

ATTACHMENT "A" OF ST. LOUIS COUNTY RULES & REGULATIONS
ANCHORAGE & SWAY BRACING MECHANICAL & ELECTRICAL SYSTEM COMPONENTS
SEISMIC CODE BLOCK ON 1ST SHEET OF MECHANICAL & PLUMBING PLANS
EARTHQUAKE LOAD RESISTANCE

SEISMIC USE GROUP (2)	ANCHORAGE TO FLOORS, ROOFS, ETC.		SWAY BRACING		LOCATION OF PROFESSIONAL SEALED ANCHORAGE AND SWAY BRACING DETAILS		SEISMIC DESIGN CATEGORY (D)	COMMENTS
	NOT PROVIDED	PROVIDED	NOT PROVIDED	PROVIDED	ON CONST. DOCUMENTS			
					DRAWING NO. OR SPEC. SECTION	SUBSEQUENT SUBMITTAL SEPARATE PERMIT & PLANS		
FIRE PROTECTION, DETECTION & ALARM EQUIPMENT & SYSTEM COMPONENTS, *SEE ATTACHMENT "C" TABLE 200	X		X					
HAZARDOUS EQUIPMENT & SYSTEM COMPONENTS; *SEE ATTACHMENT "C" TABLE 200								
GAS PIPING 3" OR LESS (Interior and exterior)		X					X	
GAS PIPING > 1" OR NON-DUCTILE (Interior)				X			X	
OTHER GENERAL EQUIPMENT & SYSTEM COMPONENTS								
DUCTWORK	X		X			M-300		1. SEISMIC SUPPORTS OF DUCTWORK ARE NOT REQUIRED, AS ALL DUCTS ARE LESS THAN 6 SQ.FT. CROSS-SECTIONAL AREA. 2. AIR DEVICES SHALL BE ATTACHED WITH MECHANICAL FASTENERS TO CEILING. REFER TO DETAIL ON SHEET M4-00 3. EXHAUST FAN SEISMIC SUPPORT ARE NOT REQUIRED, PER TABLE 4.4, EXEMPTION 1.A.
ROOFTOP UNITS (ERV-1)		X		X		M-300		
AIR DEVICES		X		X				
EXHAUST FANS	X		X					

#	Description	Date

PERMIT SET

Client Approval

MECHANICAL SPECIFICATIONS

Project # NVA22-PP01
Issue Date 8/04/23
Scale As Noted
Drawn by
Checked by

M-001

1. **GENERAL**
 - A. THE GENERAL CONDITIONS OF THE GENERAL SPECIFICATIONS, AND ALL APPLICABLE INSTRUCTIONS TO BIDDERS SHALL BE PART OF THESE SPECIFICATIONS.
 - B. THE WORD "PROVIDE" AS USED HEREIN MEANS TO FURNISH AND INSTALL COMPLETE.
 - C. THE TERM "CONTRACTOR" AS USED HEREIN MEANS ANY CONTRACTOR OR SUBCONTRACTOR CONTRACTED TO PERFORM WORK INCLUDED IN AND DEFINED BY THIS SECTION.
 - D. MECHANICAL WORK SHALL BE PROVIDED IN STRICT COMPLIANCE WITH THE 2015 MASSACHUSETTS MECHANICAL CODE, AND ALL APPLICABLE LOCAL ORDINANCES, STATE LAWS AND FEDERAL LAWS.
2. **PRIOR TO BIDDING:**
 - A. THOROUGHLY REVIEW THE BID INSTRUCTIONS INCLUDING ALL CIVIL, ARCHITECTURAL, STRUCTURAL, AND MEP CONSTRUCTION DOCUMENTS. OBTAIN AND THOROUGHLY EXAMINE THE MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS, DETAILS, AND REQUIREMENTS FOR THE SCHEDULED AND SPECIFIED EQUIPMENT AND MATERIALS. FOR AMBIGUOUS, CONTRADICTORY, OR CONFLICTING ITEMS WITHIN THE CONSTRUCTION DOCUMENTS, THE CONTRACTOR SHALL REQUEST CLARIFICATION IN A WRITTEN "REQUEST FOR INFORMATION" (RFI), AT LEAST FIVE (5) WORKING DAYS PRIOR TO BID DATE. RFI NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ARCHITECT (ENGINEER) IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK.
 - B. EXISTING CONDITIONS: THE CONTRACT DOCUMENTS ARE BASED ON INFORMATION PROVIDED TO CASE ENGINEERING AT THE TIME OF DESIGN. THIS CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS INCLUDING BUT NOT LIMITED TO: EXISTING HVAC SYSTEM LOCATIONS, EXISTING DUCT AND PIPING LAYOUTS, CLEARANCES, ETC. REPORT IN WRITING ANY DISCREPANCIES TO THE ARCHITECT (ENGINEER) AT LEAST FIVE (5) BUSINESS DAYS PRIOR TO BID. DISCREPANCIES NOT CLARIFIED PRIOR TO BID SHALL BE PROVIDED PER THE ARCHITECT (ENGINEER) IN STRICT ACCORDANCE WITH THE MOST STRINGENT MATERIALS, EQUIPMENT, AND SCOPE OF WORK.
 - C. IF THE CONTRACTOR BELIEVES THE DRAWINGS AND SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE ARCHITECT (ENGINEER) IN WRITING.
 - D. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THE CONSTRUCTION DOCUMENTS OR FOR THE FAILURE OF THE CONTRACTOR TO OBTAIN CLARIFICATIONS PRIOR TO BID.
 - E. VISIT THE JOB SITE AND THOROUGHLY INVESTIGATE CONDITIONS. THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE CONTRACTOR OF ANY RESPONSIBILITY.
 - F. REFER TO APPLICABLE CODES CITED IN CONSTRUCTION DOCUMENTS, EXAMINE GOVERNING STATE AND LOCAL CODES, AND LOCAL REGULATIONS AND ORDINANCES, AND PROVIDE ALL EQUIPMENT AND INSTALLATION IN STRICT ACCORDANCE WITH SAME.
 - G. REFER TO CONSTRUCTION DOCUMENTS FOR SCHEDULED AND SPECIFIED MATERIALS AND EQUIPMENT. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS.
 - H. ALL WORK SHALL BE COMPLETED IN STRICT ACCORDANCE WITH THE LANDLORD'S CONSTRUCTION CRITERIA AND TENANT/LANDLORD AGREEMENT. THIS CONTRACTOR SHALL EXAMINE THE LANDLORD CRITERIA AND TENANT/LANDLORD AGREEMENT AND THEY SHALL BE PART OF THESE SPECIFICATIONS. NO ALLOWANCES WILL BE MADE DUE TO CONTRACTOR'S UNFAMILIARITY WITH THESE DOCUMENTS.
3. **BIDDING**
 - A. SUBMISSION OF A BID ACKNOWLEDGES THAT THE CONTRACTOR HAS REVIEWED THE BID INSTRUCTIONS, HAS VISITED THE SITE, EXAMINED ALL CONSTRUCTION DOCUMENTS, AND AGREES TO ALL ITEMS AND CONDITIONS WITHIN THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR'S BID SHALL INCLUDE ALL MECHANICAL WORK IN THE CONSTRUCTION DOCUMENTS, INCLUDING MECHANICAL WORK RELATED TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS.
4. **PERMITS**
 - A. SECURE AND PAY FOR ALL PERMITS, LICENSES, AND INSPECTIONS REQUIRED BY THE AHJ FOR THIS WORK.
5. **SUBSTITUTIONS**
 - A. MANUFACTURERS' EQUIPMENT AND MATERIALS SCHEDULED, NOTED, AND SPECIFIED IN THE CONSTRUCTION DOCUMENTS ARE THE DESIGN STANDARD. NO SUBSTITUTIONS WILL BE ALLOWED WITHOUT PRIOR WRITTEN APPROVAL BY THE ARCHITECT OR ENGINEER. IN BIDDING, DO NOT ASSUME ACCEPTANCE OF SUBSTITUTIONS. CONTRACTOR MUST STATE IN SUBSTITUTION REQUEST "PROPOSED SUBSTITUTIONS ARE EQUAL OR OF HIGHER QUALITY, EFFICIENCY AND DEPENDABILITY COMPARED TO THE SPECIFIED EQUIPMENT AND MATERIAL. CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS." IF DEEMED NECESSARY BY THE ARCHITECT OR ENGINEER, SUBSTITUTIONS WHICH ARE NOT APPROVED OR NOT EQUAL TO DESIGN STANDARD SHALL BE REMOVED AND THE SCHEDULED, NOTED, AND SPECIFIED EQUIPMENT AND MATERIALS SHALL BE INSTALLED AT CONTRACTOR'S EXPENSE. SUBMITTING CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ADDITIONAL ENGINEERING COSTS AND COSTS TO OTHER CONTRACTORS DUE TO SUBSTITUTIONS.
6. **SCHEDULING**
 - A. ALL PERFORMANCE OF CONSTRUCTION SHALL BE AS REQUIRED BY THE PACE OF THE GENERAL CONSTRUCTION, AS SCHEDULED BY THE GC. PROVIDE COMPLETE INFORMATION AND FULL COOPERATION WITH OTHER CONTRACTORS AND TRADES, AS REQUIRED FOR THE TIMELY COMPLETION AND COORDINATION OF THE COMPLETE PROJECT.
 - B. PROVIDE ALL TESTS AND INSPECTIONS REQUIRED BY AHJ.
 - C. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE PROJECT COMPLETION.
7. **SCOPE**
 - A. PROVIDE PERMIT(S), INSPECTIONS, FINAL CERTIFICATE(S) OF INSPECTION BY AHJ, PERMIT AND INSPECTION FEES, AND ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY FOR A COMPLETE AND FULLY OPERATING HVAC SYSTEM.
 - B. INSTALL ALL WORK AND EQUIPMENT RIGID, DEAD LEVEL, PLUMB, AND TRUE-TO-LINE. UNLESS NOTED OTHERWISE, SUPPORT AND MOUNTING OF EQUIPMENT, DUCT, PIPING, ETC., ARE THIS CONTRACTOR'S MEANS AND METHODS. THE CONTRACTOR SHALL UNDERSTAND THE SPECIFIED AND SCHEDULED EQUIPMENT AND MATERIALS AND MEANS AND METHODS OF INSTALLATION. THIS CONTRACTOR SHALL PROVIDE ALL ACCESSORIES REQUIRED FOR PROPER SUPPORT WHETHER SHOWN ON THE DRAWINGS OR NOT. IF SUPPORTS ARE REQUIRED, CONTRACTOR SHALL SUBMIT DRAWINGS TO THE ARCHITECT FOR APPROVAL.
 - C. PROVIDE ACCESSORY MOUNTING HARDWARE INCLUDING BUT NOT LIMITED TO STRUCTURAL STEEL, STRUT SYSTEMS, ALL THREAD RODS, AND BRACES, AS REQUIRED TO MOUNT EQUIPMENT. PROVIDE STEEL SHAPES AND FRAMES TO SUPPORT EQUIPMENT WHERE NEEDED. ALL SYSTEMS SHALL BE SUPPORTED INDEPENDENT OF AND ISOLATED FROM EQUIPMENT VIBRATION.
 - D. PRODUCTS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS' PRINTED INSTALLATION AND MAINTENANCE LITERATURE. COMPONENTS REQUIRING PERIODIC MAINTENANCE OR ADJUSTMENTS SHALL BE INSTALLED AS TO PERMIT ACCESS WITHOUT DAMAGE TO STRUCTURE, FINISHES, OR OTHER EQUIPMENT.
 - E. DEMOLITION: REFER TO THE ARCHITECTURAL DRAWINGS FOR THE GENERAL SCOPE OF DEMOLITION. THIS CONTRACTOR SHALL DISCONNECT AND CAREFULLY REMOVE ALL EXISTING HVAC EQUIPMENT AREAS INCLUDING ROOF, PLENUMS, CEILING, WALLS, AND FLOORS. U.N.O., DISCONNECT AND REMOVE EXISTING HVAC SYSTEMS COMPLETE, INCLUDING EQUIPMENT, CURBS, DUCTS, INSULATION, AIR DEVICES, AND PIPING LOCATED IN THESE AREAS. ALL HVAC SYSTEM COMPONENTS INCLUDING AIR TERMINAL UNITS, FANS, MOTORS, CONTROL DEVICES AND SENSORS, DAMPERS, ACTUATORS, HANGERS, RESTRAINTS, MOUNTING HARDWARE, ETC., SHALL BE REMOVED AND LEGALLY DISPOSED OF BY THIS CONTRACTOR.
 - F. UNLESS NOTED OTHERWISE, ABANDONMENT IN PLACE (AIP) IS NOT ACCEPTABLE. UNUSED EQUIPMENT, DUCT, PIPING, AND OTHER COMPONENTS WITHIN OR SERVING THIS SPACE MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. ENDS OF SYSTEMS BEYOND GENERAL SCOPE OF DEMOLITION MAY BE ABANDONED ONLY WITH WRITTEN APPROVAL OF ARCHITECT (ENGINEER). WHERE THESE ABANDONED ENDS TERMINATE, TRIM CLEANLY AND PROPERLY CAP OR SEAL IN AN APPROVED MANNER, LEAVING TERMINATION SAFE AND SECURE BEHIND NEW FINISHES. MAINTAIN SYSTEM CONTINUITY TO HVAC SYSTEMS SERVING AREAS BEYOND GENERAL DEMOLITION, AS NEEDED. THIS INCLUDES BUT IS NOT LIMITED TO REMOVAL, MODIFICATION AND/OR REINSTALLATION OF EQUIPMENT, AS NEEDED. COMPLETION OF THIS PROJECT SHALL INCLUDE RETURNING THESE ADJACENT AREAS TO FULLY FUNCTIONING OPERATION.
 - G. CONTRACTOR SHALL PROVIDE DAILY CLEAN-UP, REMOVAL AND LEGAL DISPOSAL OF ALL RUBBISH GENERATED BY THIS WORK.
 - H. AS-BUILT DRAWINGS: DURING CONSTRUCTION, AS WORK PROCEEDS, MAINTAIN AS-BUILT MARK-UPS OF ACTUAL INSTALLATION. AT CONSTRUCTION COMPLETION AND PRIOR TO TURNOVER TO TENANT, PROVIDE FINAL MARK-UPS IN PDF FORMAT TO ARCHITECT AND ENGINEER.
 - I. PROVIDE FINAL CONNECTIONS TO EQUIPMENT FURNISHED/PROVIDED BY OTHERS, AS NOTED (LAUNDRY EQUIPMENT, ETC.).
 - J. DO NOT ROUTE ANY PIPING OR DUCTWORK ABOVE ELECTRICAL PANELS.
 - K. UNLESS NOTED OTHERWISE, ALL DUCT AND PIPE SHALL BE RUN PARALLEL TO OR AT RIGHT ANGLES TO WALLS, BEAMS, OR COLUMNS. PIPE SHALL BE RUN AS DIRECT AS POSSIBLE - AVOID UNNECESSARY OFFSETS AND MAXIMIZE HEADROOM.
 - L. PRIOR TO ORDERING EQUIPMENT, THIS CONTRACTOR SHALL PROVIDE FINAL COORDINATION OF ELECTRICAL POWER REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
 - M. CONTRACTOR SHALL MAINTAIN ACTIVITIES WITHIN AREA APPROVED BY OWNER OR GC. CONTRACTOR'S ACTIVITIES SHALL NOT INTERFERE WITH THE OWNER'S OPERATIONS, EXCEPT AS APPROVED.
 - N. EXCEPT THOSE COORDINATED AND APPROVED BY THE G.C., CONTINUITY OF ALL BUILDING SERVICES AND UTILITIES SERVING BUILDING FACILITIES SHALL BE MAINTAINED UNINTERRUPTED AT NO ADDITIONAL COST. PROVIDE ALL NECESSARY CROSS CONNECTIONS AND TEMPORARY CONNECTIONS REQUIRED TO PERFORM THE CONSTRUCTION, AS DETERMINED BY THE G.C., AND NEEDED TO MAINTAIN CONTINUITY OF THE BUILDING SERVICE(S). THIS CONTRACTOR SHALL SCHEDULE WORK SUCH THAT ANY AND ALL CONNECTIONS, AND/OR REARRANGEMENT OF EXISTING EQUIPMENT, PIPING, ETC., SHALL ASSURE FULL RESUMPTION OF SERVICE(S) AT THE G.C.'S DESIGNATED TIME.
8. **CODE REQUIREMENTS**
 - A. ALL WORK SHALL COMPLY WITH THE CONSTRUCTION DOCUMENTS OR, AS DIRECTED BY THE ARCHITECT (ENGINEER), AND SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS OF THE AHJ, WHETHER SO SHOWN OR NOT. CONTRACTOR SHALL BE FAMILIAR WITH PROVISIONS OF ALL APPLICABLE CODES AND SHALL INSURE THE WORK COMPLETES WITH ALL LOCAL, STATE AND FEDERAL CODES, TRADE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS. IF CONTRACTOR BELIEVES THE DRAWINGS AND/OR SPECIFICATIONS CONFLICT WITH CODE REQUIREMENTS, IMMEDIATELY NOTIFY THE G.C. IN WRITING. DO NOT INSTALL WORK NOT COMPLYING WITH CODE REQUIREMENTS. IN CASE OF CONFLICT BETWEEN THE CONSTRUCTION DOCUMENTS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. AS A MINIMUM STANDARD, CONTRACTOR SHALL SATISFY CODE REQUIREMENTS. ALL MODIFICATIONS REQUIRED BY AHJ SHALL BE MADE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. BEFORE COMMENCING WORK NOT SHOWN IN DOCUMENTS BUT REQUIRED TO ACHIEVE FULL COMPLIANCE WITH CODES, CONTRACTOR SHALL NOTIFY ARCHITECT (ENGINEER).
9. **CUTTING & PATCHING**
 - A. CORE-DRILL OR SAW-CUT EXISTING FLOORS, WALLS, ROOF, ETC., AS REQUIRED FOR EQUIPMENT, PIPE, OR DUCTWORK. PRIOR TO CUTTING, PERFORM NON-DESTRUCTIVE TESTING TO VERIFY LOCATION OF STRUCTURAL COMPONENTS. NOTIFY ARCHITECT (ENGINEER) OF ANY DISCREPANCIES. PATCH SURROUNDING AREAS FLUSH WITH ADJACENT SURFACE AND READY TO RECEIVE FINISH. PATCH AND REPAIR ROOF TO MATCH EXISTING ROOFING. ALL ROOF WORK SHALL MEET WARRANTY REQUIREMENTS OF EXISTING ROOFING. COORDINATE REQUIRED OPENINGS AND PENETRATIONS WITH THE GC AND OTHER TRADES. (OPENINGS IN FOUNDATIONS, FLOORS, WALLS, CEILING, AND ROOF SHALL BE BUILT INTO THE STRUCTURE WITH SLEEVES, CURBS, ETC.)
10. **FIRE STOPPING**
 - A. PROVIDE FIRE STOPPING FOR PENETRATIONS OF DUCT, PIPING, AND OTHER MECHANICAL EQUIPMENT THROUGH FIRE-RATED VERTICAL BARRIERS (WALLS AND PARTITIONS), HORIZONTAL BARRIERS (FLOOR/CEILING ASSEMBLIES), AND VERTICAL SERVICE SHAFT WALLS AND PARTITIONS. FIRESTOP SYSTEM INSTALLATION MUST MEET REQUIREMENTS OF ASTM E 814 OR UL 1479 TESTED ASSEMBLIES THAT PROVIDE A FIRE RATING EQUAL TO OR GREATER THAN THAT OF CONSTRUCTION BEING PENETRATED. INSTALL IN STRICT ACCORDANCE WITH UL FIRE RESISTANCE DIRECTORY, AHJ, AND MANUFACTURER'S SPECIFIED REQUIREMENTS. ONLY TESTED FIRESTOP SYSTEMS BY "3M", "HILT", OR EQUAL SHALL BE USED. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY RATING.

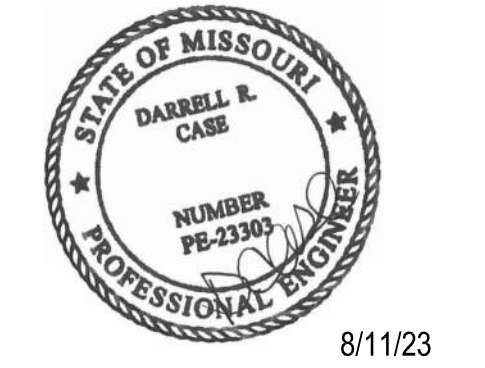
11. **MATERIALS AND WORKMANSHIP**
 - A. ALL MANUFACTURED ARTICLES, MATERIALS, AND EQUIPMENT SHALL BE NEW U.N.O., FREE OF DEFECTS, AND INSTALLED IN STRICT ACCORDANCE WITH THE MANUFACTURER'S WRITTEN INSTRUCTIONS AND DETAILS, AND INDEPENDENTLY TESTED AND LABELED BY A NATIONALLY RECOGNIZED TESTING LABORATORY - UNDERWRITERS LABORATORIES (UL) OR INTERTEK (ETL). ALL LIKE MATERIALS USED SHALL BE OF THE SAME MANUFACTURE AND QUALITY U.N.O.
 - B. ALL MATERIALS WITHIN PLENUMS OR SHALL HAVE A FLAME SPREAD INDEX OF NOT MORE THAN 25 AND A SMOKE DEVELOPED INDEX OF NOT MORE THAN 50 WHEN TESTED IN ACCORDANCE WITH ASTM E84 OR UL 723. ALL MATERIALS INSTALLED IN PLENUM SPACES SHALL BE LISTED AND LABELED FOR SUCH APPLICATION.
 - C. ALL WORK SHALL BE SUPERVISED BY THE INSTALLING CONTRACTOR'S COMPETENT AND SKILLED FOREMAN. ALL WORK SHALL BE PERFORMED BY COMPETENT AND SKILLED WORKERS, WITH ALL TRADE AND MANUFACTURER REQUIRED TRAINING, AND EXECUTED IN A NEAT AND WORKMANLIKE MANNER. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND IN CONFORMANCE WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS, INCLUDING APPLICABLE OSHA REGULATIONS. PROPERLY PROTECT WORK DURING CONSTRUCTION. AT CONSTRUCTION COMPLETION, THOROUGHLY CLEAN WORK AND REMOVE ALL DEBRIS FROM THE PREMISES.
12. **PROTECTION OF WORK AND PROPERTY**
 - A. PROTECT ALL WORK FROM DAMAGE AND PROTECT THE OWNER'S PROPERTY FROM DIRT, DAMAGE, OR LOSS ARISING FROM CONTRACTOR WORK.
 - B. COMPLY WITH OSHA REQUIREMENTS AND TAKE ALL NECESSARY PRECAUTIONS FOR EMPLOYEE SAFETY.
 - C. PROTECT ALL OPEN PIPING, DUCT, AND EQUIPMENT. EXISTING AND NEW FROM CONSTRUCTION DIRT AND DUST, COVER, CAP, OR PLUG OPEN ENDS OF PIPING AND DUCT. KEEP EQUIPMENT CLOSED OR COVER AND SEAL EQUIPMENT OPENINGS. ANY MECHANICAL SYSTEMS, NEW AND/OR EXISTING OPERATED DURING CONSTRUCTION SHALL BE PROTECTED BY COVERING EACH RETURN AIR DUCT OPENING WITH MERV 8 FILTERS AND INSTALLING MERV 8 FILTER(S) IN EQUIPMENT FILTER RACK. PRIOR TO TESTING AND BALANCING, REMOVE FILTERS FROM FILTER RACKS AND INSTALL NEW MERV 8 FILTERS.
 - D. AT COMPLETION OF WORK, PRIOR TO EQUIPMENT START-UP, REMOVE COVERS, CAPS, OR PLUGS ON DUCT AND PIPING.
13. **DAMAGE BY LEAKS**
 - A. THIS CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL DAMAGES TO THE PROPERTY (GROUNDS, WALKS, ROADS, BUILDING COMPONENTS, FINISHES, PIPING SYSTEMS, ELECTRICAL SYSTEMS, HVAC SYSTEMS, AND THEIR EQUIPMENT AND CONTENT) CAUSED BY LEAKS IN THE SYSTEMS BEING INSTALLED OR HAVING BEEN INSTALLED AS PART OF THIS WORK. ALL REPAIRS WILL BE MADE AT THIS CONTRACTOR'S EXPENSE.
14. **DRAWINGS AND SPECIFICATIONS**
 - A. DRAWINGS ARE DIAGRAMMATIC AND INTENDED TO SHOW GENERAL LOCATIONS OF DUCTS, PIPES, AND EQUIPMENT AND THE METHODS OF CONNECTING AND CONTROL. THE DRAWINGS SHALL BE FOLLOWED AS CLOSELY AS ACTUAL BUILDING CONDITIONS AND THE WORK OF OTHER TRADES PERMIT. THE DRAWINGS ARE NOT INTENDED TO SHOW EVERY CONNECTION IN DETAIL OR ALL OFFSETS, TRANSITIONS, OR FITTINGS REQUIRED FOR A COMPLETE SYSTEM NOR IS IT IMPLIED THAT ALL CONFLICTS BETWEEN BUILDING ELEMENTS AND/OR OTHER TRADES ARE INDICATED. DO NOT SCALE DRAWINGS. SEE ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR EXACT LOCATION OF DOORS, WINDOWS, LIGHTS, ETC.
 - B. THE DRAWINGS AND SPECIFICATIONS ARE MUTUALLY COMPLEMENTARY, AND ANY WORK REQUIRED BY ONE BUT NOT BY THE OTHER SHALL BE REQUIRED BY BOTH.
 - C. PRIOR TO INSTALLING EQUIPMENT, DUCT, OR PIPE COORDINATE PROPOSED LOCATIONS WITH EACH TRADE/DISCIPLINE AND GC. EXAMINE EACH DISCIPLINE'S DRAWINGS FOR CONSTRUCTION DETAILS, CEILING HEIGHTS, REQUIRED CLEARANCES, AND SPACE CONSTRAINTS. PROVIDE SYSTEMS INSTALLATION BASED ON THIS EXAMINATION AND COORDINATION. IMMEDIATELY REPORT INSTALLATION CONFLICTS IN WRITING TO THE GC. RESOLVE ALL CONFLICTS WITH GC AND OTHER TRADES PRIOR TO PROCEEDING. INSTALLING CONTRACTOR IS FULLY RESPONSIBLE FOR CORRECT INTERPRETATION AND APPLICATION OF ALL SIZES AND DIMENSIONS.
 - D. SIGNIFICANT DEVIATIONS OR CHANGES FROM THE DRAWINGS, WHICH ARE REQUIRED TO ACCOMPLISH THE INTENT OF THE CONTRACT DOCUMENTS MUST BE REVIEWED AND APPROVED BY THE ARCHITECT (ENGINEER) BEFORE PROCEEDING. IF THE CONTRACTOR BELIEVES CHANGES TO THE CONTRACT DRAWINGS ARE NECESSARY, SHOP DRAWINGS WITH WRITTEN DESCRIPTIONS OF THE PROPOSED CHANGES SHALL BE SUBMITTED TO THE ARCHITECT (ENGINEER) FOR APPROVAL.
 - E. ALL PIPE, DUCTS, VENTS, ETC., EXTENDING THROUGH WALLS AND ROOF SHALL BE FLASHED WATERPROOF. PROVIDE ALL FLASHING FOR PIPE AND DUCTWORK PENETRATING BUILDING ENVELOPE. PROVIDE DUCT AND/OR PIPE SLEEVES AT WALL PENETRATIONS. SEAL ANNULAR SPACE WEATHER TIGHT.
15. **CONTROLS**
 - A. PROVIDE COMPLETE EQUIPMENT CONTROLS, INCLUSIVE OF ALL COMPONENTS, VOLTAGES, PROGRAMMING, WIRING ETC. FOR COMPLETE AND OPERATIONAL SYSTEMS. MOUNT THERMOSTATS AND SWITCHES 4'-0" ABOVE FINISHED FLOOR. PRIOR TO MOUNTING, COORDINATE THERMOSTAT LOCATION(S) WITH FINAL FIXTURES AND EQUIPMENT. DO NOT MOUNT THERMOSTATS IN DIRECT SUNLIGHT, IN DISCHARGE OF SUPPLY GRILLES), NEAR HEAT PRODUCING APPLIANCES OR EQUIPMENT, ON WALLS WITH INTERNAL HEAT SOURCES (DUCT OR PIPING) OR ON EXTERIOR WALLS. IF EXTERIOR WALL MOUNTING IS NECESSARY, PROVIDE INSULATED MOUNTING BASE. WHERE THERMOSTAT LOCATION IS SUBJECT TO DAMAGE, PROVIDE LOCKABLE HIGH-IMPACT GUARD.
16. **PIPING**
 - A. IN FINISHED AREAS, ALL PIPING SHALL BE CONCEALED UNLESS NOTED OTHERWISE.
 - B. SEE PLAN KEYED NOTES FOR PIPE MATERIALS AND PIPE INSULATION.
 - C. DO NOT INSTALL PVC PIPING IN PLENUM AREAS.
 - D. BRANCH TAKE-OFFS SHALL BE MADE WITH SWING CONNECTIONS AS REQUIRED TO AVOID STRESS AT THESE POINTS.
 - E. DO NOT INSTALL ANY PIPING ABOVE ELECTRICAL PANELS AND/OR TRANSFORMERS.
 - F. LABEL PIPE PER BUILDING STANDARD OR AS SCHEDULED.
 - G. PAINT PIPE TO MATCH OWNER'S OR BUILDING STANDARD.
 - H. ON HYDRONIC PIPING, PROVIDE MANUAL AIR VENTS AT ALL HIGH POINTS TO ALLOW BLEEDING OF AIR FROM THE SYSTEM, AND BALL VALVES WITH HOSE END DRAIN FITTINGS AT ALL LOW POINTS TO ALLOW DRAINING THE SYSTEM.
 - I. PRIOR TO INSTALLING EQUIPMENT/APPLIANCES, CAREFULLY CONSIDER FULFILLING REQUIREMENTS OF CONDENSATE DRAIN PIPE. PROVIDE MINIMUM 1/8" FOOT SLOPE. EXTEND CONDENSATE DRAIN PIPE TO AN APPROVED RECEPTOR AND TERMINATE VIA AN INDIRECT CONNECTION.
 - J. ALL HOLES REQUIRED THROUGH EXISTING FLOORS AND MASONRY WALLS SHALL BE CORE DRILLED.
17. **DUCT MOUNTED SMOKE DETECTORS**
 - A. RETURN AIR DUCT MOUNTED SMOKE DETECTORS SHALL BE RELOCATED TO NEW LOCATION. VERIFY THAT EXISTING SMOKE DETECTORS OPERATE PROPERLY.
18. **SHOP DRAWINGS**
 - A. SUBMIT SHOP DRAWINGS ON SCHEDULED AND NOTED EQUIPMENT AND MATERIALS. PRIOR TO SUBMITTAL, EACH SHOP DRAWING SHALL BE REVIEWED BY THE CONTRACTOR TO ASSURE THAT THE PROPOSED EQUIPMENT IS CLEARLY MARKED, HIGHLIGHTED, AND NOTED. ALL DIMENSIONS, QUANTITIES, CONNECTIONS, CAPACITIES AND ACCESSORIES SHALL BE CLEARLY SHOWN IN CONFORMANCE WITH THE CONTRACT DOCUMENTS AND SHALL BE MARKED OR STAMPED TO CONFIRM THAT SUCH REVIEW WAS MADE AND COMPLIANCE WAS CONFIRMED. SHOP DRAWING SUBMITTED WITHOUT BEING MARKED, HIGHLIGHTED, AND NOTED WILL BE REJECTED WITHOUT REVIEW.
 - B. PROVIDE ADEQUATE TIME FOR REVIEW AND CORRECTIONS, IF ANY, TO PREVENT CONSTRUCTION DELAY.
 - C. REVIEW OF SHOP DRAWINGS BY THE OWNER, OWNER'S AGENT, ARCHITECT, OR ENGINEER IS FOR GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLYING WITH ALL TERMS OF THE CONTRACT DOCUMENTS AND FOR PERFORMANCE OF ALL EQUIPMENT AND MATERIALS PURCHASED, FOR QUANTITIES, PROPER FIT, AND OTHER DIMENSIONAL REQUIREMENTS.
19. **DUCTWORK**
 - A. REFER PLAN KEYED NOTES FOR CLARIFICATION OF DUCT DIMENSIONS. PROVIDE ALL DUCTWORK IN STRICT ACCORDANCE WITH THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA) "HVAC DUCT CONSTRUCTION STANDARDS" - METAL AND FLEXIBLE" LATEST EDITION, U.N.O. ALL RIGID DUCTWORK SHALL BE GALVANIZED SHEET METAL. NO FIBERGLASS DUCTBOARD WILL BE ALLOWED. ALL EXPOSED DUCTWORK SHALL HAVE A MILL-PHOSPHATIZED FINISH FOR PAINT ADHESION. EXPOSED ROUND DUCT SHALL BE SPIRAL SEAM TYPE.
 - B. PROVIDE DAMPERS AT EACH BRANCH DUCT SERVING AIR DEVICES AND AS SHOWN AND DETAILED. ALL FLEXIBLE DUCT SHALL BE THERMAFLEX TYPE MKE, MAXIMUM 5'-0" LONG. FLEXDUCT SHALL BE INSTALLED IN ACCESSIBLE CONCEALED SPACES ONLY AND WITHOUT SAGS. INSTALLATION ABOVE INACCESSIBLE CEILING IS UNACCEPTABLE.
20. **DUCT SEALING**
 - A. IN CONDITIONED AREAS, SEAL ALL LONGITUDINAL AND TRANSVERSE JOINTS WITH A NON-HARDENING, NON-MIGRATING MASTIC OR LIQUID ELASTIC SEALANT, WITH VOC CONTENT NO GREATER THAN 250G/L AND RECOMMENDED BY THE MANUFACTURER FOR SEALING SHEET METAL DUCT. SEAL ALL JOINTS, SPIN-IN FITTINGS, AND FASTENING SCREWS WITH MASTIC. HVAC SYSTEM LEAKAGE SHALL NOT EXCEED 5% OF DESIGN FLOW.
21. **CLOTHES DRYER**
 - A. CLOTHES DRYER AND EXHAUST DUCT SERVING COMMERCIAL DISHWASHERS SHALL BE ALUMINUM DUCT SEALED WATER TIGHT. FABRICATE DRYER DUCT WITH NO FASTENERS PROTRUDING INTO INSIDE OF DUCT. TERMINATE DRYER DUCT WITH BACKDRAFT DAMPER AND WITHOUT A SCREEN.
22. **DUCT INSULATION**
 - A. SEE PLAN KEYED NOTES FOR MORE INFORMATION.
23. **EQUIPMENT**
 - A. INSTALL ALL EQUIPMENT AND MATERIALS IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTALLATION AND OPERATIONS MANUAL AND IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS.
 - B. U.N.O. PROVIDE ALL MOTORIZED EQUIPMENT WITH VIBRATION ISOLATION MOUNTING AND FLEXIBLE DUCT AND FLEXIBLE PIPE CONNECTIONS.
 - C. LABEL EQUIPMENT WITH ENGRAVED PHENOLIC RESIN NAMEPLATES ADHERED TO UNIT CABINET WITH RTV SILICONE. LETTERING SHALL BE 1" HIGH BLACK ON WHITE BACKGROUND.
 - D. ALL EQUIPMENT, DUCT, PIPE, ETC. MOUNTED FROM BOLTED CONNECTIONS SHALL HAVE DOUBLE NUTS AT ATTACHMENT TO STRUCTURE AND

- HANGER, NO EXCEPTIONS.
24. **FIRE AND FIRE-SMOKE DAMPERS**
 - A. PROVIDE FIRE DAMPERS AND/OR FIRE SMOKE DAMPERS AT DUCT PENETRATIONS OF RATED ASSEMBLIES AND AS REQUIRED BY AHJ. REFER TO ARCHITECTURAL DRAWINGS FOR ASSEMBLY RATINGS. INSTALL DAMPERS IN STRICT ACCORDANCE WITH MANUFACTURER'S DETAILS AND MAINTAIN MANUFACTURER'S SCHEDULE FOR AHJ REVIEW. PROVIDE ACCESS PANELS OF ADEQUATE SIZE TO FACILITATE SERVICE ACCESS OF DAMPER. IN LIEU OF ACCESS PANELS, A REMOVABLE DUCT SECTION IS ACCEPTABLE.
 25. **OUTDOOR AIR INTAKES**
 - A. PROVIDE A MINIMUM 10'-0" HORIZONTAL CLEARANCE BETWEEN MECHANICAL EQUIPMENT OUTDOOR AIR INTAKES AND EXHAUST FAN DISCHARGES, COMBUSTION EXHAUST, PLUMBING VENTS, AND ANY OTHER HAZARDOUS OR NOXIOUS CONTAMINANT.
 26. **AIR FILTERS**
 - A. PROVIDE THREE (3) SETS OF NEW MERV 8 DISPOSABLE AIR FILTERS, PER THE FOLLOWING: FOR HVAC SYSTEMS OPERATED DURING CONSTRUCTION, PROVIDE FILTERS IN EQUIPMENT AND ON RETURN AIR DUCT OPENINGS TO PROTECT DUCT FROM DIRT; IN HVAC EQUIPMENT PRIOR TO AIR TESTING, ADJUSTING, AND BALANCING; AND AT PROJECT COMPLETION - ONE (1) SPARE SET FOR HVAC EQUIPMENT.
 27. **COMPLETION OF WORK**
 - A. UPON COMPLETION OF WORK, INSPECT INSTALLATION OF ALL EQUIPMENT AND SYSTEMS. OPEN ALL ACCESS COVERS ON EQUIPMENT. REMOVE ALL SURPLUS MATERIALS AND DEBRIS AND PROPERLY DISPOSE OF SAME.
 28. **TESTING, ADJUSTING, & BALANCING**
 - A. PRIOR TO EQUIPMENT START-UP, REMOVE COVERS, CAPS, OR PLUGS ON DUCT AND PIPING.
 - B. UPON COMPLETION OF WORK, MC SHALL PROVIDE HVAC TESTING:
 - a. AFTER INSTALLING EQUIPMENT AND AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, TEST UNITS FOR COMPLIANCE WITH REQUIREMENTS.
 - b. INSPECT FOR AND REMOVE SHIPPING BOLTS, BLOCKS, AND TIE-DOWN STRAPS.
 - c. OPERATIONAL TEST: AFTER ELECTRICAL CIRCUITRY HAS BEEN ENERGIZED, START UNITS TO CONFIRM PROPER MOTOR ROTATION, BELT TENSION, DAMPER FUNCTION, COOLING FUNCTION, HEATING FUNCTION, AND UNIT OPERATION.
 - d. TEST AND ADJUST CONTROLS AND SAFETIES. REPLACE DAMAGED AND MALFUNCTIONING CONTROLS AND EQUIPMENT.
 - e. REMOVE AND REPLACE MALFUNCTIONING UNITS AND RETEST AS SPECIFIED ABOVE.
 - f. SUBMIT TESTING REPORT TO ARCHITECT (ENGINEER).
 - C. UPON COMPLETION OF WORK, PROVIDE AN HVAC TESTING, ADJUSTING, AND BALANCING REPORT PERFORMED BY AN INDEPENDENT CONTRACTOR CERTIFIED BY AABC, NEBB, OR TAB. BALANCE SYSTEMS WITHIN 10% OF DESIGN FLOW. TAB SHALL BE PERFORMED IN STRICT ACCORDANCE WITH SMACNA'S "TAB PROCEDURAL GUIDE", LATEST EDITION. MC SHALL BE PRESENT DURING TAB SHOULD ANY CORRECTIONS BE REQUIRED. (EXISTING HVAC SYSTEMS: PRIOR TO START OF WORK, TEST AND RECORD FLOW OF EXISTING DEVICES AND SYSTEMS. AT COMPLETION OF WORK ADJUST FLOW TO NEW DEVICES, AS INDICATED ON DRAWINGS. RESTORE EXISTING DEVICES NOT IN SCOPE OF WORK TO ORIGINAL VOLUMETRIC FLOW RATES.)
 29. **CLOSEOUT - AT CONSTRUCTION COMPLETION AND PRIOR TO TURNOVER TO OWNER (TENANT):**
 - A. PROVIDE FINAL MARK-UPS IN PDF (DWG) FORMAT TO ARCHITECT AND ENGINEER.
 - B. PROVIDE A SIGNED CERTIFICATE OF INSPECTION AT THE PROJECT COMPLETION.
 - C. PROVIDE THE OWNER WITH A BOUND OWNER'S MANUAL. THE MANUAL SHALL CONSIST OF A THREE-RING LOOSE-LEAF BINDER CONTAINING ALL PRINTED MATERIAL FOR INSTALLED EQUIPMENT INCLUDING BUT NOT LIMITED TO: WARRANTY INFORMATION, SERVICE AND CLEANING INSTRUCTIONS, NOTICES TO OWNER, OPERATING MANUALS, AND MAINTENANCE INSTRUCTIONS.
 - D. TRAIN THE OWNER IN THE THERMOSTATS FUNCTIONS AND OPERATING THE EQUIPMENT USING THE THERMOSTATS. CONTRACTOR SHALL PROGRAM THE THERMOSTATS PER THE OWNER'S TIME SCHEDULES AND SETPOINTS.
 30. **WARRANTY**
 - A. ON ALL WORK INCLUDED IN THIS CONTRACT, PROVIDE ONE (1) YEAR UNCONDITIONAL WRITTEN WARRANTY FOR LABOR, EQUIPMENT, AND MATERIALS TO REPLACE ALL FAULTY MATERIALS AND/OR LABOR, AT NO COST TO OWNER, BEGINNING ON DATE OF ACCEPTANCE BY OWNER.
 - B. WITHIN THE WARRANTY PERIOD, DURING THE OPPOSITE SEASON (HEATING/COOLING) FROM THAT IN WHICH THE INITIAL ADJUSTMENTS WERE MADE, THIS CONTRACTOR SHALL MAKE AN INSPECTION OF THE INSTALLED BUILDING SYSTEMS. AT THIS INSPECTION, WITH SYSTEMS OPERATING, THIS CONTRACTOR SHALL MAKE ANY NECESSARY MODIFICATIONS TO THE INITIAL ADJUSTMENTS REQUIRED TO PRODUCE OPTIMUM OPERATION OF THE SYSTEM COMPONENTS, TO PRODUCE THE PROPER CONDITIONS IN EACH SPACE.

#	Description	Date
1	FIRE DEPT.	09/19/2023
4	CLIENT REVISIONS	11/22/2023

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Missouri Corporate Authority Number #84.
Missouri Architect in responsible charge - Ronald Wade Rain #6-5693.

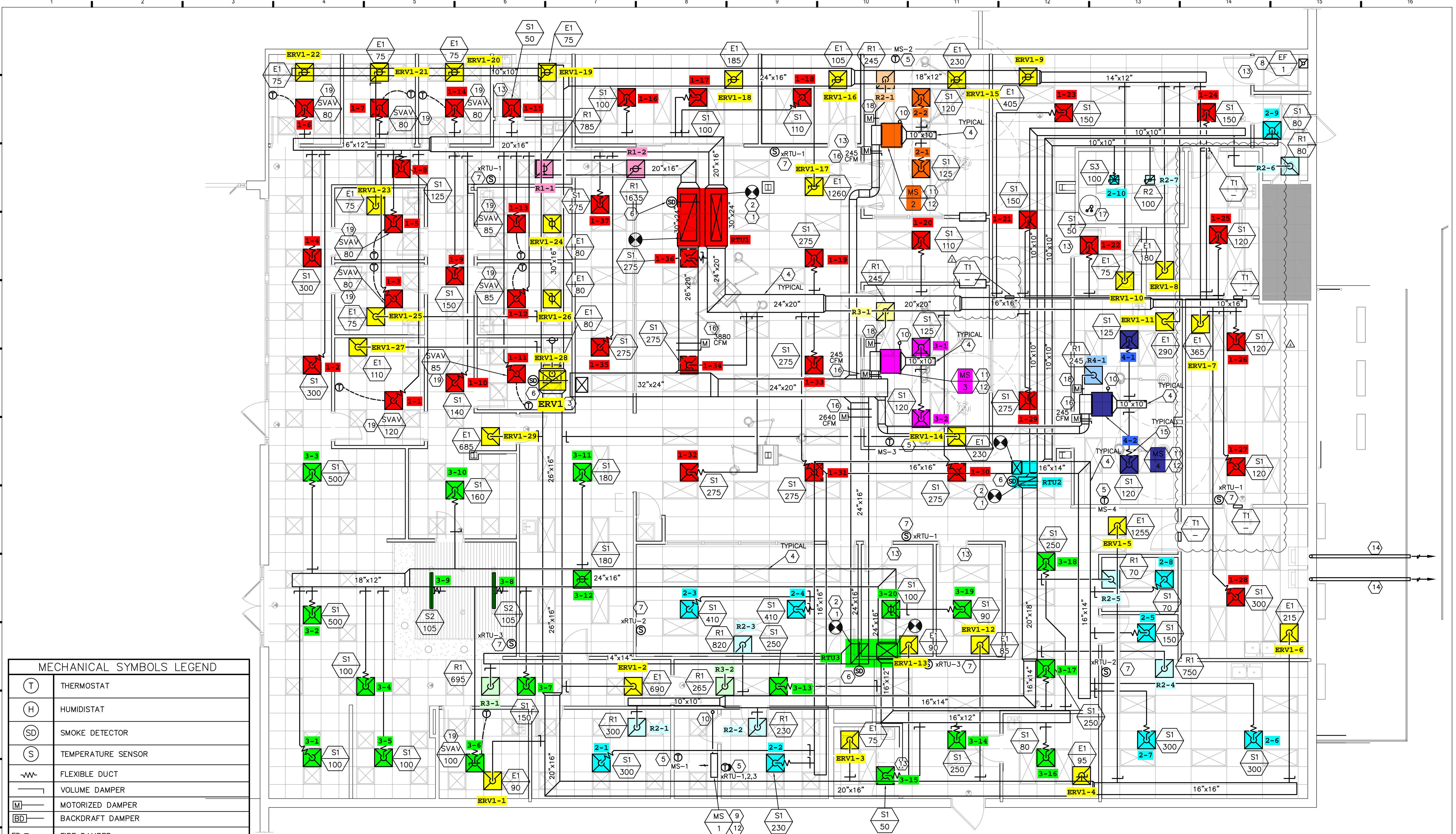


PERMIT SET
Client Approval

MECHANICAL FLOOR PLAN

Project # NVA22-PP01
Issue Date 8/24/23
Scale As Noted
Drawn by
Checked by

M-100

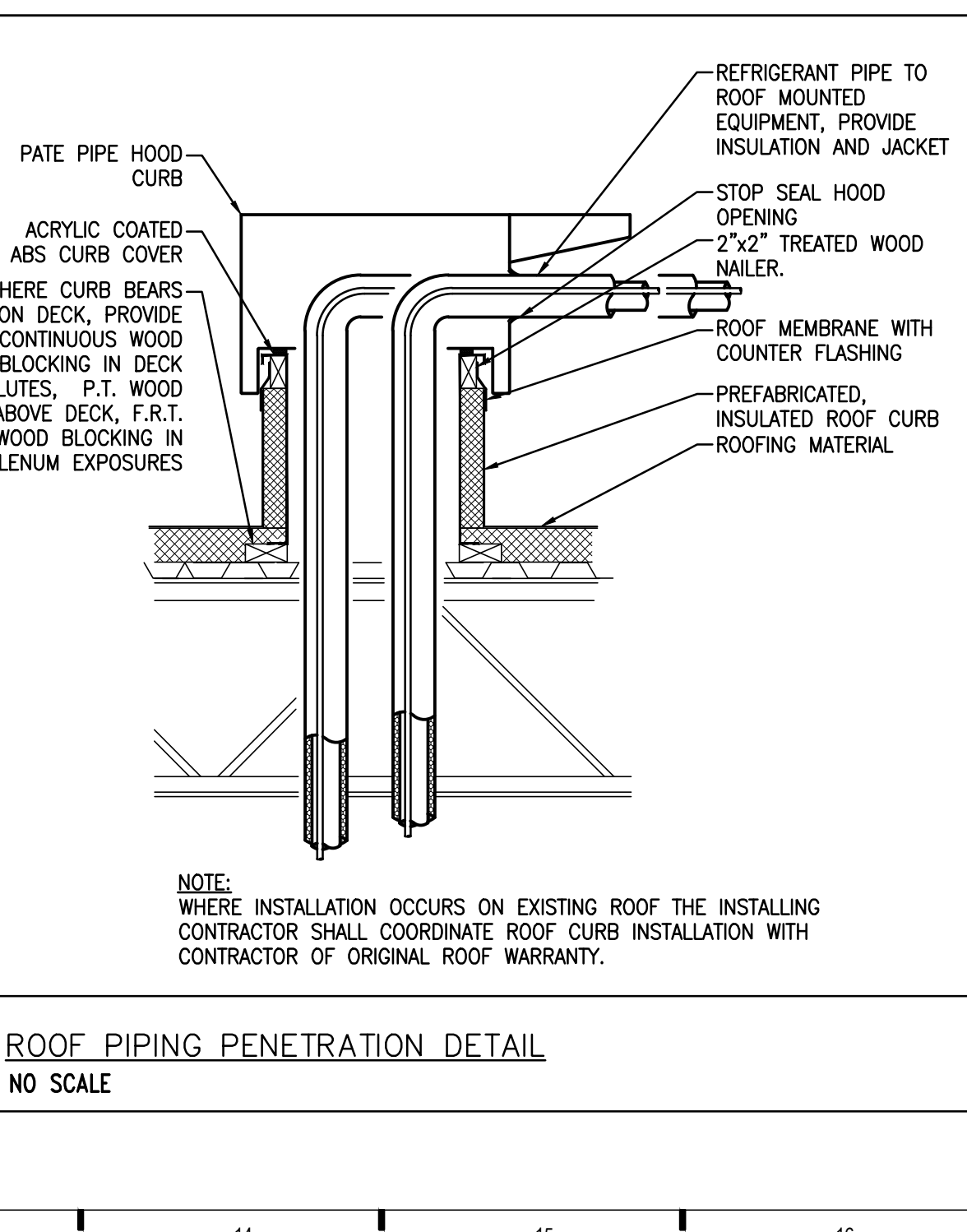
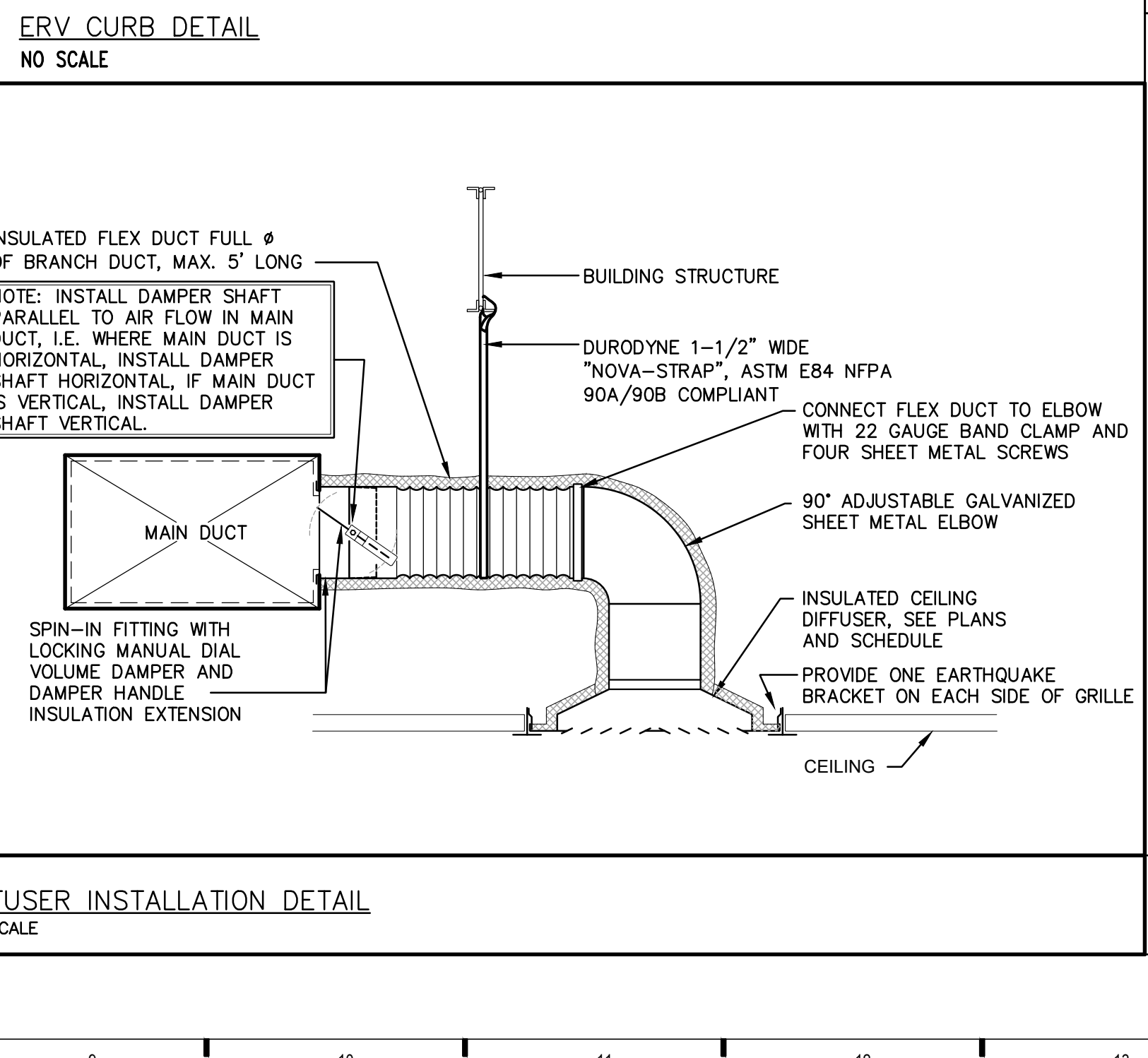
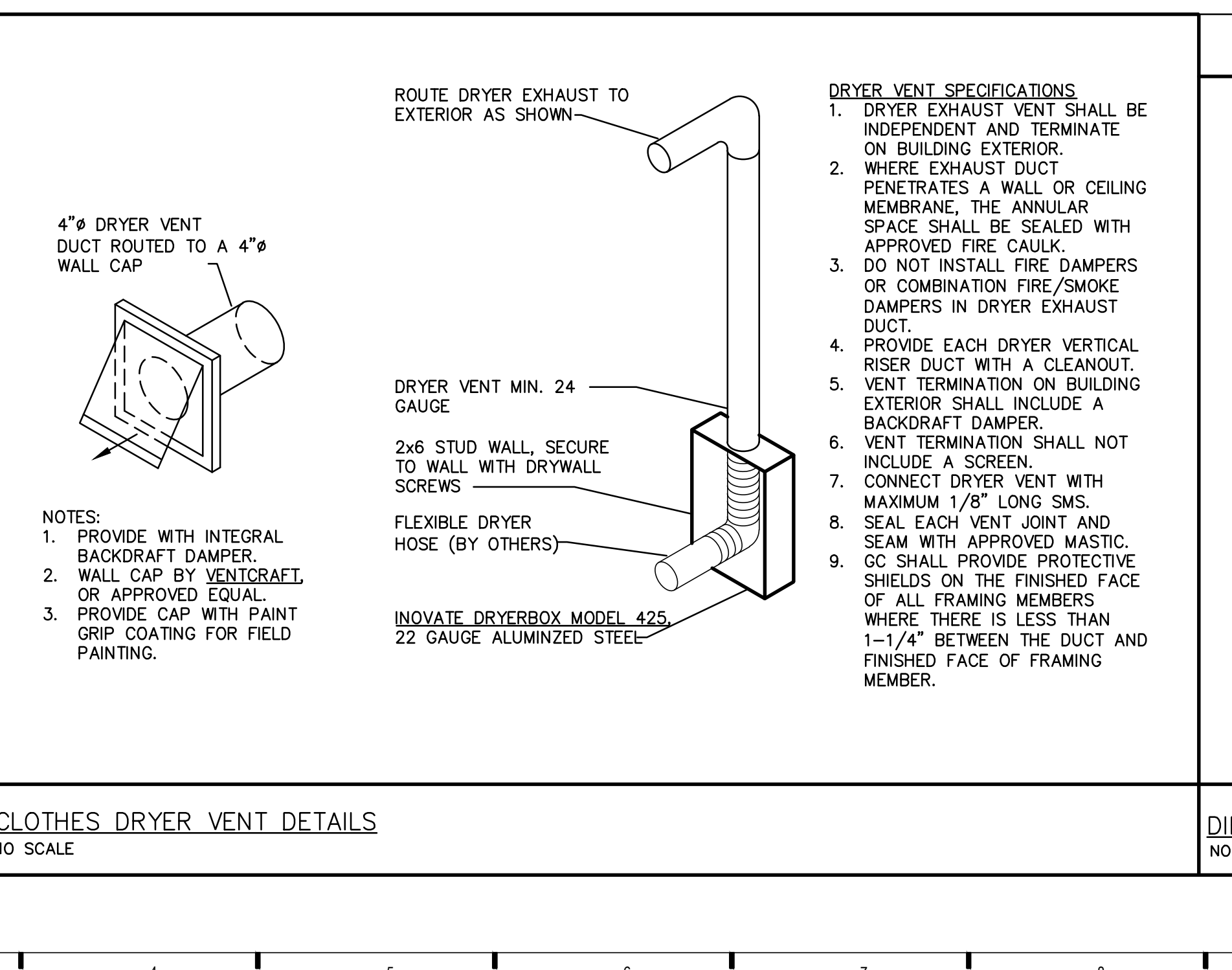
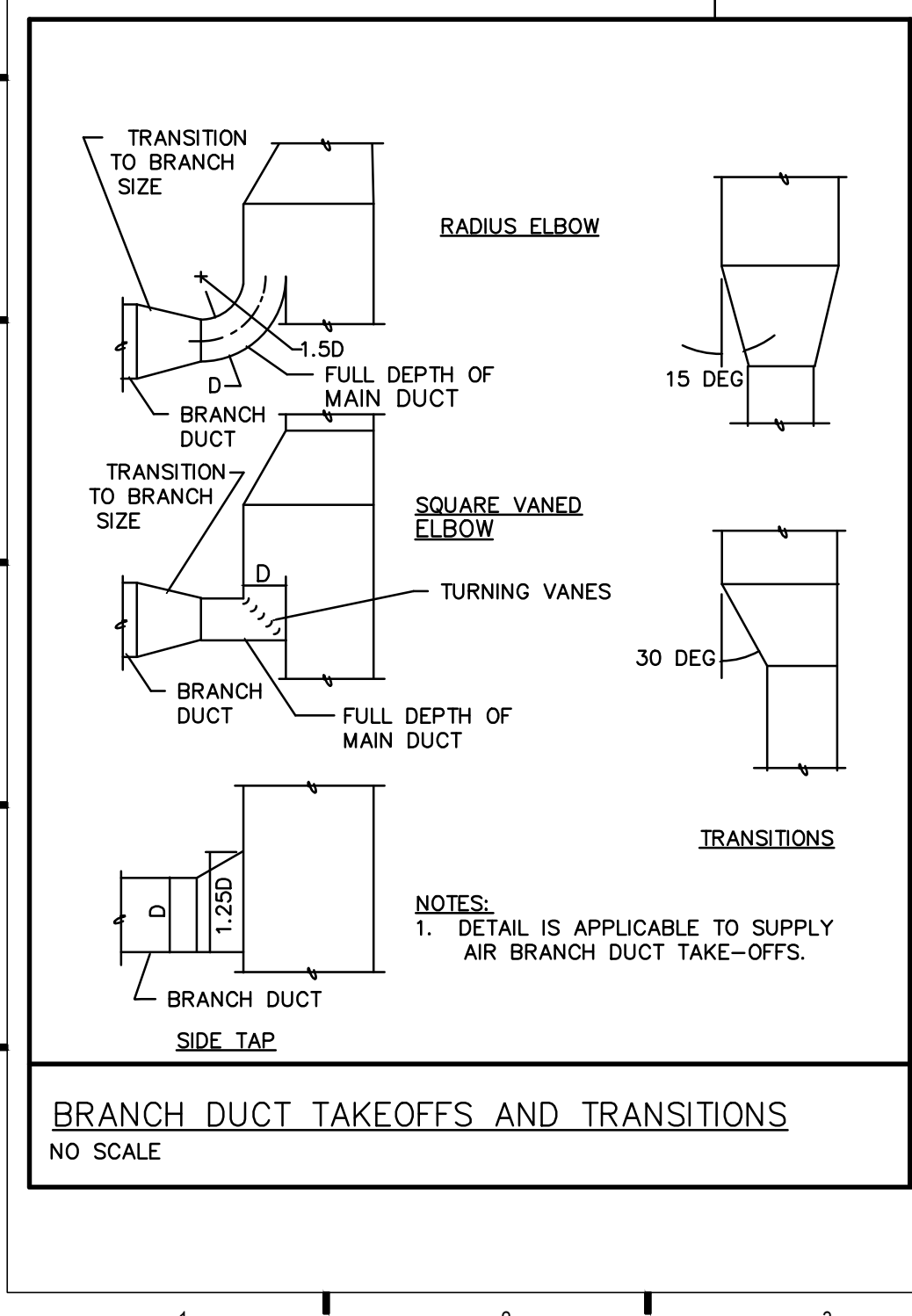
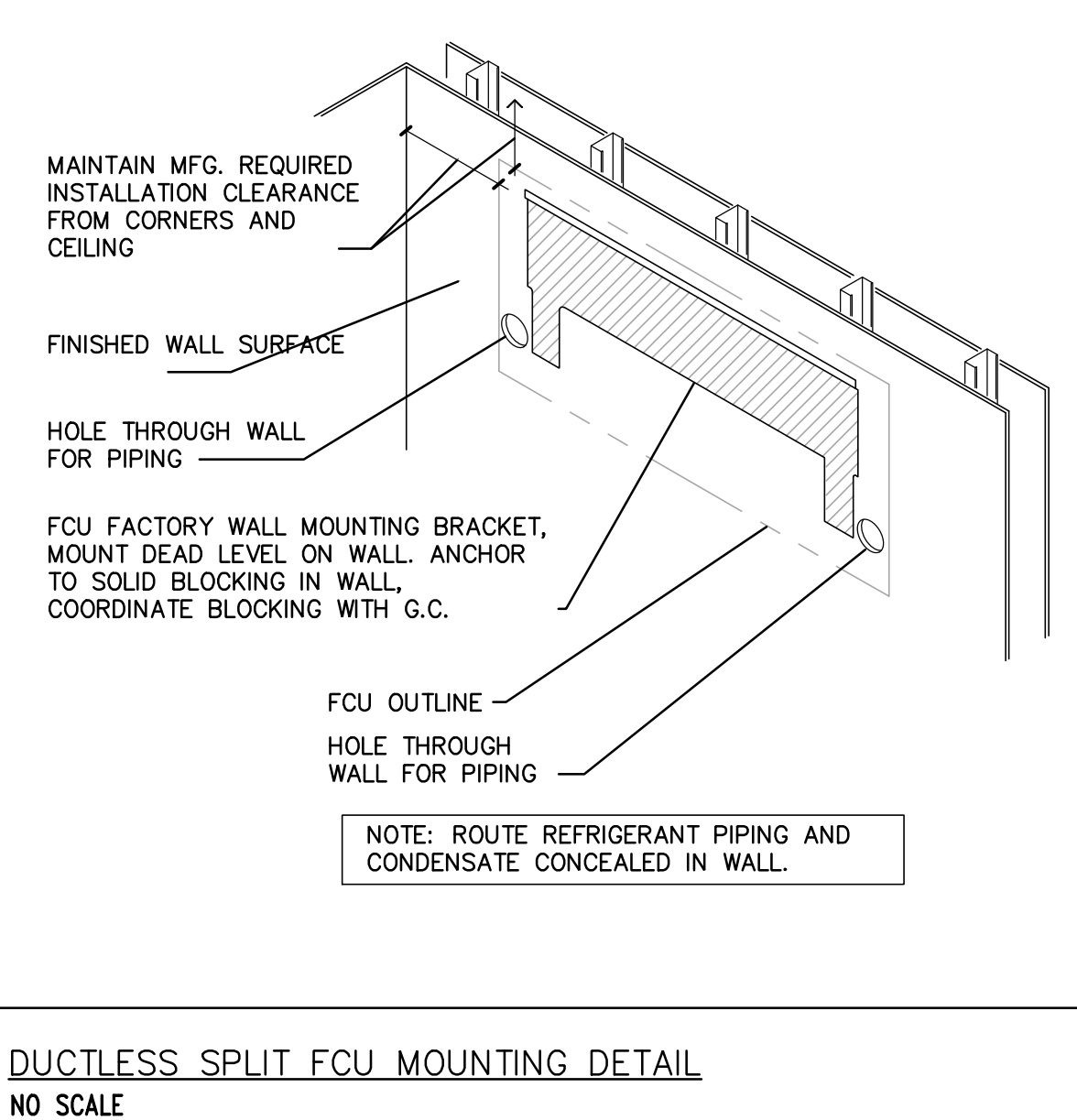
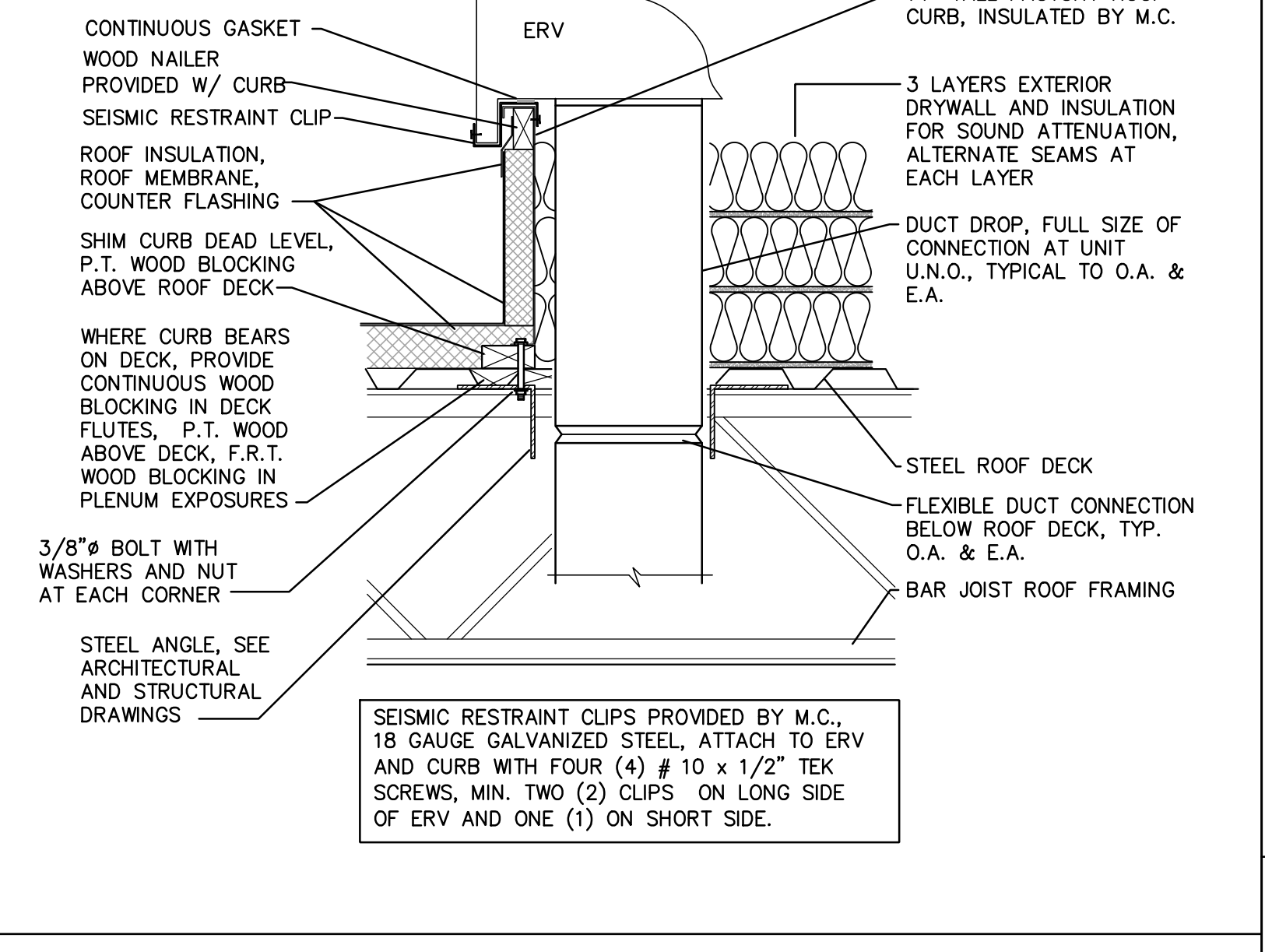
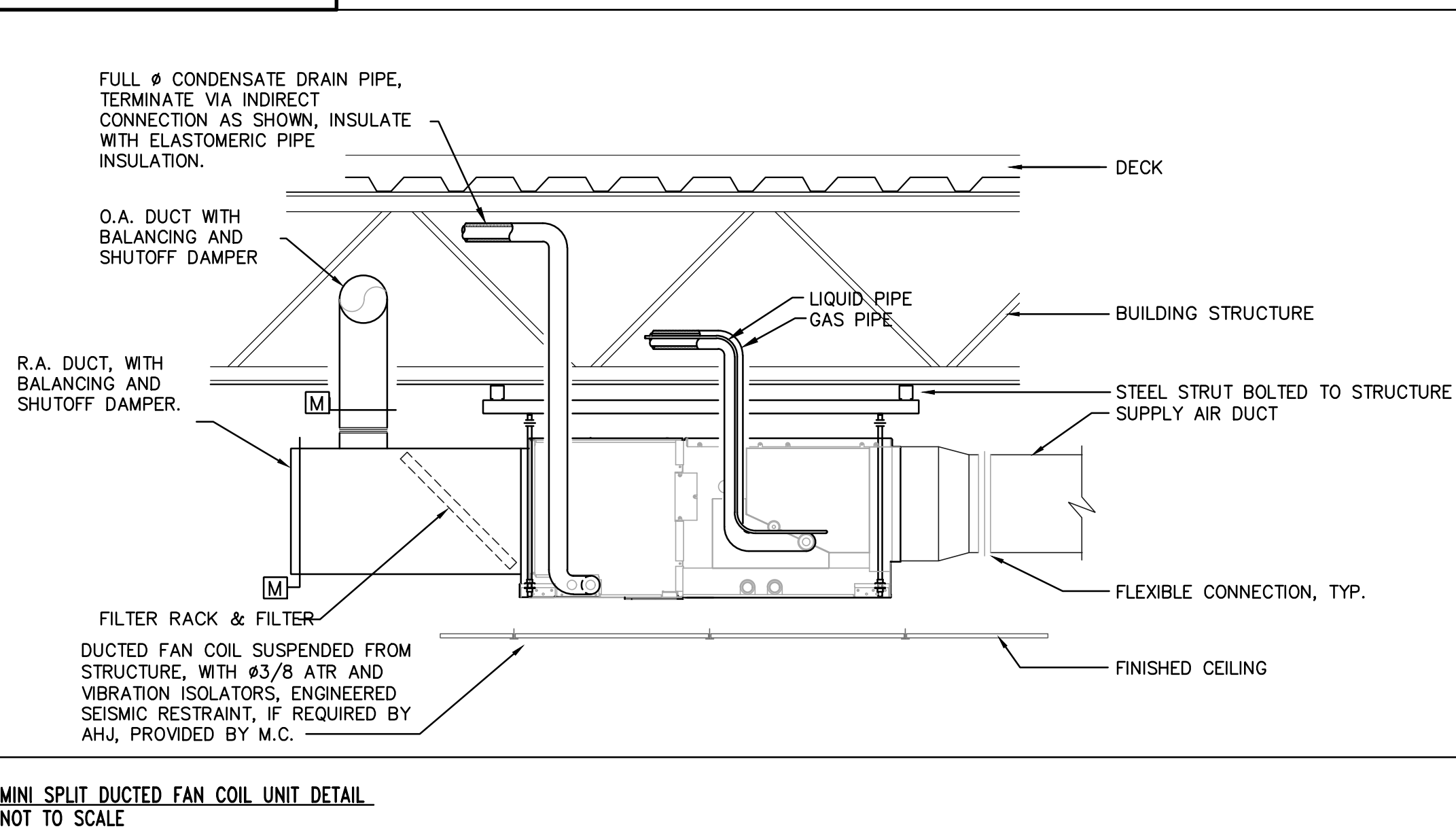
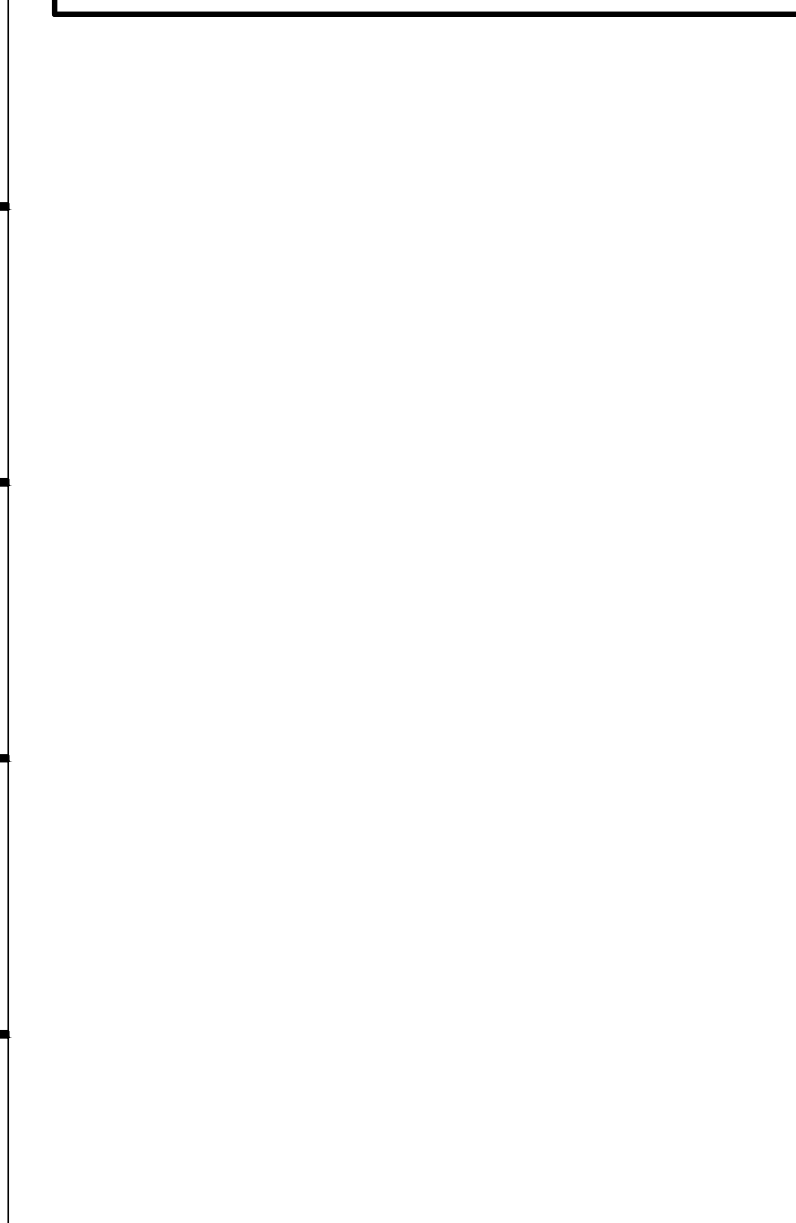
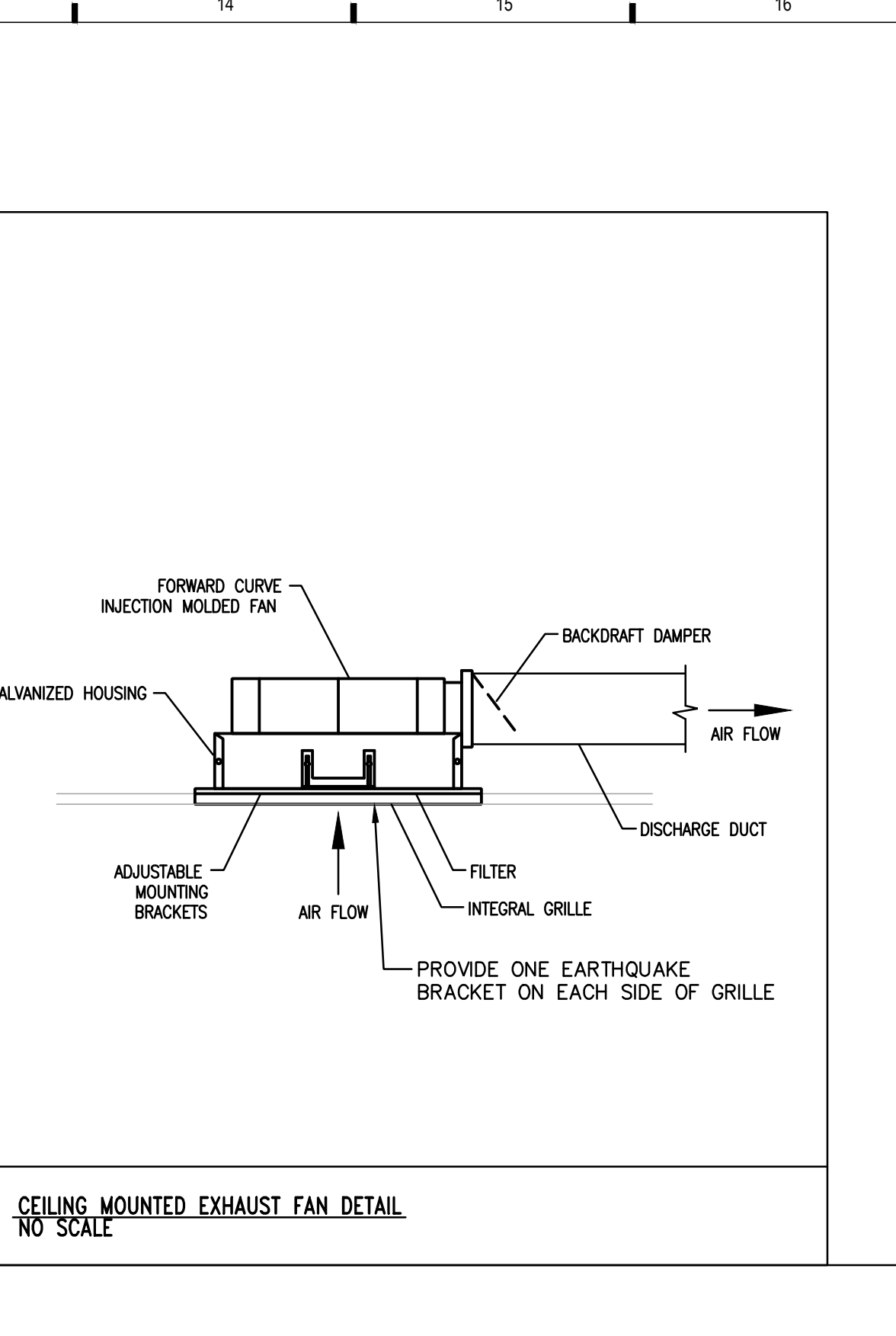
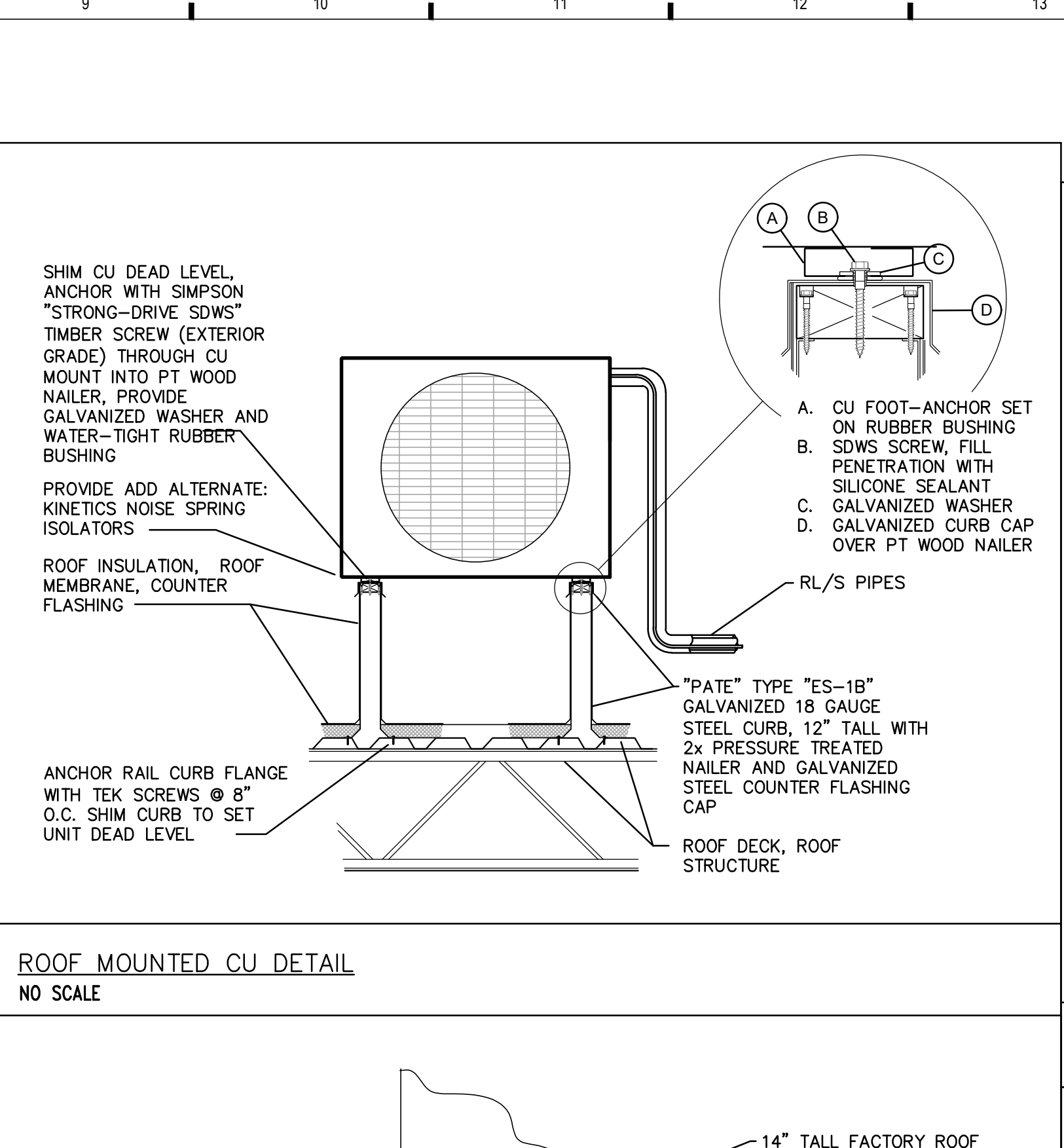
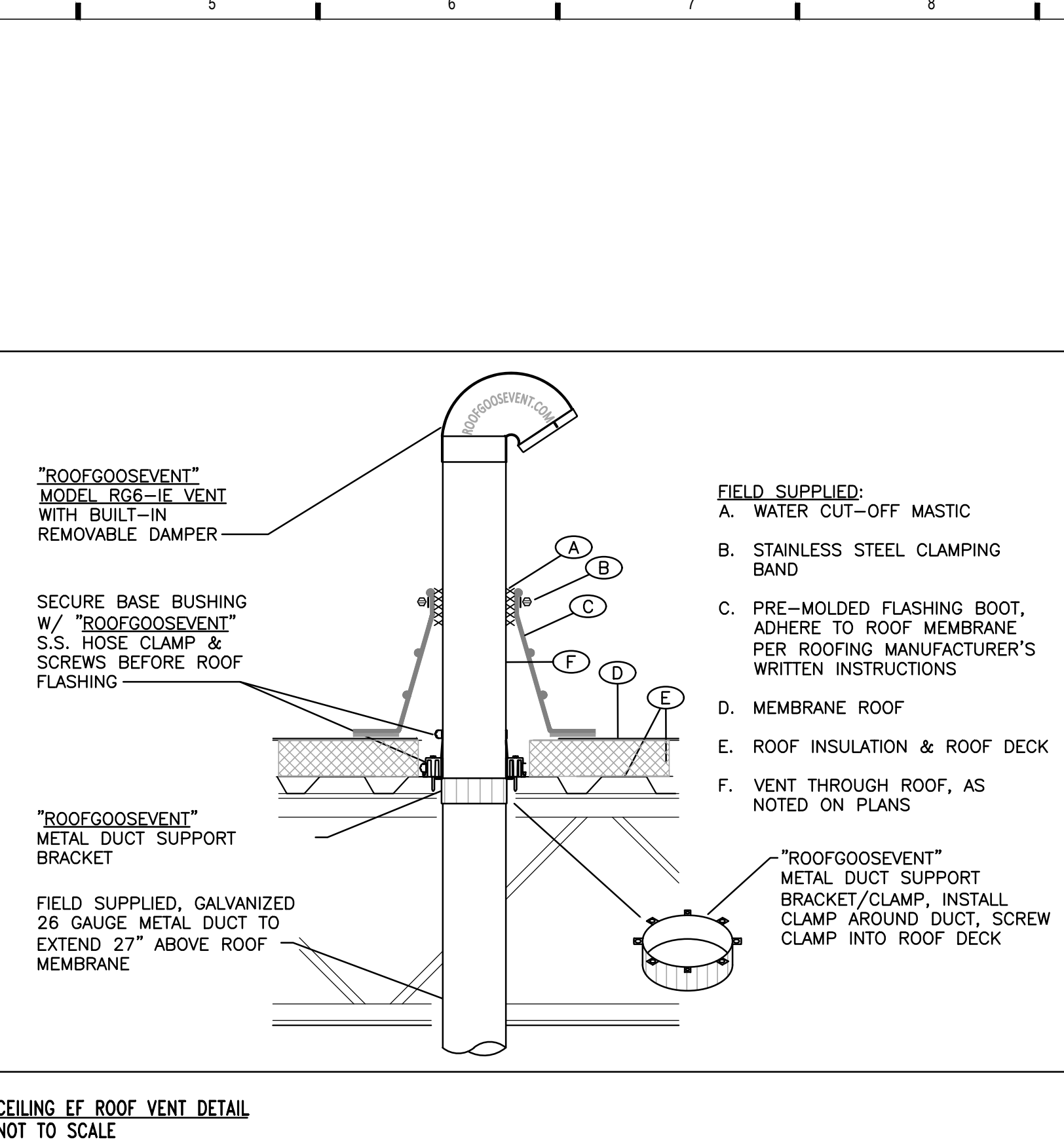
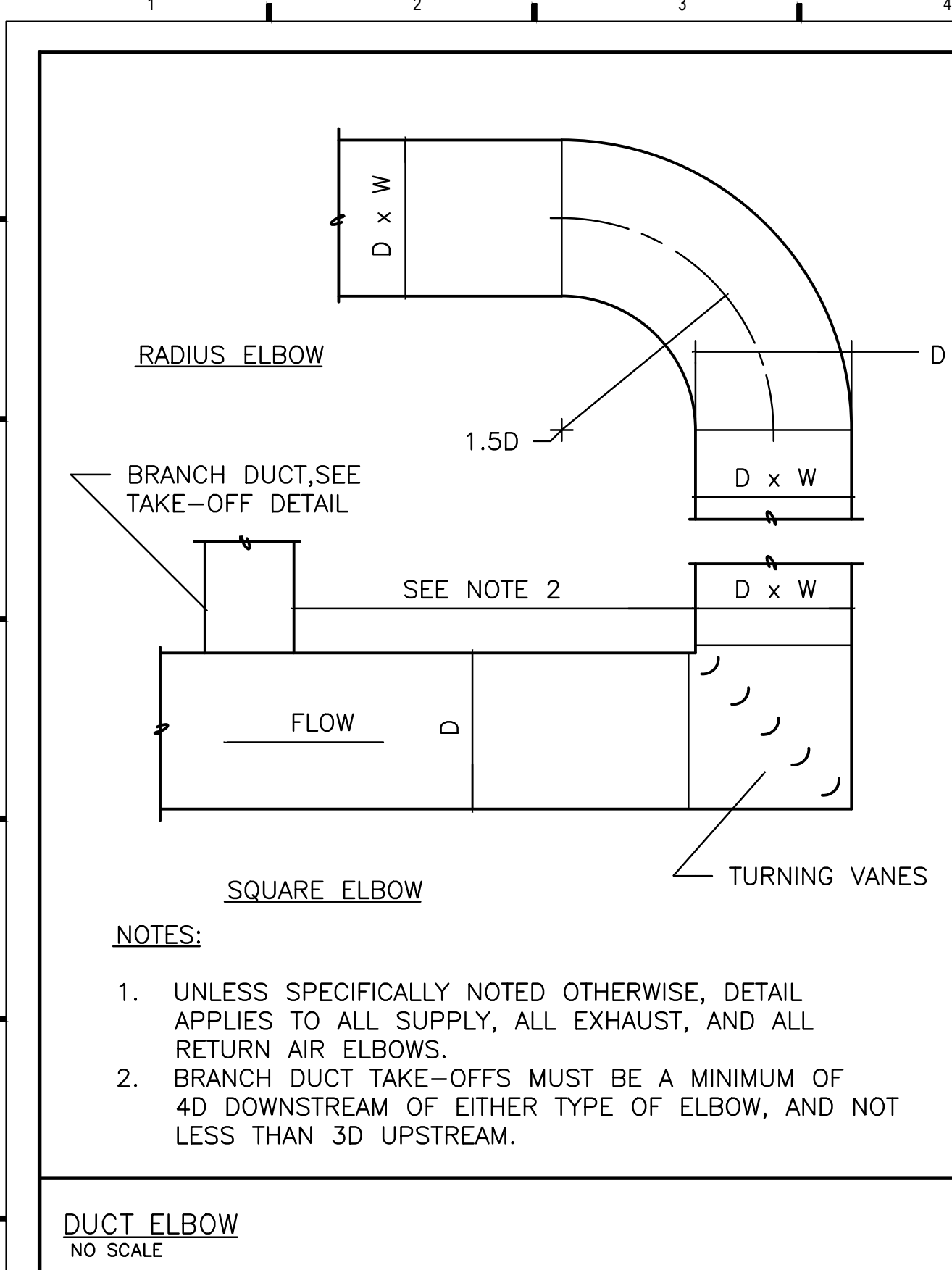


MECHANICAL SYMBOLS LEGEND	
(T)	THERMOSTAT
(H)	HUMIDISTAT
(SD)	SMOKE DETECTOR
(S)	TEMPERATURE SENSOR
~w~	FLEXIBLE DUCT
— —	VOLUME DAMPER
(M)	MOTORIZED DAMPER
(BD)	BACKDRAFT DAMPER
FD	FIRE DAMPER
(S)	CEILING SUPPLY AIR DIFFUSER
(R)	CEILING RETURN AIR GRILLE
— —	SIDEWALL AIR DIFFUSER OR GRILLE
— —	NEW DUCTWORK
— —	EXISTING DUCTWORK
D	CONDENSATE DRAIN
G	GAS PIPING
— —	PIPE TURNING DOWN
— —	PIPE TURNING UP
(V)	BALL VALVE
(G)	GATE VALVE
(C)	CONNECTION OF NEW TO EXISTING
AFF	ABOVE FINISHED FLOOR
(S1)	AIR DEVICE #
(100)	CFM
S	S - SUPPLY
R	R - RETURN
E	E - EXHAUST

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

KEYED MECHANICAL NOTES

- SUPPLY AND RETURN DROPS FROM ROOFTOP UNITS. PROVIDE FLEXIBLE CONNECTORS FOR THE SUPPLY AND RETURN AIR DUCT CONNECTIONS. TRANSITION TO DUCT SIZES SHOWN. PROVIDE DUCT WORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. REFER TO EQUIPMENT SCHEDULES FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR TO VERIFY ORIENTATION OF EXISTING ROOFTOP UNITS AND LOCATION OF SUPPLY AND RETURN DROPS. NOTIFY TENANT'S ENGINEER WITH ANY QUESTIONS PRIOR TO BIDDING. NO EXTRAS OR CHANGE ORDERS SHALL BE GIVEN FOR CONTRACTOR'S FAILURE TO VERIFY SITE CONDITIONS PRIOR TO BIDDING.
- SUPPLY AND EXHAUST DROPS FROM ROOFTOP UNITS. PROVIDE FLEXIBLE CONNECTORS FOR THE SUPPLY AND RETURN AIR DUCT CONNECTIONS. TRANSITION TO DUCT SIZES SHOWN. PROVIDE DUCT WORK AND AIR DISTRIBUTION DEVICES AS INDICATED ON THE PLAN. REFER TO EQUIPMENT SCHEDULES FOR ADDITIONAL REQUIREMENTS.
- PROVIDE GALVANIZED STEEL DUCTWORK, SIZES AS NOTED ON DRAWINGS. ALL SIZES SHOWN ARE CLEAR INTERNAL DIMENSIONS. ALL NEW SUPPLY DUCTWORK ABOVE CEILING SHALL BE INSULATED WITH R-6 DUCT WRAP WITH VAPOR BARRIER.
- FURNISH AND INSTALL SEVEN-DAY PROGRAMMABLE THERMOSTATS WITH AUTO CHANGEOVER AND RELATED WIRING TO PROVIDE CONTROL OF MECHANICAL EQUIPMENT. MOUNT AT 48" AFF IN HM'S OFFICE. VERIFY PROPER OPERATION IN FIELD. COORDINATE TYPE AND FINAL LOCATION WITH OWNER.
- SMOKE DETECTOR BY ELECTRICAL CONTRACTOR IN EQUIPMENT RETURN AIR DUCTS TO MEET LOCAL CODE REQUIREMENTS. ELECTRICAL CONTRACTOR TO PROVIDE INTERLOCK WIRING TO DE-ENERGIZE ALL RTU'S AND ERV-1 UPON DETECTION OF SMOKE. COORDINATE WITH ELECTRICAL DRAWINGS.
- PROVIDE REMOTE TEMPERATURE AND HUMIDITY SENSORS, COMPATIBLE WITH CORRESPONDING THERMOSTATS. MOUNT 48" A.F.F. MULTIPLE SENSORS TO BE TEMPERATURE AVERAGING.
- NEW CEILING MOUNTED EXHAUST FAN (EF-1). FANS SHALL RUN CONTINUOUSLY TO MEET NFPA-99 REQUIREMENTS FOR MEDICAL GAS STORAGE. COORDINATE WITH ELECTRICAL CONTRACTOR. PROVIDE 6" EXHAUST DUCT WITH BACKDRAFT DAMPER, EXTEND THROUGH ROOF AND TERMINATE WITH GOOSENECK.
- PROVIDE WALL MOUNTED DUCTLESS MINI SPLIT UNIT. COORDINATE EXACT MOUNTING HEIGHT IN FIELD. INSTALL UNIT IN ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS.
- ROUTE SUCTION AND DISCHARGE LINE SETS UP THROUGH ROOF TO CORRESPONDING CONDENSING UNIT. PROVIDE WITH 1" ELASTOMERIC INSULATION AND VAPOR BARRIER. INSTALL IN ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE DUCTED MINI SPLIT FAN COIL. INSTALL UNIT ABOVE CEILING IN ACCORDANCE WITH ALL MANUFACTURER'S RECOMMENDATIONS.
- ROUTE 3/4" COPPER CONDENSATE PIPING, PROVIDE WITH 1" INSULATION AND VAPOR BARRIER. SLOPE PIPING 1/4" PER FT TO TERMINATE INDIRECTLY ABOVE MOP SINK, PROVIDE WITH CONDENSATE PUMP ON DRAIN DISCHARGE AT UNIT.
- UNDER CUT DOOR 1" FOR PROPER TRANSFER AIR FLOW.
- PROVIDE 4" CRUSH RESISTANT ROUND ALUMINUM EXHAUST DUCT FOR DRYER WITH EXTERNAL WRAPPED INSULATION. VERIFY FLUE SIZE AND REQUIREMENTS WITH MANUFACTURER RECOMMENDATIONS. DUCTWORK SHALL BE SEALED PER MANUFACTURER'S RECOMMENDATIONS. COORDINATE LOCATION WITH OTHER TRADES PRIOR TO INSTALLATION. TERMINATE THROUGH EXTERIOR WALL WITH DRYER VENT HOOD. PROVIDE UL FIRE STOP SYSTEM AT ALL WALL PENETRATIONS. PROVIDE CLEANOUTS AT ALL 90° BENDS. NO FLEX DUCT ALLOWED.
- MAXIMUM FIVE (5) FEET OF FLEXIBLE DUCT. ONLY ONE 90° ELBOW ALLOWED IN FLEXIBLE DUCTWORK.
- PROVIDE OUTSIDE AIR DUCTS FROM ERV-1 TO SERVE RTU-1 AND RTU-3. OA DUCTWORK SHALL BE INSULATED WITH R-6 DUCT WRAP WITH VAPOR BARRIER. PROVIDE NORMALLY CLOSED MOTORIZED DAMPER IN EACH OA DUCT, INTERLOCKED WITH ERV-1 SUPPLY FAN. DAMPERS TO OPEN DURING ERV-1 SUPPLY FAN OPERATION. BALANCE DAMPER TO CFM SHOWN ON PLAN.
- ROUTE FLUE/INTAKE FROM WATER HEATER, SIZED PER MANUFACTURER'S RECOMMENDATIONS, UP TO ROOF AND TERMINATE WITH CONCENTRIC VENT. TERMINATION MUST BE AT LEAST 10'-0" AWAY FROM ALL OUTDOOR AIR INTAKES. VERIFY EXACT ROUTING IN FIELD AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- PROVIDE NORMALLY OPEN MOTORIZED DAMPER IN MINI-SPLIT RETURN DUCT, INTERLOCKED WITH ERV-1 SUPPLY FAN. DAMPER TO CLOSE DURING ERV-1 SUPPLY FAN OPERATION.
- PROVIDE VAV DIFFUSER WITH FACTORY TEMPERATURE CONTROLLER. COORDINATE VAV DIFFUSER INSTALLATION WITH E.C. INSTALL ACCORDING TO ALL MANUFACTURER RECOMMENDATIONS.



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CERTIFICATE OF AUTHORITY NO. 001498

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10320 Manchester Rd
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#	Description	Date

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Miscellaneous Authority Number #14
Missouri Architect in responsible charge - Ronald M. Rain AR-5485

PERMIT SET

Client Approval

MECHANICAL DETAILS

Project # NVA22-PP01
Issue Date 8/04/23
Scale As Noted
Drawn by
Checked by

M-300