

**ADDENDUM NO. SIX**

**PROJECT: Johnson County Recycling Center**

**PROJECT NUMBER: 23122**

**DATE OF ADDENDUM: June 6, 2024**



**THIS ADDENDUM FORMS A PART OF THE CONTRACT DOCUMENTS AND IS ISSUED IN ACCORDANCE WITH THE INSTRUCTIONS TO BIDDERS. ACKNOWLEDGE RECEIPT OF THIS ADDENDUM BY SIGNING THE ADDENDUM ACKNOWLEDGMENT SECTION OF THE BID FORM.**

**Questions:**

Q: The mechanical schedule on sheet M002 does not show the following units:

- GFUH-A1
- GFUH-A2
- GFUH-A3
- PTAC-A1
- PTAC-A2
- PTAC-A3

We need to have some type of schedule on these to price them properly.

A: See attached updated Sheet M002

Q: Is the radiant floor system supposed to be designed by the HVAC contractors?

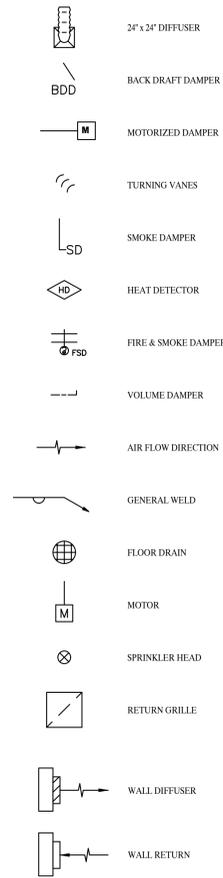
A: The Radiant floor heating is a delegated design by the contractor based on the criteria provided on drawings



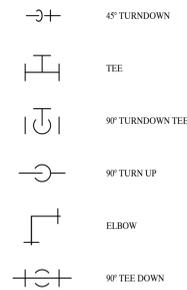
**Attachments:** M002

**End of Addendum 6**

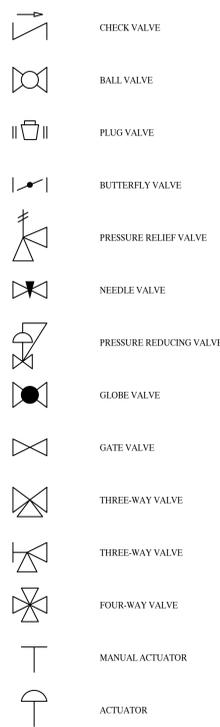
**MECHANICAL SYMBOLOGY**



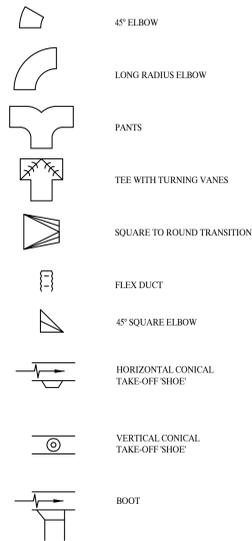
**PIPING SYMBOLOGY**



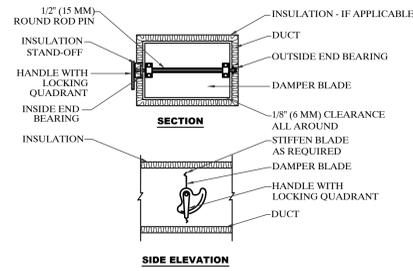
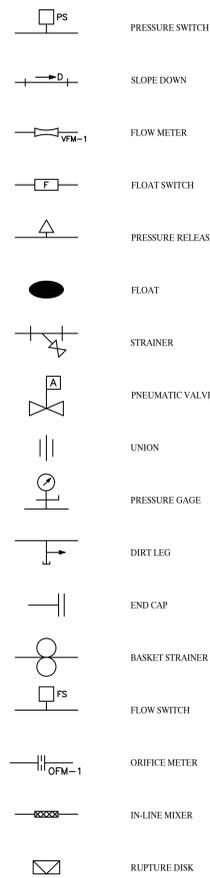
**VALVES**



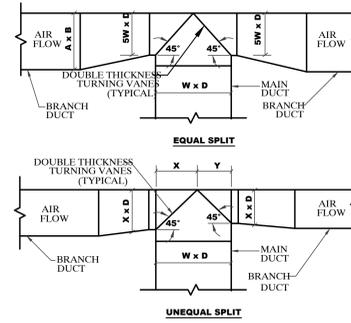
**DUCT SYMBOLOGY**



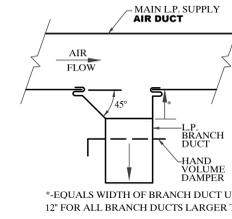
**PIPING SYMBOLS**



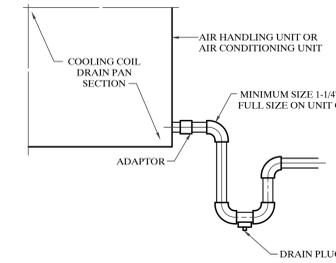
**A VOLUME DAMPER DETAIL**  
SCALE: NTS



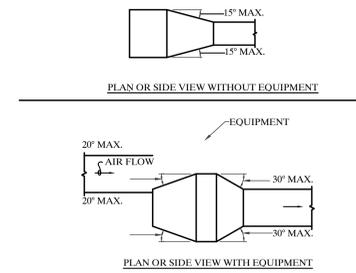
**E DUCT DETAIL**  
SCALE: NTS



**B TYPICAL LOW PRESSURE BRANCH**  
SCALE: NTS

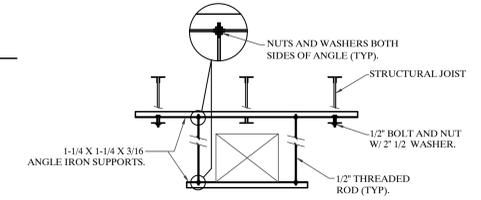


**G CONDENSATE DRAIN DETAIL**  
SCALE: NTS

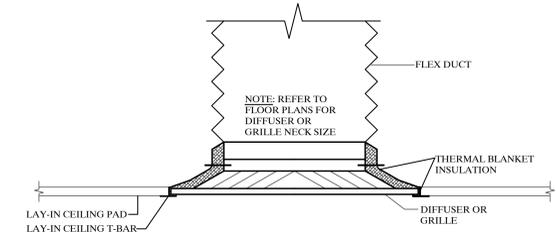


**C TYPICAL DUCTWORK TRANSITIONS**  
SCALE: NTS

NOTE: UNLESS OTHERWISE INDICATED ON PLANS, MAXIMUM ANGLES SHOWN SHALL APPLY.

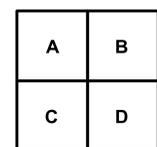


**D DUCT HANGER DETAIL**  
SCALE: NTS



**M DIFFUSER INSTALLATION DETAIL**  
SCALE: NTS

DRAWING INDEX	
DRAWING No.	DRAWING TITLE
M001	MECHANICAL SYMBOLS
M002	MECHANICAL SCHEDULES & SPECIFICATIONS
M101	FIRST FLOOR - MECHANICAL PLAN



REVISIONS:	Date	Disc.
1	08.08.2024	Mechanical Revision

**GENERAL NOTES:**

- A. ALL WORK SHALL BE IN ACCORDANCE WITH THE BEST QUALITY STANDARDS OF THE TRADE AND SHALL CONFORM WITH ALL FEDERAL, STATE, AND LOCAL CODES AND STANDARDS.
- B. CONTRACT DOCUMENTS CONSIST OF BOTH THE PROJECT MANUAL AND DRAWINGS AND BOTH ARE INTENDED TO BE COMPLEMENTARY - ANYTHING APPEARING ON EITHER MUST BE EXECUTED THE SAME AS IF SHOWN ON BOTH.
- C. THE CONTRACTOR SHALL INCLUDE IN BID PROPOSAL ALL COSTS REQUIRED TO COMPLETELY AND PROPERLY INSTALL ALL WORK REQUIRED FOR THE PROJECT AND SHALL EXAMINE THE SCOPE OF WORK OF OTHER TRADES PRIOR TO SUBMITTING A BID PROPOSAL.
- D. CONSTRUCTION DOCUMENTS SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, HOWEVER, SYSTEMS HAVE BEEN SHOWN DIAGRAMMATICALLY AND IN SOME CASES AND ENLARGED FOR CLARITY. ANY OFFSETS, ADDITIONAL FITTINGS, AND/OR APURTANCES REQUIRED TO PROVIDE A COMPLETE AND COORDINATED SYSTEM SHALL BE BORNE BY THE CONTRACTOR.
- E. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF CEILING MOUNTED MATERIALS INCLUDING ALL DIFFUSERS, GRILLES, AND REGISTERS.
- F. THE MECHANICAL CONTRACTOR SHALL COORDINATE DUCTWORK INSTALLATIONS WITH OTHER TRADES. LIGHTING AND DUCTWORK DESIGNS INDICATED ON CONTRACT DRAWINGS WERE COORDINATED, HOWEVER CONFLICTS WITH DUCTWORK AND LIGHTS MAY ARISE DUE TO GRID INSTALLATION. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL DUCTWORK MODIFICATIONS AND OFFSETS REQUIRED TO ACCOMMODATE FIELD CONDITIONS.
- G. ALL EQUIPMENT INCLUDING BUT NOT LIMITED TO DUCTWORK, PIPING, UNIT HEATERS, ETC. SHALL BE HUNG FROM THE TOP CHORD OF THE STRUCTURAL STEEL.
- H. ALL EXTERIOR PENETRATIONS SHALL BE WEATHER AND WATER TIGHT.
- I. REFRIGERANT PIPE SIZING AND CONFIGURATION BY UNIT MANUFACTURER.
- J. CONTRACTORS SHALL REVIEW STRUCTURAL PLANS AND ACTUAL LAYOUT OF BEAMS, JOISTS, ETC. TO AVOID CONFLICT BETWEEN DUCT, ADJUST DUCT ROUTING TO ACCEPT STRUCTURAL CONDITIONS.
- K. ALL EXHAUST DISCHARGES AND GAS FLUES WHERE INDICATED SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM OUTSIDE AND COMBUSTION AIR INTAKES UNLESS LOCAL AND STATE CODES MANDATE ADDITIONAL DISTANCE.
- L. CONTRACTOR SHALL VERIFY ELECTRICAL CHARACTERISTICS OF ALL MECHANICAL EQUIPMENT WITH THE ELECTRICAL CONTRACTOR PRIOR TO PLACING EQUIPMENT ON ORDER.
- M. WHERE WALL TYPE LOUVERS ARE INDICATED, MECHANICAL CONTRACTOR SHALL SEAL WATER-TIGHT ALL AROUND LOUVER WITH SILICON CAULKING. CONTRACTOR SHALL COORDINATE PAINTING REQUIREMENTS FOR LOUVERS WITH GENERAL CONTRACTOR PRIOR TO SUBMITTING BID.
- N. PLANS INDICATE GENERAL LOCATION AND ARRANGEMENT OF MECHANICAL SYSTEMS. INSTALL AS INDICATED UNLESS DEVIATIONS ARE APPROVED.
- O. PROVIDE SUBMITTALS FOR EACH TYPE OF EQUIPMENT, MATERIAL AND ACCESSORY.
- P. INSTALL ALL MECHANICAL SYSTEMS PER SMACNA.
- Q. INSTALL DUCT WORK WITH FEWEST AMOUNT OF JOINTS.
- R. INSTALL DUCT WORK PARALLEL AND PERPENDICULAR TO BUILDING LINES.
- S. DUCT WORK SHALL HAVE A MINIMUM OF 1" CLEARANCE.
- T. PROTECT ALL MECHANICAL EQUIPMENT, SYSTEMS, MATERIALS AND ACCESSORIES FROM DAMAGE DURING STORAGE, INSTALLATION AND CONSTRUCTION.
- U. EXAMINE AND REVIEW CONDITIONS FOR COMPLIANCE BEFORE PROCEEDING WITH CONSTRUCTION AND INSTALLATION.

**METAL DUCTS**

- 1.1 **SHEET METAL MATERIALS**
  - A. GALVANIZED STEEL SHEETS: COMPLY WITH ASTM A653/A 653M, G60 (Z180) AND A MILL PHOSPHATIZED FINISH FOR SURFACES EXPOSED TO VIEW.
  - B. REINFORCEMENT SHAPES AND PLATES SHALL BE GALVANIZED STEEL. DISSIMILAR MATERIALS SHALL BE SEPARATED USING APPROPRIATE GASKET MATERIALS.
  - C. GALVANIZED STEEL: THE RODS THAT ARE 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS AND 3/8-INCH DIAMETER FOR LONGER LENGTHS LONGER.
  - D. CARBON STEEL SHEETS: COMPLY WITH ASTM A108/1088MM, WITH OILED, MATTE FINISH FOR EXPOSED SURFACES.
- 1.2 **DUCT LINER**
  - A. TYPE I, FLEXIBLE LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.27 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.
  - B. TYPE II, RIGID LINER SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY OF 0.23 BTU X IN./H X SQ. FT. X DEG F AT 75 DEG F MEAN TEMPERATURE.
  - C. ANTIMICROBIAL EROSION-RESISTANT COATING TESTED AND REGISTERED FOR USE IN HVAC SYSTEMS
  - D. WATER-BASED LINER ADHESIVE: COMPLY WITH NFPA 90A OR NFPA 90B AND WITH ASTM C 916.
  - E. INSULATION PINS AND WASHERS:
    1. CUPPED-HEAD CAPACITOR-DISCHARGE-WELD PINS SHALL BE COPPER- OR ZINC-COATED STEEL PIN, FULLY ANNEALED FOR CAPACITOR-DISCHARGE WELDING, 0.106-INCH DIAMETER SHANK, LENGTH TO SUIT DEPTH OF INSULATION LINED WITH INTERNAL 1/2-INCH GALVANIZED CARBON-STEEL WASHER.
    2. INSULATION-RETAINING WASHERS SHALL BE SELF-LOCKING WASHERS FORMED FROM 0.016-INCH THICK GALVANIZED STEEL; WITH BEVELED EDGE SIZED AS REQUIRED TO HOLD INSULATION SECURELY IN PLACE BUT NOT LESS THAN IN DIAMETER.
  - F. SHOP APPLICATION OF DUCT LINER IS PERMITTED.
- 1.3 **SEALANT AND GASKETS**
  - A. WATER-BASED JOINT AND SEAM SEALANT SHALL BE BRUSHED ON WITH A MINIMUM SOLIDS CONTENT OF 65%, A MINIMUM SHORE A HARDNESS OF 20, WATER MOLD AND MILDEW RESISTANT AND A MAXIMUM VOC OF 75 G/L. MUST BE RATED FOR UP TO 10" WG AND FOR INDOOR AND OUTDOOR SERVICE. SHALL BE COMPATIBLE WITH METAL SUBSTRATE.
  - B. FLANGED JOINT SEALANT SHALL BE A SINGLE-COMPONENT, ACID-CURING, SILICONE ELASTOMERIC, TYPE S, GRADE NS, CLASS 25 AND 0 USE.
  - C. FLANGE GASKETS SHALL BE BUTYL RUBBER, NEOPRENE, OR EPDM POLYMER WITH POLYISOBUTYLENE PLASTICIZER.
- 1.4 **HANGERS AND SUPPORTS**
  - A. HANGER RODS SHALL BE CADMIUM-PLATED STEEL RODS AND NUTS.
  - B. STEEL CABLES FOR GALVANIZED-STEEL DUCTS.
  - C. STEEL CABLE END CONNECTIONS SHALL BE CADMIUM-PLATED STEEL ASSEMBLIES WITH BRACKETS, SWIVEL, AND BOLTS DESIGNED FOR DUCT HANGER SERVICE, WITH AN AUTOMATIC-LOCKING AND CLAMPING DEVICE.
  - D. SHEET METAL SCREWS, BLIND RIVETS, OR SELF-TAPPING METAL SCREWS SHALL BE COMPATIBLE WITH DUCT MATERIALS.
  - E. SUPPORT GALVANIZED-STEEL DUCTS WITH GALVANIZED-STEEL SHAPES AND PLATES.
- 1.5 **DUCT INSTALLATION**
  - A. PROTECT ALL MATERIALS, INSTALLED AND STORED, FROM DAMAGE.
  - B. COVER OPENINGS BETWEEN NON-FIRE RATED INTERIOR PARTITIONS AND DUCT (OR DUCT INSULATION) WITH SHEET METAL OVERLAPPING ON FOUR SIDES BY A MINIMUM OF 1".
  - C. TRIM DUCT SEALANTS FLUSH WITH METAL. CREATE A SMOOTH AND UNIFORM EXPOSED BEAD.
  - D. REPAIR OR REPLACE DAMAGED SECTIONS AND FINISHED WORK THAT DOES NOT COMPLY WITH THESE REQUIREMENTS.
  - E. HANGERS AND SUPPORTS SHALL USE STRUCTURAL-STEEL FASTENERS APPROPRIATE FOR CONSTRUCTION MATERIALS TO WHICH HANGERS ARE BEING ATTACHED.
  - F. HANGERS EXPOSED TO VIEW SHALL BE THREADED ROD AND ANGLE OR CHANNEL SUPPORTS.
  - G. INSTALL UPPER ATTACHMENTS TO STRUCTURES. SELECT AND SIZE UPPER ATTACHMENTS WITH PULL-OUT, TENSION, AND SHEAR CAPACITIES APPROPRIATE FOR SUPPORTED LOADS AND BUILDING MATERIALS WHERE USED.
  - H. PAINT INTERIOR OF METAL DUCTS THAT ARE VISIBLE THROUGH REGISTERS AND GRILLES AND THAT DO NOT HAVE DUCT LINER. APPLY ONE COAT OF FLAT, BLACK, LATEX PAINT OVER A COMPATIBLE GALVANIZED-STEEL PRIMER.
  - I. PERFORM TESTS AND INSPECTIONS. DUCT SYSTEM WILL BE CONSIDERED DEFECTIVE IF IT DOES NOT PASS TESTS AND INSPECTIONS.
  - J. CLEAN EXISTING DUCT SYSTEMS BEFORE TESTING, ADJUSTING, AND BALANCING.
- 1.6 **DUCT SCHEDULE**
  - A. INTERMEDIATE REINFORCEMENT SHALL BE STAINLESS STEEL.

**DUCT ACCESSORIES**

- 1.1 **MATERIALS**
  - A. REINFORCEMENT SHAPES AND PLATES SHALL MATCH OR BE COMPATIBLE WITH SHEET METAL DUCT MATERIAL.
  - B. THE RODS SHALL BE STAINLESS STEEL, 1/4-INCH MINIMUM DIAMETER FOR LENGTHS 36 INCHES OR LESS; 3/8-INCH MINIMUM DIAMETER FOR LENGTHS LONGER THAN 36 INCHES.
- 1.2 **MANUAL VOLUME DAMPERS**
  - A. ALL STAINLESS STEEL DAMPER WITH STANDARD LEAKAGE RATING AND LINKAGE OUTSIDE OF AIRSTREAM. USE A HAT-SHAPED FRAME WITH STAINLESS STEEL CHANNELS, MITERED AND WELDED CORNERS, FLANGELESS FRAMES FOR INSTALLATION IN DUCTS, STAINLESS STIFFENED DAMPER BLADES AND OIL IMPREGNATED BRONZE BEARINGS.
- 1.3 **FLANGE CONNECTORS**
  - A. GALVANIZED STEEL MATCHING CONNECTING DUCTWORK IN GAGE AND SHAPE. IT SHALL BE AN ADD-ON, FACTORY-FABRICATED DEVICE WITH SLIDE-ON TRANSVERSE FLANGE CONNECTORS, GASKETS, AND COMPONENTS.
- 1.4 **TURNING VANES**
  - A. MANUFACTURED STAINLESS STEEL TURNING VANES WITH CURVED BLADES AND SUPPORTED WITH BARS PERPENDICULAR TO BLADES SET. INSTALL SINGLE WALL VANES FOR DUCTS UP TO 48" WIDE AND DOUBLE WALL FOR LARGER DUCTS.
- 1.5 **DUCT-MOUNTED ACCESS DOORS**
  - A. STAINLESS STEEL DOUBLE WALL RECTANGULAR DOOR WITH INSULATION PER DUCT PRESSURE CLASS AND 1"x4" BUTT OR PLANO HINGES AND CAM LATCHES. NUMBER OF HINGES SHALL BE APPROPRIATE TO DOOR SIZE. FRAME SHALL BE GALVANIZED WITH BED OVER TABS AND FOAM GASKETS.
- 1.6 **FLEXIBLE CONNECTORS**
  - A. FLEXIBLE CONNECTORS SHALL BE MADE OF FLAME-RETARDANT OR NONCOMBUSTIBLE FABRICS.
  - B. INDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH NEOPRENE. MINIMUM WEIGHT SHALL BE 28 OZ/SQ YD WITH A TENSILE STRENGTH OF 400 LBF/INCH IN THE WRAP AND 160 LBF/INCH IN THE FILLING AT 40°F TO 200°F.
  - C. OUTDOOR SYSTEM FLEXIBLE CONNECTOR SHALL BE GLASS FABRIC DOUBLE COATED WITH PROOF, SYNTHETIC RUBBER RESISTANT TO UV RAYS AND OZONE. MINIMUM WEIGHT SHALL BE 24 OZ/SQ YD WITH A TENSILE STRENGTH OF 500 LBF/INCH IN THE WRAP AND 440 LBF/INCH IN THE FILLING AT -20°F TO 250°F.
- 1.7 **FLEXIBLE DUCTS**
  - A. NONINSULATED FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE WITH A PRESSURE RATING OF 4" WG TO 4.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF -20°F TO 175°F.
  - B. INSULATED, FLEXIBLE DUCT SHALL BE BLACK POLYMER FILM SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE, FIBROUS-GLASS INSULATION WITH ALUMINIZED VAPOR-BARRIER FILM. PRESSURE RATING SHALL BE 4" WG TO 4.5" WG AT A MAXIMUM AIR VELOCITY OF 4000 FPM AND A TEMPERATURE RANGE OF 20°F TO 175°F.
  - C. STAINLESS STEEL CLAMPS WITH CADMIUM-PLATED HEX SCREW TO TIGHTEN BAND WITH A WORM GEAR ACTION IN SIZES 3 THROUGH 18.
  - D. ADHESIVE PLUS SHEET METAL SCREWS FOR NON-CLAMP CONNECTORS.
- 1.8 **INSTALLATION**
  - A. INSTALL DUCT ACCESSORIES OF MATERIALS THAT ARE COMPATIBLE WITH DUCT MATERIALS.
  - B. INSTALL VOLUME DAMPERS AT POINTS ON SUPPLY, RETURN, AND EXHAUST SYSTEMS WHERE INDICATED ON DRAWINGS WHERE DAMPERS ARE INSTALLED IN DUCTS HAVING DUCT LINER, INSTALL DAMPERS WITH HAT CHANNELS OF SAME DEPTH AS LINER, AND TERMINATE LINER WITH V-GROOVE AT HAT CHANNEL.
  - C. SET DAMPERS TO FULLY OPEN POSITION BEFORE TESTING, ADJUSTING, AND BALANCING.
  - D. INSTALL DUCT ACCESS DOORS ON SIDES OF DUCTS TO ALLOW FOR PROPER USE AT THE FOLLOWING LOCATIONS:
    1. DOWNSTREAM FROM DAMPERS AND EQUIPMENT.
    2. ADJACENT TO AND CLOSE ENOUGH TO FIRE OR SMOKE DAMPERS TO RESET OR REINSTALL FUSIBLE LINKS. ACCESS DOORS FOR ACCESS TO FIRE OR SMOKE DAMPERS HAVING FUSIBLE LINKS SHALL BE PRESSURE RELIEF ACCESS DOORS AND SHALL BE OUTWARD OPERATION FOR ACCESS DOORS INSTALLED UPSTREAM FROM DAMPERS AND INWARD OPERATION FOR ACCESS DOORS INSTALLED DOWNSTREAM FROM DAMPERS.
    3. CONTROL DEVICES REQUIRING INSPECTION.
    4. ELSEWHERE AS INDICATED.
  - E. INSTALL ACCESS DOORS WITH SWING AGAINST DUCT STATIC PRESSURE.
  - F. ACCESS DOOR SIZES:
    1. ONE-HAND OR INSPECTION ACCESS: 8 BY 5 INCHES.
    2. TWO-HAND ACCESS: 12 BY 4 INCHES.
    3. HEAD AND HAND ACCESS: 18 BY 10 INCHES.
    4. HEAD AND SHOULDERS ACCESS: 21 BY 14 INCHES.
    5. BODY ACCESS: 25 BY 14 INCHES.
  - G. INSTALL FLEXIBLE CONNECTORS TO CONNECT DUCTS TO EQUIPMENT.
  - H. CONNECT DIFFUSERS OR LIGHT TROFFER BOOT TO DUCTS WITH MAXIMUM 60-INCH LENGTHS OF FLEXIBLE DUCT CLAMPED OR STRAPPED IN PLACE.
  - I. CONNECT FLEXIBLE DUCTS TO METAL DUCTS WITH ADHESIVE PLUS SHEET METAL SCREWS.
  - J. FULLY TEST AND OPERATE ALL DAMPERS TO VERIFY FULL RANGE OF MOVEMENT.
  - K. INSPECT ALL EQUIPMENT AND ACCESSORIES FOR PROPER INSTALLATION.

**CEILING DIFFUSER/RETURN GRILLE SCHEDULE**

MARK NO.	A	B	C
MANUFACTURER	TITUS	TITUS	TITUS
MODEL NO.	TMS	350FL	350FL
DESCRIPTION	SUPPLY DIFFUSER	RETURN GRILLE	EXHAUST GRILLE
MAXIMUM CFM	225		
NOISE CRITERIA	22		
NECK SIZE	ON DRAWING	ON DRAWING	ON DRAWING
FACE SIZE	24"x24" or 12"x12"	ON DRAWING	ON DRAWING
MODULE SIZE	-	-	-
CONST. MATERIAL	ALUM	ALUM	ALUM
FINISH	-	-	-
ACCESSORIES	-	-	-
REMARKS	FOR SUSPENDED OR DRYWALL CEILING SYSTEM	FOR SUSPENDED OR DRYWALL CEILING SYSTEM	FOR SUSPENDED OR DRYWALL CEILING SYSTEM
	INCLUDE INSULATION ON THE BACK OF THE DIFFUSER		

NECK SIZE: 1. INSTALL ALL DEVICES LEVEL AND PLUMB. 2. INSTALL WITH AIRTIGHT CONNECTIONS TO DUCTS. 3. ADJUST AIR PATTERN AND DAMPERS AS REQUIRED FOR AIR BALANCING. 4. COLOR BY ARCHITECT.

**ESCUTCHEONS**

NEW PIPE	TYPE
PROTRUDING FROM WALL	ONE-PIECE, DEEP PATTERN
INSULATED PIPING	ONE-PIECE, STAMPED-STEEL
BARE PIPE	ONE-PIECE CAST BRASS - POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	ONE-PIECE, FLOOR-PLATE
EXISTING PIPE	
ALL PIPE	SPLIT-PLATE STAMPED STEEL WITH POLISHED CHROME-PLATED FINISH
FOR THE FLOOR	SPLIT-CASTING, FLOOR-PLATE
	1 REPLACE BROKEN AND DAMAGED ESCUTCHEONS AND FLOOR PLATES USING NEW MATERIALS
	2 SUBMITT EACH TYPE FOR REVIEW

**SEAL CLASS**

	SUPPLY (2" PRESSURE AND LOWER)	SUPPLY (HIGHER THAN 2" PRESSURE)	EXHAUST	RETURN
OUTDOOR	A	A	C	C
UNCONDITIONED SPACES	B	A	C	B
CONDITIONED SPACES	C	B	B	C

**CIRCULATING FAN SCHEDULE**

FAN DATA						ELECTRICAL DATA				GENERAL INFORMATION			
TAG	CFM	ESP IN. W.C.	TIP SPEED	RPM	SONES	HP or WATTS	VOLTAGE	BHP	CONTROLLED BY	MANUFACTURER AND MODEL NUMBER	FAN TYPE	LOCATION	NOTES
CCF-A1, A2	5436					64watts	120	---	Manufacturer's ONN/OFF/SPEED	MARLEY QMARK CHD SERIES 56IN Diameter	CEILING CIRCULATING FAN	CEILING MOUNTED	
NOTES													
1 ON/OFF SPEED CONTROL BY MANUFACTURER													
2 PROVIDE WITH TWIST LOCK RECEPTICAL													

**Furnace and Condensing Unit Schedule**

Furnace										Condensing Unit														
GENERAL INFORMATION		INDOOR FAN			HEATING PERFORMANCE			DX COOLING COIL		ELECTRICAL		FURNACE MODEL INFORMATION			GENERAL INFORMATION		ELECTRICAL		CONDENSING UNIT MODEL INFORMATION					
TAG	OA	CFM	E.S.P.	HP	MBH	MBH	EDB	EWB	Voltage	MCA	MOP	Approx Weight LBS	Furnace Manufacturer Model Number	TAG	NOMINAL TONS	AMB. AIR TEMP F.	TOTAL MBH	MIN. SEER	Voltage	MCA	MOP	Approx Weight LBS	Condensing Unit Manufacturer Model Number	NOTES
F-A1, A2		1092	0.9"	1/3		36		77.6	65	120/1/60			TRANE: TEMA00C375315C	CU-1	3.0	95	36.0	17.0	208/3/60	15	25	245	TRANE: 4TTA7036A3000A	ALL
NOTES:																								
1 Condensing Unit to be provided with start assist kit, low ambient controls, crank case heaters, five minutes restart time delay, and service valves.																								
2 Unit mounted disconnect, internal thermal overload, low pressure switch, high pressure switch, filter drier, louvered coil guard.																								
3 For servicing or cleaning, a 24" front clearance is required. Unit connections (electrical, flue and drain) may necessitate greater clearances than the minimum clearances listed above.																								
4 Installer must supply one or two PVC pipes: one for combustion air (optional) and one for the flue outlet (required). Vent pipe must be either 2" or 3" in diameter, depending upon furnace input, number of elbows, length of run and installation (1 or 2 pipes). The optional Combustion Air Pipe is dependent on installation/code requirements and must be 2" or 3" diameter PVC.																								
5 Standard Gas Supply Pipe size is 3/4".																								
6 1/2" Ribbed vibration pad under entire unit.																								
7 Constant Volume, Single Zone Unit.																								
9 7 day programmable thermostat with touch screen interface (vision pro 8000)																								
10 Provide matching DX Coil with furnace.																								

**EXHAUST FAN SCHEDULE**

FAN DATA					ELECTRICAL DATA					GENERAL INFORMATION						
TAG	CFM	ESP IN. W.C.	TIP SPEED	RPM	SONES	HP	BHP	VOLTAGE	MCA	MOP	CONTROLLED BY	FAN TYPE	MANUFACTURER AND MODEL NUMBER	LOCATION	APPROX. WEIGHT LBS	NOTES
EF-A1	500	0.5	---			0.1		120 V			schedule	Centrifugal - in line	Greenheck, SQ-95-DGEX-QD	Plenum	38	ALL
NOTES																
1 Fan with disconnect, speed controller, backdraft damper, and wall cap (Color as selected by Architect). Fan shall be energized when furnaces are energized.																

**PTAC SCHEDULE - PTH Models- Cooling/Heat Pump**

TAG	FAN DATA			COOLING DATA				HEATING DATA			AUXILIARY HEATING DATA		ELECTRICAL DATA			WEIGHT LBS	MANUFACTURER AND MODEL NUMBER	NOTES
	HIGH CFM	LOW CFM	OUTSIDE AIR CFM	EER	TOTAL MBH	ROWS FPI	REFRIG. TYPE	COP	REVERSE CYCLE MBH	COIL KW	COIL MBH	SINGLE POINT POWER						
												VOLTAGE	MCA	MOP				
PTAC-A1	360	270.0	65.0	11.9	9.0	---	R-410A	3.4	8.2	2.5	6.8	208/1	14.1	15	112	AMANA PTH09K25	ALL	
NOTES																		
1 3-Stage Heating Design, Heat Pump with Supplemental Resistance Heat, Reduce PTAC energy consumption up to 35%, Increased Dehumidification Capacity, High Energy Efficiency, Quiet Operation-Two fan motors (Indoor/outdoor)- Indoor tangential fan for quiet operation, Seven-Button Touch Pad, Filter Dryer for Sealed System Refrigerant, Condensate Dispersion System, Front Desk Control, Room Freeze Protection, Remote Thermostat Control, Zero Floor Clearance, Constant Fan Mode, Compressor Lock-in, Easy Pull-Out Filters, Easy to Service with On-Board LED Diagnostics, Extended Heat Pump Heating, High-Pressure Switch, Hidden Ventilation Control, Automatic Emergency Heat, 30-Second Fan-Off Delay																		
2 one position discharge grille, one position return grille, wall mounted thermostat, wall sleeve, extruded aluminum architectural grille, Condensate drain kit, Low-Voltage Wire Harness Kit, Remote Escutcheon kit, Sub-base Kit, Leveling Legs, Hard-wire Kits, Power Disconnect Switch, Fuse Holder Kit, Circuit Breaker Kit (230/208V only), Duct Extension Kit, Sub-base Extension Cover Kit, Condensate Removal Pump, Security Key Locks, Condenser Baffle Kit, Hydronic Heat Kit, Wall Sleeve Extension Adapter Kits, Curtain Baffle Kit, Hydronic Valves, power connection kit.																		
4 Minimum voltage on 230/208-volt models is 197 volts; maximum is 253 volts.																		
6 Heating capacity and efficiency based on unit operation without condensate pump; unit automatically switches to electric																		
11 All units less than 250-volts have a Leak Current Detector interrupter (LCDI) power cord and meet UL 484 standards.																		

**LOUVER SCHEDULE**

MARK	SERVICE	CFM	WIDTH INCHES	HEIGHT INCHES	FRAME DEPTH INCHES	VELOCITY FPM	MAX APD IN. WG	BLADE STYLE	MANUFACTURER	MODEL	REMARKS
L-1	OUTSIDE AIR	100	6	6	4				GREENHECK	EAC-401	
L-2	OUTSIDE AIR	400	12	12	4				GREENHECK	EAC-402	

- REMARKS:
1. FURNISH WITH ALUMINUM BIRD SCREEN.
  2. FURNISH WITH KYMAR PAINT FINISH OF STANDARD COLOR SELECTION BY ARCHITECT.
  3. EXTRUDED ALUMINUM COMBINATION DAMPER/ LOUVER, DRAINABLE BLADES

**DUCT SCHEDULE**

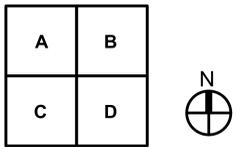
	PRESSURE CLASS	SMACNA SEAL CLASS	SMACNA LEAKAGE CLASS (RECT)	SMACNA LEAKAGE CLASS (ROUND/OVAL)	LINER
SUPPLY DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A		24	12
SUPPLY DUCT - CONSTANT VOLUME AIR HANDLING UNITS	+3"	B		12	6
SUPPLY DUCT VARIABLE AIR VOLUME AIR HANDLING UNIT	+3"	B		6	6
RETURN DUCT - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	1"	A		24	12
RETURN DUCT - AIR HANDLING UNITS	3"	B		12	6
OTHER EQUIPMENT	+3"	B		12	6
EXHAUST DUCT	+1"	A		24	12
OUTDOOR AIR - FAN COIL UNITS, HEAT PUMPS, TERMINAL UNITS	+1"	A		24	12
OUTDOOR AIR - AIR HANDLING UNITS	+3"	B		12	6
DOUBLE WALL EXHAUST DUCT					

**ELECTRIC WALL HEATER SCHEDULE**

TAG	CFM	MBH	KW	RPM	ELECTRICAL			GRILL DIMENSIONS	MOUNTING	WEIGHT LBS	MANUFACTURER/MODEL NUMBER	NOTES
					VOLTAGE	MCA	MOP					
WH-1	245	13.65	4.0	1400	208V/1PHASE	19.2	-	25-1/32" X 17-7/16"W	WALL	55	TPI CORP. F3454T	ALL
NOTES												
1 Powder coated bar stock steel tamper proof grille, with extruded Aluminum frame and 16 gauge housing.												
2 In-Built double pole tamper proof thermostat with a 60"-120°F temperature range & positive off, Manual reset thermal limit switch.												
3 Corrosion resistant steel tubular element with brazed steel fins.												
4 Permanently lubricated, unit bearing, shaded pole motor with impedance protection.												
5 Van Axial Fan, Propeller type fan blade.												
6 Wall box required - may be ordered early for rough in purposes. Factory installed contactors: circuit breakers, control transformers.												

**GAS UNIT HEATER SCHEDULE**

TAG	CFM	MBH	MBHOUT	PUT	ELECTRICAL			MOUNTING	WEIGHT LBS	MANUFACTURER AND MODEL NUMBER	NOTES
					VOLTAGE	MCA	MOP				
GFUH-1	4,400	400	320.0		208/1	15	20	HUNG	550	TRANE H1400	1
NOTES											
1 SEPARATED COMBUSTION, 2 STAGE HEATING, PROVIDE THERMOSTAT WITH REMOTE SENSOR, COMBUSTION AIR INLET and flue KIT, SPRING ISOLATORS, OSHA FAN GUARDS, OUTLET Louver											



REVISIONS:	Date	Disc:
1	08.08.2024	Mechanical Revision
100% CONSTRUCTION DOCUMENTS		
PROJECT:	24020	
DATE:	04-22-2024	
DRAWN BY:	DAE	

REVISIONS:

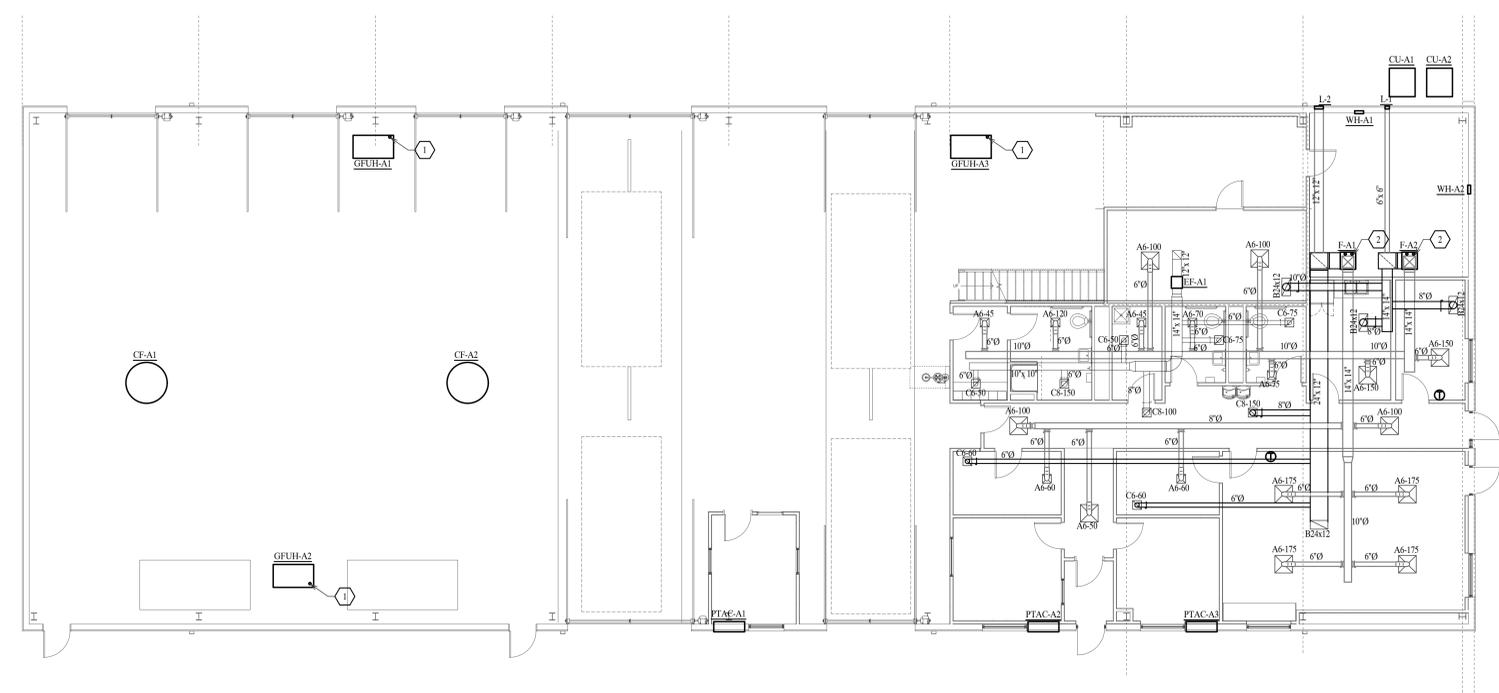
#	Date	Desc.
1	08.08.2024	Mechanical Revision

100% CONSTRUCTION DOCUMENTS  
PROJECT: 24020  
DATE: 04.22.2024  
DRAWN BY: DAE

SHEET NAME  
FIRST FLOOR  
MECHANICAL  
PLAN

M101

- KEYED PLAN NOTES:**
1. INSTALL OUTSIDE AIR AND FLUE VENT FROM PROPELLER UNIT HEATER. ROUTE TO ROOF.
  2. INSTALL OUTSIDE AIR AND FLUE VENT FROM FURNACE. ROUTE TO ROOF.



**FIRST FLOOR - MECHANICAL PLAN**  
SCALE 1/8" = 1'-0"

A	B
C	D

