

1. GENERAL PROVISIONS
- A. INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE 2021 VIRGINIA STATE BUILDING CODE INCLUDING REFERENCED CODES AND STANDARDS AND IN ACCORDANCE WITH MANDATES OF THE LOCAL BUILDING OFFICIALS.
- B. THE GENERAL ARRANGEMENT AND LOCATIONS OF DUCTWORK, PIPING, FIXTURES, ETC. ARE INDICATED BY THE DRAWINGS AND SHALL BE INSTALLED IN ACCORDANCE THEREWITH; WITH THE EXCEPTION OF SUCH CHANGES AS MAY BE REQUIRED ON ACCOUNT OF OTHER TRADES. CONTRACTOR SHALL COORDINATE WORK WITH INSTALLATION OF OTHER SUBCONTRACTORS.
- C. MECHANICAL WORK SHALL BE COORDINATED WITH THE CONTRACTOR AS TO SCHEDULING, DIMENSIONING AND LOCATION OF EQUIPMENT.
- D. MAJOR ITEMS ARE SHOWN ON THE PROJECT PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL INCIDENTAL ITEMS REQUIRED TO PROVIDE A COMPLETE AND FUNCTIONAL SYSTEM.
- E. TRADE NAMES AND CATALOG NUMBERS SHALL BE INTERPRETED AS ESTABLISHING A GENERAL DESIGN AND STANDARD OF QUALITY AND SHALL NOT BE CONSTRUED AS LIMITING COMPETITION. UNLESS STATED OTHERWISE, THE CONTRACTOR MAY USE ANY ARTICLE WHICH, IN HIS JUDGEMENT, AND WITH WRITTEN COMMENT FROM THE ARCHITECT/ENGINEER INDICATING NO OBJECTION, IS EQUAL OR SUPERIOR TO THAT SPECIFIED. DRAWINGS SHOWING CHANGES OR REVISIONS REQUIRED BY THE SUBSTITUTION FOR SPECIFIED ITEMS SHALL BE SUBMITTED WITH THE SHOP DRAWING DATA, AND THE COSTS OF ALL SUCH CHANGES SHALL BE BORNE BY THE CONTRACTOR.
- F. SIMILAR ITEMS SHALL BE PROVIDED BY A SINGLE MANUFACTURER.
- G. ALL REQUIRED WALL OR FLOOR OPENINGS SHALL BE COORDINATED WITH THE CONTRACTOR.
- H. ALL PIPING SHALL BE ABOVE CEILING UNLESS INDICATED OTHERWISE.
- I. DO NOT INSTALL PVC PIPING OR ANY COMBUSTIBLE MATERIAL IN ANY AIR PLENUM.
- J. ALL EQUIPMENT SHALL BE WIPED CLEAN, REMOVING ALL TRACES OF OIL, DIRT, OR PAINT SPOTS.
- K. PROVIDE SUPPORTS TO RIGIDLY ATTACH ALL EQUIPMENT. APPURTENANCES AND PIPE AS REQUIRED FOR SUPPORT. PRIOR TO INSTALLATION OF HANGERS AND INSERTS, THE CONTRACTOR SHALL COORDINATE LOCATIONS AND REQUIREMENTS TO MINIMIZE CONFLICTS WITH OTHER BUILDING SYSTEMS. INSTALLATION OF PIPE HANGERS AND SUPPORTS SHALL BE IN STRICT ACCORDANCE WITH MSS SP-58, 68 AND 69.
- L. CONTRACTOR SHALL MAKE FINAL CONNECTIONS TO ALL EQUIPMENT INDICATED TO BE FURNISHED BY OTHERS.
- M. ALL MATERIALS AND WORKMANSHIP SHALL BE WARRANTED TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE AND CONTRACTOR SHALL MAKE GOOD, WITHOUT ADDITIONAL COST TO THE OWNER, ANY DEFECT WHICH MAY APPEAR WITHIN THAT PERIOD. MANUFACTURER'S WARRANTIES EXTENDING BEYOND ONE YEAR SHALL BE PROCESSED AND TURNED OVER TO THE OWNER.
2. SUBMISSION OF SHOP DRAWINGS, PRODUCT DATA, SAMPLES AND PROJECT INFORMATION
- A. SHOP DRAWINGS SHALL BE SUBMITTED FOR THE FOLLOWING ITEMS:
- (1) MECHANICAL SLEEVE SEALS
- (2) FIRE BARRIER PENETRATION SEALS
- (3) INSULATION
- (4) ALL MECHANICAL EQUIPMENT
- B. IDENTIFY ALL MECHANICAL SHOP DRAWINGS, PRODUCT DATA AND SAMPLES WITH THE NAME OF THE PROJECT. CLEARLY MARK THE SPECIFIC ITEMS INTENDED FOR USE. SUBMIT ALL RELATED ITEMS AT ONE TIME.
- C. PRIOR TO SUBSTANTIAL COMPLETION OF THE PROJECT, SUBMIT THE FOLLOWING INFORMATION FOR REVIEW AND APPROVAL.
- (1) OPERATING AND MAINTENANCE INSTRUCTIONS.
- (2) "AS BUILT" DRAWINGS.
3. "AS BUILT" DRAWINGS: CONTRACTOR SHALL KEEP AN ACCURATE RECORD OF THE LOCATION OF ALL CONCEALED DUCTWORK, PIPING, VALVES, CONTROLS, ETC., BOTH INTERIOR AND EXTERIOR. ON COMPLETION OF THE WORK, ONE PRINT EACH OF THE CONTRACT DRAWINGS WHICH ARE APPLICABLE SHALL BE NEATLY AND CLEARLY MARKED IN COLOR TO SHOW ALL VARIATIONS BETWEEN THE WORK ACTUALLY PROVIDED AND THAT INDICATED ON THE CONTRACT DRAWINGS.

4. OPERATING AND MAINTENANCE MANUALS
- A. GENERAL: PRIOR TO COMPLETION OF THE PROJECT, THE CONTRACTOR SHALL PROVIDE TWO HARDBACKED LOOSELEAF RING TYPE BINDERS, IDENTIFIED WITH THE NAME OF THE PROJECT. CONTRACTOR SHALL DELIVER THESE BINDERS TO THE ENGINEER FOR REVIEW AND TRANSMITTAL TO THE OWNER. ALTERNATIVELY, ELECTRONIC DOCUMENTS MAY BE PROVIDED WITH OWNER'S AGREEMENT.
- B. THE FOLLOWING ITEMS AND OTHER ADDITIONAL PERTINENT DATA FOR EACH ITEM OF EQUIPMENT SHALL BE INCLUDED:
- (1) NAME OF MANUFACTURER.
- (2) NAME, ADDRESS AND TELEPHONE NUMBER OF NEAREST MANUFACTURER'S REPRESENTATIVE.
- (3) COPY OF LATEST APPROVED SHOP DRAWING.
- (4) MANUFACTURER'S OPERATING AND MAINTENANCE MANUAL INCLUDING LUBRICATION DATA.
- (5) PARTS NUMBERS FOR ALL REPLACEABLE ITEMS.
- (6) SERIAL NUMBERS OF ALL PRINCIPAL ITEMS OF EQUIPMENT.
- (7) CONTROL DIAGRAMS AND SEQUENCE OF OPERATION.
- (8) MANUFACTURER'S WRITTEN GUARANTEES THAT EXTEND BEYOND THE CONTRACTOR'S ONE YEAR GUARANTEE.
- C. THE OPERATING AND MAINTENANCE MANUALS SHALL BE CONSIDERED A PART OF THE FINAL INSPECTION AND THEY SHALL BE SUBMITTED FOR APPROVAL AT LEAST THIRTY (30) DAYS PRIOR TO REQUEST FOR FINAL INSPECTION.
5. ACCESS DOORS: ACCESS DOORS SHALL BE PROVIDED FOR ALL CONCEALED VALVES, CONTROLS, AND ANY OTHER EQUIPMENT OR MATERIALS REQUIRING INSPECTION OR MAINTENANCE. ACCESS DOORS SHALL BE FURNISHED FOR FLOORS, WALLS AND CEILINGS, OF ADEQUATE SIZE SO THAT CONCEALED ITEMS WILL BE READILY ACCESSIBLE FOR SERVICING OR FOR REMOVAL AND REPLACEMENT IF NECESSARY.
6. PAINTING
- A. SCOPE OF WORK: MECHANICAL EQUIPMENT, MATERIALS, AND RELATED PIPING DO NOT REQUIRE PAINTING EXCEPT AS INDICATED BELOW.
- B. EQUIPMENT WITH A FACTORY APPLIED FINISH WILL NOT REQUIRE ADDITIONAL PAINTING EXCEPT TOUCH-UP WITH MATCHING FINISH WHERE IT IS DAMAGED.
- C. PIPING, FABRICATED SUPPORTS, OR OTHER UNFINISHED AND UNPROTECTED MATERIALS LOCATED OUTDOORS SHALL BE PAINTED WITH A SUITABLE PRIMER AND COMPATIBLE FINISH PAINT. COLOR SHALL BE AS DIRECTED BY ENGINEER.
- D. PAINT INSIDE OF DUCTWORK WITH MATTE BLACK PAINT WHERE VISIBLE BEHIND AIR INLETS AND OUTLETS.
- E. PROTECTION OF WORK: PAINTING SHALL BE DONE WITH ALL POSSIBLE CARE TO PROTECT THIS WORK AND WORK OF OTHER TRADES. ALL DAMAGE TO THIS AND OTHER WORK CAUSED BY THE PAINTING OPERATIONS SHALL BE CORRECTED, CLEANED OR REPAIRED AS REQUIRED. HARDWARE, SPECIAL CONTROL ITEMS, GAUGES, THERMOMETERS, NAMEPLATES, INSTRUMENT GLASS AND OTHER SIMILAR ITEMS SHALL BE REMOVED OR PROPERLY PROTECTED DURING THE PAINTING OPERATIONS TO INSURE THAT THESE ITEMS ARE NOT COVERED OR SPLATTERED WITH PAINT.
7. IDENTIFICATION
- A. SUBMITTALS
- (1) SUBMIT LIST OF WORDING, SYMBOLS, LETTER SIZE, AND COLOR CODING FOR MECHANICAL IDENTIFICATION.
- (2) SUBMIT VALVE CHART AND SCHEDULE, INCLUDING VALVE TAG NUMBER, LOCATION, FUNCTION, AND VALVE MANUFACTURER'S NAME AND MODEL NUMBER.
- (3) PRODUCT DATA: PROVIDE MANUFACTURERS CATALOG LITERATURE FOR EACH PRODUCT REQUIRED.
- B. NAMEPLATES
- (1) DESCRIPTION: LAMINATED THREE-LAYER PLASTIC WITH ENGRAVED LETTERS ON LIGHT CONTRASTING BACKGROUND COLOR.
- C. TAGS
- (1) METAL TAGS: BRASS WITH STAMPED LETTERS; TAG SIZE MINIMUM 1-1/2 INCHES (40 MM) DIAMETER.
- CHART: TYPEWRITTEN LETTER SIZE LIST IN ANODIZED ALUMINUM FRAME.
- D. STENCILS
- (1) STENCILS: WITH CLEAN CUT SYMBOLS AND LETTERS OF FOLLOWING SIZE:
- (A) 3/4 TO 1-1/4 INCHES (20-30 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 1/2 INCHES (15 MM) HIGH LETTERS.
- (B) 1-1/2 TO 2 INCHES (40-50 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 8 INCHES (200 MM) LONG COLOR FIELD, 3/4 INCH (20 MM) HIGH LETTERS.
- (C) 2-1/2 TO 6 INCHES (65-150 MM) OUTSIDE DIAMETER OF INSULATION OR PIPE: 12 INCHES (300 MM) LONG COLOR FIELD, 1-1/4 INCHES (30 MM) HIGH LETTERS.

- (D) DUCTWORK AND EQUIPMENT: 2-1/2 INCHES (65 MM) HIGH LETTERS.
- (2) STENCIL PAINT: SEMI-GLOSS ENAMEL, COLORS CONFORMING TO ASME A13.1.
- E. PIPE MARKERS
- (1) COLOR: CONFORM TO ASME A13.1.
- (2) PLASTIC PIPE MARKERS: FACTORY FABRICATED, FLEXIBLE, SEMI- RIGID PLASTIC, PREFORMED TO FIT AROUND PIPE OR PIPE COVERING; MINIMUM INFORMATION INDICATING FLOW DIRECTION ARROW AND IDENTIFICATION OF FLUID BEING CONVEYED.
- F. CEILING TACKS
- (1) DESCRIPTION: STEEL WITH 3/4 INCH (20 MM) DIAMETER COLOR CODED HEAD.
- (2) COLOR CODE AS FOLLOWS:
- (A) YELLOW - HVAC EQUIPMENT
- (B) RED - FIRE DAMPERS/SMOKE DAMPERS
- (C) GREEN - PLUMBING VALVES
- (D) BLUE - HEATING/COOLING VALVES
- G. INSTALLATION
- (1) DEGREASE AND CLEAN SURFACES TO RECEIVE ADHESIVE FOR IDENTIFICATION MATERIALS.
- (2) INSTALL PLASTIC NAMEPLATES WITH CORROSIVE-RESISTANT MECHANICAL FASTENERS, OR ADHESIVE. APPLY WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT ADHESION AND SEAL WITH CLEAR LACQUER.
- (3) INSTALL TACS WITH CORROSION RESISTANT CHAIN.
- (4) INSTALL PLASTIC PIPE MARKERS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- (5) IDENTIFY AIR CONDITIONING UNITS AND FANS WITH PLASTIC NAMEPLATES OR STENCIL PAINTING.
- (6) IDENTIFY CONTROL PANELS AND MAJOR CONTROL COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES.
- (7) IDENTIFY DUCTWORK WITH PLASTIC NAMEPLATES OR STENCILED PAINTING. IDENTIFY WITH AIR HANDLING UNIT OR FAN AND AREA BEING SERVED.
- (8) TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS. KEY TO CONTROL SCHEMATIC.
- (9) IDENTIFY PIPING, CONCEALED OR EXPOSED, WITH PLASTIC PIPE MARKERS OR STENCILED PAINTING. IDENTIFY SERVICE, FLOW DIRECTION, AND PRESSURE. INSTALL IN CLEAR VIEW AND ALIGN WITH AXIS OF PIPING. LOCATE IDENTIFICATION NOT TO EXCEED 20 FEET (6 M) ON STRAIGHT RUNS INCLUDING RISERS AND DROPS, ADJACENT TO EACH VALVE AND TEE, AT EACH SIDE OF PENETRATION OF STRUCTURE OR ENCLOSURE, AND AT EACH OBSTRUCTION.
- (10) PROVIDE CEILING TACKS TO LOCATE VALVES ABOVE T-BAR TYPE PANEL CEILINGS. LOCATE IN CORNER OF PANEL CLOSEST TO EQUIPMENT.
8. CONCRETE EQUIPMENT PADS
- A. UNLESS OTHERWISE NOTED, CONCRETE PADS NOT LESS THAN 4 INCHES HIGH AND WHICH PROJECT NOT LESS THAN 4 INCHES BEYOND THE EQUIPMENT ON ALL SIDES SHALL BE PROVIDED ALL FLOOR-MOUNTED EQUIPMENT. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS, 3% TO 8% AIR ENTRAINMENT, 6 INCHES SLUMP MAXIMUM UPON PLACEMENT. CONCRETE SHALL NOT BE PLACED WHEN TEMPERATURE WILL FALL BELOW 32 DEGREES F DURING PLACEMENT OR DURING A PERIOD OF THREE DAYS AFTER PLACEMENT. ANCHOR BOLTS SHALL BE SET PRIOR TO POURING OF THE SLABS. ARRANGE PAD AND OUTDOOR UNIT SO THAT COILS ARE A MINIMUM OF 12" ABOVE FINISHED GRADE.
9. INSULATION
- A. FLAME/SMOKE RATINGS: PROVIDE COMPOSITE PLUMBING INSULATION (INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES) WITH FLAME-SPREAD RATING OF 25 OR LESS, AND SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ANSI/ASTM E84 (NFPA 255) METHOD. INSULATION SHALL BE LABELED BY THE MANUFACTURER. THE LABEL SHALL INDICATE THE INSULATING VALUE, FLAME SPREAD AND SMOKE-DEVELOPED RATING.
- B. SUBMITTALS: SUBMIT MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS FOR EACH TYPE OF INSULATION. SUBMIT SCHEDULE SHOWING MANUFACTURER'S PRODUCT NUMBER THICKNESS, AND FURNISHED ACCESSORIES FOR EACH SYSTEM REQUIRING INSULATION.
- C. INSTALLATION: INSULATION SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS USING ONLY ADHESIVES, MASTICS AND PLUMBING FASTENERS APPROVED BY THE INSULATION MANUFACTURER. INSULATION SHALL NOT BE APPLIED UNTIL AFTER THE EQUIPMENT HAS BEEN TESTED WITH RESULTS ACCEPTABLE TO THE ARCHITECT/ENGINEER. INSULATION WITH A VAPOR BARRIER JACKET SHALL BE APPLIED WITH A CONTINUOUS, UNBROKEN VAPOR SEAL AND ALL JOINTS SHALL BE SEALED WITH A VAPOR BARRIER ADHESIVE UNLESS OTHERWISE INDICATED. STAPLES, STICK CLIPS AND HANGERS SHALL BE VAPOR SEALED WHERE THEY PUNCTURE VAPOR BARRIER JACKETS.

- D. MATERIALS:
- (1) FLEXIBLE DUCT INSULATION: ASTM C1290, MINERAL FIBER BLANKET, WITH OPERATING TEMPERATURE OF 250°F. THERMAL CONDUCTIVITY "K"=0.30 AT 75°F, DENSITY=0.75 LB/CU. FT. F AT 75 DEGREES F. FACTORY APPLIED JACKET (ASJ) SHALL CONSIST OF WHITE KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED WITH GLASS FIBER YARN. EQUAL TO OWENS-CORNING ASJ.
- (2) ELASTOMERIC CELLULAR FOAM PIPE INSULATION: ASTM C534, TYPE 1 TUBULAR FORM, UNSLIT TUBING OR PRE-SLIT TUBULAR WITH FACTORY APPLIED PRESSURE SENSITIVE ADHESIVE. "K"=0.27 AT 75 DEGREES F, SERVICE TEMPERATURE 0°F TO 200°F. NO JACKET REQUIRED.
- E. DUCT INSULATION
- (1) DUCT INSULATION: INSULATE ALL SUPPLY AIR, OUTDOOR AIR DUCTS AND RETURN DUCTS.
- (2) PROVIDE INSULATION WITH VAPOR RETARDER JACKETS. PIPING SYSTEM WITH EQUIVALENT THICKNESS AND COMPOSITION OF INSULATION AS APPLIED TO ADJOINING PIPE RUN.
- (3) EXTEND DUCT INSULATION WITHOUT INTERRUPTION THROUGH WALLS, FLOORS AND SIMILAR PIPING PENETRATIONS, EXCEPT WHERE OTHERWISE INDICATED.
- (4) INSTALL PROTECTIVE METAL SHIELDS AND INSULATED INSERTS WHEREVER NEEDED TO PREVENT COMPRESSION OF INSULATION.
- (5) SUPPLY, RETURN AND OUTSIDE AIR DUCTS: INSULATE WITH 2" THICK FLEXIBLE DUCTWORK INSULATION.
- F. PIPE INSULATION
- (1) REFRIGERANT SUCTION AND HOT GAS PIPING: INSULATE 1-1/2" AND SMALLER PIPES WITH 1-1/2" THICK ELASTOMERIC CELLULAR FOAM INSULATION. INSULATE LARGER THAN 1-1/2" PIPES WITH 2" THICK ELASTOMERIC CELLULAR FOAM.
- (2) CONDENSATE DRAIN PIPING: INSULATE ALL PIPING WITH 1/2" THICK ELASTOMERIC CELLULAR FOAM INSULATION.
10. DUCTWORK
- A. GALVANIZED STEEL DUCTS: ASTM A653/A653M GALVANIZED STEEL SHEET, LOCK-FORMING QUALITY, HAVING G60 ZINC COATING IN CONFORMANCE WITH ASTM A90/90M.
- B. FABRICATE AND SUPPORT IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- C. WHERE RECTANGULAR ELBOWS ARE USED, FURNISH TURNING VANES.
- D. INCREASE DUCT SIZES GRADUALLY, NOT EXCEEDING 15° DIVERGENCE WHEREVER POSSIBLE; MAXIMUM 30° DIVERGENCE UPSTREAM OF EQUIPMENT AND 45° CONVERGENCE DOWNSTREAM.
- E. FLEXIBLE DUCT CONNECTIONS SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
- F. VOLUME CONTROL DAMPERS SHALL BE RUSKIN MODEL MD-35 AND SHALL BE FABRICATED IN ACCORDANCE WITH SMACNA HVAC DUCT CONSTRUCTION STANDARDS - METAL AND FLEXIBLE.
11. THE REFRIGERANT PIPING SYSTEM SHALL BE TYPE ACR COPPER TUBE, SOFT ANNEALED TEMPER WITH CAST COPPER-ALLOY FITTINGS FOR FLARED COPPER TUBES. MATERIALS SHALL BE IN ACCORDANCE WITH ANSI B31.5, CODE FOR REFRIGERATION
12. DIFFUSERS, REGISTERS AND GRILLES
- A. DIFFUSERS, REGISTERS AND GRILLES SHALL BE THE TYPE, MATERIAL, AIR PATTERN AND FINISH INDICATED ON THE DRAWINGS.
- B. INSTALL AIR OUTLETS AND INLETS IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. INSTALL DIFFUSERS, REGISTERS AND GRILLES TO DUCTWORK WITH AIRTIGHT CONNECTION.
13. CLEANING AND TESTING
- A. CLEAN EQUIPMENT AND FIXTURES TO A SANITARY CONDITION WITH CLEANING MATERIALS APPROPRIATE TO THE SURFACE AND MATERIAL BEING CLEANED. CLEAN DUCT SYSTEMS AND FORCE AIR AT HIGH VELOCITY THROUGH DUCT TO REMOVE ACCUMULATED DUST.
- B. REPLACE FILTERS OF OPERATING EQUIPMENT.
- C. HEATING AND COOLING SYSTEMS AND EXHAUST SYSTEMS SHALL BE TESTED, ADJUSTED AND BALANCED (TAB). AIR HANDLING SYSTEMS SHALL BE ADJUSTED TO WITHIN +/- 10% OF DESIGN. THE TOTAL OF AIR OUTLETS AND INLETS SHALL BE ADJUSTED TO WITHIN PLUS 10% AND MINUS 5% OF DESIGN TO SPACE. ADJUST OUTLETS AND INLETS IN SPACE TO WITHIN +/- 10% OF DESIGN.
- D. THE TAB CONTRACTOR SHALL NOT BE AFFILIATED IN ANY WAY BE WITH THE INSTALLING CONTRACTOR OR EQUIPMENT SUPPLIERS. PROVIDE TAB REPORT.

END OF SPECIFICATIONS



MECHANICAL SPECIFICATIONS
VISTAR EYE CENTER - WYTHEVILLE
ADDITION

470 LUTHIA RD.

WYTHEVILLE, VIRGINIA

100% WORKING DRAWINGS - BID SET

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M1.1

SHEET: --
OF: --

DATE: 09-02-25
REV. NO.: --

DESIGNED BY: MDR
DRAWN BY: MDR
CHECKED BY: MDR

PROJECT NO.: ---
COMMISSION NO.: --

SPLIT SYSTEM FURNACE SCHEDULE

MARK	MANUFACTURER & MODEL NO.	CFM	EVAP. FAN HP	VOLTS Ø	INDOOR UNIT										OUTDOOR UNIT							
					S.P. IN WG EXT.	GAS FURNACE					COOLING CAPACITY		O.A. CFM	WEIGHT	MARK	MANUFACTURER & MODEL NO.	VOLTS Ø	MCA	MOCP	WEIGHT		
						INPUT (MBH)	OUTPUT (MBH)	% EFF	MCA	MOCP	TOTAL MBH	SENS MBH										
F-1	TRANE S9V2C100USVS	1600	1	120/1	0.5	100	97	98	13.4	15	47.6	37.0	150	160 LBS.	CU-1	TRANE 5TR5048	208/1	23.0	35	310 LBS.		
F-2	TRANE S9V2D120USVS	1990	1	120/1	0.5	120	116	98	13.4	15	59.1	46.0	260	160 LBS.	CU-2	TRANE 5TR5060	208/1	28.0	50	310 LBS.		
F-3	TRANE S9V2C080USVS	1220	1	120/1	0.5	80	77	98	13.4	15	35.2	27.4	130	150 LBS.	CU-3	TRANE 5TR5036	208/1	18.0	30	160 LBS.		

- NOTES:
- EQUIPMENT SUBSTITUTIONS SHALL BE OWNER APPROVED.
 - INCLUDE HONEYWELL PRO THERMOSTAT WITH LOCKABLE COVER, CONDENSATE PUMP (IF REQUIRED) AND CONCENTRIC VENT SYSTEM.
 - EACH SYSTEM TO BE EQUIPPED WITH TRANE SYMBIO R-454B REFRIGERANT LEAK DETECTION SYSTEM AND ALARM. SEE FLOOR PLAN FOR ALARM LOCATION.
 - WEIGHTS ARE APPROXIMATE AND INCLUDE ACCESSORIES
 - ALL AIR HANDLERS HAVE SINGLE POINT POWER CONNECTIONS
 - UNITS TO BE A MINIMUM OF 15 SEER.

FAN SCHEDULE

UNIT	CFM	S.P.	RPM	MOTOR			SELECTION BASED ON GREENHECK	CONTROL	NOTES
				HP	VOLTS	PH			
EF-1	540	0.25	973	0.06	120	1	CSP-A710	CONTINUOUS DURING OCCUPIED TIMES	1

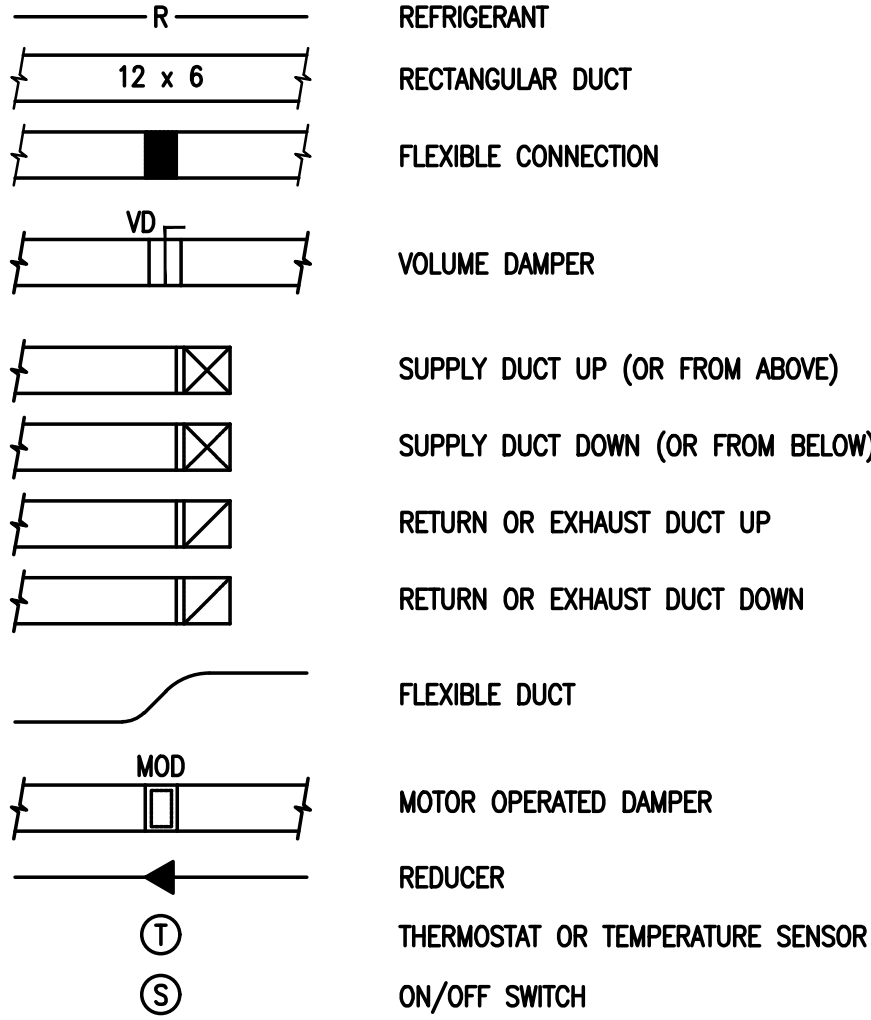
- SCHEDULE NOTES:
- PROVIDE WITH ELECTRICAL DISCONNECT, BACKDRAFT DAMPER, ROOF CAP, SPEED CONTROLLER CONTROL AS INDICATED IN SCHEDULE.

GRILLES, REGISTERS AND DIFFUSERS SCHEDULE

MARK	MANUFACTURER & MODEL NO.	DESCRIPTION	MATERIAL	FINISH	ACCESSORIES & FEATURES
SUPPLY DIFFUSERS					
CD-1	METALAIRE 5750-6	24"x24" LOUVER FACE DIFFUSER WITH 6"Ø NECK FOR LAY-IN CLG	STEEL	WHITE	BDS DAMPER
CD-2	METALAIRE 5750-6	24"x24" LOUVER FACE DIFFUSER WITH 8"Ø NECK FOR LAY-IN CLG	STEEL	WHITE	BDS DAMPER
CD-3	METALAIRE 5750-6	24"x24" LOUVER FACE DIFFUSER WITH 10"Ø NECK FOR LAY-IN CLG	STEEL	WHITE	BDS DAMPER

GRILLES & REGISTERS					
CG-1	METALAIRE 7550R-6	24"x24" CEILING RET GRILLE WITH 8"x8" NECK FOR LAY-IN CEILING	STEEL	WHITE	--
CG-2	METALAIRE 7550R-6	24"x24" CEILING RET GRILLE WITH 12"x12" NECK FOR LAY-IN CEILING	STEEL	WHITE	---
CR-1	METALAIRE 7550R-6	24"x24" CEILING EXH REGISTER WITH 8"x8" NECK FOR LAY-IN CEILING	STEEL	WHITE	OPPOSED BLADE DAMPER
CR-2	METALAIRE 7500R-6	24"x24" CEILING EXH REGISTER WITH 10"x10" NECK FOR LAY-IN CEILING	STEEL	WHITE	OPPOSED BLADE DAMPER

LEGEND



ABBREVIATIONS

BTU	BRITISH THERMAL UNIT
CD	CEILING DIFFUSER
CFM	CUBIC FEET PER MINUTE
CG	CEILING GRILLE
CR	CEILING REGISTER
DB	DRY BULB TEMPERATURE
EAT	ENTERING AIR TEMPERATURE
EXT	EXTERNAL
F	DEGREES FAHRENHEIT
FDPR	FIRE DAMPER
FT	FEET
HP	HORSEPOWER
IN	INCH, INCHES
MAX	MAXIMUM
MBH	THOUSAND BTU PER HOUR
VD	VOLUME DAMPER
MIN	MINIMUM
MOD	MOTOR OPERATED DAMPER
OA	OUTSIDE AIR
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAGE
RA	RETURN AIR
TEMP	TEMPERATURE
TYP	TYPICAL
WC, WG	WATER COLUMN
ABV	ABOVE
BEL	BELOW
BET	BETWEEN
CLG	CEILING
EA	EACH
FLEX	FLEXIBLE
FR	FROM

GENERAL MECHANICAL NOTES

- INSTALL THERMOSTATS WITH CENTER AT 4'8" ABOVE FLOOR. WHERE THERMOSTATS AND SNAP SWITCHES (SEE ELECTRICAL DRAWINGS) ARE INDICATED IN CLOSE PROXIMITY ON THE SAME WALL, THE LOCATIONS SHALL BE COORDINATED SO THAT THE THERMOSTAT IS CENTERED DIRECTLY OVER SNAP SWITCH OR GROUP OF SNAP SWITCHES.
- DUCT DIMENSIONS INDICATED ARE SHEET METAL DIMENSIONS.
- COORDINATE LOCATIONS OF CEILING MOUNTED DIFFUSERS, REGISTERS AND GRILLES WITH LIGHT FIXTURES AND CEILING GRID. REFER TO ELECTRICAL DRAWINGS.
- FIRST FIGURE OF DUCT SIZE INDICATES DIMENSION OF SIDE SHOWN OR INDICATED.
- ACCESS SHALL BE MAINTAINED TO ALL CONTROL DEVICES. ACCESS PANEL SIZES AND LOCATIONS SHALL BE DETERMINED PRIOR TO BIDDING AND SHALL BE INCLUDED IN THE BID PRICE FOR CONTRACT WORK. ACCESS PANELS SHALL BE INSTALLED WHERE REQUIRED AND SHALL BE FIRE RATED WHEN USED IN FIRE RESISTIVE CONSTRUCTION.
- PIPING AND DUCTWORK SHALL BE SUPPORTED FROM, OR ANCHORED TO, THE BUILDING STRUCTURE; CEILING CONSTRUCTION SHALL NOT BE USED FOR SUPPORT OR ANCHORING OF WORK.
- TEMPERATURE CONTROL WIRING WIRING LESS THAN 100 VOLTS SHALL BE PROVIDED IN DIVISION 15. WIRING 100 VOLTS AND GREATER SHALL BE PROVIDED IN DIVISION 16.
- MAINTAIN ACCESS BELOW EQUIPMENT INSTALLED ABOVE CEILINGS. DO NOT OBSTRUCT ACCESS WITH PIPING OR DUCTWORK.
- PROVIDE MANUAL VOLUME DAMPERS AS REQUIRED TO PROPERLY BALANCE THE SYSTEM.
- CONTRACTOR SHALL CLOSELY COORDINATE LOCATIONS OF ALL PANELBOARDS WITH LOCATIONS OF ALL DUCTWORK AND PLUMBING PIPING. DUCTWORK AND PLUMBING PIPING SHALL NOT BE INSTALLED OVER TOP OF ANY PANELBOARD. DUCTWORK AND PLUMBING PIPING SHALL NOT BE INSTALLED OVER ANY OF THE CODE REQUIRED CLEAR SPACES AT ANY PANELBOARD LOCATION.

HVAC CONTROLS

- PROVIDE DOCUMENTATION AND TRAINING TO OWNER ALONG WITH ONE YEAR WARRANTY. LABEL ALL CONTROLS AND EQUIPMENT THE SAME AS IDENTIFIED ON THE DRAWINGS AND SUBMITTALS. SUBMIT SHOP DRAWINGS AND DETAILED SEQUENCE OF OPERATION OF CONTROL SYSTEM PRIOR TO INSTALLATION.
- CONTROLS SHALL INCLUDE ALL THERMOSTATS, SENSORS, VALVES, DAMPERS, TRANSFORMERS, STARTERS, RELAYS, WIRING, INTERLOCKS AND OTHER DEVICES TO ENABLE THE SEQUENCE OF OPERATION. CONTROLS SHALL BE COORDINATED WITH THE EQUIPMENT PROVIDED.
- PROVIDE START-UP AND VERIFICATION OF CONTROL SYSTEM & SEQUENCE OF OPERATION. COORDINATE WITH TEST & BALANCE CONTRACTOR TO OPERATE EQUIPMENT IN ALL MODES AND DEVICE POSITIONS.
- ROOM SENSOR SHALL HAVE DIGITAL DISPLAY AND TIMED OVERRIDE BUTTON. ALL SENSORS SHALL HAVE THE CAPABILITY TO ADJUST ROOM TEMPERATURE SETPOINT OR TO HAVE THIS FUNCTION LOCKED OUT.
- SPLIT SYSTEMS: IN OCCUPIED MODE, THE SUPPLY FAN SHALL RUN CONTINUOUSLY. THE OUTSIDE AIR DAMPER SHALL OPEN AND THE UNIT CONTROLLER WILL MAINTAIN ROOM SETPOINT BY CYCLING THE COOLING/HEATING. IN UNOCCUPIED MODE, THE UNITS SHALL BE DE-ENERGIZED UNTIL A CALL FOR SETBACK HEATING OR COOLING BY THE UNIT CONTROLLER. THE OUTSIDE AIR DAMPER SHALL REMAIN CLOSED AT ALL TIMES DURING UNOCCUPIED MODE. OVERRIDE BUTTON ON THERMOSTAT SHALL PLACE THE UNIT IN OCCUPIED MODE FOR TWO HOURS (ADJUSTABLE). CONTROLS SHALL INCLUDE REMOTE WALL SENSOR AND CORRESPONDING PROGRAMMABLE THERMOSTAT LOCATED IN OFFICE.



MECHANICAL LEGEND, SCHEDULES, NOTES, CONTROLS

VISTAR EYE CENTER - WYTHEVILLE

ADDITION

470 LITHIA RD.

WYTHEVILLE, VIRGINIA

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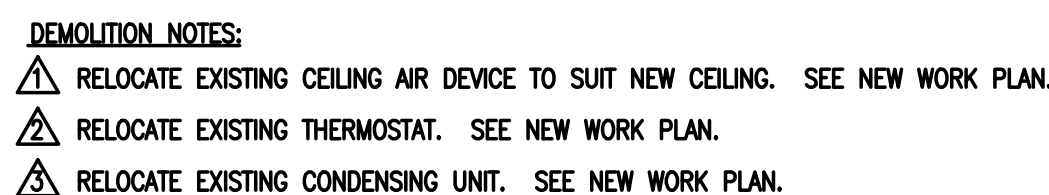
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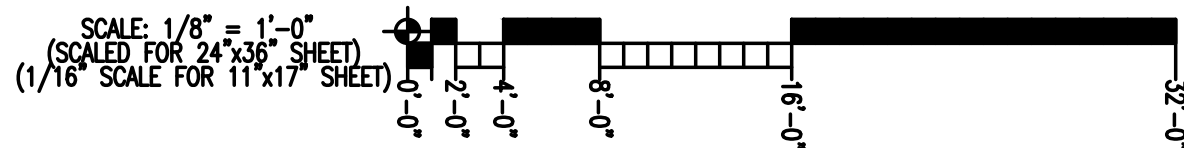
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DEMOLITION FLOOR PLAN – MECHANICAL



ITION FLOOR PLAN – MECHANICAL
VISTAR EYE CENTER – WYTHEVILLE
ADDITION
470 LITHIA RD.

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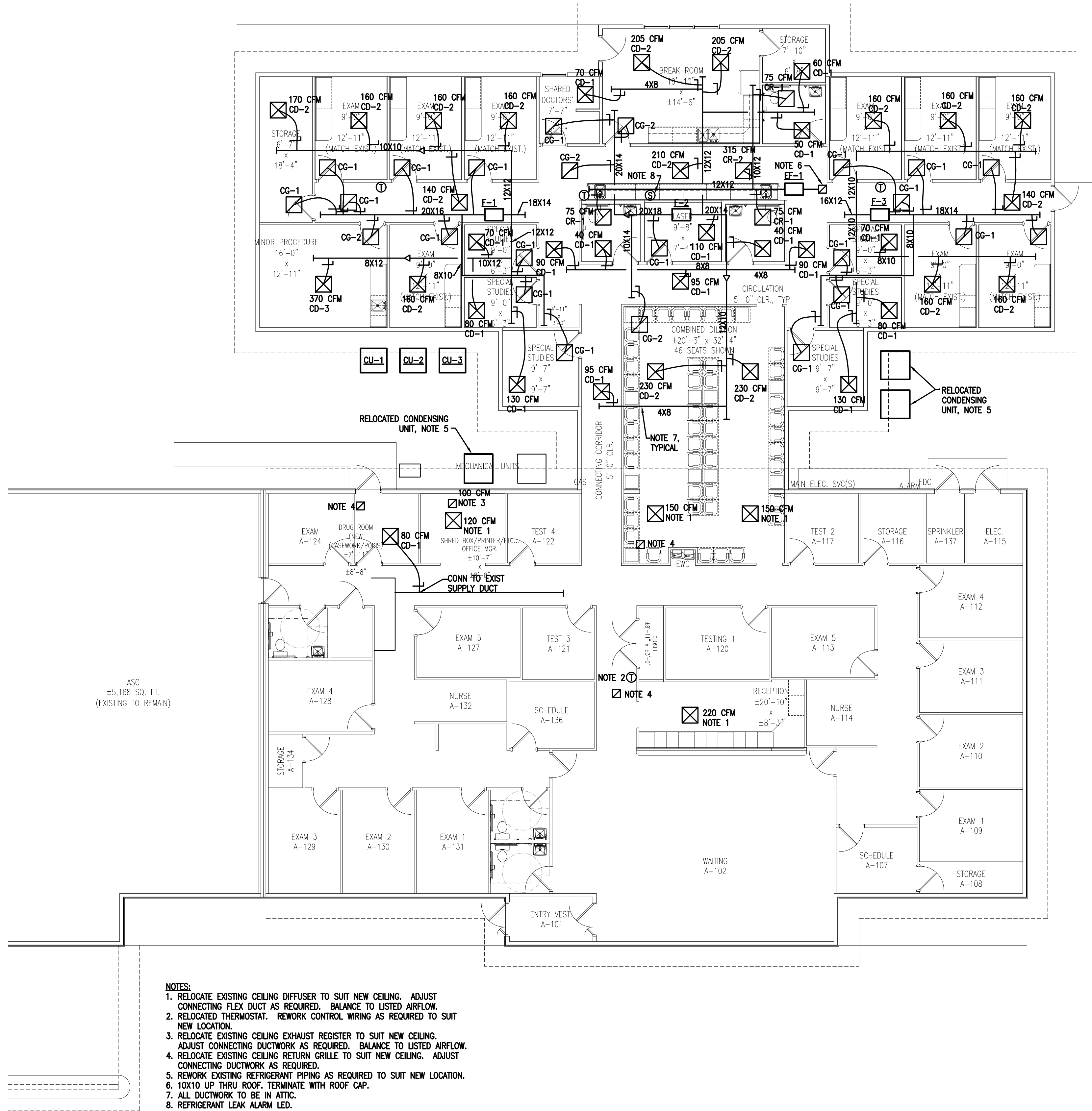
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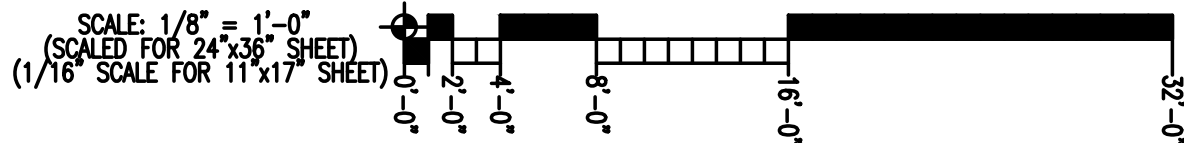
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FLOOR PLAN – MECHANICAL

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



FLOOR PLAN – MECHANICAL
VISTAR EYE CENTER – WYTHEVILLE
ADDITION
470 LITHIA RD.
WYTHEVILLE, VIRGINIA

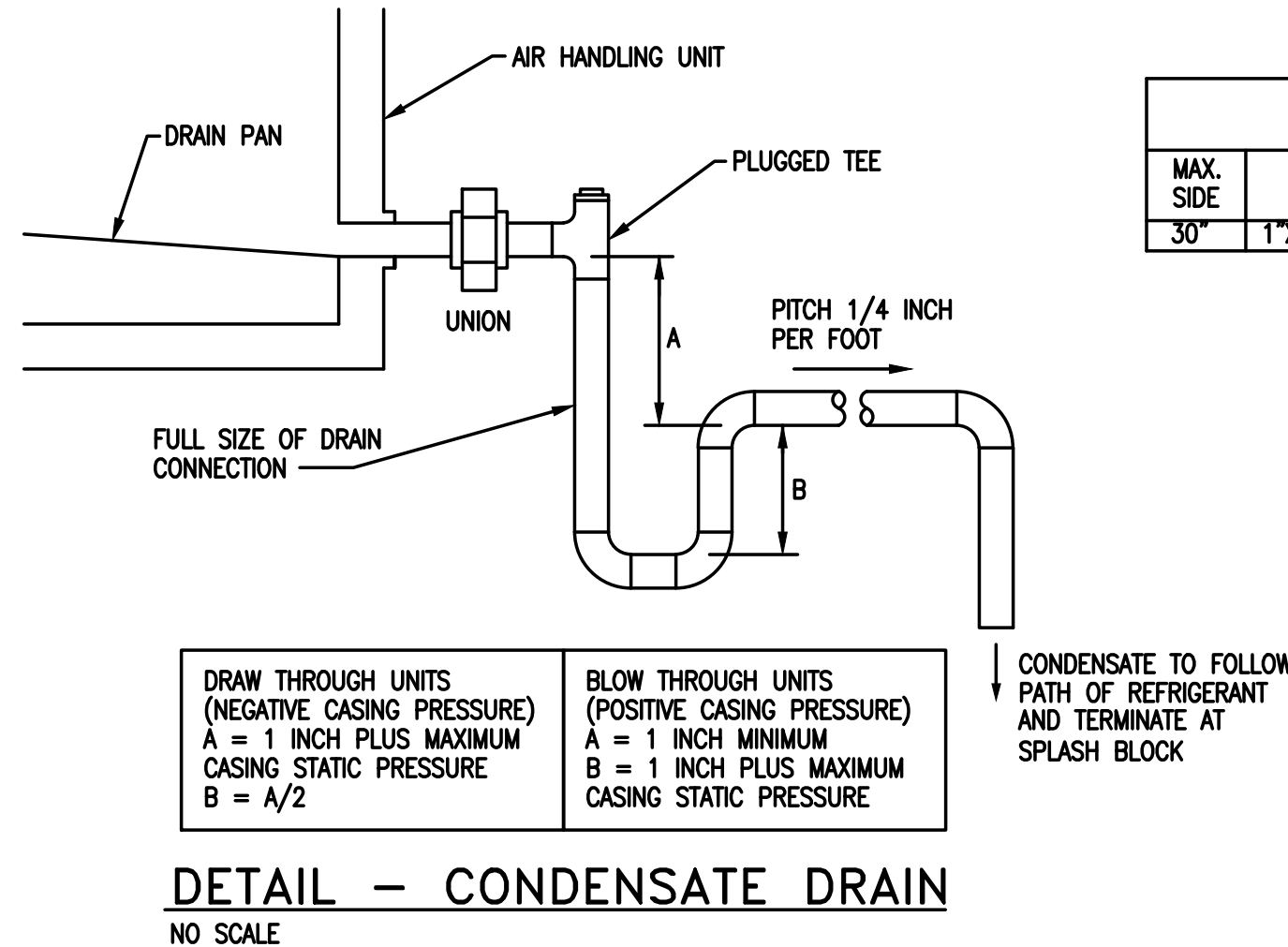
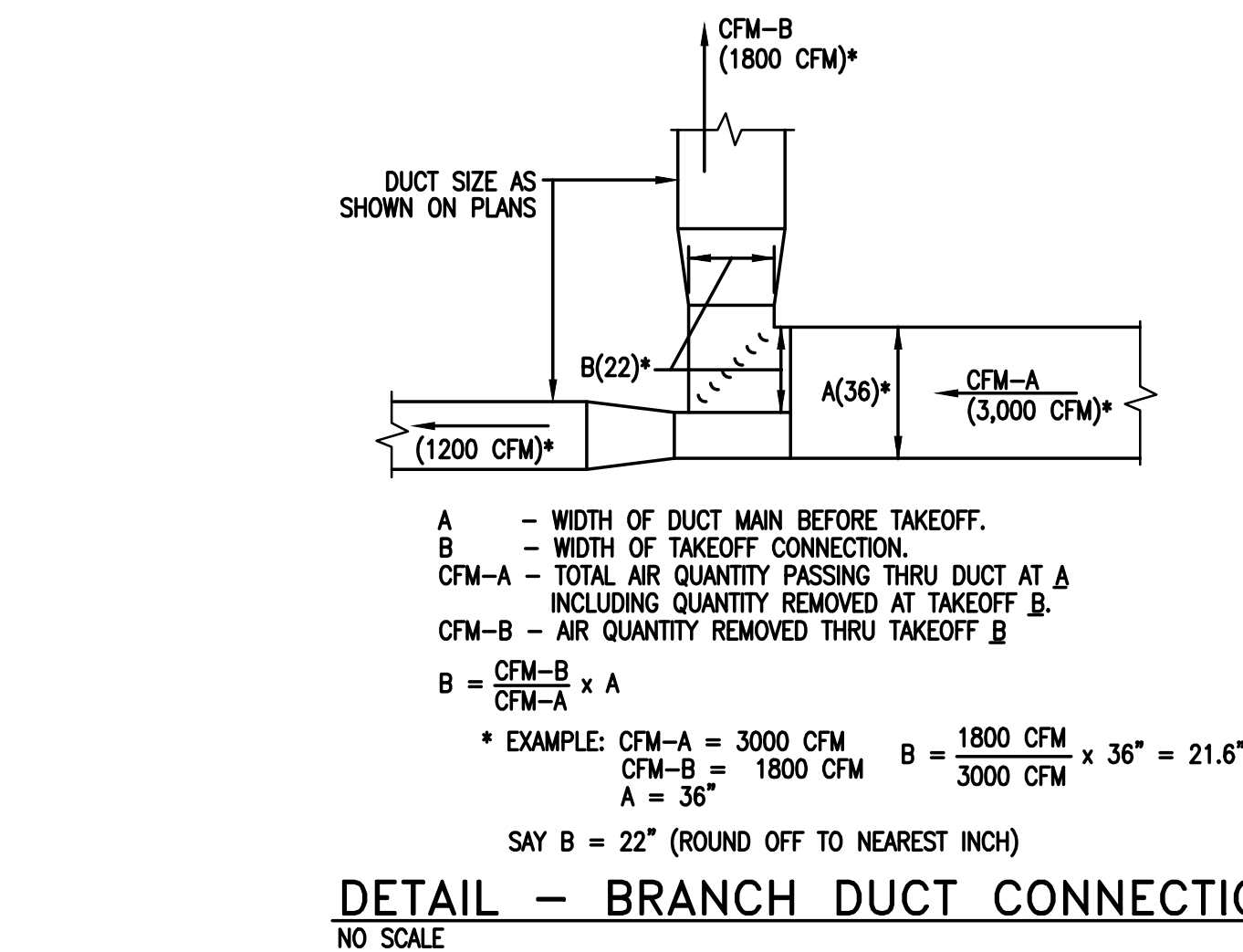
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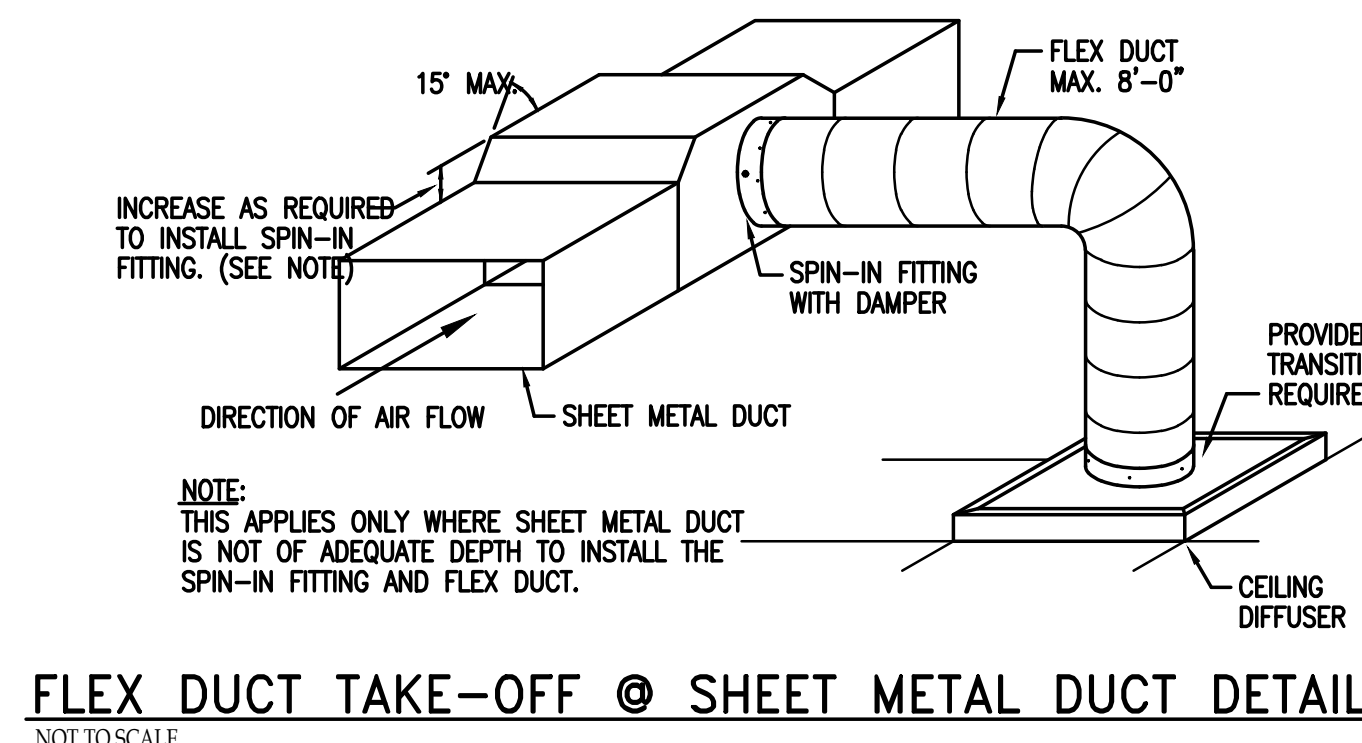
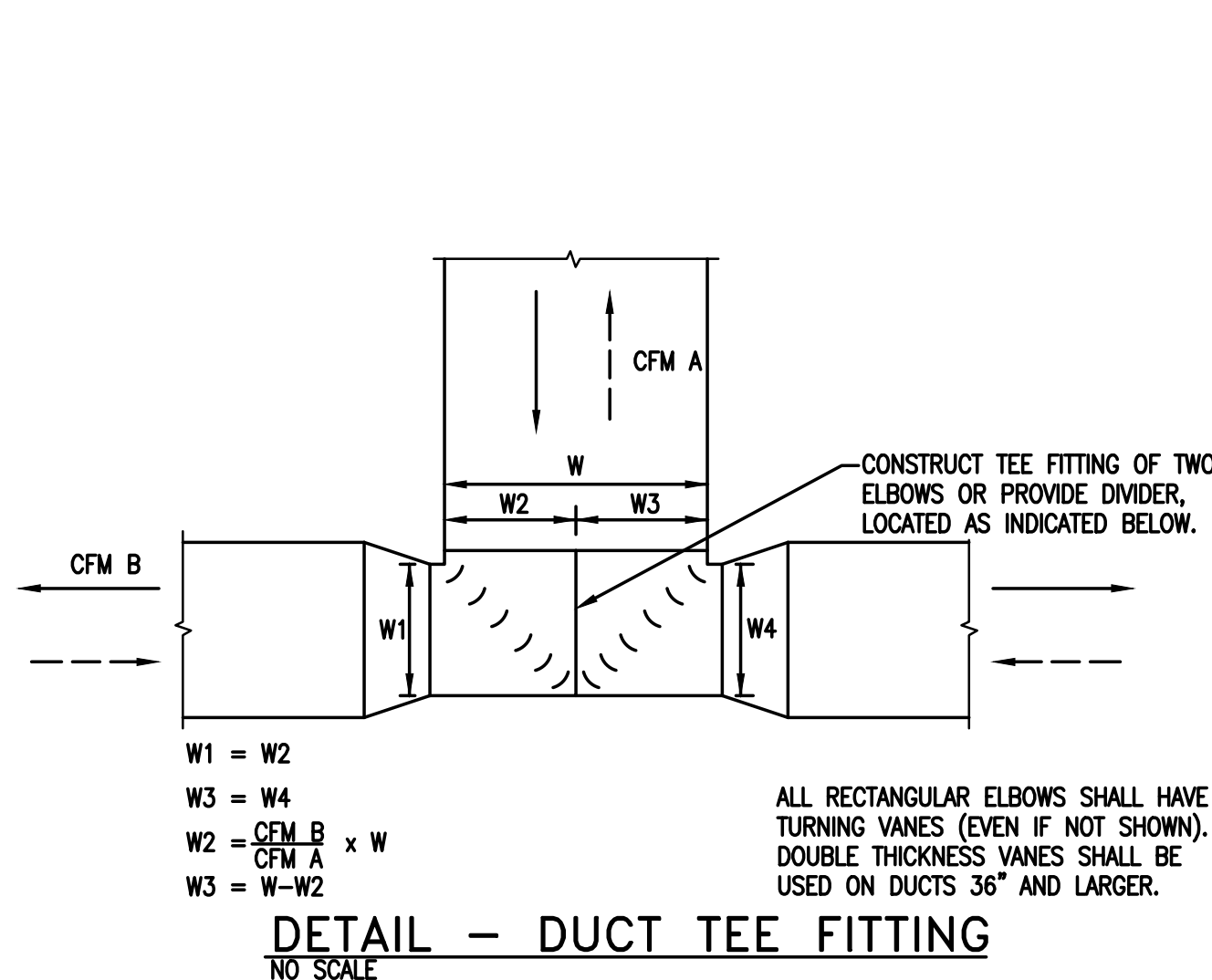
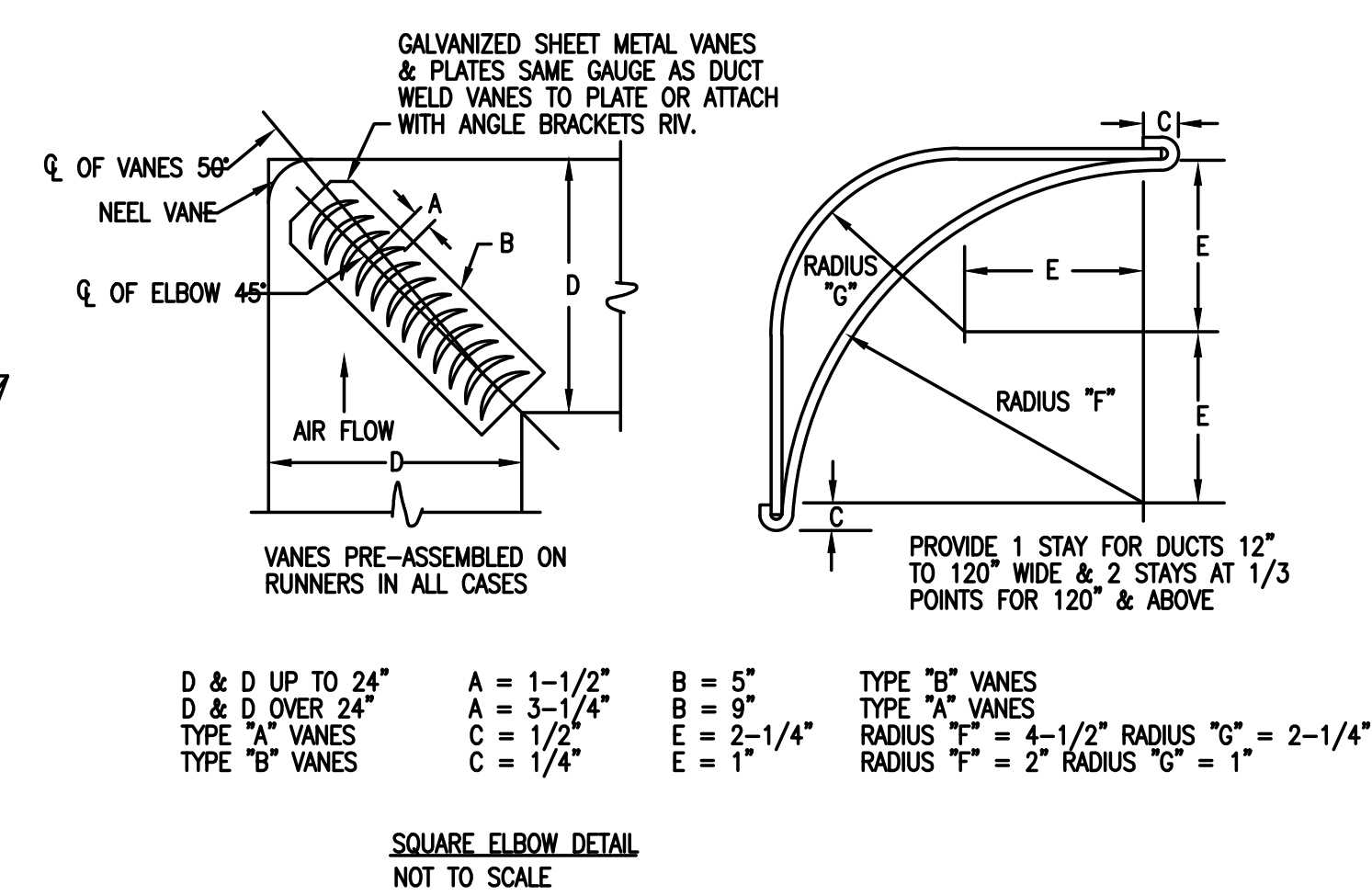
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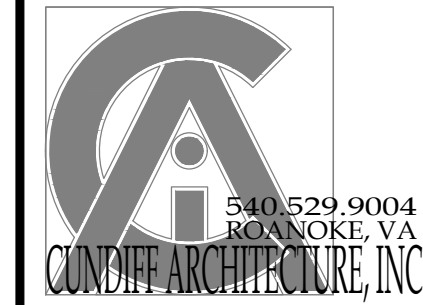
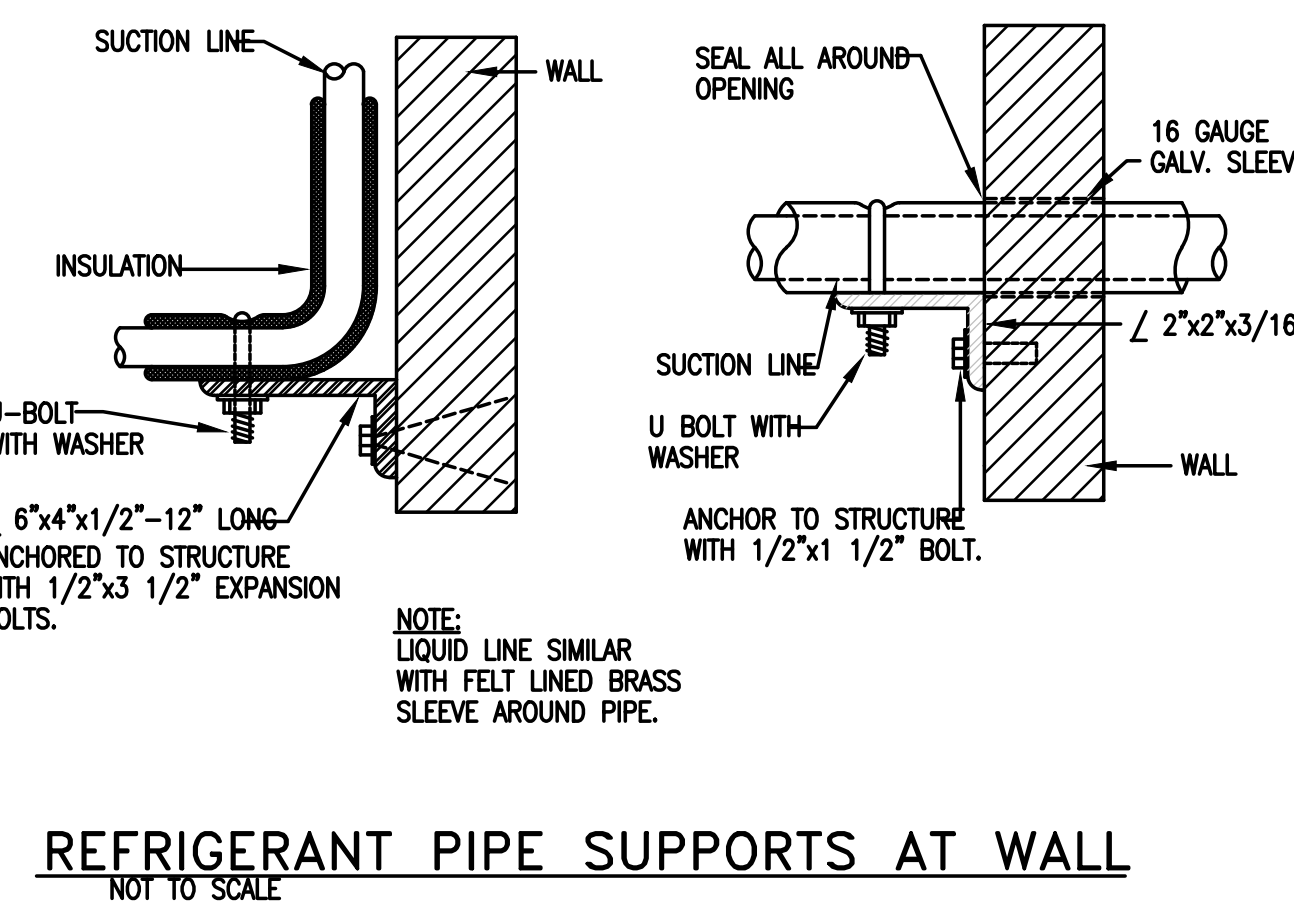
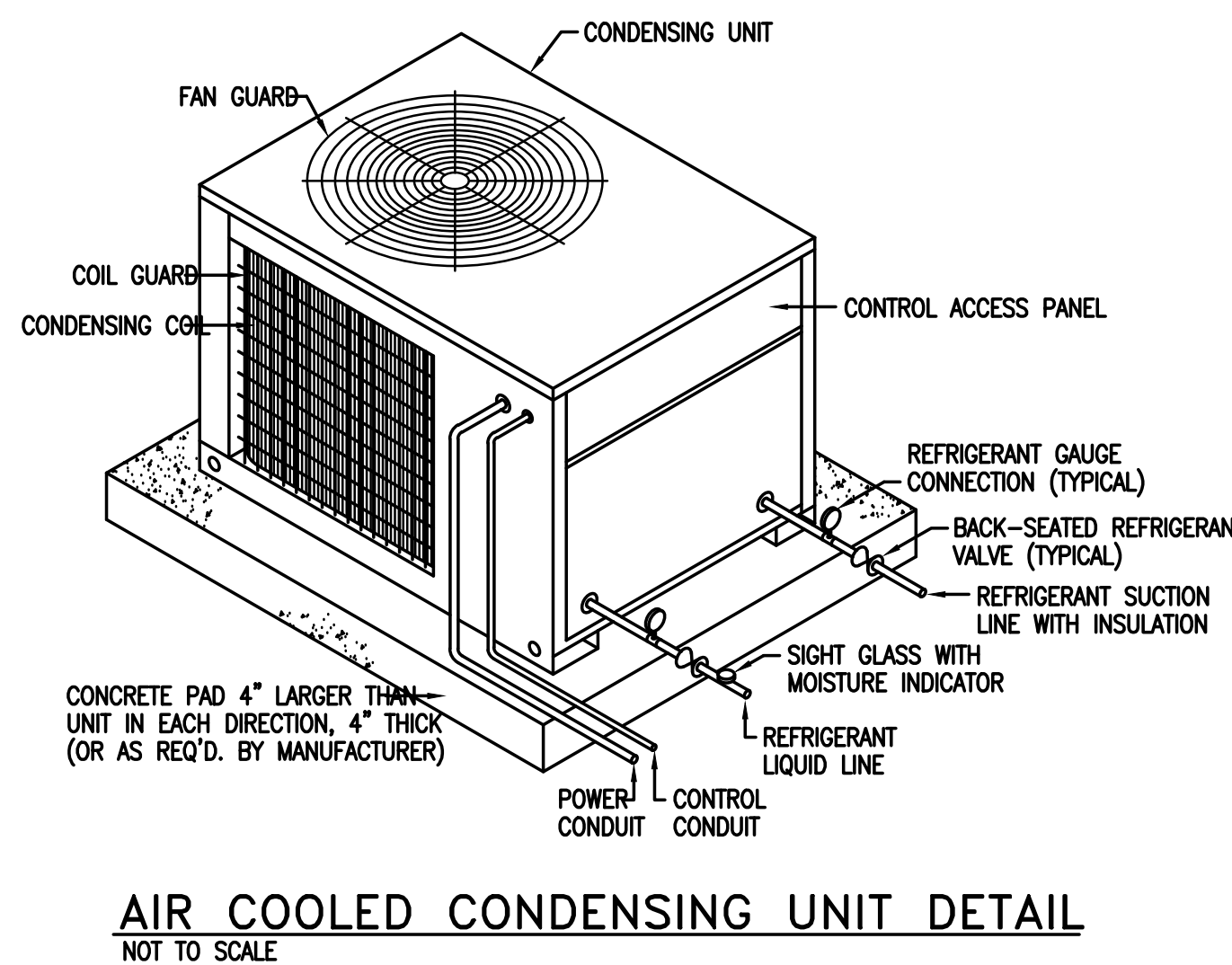
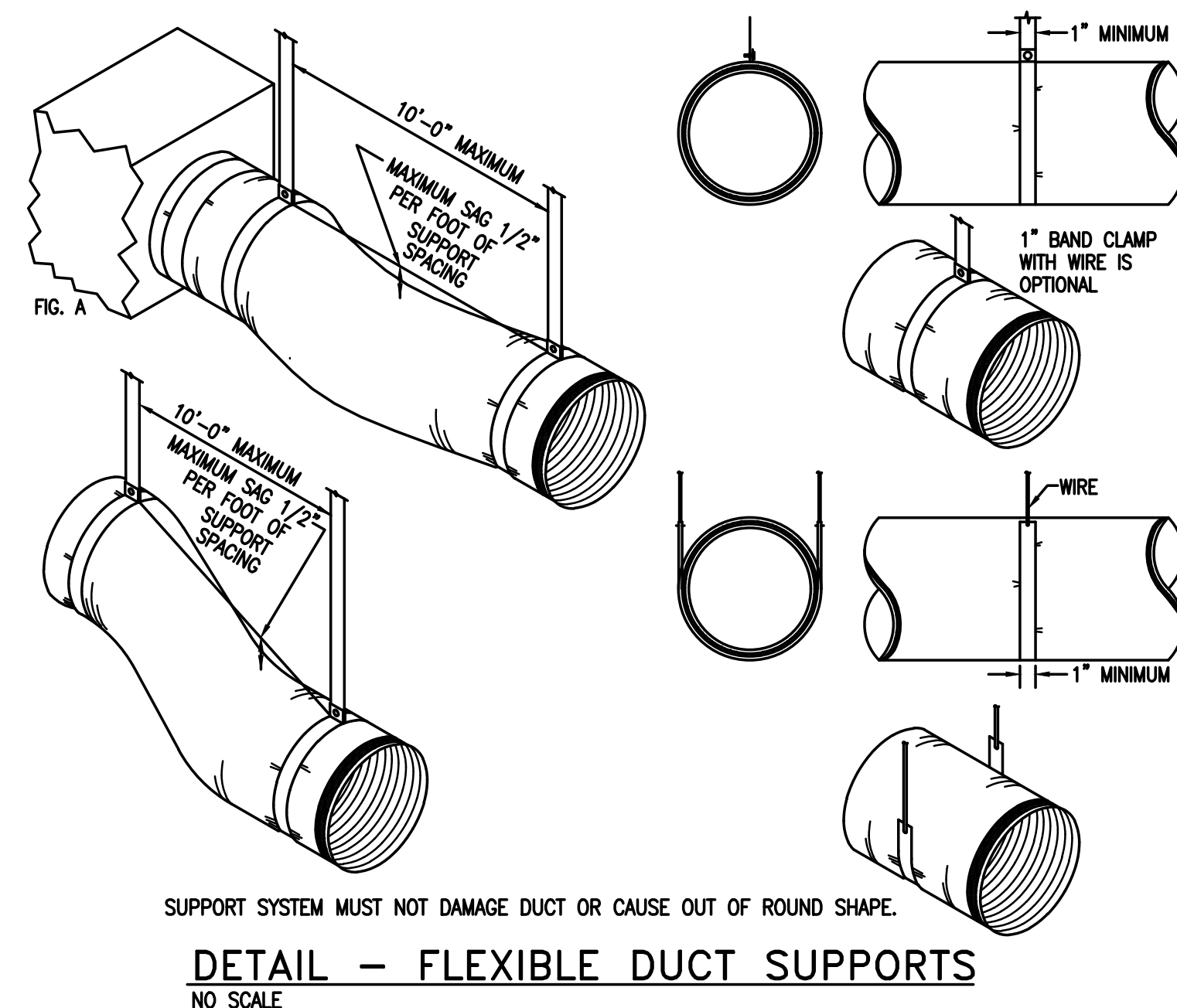
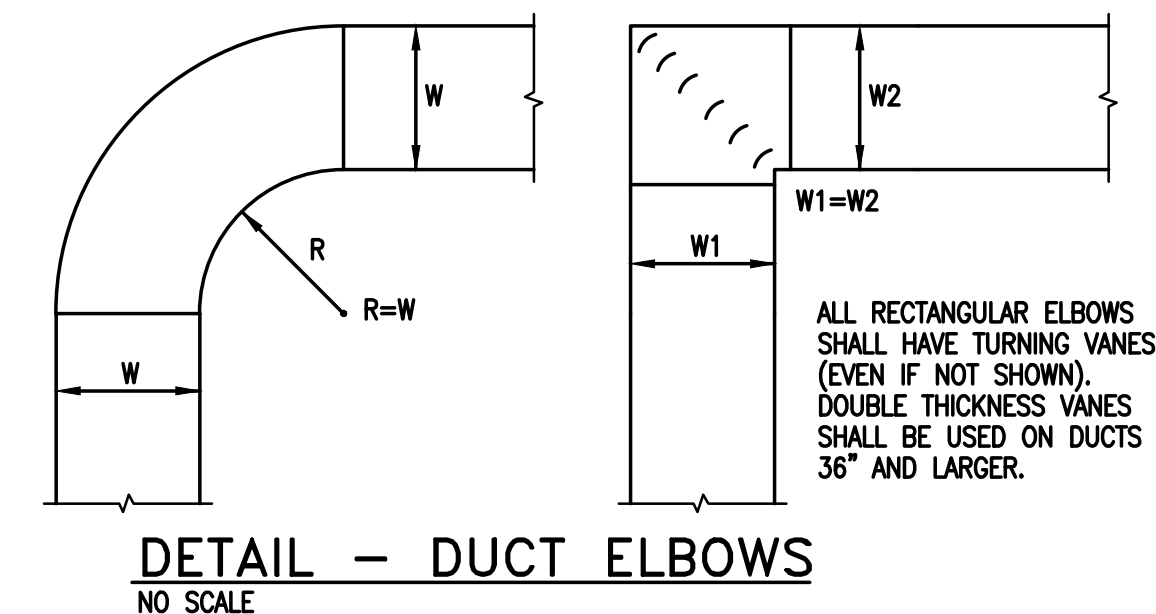
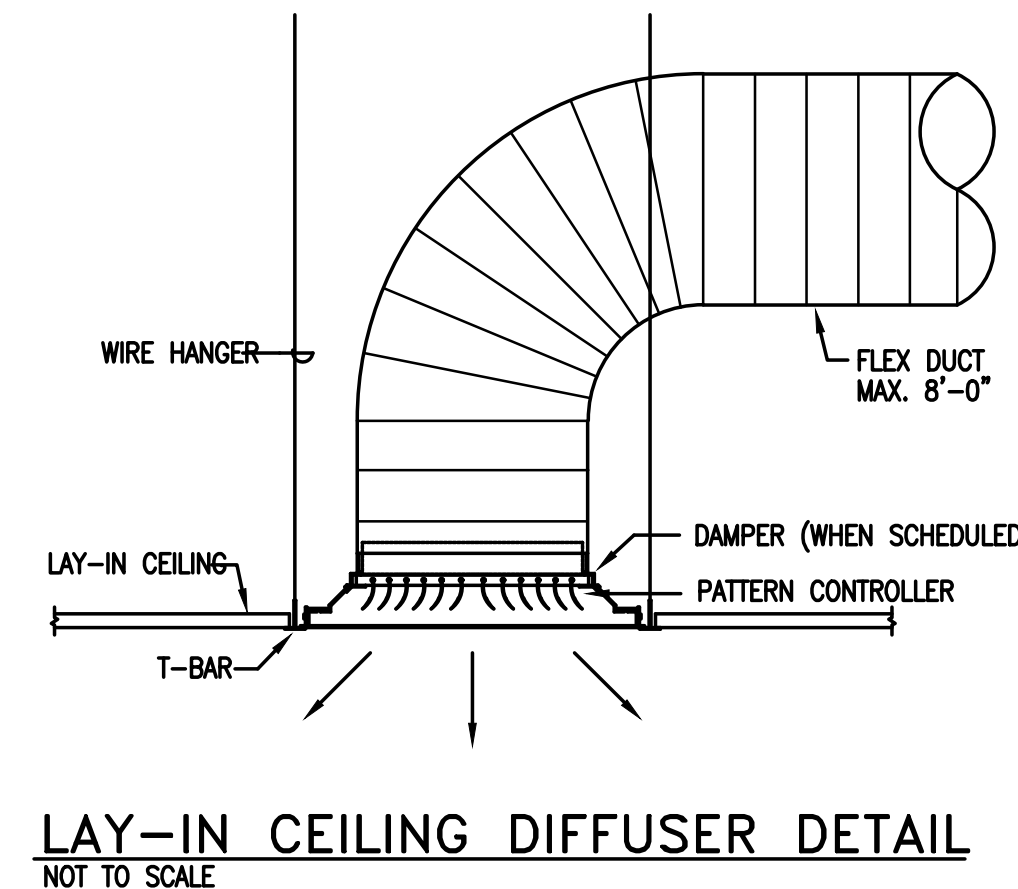
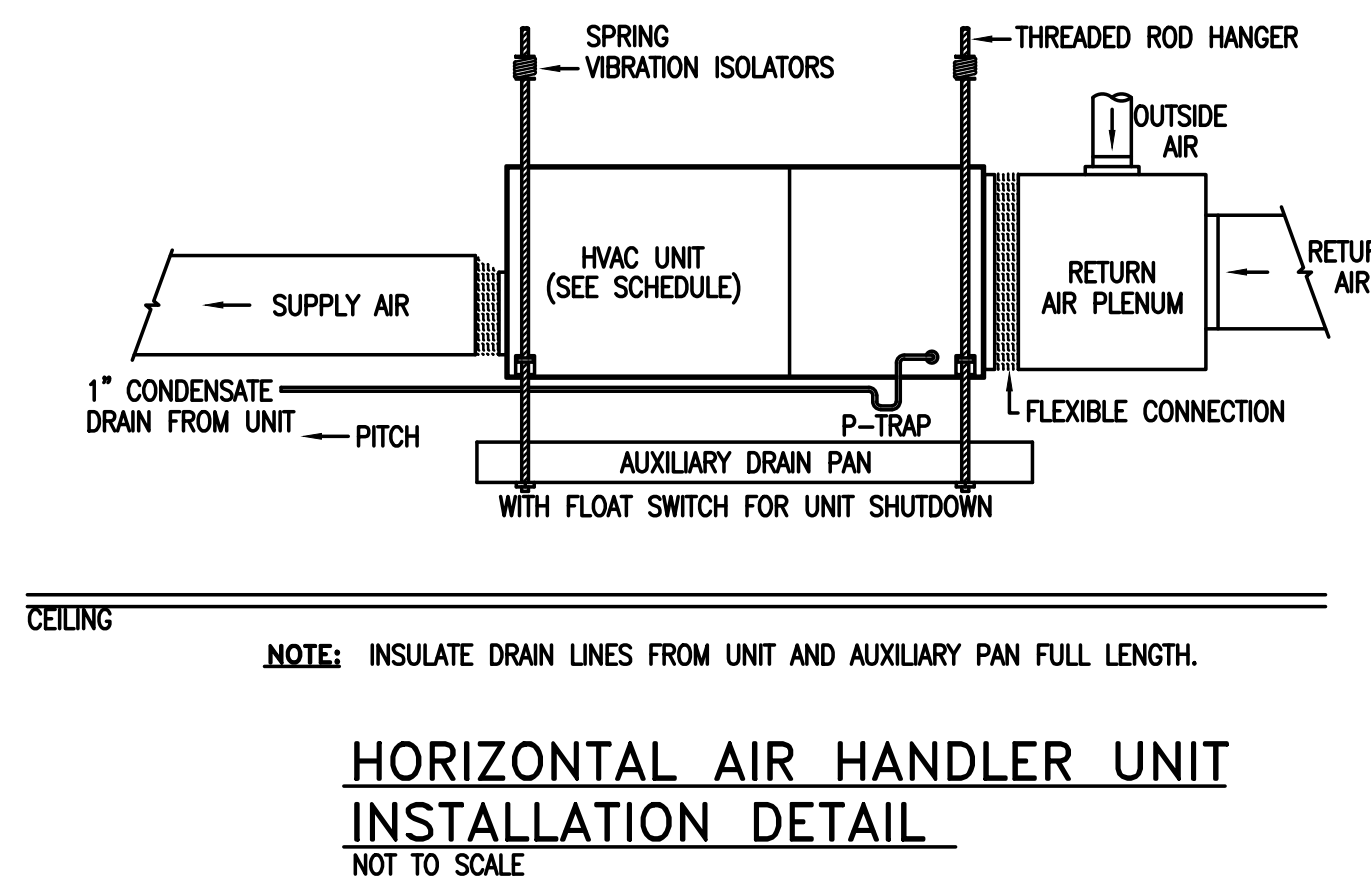
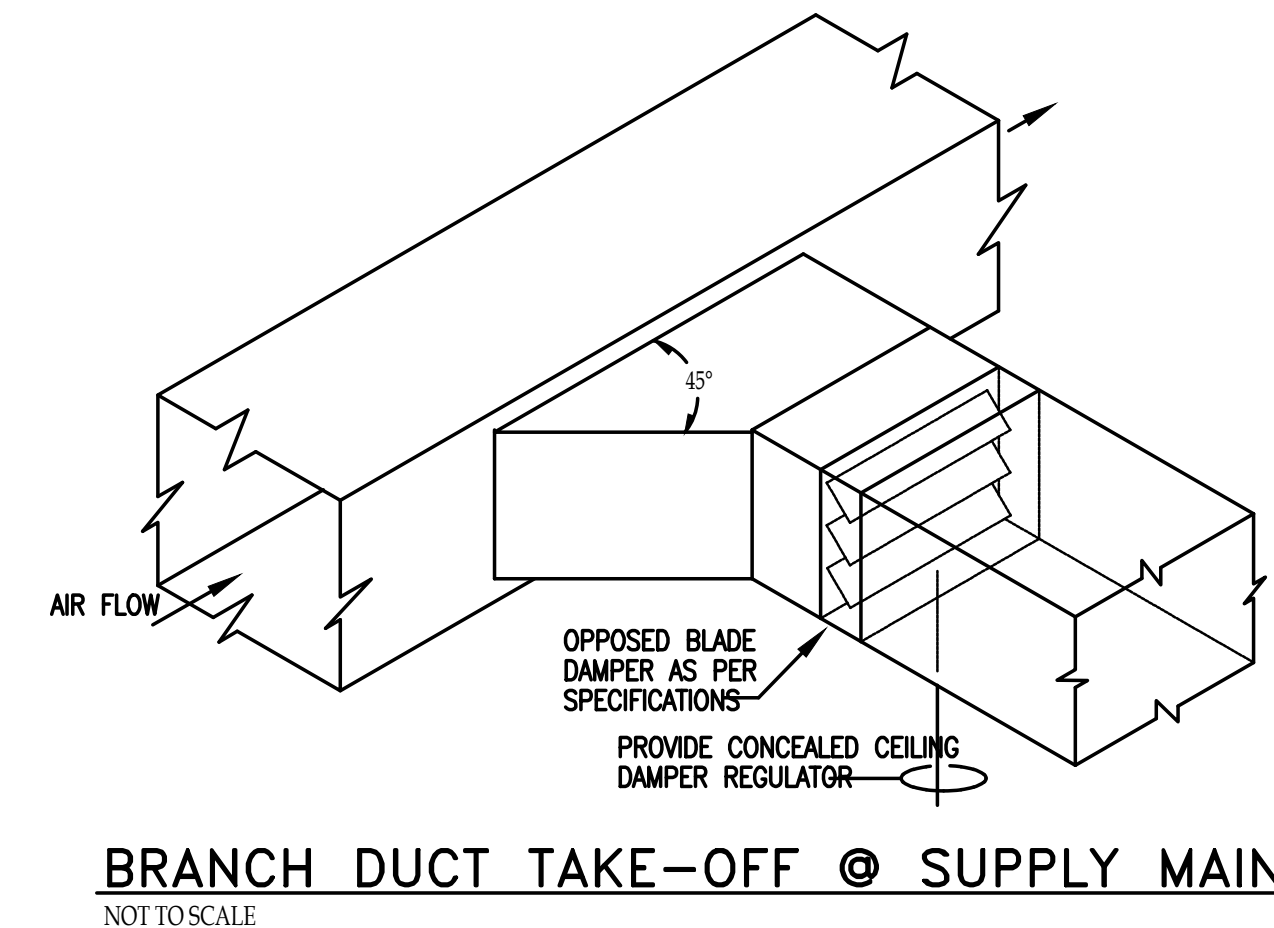
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DUCT STRAP HANGER DETAIL
NOT TO SCALE



DETAIL - BRANCH DUCT CONNECTION
NO SCALE



MECHANICAL DETAILS
VISTAR EYE CENTER - WYTHEVILLE
ADDITION
470 LITHIA RD.
WYTHEVILLE, VIRGINIA

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