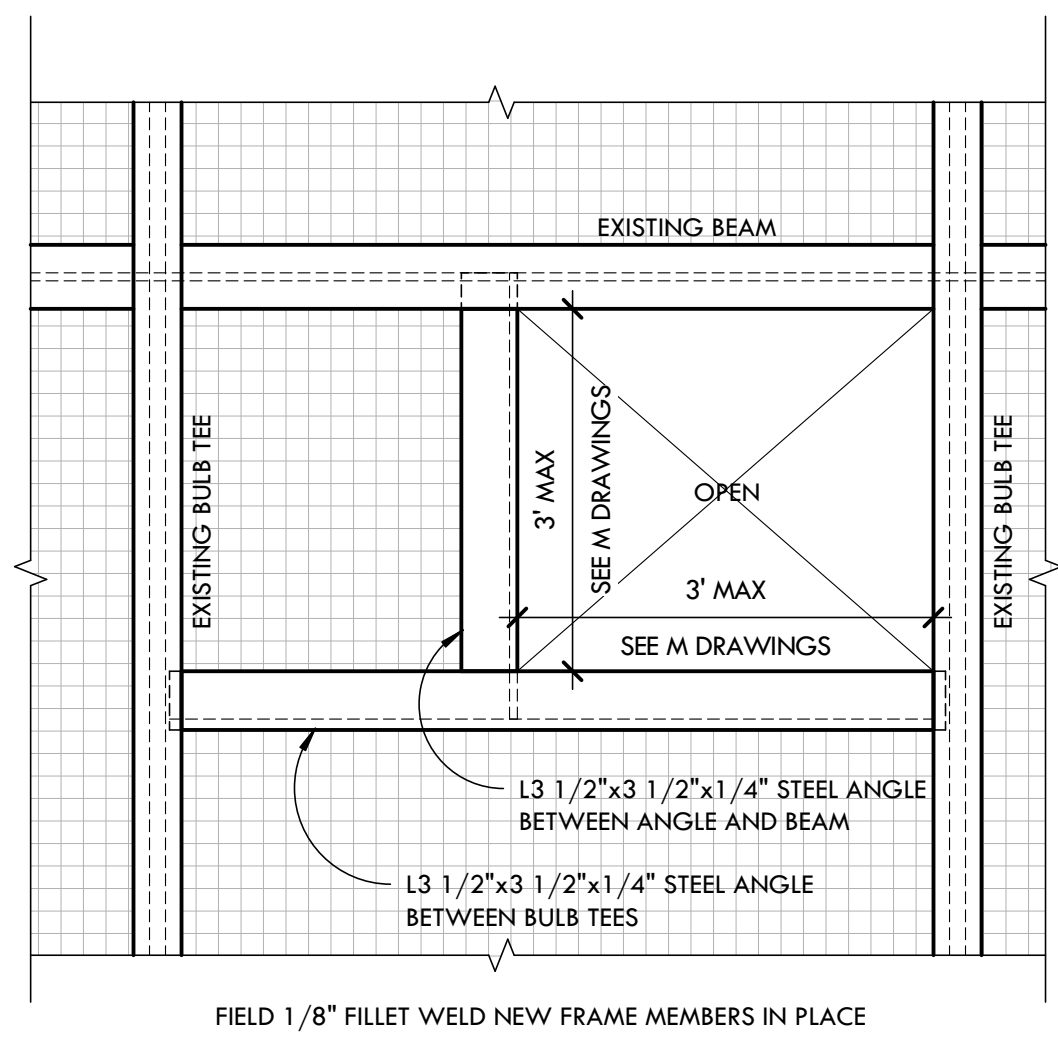
1 1ST FLOOR - AREA OF WORK
SCALE: 1/8" = 1'-0"



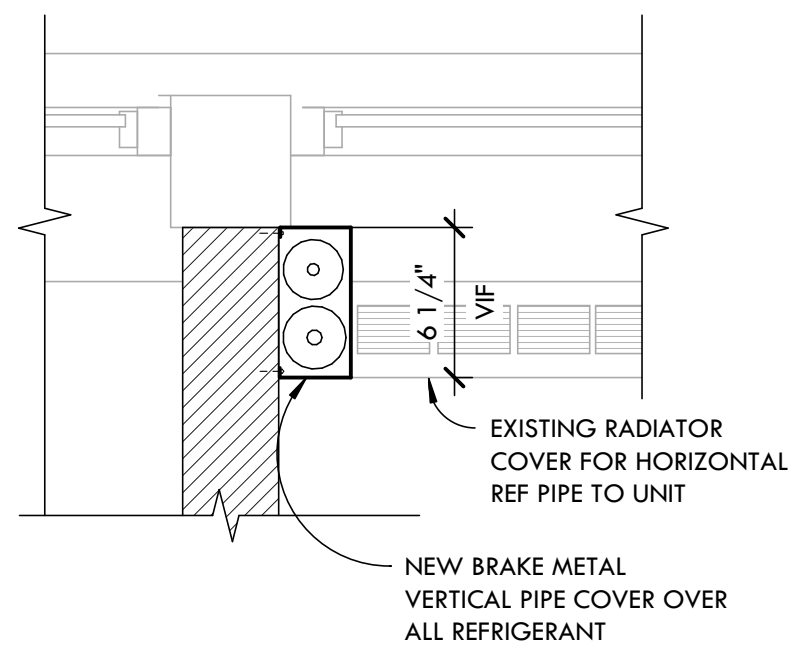
4 TYPICAL TECTUM PENETRATION DETAIL
SCALE: 1 1/2" = 1'-0"



2 ART AND CLASSROOM RENOVATION
SCALE: 1/8" = 1'-0"



5 ROOF OPENING FRAME REFLECTED PLAN DETAIL
SCALE: 1" = 1'-0"



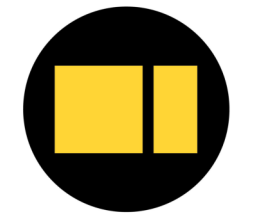
3 PIPE COVER A
SCALE: 1 1/2" = 1'-0"

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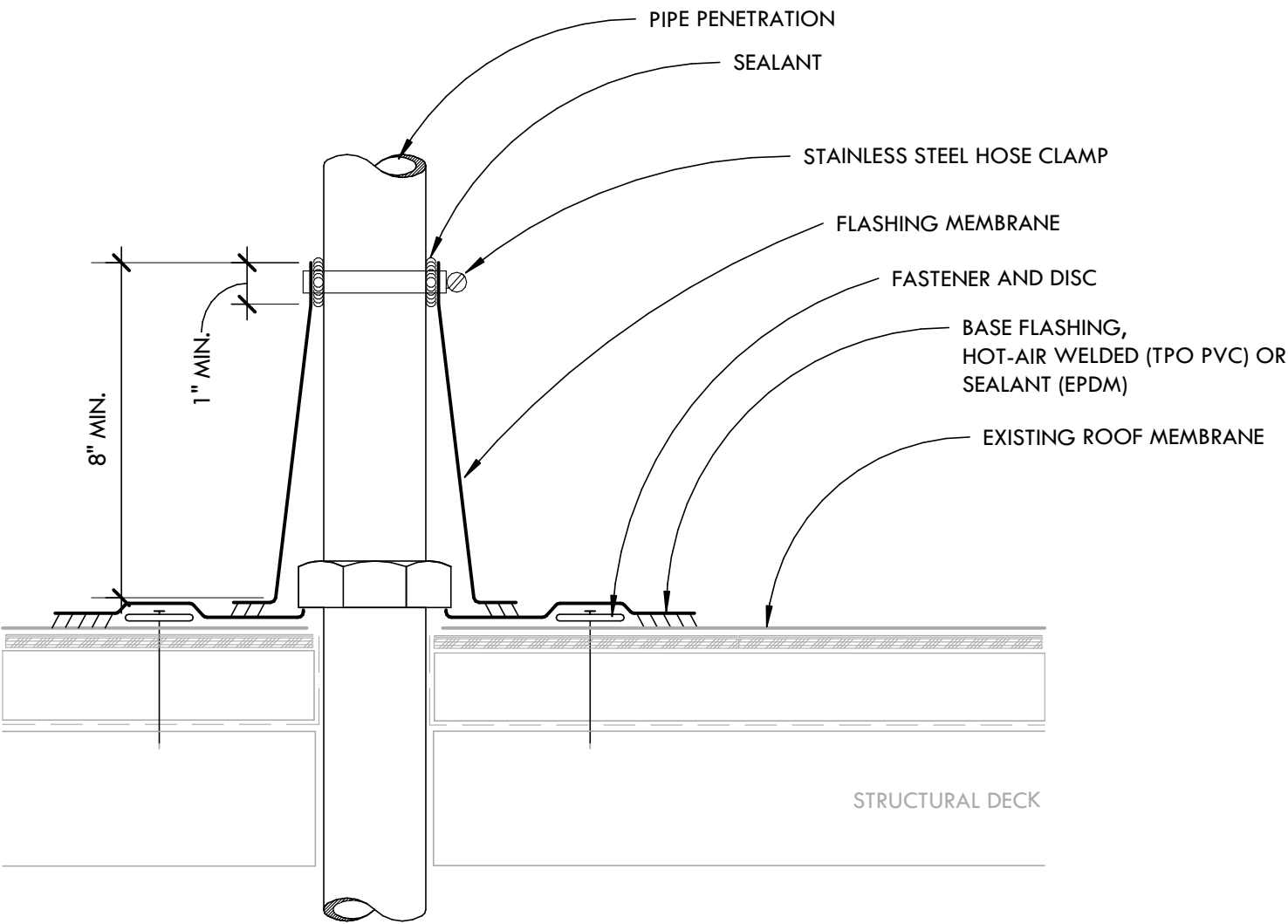
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PROJECT NUMBER	32103-03
SHEET NUMBER	A1.2
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Larson & Darby Group
Architecture Engineering Interiors

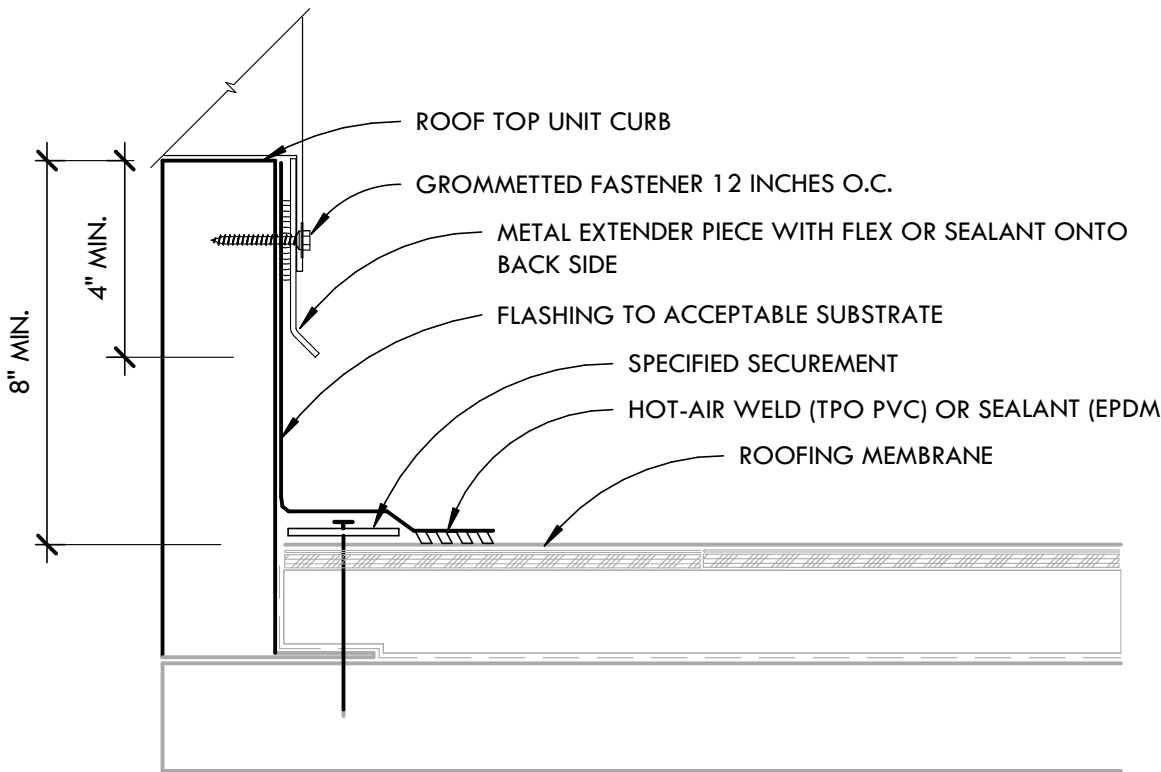


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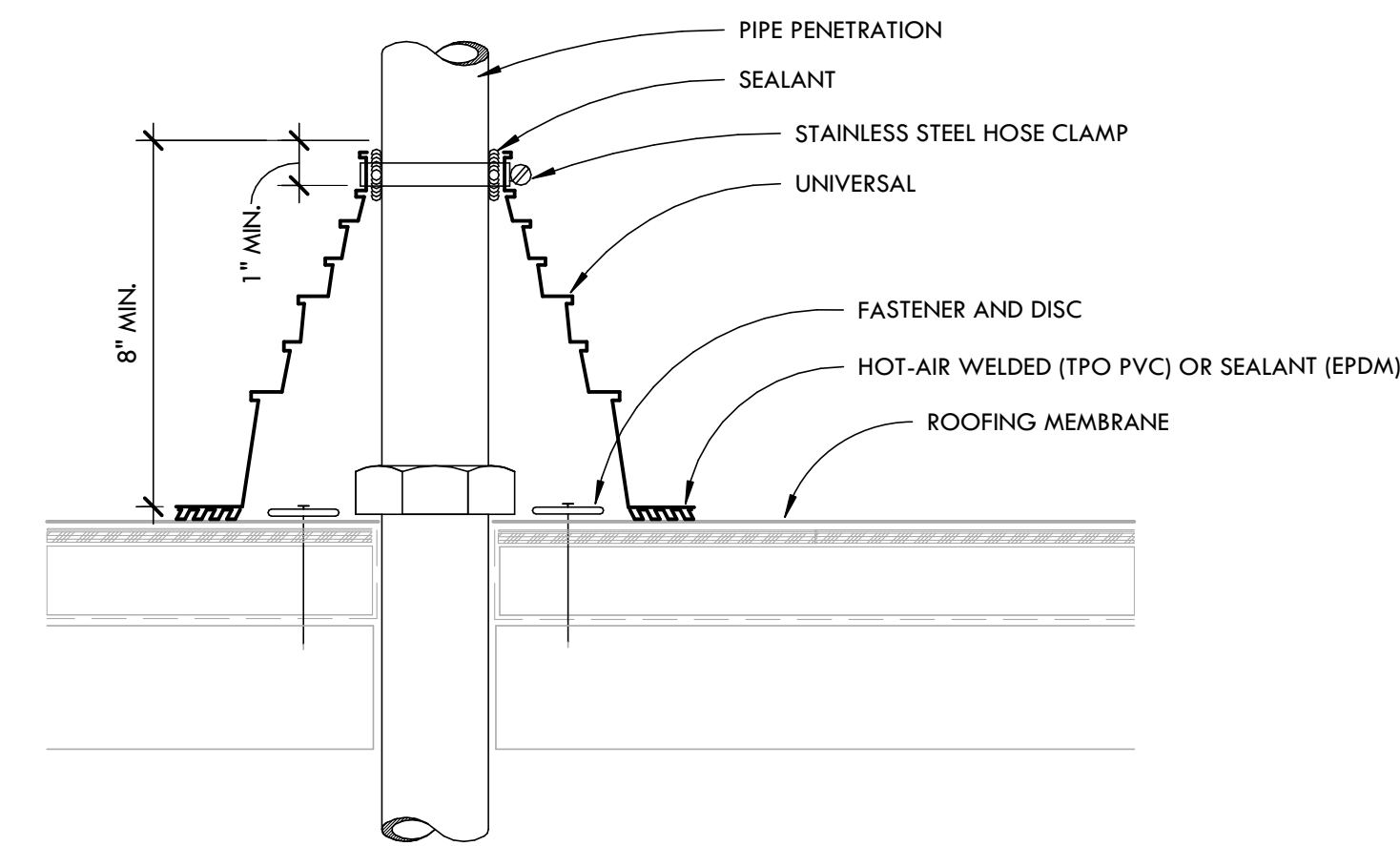
LEGEND - KEYNOTE	
KEY VALUE	KEYNOTE TEXT
R30	PROVIDE NON PENETRATING EQUIPMENT PLATFORM FOR CONDENSER UNITS WITH PIPE PORTAL FOR ROOF PIPING PENETRATIONS. COORDINATE WITH MECHANICAL SHEETS.
R31	PROVIDE CURB AND FLASHING FOR VENT DUCT THROUGH ROOF. SEE DETAILS 4 & 5/A1.2.
R32	CONDUIT FLASHING BOOT.



2 CONE FLASHING AT CONDUIT PENETRATION
SCALE: 3" = 1'-0"



3 CURB FLASHING
SCALE: 3" = 1'-0"



NOTE:
1) PIPE SEAL MUST HAVE INTACT RIB AT TOP EDGE, REGARDLESS OF PIPE DIAMETER.
2) DECK FLANGES OF THE PRE-MOLDED PIPE SEAL SHALL NOT BE OVERLAPPED, CUT OR APPLIED OVER ANY ANGLE CHANGE.
3) THE EMPTY SPACE SHALL BE FILLED WITH AN EXPANDING URETHANE FOAM. THIS WILL MINIMIZE CONDENSATION FORMATION AS WELL AS PROVIDING SOME RESILIENCY TO THE FINISHED DETAIL.

5 UNIVERSAL PIPE BOOT
SCALE: 3" = 1'-0"

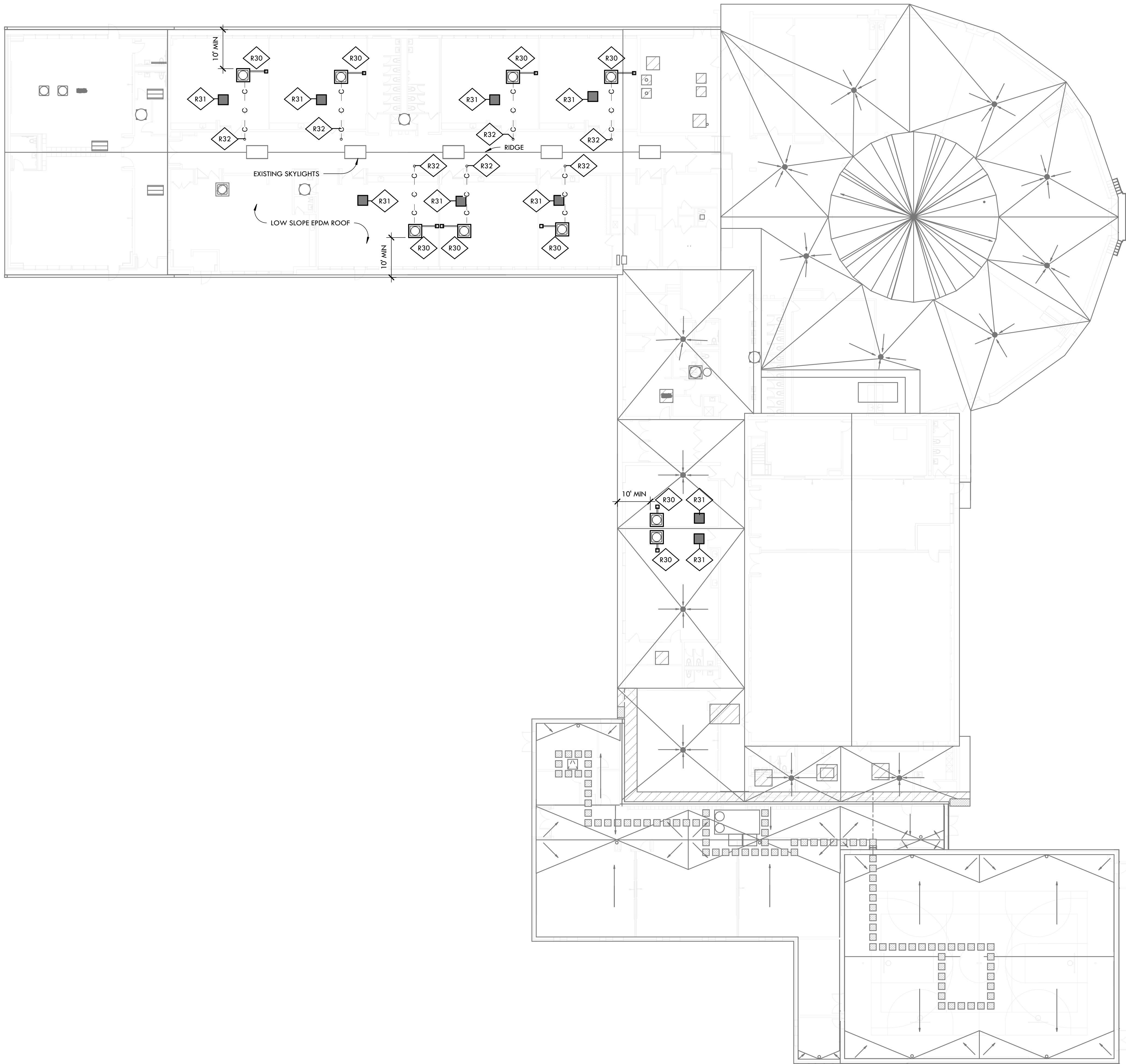
GENERAL NOTES - ROOF

- COORDINATE WITH PLUMBING DRAWINGS FOR PLUMBING VENT PENETRATIONS THROUGH ROOF.
- COORDINATE WITH ALL OTHER DRAWINGS FOR ADDITIONAL PENETRATIONS THROUGH ROOF. (STRUCTURAL, HVAC, ELECTRICAL, TECH)
- REFER TO SPECIFICATIONS FOR DESCRIPTION OF ROOF MEMBRANE SYSTEM AND REQUIREMENTS. PROVIDE SINGLE SOURCE SYSTEM. PROVIDE SYSTEM STANDARD DETAILS FOR ALL APPLICABLE FLASHING, OPENING, PENETRATION, TERMINATION, ETC., CONDITIONS.
- PROVIDE TAPERED INSULATION SADDLES AT ALL MECHANICAL EQUIPMENT CURBS

LEGEND - ROOF

	PROVIDED BY SLOPED STRUCTURE
	PROVIDED BY TAPERED INSULATION
	VALLEY OR RIDGE
	ROOF DRAIN
	PAVER WALKWAY

LEGEND - KEYNOTE	
KEY VALUE	KEYNOTE TEXT
R30	PROVIDE NON PENETRATING EQUIPMENT PLATFORM FOR CONDENSER UNITS WITH PIPE PORTAL FOR ROOF PIPING PENETRATIONS. COORDINATE WITH MECHANICAL SHEETS.
R31	PROVIDE CURB AND FLASHING FOR VENT DUCT THROUGH ROOF. SEE DETAILS 4 & 5/A1.2.
R32	CONDUIT FLASHING BOOT.

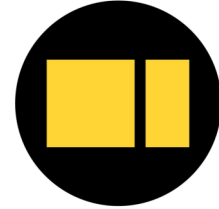


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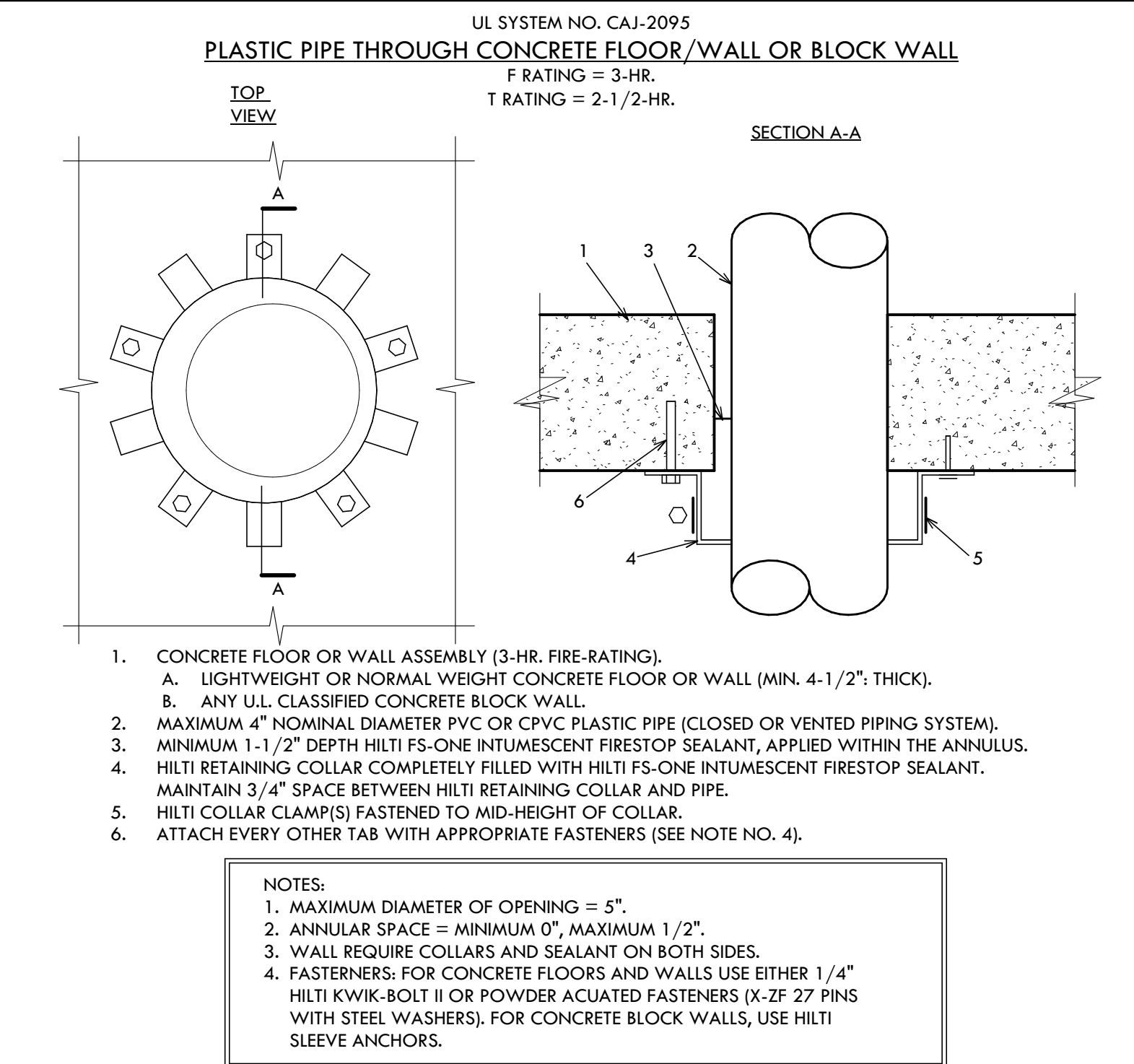
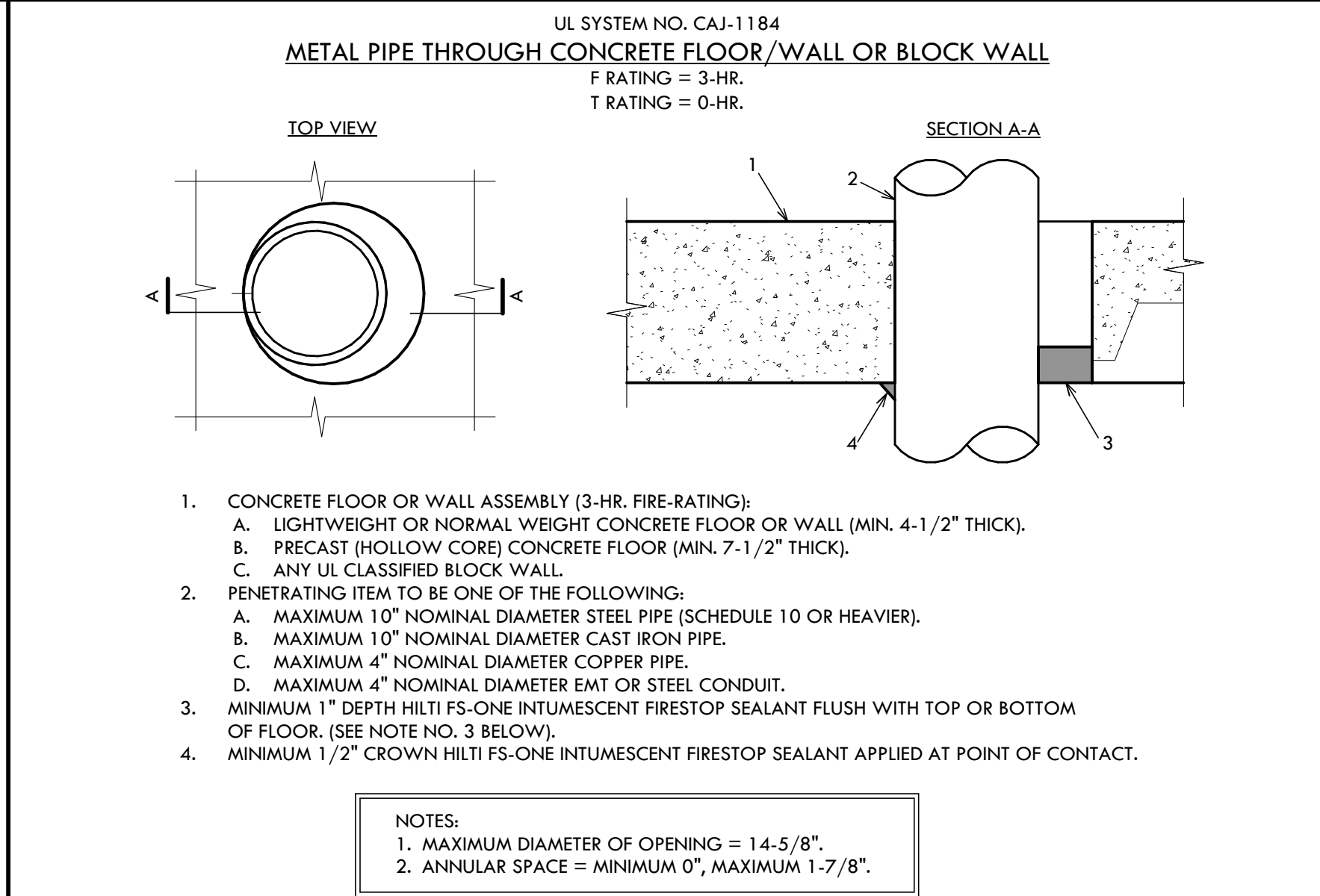
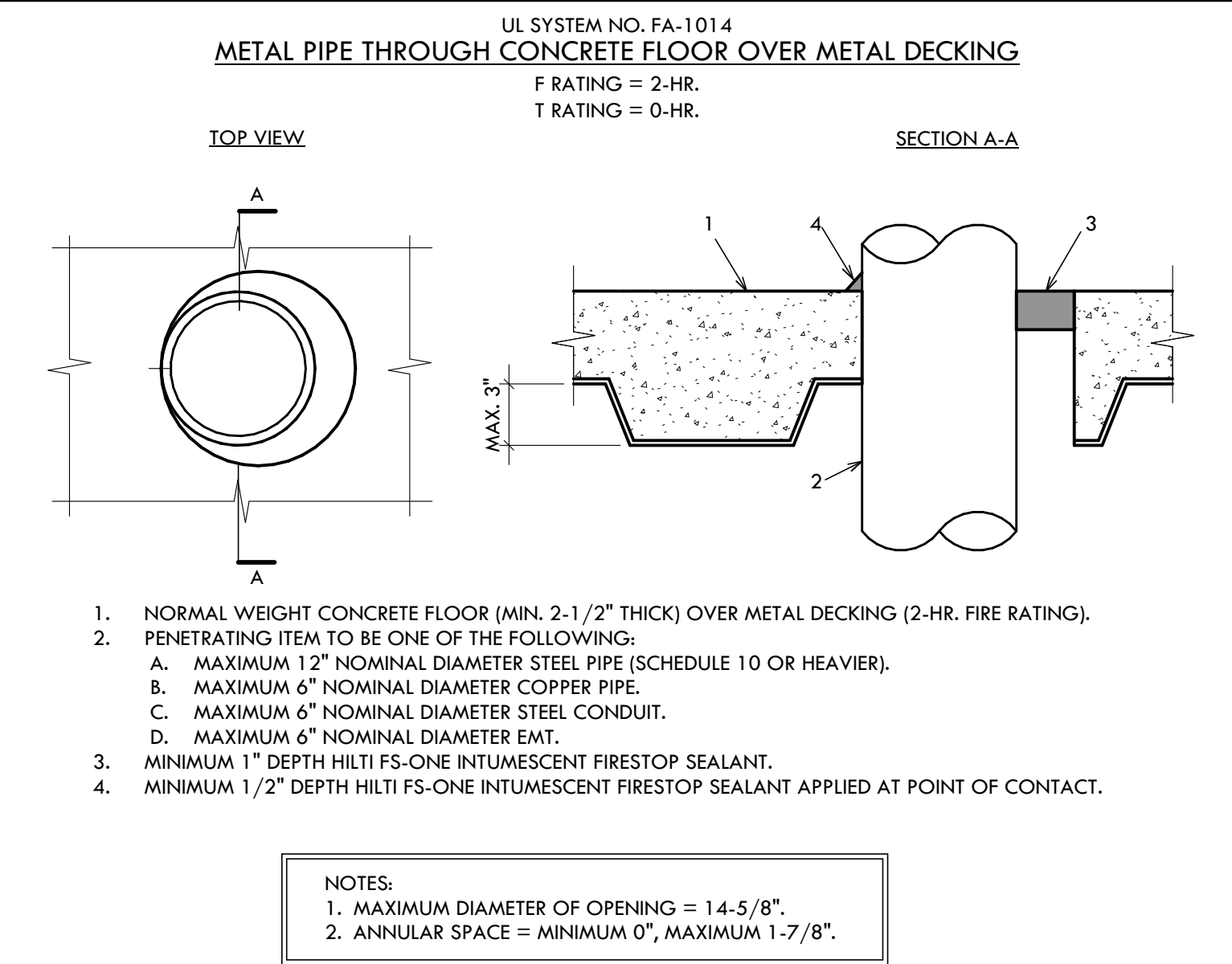
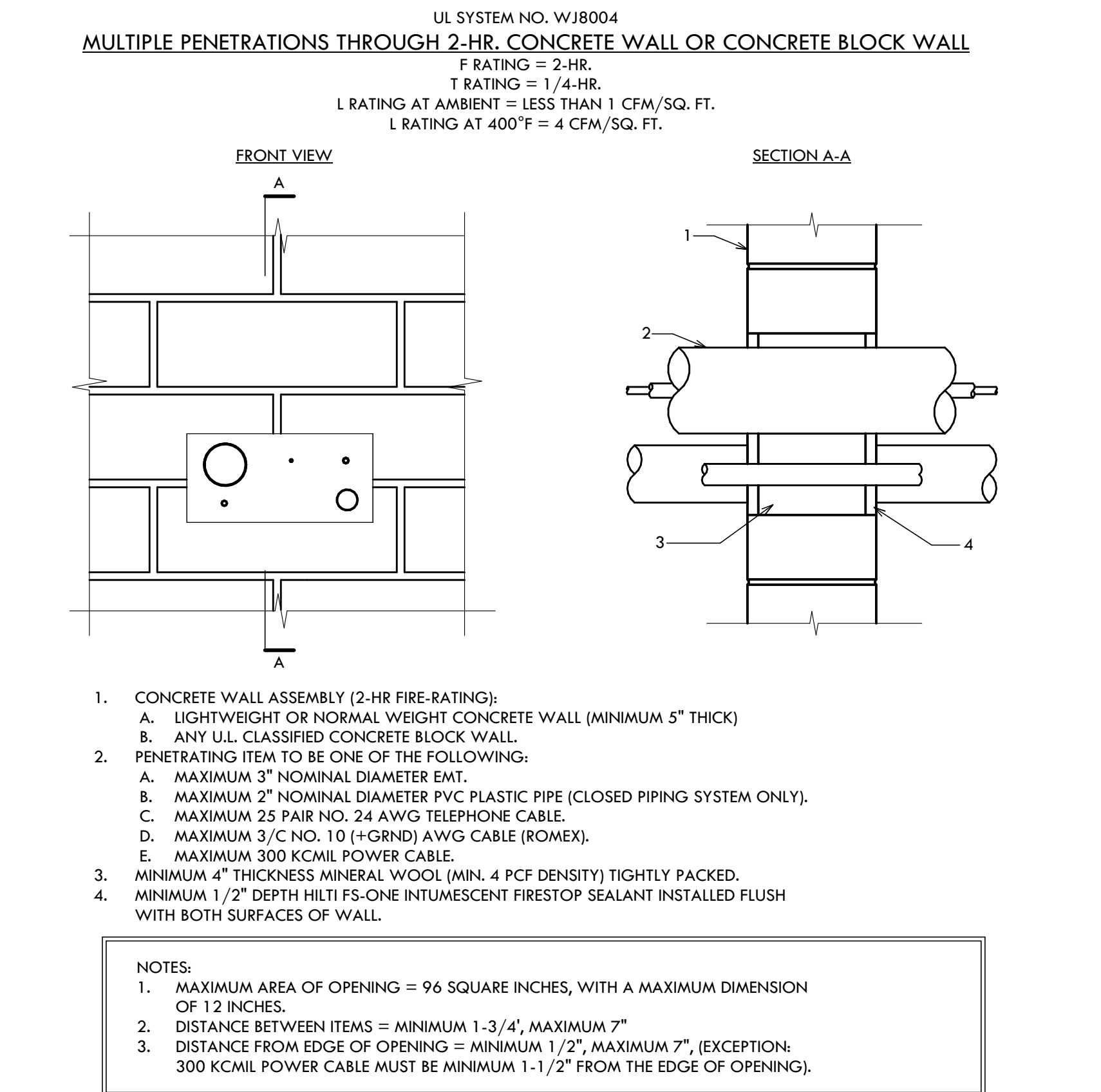
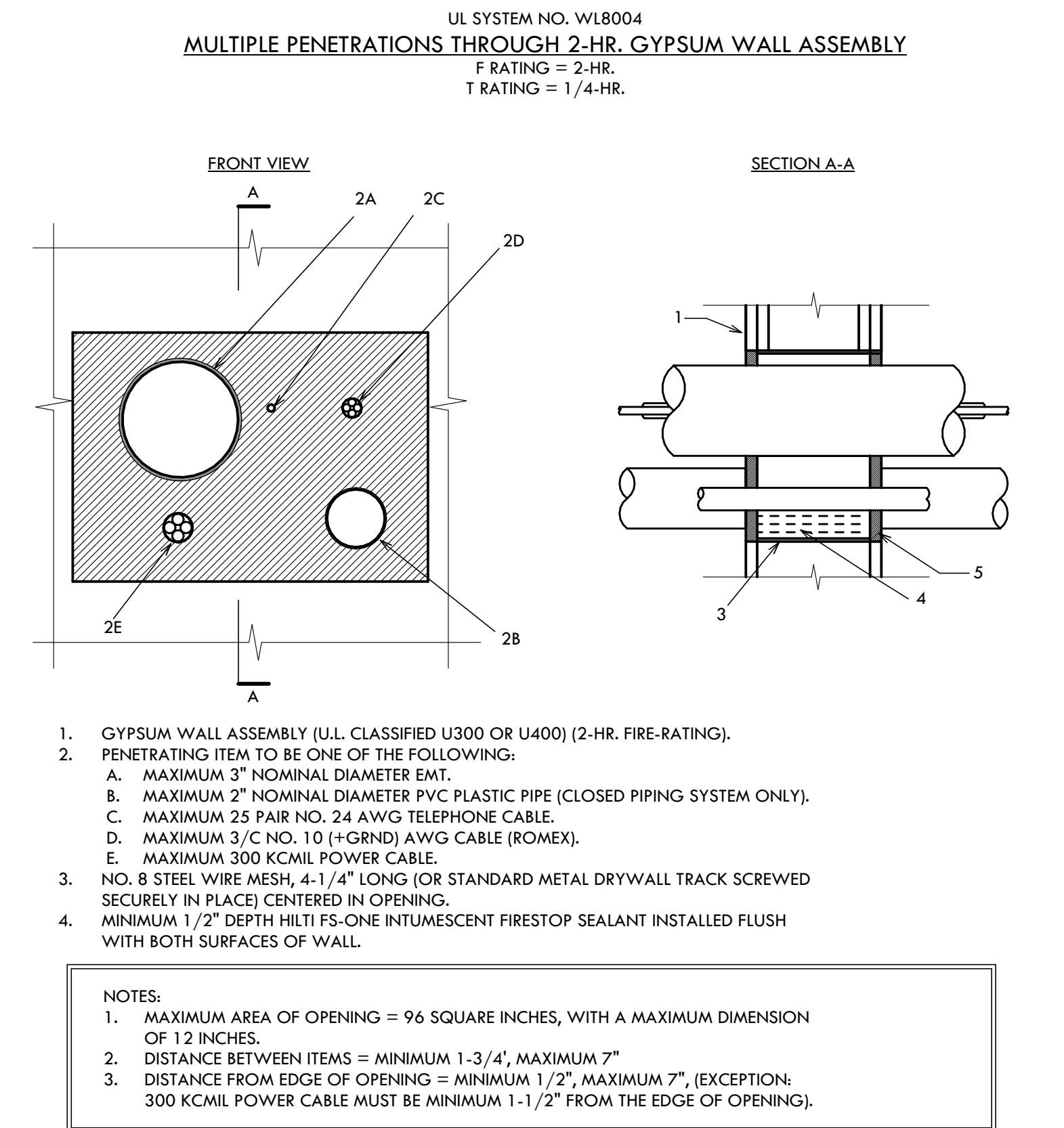
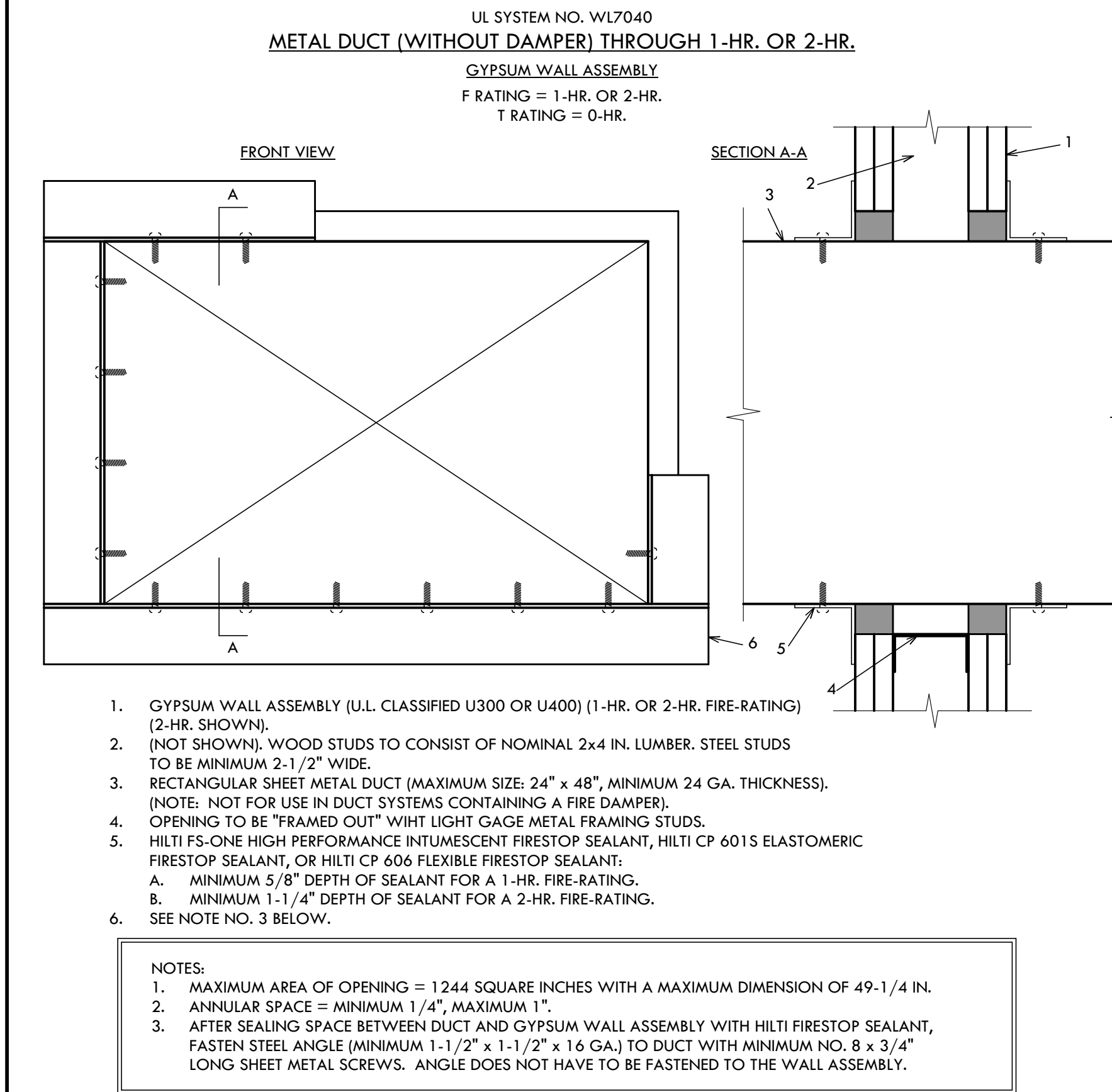
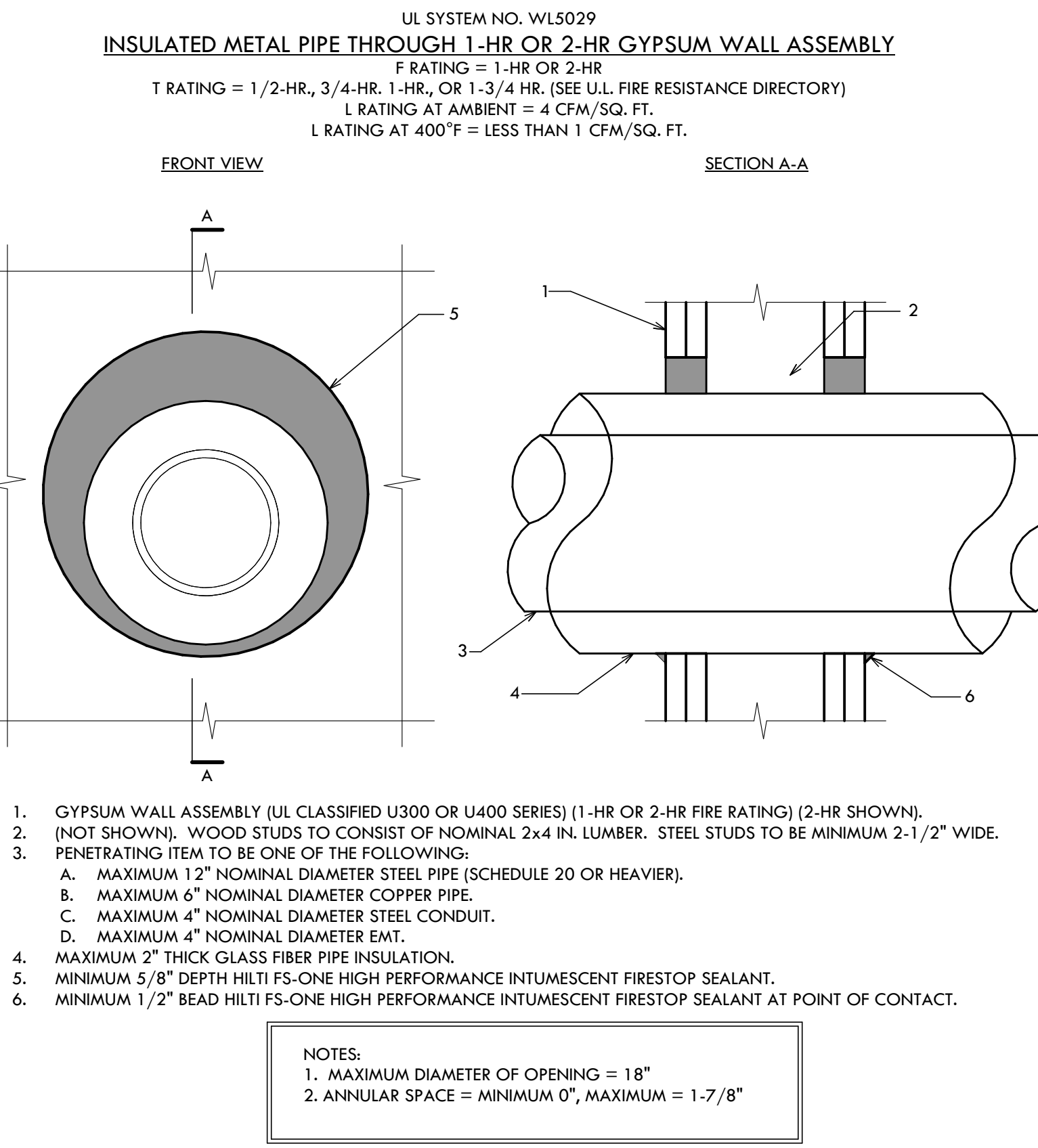
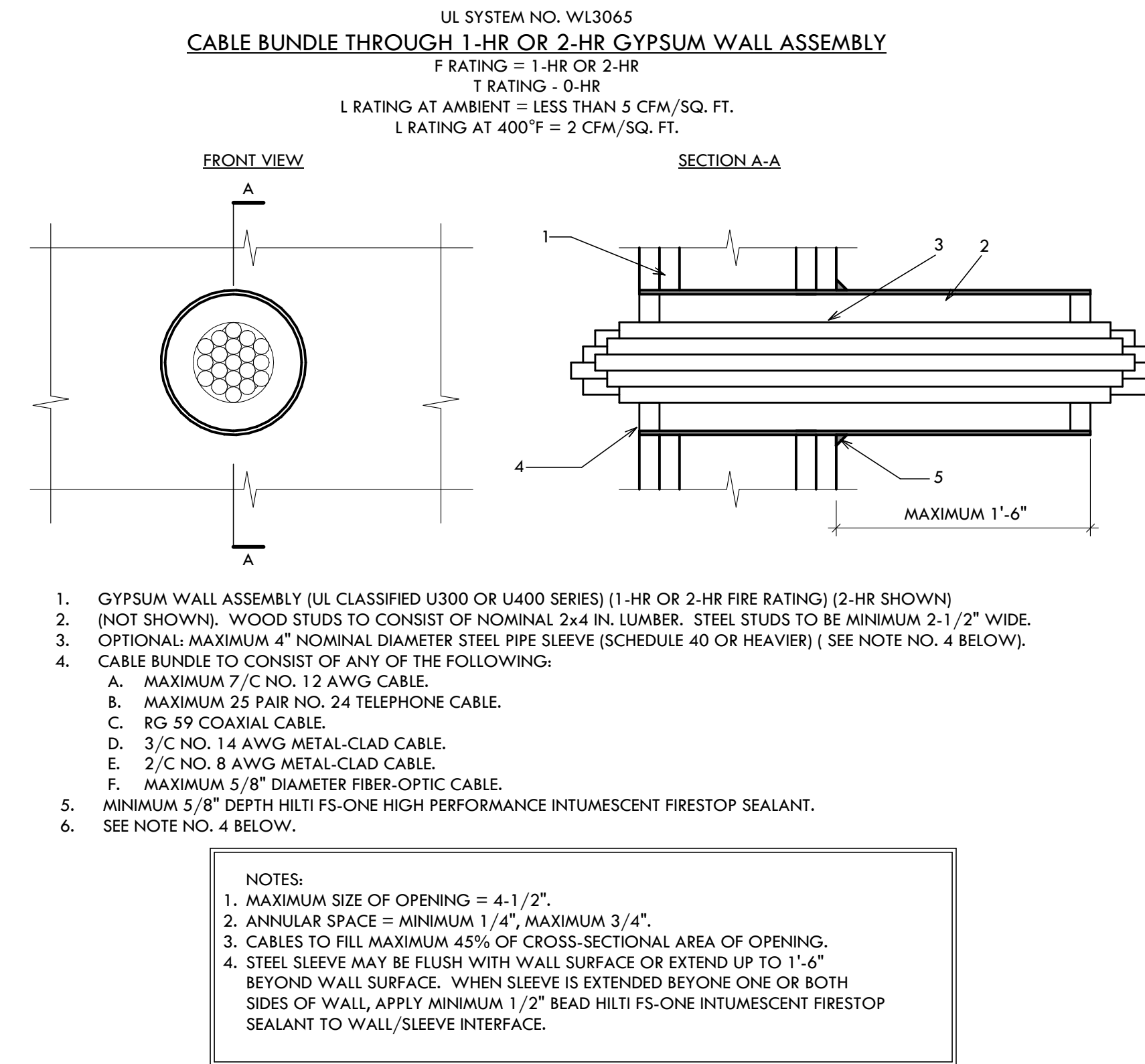
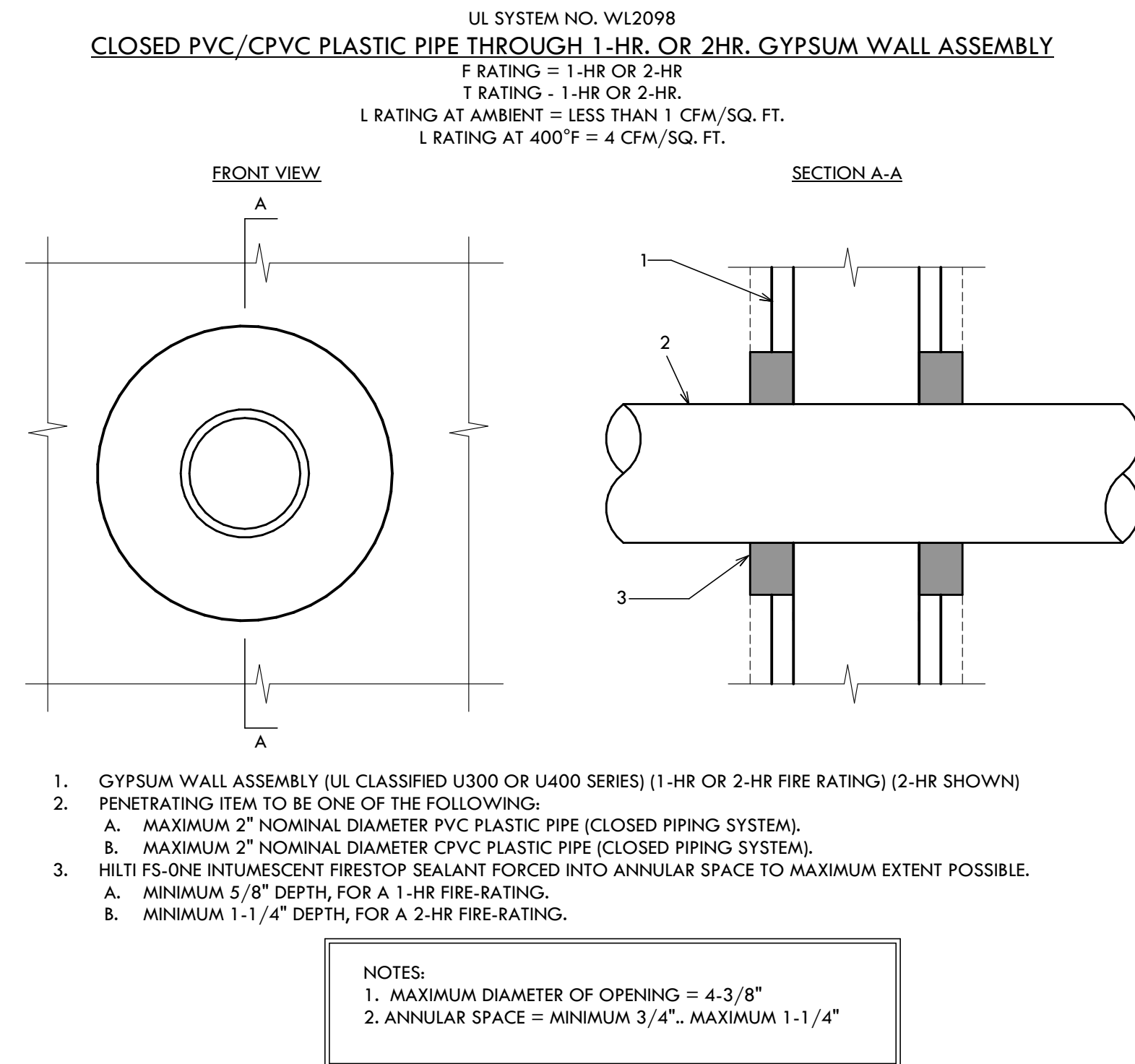
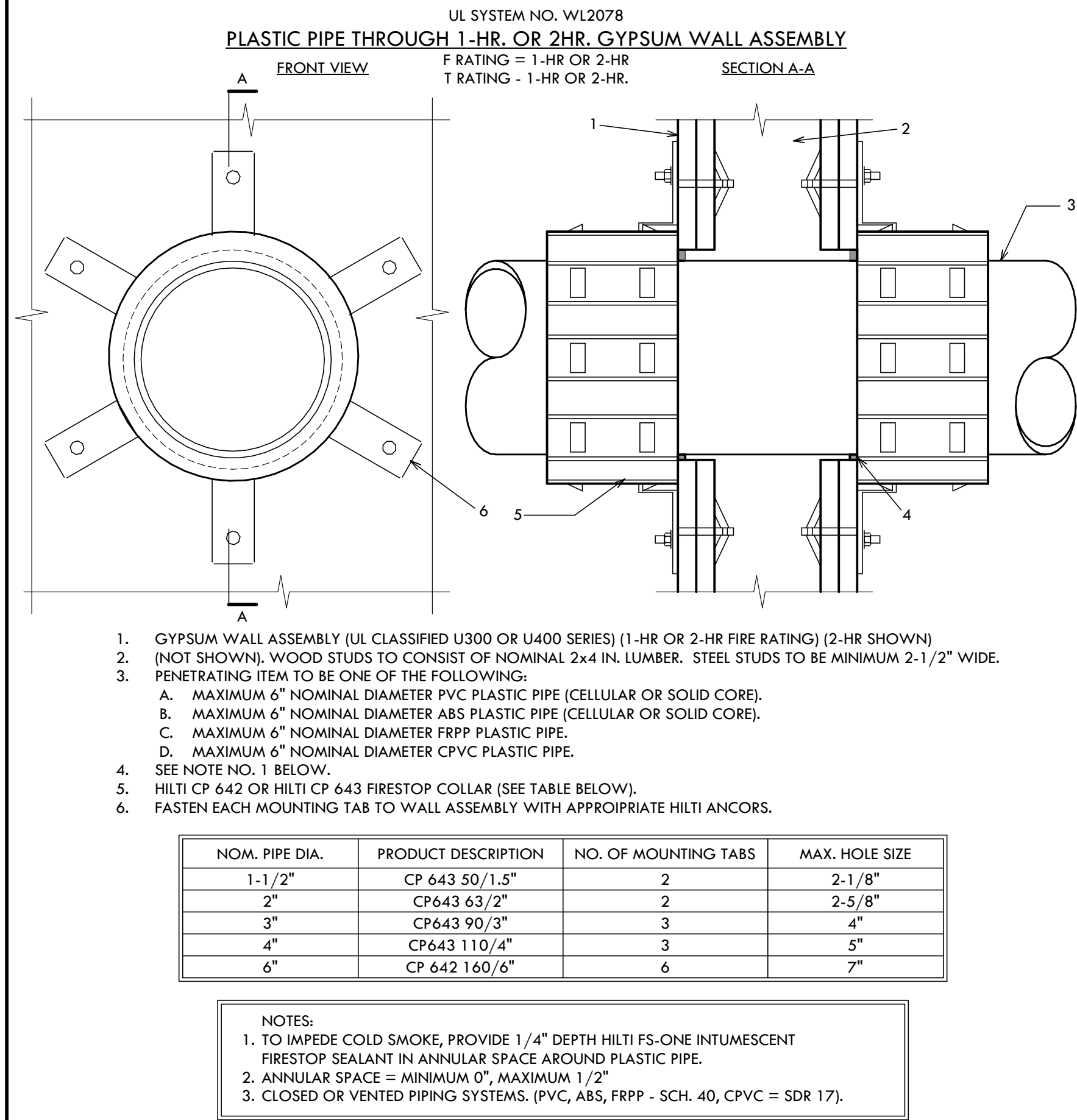
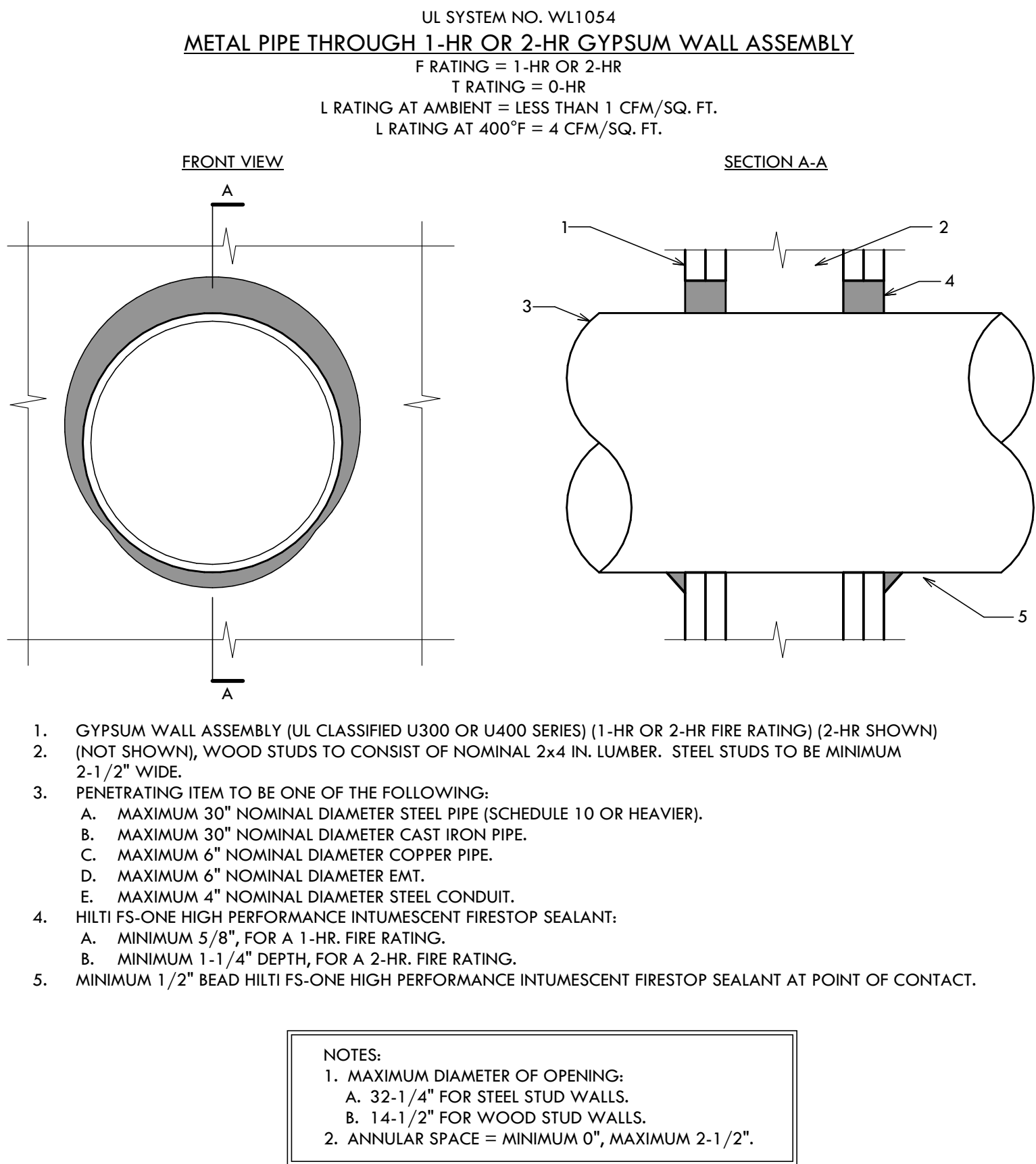
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DATE	10-11-2022
PROJECT NUMBER	32103-03
SHEET NUMBER	A1.3



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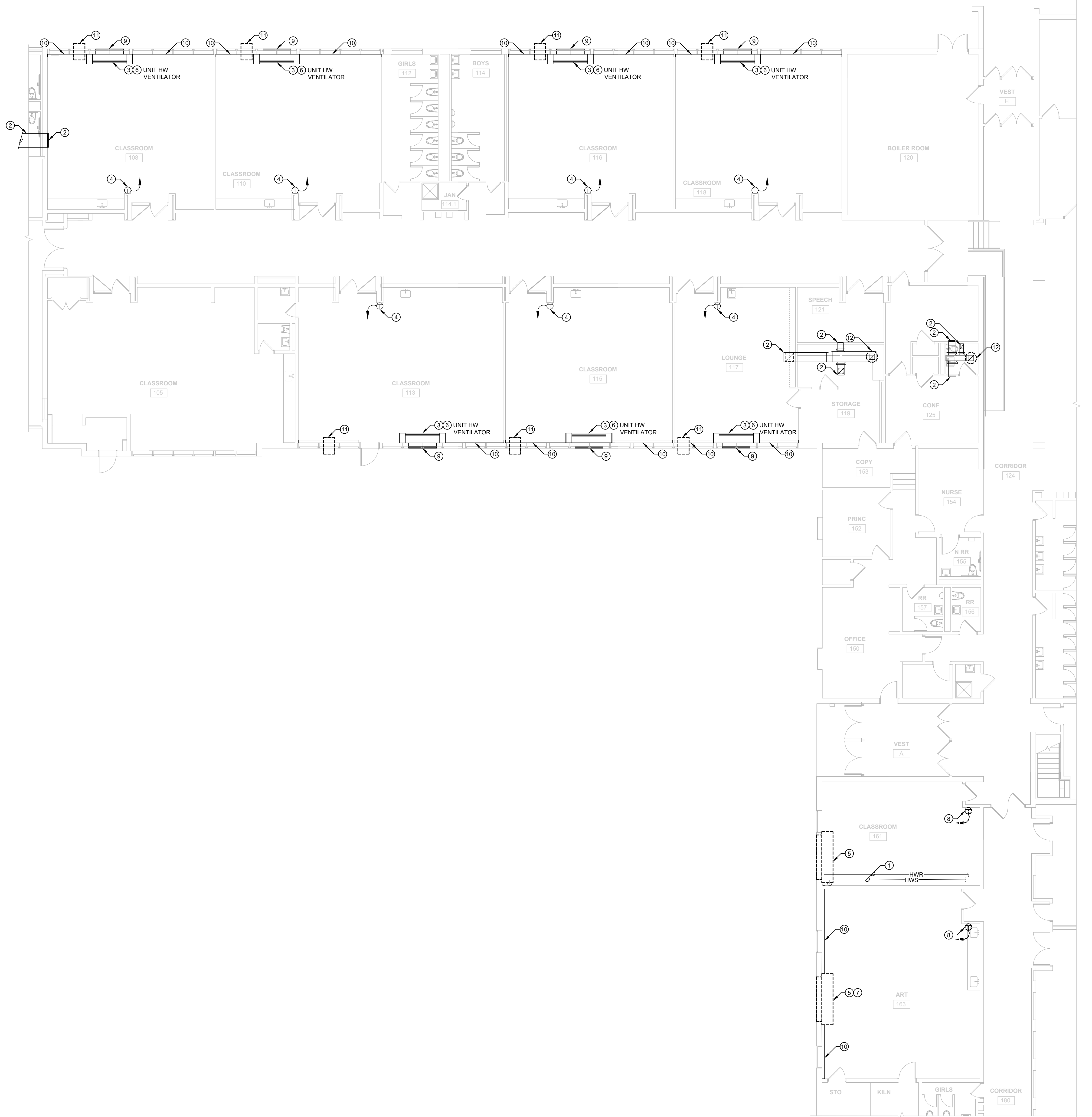
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Esk Grove, IL 60007
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www.cs2designgroup.com



GENERAL FIRE-STOP SYSTEM NOTES:

- THE GENERAL CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL FIRE-STOP DETAILS AND RESPONSIBILITIES AND CONFIRMING THAT EACH TRADE HAS INCLUDED APPROPRIATE COSTS FOR SUCH FIRE-STOP WORK IN THEIR BID OR THAT THE G.C. WILL ASSUME THE RESPONSIBILITY FOR THIS WORK HIMSELF.
- THESE DETAILS & NOTES ARE INTENDED TO BE A GENERAL GUIDE AS TO TYPICAL EXPECTED CONDITIONS. ACTUAL CONDITIONS AND DETAILS SHALL BE REVIEWED BY EACH TRADE WITH THE GENERAL CONTRACTOR. ALTERNATIVE UL APPROVED FIRE-STOP SYSTEMS OR DETAILS MAY BE USED WHICH SATISFY THE FIRE RATING REQUIREMENTS.
- FOR LARGER OPENINGS, ADDITIONAL ITEMS PENETRATING OPENINGS, ETC. SECURE "ENGINEERING JUDGEMENT" SHEETS FROM FIRE-STOP SYSTEM MANUFACTURER'S TECHNICAL SUPPORT DEPARTMENTS (SUCH AS HILTI OR TREMCO).
- IN LIEU OF SECURING SPECIAL "ENGINEERING JUDGEMENTS", FOR LARGER OPENINGS WITH MULTIPLE PENETRATING ITEMS OF VARIOUS SIZES AND MATERIALS PENETRATING AN OPENING, THE CONTRACTOR MAY POUR A MINIMUM 6" THICK CONCRETE AROUND ALL SUCH ITEMS TO FILL THE BULK OF THE OPENING AND THEN FIRE-STOP/SEAL EACH ITEM AS AN INDIVIDUAL PENETRATION AS PER TYPICAL UL APPROVED DETAILS. ASSUME A MINIMUM #5 RE BAR DOWELS OR 1/2" Ø STUDS 12" O.C. TO THE THIS CONCRETE IN-FILL INTO ADJACENT CONSTRUCTION. (WELD RE-BAR DOWELS TO LARGE OPENING LITELS OR STEEL FRAMES AS REQUIRED. COORDINATE EXACT DETAILS OF THIS INFILL CONCRETE WITH THE STRUCTURAL ENGINEER/ARCHITECT PRIOR TO PROCEEDING.)
- SUBMIT A DETAILED SCHEDULE OF PENETRATION LOCATIONS, INTENDED FIRE-STOP DETAILS, MATERIALS/ CUT-SHEETS, ETC. FOR ALL PENETRATIONS FOR ARCHITECT REVIEW AND CITY APPROVAL PRIOR TO PROCEEDING TO ORDER MATERIAL AND INSTALL THE WORK.
- SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS.

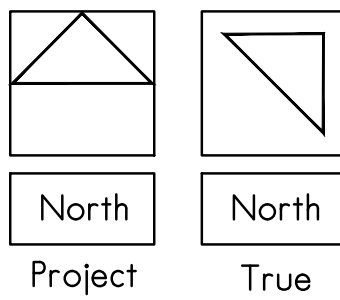
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FIRST FLOOR HVAC PLAN - DEMOLITION

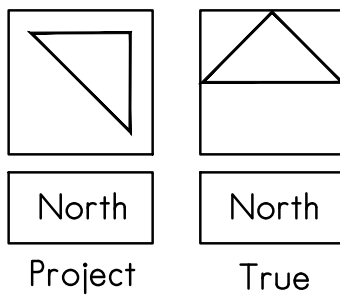
SCALE:

1/8" = 1'-0"



KEY PLAN

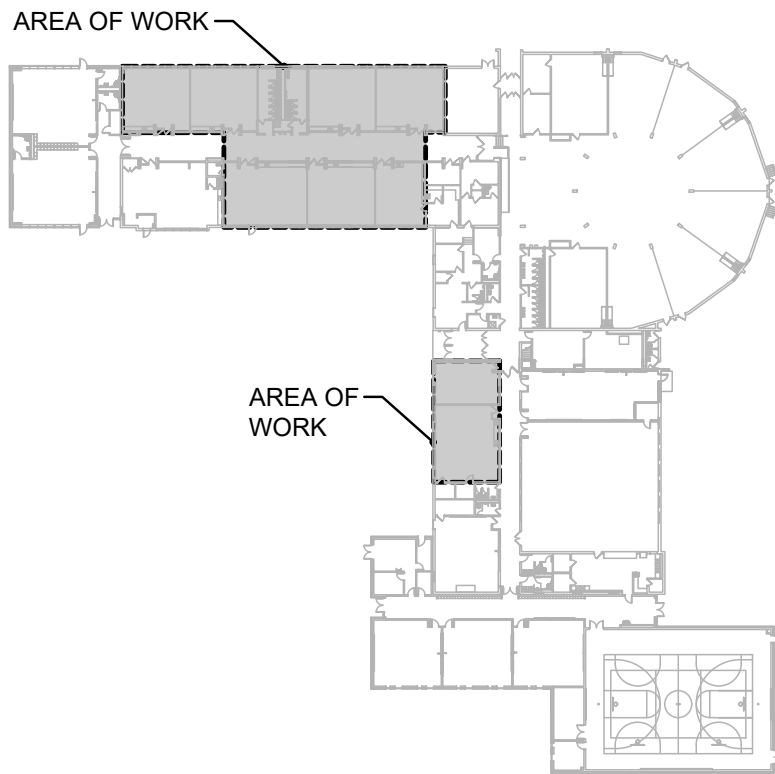
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CONTRACTOR TO REMOVE EXISTING PNEUMATIC / ELECTRIC CONTROL VALVES, ACTUATORS, WIRING, TUBING AND REPLACE WITH DDC CONTROL VALVES, ACTUATORS AND WIRING TO ALL NEW AND EXISTING EQUIPMENT. REMOVE EXISTING PNEUMATIC / ELECTRIC THERMOSTATS AND REPLACE WITH DDC SENSORS.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REMOVE AND REINSTALL PORTIONS OF THE CEILING TILE AND GRID (WHICH IS NOT INDICATED ON THE ARCHITECTURAL DRAWING) AS REQUIRED TO PERFORM WORK OF THIS TRADE.

ALL EXPOSED PIPING SHALL BE INSULATED PER SPECIFICATION AND COVERED WITH A PVC JACKET. ALL REFRIGERANT PIPING SHALL BE HARD DRAWN. SOFT COPPER LINE SETS ARE NOT ACCEPTABLE.



HVAC DEMOLITION DRAWING NOTES:

- EXISTING PIPING AND VALVING TO REMAIN.
- EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- EXISTING HVAC EQUIPMENT TO REMAIN.
- EXISTING THERMOSTAT TO REMAIN.
- REMOVE ALL PIPING, VALVING, HANGERS, INSULATION, ETC. SHOWN DASHED AS REQUIRED TO PROVIDE NEW UNIT VENTILATOR AT SIMILAR LOCATION. REFER TO M1.1G FOR ADDITIONAL INFORMATION.
- DISCONNECT AND REMOVE EXISTING HOT WATER COIL. PROVIDE NEW DX COIL/ REFRIGERANT PIPING/ VALVES/ INSULATION/ CONTROLS, ETC. RE-INSTALL HOT WATER COIL/ PIPING/ VALVING/ INSULATION, CONTROLS, ETC. REFER TO DETAIL AND SPECIFICATIONS.
- REMOVE SELF CONTAINED UNIT VENTILATOR AND ALL ASSOCIATED PIPING, VALVING, CONTROLS, ETC. REMOVE WALL LOUVER UNLESS NOTED OTHERWISE.
- REMOVE EXISTING THERMOSTAT INCLUDING ALL ASSOCIATED CONDUIT, WIRING, PNEUMATIC TUBING, ETC. LOCATED ABOVE ANY ACCESSIBLE CEILING BETWEEN THERMOSTAT AND THE UNIT IT CONTROLS. PROVIDE BLANK COVER PLATE OVER ALL ABANDONED JUNCTION BOXES IN WALLS THAT ARE TO REMAIN.
- EXISTING LOUVER TO REMAIN.
- REMOVE EXISTING FINNED TUBE RADIATION ENCLOSURE CONCEALING HYDRONIC PIPING LOOP. REMOVE/REPLACE PIPING, VALVING, HANGERS, INSULATION, ETC. AS REQUIRED TO PROVIDE A/C.
- CAREFULLY REMOVE WINDOW AIR CONDITIONING UNIT AND TURN OVER TO OWNER.
- REMOVE EXISTING EXHAUST FAN AND ALL ASSOCIATED DUCTWORK (AS REQUIRED), CURB, CONTROLS ETC. IN PREPARATION FOR NEW FAN/CURB AT SAME LOCATION.

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SHEET NUMBER	MD1.1G

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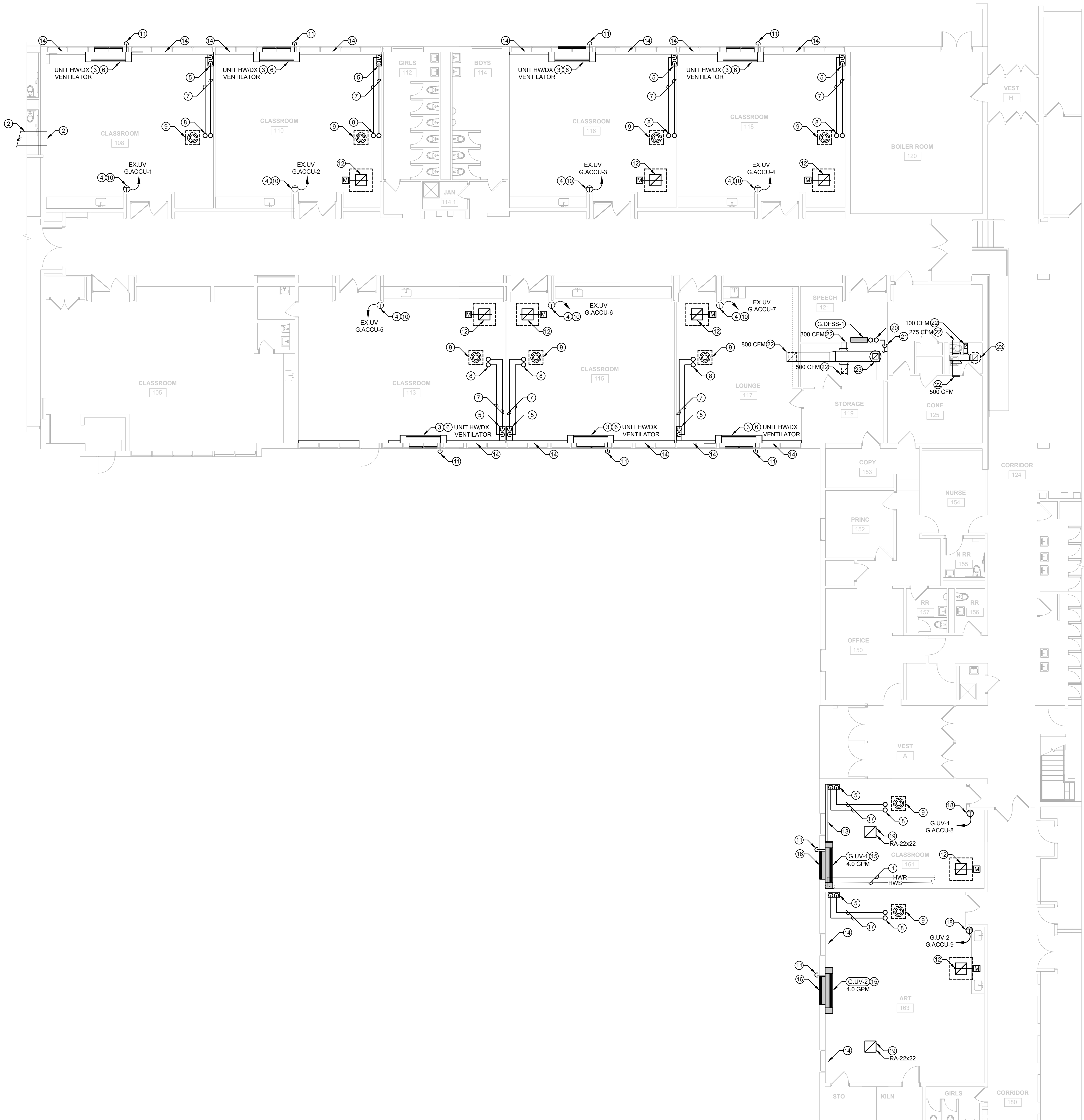


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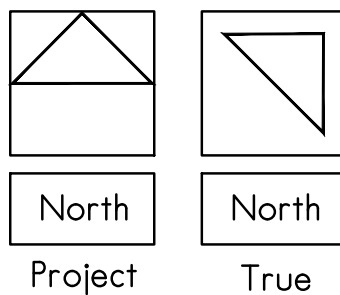
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FIRST FLOOR HVAC PLAN

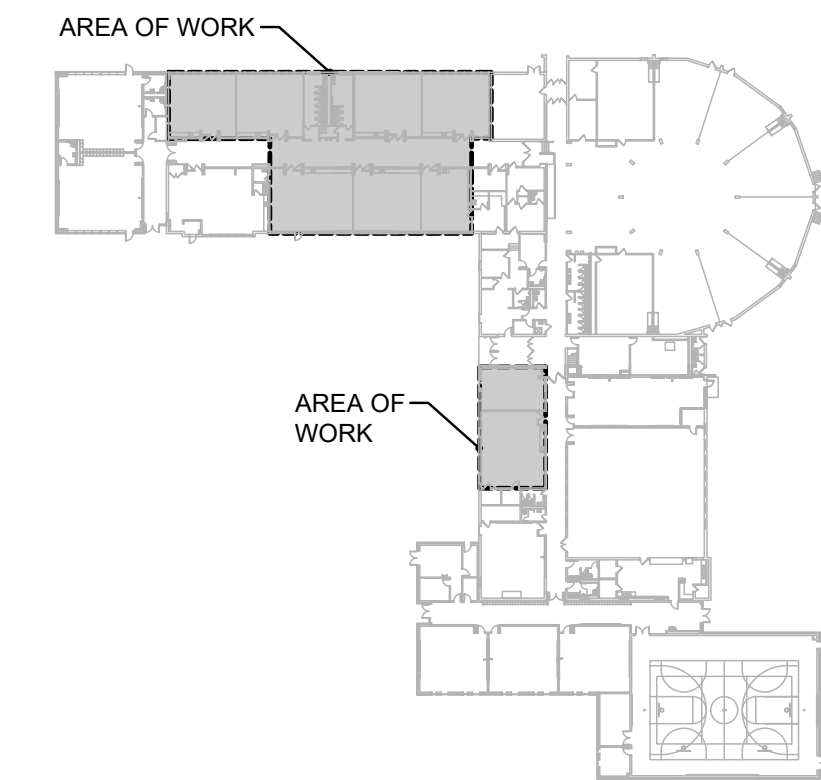
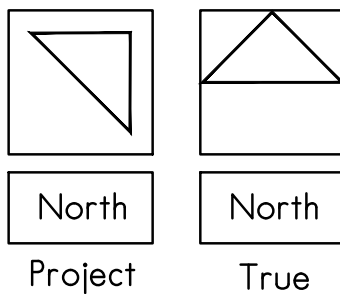
SCALE:

1/8" = 1'-0"



KEY PLAN

SCALE: NO SCALE



CONTRACTOR TO REMOVE EXISTING PNEUMATIC / ELECTRIC CONTROL VALVES, ACTUATORS, WIRING, TUBING AND REPLACE WITH DDC CONTROL VALVES, ACTUATORS AND WIRING TO ALL NEW AND EXISTING EQUIPMENT. REMOVE EXISTING PNEUMATIC / ELECTRIC THERMOSTATS AND REPLACE WITH DDC SENSORS.

IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REMOVE AND REINSTALL PORTIONS OF THE CEILING TILE AND GRID (WHICH IS NOT INDICATED ON THE ARCHITECTURAL DRAWING) AS REQUIRED TO PERFORM WORK OF THIS TRADE.

ALL EXPOSED PIPING SHALL BE INSULATED PER SPECIFICATION AND COVERED WITH A PVC JACKET. ALL REFRIGERANT PIPING SHALL BE HARD DRAWN. SOFT COPPER LINE SETS ARE NOT ACCEPTABLE.

HVAC DRAWING NOTES:

- EXISTING PIPING AND VALVING TO REMAIN.
- EXISTING DUCTWORK, DIFFUSERS, REGISTERS, AND GRILLES TO REMAIN.
- EXISTING HVAC EQUIPMENT TO REMAIN.
- EXISTING THERMOSTAT TO REMAIN.
- DROP NEW REFRIGERANT PIPING DOWN IN METAL PIPE ENCLOSURE. REFER TO ARCHITECTURAL FOR ADDITIONAL ENCLOSURE INFORMATION. NEW PIPE ENCLOSURE PAINTED TO MATCH EXISTING WALLS. PROVIDE WALLPIPE MOUNTS EVERY 4'-0" O.C. USE CUSH-A-THERM OR KLOSHURE SERIES 7 STYLE MOUNTS TO ENSURE CONTINUOUS INSULATION VAPOR BARRIER.
- PROVIDE NEW DX COIL IN EXISTING DAIKIN UNIT VENTILATOR. DISCONNECT/ RECONNECT, REMOVE/REPLACE HOT WATER COIL, VALVING, POWER, CONTROLS, ETC. AS REQUIRED. PROVIDE NEW VALVING AND REFRIGERANT PIPING BETWEEN NEW ROOF MOUNTED ACCU AT EXISTING FLOOR MOUNTED UNIT VENTILATOR. INSTALL PER UNIT MANUFACTURES REQUIREMENTS.
- REFRIGERANT PIPING SIZED PER MANUFACTURER. ROUTE REFRIGERANT PIPING CONCEALED ALONG WIDE FLANGE BEAM. REFER TO EXISTING SIMILAR INSTALLATION IN ADJACENT KINDERGARTEN ROOMS.
- REFRIGERANT PIPING UP THROUGH PIPE PORTAL TO NEW ROOF MOUNTED AIR COOLED CONDENSING UNIT. REFER TO SPECIFICATION AND DETAIL. FOR CONTINUATION, REFER TO ROOF PLAN.
- NEW ROOF MOUNTED NEW (ACCU) AIR COOLED CONDENSING UNIT. REFER TO ROOF PLAN. FOR ADDITIONAL INFORMATION, REFER TO SCHEDULES, DETAILS AND SPECIFICATION.
- MODIFY OPERATION OF EXISTING THERMOSTAT TO FUNCTION IN BOTH HEATING AND COOLING MODES OF OPERATION. REFER TO NEW SEQUENCE OF OPERATIONS.
- PROVIDE 3/4" CONNECTION TO EXISTING UNIT VENTILATOR DRAIN PAN. SLOPE TO EXTERIOR. TERMINATE WITH DOWN TURNED SCREENED SCHEDULE 40 ELBOW. SEAL PIPE/WALL PENETRATION WEATHERTIGHT. REFER TO DETAIL ELSEWHERE.
- PROVIDE 18x18 WITH LOW LEAK MOTOR OPERATED DAMPER TO OPEN/CLOSE WITH ON/OFF OPERATION OF UNIT VENTILATOR. 18x18 DUCT UP TO ROOF MOUNTED RELIEF HOOD. COVER OPEN END WITH EXPANDED SHEET METAL SCREEN. REFER TO ROOF PLAN FOR CONTINUATION. FIELD COORDINATE FINAL LOCATION WITH ARCHITECT AND EXISTING CONDITIONS.
- PROVIDE NEW HORIZONTAL PIPE ENCLOSURE. MATCH EXISTING ENCLOSURE. PAINT TO MATCH WALL. COLOR AS SELECTED BY ARCHITECT.
- REMOVE/RE-INSTALL/MODIFY EXISTING PIPE ENCLOSURE TO DISCONNECT/ RECONNECT EXISTING HWS/R, CONTROLS, POWER, ETC. TO PROVIDE A/C.
- PROVIDE NEW HOT WATER HEATING, DX COOLING UNIT VENTILATOR. REFER TO SCHEDULES, DETAILS AND SPECIFICATIONS.
- MODIFY/PATCH WALL OPENING TO ACCEPT NEW LOUVER AT SIMILAR LOCATION. BLOCK AND BRICK TO MATCH EXISTING. COORDINATE WITH ARCHITECT.
- REFRIGERANT PIPING SIZED PER MANUFACTURER. ROUTE CONEALED ABOVE EXISTING LAY-IN CEILING.
- PROVIDE NEW DDC THERMOSTAT AT SIMILAR LOCATION. PATCH/PAINT WALL TO MATCH EXISTING.
- PROVIDE 24x24 RELIEF GRILLE. FIELD VERIFY EXACT LOCATION IN SUSPENDED CEILING.
- WALL MOUNTED DUCT FREE SPLIT SYSTEM. FIELD VERIFY EXACT LOCATION. PROVIDE MANUFACTURES REFRIGERANT PIPING SHROUD, MANUFACTURERS CONDENSATE PUMP AND MANUFACTURERS WALL MOUNT BRACKET.
- ROUTE CONDENSATE THROUGH WALL. SEAL WALL/PIPE PENETRATION PER DETAIL. PAINT WALL TO MATCH. ROUTE DOWN TO EXISTING FLOOR DRAIN NEAR MECHANICAL EQUIPMENT. TERMINATE WITH INDIRECT CONNECTION. ROUTE TO AVOID TRIPPING HAZARD.
- EXISTING GRILLES AND DUCTWORK TO REMAIN. BALANCE TO AIRFLOW RATE INDICATED.
- EXISTING EXHAUST RISER TO REMAIN. MODIFY TO CONNECT TO NEW FAN ON NEW TALLER CURB.

GREGORY ELEMENTARY SCHOOL - HVAC IMPROVEMENTS

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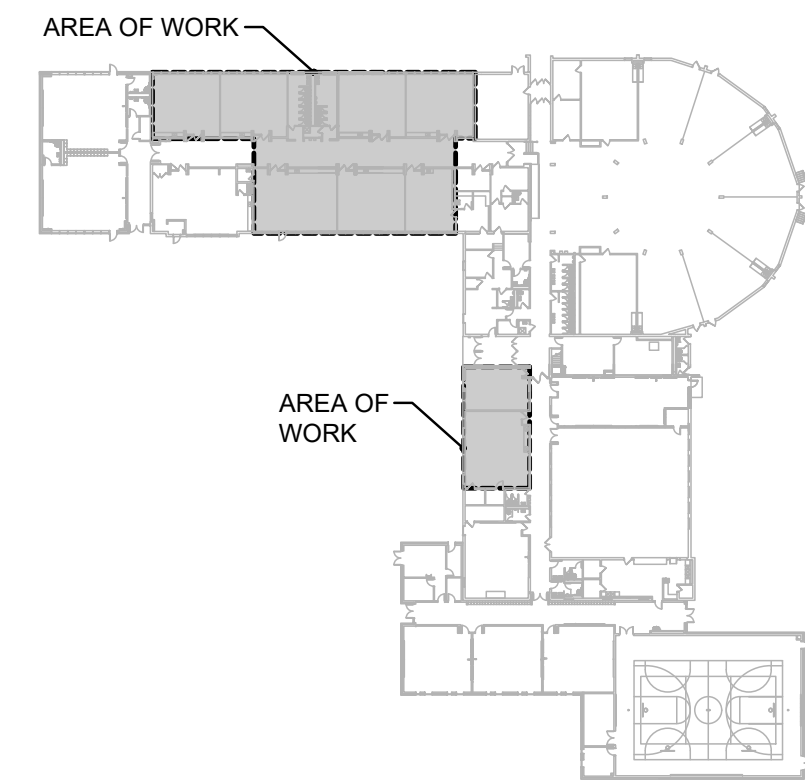
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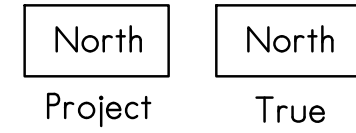
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1. REFRIGERANT PIPING SIZED PER MANUFACTURER. ROUTE REFRIGERANT PIPING DOWN IN PIPE RATTLE. REFER TO DETAIL AND SPECIFICATIONS. SLOPE RATTLE TO MATCH EXISTING ROOF SLOPE.
2. PROVIDE NEW (ACCU) AIR COOLED CONDENSING UNIT ON NON-PENETRATING EQUIPMENT PLATFORM. FIELD VERIFY EXACT LOCATION. MOUNT A MINIMUM OF 10'-0" FROM ROOF EDGE. REFER TO DETAILS AND SCHEDULE.
3. PROVIDE REEF HOOD WITH COUNTER BALANCED BACK DRAFT DAMPER. 18x18 DUCT RUN WITH EXPANDED SHEET METAL SCREEN OVER OPENING. COORDINATE FINAL LOCATION WITH ARCHITECT. PROVIDE ROOF CURB TO MATCH SLOPE OF EXISTING ROOF.
4. EXISTING HVAC EQUIPMENT TO REMAIN.
5. PROVIDE NEW CURB AND NEW EXHAUST FAN AT EXISTING LOCATION TO EXISTING. MODIFY DUCT RISER AS NEEDED. CONNECT TO EXISTING DDC SYSTEM. REFER TO DETAILS AND SPECIFICATIONS. UTILIZE DISTRICTS ROOFING CONTRACTOR TO PRESERVE EXISTING ROOFING WATERFALL IF ONE STILL REMAINS.

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M1.2G			

FILE: P:\188-01-1\COMMON\7801\1880101.DWG - SHEET 06: MECHANICAL SCHEDULES - DATE: 9/30/2022 TIME: 1:55 PM

AIR COOLED CONDENSING UNIT SCHEDULE																									
EQUIPMENT TAG	SCHOOL LOCATION	UNIT SERVED AREA SERVED	MANUFACTURER	MODEL	SEER	HEAT REJECTION (MBH)	WEIGHT (LBS)	COMPRESSORS					FANS					ELECTRICAL DATA					NOTES		
								QUANTITY	SIZE EACH (TONS)	CAPACITY STEPS	SST (°F)	REF. TYPE	EAT (°F)	QUANTITY	DIAMETER	TYPE	HP (ea.)	RPM	SP (IN)	MCA	MOCP	PHASE		VOLT	
(G.ACCU-1)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 108	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-2)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 110	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-3)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 116	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-4)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 118	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-5)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 113	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-6)	GREGORY ROOF	EX.UV/NEW DX COIL CLRM. 115	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-7)	GREGORY ROOF	EX.UV/NEW DX COIL LOUNGE 117	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.8	
(G.ACCU-8)	GREGORY ROOF	G.UV-1 CLASSROOM 161	DAIKIN	DX16TC0241	16.0	23.0	180	1	2	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	13.6	20	1	208	1-4.7	
(G.ACCU-9)	GREGORY ROOF	G.UV-2 ART ROOM 163	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-1)	HILLMAN ROOF	H.UV-8 CLSRM 111	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-2)	HILLMAN ROOF	H.UV-9 CLSRM 112	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-3)	HILLMAN ROOF	H.UV-10 CLSRM 113	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-4)	HILLMAN ROOF	H.UV-11 CLSRM 114	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-5)	HILLMAN ROOF	H.UV-12 CLSRM 115	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-6)	HILLMAN ROOF	H.UV-13 CLSRM 116	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-7)	HILLMAN ROOF	H.UV-14 CLSRM 117	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-8)	HILLMAN ROOF	H.UV-15 CLSRM 118	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-9)	HILLMAN ROOF	H.UV-16 RESOURCE 121	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-10)	HILLMAN ROOF	H.UV-17 RESOURCE 121	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-11)	HILLMAN ROOF	H.UV-18 RESOURCE 121	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-12)	HILLMAN ROOF	H.UV-19 CLRM 201	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-13)	HILLMAN ROOF	H.UV-1 CLSRM 101	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-14)	HILLMAN ROOF	H.UV-20 CLRM 202	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-15)	HILLMAN ROOF	H.UV-2 CLSRM 102	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-16)	HILLMAN ROOF	H.UV-21 CLRM 200	DAIKIN	DX16TC0241	16.0	23.0	180	1	2	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	13.6	20	1	208	1-4.7	
(H.ACCU-17)	HILLMAN ROOF	H.UV-3 CLSRM 100	DAIKIN	DX16TC0241	16.0	23.0	180	1	2	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	13.6	20	1	208	1-4.7	
(H.ACCU-18)	HILLMAN ROOF	H.UV-22 CLRM 203	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-19)	HILLMAN ROOF	H.UV-4 CLSRM 103	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-20)	HILLMAN ROOF	H.UV-23 CLRM 204	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-21)	HILLMAN ROOF	H.UV-5 CLSRM 104	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-22)	HILLMAN ROOF	H.UV-24 CLRM 205	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-23)	HILLMAN ROOF	H.UV-6 CLSRM 105	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-24)	HILLMAN ROOF	H.UV-25 CLRM 206	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-25)	HILLMAN ROOF	H.UV-7 CLSRM 106	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-VARIABLE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-26)	HILLMAN ROOF	H.UV-26 CLSRM 106	DAIKIN	DX16TC0241	16.0	23.0	180	1	2	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	13.6	20	1	208	1-4.7	
(H.ACCU-27)	HILLMAN ROOF	H.UV-27 CLSRM 212	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-VARIABLE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-28)	HILLMAN ROOF	H.UV-28 CLSRM 213	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-VARIABLE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(H.ACCU-29)	HILLMAN ROOF	H.UV-29 CLSRM 214	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-VARIABLE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-1)	MCINTOSH ROOF	CLASSROOM 12	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-2)	MCINTOSH ROOF	CLASSROOM 11	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-3)	MCINTOSH ROOF	CLASSROOM 10	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-4)	MCINTOSH ROOF	CLASSROOM 9	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-5)	MCINTOSH ROOF	CLASSROOM 8	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-6)	MCINTOSH ROOF	CLASSROOM 7	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-7)	MCINTOSH ROOF	CLASSROOM 6	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7	30	1	208	1-4.7	
(M.ACCU-8)	MCINTOSH ROOF	CLASSROOM 5	DAIKIN	DX16TC0361	16.0	34.0	201	1	3	2-STAGE SCROLL	45.0	R410A	95.0	1	22	PROP	1/6	--	--	19.7					

UNIT VENTILATOR SCHEDULE (VERTICAL STAND UP)																																										
GENERAL															HOT WATER COIL					DX COOLING COIL					ACCESSORIES		FACTORY CONTROLS		FILTERS			SUPPLY FAN-POWER EXHAUST					NOTES					
EQUIPMENT TAG	SCHOOL LOCATION	AREA SERVED	MANUF.	MODEL	STANDARD AIR FLOW	EXT. S.P. IN.	MIN. O.A. (CFM)	UNIT TYPE	WIDTH (IN.)	HEIGHT (IN.)	DEPTH (IN.)	AIR ARRANGEMENT INLET AIR DISCHARGE	ROWS	COIL CONN.	EAT (°F)	LAT (°F)	EWI (°F)	MAX PD. (FT.)	GPM	CAP (MBH)	ROWS	COIL CONN.	EAT (°F)	LAT (°F)	LAT (°F)	SST	SENS. CAP. (MBH)	TOTAL CAP. (MBH)	WALL LAMPS	LOUVER DEPTH	DAMPERS	HOT WATER COIL CONTROLS	TYPE	SIZE	EXTRA ST.	HP. SUPPLY HP. EXHAUST		MCA	MOCP	PHASE	VOLTS	
(M.UV-13)	MCINTOSH CLSRM 24	CLASSROOM 24	AIREDALE	CMS36DABA CBNNC92N	1100	0.5	275	VERT.	42	90	30	SIDE GRILLE	DUCTED TOP	1	NOTE 4	50	113	180	2.2	5.5	78.3	4	NOTE 4	75	63	55	54	45	35.8	45.5	44"	31"	DDC FIDC, 2-WAY DDC MOD. VALVE	2" T ² MERV 13	2 @ 12"x24"x1"	YES	3/4 HP	4.8	15	3	208	1 THRU 7, 10
(M.UV-14)	MCINTOSH CLSRM 23	CLASSROOM 23	AIREDALE	CMS36DABA CBNNN92N	1100	0.5	275	VERT.	42	90	30	SIDE GRILLE	DUCTED TOP	1	NOTE 4	50	113	180	2.2	5.5	78.3	4	NOTE 4	75	63	55	54	45	35.8	45.5	44"	31"	DDC FIDC, 2-WAY DDC MOD. VALVE	2" T ² MERV 13	2 @ 12"x24"x1"	YES	1 HP/ 1/2 HP	5.9	15	3	208	1 THRU 9
NOTES:																																										
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATION.					4. PROVIDE A HOT WATER PIPING PACKAGE WITH A TWO WAY, BELUM (OT) SHROUD, FRONT AND MODULATING CONTROL VALVE (SIZED FOR MAXIMUM 3.0W PRESSURE DROP). SEE PIPING DETAIL FOR TRIM.					5. COLOR AS SELECTED BY ARCHITECT.					8. PROVIDE WITH 1/2 HP POWER EXHAUST FAN. PROVIDE MANNED EQUIVERS, ADJUSTABLE, INSULATED WALL SLEEVE WITH SPLITTER AND 39"x39"x1"x4" DEEP MANUF. WALL LOUVER.																											
2. PROVIDE WITH CIRCUIT BREAKER AND DISCONNECT SWITCH.										6. PROVIDE WITH MATCHED 3-TON AIR COOLED CONDENSING UNIT. REFER TO ACCU SCHEDULE.					9. PROVIDE LITTLE GIAN 18"X30"X10, 120V/1 PH, 1.5A, 93W CONDENSATE PUMP WITH CHECK VALVE.																											
3. UNIT VENTILATOR INITIAL MINIMUM O.A. SETPOINT BASED ON CURRENT ROOM OCCUPANCY.																																										

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DEDICATED OUTDOOR AIR SYSTEM																																																				
GENERAL										SUPPLY FAN DATA							RETURN FAN DATA							GAS HEATING SECTION							DIRECT EXPANSION COIL							ENERGY RECOVERY							FILTERS		ELECTRICAL DATA				NOTES	
EQUIPMENT TAG	SCHOOL LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE OF SYSTEM	UNIT EFFICIENCY	TYPE OF UNIT	PHYSICAL CHARACTERISTICS				CFM	MIN.O.A. (CFM)	SUPPLY TSP (IN.)	DRIVE TYPE	MOTOR SPEEDS RPM	HP	CFM	MIN.O.A. (CFM)	SUPPLY ESP (IN.)	DRIVE TYPE	MOTOR SPEEDS RPM	HP	INPUT CAPACITY (MBH)	OUTPUT CAPACITY (MBH)	STAGES	EAT (°F)	LAT (°F)	MIN. ROWS	MAX. FPI	MAXIMUM VELOCITY (FPM)	EAT (DB) (°F)	EAT (WB) (°F)	LAT (DB) (°F)	LAT (WB) (°F)	MAX SP (IN.)	SST (°F)	TOTAL MBH	TYPE	SUMMER O.A. (DB/WB)	SUMMER L.A. (DB/WB)	SUMMER CAP. (MBH)	WINTER O.A. (DB/WB)	WINTER L.A. (DB/WB)	WINTER CAP. (MBH)	FACE VELOCITY (FPM)	TYPE	MINIMUM CIRCUIT AMPS	MOCB	PHASE		VOLTS
								L	W	H	(WEIGHT) (LBS.)																																									
(N.DOAS-1)	ROOF NASHOLD	CLASSROOM VENTILATION	AAON	RN-016-8-0-EA09-348	100% O.A. W/WHEEL	HIGH EFF. 10.1 EER	DEDICATED O.A. SYSTEM	157"	59"	60"	2580	3600	3600	2.9	PLUG DIRECT VFD	1760	5.0	3600	3600	1.5	PLUG DIRECT VFD	1760	2.0	270.0	218.7	FULL MOD. 9:1	51.4	107.6	3	14	185.0	79.9	66.1	50.9	49.5	0.2	45.0	172.3	WHEEL	95/75 °F	79.9/66.1 °F	113.8	-10/-10 °F	51.4/46.9 °F	330.0	175.0	2" THICK MERV 14	95.0	110	3	208	1-21
(N.DOAS-2)	ROOF NASHOLD	CLASSROOM VENTILATION	AAON	RN-016-8-0-EA09-348	100% O.A. W/WHEEL	HIGH EFF. 10.1 EER	DEDICATED O.A. SYSTEM	157"	59"	60"	2580	3600	3600	2.9	PLUG DIRECT VFD	1760	5.0	3600	3600	1.5	PLUG DIRECT VFD	1760	2.0	270.0	218.7	FULL MOD. 9:1	51.4	107.6	3	14	185.0	79.9	66.1	50.9	49.5	0.2	45.0	172.3	WHEEL	95/75 °F	79.9/66.1 °F	113.8	-10/-10 °F	51.4/46.9 °F	330.0	175.0	2" THICK MERV 14	95.0	110	3	208	1-21
(N.DOAS-3)	ROOF NASHOLD	CLASSROOM VENTILATION	AAON	RN-020-8-0-EA09-348	100% O.A. W/WHEEL	HIGH EFF. 10.1 EER	DEDICATED O.A. SYSTEM	157"	59"	60"	3575	5000	5000	3.5	PLUG DIRECT VFD	1760	5.0	5000	5000	1.9	PLUG DIRECT VFD	1760	5.0	270.0	218.7	FULL MOD. 9:1	45.5	85.9	4	14	255.0	81.3	67.1	53.6	52.1	0.2	45.0	225.2	WHEEL	95/75 °F	81.3/67.1 °F	143.1	-10/-10 °F	45.4/42.7 °F	417.0	175.0	2" THICK MERV 14	95.0	110	3	208	1-21

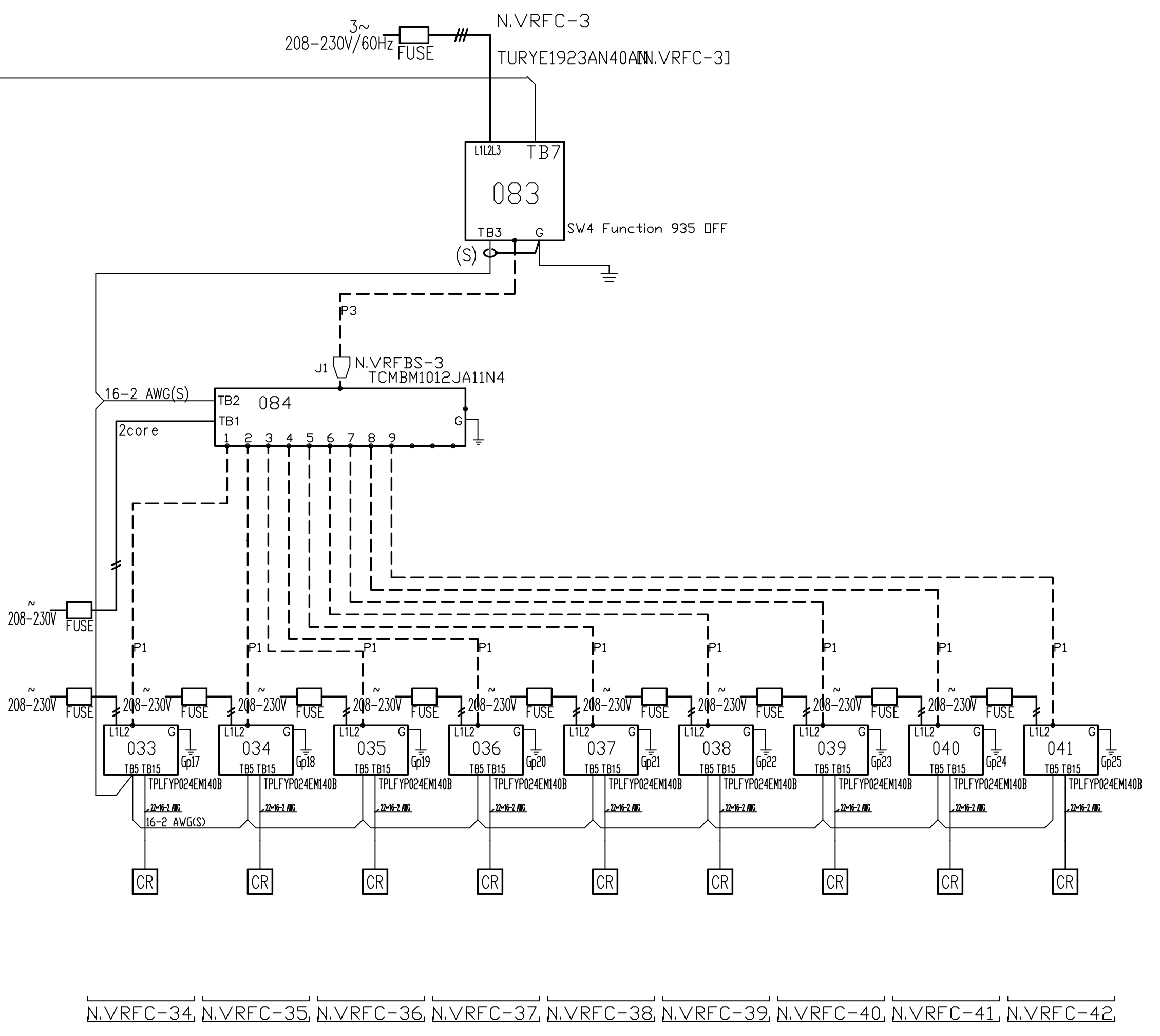
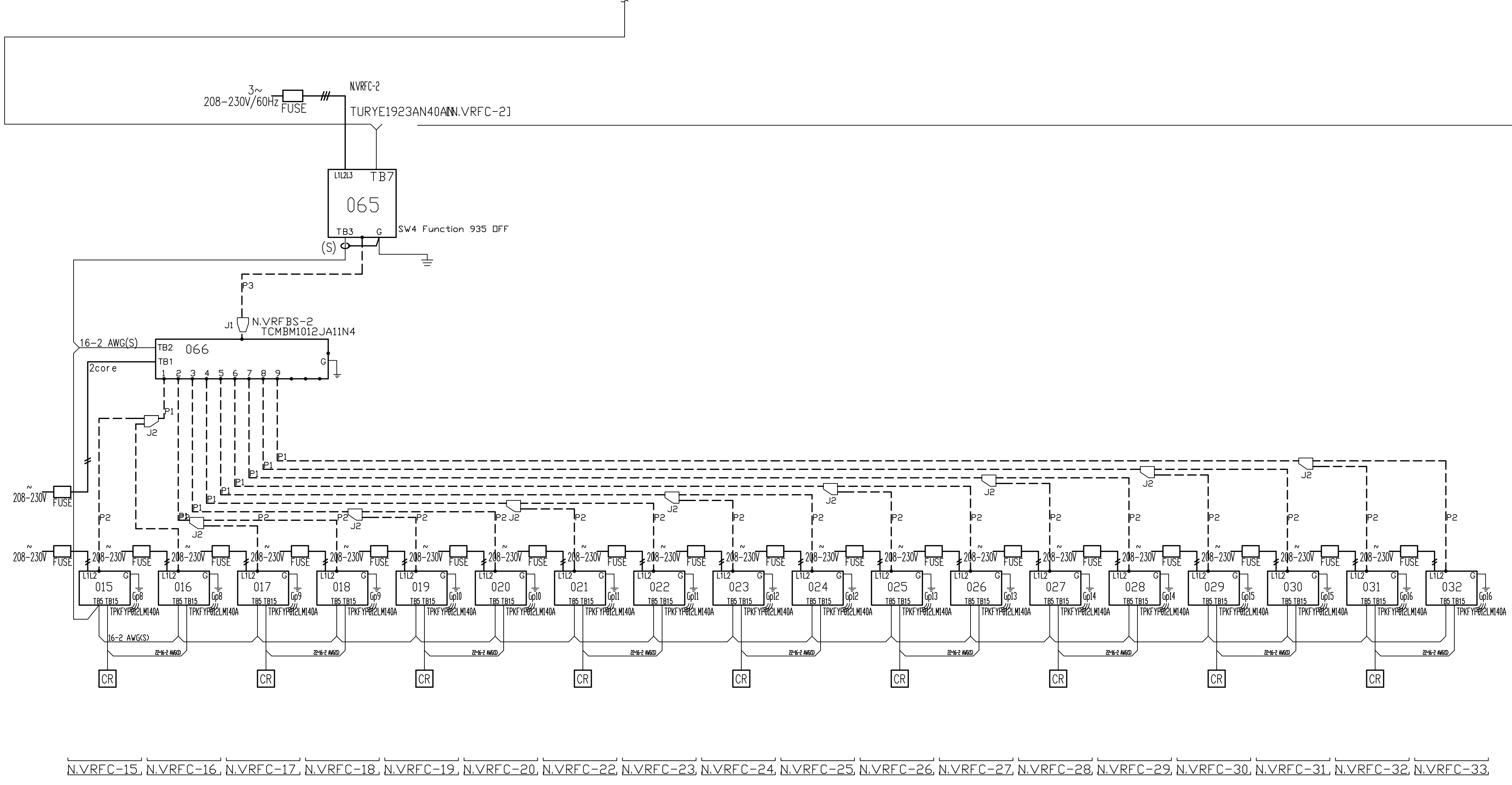
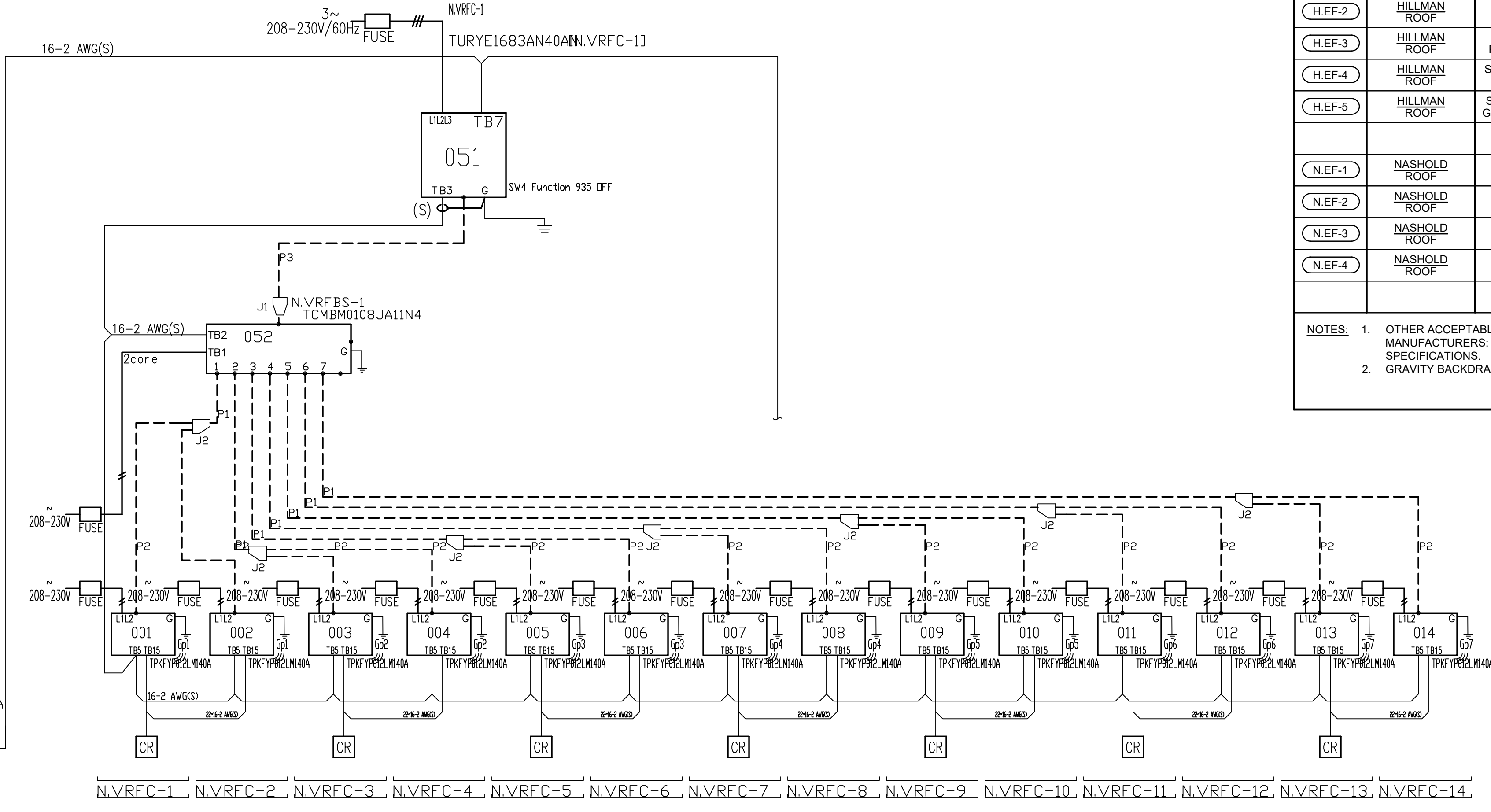
VARIABLE REFRIGERANT FLOW BRANCH CONTROLLER SCHEDULE																	
EQUIPMENT TAG	SCHOOL LOCATION	UNIT SERVED	MANUF.	MODEL	PHYSICAL DIMENSIONS				MAX CAPACITY PER PORT (BTU/H)	ELECTRICAL DATA			NOTES				
					H	W	D	WEIGHT		MCA	MOCP	V/PH/Hz					
(N.VRFBS-1)	NASHOLD CORRIDOR	N.VRFC-1	TRANE	TCMBM108JA11N4 (8-PORT)	9.9	35.9	21.5	106	54,000	0.83	15	230/1/60	1 - 5				
(N.VRFBS-2)	NASHOLD CORRIDOR	N.VRFC-2	TRANE	TCMBM1012JA11N4 (12-PORT)	9.9	44.7	21.5	133	54,000	1.57	15	230/1/60	1 - 5				
(N.VRFBS-3)	NASHOLD CORRIDOR	N.VRFC-3	TRANE	TCMBM1012JA11N4 (12-PORT)	9.9	44.7	21.5	133	54,000	1.57	15	230/1/60	1 - 5				
NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS. 2. PROVIDE FACTORY INSTALLED REFRIGERATION ISOLATION VALVES. 3. FOR ADDITIONAL INFORMATION, REFER TO SYSTEM SCHEMATIC DIAGRAM. 4. CAP EACH UNUSED PORT. 5. SERVICE UNIT FROM BOTTOM AND SIDES ONLY. TOP ACCESS NOT REQUIRED / ALLOWED. 6. PROVIDE BLUE DIAMOND, MAXI BLUE CONDENSATE PUMP MODEL# X87-712, WITH RESERVOIR & SENSOR, DUAL VOLTAGE OPTIONS, COORDINATE WITH ELECTRICAL CONTRACTOR.																	

VARIABLE REFRIGERANT FLOW CONDENSER SCHEDULE																										
EQUIPMENT TAG	SCHOOL LOCATION	UNITS SERVED	MANUFACTURER	MODEL	EER / IEEF / COP @ 47°F	PRELIM. BASE REF. CHARGE	PRELIM. ADD. REF. CHARGE	PHYSICAL DIMENSIONS				APPROX. ROOF SUPPORT WEIGHT (LBS.)	REFRIGERANT	CONDENSER FANS			COMPRESSOR TYPE	COOLING		HEATING		ELECTRICAL DATA			NOTES	
								W	D	H	WEIGHT			QUANTITY/ TYPE	AIRFLOW (CFM)	ESP (INCHES, W.G.)		CAP. (MBH) (RATED)	CAP. (MBH) (ACTUAL)	DESIGN O.A. TEMP (DB °F)	CAP. (MBH) (RATED)	CAP. (MBH) (ACTUAL)	DESIGN O.A. TEMP (DB °F)	MCA		MOCP
(N.VRFC-1)	NASHOLD ROOF	N.VRFU-1-14	TRANE	TURYE1683AN40AN HEAT RECOVERY SERIES	11.2/23.4/3.3	24.0 #	40.0 #	69.0	29.1	71.6	777	250	R410A	(2)-PROP. (2)@7425	0.0	INVERTER SCROLL HERMETIC	168.0	154.6	95	188.0	86.1	-13.0	57.0	90.0	208 / 3 / 60	1 - 13
(N.VRFC-2)	NASHOLD ROOF	N.VRFU-15-30	TRANE	TURYE1923AN40AN HEAT RECOVERY SERIES	11.3/20.0/3.3	26.0 #	57.0 #	69.0	29.1	71.6	887	250	R410A	(2)-PROP. (2)@7425	0.0	INVERTER SCROLL HERMETIC	192.0	174.8	95	215.0	82.9	-13.0	66.0	110.0	208 / 3 / 60	1 - 13
(N.VRFC-3)	NASHOLD ROOF	N.VRFC-31-39	TRANE	TURYE1923AN40AN HEAT RECOVERY SERIES	11.3/20.0/3.3	26.0 #	57.0 #	69.0	29.1	71.6	887	250	R410A	(2)-PROP. (2)@6525	0.0	INVERTER SCROLL HERMETIC	192.0	179.7	95	215.0	83.8	-13.0	66.0	110.0	208 / 3 / 60	1 - 13
<div>NOTES:</div> <div><div>1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.</div><div>2. PROVIDE MINIMUM 18" HIGH, MIRO NON-PENETRATING EQUIPMENT SUPPORT WITH VIBRATION ISOLATION.</div><div>3. PROVIDE PANEL HEATER KIT.</div><div>4. PROVIDE SNOW & HAIL GUARDS.</div><div>5. UNITS SHALL PROVIDE CONTINUOUS HEATING DURING DEFROST AND OIL RETURN CYCLES.</div><div>6. PROVIDE VRF CENTRAL CONTROLLER UNIT. SYSTEM SHALL BE CONTROLLED THROUGH THE VRF CENTRAL CONTROLLER. FIELD VERIFY AND COORDINATE WITH OWNER EXACT LOCATION.</div><div>7. PROVIDE BACNET GATEWAY FOR INTEGRATION INTO EXISTING BUILDING AUTOMATION SYSTEM (SCHEDULING, MONITORING & ALARMS ONLY THROUGH BAS). BAS SHALL MONITOR STATUS, ENABLE/DISABLE SYSTEM, SET SCHEDULE AND RECEIVE AN ALARM. REFER TO SPECIFICATIONS. FIELD VERIFY AND COORDINATE EXACT REQUIREMENTS.</div><div>8. RATED DESIGN CONDITIONS: SUMMER DESIGN CONDITIONS: INDOOR 75°F DB, 62.5°F WB, OUTDOOR 95°F DB. WINTER DESIGN CONDITIONS: INDOOR 70°F DB, OUTDOOR -13°F. SYSTEM SHALL PROVIDE MINIMALLY DE-RATED HEATING PERFORMANCE DURING WINTER DESIGN CONDITIONS. SUBMITTED PERFORMANCE DATA MUST BE FULLY DE-RATED FOR ALL COMPONENTS AND ACCESSORIES, INCLUDING BUT NOT LIMITED TO, LINE LENGTH, VERTICAL SEPARATION, CONNECTION RATIO, DESIGN CONDITIONS, CONDENSER COIL COATING.</div><div>9. PROVIDE MANUFACTURER'S STARTUP & COMMISSIONING FOR ENTIRE VRF SYSTEM(S).</div><div>10. PROVIDE 10-YEAR PARTS & COMPRESSOR WARRANTY.</div><div>11. FOR ACTUAL ADDITIONAL REFRIGERANT CHARGE, COORDINATE WITH MANUFACTURER AND FIELD VERIFY ACTUAL PIPING LENGTHS AND ELBOW COUNT.</div><div>12. PROVIDE MANUFACTURER'S REFRIGERANT PIPING TWINNING KIT.</div><div>13. PROVIDE A SEPARATE ELECTRICAL CONNECTION TO EACH MODULE.</div></div>																										

VARIABLE REFRIGERANT FLOW UNIT SCHEDULE																													
GENERAL										HEATING				COOLING				ELECTRICAL				FILTERS		INTEGRAL CONDENSATE PUMP	NOTES				
EQUIPMENT TAG	SCHOOL LOCATION	AREA SERVED	VRF-C SERVED	MANUFACTURER	MODEL	MAX. CFM	DUCTED O.A. CFM	ESP (IN. WG)	TYPE	REFRIGERANT	CABINET				LAT (°F)	CAP. (MBH) (ACTUAL)	TOTAL CAP. (MBH) (NOMINAL)	LAT (°F)	TOTAL CAP. (MBH) (ACTUAL)	SENSIBLE CAP. (MBH) (ACTUAL)	MCA	MOCP	VOLTS			PHASE	TYPE	EXTRA SET	
											HEIGHT (IN.)	WIDTH (IN.)	DEPTH (IN.)	WEIGHT (LBS.)															
(N.VRFU-1)	NASHOLD CLASSROOM 2	CLASSROOM 2	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-2)	NASHOLD CLASSROOM 2	CLASSROOM 2	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-3)	NASHOLD CLASSROOM 4	CLASSROOM 4	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-4)	NASHOLD CLASSROOM 4	CLASSROOM 4	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-5)	NASHOLD CLASSROOM 6	CLASSROOM 6	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-6)	NASHOLD CLASSROOM 6	CLASSROOM 6	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-7)	NASHOLD CLASSROOM 1	CLASSROOM 1	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-8)	NASHOLD CLASSROOM 1	CLASSROOM 1	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-9)	NASHOLD CLASSROOM 3	CLASSROOM 3	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-10)	NASHOLD CLASSROOM 3	CLASSROOM 3	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-11)	NASHOLD CLASSROOM 5	CLASSROOM 5	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-12)	NASHOLD CLASSROOM 5	CLASSROOM 5	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-13)	NASHOLD CLASSROOM 7	CLASSROOM 7	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-14)	NASHOLD CLASSROOM 7	CLASSROOM 7	N.VRFC-1	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1-8	
(N.VRFU-15)	NASHOLD CLASSROOM 12	CLASSROOM 12	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-16)	NASHOLD CLASSROOM 12	CLASSROOM 12	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-17)	NASHOLD TEAM ROOM 8	TEAM ROOM 8	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-18)	NASHOLD TEAM ROOM 8	TEAM ROOM 8	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-19)	NASHOLD CLASSROOM 9	CLASSROOM 9	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-20)	NASHOLD CLASSROOM 9	CLASSROOM 9	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-21)	NASHOLD CLASSROOM 11	CLASSROOM 11	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-22)	NASHOLD CLASSROOM 11	CLASSROOM 11	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-23)	NASHOLD LIBRARY 14	LIBRARY 14	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-24)	NASHOLD LIBRARY 14	LIBRARY 14	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-25)	NASHOLD CLASSROOM 16	CLASSROOM 16	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-26)	NASHOLD CLASSROOM 16	CLASSROOM 16	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-27)	NASHOLD CLASSROOM 13	CLASSROOM 13	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-28)	NASHOLD CLASSROOM 13	CLASSROOM 13	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-29)	NASHOLD CLASSROOM 15	CLASSROOM 15	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-30)	NASHOLD CLASSROOM 15	CLASSROOM 15	N.VRFC-2	TRANE	TPKFYP012LM140A	257	N/A	N/A	WALL MOUNTED	R410A	12.0	31.0	10.0	30	112.5	13.5	12	49.5	11.2	8.4	0.2	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1-8	
(N.VRFU-31)	NASHOLD CLASSROOM 24	CLASSROOM 24	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1,2,4-9	
(N.VRFU-32)	NASHOLD CLASSROOM 25	CLASSROOM 25	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.0" LIFT)	1,2,4-9	
(N.VRFU-33)	NASHOLD CLASSROOM 22	CLASSROOM 22	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-34)	NASHOLD CLASSROOM 23	CLASSROOM 23	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-35)	NASHOLD CLASSROOM 20	CLASSROOM 20	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-36)	NASHOLD CLASSROOM 21	CLASSROOM 21	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-37)	NASHOLD CLASSROOM 19	CLASSROOM 19	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-38)	NASHOLD CLASSROOM 17	CLASSROOM 17	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
(N.VRFU-39)	NASHOLD FACULTY 18	FACULTY 18	N.VRFC-3	TRANE	TPLPYP024EM140B	812	N/A	N/A	3"X3" CASSETTE	R410A	11.75	33.1	33.1	67	100.8	27.0	24	55.6	24.0	18.0	0.54	15	230	1	STANDARD	YES	YES (33.4" LIFT)	1,2,4-9	
NOTES:	1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.					4. RATED DESIGN CONDITIONS: SUMMER DESIGN CONDITIONS: INDOOR 75°F DB, 62.5°F WB. OUTDOOR 95°F DB. WINTER DESIGN CONDITIONS: INDOOR 70°F DB, OUTDOOR -13°F.								5. PROVIDE NEOPRENE VIBRATION ISOLATORS.												8. PROVIDE WITH MANUFACTURER'S INTEGRAL UNIT MOUNTED CONDENSATE PUMP & DRAIN PAN LEVEL SENSOR.			
	2. PROVIDE WITH REMOTE MOUNTED THERMOSTAT.													6. ELECTRICAL CONTRACTOR TO PROVIDE DISCONNECT.												9. RECESSED CEILING MOUNT. MODIFY SUSPENDED CEILING AS REQUIRED.			
	3. PROVIDE WITH MANUFACTURER'S WALL MOUNT BRACKET.													7. FOR ADDITIONAL INFORMATION, REFER TO SYSTEM SCHEMATIC DIAGRAM.															

DIAGRAM SYMBOL	LEGEND	CONTINUING	PAGE
1	POWER WIRE		
2	CONTROL WIRE		
3	REF. PIPE		

PIPING AND CONTROLS
J1 CMY-43025-G
J2 CMY-43025-G
J3 CMY-43025-G
J4 CMY-43025-G
J5 CMY-43025-G
J6 CMY-43025-G
J7 CMY-43025-G
J8 CMY-43025-G
J9 CMY-43025-G
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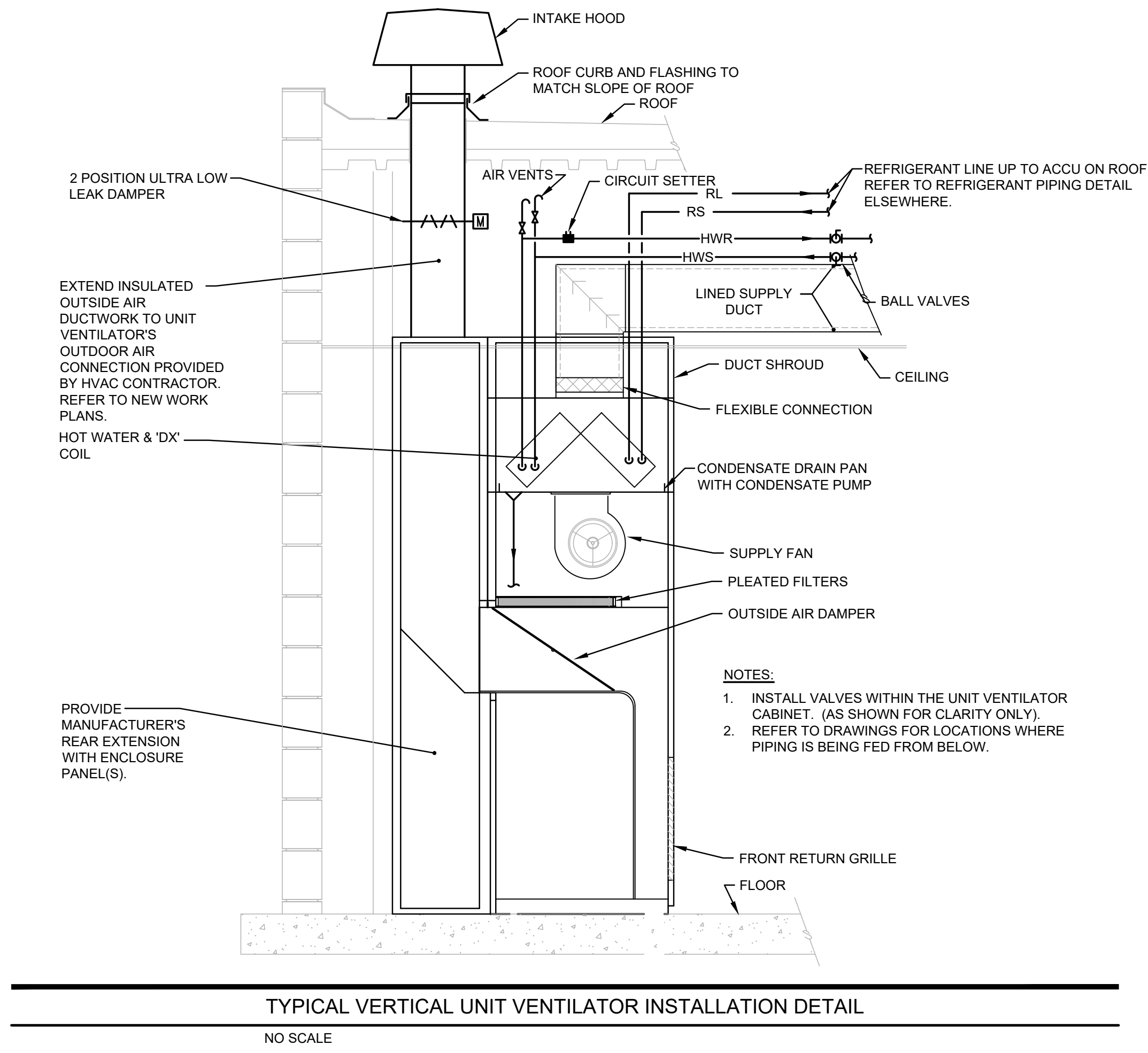
VARIABLE REFRIGERANT FLOW SYSTEM(S) SCHEMATIC DIAGRAMS
NO SCALE

EXHAUST FAN SCHEDULE																			
EQUIPMENT TAG	SCHOOL LOCATION	AREA SERVED	MANUFACTURER	MODEL	TYPE	DRIVE	MIN. WHEEL DIA. (IN.)	CFM	SP (IN.)	FAN RPM	BHP	MOTOR				SONES	CONTROLS	NOTES	
												HP(MAX.)	RPM	PHASE	VOLT				
G.EF-1	GREGORY ROOF	SPEECH/STORAGE CLASSROOM	GREENHECK	G-120-VG	CENTRIFUGAL ROOF	DIRECT	12	1600	0.375	1483	0.29	1/2	1750	1	120	13.4	TC	1,2,3,4,5,6	
G.EF-2	GREGORY ROOF	CONFERENCE/ AP	GREENHECK	G-100-VG	CENTRIFUGAL ROOF	DIRECT	10	875	0.375	1297	0.12	1/4	1750	1	120	7.1	TC	1,2,3,4,5,6	
H.EF-1	HILLMAN ROOF	BOYS/GIRLS RESTROOMS	GREENHECK	G-100-VG	CENTRIFUGAL ROOF	DIRECT	10	800	0.375	1230	0.10	1/4	1750	1	120	6.3	TC	1,2,3,4,5,6	
H.EF-2	HILLMAN ROOF	STORAGE JANITOR	GREENHECK	G-095-VG	CENTRIFUGAL ROOF	DIRECT	9.5	500	0.375	1317	0.07	1/6	1750	1	120	6.6	TC	1,2,3,4,5,6	
H.EF-3	HILLMAN ROOF	STORAGE ROOF ACCESS	GREENHECK	G-100-VG	CENTRIFUGAL ROOF	DIRECT	10	800	0.375	1230	0.10	1/4	1750	1	120	6.3	TC	1,2,3,4,5,6	
H.EF-4	HILLMAN ROOF	SMALL RESTRM JANITORS	GREENHECK	G-100-VG	CENTRIFUGAL ROOF	DIRECT	10	800	0.375	1230	0.10	1/4	1750	1	120	6.3	TC	1,2,3,4,5,6	
H.EF-5	HILLMAN ROOF	STACKED BOYS GIRLS RESTRMS.	GREENHECK	G-160-VG	CENTRIFUGAL ROOF	DIRECT	16	2600	0.500	1230	0.52	1.0	1750	1	120	13.5	TC	1,2,3,4,5,6	
N.EF-1	NASHOLD ROOF	PE OFFICE/ SHOWER	GREENHECK	G-100-VG	CENTRIFUGAL ROOF	DIRECT	10	800	0.375	1230	0.10	1/4	1750	1	120	6.3	TC	1,2,3,4,5,6	
N.EF-2	NASHOLD ROOF	BOYS/GIRLS RESTROOMS	GREENHECK	G-130-VG	CENTRIFUGAL ROOF	DIRECT	13.0	1400	0.375	1179	0.18	1/2	1750	1	120	9.7	TC	1,2,3,4,5,6	
N.EF-3	NASHOLD ROOF	MAIN OFFICE	GREENHECK	G-090-VG	CENTRIFUGAL ROOF	DIRECT	9.0	340	0.375	1280	0.04	1/10	1750	1	120	5.5	TC	1,2,3,4,5,6	
N.EF-4	NASHOLD ROOF	BOYS/GIRLS RESTROOMS	GREENHECK	G-130-VG	CENTRIFUGAL ROOF	DIRECT	13.0	1400	0.375	1179	0.18	1/2	1750	1	120	9.7	TC	1,2,3,4,5,6	
NOTES:												CONTROLS:							
1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS.												LS - LOCAL SWITCH BY E.C.							
2. GRAVITY BACKDRAFT DAMPER.												SC - WALL SPEED CONTROLLER PROVIDED BY M.C. INSTALLED AND WIRED BY E.C.							
3. DISCONNECT SWITCH.												TC - TEMPERATURE CONTROLS CONTRACTOR TO PROVIDE BAS CONTROLS AND INTERFACE.							
4. INSULATED PREFABRICATED ROOF CURB, MINIMUM 18" ABOVE EXISTING ROOF MEMBRANE.												T - THERMOSTAT BY TEMPERATURE CONTROL CONTRACTOR.							
5. EC MOTOR WITH MOTOR MOUNTED POTENTIOMETER DIAL.																			
6. GALVANIZED BIRDSCREEN.																			

VARIABLE FREQUENCY DRIVE SCHEDULE														
EQUIPMENT TAG	SCHOOL LOCATION	EQUIPMENT SERVED	MANUF.	MODEL	MOUNTING	SIZE (H"XW"XD")	MAX. DRIVE OUTPUT CURRENT	MOTOR				SPEED RANGE	NOTES	
								HP(MAX.)	RPM	FREQ.(Hz)	PHASE			VOLTS
(H.VFD-1)	HILLMAN BOILER RM.	HOT WATER SYS. PUMP	DANFOSS	SS	WALL MOUNTED	30.8x7.8x8.3	10.6	3	1800	60	3	208	10%	1,2,3
(H.VFD-2)	HILLMAN BOILER RM.	HOT WATER SYS. PUMP	DANFOSS	SS	WALL MOUNTED	30.8x7.8x8.3	10.6	3	1800	60	3	208	10%	1,2,4
NOTES: 1. OTHER ACCEPTABLE MANUFACTURERS: SEE SPECIFICATIONS. 2. PROVIDE NEMA 1 ENCLOSURE RFI FILTER, DC LINK REACTOR, MANUAL 3-CONTRACTOR CONSTANT SPEED BYPASS, INPUT DISCONNECT SWITCH & OUTPUT LINE REACTOR. 3. EXISTING SYSTEM PUMP. 4. EXISTING STAND-BY SYSTEM PUMP.														

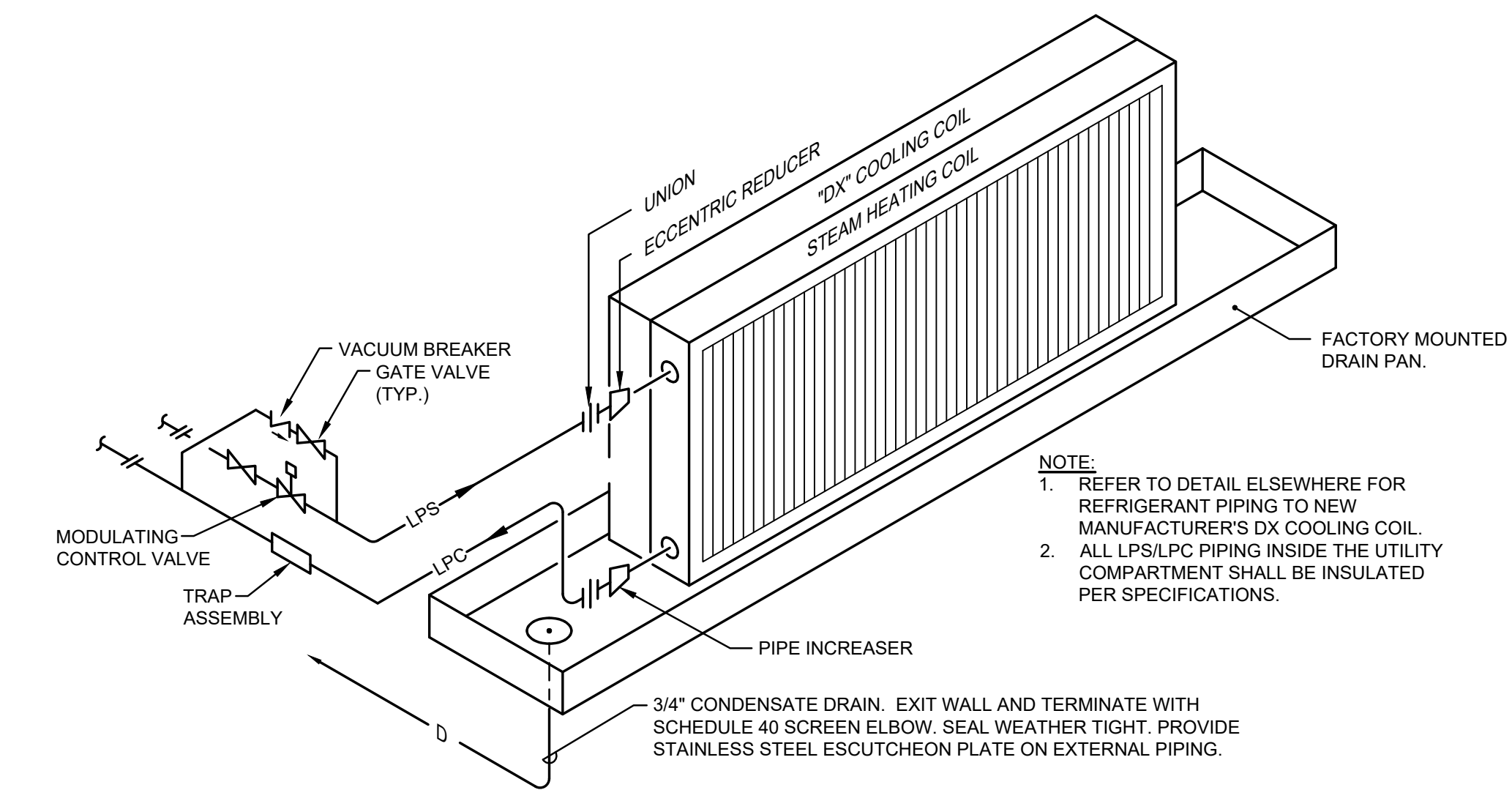


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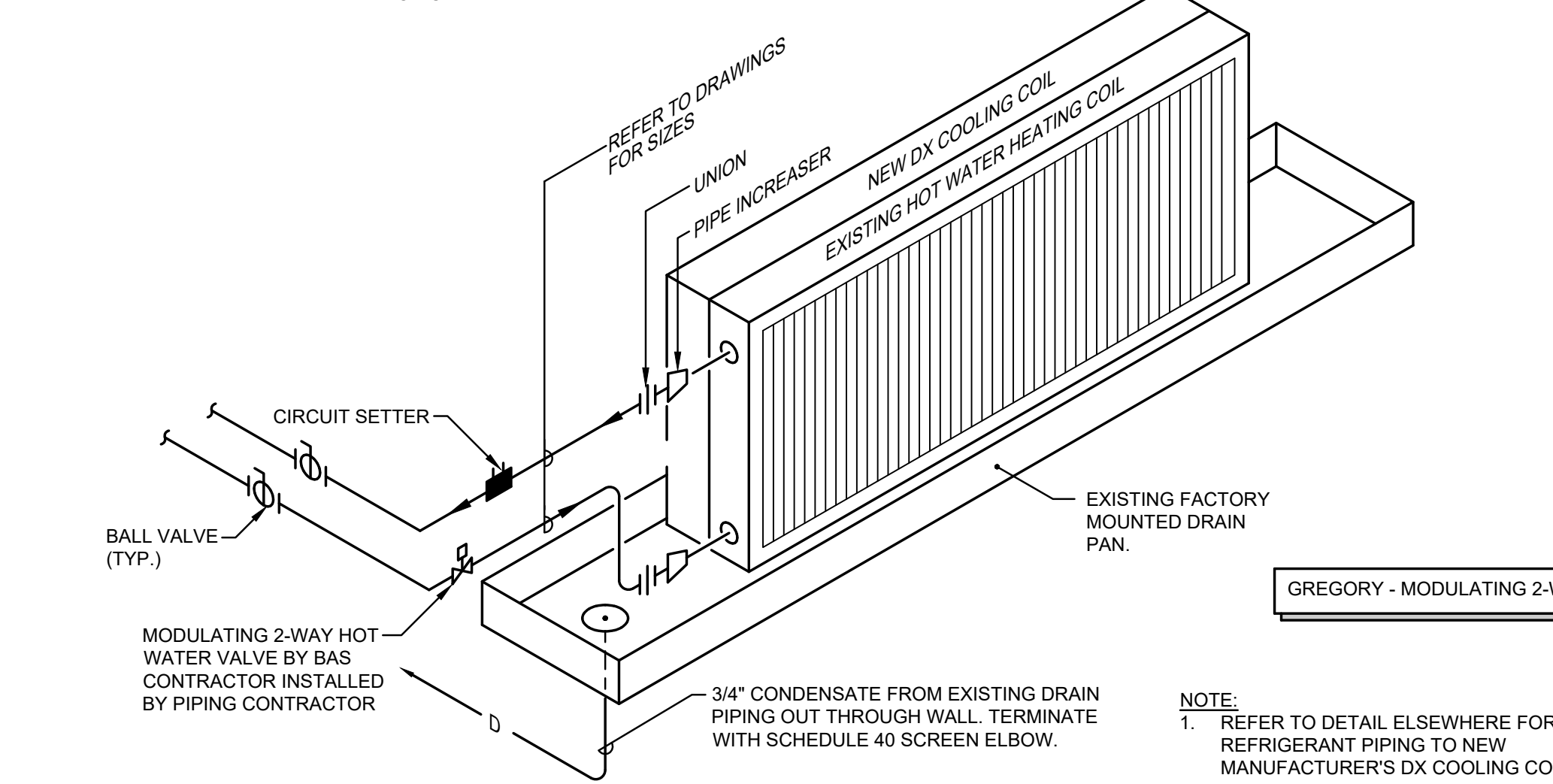
TYPICAL VERTICAL UNIT VENTILATOR INSTALLATION DETAIL

NO SCALE



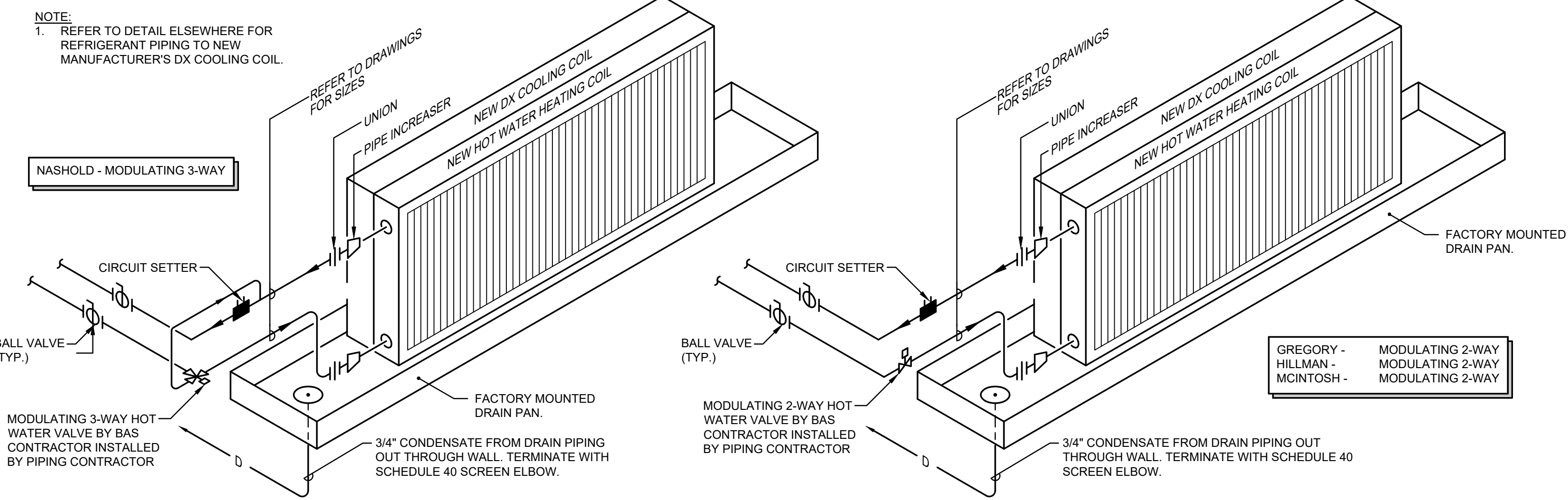
UNIT VENTILATOR WITH STEAM HEAT AND 'DX' COIL DETAIL

NO SCALE



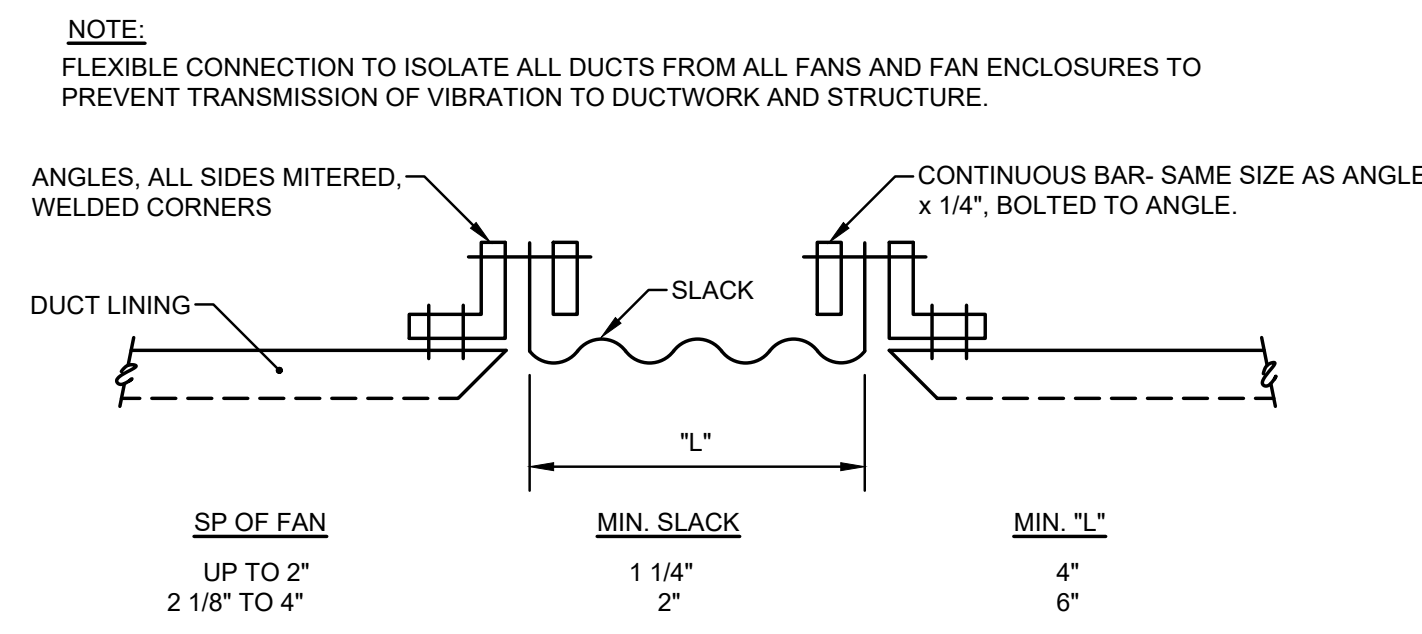
EXISTING UNIT VENTILATOR WITH EXIST. HOT WATER COIL AND NEW 'DX' COIL

NO SCALE



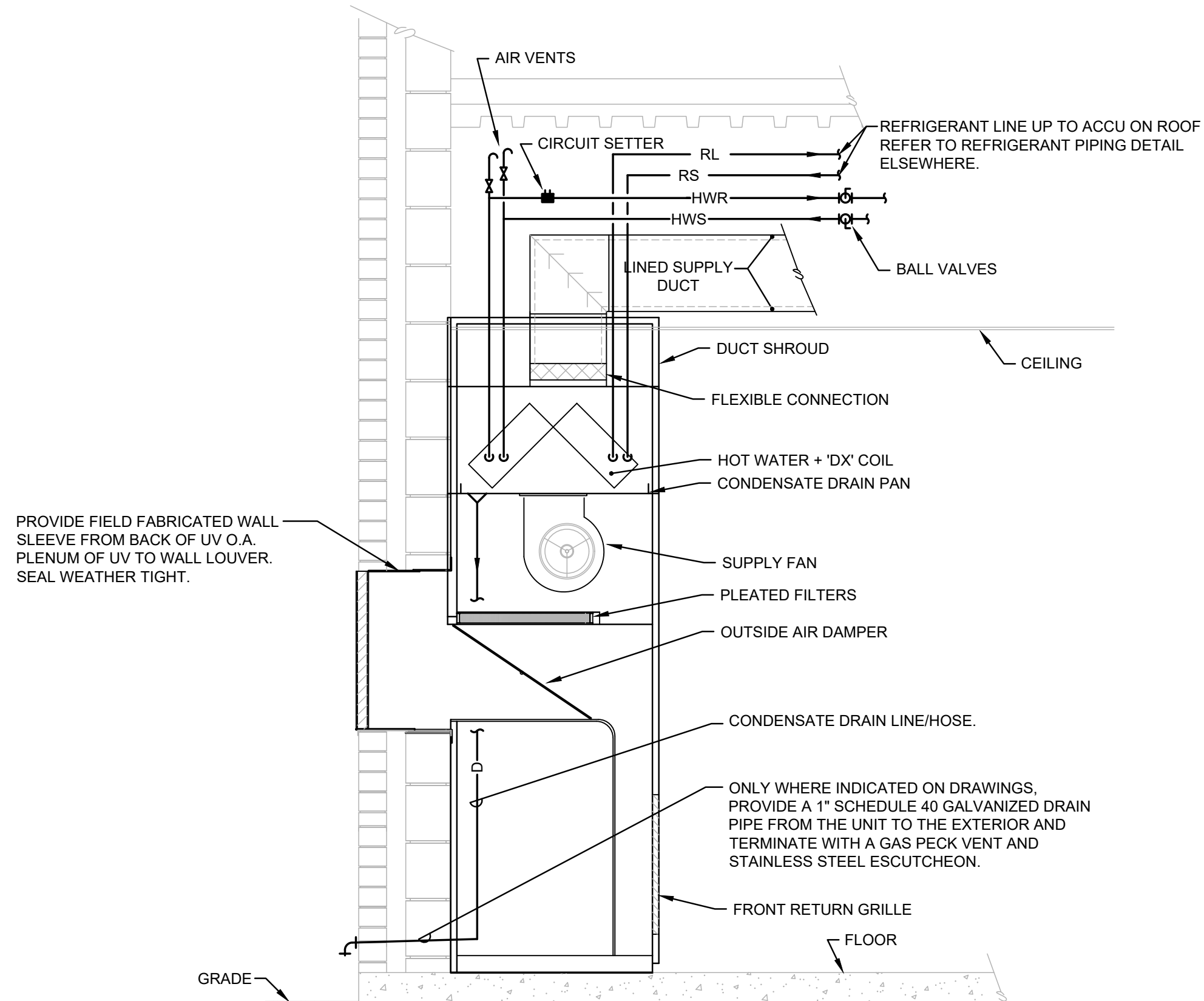
NEW UNIT VENTILATOR WITH HOT WATER COIL AND 'DX' COIL

NO SCALE



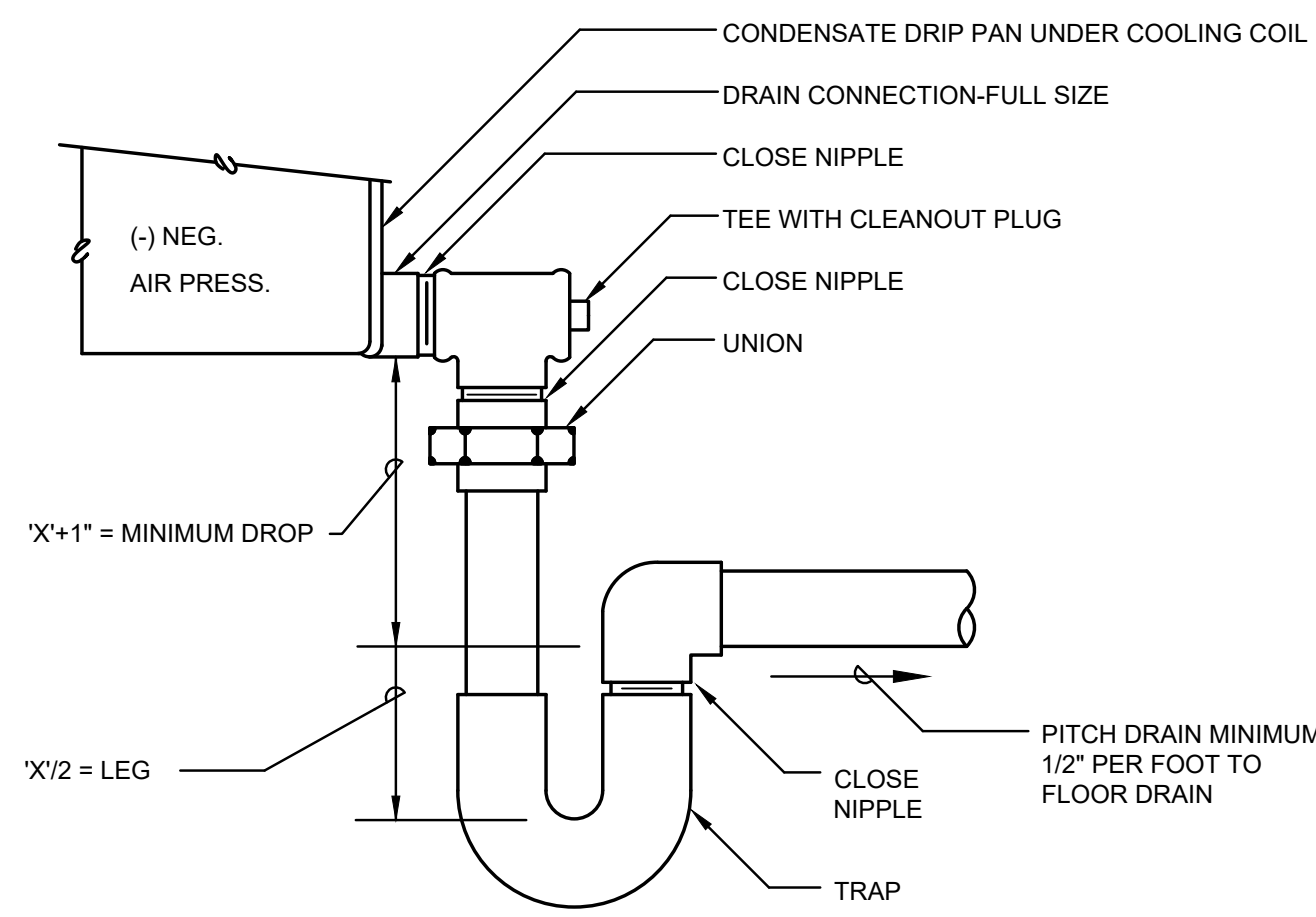
FLEXIBLE CONNECTION DETAIL

NO SCALE



UNIT VENTILATOR INSTALLATION DETAIL WITH EXTERIOR LOUVER AND POWER EXHAUST

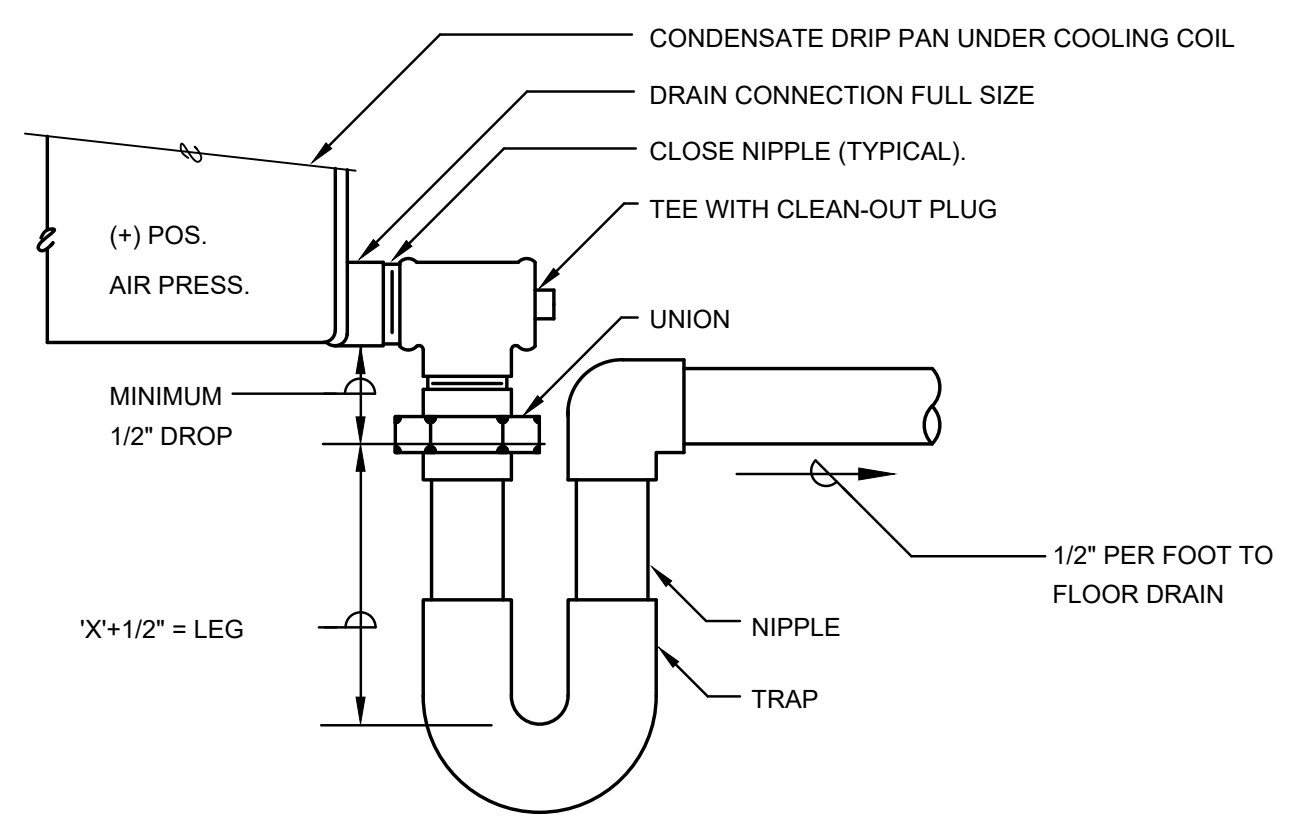
NO SCALE



- NOTES:
1. "X" = SUCTION PRESSURE AT FAN INLET (NEGATIVE INTERNAL S.P.)
 2. FOR ROOFTOP UNITS, SPILL DRAIN TO OVER 12"x12"x3/4" THICK RUBBER ROOF GUARD PAD.

DRAW-THRU COOLING COIL DRIP PAN DRAIN DETAIL

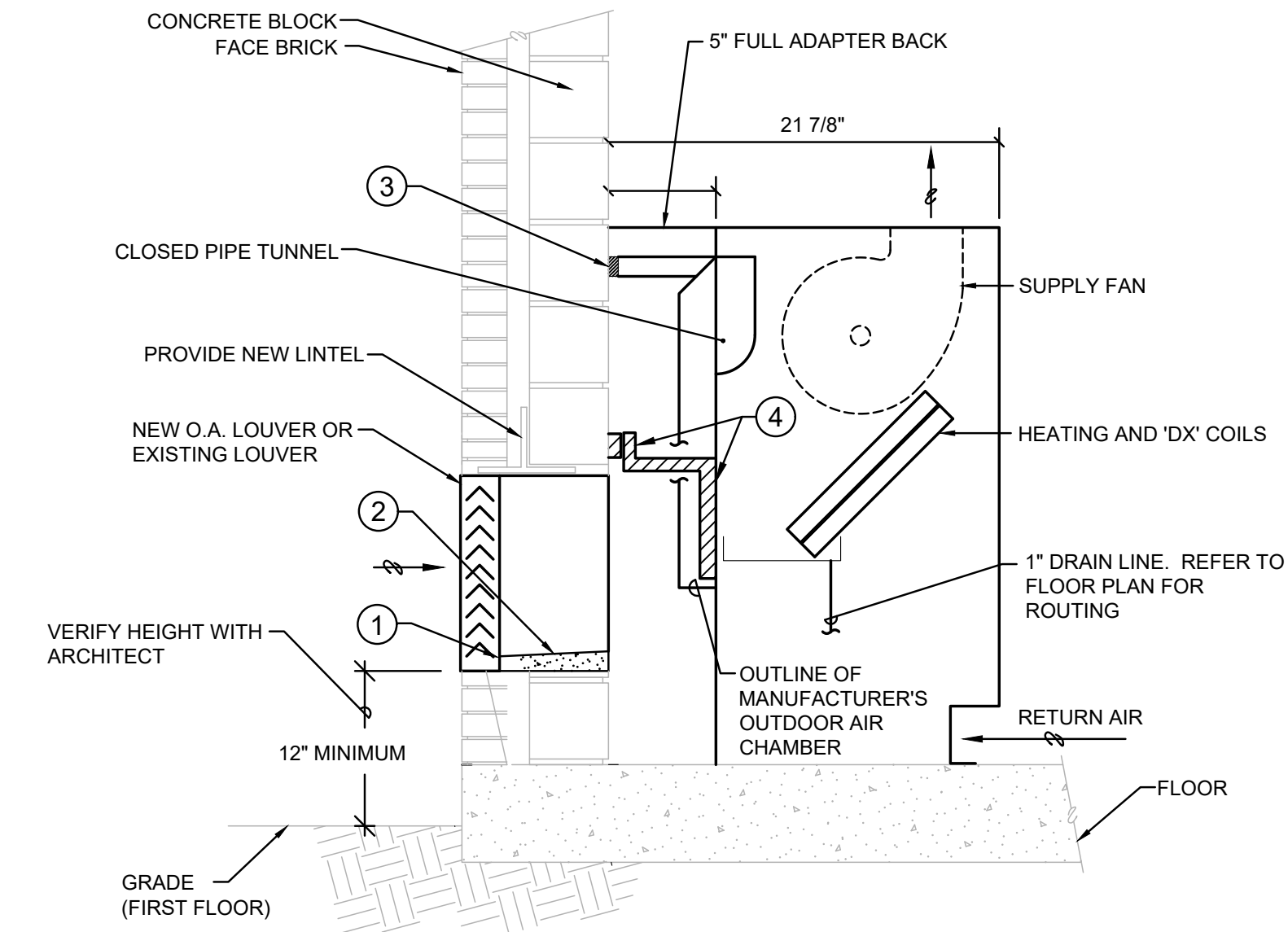
NO SCALE



- NOTES:
1. "X" = DISCHARGE PRESSURE OF FAN (POSITIVE INTERNAL S.P.)

BLOW-THRU COOLING COIL DRIP PAN DRAIN DETAIL

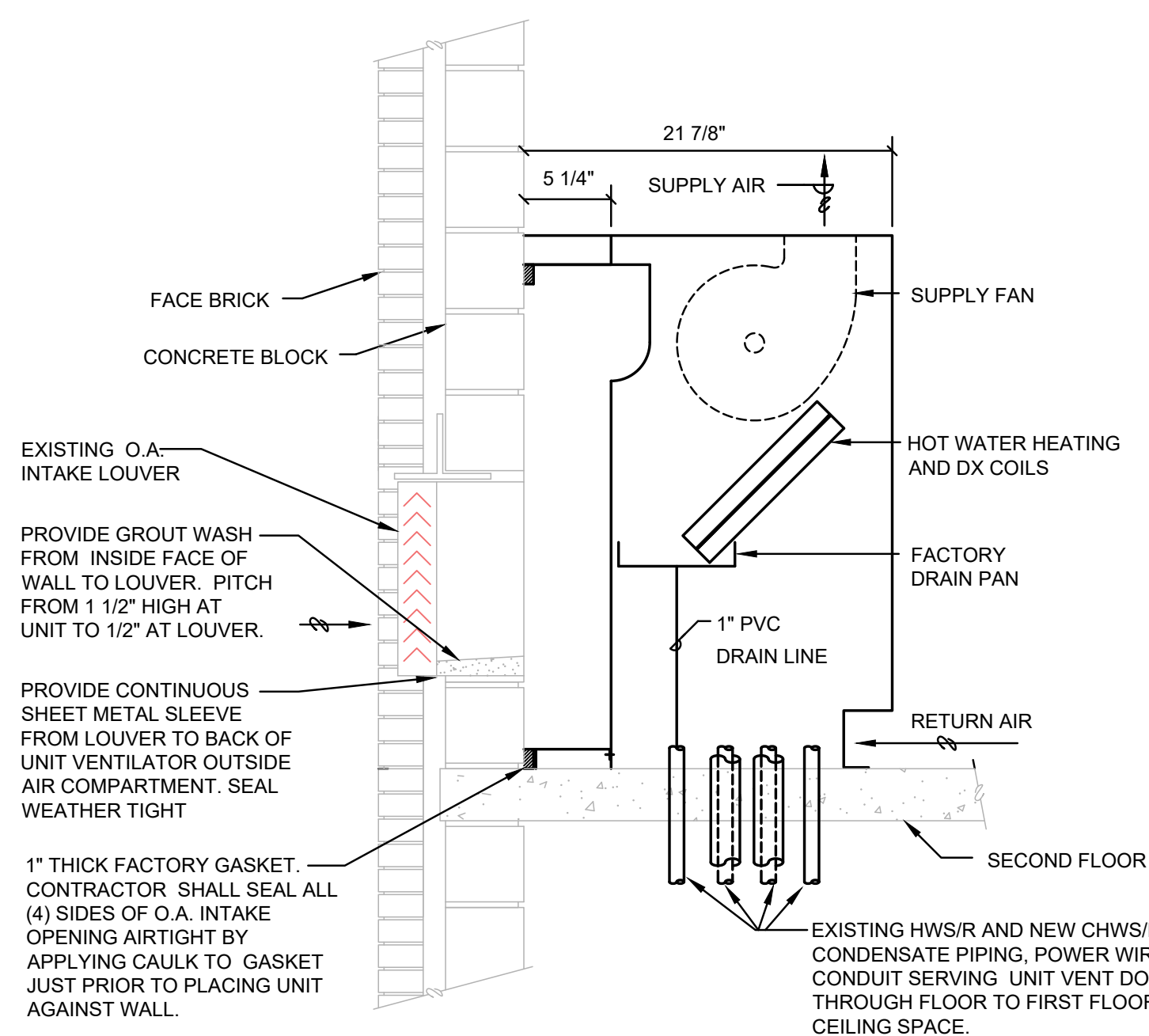
NO SCALE



SIMILAR DETAIL FOR STEAM COILS. REFER TO COIL PIPING DETAILS FOR ADDITIONAL INFORMATION.

UNIT VENTILATOR WITH STEAM & 'DX' COIL

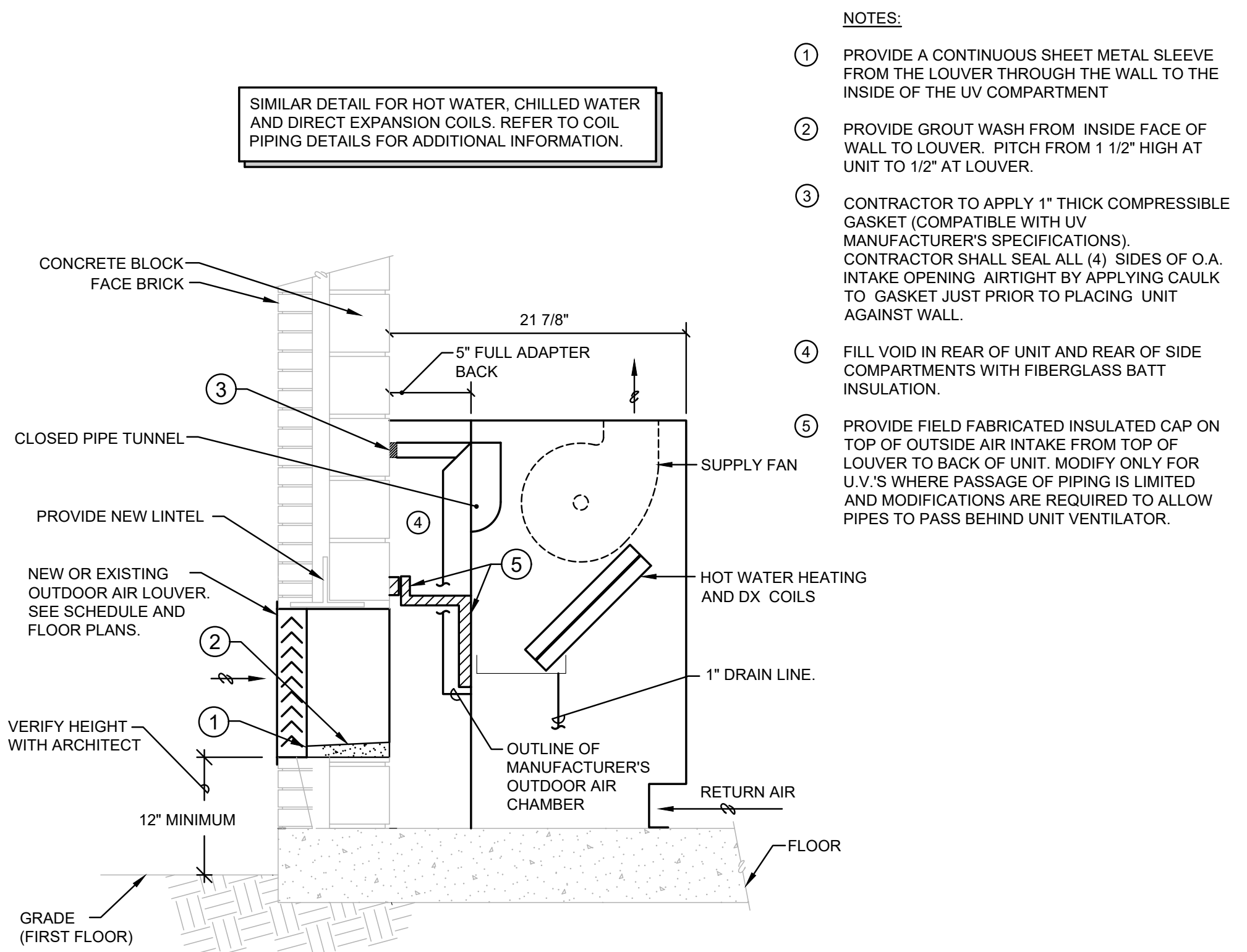
NO SCALE



- NOTES:
1. LINE INTERIOR OF OUTDOOR AIR INTAKE OF UNIT VENTILATOR COMPARTMENT WITH 1" THICK FIBER FREE ACOUSTICAL INSULATION ON ALL SIDES.
 2. THE VOID IN ALL UNIT VENTILATOR SIDE COMPARTMENTS BETWEEN THE PIPING, CONDUITS, AND CONTROL WIRING SHALL BE FILLED WITH BATT INSULATION.

UNIT VENT INSTALLATION DETAIL

NO SCALE



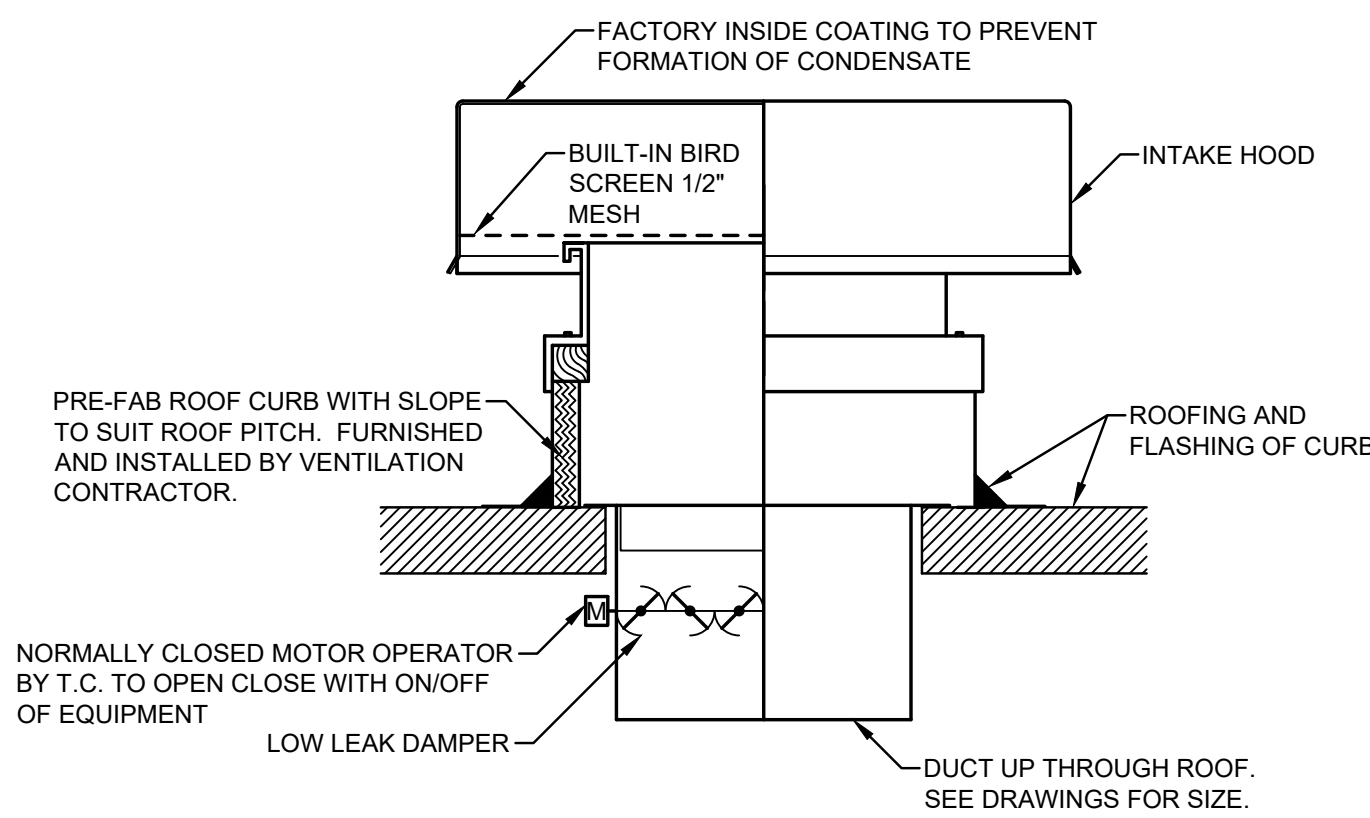
SIMILAR DETAIL FOR HOT WATER, CHILLED WATER AND DIRECT EXPANSION COILS. REFER TO COIL PIPING DETAILS FOR ADDITIONAL INFORMATION.

UNIT VENTILATOR WITH HOT WATER COIL AND DX OR COILS

NO SCALE

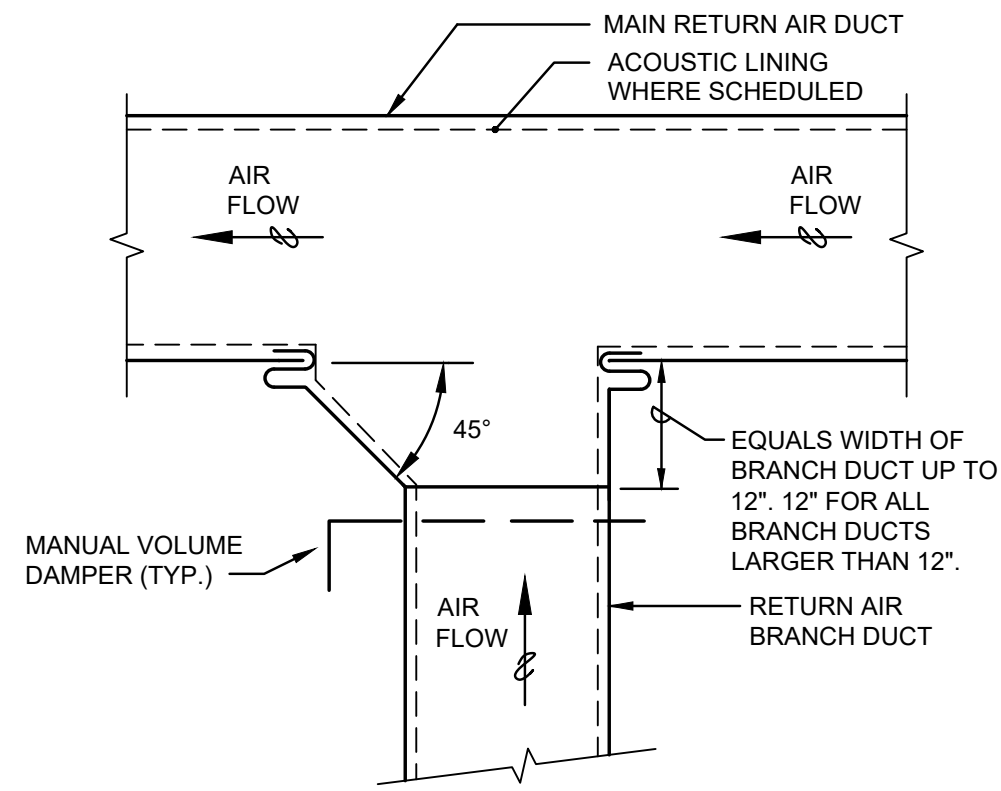


DATE	ISSUED FOR:
10-11-2022	
PROJECT NUMBER	32103-00
SHEET NUMBER	M4.1



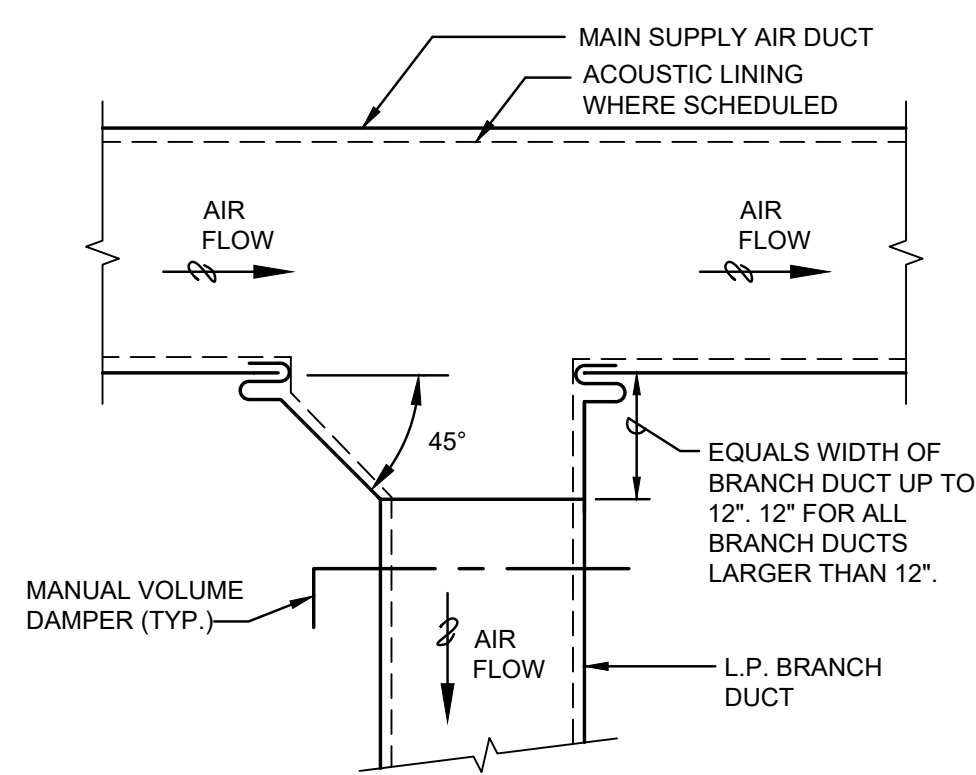
INTAKE/RELIEF HOOD INSTALLATION DETAIL

NO SCALE



TYP. RETURN BRANCH DUCT TAKE-OFF

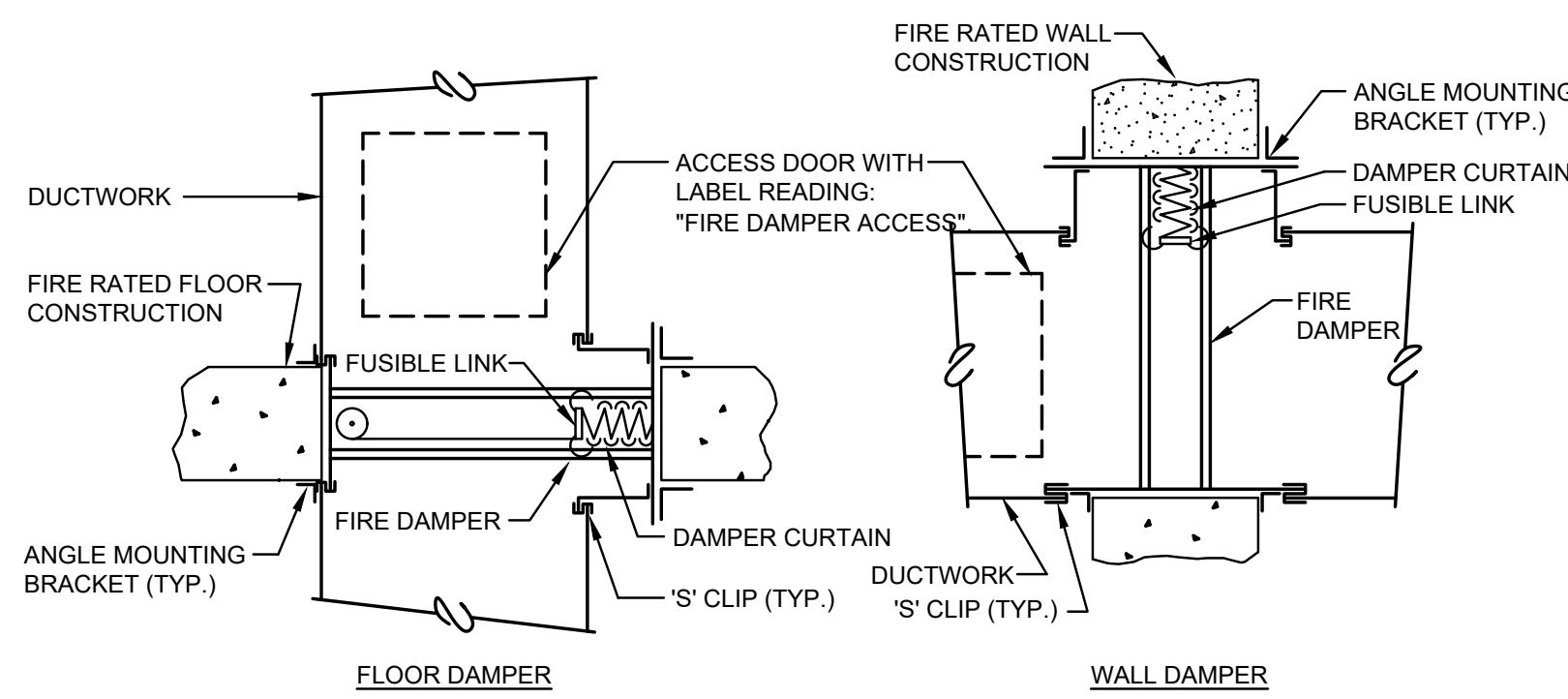
NO SCALE



TYP. SUPPLY BRANCH DUCT TAKE-OFF

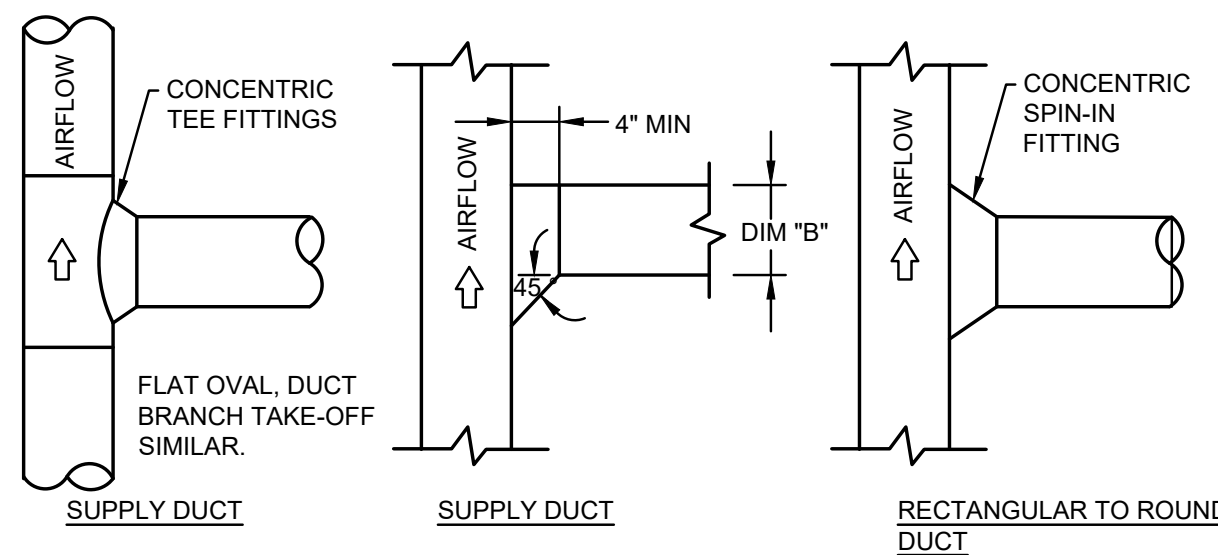
NO SCALE

- NOTES:
1. ACCESS DOORS TO BE SIZED/LOCATED SUCH THAT RESETTNG FIRE DAMPER LINK CAN BE ACCOMPLISHED VIA ACCESS DOOR
 2. MINIMUM SIZE IS 12"x12". PROVIDE MULTIPLE ACCESS DOORS AT MULTIPLE SECTION FIRE DAMPERS.
 3. COORDINATE GENERAL CONTRACTOR FURNISHED/INSTALLED WALL OR CEILING ACCESS PANELS REQUIRED AT OTHERWISE INACCESSIBLE LOCATIONS.



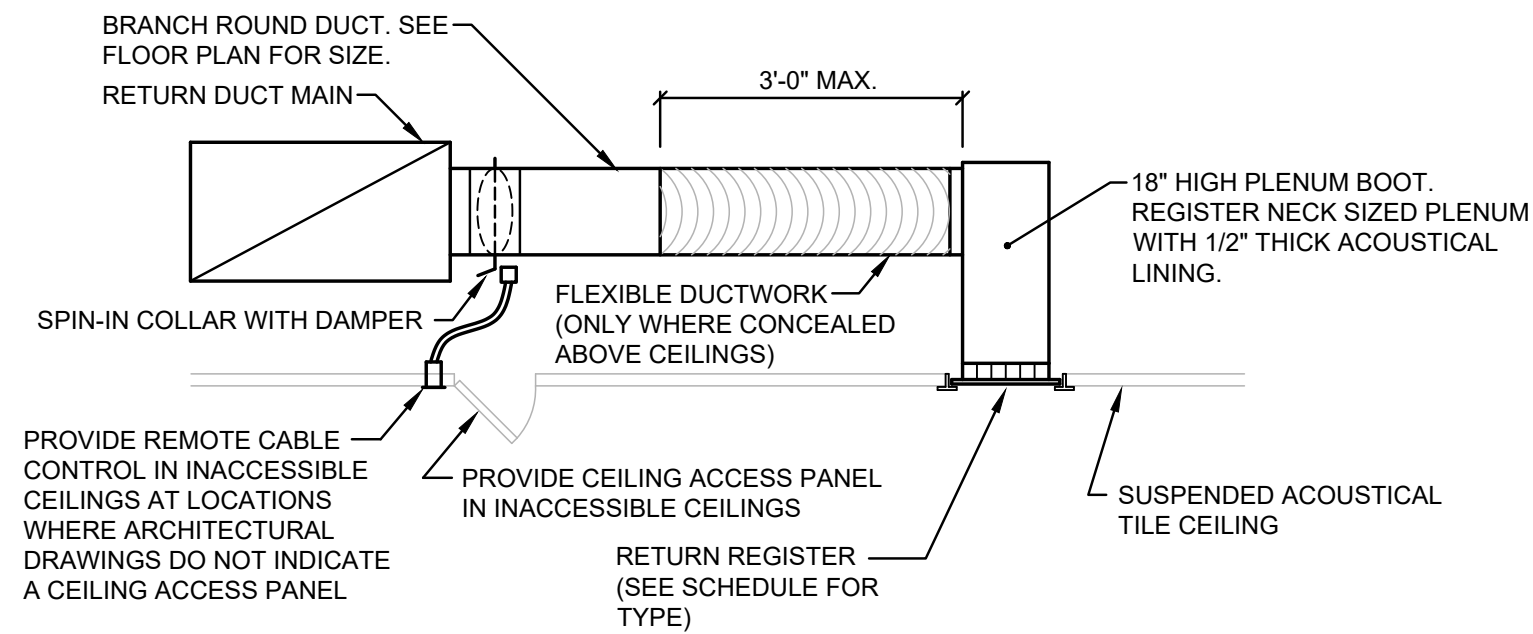
FIRE DAMPER DETAIL (FID)

NO SCALE



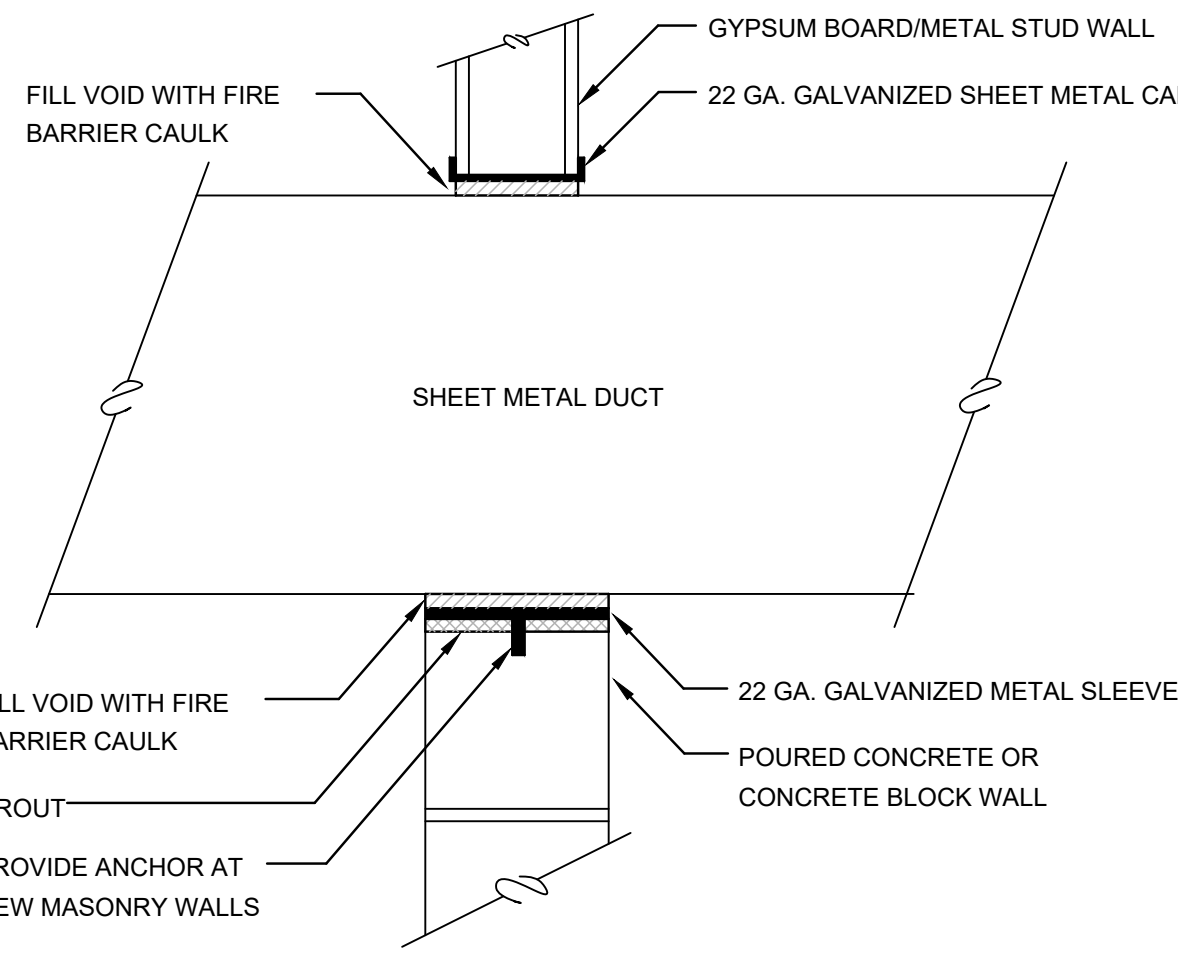
DUCT BRAANCH TAKE-OFF DETAIL

NO SCALE



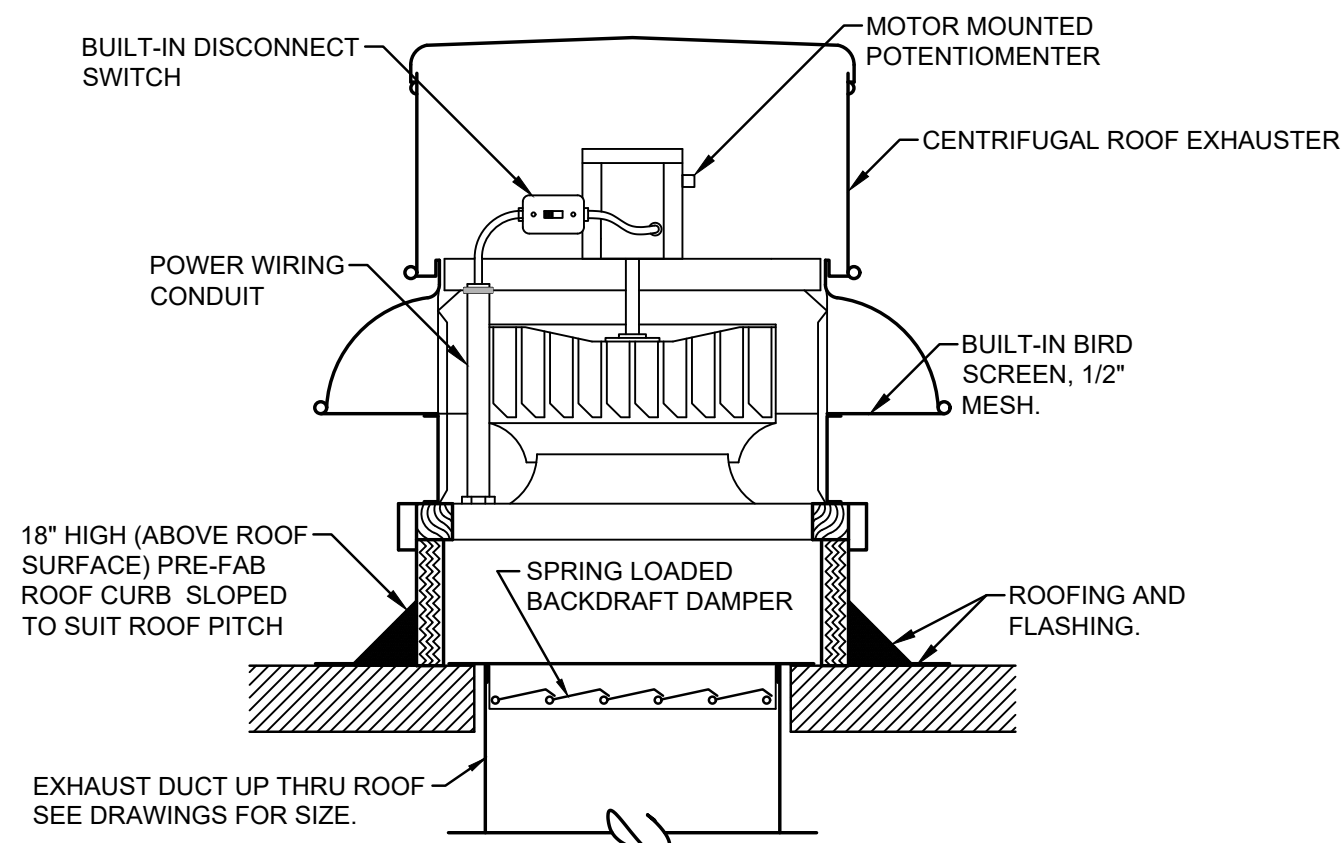
RETURN/EXHAUST REGISTER INSTALLATION DETAIL

NO SCALE



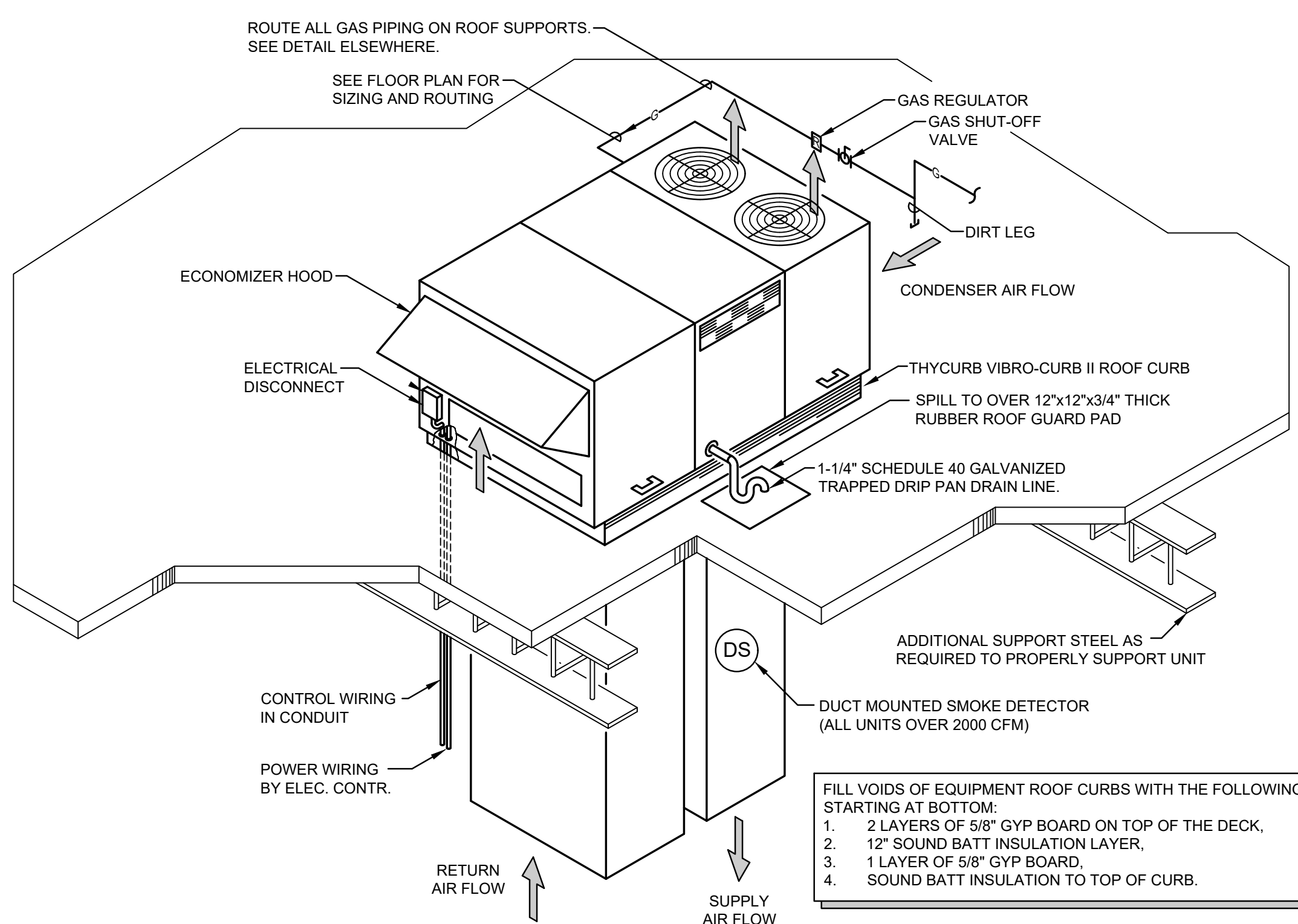
DUCT SLEEVE THROUGH INTERIOR WALL DETAIL

NO SCALE



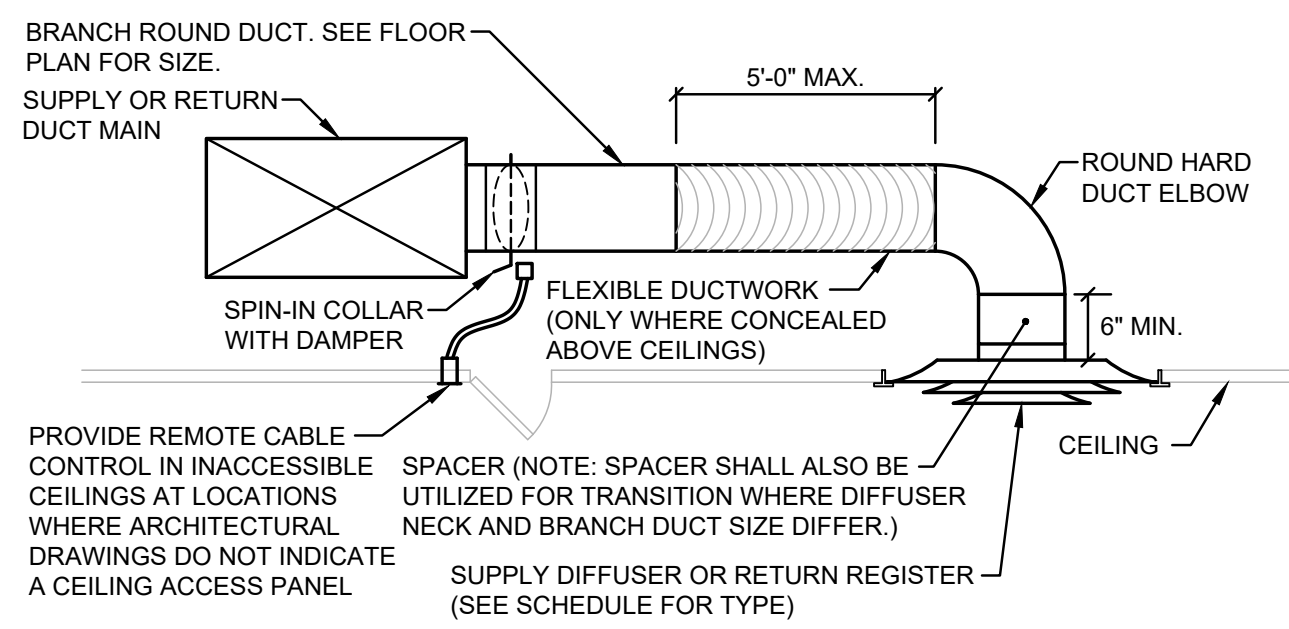
DOWNBLAST CENTRIFUGAL ROOF EXHAUSTER DETAIL

NO SCALE



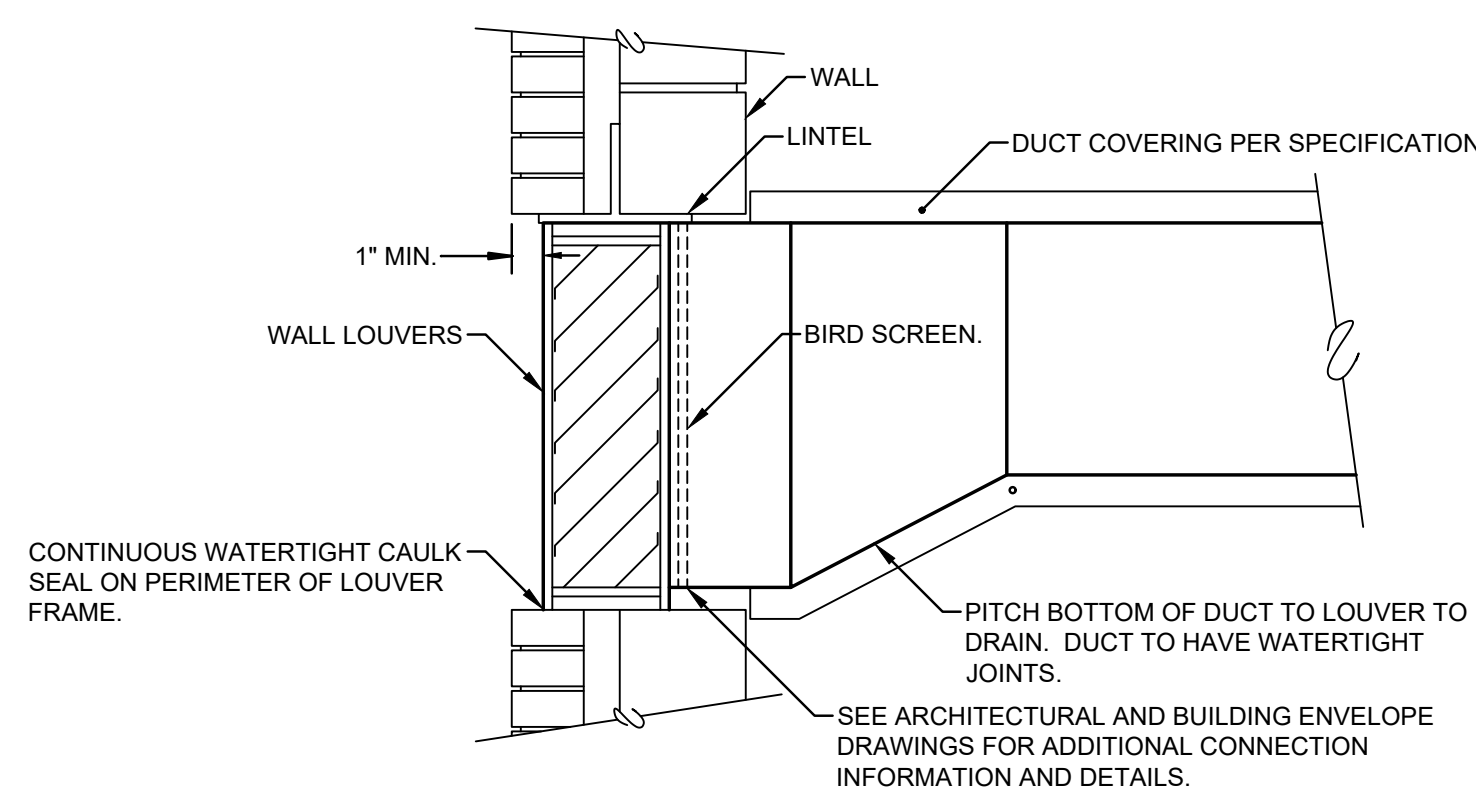
ROOFTOP UNIT INSTALLATION DETAIL

NO SCALE



DIFFUSER/REGISTER INSTALLATION DETAIL

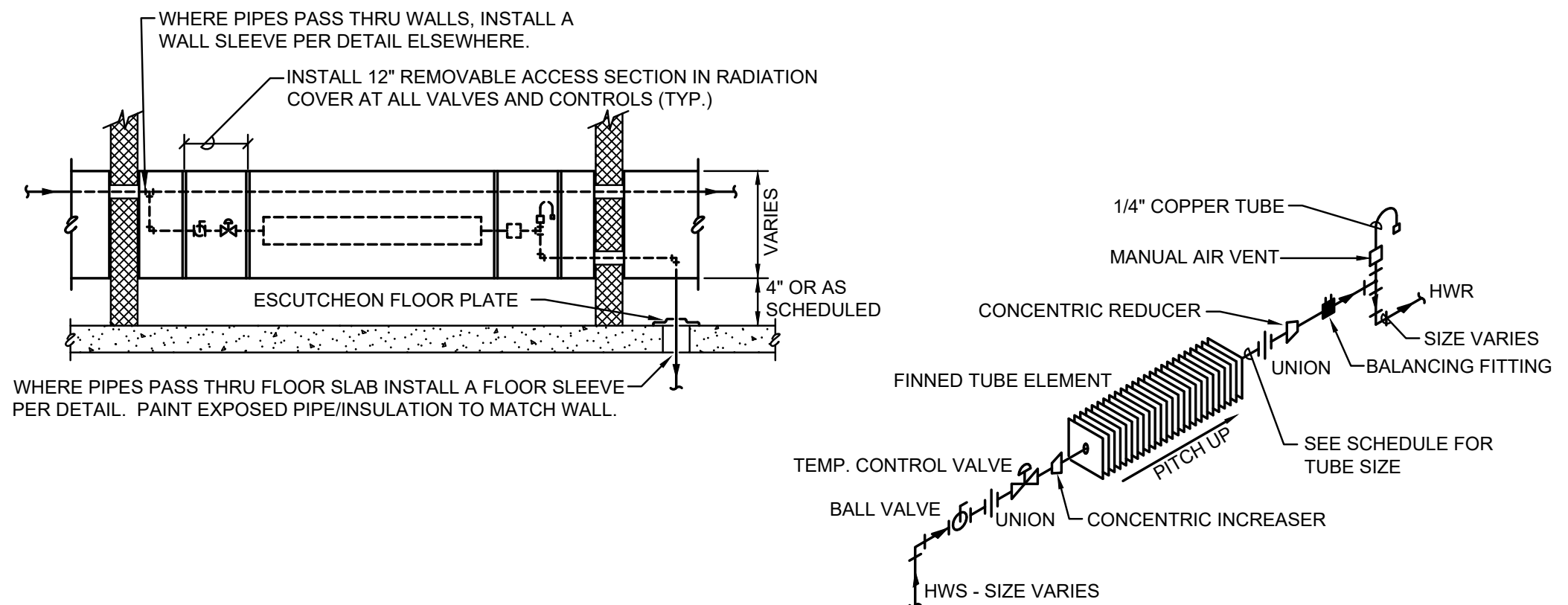
NO SCALE



NOTE:
1. SEE WALL LOUVER SCHEDULE FOR CONNECTION SIZES.

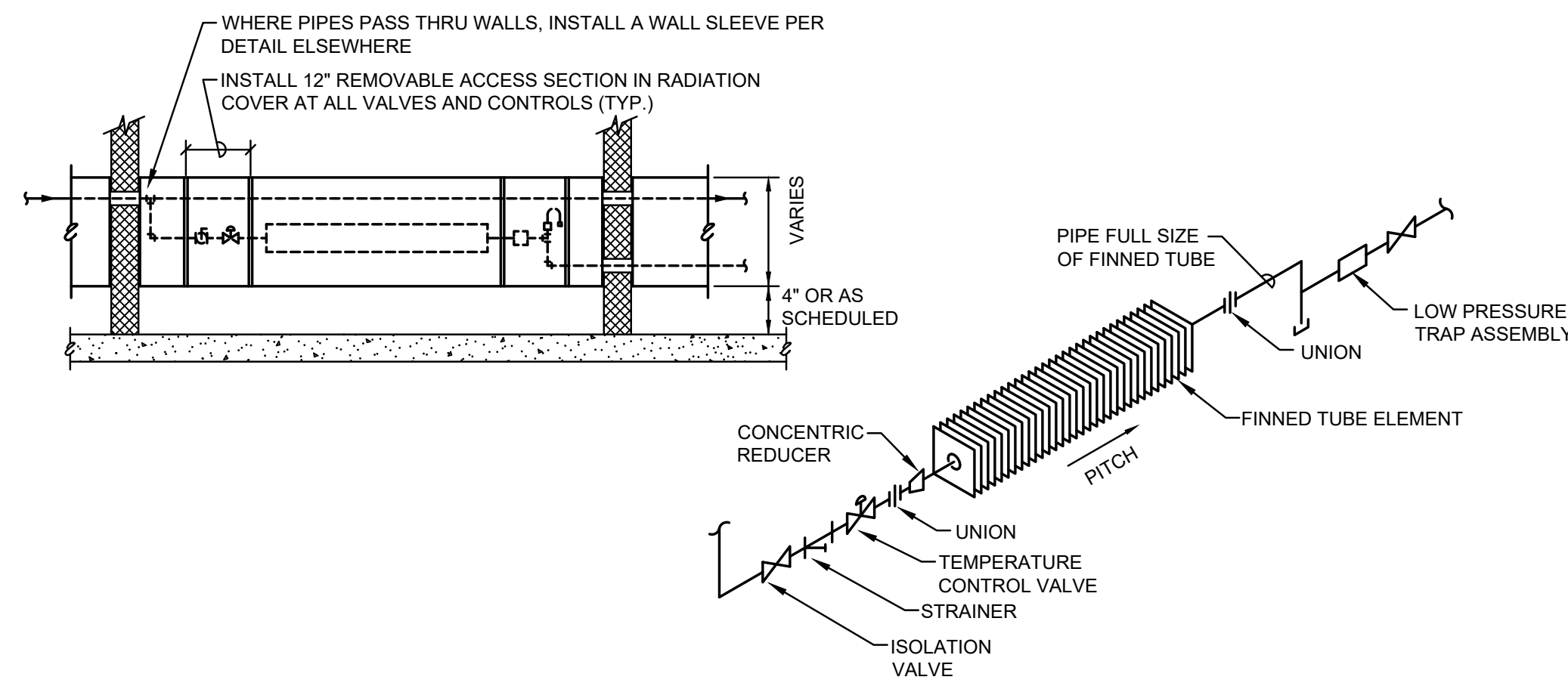
DUCT CONNECTION TO WALL LOUVER DETAIL

NO SCALE



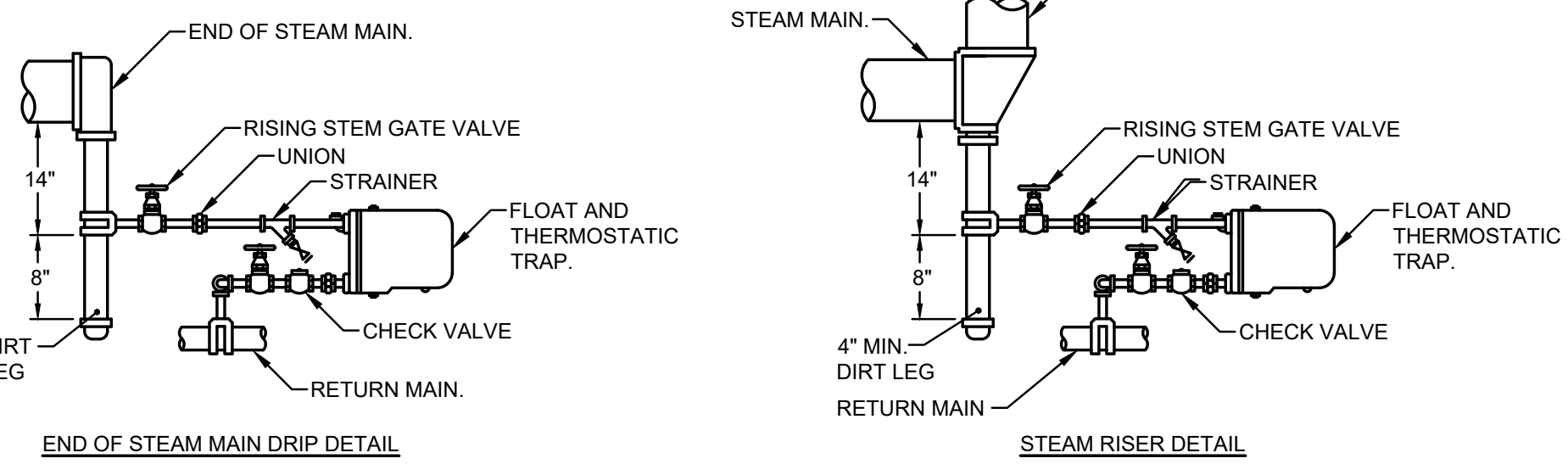
TYPICAL HOT WATER FINNED TUBE RADIATION

NO SCALE



TYPICAL STEAM FINNED TUBE RADIATION

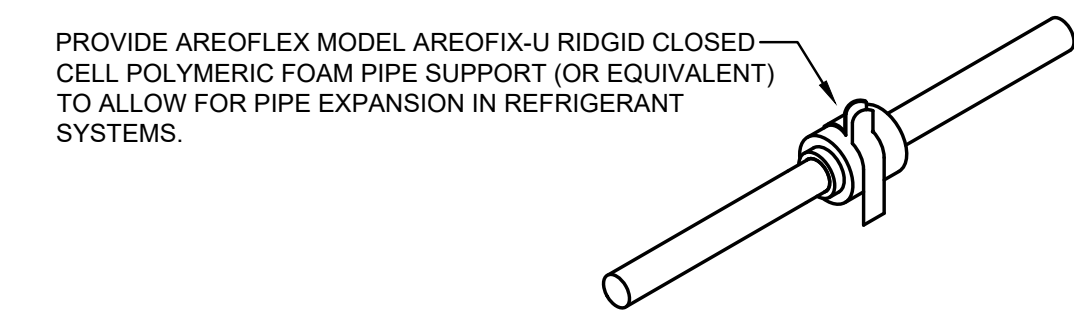
NO SCALE



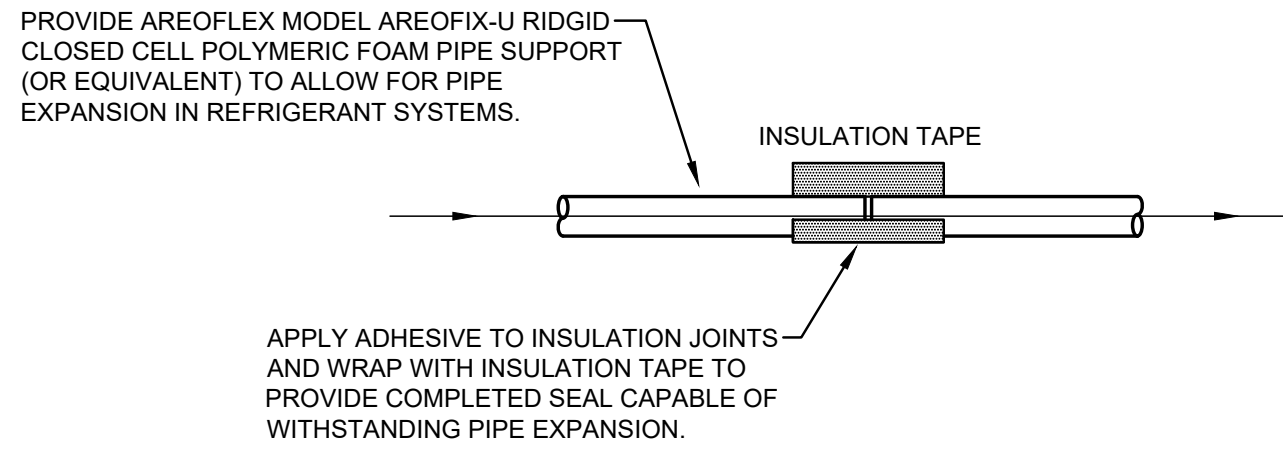
TYPICAL STEAM FINNED TUBE RADIATION

NO SCALE

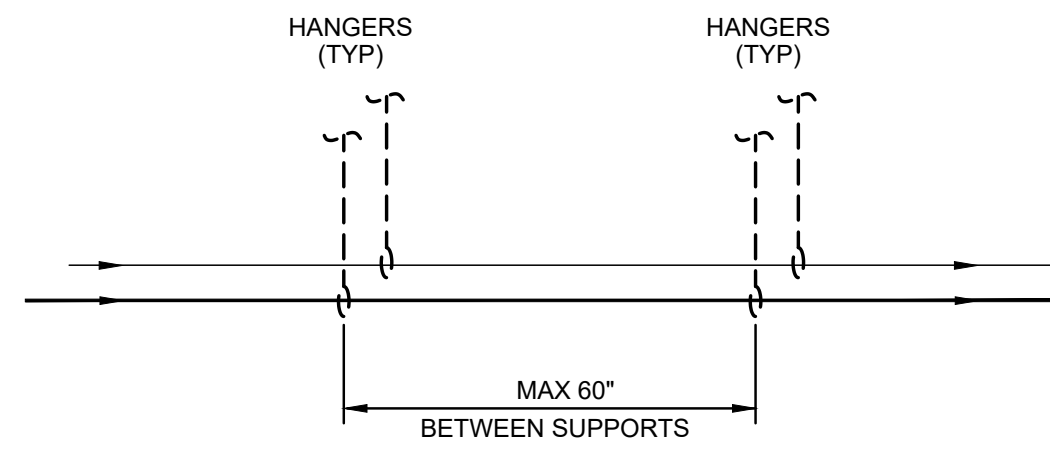




VRF - TYPICAL PIPE EXPANSION AND SUPPORT DETAIL
NO SCALE

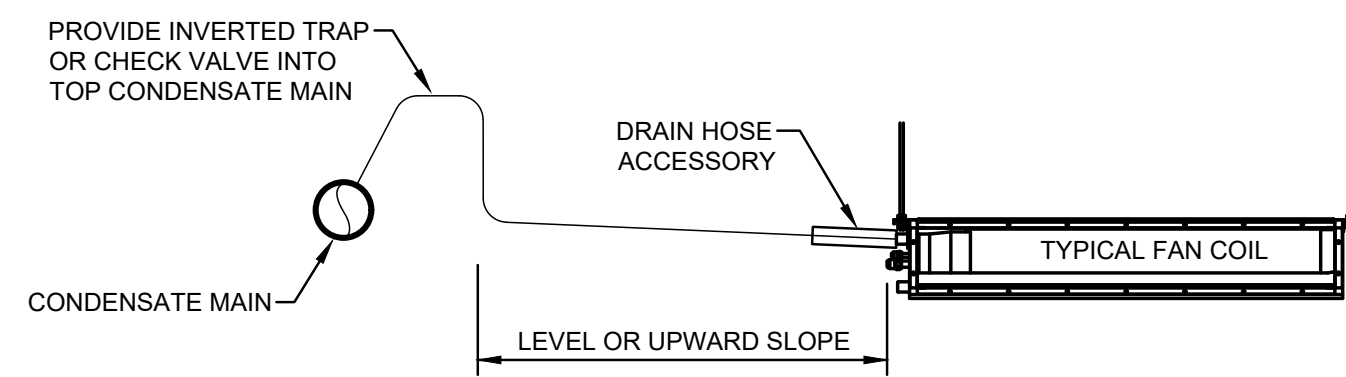


VRF - TYPICAL REFRIGERANT PIPING INSULATION DETAIL
NO SCALE

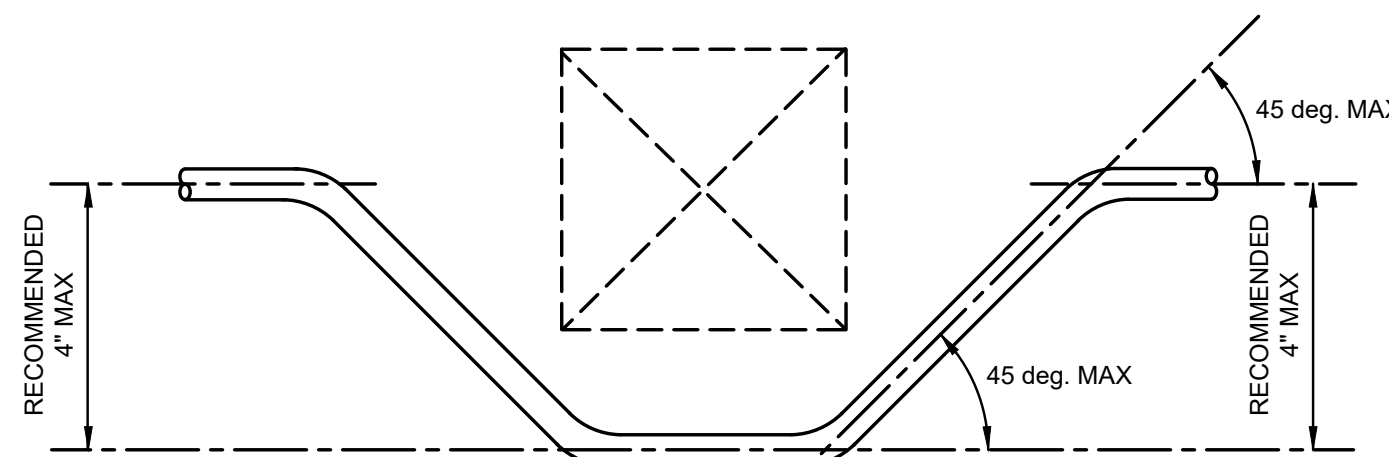


NOTES:
1. HANGAR TYPES TO INCLUDE CLEVIS HANGARS OR TRAPEZE HANGARS.

VRF - TYPICAL HANGAR SPACING DETAIL
NO SCALE

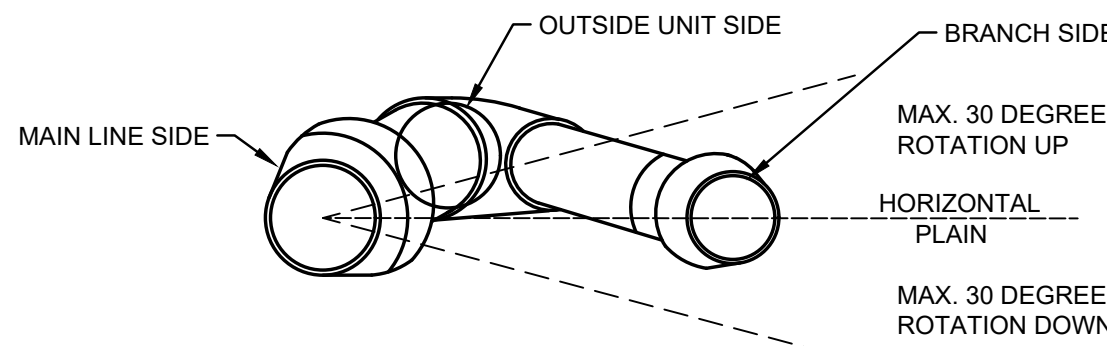


VRF - CONDENSATE DRAIN PIPING FOR INDOOR UNITS
NO SCALE (REFER TO MANUFACTURERS INSTRUCTIONS)



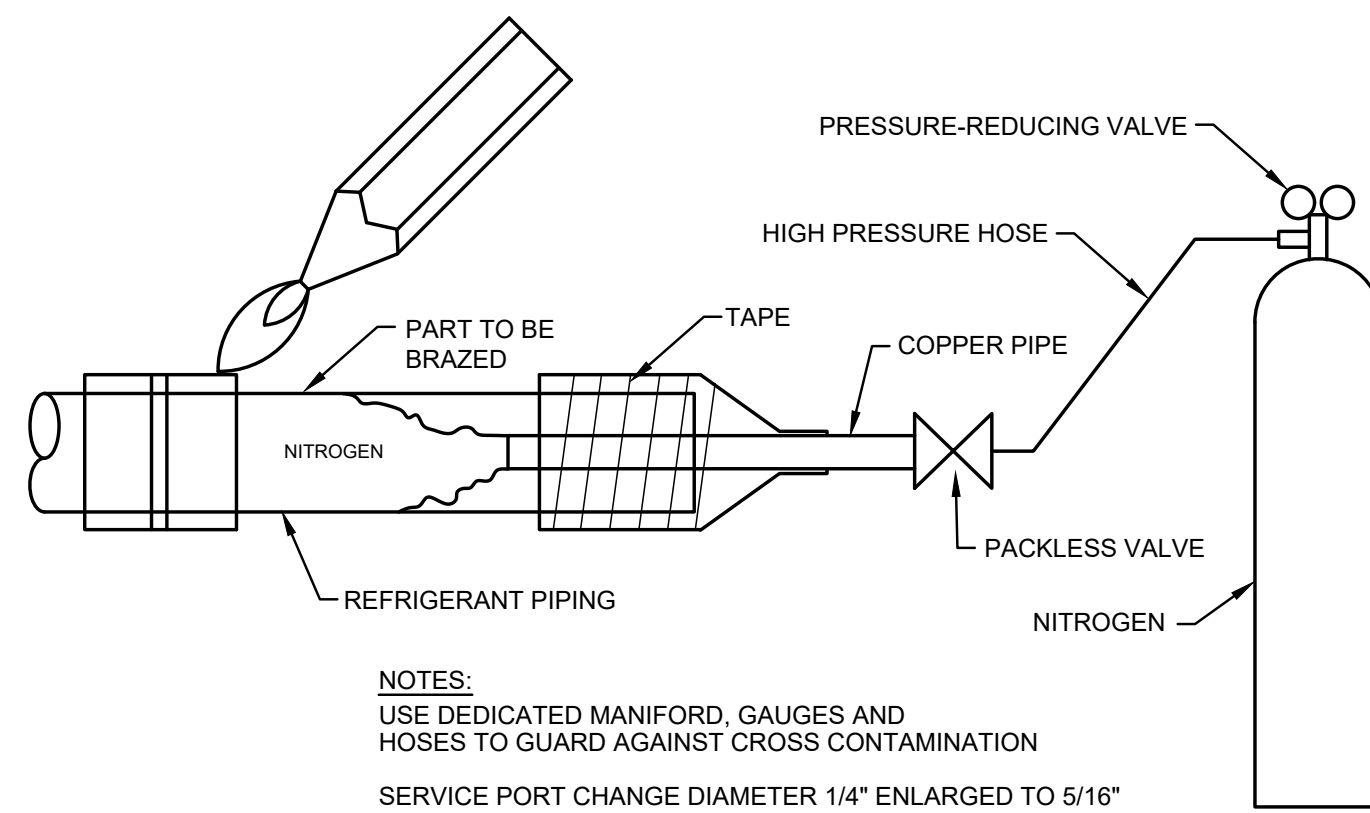
NOTE: IN CASES WHERE PIPING/TUBING NEEDS TO DROP BELOW OBJECTS (BEAMS, DUCTS, CONDUITS, PIPES ETC.) PIPING SHALL HAVE LARGE RADIUS TURNS AS INDICATED ABOVE (NO MORE THAN 45 DEGREES PER FITTING) TO PREVENT TRAPPING OF REFRIGERANT.

VRF - ELEVATION - PIPING OFFSET BELOW OBJECT
NO SCALE



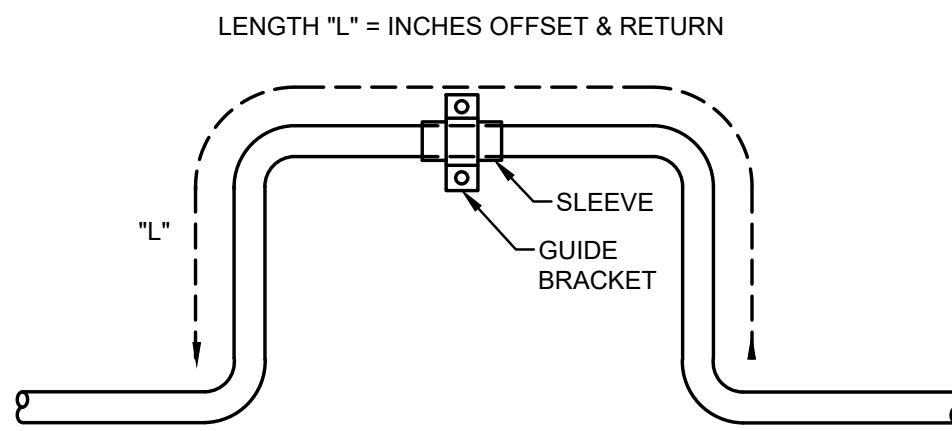
NOTE:
THIS SAME HORIZONTAL APPLICATION APPLIES TO HEADERS.

VRF - MAXIMUM ROTATION OF HORIZONTAL INSTALLED "REFNET"
NO SCALE (REFER TO MANUFACTURERS INSTRUCTIONS)



NOTES:
USE DEDICATED MANIFOLD, GAUGES AND HOSES TO GUARD AGAINST CROSS CONTAMINATION
SERVICE PORT CHANGE DIAMETER 1/4" ENLARGED TO 5/16"

VRF - TYPICAL NITROGEN PURGING SET-UP
NO SCALE

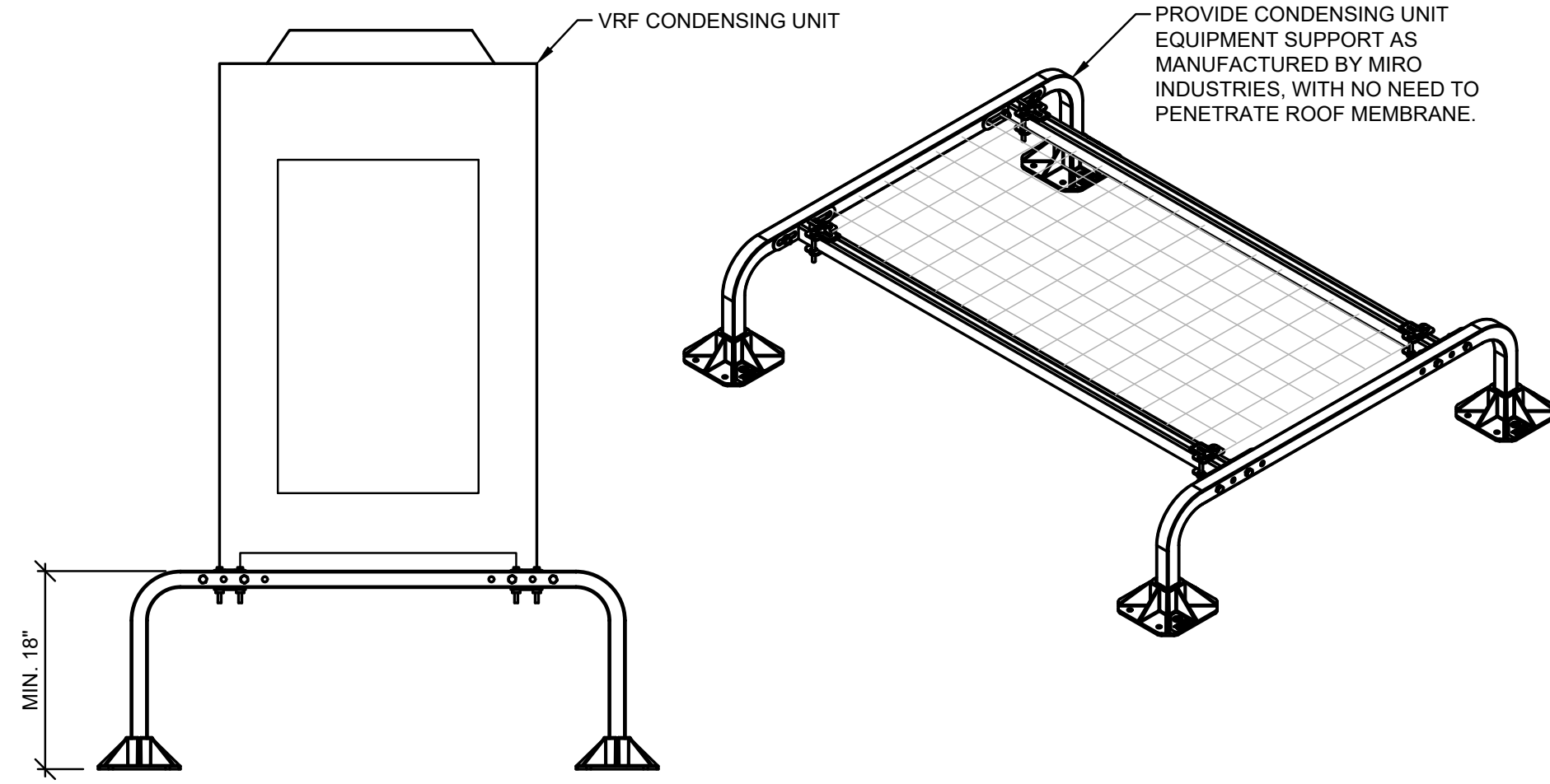


NOTE: CALCULATION FOR EXPANSION AND CONTRACTION SHOULD BE BASED ON THE AVERAGE COEFFICIENT OF EXPANSION OF COPPER WHICH IS 0.000094 INCH PER INCH PER DEGREE F, BETWEEN 70 degrees F AND 212 degrees F.

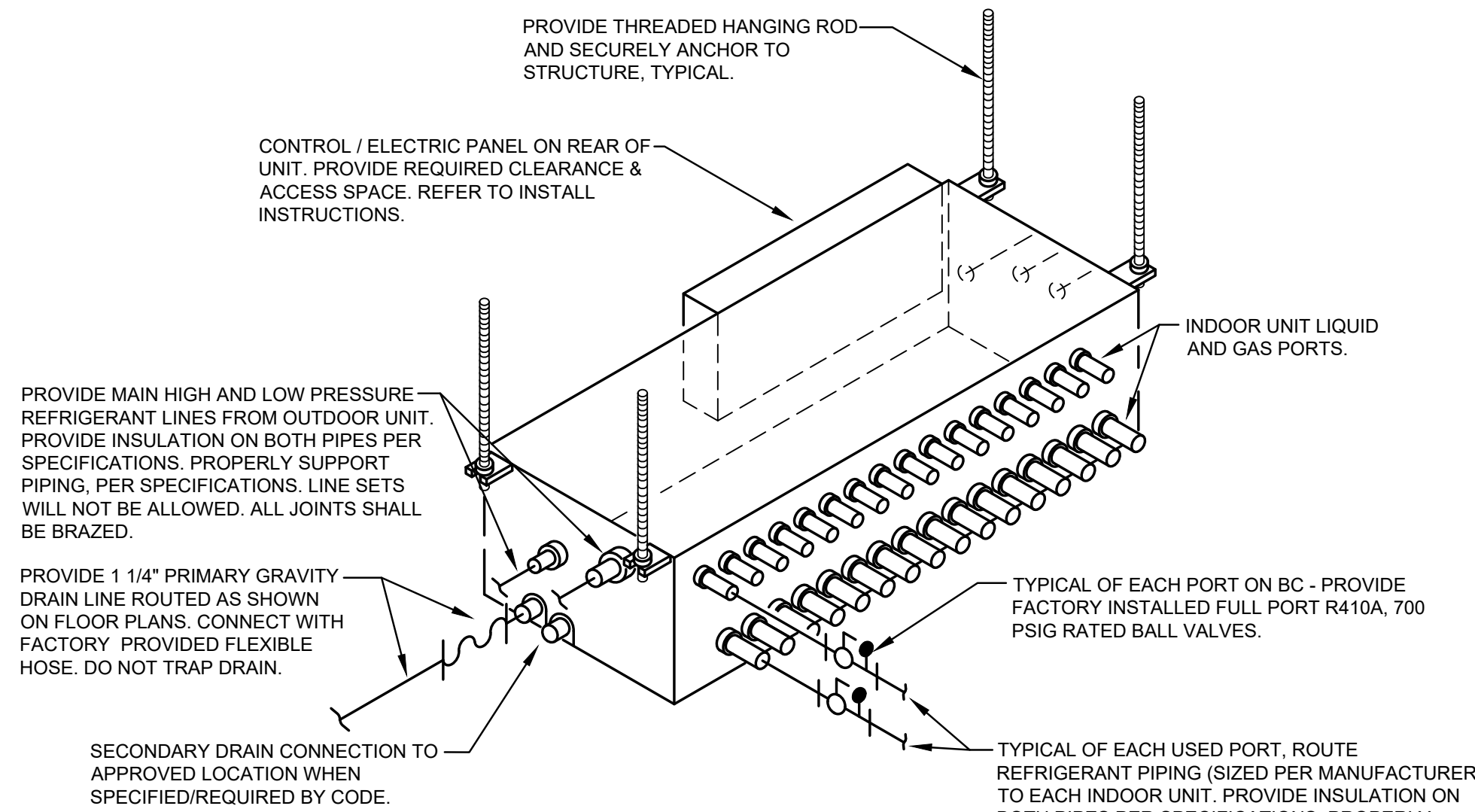
(EXAMPLE: EXPANSION OF A 100 DEGREE F RISE FOR EACH 100 FT. OF ANY SIZE IS 1.128 INCHES)

EXPANSION DIMENSION 'L' FOR OFFSET & RETURN TO BE BASED ON THE EXPECTED EXPANSION INCHES PER DIMENSION OF PIPE

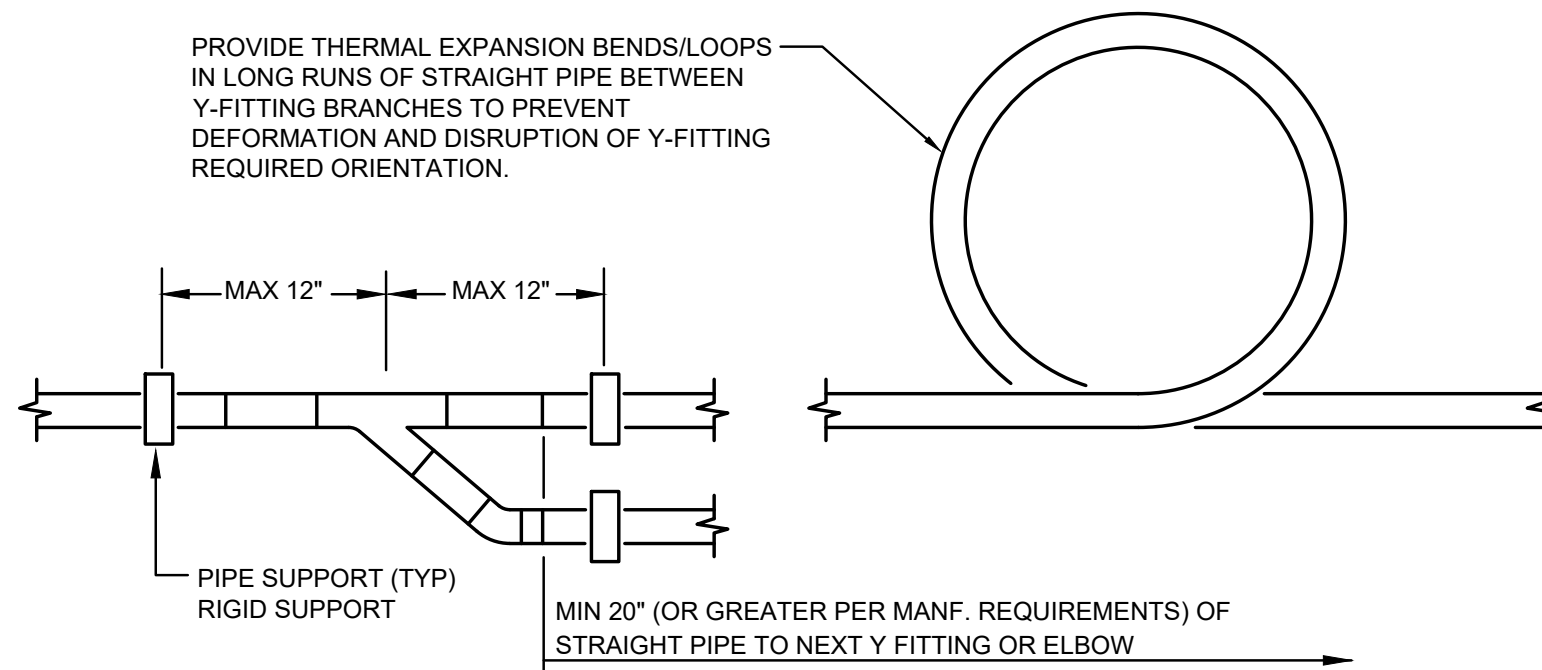
VRF - PLAN - EXPANSION LOOPS
NO SCALE



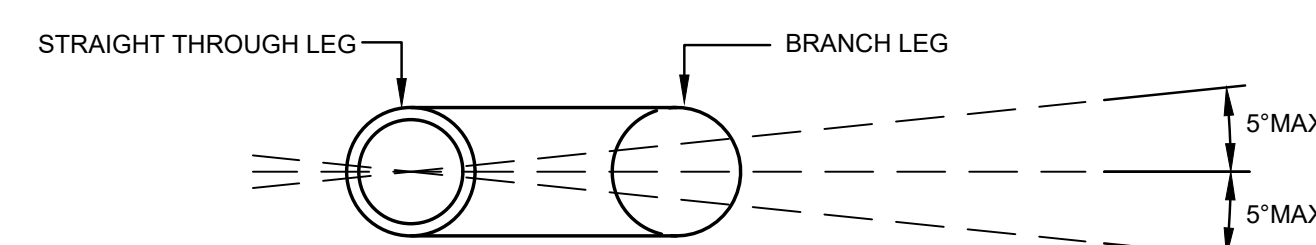
VRF - CONDENSING UNIT ROOF SUPPORT (SIDE VIEW / ISOMETRIC VIEW)
NO SCALE (SINGLE MODULE SYSTEM SHOWN)



VRF - BRACH CIRCUIT (BC) CONTROLLER DETAIL
NO SCALE

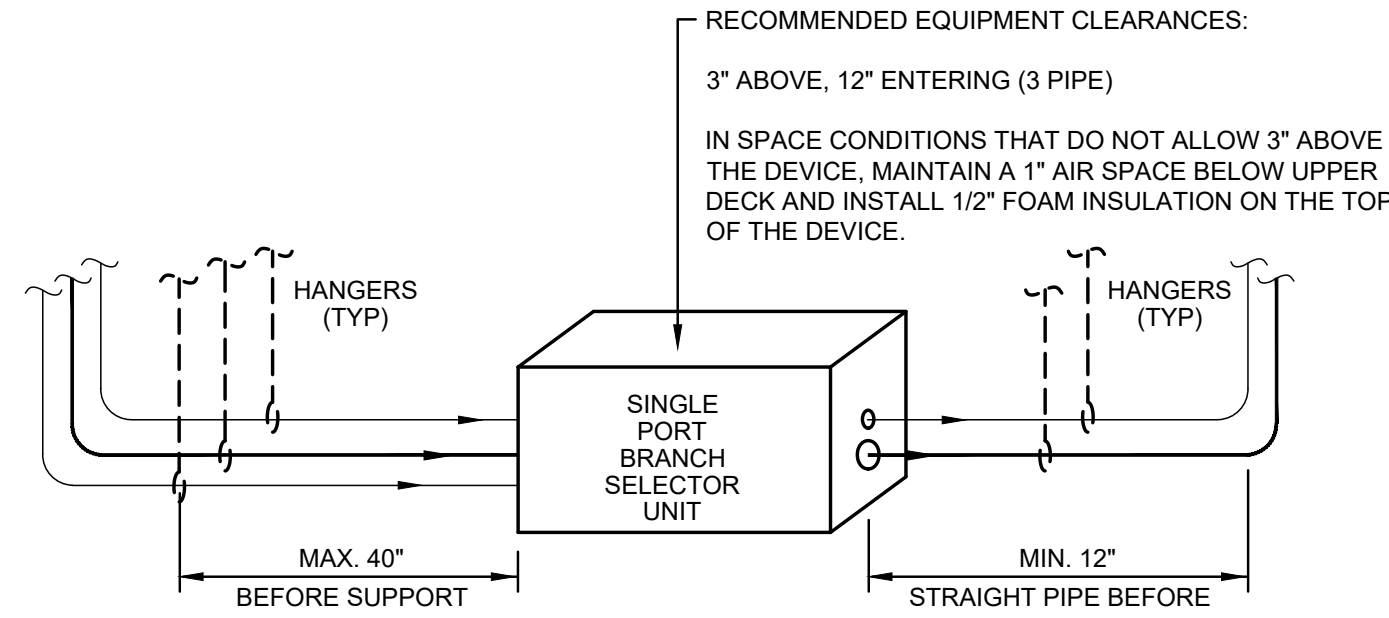


Y-BRANCH FITTING - PLAN VIEW

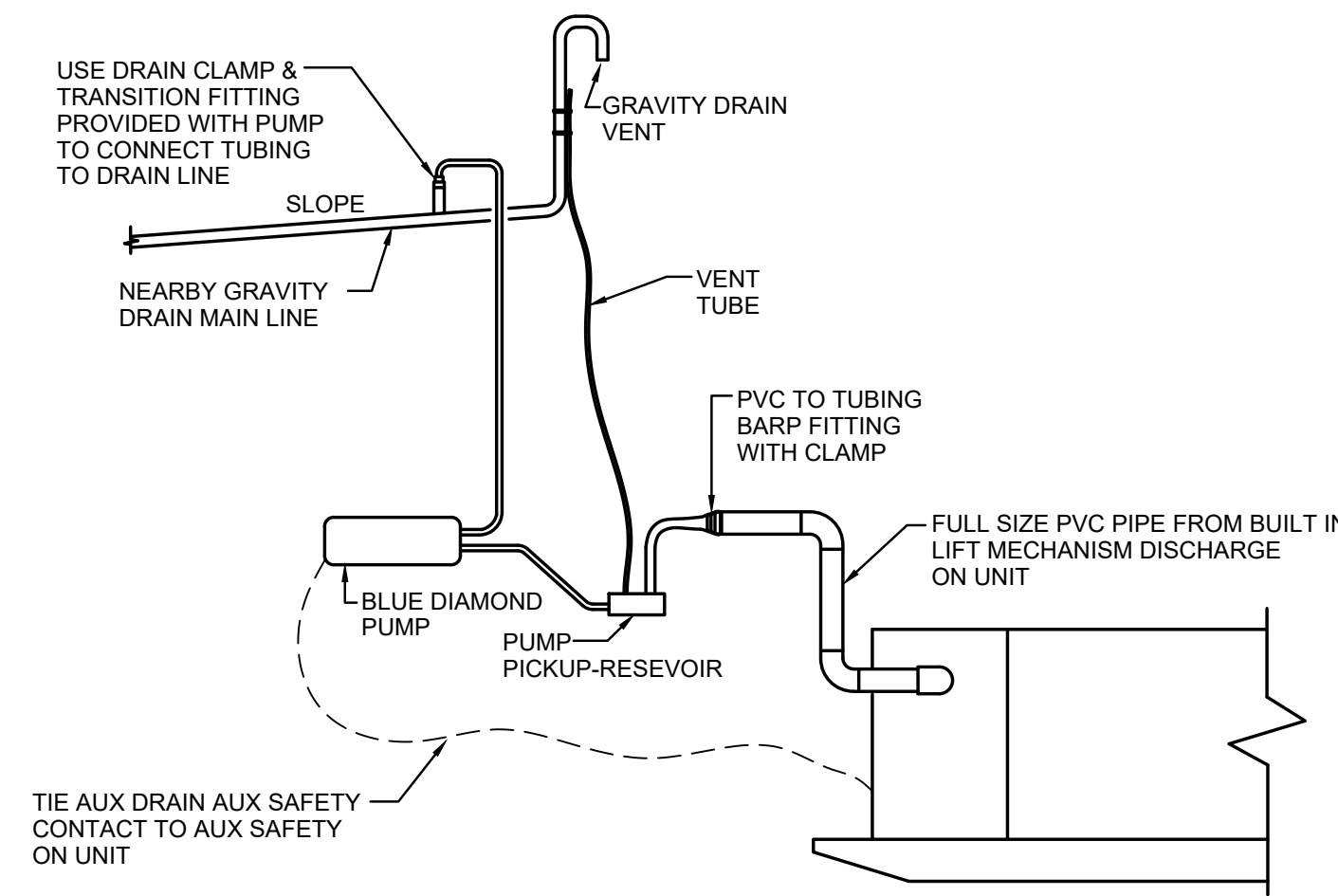


Y-BRANCH HORIZONTAL ORIENTATION RESTRICTIONS

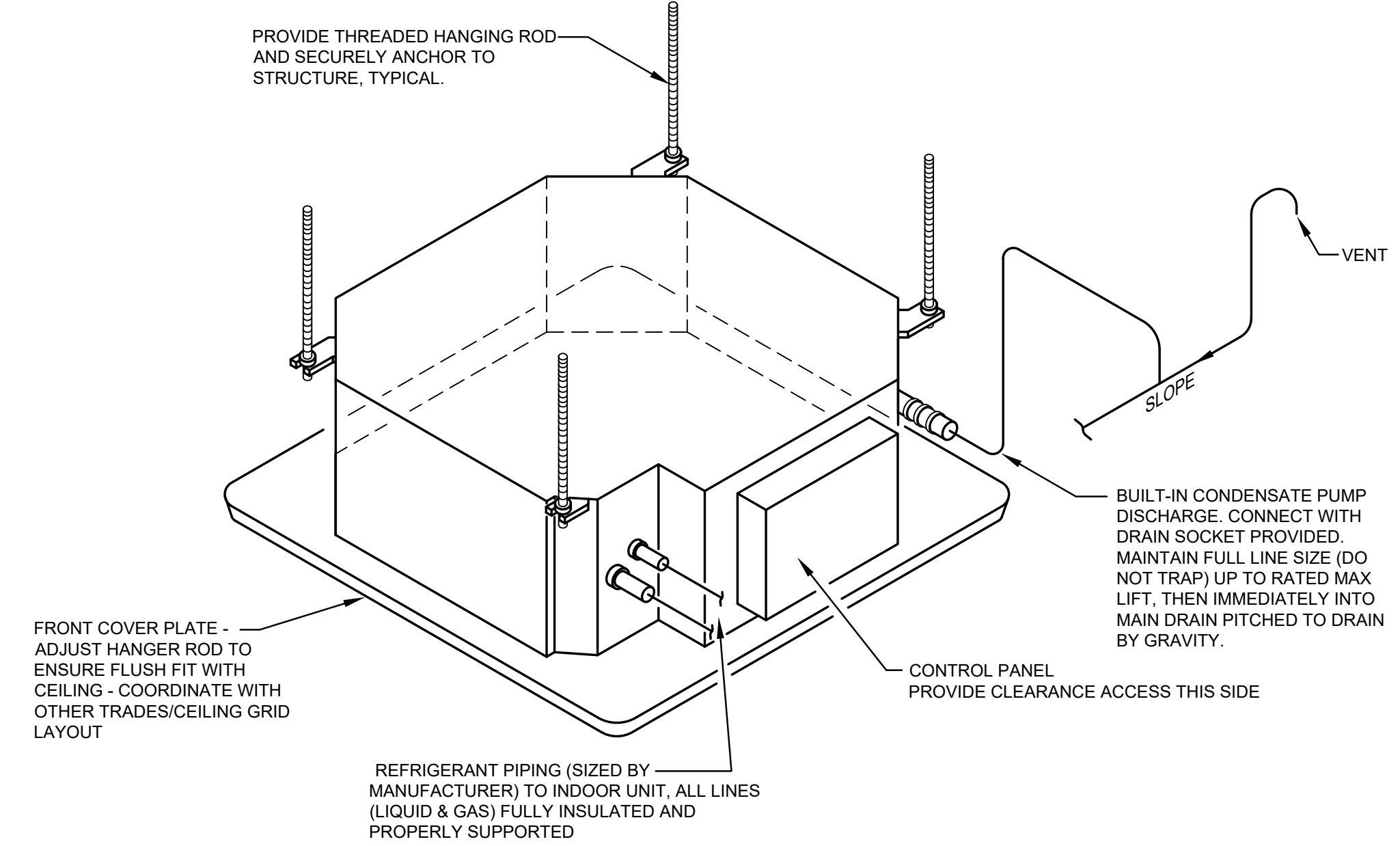
VRF PIPING DISTRIBUTION REQUIREMENTS
NO SCALE



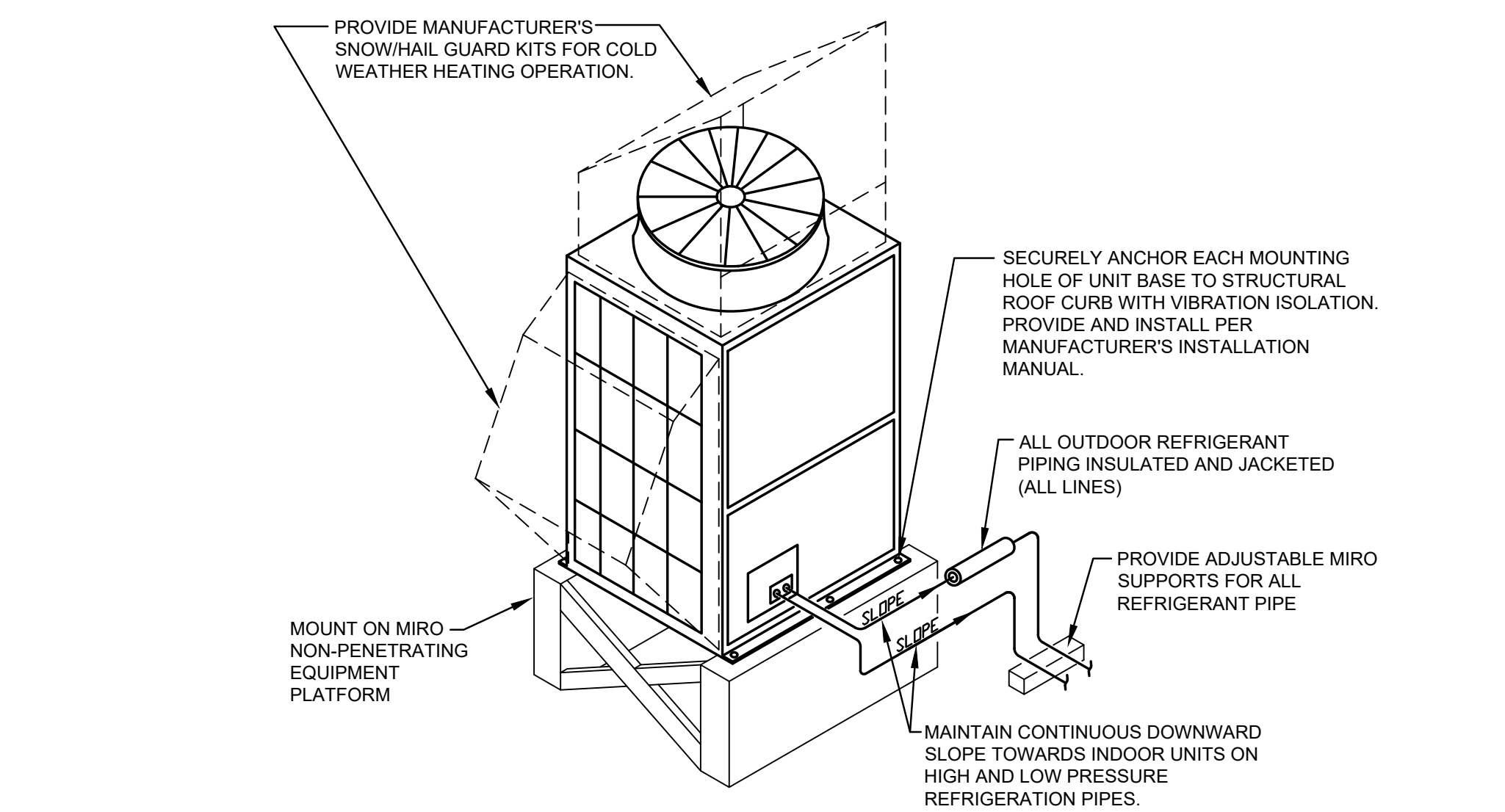
VRF - RECOMMENDED PIPE CLEARANCES FOR BRANCH SELECTOR UNITS
NO SCALE (REFER TO MANUFACTURERS INSTRUCTIONS)



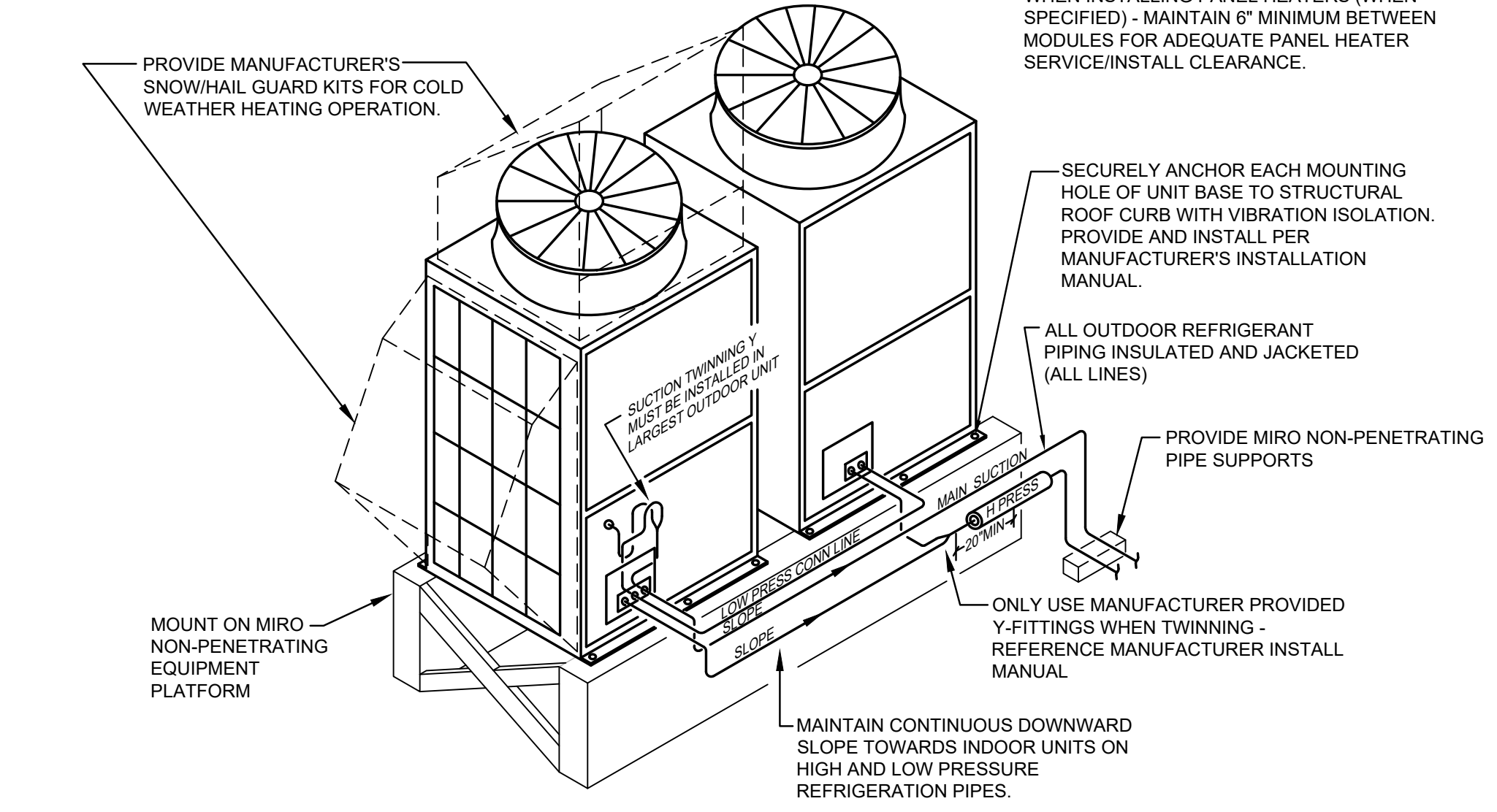
CONDENSATE PUMP ON VRF CASSETTE UNIT DETAIL
NO SCALE



VRF CASSETTE INDOOR UNIT DETAIL
NO SCALE



VRF OUTDOOR UNIT SINGLE MODULE DETAIL
NO SCALE



VRF - HEAT RECOVERY-R2 (TWINNED) DETAIL
NO SCALE



DATE	ISSUED FOR:

DATE:	PROJECT NUMBER	SHEET NUMBER	M4.3
10-11-2022	32103-00		

AFF.	ABOVE FINISHED FLOOR	HP	HORSEPOWER		LOW TEMPERATURE (HEATING) HOT WATER SUPPLY		FLEXIBLE DUCT CONNECTION
ACCU	AIR COOLED CONDENSING UNIT	LAT	LEAVING AIR TEMPERATURE		LOW TEMPERATURE (HEATING) HOT WATER RETURN		MANUAL SINGLE BLADE OR OPPOSED BLADE DAMPER
AFF	ABOVE FINISHED FLOOR	MCA	MINIMUM CIRCUIT AMPS		LOW PRESSURE CONDENSATE		VERTICAL FIRE DAMPER WITH ACCESS DOOR
AP	ACCESS PANEL	MOCp	MAXIMUM OVERCURRENT PROTECTION		LOW PRESSURE STEAM		AIR FLOW
BHP	BRAKE HORSE POWER	PH	PHASE		PUMPED CONDENSATE		DUCT SIZE FREE AREA (1ST FIGURE, SIDE OF DUCT SHOWN)
BTU	BRITISH THERMAL UNIT	PSI	POUNDS PER SQUARE INCH		REFRIGERANT SUCTION		CROSS-SECTION OF SUPPLY OR OUTSIDE AIR INTAKE DUCT
BTUH	BRITISH THERMAL UNIT PER HOUR	RPM	REVOLUTIONS PER MINUTE		REFRIGERANT LIQUID		CROSS-SECTION OF RETURN OR EXHAUST DUCT
CFM	CUBIC FEET PER MINUTE	TSP	TOTAL STATIC PRESSURE		DRAIN LINE / PUMPED CONDENSATE		90° ELBOW WITH TURNING VANES
CUH	CABINET UNIT HEATER	TYP	TYPICAL		PIPING TO BE REMOVED (DEMOLITION DRAWING ONLY)		90° BRANCH TAKE-OFF W/45 DEGREE ENTRY
CV	CONNECTOR	VRf	VARIABLE REFRIGERANT FLOW		DIRECTION OF FLOW		ROUND FLEXIBLE DUCT
D	DRAIN LINE	VRfBC	VARIABLE REFRIGERANT FLOW BRANCH CONTROLLER		PITCH OF PIPE (DOWN)		SQUARE OR RECTANGLE DUCT TRANSITION
DB	DRY BULB	VRfC	VARIABLE REFRIGERANT FLOW CONDENSER		PIPE ELBOW (TURNED UP)		SQUARE OR RECTANGLE TO ROUND DUCT TRANSITION
DOAS	DEDICATED OUTDOOR AIR SYSTEM	VRfU	VARIABLE REFRIGERANT FLOW UNIT		PIPE ELBOW (TURNED DOWN)		DUCT UP TO ROOF MOUNTED EXHAUST FAN OR VENTILATOR
DN.	DOWN	WB	WET BULB		PIPE TEE DOWN (DROP)		EQUIPMENT TAG
EAT	ENTERING AIR TEMPERATURE	WL	WALL LOUVER		PIPE TEE UP		WALL THERMOSTAT OR TEMPERATURE SENSOR
EF	EXHAUST FAN				PIPE TEE UP OR ANGLE		ROUND
ESP	EXTERNAL STATIC PRESSURE				PIPE TEE DOWN OR ANGLE		
F	FAHRENHEIT				NEW CONNECTION		
FID	FIRE DAMPER						
FPM	FEET PER MINUTE						

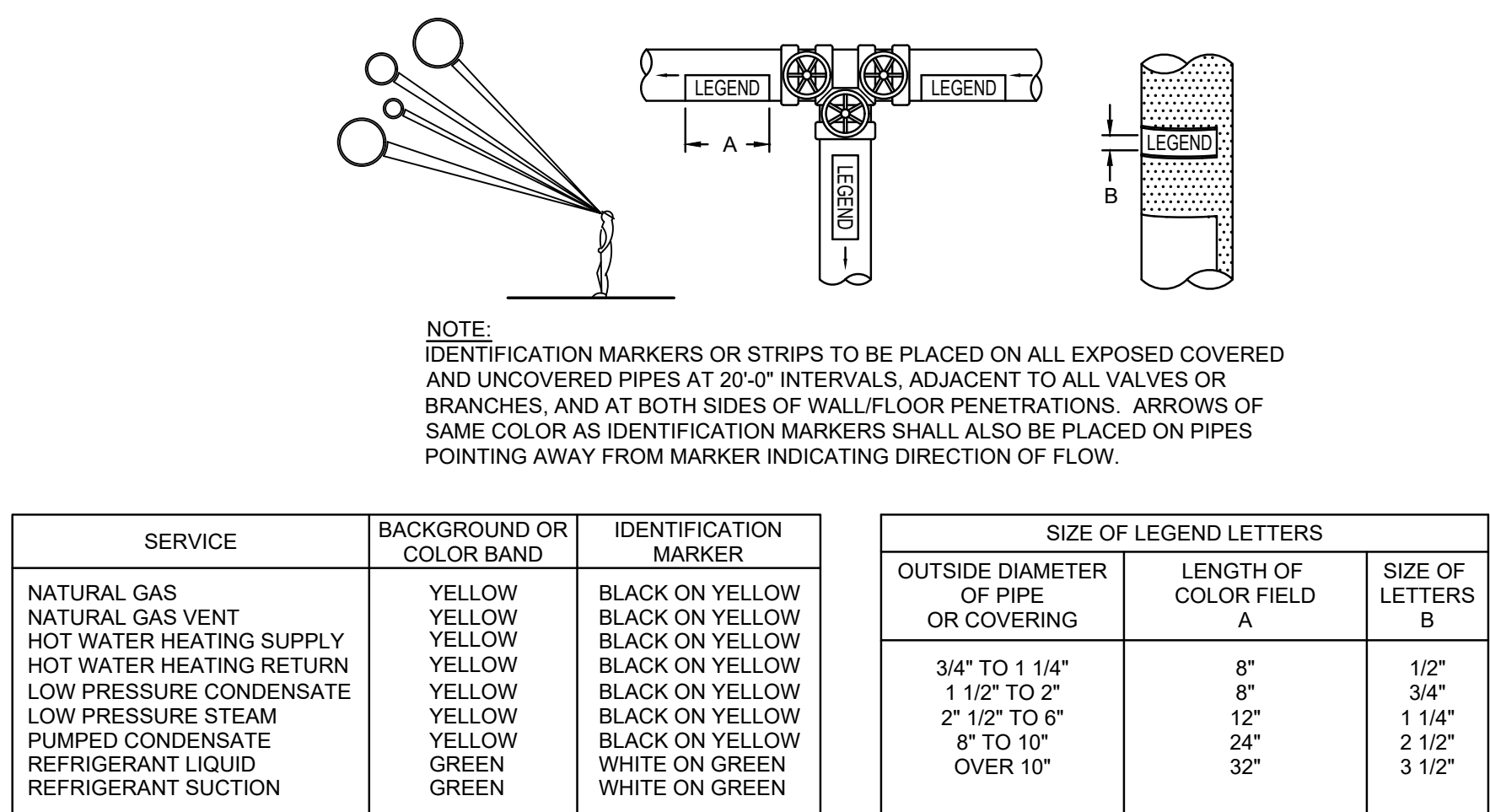
GENERAL NOTES - ALL CONTRACTORS

1. DRAWINGS ARE GENERALLY DIAGRAMMATIC. ROUTING OF PIPING, DUCTWORK, CONDUITS, RACEWAYS, ETC., AS SHOWN ON DRAWINGS, DOES NOT INTEND TO SHOW EVERY RISE, DROP, HANG, OR TURN. ANY STRUCTURAL ELEMENT THAT MAY BE ENCOUNTERED DURING THE INSTALLATION OF THIS WORK. EACH CONTRACTOR SHALL MAKE ANY REQUIRED CHANGES FROM THE GENERAL ROUTING SHOWN ON THESE DRAWINGS, SUCH AS OFFSETS, BENDS OR CHANGES IN DIRECTION DUE TO OBSTRUCTIONS, IN ORDER TO MAINTAIN THE INTENT OF THE GENERAL CONSTRUCTION. ALL CHANGES SHALL BE MADE WITHOUT ADDITIONAL COST TO THE OWNER OR DELAY IN COMPLETION DATE OF THE PROJECT.
2. IT IS INTENDED THAT EQUIPMENT SHALL BE LOCATED SYMMETRICALLY WITH THE ARCHITECTURAL ELEMENTS OF THE BUILDING, NOTWITHSTANDING THE FACT THAT LOCATIONS INDICATED BY THESE DRAWINGS MAY BE DISTORTED FOR CLARNESS OF PRESENTATION.
3. CONTRACTOR SHALL CHECK DRAWINGS OF OTHER TRADES TO VERIFY THAT SPACES IN WHICH EQUIPMENT SHALL BE LOCATED WILL BE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS IN THE BUILDING, WHERE HEADROOM OR SPACE CONDITIONS APPEAR INADEQUATE. CONTRACTOR SHALL NOTIFY OWNER/ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE INSTALLATION OF THEIR WORK.
4. CONTRACTOR SHALL FURNISH OTHER TRADES ADVANCE INFORMATION AND SHOP DRAWINGS ON LOCATIONS AND SIZES OF PIPING, DUCTWORK, CONDUIT, RACEWAYS, EQUIPMENT, FRAMES, ETC. AS REQUIRED. EACH TRADE SHALL BE RESPONSIBLE FOR THE PROTECTION OF THEIR WORKS AFFECTED TO INSTALL THEIR WORK PROPERLY AND WITHOUT DELAY.
5. WHERE THERE IS EVIDENCE THAT WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, ALL TRADES SHALL MEET ON JOB SITE TO WORK OUT SPACE CONDITIONS AND MAKE SATISFACTORY ADJUSTMENTS TO INSTALLATION OF THE NEW WORK. CONTRACTORS SHALL BE RESPONSIBLE FOR ALL ACCESS TO FIELD CONDITIONS AND LOCATIONS AND LOCATIONS, DRAWINGS, AND WORK OF OTHER TRADES PRIOR TO ROUGH-IN. EACH CONTRACTOR SHALL BE RESPONSIBLE, AT THEIR OWN EXPENSE, FOR THE REMOVAL AND REINSTALLATION OF ANY PART OF THE EXISTING SPACE WAS INSTALLED WITHOUT CONSULTING WITH OTHER TRADES BEFORE INSTALLING THEIR WORK.
6. CONTRACTOR SHALL PROVIDE SLEEVES IN BEAMS, FLOORS, COLUMNS AND WALLS AS SHOWN ON THE DRAWINGS, AS REQUIRED BY JOB SITE CONDITIONS, AND/OR AS SPECIFIED, WHEN INSTALLING THEIR WORK. ALL BEAMS AND COLUMNS WHICH ARE REQUIRED TO BE SLEEVED SHALL BE CHECKED AND APPROVED BY ARCHITECT BEFORE CONTRACTOR CUTS ANY STRUCTURAL BUILDING MEMBER.
7. THE SEQUENCE FOR THE INSTALLATION OF ALL WORK SHALL BE COORDINATED BETWEEN ALL CONTRACTORS ON THE PROJECT AND IN STRICT ACCORDANCE WITH ARCHITECT/ENGINEER AND OWNER'S STIPULATION AS DIRECTED.
8. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL AND STRUCTURAL CONTRACTOR DRAWINGS AND SPECIFICATIONS FOR SUBMITTING THEIR BIDS TO FAMILIARIZE THEMSELVES WITH THE EXTENT OF THE GENERAL CONTRACTOR'S WORK, CEILING HEIGHTS AND CLEARANCE FOR INSTALLING THEIR WORK.
9. CONTRACTOR SHALL BE RESPONSIBLE AND PAY FOR ALL CORING, CUTTING, PATCHING, REPAIRING, REFINISHING AND REMOVAL/REPLACEMENT OF NEW BUILDINGS CONSTRUCTION AS REQUIRED TO ACCOMMODATE THE INSTALLATION OF THEIR WORK. ALL CORING, PATCHING, REPAIRING AND REFINISHING WORK SHALL BE PERFORMED BY THOSE REGULARLY INVOLVED IN THAT TRADE AND SHALL MATCH THE ADJACENT CONSTRUCTION AS CLOSELY AS POSSIBLY. ALL WORK SHALL BE TAKEN AS OR PROTECTED AS NOT TO BE DAMAGED DURING NEW BUILDING CONSTRUCTION. ANY PREVIOUSLY INSTALLED FINISHES THAT ARE DAMAGED DURING THE INSTALLATION OF NEW WORK SHALL BE REPAIRED, REPLACED AND PAID FOR BY THE INSTALLING CONTRACTOR WHO DAMAGED THEM TO THE SATISFACTION OF THE ARCHITECT AND OWNER.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR OWN CLEAN-UP DURING CONSTRUCTION. IF CONTRACTOR FAILS TO PROVIDE SUCH CLEAN-UP, THE ARCHITECT/ENGINEER WILL DIRECT THE OWNER CONTRACTOR TO PROVIDE SUCH CLEAN-UP. CONTRACTOR SHALL BE RESPONSIBLE TO PAY THE ASSOCIATED BACK-CHARGES AS DEEMED APPROPRIATE BY THE ARCHITECT/ENGINEER.
11. CONTRACTOR SHALL INSTALL ALL AUXILIARY SUPPORTING STEEL AS REQUIRED FOR THE SUPPORTING OF THEIR PIPING, DUCTWORK, CONDUIT, TANKS, EQUIPMENT, ETC. ALL SUPPORTING STEEL FOR ITEMS ABOVE A SUSPENDED CEILING SHALL BE FROM BUILDING STRUCTURAL MEMBERS ONLY.
12. CONTRACTOR SHALL STORE ALL MATERIALS AND EQUIPMENT SHIPPED TO THE SITE IN A PROTECTED AREA. MATERIALS AND EQUIPMENT SHALL BE MAINTAINED AND BE STORED OFF THE GROUND A MINIMUM OF SIX INCHES (6") SET ON 8 X 6 PLANKS AND/OR WOOD PALLETS. ALL MATERIAL AND EQUIPMENT MUST BE COMPLETELY COVERED WITH WEATHERPROOF TARP OR VISQUIN OR EQUIVALENT. MATERIALS AND EQUIPMENT SHALL BE KEPT OFF THE GROUND AND OTHER DEBRIS. NO EQUIPMENT WILL BE ALLOWED TO BE STORED OUTSIDE THE BUILDING ON THE SITE UNLESS IT IS SUPPORTED OFF THE GROUND AND COMPLETELY PROTECTED WITH WEATHERPROOF COVERS.
13. THE DRAWINGS, SCHEDULES AND SPECIFICATIONS HAVE BEEN PREPARED USING ONE MANUFACTURER FOR EACH PIECE OF EQUIPMENT AS THE BASIS FOR DIMENSIONING. IF CONTRACTOR DESIRES TO USE ANOTHER MANUFACTURER FOR ANY EQUIPMENT, CONTRACTOR, BUT NOT THE SCHEDULED MANUFACTURER USED FOR THE BASE DESIGN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING ALL THE DIMENSIONS OF THE EQUIPMENT TO VERIFY THAT IT WILL FIT IN THE SPACE SHOWN ON THE DRAWINGS. ANY DIMENSIONS THAT DO NOT MEET THE DIMENSIONS WILL BE PERMITTED, PROVIDED THE RATINGS MEET THOSE SHOWN ON THE DRAWINGS AND EQUIPMENT WILL PHYSICALLY FIT INTO THE SPACE ALLOCATED WITH THE EQUIPMENT. ACCESS TO FIELD CONDITIONS AND LOCATIONS AND LOCATIONS, DRAWINGS, WHEN EQUIPMENT SUBMITTED FOR REVIEW DOES NOT MEET THE PHYSICAL SIZE OR ARRANGEMENT OF THAT SCHEDULED AND SPECIFIED, CONTRACTOR SHALL PAY FOR ALL REMOVAL AND REINSTALLATION OF ANY PART OF THE EXISTING SPACE WAS INSTALLED WITHOUT CONSULTING WITH OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT TO FIT IN THE SPACE AND FUNCTION AS INTENDED.
14. CONTRACTOR AND/OR MANUFACTURER SHALL VERIFY THAT THE CHARACTERISTICS OF THE EQUIPMENT SUBMITTED FOR REVIEW MEET THE REQUIREMENTS OF THE EQUIPMENT. EQUIPMENT SUBMITTED FOR REVIEW REQUIRES MODIFICATIONS TO THE WORK OF OTHER CONTRACTORS, SUBMITTING CONTRACTOR SHALL PAY FOR ALL COSTS FOR ADDITIONAL WORK REQUIRED BY OTHER CONTRACTORS, OWNER, ARCHITECT OR ENGINEER TO MAKE CHANGES WHICH WOULD ALLOW THE EQUIPMENT FUNCTION SAFELY AND PROPERLY.
15. CONTRACTOR SHALL COORDINATE THE INSTALLATION OF HIS WORK WITH CONSTRUCTION OF THE BUILDING, INCLUDING VERIFYING THE SIZE OF EXISTING OPENINGS, WINDOWS, DOORS, CORRIDORS, ROOMS, ETC. FOR ACCESS OF HIS NEW EQUIPMENT INTO THE BUILDING AREAS. CONTRACTOR WILL ALREADY BE CONSTRUCTING HIS EQUIPMENT AS READY TO BE INSTALLED, IF OPENINGS ARE TOO SMALL FOR ACCESS THEN CONTRACTOR SHALL AT HIS OWN EXPENSE PROVIDE NEW OR ENLARGED OPENINGS AND RESTORE SAME TO PREVIOUS SIZE AND CONDITION. CONTRACTOR MAY BE REQUIRED TO PROVIDE ACCESS TO THE BUILDING FOR THE INSTALLATION OF HOUSING FOR ENTRANCE INTO THE SPACE OR BUILDING. CONTRACTOR SHALL REASONABLE EQUIPMENT AFTER IT IS IN THE SPACE AT HIS OWN EXPENSE.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND THEIR ASSOCIATED FEES.
17. SEAL ALL FLOOR PENETRATIONS BETWEEN THE PIPE AND THE FLOOR SLAB WITH A HIGH ADHESIVE POLYURETHANE SEALANT AS PER THE LATEST EDITION OF THE EPA "RADON PROHIBITION IN THE DESIGN AND CONSTRUCTION OF SCHOOLS AND OTHER LARGE BUILDINGS" MANUAL.

HVAC/PLUMBING/ELECTRICAL COORDINATION SCHEDULE

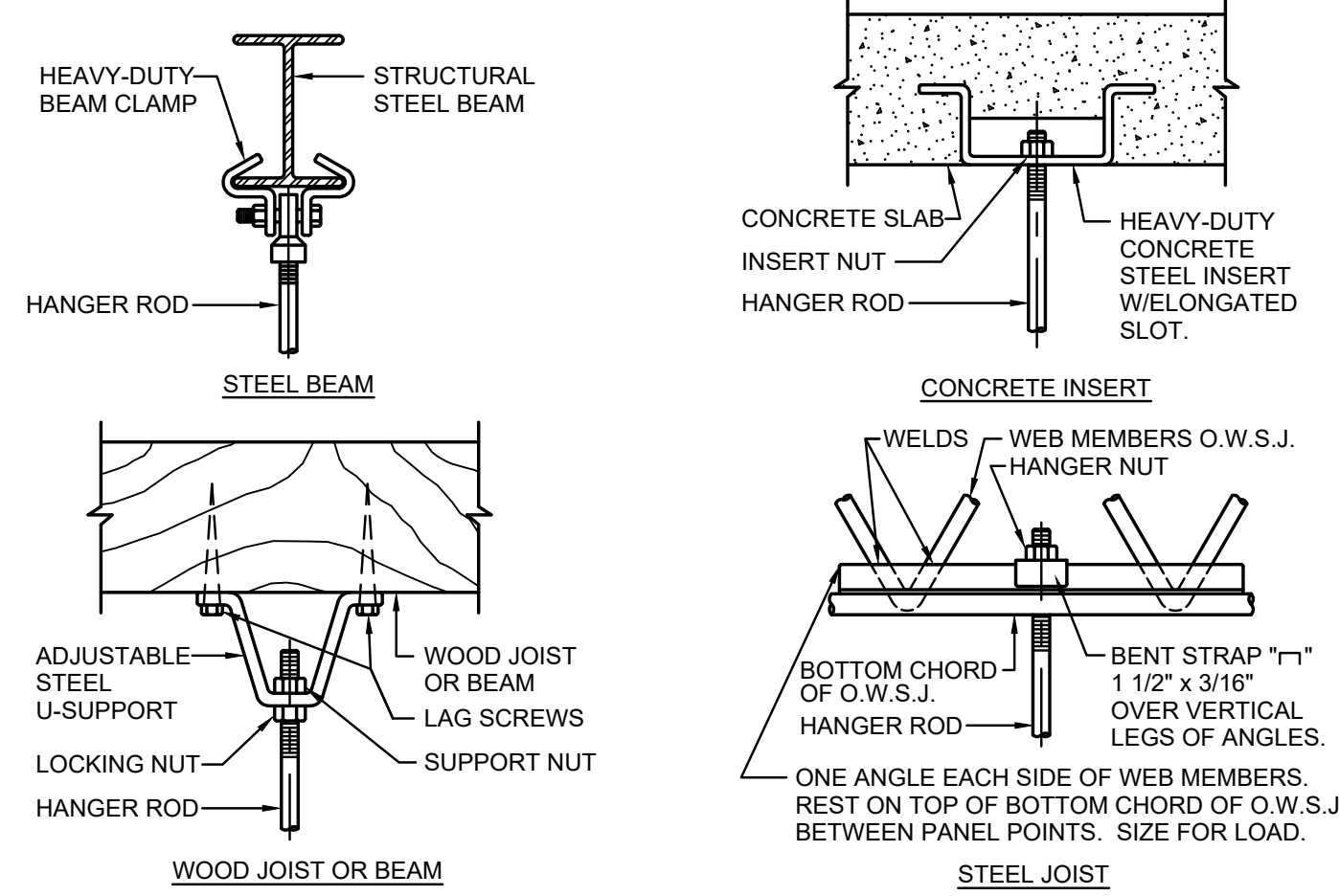
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- NOTES:**
1. DEVICES TO BE FURNISHED BY THE ELECTRICAL CONTRACTOR (MARKED "E"), MECHANICAL CONTRACTOR (MARKED "M"), HVAC CONTRACTOR (MARKED "HV"), BAS CONTRACTOR (MARKED "B"), PLUMBING CONTRACTOR (MARKED "P"), FIRE PROTECTION CONTRACTOR (MARKED "FP"), OR MANUFACTURER (MARKED "MANUF").
 2. ALL CONDUIT AND WIRING FOR TEMPERATURE CONTROL AND EQUIPMENT INTERLOCK SHALL BE BY BAS CONTRACTOR. OTHER CONTROLS AND CONTROL CONDUIT/WIRING BY TRADE FURNISHING RESPECTIVE EQUIPMENT.
 3. IT IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE AND REVIEW THE ELECTRICAL CHARACTERISTICS, AMPACITY AND OTHER REQUIREMENTS OF COMPONENTS BEFORE INSTALLATION OF WORK. ALL OTHER CONTRACTORS SHALL ADVISE ELECTRICAL CONTRACTOR OF ANY MOTOR/DEVICE CHANGES.
 4. ALL LOOSE STARTERS SHALL INCLUDE HOA SWITCH, CONTROL TRANSFORMER, AND ONE N.O. AND ONE N.C. AUXILIARY CONTACTS. ALL SINGLE PHASE EXHAUST FAN CONTROL SWITCHES SHALL HAVE IDENTIFICATION NAMEPLATE AND PILOT LIGHT.
 5. SEE SPECIFICATIONS AND DRAWINGS FOR TYPES AND LOCATIONS OF DEVICES SCHEDULED BELOW.



TYPICAL PIPE IDENTIFICATION MARKERS

NO SCALE



PIPE HANGERS AND SUPPORTS

SUPPORT HORIZONTAL STEEL AND COPPER PIPING AS FOLLOWS:

NOMINAL PIPE SIZE	DISTANCE BETWEEN SUPPORTS	HANGER ROD DIAMETERS
1/2"	6'	3/8"
3/4" TO 1-1/2"	6'	1/2"
2" TO 2-1/2"	10'	1/2"
3" AND 4"	12'	5/8"
6" TO 12"	14'	7/8"
14" TO 18"	20'	1"

PLACE HANGER WITHIN 1 FOOT OF EACH HORIZ. ELBOW. SUPPORT HORIZ. SOIL WASTE AND STORM PIPE NEAR EACH HUB, WITH 5 FEET MAXIMUM SPACING BETWEEN HANGER.

VERTICAL PIPING:

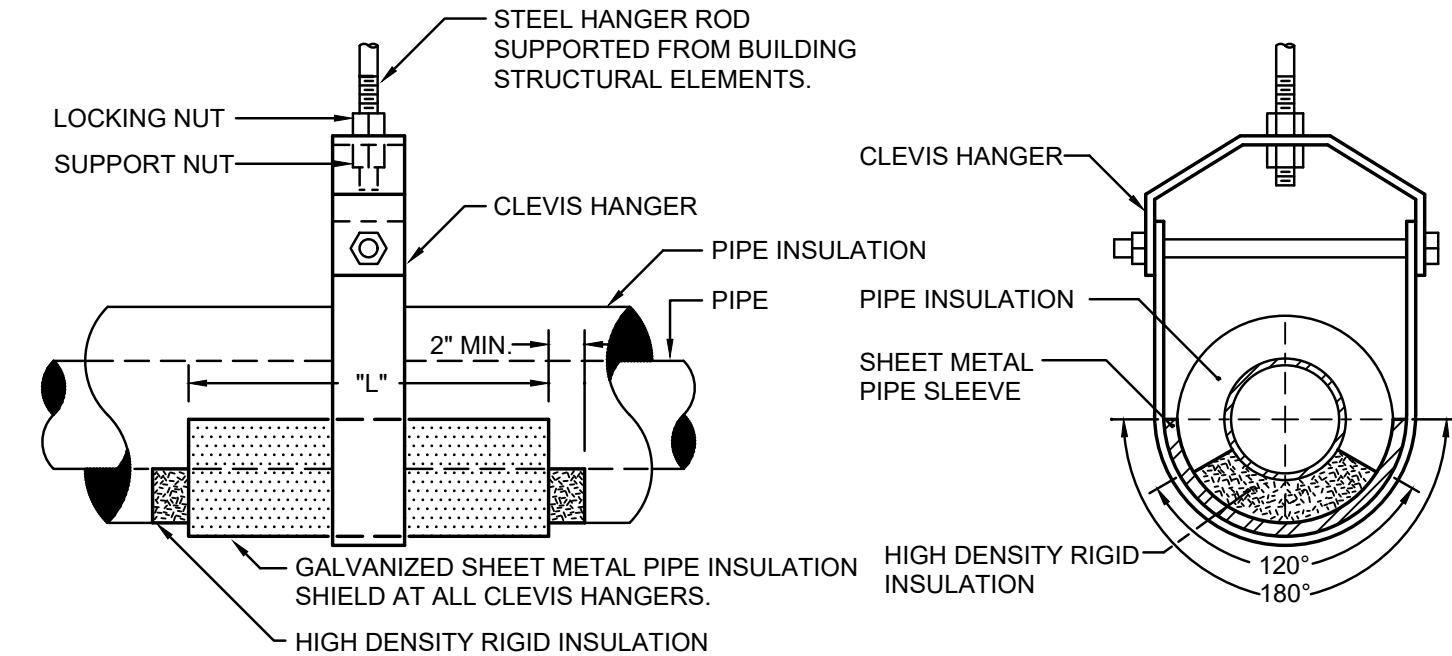
1. SUPPORT VERTICAL WATER PIPING AT EVERY FLOOR.
2. SUPPORT VERTICAL SOIL PIPE AT EACH FLOOR AT HUB.

WHERE SEVERAL PIPES CAN BE INSTALLED IN PARALLEL AND AT SAME ELEVATION PROVIDE MULTIPLE OR TRAPEZE HANGERS.

WHERE PRACTICAL, SUPPORT RISER PIPING INDEPENDENTLY OF CONNECTED HORIZ. PIPING

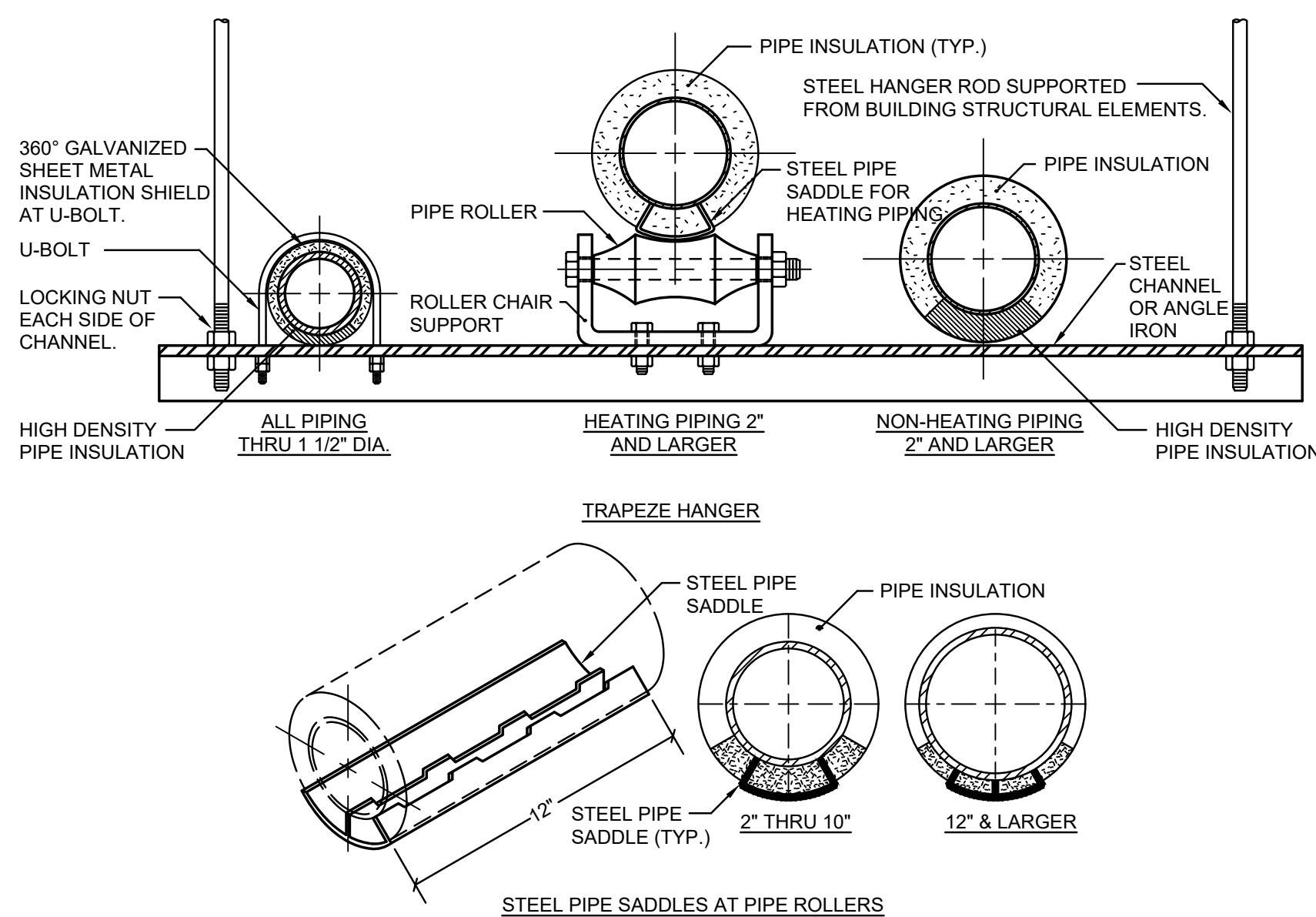
TYPICAL PIPE HANGER DETAILS

NO SCALE



PIPE INSULATION SHIELD SCHEDULE		
PIPE SIZE	LENGTH	GAUGE
UP TO 3/4"	8"	20 GA.
1" - 2"	12"	18 GA.
2 1/2" - 4"	12"	16 GA.
5" & 6"	18"	16 GA.
8" & UP	24"	14 GA.

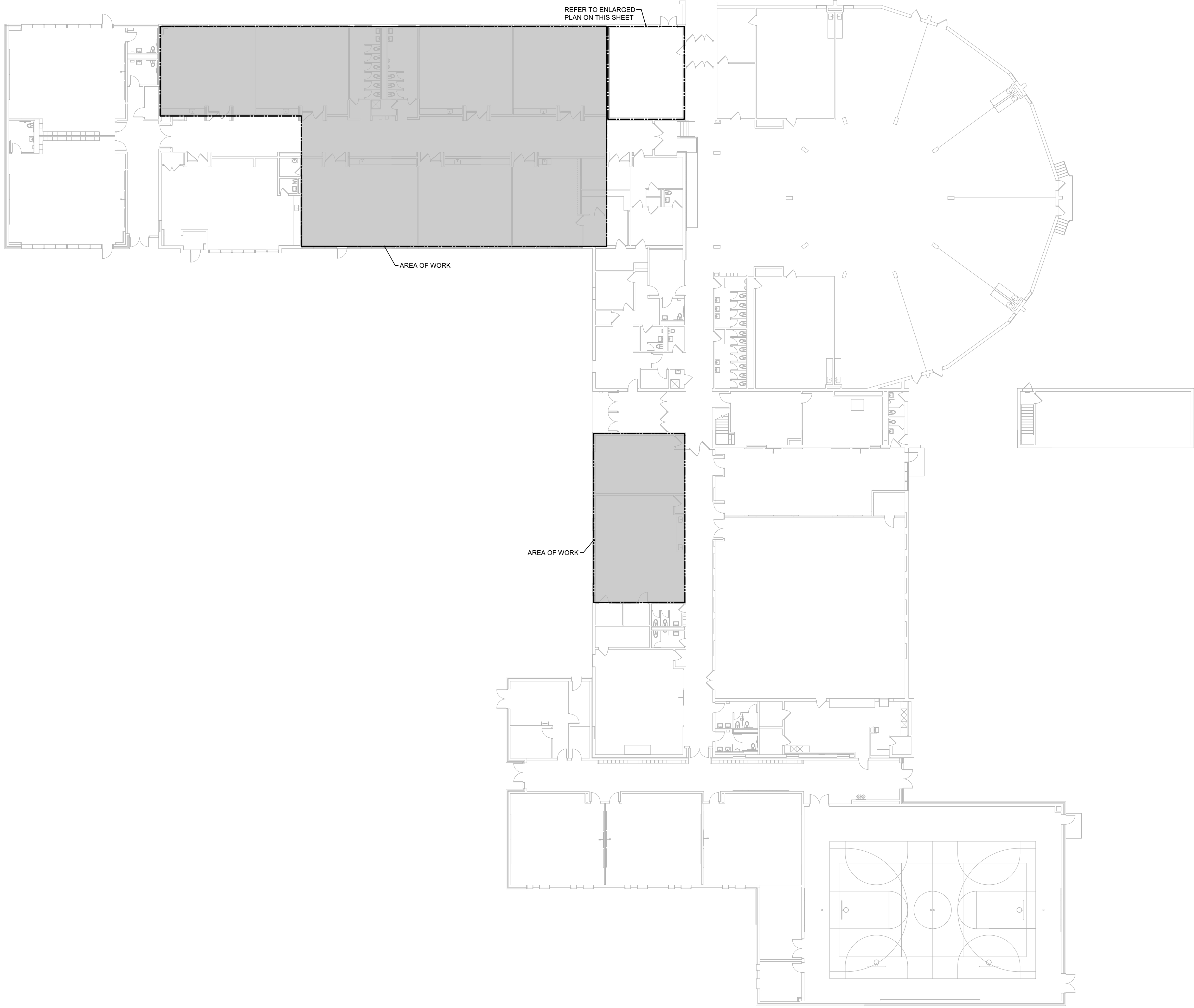
NOTE: 1. CONFER WITH ARCHITECT AND REFER TO STRUCTURAL DRAWINGS FOR ADDITIONAL INFORMATION ON ACCEPTABLE METHODS AND LOCATIONS FOR HANGER SUPPORTS.



TYPICAL PIPE HANGER DETAILS

NO SCALE

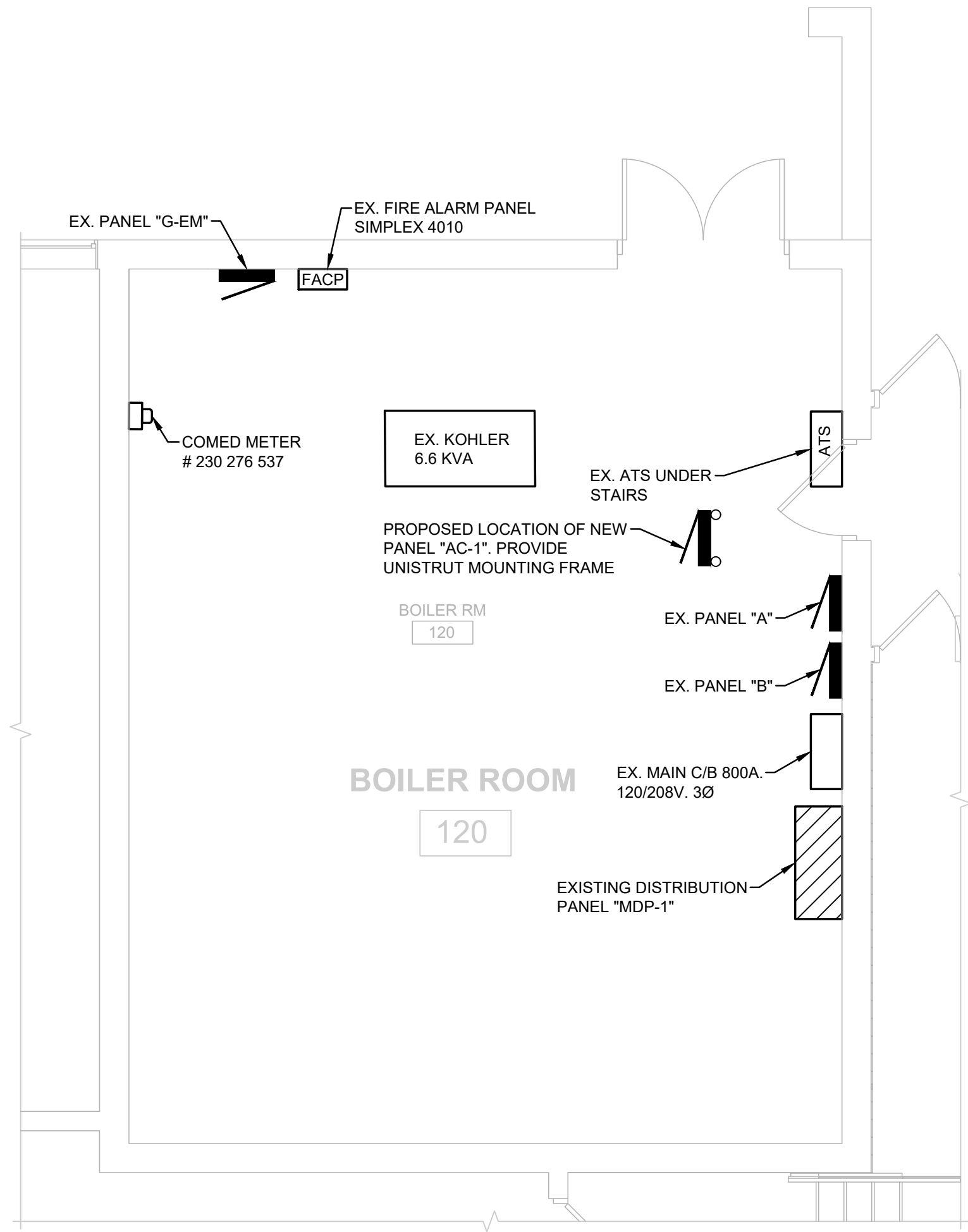
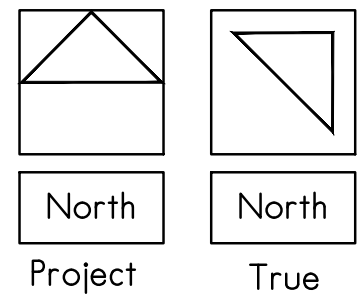
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FIRST FLOOR ELECTRICAL PLAN

SCALE:

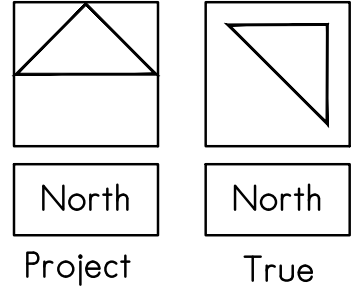
1/16" = 1'-0"



PARTIAL FIRST FLOOR POWER PLAN

SCALE:

1/4" = 1'-0"



DATE:	10-11-2022
PROJECT NUMBER	32103-03
SHEET NUMBER	E1.0G

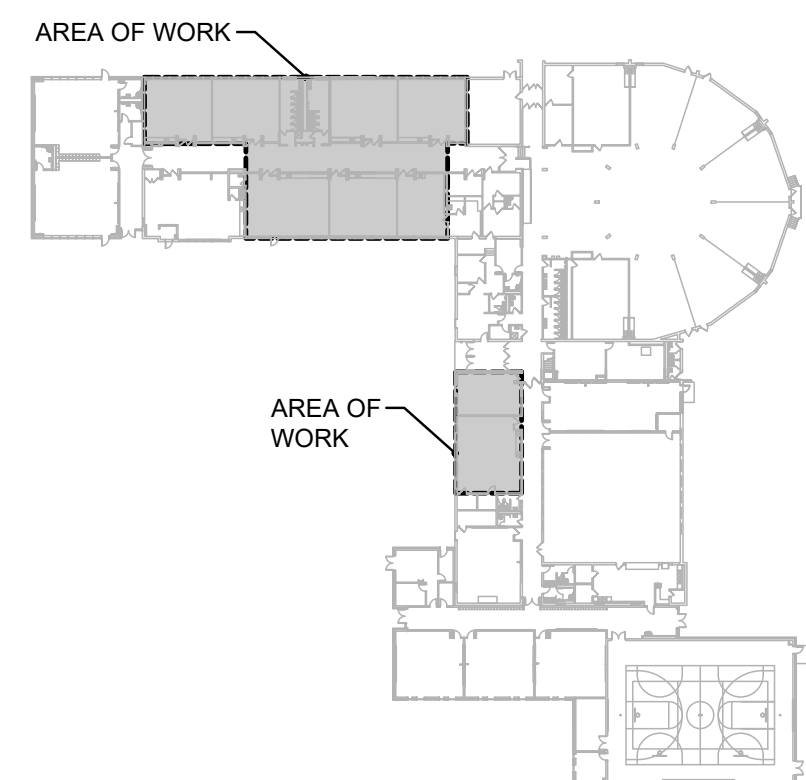
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DATE

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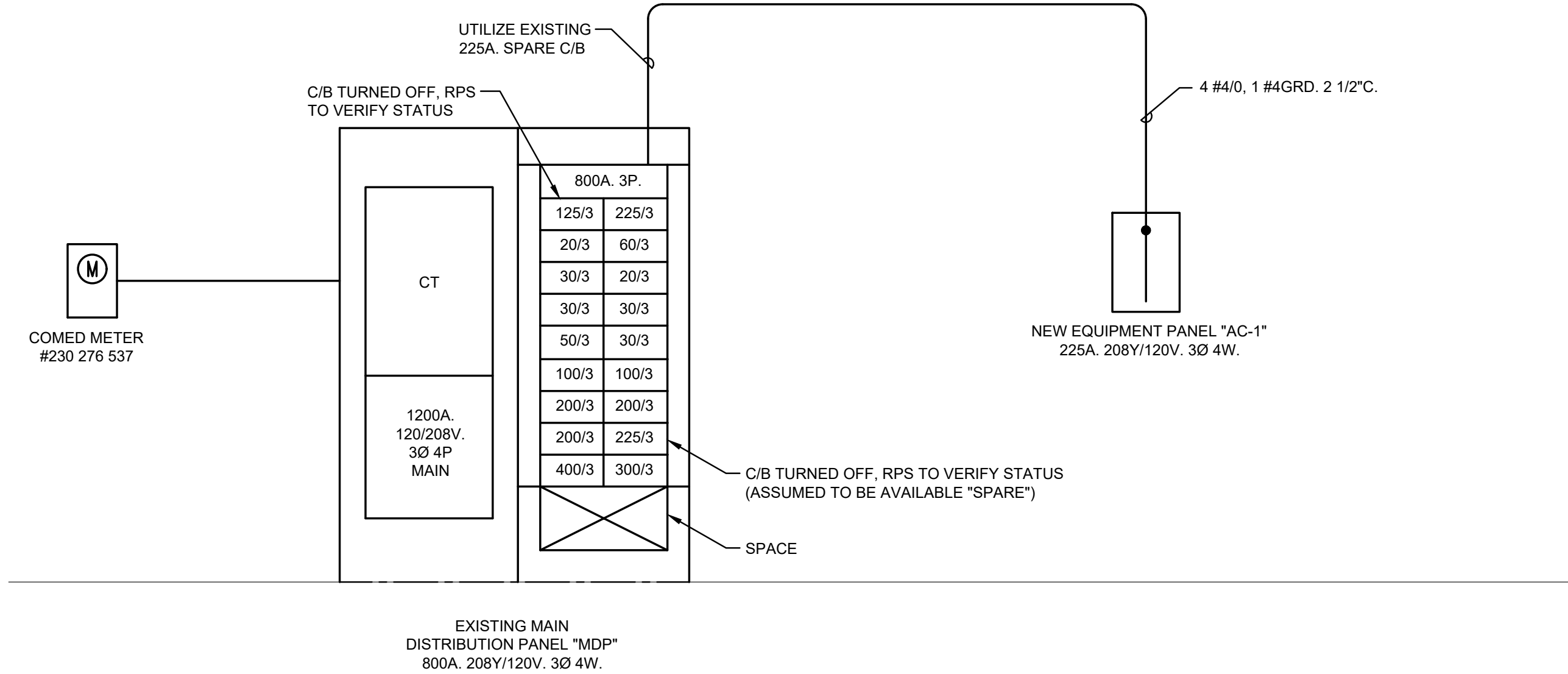
GREGORY ELEMENTARY SCHOOL
RPS DISTRICT 205 PROJ #: 2400
4820 CAROL CT. ROCKFORD, IL 61108





True

- PANELS INDICATED ON PLANS ARE FROM FIELD SURVEY AND RESPECTIVE DESIGNATED CIRCUITS BASED ON PANELBOARD SCHEDULES WHICH MAY OR MAY NOT REFLECT ACTUAL FIELD CONDITIONS AND SHALL BE VERIFIED BY ELECTRICAL CONTRACTOR PRIOR TO ALL WORK. IF ANY DISCREPANCIES ARE DISCOVERED, IMMEDIATE DEMOLITION WHERE APPLICABLE, OTHERWISE, REFER TO DRAWING NOTES FOR ADDITIONAL INFORMATION/INSTRUCTIONS. PROVIDE ANY ADDITIONAL CONDUIT, WIRE, RACEWAYS, ETC., AS REQUIRED. ONLY PROVIDE NEW CIRCUITS/CIRCUIT BREAKERS (MATCH EXISTING TYPE) WHERE ABSOLUTELY NECESSARY - VERIFY PHASES AND SEPARATELY IDENTIFY ALL CIRCUITS TO BE REMOVED. ACCORDINGLY, VERIFY PANEL LOADING PRIOR TO FINAL CONNECTIONS. IMMEDIATELY NOTIFY CS2 OF ANY DISCREPANCIES AND/OR PROBLEMATIC ITEMS.



PARTIAL ELECTRICAL RISER DIAGRAM

NO SCALE

GREGORY SCHOOL

PANELBOARD SCHEDULE: "AC-1" GREGORY													
MAIN: 225A MLO			VOLTAGE: 208 Y/120V, 3PH, 4W					C/B RATING: - 10 k.A.I.C.					
LOCATION: - BOILER ROOM			NEUTRAL: 100%					GROUND: EQUIPMENT				MOUNTING: - SURFACE	
REMARKS: -												TYPE: BOLT-ON	
CKT	USE AND/OR AREA SERVED		C/B	TYPE	VA	PH	VA	TYPE	C/B	USE AND/OR AREA SERVED		CKT	
1	G-ACCU - 1		30/2	M	2049	A	2049	M	30/2	G-ACCU - 5		2	
3				M	2049	B	2049	M				4	
5	G-ACCU - 2		30/2	M	2049	C	2049	M	30/2	G-ACCU - 6		6	
7				M	2049	A	2049	M				8	
9	G-ACCU - 3		30/2	M	2049	B	2049	M	30/2	G-ACCU - 7		10	
11				M	2049	C	2049	M				12	
13	G-ACCU - 4		30/2	M	2049	A	720	R	20/1	ROOF TOP RECEPTACLE		14	
15				M	2049	B	2049	M	30/2	G-ACCU-9		16	
17	ROOF TOP RECEPTACLE		20/1	R	540	C	2049	M				18	
19	G-DFSS-1		30/2	M	2912	A	2049	M	30/2	G-ACCU-8		20	
21				M	2912	B	2049	M				22	
23	G-UV-1/G-UV-2		20/1	M	1334	C				BUSSED SPACE		24	
25	BUSSED SPACE					A				BUSSED SPACE		26	
27	BUSSED SPACE					B				BUSSED SPACE		28	
29	BUSSED SPACE					C				BUSSED SPACE		30	
TOTAL LOAD PER PHASE A					15926					CONNECTED LOAD		45300 VA	
TOTAL LOAD PER PHASE B					17255					HIGH PHASE AMPS		143.7 A	
TOTAL LOAD PER PHASE C					12119								

GREGORY ELEMENTARY SCHOOL
RPS DISTRICT 205 PROJ #: 2400
4820 CAROL CT. ROCKFORD, IL 61108

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ISSUED FOR:	DATE

DATE:	10-11-2022
PROJECT NUMBER	32103-03
SHEET NUMBER	E2.0G



Larson & Darby Group
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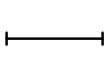





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ABBREVIATIONS			
A	AMPERE	MCA	MINIMUM CIRCUIT AMPS
ADDTL	ADDITIONAL	MCB	MAIN CIRCUIT BREAKER
A.F.F.	ABOVE FINISH FLOOR	MLO	MAIN LUGS ONLY
C.	CONDUIT	MOCP	MAXIMUM OVERCURRENT PROTECTION
C/B	CIRCUIT BREAKER	MTD	MOUNTED
CCT	CIRCUIT	N	NEW
CLG	CEILING	N.I.C.	NOT IN CONTRACT
DIA	DIAMETER	NL	NIGHTLIGHT
DED	DEDICATED CIRCUIT	N.T.S.	NOT TO SCALE
DISC	DISCONNECT	PB	PULLBOX
DIST	DISTRIBUTION	PNL	PANEL
E.C.	ELECTRICAL CONTRACTOR	REQ'D	REQUIRED
EM	EMERGENCY	SWBD	SWITCHBOARD
EMT	ELECTRICAL METALLIC TUBING	TYP	TYPICAL
EWV	ELECTRIC WATER COOLER	V	VOLTS
EWV	ELECTRIC WATER HEATER	VA	VOLTS - AMPERES
EX OR X	EXISTING TO REMAIN	W	WATTS OR WIRE
FLA	FULL LOAD AMPS	WG	WIRE GUARD
FU	FUSE	WP	WEATHERPROOF
GFI, GFCI	GROUND FAULT CURRENT INTERRUPTER	XFMR	TRANSFORMER
GRD	GROUND	1P	SINGLE POLE
HP	HORSEPOWER	2P	TWO POLE
IMC	INTERMEDIATE METAL CONDUIT	3P	THREE POLE
J-BOX, JB	JUNCTION BOX	Ø	PHASE


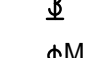
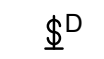
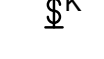
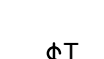
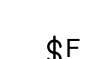









NOTE:
ALL SYMBOLS, ABBREVIATIONS, ETC., ARE GENERAL OFFICE STANDARD AND ARE NOT ALL NECESSARILY USED IN THIS PROJECT.









MOUNTING HEIGHT NOTE
REFER TO ARCHITECTURAL FLOOR PLANS FOR ADDITIONAL INFORMATION REGARDING MOUNTING HEIGHTS AND LOCATIONS OF ELECTRICAL DEVICES BEFORE ROUGH-IN.





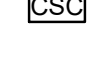

LIGHTING NOTE:
REFER TO ARCHITECTURAL FLOOR PLANS FOR ADDITIONAL INFORMATION REGARDING MOUNTING HEIGHTS AND LOCATIONS OF ELECTRICAL DEVICES BEFORE ROUGH-IN.










LIGHTING	
	2' X 4' LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED PER LIGHTING FIXTURE SCHEDULE.
	1' X 4' LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED PER LIGHTING FIXTURE SCHEDULE.
	2' X 2' LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED PER LIGHTING FIXTURE SCHEDULE.
	4 FT LED LIGHT FIXTURE; WALL, CEILING OR PENDANT MOUNTED PER LIGHTING FIXTURE SCHEDULE.
	4' LED STRIP LIGHT FIXTURE, PER LIGHTING FIXTURE SCHEDULE.
	2' X 4' LIGHT FIXTURE ON EMERGENCY CIRCUIT (EM) OR NIGHT LIGHT (NL)
	WALL MOUNTED FIXTURE PER LIGHTING FIXTURE SCHEDULE.
	WALL MOUNTED FIXTURE, PER LIGHTING FIXTURE SCHEDULE.
	LIGHT FIXTURE, RECESSED OR SURFACE MOUNTED PER LIGHTING FIXTURE SCHEDULE.
	EMERGENCY EXIT FIXTURE, SURFACE CEILING MOUNTED, SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS PER EXIT SIGN SCHEDULE.
	EMERGENCY EXIT FIXTURE, SURFACE WALL MOUNTED, SINGLE OR DOUBLE FACE, WITH OR WITHOUT DIRECTIONAL ARROWS PER EXIT SIGN SCHEDULE.
	EMERGENCY, DUAL HEAD, BATTERY PACK LIGHTING FIXTURE, SURFACE WALL MOUNTED.
	EMERGENCY, DUAL HEAD, BATTERY PACK LIGHTING FIXTURE, RECESSED CEILING MOUNTED.
	DAYLIGHTING SENSOR

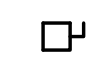





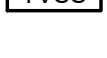
OCCUPANCY SENSOR AND COMPONENTS	
	SELF ADAPTIVE WALL MOUNTED ULTRASONIC AND PASSIVE INFRARED OCCUPANCY SENSOR SWITCH.
	SELF ADAPTIVE CEILING MOUNTED ULTRASONIC AND PASSIVE INFRARED OCCUPANCY SENSOR WITH POWER PACK. 2000 SQFT. COVERAGE.
	SELF ADAPTIVE CEILING MOUNTED ULTRASONIC AND PASSIVE INFRARED OCCUPANCY SENSOR WITH POWER PACK. 1000 SQFT. COVERAGE.
	SELF ADAPTIVE CEILING MOUNTED ULTRASONIC AND PASSIVE INFRARED OCCUPANCY SENSOR WITH POWER PACK. 500 SQFT.




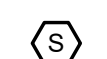
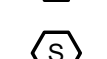








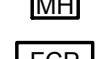
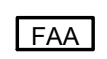


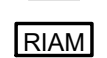
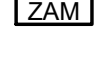




WIRING DEVICES	
	SINGLE POLE 20 AMP 120-277 VOLT TOGGLE SWITCH INSTALLED 48" AFF.
	THREE WAY 20 AMP 120-277 VOLT TOGGLE SWITCH INSTALLED 48" AFF.
	MOMENTARY CONTACT SWITCH.
	DIMMING SWITCH
	SINGLE POLE 20 AMP 120-277 VOLT KEY OPERATED TOGGLE SWITCH INSTALLED 48" A.F.F. SWITCH SHALL UTILIZE FLAT AND KEY ONLY, FORK TYPE SHALL NOT BE ACCEPTABLE. BRYANT TECH-SPEC CATALOG NO. 4901L OR EQUAL.
	MANUAL MOTOR STARTER, THERMAL OVERLOAD TOGGLE SWITCH.
	MANUAL SINGLE PHASE FUSIBLE DISCONNECT SWITCH W/ PLUG FUSE SIZED PER EQUIPMENT MANUFACTURER'S RECOMMENDATION.
	TOGGLE SWITCH WITH PILOT LIGHT "ON" WITH LOAD.
	OCCUPANCY SENSOR SWITCH
	OCCUPANCY SENSOR SWITCH WITH DIMMING
	20 AMP 2P, 3 WIRE, GROUNDING TYPE, 120 VOLT SPECIFICATION GRADE DUPLEX RECEPTACLE NEMA 5-20R INSTALLED 16" A.F.F. UNLESS NOTED OTHERWISE, WHITE IN COLOR. "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
	20 AMP 2P, 3 WIRE, GROUNDING TYPE, 120 VOLT SPECIFICATION GRADE DUPLEX RECEPTACLE NEMA 5-20R INSTALLED ABOVE COUNTER TOP OR COUNTER TOP BACK SPLASH. "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER, WHITE IN COLOR.
	TWO 20 AMP 2P, 3 WIRE, GROUNDING TYPE, 120 VOLT SPECIFICATION GRADE DUPLEX RECEPTACLES NEMA 5-20R, INSTALLED 16" A.F.F. UNLESS NOTED OTHERWISE, WHITE IN COLOR. "GFI" DENOTES RECEPTACLE EQUIPPED WITH INTEGRAL GROUND FAULT CIRCUIT INTERRUPTER.
	RECEPTACLE MOUNTED IN CEILING.
	HAND DRYER 120V, 20A, DEDICATED CIRCUIT - VERIFY PRIOR TO ROUGH-IN.


















DATA, VOICE AND VIDEO	
	DATA JACKS, +16" A.F.F UNLESS OTHERWISE NOTED. ("A" DENOTES ABOVE COUNTER HEIGHT.)
	VOICE JACK, +16" A.F.F UNLESS OTHERWISE NOTED. ("W" DENOTES WALL MOUNTED AT +48" A.F.F.
	COMBINATION VOICE AND DATA JACK, +16" A.F.F UNLESS OTHERWISE NOTED.
	PROJECTOR CONTROL OUTLET. PROVIDE 3-GANG EXTRA DEEP FLUSH MOUNTED JUNCTION BOX MOUNTED AT +16" A.F.F.
	CEILING MOUNTED PROJECTOR MOUNTING PLATE WITH DUPLEX RECEPTACLE AND PROJECTOR CONTROL CABLES.
	APPROXIMATE LOCATION OF DATA JACK FOR WIRELESS NETWORK WITH 25'-0" SERVICE LOOP OF CATEGORY 6E CABLE WITH CLEAR MALE JACK. VERIFY EXACT LOCATION WITH OWNER'S REPRESENTATIVE.
	WALL MOUNTED LCD MONITOR.
	CEILING MOUNTED LCD MONITOR.

CLOCK / PAGING / SOUND	
	FLUSH CEILING MOUNTED SPEAKER.
	SCHOOL INTERCOM SYSTEM CALL SWITCH, CONTRACTOR TO PROVIDE A FLUSH BACKBOX AT +48"A.F.F. WITH 3/4"C. TO SPEAKER ENCLOSURE.
	MICROPHONE OUTLET, PROVIDE SINGLE GANG BOX AT +16" A.F.F. WITH 3/4"C. STUBBED INTO ACCESSIBLE CEILING SPACE.
	WALL MOUNTED CLOCK.
	COMBINATION SPEAKER/CALL-IN SWITCH. PROVIDE THREE GANG BOX AT +48" A.F.F. WITH 3/4"C. STUBBED INTO ACCESSIBLE CEILING SPACE. "WP" DENOTES WEATHERPROOF ENCLOSURE.
	CLOCK/SPEAKER ENCLOSING

ELECTRICAL SYMBOL LIST	
RACEWAY AND BOXES	
	CEILING JUNCTION BOX.
	WALL MOUNTED JUNCTION BOX.
	JUNCTION BOX WITH FLEXIBLE CONDUIT AND FINAL CONNECTION TO EQUIPMENT.
	CONDUIT ROUTED CONCEALED IN WALLS AND CEILING. HASH MARKS DENOTE QUANTITY OF #12 CONDUCTORS OR AS NOTED.
	CONDUIT ROUTED EXPOSED. INSTALL PARALLEL TO WALLS AND CEILINGS. HASH MARKS DENOTE QUANTITY OF #12 CONDUCTORS OR AS NOTED.
	DENOTES CONDUIT CONTAINING A #12 EQUIPMENT GROUND CONDUCTOR OR AS NOTED.
	SURFACE CONDUIT. WIREMOLD V700 SERIES RACEWAYS OR EQUAL.
	DENOTES SURFACE MOUNTED RACEWAY BACK FEED FROM WALL, UNLESS NOTED OTHERWISE. WIREMOLD V4000 SERIES OF EQUAL.
	DENOTES RECESSED LARGE CAPACITY FLOOR BOX FLUSH WITH FLOOR.

SERVICE AND DISTRIBUTION	
	NON-FUSED SAFETY DISCONNECT SWITCH, AMPERE RATING AND NUMBER OF POLES AS NOTED.
	FUSED DISCONNECT SWITCH, AMPERE RATING AND NUMBER OF POLES AS NOTED.
	COMBINATION MOTOR STARTER WITH FUSED DISCONNECT SWITCH
	CIRCUIT BREAKER PANELBOARD
	DISTRIBUTION PANEL.
	MOTOR CONNECTION, HORSEPOWER, VOLTAGE AND PHASE AS NOTED.
	TRANSIENT VOLTAGE SURGE PROTECTOR MOUNTED ADJACENT TO SWITCHBOARD ON PANELBOARD.

FIRE ALARM	
	FIRE ALARM SYSTEM PULL STATION INSTALLED +48" A.F.F. WITH STOPPER II COVER.
	FIRE ALARM SYSTEM SPEAKER/VISUAL STROBE INSTALLED +80" A.F.F.
	FIRE ALARM SYSTEM CEILING MOUNTED SPEAKER/VISUAL STROBE.
	WALL MOUNTED FIRE ALARM SPEAKER.
	CEILING MOUNTED FIRE ALARM SPEAKER.
	FIRE ALARM SYSTEM VISUAL SIGNAL INSTALLED +80" A.F.F.
	FIRE ALARM SYSTEM CEILING MOUNTED VISUAL SIGNAL.
	FA SYSTEM WALL MOUNTED AUDIO/VISUAL SIGNALING DEVICE (HORN/STROBE).
	FA SYSTEM CEILING MOUNTED AUDIO/VISUAL SIGNALING DEVICE (HORN/STROBE).
	FIRE ALARM SYSTEM CARBON MONOXIDE DETECTOR.
	FIRE ALARM SYSTEM CEILING HEAT DETECTOR "FT" DENOTES FIXED TEMPERATURE.
	FIRE ALARM SYSTEM CEILING SMOKE DETECTOR.
	FIRE ALARM SYSTEM DUCT MOUNTED SMOKE DETECTOR.
	DUCT SMOKE DETECTOR REMOTE INDICATING LIGHT WITH KEY OPERATED TEST SWITCH.
	FIRE ALARM MAGNETIC DOOR HOLD OPEN DEVICE.
	FIRE ALARM CONTROL PANEL.
	FIRE ALARM ANNUNCIATOR PANEL.
	SPRINKLER SYSTEM FLOW SWITCH.
	SPRINKLER SYSTEM VALVE SUPERVISORY SWITCH.
	FIRE ALARM DOOR CLOSER.
	FIRE ALARM INDIVIDUAL ADDRESSABLE MODULE.
	FIRE ALARM RELAY INDIVIDUAL ADDRESSABLE MODULE.
	FIRE ALARM ZONE ADAPTER MODULE.

SPECIAL SYSTEMS	
	DOOR WITH SECURITY SYSTEM CONTACT AND/OR DOOR POSITION SWITCH.
	DOOR WITH SECURITY ELECTRIC STRIKE.
	CARD READER LOCATION. PROVIDE SINGLE GANG BACKBOX AT +42"A.F.F. WITH 3/4" CONDUIT STUBBED INTO "SAFE-SIDE" CEILING SPACE FOR SECURITY CABLING.
	CEILING MOUNTED SECURITY MOTION DETECTOR.
	WALL MOUNTED SECURITY MOTION DETECTOR.
	WALL MOUNTED SECURITY SIREN.
	SECURITY KEYPAD (BOSCH).
	REQUEST TO EXIT, SECURITY MOTION BY PASS DETECTOR.
	SECURITY SYSTEM CONTROL PANEL.
	ENTRANCE INTERCOM WITH CAMERA
	INTERCOM MASTER STATION.
	CAMERA SINGLE DOME 360 DEGREE MULTI-SENSOR CEILING MOUNTED
	CAMERA SINGLE DOME 360 DEGREE MULTI-SENSOR CORNER MOUNTED
	CAMERA SINGLE DOME WALLMOUNTED, OUTDOOR
	CAMERA SINGLE DOME WALLMOUNTED, PANORAMIC, OUTDOOR
	CAMERA SINGLE DOME 360 DEGREE FISHEYE, CEILING MOUNTED
	CAMERA SINGLE DOME DUAL, CEILING MOUNTED