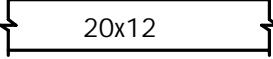
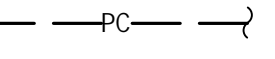
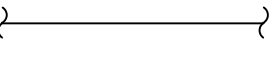
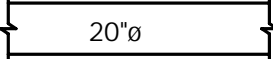
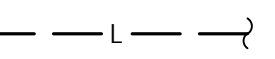
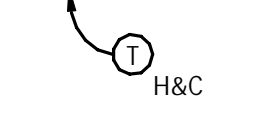
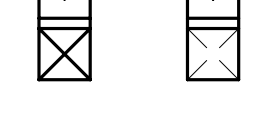
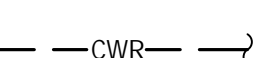

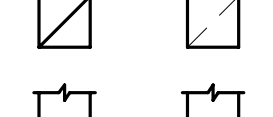
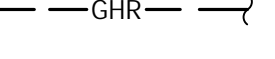

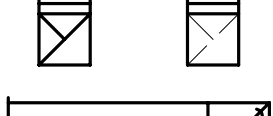
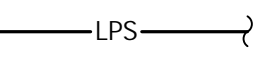

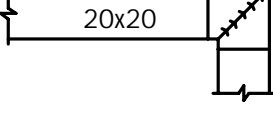
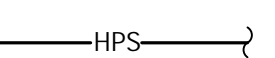


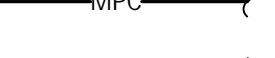

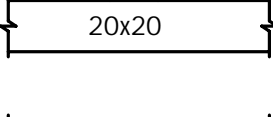
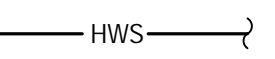

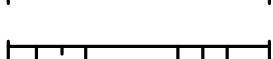



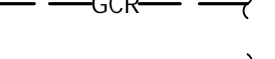
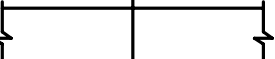

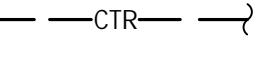

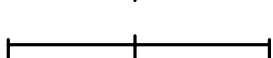
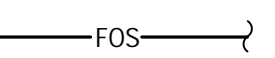
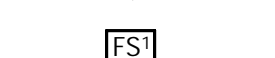
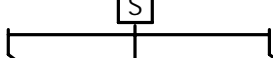

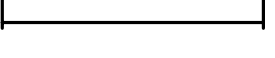



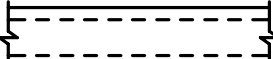
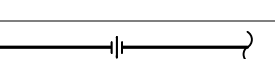
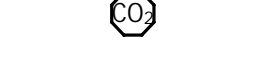
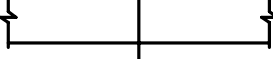
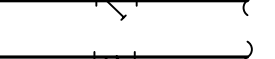
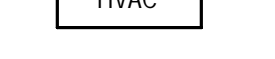

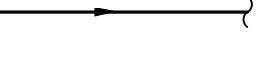


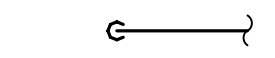

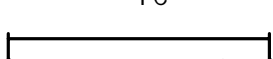
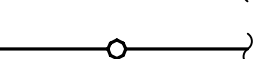




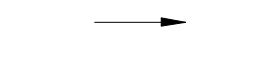




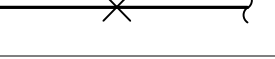





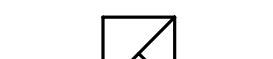




MECHANICAL LEGENDS & ABBREVIATIONS			
NOTE: NOT ALL SYMBOLS/ABBREVIATIONS SHOWN IN THE LEGEND ARE USED IN THIS DRAWING SET. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY CONTENT SHOWN ON DRAWINGS.			
DUCTWORK	PIPING SYSTEMS	CONTROLS & BALANCING	ABBREVIATIONS
 RECTANGULAR DUCT, FIRST NUMBER IS DIMENSION IN VIEW OF DRAWING	 PUMPED STEAM	 CONTROLS WIRING	$\phi$ DIAMETER
 ROUND RIGID DUCT	 CONDENSATE DRAIN	 WALL MOUNTED THERMOSTAT. SUBSCRIPTS: HEATING & COOLING. ARROW POINTS TO DEVICE CONTROLLED	AMPS/AMPERAGE
 SUPPLY/OUTSIDE AIR DUCT ELBOW UP/DOWN	 REFRIGERATED LIQUID	 UNIT MOUNTED THERMOSTAT	AA ALL AROUND
 RETURN DUCT ELBOW UP/DOWN	 REFRIGERANT SUCTION	 THERMOSTAT, LINE VOLTAGE	ABV AUTOMATIC BALANCE VALVE
 EXHAUST DUCT ELBOW UP/DOWN	 CONDENSER WATER RETURN	 FAN SPEED CONTROL	ACV AUTOMATIC BALANCE VALVE
 RECTANGULAR DUCT 90° MITERED ELBOW WITH TURNING VANES	 GLYCOL HEATING RETURN	 HUMIDISTAT	AD ACCESS DOOR
 TYPICAL LONG RADIUS ELBOW, RECTANGULAR/ROUND DUCT	 GLYCOL HEATING SUPPLY	 THERMAL SENSOR	AFF ABOVE FINISH FLOOR
 TYPICAL BRANCH DUCT 45° TAKE-OFF W/ VOLUME DAMPER	 LOW PRESSURE STEAM	 AQUASTAT	AI ANALOG INPUT
 DUCT RISE	 MEDIUM PRESSURE STEAM	 PRESSURE TRANSMITTER	AO ANALOG OUTPUT
 DUCT SET DOWN	 HIGH PRESSURE STEAM	 FLOW SWITCH	APD AIR PRESSURE DROP
 FLEXIBLE DUCT	 LOW PRESSURE CONDENSATE	 BALANCING VALVE	ARCH ARCHITECT(URAL)
 FIRE DAMPER	 MEDIUM PRESSURE CONDENSATE	 DIFFERENTIAL PRESSURE SWITCH	ATC AUTOMATIC TEMPERATURE CONTROL
 SMOKE DAMPER	 HIGH PRESSURE CONDENSATE	 MANUAL VOLUME DAMPER	AVT AVERAGE WATER TEMPERATURE
 FIRE & SMOKE DAMPER	 HEATING HOT WATER RETURN	 MOTOR OPERATED DAMPER	BAS BUILDING AUTOMATION SYSTEM
 DUCT SMOKE DAMPER	 HEATING HOT WATER SUPPLY	 AIR FLOW SWITCH	BF BOILER FEEDWATER
 DUCT SOUND ATTENUATION LINING	 MAKE-UP WATER	 CARBON MONOXIDE GAS SENSOR	BHP BRAKE HORSEPOWER
 BACKDRAFT DAMPER	 CHILLED WATER RETURN	 CARBON DIOXIDE GAS SENSOR	BOD BOTTOM OF DUCTWORK (ELEVATION)
 BAROMETRIC RELIEF DAMPER	 CHILLED WATER SUPPLY	 CONTROL PANEL	BTU/H BRITISH THERMAL UNITS PER HOUR
 FLEXIBLE DUCT CONNECTOR	 CHILLED GLYCOL RETURN		C COMMON
 EQUIPMENT FLEX CONNECTOR	 CHILLED GLYCOL SUPPLY		CAP CAPACITY
 ELEVATION OF TOP OF DUCT (TOD) AFF	 COOLING TOWER RETURN		CFM CUBIC FEET PER MINUTE
 ELEVATION OF BOTTOM OF DUCT (BOD) AFF	 COOLING TOWER SUPPLY		CKT CIRCUIT
 TRANSFER GRILLE	 FUEL OIL SUPPLY		CM CONSTRUCTION MANAGER
 DIRECTION OF SUPPLY AIR FLOW	 FUEL OIL RETURN		CONN CONNECTION
 DIRECTION OF RETURN OR EXHAUST AIR FLOW			COP COEFFICIENT OF PERFORMANCE
 SUPPLY FAN ROOF MOUNTED			CP CONTROL PANEL
 EXHAUST FAN ROOF MOUNTED			db DRY BULB TEMPERATURE
 SMOKE DETECTOR			DCW DOMESTIC COLD WATER
 FAN (SCHEMATIC)			DDC DIRECT DIGITAL CONTROL
 SUPPLY AIR DIFFUSER, REGISTER, OR GRILLE			DI DIGITAL INPUT
 RETURN AIR REGISTER OR GRILLE			DIA DIAMETER
 EXHAUST AIR REGISTER OR GRILLE			DN DOWN
			DO DIGITAL OUTPUT
			DR DRAIN
			DWG DRAWING
			DWV DRAIN, WASTE, VENT
			DX DIRECT EXPANSION
			-E- EXISTING
			E/A EXHAUST AIR
			EAT ENTERING AIR TEMPERATURE
			EC ELECTRICAL CONTRACTOR
			ECON ECONOMIZER
			EDB ENTERING DRY BULB
			EER ENERGY EFFICIENCY RATIO
			EFP EFFICIENCY
			ESP EXTERNAL STATIC PRESSURE
			EWB ENTERING WET BULB
			EWT ENTERING WATER TEMPERATURE
			FA FREE AREA
			FLA FULL LOAD AMPS
			FOB FLAT ON BOTTOM
			FOT FLAT ON TOP
			FPI FINS PER INCH
			FPM FEET PER MINUTE
			FT FEET
			FVNR FULL VOLTAGE ON-REVERSING
			GA GALLONS
			GC GENERAL CONTRACTOR
			GPM GALLONS PER MINUTE
			HOA HAND-OFF AUTOMATIC
			HP HORSEPOWER
			Hz HERTZ
			ID INSIDE DIAMETER
			in INCH(ES)
			KW KILOWATT(S)
			LAT LEAVING AIR TEMPERATURE
			LDB LEAVING DRY BULB
			LF LINEAR FEET
			LRA LOCKED ROTOR AMPS
			LWB LEAVING WET BULB
			LWT LEAVING WATER TEMPERATURE
			MAX MAXIMUM
			MBH 1,000 BRITISH THERMAL UNITS PER HOUR
			MC MECHANICAL CONTRACTOR
			MCA MINIMUM CIRCUIT AMPACITY
			MCC MOTOR CONTROL CENTER
			MEP MECHANICAL, ELECTRICAL, PLUMBING
			MIN MINIMUM
			MMBH MILLIONS OF BTU/H
			MOCP MAXIMUM OVERCURRENT PROTECTION
			MOD MOTOR OPERATED DAMPER
			MRE MECHANICAL ROOM EQUIPMENT
			MTD MOUNTED
			NC NORMALLY CLOSED
			NIC NOT IN CONTRACT
			NO NORMALLY OPEN
			NO. NUMBER
			NTS NOT TO SCALE
			O/A OUTDOOR AIR
			OAT OUTSIDE AIR TEMPERATURE
			OD OUTSIDE DIAMETER
			OED OPEN ENDED DUCT
			OIT OPERATOR INTERFACE TERMINAL
			P PUMP
			PC PLUMBING CONTRACTOR
			PD PRESSURE DROP
			PH ELECTRICAL PHASE
			PSI POUNDS PER SQUARE INCH
			R/A RETURN AIR
			RH RELATIVE HUMIDITY
			RLA RATED LOAD AMPS
			RPM REVOLUTIONS PER MINUTE
			S/A SUPPLY AIR
			SAT SUPPLY AIR TEMPERATURE
			SF SQUARE FEET
			SP STATIC PRESSURE
			SS STAINLESS STEEL
			TEMP DEGREES FAHRENHEIT (° F) UNLESS OTHERWISE NOTED
			TSP TOTAL STATIC PRESSURE
			TYP TYPICAL
			UD UNDERCUT DOOR
			VB VACUUM BREAKER
			VFD VARIABLE FREQUENCY DRIVE
			VF VERIFY IN FIELD
			WB WET BULB TEMPERATURE
			WC WATER COLUMN
			WG WATER GAUGE
			WPD WATER PRESSURE DROP

MECHANICAL GENERAL NOTES	
A. QUALITY OF WORK	F. TESTING, ADJUSTING, AND BALANCING
1. IT IS THE INTENT OF THE DRAWINGS AND SPECIFICATIONS TO OBTAIN A COMPLETE AND SATISFACTORY INSTALLATION. AN ATTEMPT HAS BEEN MADE TO SEPARATE AND DEFINE THE WORK OF THE CONTRACTOR. DRAWINGS ARE DIAGRAMMATIC, BUT MUST BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION OF THE FACILITY AND WORK OF OTHER TRADES WILL PERMIT. THE DRAWINGS UTILIZE SYMBOLS AND SCHEMATIC DIAGRAMS TO INDICATE VARIOUS ITEMS OF WORK. THEREFORE, NO INTERPRETATION WILL BE MADE FROM THE LIMITATION OF SYMBOLS AND DIAGRAMS THAT ANY ELEMENTS NECESSARY FOR THE COMPLETE INSTALLATION ARE EXCLUDED. THE ENGINEER IS TO BE NOTIFIED OF ANY DISCREPANCIES, OMISSIONS, CONFLICTS, OR INTERFERENCE WHICH OCCUR BETWEEN VARIOUS DRAWINGS AND SPECIFICATIONS. IF SUCH NOTIFICATION IS NOT RECEIVED, THE INSTALLING CONTRACTOR(S) IS TO BE RESPONSIBLE FOR THEIR INTERPRETATIONS. "PROVIDE" MEANS FURNISH AND INSTALL, AND MUST INCLUDE ALL EQUIPMENT (THAT INCLUDE THE ACCESSORIES, SUPPORTS, FITTINGS AND OTHER INCIDENTAL MATERIAL NEEDED FOR THE EQUIPMENT), DEVICES, HARDWARE, MOUNTS, LABOR, RIGGING, SUBCONTRACTS, ETC., THAT RESULT IN A COMPLETE AND FUNCTIONAL PROJECT INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE. MINOR ITEMS TO FINISH THE WORK SUCH AS PATCHING, BLOCKING, TRIM, TOUCH-UP PAINT, ETC., SHALL BE PROVIDED WHETHER OR NOT INDICATED IN THE CONTRACT DOCUMENTS.	1. WORK IS TO BE PERFORMED BY AN INDEPENDENT TESTING AND BALANCING AGENCY SPECIALIZING IN TESTING, ADJUSTING, AND BALANCING OF HEATING, VENTILATION, AND COOLING SYSTEMS. TESTING AND BALANCING CONTRACTOR MUST BE AABC OR NEBB CERTIFIED.
2. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER IS TO BE USED.	2. TOLERANCE OF HYDRONIC SYSTEMS: ADJUST FLUID FLOW RATES AT BALANCE VALVES AND ALL EQUIPMENT TO PLUS/MINUS 10% OF DESIGN FLOW RATES.
3. ALL WORKMANSHIP, MATERIALS, AND EQUIPMENT IS TO BE GUARANTEED FOR A PERIOD OF ONE YEAR AFTER ACCEPTANCE BY THE OWNER.	3. TOLERANCE OF AIR SYSTEMS: ADJUST AIR FLOW RATES AT AIR HANDLING UNITS TO PLUS/MINUS 5% OF DESIGN FOR SUPPLY SYSTEMS AND PLUS/MINUS 10% OF DESIGN FOR RETURN AND EXHAUST SYSTEMS. ADJUST AIR FLOW RATES AT AIR INLETS AND OUTLETS TO PLUS/MINUS 10% OF DESIGN TO THE SPACE. IN ALL CASES MAINTAIN REQUIRED FLOW OR SPACE PRESSURIZATION CRITERIA.
4. PROVIDE IDENTIFICATION LABELS FOR NEW EQUIPMENT. AFFIX PERMANENT IDENTIFYING TAGS OR LABELS TO FANS, TERMINAL UNITS, AIR HANDLERS ETC. IDENTIFY SYSTEM ON PIPING AND DUCTWORK MAINS AND INDICATE DIRECTION OF FLOW ON PIPING. INDICATE THE CONTROLLED EQUIPMENT ON WALL MOUNTED CONTROLS.	4. SCHEDULED EQUIPMENT IS TO BE BALANCED AND A PRELIMINARY REPORT SUBMITTED TO THE ENGINEER FOR REVIEW. PROVIDE ALLOWANCE FOR (2) RETURN TRIPS FOR ADDITIONAL REBALANCE WORK AFTER ENGINEER REVIEW OF INITIAL REPORTS. PROVIDE THE FINAL REPORT TO ENGINEER.
B. CODES/PERMITS	G. WARRANTY
1. WORK IS TO BE PERFORMED IN STRICT ACCORDANCE WITH STATE RECOGNIZED BUILDING CODES, NFPA, ASHRAE, UNDERWRITERS LABORATORIES AND ALL MUNICIPAL, STATE AND OTHER AUTHORITIES, PUBLIC AND PRIVATE, HAVING JURISDICTION. REPORT ALL DISCREPANCIES WITH SUCH REGULATIONS TO ENGINEER AND DO NOT PROCEED WITH ANY WORK UNTIL WRITTEN AUTHORIZATION IS RECEIVED FROM THE ENGINEER.	1. GUARANTEE ALL WORK PERFORMED AND MATERIALS AND EQUIPMENT INSTALLED TO THE FULL EXTENT REQUIRED BY THE DRAWINGS AND SPECIFICATIONS TO BE FREE FROM INHERENT DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE.
2. ALL NECESSARY FEES, PERMITS, AND APPROVALS AS REQUIRED BY THE WORK OF THESE DRAWINGS AND SPECIFICATIONS IS TO BE OBTAINED AND PAID FOR BY THIS CONTRACTOR.	2. REPLACE ANY MATERIAL AND EQUIPMENT PRIOR TO THE FINAL ACCEPTANCE WHICH IS CORRODED OR OTHERWISE DAMAGED THROUGH THE MECHANICAL CONTRACTOR'S FAILURE TO PROPERLY OPERATE AND MAINTAIN THE INSTALLATION DURING CONSTRUCTION OR RETESTING.
3. NOTHING CONTAINED IN THE SPECIFICATIONS OR INDICATED ON THESE DRAWINGS IS TO BE CONSTRUED TO CONFLICT WITH APPLICABLE PORTIONS OF ANY LAWS, ORDINANCES, REGULATIONS, OR CODES.	3. KEEP THE WORK IN REPAIR AND REPLACE ANY DEFECTIVE MATERIALS, EQUIPMENT, OR WORKMANSHIP UPON NOTICE FROM THE ENGINEER OR OWNER'S REPRESENTATIVE FOR A PERIOD OF ONE YEAR FROM DATE OF ACCEPTANCE.
C. COORDINATION OF WORK	H. INSURANCE
1. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, AND ELECTRICAL WORK - NEW OR EXISTING.	1. THE CONTRACTOR MUST, DURING THE LIFE OF THE CONTRACT, MAINTAIN IN FORCE, SUCH INSURANCE AS IS REQUIRED OF THE PRIME CONTRACTOR IN THE GENERAL CONDITIONS OF THE CONTRACT; AND IS TO FURNISH THE PRIME CONTRACTOR AND THE OWNER WITH CERTIFICATION OF SUCH INSURANCE BEFORE BEGINNING WORK ON THIS SECTION OF CONTRACT.
2. WHEN MECHANICAL WORK (HVAC, PLUMBING, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT IS TO BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT MUST BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION IS FINAL.	I. DOCUMENTATION
3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS ARE APPROXIMATE AND NOT DEFINITELY FIXED BY DIMENSIONS. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS. CASES WHERE THERE ARE MAJOR CONFLICTS THE CONTRACTOR MUST NOTIFY THE ENGINEER FOR FIELD REVIEW. DO NOT SCALE THE DRAWINGS.	1. PROVIDE AN ENTIRE SET OF PROJECT CLOSE-OUT DOCUMENTS TO OWNER PER CONTRACT DOCUMENTS. PACKAGE MUST CONTAIN ENTIRE O&M MANUALS WITH PROJECT SUBMITTALS AND SUBMITTAL COMMENTS, TAB REPORTS, TEST REPORTS, AND RECORD DRAWINGS, PLUS ADMINISTRATIVE DOCUMENTS.
4. PROVIDE LOCATIONS OF REQUIRED ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS TO SERVICE VALVES, DAMPERS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. GENERAL CONTRACTOR IS TO FURNISH & INSTALL ACCESS PANELS.	
5. COORDINATE LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS WITH ALL OTHER TRADES INVOLVED. ALL OPENINGS IN FIRE WALLS, FLOORS AND RATED PARTITIONS FOR PIPING, CONDUIT, ETC., ARE TO BE FIRE STOPPED WITH A UL APPROVED SYSTEM.	
D. PIPING	
1. SEE PIPING PLAN SHEETS FOR PIPING GENERAL NOTES.	
E. DUCTWORK	
1. SEE DUCTWORK PLANS SHEETS FOR DUCTWORK GENERAL NOTES.	



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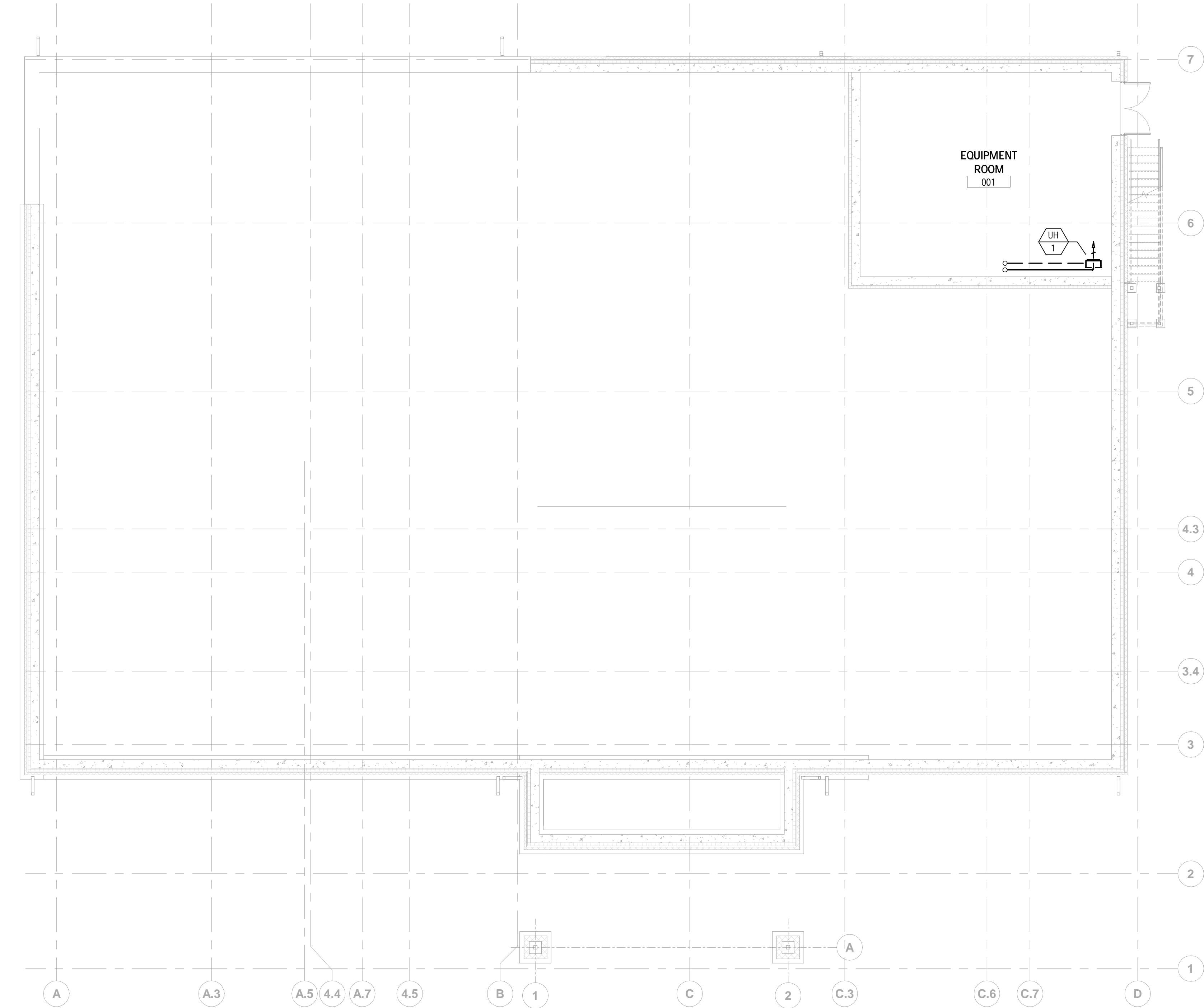
LEGENDS & NOTES

SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

M0.1





BASEMENT PLAN - MECHANICAL

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

- MECHANICAL DUCTWORK NOTES
1. SEE SHEET MD.1 FOR MECHANICAL GENERAL NOTES.
  2. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK, VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
  3. ALL DUCTWORK IS TO BE FABRICATED FROM G-90 GALVANIZED SHEET METAL IN LOCK-FORMING QUALITY, UNLESS SPECIFIED OTHERWISE.
  4. ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INTERNAL SIZES.
  5. ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAGE SEAL CLASS "A".
  6. ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
  7. ALL SUPPLY AND O/A DUCT WORK TO BE INSULATED TO MEET THE ENERGY CONSERVATION CODE ADOPTED BY THE STATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  8. COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
  9. PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFF'S. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.

MECHANICAL KEYNOTES



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CONSULTANT:



Building Services Division  
Bedford, NH  
ME/PE/PP Engineers  
603.444.6578  
Project #530419

SEAL:

CITY OF CARIBOU, MAINE  
CARIBOU POLICE DEPARTMENT

PROJECT NUMBER: 21-000

SUBMISSION  
PROGRESS

ORIGINAL ISSUE  
11.06.24

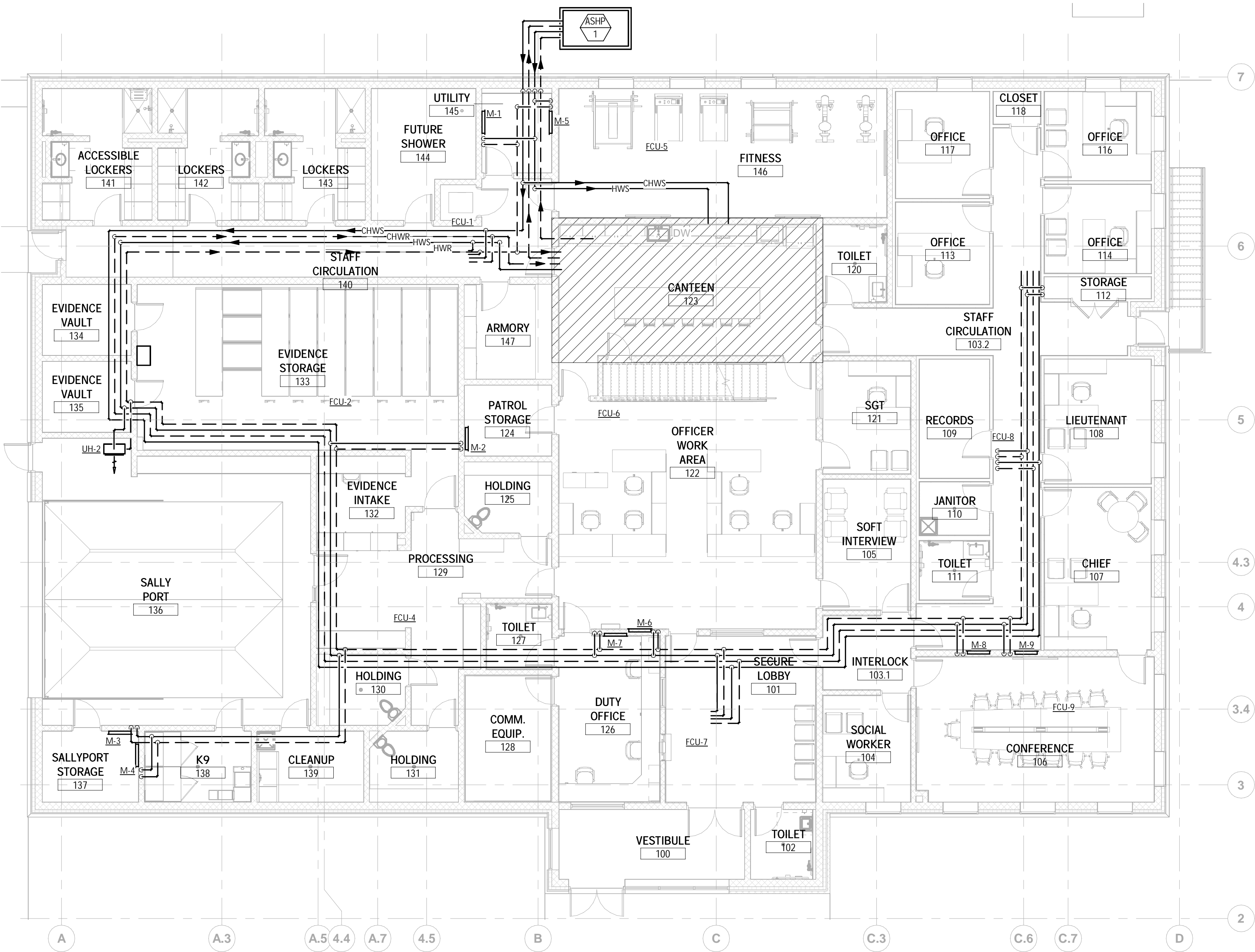
SHEET REVISION SCHEDULE:  
No. DATE

BASEMENT PLAN - MECHANICAL

SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

M1.0



FIRST FLOOR PLAN - PIPING

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

- MECHANICAL PIPING NOTES
1. SEE SHEET M0.1 FOR MECHANICAL GENERAL NOTES.
  2. TAKE ALL NECESSARY MEASUREMENTS AT THE BUILDING AND FABRICATE THE PIPING ON THE SITE. IF REQUIRED, TO ENSURE AN APPROVED INSTALLATION.
  3. UNLESS OTHERWISE NOTED, ALL PIPING IS OVERHEAD, TIGHT TO UNDERSIDE OF STRUCTURE OR SLAB, WITH SPACE FOR INSULATION.
  4. INSTALL ALL PIPING WITHOUT FORCING OR SPRINGING. ALL PIPING IS TO CLEAR DOORS AND WINDOWS.
  5. COORDINATE ALL PIPING WITH EXISTING CONDITIONS. OFFSETS IN PIPING AROUND OBSTRUCTIONS ARE TO BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
  6. PIPING PENETRATIONS OF ALL WALLS AND FLOORS ARE TO BE SEALED WITH FIRE CAULK.
  7. INSTALL PIPING SO THAT ALL VALVES, STRAINERS, UNIONS, TRAPS, FLANGES, AND OTHER APPURTENANCES REQUIRING ACCESS ARE ACCESSIBLE. ALL VALVES ARE TO BE ADJUSTED FOR SMOOTH AND EASY OPERATION. ALL VALVES ARE TO BE MARKED WITH A PERMANENT TAG INDICATING THE EQUIPMENT SERVED. PROVIDE A TYPED VALVE SCHEDULE TO BE KEPT IN OWNER IDENTIFIED AREA.
  8. ALL VALVES (EXCEPT CONTROL VALVES) AND STRAINERS ARE TO BE FULL SIZE OF PIPE. INSTALL VALVES AT ALL TAKEOFFS FROM THE MAIN AND PROVIDE EXTENDED STEMS TO CLEAR INSULATION.
  9. UNIONS AND/OR FLANGES ARE TO BE INSTALLED AT EACH PIECE OF EQUIPMENT, IN BYPASSES, AND IN LONG PIPING RUNS (100 FEET OR MORE) TO PERMIT DISASSEMBLY FOR ALTERNATION AND REPAIRS.
  10. PROVIDE FLEXIBLE CONNECTION IN ALL PIPING SYSTEMS CONNECTED TO PUMPS, CHILLERS, AND OTHER EQUIPMENT WHICH REQUIRE VIBRATION ISOLATION EXCEPT WATER COILS. FLEXIBLE CONNECTIONS ARE TO BE PROVIDED AS CLOSE TO THE EQUIPMENT AS POSSIBLE OR AS INDICATED ON DRAWINGS.

MECHANICAL KEYNOTES



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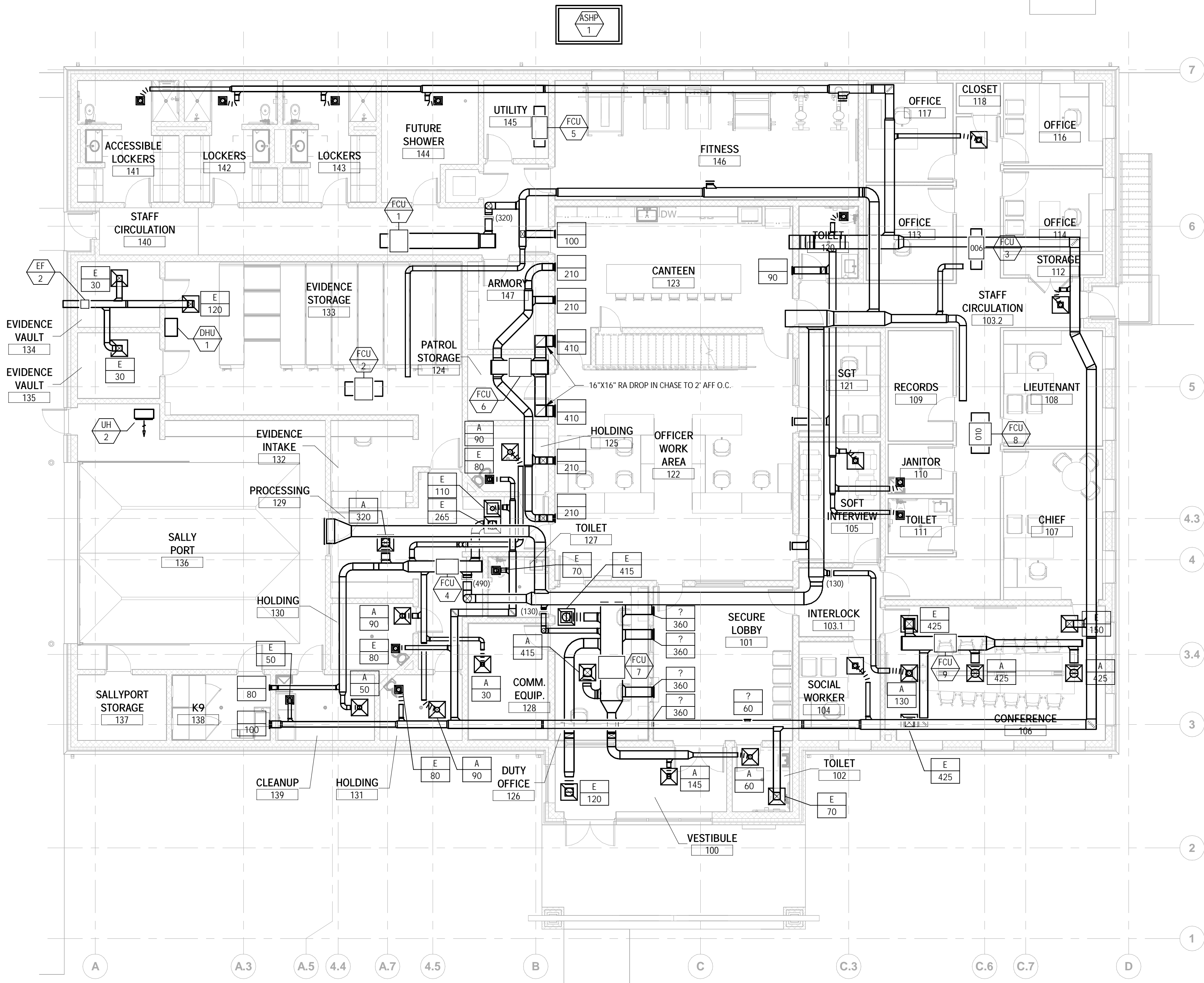
FIRST FLOOR PLAN - PIPING

SHEET

M1.1

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FIRST FLOOR PLAN - DUCTWORK

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

- MECHANICAL DUCTWORK NOTES
- SEE SHEET MD.1 FOR MECHANICAL GENERAL NOTES.
  - FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
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  - ALL SUPPLY, RETURN, EXHAUST, AND OUTSIDE AIR DUCTWORK SHALL BE FABRICATED AT A MINIMUM CLASS OF 2 INCH WATER GAGE SEAL CLASS "A".
  - ALL DUCT SEALANT TO BE WATER BASED LOW VOC.
  - ALL SUPPLY AND O/A DUCT WORK TO BE INSULATED TO MEET THE ENERGY CONSERVATION CODE ADOPTED BY THE STATE. SEE SPECIFICATIONS FOR ADDITIONAL INFORMATION.
  - COORDINATE THE LOCATION OF CEILING AIR INLETS AND OUTLETS WITH LIGHTS, SPRINKLER HEADS, AND LIFE SAFETY DEVICES.
  - PROVIDE ADJUSTABLE VOLUME DAMPERS AT ALL BRANCH DUCT TAKE OFF'S. "RAP-IT" STYLE VOLUME DAMPERS AND HARDWARE IS NOT PERMITTED. FOR LOW FLOW BRANCHES, PROVIDE EDGE SEALED DAMPERS TO OBTAIN PROPER FLOW BALANCING.

MECHANICAL KEYNOTES



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**STUDIOS**

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**DuBois & King inc.**

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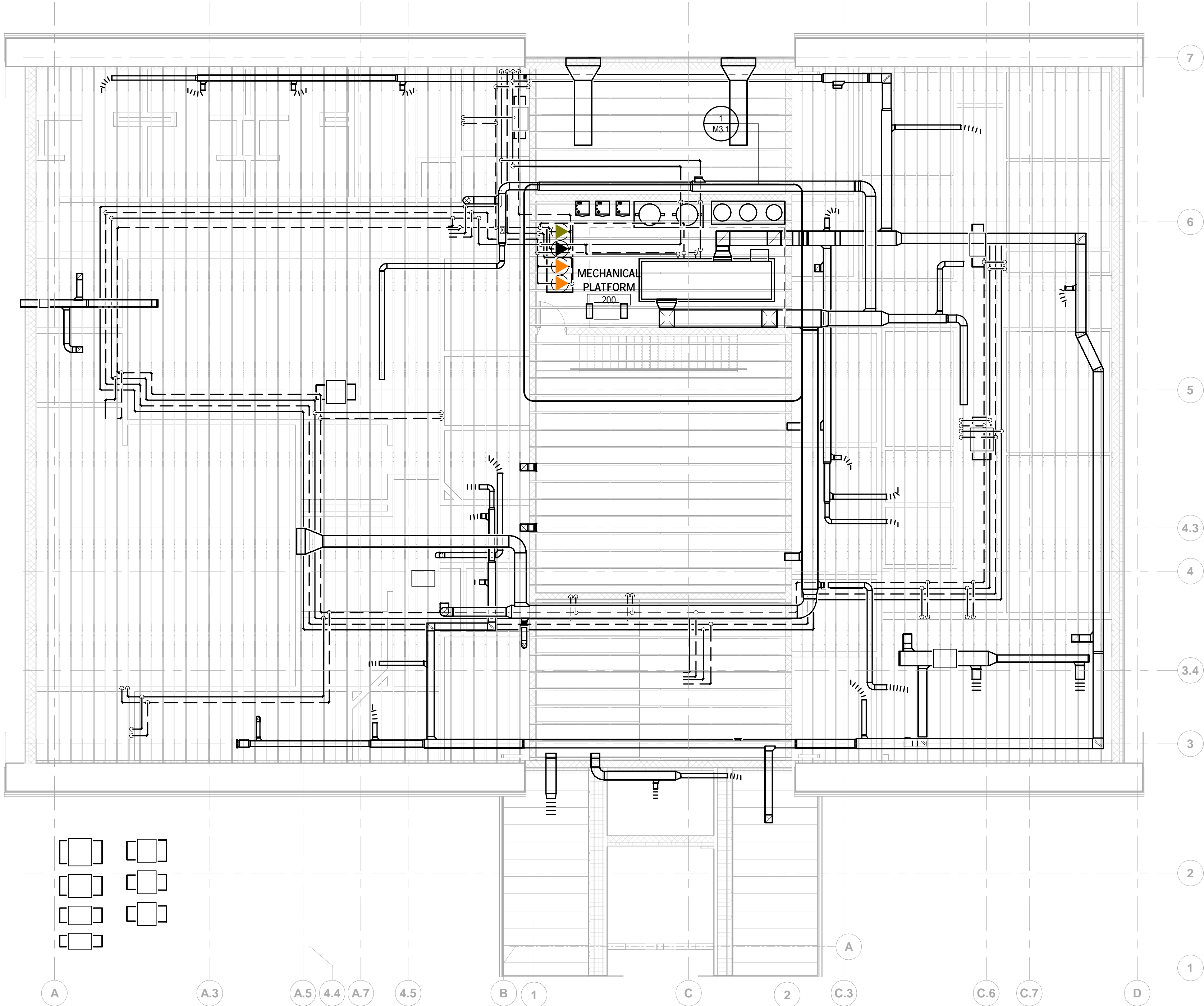
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No. DATE

FIRST FLOOR PLAN - DUCTWORK

SHEET

M1.2

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ROOF PLAN - MECHANICAL  
SCALE: 1/8" = 1'-0"

- MECHANICAL DUCTWORK NOTES
1. SEE SHEET MD.1 FOR MECHANICAL GENERAL NOTES.
  2. FABRICATE DUCTWORK FROM FIELD VERIFIED DIMENSIONS. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA GUIDELINES (LATEST EDITION). PRIOR TO FABRICATING DUCTWORK, VERIFY CEILING CLEARANCES WITH STRUCTURE, PIPES, ETC. COORDINATE THE INSTALLATION OF DUCTWORK WITH SPRINKLER PIPING. INSTALL DUCTWORK PRIOR TO INSTALLING ANY PIPING AND ELECTRICAL WORK TO REDUCE CONFLICTS.
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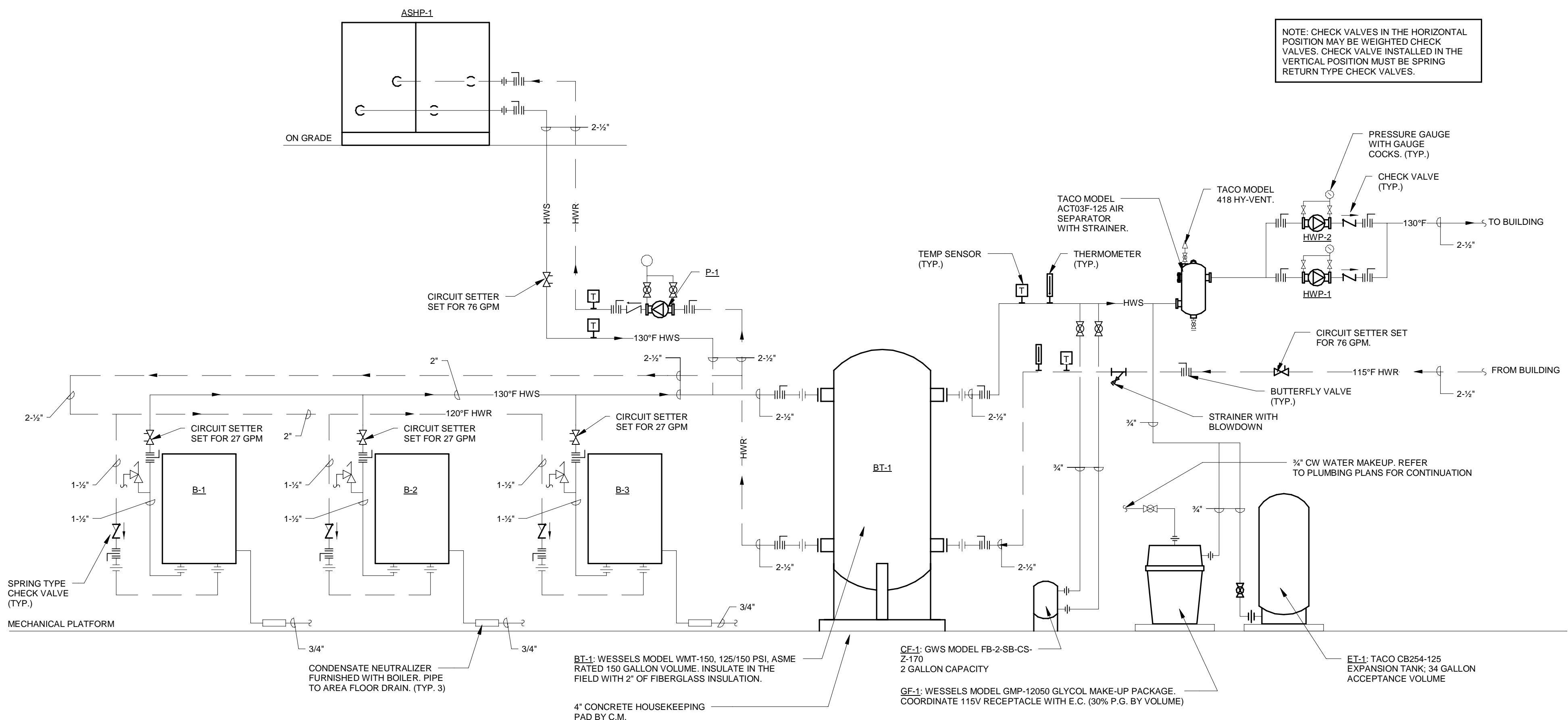
ROOF PLAN - MECHANICAL

SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

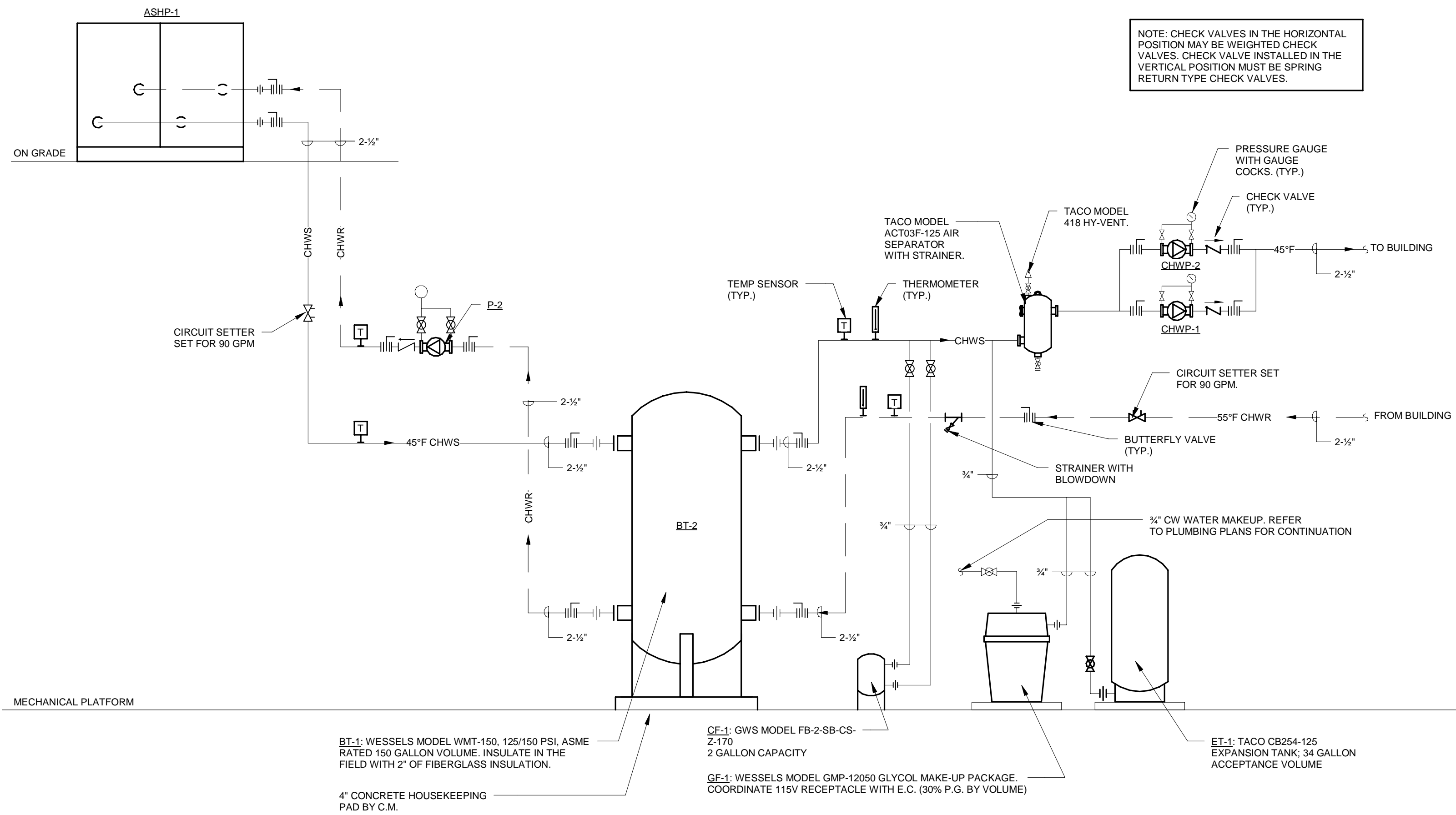
M1.3





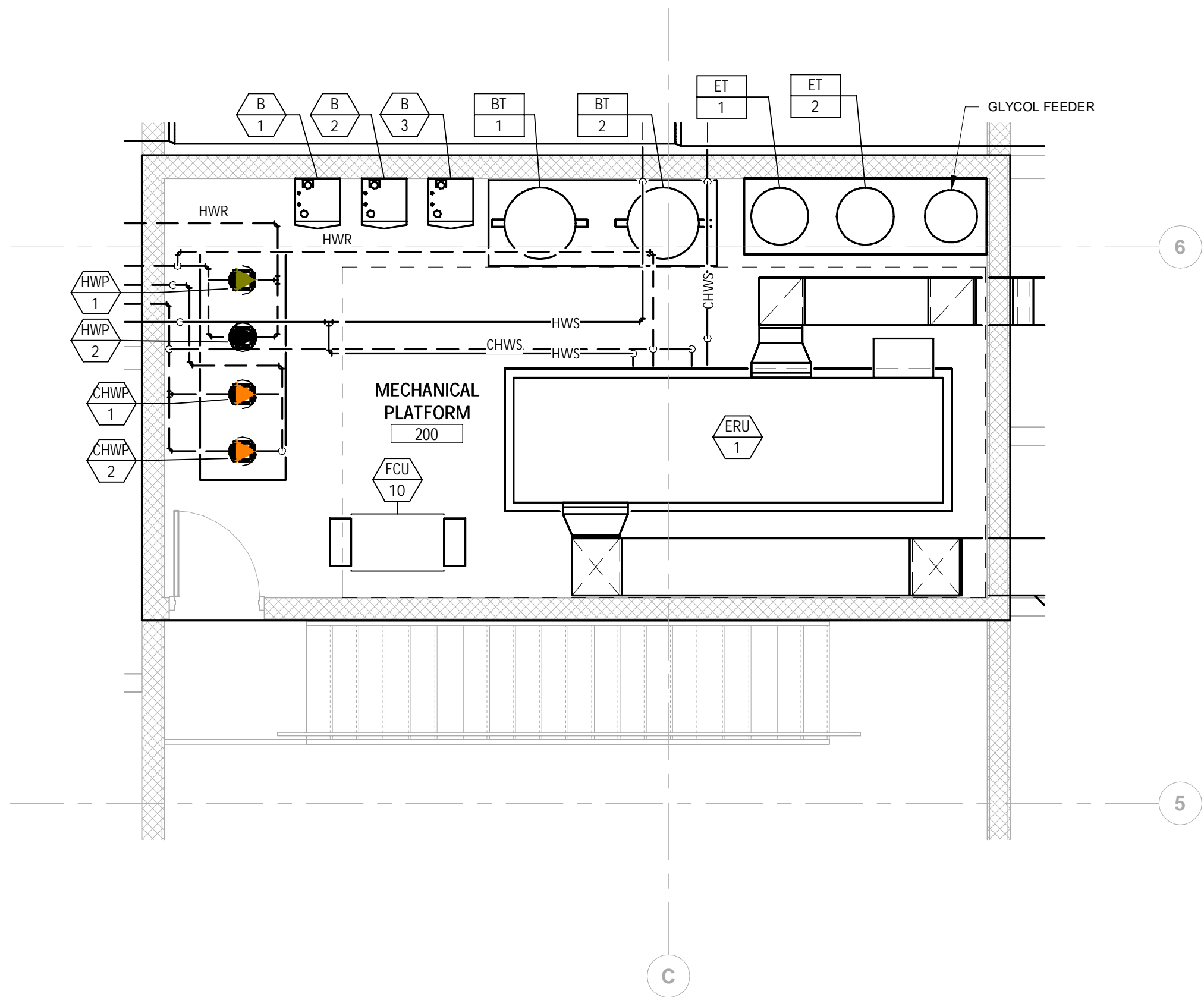
HOT WATER PLANT PIPING DIAGRAM

SCALE: NTS



CHILLED WATER PLANT PIPING DIAGRAM

SCALE: NTS



MECHANICAL MEZZANINE - ENLARGED PLAN

SCALE: 1/4" = 1'-0"



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ENLARGED PLANS

SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

M3.1





RADIANT FLOOR ZONING PLAN  
SCALE: 1/8" = 1'-0"

SEAL:

CITY OF CARIBOU, MAINE  
CARIBOU POLICE DEPARTMENT

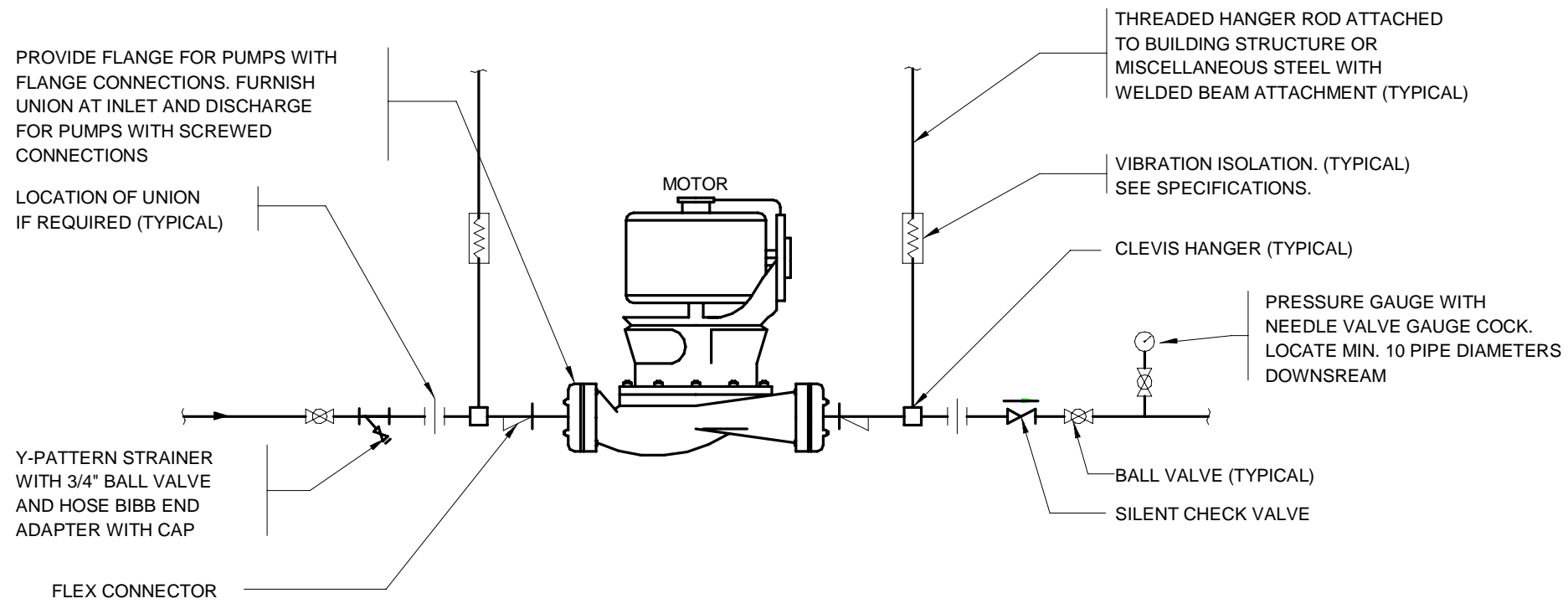
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RADIANT FLOOR ZONING PLAN  
SHEET

PRELIMINARY - NOT FOR CONSTRUCTION

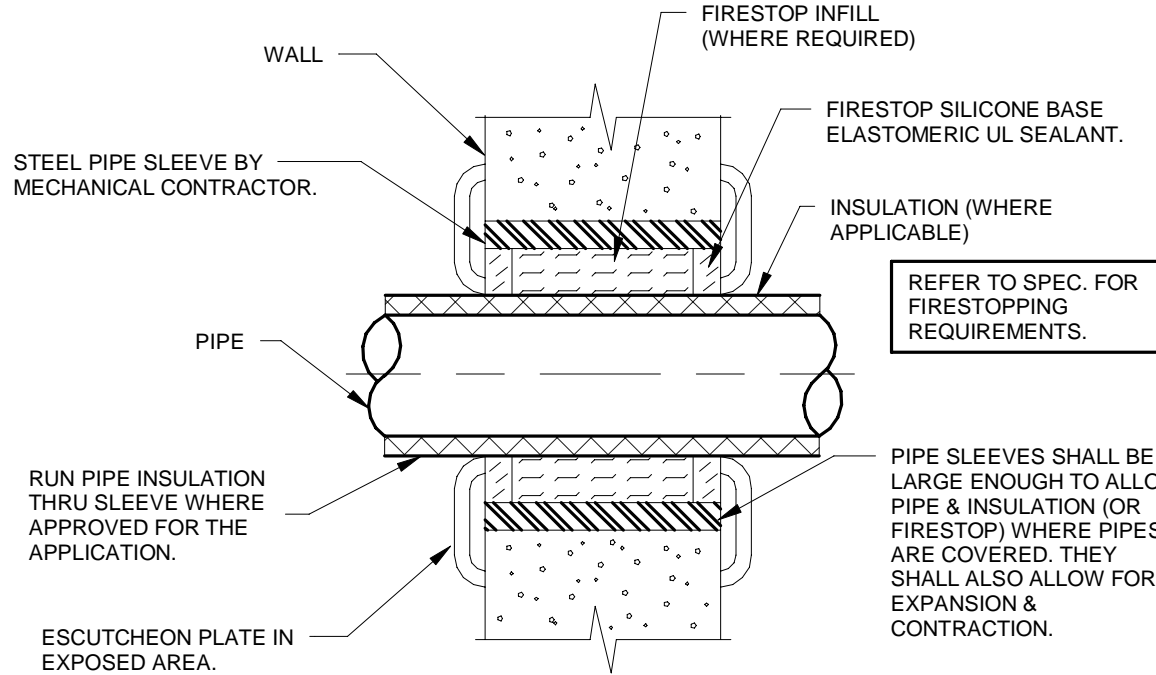
M4.1





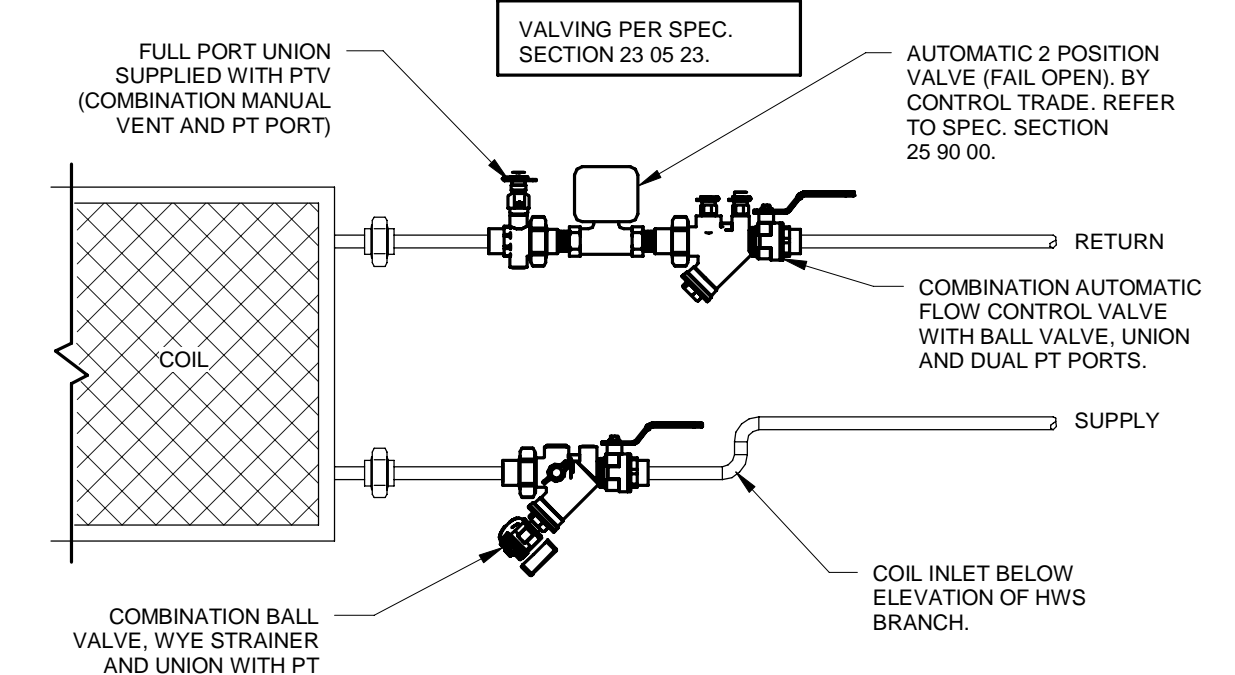
IN-LINE PUMP SUSPENDED INSTALLATION DETAIL

SCALE: NTS



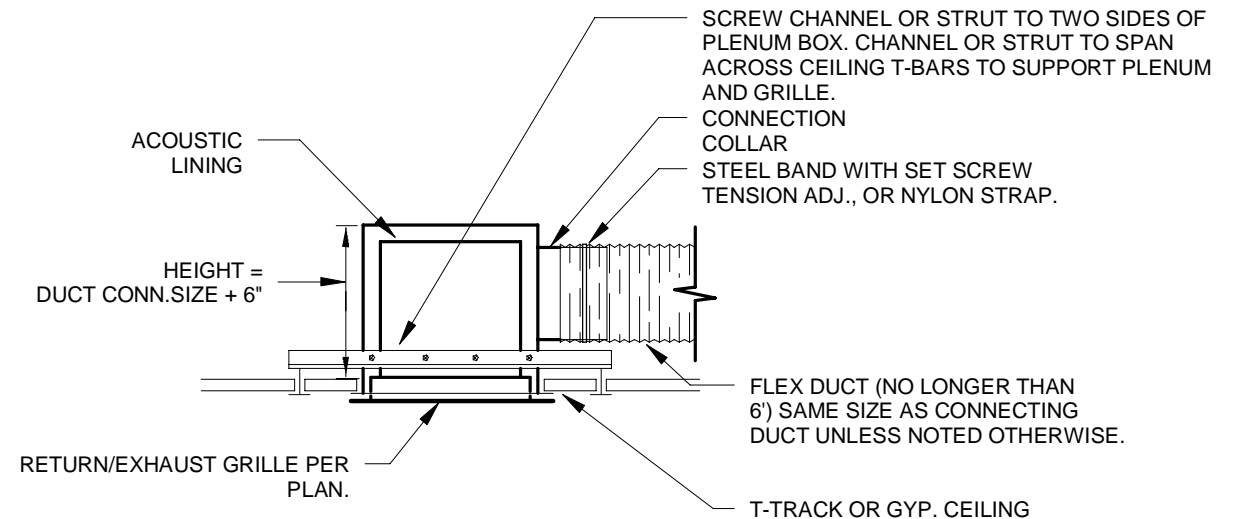
PIPE SLEEVE THRU WALL

SCALE: NTS

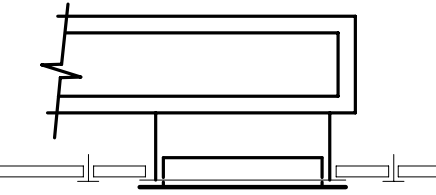


TYPICAL 2-WAY COIL PIPING DETAIL

SCALE: NTS



TYP. FLEX CONN.

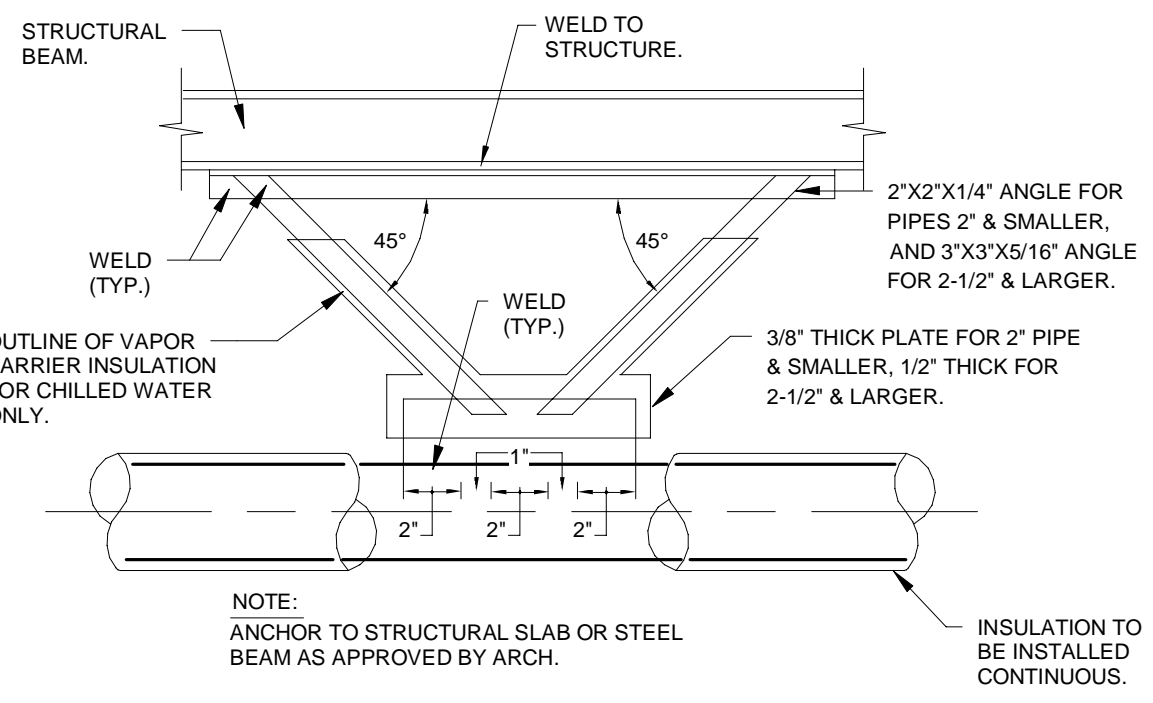


TYP. HARD CONN.

- NOTES:
1. DOUBLE STRAPS ARE REQUIRED ON INSULATED FLEX DUCT, ONE OVER THE ACTUAL DUCT TRIM EXCESS INSULATION TO PROVIDE A NEAT FINISHED PRODUCT.
  2. FLEX DUCT MUST BE SUPPORTED AT INTERVALS NECESSARY TO AVOID EXCESSIVE SAGS WITH SHEET METAL BAND HANGERS.
  3. GRILLES MUST BE SUPPORTED SEPARATE OF THE CEILING TILE IN WHICH PLACED TO AVOID WEIGHT INFLUENCE ON THE TILE.
  4. ALL DUCTWORK THAT IS VISIBLE THROUGH THE GRILLE THAT DOES NOT HAVE ACOUSTIC LINING SHALL BE PAINTED FLAT BLACK.

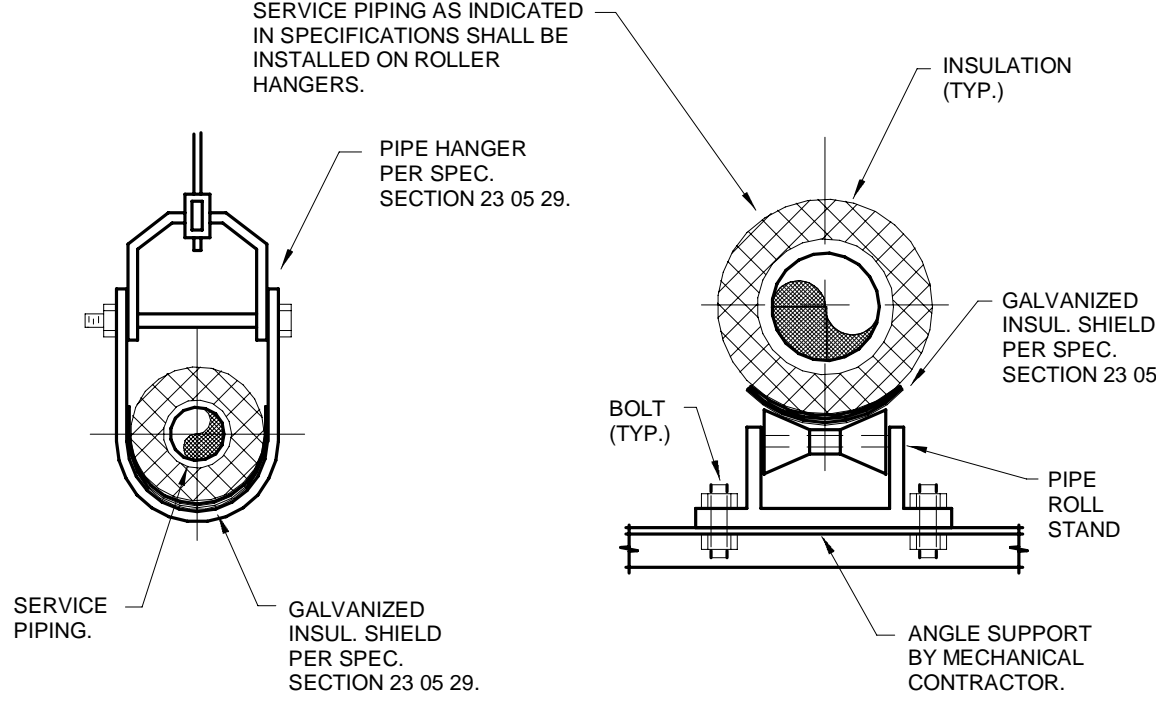
TYPICAL RETURN/EXHAUST GRILLE DETAIL

SCALE: NTS



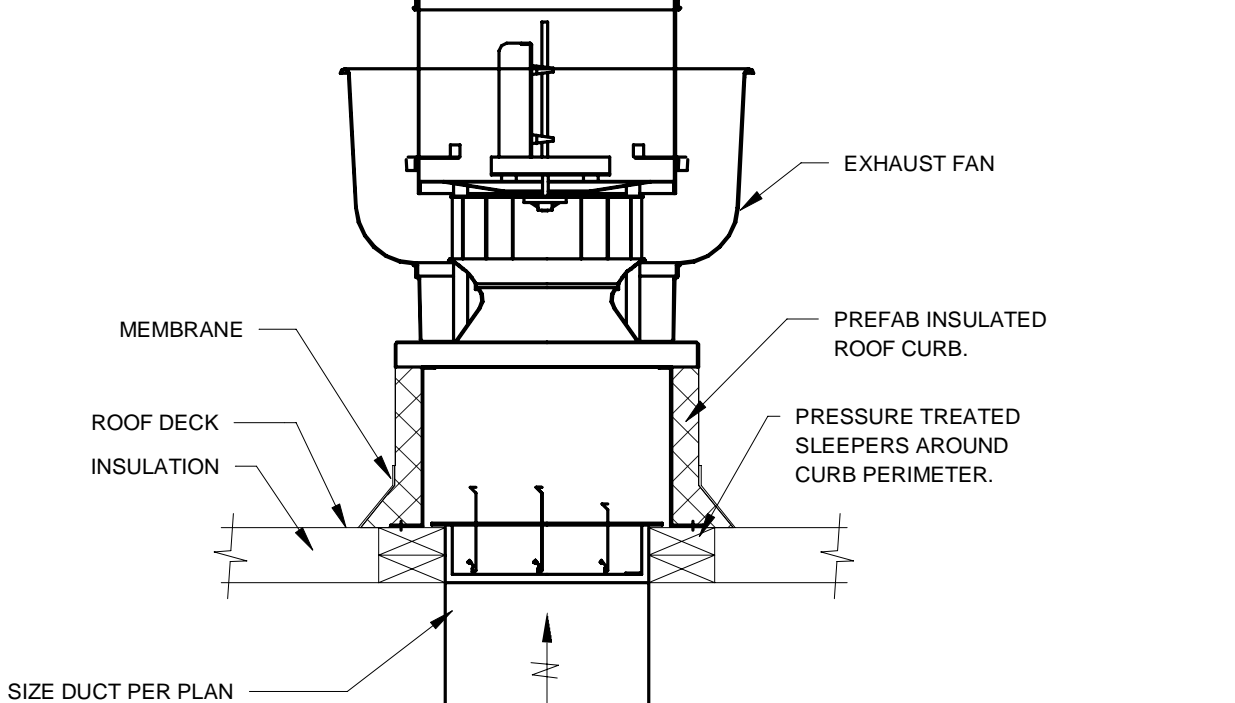
TYPICAL HORIZONTAL PIPE ANCHOR DETAIL

SCALE: NTS



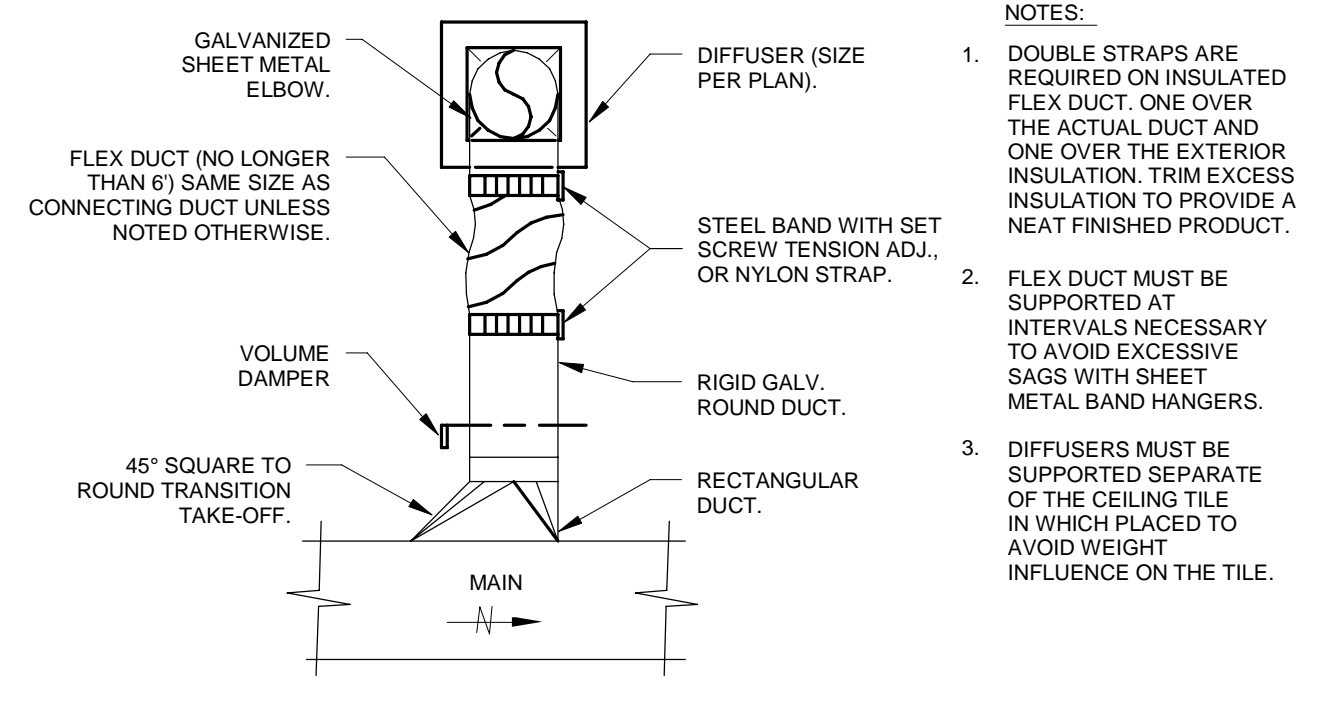
TYPICAL PIPE HANGER & ROLLER DETAIL

SCALE: NTS



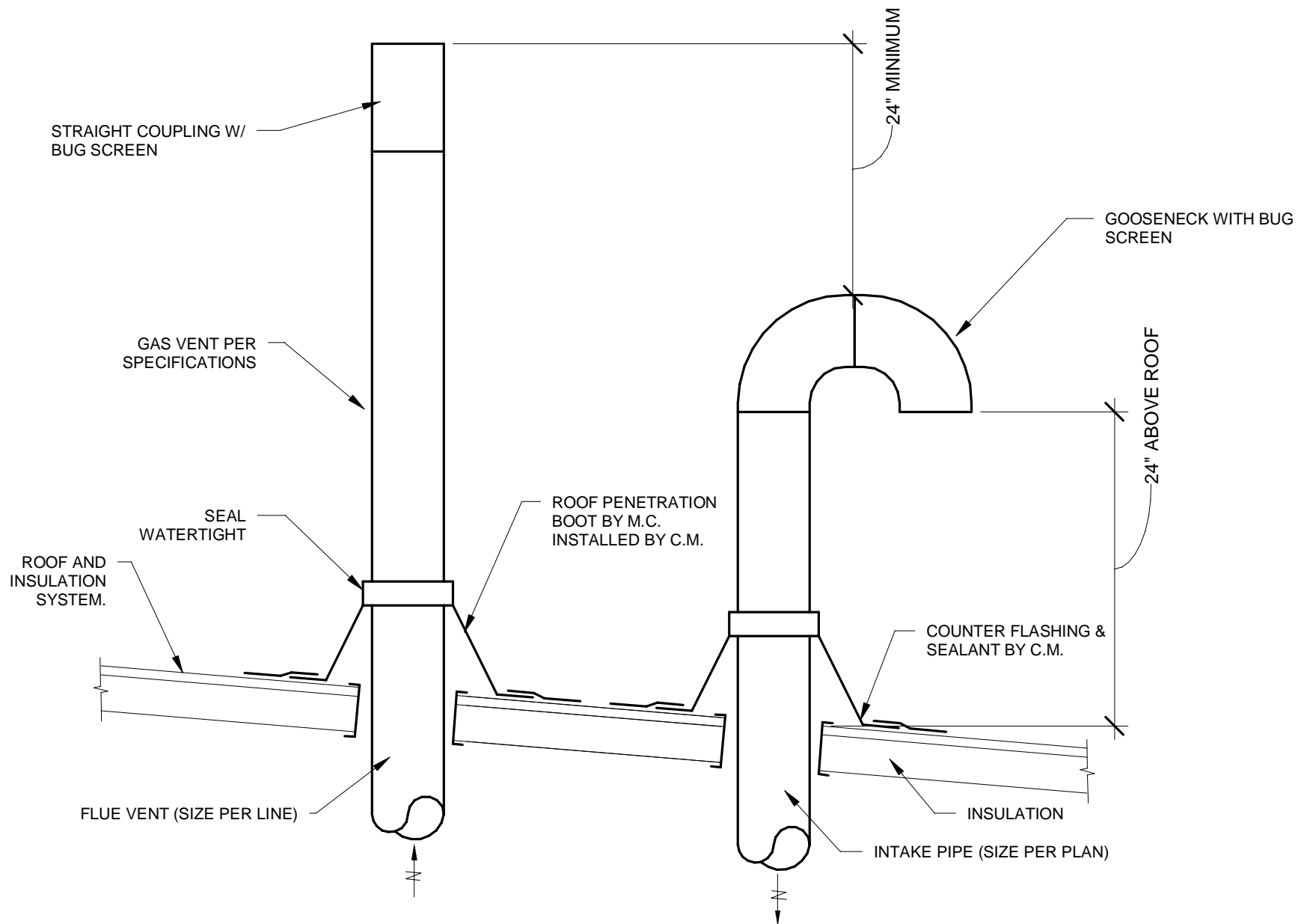
ROOF EXHAUST FAN DETAIL

SCALE: NTS



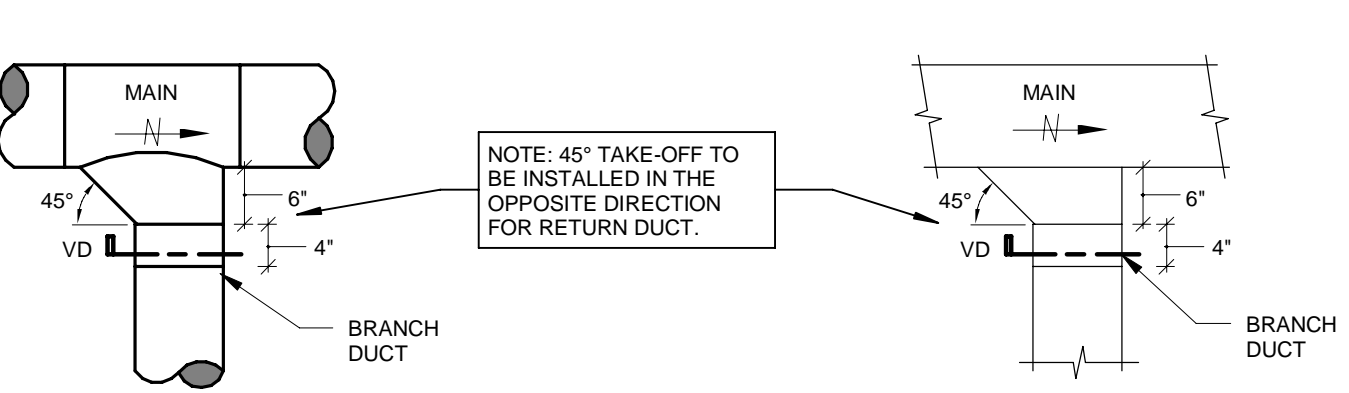
TYPICAL BRANCH TAKE-OFF DETAIL

SCALE: NTS



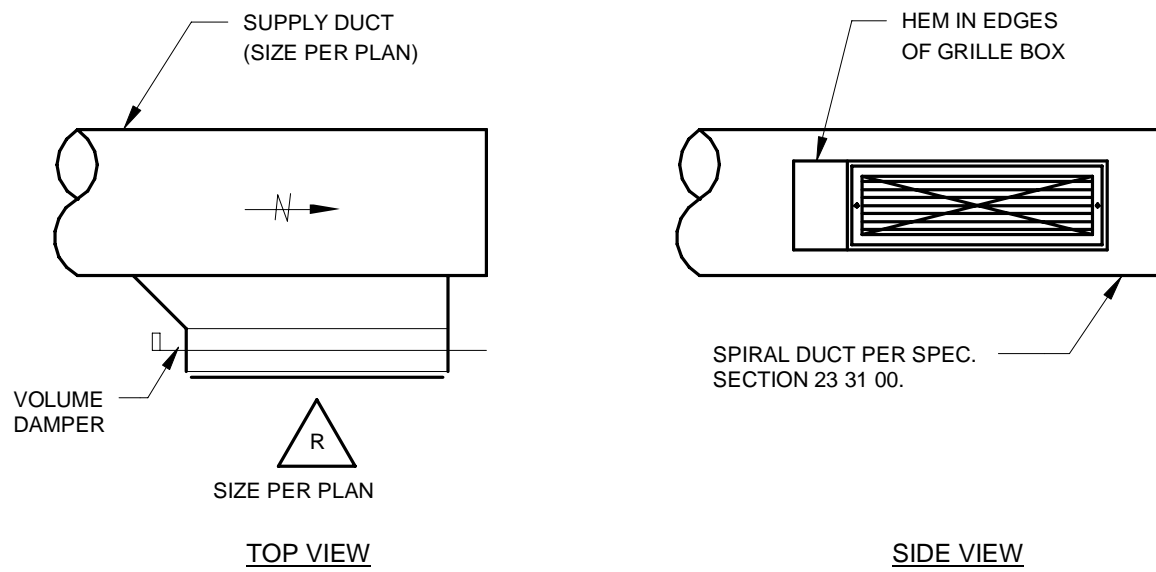
THRU-ROOF BOILER FLUE AND INTAKE DETAIL

SCALE: NTS



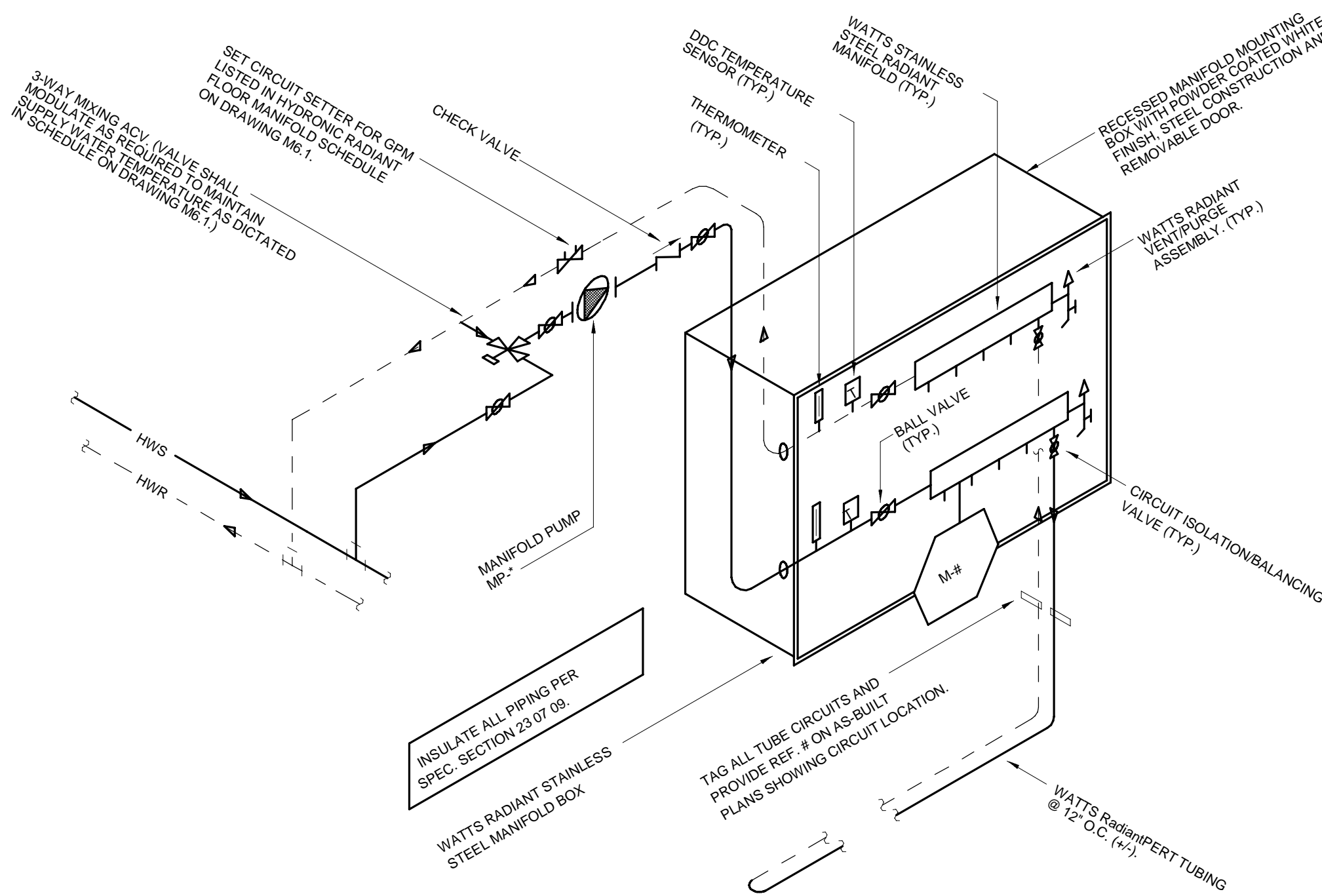
TYPICAL DUCT TAKE OFF DETAIL

SCALE: NTS



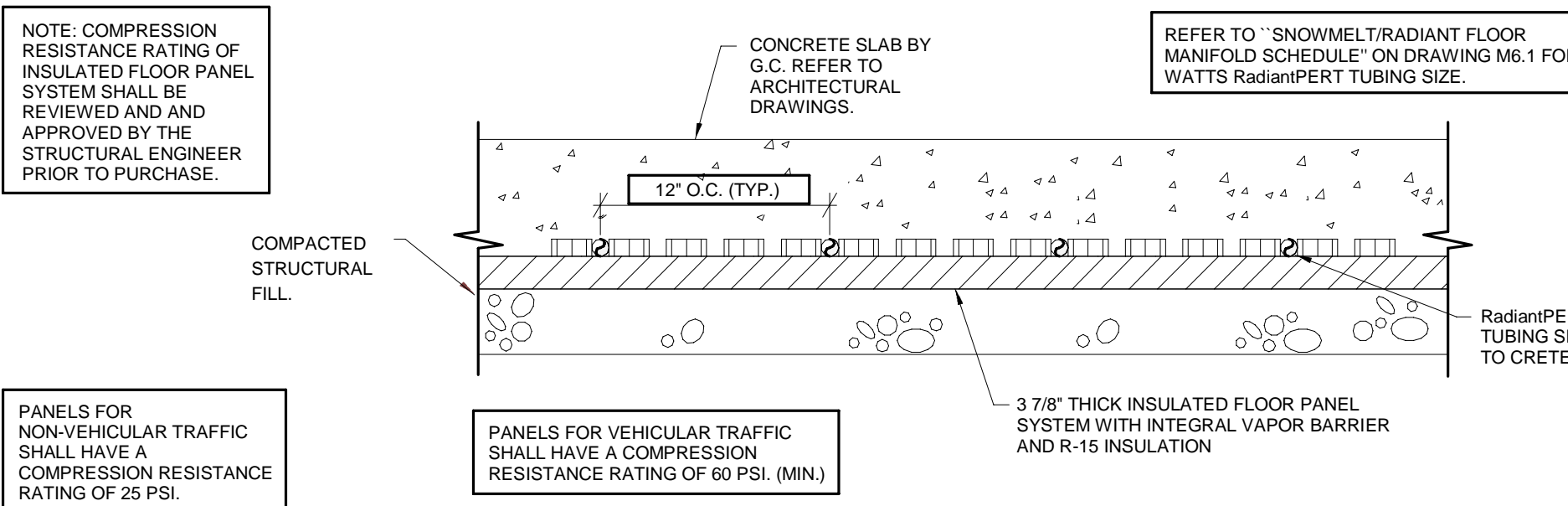
SPIRAL DUCT GRILLE INSTALLATION DETAIL

SCALE: NTS



IN-SLAB RADIANT MANIFOLD DETAIL

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



RADIANT AND SNOWMELT TUBING INSTALLATION DETAIL

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



DEDICATED OUTDOOR AIR SYSTEM SCHEDULE																																									
NO.	MAKE & MODEL	SUPPLY AIR (CFM)	EXHAUST AIR (CFM)	HEATING						COOLING						TOTAL ENERGY WHEEL						RETURN/EXHAUST FAN				SUPPLY FAN						ELECTRICAL						WEIGHT (LBS)	REMARKS		
				MBH	EWT (°F)	ΔT (°F)	GPM	WPD (FT)	EAT (°F)	LAT (°F)	TOTAL CAPACITY...	SENSIBLE CAPACITY (MBH)	EWT (°F)	ΔT (°F)	GPM	WPD (FT)	EAT (°F)	LAT (°F)	SUMMER			WINTER			AIRFLOW (CFM)	TYPE	HP	ESP (IN. WG)	RPM	AIRFLOW (CFM)	TYPE	HP	ESP (IN. WG)	RPM	VOLTS	PH	CY			MCA	MOCP
																			OAT	RAT	LAT	OAT	RAT	LAT																	
DOAS-1	GREENHECK RVE-40-41E	3,200	2,100	213.2	120	10	43.2	8.1	28.2	89.8	116.9	100.5	45	10	23	10.6	79.8/63.6	51.1/50.8	84.5/64.6	75/63	80/64	-15/-15	72/56	28.2	2,100	VFD	1.5	1.5"	1,601	3,200	VFD	3	2.0"	2,049	208	3	60	16.8	25	2,446	1
1	FURNISH UNIT WITH INDOOR CABINET WITH SIDE DISCHARGE AND INTAKE CONNECTION CONFIGURATION. FURNISH UNIT WITH WITH ALL STANDARD FEATURES INCLUDING FACTORY SUPPLIED AND MOUNTED VFD FOR SUPPLY & EXHAUST, DOUBLE WALL INSULATED CONSTRUCTION, ECONOMIZER MODE, SINGLE POINT POWER CONNECTION, UNIT MOUNTED NON-FUSED DISCONNECT, BACnet®IP CONTROLLER, PREMIUM EFFICIENCY MOTORS, LOW LEAKAGE MOTORIZED ISOLATION DAMPERS, PHASE/BROWNOUT PROTECTION, SS CONDENSATE DRAIN PAN AND CONNECTION WITH OVERFLOW SWITCH, 2" MERV 8 PRE-FILTERS ON SUPPLY AND EXHAUST (2 SETS), 2" MERV 13 SUPPLY AIR FILTER, VIBRATION ISOLATION, R-13 FOAM CABINET INSULATION, AND FACTORY STARTUP. REFER TO SPECIFICATIONS FOR SEQUENCE OF OPERATION.																																								

AIR SOURCE HEAT PUMP SCHEDULE																										
UNIT	MAKE & MODEL	SYSTEM TYPE	QTY OF MODULES	FLUID TYPE	REFRIGERANT TYPE	COMPRESSOR TYPE	HEATING DATA						COOLING DATA						COP @ 10°F	WIEIGHT (LBS)	ELECTRICAL					REMARKS
							CAPACITY AT 5°F (MBH)	HEATING MIN. (MBH)	LWT	EWT	GPM	WPD	COOLING AT 85°F (MBH)	LWT	EWT	GPM	WPD	VOLTS			PH	CY	MCA	MOCP		
ASHP-1	QUANTECH QTH10035	AIR TO WATER	1	30%P.G.	R454B	SCROLL	230.7	31.0	130°F	115°F	48.5	4.99'	421	45°F	55°F	90	18.4'	--	2,668	480	3	60	74	100	1	
1	FURNISH ALL EQUIPMENT REQUIRED FOR PROPER INSTALLATION. INSTALL PER MANUFACTURER'S PUBLISHED INSTRUCTIONS. PROVIDE MANUFACTURER START UP AND SET UP. ELECTRICAL CONTRACTOR TO FURNISH, INSTALL AND WIRE WEATHERPROOF DISCONNECTS FOR HEAT PUMP.																									

DEHUMIDIFIER SCHEDULE															
UNIT	MAKE & MODEL	SYSTEM TYPE	CFM	E.S.P.	MOISTURE REMOVAL	REACTIVATION AIRFLOW (CFM)	REACTIVATIO N E.S.P.	REACTIVATION HEATER	WEIGHT (LBS)	ELECTRICAL					REMARKS
										VOLTS	PH	CY	MCA	MOCP	
DHU-1	MUNTERS HC-150	DESSICANT	150	0.75"	4.8 LB/HR	55	0.15"	2.9kW	70	115	1	60	15.5	--	1
1	FURNISH ALL EQUIPMENT REQUIRED FOR PROPER INSTALLATION. INSTALL PER MANUFACTURER'S PUBLISHED INSTRUCTIONS. PROVIDE MANUFACTURER LOW VOLATGE HUMIDISTAT.														

FAN COIL SCHEDULE															
NO.	MAKE & MODEL	MODE	CFM	MBH	EAT	LAT	EWT	ΔT	GPM	WPD	ROWS	HEIGHT	WIDTH	WEIGHT	REMARKS
FCU-1	WILLIAMS LH003W4R3317000	Cooling	311	9.2	80	-	45	10	1.8	1.1	3	11	26	97	1
		Heating	317	21.1	70	-	180	20	1.8	1.2					
FCU-2	WILLIAMS LH002W4R3317000	Cooling	318	8.5	80	-	45	10	1.7	1.0	3	11	26	106	1
		Heating	295	17.0	70	-	180	20	0.7	3.1					
FCU-3	WILLIAMS HH006W4R4417000	Cooling	755	16.4	80	-	45	10	3.3	1.1	4	18	32	135	1
		Heating	755	56.2	70	-	180	20	6.3	1.6					
FCU-4	WILLIAMS HH006W4R4417000	Cooling	755	16.4	80	-	45	10	3.3	1.1	4	18	32	135	1
		Heating	755	56.2	70	-	180	20	6.3	1.6					
FCU-5	WILLIAMS HH006W4R4417000	Cooling	755	16.4	80	-	45	10	3.3	1.1	4	18	32	135	1
		Heating	755	56.2	70	-	180	20	6.3	1.6					
FCU-6	WILLIAMS HH008W4R4417000	Cooling	855	22.5	80	-	45	10	4.5	2.0	4	18	32	143	1
		Heating	855	63.2	70	-	180	20	7.7	2.7					
FCU-7	WILLIAMS HH012W4R4417000	Cooling	1340	40.1	80	-	45	10	8.0	4.1	4	18	32	163	1
		Heating	1340	125.9	70	-	180	20	12.6	4.7					
FCU-8	WILLIAMS HH010W4R4417000	Cooling	1120	32.8	80	-	45	10	6.6	4.3	4	18	32	274	1
		Heating	1120	103.5	70	-	180	20	10.3	5.1					
FCU-9	WILLIAMS HH008W4R4417000	Cooling	855	22.5	80	-	45	10	4.5	2.0	4	18	32	143	1
		Heating	855	63.2	70	-	180	20	7.7	2.7					
FCU-10	WILLIAMS LH002W4R3317000	Cooling	318	8.5	80	-	45	10	1.7	1.0	3	11	26	106	1
		Heating	295	17.0	70	-	180	20	0.7	3.1					
1	COPPER COIL WITH ALUMINUM FINS (148 FINS/FT) AND TURBULATORS. INSTALL WITH HANGING RODS AND FLEX CONNECTORS AT DUCT CONNECTIONS.														

PUMP SCHEDULE									
NO.	SERVES	MAKE & MODEL	GPM @ FT. OF HEAD	HP	EFF.	ELECTRICAL			REMARKS
						VOLTS	PH	CY	
HWP-1	HEATING HOT WATER LOOP	GRUNDFOS CRE-DP 20-1	106 @ 40'	3	59%	208	3	60	VFD / DISCONNECT
CHWP-1	HEATING HOT WATER LOOP	GRUNDFOS CRE-DP 20-1	90 @ 40'	3	59%	208	3	60	VFD / DISCONNECT
MP-1 THRU MP-9	RADIANT FLOOR PUMPS	TACO 007E	--	0.5	--	120	1	60	ECM / DISCONNECT
1	PUMP SELECTED BASED ON 30%P.G./70% WATER. PROVIDE PUMP WITH INTEGRAL SPEED CONTROL AND VFD. E.C. TO PROVIDE AND INSTALL SEPARATE SERVICE SWITCH DISCONNECT. PUMP SHALL BE SET UP FOR LOCAL CONTROL VIA INTEGRAL DELTA-P PROPORTIONAL CONTROL.								
2	PUMP SELECTED BASED ON 30%P.G./70% WATER. PROVIDE PUMP WITH INTEGRAL SPEED CONTROL. E.C. TO PROVIDE AND INSTALL SEPARATE SERVICE SWITCH DISCONNECT.								

RADIANT FLOOR MANIFOLD SCHDULE												
NO.	SERVES	MANUFACTURER	AREA	OUTPUT (MBH)	GPM	EWT	WATER ΔT	WPD	# OF CIRCUITS	TUBE SIZE	TUBE SPACING	CIRCUIT LENGTH
M-1	RADIANT ZONE 1: LOCKERS	WATTS	1,200	21.7	2.5	99.5°	20°	2.0'	5	1/2"	12"	290'
M-2	RADIANT ZONE 2: EVIDENCE	WATTS	1,200	21.7	2.5	99.5°	20°	2.0'	5	1/2"	12"	290'
M-3	RADIANT ZONE 3: SALLY PORT	WATTS	930	17.7	2.0	100.7°	20°	2.0'	4	1/2"	12"	280'
M-4	RADIANT ZONE 4: PROCESSING / HOLDING	WATTS	1,115	20.1	2.3	99.5°	20°	1.6'	5	1/2"	12"	270'
M-5	RADIANT ZONE 5: FITNESS	WATTS	535	9.7	1.2	99.6°	20°	2.6'	2	1/2"	12"	300'
M-6	RADIANT ZONE 6: WORK AREA	WATTS	1,305	19.7	2.3	95.7°	20°	1.8'	5	1/2"	12"	300'
M-7	RADIANT ZONE 7: LOBBY	WATTS	785	16.5	1.9	103.2°	20°	3.0'	3	1/2"	12"	300'
M-8	RADIANT ZONE 8: OFFICES	WATTS	1,645	34.6	3.9	103.3°	20°	3.4'	6	1/2"	12"	300'
M-9	RADIANT ZONE 9: CONFERENCE	WATTS	435	10.5	1.2	106.8°	20°	2.4'	2	1/2"	12"	260'
1	FURNISH RADIANTPERT TUBING (OR EQUAL) AND PRE-ASSEMBLED STAINLESS STEEL MANIFOLDS COMPLETE WITH VENT/PURGE ASSEMBLY, DRAIN VALVE AND ALL HARDWARE AND ACCESSORIES REQUIRED FOR A COMPLETE AND PROPER INSTALLATION. INSTALL IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED INSTRUCTIONS. REFER TO "TYPICAL IN-SLAB RADIANT HEAT PIPING DIAGRAM" ON DRAWING M5.2. EQUIPMENT IS SELECTED FOR 30%P.G./70% WATER.											

CIRCUIT SETTER SCHEDULE	
GPM	CIRCUIT SETTER SIZE
UP TO 3.8	1/2"
3.9 TO 5.5	3/4"
5.6 TO 8.5	1"
8.6 TO 14.0	1-1/4"
14.1 TO 20.0	1-1/2"
20.1 TO 33.0	2"
33.1 TO 100.0	2 1/2"
100.1 TO 117.0	3"
118.0 AND UP	4"
NOTE: BASED ON MACON BALANCING GLOBE STYLE MODEL STVL OR STVA. TO RETAIN FULL CALIBRATED ACCURACY, A LENGTH OF UNRESTRICTED PIPE EQUIVALENT TO 3 PIPE DIAMETERS UPSTREAM AND DOWNSTREAM SHOULD BE MAINTAINED IMMEDIATELY ADJACENT TO CIRCUIT SETTER BALANCE VALVES. CIRCUIT SETTERS TO BE SIZED PER SCHEDULE EXCEPT WHERE SIZED ON PLANS.	