

Project Requirements Report

Proj Number:

Proj Name:

<u>Subject</u>	<u>Notes</u>	<u>Status</u>
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End of Report

OWNERSHIP OF INSTRUMENTS OF SERVICE
 4/27/2023 12:39:02\4166.01-21-MEP-PPROMO Mercantile Formica Bldg - Cinci OH - detached.rvt
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STANDARD HVAC ABBREVIATIONS			
AAV	AUTOMATIC AIR VENT	HD	HEAD
ACCESS	ACCESSORIES	HDA	HAND/OFF/AUTOMATIC
AD	ACCESS DOOR	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	HPR	HIGH PRESSURE RETURN
AMP	AMPERE	HSAT	HUMIDISTAT
AP	ACCESS PANEL	HTR	HEATING
APD	AIR PRESSURE DROP	HWR	HEATING HOT WATER RETURN
ARI	AIR CONDITIONING AND REFRIGERATION INSTITUTE	HWS	HEATING HOT WATER SUPPLY
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS	HZ	HERTZ
BAS	BUILDING AUTOMATION SYSTEM	IC	INCH WATER COLUMN
BD	BACKDRAFT DAMPER	IAQ	INDOOR AIR QUALITY
BHP	BRAKE HORSEPOWER	IOWG	INCHES OF MERCURY
BTU	BRITISH THERMAL UNIT	IN WG	INCH WATER COLUMN
BTUH	BRITISH THERMAL UNIT PER HOUR	IN WG	INCH WATER COLUMN
CD	CEILING DIFFUSER	IPLV	INTERGRATED PART LOAD VALUE
CFH	CUBIC FEET PER HOUR	INST	INSTALLED
CFM	CUBIC FEET PER MINUTE	KW	KILOWATT
CHWR	CHILLED WATER RETURN	KWH	KILOWATT HOUR
CHWS	CHILLED WATER SUPPLY	LAT	LEAVING AIR TEMPERATURE
CI	CAST IRON	LBS/HR	POUNDS PER HOUR
CLG	COOLING	LFT	LINEAR FOOT (FEET)
CO	CARBON MONOXIDE	LPR	LOW PRESSURE RETURN
CO2	CARBON DIOXIDE	LPS	(STEAM CONDENSATE)
COP	COEFFICIENT OF PERFORMANCE	LWT	LOW PRESSURE STEAM
CV	CONSTANT VOLUME	LWTR	LEAVING WATER TEMPERATURE
CWR	CONDENSER WATER RETURN	MAX	MAXIMUM
CWS	CONDENSER WATER SUPPLY	MBH	1000 BTUH
DB	DECIBELS	MCA	MINIMUM BRANCH CIRCUIT AMPACITY
DB	DRY-BULB TEMPERATURE	MERV	MINIMUM EFFICIENCY REPORTING VALUE
DC	DISCONNECT	MN	MINIMUM
DDC	DIRECT DIGITAL CONTROLS	MOD	MOTOR OPERATED DAMPER
DEG	DEGREE DELTA(CHANGE IN TEMPERATURE)	MOR	MEDIUM PRESSURE RETURN
DIA	DAMETER	MPS	MEDIUM PRESSURE STEAM
DIW	DEIONIZED WATER	MRI	MAGNETIC RESONANCE IMAGING
DP	DEW POINT TEMPERATURE	MVD	MANUAL VOLUME DAMPER
DX	DIRECT EXPANSION	NA	NOT APPLICABLE
EAT	ENTERING AIR TEMPERATURE	NC	NOISE CRITERIA
EER	ENERGY EFFICIENCY RATIO	NC	NORMALLY CLOSED
EG	EXHAUST GRILLE	NO	NORMALLY OPEN
EMERG	EMERGENCY POWER	NTS	NOT TO SCALE
ESP	EXTERNAL STATIC PRESSURE	OA	OUTSIDE AIR
EWT	ENTERING WATER TEMPERATURE	OCP	OVER CURRENT PROTECTION
EX	EXISTING	PD	PRESSURE DROP
F	FAHRENHEIT	PPM	PARTS PER MILLION
F&T	FLOAT AND THERMOSTATIC	PRS	PRESSURE REGULATING (VALVE) STATION
FA	FREE AREA	PRV	PRESSURE REGULATING VALVE
FD	FIRE DAMPER	PSI	POUNDS PER SQUARE INCH
FLA	FULL LOAD AMPERES	PSIA	POUNDS PER SQUARE INCH - ABSOLUTE
FPM	FEET PER MINUTE	PSIG	POUNDS PER SQUARE INCH - GAGE
FPS	FEET PER SECOND	RA	RETURN AIR
FT	FEET	RAT	RETURN AIR TEMPERATURE
FURN	FURNISHED	RH	RELATIVE HUMIDITY
GA	GAUGE	RL	REFRIGERANT LIQUID LINE
GAL	GALLONS	RLA	RUN LOAD AMPERE
GPM	GALLONS PER MINUTE		
		RO	REVERSE OSMOSIS
		RPM	REVOLUTIONS PER MINUTE
		RS	REFRIGERANT SUCTION
		SA	SUPPLY AIR
		SAT	SUPPLY AIR TEMPERATURE
		SC	SHADING COEFFICIENT
		SCD	SMOKE CONTROL DAMPER
		SD	SENSIBLE HEAT
		SEHS	SMOKE DETECTOR
		SENS	SENSIBLE HEAT
		SP	STATIC PRESSURE
		TAB	TESTING, ADJUSTING, BALANCE
		TDH	TOTAL DYNAMIC HEAD
		TDS	TOTAL DISSOLVED SOLIDS
		TSP	TOTAL STATIC PRESSURE
		TSTAT	THERMOSTAT
		UL	UNDERWRITERS LABORATORY
		VAV	VARIABLE AIR VOLUME
		VFD	VARIABLE FREQUENCY DRIVE
		WB	WET-BULB (TEMPERATURE)
		WG	WATER GAGE
		WSD	WATER SIDE PRESSURE DROP
		WIRED	WIRED

INSULATION NOTES	
A.	ALL SUPPLY AIR DUCTWORK DOWNSTREAM OF FAN COIL UNIT DISCHARGE SHALL BE INSULATED WITH AN INSULATION RATED FOR A MINIMUM R-6 THERMAL RESISTANCE VALUE. TYPICAL ALL FAN COIL UNITS.
B.	ALL CHILLED WATER PIPING SHALL BE INSULATED. PROVIDE INSULATION THICKNESS OF 1" FOR PIPING 1-1/2" AND LARGER. PIPING SMALLER THAN 1-1/2" SHALL HAVE AN INSULATION THICKNESS OF 1/2".
C.	ALL HOT WATER PIPING SHALL BE INSULATED. PROVIDE INSULATION WITH A THICKNESS OF 1-1/2" FOR PIPING 1-1/2" AND LARGER. PROVIDE INSULATION WITH A THICKNESS OF 1" FOR PIPING LESS THAN 1-1/2".
D.	PROVIDE 1" INSULATION FOR ALL CONDENSATE PIPING.

MECHANICAL LEGEND		MECHANICAL LEGEND	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
PLAN-VIEW LINE TYPES		MECHANICAL DUCTWORK	
---	WORK SHOWN FADED INDICATES EXISTING WORK TO REMAIN OR NEW WORK BY OTHERS AS APPLICABLE		SUPPLY DUCT WITH ELBOW TURNED UP
---	WORK SHOWN BOLD-CONTINUOUS INDICATES NEW WORK		SUPPLY DUCT WITH ELBOW TURNED DOWN
DRAWING SET APPEARANCE			RETURN DUCT WITH ELBOW TURNED UP
TO BETTER COMMUNICATE SCOPE TO PERMIT AGENCIES AND CONTRACTORS, EACH DRAWING IN THIS DRAWING SET HAS BEEN CREATED IN BOTH "COLOR" AND "BLACK AND WHITE". THERE EXISTS A COLOR LAYER WITHIN EACH DRAWING WHERE VISIBILITY IS CONTROLLED THROUGH THE PDF LAYER MANAGER. THIS LAYER VISIBILITY CAN BE TOGGLED DISPLAYING EITHER "COLOR" OR "BLACK AND WHITE". TO MAINTAIN SCOPE BASED SHADING WHEN PRINTING TO PAPER, BLACK AND WHITE NEEDS TO BE VISIBLE. FOR FURTHER INSTRUCTIONS, REFER TO CONTRACTOR RESOURCES ON OUR WEBSITE AND DOWNLOAD "DRAWING COLOR INSTRUCTIONS". WWW.KLHENGRS.COM - CONTRACTOR RESOURCES (RIGHT HAND SIDE OF PAGE).			RETURN DUCT WITH ELBOW TURNED DOWN
PIPING LINE TYPES			EXHAUST DUCT WITH ELBOW TURNED UP
	HWS HOT WATER SUPPLY		EXHAUST DUCT WITH ELBOW TURNED DOWN
	HWR HOT WATER RETURN		SUPPLY DUCT
	CHWS CHILLED WATER SUPPLY		RETURN DUCT
	CHWR CHILLED WATER RETURN		EXHAUST DUCT
	CD CONDENSATE DRAIN		OUTSIDE AIR DUCT
	SUPPLY MAIN OR BRANCH		1' LINED DUCTWORK
	RETURN MAIN OR BRANCH		DUCT FLEX CONNECTOR
MECHANICAL PIPING ACCESSORIES			FLEXIBLE DUCTWORK CONNECTION
	MANUAL ISOLATION VALVE		BRANCH TAKEOFF
	CHECK VALVE (DIRECTION OF FLOW INDICATED)		REDUCER, CONCENTRIC
	PRESSURE RELIEF VALVE		REDUCER, NONCONCENTRIC
	PRESSURE REGULATING VALVE	MECHANICAL DUCTWORK ACCESSORIES	
	AUTOMATIC BALANCING VALVE		DUCT WITH MANUAL VOLUME DAMPER
	MANUAL BALANCING VALVE		ROUND ELBOW WITH TURNING VANES
	UNION		ELBOW WITH TURNING VANES
	TEMPERATURE & PRESSURE TEST PORT		MOTOR OPERATED DAMPER - LINE VOLTAGE
	FLOW DIRECTION		MOTOR OPERATED DAMPER - LOW VOLTAGE
	FLEX PIPING CONNECTOR		DUCT MOUNTED SMOKE DETECTOR (HARD WIRE INTERLOCK TO FAN MOTOR BY E.C.) FURNISHED BY E.C., INSTALLED BY M.C.
	THERMOMETER		FIRE DAMPER - 1.5 HR
	PRESSURE GAUGE		FIRE DAMPER - 3 HR
	SOLENOID VALVE		COMBINATION FIRE/SMOKE DAMPER - 1.5 HR
	Y-STRAINER		COMBINATION FIRE/SMOKE DAMPER - 3 HR
	STRAINER WITH BLOW OFF	MECHANICAL STATS & SENSORS	
	DRAIN VALVE (3/4" UNLESS OTHERWISE NOTED)		TEMPERATURE SENSOR
	MANUAL AIR VENT		LOW VOLTAGE THERMOSTAT
	3 WAY CONTROL VALVE (2 POSITION)		LOW VOLTAGE THERMOSTAT WITH LOCKABLE GUARD
	3 WAY CONTROL VALVE (MODULATING)	MECHANICAL MISCELLANEOUS	
	2 WAY CONTROL VALVE (MODULATING)		DIGITAL INPUT
	2 WAY CONTROL VALVE (2 POSITION)		DIGITAL OUTPUT
MECHANICAL AIR DEVICES			ANALOG INPUT
	SUPPLY REGISTER		ANALOG OUTPUT
	RETURN REGISTER		HARD WIRE INTERLOCK
	EXHAUST REGISTER		1' DOOR UNDERCUT
	SUPPLY GRILLE		
	RETURN GRILLE		
	CEILING DIFFUSER		
	2'x2' SQUARE CEILING DIFFUSER WITH 10' NECK		
	LINEAR SLOT DIFFUSER		



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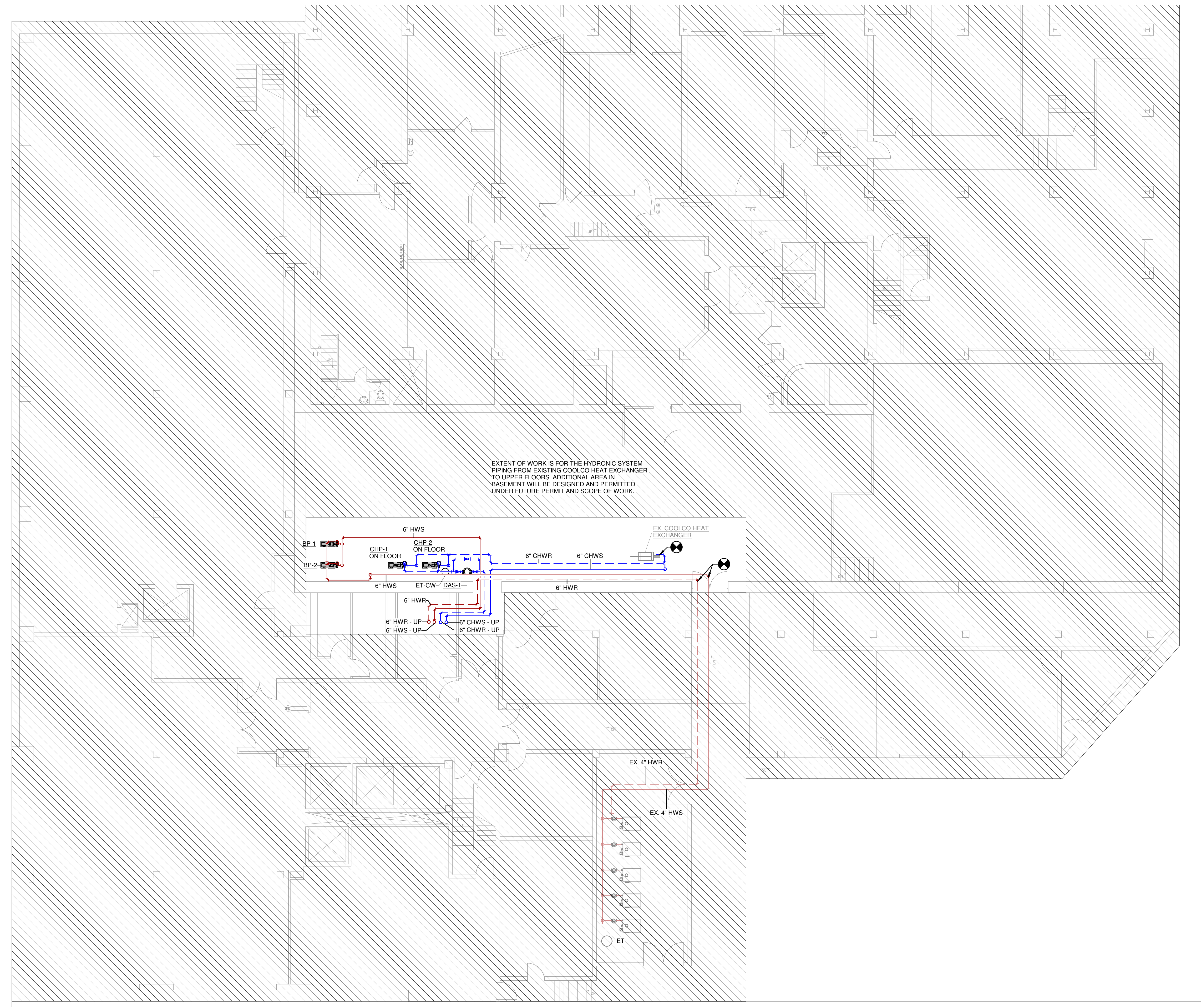
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DWN: PRF CHK: KTS
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MECHANICAL COVER SHEET
M001
1" REFERENCE
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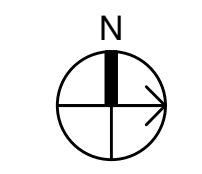
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EXTENT OF WORK IS FOR THE HYDRONIC SYSTEM
 PIPING FROM EXISTING COOLCO HEAT EXCHANGER
 TO UPPER FLOORS. ADDITIONAL AREA IN
 BASEMENT WILL BE DESIGNED AND PERMITTED
 UNDER FUTURE PERMIT AND SCOPE OF WORK.

1 MECHANICAL PLAN - LEVEL 0 - OVERALL
 1/8" = 1'-0"



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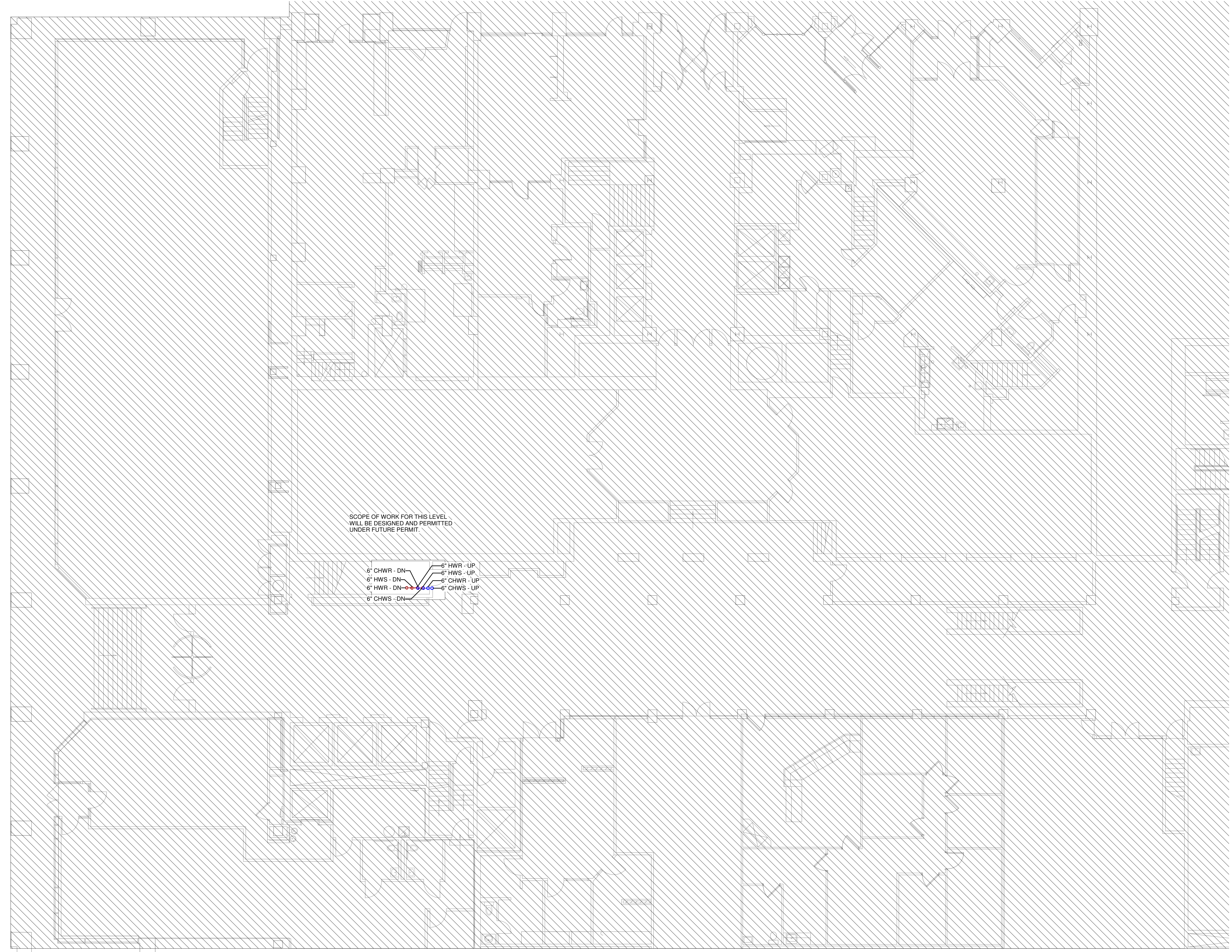
MECHANICAL
 BASEMENT
 PLAN

M200

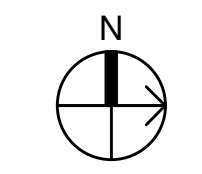
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1 MECHANICAL PLAN - LEVEL 1 - OVERALL
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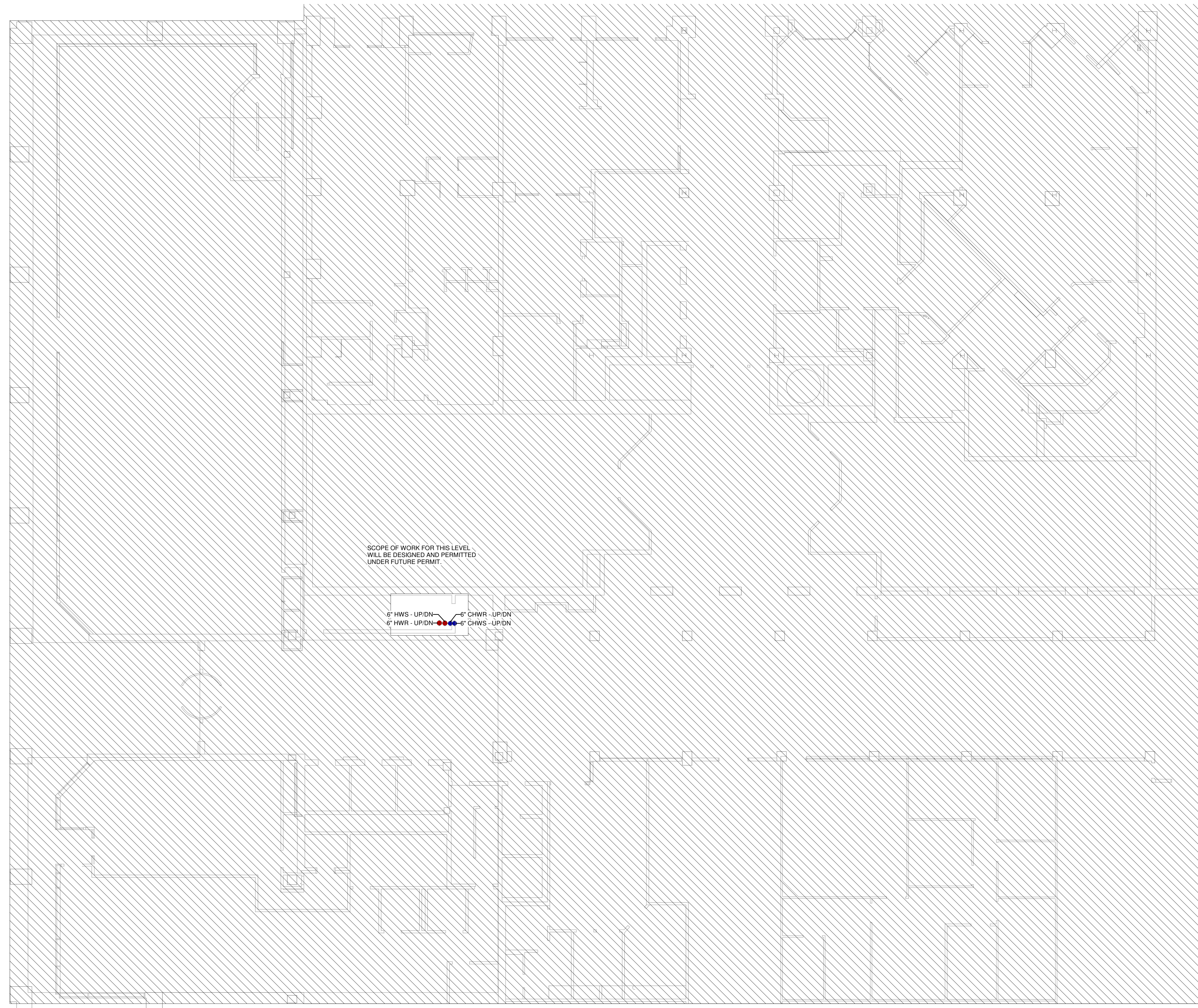
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LEVEL 1 PLAN

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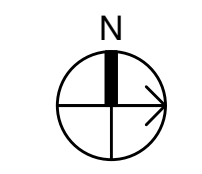
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MECHANICAL PLAN - LEVEL 2 - OVERALL
1/8" = 1'-0"



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MECHANICAL
LEVEL 2 PLAN

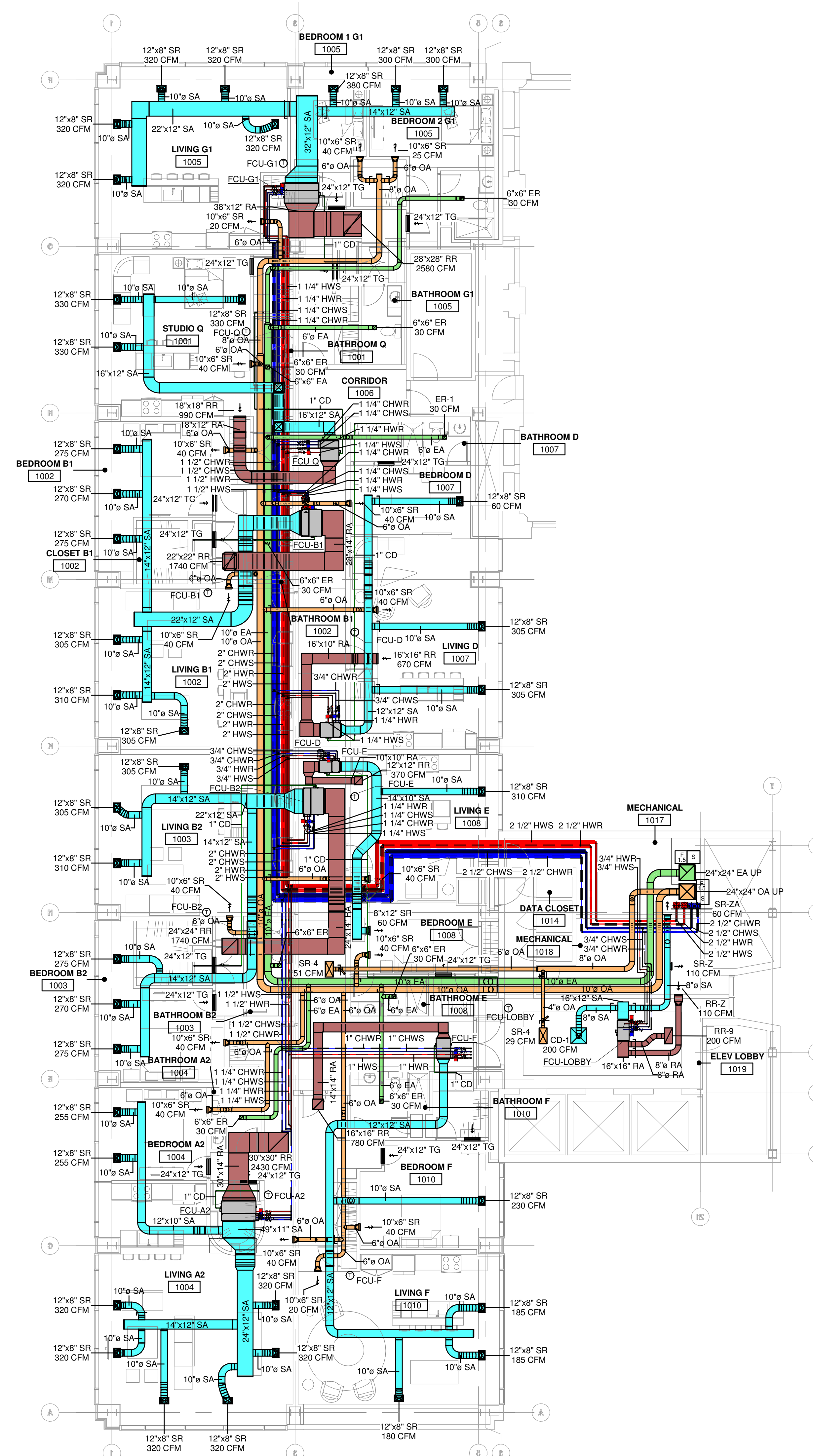
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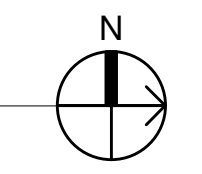
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- ### GENERAL NOTES
- A. SIDEWALL DIFFUSERS TO BE MOUNTED UNDER CEILING AND AS HIGH AS POSSIBLE. CENTER IN DOOR FRAME WHEN PLACED ABOVE DOOR.
 - B. TRANSFER AND RETURN REGISTERS SHALL BE MOUNTED WITH BLADES FACING UP. STUDS IN OPENINGS TO BE PAINTED BLACK BY OTHERS.
 - C. PROVIDE TAMPER PROOF COVERS FOR ALL THERMOSTATS IN PUBLIC AREAS.



1 MECHANICAL PLAN - LEVEL 3-10 - OVERALL
1/8" = 1'-0"



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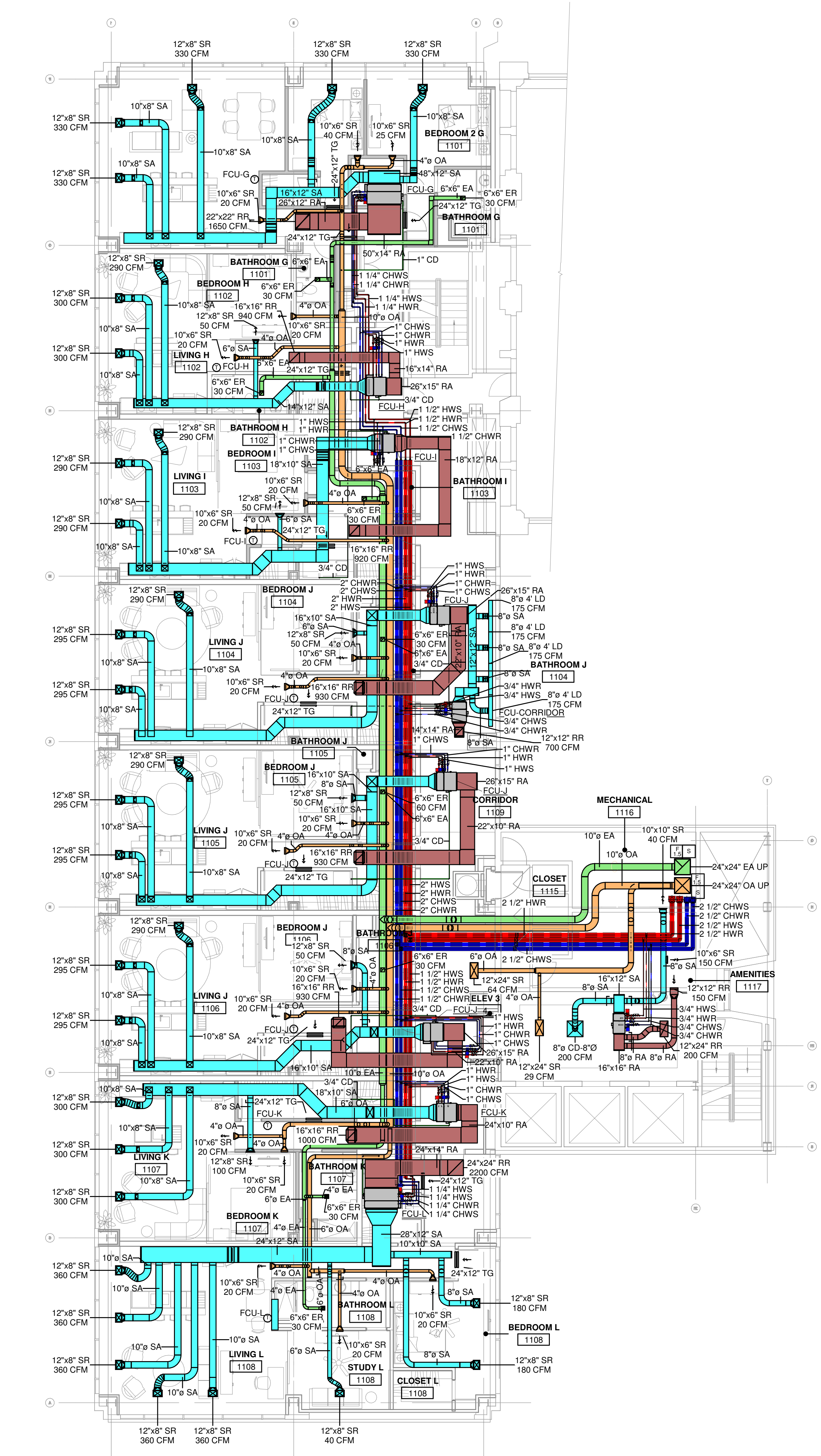
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MECHANICAL LEVEL 3-10 PLAN

M203
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KLH PROJECT # 24166.01

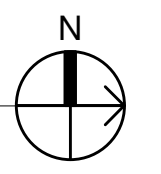
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- GENERAL NOTES**
- SIDEWALL DIFFUSERS TO BE MOUNTED UNDER CEILING AND AS HIGH AS POSSIBLE. CENTER IN DOOR FRAME WHEN PLACED ABOVE DOOR.
 - TRANSFER AND RETURN REGISTERS SHALL BE MOUNTED WITH BLADES FACING UP. STUDS IN OPENINGS TO BE PAINTED BLACK BY OTHERS.
 - PROVIDE TAMPER PROOF COVERS ON ALL THERMOSTATS IN PUBLIC AREAS.



1 MECHANICAL PLAN - LEVEL 11-12 - OVERALL
 1/8" = 1'-0"



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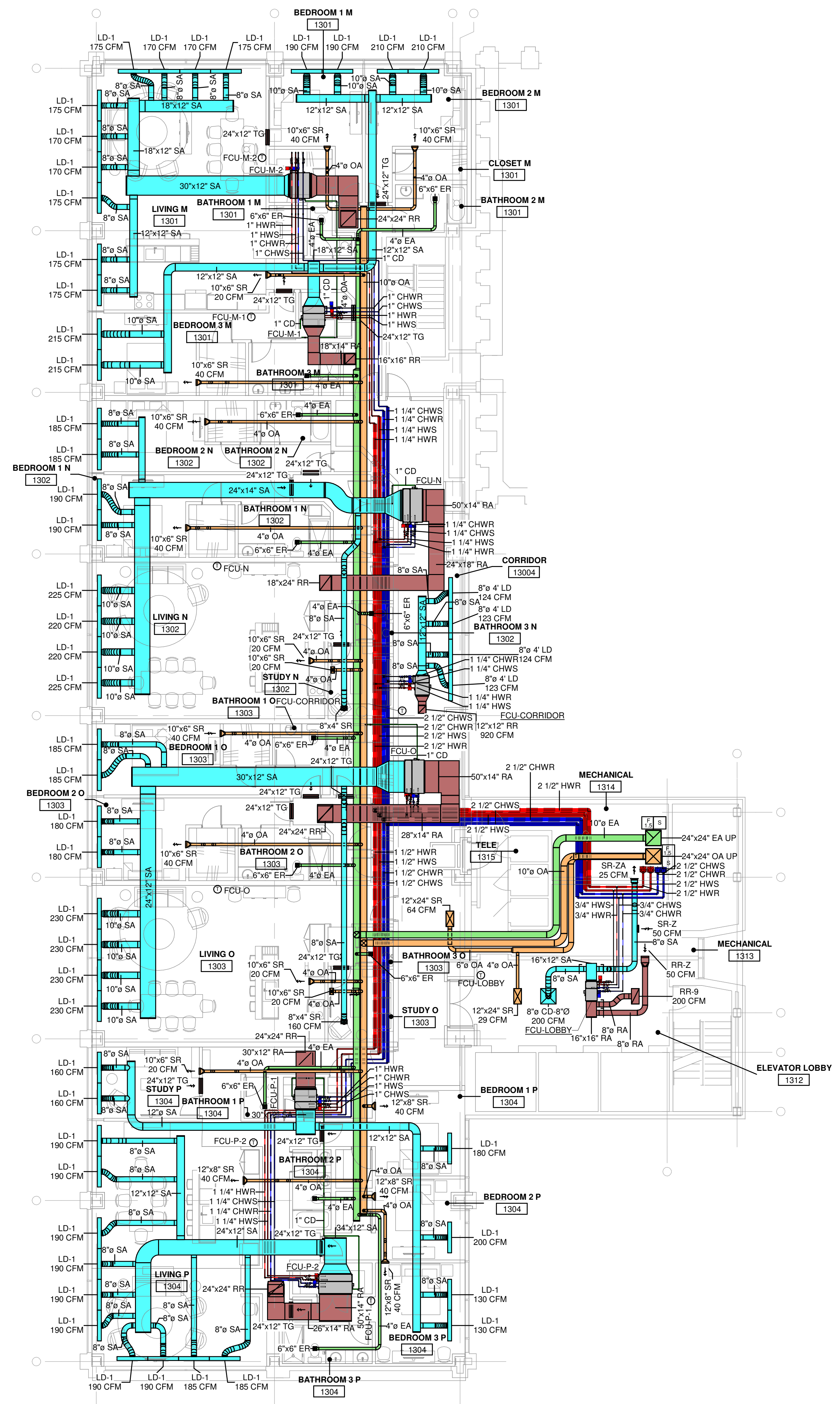
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 MECHANICAL LEVEL 11-12 PLAN

M211
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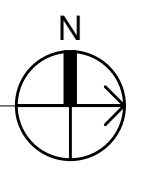
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- GENERAL NOTES**
- SIDEWALL DIFFUSERS TO BE MOUNTED UNDER CEILING AND AS HIGH AS POSSIBLE. CENTER IN DOOR FRAME WHEN PLACED ABOVE DOOR.
 - TRANSFER AND RETURN REGISTERS SHALL BE MOUNTED WITH BLADES FACING UP. STUDS IN OPENINGS TO BE PAINTED BLACK BY OTHERS.
 - PROVIDE TAMPER PROOF COVERS ON ALL THERMOSTATS IN PUBLIC AREAS.



1 MECHANICAL PLAN - LEVEL 13 - OVERALL
 1/8" = 1'-0"



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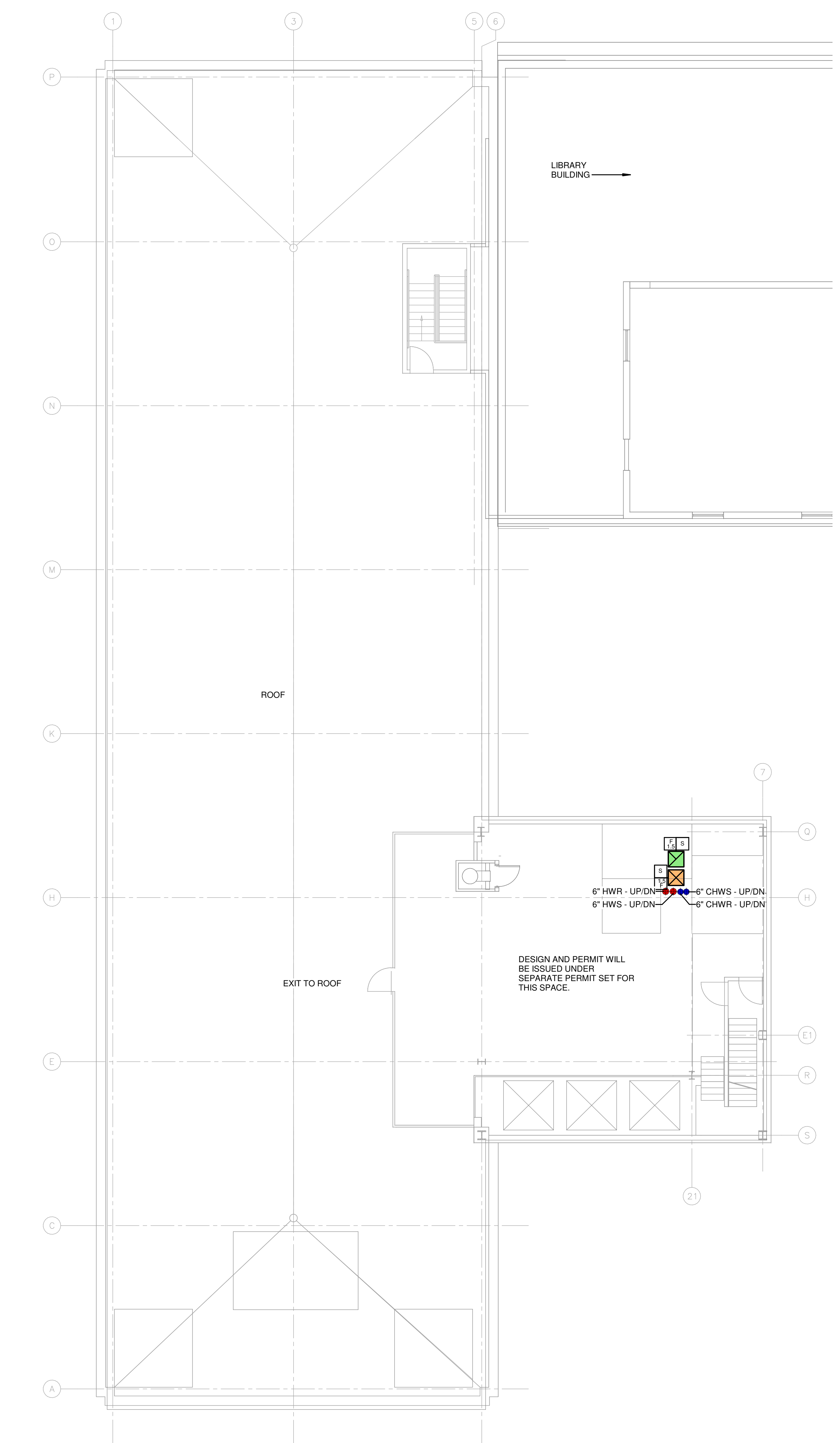
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MECHANICAL LEVEL 13 PLAN

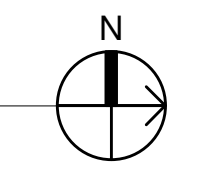
M213
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1 MECHANICAL PLAN - LEVEL 14 - OVERALL
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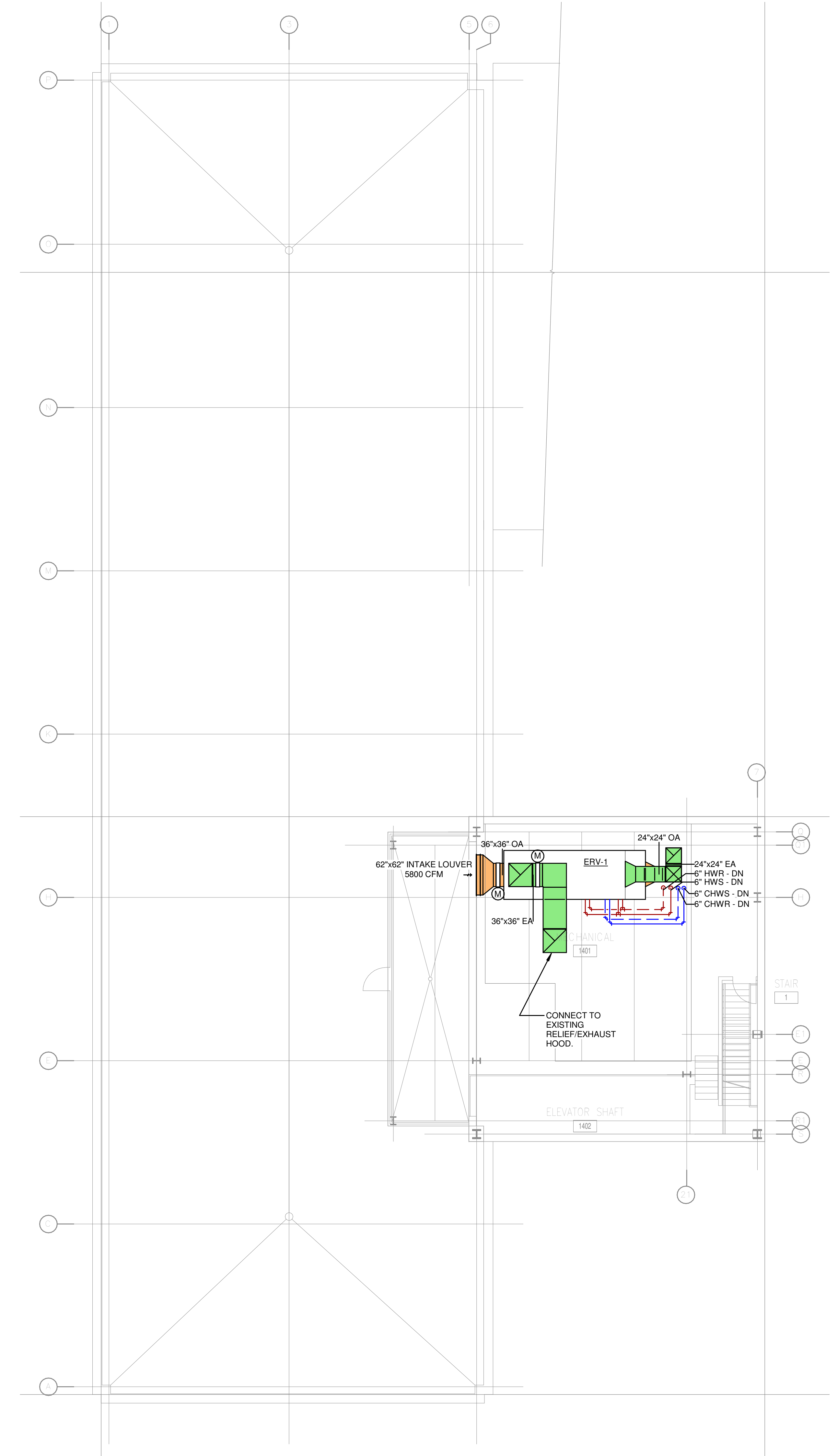
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MECHANICAL
LEVEL 14 PLAN

M214

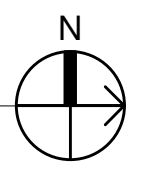
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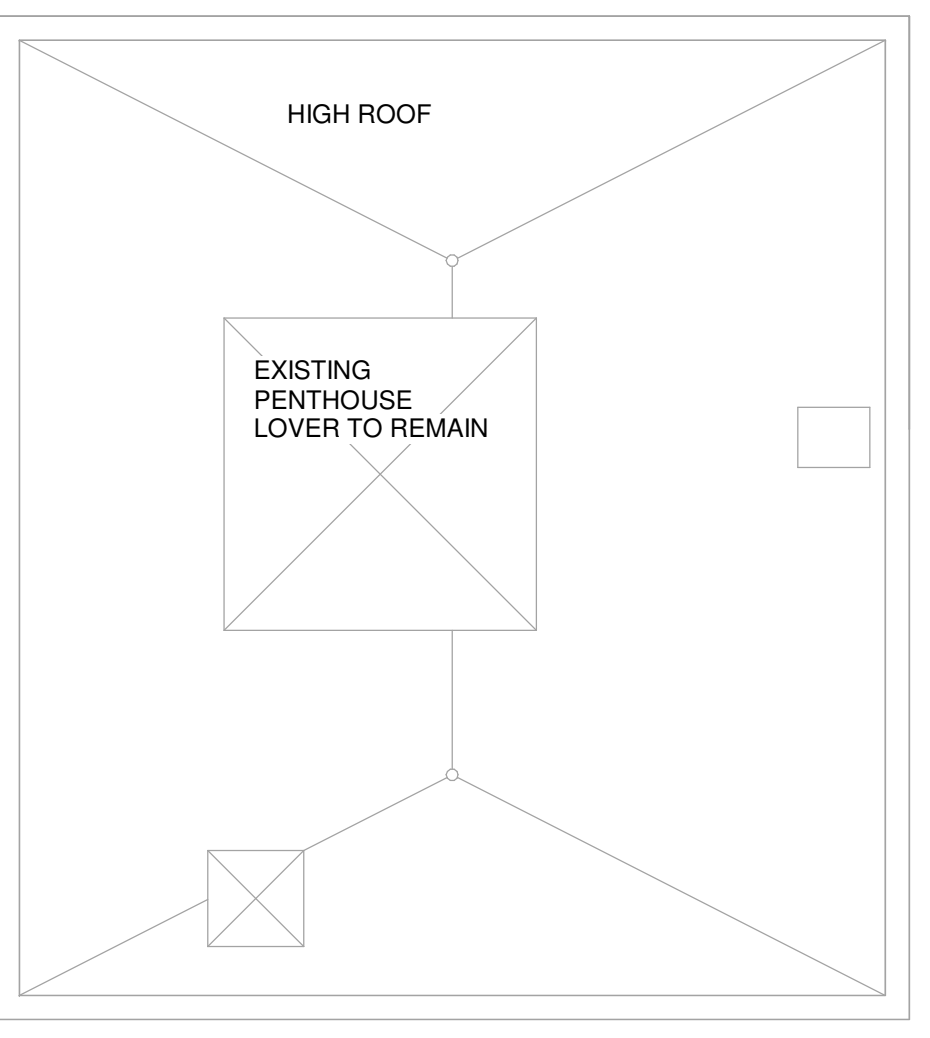
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LEVEL 15 PLAN

M215

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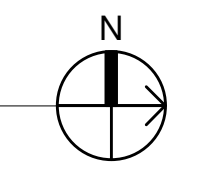
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KEYED NOTES

① MECHANICAL PLAN - LEVEL 16 - OVERALL
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DATE: 04/06/2023
PROJECT #: 24166.01

MECHANICAL
LEVEL 16 PLAN

M216

1" REFERENCE
KLH PROJECT #
24166.01

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120 e 4th street
Cincinnati OH 45202

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REVISIONS

NO.	DATE	DESCRIPTION

DWN: PRF CHK: KTS

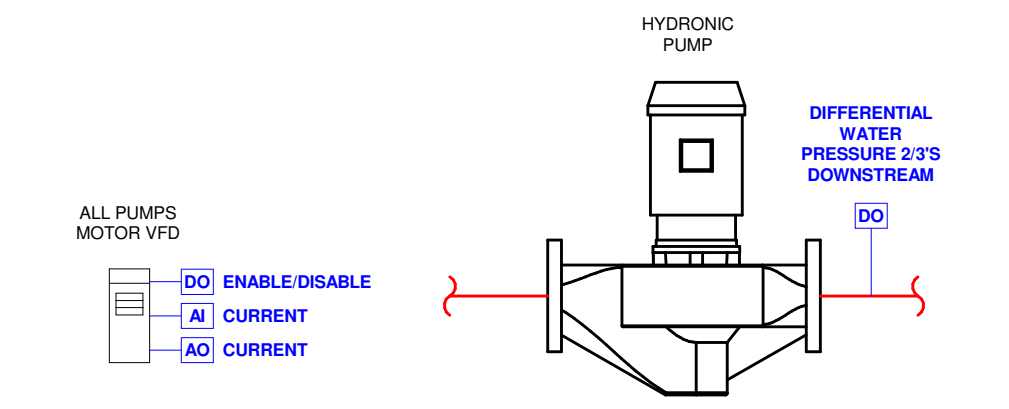
DATE: 04/06/2023

PROJECT #: 24166.031

MECHANICAL - DETAILS

M-501

1" REFERENCE
KLH PROJECT #
24166.01



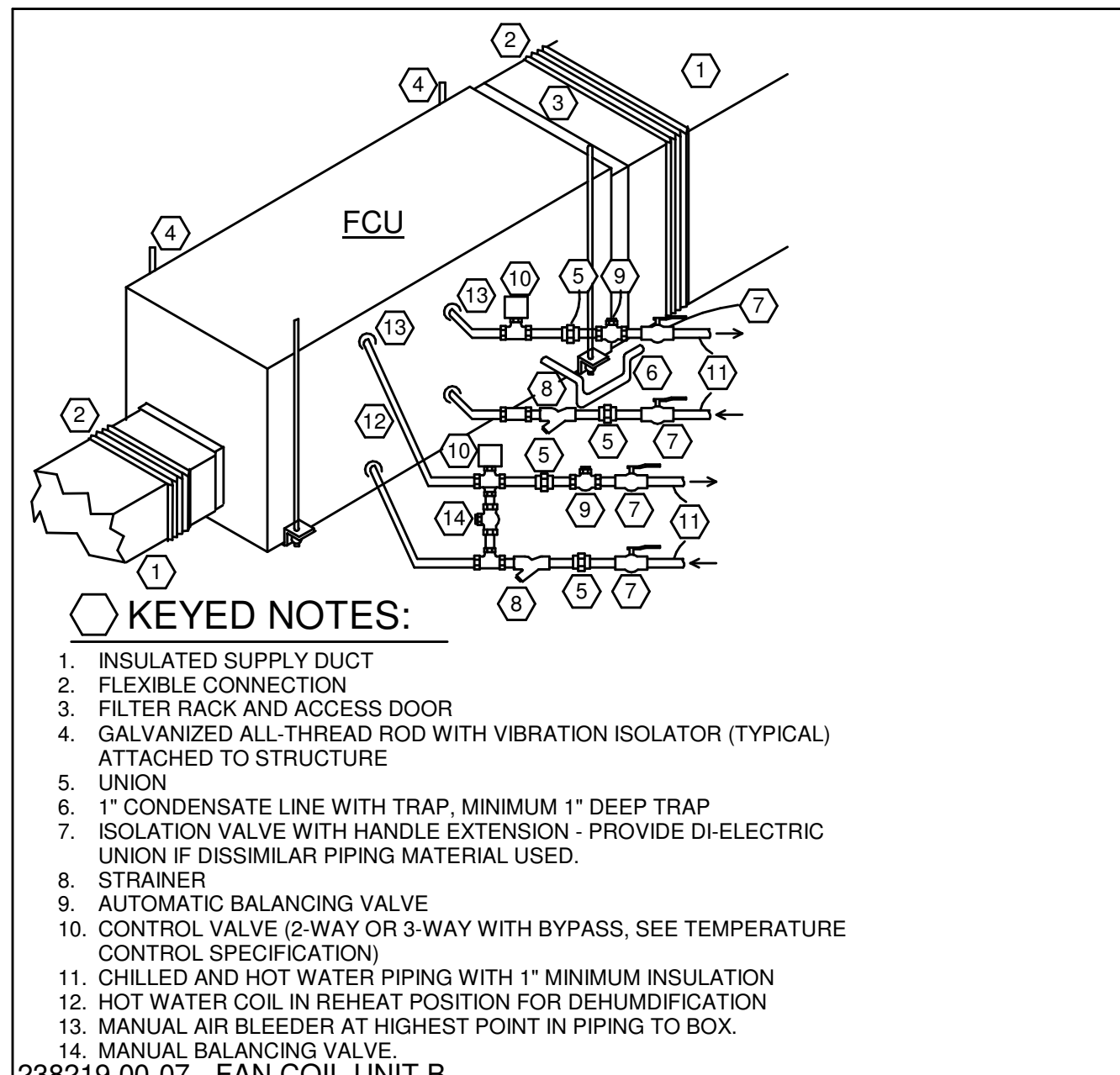
GENERAL NOTES:

- ALL ANALOG INPUTS (A) SHALL BE CONFIGURED BY USER FOR HIGH AND LOW LIMITS ALARM.
- PROVIDE ALARM FOR ALL STATUS MISMATCHES WHERE DO DOES NOT EQUAL DL.
- ALL POINTS SHALL BE TRIMMED AND HAVE RUN TIME TOTALIZATION.
- TEMPERATURE CONTROL CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH MANUFACTURER AND PROVIDE PORTS AS NOTED.
- EQUIPMENT SHALL HAVE BACKNET CARD TO COMMUNICATE WITH CONTROLS OVER BACKNET.

SEQUENCE OF OPERATION

- A. HYDRONIC PUMPS - VARIABLE FLOW
- The pump shall be enabled through the BAS.
 - The pumped speed shall modulate to maintain pressure differential setpoint in the piping system. Provide pressure differential sensor 2/3 downstream in piping. Where this results in sensor being located downstream of major piping splits, multiple sensors shall be installed in each major branch to maintain minimum setpoint in each branch.
 - An automatic electric pump sequencer shall be provided that will alarm and automatically activate the stand-by pump when the lead pump fails. Provide a flow switch in the discharge of both pumps to alert the sequencer if the lead pump fails. The sequencer shall be provided with a time delay relay that, if flow is interrupted for more than thirty seconds, shall de-energize the lead pump and energize the stand-by pump. Provide a lead/lag switch to alternate the pump sequence.

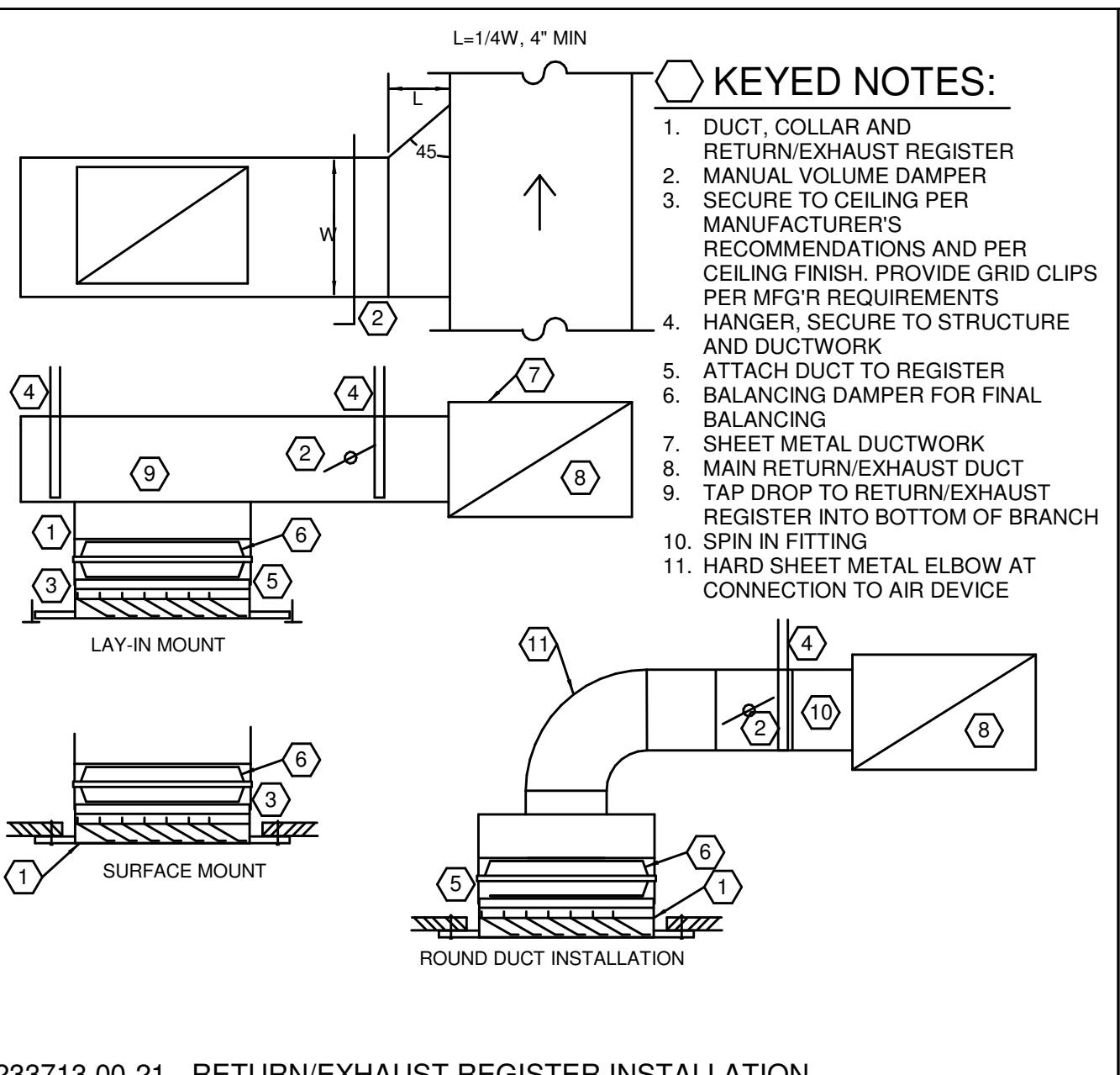
23T-093 - HYDRONIC PUMP - VARIABLE FLOW
SCALE: NONE



KEYED NOTES:

- INSULATED SUPPLY DUCT
- FLEXIBLE CONNECTION
- FILTER RACK AND ACCESS DOOR
- GALVANIZED ALL-THREAD ROD WITH VIBRATION ISOLATOR (TYPICAL) ATTACHED TO STRUCTURE
- UNION
- 1" CONDENSATE LINE WITH TRAP, MINIMUM 1" DEEP TRAP
- ISOLATION VALVE WITH HANDLE EXTENSION - PROVIDE DI-ELECTRIC UNION IF DISSIMILAR PIPING MATERIAL USED.
- STRAINER
- AUTOMATIC BALANCING VALVE
- CONTROL VALVE (2-WAY OR 3-WAY WITH BYPASS, SEE TEMPERATURE CONTROL SPECIFICATION)
- CHILLED AND HOT WATER PIPING WITH 1" MINIMUM INSULATION
- HOT WATER COIL IN REHEAT POSITION FOR DEHUMIDIFICATION
- MANUAL AIR BLEEDER AT HIGHEST POINT IN PIPING TO BOX.
- MANUAL BALANCING VALVE

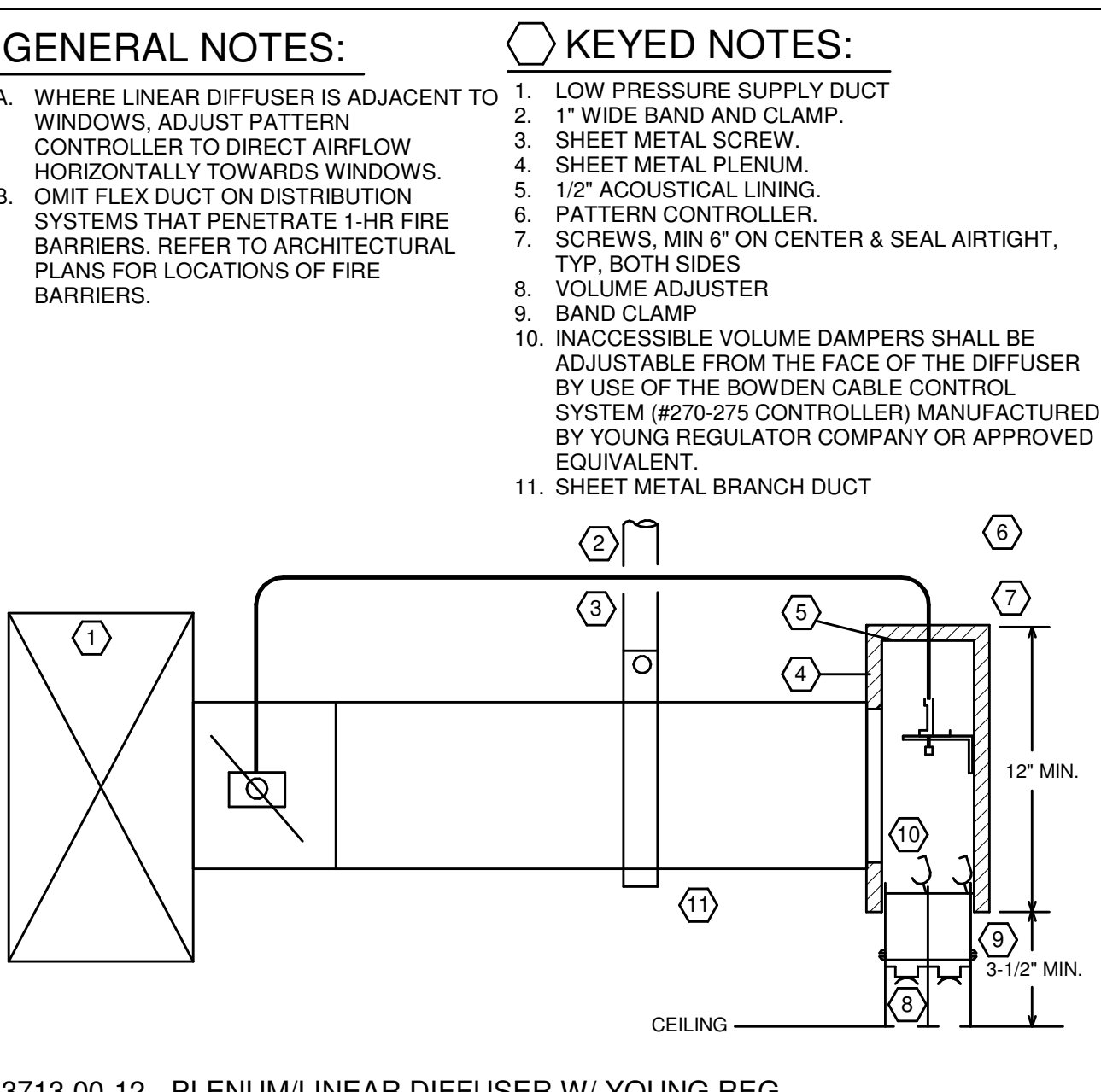
238219.00-07 - FAN COIL UNIT B
SCALE: NONE



KEYED NOTES:

- DUCT COLLAR AND RETURN/EXHAUST REGISTER
- MANUAL VOLUME DAMPER
- SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE GRID CLIPS PER MFG'R REQUIREMENTS
- HANGER, SECURE TO STRUCTURE AND DUCTWORK
- ATTACH DUCT TO REGISTER
- BALANCING DAMPER FOR FINAL BALANCING
- SHEET METAL DUCTWORK
- MAIN RETURN/EXHAUST DUCT
- TAP DROP TO RETURN/EXHAUST REGISTER INTO BOTTOM OF BRANCH
- SPIN IN FITTING
- HARD SHEET METAL ELBOW AT CONNECTION TO AIR DEVICE

233713.00-21 - RETURN/EXHAUST REGISTER INSTALLATION
SCALE: NONE



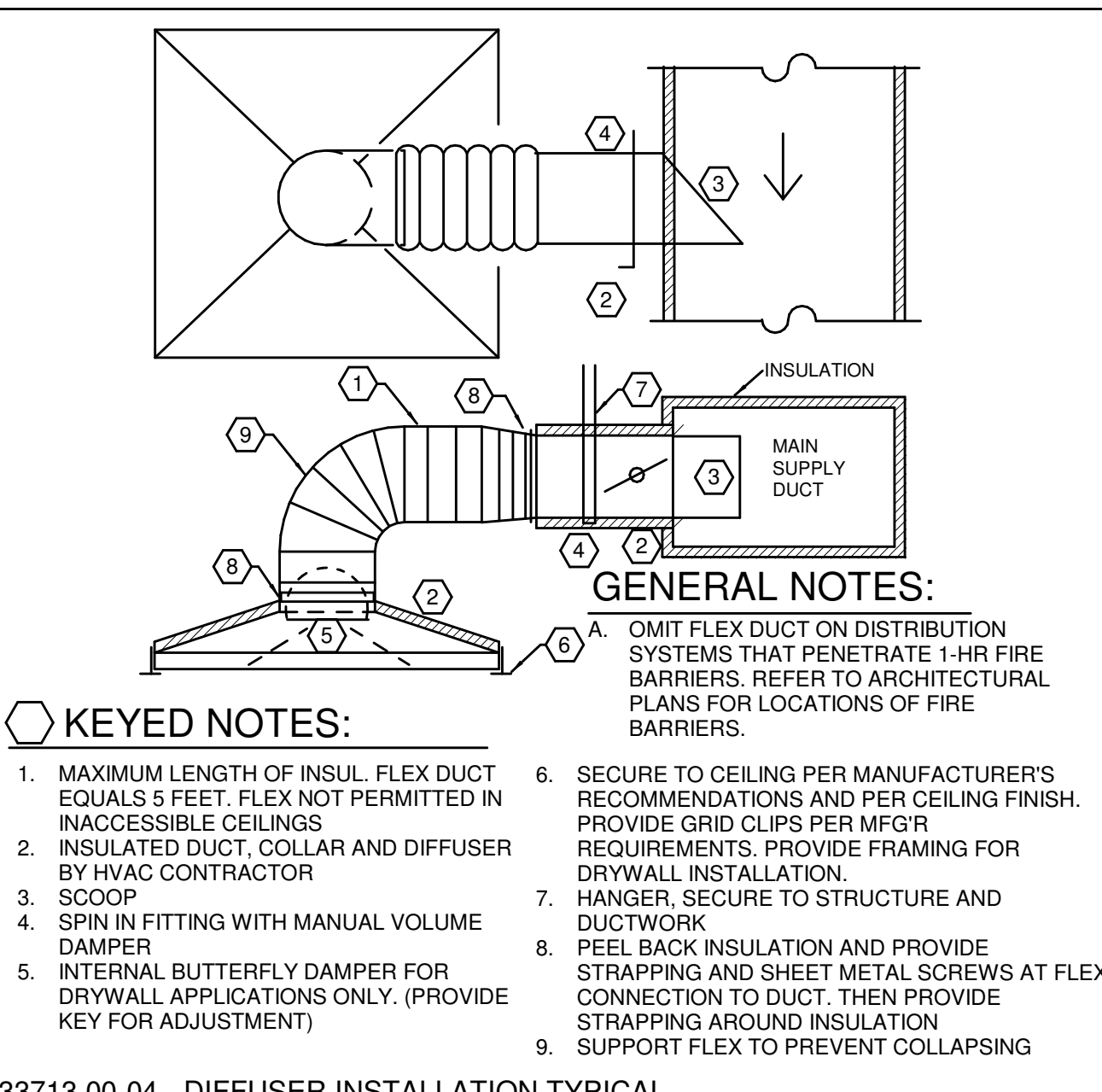
GENERAL NOTES:

- A. WHERE LINEAR DIFFUSER IS ADJACENT TO WINDOWS, ADJUST PATTERN CONTROLLER TO DIRECT AIRFLOW HORIZONTALLY TOWARDS WINDOWS.
- B. OMIT FLEX DUCT ON DISTRIBUTION SYSTEMS THAT PENETRATE 1-HR FIRE BARRIERS. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE BARRIERS.

KEYED NOTES:

- LOW PRESSURE SUPPLY DUCT
- 1" WIDE BAND AND CLAMP.
- SHEET METAL SCREW.
- SHEET METAL PLENUM
- 1/2" ACOUSTICAL LINING.
- PATTERN CONTROLLER.
- SCREWS, MIN #8 ON CENTER & SEAL AIRTIGHT, TYP, BOTH SIDES
- VOLUME ADJUSTER
- BAND CLAMP
- INACCESSIBLE VOLUME DAMPERS SHALL BE ADJUSTABLE FROM THE FACE OF THE DIFFUSER BY USE OF THE BOWDEN CABLE CONTROL SYSTEM (#270-275 CONTROLLER) MANUFACTURED BY YOUNG REGULATOR COMPANY OR APPROVED EQUIVALENT
- SHEET METAL BRANCH DUCT

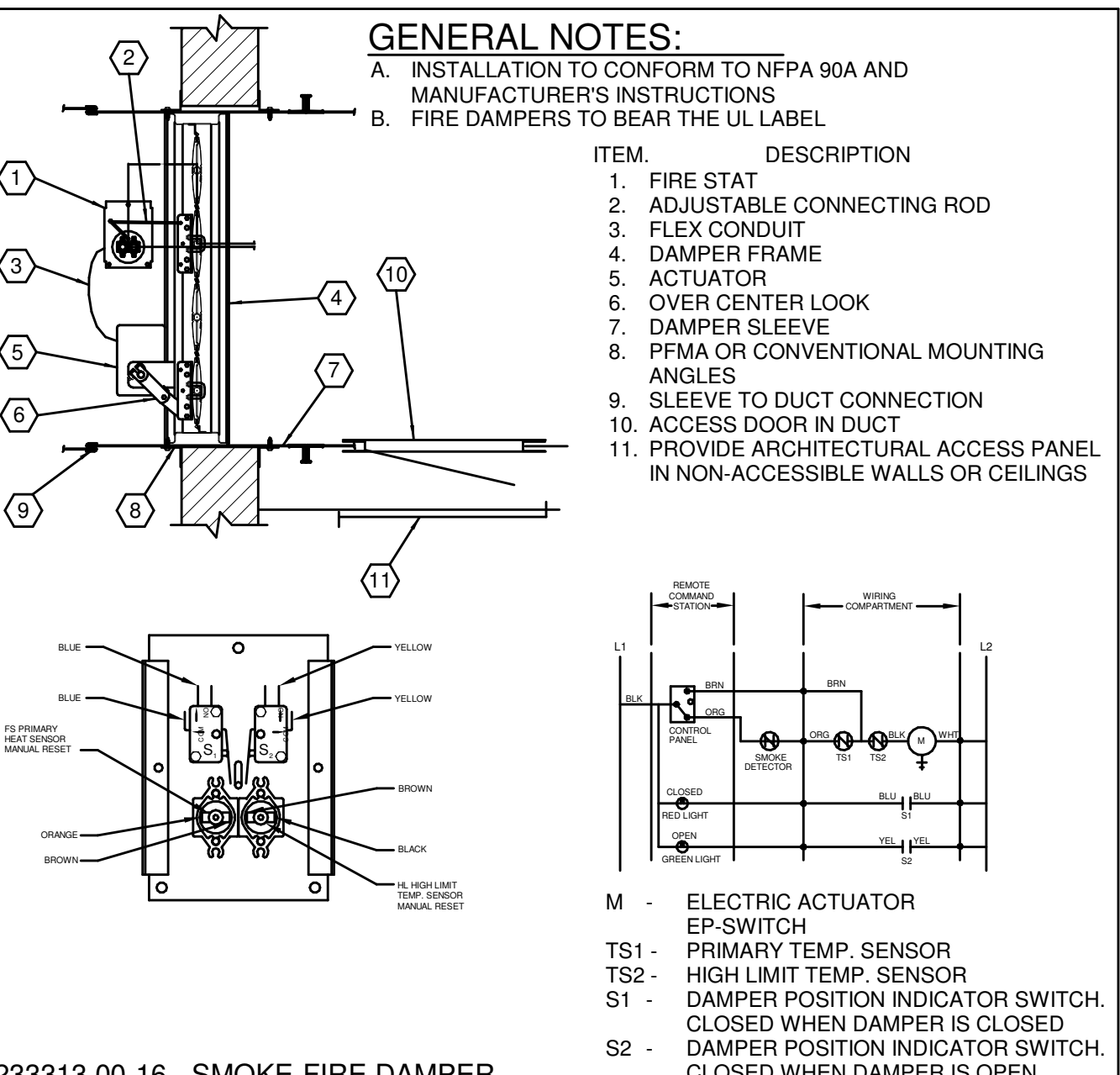
233713.00-12 - PLENUM/LINEAR DIFFUSER W/ YOUNG REG.
SCALE: NONE



KEYED NOTES:

- MAXIMUM LENGTH OF INSUL. FLEX DUCT EQUALS 5 FEET. FLEX NOT PERMITTED IN INACCESSIBLE CEILINGS
- INSULATED DUCT, COLLAR AND DIFFUSER BY HVAC CONTRACTOR
- SCOOP
- SPIN IN FITTING WITH MANUAL VOLUME DAMPER
- INTERNAL BUTTERFLY DAMPER FOR DRYWALL APPLICATIONS ONLY. (PROVIDE KEY FOR ADJUSTMENT)
- SECURE TO CEILING PER MANUFACTURER'S RECOMMENDATIONS AND PER CEILING FINISH. PROVIDE FRAMING FOR DRYWALL INSTALLATION.
- HANGER, SECURE TO STRUCTURE AND DUCTWORK
- PEEL BACK INSULATION AND PROVIDE STRAPPING AND SHEET METAL SCREWS AT FLEX CONNECTION TO DUCT. THEN PROVIDE STRAPPING AROUND INSULATION
- SUPPORT FLEX TO PREVENT COLLAPSING

233713.00-04 - DIFFUSER INSTALLATION TYPICAL
SCALE: NONE



GENERAL NOTES:

- A. INSTALLATION TO CONFORM TO NFPA 90A AND MANUFACTURER'S INSTRUCTIONS
- B. FIRE DAMPERS TO BEAR THE UL LABEL

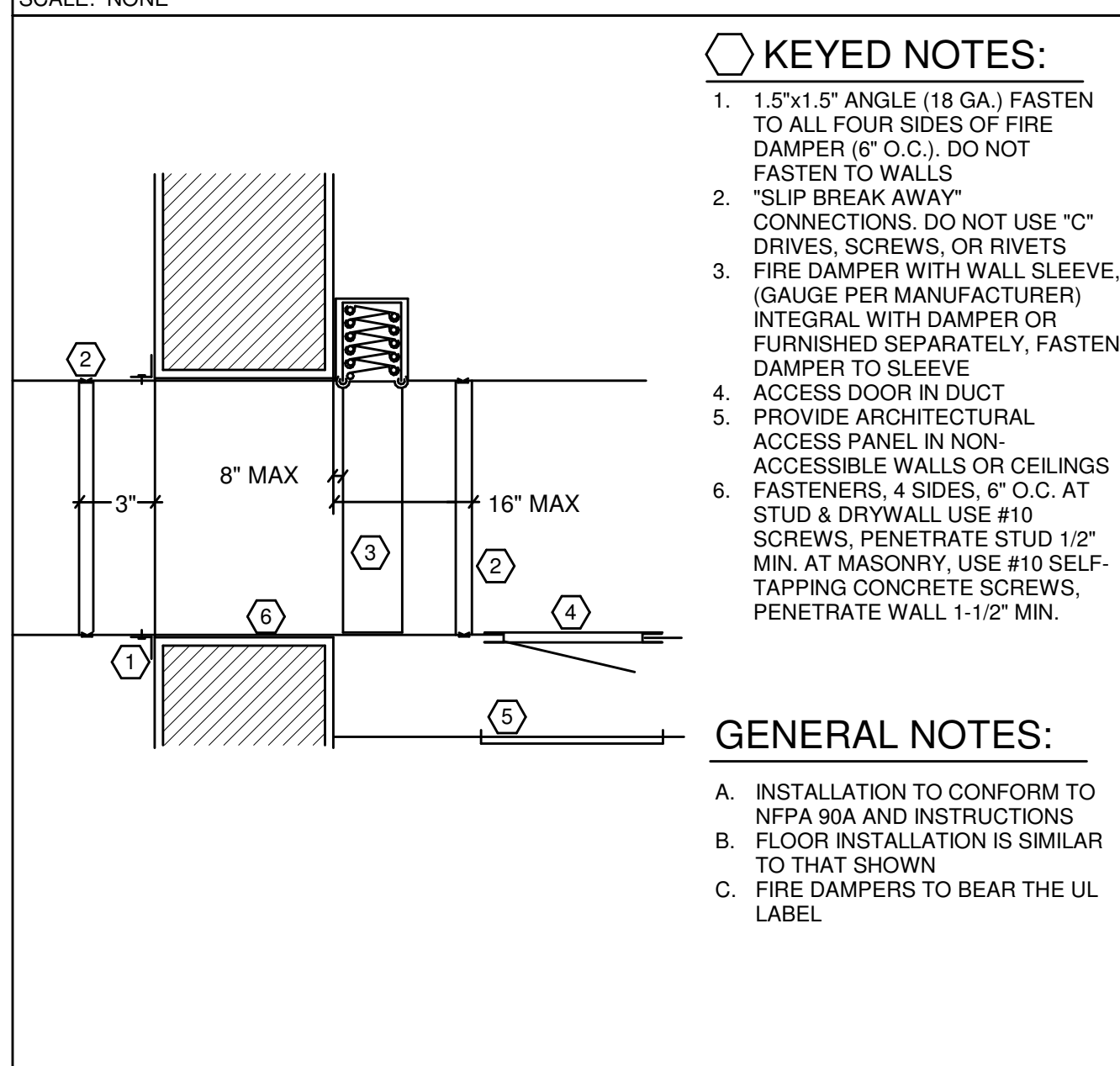
ITEM DESCRIPTION

- FIRE STAT
- ADJUSTABLE CONNECTING ROD
- FLEX CONDUIT
- DAMPER FRAME
- ACTUATOR
- OVER CENTER LOCK
- DAMPER SLEEVE
- FFMA OR CONVENTIONAL MOUNTING ANGLES
- SLEEVE TO DUCT CONNECTION
- ACCESS DOOR IN DUCT
- PROVIDE ARCHITECTURAL ACCESS PANEL IN NON-ACCESSIBLE WALLS OR CEILINGS

M - ELECTRIC ACTUATOR EP-SWITCH

- TST1 - PRIMARY TEMP. SENSOR
TST2 - HIGH LIMIT TEMP. SENSOR
S1 - DAMPER POSITION INDICATOR SWITCH. CLOSED WHEN DAMPER IS CLOSED
S2 - DAMPER POSITION INDICATOR SWITCH. CLOSED WHEN DAMPER IS OPEN.

233313.00-16 - SMOKE-FIRE DAMPER
SCALE: NONE



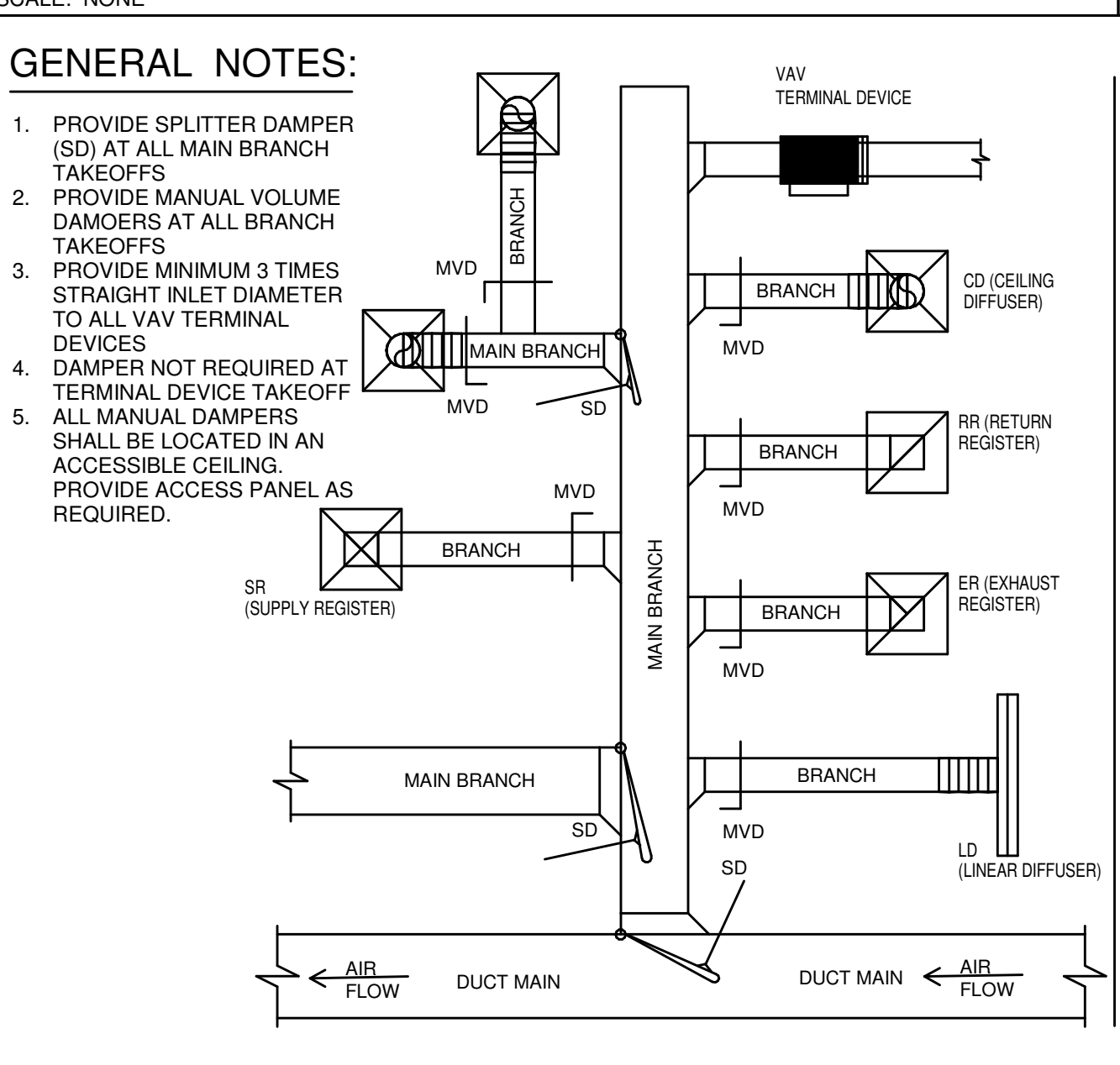
KEYED NOTES:

- 1.5"x1.5" ANGLE (18 GA.) FASTEN TO ALL FOUR SIDES OF FIRE DAMPER (8" O.C.). DO NOT FASTEN TO WALLS
- *SLIP BREAK AWAY CONNECTIONS DO NOT USE "C" DRIVES, SCREWS, OR RIVETS
- FIRE DAMPER WITH WALL SLEEVE. (GAUGE PER MANUFACTURER) INTEGRAL WITH DAMPER OR FURNISHED SEPARATELY. FASTEN DAMPER TO SLEEVE
- ACCESS DOOR IN DUCT
- PROVIDE ARCHITECTURAL ACCESS PANEL IN NON-ACCESSIBLE WALLS OR CEILINGS
- FASTENERS, 4 SIDES, 6" O.C. AT STUD & DRYWALL. USE #10 SCREWS, PENETRATE STUD 1/2" MIN. AT MASONRY. USE #10 SELF-TAPPING CONCRETE SCREWS, PENETRATE WALL 1-1/2" MIN.

GENERAL NOTES:

- A. INSTALLATION TO CONFORM TO NFPA 90A AND INSTRUCTIONS
- B. FLOOR INSTALLATION IS SIMILAR TO THAT SHOWN
- C. FIRE DAMPERS TO BEAR THE UL LABEL

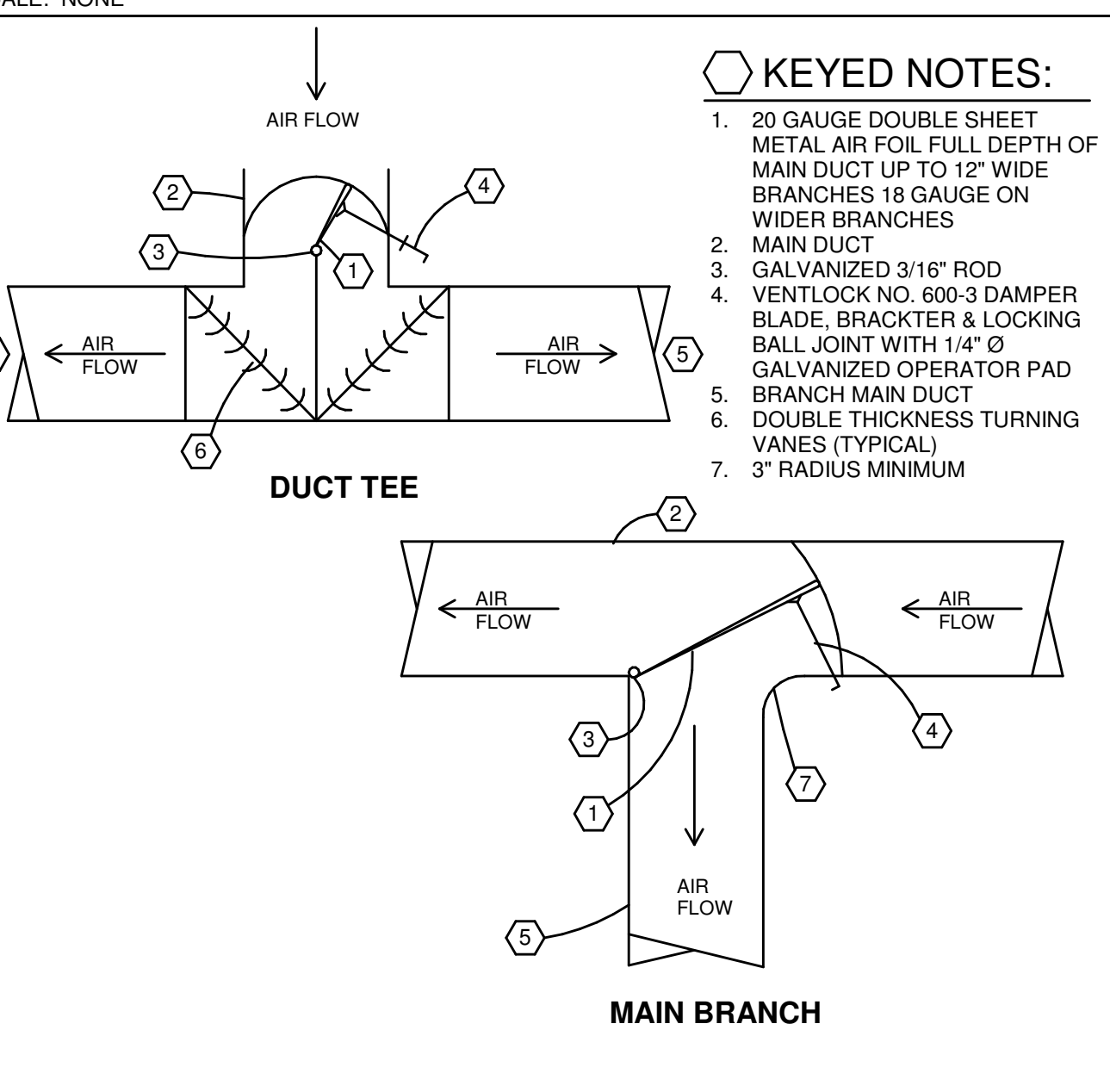
233313.00-12 - FIRE DAMPER TYPE A
SCALE: NONE



GENERAL NOTES:

- PROVIDE SPLITTER DAMPER (SD) AT ALL MAIN BRANCH TAKEOFFS
- PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH TAKEOFFS
- PROVIDE MINIMUM 3 TIMES STRAIGHT INLET DIAMETER TO ALL VAV TERMINAL DEVICES
- DAMPER NOT REQUIRED AT TERMINAL DEVICE TAKEOFF
- ALL MANUAL DAMPERS SHALL BE LOCATED IN AN ACCESSIBLE CEILING. PROVIDE ACCESS PANEL AS REQUIRED.

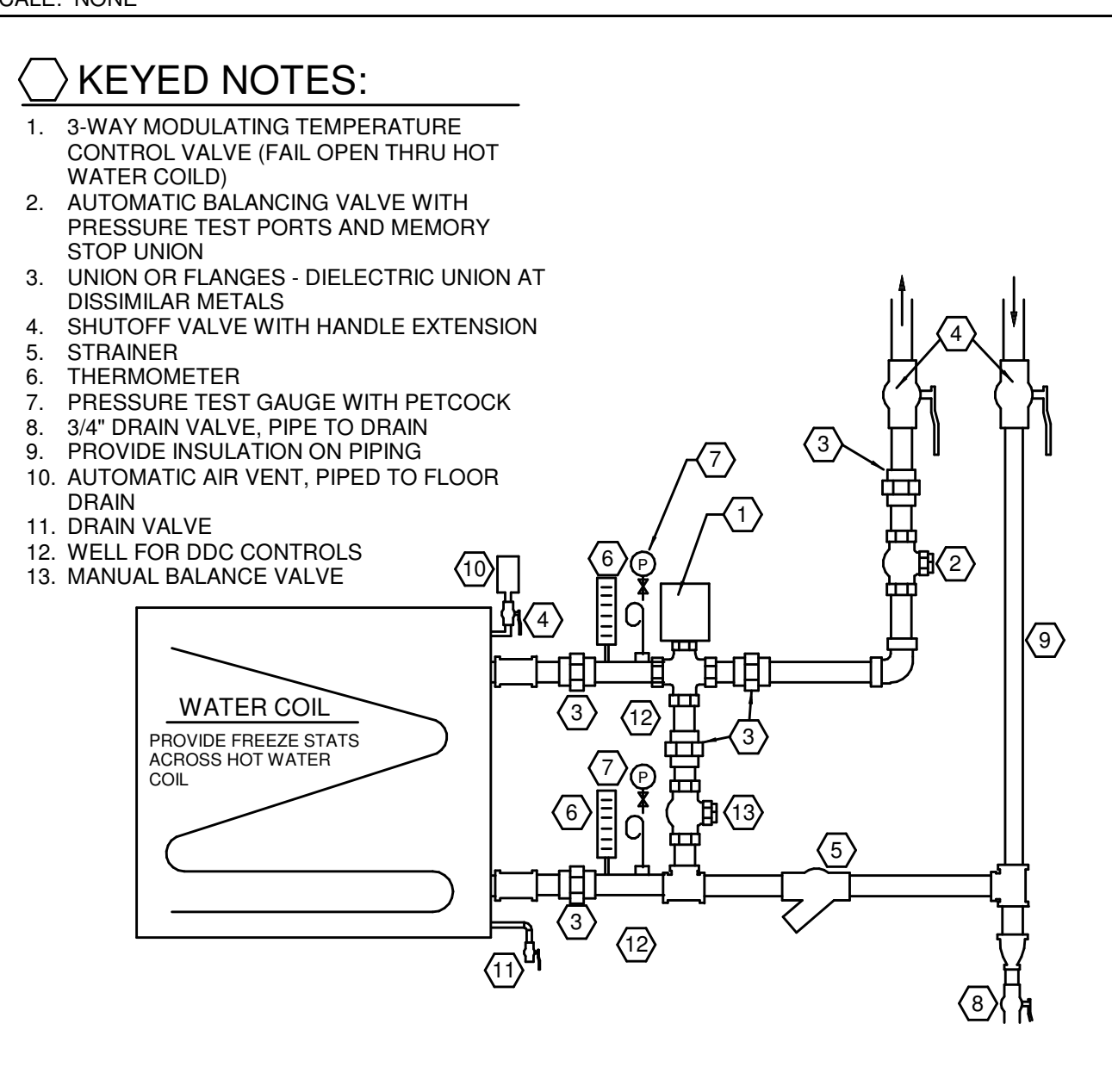
233300.00-01 - MANUAL DAMPER DETAIL
SCALE: NONE



KEYED NOTES:

- 20 GAUGE DOUBLE SHEET METAL AIR FOIL FULL DEPTH OF MAIN DUCT UP TO 12" WIDE BRANCHES 18 GAUGE ON WIDER BRANCHES
- MAIN DUCT
- GALVANIZED 3/16" ROD
- VENTLOCK NO. 800-3 DAMPER BLADE, BRACKET & LOCKING BALL JOINT WITH 1/4" O
- GALVANIZED OPERATOR PAD
- BRANCH MAIN DUCT
- DOUBLE THICKNESS TURNING VANES (TYPICAL)
- 3" RADIUS MINIMUM

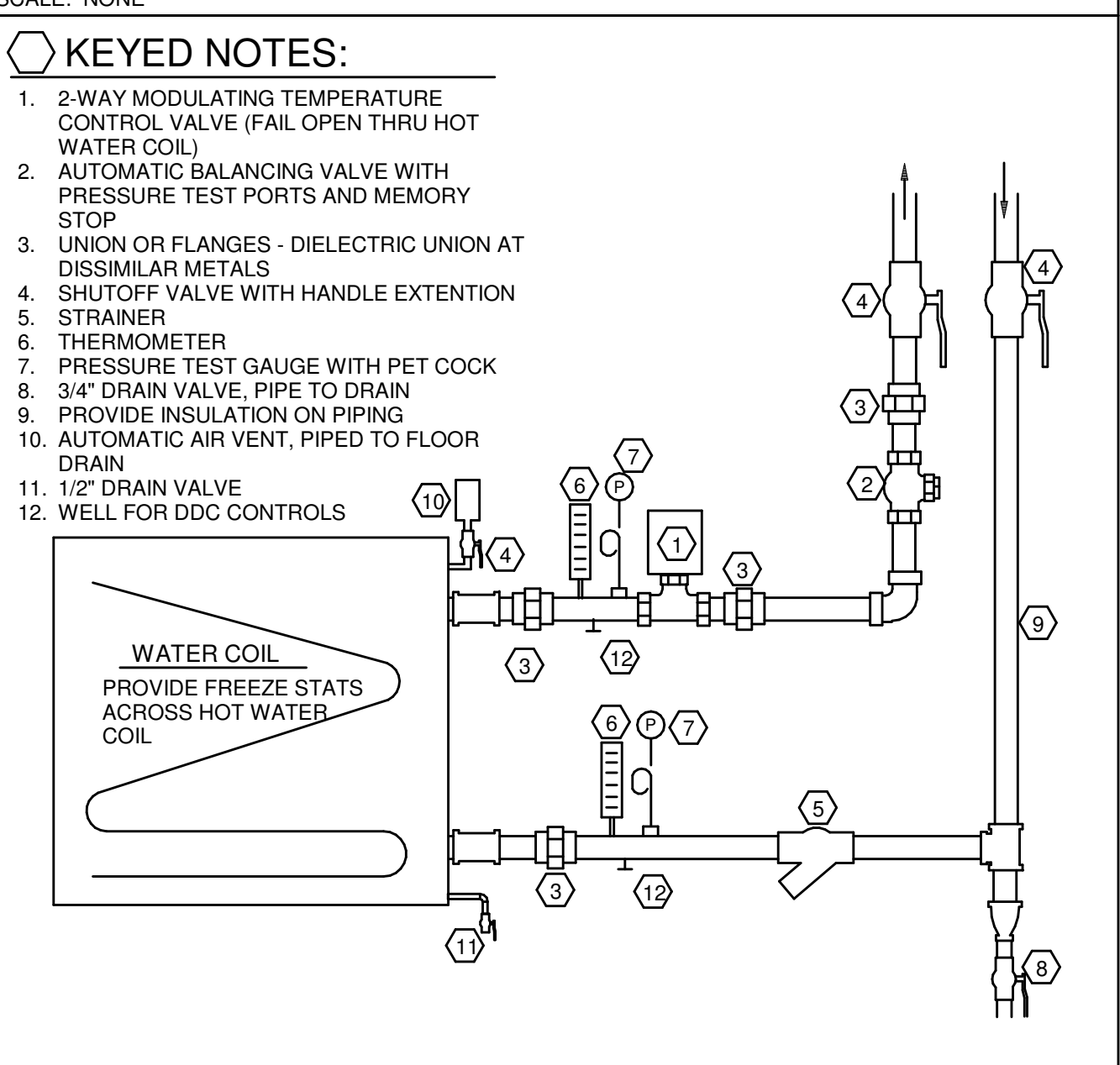
232113.23-18 - WATER COIL PIPING DIAGRAM 3-WAY
SCALE: NONE



KEYED NOTES:

- 3-WAY MODULATING TEMPERATURE CONTROL VALVE (FAIL OPEN THRU HOT WATER COIL)
- AUTOMATIC BALANCING VALVE WITH PRESSURE TEST PORTS AND MEMORY STOP UNION
- UNION OR FLANGES - DIELECTRIC UNION AT DISSIMILAR METALS
- SHUTOFF VALVE WITH HANDLE EXTENSION
- STRAINER
- THERMOMETER
- PRESSURE TEST GAUGE WITH PETCOCK
- 3/4" DRAIN VALVE, PIPE TO DRAIN
- PROVIDE INSULATION ON PIPING
- AUTOMATIC AIR VENT, PIPED TO FLOOR DRAIN
- DRAIN VALVE
- WELL FOR DDC CONTROLS
- MANUAL BALANCE VALVE

232113.23-17 - WATER COIL PIPING DIAGRAM 2-WAY
SCALE: NONE



KEYED NOTES:

- 2-WAY MODULATING TEMPERATURE CONTROL VALVE (FAIL OPEN THRU HOT WATER COIL)
- AUTOMATIC BALANCING VALVE WITH PRESSURE TEST PORTS AND MEMORY STOP
- UNION OR FLANGES - DIELECTRIC UNION AT DISSIMILAR METALS
- SHUTOFF VALVE WITH HANDLE EXTENSION
- STRAINER
- THERMOMETER
- PRESSURE TEST GAUGE WITH PET COCK
- 3/4" DRAIN VALVE, PIPE TO DRAIN
- PROVIDE INSULATION ON PIPING
- AUTOMATIC AIR VENT, PIPED TO FLOOR DRAIN
- 1/2" DRAIN VALVE
- WELL FOR DDC CONTROLS

232113.23-17 - WATER COIL PIPING DIAGRAM 2-WAY
SCALE: NONE



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REVISIONS

Table with 2 columns: No., Description

DWN: PRF CHK: KTS

DATE: 04/06/2023

PROJECT #: 24166.01

MECHANICAL - EQUIPMENT SCHEDULES

M-601

1" REFERENCE KLH PROJECT # 24166.01

HVAC ENERGY RECOVERY UNITS SCHEDULE

Table with columns: EQUIPMENT MARK, DESCRIPTION, LOCATION, STATUS, WEIGHT (lbs), MANUFACTURER, MODEL, EMERGENCY, VOLTS, PHASE, OACFM (cfm), OA ESP (in WC), OA HP (hp), OA FAN RPM (rpm), EA CFM (cfm), EA ESP (in WC), EA HP (hp), EA FAN RPM (rpm), OA CL EAT DB (Deg F), OA CL EAT WB (Deg F), OA HTG EAT DB (Deg F), OA HTG EAT WB (Deg F), EA LAT DB (Deg F), EA LAT WB (Deg F), CLG MBH (mbh), CLG SENS (in/hr), LAT CLG DB (Deg F), LAT CLG WB (Deg F), HTG MBH (mbh), LAT HTG (Deg F), FLA (amps), MCA (amps), OCP (amps)

HVAC FAN COIL UNITS SCHEDULE

Table with columns: EQUIPMENT MARK, DESCRIPTION, MANUFACTURER, MODEL, VOLTS, PHASE, CFM (cfm), ESP (in WC), MAT CLG DB (Deg F), MAT CLG WB (Deg F), CLG MBH (mbh), CLG SENS (in/hr), LAT CLG DB (Deg F), LAT CLG WB (Deg F), CHW LWT (Deg F), CW GPM (gpm), HTG MBH (mbh), LAT HTG (Deg F), HW GPM (gpm), FLA (amps), MCA (amps), OCP (amps)

HVAC HYDRONIC PUMPS SCHEDULE

Table with columns: EQUIPMENT MARK, DESCRIPTION, LOCATION, STATUS, WEIGHT (lbs), MANUFACTURER, MODEL, EMERGENCY, VOLTS, PHASE, WATTS (Watts), HEAD (ft), FLOW (gpm), PUMP (rpm), BHP (hp), HP (hp), FLA (amps), MCA (amps), OCP (amps), AVAILABLE FAULT CURRENT, SHEET NUMBER

HVAC DIFFUSERS AND REGISTERS SCHEDULE

Table with columns: TAG, MANUFACTURER, MODEL, FACE, MOUNTING, MATERIAL, FINISH, DAMPER TYPE, BORDER STYLE, REMARKS, DESCRIPTION

HVAC HYDRONIC ACCESSORIES SCHEDULE

Table with columns: EQUIPMENT MARK, Weight, DESCRIPTION, LOCATION, STATUS, MANUFACTURER, MODEL, STORAGE (GAL)

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4/27/2023 12:42:26:24166.01-21-MEP-PPROMO Mercantile Formica Bldg - Cinci OH_detailed.rvt



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REVISIONS

Table with 3 columns: No., Description, Date. Contains 10 empty rows for revisions.

DWN: PRF CHK: KTS

DATE: 04/06/2023

PROJECT #: 24166.01

MECHANICAL - ENGINEERING SCHEDULES

M-603

1" REFERENCE
KLH PROJECT #
24166.01

HVAC VENTILATION SCHEDULE

Main HVAC Ventilation Schedule table with columns: NUMBER, NAME, AREA, LEVEL, AIR CHGS, OA CHGS, PEOPLE, OA PER PERSON, OA PER SQ FT., REG SUP, ACT SUP, REG OA, ACT OA, ACT RET, ACT EXH, CRIT OA, PRESSURE, PCT OPERABLE, NATURAL VENTILATION. Includes rows for various rooms like BATHROOM, LIVING, BEDROOM, etc.

HVAC LOAD SCHEDULE

THE HEATING AND COOLING LOAD CALCULATIONS ARE BASED ON THE CLTD/CLF (COOLING LOAD TEMPERATURE DIFFERENCE/COOLING LOAD FACTOR) METHOD. ASSUMPTIONS AND EXECUTION OF THESE METHODS ARE PER ASHRAE 183-2007...

HVAC Load Schedule table with columns: EQUIPMENT MARK, COOLING LOAD BREAKDOWN (CROOF, CWALL, CPART, CGLASS, CSOLAR, CLIGHTS, CEQUIP, CPSENS, CSSENS, CFAN, COAS, CTSSENS, CPLAT, COAL, CTLAT, CTOT), HEATING LOAD BREAKDOWN (HROOF, HWALL, HPART, HGLASS, HSLAB, HSPACE, HOA, HTOT). Includes rows for various equipment marks like FCU-A2, FCU-B1, etc.

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