

MECHANICAL GENERAL NOTES:

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1. REFER TO THE PROJECTS BOOK-TYPE SPECIFICATION FOR ADDITIONAL REQUIREMENTS, DEFINITIONS, MATERIAL SPECIFICATIONS, ETC. IN THE CASE OF CONFLICTING SPECIFICATIONS THE CONTRACTOR SHALL ASSUME THE MORE STRINGENT CRITERIA APPLIES.

2. ALL WORK SHALL BE PERFORMED BY A LICENSED CONTRACTOR IN A FIRST CLASS WORKMANLIKE MANNER. THE COMPLETE SYSTEM SHALL BE FULLY AND PROPERLY OPERATIVE, AND IN COMPLIANCE WITH APPLICABLE CODES AND GOVERNING AUTHORITIES, AND SUBJECT TO ACCEPTANCE BY ARCHITECT/OWNER/ENGINEER.

3. ALL REQUIRED INSURANCES SHALL BE PROVIDED AND MAINTAINED BY THE CONTRACTOR FOR THE PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE, AND OTHER INSURANCES REQUIRED BY THE OWNER, FOR THE DURATION OF THE WORK.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, FEES, INSPECTIONS, AND TESTS.

5. DRAWINGS ARE DIAGRAMMATIC. DO NOT SCALE FROM DRAWINGS, BUT FIT WORK TO ACTUAL CONDITIONS AND SPACE REQUIREMENTS.

6. VERIFY ALL DIMENSIONS WITH STRUCTURE PRIOR TO ANY FABRICATION OR INSTALLATION.

7. DRAWINGS ARE NOT INTENDED TO SHOW EVERY DETAIL OF WORK REQUIRED. CONTRACTOR SHALL FURNISH AND INSTALL ALL ITEMS AS REQUIRED FOR A COMPLETE AND ACCEPTABLE WORKING SYSTEM.

8. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID INTERFERENCE WITH THE PROGRESS OF CONSTRUCTION AND IN STRICT COMPLIANCE WITH ALL APPLICABLE CODES AND STANDARDS.

9. VERIFY ALL VOLTAGES WITH ELECTRICAL CONTRACTOR BEFORE ORDERING ANY EQUIPMENT.

10. CONTRACTOR SHALL VERIFY EXACT PENETRATIONS OF BUILDING STRUCTURE IN FIELD, LAYOUT EXACT OPENINGS AND OBTAIN ARCHITECTS OR STRUCTURAL ENGINEER'S APPROVAL PRIOR TO CUTTING ANY STRUCTURE. DO NOT CUT ANY BEAM, COLUMN OR STRUCTURAL MEMBER.

11. INSTALLATION OF EQUIPMENT SHALL MAINTAIN CLEAR ACCESS FOR EASY FILTER REPLACEMENT, AND TO ACCESS MOTOR AND BELT, ETC.

12. MAINTAIN NATIONAL ELECTRIC CODE MINIMUM CLEAR ACCESS TO ALL ELECTRICAL COMPONENTS.

13. ALL MATERIALS SHALL BE NEW AND SHALL BEAR UNDERWRITER'S LABEL WHERE APPLICABLE.

14. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

15. EXTEND, TRANSITION, ADAPT AND REWORK DUCTWORK, PIPING, SYSTEM AND CONNECTIONS AS REQUIRED.

16. MAKE ALL CONNECTIONS TO MECHANICAL EQUIPMENT, WITH FLEXIBLE CONNECTORS.

17. CONTRACTOR SHALL PROVIDE CLEAN UNIT FILTERS IN UNIT AT ALL TIMES OF CONSTRUCTION.

18. CONTRACTOR SHALL KEEP ALL ITEMS OF CONSTRUCTION OUT OF ELECTRIC ROOMS, AND SHALL NOT INSTALL ANY ITEM OF CONSTRUCTION OVER THE SPACE ABOVE AN ELECTRICAL PANEL.

19. AIR CONDITIONING DUCTWORK SYSTEMS SHALL HAVE PRIORITY OVER SYSTEMS OF OTHER TRADES (I.E. PLUMBING, FIRE SPRINKLER, ELECTRICAL, ETC.). AIR CONDITIONING CONTRACTOR SHALL THOROUGHLY INVESTIGATE PROPOSED HVAC SYSTEMS AND PROPOSED NEW WORK OF ALL TRADES, AND INCLUDE IN HIS BID THE COST OF RELOCATING AND REWORKING VARIOUS ITEMS, AS REQUIRED BY SPACE CONDITIONS. HVAC CONTRACTOR SHALL COORDINATE SPACE CONDITIONS WITH ALL TRADES.

20. THE AIR DISTRIBUTION SUPPLY RETURN AND EXHAUST REGISTER LOCATIONS SHOWN ARE DIAGRAMMATIC. CONTRACTOR SHALL COORDINATE AND SUBMIT REFLECTED CEILING PLAN SHOWING EXACT LOCATION OF ALL LIGHTS, ALARMS, SPEAKERS, SPRINKLER HEADS, AIR DISTRIBUTION PRODUCTS, ETC. FOR ARCHITECT/ENGINEER REVIEW PRIOR TO ORDERING ANY ITEM.

21. DUCTWORK:

DUCT DIMENSIONS SHOWN ARE CLEAR INSIDE DIMENSIONS.

PROVIDE AND INSTALL MANUALLY ADJUSTABLE VOLUME DAMPERS ON ALL BRANCH TAKE-OFFS FROM THE MAIN DUCT.

NO FIBERGLASS DUCTWORK WILL BE PERMITTED.

DUCTWORK SHALL BE TESTED FOR LEAKAGE PRIOR TO CONNECTION TO ANY FLEX DUCTWORK OR EQUIPMENT. SUBJECT TO REVIEW BY ENGINEER/ARCHITECT.

ALL AIR DISTRIBUTION DEVICES MOUNTED ON EXPOSED DUCTWORK SHALL HAVE OVERSIZED COLLARS WITH FLANGE TURNED IN. COLLARS SHALL BE FURNISHED FLUSH WITH OUTER FLANGE OF THE AIR DISTRIBUTION DEVICE.

MINIMUM INSTALLED R-VALUE OF INSULATION ON AIR CONDITIONING AND HEATING SUPPLY AND RETURN AIR DISTRIBUTION COMPONENTS INCLUDING BLOWER ENCLOSURES, MECHANICAL EQUIPMENT PLENUM CHAMBERS, REFRIGERANT COIL ENCLOSURES, AIR FILTER ENCLOSURES, AIR DUCTS AND PLENUMS IN OR ON BUILDINGS SHALL BE AS FOLLOWS:

LOCATION OF AIR DISTRIBUTION COMPONENT/DUCT R-VALUE

A. SPACE INTERIOR TO BUILDING 6.0

NOTE: SEE SPECIFICATIONS FOR DUCT MATERIAL CONSTRUCTION AND INSULATION SCHEDULES.
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22. ALL HVAC TRADE ITEMS SHALL BE INDEPENDENTLY AND RIGIDLY SUPPORTED FROM STRUCTURE (DO NOT SUPPORT FROM ANOTHER TRADE).

23. DO NOT USE SHOT TYPE FASTENERS, USE LAG TYPE. ALL FASTENER TYPES SHALL BE SUBMITTED TO STRUCTURAL ENGINEER FOR REVIEW.

24. ALL EQUIPMENT SUPPORTS, PIPING SUPPORTS, DUCT SUPPORTS, AND ROOF PENETRATIONS SHALL BE DONE IN A MANNER ACCEPTABLE TO THE BUILDING STRUCTURAL ENGINEER.

25. FRAME WITH METAL STUDS INSIDE METAL STUD WALLS ALL AROUND ALL DUCT PENETRATIONS OF FIRE WALLS, SMOKE WALLS, AND CHASE WALLS. COORDINATE ALL PENETRATIONS PRIOR TO START OF CONSTRUCTION.

26. INSTALL ALL PIPING, EQUIPMENT AND DUCTWORK RUNNING PARALLEL WITH THE SMOKE WALLS, FIRE RATED WALLS, AND CORRIDOR WALLS A MINIMUM OF 6" FROM THE WALL SO THAT THE WALL CAN BE INSTALLED AND INSPECTED. HVAC OR CONTROLS TRADE ITEMS (EXCEPT FOR WALL MOUNTED THERMOSTATS OR CONTROLS) SHALL NOT BE SUPPORTED FROM WALLS.

27. PROVIDE AND INSTALL FIRE AND SMOKE PENETRATION SEALS FOR OPENINGS IN FLOORS/SLABS, WALLS AND OTHER ELEMENTS OF CONSTRUCTION DEFINED ON ARCHITECTURAL DRAWINGS AS FIRE AND/OR SMOKE BARRIERS. FIRE/SMOKE SEALING SYSTEM SHALL HAVE THE SAME RATING AS THE BARRIER PENETRATED. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.

A. FIRESTOPPING MATERIALS TO BE BY HILTI, 3M, DOW CORNING CORP., OR APPROVED EQUAL.

B. FIRESTOPPING MATERIALS TO BE ASBESTOS FREE AND IN COMPLIANCE WITH ASTM E-814 AND UL 1479.

28. INSTALL IONIZATION TYPE SMOKE DETECTORS WHERE SHOWN AND/OR AS REQUIRED BY APPLICABLE CODES AND AUTHORITIES HAVING JURISDICTION. SMOKE DETECTORS SHALL BE FURNISHED BY FIRE ALARM CONTRACTOR.

A. SMOKE DETECTORS SHALL BE INSTALLED PER NFPA 72E AND 90A.

B. SMOKE DETECTOR ACTIVATION SHALL CAUSE A VISUAL AND AN AUDIBLE SIGNAL IN A NORMALLY OCCUPIED AREA AND SMOKE DETECTOR TROUBLE CONDITIONS SHALL BE INDICATED VISUALLY OR AUDIBLY IN A NORMALLY OCCUPIED AREA AND SHALL BE IDENTIFIED AS AIR DUCT DETECTOR TROUBLE. THIS ITEM BY ELECTRICAL.

C. VISUAL, AUDIBLE AND TROUBLE INDICATION SHALL INCLUDE A REMOTE TEST/RESET STATION AND SHALL BE LABELED AND IDENTIFIED AS TO AHU SYSTEM SERVED. LOCATION OF INDICATION SHALL BE IN CEILING OVER OCCUPIED AREA BELOW DUCT DETECTOR OR ON WALL AT THERMOSTAT LOCATION IN OCCUPIED AREA UNLESS INCORPORATED INTO APPROVED PROTECTIVE SIGNALING/FIRE ALARM SYSTEM AS APPLICABLE AND ACCEPTABLE TO AUTHORITY HAVING JURISDICTION. THIS ITEM BY ELECTRICAL.

D. SMOKE DETECTORS SHALL BE INSTALLED IN DUCTS BY HVAC CONTRACTOR, AND SHALL HAVE DUCT ACCESS PANEL FURNISHED AND INSTALLED BY AIR CONDITIONING CONTRACTOR, POSITIONED TO INSPECT SAMPLING TUBES.

E. WRITTEN PRIOR TO BID APPROVED ALTERNATIVE AND A PRIOR TO INSTALLATION PROCESSED SHOP DRAWING.
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29. THIS CONTRACTOR SHALL PROVIDE AND COORDINATE ALL MOTOR STARTERS, RELAYS, CONTACTORS, INTERFACES AND APPURTENANCE REQUIRED FOR ALL EQUIPMENT AND SYSTEMS FURNISHED UNDER THIS CONTRACT AND SHALL BE INSTALLED BY THE ELECTRICAL CONTRACTOR.

30. TEMPERATURE CONTROL SHALL BE AS INDICATED ON DRAWINGS. FURNISH ALL EQUIPMENT AND HARDWARE REQUIRED FOR BUILDING COMPATIBILITY INCLUDING INTERFACE WITH LIFE SAFETY SYSTEM UNDER THIS CONTRACT FOR COORDINATION AND INSTALLATION BETWEEN THE CONTROLS CONTRACTOR AND THE ELECTRICAL CONTRACTOR.

31. LOCATION OF ALL WALL THERMOSTATS, CONTROL PANELS, ETC., I.E. ALL COMPONENTS OF HVAC SYSTEMS THAT ARE LOCATED IN FINISHED AREAS ARE SUBJECT TO LOCATION AS DIRECTED BY ARCHITECT/INTERIOR DESIGN. CONTRACTOR SHALL VERIFY AND COORDINATE ALL ITEMS, AND OBTAIN APPROVAL FOR LOCATIONS OF ALL ITEMS.

32. ALL CONTROL WIRING SHALL BE IN METALLIC CONDUIT, SEE ELECTRICAL SPECIFICATIONS FOR TYPE.

33. CONTROL NOTE: PASSIVE SMOKE CONTROL: IF ALL POWER IS OFF OR O/A AIR HANDLING UNIT OR FAN IS OFF FOR ANY REASON, ALL ASSOCIATED SMOKE DAMPERS SHALL CLOSE.

34. UNIT AND DUCT MOUNTED HEATERS SHALL BE U.L. LISTED AND LABELED. BRANCH FUSES FOR ALL ELEMENTS OVER 48 AMPS, AUTO RESET THERMAL CUT-OFF, HEAT LIMITERS, FUSED DISCONNECT, AIR FLOW PROVING DEVICE, CONTROL TRANSFORMER WHERE REQUIRED FOR CONTROL VOLTAGE.

35. AIR DISTRIBUTION, A/C EQUIPMENT, FANS, MANUFACTURER, MATERIALS, ETC. SHALL BE AS LISTED HEREIN, AS SCHEDULED ON THE DRAWINGS, OR A WRITTEN PRIOR TO BID APPROVED ALTERNATIVE AND A PRIOR TO INSTALLATION PROCESSED SHOP DRAWING. HVAC EQUIPMENT FURNISHED SHALL SATISFY THE MINIMUM EER, SEER, IPLV, HSPF, AFUE AND/OR COP AS LISTED IN THE FLORIDA ENERGY CODE. THE MINIMUM VALUES LISTED IN THE ENERGY CODE COMPLIANCE CALCULATIONS AND/OR THE VALUES SCHEDULED HEREIN WHICHEVER IS MORE RESTRICTIVE.

36. WHERE SPECIFIC PRODUCTS, MANUFACTURERS AND/OR MODEL NUMBERS ARE LISTED TO ESTABLISH QUALITY STANDARDS AND/OR SPACE LIMITATIONS, SUBSTITUTIONS OF EQUAL STATUS WITH APPROVAL FROM THE ENGINEER MAY BE CONSIDERED IF ACCEPTED IN WRITINGS/VIA PROCESSED SHOP DRAWINGS BY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION. THIS CONTRACTOR WILL ABSORB ALL COORDINATION EFFORTS AND ALL IMPACTS IMPOSED ON OTHER TRADES.

37. IF CONTRACTOR SUBMITS FOR "APPROVAL" ANY ITEM OTHER THAN WHAT IS USED AS A BASIS OF DESIGN, HE SHALL SUBMIT ALL NECESSARY DETAILED 1/4" SCALE DRAWINGS AND DETAILED PERFORMANCE COMPATIBLE IN ALL RESPECTS WITH THE SYSTEM DESIGN. IT WILL BE REJECTED IF NOT SATISFACTORILY SUBMITTED.

38. THE CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH ALL CONDITIONS. PRIOR TO COMMENCEMENT OF WORK, VERIFY MEASUREMENTS AT BUILDING SITE, NOTIFY ARCHITECT AND/OR ENGINEER OF ANY CHANGES REQUIRED DUE TO SUCH CONDITIONS BEFORE PROCEEDING WITH THE WORK. SUBMIT DISCREPANCIES, DIFFERENCES AND PROPOSED VARIATIONS TO CONTRACT DOCUMENTS FOR CONSIDERATION AND DECISION BEFORE PROCEEDING.

39. OBTAIN FULL INFORMATION REGARDING PECULIARITIES AND LIMITATIONS OF SPACE AVAILABLE FOR INSTALLATION OF THE EQUIPMENT AND MATERIALS UNDER CONTRACT, AND PROVIDE READY ACCESSIBILITY TO DAMPERS, VALVES, AND OTHER APPARATUS, INCLUDING ANY PART OF SYSTEM REQUIRED TO BE REACHED FOR MAINTENANCE AND OPERATIONS.

40. PROVIDE AN ACCURATE LAYOUT, GRADES, AND ELEVATIONS; SET SLEEVES AND OPENINGS IN AMPLE TIME; TAKE PROPER PRECAUTIONS TO PROTECT WORK AND EQUIPMENT FROM DAMAGE.

41. CUT ALL OPENINGS AND CHASES REQUIRED TO ACCOMMODATE THE WORK UNDER THIS DIVISION, AND REPAIR ALL FLOORS, WALLS, ETC. DAMAGED BY SUCH CUTTINGS. ALL WORK DONE UNDER THIS HEADING MUST CONFORM IN EVERY RESPECT TO FINISH AND QUALITY OF MATERIALS AND WORKMANSHIP SPECIFIED UNDER APPROPRIATE SECTIONS FOR THE BUILDING.

42. ALL EQUIPMENT SPECIFIED TO BE MOUNTED EXPOSED TO THE BUILDING EXTERIOR SHALL BE MOUNTED TO WITHSTAND HURRICANE WIND LOADS. REFER TO HVAC AND/OR STRUCTURAL AND/OR ARCHITECTURAL DETAILS FOR MOUNTING DETAILS INDICATING EQUIPMENT SECTIONS TO BE REMOVED FROM STRUCTURE SUCH THAT THE EQUIPMENT WILL REMAIN IN PLACE IN THE PRESENCE OF HURRICANE FORCE WINDS, AND AS REQUIRED BY FLORIDA BUILDING CODE. CONTRACTOR SHALL SUBMIT STRUCTURAL ENGINEERED SHOP DRAWINGS FOR ALL EQUIPMENT IF STRUCTURAL DESIGN IS NOT SHOWN ON THE PERMIT SET OF DOCUMENTS. THE SHOP DRAWINGS SHALL BE SUBMITTED WITH THE PERMIT AND SHALL BE SEALED BY A FLORIDA P.E. THE COST FOR ALL OF THE ABOVE SHALL BE INCLUDED IN THE CONTRACTOR'S BID.

43. PAINT ALL EXPOSED EQUIPMENT, NON-INSULATED PIPING AND DUCTWORK AS DIRECTED BY THE OWNER. CLEAN PRIME AND PAINT USING PPG ENAMEL.

44. ON ALL SCHEDULED EQUIPMENT WHOSE MODEL NUMBER IS INCONSISTENT WITH THE PERFORMANCE CHARACTERISTICS INDICATED AND/OR ANY PERCEIVED SPECIFICATION CONFLICTS, THE CONTRACTOR SHALL BASE HIS PRICE ON THE MORE EXPENSIVE SOLUTION. ANY SUCH DISCREPANCIES SUCH AS MANUFACTURER'S MODEL CHANGE SHALL BE RESOLVED PRIOR TO THE ORDERING OF ANY EQUIPMENT.

45. ALL EQUIPMENT SPECIFIED TO BE INSTALLED EXPOSED TO THE WEATHER SHALL BE MOUNTED TO WITHSTAND HURRICANE FORCE WINDS. STAND AND ATTACHMENT DETAILS SHOWN WITHIN THIS SET OF DRAWINGS ARE ONLY INTENDED TO DEFINE THE GENERAL CONSTRUCTION OF THEIR RESPECTIVE SUBJECT MATTER. REFER TO STRUCTURAL AND/OR ARCHITECTURAL DRAWINGS FOR MOUNTING EQUIPMENT. IT IS SECURED TO SUPPORTS AND STRUCTURE SUCH THAT THE EQUIPMENT WILL REMAIN IN PLACE IN THE PRESENCE OF HURRICANE FORCE WINDS, AND AS REQUIRED BY FLORIDA BUILDING CODE. IN THE ABSENCE OF SUCH STRUCTURAL AND/OR ARCHITECTURAL DETAILS, THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS, AND ANEAL BY A FLORIDA REGISTERED P.E. ALL COSTS FOR THESE INSTALLATIONS, INCLUDING ANY AND ALL MATERIALS, HARDWARE, SUPPLEMENTAL REINFORCEMENT, AND/OR ENGINEERING REQUIRED.

46. EQUIPMENT SCREENS AND/OR VISUAL BARRIERS FOR ALL EXTERIOR EQUIPMENT SHALL NOT IMPAIR THE RECOMMENDED SERVICE CLEARANCES BY THE EQUIPMENT MANUFACTURER.

47. THERE IS NO STATED OR IMPLIED COMPLIANCE WITH ASHRAE 62 OR FLORIDA MECHANICAL CODE (CHAPTER 4) OTHER THAN FROM A DESIGN STANDPOINT UNLESS "AS-BUILT" DRAWINGS AND TEST AND BALANCE DATA HAVE BEEN SUBMITTED TO AND PROCESS WITHOUT EXCEPTION BY THE ENGINEER OF RECORD PRIOR TO USE AND/OR A CERTIFICATE OF OCCUPANCY BEING ISSUED BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR PERFORMANCE AND INDOOR AIR QUALITY ASSOCIATED WITH NON- COMPLIANCE OF THIS ITEM IN SEQUENCE AND WITHIN THE TIME FRAME HEREIN DEFINED.

48. PROVISIONS SHALL BE INCLUDED FOR TEMPORARY SERVICES WHEN REQUIRED. NO SERVICE NORMALLY USED BY THE SITE SHALL BE SHUT-DOWN, INTERRUPTED OR DISCONTINUED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT AND BUILDING ADMINISTRATOR.

49. REFER TO CONTRACT DOCUMENTS CREATED BY SPECIALTY CONSULTANTS (SUCH AS LIGHTING, AND/OR INTERIOR DESIGN AS APPLICABLE) AND ASSOCIATED SHOP DRAWINGS TO CONFIRM REQUIREMENTS PRIOR TO ROUGH IN FOR QUANTITY, SIZES AND LOCATION AND CRITERIA FOR MATERIALS TO BE USED OF REQUIRED SERVICES AND COORDINATION WITH OTHER TRADES.

51. GUARANTEES:

A. ALL AHU'S OR NEW EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL HAVE A 5 YEAR MINIMUM PRODUCT GUARANTEE FROM DATE OF START-UP.

B. ALL FINISHES AND SURFACES TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ARCHITECT/OWNER/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

C. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE UNLESS OTHERWISE NOTED. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED BY CONTRACTOR WITHOUT ADDITIONAL CHARGE, AND SHALL INCLUDE

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A. CONTRACTOR SHALL FURNISH COMPLETE SET OF REPRODUCIBLE PLANS INCORPORATING ALL SUCH APPROVED CHANGES, DEVIATIONS, ETC. THAT OCCURRED DURING CONSTRUCTION. CONTRACTOR'S "AS-BUILT" DRAWINGS TO INCLUDE ALL MODIFICATIONS TO SHOP DRAWINGS, WIRING DIAGRAMS AS WELL AS PLANS.

B. ALL "AS-BUILT" DRAWINGS SHALL INCLUDE ALL SCHEDULED MATERIALS, EQUIPMENT AND FULL DATA INDICATED ON CONTRACT DOCUMENTS REVISED TO REFLECT ALL SUBSTITUTED ITEMS.

C. IF ENGINEER CERTIFIED AS-BUILT DRAWINGS ARE NOT REQUIRED BY, SUBMITTED TO AND ACCEPTED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR CODE COMPLIANCE AND/OR CONTRACTOR COMPLIANCE WITH THE INTENT OF THE PERMITTED CONTRACT DOCUMENTS.
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33. CONTROL NOTE: PASSIVE SMOKE CONTROL: IF ALL POWER IS OFF OR O/A AIR HANDLING UNIT OR FAN IS OFF FOR ANY REASON, ALL ASSOCIATED SMOKE DAMPERS SHALL CLOSE.

34. UNIT AND DUCT MOUNTED HEATERS SHALL BE U.L. LISTED AND LABELED. BRANCH FUSES FOR ALL ELEMENTS OVER 48 AMPS, AUTO RESET THERMAL CUT-OFF, HEAT LIMITERS, FUSED DISCONNECT, AIR FLOW PROVING DEVICE, CONTROL TRANSFORMER WHERE REQUIRED FOR CONTROL VOLTAGE.

35. AIR DISTRIBUTION, A/C EQUIPMENT, FANS, MANUFACTURER, MATERIALS, ETC. SHALL BE AS LISTED HEREIN, AS SCHEDULED ON THE DRAWINGS, OR A WRITTEN PRIOR TO BID APPROVED ALTERNATIVE AND A PRIOR TO INSTALLATION PROCESSED SHOP DRAWING. HVAC EQUIPMENT FURNISHED SHALL SATISFY THE MINIMUM EER, SEER, IPLV, HSPF, AFUE AND/OR COP AS LISTED IN THE FLORIDA ENERGY CODE. THE MINIMUM VALUES LISTED IN THE ENERGY CODE COMPLIANCE CALCULATIONS AND/OR THE VALUES SCHEDULED HEREIN WHICHEVER IS MORE RESTRICTIVE.

36. WHERE SPECIFIC PRODUCTS, MANUFACTURERS AND/OR MODEL NUMBERS ARE LISTED TO ESTABLISH QUALITY STANDARDS AND/OR SPACE LIMITATIONS, SUBSTITUTIONS OF EQUAL STATUS WITH APPROVAL FROM THE ENGINEER MAY BE CONSIDERED IF ACCEPTED IN WRITINGS/VIA PROCESSED SHOP DRAWINGS BY THE OWNER AND THE ENGINEER PRIOR TO INSTALLATION. THIS CONTRACTOR WILL ABSORB ALL COORDINATION EFFORTS AND ALL IMPACTS IMPOSED ON OTHER TRADES.

37. IF CONTRACTOR SUBMITS FOR "APPROVAL" ANY ITEM OTHER THAN WHAT IS USED AS A BASIS OF DESIGN, HE SHALL SUBMIT ALL NECESSARY DETAILED 1/4" SCALE DRAWINGS AND DETAILED PERFORMANCE COMPATIBLE IN ALL RESPECTS WITH THE SYSTEM DESIGN. IT WILL BE REJECTED IF NOT SATISFACTORILY SUBMITTED.

38. THE CONTRACTOR SHALL COMPLETELY FAMILIARIZE HIMSELF WITH ALL CONDITIONS. PRIOR TO COMMENCEMENT OF WORK, VERIFY MEASUREMENTS AT BUILDING SITE, NOTIFY ARCHITECT AND/OR ENGINEER OF ANY CHANGES REQUIRED DUE TO SUCH CONDITIONS BEFORE PROCEEDING WITH THE WORK. SUBMIT DISCREPANCIES, DIFFERENCES AND PROPOSED VARIATIONS TO CONTRACT DOCUMENTS FOR CONSIDERATION AND DECISION BEFORE PROCEEDING.

39. OBTAIN FULL INFORMATION REGARDING PECULIARITIES AND LIMITATIONS OF SPACE AVAILABLE FOR INSTALLATION OF THE EQUIPMENT AND MATERIALS UNDER CONTRACT, AND PROVIDE READY ACCESSIBILITY TO DAMPERS, VALVES, AND OTHER APPARATUS, INCLUDING ANY PART OF SYSTEM REQUIRED TO BE REACHED FOR MAINTENANCE AND OPERATIONS.

40. PROVIDE AN ACCURATE LAYOUT, GRADES, AND ELEVATIONS; SET SLEEVES AND OPENINGS IN AMPLE TIME; TAKE PROPER PRECAUTIONS TO PROTECT WORK AND EQUIPMENT FROM DAMAGE.

41. CUT ALL OPENINGS AND CHASES REQUIRED TO ACCOMMODATE THE WORK UNDER THIS DIVISION, AND REPAIR ALL FLOORS, WALLS, ETC. DAMAGED BY SUCH CUTTINGS. ALL WORK DONE UNDER THIS HEADING MUST CONFORM IN EVERY RESPECT TO FINISH AND QUALITY OF MATERIALS AND WORKMANSHIP SPECIFIED UNDER APPROPRIATE SECTIONS FOR THE BUILDING.

42. ALL EQUIPMENT SPECIFIED TO BE MOUNTED EXPOSED TO THE BUILDING EXTERIOR SHALL BE MOUNTED TO WITHSTAND HURRICANE WIND LOADS. REFER TO HVAC AND/OR STRUCTURAL AND/OR ARCHITECTURAL DETAILS FOR MOUNTING DETAILS INDICATING EQUIPMENT SECTIONS TO BE REMOVED FROM STRUCTURE SUCH THAT THE EQUIPMENT WILL REMAIN IN PLACE IN THE PRESENCE OF HURRICANE FORCE WINDS, AND AS REQUIRED BY FLORIDA BUILDING CODE. IN THE ABSENCE OF SUCH STRUCTURAL AND/OR ARCHITECTURAL DETAILS, THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS, AND ANEAL BY A FLORIDA REGISTERED P.E. ALL COSTS FOR THESE INSTALLATIONS, INCLUDING ANY AND ALL MATERIALS, HARDWARE, SUPPLEMENTAL REINFORCEMENT, AND/OR ENGINEERING REQUIRED.

46. EQUIPMENT SCREENS AND/OR VISUAL BARRIERS FOR ALL EXTERIOR EQUIPMENT SHALL NOT IMPAIR THE RECOMMENDED SERVICE CLEARANCES BY THE EQUIPMENT MANUFACTURER.

47. THERE IS NO STATED OR IMPLIED COMPLIANCE WITH ASHRAE 62 OR FLORIDA MECHANICAL CODE (CHAPTER 4) OTHER THAN FROM A DESIGN STANDPOINT UNLESS "AS-BUILT" DRAWINGS AND TEST AND BALANCE DATA HAVE BEEN SUBMITTED TO AND PROCESS WITHOUT EXCEPTION BY THE ENGINEER OF RECORD PRIOR TO USE AND/OR A CERTIFICATE OF OCCUPANCY BEING ISSUED BY THE AUTHORITY HAVING JURISDICTION. THE CONTRACTOR ASSUMES ALL RESPONSIBILITIES FOR PERFORMANCE AND INDOOR AIR QUALITY ASSOCIATED WITH NON- COMPLIANCE OF THIS ITEM IN SEQUENCE AND WITHIN THE TIME FRAME HEREIN DEFINED.

48. PROVISIONS SHALL BE INCLUDED FOR TEMPORARY SERVICES WHEN REQUIRED. NO SERVICE NORMALLY USED BY THE SITE SHALL BE SHUT-DOWN, INTERRUPTED OR DISCONTINUED WITHOUT PRIOR WRITTEN APPROVAL OF THE ARCHITECT AND BUILDING ADMINISTRATOR.

49. REFER TO CONTRACT DOCUMENTS CREATED BY SPECIALTY CONSULTANTS (SUCH AS LIGHTING, AND/OR INTERIOR DESIGN AS APPLICABLE) AND ASSOCIATED SHOP DRAWINGS TO CONFIRM REQUIREMENTS PRIOR TO ROUGH IN FOR QUANTITY, SIZES AND LOCATION AND CRITERIA FOR MATERIALS TO BE USED OF REQUIRED SERVICES AND COORDINATION WITH OTHER TRADES.

51. GUARANTEES:

A. ALL AHU'S OR NEW EQUIPMENT FURNISHED UNDER THIS CONTRACT SHALL HAVE A 5 YEAR MINIMUM PRODUCT GUARANTEE FROM DATE OF START-UP.

B. ALL FINISHES AND SURFACES TO REMAIN WHICH ARE DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ARCHITECT/OWNER/ENGINEER AT NO ADDITIONAL COST TO THE OWNER.

C. THE CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE UNLESS OTHERWISE NOTED. CORRECTION OF ANY DEFECTS SHALL BE COMPLETED BY CONTRACTOR WITHOUT ADDITIONAL CHARGE, AND SHALL INCLUDE

52. AS BUILT DRAWINGS:

A. CONTRACTOR SHALL FURNISH COMPLETE SET OF REPRODUCIBLE PLANS INCORPORATING ALL SUCH APPROVED CHANGES, DEVIATIONS, ETC. THAT OCCURRED DURING CONSTRUCTION. CONTRACTOR'S "AS-BUILT" DRAWINGS TO INCLUDE ALL MODIFICATIONS TO SHOP DRAWINGS, WIRING DIAGRAMS AS WELL AS PLANS.

B. ALL "AS-BUILT" DRAWINGS SHALL INCLUDE ALL SCHEDULED MATERIALS, EQUIPMENT AND FULL DATA INDICATED ON CONTRACT DOCUMENTS REVISED TO REFLECT ALL SUBSTITUTED ITEMS.

C. IF ENGINEER CERTIFIED AS-BUILT DRAWINGS ARE NOT REQUIRED BY, SUBMITTED TO AND ACCEPTED BY THE AUTHORITY HAVING JURISDICTION PRIOR TO ISSUANCE OF A CERTIFICATE OF OCCUPANCY, THE ENGINEER OF RECORD IS NOT RESPONSIBLE FOR CODE COMPLIANCE AND/OR CONTRACTOR COMPLIANCE WITH THE INTENT OF THE PERMITTED CONTRACT DOCUMENTS.

ELECTRICAL COORDINATION

- ALL 208/480 VOLT MECHANICAL EQUIPMENT ("DISCRETE UNITS" AND "PACKAGED SYSTEMS") SHALL BE PROVIDED COMPLETE WITH ELECTRICAL FEATURES AND COMPONENTS, ALL FULLY COMPATIBLE, INTEGRATED, AND (TO THE EXTENT POSSIBLE) PREWIRED TO MEET THE FOLLOWING CRITERIA:
- SINGLE POINT ELECTRICAL CONNECTION (UNLESS NOT AVAILABLE AS A STANDARD PRODUCT).
 - INCOMING POWER LOCKABLE DISCONNECT FUSED SWITCH COMPLETE WITH CURRENT LIMITING FUSES, OR LOCKABLE CIRCUIT BREAKER, UNO.
 - NEMA RATED COMBINATION STARTER(S), VARIABLE SPEED DRIVE(S), CONTROLLER(S), CONTROL TRANSFORMER(S), OVERLOAD ELEMENTS, AND CONTROLS.
 - NEMA ENCLOSURE(S), UNO, NEMA 1 INDOORS, NEMA 3R OUTDOORS.
 - ALL DEVICES AND FEATURES DESCRIBED HEREIN MAY BE FURNISHED IN AN APPROVED COMMON ENCLOSURE, WHERE APPROPRIATE.
 - ALL ELECTRICAL EQUIPMENT SHALL MEET THE SHORT CIRCUIT CURRENT RATING (INTERRUPTING CAPACITY) AND WITHSTAND RATING AS LISTED IN THE TABLE BELOW:

UNIT INCOMING CIRCUIT BREAKER OR FUSED SWITCH REQUIREMENTS

NOMINAL VOLTAGE	MAX. NOMINAL CURRENT RATING	MAX. HP/KVA RATING	MIN. SCCR RATING MIN. WITHSTAND RATING
480V, 3 phase	20 Amp	10kAIC	10kA
480V, 3 phase	60 Amp	40 HP/ 40 KVA	25kAIC
480V, 3 phase	600 Amp	400 HP/ 400 KVA	65kAIC
480V, 3 phase	above 600 Amp	above 400 HP/ 400 KVA	100kAIC
208V, 1 phase	30 Amp	5 HP/ 5 KVA	10kA
208V, 3 phase	60 Amp	20 HP/ 20 KVA	25kAIC

AIR DISTRIBUTION LEGEND

SYMBOL	ABBR	DESCRIPTION
	----	EXISTING DUCT
	----	DUCT TO BE DEMOLISHED
	----	RECTANGULAR DUCT SIZE IN INCHES FIRST SIZE LISTED IS SIDE SHOWN
	----	ROUND DUCT SIZE IN INCHES
	----	DUCT OFFSET (DOWN) IN DIRECTION OF ARROW (NOT TYPICALLY SHOWN)
	----	DUCT OFFSET (UP) IN DIRECTION OF ARROW (NOT TYPICALLY SHOWN)
	----	SUPPLY AIR DUCT SECTION TURNED UP OR TOWARDS
	----	SUPPLY AIR DUCT SECTION TURNED DOWN OR AWAY
	----	RETURN AIR DUCT SECTION TURNED UP OR TOWARDS
	----	RETURN AIR DUCT SECTION TURNED DOWN OR AWAY
	----	EXHAUST AIR DUCT SECTION TURNED UP OR TOWARDS
	----	EXHAUST AIR DUCT SECTION TURNED DOWN OR AWAY
	----	ROUND DUCT SECTION TURNED UP OR TOWARDS
	----	ROUND DUCT SECTION TURNED DOWN OR AWAY
	----	DUCT SECTIONS UP THROUGH SLAB OR ROOF
	----	DUCT SECTIONS DOWN THROUGH SLAB OR ROOF
	----	PIPE SECTION UP THROUGH SLAB OR ROOF
	----	END OF DUCT WITH CAP (UNLESS NOTED OTHERWISE)
	----	FLEXIBLE DUCT
	AD	DUCT ACCESS DOOR
	----	CONCENTRIC DUCT TRANSITION
	----	ECCENTRIC DUCT TRANSITION
	----	SQUARE TO ROUND TRANSITION
	MVD	MANUAL VOLUME DAMPER
	BDD	BACKDRAFT DAMPER
	----	TWO POSITION PARALLEL BLADE DAMPER WITH ACTUATOR
	MD	MODULATING OPPOSED BLADE DAMPER WITH ACTUATOR
	FD	FIRE DAMPER W/ACCESS DOOR IN DUCT
	FSD	FIRE/SMOKE DAMPER WITH ACCESS DOOR IN DUCT
	SMD	SMOKE DAMPER WITH ACCESS DOOR IN DUCT
	LLT	LOW LIMIT THERMOSTAT
	----	INDICATES SUPPLY AIR FLOW DIRECTION
	----	INDICATES RETURN OR EXHAUST AIR FLOW DIRECTION
	----	UNDERCUT
	----	THERMOSTAT
	----	CEILING SUPPLY DIFFUSER. REFER TO DIFFUSER AND GRILLE SCHEDULE FOR ADDITIONAL INFORMATION
	----	LINEAR SLOT DIFFUSER. REFER TO DIFFUSER AND GRILLE SCHEDULE FOR ADDITIONAL INFORMATION
	----	CEILING GRILLE (RETURN OR TRANSFER) REFER TO DIFFUSER AND GRILLE SCHEDULE FOR ADDITIONAL INFORMATION
	----	CEILING EXHAUST GRILLE. REFER TO DIFFUSER AND GRILLE SCHEDULE FOR ADDITIONAL INFORMATION
	---	GRILLE, REGISTER OR OPEN DUCT (SUPPLY SHOWN)
	----	FLEXIBLE DUCT CONNECTION

PIPING LEGEND

SYMBOL	ABBR	DESCRIPTION
		THIN LINEWORK INDICATES EXISTING PIPING OR EQUIPMENT
		HATCHING INDICATES PIPING OR EQUIPMENT TO BE REMOVED
	CD	CONDENSATE DRAIN - INDIRECT
	CTWS	COOLING TOWER WATER SUPPLY
	CTWR	COOLING TOWER WATER RETURN
	CHWS	CHILLED WATER SUPPLY
	CHWR	CHILLED WATER RETURN
	HHWS	HEATING HOT WATER SUPPLY
	HHWR	HEATING HOT WATER RETURN
		PIPE WITH ARROW INDICATING FLOW DIRECTION
		PIPE CONTINUATION
		PIPE END CAP
		PIPE TURNING DOWN OR AWAY
		PIPE TURNING UP OR TOWARD
		PIPE TURNING DOWN OR AWAY
		CONCENTRIC REDUCER (NOT TYPICALLY SHOWN)
		ECCENTRIC REDUCER (NOT TYPICALLY SHOWN)
		PIPE ANCHOR
		ALIGNMENT GUIDE
		UNION
		FLANGES
		PUMP (DIAGRAM)
		FLEXIBLE CONNECTOR
		INDICATES ASSEMBLY OF PIPING COMPONENTS (AS NOTED OR DIAGRAMMED)
		SHUTOFF VALVE (AS SPECIFIED FOR PIPING SYSTEM)
	BV	BALL VALVE
	CKV	CHECK VALVE
	BFV	BUTTERFLY VALVE
	BAL VA	BALANCING VALVE
	BSV	COMBINATION BALANCING/SHUTOFF VALVE
	ACV	MODULATING CONTROL VALVE W/ ACTUATOR
	ACV	3-WAY MODULATING CONTROL VALVE W/ACTUATOR
	PRV	PRESSURE REDUCING VALVE
	RV	RELIEF VALVE
	FMS	FLOW MEASUREMENT STATION
	STR	Y-TYPE STRAINER
	NV	NEEDLE VALVE
	SHC VA	SQUARE HEAD COCK VALVE
	PV	PLUG VALVE
	GLV	GLOBE VALVE
	OSY VA	OUTSIDE SCREW AND YOKE VALVE
	EXP VA	EXPANSION VALVE
	SOL VA	SOLENOID VALVE (TWO-POSITION W/ ACTUATOR)
	PICV	PRESSURE INDEPENDENT CONTROL VALVE
	AFCV	AUTOMATIC FLOW CONTROL VALVE
		THREADED DRAIN PLUG
		MALE (GARDEN) HOSE CONNECTION WITH CAP
	TP	TEST PLUG
	FLSW	FLOW SWITCH
	PR SW	PRESSURE SWITCH
	TH	THERMOMETER
	B STR	BASKET STRAINER
	PG	PRESSURE GAUGE
	AAV	AUTOMATIC AIR VENT
	MAV	MANUAL AIR VENT
	WM	WATER METER
		MAGNETIC DIFFERENTIAL PRESSURE GAUGE

F

CIRCULATION FAN SCHEDULE

TAG	MANUFACTURER	MODEL	AIRFOIL DIAMETER (INCHES)	CAGE DIAMETER (INCHES)	# OF AIRFOILS	WEIGHT (LBS)	SOUND LEVEL (DBA)	MOTOR (WATTS)	RPM	CONTROL	VOLT/PH	FULL LOAD CURRENT	CIRCUIT SIZE (AMPS)	NOTES
CF-1	BIG ASS FANS	AIREYE	36.5	43.2	3	67	72.0	711	950 MAX	VARIABLE SPEED	100-125V/1	9.7	15	1-6
CF-2	BIG ASS FANS	AIREYE	36.5	43.2	3	67	72.0	711	950 MAX	VARIABLE SPEED	100-125V/1	9.7	15	1-6
CF-3	BIG ASS FANS	AIREYE	36.5	43.2	3	67	72.0	711	950 MAX	VARIABLE SPEED	100-125V/1	9.7	15	1-6
CF-4	BIG ASS FANS	AIREYE	36.5	43.2	3	67	72.0	711	950 MAX	VARIABLE SPEED	100-125V/1	9.7	15	1-6
NOTES: 1. PROVIDE WITH MANUFACTURER'S SWIVEL-TYPE WALL MOUNT. 2. FAN(S) TO BE INSTALLED TO MEET ALL BAF FAN CLEARANCE GUIDELINES 3. FACTORY WARRANTY EQUAL TO 5 YEARS FOR THE MAIN FAN UNIT. 4. FAN SHALL BE CAPABLE OF CONTINUOUS OPERATION IN -4F - 131F AMBIENT CONDITIONS 5. FAN INCLUDES OSHA APPROVED BLADE CAGE. 6. GROUP CONTROL OF UP TO (8) FANS FROM SINGLE CONTROLLER VIA BAFCON PLATFORM														

E

COOLING/HEATING LOAD SUMMARY

PROJECT NAME	FPL COLUMBIA 2-BAY FLEET GARAGE					
PROJECT ADDRESS	LAKE CITY, FLORIDA					
ZONE I.D.	-	-	-	-	-	REMARKS
GROSS A/C FLOOR AREA	SQ. FT.	602	-	-	-	
OUTSIDE AIR	*FDB*/FWB	94.6 / 77.7	-	-	-	
INDOOR RELATIVE HUMIDITY-SUMMER	%	50	-	-	-	
INDOOR DESIGN	*FDB SUMMER/	75	-	-	-	
DIFFERENCE IN GRAINS WATER/LB. DRY AIR		66	-	-	-	
GRAND TOTAL HEAT GAIN (COOLING)	MBH	18.9	-	-	-	
TOTAL SENSIBLE HEAT GAIN (COOLING)	MBH	16.4	-	-	-	
TOTAL LATENT HEAT GAIN (COOLING)	MBH	2.5	-	-	-	
GRAND TOTAL HEAT LOSS (HEATING)	MBH	12.6	-	-	-	
NOTES: ① THIS DATA COMPLIES WITH THE REQUIREMENTS OF THE FLORIDA BUILDING CODE 2020 (7TH EDITION), "ENERGY CONSERVATION" CODE REQUIREMENTS. ② SIZING METHOD (I.E. LOAD CALCULATIONS) CONSISTENT WITH SECTION C403 CALCULATION PROCEDURES OF THE FLORIDA BUILDING CODE 2020 (7TH EDITION), "ENERGY CONSERVATION" AND THE ASHRAE HANDBOOK OF FUNDAMENTALS. ③ EQUIPMENT SELECTED TO SATISFY CALCULATED LOADS IS CONSISTENT WITH REQUIREMENTS OF THE FLORIDA BUILDING CODE 2020 (7TH EDITION), "ENERGY CONSERVATION" CODE REQUIREMENTS. ④ HEAT LOSS (HEATING) AND HEAT GAIN (COOLING) CALCULATIONS INCLUDE CONCURRENT OUTSIDE AIR LOADS. HEAT LOSS VALUE EXCLUDES INTERNAL HEAT GAIN CREDITS. ⑤ VALUE LISTED IS DIFFERENCE BETWEEN VALUE AT PEAK SPACE/ZONE/BLOCK LOAD INDOOR CONDITIONS AND CONCURRENT OUTDOOR CONDITIONS. ⑥ IT IS RECOGNIZED THAT THE SPACE/ZONE/BLOCK LOAD PEAK MAY NOT BE CURRENT WITH SOLAR DESIGN PEAK/EXTERIOR DESIGN CONDITIONS LISTED IN THE ASHRAE HANDBOOK OF FUNDAMENTALS VALUES LISTED HEREIN REFLECT OUTSIDE CONDITIONS EXISTING CONCURRENT TO SPACE/ZONE/BLOCK LOAD PEAK.						

C

VENTILATION COMPLIANCE SCHEDULE - FMC TABLE 403.3

UNIT NO.	AREA SERVED	NET. SQ. FT.	NO. PEOPLE	OUTSIDE AIR CFM / PERSON + CFM / SQ.FT.	VENTILATION REQUIRED	TOTAL OUTSIDE AIR/UNIT (CFM) REQUIRED/ PROVIDED	REMARKS
AHU-01	OFFICE	172	1	5 + 11	16 ③		
	STORAGE	26	-	0 + 4	4 ④		
	IT ROOM	27	-	0 + 4	4 ⑤		
	COMMON	126	6	30 + 15	45 ⑥	69	80 ① ②
	RESTROOM	58	-	-	(70) ⑦		
EF-01	LOCKERS	37	1	-	(10) ⑧		
	JAN. CLOSET	28	-	-	(28) ⑨		
EF-01	REPAIR GARAGE	3,526	-	0.75 CFM EXH PER SQ.FT.	(2,645) ⑩	2,645	2,750 ① ②
EF-02	OIL STOR.	295	-	1.5 CFM EXH PER SQ.FT.	(443) ⑪	443	500 ① ②
EF-03	PARTS RM.	295	-	0.75 CFM EXH PER SQ.FT.	(222) ⑩	222	250 ① ②
NOTES: ① OUTDOOR AIR PROVISIONS FOR VENTILATION SATISFY VENTILATION RATE PROCEDURE REQUIREMENTS FOR MINIMUMS FOR ACCEPTABLE INDOOR AIR QUALITY AS REQUIRED BY THE FLORIDA MECHANICAL CODE 2020, 7TH EDITION. IF INSTALLED CONSISTENT WITH THE PERMITTED CONTRACT DOCUMENTS, THERE IS NO STATED OR IMPLIED COMPLIANCE WITH THIS STANDARD OTHER THAN FROM A DESIGN STANDPOINT UNLESS "AS-BUILT" DRAWINGS AND TEST & BALANCE DATA HAVE BEEN SUBMITTED TO AND PROCESSED WITHOUT EXCEPTION BY THE ENGINEER OF RECORD PRIOR TO USE AND/OR A CERTIFICATE OF OCCUPANCY BEING ISSUED. ② CONTINGENT UPON PROPER MAINTENANCE, OUTSIDE AIR CO2 CONCENTRATION LESS THAN 400 PPM, NO INTERNAL SPACE USE MODIFICATIONS AND/OR INTRODUCTION OF ANY SINGLE SOURCE POLLUTANT/CONTAMINANTS. ③ OFFICE: 5 PEOPLE/1,000 SQ.FT. - 5 CFM/PERSON + 0.06 CFM PER SQ.FT. ④ STORAGE ROOMS (UNOCCUPIED): 0.12 CFM PER SQ.FT. ⑤ IT ROOM (UNOCCUPIED): 0.12 CFM PER SQ.FT. ⑥ BREAK ROOM: 50 PEOPLE/1,000 SQ.FT. - 5 CFM/PERSON + 0.12 CFM PER SQ.FT. ⑦ RESTROOMS: 50 / 70 CFM EXHAUST PER FIXTURE (CONTINUOUS / INTERMITTENT) ⑧ LOCKER ROOM: 0.25 CFM EXHAUST PER SQ.FT. ⑨ JANITOR'S CLOSET: 1.0 CFM EXHAUST PER SQ.FT. ⑩ AUTOMOTIVE REPAIR / AUTO REPAIR STORAGE: 0.75 CFM PER SQ.FT							

A

VENTILATION FAN SCHEDULE

UNIT NUMBER	EF-01	EF-02	EF-03	EF-04	EF-05
AREA SERVED	SERVICE BAY VENTILATION	LUBE ROOM VENTILATION	PARTS ROOM VENTILATION	BATHROOM EXHAUST	J. CLOSET EXHAUST
LOCATION	2 BAY FLEET GARAGE	LUBE STOR. COMP. ROOM	PARTS ROOM	SEE PLAN	SEE PLAN
DUTY	EXHAUST	EXHAUST	EXHAUST	EXHAUST	EXHAUST
FAN TYPE	PROPELLER	PROPELLER	PROPELLER	CABINET	CABINET
DRIVE	BELT/DIRECT	BELT	DIRECT	DIRECT	DIRECT
FAN SPEED	RPM ⑤	⑤	⑤	⑤	⑤
AIR QUANTITY	CFM 3,500 MIN. 8,750 MAX.	350 MIN. 1,000 MAX.	350 MIN. 1,000 MAX.	70	50
TOTAL STATIC PRESSURE ⑦	"H ₂ O 0.5 ⑤	0.5 ⑤	0.5 ⑤	0.5" ⑤	0.5" ⑤
SONES	29	14.3	14.3	0.7	0.7
FAN MOTOR	HP 1-1/2 HP	1/2 HP	1/2 HP	0.2 AMPS	0.2 AMPS
ELECTRICAL CHARACTERISTICS	V/ØHZ 208/3Ø0 ③	208/1Ø0 ③	208/1Ø0 ③	120/1Ø0 ③	120/1Ø0 ③
MANUFACTURER	GREENHECK	GREENHECK	GREENHECK	GREENHECK	GREENHECK
MODEL NUMBER	S8CE-3H30-15	AER-20-VG	AER-20-VG	SP-A50-90-VG	SP-A50-90-VG
WEIGHT	LBS 314	170	170	12	12
OPENING REQUIRED	INCHES x INCHES ⑫	⑫	⑫	N/A	N/A
REMARKS	① THRU ③ ⑬ ⑭ ⑮	① THRU ④ ⑬ ⑭ ⑮	① THRU ④ ⑬ ⑭ ⑮	④ ⑤ ⑥ ⑧ ⑮	④ ⑤ ⑥ ⑧ ⑮
NOTES: ① AMCA CERTIFIED SOUND AND AIR PERFORMANCE, U.L. LISTED AND LABELED. ② WITH M.A.L. STARTER & DISCONNECT SUPPLIED & INSTALLED BY ELEC. CONTRACTOR COORDINATED BY MECH. CONTRACTOR. ③ VERIFY ELECTRICAL SERVICE PRIOR TO ORDERING FAN. TYPICAL. ④ SHUT DOWN UPON SIGNAL FROM FIRE ALARM. PASSIVE SMOKE CONTROL. ⑤ BALANCE AGAINST ACTUAL SYSTEM RESISTANCE TO PRODUCE AIRFLOW SHOWN. ⑥ VARI-GREEN MOTOR. ⑦ ADJUSTABLE UP TO STATIC PRESSURE SHOWN. ⑧ WITH BACK-DRAFT DAMPER. ⑨ CENTRIFUGAL CEILING CABINET EXHAUST FAN - ZINC-ALUMINUM-MAGNESIUM CONSTRUCTION WITH DUAL-ACCESS J-BOX, ECM MOTOR, AND INTEGRAL SPEED CONTROL, MARK AND LOCK DOWN AT BALANCED POSITION. ⑩ CONTROL VIA OCCUPANCY SENSOR SWITCH WITH OPTIONAL TIME DELAY SHUTDOWN OR LIGHT SWITCH. ⑪ BELT-DRIVEN GALVANIZED STEEL PANEL SIDEWALL EXHAUST FAN WITH ALUMINUM AIRFOIL BLADE PROPELLER, ADJUSTABLE MOTOR PULLEY, STATIC RESISTANT GRIP-NOTCH BELTS, AUTOMATIC BELT TENSIONER, MOTOR WITH THERMAL OVERLOAD PROTECTION, OSHA WALL HOUSING, EXTENDED LUBE LINES, AND DISCONNECT SWITCH. PROVIDE VFD FOR SPEED CONTROL. ⑫ FAN SHALL BE MOUNTED BEHIND LOUVER. REFER TO WALL MOUNTED PROPELLER FAN DETAILS. ⑬ DIRECT DRIVE GALV. STEEL PANEL SIDEWALL EXHAUST FAN CAST ALUMINUM PROPELLER, VARI-GREEN MOTOR WITH 0-10V INPUT FOR SPEED CONTROL, OSHA WALL HOUSING, MOUNTED & WIRED J-BOX, DISCONNECT SWITCH, & HI-PRO POLYESTER COATING. ⑭ SUPPORT WALL HOUSING FROM STRUCTURE ABOVE (ADD UNISTRUT 304 STAINLESS STEEL ATTACHED TO JOISTS), WITH GALVANIZED ALL THREAD RODS AS REQUIRED. ⑮ CONTROLLED BY BMS BY OCCUPANCY SCHEDULE.					

VEHICLE EXHAUST FAN SCHEDULE

UNIT NUMBER	EF-06				
QUANTITY	1				
AREA SERVED	VEHICLE EXH. EXTRACTION 2 BAY FLEET GARAGE				
LOCATION	2 BAY FLEET GARAGE				
DUTY	EXHAUST				
FAN TYPE	STRUCTURE HUNG				
DRIVE	BELT/DIRECT	BELT UTILITY SET			
FAN SPEED	RPM 1,750				
AIR QUANTITY	CFM 2,850				
TOTAL STATIC PRESSURE	"H ₂ O 3.0				
SONES	-				
FAN MOTOR	HP 2 HP				
ELECTRICAL CHARACTERISTICS	V/ØHZ 208/1Ø0				
MANUFACTURER	HARVEY IND.				
MODEL NUMBER	BD-13				
WEIGHT	LBS 200				
OPENING REQUIRED	INCHES x INCHES	N/A			

AIR DISTRIBUTION PRODUCTS SCHEDULE

TAG	TYPE	BASIS OF DESIGN	MODEL	AIR FLOW	INLET SIZE	FACE SIZE	NOTES
S1	CEILING MOUNTED SUPPLY	TITUS	OMNI	0 TO 100 CFM 0 TO 100 CFM 101 TO 240 CFM	6" 6" 8"	12x12 24x24 24x24	1,2,3,4,7
S2	WALL MOUNTED SUPPLY	TITUS	272 FS	0 TO 150 CFM 151 TO 250 CFM 251 TO 350 CFM	6x6 10x6 14x6	8x8 12x8 16x8	4,7
S3	CEILING MOUNTED SUPPLY	TITUS	250-AA	0 TO 150 CFM 151 TO 250 CFM	6x6 8x8	12x8 10x10	1,3,4,5,6,7
R1	CEILING MOUNTED RETURN	TITUS	350 F 45° DEFLECTION	0 TO 600 CFM 0 TO 2000 CFM	12x12 22x22	14x14 24x24	1,2,4,6,7
E1	CEILING MOUNTED EXHAUST	TITUS	350 FL	0 TO 400 CFM	NA	12x12	1,4,7
E2	WALL MOUNTED EXHAUST	TITUS	350 FL	0 TO 400 CFM 401 TO 700 CFM	NA	12x10 14x14	4,7
NOTES: 1. DIFFUSER GRILLE FRAME TYPE AND FINISH SHALL BE COORDINATED WITH REFLECTED CEILING PLAN AND FINISH SCHEDULE. 2. PROVIDE LAY-IN PANEL FOR DEVICES IN LAY-IN CEILING WITH FACE SMALLER THAN 24x24. PANEL MAY BE TRIMMED TO FIT AVAILABLE GRID SPACE. 3. PROVIDE 4-WAY THROW DIFFUSERS UNLESS SHOWN OTHERWISE. 4. COORDINATE FINISH FOR ALL DIFFUSERS WITH ARCHITECT. 5. PROVIDE GRILLE WITH 45° ANGLE FOR SIGHTPROOF. 6. NC SHALL BE 30 OR LOWER. 7. PROVIDE WITH OPPOSED BLADE DAMPER.							

UNIT HEATER SCHEDULE

MARK	LOCATION	HEATER TYPE	ELECTRICAL KW	VOLT/PH	AMPS	WEIGHT	BASIS OF DESIGN
UH-1	GARAGE 100	WALL	10	208 / 3	-	67	MODINE HER100C 3101
UH-2	GARAGE 100	WALL	10	208 / 3	-	67	MODINE HER100C 3101
UH-3	GARAGE 100	WALL	10	208 / 3	-	67	MODINE HER100C 3101
UH-4	GARAGE 100	WALL	10	208 / 3	-	67	MODINE HER100C 3101
NOTES: 1. PROVIDE WITH DISCONNECT SWITCH, WALL MOUNTING BRACKET (REFER TO ARCHITECTURAL DRAWINGS FOR WALL BLOCKING OR REINFORCEMENT REQUIRED), LOW VOLTAGE CONTROL KIT, LOW VOLTAGE THERMOSTAT, AND SUMMER-WINTER SWITCH. 2. INSTALL IN ACCORDANCE WITH ALL MANUFACTURER RECOMMENDATION & CLEARANCE REQUIREMENTS. 3. COORDINATE VOLTAGE PRIOR TO ORDERING. 4. SHALL MEET THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE AND BE LISTED BY UNDERWRITERS LABORATORIES.							

DX-SPLIT AIR CONDITIONING EQUIPMENT SCHEDULE

ID / TAG	UNIT NUMBER	AHU-01	AHU-02 ⑬			
AREA SERVED	FLEET GARAGE	IDF ROOM				
TOTAL SUPPLY AIR	CFM	650	375 ⑭			
OUTSIDE AIR	CFM	80	-			
EXTERNAL STATIC PRESSURE ⑦	"H ₂ O	1.0	N/A			
FAN MOTOR	FLA / HP / BHP	4.58 / 0.53 / 0.425	0.76 / - / -			
ELEC. CHARACTERISTICS	V/Ø/Hz	208 / 1 / 60	⑮			
CHARACTERISTICS	FACE VELOCITY / ROWS / FPF	390 / 4 / -	-			
TOTAL COOLING	MBH	22.29	12.2			
SENSIBLE COOLING	MBH	18.92	8.9			
ENTERING AIR TEMP.	*F DB / *F WB	79.90 / 63.70	80 / 67			
LEAVING AIR TEMP.	*F DB / *F WB	53.34 / 51.85	-			
HEAT PUMP HEATING CAPACITY	MBH	N/A	N/A			
HEATING ENTERING AIR	*F DB	N/A	N/A			
ELEC. HEAT CAP.	KW / STEPS	5.0 / 2	-			
ELEC. CHAR.	V/Ø/Hz	208/1Ø0 ⑯	-			
HEATER TOTAL CAPCITY	MBH	17.08	-			
HEATER ENTERING / LEAVING AIR	*F	65.0 / 89.3	-			
UNIT MANUFACTURER		TRANE	MITSUBISHI			
MODEL NUMBER		BCVE024 ⑰	PKA-AL-12NL			
WEIGHT	LBS.	215	28			
FILTER	THICKNESS / MERV	2" / 8	-			
ELECTRICAL SOURCE	V/Ø/Hz	208 / 1 / 60	208 / 1 / 60			
MCA / MOCP	AMPS	35.77 / 40 ⑰	⑮			
UNIT NUMBER		CU-01	CU-02 ⑰			
STAGES OF COOLING		INVERTER	INVERTER			
LOCATION		GRADE	GRADE			
AMBIENT TEMP.	*F	95	95			
REFRIGERANT	R	R-454B	R-454B			
ELEC. CHARACTERISTICS	V/Ø/Hz	208/230 - 1 - 60	208/1Ø0			
CONDENSER FANS	QTY / HP / FLA	1 / 0.333 / 1.5	1 / - / 0.71			
COMPRESSORS	QTY / FLA / LRA	1 / - / -	1 / - / -			
MCA / RECOMMENDED CKT PROTECTION (MAX)		18.0 / 20 (30)	16 / 27			
MANUFACTURER		TRANE	MITSUBISHI			
MODEL NUMBER		5TRT024A	PUY-AK12NL			
WEIGHT	LBS.	194	99			
SYSTEM SEER2 / EER2		17 / -	21.1 / 14.8			
REMARKS		① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑	① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱ ⑲ ⑳ ㉑			
NOTES: ① PROVIDE 5 YEAR PARTS AND LABOR WARRANTY ON ALL COMPRESSORS, 1 YR PARTS & LABOR ON ALL OTHER PARTS. ② PROVIDE 5 MINUTE TIME DELAY ON CONDENSING UNITS COMPONENTS. ③ PROVIDE COMPLETE CONTROL SYSTEM ON-OFF-AUTO, HVAC CONTRACTOR PROVIDING AND INSTALLING ALL CONTROLS, CONDUIT, AND WIRING, ETC. ④ PROVIDE STARTERS, RELAYS, TRANSFORMERS, ETC. AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. ⑤ INSTALL BOTTOM-RETURN VERTICAL BLOWER COIL ON STAND THROUGH VIBRATION ISOLATION. WHERE REQUIRED, FURNISH WITH FILTER RACK (SERVICEABLE WITHOUT THE USE OF TOOLS). PROVIDE ONE SET OF FILTERS IN UNIT AND TWO SPARE SETS OF FILTERS FOR OWNER STOCK. UNIT SHALL INCLUDE CONDENSATE OVERFLOW SAFETY SWITCH. SEE VERTICAL UNIT INSTALLATION DETAIL. ⑥ SPLIT SYSTEMS - SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. SIZE LINES AS REQUIRED TO COMPENSATE FOR LINE LOSS WITH MINIMUM CAPACITY REDUCTION. INSTALL REFRIGERANT PIPING ACCESSORIES (SIGHT GLASS, FILTER DRYER, SERVICE VALVES, EXPANSION VALVE, SOLENOID VALVE, ETC.). ⑦ INCLUDES AIR DISTRIBUTION SYSTEM ONLY. BALANCE AS REQUIRED TO DELIVER AIR QUANTITY INDICATED. ⑧ MOUNT CONDENSING UNIT ON ISOMODE VIBRATION PADS, ANCHOR UNIT STAND OR SUPPORT AS REQUIRED. SEE SUPPORT DETAIL. ⑨ WITH MAL STARTER WITH AUXILIARY CONTACTS, AND CONTROLS (SEE CONTROL DRAWING). ⑩ UNIT WITH FACTORY HEAT SINGLE POINT OF CONNECTION ELECTRICAL. ⑪ TRANE DX CONDENSING UNIT WITH INVERTER COMPRESSOR. ⑫ ENTIRE CONDENSING UNIT (CASING, COIL, ETC.) WITH FACTORY OR "BLYGOLD" CORROSION COATING, OR APPROVED EQUAL. ⑬ AIR HANDLING UNIT COIL WITH FACTORY CORROSION COATING. ⑭ WITH MANUFACTURER'S OPTIONAL MINI CONDENSATE PUMP 5GPH AND CONDENSATE OVERFLOW SWITCH WIRED TO UNIT SEE MANUFACTURER'S INSTALLATION INSTRUCTIONS. ⑮ WITH ALERTON VARIABLE SPEED COOLING 2-STAGE HEAT CONTROLLER, SEE CONTROLS. ⑯ INDOOR UNIT IS POWERED FROM OUTDOOR UNIT. ⑰ VARIABLE SPEED FAN. AIRFLOW LISTED AT MAXIMUM SPEED. ⑱ PROVIDE COMPLETE BACNET CAPABLE SYSTEMS TO BE INTERFACED WITH OWNER'S ALERTON BMS. THIS INCLUDES TRANE/PROCON MINI-SPLIT BACNET INTERFACE MODULE NO. PAC-UKPRO01-0N-1. CONTROL SYSTEM CONTRACTOR SHALL PROVIDE AND INSTALL CONTROLS, CONDUIT, WIRING, ETC. STARTERS, RELAYS, TRANSFORMERS, ETC. AS REQUIRED FOR A COMPLETE OPERATING SYSTEM. ⑲ SPLIT SYSTEMS - SIZE REFRIGERANT PIPING PER MANUFACTURER'S RECOMMENDATIONS. SIZE LINES AS REQUIRED TO COMPENSATE FOR LINE LOSS WITH MINIMUM CAPACITY REDUCTION. INSTALL REFRIGERANT PIPING ACCESSORIES (SIGHT GLASS, FILTER DRYER, SERVICE VALVES, EXPANSION VALVE, SOLENOID VALVE, ETC.). ⑳ UNIT SHALL INCLUDE UV-C EMITTER DEVICE - MANUFACTURED BY STERIL-AIRE - AT RETURN AIR COIL. DEVICE SHALL BE SIZED TO FIT UNIT COIL, INCLUDE MULTI-VOLTAGE (110-277V) RAPID INSTALL KIT, AND BE INSTALLED ACCORDING TO MANUFACTURER'S INSTRUCTIONS. SYSTEM WIRED WITH ALL CONTROLS, POWER INDICATOR LIGHTS AND SAFETY DOOR SWITCH, AS REQUIRED. PROVIDE ALARM CONTACT TO BMS IF SYSTEM HAS FAILED. ㉑ AIR COOLED HEAT PUMP WITH MODULAR CABINET WITH INVERTER TWIN-ROTARY COMPRESSOR, DIRECT DRIVE VARIABLE SPEED HORIZONTAL DISCHARGE FAN, FACTORY STANDARD COIL GUARDS, INTEGRATED INVERTER TECHNOLOGY TO DELIVER MAXIMUM EFFICIENCY DURING PART LOAD CONDITIONS AND PROVIDE PRECISE INDIVIDUAL ZONE CONTROL. FACTORY CORROSION RESISTANCE 1000HR SALT SPRAY TESTED. ②② WITH HARD WIRED MITSUBISHI PROGRAMMABLE THERMOSTAT.						

LOUVER SCHEDULE

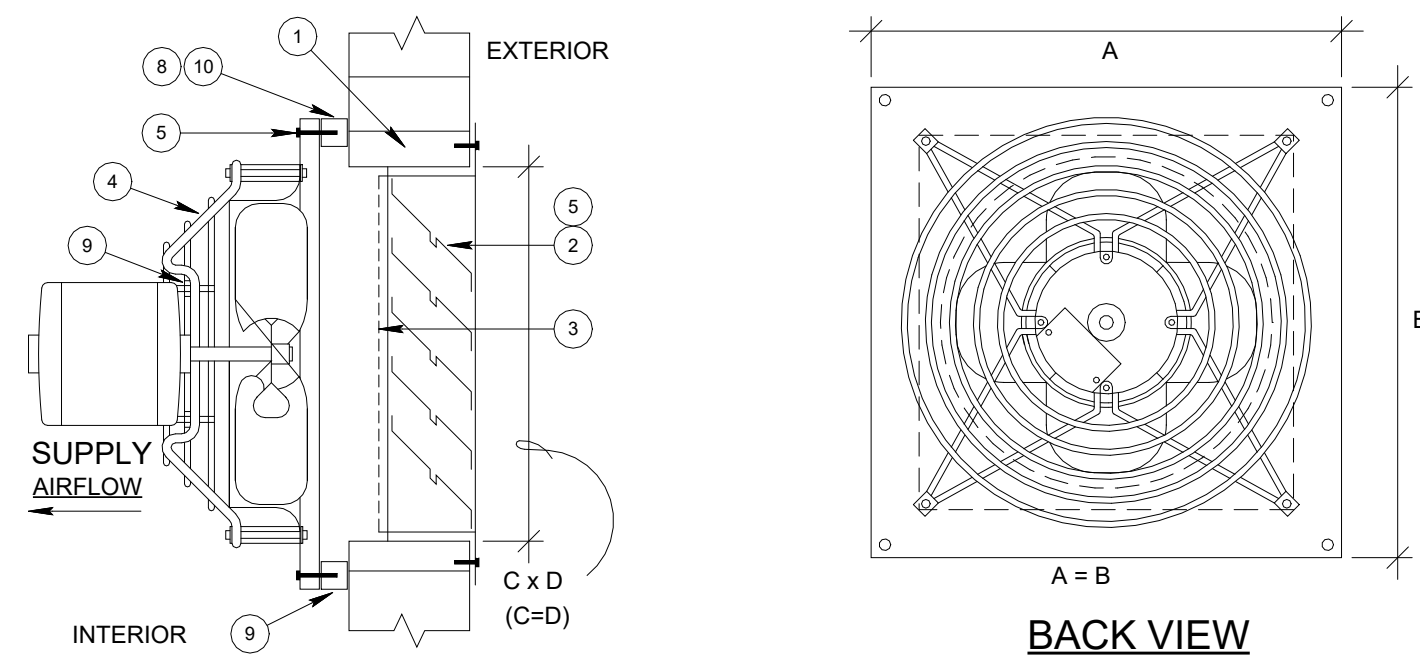
TAG	SIZE	BASIS OF DESIGN	MAX. FPM	MAX. S.P IN. W.G.	FREE AREA	NOTES
LV-1212	12"x12"	GREENHECK EVH-660D	500	0.05"	45.5%	1,2,3
LV-3636	36"x36"	GREENHECK EVH-660D	500	0.05"	45.5%	1,2,3,4
NOTES: 1. PROVIDE LOUVER WITH ST. ST. OR ALUMINUM FACTORY BIRDSCREEN. 2. PROVIDE MIAMI-DADE NOA WITH LOUVER SUBMITTAL. NOA NO. 22-0707.08 (EXPIRES 10/4/2027) AMCA 540/550 TESTED. 3. PROVIDE WITH CLEAR ANODIZED FINISH. 4. PROVIDE GRAVITY DAMPER ON INTAKE LOUVERS WITHOUT MOTORIZED DAMPER, SET TO 0.04" W.G.						



SEAL

NO.	REASON	DATE

F



SIDE VIEW

BACK VIEW

DETAIL NOTES:

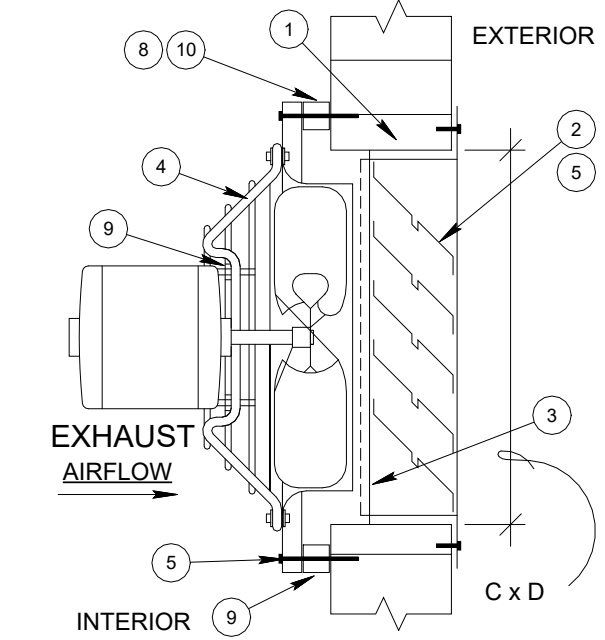
- FOR FRAMED OPENING DETAILS, REFER TO ARCHITECTURAL DRAWINGS.
- 6" EXTRUDED ALUMINUM, DRAINABLE BLADE/GUTTERS WITH INTEGRAL FLANGE FLUSH/SURFACE MOUNTING FRAME WITH ADDITIONAL FEATURES/ACCESSORIES AS INDICATED. ASSEMBLY TO GREENHECK EVH-660D WIND-DRIVEN RAIN LOUVER. FINISH/ COLOR AS SELECTED BY ARCHITECT. COORDINATE LOUVER SIZE (C X D) WITH FAN HOUSING SIZE (A X B) ASSEMBLY AND MOUNTING REQUIREMENTS.
- PROVIDE LOUVER ACCESSORY BIRD SCREEN AND/OR REAR SECURITY BARS AS INDICATED IN LOUVER SPECIFICATION/ AIR DISTRIBUTION SCHEDULE.
- INTEGRAL WITH FAN HOUSING. OSHA APPROVED MOTOR SIDE GUARD.
- LOUVER FURNISHED TO HAVE PRODUCT APPROVAL WHERE REQUIRED.
- INSTALL AS RECOMMENDED BY MANUFACTURER.
- PROVIDE ACCESSORIES AND CONTROLS AS INDICATED IN FAN SCHEDULE.

- INSTALLATION/SUPPORT/MOUNTING DETAIL. MAY VARY FROM MANUFACTURER TO MANUFACTURER.
- FULL PERIMETER SPACER FRAME AS REQUIRED FOR FAN HOUSING CLEARANCE FROM LOUVER ASSEMBLY AND ADDITIONAL ACCESSORIES WHERE INDICATED SUCH AS ACCESSIBLE BACK DRAFT DAMPERS, MOTORIZED DAMPERS, FIRE DAMPERS WITH ACCESS DOORS, ETC.
- MOTOR/SHAFT/BLADE VIBRATION ISOLATION MOUNTING.
- MODIFY MOUNTING, AS REQUIRED, WITH SHEET METAL PLENUM MIN. 8" DEEP WHEN FAN PANEL IS SMALLER THAN LOUVER SIZE LISTED ON AIR DISTRIBUTION SCHEDULE.

WALL MOUNTED PROPELLER
SUPPLY/EXHAUST FAN DETAIL

N.T.S.

E



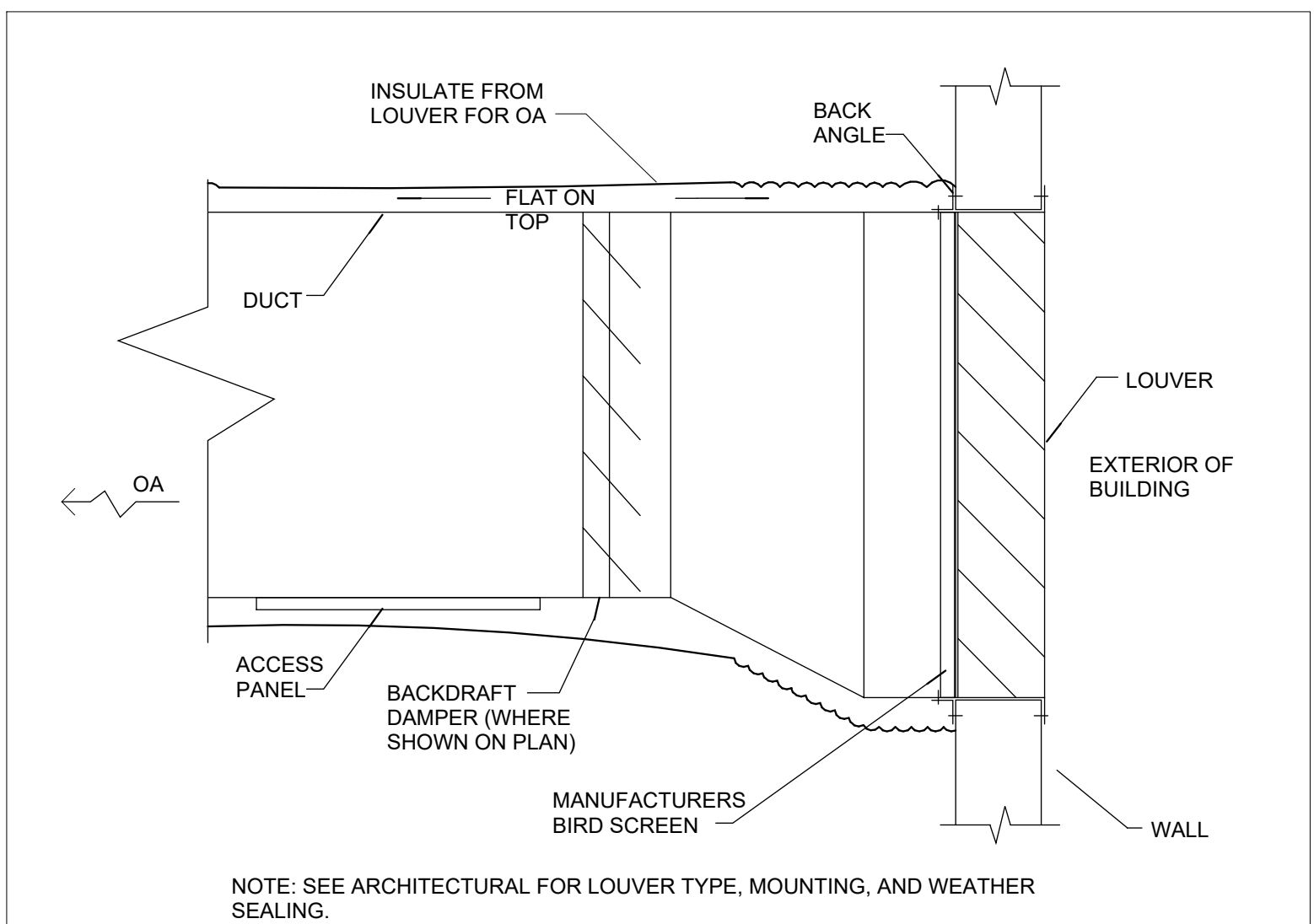
SIDE VIEW

- INSTALLATION/SUPPORT/MOUNTING DETAIL. MAY VARY FROM MANUFACTURER TO MANUFACTURER.
- FULL PERIMETER SPACER FRAME AS REQUIRED FOR FAN HOUSING CLEARANCE FROM LOUVER ASSEMBLY AND ADDITIONAL ACCESSORIES WHERE INDICATED SUCH AS ACCESSIBLE BACK DRAFT DAMPERS, MOTORIZED DAMPERS, FIRE DAMPERS WITH ACCESS DOORS, ETC.
- MOTOR/SHAFT/BLADE VIBRATION ISOLATION MOUNTING.
- MODIFY MOUNTING, AS REQUIRED, WITH SHEET METAL PLENUM MIN. 8" DEEP WHEN FAN PANEL IS SMALLER THAN LOUVER SIZE LISTED ON AIR DISTRIBUTION SCHEDULE.

WALL MOUNTED PROPELLER
SUPPLY/EXHAUST FAN DETAIL

N.T.S.

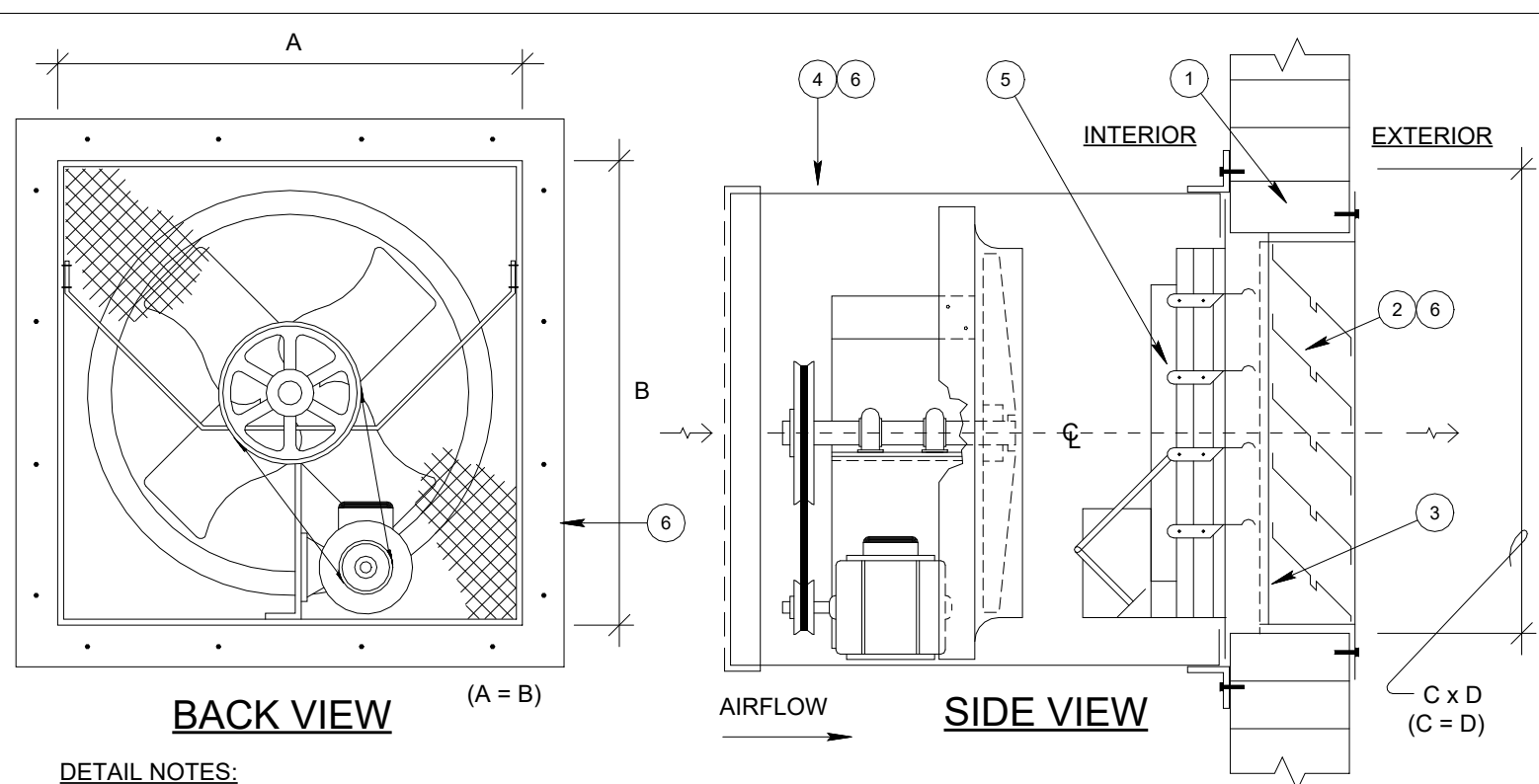
D



EXTERIOR LOUVER / DUCT CONNECTION DETAIL

N.T.S.

C



BACK VIEW

SIDE VIEW

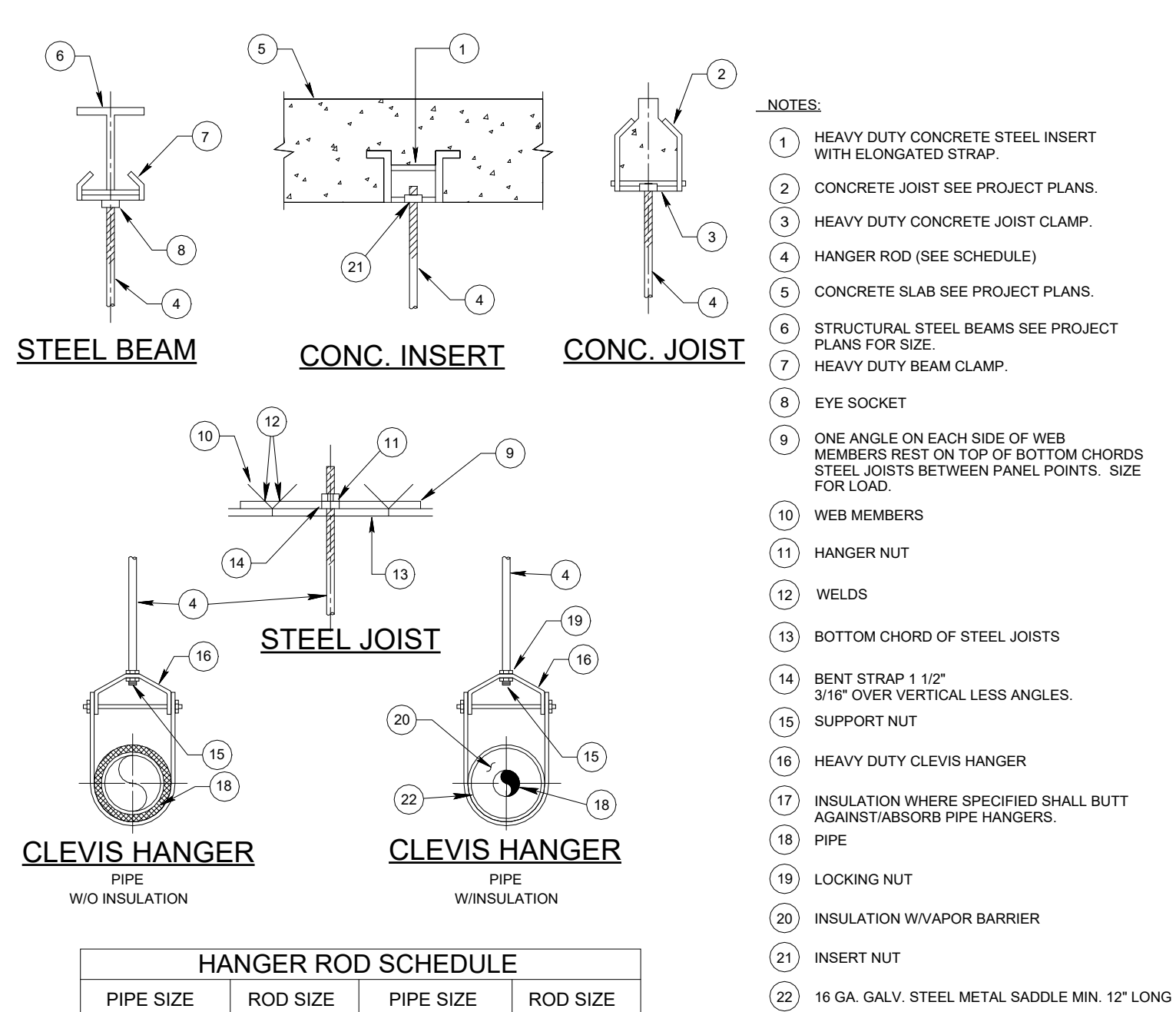
DETAIL NOTES:

- FOR FRAMED OPENING DETAILS, REFER TO ARCHITECTURAL DRAWINGS.
- 6" EXTRUDED ALUMINUM, DRAINABLE BLADE/GUTTERS WITH INTEGRAL FLANGE FLUSH/SURFACE MOUNTING FRAME WITH ADDITIONAL FEATURES/ACCESSORIES AS INDICATED. ASSEMBLY TO GREENHECK EVH-660D WIND-DRIVEN RAIN LOUVER. FINISH/ COLOR AS SELECTED BY ARCHITECT. MODIFY MOUNTING AS REQUIRED BY FAN HOUSING SIZE (A X B) COMPATIBILITY WITH LOUVER SIZE (C X D) INDICATED. LOUVER FURNISHED TO HAVE PRODUCT APPROVAL WHERE REQUIRED.
- PROVIDE LOUVER ACCESSORY BIRD SCREEN AND/OR REAR SECURITY BARS AS INDICATED IN LOUVER SPECIFICATIONS/AIR DISTRIBUTION SCHEDULE AND/OR AS DIRECTED BY ARCHITECTURAL DRAWINGS.
- FAN MANUFACTURER FACTORY ACCESSORY WALL HOUSING WITH PERIMETER MOUNTING ANGLE & GUARD ASSEMBLY WITH REMOVABLE FOR SERVICING. OSHA APPROVED, EXPANDED METAL, MOTOR SIDE GUARD. FINISH TO BE GALVANIZED STEEL OR THERMAL BONDED FACTORY FINISHED PAINTED STEEL. WALL HOUSING TO BE EXTENDED AS REQUIRED TO ACCOMMODATE ADDITIONAL FAN UPSTREAM OR DOWN-STREAM ACCESSORIES WHERE SUCH ARE INDICATED. PROVIDE ADDITIONAL SUPPORT AS REQ'D.
- PROVIDE ACCESSIBLE GRAVITY BACKDRAFT DAMPERS, FIRE DAMPERS WITH ACCESS DOORS AND/OR MOTORIZED DAMPERS AND OTHER ACCESSORIES AND CONTROLS AS INDICATED.
- INSTALL AS RECOMMENDED BY MANUFACTURER.
- ADJUSTABLE PITCH BELT DRIVE FAN WITH LOCAL DISCONNECT SHOWN. DIRECT DRIVE SIMILAR.
- INSTALLATION/SUPPORT/MOUNTING DETAIL MAY VARY FROM MANUFACTURER TO MANUFACTURER.
- EXHAUST FAN SHOWN, SUPPLY FAN (W/ REVERSE VENTURI) SIMILAR WHEN SUPPLY IS INDICATED.

WALL MOUNTED PROPELLER
SUPPLY/EXHAUST FAN DETAIL

N.T.S.

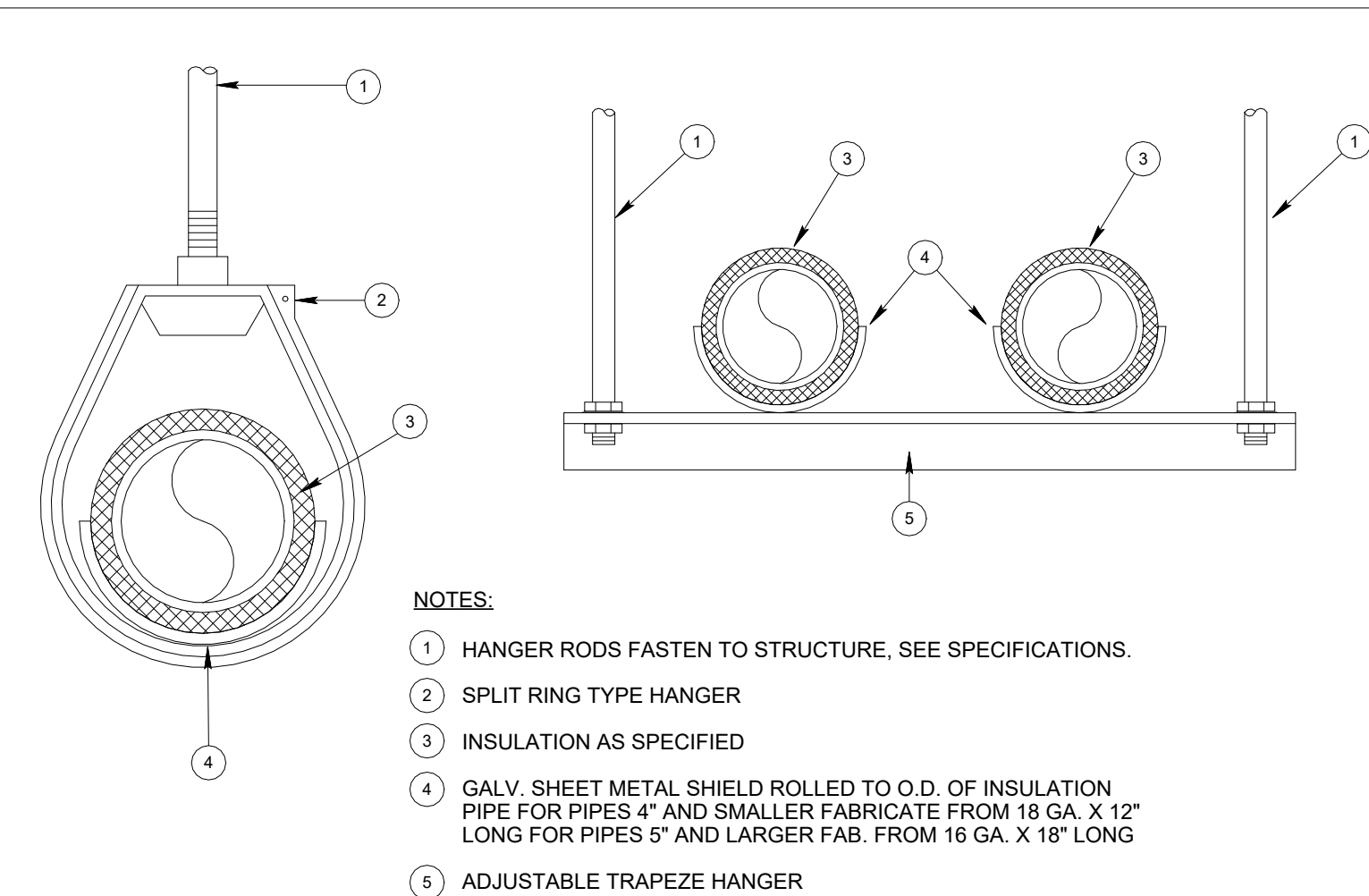
A



HANGER ROD SCHEDULE			
PIPE SIZE	ROD SIZE	PIPE SIZE	ROD SIZE
UP TO 2"	0.375"Ø	4" THRU 6"	0.625"Ø
2.5" TO 3"	0.5"Ø	6" THRU 12"	0.875"Ø

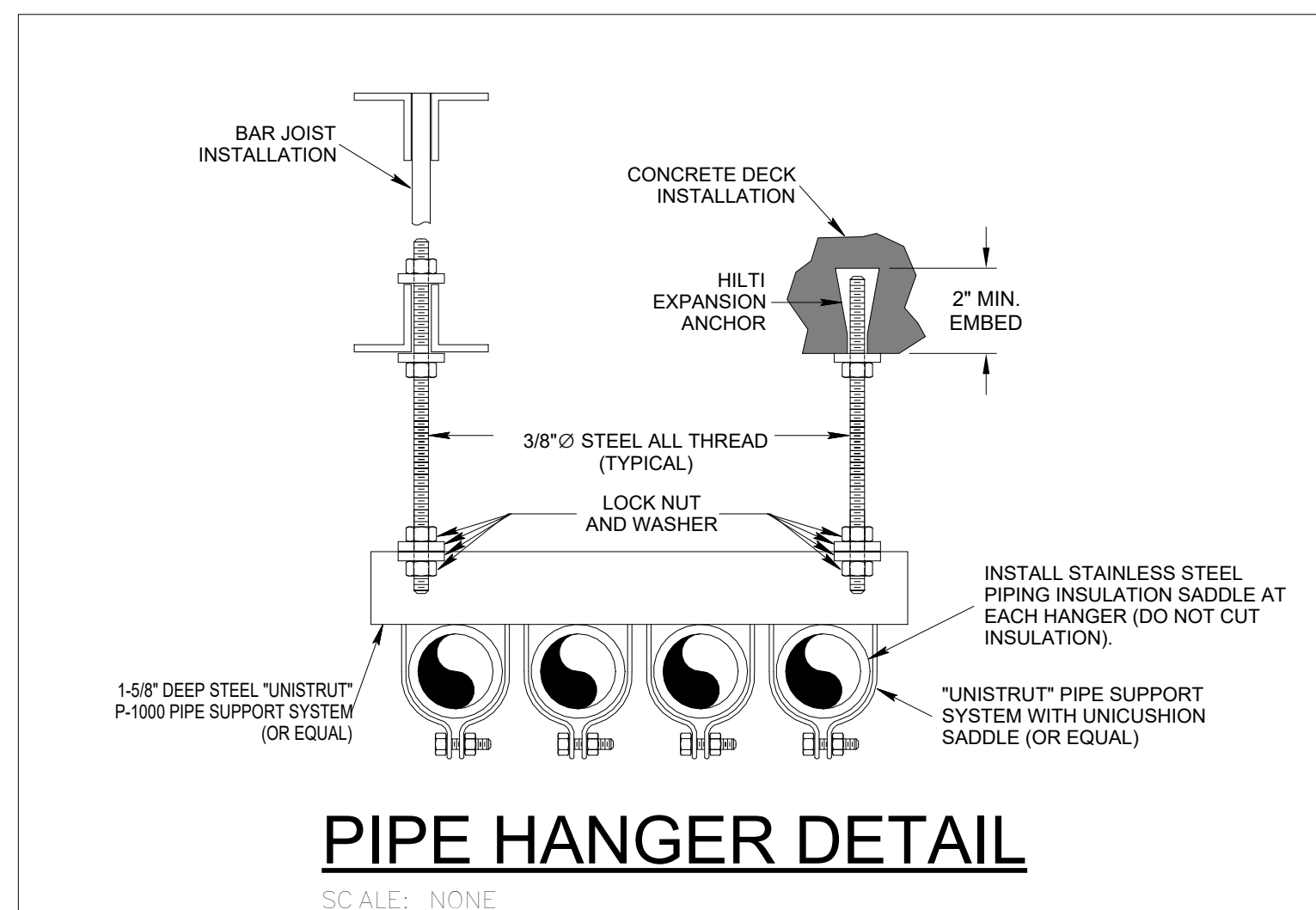
PIPE SUPPORT DETAIL

N.T.S.



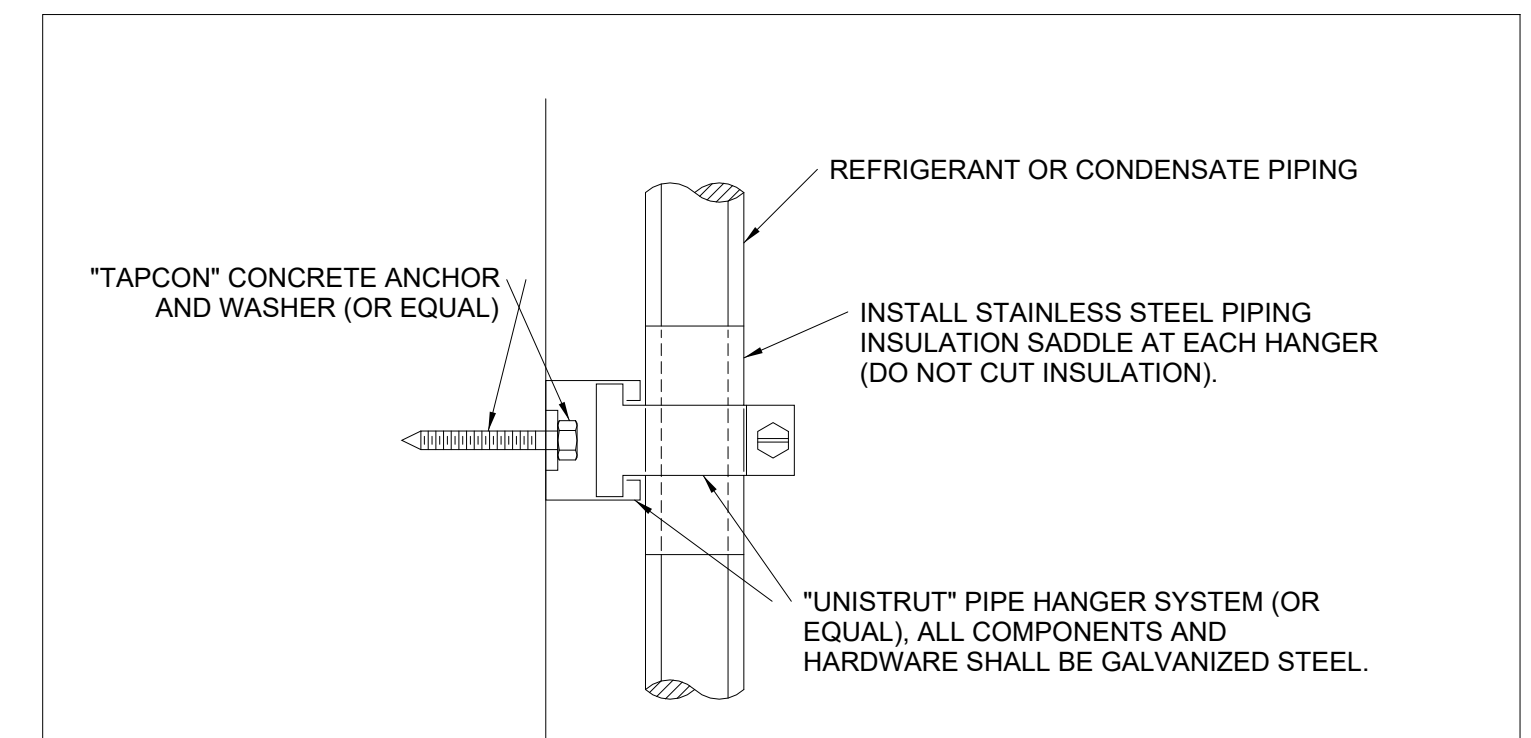
TYPICAL TRAPEZE PIPE SUPPORT

N.T.S.



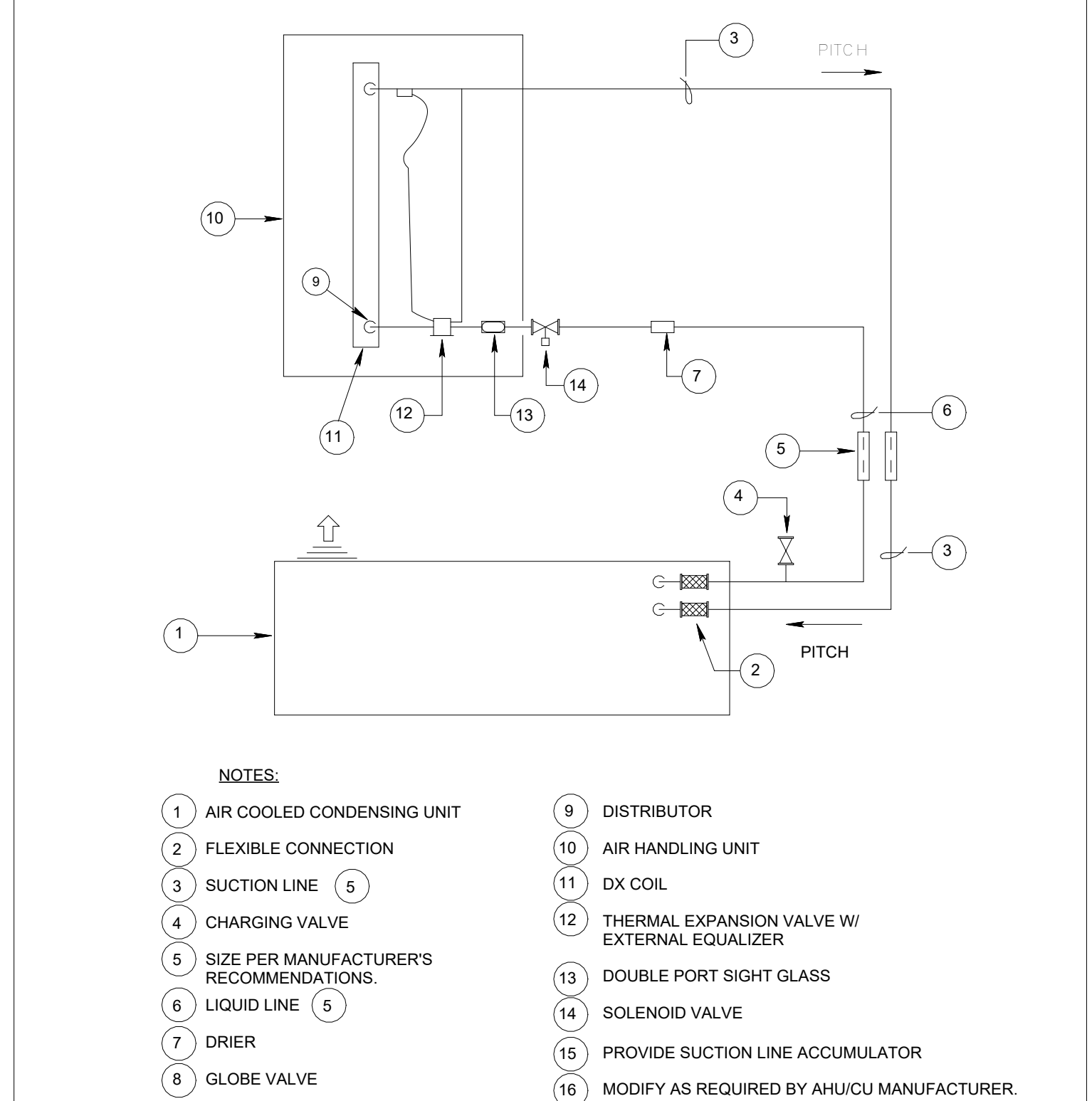
PIPE HANGER DETAIL

SCALE: NONE



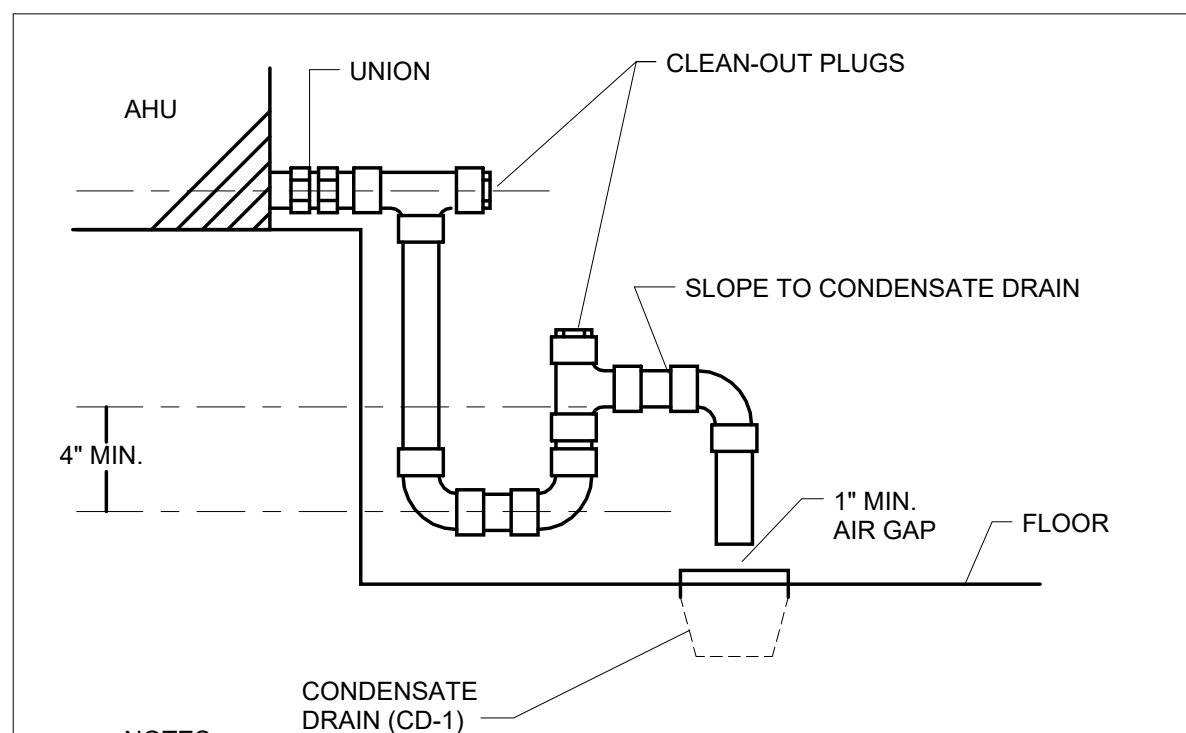
PIPE VERTICAL SUPPORT DETAIL

SCALE: NONE



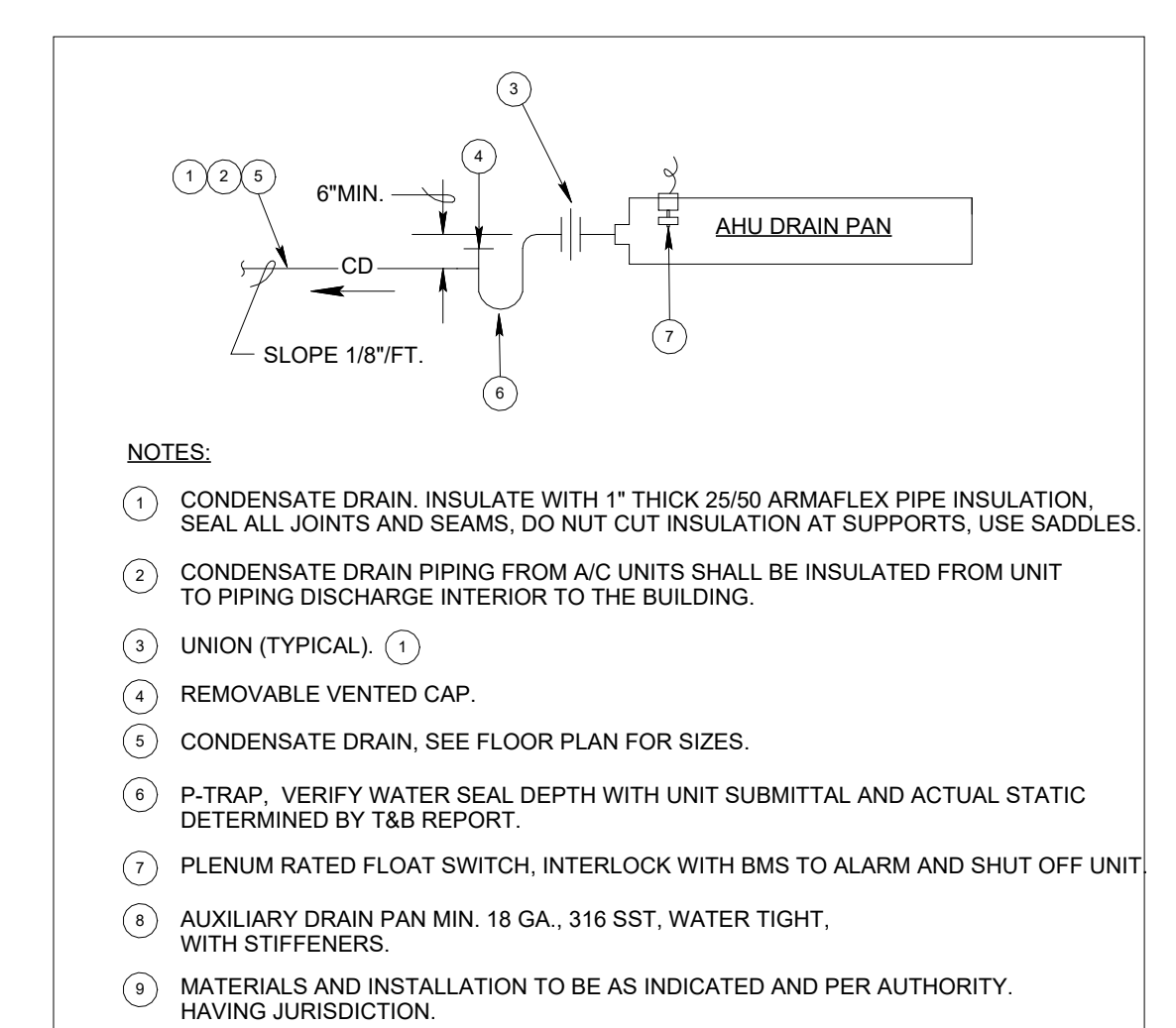
TYPICAL REFRIGERANT PIPING DIAGRAM

N.T.S.



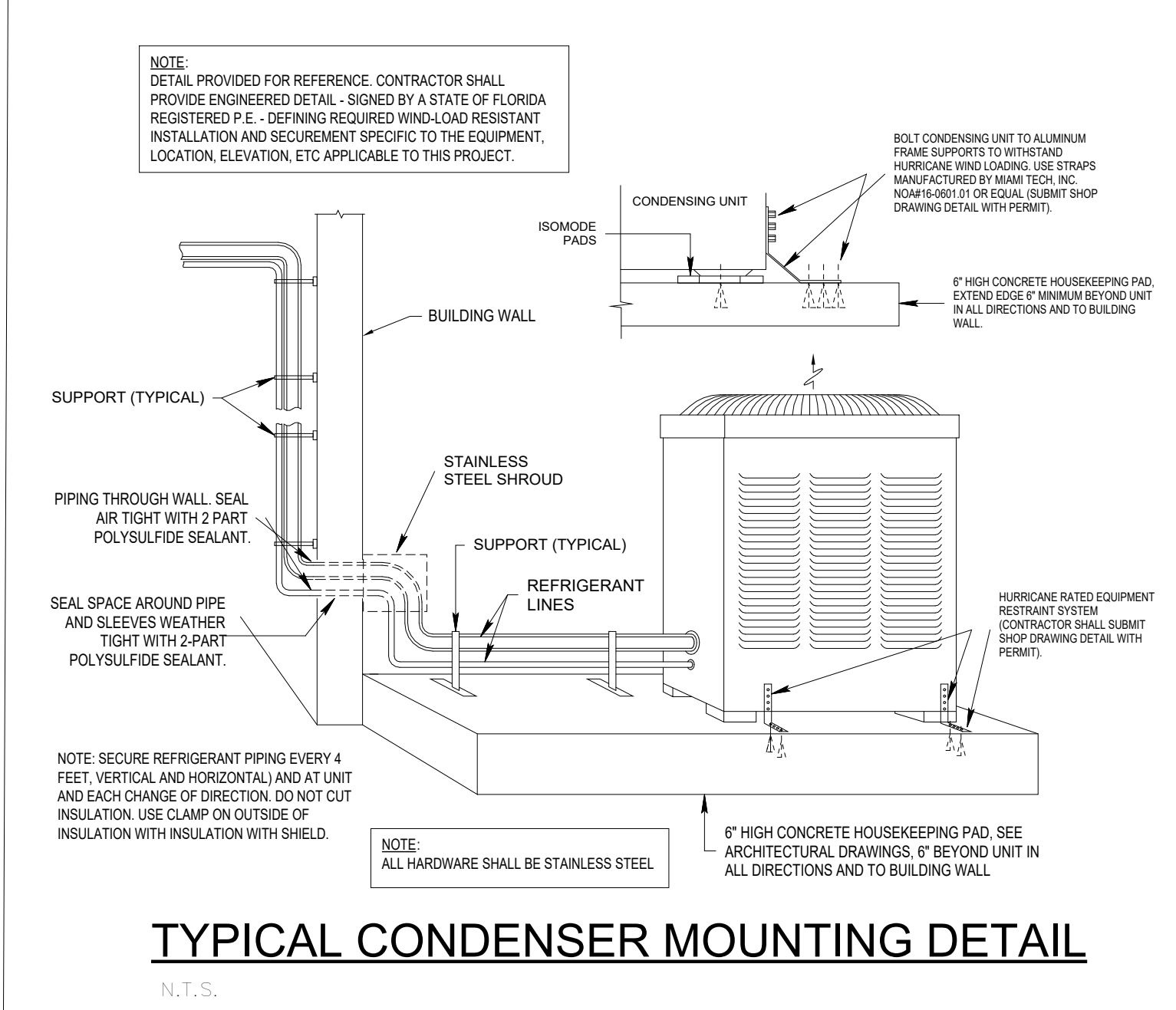
CONDENSATE DRAIN DETAIL

N.T.S.



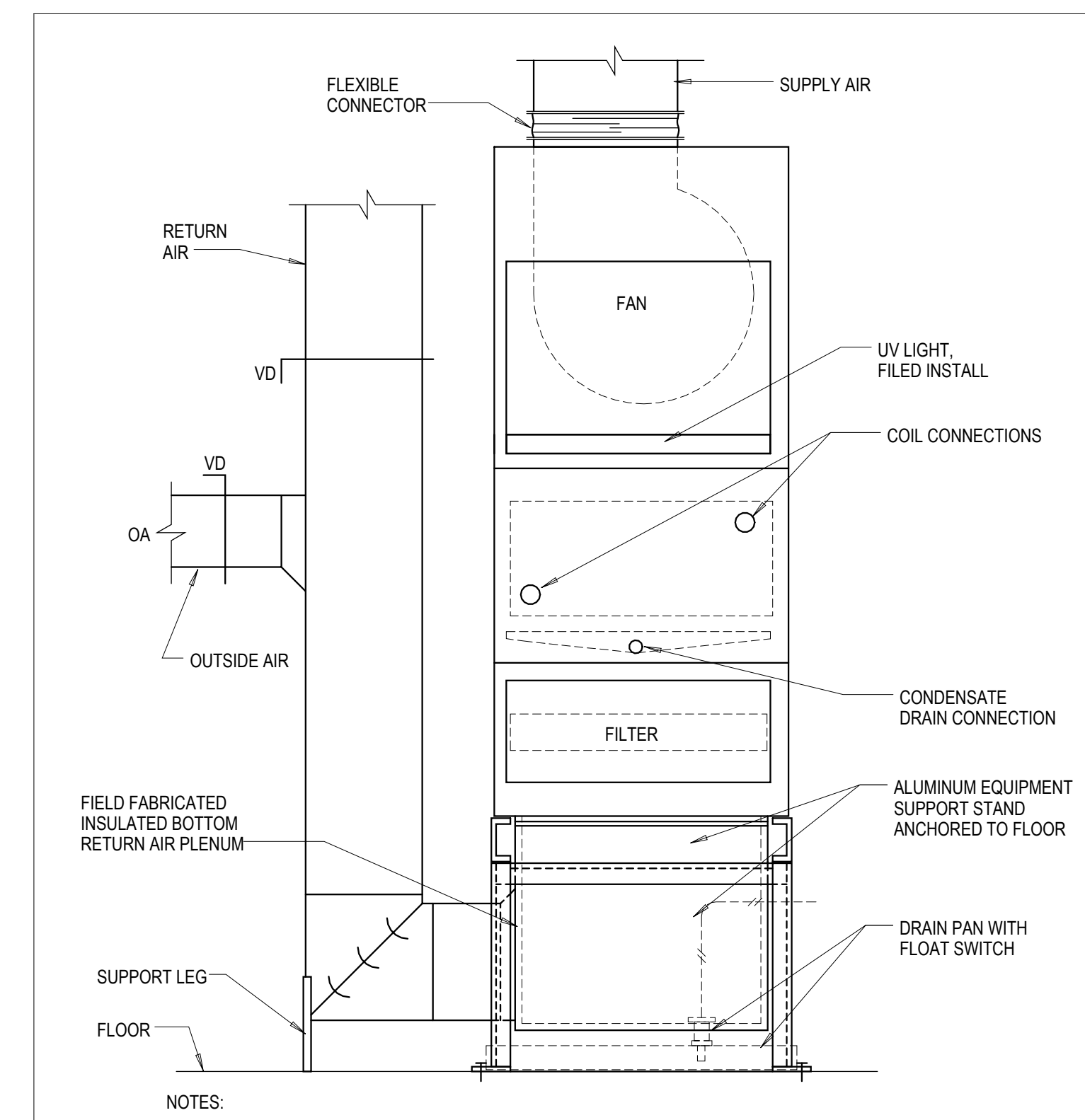
AHU DRAIN PAN &
CONDENSATE TRAP DETAIL

N.T.S. (ALL UNITS)



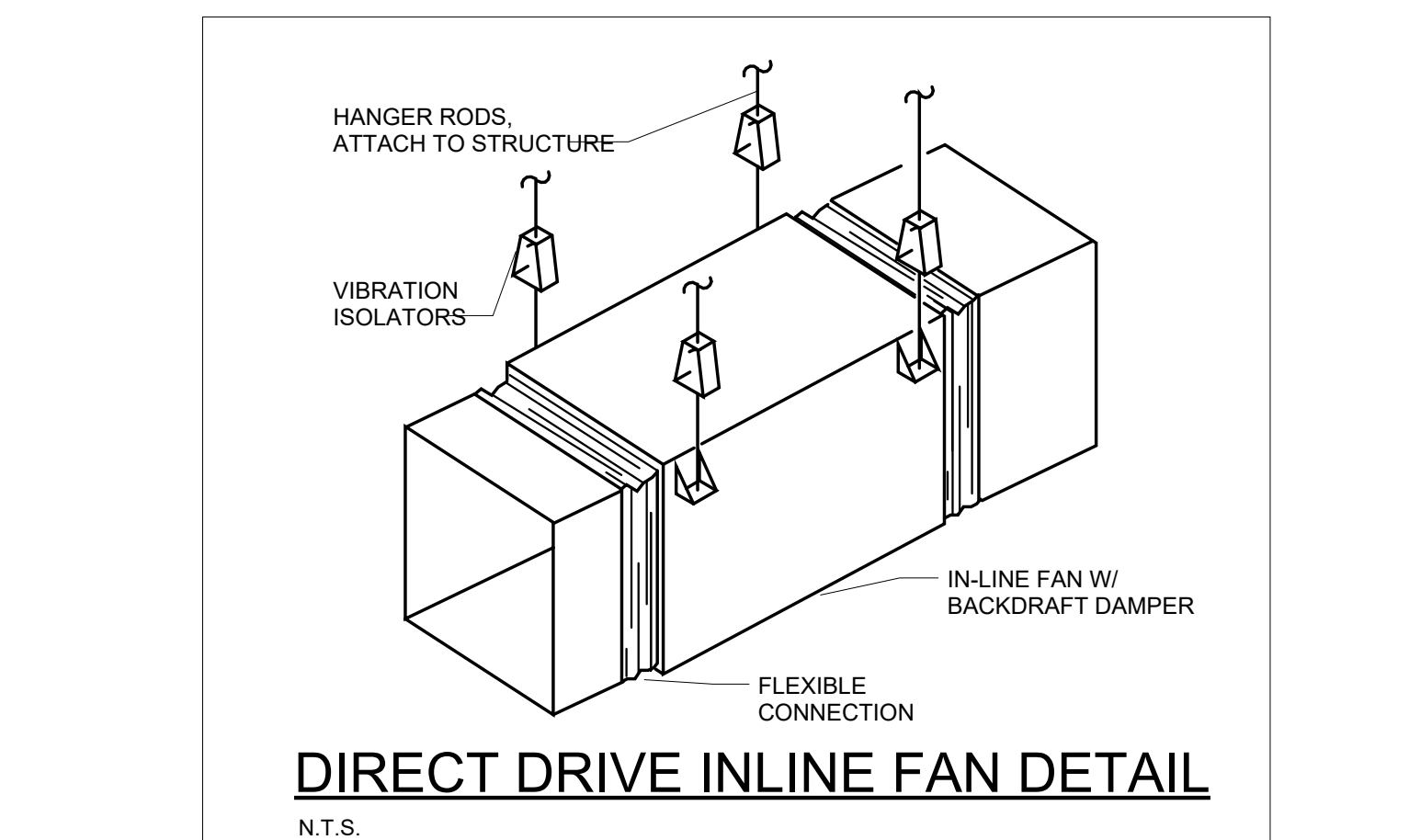
TYPICAL CONDENSER MOUNTING DETAIL

N.T.S.



FLOOR MOUNTED VERTICAL
AIR HANDLING UNIT DETAIL

N.T.S.



DIRECT DRIVE INLINE FAN DETAIL

N.T.S.

LITTLE
DIVERSIFIED ARCHITECTURAL CONSULTING

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ISSUE FOR:
100% CONSTRUCTION
DOCUMENTS

ISSUE DATE:
02/15/2026

REVISIONS:

NO. REASON DATE



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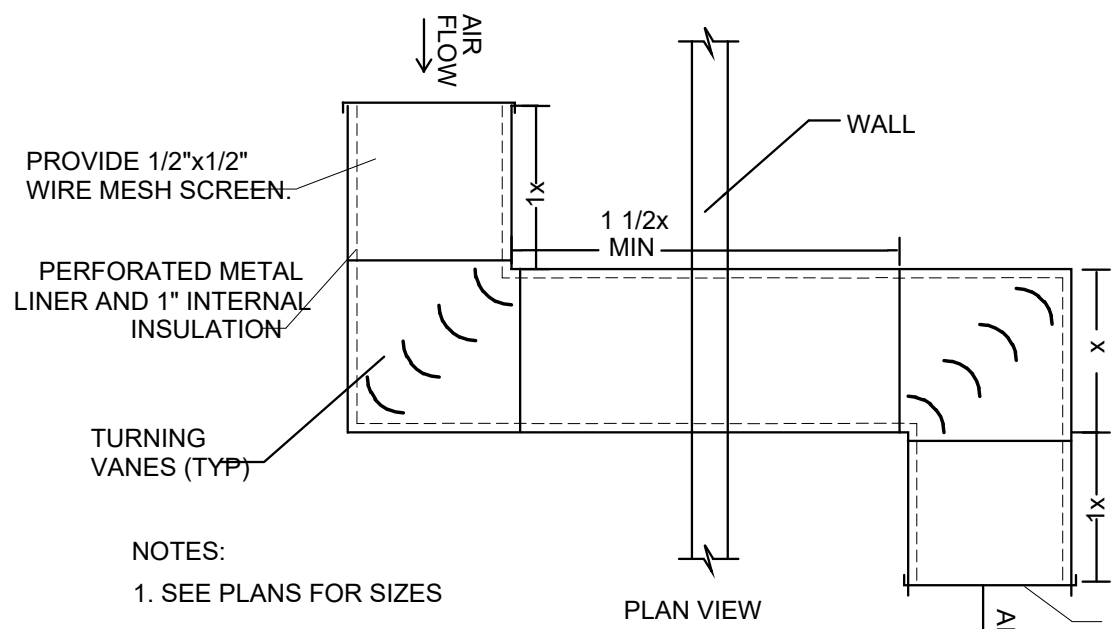
PROJECT TEAM
PRINCIPAL IN CHARGE
SCOTT RAYNOR
PROJECT MANAGER
SCOTT RAYNOR
DESIGN TEAM
CEA
PROJECT NAME

COLUMBIA STORM
PROCESSING & SERVICE
CENTER - BLDG C -
2-BAY FLEET GARAGE

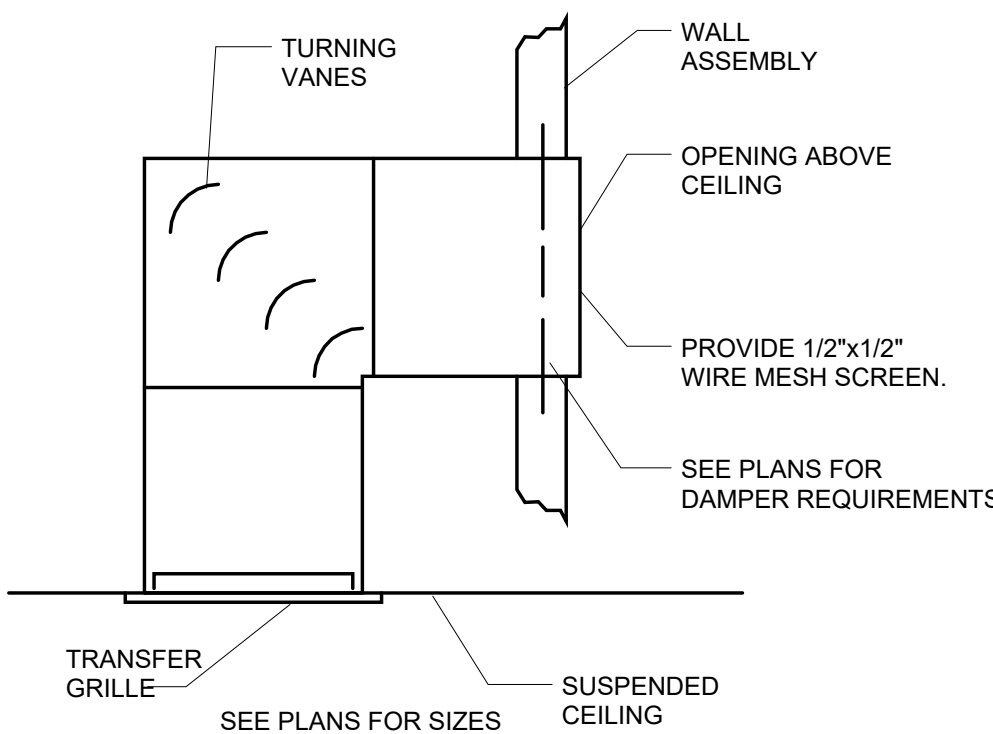
PROJECT NO.
814C632800

SHEET TITLE
SHEET NAME
MECHANICAL DETAILS

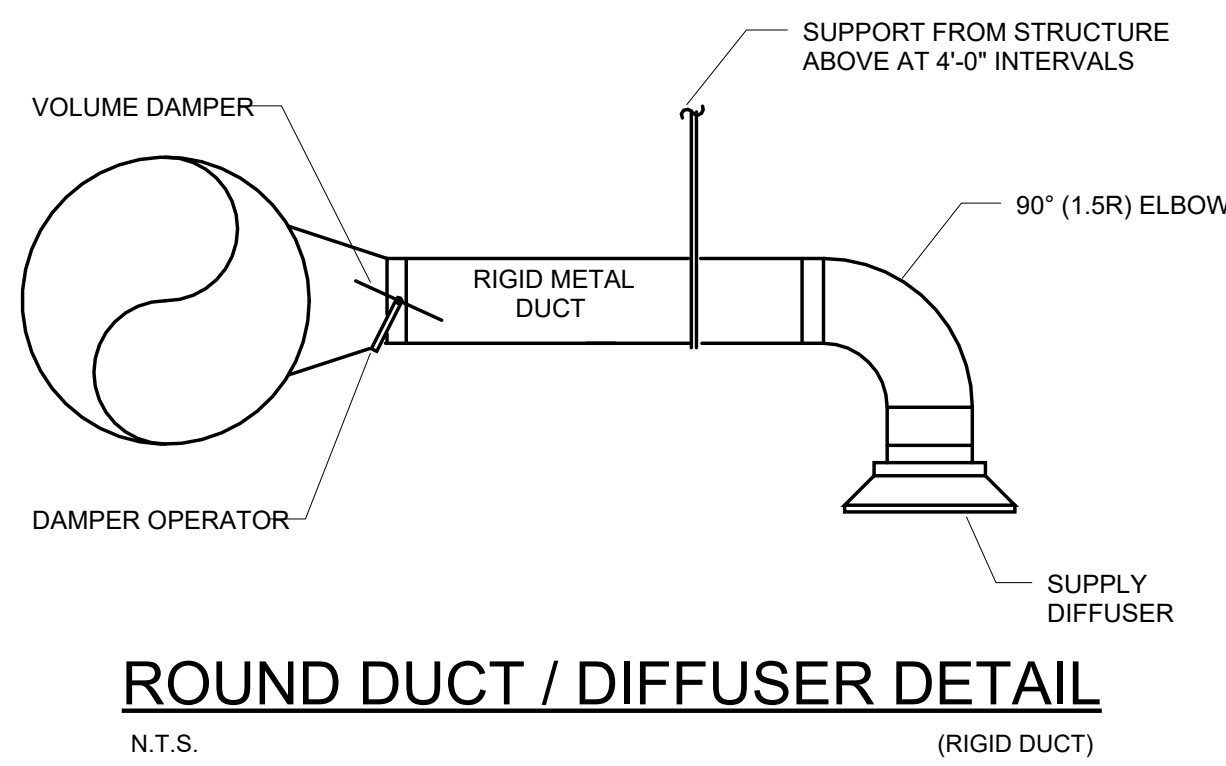
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C-M004



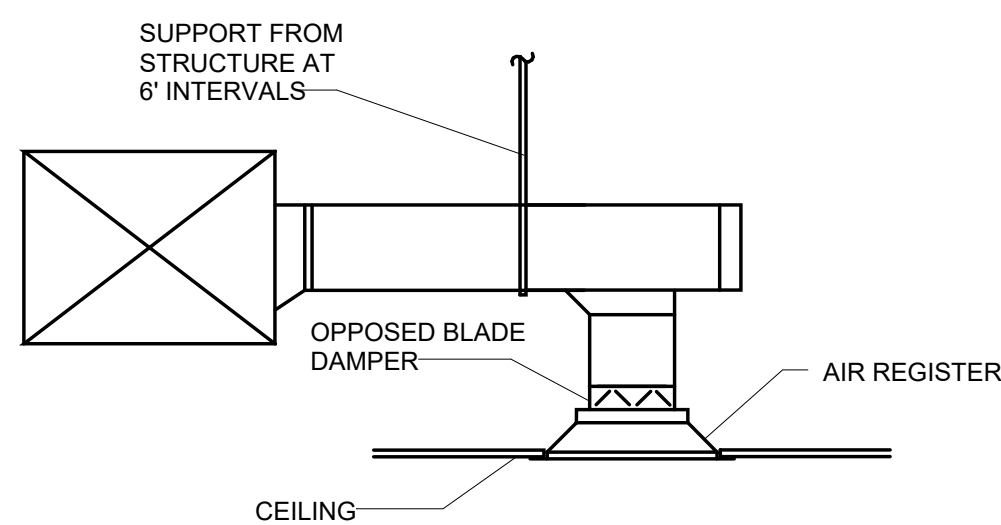
**SOUND TRAP ELBOW
TRANSFER DUCT DETAIL**
N.T.S.



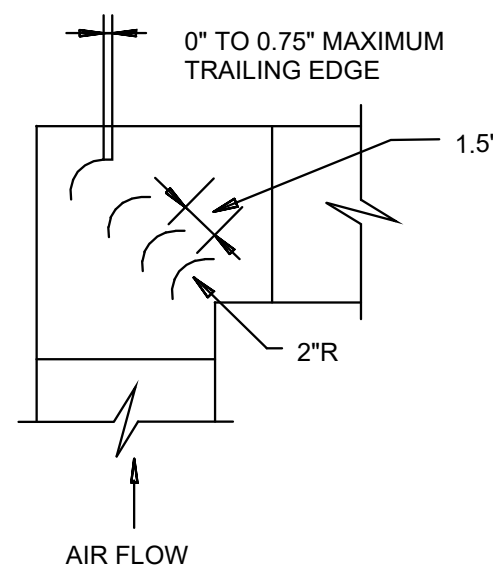
THROUGH-WALL TRANSFER DUCT DETAIL
N.T.S.



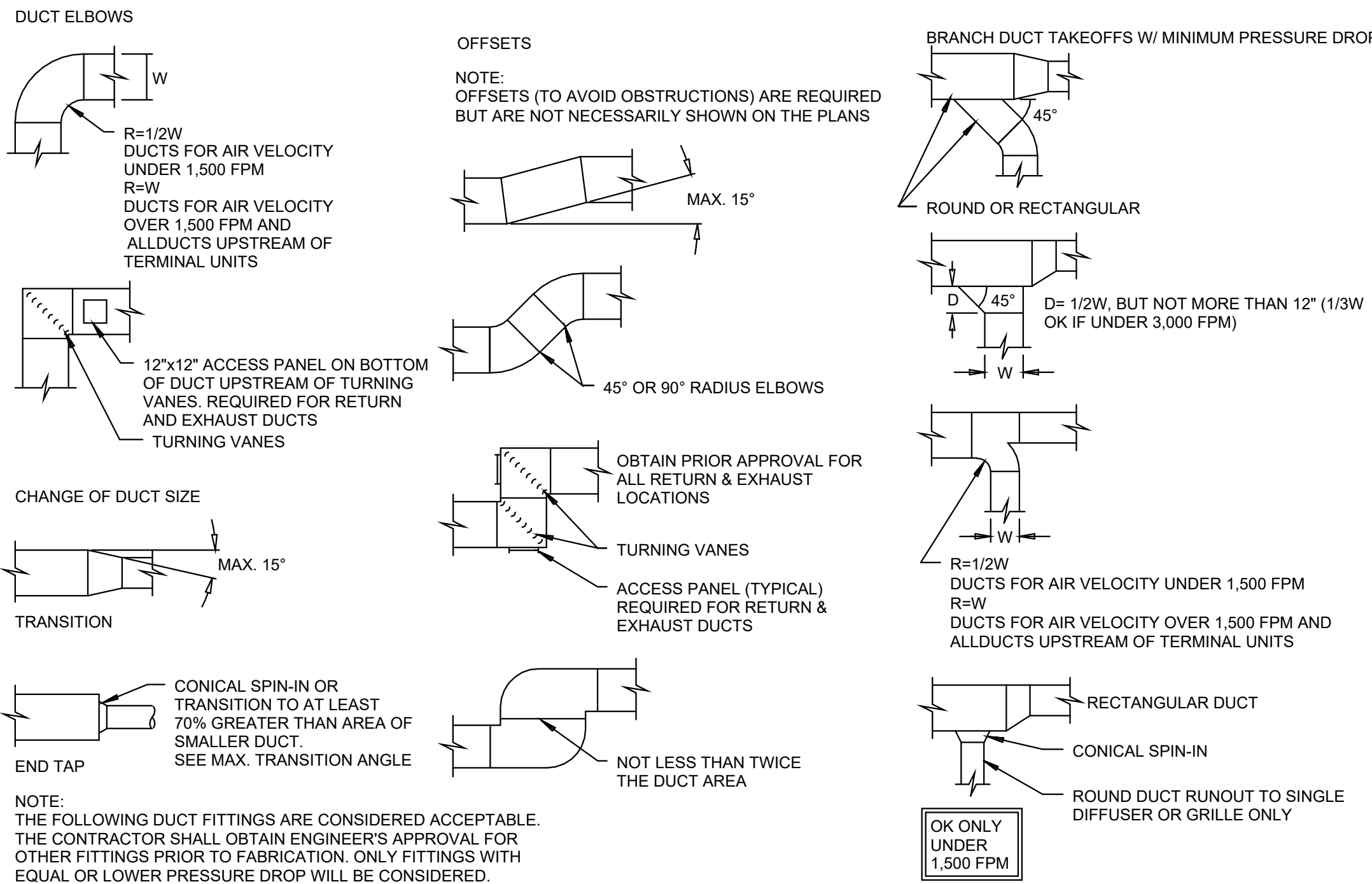
ROUND DUCT / DIFFUSER DETAIL
N.T.S. (RIGID DUCT)



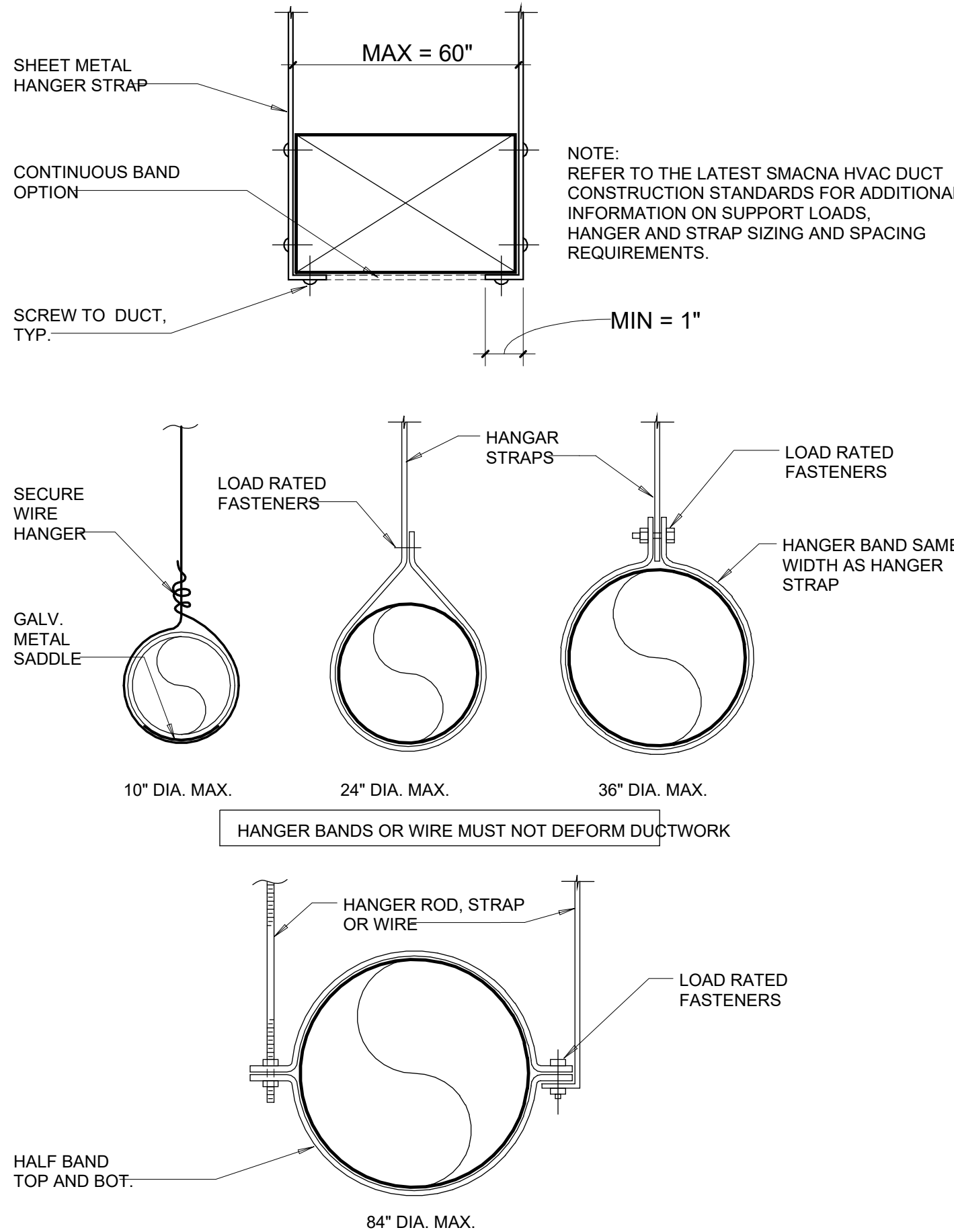
**RECTANGULAR
HARD DUCT / GRILLE DETAIL**
N.T.S.



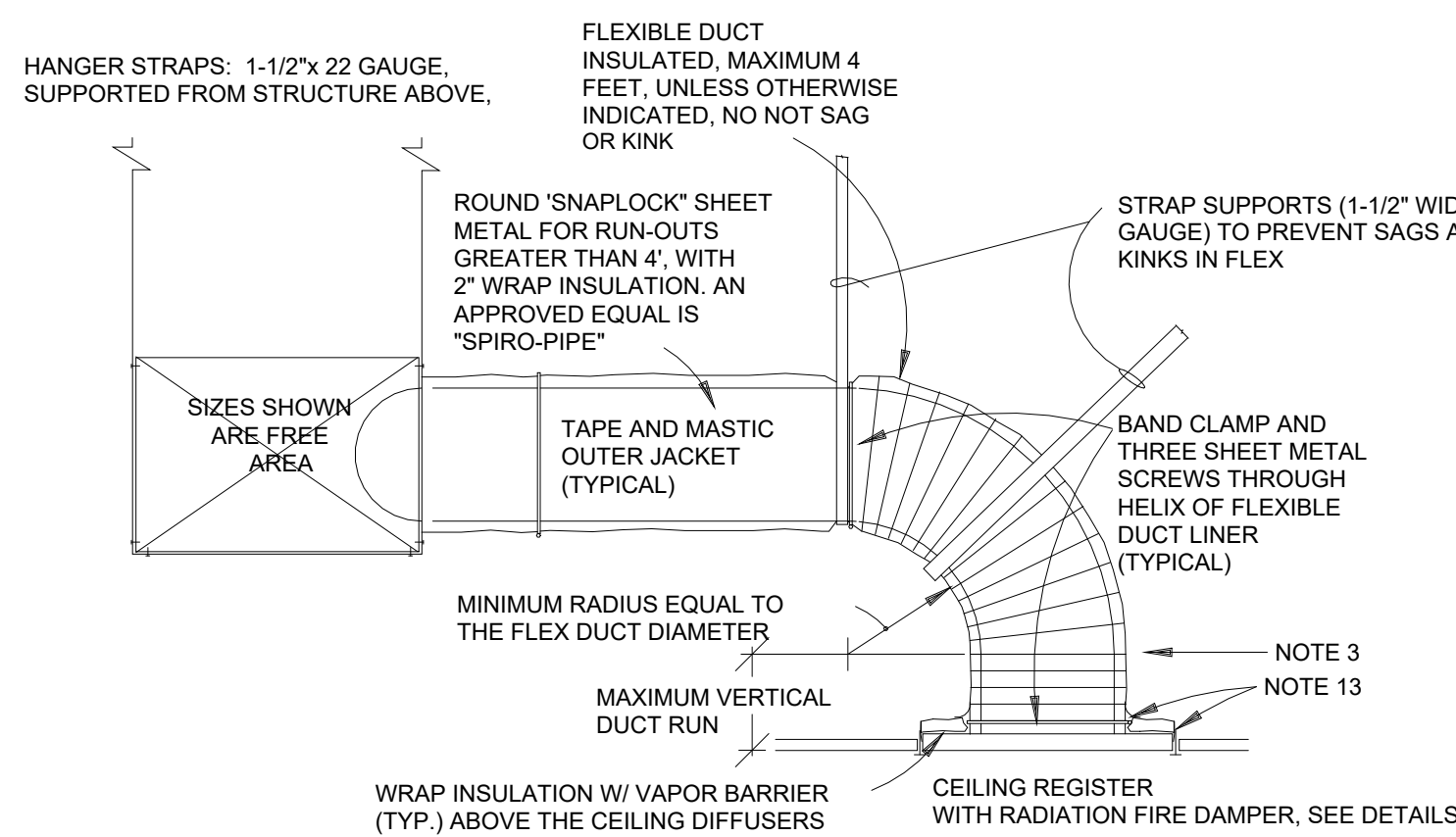
**MITERED ELBOW
TURNING VANE DETAIL**
N.T.S.



DUCT FITTING REQUIREMENTS DETAIL
N.T.S.

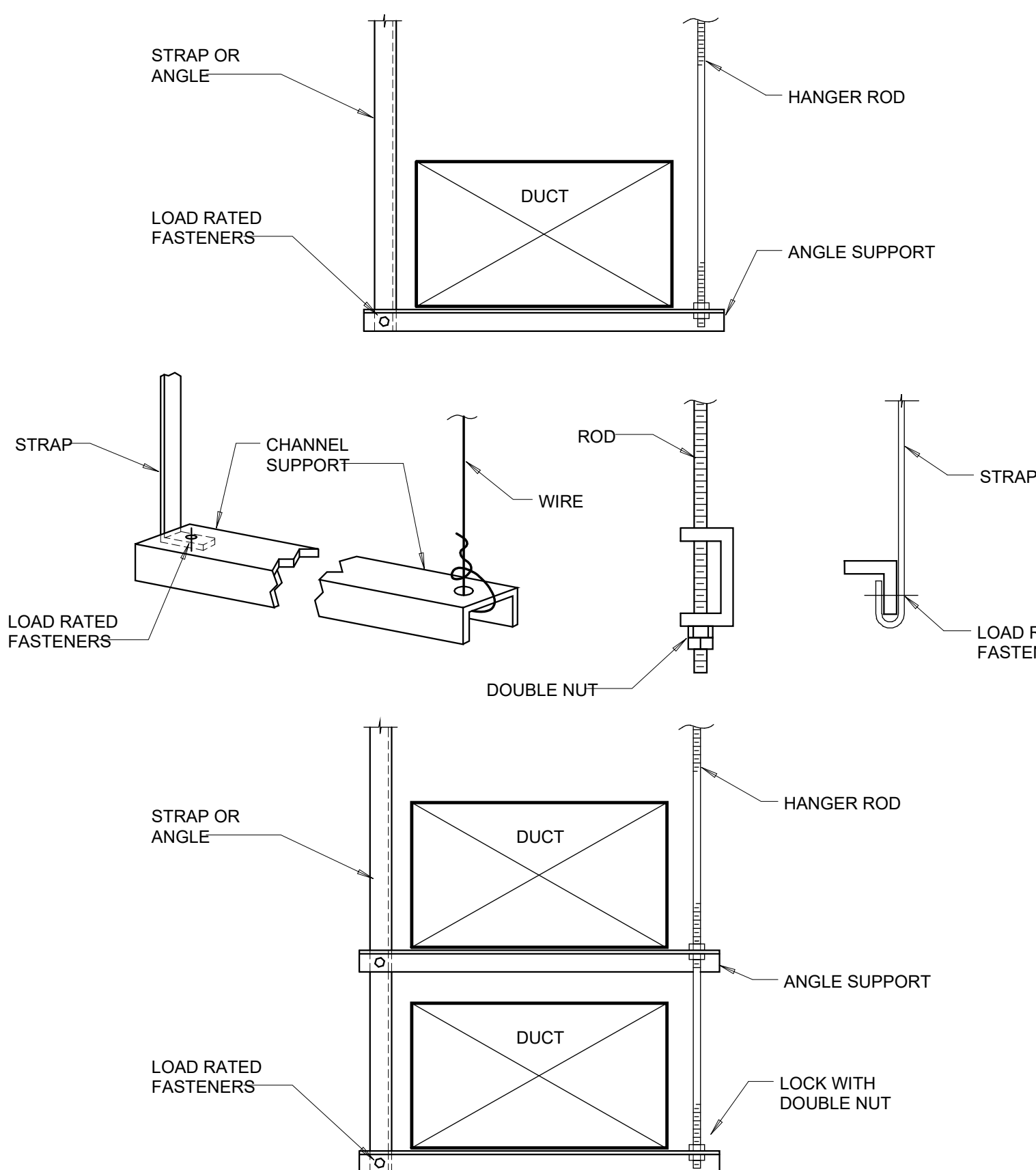
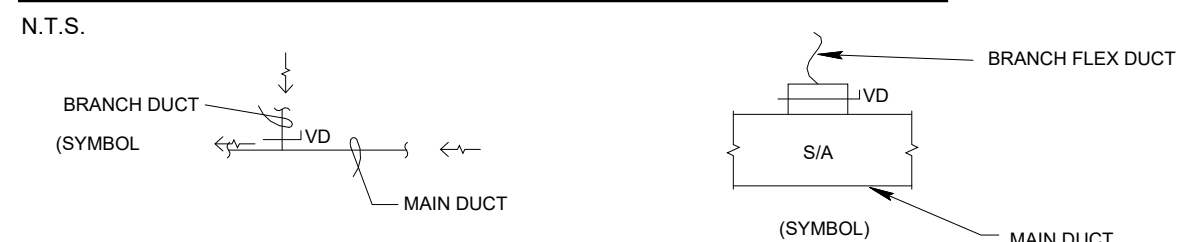


STRAP TYPE DUCT HANGER DETAILS
N.T.S.



- DUCTS SHALL BE FABRICATED & INSTALLED PER THE LATEST EDITION OF SMACNA, AND THE ENERGY CODE.
- ALTERNATE INTERPRETATIONS OF SMACNA DUCT MATERIAL, HANGERS AND REINFORCEMENTS ARE SUBJECT TO ENGINEER APPROVAL, AND REQUIRE SEPARATE SUBMITTAL OF THE ALTERNATES.
- FLEXIBLE DUCT CONNECTORS MAY BE PROVIDED WHERE INDICATED. IF SPACE CONDITIONS PERMIT, OTHERWISE USE RIGID DUCT.
- ELBOWS SHALL BE SQUARE NECK (SAME IN OUT DIMENSION) WITH 2" DOUBLE THICKNESS TURNING VANES.
- OFFSETS SHALL NOT REDUCE THE FREE AREA, AND SHALL NOT EXCEED 30". A RADIUS HEEL SHALL BE PROVIDED ON 30" OFFSETS. SMALLER OFFSETS SHALL BE MITERED AT BOTH THE HEEL & THROAT.
- TRANSITIONS SHALL NOT EXCEED 1:3 RATIO (4" TRANSITION PER FOOT SINGLE SIDED TRANSITION; AND 6" PER FOOT DOUBLE SIDED TRANSITION).
- INSULATION SHALL BE NFPA 90 APPROVED.
- RECTANGULAR BRANCH CONNECTIONS SHALL BE 45" ENTRY TYPE PER SMACNA FIGURE 2-10.
- ROUND DUCT CONNECTIONS SHALL BE WITH "METAL MANUFACTURING COMPANY" MSI-6 SPIN-IN FITTINGS, WITH 90" SCOOP, DAMPER AND HANDLE OR APPROVED EQUAL. MARK LOCATIONS OF HANDLES.
- ALUMINUM FLEXIBLE DUCT. SEE SPECIFICATIONS.
- ALL TAPE SHALL BE FASSON 6810 SMACNA APPROVED.
- SEAL ALL SUPPLY, RETURN & OUTSIDE AIR DUCTS AIR TIGHT.
- SEAL INSULATION AIR TIGHT WITH DUCT TAPE (TYPICAL THROUGHOUT JOB).
- NO FIBEROUS MATERIAL (INSULATION) SHALL BE PERMITTED INSIDE DUCTWORK. ALL DUCTWORK SHALL BE METAL WITH EXTERNAL INSULATION (INCLUDING FLEXIBLE DUCT).

MAIN AND BRANCH DUCT DETAIL



NOTE:
REFER TO THE LATEST SMACNA HVAC DUCT CONSTRUCTION STANDARDS FOR ADDITIONAL INFORMATION ON SUPPORT LOADS, HANGER AND STRAP SIZING AND SPACING REQUIREMENTS.

TRAPEZE TYPE DUCT HANGER DETAILS

N.T.S.



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NW MERCANTILE PL #206
RT ST. LUCIE, FL 34986
OFFICE: (561) 746-6343

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78477 CA LIC. 31555
 THESE DRAWINGS ARE NOT VALID FOR ANY
 PURPOSE WHICH REQUIRES THE ORIGINAL
 SIGNATURE AND SEAL OF THE ENGINEER
 UNLESS THE ORIGINAL SIGNATURE AND
 SEAL ARE AFFIXED. DRAWINGS NOT SIGNED
 OR SEALED BY THE ENGINEER SHALL NOT
 BE SUBMITTED TO ANY AUTHORITY OR
 USED FOR ANY PURPOSE WHERE SIGNED
 OR SEALED DOCUMENTS ARE REQUIRED.

100% CONSTRUCTION DOCUMENTS

2/15/2026

NO.	REASON	DATE
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[illegible]

PROJECT TEAM
PRINCIPAL IN CHARGE
COTT RAYNOR
PROJECT MANAGER
COTT RAYNOR
DESIGN TEAM
CEA
PROJECT NAME

COLUMBIA STORM
PROCESSING & SERVICE
CENTER - BLDG C -
BAY FLEET GARAGE

14C632800

SHEET NAME
MECHANICAL DETAILS

ET NUMBER

C-M005



FIRE STOPPING REQUIREMENT

PENETRATIONS THROUGH RATED WALLS AND FLOORS SHALL BE SEALED WITH A MATERIAL CAPABLE OF PREVENTING THE PASSAGE OF FLAMES AND HOT GASSES WHEN SUBJECTED TO THE REQUIREMENTS OF THE TEST STANDARD SPECIFIC FOR FIRE STOPS ASTM E-814/UL 1479. ONLY FIRESTOP SYSTEMS AND MATERIALS MANUFACTURED BY HILTI CONSTRUCTION CHEMICALS, INC. SHALL BE USED.



