

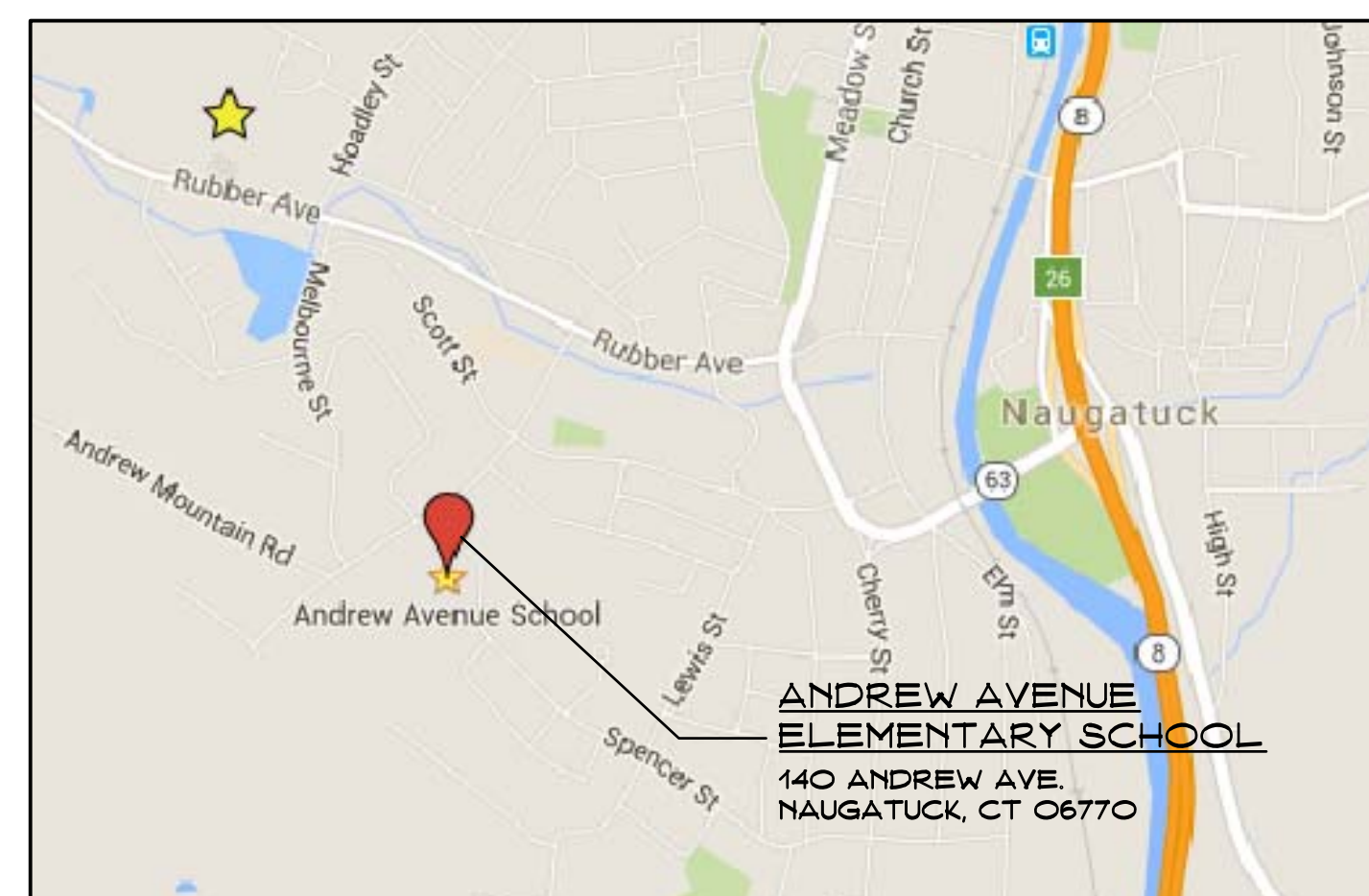
Borough of Naugatuck

# District Wide School Upgrades

497 Rubber Ave.  
Naugatuck, Connecticut 06770

Andrew Ave. School HVAC Upgrades

PROJECT LOCATION MAP



LIST OF DRAWINGS

GENERAL

CS - COVER SHEET

STRUCTURAL:

S100 ROOF FRAMING PLAN

MECHANICAL:

M001 GENERAL NOTES - MECHANICAL  
M100 MECHANICAL DEMOLITION PLAN  
M101 MECHANICAL FLOOR PLAN  
M102 MECHANICAL ROOF PLAN  
M200 MECHANICAL SCHEDULES  
M201 MECHANICAL DETAILS  
M202 MECHANICAL DETAILS

ELECTRICAL:

E100 ELECTRICAL FLOOR PLAN  
E101 LIGHTING PLAN & NOTES



SILVER / PETRUCELLI + ASSOCIATES

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**ABBREVIATIONS**  
(NOT ALL SYMBOLS ARE USED)

(###)	CPM	FA	FACE AREA	NO	NORMALLY OPEN
ABV	ABOVE	FBO	FURNISHED BY OTHERS	NTS	NOT TO SCALE
AC	AIR COMPRESSOR	INST	INSTALLED BY HVAC SUBCONTRACTOR	O/A	OUTSIDE AIR
ACU-H	AIR CONDITIONING UNIT	FCU	FORWARD CURVE	OAT	OUTDOOR AIR TEMPERATURE
AD	ACCESS DOOR	FCU	FAN COIL UNIT	OAI	OUTDOOR AIR INTAKE
AF	AIRFOIL	FD	FIRE DAMPER WITH ACCESS DOOR	OBD	OPPOSED BLADE DAMPER
AFC	ADJUSTABLE FREQUENCY CONTROLLER	FF	FINAL FILTER	OD	OUTSIDE DIMENSION
AFP	ABOVE FINISHED FLOOR	FBO	FURNISHED AND INSTALLED BY OTHERS	O.E.T.D.	OPEN END TRANSFER DUCT
AFMS	AIR FLOW MEASURING STATION	FN FL	FINISH FLOOR	P#	PUMP
AH-U	AIR HANDLING UNIT	FL	FLOOR	PS	PUSH BUTTON
AL	ACOUSTIC LINING	FLA	FULL LOAD AMPERES	PBD	PARALLEL BLADE DAMPER
ALD	AUTOMATIC LOUVER DAMPER	FLEX	FLEXIBLE	PD	PRESSURE DROP
APD	AIR PRESSURE DROP	FPF	FINS PER FOOT	PF	PREFILTER
AUTO	AUTOMATIC	FPV	FAN POWERED VAV BOX	PH	PHASE
B	BOILER	FT	FEET	PHC	PREHEAT COIL
BC	BACKWARD CURVED	F.T.	FLOAT & THERMOSTATIC TRAP	PHR	POUND PER HOUR
BD	BELT DRIVE	FTR	FIN TUBE RADIATION	PRV	PRESSURE REDUCING VALVE
BMGS	BUILDING MANAGEMENT & CONTROL SYSTEM	FV	FACE VELOCITY	PSI	POUND PER SQUARE INCH
IBT	INVERTED BUCKET TRAP	GC	GENERAL CONTRACTOR	RA	RETURN AIR
BTU	BRITISH THERMAL UNIT	GH	GRAVITY INTAKE HOOD	RAF-#	RETURN AIR FAN
CH	CHILLER	GPH	GALLONS PER HOUR	RAT	RETURN AIR TEMPERATURE
CAP	CAPACITY	GPM	GALLONS PER MINUTE	REG	REGISTER
CB-H	CHILLED BEAM	GWLS	GEOTHERMAL WATER LOOP SUPPLY	RH	RELATIVE HUMIDITY
CC	COOLING COIL	GWLR	GEOTHERMAL WATER LOOP RETURN	RHC	REHEAT COIL
CD	CEILING DIFFUSER	H/C	HEATING/COOLING	RM	ROOM
CFM	CUBIC FEET PER MINUTE	H-H	HUMIDIFIER	RP	RADIANT PANEL
CG	CEILING GRILLE	H-O-A	HAND-OFF-AUTOMATIC	RP1	REVOLUTIONS PER MINUTE
CLS	CEILING	HC-H	HEATING COIL	RS	RISE
CONV-#	HOT WATER CONNECTOR	HS	HEATING/COOLING	RTU-#	ROOFTOP AIR CONDITIONING UNIT
CP	CONDENSATE RECEIVER/PUMPING SYSTEM	HT	FEET OF HEAD	SA	SUPPLY AIR
CR	CEILING REGISTER	HP	HORSEPOWER	SAR-#	SUPPLY AIR FAN
CT-H	COOLING TOWER	HTR	HEATER	SAT	SUPPLY AIR TEMPERATURE
CTD	CEILING TRANSFER DUCT	HV-H	HEATING AND VENTILATING UNIT	SB	SECURITY BARS
CJH-H	CABINET UNIT HEATER HOT WATER	HVAC	HEATING, VENTILATING & AIR CONDITIONING	VSC	VERTICAL SPLIT CASE
CV	CONTROL VALVE	HC-H	HEATING COIL	HSC	HORIZONTAL SPLIT CASE
CW	COLD WATER	HX-#	HEAT EXCHANGER CONVERTOR	SD	SMOKE DAMPER
DET	DRIP AND TRAP	ID-#	INSIDE DIMENSION	SG	SUPPLY GRILLE
DS	DECIBELS	IN	INCHES	SP	STATIC PRESSURE
DB	DRY BULB	IN	INLET GUIDE VANES	SQ FT	SQUARE FOOT (AREA)
DD	DIRECT DRIVE	KVW	KELVIN	ST	SINGLE POLE SWITCH
DDC	DIRECT DIGITAL CONTROL	KWH	KILOWATT HOUR	SWR	SWITCHING OVERLOAD
DIFF	DIFFUSER	LD	LINEAR DIFFUSER	STAT	SIZE WALL REGISTER
DL	DOOR LOUVER	LN	LINEAR	TD	TEMPERATURE DIFFERENCE
DN	DOWN	LRA	LOCKED ROTOR AMPERES	TEMP	TEMPERATURE
DOAS	DEDICATED OUTDOOR AIR SYSTEM	LPR	LOW PRESSURE RETURN	TG	AIR TRANSFER GRILLE
DP	DEWPOINT TEMPERATURE	LPS	LOW PRESSURE SUPPLY	TOT	TOTAL
DR	DROP	LVG	LEAVINGS	TWHR	TON-HOUR REFRIGERATION
DTWS	DUAL TEMPERATURE WATER SUPPLY	LWT	LEAVINGS WATER TEMPERATURE	TR	TRANSFER DUCT
DTWR	DUAL TEMPERATURE WATER RETURN	MAN	MANUAL	TT	THERMOSTATIC TRAP
DX	DIRECT EXPANSION	MAX	MAXIMUM	TYP	TYPICAL
EF-H	EXHAUST FAN	MBH	1000 BTUS	UC	UNDERCUT DOOR
EAT	ENTERING AIR TEMPERATURE	MCA	MINIMUM CIRCUIT AMPACITY	UH-H	UNIT HEATER HOT WATER
BER	ENERGY EFFICIENCY RATIO	MD	MOTORIZED DAMPER	UV-H	UNIT VENTILATOR
EG	EXHAUST GRILLE	MER	MECHANICAL EQUIPMENT ROOM	VAV-#	VARIABLE AIR VOLUME
EHC-H	ELECTRIC HEATING COIL	MEZZ	MEZZANINE	VD	VOLUME DAMPER
ENT	ENTERING	MFS	MAXIMUM FUSE SIZE	VFD	VARIABLE FREQUENCY DRIVE
HEPA	HIGH EFFICIENCY PARTICULATE FILTER	MN	MINIMUM	VIB	VIBRATION ISOLATOR
ER	EXHAUST REGISTER	MOT	MOTOR	VSP	VARIABLE SPEED FAN SWITCH
ES	END SUCTION	MUA	MAKEUP AIR	W	WITH
ESP	EXTERNAL STATIC PRESSURE	MV	MOTORIZED VALVE	WB	WET BULB
ET-H	ELECTRIC UNIT HEATER	NC	NORMALLY CLOSED	WFM	WATER FLOW MEASURING STATION
EWV	ENTERING WATER TEMPERATURE	NO	NOISE CRITERIA	WMS	WIRE MESH SCREEN
EXT	EXTERNAL	NFA	NET FREE AREA	WPD	WATER PRESSURE DROP
FX-H	FRENCH FARENHEIT	NC	NOT IN THIS CONTRACT	WT	WEIGHT (LBS)
FEB	FACE & BYPASS DAMPER			ZD	ZONE DAMPER

**SYMBOL LEGEND**  
(NOT ALL SYMBOLS ARE USED)

	POINT OF CONNECTION		MECHANICAL NOTE REFERENCE NUMBER INDICATES NOTE
	RETURN OR EXHAUST DUCT UP	CFM	CUBIC FEET PER MINUTE
	SUPPLY OR OUTSIDE AIR DUCT UP	Ø	DIAMETER
	ACOUSTICALLY LINED DUCTWORK		VOLUME DAMPER
	SINGLE WALL DUCTWORK		BACKDRAFT DAMPER
	THERMOSTAT OR SPACE TEMPERATURE SENSOR		DUCT STATIC PRESSURE SENSOR
	HUMIDITY/HUMIDITY SENSOR		MOTORIZED DAMPER
	PRESSURE SENSOR		SUPPLY OR OUTSIDE AIR DUCT UP OR CSO
	DUCT SMOKE DETECTOR		RETURN OR EXHAUST DUCT UP OR CRG/CRR
	DIRECTION OF FLOW		RETURN OR EXHAUST DUCT DOWN
	RETURN GRILLE		FLEXIBLE CONNECTION
	T DOOR UNDERCUT		DUCT TRANSITION
	DIRECTION OF SUPPLY OR OUTSIDE AIR		RECTANGULAR TO ROUND TRANSITION
	DIRECTION OF RETURN OR EXHAUST AIR		DUCT WORK, DIRECTION OF FLOW
	AIR TERMINAL UNIT		POSITIVE PRESSURE DUCT
	DUCT MOUNTED HUMIDITY SENSOR		NEGATIVE PRESSURE DUCT
	DUCT MOUNTED CARBON DIOXIDE SENSOR		CHANGE OF ELEVATION, RISE (R) DROP (D)
	SMOKE DAMPER		DUCT ACCESS DOOR
	COMBINATION FIRE AND SMOKE DAMPER		
	FIRE DAMPER WITH ACCESS DOOR		

**GENERAL**

- THE INTENT OF THESE CONTRACT DOCUMENTS IS FOR THE CONTRACTOR TO FURNISH AND INSTALL COMPLETE MECHANICAL AND CONTROL SYSTEMS. THESE SYSTEMS INCLUDE FIRE PROTECTION, HVAC, ELECTRICAL AND ALL ASSOCIATED SPECIAL SYSTEMS. ALL SYSTEMS SHALL BE COMPLETE IN ALL RESPECTS, OPERATING, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- THE CONTRACTOR SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS, INCLUDING PROJECT MANUAL, PLANS AND SPECIFICATIONS OF ALL TRADES BEFORE SUBMITTING BID. REFER TO SPECIFICATIONS, PROJECT MANUAL AND PLANS, INCLUDING ALL EQUIPMENT SCHEDULES FOR MECHANICAL AND ELECTRICAL INFORMATION. CONTRACTOR SHALL VISIT THROUGH BUILDING TO BECOME FAMILIAR WITH THE EXISTING FIELD CONDITIONS PRIOR TO SUBMITTING BID.
- ALL OF THE CONTRACT DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO FORM A TOTAL DESIGN PACKAGE. IT IS THE RESPONSIBILITY OF THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER TO DETERMINE WHICH TRADE CONTRACTOR IS RESPONSIBLE FOR VARIOUS PORTIONS OF THE WORK.
- ALL WORK AND ACTION DEPICTED AND DESCRIBED SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
- PROVIDE SUPPORT/BRACING OF EQUIPMENT AND BUILDING SERVICES FOR SEISMIC RESTRAINT AS REQUIRED BY CODE.
- OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
- ALL EQUIPMENT, MATERIALS AND RELATED SYSTEMS COMPONENTS SHALL BE NEW UNLESS SPECIFICALLY NOTED OTHERWISE.
- REPAIR AND/OR REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.
- THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. THE CONTRACTOR SHALL COORDINATE EXACT LOCATIONS OF EQUIPMENT AND EXISTING CONNECTION LOCATIONS WITH ALL TRADES BEFORE STARTING CONSTRUCTION. ANY MODIFICATIONS TO THE EQUIPMENT LAYOUT REQUIRED FOR INSTALLATION ARE TO BE PERFORMED AT NO ADDITIONAL COST TO THE OWNER.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR THE EXACT LOCATION OF DIFFUSERS, REGISTERS AND GRILLES AND MOUNTING HEIGHTS OF EQUIPMENT, INCLUDING RECEPTACLES, SWITCHES, THERMOSTATS, ETC. ALL SUCH EQUIPMENT AND COLORS SHALL BE COORDINATED WITH THE ARCHITECT. CONTACT ARCHITECT FOR CLARIFICATION OF MOUNTING REQUIREMENTS, IF INFORMATION IS NOT CONTAINED IN THE DRAWINGS.
- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH THE APPLICABLE CODES IN THE ORDINANCES AND THE REGULATORY AGENCIES HAVING JURISDICTION.
- ALL EQUIPMENT SHALL BE LOCATED IN ACCESSIBLE LOCATIONS. WHEN A PIECE OF EQUIPMENT MUST BE LOCATED ABOVE AN ACCESSIBLE CEILING OR WALL, THEN THE APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. THESE SHALL BE COORDINATED WITH THE ARCHITECT.
- WHEN CONFLICTS OCCUR BETWEEN THE DRAWINGS AND/OR SPECIFICATIONS IT SHALL BE BROUGHT TO THE ATTENTION OF THE GENERAL CONTRACTOR SHALL CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- CONTRACTORS SHALL COORDINATE THEIR WORK WITH ALL OWNER-FURNISHED EQUIPMENT, INCLUDING REQUIRED SERVICE CONNECTIONS, RECEPTACLES, ETC. BEFORE INSTALLATION.
- CONTRACTORS SHALL PROVIDE ALL REQUIRED SLEEVES AND SEALS FOR PIPES OR CONDUIT PENETRATING WALLS OR FLOORS. SEALS SHALL HAVE FIRE STOPPING CAPABILITY AND BE INSTALLED WHERE REQUIRED.
- ELECTRICAL CONDUITS & BOXES TO BE CONCEALED IN WALLS OR ABOVE CEILING WHEREVER POSSIBLE.
- COORDINATE ALL PIPING AND CONDUITS LEAVING THE BUILDING WITH THE SITE CONTRACTOR(S) BEFORE INSTALLATION.
- PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT.
- PROVIDE VIBRATION ISOLATION FOR ALL PIPING SUPPORTS CONNECTED TO AND WITHIN 80 FEET OF ISOLATED EQUIPMENT THROUGHOUT MECHANICAL EQUIPMENT ROOMS.
- LOCATE ALL TEMPERATURE, PRESSURE AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UP/DOWN STREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
- PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILING, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS AND OTHER CONCEALED MECHANICAL EQUIPMENT.
- ALL EQUIPMENT, PIPING, DUCT WORK SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
- LOCATION AND SIZES OF ALL FLOOR, WALL AND ROOF PENETRATIONS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
- INSTALL COMPLETE OPERATING SYSTEMS. PROVIDE ALL COMPONENTS, DEVICES, CONTROLS, RELAYS, TRANSFORMERS, ETC., WHETHER INDICATED OR NOT, FOR COMPLETE SYSTEMS AS INTENDED BY THE CONSTRUCTION DOCUMENTS.
- ALL PENETRATIONS THRU RATED WALLS, FLOORS & CEILING SHALL BE SEALED USING UL LISTED METHODS APPROPRIATE FOR INDICATED RATING.
- SOME PART OF THE BUILDING WILL BE OCCUPIED DURING CONSTRUCTION. REFER TO PHASING PLAN FOR MORE INFORMATION. MAINTAIN EXISTING SEPARATE SEALS, DUCTWORK AND VENTILATOR OPENINGS COMMUNICATING CONSTRUCTION AREAS WITH OCCUPIED AREAS TO PREVENT THE TRANSFER OF AIR CONTAMINATED BY CONSTRUCTION ACTIVITIES.
- DRAWINGS OF EXISTING FIELD CONDITIONS AND INSTALLATION OF EXISTING SYSTEMS AND EQUIPMENT ARE BASED ON ORIGINAL DESIGN DRAWINGS AND LIMITED SURVEY TO ACCESSIBLE AND VISIBLE LOCATIONS. CONTRACTORS SHALL TAKE THIS INTO CONSIDERATION IN THEIR BIDS AND MAKE ANY REQUIRED ADJUSTMENTS BASED ON THESE DISCREPANCIES AT NO ADDITIONAL COST TO THE OWNER.

**MECHANICAL**

- PIPING AND DUCT WORK LAYOUTS AS INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC. PROVIDE ADDITIONAL TRANSITIONS AND OFFSETS AS REQUIRED FOR COORDINATION WITH BUILDING CONSTRUCTION AND THE WORK OF OTHER TRADES.
- PROVIDE VOLUME DAMPERS, THROTTLING VALVES AND ISOLATION VALVES AT EACH BRANCH CONNECTION, AS SPECIFIED AND AS INDICATED ON THE DRAWINGS.
- PROVIDE FIRE DAMPERS AT DUCT PENETRATIONS OF FIRE RATED PARTITIONS.
- PROVIDE SMOKE DETECTORS ON THE SUPPLY AND RETURN SIDE OF ALL AIR HANDLING EQUIPMENT 2000 CFM AND OVER.
- ALL MOTORS AND EQUIPMENT SHALL BE OF EFFICIENCIES THAT ARE ELIGIBLE FOR UTILITY COMPANY ENERGY INCENTIVE PROGRAMS.
- THE UNIT MOUNTED AND STATIC PRESSURE CONTROL SYSTEMS SHALL BE COMPLETE IN ALL REGARDS, TESTED AND CAPABLE OF ACHIEVING THE SEQUENCES OF OPERATION. ALL DEVICES SHALL BE UNDER SYSTEM CONTROL. ALL ZONES SHALL BE THERMOSTATICALLY CONTROLLED WHETHER OR NOT A THERMOSTAT, SENSOR OR CONTROLLER IS INDICATED.
- MAINTAIN MANUFACTURER'S RECOMMENDED MINIMUM CLEARANCES FOR INSTALLATION OF EQUIPMENT.
- FLEXIBLE DUCT RUNS SHALL NOT BE LONGER THAN 5 FT.
- PROVIDE VOLUME DAMPERS AT ALL SUPPLY DIFFUSERS, RETURN GRILLES, AND EXHAUST GRILLES, AS INDICATED.
- PROVIDE VANDAL RESISTANT COVERS THERMOSTATS, AS NOTED.
- ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- PROVIDE ALL 90 DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS SHALL BE UNVANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING VANES.
- COORDINATE DIFFUSER, REGISTER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS.
- PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS CONNECTED TO AIR HANDLING UNITS, FANS AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
- ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, COILS AND OTHER ITEMS LOCATED IN DUCTWORK WHICH REQUIRE SERVICE OR INSPECTION.
- PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT AND MAINTENANCE OF ALL FANS, VALVES AND MECHANICAL EQUIPMENT.
- SUPPLY AND RETURN DUCTS FROM THE MAIN AIR HANDLING UNIT SHALL HAVE ACOUSTICAL LINING, R VALUE OF 5, WITHIN 15 FT OF DUCTWORK CONNECTED TO THE UNIT. METAL NOISES SHALL BE SECURELY INSTALLED OVER TRANSVERSELY ORIENTED LINER EDGES FACING THE AIR STREAM AT FAN DISCHARGE, AT ACCESS DOORS, AND AT ANY INTERVAL OF LINED DUCT PRECEDED BY UNLINED DUCT. METAL NOISES SHALL BE USED ON UPSTREAM EDGES OF LINER AT EVERY TRANSVERSE JOINT.
- DUCTWORK SHALL BE CLEANED, PRESSURE TESTED AND SEALED FOR LEAKAGE IN ACCORDANCE WITH CODE AND THE PROJECT REQUIREMENTS.
- THE SUPPLY AIR SYSTEM SHALL BE PURGED TO ENSURE ALL FOREIGN PARTICLES ARE REMOVED PRIOR TO FINAL CONNECTION OF SUPPLY AIR DIFFUSERS.
- ALL ELBOWS AND TEES FROM DOWNFLOW ROOF MOUNTED UNITS SHALL BE WRAPPED WITH A SOUND LAGGING MATERIAL, IN ADDITION TO DUCT LINER.

**MECHANICAL DEMOLITION NOTES**

ALL EQUIPMENT, FIXTURES, PIPING ETC. TO BE REMOVED SHALL BE DISPOSED OF TURNED OVER TO THE OWNER OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, FIXTURES, PIPING, DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITH OUT THE OWNERS APPROVAL.

ALL ABANDONED PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPED AND/OR BY PASSED SUCH THAT UPON COMPLETION OF WORK ALL ABANDONED SYSTEMS ARE PROPERLY CONCEALED, AND THAT EXISTING SYSTEMS TO REMAIN, REMAIN OPERATIONAL.

NO DEAD ENDS SHALL BE LEFT ON ANY PIPING SYSTEMS UPON COMPLETION OF WORK.

EXISTING EXPOSED PIPING SYSTEMS NOT TO BE REUSED, AND NOT SPECIFICALLY NOTED FOR REMOVAL SHALL BE COMPLETELY REMOVED. CONTRACTOR SHALL VERIFY PRIOR TO REMOVAL.

ALL SYSTEMS SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.

ALL EXISTING EXPOSED, UNNECESSARY PIPING RELATED TO NEW WORK SHALL BE COMPLETELY REMOVED.

REROUTE OR REMOVE ALL EXISTING PIPING, AND SYSTEMS WHERE NECESSARY TO AVOID NEW EQUIPMENT, STRUCTURAL, OR MASONRY WORK AS REQUIRED BY THE PROPOSED ALTERATIONS.

COORDINATE PLUMBING SERVICES SHUT DOWNS (HECW, GAS, WASTE, VENT & STORM SYSTEMS) WITH THE BUILDING MANAGER AND UTILITY COMPANY.

**MECHANICAL CONSTRUCTION NOTES**

ALL EQUIPMENT, FIXTURES, PIPING ETC. TO BE REMOVED SHALL BE DISPOSED OF, TURNED OVER TO THE OWNER, OR SALVAGED AS DIRECTED BY THE OWNER. EQUIPMENT, FIXTURES, PIPING, DEVICES, ETC. SHALL NOT BE REMOVED FROM THE PREMISES WITH OUT THE OWNERS APPROVAL.

ALL ABANDONED PIPING TO REMAIN SHALL BE PROPERLY PLUGGED, VALVED, CAPED AND/OR BY PASSED SUCH THAT UPON COMPLETION OF WORK ALL ABANDONED SYSTEMS ARE PROPERLY CONCEALED, AND THAT EXISTING SYSTEMS TO REMAIN, REMAIN OPERATIONAL.

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COORDINATE PLUMBING SERVICES SHUT DOWNS (HECW, GAS, WASTE, VENT & STORM SYSTEMS) WITH THE BUILDING MANAGER AND UTILITY COMPANY.

ALL ROOFTOP AIR-CONDITIONING UNIT (RTU) CONTROLS SHALL BE BY THE EQUIPMENT MANUFACTURER. ALL RTU'S SHALL BE FACTORY FURNISHED WITH BACNET INTERFACE CARDS TO ALLOW SET POINT CHANGES, EQUIPMENT SCHEDULING, MONITORING OF SYSTEM POINTS, ALARMS, ETC. THROUGH THE EXISTING ENTERPRISE SIEMENS APODSEE SERVER. THE EQUIPMENT MANUFACTURER SHALL PROVIDE ALL BACNET CARDS, PROGRAMMING AND CONSULTATION TO SUPPORT INTEGRATION TO THE SIEMENS APODSEE BUILDING AUTOMATION SYSTEM (BAS).

CONTACT FOR BAS: SIEMENS INDUSTRY, INC.  
PROLOGIC LINE, APODSEE AUTOMATION SYSTEM (BASIS OF DESIGN), NO SUBSTITUTIONS PERMITTED.  
POINT OF CONTACT: EDWARD SHALL, MOBILE: 860-638-8262, EMAIL: EDWARD.SHAL@SIEMENS.COM

**BASE BID AND BID ALTERNATES**

**BASE BID**  
THE SCOPE OF WORK FOR THE BASE BID CONSISTS OF ALL HVAC, ELECTRICAL AND ARCHITECTURAL WORK FOR SYSTEMS SERVING CLASSROOMS, THE LIBRARY/MEDIA CENTER, READING ROOMS, CORRIDORS, KITCHEN AREAS AND AREAS NOT SPECIFICALLY INDICATED IN THE ALTERNATE SCOPE DESCRIPTIONS BELOW.

**ALTERNATE #1**  
THE SCOPE OF WORK FOR THIS BID ALTERNATE CONSISTS OF ALL HVAC, ELECTRICAL AND ARCHITECTURAL WORK FOR SYSTEMS SERVING THE ADMINISTRATIVE PORTION OF THE BUILDING, AS INDICATED ON THE DRAWINGS.

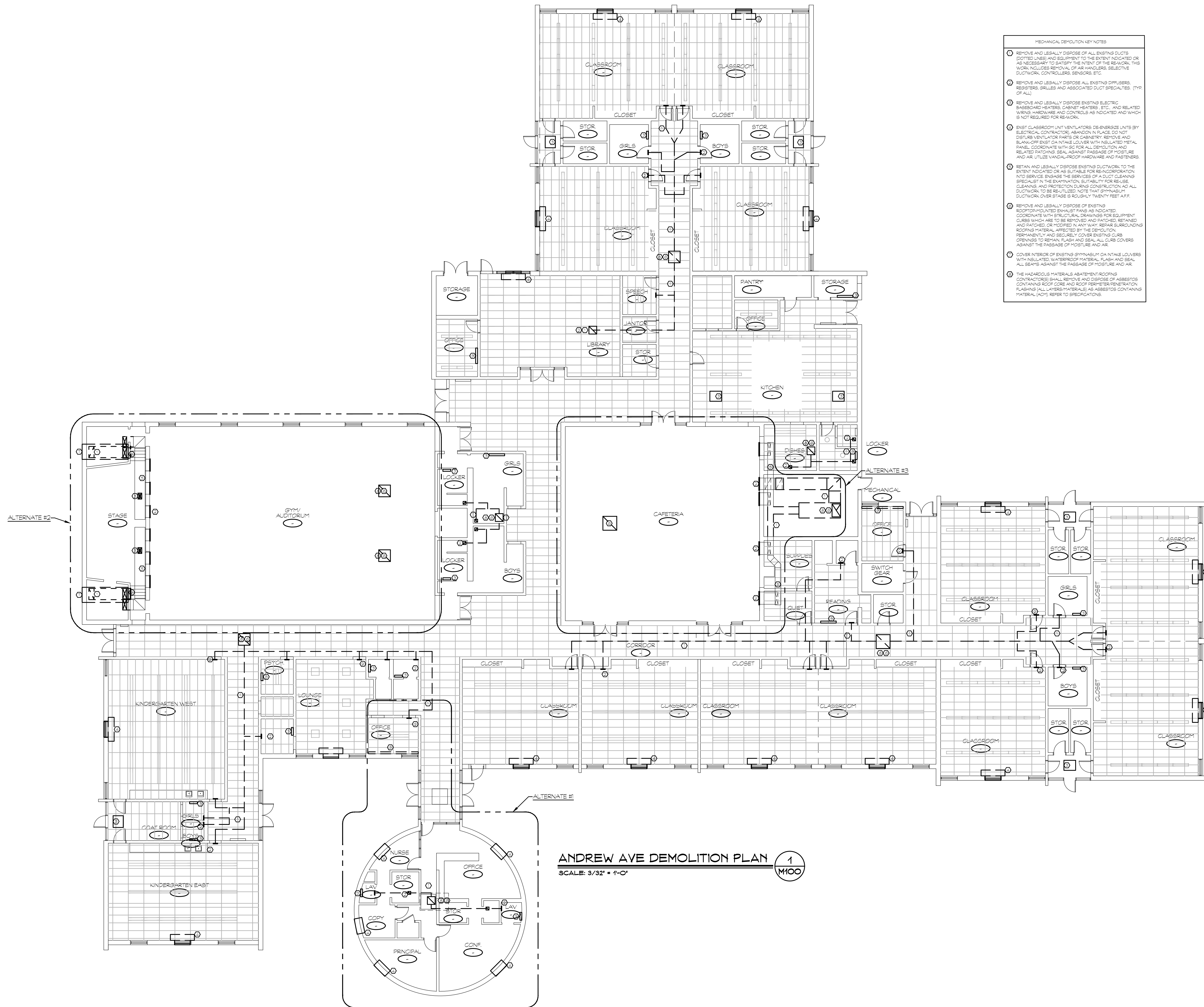
**ALTERNATE #2**  
THE SCOPE OF WORK FOR THIS BID ALTERNATE CONSISTS OF ALL HVAC, ELECTRICAL AND ARCHITECTURAL WORK FOR SYSTEMS SERVING THE GYMNASIUM, AS INDICATED ON THE DRAWINGS.

**ALTERNATE #3**  
THE SCOPE OF WORK FOR THIS BID ALTERNATE CONSISTS OF ALL HVAC, ELECTRICAL AND ARCHITECTURAL WORK FOR SYSTEMS SERVING THE CAFETERIA, AS INDICATED ON THE DRAWINGS.

**WORK PHASING**

- CONTRACTOR SHALL COORDINATE WORK PHASING WITH OWNER PRIOR TO COMMENCING WORK FOR EACH WORK ZONE AND ACCEPTED BID ALTERNATE.
- FOR WORK IN EACH ZONE, THE OWNER WILL RELOCATE ZONE OCCUPANTS TO A SPARING SPACE ELSEWHERE IN THE FACILITY THROUGHOUT THE COURSE OF WORK IN THE RESPECTIVE ZONE. CONTRACTOR SHALL PROVIDE THE OWNER WITH A SCHEDULE OF THE WORK REQUIRED FOR EACH ZONE AND PROVIDE ADVANCED NOTICE FOR COMMENCING AND COMPLETED ZONE WORK.
- CONTRACTOR SHALL REMOVE, PROTECT AND SAFELY STORE ALL CEILING TILES NECESSARY FOR THE DEMOLITION AND RE-INSTALLATION WORK TO BE PERFORMED IN EACH ZONE WHILE WORK IN THAT ZONE IS UNDERWAY. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING ALL MISSING, DAMAGED AND LOST CEILING TILES, TO THE SATISFACTION OF THE OWNER.
- DURING WORK IN EACH ZONE, CONTRACTOR SHALL SECURE ALL WIRING ABOVE THE CEILING TO WITHIN THE SPACE ABOVE THE EXISTING CEILING GRIDS PER ORDER OF THE BOROUGH OF NAUGATUCK BUILDING INSPECTOR.
- MOST WORK SHALL BE CAPABLE OF BEING DONE DURING NORMAL BUSINESS HOURS; HOWEVER ANY WORK INVOLVING POWER TRANSFER/CUT OVER SWITCH OVER FROM EXISTING TO NEW HVAC/HEATING SYSTEMS, ETC. SHALL BE DONE OFF-HOURS, WEEKENDS AND OTHER DAYS OFF FROM SCHOOL AS COORDINATED WITH THE OWNER.
- CONTRACTOR MUST BE COMPLETE WITH THE SCOPE OF WORK FOR ALL BASE BID AND OWNER ACCEPTED ALTERNATES JUNE 2017 IN ACCORDANCE WITH STATE FUNDING AGREEMENTS WITH THE BOROUGH OF NAUGATUCK.

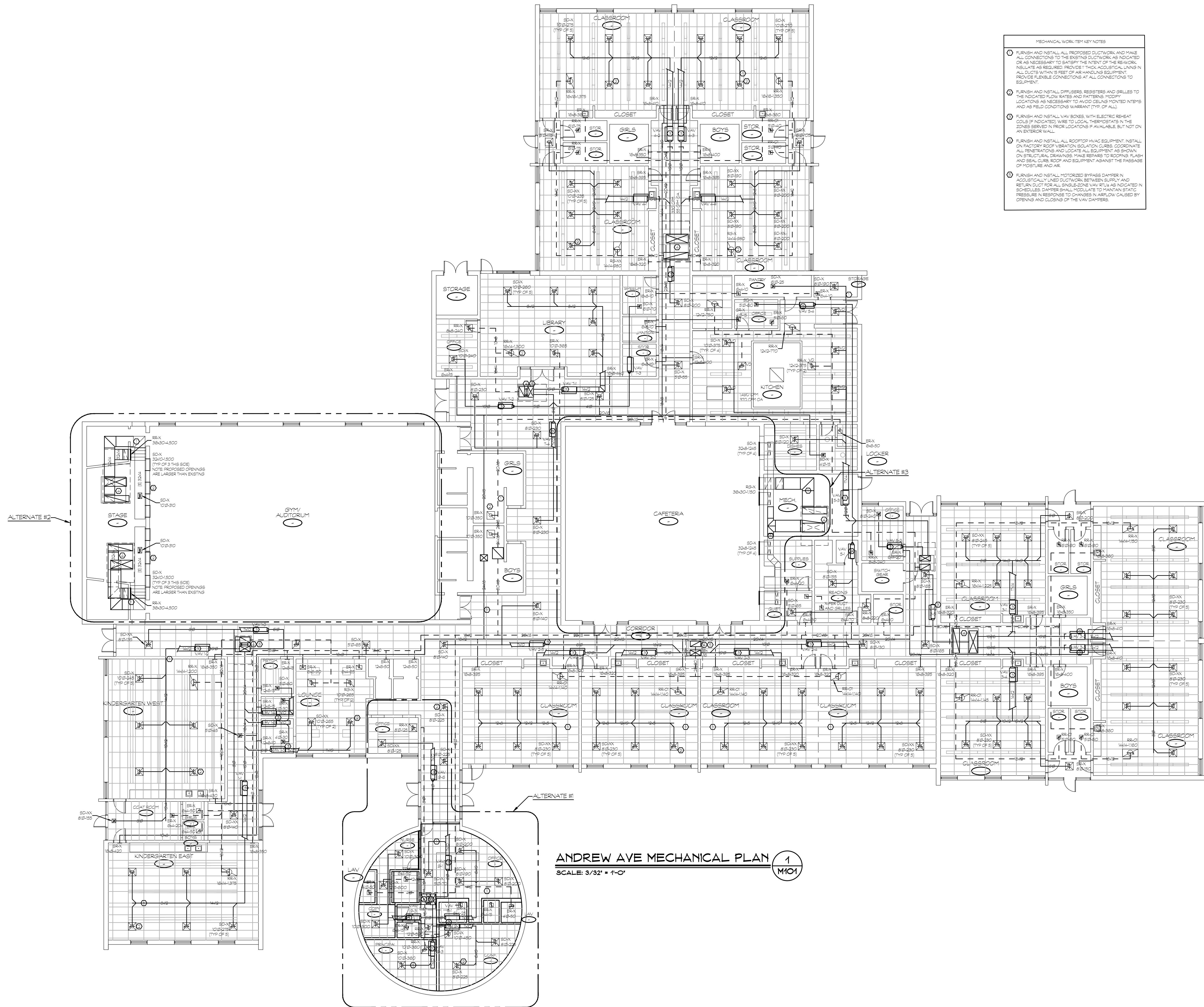




- MECHANICAL DEMOLITION KEY NOTES
- 1 REMOVE AND LEGALLY DISPOSE OF ALL EXISTING DUCTS (DOTTED LINE) AND EQUIPMENT TO THE EXTENT INDICATED OR AS NECESSARY TO SATISFY THE INTENT OF THE REWORK. THIS WORK INCLUDES REMOVAL OF AIR HANDLERS, SELECTIVE DUCTWORK, CONDENSERS, SENSORS, ETC.
  - 2 REMOVE AND LEGALLY DISPOSE ALL EXISTING DIFFUSERS, REGISTERES, GRILLES AND ASSOCIATED DUCT SPECIALTIES (TYPE OF ALL).
  - 3 REMOVE AND LEGALLY DISPOSE EXISTING ELECTRIC BASEBOARD HEATERS, CABINET HEATERS, ETC. AND RELATED WIRING HARDWARE AND CONTROLS AS INDICATED AND WHICH IS NOT REQUIRED FOR REWORK.
  - 4 EXIST CLASSROOM UNIT VENTILATORS, DEHUMIDIFIERS UNITS BY ELECTRICAL CONTRACTORS ABANDON IN PLACE. DO NOT DISTURB VENTILATOR PARTS OR CABINETS. REMOVE AND BLANK-OFF INSET ON FRAME LOUVERS WITH INSULATED METAL PANEL. COORDINATE WITH RC FOR ALL DEMOLITION AND RELATED PATCHING SEAL AGAINST PASSAGE OF MOISTURE AND AIR. UTILIZE VANDAL-PROOF HARDWARE AND FASTENERS.
  - 5 RETAIN AND LEGALLY DISPOSE EXISTING DUCTWORK TO THE EXTENT INDICATED OR AS SUITABLE FOR REINTEGRATION INTO SERVICE. ENSURE THE SERVICES OF A DUCT CLEANING SPECIALIST IN THE EXAMINATION, SUITABILITY FOR REUSE, CLEANING, AND PROTECTION DURING CONSTRUCTION AND ALL DUCTWORK TO BE REUTILIZED. NOTE THAT SYMMETRICAL DUCTWORK OVER STAGE IS 30" X 12" X 12" FEET AFF.
  - 6 REMOVE AND LEGALLY DISPOSE OF EXISTING ROOF-COLOCATED EXHAUST FANS AS INDICATED. COORDINATE WITH STRUCTURAL DRAWINGS FOR EQUIPMENT CURBS WHICH ARE TO BE REMOVED AND PATCHED, RETAINED AND PATCHED, OR MOVED IN ANY WAY. REMOVE SURROUNDING ROOFING MATERIAL AFFECTED BY THE DEMOLITION. REPAIRS AND LEGALLY DISPOSE EXISTING CURB OPENINGS TO REMAIN. FLASH AND SEAL ALL CURB COVERS AGAINST THE PASSAGE OF MOISTURE AND AIR.
  - 7 COVER INTERIOR OF EXISTING SYMMETRICAL GYMNASTIC LOUVERS WITH INSULATED WATERPROOF MATERIAL, FLASH AND SEAL ALL SEAMS AGAINST THE PASSAGE OF MOISTURE AND AIR.
  - 8 THE HAZARDOUS MATERIALS ABATEMENT CONTRACTORS SHALL REMOVE AND DISPOSE OF ASBESTOS CONTAINING ROOF JOBS AND ROOF FIBERGLASS REINFORCED FLASHING (ALL LAYERS/MATERIALS) AS ASBESTOS CONTAINING MATERIAL (ACM). REFER TO SPECIFICATIONS.



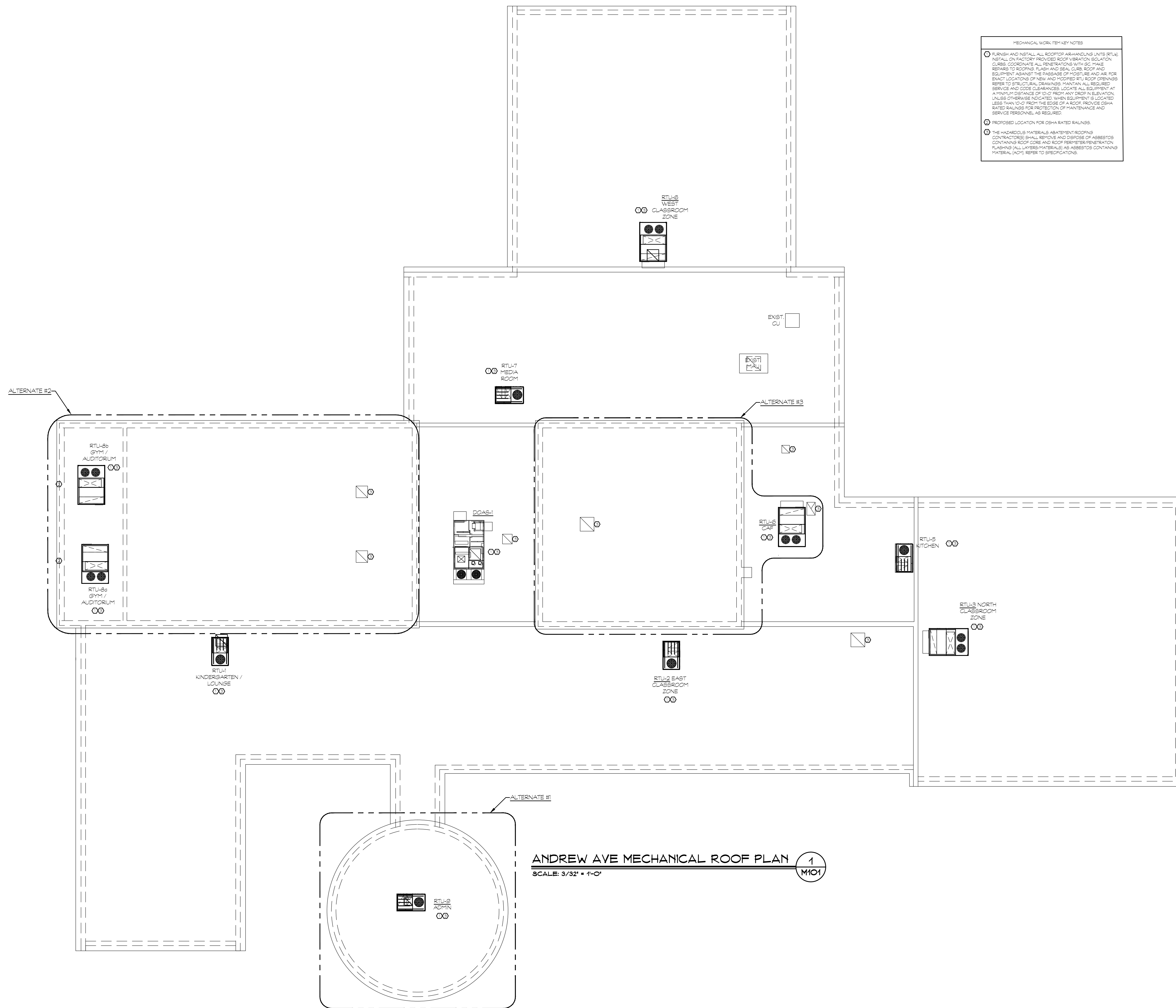
Revision	Description	Date	Revised By
-	ISSUED FOR REBID	10/03/16	KJE



- MECHANICAL WORK ITEM KEY NOTES
1. FURNISH AND INSTALL ALL PROPOSED DUCTWORK AND MAKE ALL CONNECTIONS TO THE EXISTING DUCTWORK AS INDICATED OR AS NECESSARY TO SATISFY THE INTENT OF THE NETWORK. LABELS AS REQUIRED. PROVIDE THICK ADJUSTABLE LINING IN ALL DUCTS WITHIN 5 FEET OF AIR HANDLING EQUIPMENT. PROVIDE FLEXIBLE CONNECTIONS AT ALL CONNECTIONS TO EQUIPMENT.
  2. FURNISH AND INSTALL DIFFUSERS, REGISTERS AND GRILLES TO THE INDICATED FLOW RATES AND PATTERNS. PROVIDE LOCATIONS AS NECESSARY TO AVOID CEILING MOUNTED ITEMS AND AS FIELD CONDITIONS WARRANT (TYP. OF ALL).
  3. FURNISH AND INSTALL VAV BOXES WITH ELECTRIC REHEAT COILS IF INDICATED. USE LOCAL TEMPERATURES IN THE ZONES SERVED. PROVIDE LOCATIONS IF AVAILABLE BUT NOT ON AN EXTERIOR WALL.
  4. FURNISH AND INSTALL ALL SCOPED HVAC EQUIPMENT. INSTALL ON FACTORY ROOF VIBRATION ISOLATION CURBS. COORDINATE ALL PENETRATIONS AND LOCATE ALL EQUIPMENT AS SHOWN ON STRUCTURAL DRAWINGS. MAKE REPAIRS TO ROOFING FLASHING AND SEAL CURB SCOP AND EQUIPMENT AGAINST THE PASSAGE OF MOISTURE AND AIR.
  5. FURNISH AND INSTALL MOTORIZED BYPASS DAMPERS IN ADDITIONAL LINE DUCTWORK BETWEEN SUPPLY AND RETURN DUCT FOR ALL SINGLE ZONE VAV RTUs AS INDICATED. SCHEDULE DAMPERS SHALL MODULATE TO MAINTAIN STATIC PRESSURE IN RESPONSE TO CHANGES IN AIRFLOW CAUSED BY OPENING AND CLOSING OF THE VAV DAMPERS.



Revision	Description	Date	Revised By
-	ISSUED FOR REBID	10/03/16	KJE



**MECHANICAL WORK ITEM KEY NOTES**

- FURNISH AND INSTALL ALL ROOF TOP ABANDONING UNITS (RTUs) INSTALL ON FACTORY PROVIDED ROOF VIBRATION ISOLATION CURBS. COORDINATE ALL PENETRATIONS WITH GC. MAKE SURE TO ADHERE TO FLASHING AND SEAL CURB ROOF AND EQUIPMENT AGAINST THE PASSAGE OF MOISTURE AND AIR. FOR EXACT LOCATIONS OF NEW AND PROPOSED RTU ROOF OPENINGS REFER TO STRUCTURAL DRAWINGS. MAINTAIN ALL REQUIRED SERVICE AND CODE CLEARANCES. LOCATE ALL EQUIPMENT AT A MINIMUM DISTANCE OF 100\"/>
- PROPOSED LOCATION FOR OSHA RATED RAINWATER HARVESTING.
- THE HAZARDOUS MATERIALS ABATEMENT/ROOFING CONTRACTORS SHALL REMOVE AND DISPOSE OF ASBESTOS CONTAINING ROOF CORE AND ROOF FIBER PENETRATION FLASHING (ALL LAYERS/MATERIALS) AS ASBESTOS CONTAINING MATERIAL. (A/C) REFER TO SPECIFICATIONS.

**ANDREW AVE MECHANICAL ROOF PLAN** 1  
SCALE: 3/32" = 1'-0" M101



Revision	Description	Date	Revised By
-	ISSUED FOR REBID	10/03/16	KJE

3-10 Ton R-410 Packaged Heat Pump Schedule

TAG No.	Design Basis Manufacturer/Model	Area Served	Unit Information														Cooling Data								Heating Data								Electrical Data												BASE or ALTERNATE #	Notes
			Unit Function	Airflow cfm	Design Airflow cfm	Supply fan motor	Design ESP in H2O	Indoor RPM	Indoor Mtr Operating Power bhp	Gross Total Capacity MBh	Gross Sensible Capacity MBh	Cooling Entering Dry Bulb F	Cooling Entering Wet Bulb F	Cooling Leaving Unit DB F	Evaporator Unit WB F	Evaporator Rows Each F	Ambient Temp F	Saturated Suction Temp Circuit 1 F	Saturated Discharge Temp Circuit 1 F	Saturated Suction Temp Circuit 2 F	Saturated Discharge Temp Circuit 2 F	Heating Type	Heating Temp Rise F	Output hgt capacity w/fan MBh	Output hgt capacity w/fan MBh	Saturated Suction Temp Circuit 1 - HP F	Saturated Discharge Temp Circuit 1 - HP F	Saturated Suction Temp Circuit 2 - HP F	Saturated Discharge Temp Circuit 2 - HP F	Voltage	Indoor Motor power kW	Compressor power kW	Outdoor motor power kW	System power kW	Evaporator Fan RLA A	Condenser fan RLA A	Compressor 1 RLA A	Compressor 2 RLA A	MCA A	MOP A	EER	SEER @ARI bluh/watt	SEER @ARI IFLV			
RTU-1	WPC120E4*0A**P7	Kindergarten Wing	Heat Pump - VAV	Downflow	3,615	3,615	Multi speed fan	1.25	1478	2.3	114.97	82.84	73.6	62.5	54.53	52.03	4	95	48.31	117.84	47.57	119.02	Heat Pump	29.74	109.68	116.12	26.31	93.29	25.86	92.34	460/60/3	1.71	9.02	0.65	11.39	4.3	1.5	9	9	26.1	35	13.1	-	13.1	BASE BID	Note 1, Note 2
RTU-2	WSC120E4*0A**T7	East Classroom Wing	Heat Pump - VAV	Downflow	4,800	4,800	Multi speed fan	1	1696	3.2	121.12	89.74	73.6	62.6	58.33	54.63	4	95	50.1	118.59	49.38	119.84	Heat Pump	23.11	110.79	119.8	25.93	86.81	25.46	85.9	460/60/3	2.39	9.2	0.65	12.24	4.3	1.5	9	9	26.1	35	13.1	-	13.1	BASE BID	Note 1, Note 2
RTU-5	WPC060E4*0A**P7	Kitchen/Reading	Heat Pump - VAV	Downflow	2,025	2,025	Multi speed fan	1.25	1129	1.12	58.45	43.09	73.5	62.9	55.85	53.62	4	95	46.31	112.96	-	-	Heat Pump	28.89	59.61	63.18	31.27	98.3	-	-	460/60/3	0.84	4.17	0.36	5.36	2.5	1	9	0	14.7	20	-	13	-	BASE BID	Note 1, Note 2
RTU-7	WPC060E4*0A**P7	Media Room Zone	Heat Pump - VAV	Downflow	2,270	2,270	Multi speed fan; High Static Drive	1.25	1155	1.29	59.85	48.31	74.2	62.8	56.55	54.43	4	95	47.56	113.3	-	-	Heat Pump	26.16	60.1	64.14	31.14	95.46	-	-	460/60/3	0.96	4.18	0.36	5.5	2.5	1	9	0	14.7	20	-	13	-	BASE BID	Note 1, Note 2
RTU-9	WPC072E4*0A**P7	Administrative Wing	Heat Pump - VAV	Downflow	2,540	2,540	Multi speed fan; High Static Drive	1.25	1103	1.36	75.13	56.08	75.7	63.1	57.2	53.53	4	95	48.78	115.25	-	-	Heat Pump	11.22	26.53	30.77	-11.17	77.39	-	-	460/60/3	1.01	5.35	0.55	6.91	2.5	1.75	12.8	0	20.3	30	13	-	13	ALT #1	Note 1, Note 2

Note 1: Unit shall be furnished with Low Leak Economizer using comparative enthalpy; 0-100% Operation; Barometric Relief

Note 2: Unit shall be furnished with Rhelet (or equivalent), unit-mounted controller. Controller shall operate the unit as a VAV air-handler serving zone-mounted terminal boxes with local zone-thermostat controlled reheat coils. RTU heat pump circuit shall be first stage of zone heating.

12 1/2-20 Ton Packaged Unitary Heat Pump Rooftop Schedule

TAG No.	Design Basis Manufacturer/Model	Area Served	Unit Information														Cooling Data								Heating Data								Electrical Data												BASE or ALTERNATE #	Notes
			Unit function	Airflow cfm	Design Airflow cfm	Supply fan motor	Design ESP in H2O	Indoor RPM	Indoor Mtr Operating Power bhp	Gross Total Capacity MBh	Gross Sensible Capacity MBh	Entering Dry Bulb F	Entering Wet Bulb F	Cooling Leaving Unit DB F	Evaporator Unit WB F	Evaporator Rows Each F	Ambient Temp F	Saturated Suction Temp Circuit 1 F	Saturated Discharge Temp Circuit 1 F	Saturated Suction Temp Circuit 2 F	Saturated Discharge Temp Circuit 2 F	Heating Type	Heating Temp Rise F	Output Hgt Capacity MBh	Supplemental Electric Heat	Voltage	Indoor Motor Power kW	Compressor Power kW	Outdoor Motor Power kW	System Power kW	Evaporator Fan RLA A	Condenser Fan RLA A	Compressor 1 RLA A	Compressor 2 RLA A	MCA A	MOP A	IEER Rating	IFLV @ AHRV								
RTU-3	WSD150E4RDA	North Classroom Wing	Heat Pump	Downflow	5,320	5,320	High Efficiency Oversized Motor	1.25	851	3.8	139.89	104.58	73.6	62.6	57.82	54.38	3	95	48.91	116.42	46.65	115.37	Heat Pump	26.89	142.54	No	460/60/3	2.83	10.61	0.98	14.42	7.6	1.6	10.6	75	35	45	13.5	13.5	BASE BID	Note 1, Note 2					
RTU-4	WSD150E4RDA	West Classroom Wing	Heat Pump	Downflow	5,170	5,170	High Efficiency Oversized Motor	1.25	842	3.64	138.48	103.14	73.5	62.5	57.43	54.07	3	95	48.76	116.34	46.5	115.3	Heat Pump	28.27	146.39	No	460/60/3	2.71	10.58	0.98	14.28	7.6	1.6	10.6	75	35	45	12	12	BASE BID	Note 1, Note 2					
RTU-6	WSD180E4RDA	Cafeteria	Heat Pump	Downflow	5,000	5,000	Single zone VAV standard motor	0.75	679	2.21	177.97	131.03	78.7	65.2	56.24	53.77	3	95	49.65	119.83	43.53	117.18	Heat Pump	13.63	66.68	No	460/60/3	1.64	13.48	0.95	16.07	4.8	1.6	12.5	100	36	45	13.5	13.5	ALT #3	Note 1, Note 2					
RTU-8a	WSD180E4RDA	Gym/ Auditorium	Heat Pump	Downflow	4,810	4,810	Single zone VAV standard motor	0.75	668	2.06	175.69	126.89	78.2	65	55.56	53.15	3	95	49.41	119.69	43.34	117.08	Heat Pump	14.1	66.77	No	460/60/3	1.53	13.44	0.95	15.92	4.8	1.6	12.5	100	36	45	13.5	13.5	ALT #2	Note 1, Note 2					
RTU-8b	WSD180E4RDA	Gym/ Auditorium	Heat Pump	Downflow	4,810	4,810	Single zone VAV standard motor	0.75	668	2.06	175.69	126.89	78.2	65	55.56	53.15	3	95	49.41	119.69	43.34	117.08	Heat Pump	14.1	66.77	No	460/60/3	1.53	13.44	0.95	15.92	4.8	1.6	12.5	100	36	45	13.5	13.5	ALT #2	Note 1, Note 2					

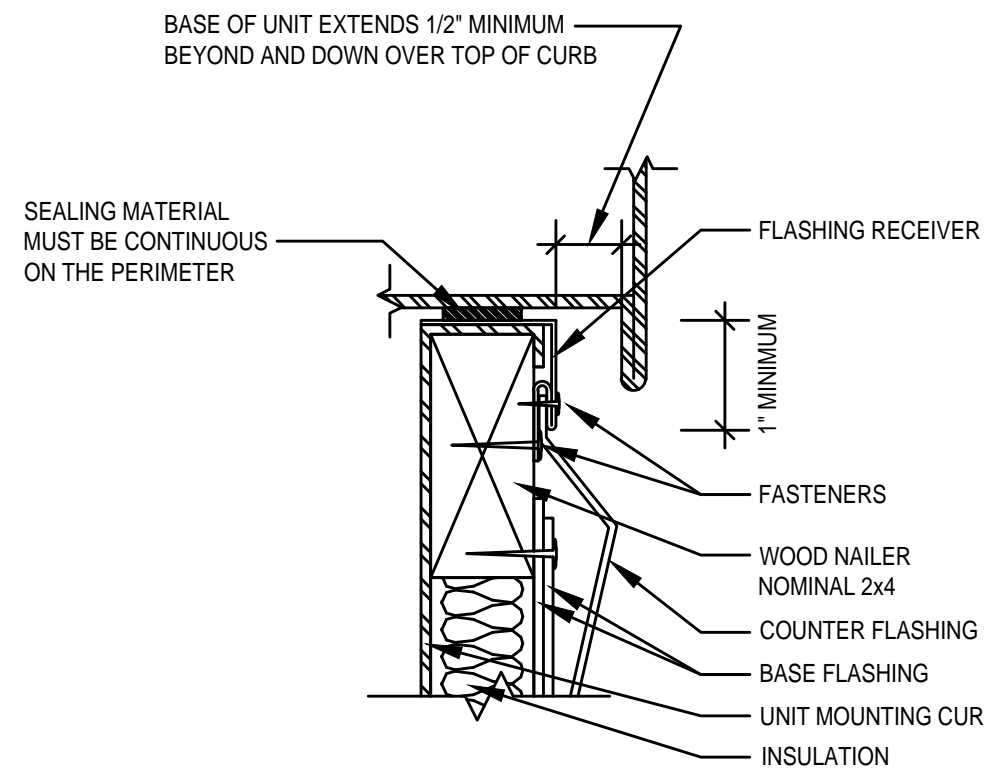
Note 1: Unit shall be furnished with Low Leak Economizer using comparative enthalpy; 0-100% Operation; Barometric Relief

Note 2: Unit shall be furnished with Rhelet (or equivalent), unit-mounted controller. Controller shall operate the unit as a VAV air-handler serving zone-mounted terminal boxes with local zone-thermostat controlled reheat coils. RTU heat pump circuit shall be first stage of zone heating.

Variable Air Volume Single Duct Terminal Units Schedule

TAG No.	Design Basis Manufacturer/Model - Description	Unit model	Primary inlet	Design cooling airflow cfm	AFD @ cooling airflow in H2O	Cooling coil velocity ft/min	Valve heating airflow cfm	Primary EDB F	Unit LAT F	Electric heater voltage	Col heating capacity MBh	Electric heater kilowatt	Electric heater stage	Full load amps A	Mn circuit ampacity A	Max fuse size A
VAV 1-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1375	0.052	2521	1375	55	73.31	480/3	27.32	8.0	1	9.82	12.03	15
VAV 1-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1380	0.052	2530	1380	55	70.97	480/3	23.9	7.0	1	8.42	10.52	15
VAV 1-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	6" (152mm)	455	0.188	2317	310	55	90.54	480/3	11.95	3.5	1	4.21	5.26	15
VAV 1-4	Trane VCCF-Single Duct VAV Terminal	VCCF	4" (102mm)	60	0.01	688	60	55	-	-	-	-	-	-	-	-
VAV 1-5	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	8" (203mm)	530	0.04	1518	530	55	96.57	480/3	23.9	7.0	1	8.42	10.52	15
VAV 1-6	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	4" (102mm)	85	0.01	974	85	55	92.03	480/3	3.41	1.0	1	1.2	1.5	15
VAV 2-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1140	0.037	2090	1140	55	66.04	480/3	13.66	4.0	1	4.81	6.01	15
VAV 2-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1140	0.037	2090	1140	55	66.04	480/3	13.66	4.0	1	4.81	6.01	15
VAV 2-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1140	0.037	2090	1140	55	66.04	480/3	13.66	4.0	1	4.81	6.01	15
VAV 2-4	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1140	0.037	2090	1140	55	66.04	480/3	13.66	4.0	1	4.81	6.01	15
VAV 2-5	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	6" (152mm)	280	0.069	1426	280	55	88.72	480/3	10.24	3.0	1	3.61	4.51	15
VAV 3-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	12" (305mm)	1425	0.041	1814	1425	55	67.15	480/3	18.78	5.5	1	6.62	8.27	15
VAV 3-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1150	0.037	2108	1150	55	72.79	480/3	22.2	6.5	1	7.82	9.77	15
VAV 3-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1160	0.038	2127	1150	55	72.79	480/3	22.2	6.5	1	7.82	9.77	15
VAV 3-4	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1285	0.046	2356	1285	55	73.37	480/3	25.61	7.5	1	9.02	11.28	15
VAV 3-5	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	6" (152mm)	330	0.097	1681	330	55	88.38	480/3	11.95	3.5	1	4.21	5.26	15
VAV 4-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1345	0.05	2466	1345	55	67.87	480/3	18.78	5.5	1	6.62	8.27	15
VAV 4-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1375	0.052	2521	1375	55	69.88	480/3	22.2	6.5	1	7.82	9.77	15
VAV 4-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1375	0.052	2521	1375	55	69.88	480/3	22.2	6.5	1	7.82	9.77	15
VAV 4-4	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1090	0.034	1998	1090	55	70.88	480/3	18.78	5.5	1	6.62	8.27	15
VAV 4-5	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	5" (127mm)	200	0.01	1467	200	55	78.61	480/3	5.12	1.5	1	1.8	2.26	15
VAV 5-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	4" (102mm)	220	0.011	2521	220	55	69.31	480/3	3.41	1.0	1	1.2	1.5	15
VAV 5-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	5" (127mm)	240	0.012	1760	240	55	74.67	480/3	5.12	1.5	1	1.8	2.26	15
VAV 5-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	12" (305mm)	1500	0.045	1910	1500	55	80.18	480/3	40.98	12.0	1	14.43	18.04	20
VAV 5-4	Trane VCCF-Single Duct VAV Terminal	VCCF	4" (102mm)	50	0.01	573	50	55	-	-	-	-	-	-	-	-
VAV 7-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	10" (254mm)	1300	0.047	2384	1300	55	62.26	480/3	10.24	3.0	1	3.61	4.51	15
VAV 7-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	5" (127mm)	240	0.012	1760	240	55	87.79	480/3	8.54	2.5	1	3.01	3.76	15
VAV 7-3	Trane VCCF-Single Duct VAV Terminal	VCCF	4" (102mm)	70	0.01	802	70	55	-	-	-	-	-	-	-	-
VAV 7-4	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	8" (203mm)	700	0.069	2005	700	55	86.47	480/3	23.9	7.0	1	8.42	10.52	15
VAV 9-1	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	8" (203mm)	590	0.049	1690	590	55	76.34	277/1	13.66	4.0	1	14.44	18.05	20
VAV 9-2	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	6" (152mm)	480	0.211	2445	480	55	81.23	277/1	13.66	4.0	1	14.44	18.05	20
VAV 9-3	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	6" (152mm)	360	0.116	1833	360	55	76.86	277/1	8.54	2.5	1	9.03	11.28	15
VAV 9-4	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	8" (203mm)	600	0.051	1719	600	55	78.61	277/1	15.37	4.5	1	16.25	20.31	25
VAV 9-5	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	8" (203mm)	480	0.033	1375	480	55	97.62	277/1	22.2	6.5	1	23.47	29.33	30
VAV 9-6	Trane VCEF-Single Duct VAV Terminal w/ Electric Reheat	VCEF	4" (102mm)	125	0.01	1432	125	55	80.18	277/1	3.41	1.0	1	3.61	4.51	15

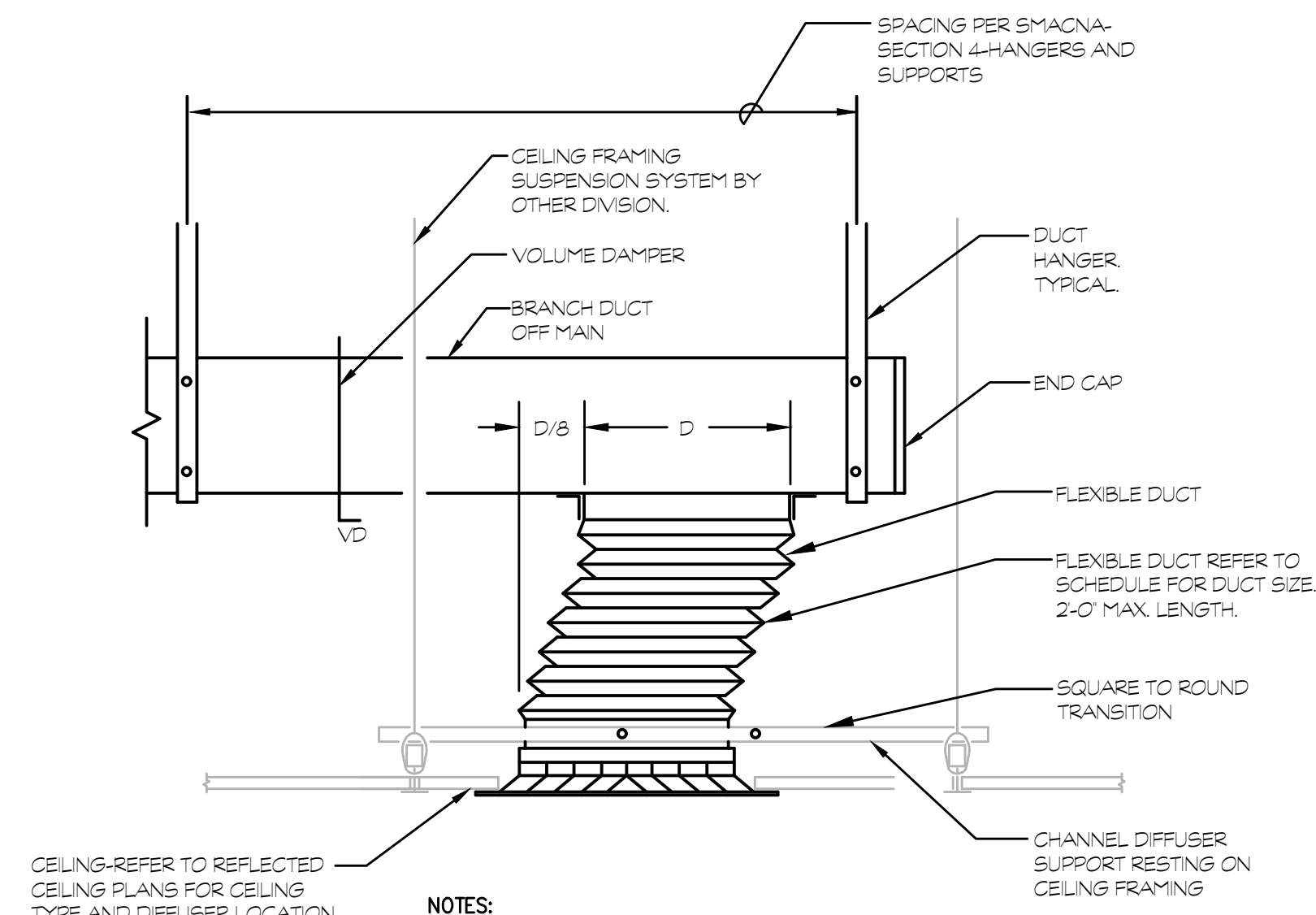
ALTERNATE #1



NOTES:  
1. ROOF CURB HEIGHT SHALL BE COORDINATED WITH THE ROOFING CONTRACTOR. CURB HEIGHT SHALL BE A MINIMUM OF 14" ABOVE THE FINISHED ROOF SURFACE.

SMACNA ROOFTOP AIR-HANDLING UNIT SECTION DETAIL

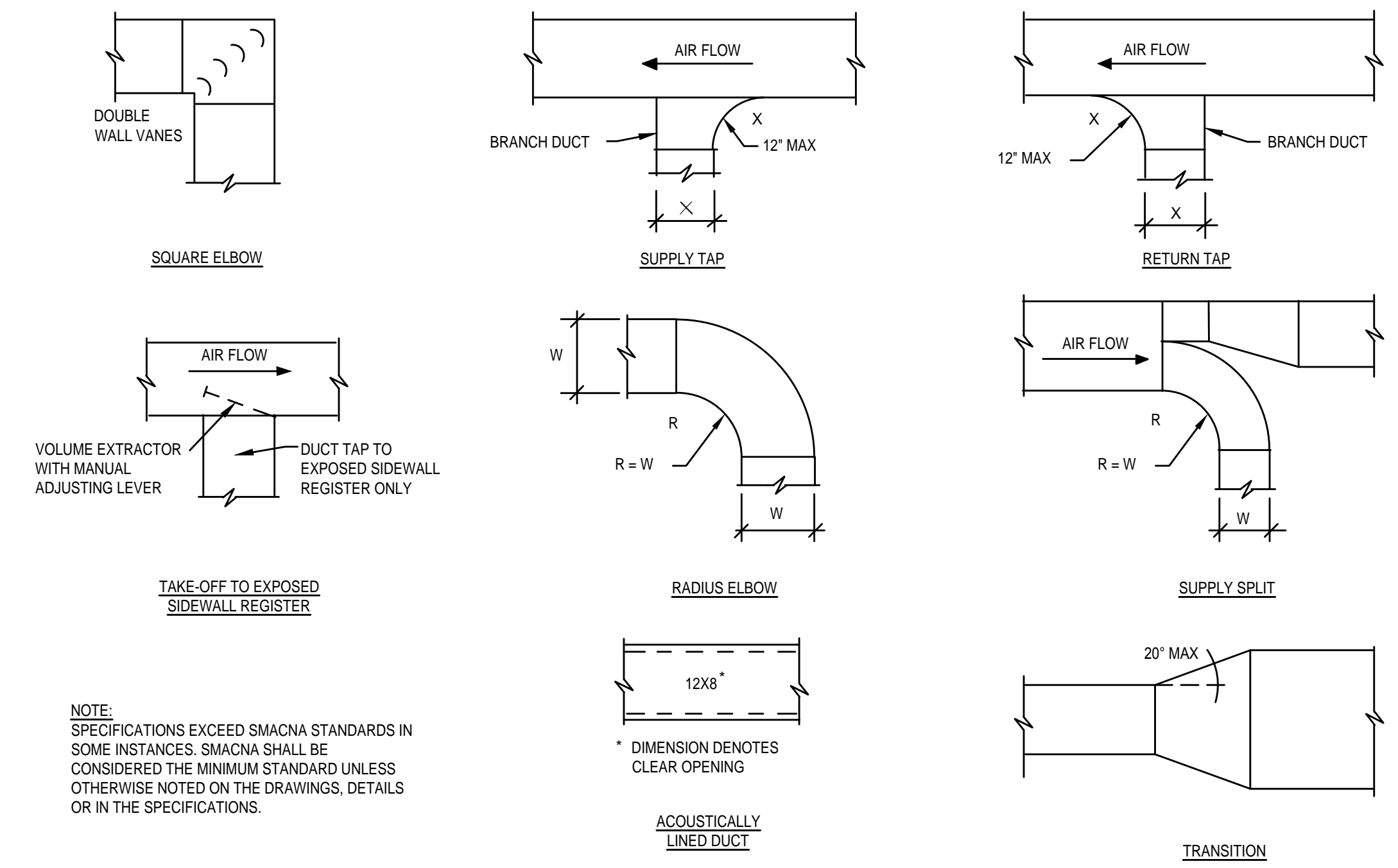
NOT TO SCALE



NOTES:  
1. PROVIDE DIFFUSER W/ OPPOSED BLADE OPERATED DAMPERS W/ HANDSTREAM OPERATORS WHERE INSTALLED IN HARD ACCESSIBLE CEILING.  
2. OFFSET SHALL NOT EXCEED D/8.

TYPICAL DIFFUSER DETAIL WITH FLEXIBLE DUCTWORK CONNECTION

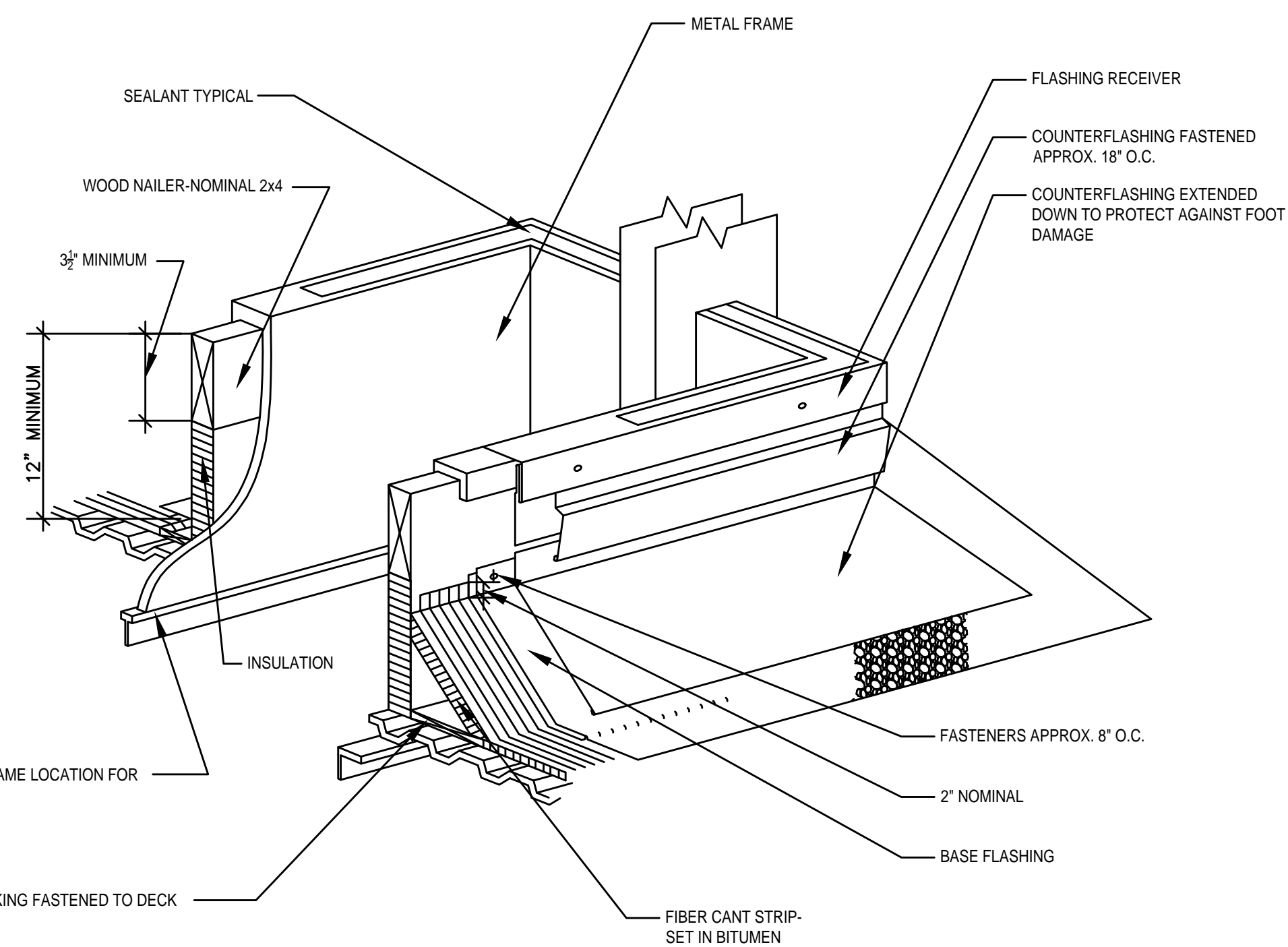
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NOTE:  
SPECIFICATIONS EXCEED SMACNA STANDARDS IN SOME INSTANCES. SMACNA SHALL BE CONSIDERED THE MINIMUM STANDARD UNLESS OTHERWISE NOTED ON THE DRAWINGS, DETAILS OR IN THE SPECIFICATIONS.

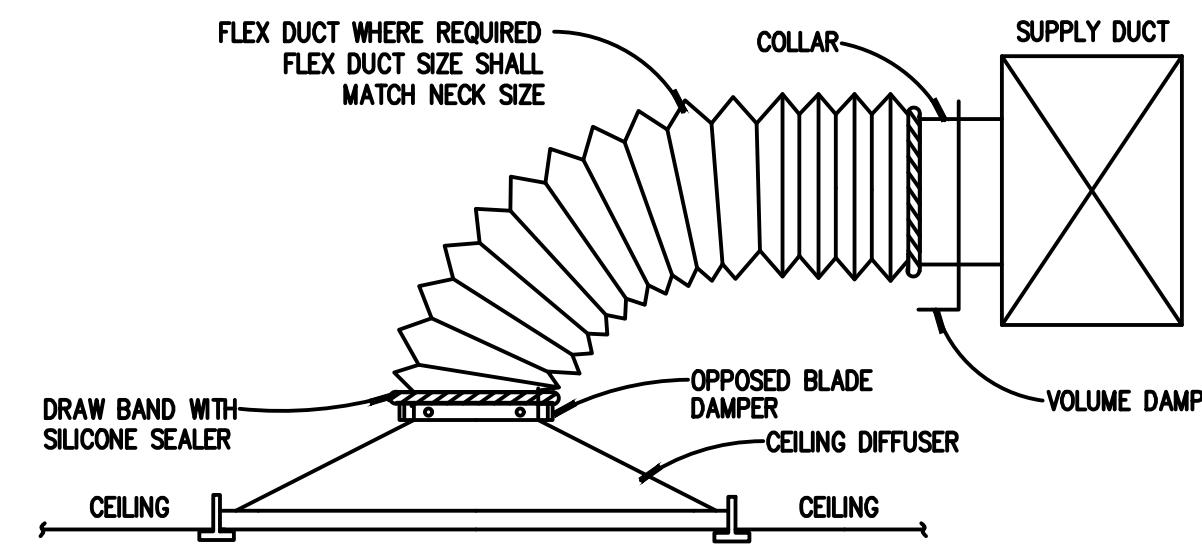
DUCT CONSTRUCTION DETAIL

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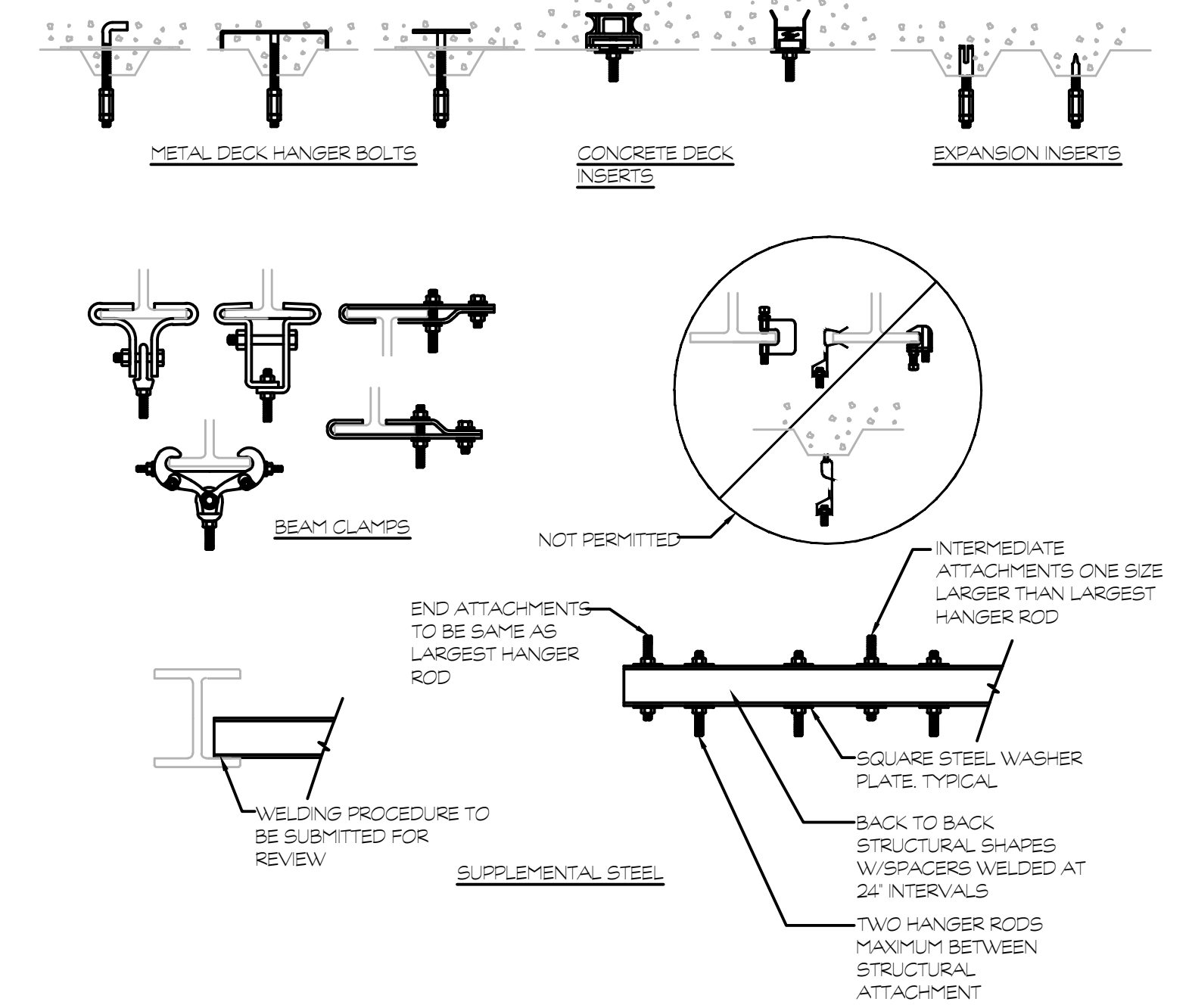
SMACNA ROOFTOP AIR-HANDLING UNIT ISOMETRIC DETAIL

NOT TO SCALE



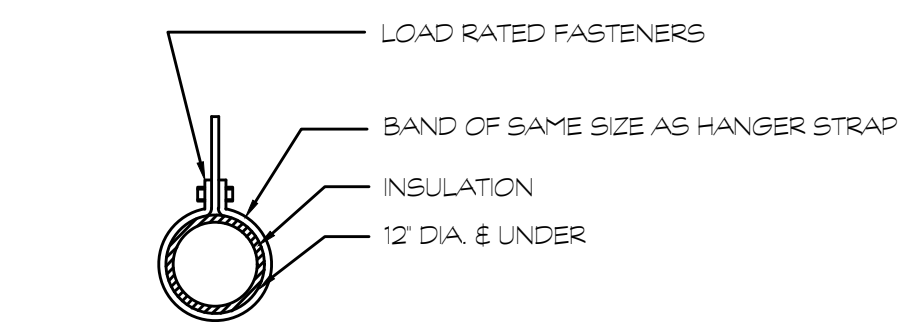
TYPICAL SIDE DIFFUSER CONNECTION DETAIL

NOT TO SCALE

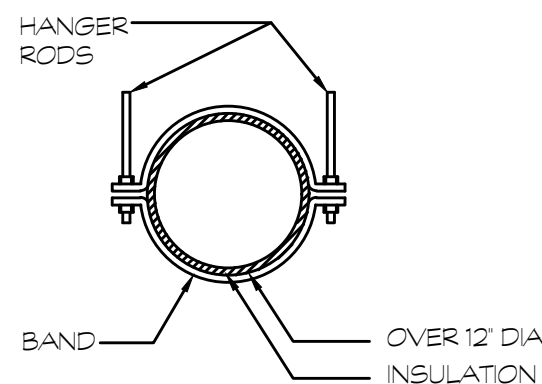


HANGER ATTACHMENT DETAIL

NOT TO SCALE



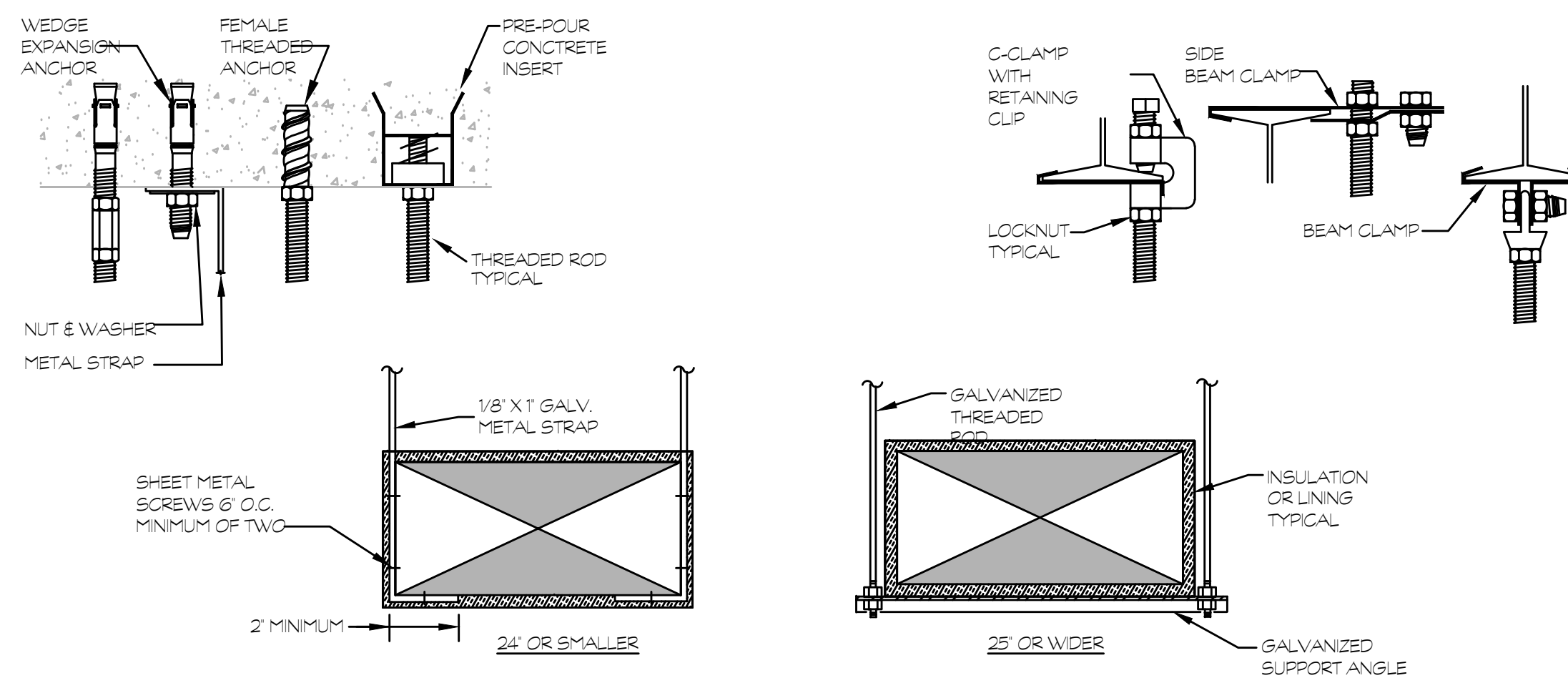
HANGER STRAPS OR RODS				
MAX. DUCT DIA. IN. (MM)	QUANTITY / SIZE IN. (MM)	MAX. LOAD LBS. (KG)	MAX. SPACING FT. (M)	
24 (600)	ONE (25) X 22 GA STRAP	260 (119)	12 (3.7)	
36 (900)	TWO (25) X 20 GA STRAP	420 (190)	12 (3.7)	
50 (1250)	TWO 3/8 (10) DIA. RODS	700 (317)	12 (3.7)	
60 (1500)	TWO 3/8 (10) DIA. RODS	1320 (598)	12 (3.7)	
84 (2100)	TWO 3/8 (10) DIA. RODS	2500 (1133)	12 (3.7)	



NOTE:  
1. TABULATED DATA FROM SMACNA ALLOWS FOR DUCT REINFORCING AND INSULATION, BUT NO EXTERNAL LOAD.

ROUND DUCT SUPPORT DETAIL

NOT TO SCALE

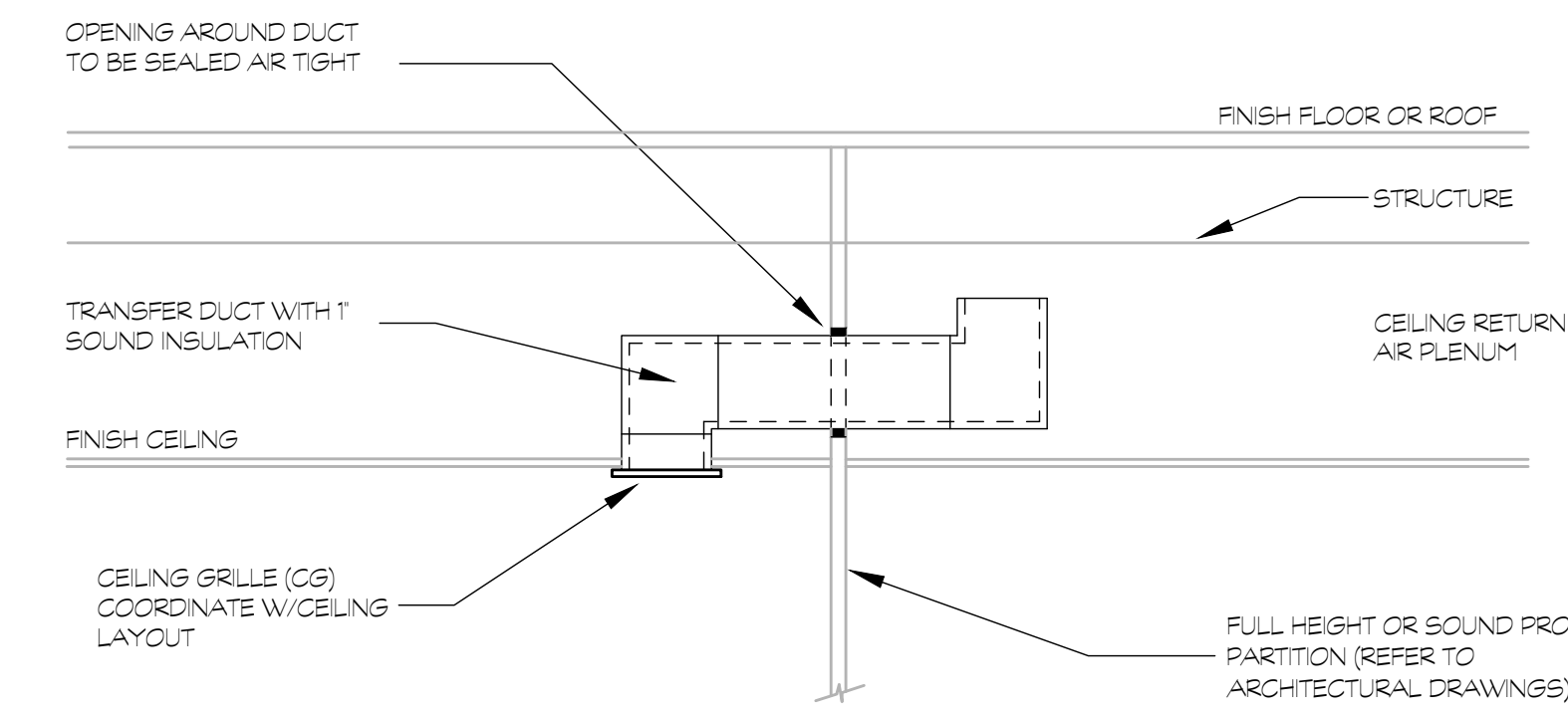


DUCT WIDTH	SUPPORT ANGLE OR EQUIV. CHANNEL	ROD DIA.	MAXIMUM SPACING	MAXIMUM AREA*
25" TO 30"	1 1/2" X 1 1/2" X 1/8"	3/8"	8'-0" O.C.	4 SQ. FT.
31" TO 42"	1 1/2" X 1 1/2" X 1/8"	3/8"	8'-0" O.C.	10 SQ. FT.
43" TO 60"	1 1/2" X 1 1/2" X 1/8"	1/2"	6'-0" O.C.	10 SQ. FT.
61" TO 84"	2" X 2" X 1/4"	1/2"	4'-0" O.C.	-
85" AND UP	2" X 2" X 1/4"	1/2"	4'-0" O.C.	-

\*REDUCE SPACING TO NEXT SMALLER INTERVAL IF DUCT AREA EXCEEDS MAXIMUM.

DUCT SUPPORT DETAIL

NOT TO SCALE



AIRFLOW RANGE (CFM)	TRANSFER DUCT SIZES (INCHES)
0-220	12x10, 20x8
221-340	20x10, 24x8
341-460	22x12, 26x10, 32x8
461-600	24x14, 28x12, 34x10
601-750	26x14, 30x12, 36x10
751-950	28x16, 32x14, 38x12
951-1200	36x16, 42x14, 48x12
1201-1600	38x20, 48x16, 54x14
1601-2000	48x20, 54x16, 60x16

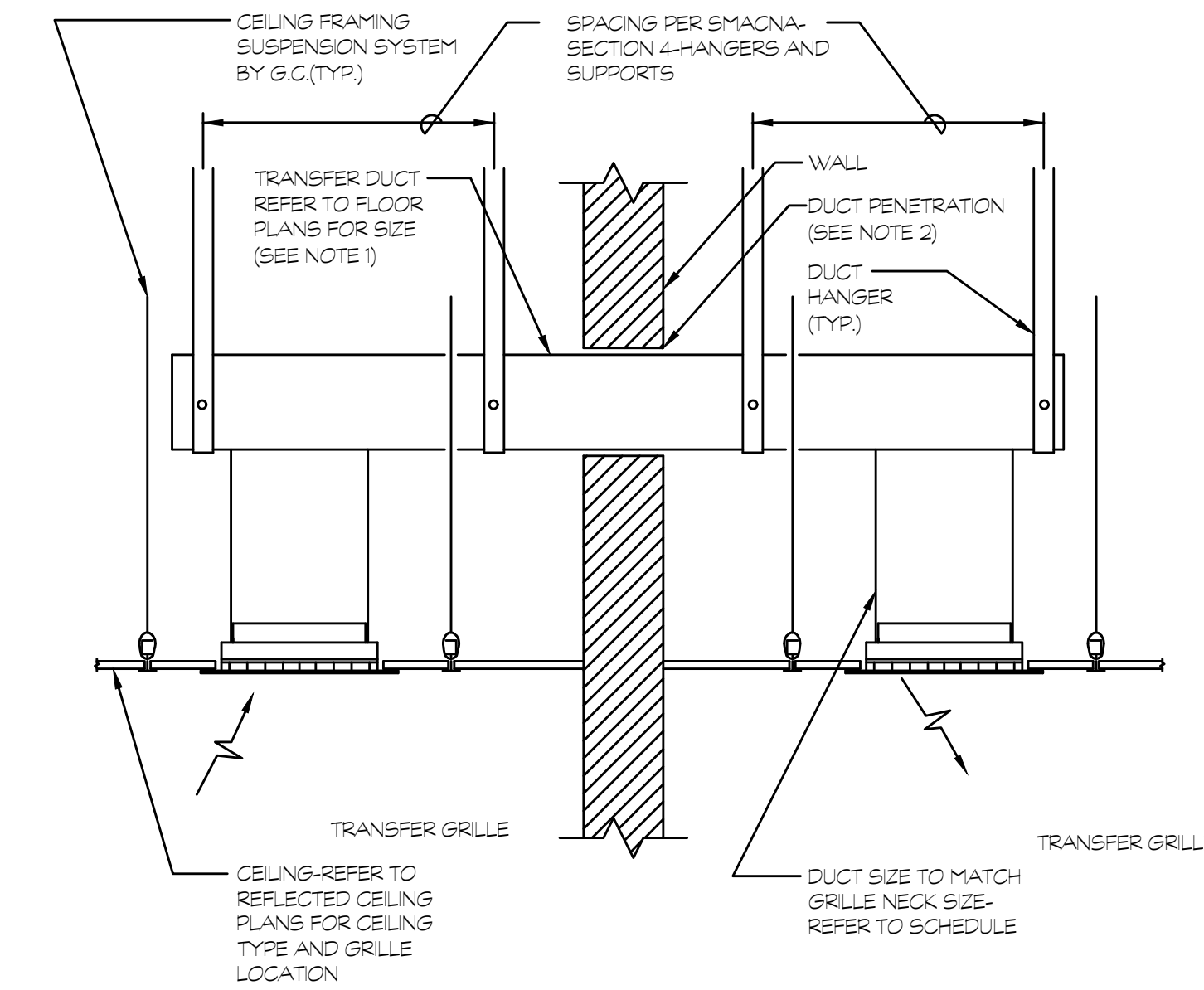
NOTE:  
FOR CFM GREATER THAN RANGES LISTED ABOVE, PROVIDE MULTIPLE DUCTS.

CEILING GRILLE TO R.A. PLENUM TRANSFER DUCT DETAIL

NOT TO SCALE

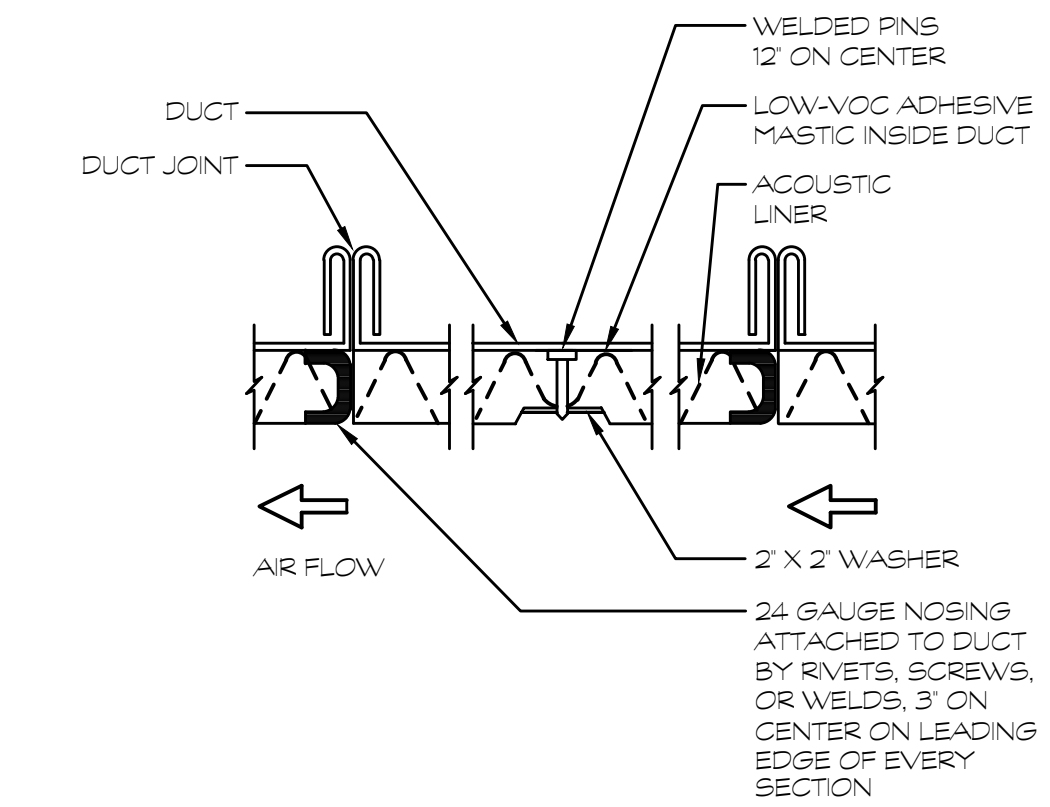




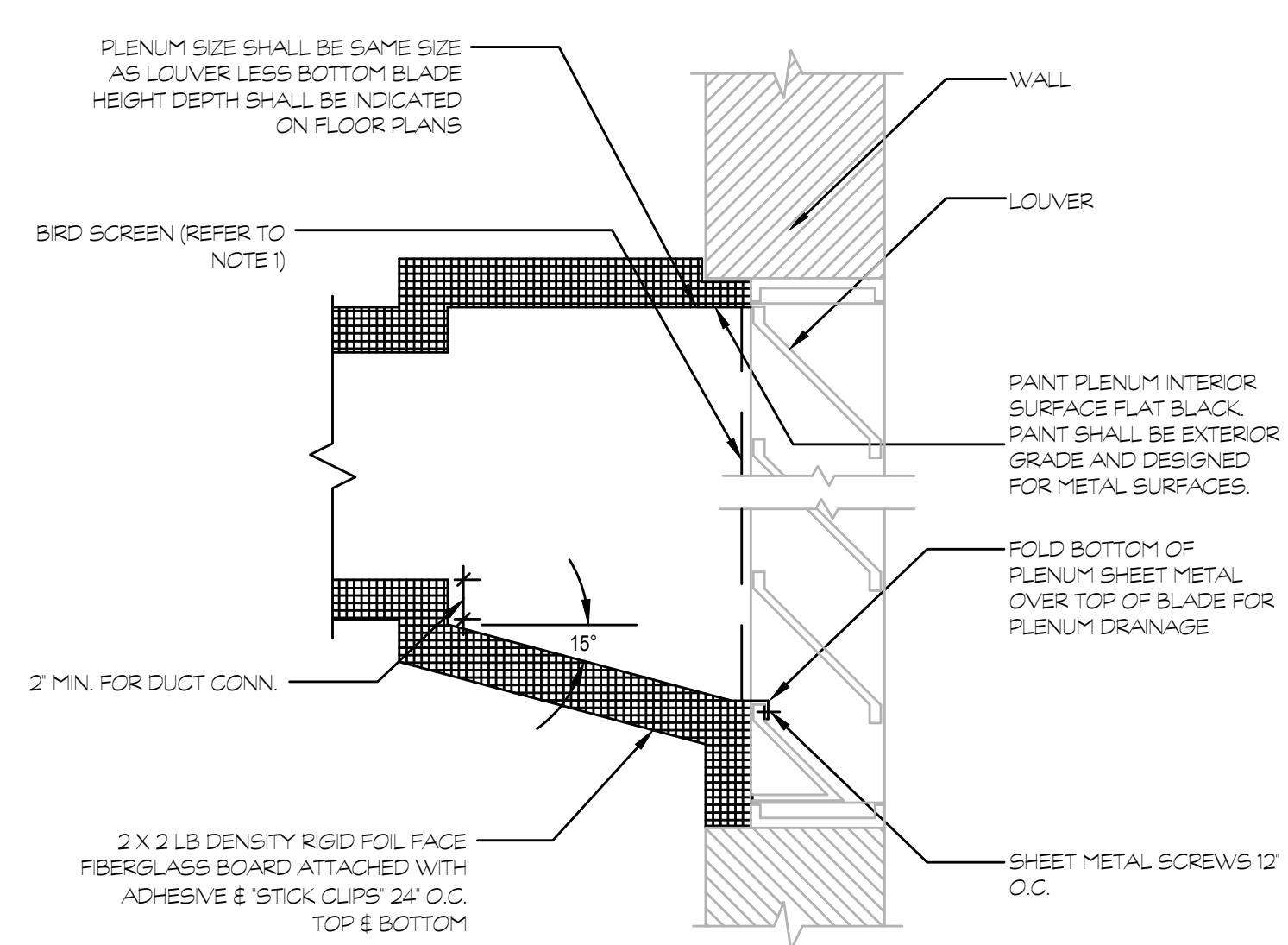


- NOTES:**
1. PROVIDE Z-BEND TYPE OFFSET WITH SQUARE ELBOWS WHERE SHOWN ON DRAWINGS TO REDUCE SOUND TRANSMISSION BETWEEN ROOMS.
  2. PROVIDE FIRE DAMPER WHERE TRANSFER DUCT PASSES THROUGH RATED WALL OF 1-HOUR OR GREATER. PROVIDE SLEEVE WHERE DUCT PASSES THROUGH WALL.

**CEILING GRILLE TO R.A. PLENUM TRANSFER DUCT DETAIL**  
NOT TO SCALE

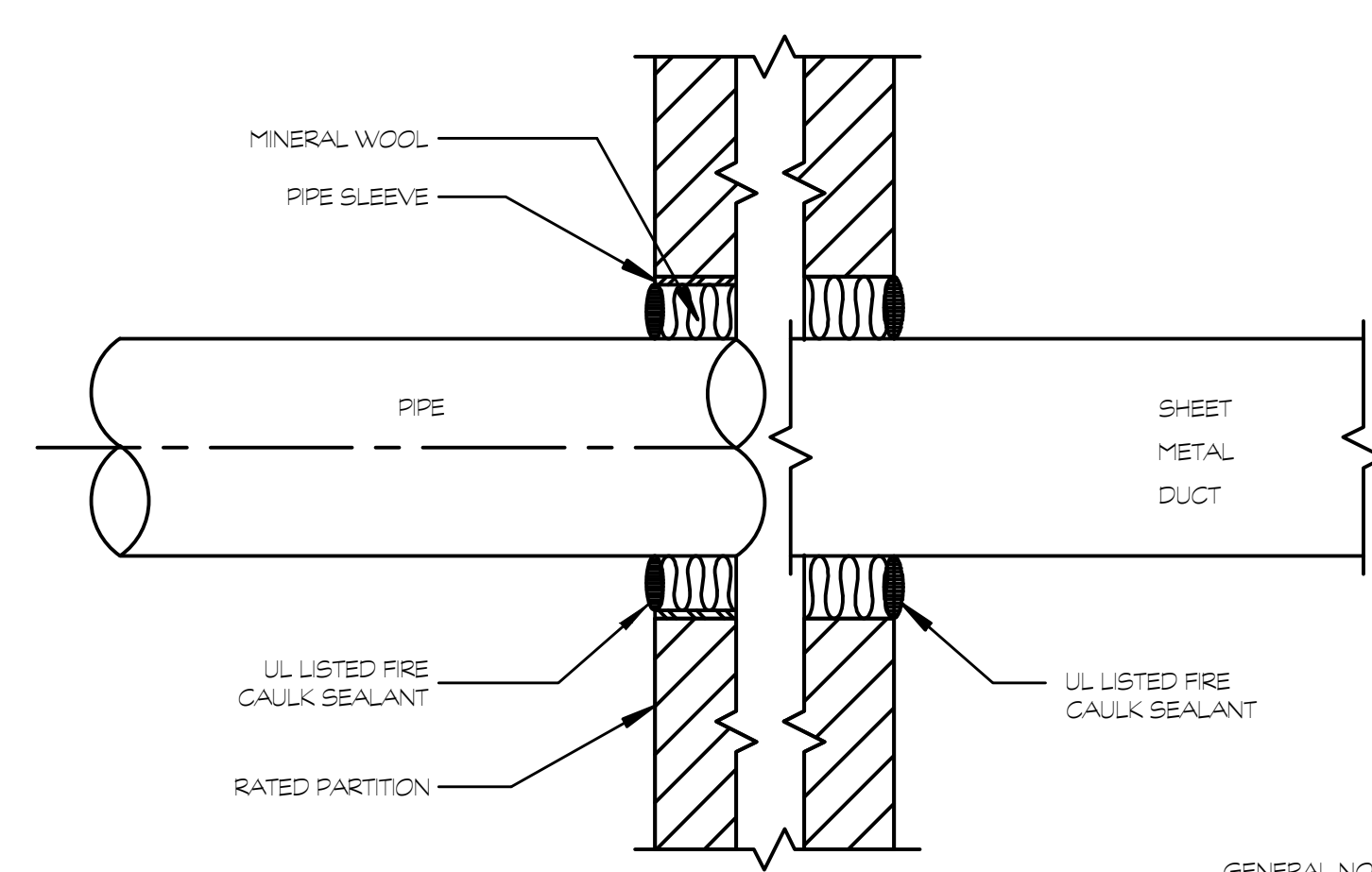


**ACOUSTIC DUCT LINING DETAIL**  
NOT TO SCALE



- NOTES:**
1. COVER INSIDE FACE OF LOUVER WITH 1/2" MESH ALUMINUM BRD SCREEN SCREWED IN PLACE.
  2. INSULATE UNUSED PORTION OF LOUVER WITH 2" DOUBLE WALL INSULATED PANELS.
  3. SEAL ALL PLENUM SEAMS WATER-TIGHT WITH SILICONE SEALANT.
  4. TYPICAL FOR SUPPLY AND EXHAUST PLENUMS.
  5. PROVIDE ACCESS DOOR IN PLENUM. DOOR SHALL BE FIELD COORDINATED FOR ACCESS. DOOR SIZE SHALL BE 36" HIGH X 18" WIDE. REFER TO SPECIFICATION FOR DOOR CONSTRUCTION.

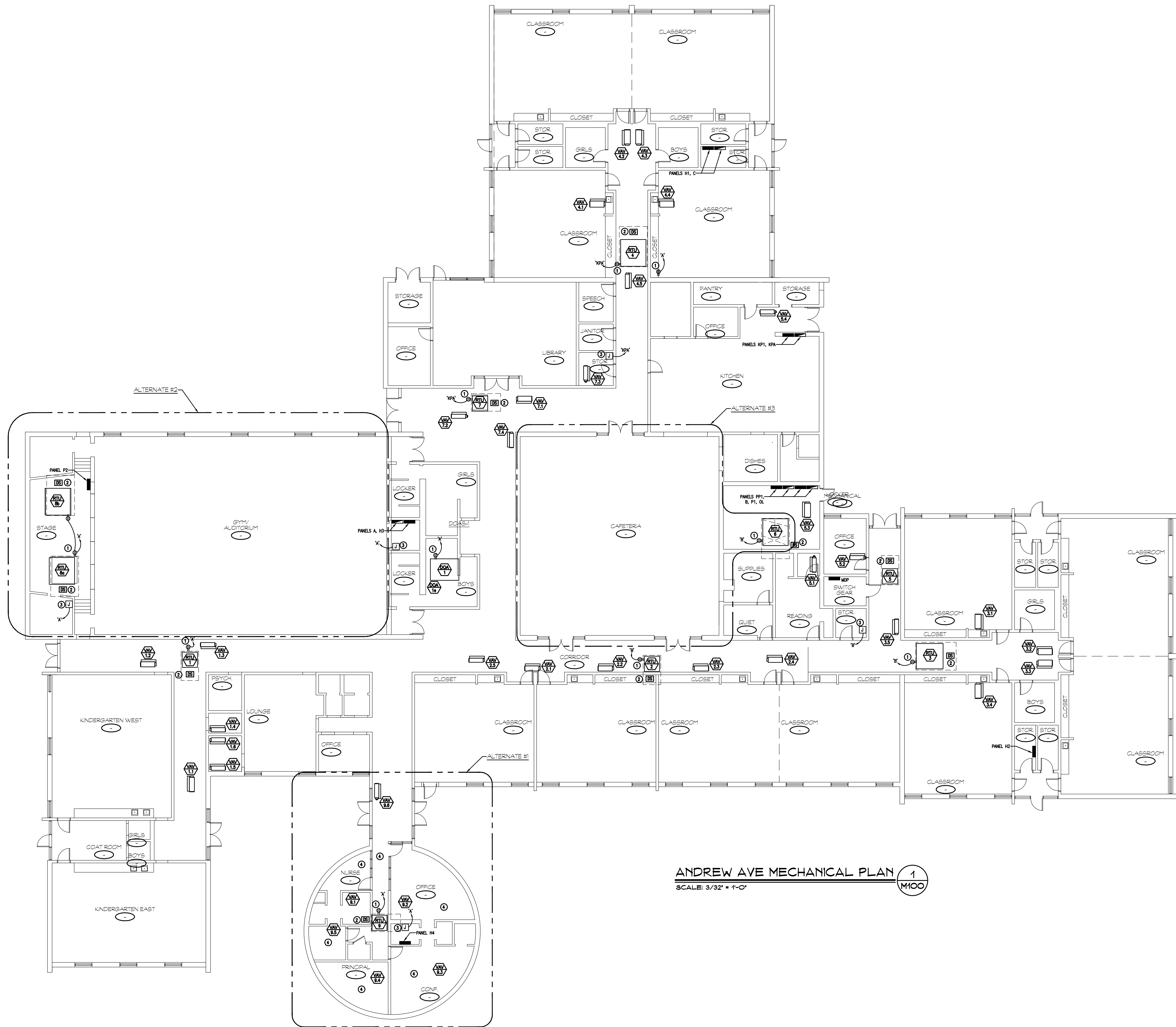
**INTAKE LOUVER PLENUM DETAIL**  
NOT TO SCALE



- GENERAL NOTES:**
- PROVIDE UL LISTED, FM APPROVED FIRE/SMOKE PENETRATION ASSEMBLY IN ACCORDANCE W/ UL 1479, ASTM E 814 REQUIREMENTS FOR WALL TYPE, RATING, PIPE SIZE AND INSULATION THICKNESS INSTALLED.
- FIRE STOPPING SHALL HAVE A RATING EQUAL TO OR GREATER THAN THE WALL BEING PENETRATED - SEE SPECIFICATIONS. REFER TO ARCHITECTURAL DRAWINGS FOR WALL RATINGS AND LOCATIONS.

**PIPE OR DUCT PENETRATION THROUGH WALL DETAIL**  
NOT TO SCALE



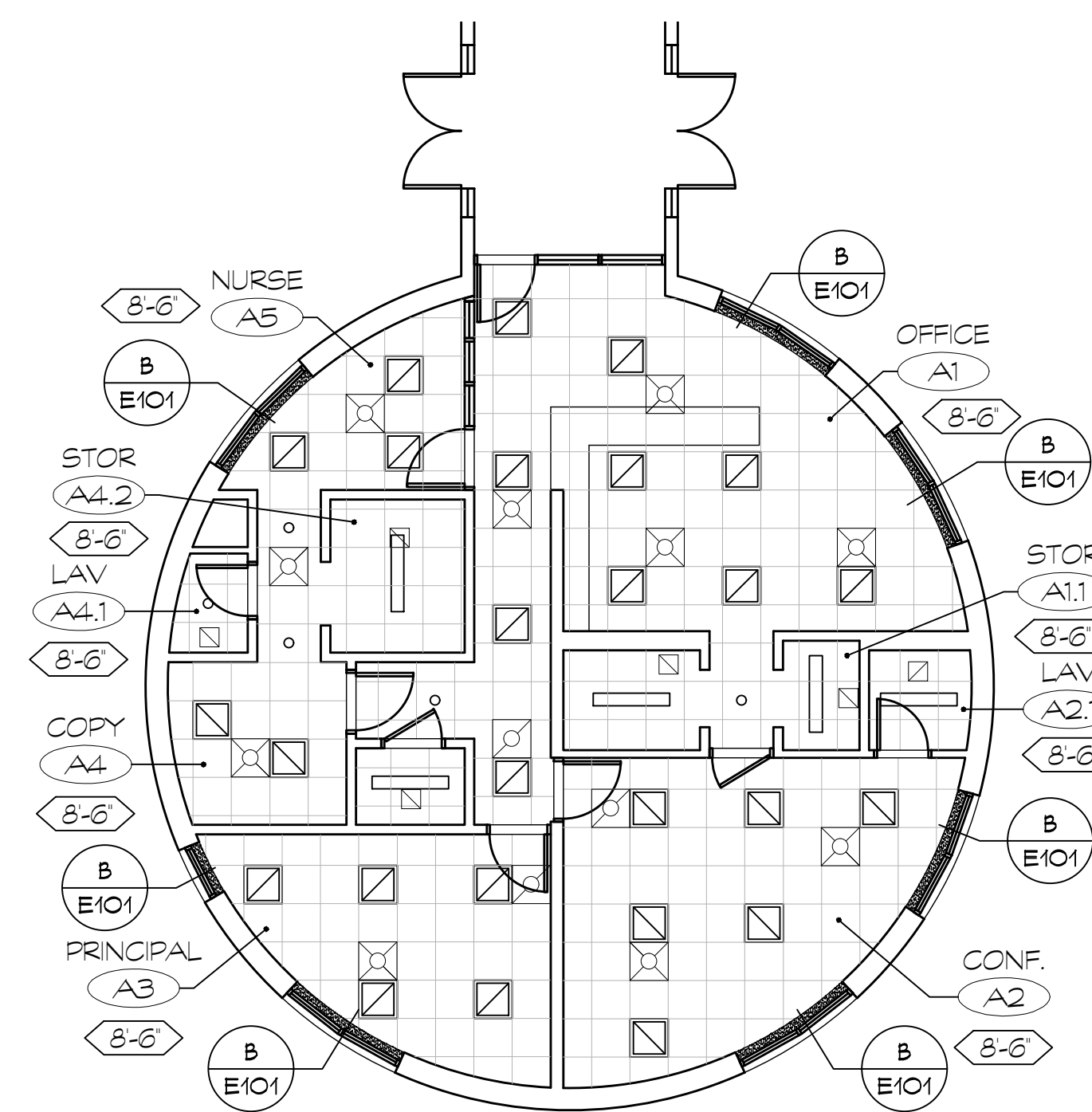
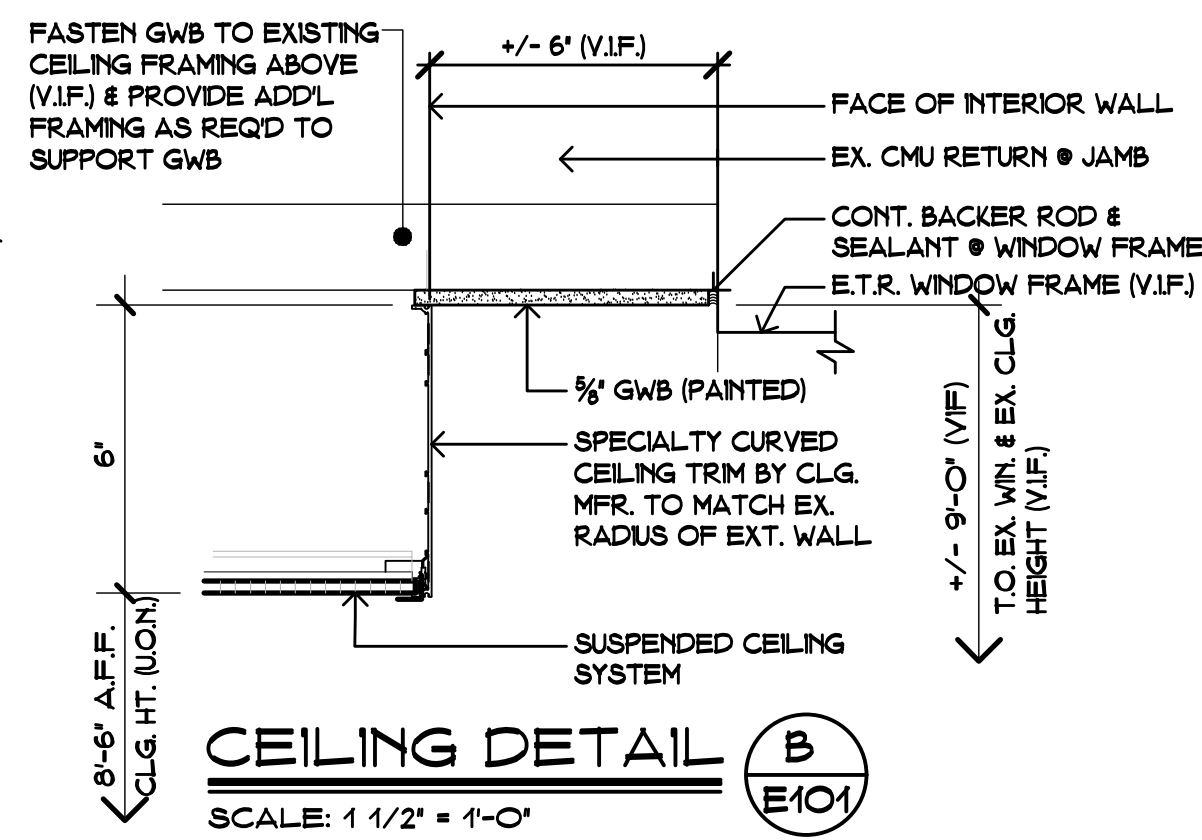
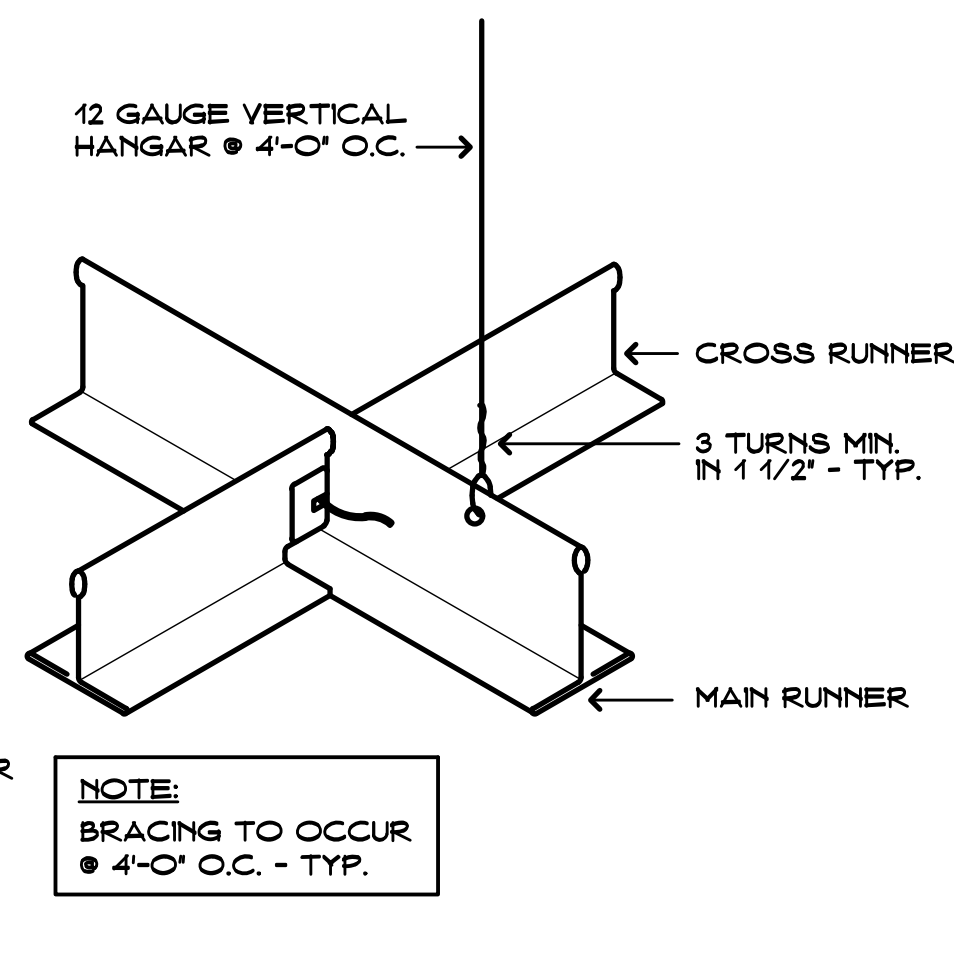
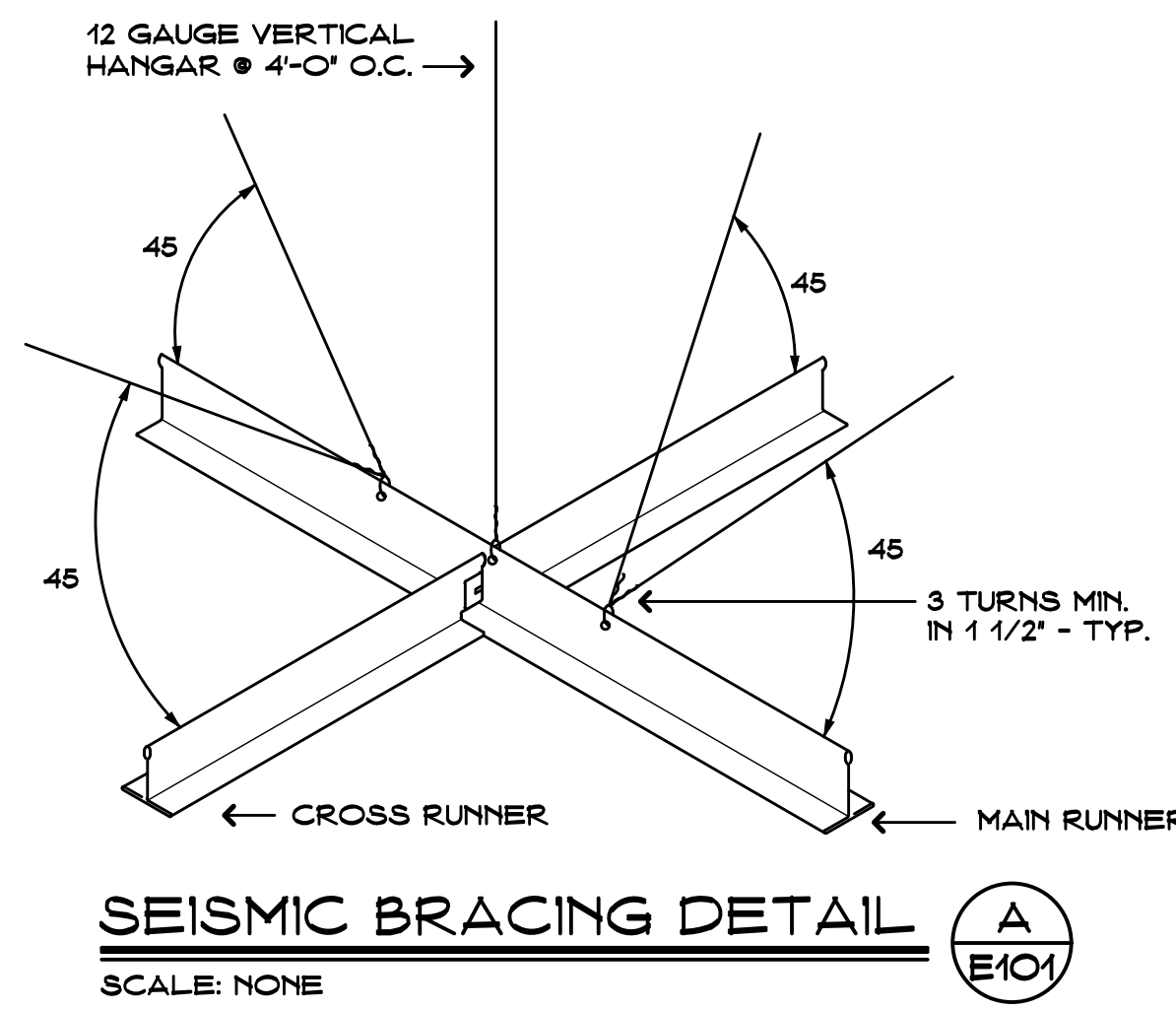


ANDREW AVE MECHANICAL PLAN 1  
SCALE: 3/32" = 1'-0"  
MOO

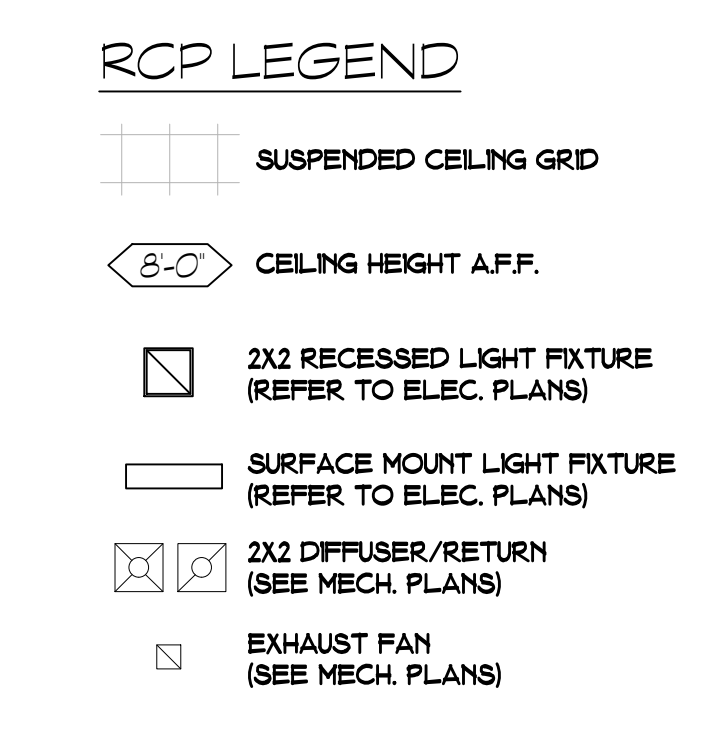
EQUIPMENT SCHEDULE							
SYMBOL	VOLTAGE	PHASE	CIRCUIT AMPS	BREAKER	PANEL	WIRE	CONNECTION
RTU-1	480	3	40	35A/3P	H3	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-2	480	3	40	35A/3P	MDP	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-3	480	3	50	45A/3P	MDP	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-4	480	3	50	45A/3P	H1	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-5	480	3	20	20A/3P	PP1	4 #12	HARDWARE TO DISC. FURN. WITH UNIT
RTU-6	480	3	50	45A/3P	KP1	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-7	480	3	20	20A/3P	H3	4 #12	HARDWARE TO DISC. FURN. WITH UNIT
RTU-8a	480	3	50	45A/3P	P2	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-8b	480	3	50	45A/3P	P2	4 #8	HARDWARE TO DISC. FURN. WITH UNIT
RTU-9	480	3	30	30A/3P	H4	4 #10	HARDWARE TO DISC. FURN. WITH UNIT
DOA-1	480	3	80	80A/3P	P2	4 #4	HARDWARE TO DISC. FURN. WITH UNIT
DOA-1e	480	3	80	70A/3P	P2	4 #4	HARDWARE TO DISC. FURN. WITH UNIT
VAV-1.1	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-1.2	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-1.3	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-1.4	120	1	20	20A/1P	A	3 #12	NON-FUSED DISCONNECT
VAV-1.5	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-1.6	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-2.1	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-2.2	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-2.3	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-2.4	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-2.5	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-3.1	480	3	20	15A/3P	MDP	4 #12	NON-FUSED DISCONNECT
VAV-3.2	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-3.3	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-3.4	480	3	20	15A/3P	H2	4 #12	NON-FUSED DISCONNECT
VAV-3.5	480	3	20	15A/3P	MDP	4 #12	NON-FUSED DISCONNECT
VAV-4.1	480	3	20	15A/3P	H1	4 #12	NON-FUSED DISCONNECT
VAV-4.2	480	3	20	15A/3P	H1	4 #12	NON-FUSED DISCONNECT
VAV-4.3	480	3	20	15A/3P	H1	4 #12	NON-FUSED DISCONNECT
VAV-4.4	480	3	20	15A/3P	H1	4 #12	NON-FUSED DISCONNECT
VAV-4.5	480	3	20	15A/3P	H1	4 #12	NON-FUSED DISCONNECT
VAV-5.1	480	3	20	15A/3P	PP1	4 #12	NON-FUSED DISCONNECT
VAV-5.2	480	3	20	15A/3P	PP1	4 #12	NON-FUSED DISCONNECT
VAV-5.3	480	3	20	20A/3P	PP1	4 #12	NON-FUSED DISCONNECT
VAV-5.4	120	1	20	20A/1P	B	3 #12	NON-FUSED DISCONNECT
VAV-7.1	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-7.2	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-7.3	120	1	20	20A/1P	A	3 #12	NON-FUSED DISCONNECT
VAV-7.4	480	3	20	15A/3P	H3	4 #12	NON-FUSED DISCONNECT
VAV-9.1	277	1	20	20A/1P	H4	3 #12	NON-FUSED DISCONNECT
VAV-9.2	277	1	20	20A/1P	H4	3 #12	NON-FUSED DISCONNECT
VAV-9.3	277	1	20	15A/1P	H4	3 #12	NON-FUSED DISCONNECT
VAV-9.4	277	1	30	25A/1P	H4	3 #10	NON-FUSED DISCONNECT
VAV-9.5	277	1	30	30A/1P	H4	3 #10	NON-FUSED DISCONNECT
VAV-9.6	277	1	20	15A/1P	H4	3 #12	NON-FUSED DISCONNECT

- NOTES:
- DISCONNECT SWITCHES & MOTOR STARTERS LISTED SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR UNLESS NOTED OTHERWISE.
  - PROVIDE ANY 120V WIRING REQUIRED TO INTERLOCK EQUIPMENT WITH HVAC CONTROLS.
  - CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS FOR ALL BRANCH CIRCUITS INDICATED IN SCHEDULE. MATCH EXISTING BREAKER TYPE. UPDATE PANEL DIRECTORIES.

- PLAN NOTES
- PROVIDE 120V/20A DEDICATED BRANCH CIRCUIT FROM PANEL INDICATED FOR WP GF1 RECEPTACLE FURNISHED WITH NEW ROOFTOP EQUIPMENT.
  - PROVIDE NEW ADDRESSABLE PHOTOELECTRIC DUCT SMOKE DETECTOR WITH SAMPLING TUBE AND REMOTE TEST SWITCH. UNIT SHALL BE COMPATIBLE WITH EXISTING FIRE ALARM SYSTEM. UNIT SHALL BE INSTALLED BY MECHANICAL CONTRACTOR AND WIRING BY ELECTRICAL CONTRACTOR. PROVIDE ALL REQUIRED POWER & SIGNAL WIRING PLUS SYSTEM PROGRAMMING TO SIGNAL THE FIRE ALARM PANEL AND SHUT DOWN THE ASSOCIATED UNIT ON DETECTION OF SMOKE. COORDINATE ACCESSIBLE LOCATION OF TEST SWITCH IN FIELD.
  - PROVIDE 120V/20A DEDICATED BRANCH CIRCUIT FROM PANEL INDICATED FOR NEW HVAC CONTROLS. COORDINATE LOCATIONS WITH CONTROLS CONTRACTOR.
  - SEE SHEET E101 FOR CEILING AND LIGHTING WORK IN THIS AREA.

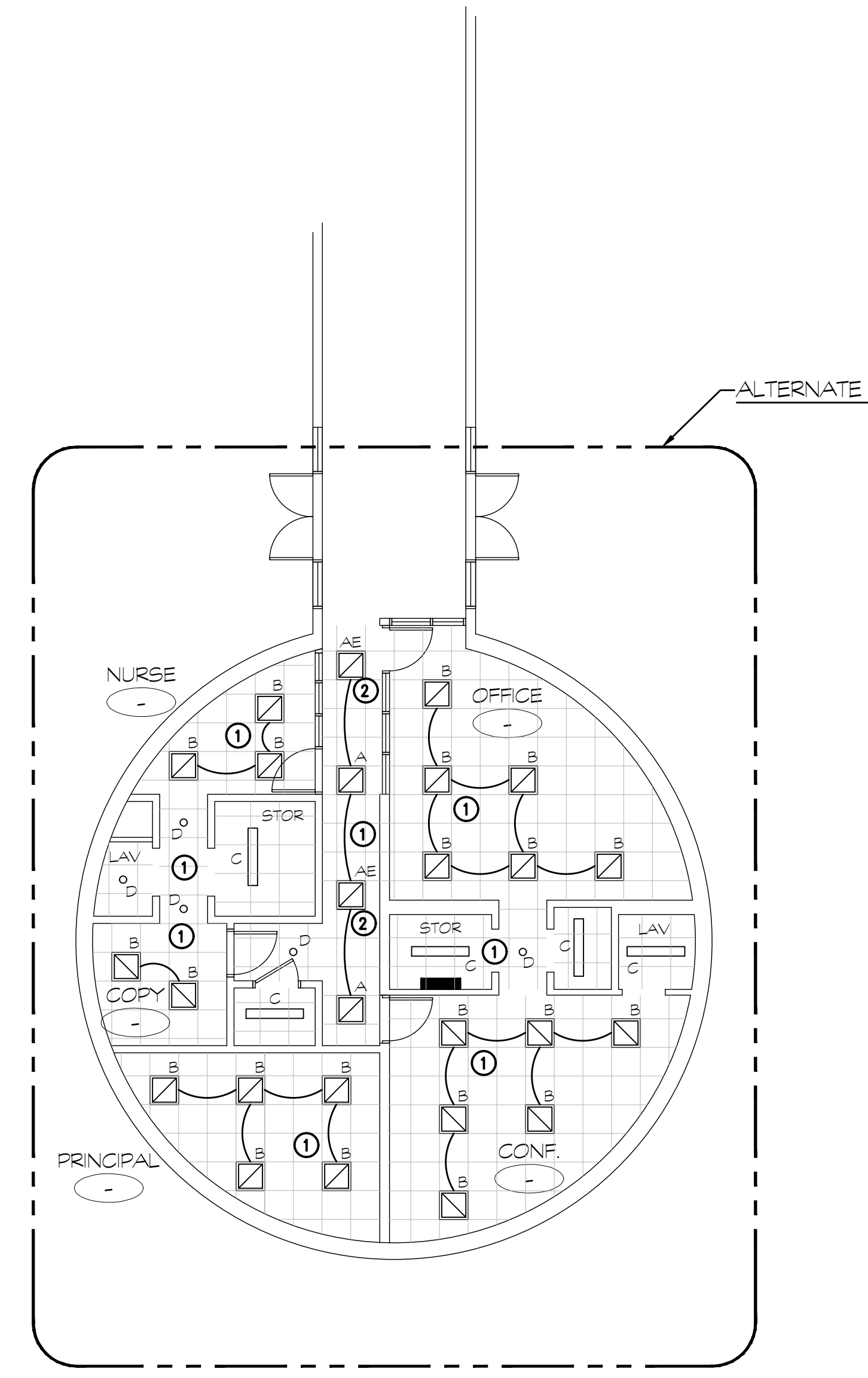


- REFLECTED CEILING PLAN NOTES:**
- EXISTING 8'-0" A.F.F. (V.I.F.), 1X ACOUSTICAL CEILING SYSTEM SHALL BE REMOVED AS REQUIRED TO PROVIDE MECHANICAL & ELECTRICAL WORK, AND AS REQUIRED TO PROVIDE NEW SUSPENDED CEILING SYSTEM. REFER TO MECHANICAL & ELECTRICAL DRAWINGS FOR ADDITIONAL ITEMS TO BE REMOVED.
  - PROVIDE 2X2 SUSPENDED CEILING SYSTEM AT 8'-6" A.F.F. WITH LAY-IN FIXTURES. RELOCATE EXISTING-TO-REMAIN SURFACE MOUNTED FIXTURES (ON WALLS & CEILINGS) AS REQD SUCH THAT THEY ARE LOCATED BELOW THE NEW SUSPENDED CEILING SYSTEM. REFER TO MECHANICAL & ELECTRICAL FOR MORE INFO.
  - PROVIDE RADIUS PERIMETER CEILING TRIM & GWB SOFFIT AT WINDOW OPENINGS - REFER TO DETAIL B/E101 FOR MORE INFO.



**REFLECTED CEILING PLAN AT MAIN OFFICE & ADMINISTRATIVE AREA**  
SCALE: 1/8" = 1'-0" ALTERNATE #1

- GENERAL NOTES -- ELECTRICAL**
- SPECIFICATION SECTIONS, GENERAL CONDITIONS, SUPPLEMENTAL GENERAL CONDITIONS AND DRAWINGS ARE INTEGRAL PARTS OF CONTRACT DOCUMENTS.
  - SYSTEM COMPONENTS ARE LOCATED APPROXIMATELY ON DRAWINGS. BASE ACTUAL LOCATIONS ON FIELD VERIFICATION OF EXISTING BUILDING CHARACTERISTICS INCLUDING BUT NOT LIMITED TO STRUCTURAL, MECHANICAL, ELECTRICAL & ARCHITECTURAL COMPONENTS.
  - ALL WORK AND ACTION DEPICTED AND DESCRIBED IN CONTRACT DOCUMENTS SHALL BE PERFORMED BY THE CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
  - REFERENCE TO SPECIFIC SUB-CONTRACTORS SUCH AS "MECHANICAL", "ELECTRICAL", ETC. ARE INTENDED TO SUGGEST POSSIBLE DIVISION OF RESPONSIBILITY. PRIME CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION AND EXECUTION OF ALL WORK.
  - OBTAIN AND PAY FOR ALL REQUIRED PERMITS AND INSPECTIONS.
  - ALL EQUIPMENT, MATERIALS AND RELATED SYSTEM COMPONENTS SHALL BE NEW UNLESS NOTED OTHERWISE.
  - REPAIR AND REPLACE AT NO COST TO OWNER ALL EQUIPMENT AND MATERIALS DAMAGED DURING CONSTRUCTION.
  - CIRCUITING DEPICTED FOR RECEPTACLES & LIGHTING FIXTURES DEFINES GROUPING OF FIXTURES, DEVICES AND COMPONENTS AND REQUIRED CONDUCTORS. CIRCUITING IS NOT INTENDED TO DEFINE CONDUIT LOCATIONS.
  - STUDY THE PROJECT MANUAL & DRAWINGS OF OTHER DISCIPLINES INCLUDING ARCHITECTURAL, STRUCTURAL, CIVIL & MECHANICAL.
  - ELECTRICAL CONDUITS & BOXES SHALL BE CONCEALED IN WALLS OR ABOVE CEILINGS WHEREVER POSSIBLE.
  - FURNISH & INSTALL GFCI RECEPTACLES IN ALL WET LOCATIONS.
  - ALL PENETRATIONS THRU RATED WALLS & CEILINGS SHALL BE SEALED USING U.L. LISTED METHODS APPROPRIATE FOR INDICATED RATING.
  - NO PENETRATIONS ARE ALLOWED INTO STAIR ENCLOSURES EXCEPT AS REQUIRED FOR SERVICES UTILIZED IN THE STAIR.
  - ALL INSTALLATIONS ON NEW WALLS SHALL BE FULLY RECESSED. INSTALLATIONS ON EXISTING MASONRY WALLS SHALL BE RUN WITH SURFACE RACEWAY PAINTED TO MATCH WALL FINISH AND SURFACE BOXES. INSTALLATIONS ON EXISTING STUD WALLS SHALL CUT IN OLD-WORK STYLE BOXES AND FISH WIRING IN WALL CAVITY.
- GENERAL DEMOLITION NOTES -- ELECTRICAL**
- ELECTRICAL DEMOLITION TO BE SUPERVISED BY LICENSED ELECTRICAL CONTRACTOR. EACH CIRCUIT SHALL BE VERIFIED "COLD" & DISCONNECTED FROM ELECTRICAL SERVICE PRIOR TO COMMENCING REMOVAL.
  - REMOVE EXISTING ELECTRICAL EQUIPMENT & MATERIALS AS REQUIRED TO ACCOMMODATE MECHANICAL & ARCHITECTURAL WORK AND AS SPECIFICALLY NOTED ON THE DEMOLITION DRAWINGS.
  - ALL MATERIALS BEING REMOVED SHALL BE HANDLED IN A MANNER COMPLYING WITH ALL PERTINENT LAWS, CODES AND ENVIRONMENTAL REGULATIONS.
  - WHERE ELECTRICAL EQUIPMENT & DEVICES ARE BEING REMOVED, COORDINATE AND FIELD VERIFY IF BRANCH CIRCUIT FEEDS THROUGH TO EQUIPMENT/DEVICES TO REMAIN. BRANCH CIRCUITS SHALL BE SPLICED OR RELOCATED TO MAINTAIN CONTINUATION OF SERVICES.
  - WHERE EXISTING DEVICES ARE REMOVED & NO NEW DEVICES ARE INSTALLED IN THE SAME LOCATION, REMOVE ALL WIRING FROM BOX & PROVIDE PROPERLY SIZED BLANK COVER PLATE.
  - CONTRACTOR SHALL REMOVE ALL FLUORESCENT LIGHT FIXTURE BALLASTS & IDENTIFY THOSE CONTAINING PCB'S. THESE SHALL BE TURNED OVER TO THE OWNER FOR DISPOSAL.
  - ALL REMOVED COMPONENTS SHALL BE LEGALLY DISPOSED OF BY CONTRACTOR UNLESS SPECIFICALLY NOTED OTHERWISE.
  - ELECTRICAL COMPONENTS IDENTIFIED BELOW, AND THE ASSOCIATED CONDUIT, WIRE & BOXES ARE TO BE REMOVED AND DISPOSED OF UNLESS SPECIFICALLY NOTED OTHERWISE.
  - ELECTRICAL DEMOLITION SCOPE SHALL CONSIST OF REMOVAL OF LIGHTING FIXTURES IN THE AREA SHOWN WITH NEW LIGHTS AND REMOVAL OF BRANCH CIRCUITS SERVING THE FOLLOWING MECHANICAL EQUIPMENT: (5) 3-PHASE EF; (2) 120V EF; CATERERIA AHUS- MOTOR AND HEATER CIRCUITS, (16) 480/3Ø/20A HEATERS, (12) 480/3Ø/30A HEATERS, (3) 480/3Ø/40A HEATERS, (22) 120 OR 277V/20A HEATERS, (5) 277V/20A AC UNITS, GYM AHU-1 & 2 MOTOR AND HEATER CIRCUITS.



- PLAN NOTES**
- REMOVE ALL EXISTING LIGHT FIXTURES IN AREA SHOWN. REMOVE BRANCH WIRING, NEW & CONDUIT TO FIXTURES BUT RETAIN EXISTING CIRCUIT AND CONTROLS. PROVIDE NEW BRANCH CIRCUIT WIRING TO SERVE NEW FIXTURES AS SHOWN.
  - PROVIDE UNSWITCHED POWER FROM AREA LIGHTING CIRCUIT TO BATTERY PACK FURNISHED WITH EMERGENCY FIXTURE.
- GEN. CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPORT OF EXISTING CABLE ANTICIPATED TO BE SUPPORTED BY EXISTING CEILING TO BE REMOVED. CONTRACTOR SHALL BUNDLE THE CABLE TO THE EXTENT ALLOWED BY LENGTHS AND SUPPORT WITH J-HOOKS FROM THE STRUCTURE ABOVE. ALLOW FOR 50 J-HOOKS FOR BIDDING PURPOSES.
- GEN. CONTRACTOR SHALL ALLOW FOR REMOVAL AND REINSTALLATION OF 6 CEILING MOUNTED SMOKE DETECTORS TO ACCOMMODATE CEILING REPLACEMENT.

**LIGHT FIXTURE SCHEDULE**

DESIGNATION	MFR.	MODEL NUMBER
A	LITHONIA	2TL2-33L-PV-A12-EZ-LP840
AE	LITHONIA	2TL2-33L-PV-A12-EZ-LP840-ELM4L
B	LITHONIA	2VL2-40L-ADP-EZ-LP840
C	LITHONIA	LB4-LP840
D	LITHONIA	480MMWLED-40K/13LED724