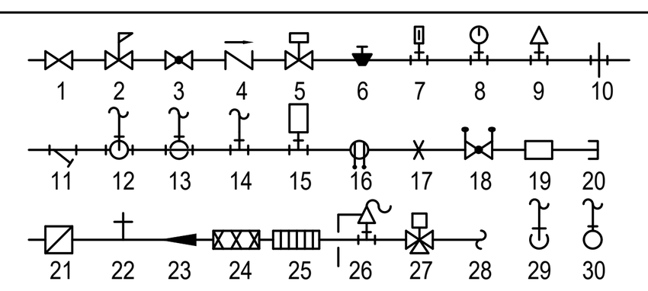
SYMBOL	ABBREV.	DESCRIPTION
—·—	CW	COLD WATER
—··—	HW	HOT WATER
—···—	RHW	RECIRCULATED HOT WATER
— A —	A	AIR
— AV —	AV	ACID VENT
— AW —	AW	ACID WASTE
— CD —	CD	CONDENSATE
— CHR —	CHR	CHILLED WATER RETURN
— CHS —	CHS	CHILLED WATER SUPPLY
— CWR —	CWR	CONDENSER WATER RETURN
— CWS —	CWS	CONDENSER WATER SUPPLY
— DI —	DI	DEIONIZED WATER
— DS —	DS	DOWNSPOUT (RAINWATER)
— DWR —	DWR	DUAL WATER RETURN
— DWS —	DWS	DUAL WATER SUPPLY
— FOR —	FOR	FUEL OIL RETURN
— FOS —	FOS	FUEL OIL SUPPLY
— FOV —	FOV	FUEL OIL VENT
— FSPR —	FSPR	FIRE SPRINKLER
— G —	G	NATURAL GAS LINE (FIRM)
— GI —	GI	GREASE INTERCEPTOR
— HG —	HG	HOT GAS
— HPR —	HPR	HIGH PRESSURE STEAM RETURN
— HPS —	HPS	HIGH PRESSURE STEAM SUPPLY
— HWR —	HWR	HEATING WATER RETURN
— HWS —	HWS	HEATING WATER SUPPLY
— IG —	IG	NATURAL GAS LINE (INTERRUPTIBLE)
— LPG —	LPG	LIQUIFIED PETROLEUM GAS
— LPR —	LPR	LOW PRESSURE STEAM RETURN
— LPS —	LPS	LOW PRESSURE STEAM SUPPLY
— LSPR —	LSPR	LAWN SPRINKLER
— MPR —	MPR	MEDIUM PRESSURE STEAM RETURN
— MPS —	MPS	MEDIUM PRESSURE STEAM SUPPLY
— NP· —	NPCW	NON POTABLE COLD WATER
— NP·· —	NPHW	NON POTABLE HOT WATER
— NP··· —	NPRHW	NON POTABLE RECIRCULATED HOT WATER
— O —	O	OXYGEN
— ORD —	ORD	OVERFLOW DRAIN
— RL —	RL	REFRIGERANT LIQUID
— RS —	RS	REFRIGERANT SUCTION
— S· —	SCW	SOFT COLD WATER
— S·· —	SHW	SOFT HOT WATER
— S··· —	SRHW	SOFT RECIRCULATED HOT WATER
— SD —	SD	STORM DRAIN
— TW —	TW	TEMPERED WATER
— V —	V	VENT
— VAC —	VAC	VACUUM
— W —	W	WASTE ABOVE GRADE
- - W - -	W	WASTE BELOW FLOOR
— W —	W	WASTE BELOW GRADE

SYMBOL & DESCRIPTION



1. SHUT-OFF VALVE
2. PRESSURE REDUCING VALVE
3. BALANCE VALVE
4. CHECK VALVE
5. CONTROL VALVE
6. GAS COCK
7. THERMOMETER
8. PRESSURE GAUGE
9. MANUAL AIR VENT
10. UNION
11. STRAINER W/DRAIN VALVE
12. TOP CONNECTION TEE W/ELBOW
13. BOTTOM CONNECTION TEE W/ELBOW
14. SIDE CONNECTION TEE
15. SHOCK ABSORBER
16. FLOW METER FITTING
17. PIPE ANCHOR
18. BALANCE VALVE W/FLOW METER FITTING
19. FLOW CONTROL VALVE
20. PIPE CAP, PLUG OR CLEANOUT
21. FLOAT AND THERMOSTATIC TRAP
22. PRESSURE AND TEMPERATURE TEST PORT
23. FLOW DIRECTION ARROW
24. EXPANSION JOINT
25. FLEX CONNECTOR
26. PRESSURE AND TEMPERATURE RELIEF VALVE
27. THREE WAY CONTROL VALVE
28. CONTINUATION SYMBOL
29. PIPE DOWN
30. PIPE UP

SYMBOL	ABBREV.	DESCRIPTION
		SPLASH BLOCK
		CONNECTION TO EXISTING
		POINT OF DISCONNECT
	CO	CLEANOUT
	WH	WALL HYDRANT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	HB	HOSE BIBB
	WCO	WALL CLEANOUT
	FCO	FLOOR CLEANOUT
	DCO	DOUBLE CLEANOUT
	TD	TRENCH DRAIN
	RD	ROOF DRAIN

SYMBOL	DESCRIPTION
	SUPPLY/OUTSIDE AIR DUCT UP (S/A OR O/A)
	SUPPLY/OUTSIDE AIR ROOF/FLOOR PENETRATION
	SUPPLY/OUTSIDE AIR DUCT DOWN (S/A OR O/A)
	RETURN AIR DUCT UP (R/A)
	RETURN AIR ROOF/FLOOR PENETRATION
	RETURN AIR DUCT DOWN (R/A)
	EXHAUST AIR DUCT UP (E/A)
	EXHAUST AIR ROOF/FLOOR PENETRATION
	EXHAUST AIR DUCT DOWN (E/A)
	ROUND DUCT SECTION UP
	ROUND DUCT ROOF/FLOOR PENETRATION
	ROUND DUCT SECTION DOWN
1/2	1. WIDTH DIMENSION 2. DEPTH DIMENSION
R	DUCT RISE IN DIRECTION
D	DUCT DROP IN DIRECTION
1/2, 3	1. WIDTH DIMENSION 2. WIDTH DIMENSION 3. DEPTH DIMENSION
R, W	TYPICAL DUCT TURN R EQUAL TO W (MINIMUM)
	TYPICAL DUCT TURN WITH TURN VANES
1., 2., 1/2 A	1. CONICAL TAKE-OFF 2. BRANCH DUCT INTO SIDE OF MAIN DUCT
	TYPICAL SQUARE TO ROUND TRANSITION
	FLEXIBLE DUCT CONNECTION (CANVAS)
M S 1. 2. 3.	1. MOTORIZED DAMPER 2. FIRE DAMPER 3. SMOKE DAMPER
B P S 1. 2. 3.	1. BACKDRAFT DAMPER 2. STATIC PRESSURE SENSOR 3. FIRE/SMOKE DAMPER
1. 2 3.	1. REHEAT COIL 2. SPLITTER DAMPER 3. MANUAL VOLUME DAMPER
D-X X"Ø CFM XXX	SUPPLY AIR DIFFUSER TAG
G-X X"/X" CFM XXX	RETURN GRILLE TAG
T	THERMOSTAT
T	THERMOSTAT W/LOCKING COVER
T N	NIGHT THERMOSTAT
T A	RECESSED STAT (ASPIRATING)
H	HUMIDISTAT
S	OCCUPIED-UNOCCUP. SWITCH
X	KEYED NOTES
X	KEYED DEMOLITION NOTES
X	REVISION NOTE NUMBER

ABBREVIATIONS

AF	AIRFOIL
AC-X	AIR COMPRESSOR
A/C	AIR CONDITIONING
ACCU-X	AIR COOLED CONDENSING UNIT
AHU-X	AIR HANDLING UNIT
AIR PD	AIR PRESSURE DROP
AS-X	AIR SEPARATOR
ATU	AIR TERMINAL UNIT
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
ASHRAE	AMERICAN SOCIETY OF HEATING, REFRIGERATION AND AIR CONDITIONING ENGINEERS
AMP	AMPERE
ANG	ANGLE
A	AREA
AD-X	AIR DOOR
APPROX	APPROXIMATE
AUX	AUXILIARY
ATM	ATMOSPHERE
AVG	AVERAGE
BI	BACKWARD INCLINED
BIBC	BACKWARD INCLINED BACKWARD CURVED
BOD	BOTTOM OF DUCT
BOJ	BOTTOM OF JOIST
B-X	BOILER
BHP	BREAK HORSE POWER
BTU	BRITISH THERMAL UNIT
BLDG	BUILDING
CUH-X	CABINET UNIT HEATER
CLG	CEILING
C TO C	CENTER TO CENTER
CL	CENTER LINE
CENT	CENTRIFUGAL
CF-X	CHEMICAL FEED SYSTEM
CHR	CHILLED WATER RETURN
CHS	CHILLED WATER SUPPLY
CH-X	CHILLER
CPVC	CHLORINATED POLYVINYL CHLORIDE
CLR	CLEAR
CO	CLEANOUT
CMPR	COMPRESSOR
CRAC-X	COMPUTER ROOM AIR CONDITIONER
CP-X	CONDENSATE PUMP
CDU	CONDENSER UNIT
CU-X	CONDENSING UNIT
CUHP-X	CONDENSING UNIT HEAT PUMP
CV	CONSTANT VOLUME / CONTROL VALVE
CCC-X	CLOSED CIRCUIT COOLER (FLUID COOLER)
CC-X	COOLING COIL
CT-X	COOLING TOWER
CU FT	CUBIC FEET
CFM	CUBIC FEET PER MINUTE
CU IN	CUBIC INCH
DEG	DEGREE
DP	DEPTH / DEEP
DIA	DIAMETER
D-X	DIFFUSER
DX	DIRECT EXPANSION
DISC	DISCONNECT
DWG	DRAWING
DB	DRY BULB (Temperature)

DDVAV	DUAL DUCT VARIABLE AIR VOLUME
DC-X	DUST COLLECTOR
DWDI	DOUBLE WHEEL DOUBLE INLET
ERAD-X	ELECTRIC BASEBOARD RADIATOR
EFT-X	ELECTRIC FIN TUBE
ERH-X	ELECTRIC RADIANT HEATER
EUH-X	ELECTRIC UNIT HEATER
EL/ELEV	ELEVATION
ERV-X	ENERGY RECOVERY VENTILATOR
EAT	ENTERING AIR TEMPERATURE
EWT	ENTERING WATER TEMPERATURE
EQUIP	EQUIPMENT
ECU-X	EVAPORATIVE CONDENSING UNIT
EVAP	EVAPORATOR
EXH	EXHAUST
EA	EXHAUST AIR
EF-X	EXHAUST FAN
EH-X	EXHAUST HOOD
EXIST	EXISTING
ET-X	EXPANSION TANK
ESP	EXTERNAL STATIC PRESSURE
°F	DEGREE FAHRENHEIT
FCU-X	FAN COIL UNIT
FPB-X	FAN POWERED BOX
FT	FEET
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT-X	FIN TUBE
FF-X	FINAL FILTER
FLT-X	FLASH TANK
FLR	FLOOR
FC-X	FAN COIL
FC	FORWARD CURVED
FA	FREE AREA / FIRE ALARM
FOT-X	FUEL OIL TANK
FLA	FULL LOAD AMPS
F-X	FURNACE
GAL	GALLONS
GPM	GALLONS PER MINUTE
GALV	GALVANIZED
G	GAS
GPR-X	GAS PRESSURE REGULATOR
GA	GAUGE
GC	GENERAL CONTRACTOR
GEN	GENERATOR
GH-X	GRAVITY HOOD
G-X	GRILLE
HZ	HERTZ
HD	HEAD
HE-X	HEAT EXCHANGER
HP-X	HEAT PUMP
HPWR	HEAT PUMP WATER RETURN
HPWS	HEAT PUMP WATER SUPPLY
HTR	HEATER
HTG	HEATING
HC-X	HEATING COIL
HVAC	
HEATING,	VENTILATING AND AIR CONDITIONING
HWR	
HEATING	WATER RETURN
HWS	HEATING WATER SUPPLY
HGT	HEIGHT

HDPE	HIGH DENSITY POLYETHYLENE
HP	HORSE POWER
HR	HOUR
H-X	HUMIDIFIER
HF-X	HYDRONIC FILTER
ID	INSIDE DIAMETER
IH-X	INTAKE HOOD
ISP	INTERNAL STATIC PRESSURE
KW	KILOWATT
KWH	KILOWATT HOUR
KES	KITCHEN EQUIPMENT SUPPLIER
KEF-X	KITCHEN EXHAUST FAN
KH-X	KITCHEN HOOD
LAT	LEAVING AIR TEMPERATURE
LWT	LEAVING WATER TEMPERATURE
LG	LENGTH
LTG	LIGHTING
LD-X	LINEAR DIFFUSER
LF	LINEAR FEET
LP	LIQUID PROPANE
LRA	LOCKED ROTOR AMPS
L-X	LOUVER
LPC	LOW PRESSURE CONDENSATE
LPS	LOW PRESSURE STEAM
LBS	POUNDS
MBH	1000 BTU'S
MFR	MANUFACTURER
MAX	MAXIMUM
MCA	MAXIMUM CIRCUIT AMPACITY
MA	MAKE-UP AIR
MAU-X	MAKE-UP AIR UNIT
MECH	MECHANICAL
MC	MECHANICAL CONTRACTOR
MPC	MEDIUM PRESSURE CONDENSATE
MPS	MEDIUM PRESSURE STEAM
MIN	MINIMUM
MISC	MISCELLANEOUS
MV-X	MIXING VALVE
MTD	MOUNTED
MTG	MOUNTING
NOM	NOMINAL
NC	NORMALLY CLOSED / NOISE CRITERIA
NO	NORMALLY OPEN / NUMBER
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NA	NEUTRAL AIR
OA	OUTSIDE AIR
OC	ON CENTER
ORD	OVERFLOW STORM DRAIN PIPING
ORD	OVERFLOW ROOF DRAIN
PTAC-X	PACKAGED TERMINAL A/C
PTHP-X	PACKAGED TERMINAL HEAT PUMP
PPM	PARTS PER MILLION
PERP	PERPENDICULAR
PH	PHASE
PLBG	PLUMBING
PC	PLUMBING CONTRACTOR
PHVAC	PLUMBING, HEATING, VENTILATION AND AIR

	CONDITIONING
PVC	POLYVINYL CHLORIDE
PDU-X	POOL DEHUMIDIFICATION UNIT
PIV	POST INDICATOR VALVE
PWR	POWER
PF-X	PRE FILTER
PHC-X	PREHEAT COIL
PD	PRESSURE DROP
P-X	PLUMBING FIXTURE
PRV-X	PRESSURE REDUCING VALVE
P-X	PUMP
PROP	PROPELLER
RECIRC	RECIRCULATE
R-X	REGISTER
RHC-X	REHEAT COIL
RLFA	RELIEF AIR
RV-X	RELIEF VALVE
REQ'D	REQUIRED
RA	RETURN AIR
RD	ROOF DRAIN
RF-X	RETURN FAN
RPM	REVOLUTIONS PER MINUTE
RH	RELATIVE HUMIDITY
RTU-X	ROOFTOP UNIT
RM	ROOM
SCHED	SCHEDULE
SEN	SENSOR
SIM	SIMILAR
SWSI	SINGLE WHEEL SINGLE INLET
SA-X	SOUND ATTENUATOR
SD	STORM DRAIN PIPING
SPEC(S)	SPECIFICATIONS
SQ	SQUARE
STD	STANDARD
SUCT	SUCTION
SP	STATIC PRESSURE
SA	SUPPLY AIR
SF-X	SUPPLY FAN
TEMP	TEMPERATURE
TD	TEMPERATURE DIFFERENCE
TU-X	TERMINAL UNIT
TUR	TERMINAL UNIT REHEAT
T-STAT	THERMOSTAT
TK	THICK
TONS	12000 BTU
TSP	TOTAL STATIC PRESSURE
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UH-X	UNIT HEATER
UV-X	UNIT VENTILATOR
UNO	UNLESS NOTED OTHERWISE
VAR	VARIABLE
VAV	VARIABLE AIR VOLUME
VFD-X	VARIABLE FREQUENCY DRIVE
VERT	VERTICAL
V	VOLT
VOL	VOLUME
WG	WATER GAUGE
WPD	WATER PRESSURE DROP
W	WATT / WIDTH
WT	WEIGHT
WB	WET BULB TEMPERATURE
YD	YARD

DRAWING INDEX

CODE REQUIREMENTS

2012 INTERNATIONAL MECHANICAL CODE
2012 INTERNATIONAL PLUMBING CODE
2009 INTERNATIONAL ENERGY CONSERVATION CODE
2012 INTERNATIONAL BUILDING CODE
2012 NATIONAL FUEL GAS CODE

GENERAL NOTES:

1. PIPING, DUCTWORK, AND EQUIPMENT SHOWN HALFTONE IS EXISTING TO REMAIN. PIPING, DUCTWORK AND EQUIPMENT SHOWN FULL-TONE IS NEW.
2. MECHANICAL CONTRACTOR IS RESPONSIBLE FOR ANY CUTTING AND PATCHING NEEDED FOR MECHANICAL INSTALLATION. PATCHING MUST MATCH EXISTING.
3. ACCESS PANELS ARE REQUIRED FOR ALL VALVES, TRAPS, DAMPERS, CONTROLS, ETC., IN HARD SURFACE CEILINGS. ACCESS PANELS SHALL BE FURNISHED BY MC AND INSTALLED BY THE MC. COORDINATE EXACT LOCATIONS WITH ARCHITECT.
4. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
5. CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC AND PIPING) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
6. INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
7. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, PLUMBING, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC.,SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
8. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
9. LOCATE ALL TEMPERATURE, PRESSURE, AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH STRAIGHT SECTION OF PIPE OR DUCT UPSTREAM AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
10. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.
11. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.
12. REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ASTM 315 AND ACI 318. CONCRETE SHALL CONFORM TO ASTM C94. CONCRETE WORK SHALL CONFORM TO ACI 318, PART ENTITLED "CONSTRUCTION REQUIREMENTS." COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OF EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT OF VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4 INCHES. CONCRETE SHALL BE CURED FOR 7 DAYS AFTER PLACEMENT.
13. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S DRAWINGS COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
14. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND DIVISION 16 OF THE SPECIFICATION.
15. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND INSTALLED BY THE MC. MINIMUM CONCRETE PAD THICKNESS SHALL BE 4". PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 4" ON EACH SIDE. IT SHALL BE THE RESPONSIBILITY OF THE MC TO COORDINATE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS.
16. WHEN MECHANICAL WORK (HVAC, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MC'S RESPONSIBLY 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 SHALL BE BROUGHT TO THE ATTENTION OF THE MC, WHOSE DECISION SHALL BE FINAL.
17. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT DEFINITELY FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
18. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN DETAILS FOR PIPING, DUCTWORK, AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MC.
19. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED, AND REQUIRED TO PROVIDE A VIBRATION FREE INSTALLATION.
20. ALL DUCTWORK, PIPING AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.
21. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM METAL DECK.
22. ALL ROOF MOUNTED EQUIPMENT CURBS FOR EQUIPMENT PROVIDED BY THE MC SHALL BE FURNISHED BY THE MC AND INSTALLED BY THE MC.
23. LOCATIONS AND SIZES OF ALL FLOOR, ROOF, AND WALL OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
24. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING, CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
25. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
26. ALL WORK SHALL COMPLY WITH LOCAL CODES, INTERNATIONAL BUILDING CODE, INTERNATIONAL MECHANICAL CODE, AND NFPA.

HVAC GENERAL NOTES :

1. DO NOT RUN DUCTWORK ABOVE ELECTRICAL PANELS OR IN CODE REQUIRED CLEARANCE SPACES. COORDINATE ALL ROUTING WORK WITH ALL TRADES.
2. CONTRACTOR SHALL COORDINATE LOCATION OF DUCTWORK IN CEILING SPACE WITH ALL TRADES PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK.
3. FOR GENERAL DUCTWORK CONSTRUCTION, SEE DETAILS IN DRAWING SET.
4. DUCTWORK SHALL NOT BE FABRICATED UNTIL ALL COORDINATION CONFLICTS HAVE BEEN RESOLVED.
5. CAP ENDS OF ALL INSTALLED DUCTWORK DURING CONSTRUCTION TO MINIMIZE DIRT, DEBRIS, AND FOREIGN OBJECTS FROM ENTERING THE DUCT SYSTEM.
6. BRANCH DUCT SIZES ARE THE SAME AS DIFFUSER NECK SIZE, UNLESS NOTED OTHERWISE.
7. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
8. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
9. PROVIDE ALL 90° SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED.
10. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO HEAT PUMPS, FANS, AND OTHER EQUIPMENT WHICH REQUIRES VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
11. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF REQUIRED.
12. RUNS OF FLEXIBLE DUCT SHALL NOT EXCEED 3-0" AND NOT FORM AN ANGLE GREATER THAN 45°.
13. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
14. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, HUMIDIFIERS, COILS, AND OTHER ITEMS LOCATED IN THE DUCTWORK WHICH REQUIRE SERVICE AND/OR INSPECTION.
15. PROVIDE ACCESS DOORS IN DUCTWORK FOR OPERATION, ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENT.
16. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.
17. PROVIDE VOLUME DAMPER IN ALL BRANCH TAKEOFFS CONNECTING TO DIFFUSERS OR REGISTERS.
18. COORDINATE SCHEDULE OF SHUTDOWN FOR EXISTING HVAC SYSTEMS, FOR INSTALLATION OF NEW HVAC SYSTEMS, WITH THE OWNER'S REPRESENTATIVE PRIOR TO SHUTDOWN.
19. LOCATE ALL MECHANICAL EQUIPMENT (HEAT PUMPS, MAKE-UP AIR UNITS, ETC.) FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS AND VALVING, AS REQUIRED BY MANUFACTURER'S INSTALLATION AND OPERATION REQUIREMENTS AND/OR BY CODE.
20. CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENT FOR THESE ITEMS.
21. ALL MAKE-UP AIR UNITS SHALL OPERATE WITHOUT MOISTURE CARRYOVER.
22. COORDINATE DIFFUSER, REGISTER, AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
23. IN CORRIDORS WHERE CEILING DEVICES AND AIR DIFFUSERS ARE INDICATED BETWEEN THE SAME LIGHT FIXTURES, INSTALL BOTH DEVICES AT THE QUARTER POINTS BETWEEN THE SAME FIXTURE.
24. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM SENSORS AT 4-0" (CENTERLINE) A.F.F. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE ABOVE LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON LOCATION.
25. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE EC. THE MC SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS.
26. MC TO MAKE CUTS IN FLOOR FOR PENETRATIONS OF DUCTWORK. MECHANICAL DUCT PENETRATIONS TO BE IN SLAB ONLY. DO NOT CUT OR DAMAGE CONCRETE JOIST STEMS.
27. MC TO INSTALL STATIC, RADIATION FIRE DAMPERS IN FIRE-RATED STRUCTURAL PENETRATIONS AS DIRECTED. EC TO INSTALL N.O. SWITCH INTERLOCKED WITH THE BLOWER MOTOR ON THE ASSOCIATED HVAC EQUIPMENT. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURER'S PRINTED INSTRUCTIONS AND ALL CODE REQUIREMENTS.

GENERAL PLUMBING NOTES:

1. PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT A COMPLETE OPERATIONAL PLUMBING SYSTEM FOR THE ENTIRE PROJECT AS SHOWN ON THESE DRAWINGS, INCLUDING ALL NECESSARY FEES AND PERMITS.
2. THE ENTIRE INSTALLATION SHALL CONFORM TO THE MOST RECENTLY ADOPTED REQUIREMENTS OF THE 2006 INTERNATIONAL MECHANICAL CODE, 2012 INTERNATIONAL PLUMBING CODE, AND ALL OTHER APPLICABLE CITY, COUNTY AND STATE CODES AND REGULATIONS IN EFFECT AT THE DATE OF THE BID.
3. PRIOR TO FABRICATION AND INSTALLATION THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF ALL PLUMBING PIPING, DUCTWORK, AND EQUIPMENT WITH PLUMBING PIPING, PLUMBING EQUIPMENT, ALL DUCTWORK, AND ALL OTHER TRADES INCLUDING BUT NOT LIMITED TO THE MECHANICAL CONTRACTOR, ELECTRICAL CONTRACTOR, GENERAL CONTRACTOR AND ANY CONTRACTOR HIRED DIRECTLY BY THE OWNER WHERE CONFLICTS MAY OCCUR, THEY SHALL BE RESOLVED PRIOR TO INSTALLATION.
4. THE DRAWINGS SHOW THE GENERAL DESIGN ARRANGEMENTS AND THE EXTENT OF THE SYSTEM. IT SHALL BE THE WORK OF THE CONTRACTOR TO MAKE SUCH SLIGHT ALTERATIONS AS MAY BE NECESSARY TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL IN ACCORDANCE WITH THE DESIGN INTENT. MAJOR DEVIATIONS, SUCH AS CHANGES IN COMPONENT SIZES, WEIGHTS, QUANTITIES OR MATERIAL, REQUIRE PRIOR APPROVAL BY THE CONSULTING ENGINEER.
5. ALL PLUMBING INFORMATION IS NOT SHOWN ON THE PLUMBING DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING INFORMATION ON ALL OTHER CONSTRUCTION DOCUMENTS INCLUDING ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
6. THE WORKING DRAWINGS ARE DIAGRAMMATIC. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, THEY DO NOT SHOW EVERY OFFSET, BEND OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR PLUMBING EQUIPMENT AND PIPING SHALL BE CHECKED AND COORDINATED WITH THE ARCHITECTURAL, MECHANICAL, STRUCTURAL AND ELECTRICAL DRAWINGS.
7. EXACT ROUTING OF WASTE, GAS AND WATER SERVICE IS DEPENDENT ON LOCAL SITE CONDITIONS AND MODIFICATIONS IN EQUIPMENT CONNECTIONS. EXACT LOCATION OF EQUIPMENT MAY VARY DEPENDING ON LOCAL CODE, HEALTH DEPARTMENT AND CITY REQUIREMENTS.
8. DETAILS: THE CONTRACTOR IS RESPONSIBLE TO REVIEW AND USE WHERE APPROPRIATE ALL OF THE PLUMBING DETAILS SHOWN ON THE DRAWINGS. DETAILS MAY OR MAY NOT BE CALLED OUT ON THE DRAWINGS WITH SYMBOLS OR KEYED NOTES. ANY CHANGES RESULTING FROM FAILURE TO INSTALL THE PLUMBING SYSTEM WITHOUT USING THE INCLUDED DETAILS IS THE RESPONSIBILITY OF THE CONTRACTOR.
9. THE DRAWINGS AND SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH THE ITEMS SHOWN ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN BOTH.
10. THE STRUCTURE SHOWN ON ALL DETAILS MAY OR MAY NOT PERTAIN TO A PORTION OR ANY PORTION OF THE BUILDING. COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL DRAWINGS AND STRUCTURAL DRAWINGS.
11. ANY PART OF THIS INSTALLATION THAT FAILS, IS UNFIT, OR BECOMES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
12. COORDINATE THE RETURN OF ALL PLUMBING ITEMS REMOVED DURING DEMOLITION WITH THE OWNER'S REPRESENTATIVE.
13. ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS. PROVIDE ALL FITTINGS, TRANSITIONS, VALVES AND OTHER DEVICES AND ACCESSORIES REQUIRED FOR A COMPLETE, WORKABLE INSTALLATION.
14. ALL MOTORS REQUIRED SHALL BE FURNISHED BY THE DIVISION 15 CONTRACTORS. ALL MOTOR STARTING EQUIPMENT, IF NOT A PART OF THE ORIGINAL EQUIPMENT, SHALL BE FURNISHED BY THE ELECTRICAL CONTRACTOR.
15. THE CONTRACTOR IS RESPONSIBLE FOR PLUMBING EQUIPMENT CHECK-IN SAFEKEEPING AND DAMAGE.
16. INVERTS SHOWN ON PLUMBING DRAWINGS MAY BE REFERENCED FROM THE FINISHED FLOOR ELEVATION.
17. CONTRACTOR TO VERIFY INVERT ELEVATIONS, ROUTING AND PIPE SIZES OF ALL EXISTING PIPING TO BE CONNECTED PRIOR TO CONSTRUCTION. COORDINATE ALL INVERTS WITH CIVIL DRAWINGS PRIOR TO INSTALLATION.
18. CONTRACTOR TO COMPLY WITH THE LATEST ILLINOIS STATE PLUMBING CODE WHEN SIZING TRAP ARMS ON COMBINATION WASTE AND VENT SYSTEMS. THE DRAWINGS INDICATE THE WASTE LINE SIZE AND THE SIZE OF THE TRAP REQUIRED.
19. PROVIDE CLEANOUTS IN ACCORDANCE WITH THE REQUIREMENTS OF APPLICABLE CODES. FLOOR CLEANOUTS SHALL BE LOCATED OUT OF TRAFFIC AREAS.
20. LOCATE ALL PLUMBING VENTS AT LEAST 3 FEET ABOVE OR 10 FEET AWAY FROM ALL OUTSIDE AIR INTAKES INTO THE BUILDING.
21. SEE "PLUMBING FIXTURE SCHEDULE" FOR FIXTURE MAKE AND TYPE, AND SIZE OF INDIVIDUAL WASTE, VENT AND DOMESTIC WATER PIPING TO FIXTURES.
22. ALL PLUMBING EQUIPMENT SHALL BE LISTED AND LABELED BY AN APPROVED TESTING AGENCY.
23. ALL PIPING SHALL BE SECURED BY DOUBLE NUTTING AT THE HANGER ROD ATTACHMENT TO THE AND AT THE PIPE HANGER.
24. PROVIDE WATER HAMMER ARRESTORS (SHOCK ABSORBERS) AT ALL PIPE LOCATIONS WHERE VALVE CLOSURES (SUCH AS FLUSH VALVES) MAY CAUSE WATER HAMMER OR RESULT IN EXCESSIVE PIPE VIBRATION OR MOVEMENT.
25. PROPERLY LUBRICATE ALL PIECES OF EQUIPMENT BEFORE TURNING THE SYSTEM OVER TO THE OWNER.
26. UPON COMPLETION OF THE WORK, REMOVE ALL SURPLUS MATERIALS AND RUBBISH. MAKE ALL REQUIRED PATCHING AND REPAIRS OF OTHER TRADES' WORK DAMAGED BY THIS CONTRACTOR, AND LEAVE THE PREMISES IN A CLEAN AND ORDERLY CONDITION.
27. THE CONTRACTOR SHALL OPERATE THE SYSTEM AND DEMONSTRATE ALL ASPECTS TO THE ENGINEER AND/OR OWNER, TO PROVE IT'S OPERATIONAL.
28. THE CONTRACTOR SHALL GUARANTEE THE PLUMBING SYSTEM FOR A PERIOD OF ONE YEAR FROM THE DATE OF SUBSTANTIAL COMPLETION.
29. INSTALL 4" AND LARGER SANITARY PIPING AT 1/8" PER FOOT SLOPE, SMALLER SIZES AT 1/4" PER FOOT.
30. DO NOT INSTALL HW AND CW SUPPLY PIPING IN ATTIC SPACE OR SPACES SUBJECT TO FREEZING.
31. DO NOT RUN PIPING ABOVE ELECTRICAL PANELS. PROVIDE 4' - 0" DEEP X 6' -6" HIGH CLEAR ACCESS SPACE IN FRONT OF PANELS. DO NOT RUN PIPING IN ELECTRICAL ROOMS.
32. COORDINATE EXACT LOCATION OF FIXTURES AND DRAINS WITH ARCHITECTURAL DRAWINGS.
33. PROVIDE 4" MINIMUM VENT THRU ROOF. INCREASE VENT LINE SIZE 12" BELOW BUILDING INSULATION.

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SYMBOLS & ABBREVIATIONS

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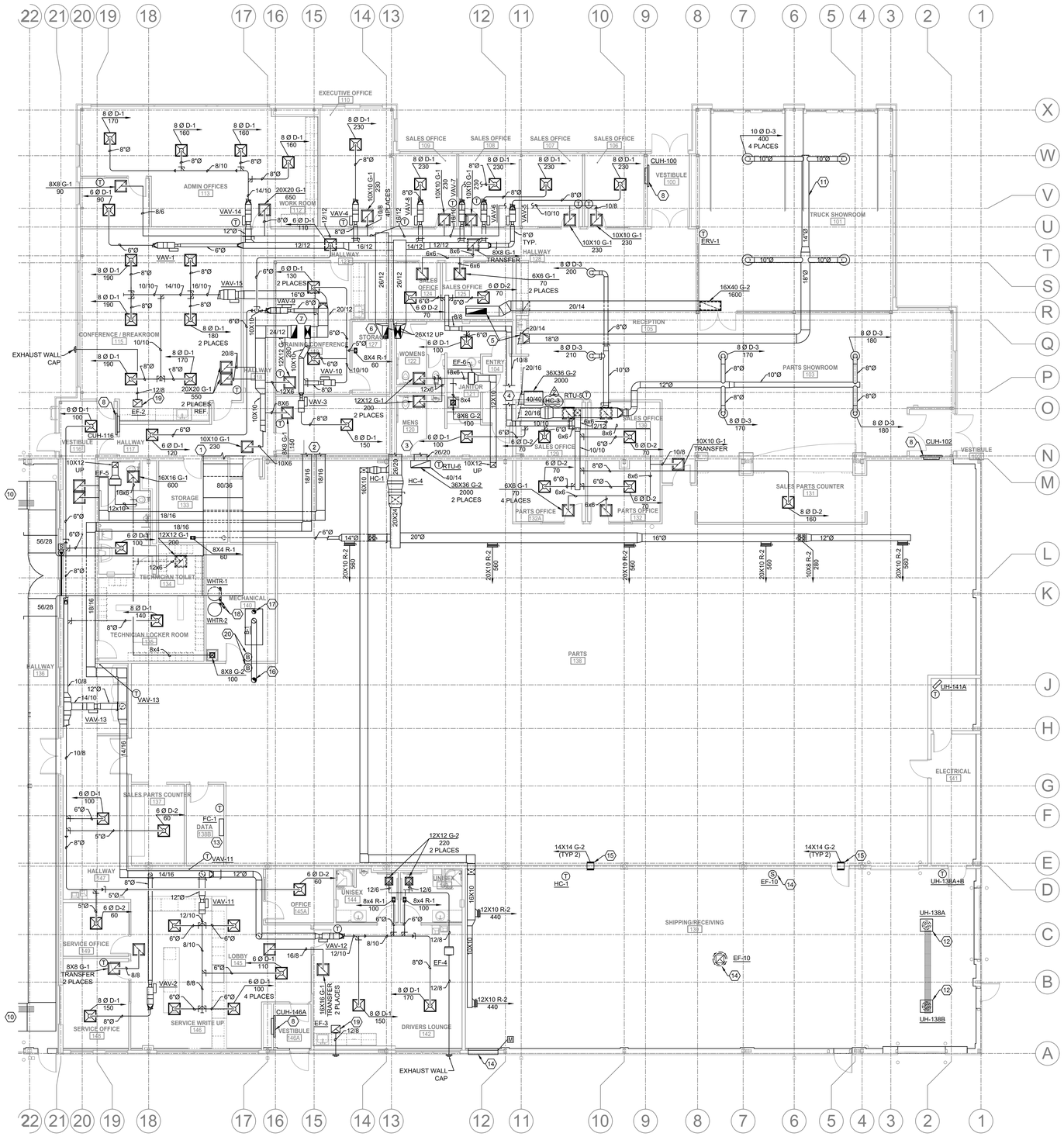

KEYED MECHANICAL NOTES: (X)

1. TO MAU-1 ON ROOF, SEE SHEET M1.3. SEAL PENETRATION THRU WALL WEATHER TIGHT.
2. TO RTU-4 ON ROOF, SEE SHEET M1.3. SEAL PENETRATION THRU WALL WEATHER TIGHT.
3. TO RTU-6 ON ROOF, SEE SHEET M1.3. SEAL PENETRATION THRU WALL WEATHER TIGHT.
4. TO RTU-5 ON ROOF, SEE SHEET M1.3. SEAL PENETRATION THRU WALL WEATHER TIGHT.
5. TO ERV-1 ON ROOF, SEE SHEET M1.3. SEAL PENETRATION THRU WALL WEATHER TIGHT.
6. UP TO RTU-2 ON ROOF, SEE SHEET M1.3.
7. UP TO RTU-3 ON ROOF, SEE SHEET M1.3.
8. MOUNT TOP OF CUH AT 42" A.F.F.
9. MOUNT TOP OF UH AT 8'-0" A.F.F.
10. SEE SHEET M1.2 FOR CONTINUATION.
11. COORDINATE DUCT MOUNTING HEIGHT WITH OVERHEAD DOOR ELEVATION.
12. COORDINATE UH MOUNTING HEIGHT WITH OVERHEAD DOOR ELEVATION.
13. MOUNT TOP OF FC-1 AT 9'-0" A.F.F.
14. PROVIDE AND INSTALL 60"X60" LOUVER WITH INSECT SCREEN SIMILAR TO UNITED ENERTECH FL-D-4 OR EQUAL. PROVIDE WITH 120 V ACTUATOR DAMPER. INTERLOCK DAMPER WITH EF-10. MOUNT TOP OF LOUVER AT 10'-0" A.F.F. INTERLOCK WITH WALL SWITCH AND TIME. PROVIDE END SWITCH ON DAMPER.
15. MOUNT TOP OF LTD AT 8'-0" A.F.F.
16. 10" COMBUSTION AIR DUCT UP THROUGH ROOF.
17. 8" BOILER FLUE UP THROUGH ROOF.
18. CONCENTRIC TERMINATION VENT FROM WATER HEATER UP THROUGH ROOF.
19. INTERLOCK WITH WALL SWITCH.
20. BOILER EMERGENCY SHUT OFF SWITCH.

GENERAL NOTES:

1. PROVIDE TURNING VANES IN ALL 90° ELBOWS.
2. MOUNT THERMOSTATS AT 48" A.F.F.

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ENLARGED MECHANICAL PLAN - NORTH

1 ENLARGED MECHANICAL PLAN - NORTH
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

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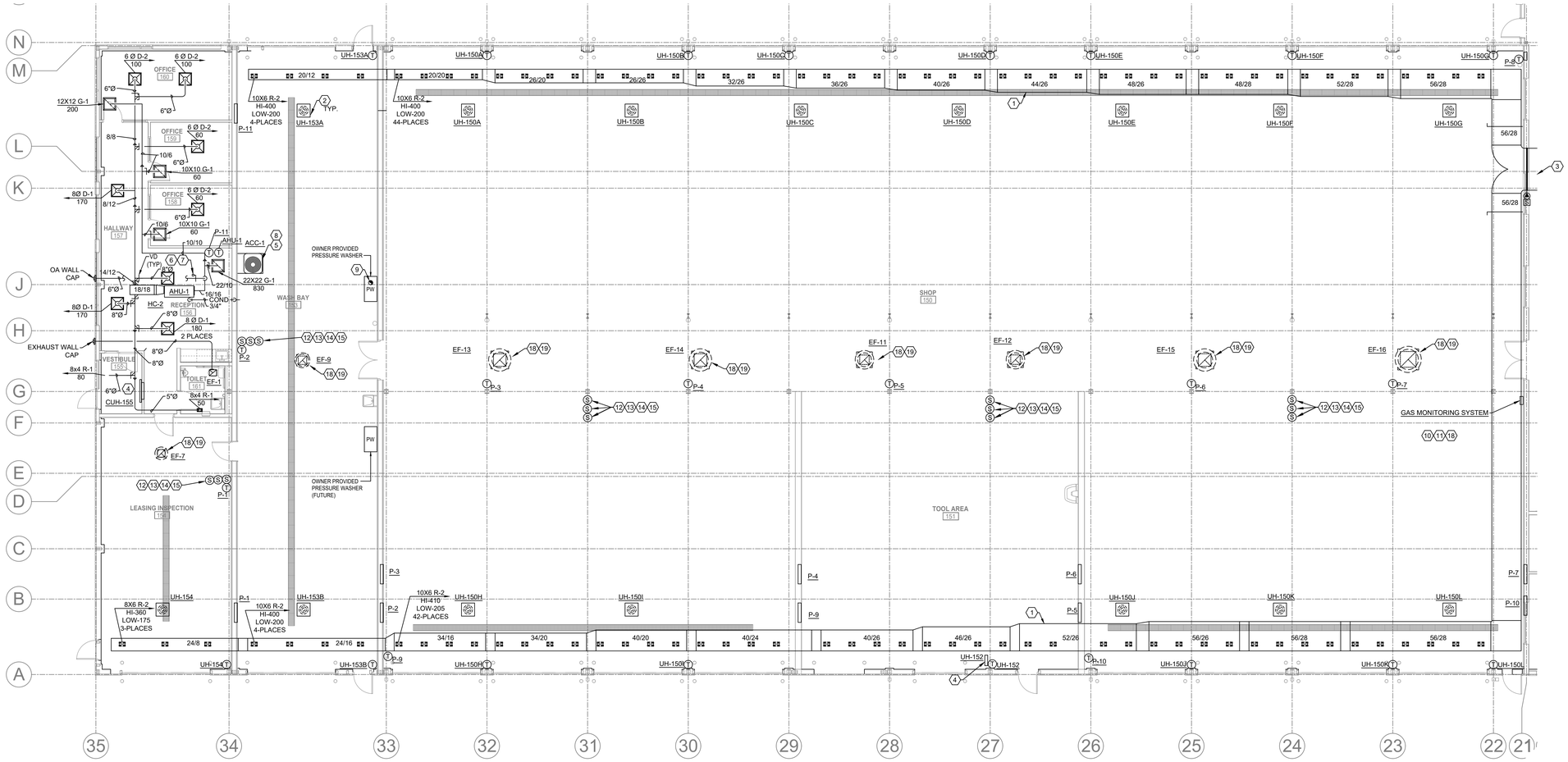

KEYED MECHANICAL NOTES: (X)

1. COORDINATE DUCT MOUNTING HEIGHT WITH OVERHEAD DOOR AND CRANE TRAVEL.
2. COORDINATE UH MOUNTING HEIGHT WITH OVERHEAD DOOR TRAVEL AND OVERHEAD CRANE.
3. SEE SHEET M1.1 FOR CONTINUATION.
4. MOUNT TOP OF UH @ 96" A.F.F.
5. MOUNT BOTTOM OF ACC-1 @ 12'-0" A.F.F.F PROVIDE WALL MOUNT BRACKET.
6. BALANCE OUTSIDE AIR TO 100 CFM. INSULATE OUTSIDE AIR DUCT WITH 2" FOIL FACED FIBERGLASS INSULATION.
7. INTERLOCK MOTORIZED DAMPER WITH AHU-1. DAMPER SHALL OPEN WHEN FAN IS ENERGIZED. DAMPER SHALL CLOSE WHEN FAN IS DE-ENERGIZED.
8. ROUTE RLRS LINESET TO AHU-1, RACK PIPING ON WALL.
9. ROUTE POWER WASHER FLUE THROUGH ROOF WITH TYPE B FLUE VENT. SEE FLUE PIPING DETAIL. INSTALL FLUE PER MANUFACTURERS RECOMMENDATIONS.
10. PROVIDE AND INSTALL TOXIC GAS DETECTION SYSTEM CONTROLLER, HONEYWELL MODEL "301C" OR SIMILAR. PROVIDE LOW VOLTAGE TRANSFORMER SIZED FOR ENTIRE GAS DETECTION SYSTEM. PROVIDE PANEL DP-1; MOUNT CONTROLLER AND TRANSFORMER IN PANEL. SEE ELEC PLANS FOR 110V POWER TO PANEL.
11. PROVIDE LOW VOLTAGE CONTROL WIRING IN CONDUIT FROM GAS DETECTION CONTROLLER 301C TO RELAYS FOR EXHAUST FANS. THESE RELAYS ARE PROVIDED/INSTALLED BY ELEC CONTRACTOR, SEE ELEC PLANS FOR RELAY LOCATION AND NOTE ELECTRIC CONTRACTOR IS PROVIDING A "FAN ON" SWITCH FOR EACH EXHAUST FAN TO ALLOW USER CONTROLLED SUMMER EXHAUST VENTILATION.
12. PROVIDE AND INSTALL HONEYWELL E3POINT (OR SIMILAR) "E3SM" SENSOR MONITOR UNIT (SMU) WITH "E3SCO" CARBON MONOXIDE (CO) SENSOR CARTRIDGE, ON-BOARD ANNUNCIATOR, AND REMOTE MOUNTED STROBE LIGHT. MOUNT "CO" SMU AT 5 FT A.F.F. PROVIDE LOW VOLTAGE POWER WIRING TO EACH SMU, STROBE WIRING BACK TO SMU, AND DAISY-CHAIN COMM. WIRING FROM SMU'S BACK TO GAS DETECTION CONTROLLER IN PANEL DP-1 (ALL WIRING IN CONDUIT).
13. PROVIDE AND INSTALL HONEYWELL E3POINT (OR SIMILAR) "E3SM" SENSOR MONITOR UNIT (SMU) WITH "E3NO2" NITROGEN DIOXIDE (NO_2) SENSOR CARTRIDGE, ON-BOARD ANNUNCIATOR, AND REMOTE MOUNTED STROBE LIGHT. MOUNT "NO2" SMU AT HEIGHT RECOMMENDED BY MANUFACTURER. PROVIDE LOW VOLTAGE POWER WIRING TO EACH SMU, STROBE WIRING BACK TO SMU, AND DAISY-CHAIN COMM. WIRING FROM THE SMU'S BACK TO GAS DETECTION CONTROLLER IN PANEL DP-1 (ALL WIRING IN CONDUIT).
14. PROVIDE AND INSTALL HONEYWELL E3POINT (OR SIMILAR) "E3SM" SENSOR MONITOR UNIT (SMU) WITH "E3M" COMPRESSED NATURAL GAS (CNG) SENSOR CARTRIDGE, ON-BOARD ANNUNCIATOR, AND REMOTE MOUNTED STROBE LIGHT. MOUNT "CNG" SMU AT HEIGHT RECOMMENDED BY MANUFACTURER. PROVIDE LOW VOLTAGE POWER WIRING TO EACH SMU, STROBE WIRING BACK TO SMU, AND DAISY-CHAIN COMM. WIRING FROM THE SMU'S BACK TO GAS DETECTION CONTROLLER IN PANEL DP-1 (ALL WIRING IN CONDUIT).
15. RANGE OF SENSOR MONITOR UNIT (SMU) IS A 50 FT RADIUS CIRCLE. INSTALL SMU PER MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
16. NOT USED.
17. NOT USED.
18. UPON DETECTION OF ELEVATED LEVELS OF CO, NO2, OR CNG, GAS DETECTION SYSTEM SHALL INCREASE EXHAUST FAN AND MAKE-UP AIR UNIT FAN SPEED FROM LOW SPEED TO MAX SPEED.
19. EXHAUST FAN EQUIPPED WITH GRAVITY BACKDRAFT DAMPER (NOT MOTORIZED).

GENERAL NOTES:

1. PROVIDE TURNING VANES IN ALL 90° ELBOWS.
2. MOUNT THERMOSTATS AT 48" A.F.F.

(1) ENLARGED MECHANICAL PLAN - SOUTH
1/8" = 1'-0"

PLAN NORTH | TRUE NORTH

NOT DISCLOSED

ENLARGED MECHANICAL PLAN - SOUTH

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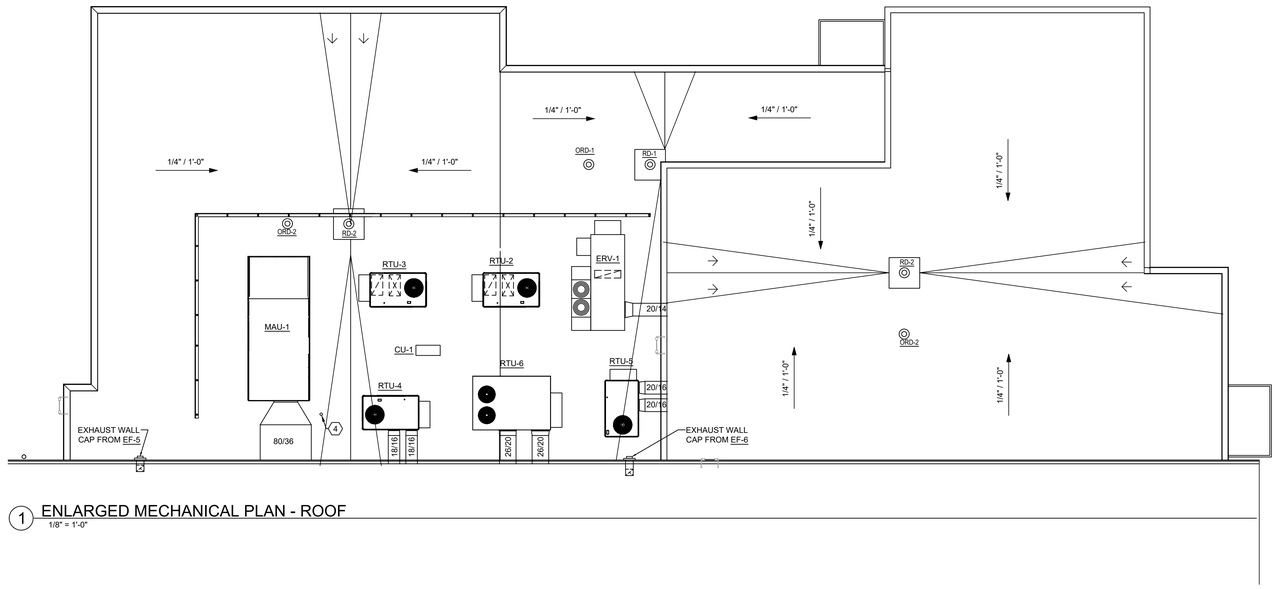
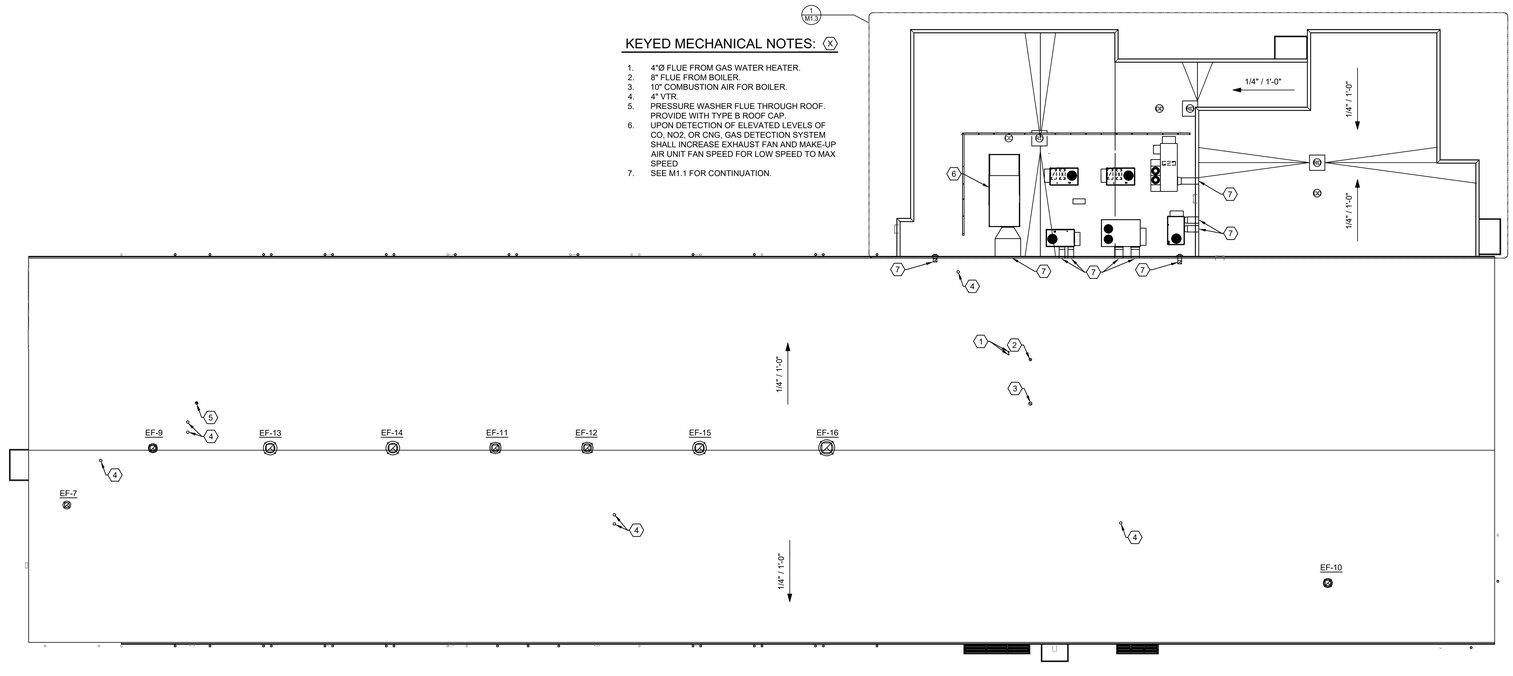


1 ENLARGED MECHANICAL PLAN - ROOF
1/8" = 1'-0"

KEYED MECHANICAL NOTES: (X)

1. 4"Ø FLUE FROM GAS WATER HEATER.
2. 8" FLUE FROM BOILER.
3. 10" COMBUSTION AIR FOR BOILER.
4. 4" VTR.
5. PRESSURE WASHER FLUE THROUGH ROOF. PROVIDE WITH TYPE B ROOF CAP.
6. UPON DETECTION OF ELEVATED LEVELS OF CO, NO2, OR CNG, GAS DETECTION SYSTEM SHALL INCREASE EXHAUST FAN AND MAKE-UP AIR UNIT FAN SPEED FOR LOW SPEED TO MAX SPEED
7. SEE M1.1 FOR CONTINUATION.



2 MECHANICAL PLAN - ROOF
1/16" = 1'-0"

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MECHANICAL PLAN - ROOF

PLAN NORTH TRUE NORTH

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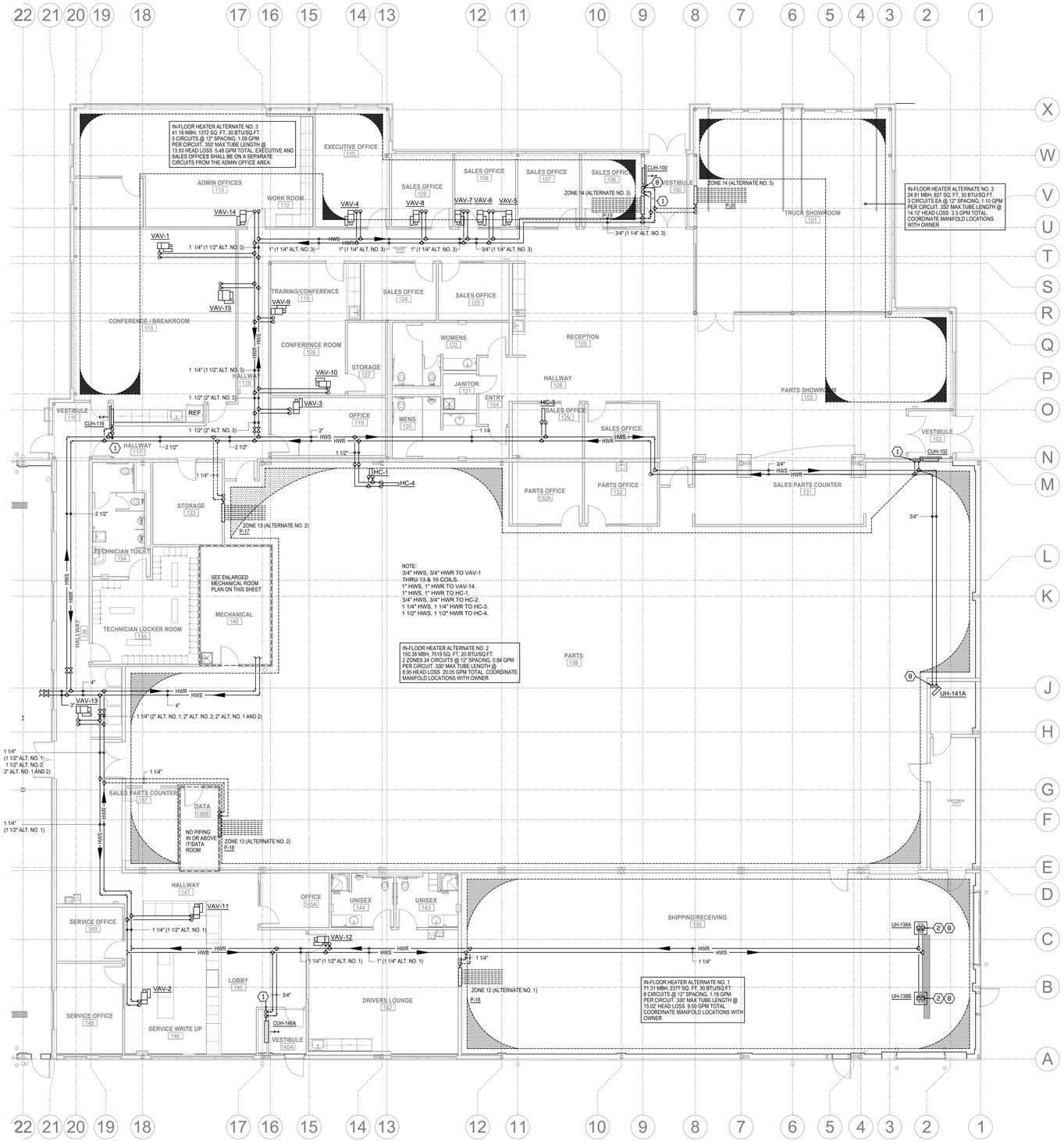

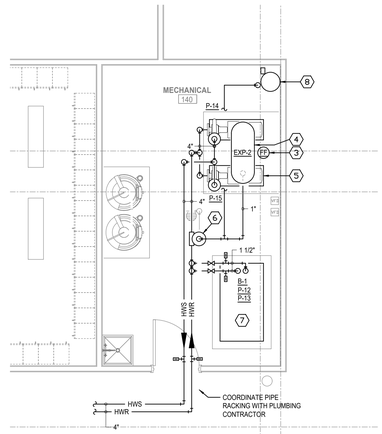

ENLARGED MECHANICAL ROOM PLAN

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

GENERAL NOTES:

1. THE IN-FLOOR HEAT ENTERING WATER TEMPERATURE SHALL BE SET AT 100°F.
2. THE DESIGN SHALL BE BASED ON A 15° DELTA T.
3. THE DESIGN SHALL BE BASED ON 5/8" PEX TUBING.
4. PIPE SPACING SHALL BE SET AT 12" ON CENTER.
5. THE PRESSURE DROP IS BASED ON 30% PROPYLENE GLYCOL @ 60° START UP TEMPERATURE.
6. TOTAL HEAD PRESSURE SHOWN INCLUDES PRESSURE DROP THROUGH THE IN-FLOOR HEAT MANIFOLD.
7. THE PIPING IN THE SHOP AND ANY EXPOSED AREAS SHALL HAVE A PROTECTIVE PVC JACKETED SHELL INSULATION.
8. UNDERSLAB IN-FLOOR HEAT INSULATION BY OTHERS.
9. PROVIDE PROPYLENE GLYCOL CLEANING, FLUSHING AND TESTING RESULTS WITH PROJECT O&M MANUALS.

KEYED PIPING NOTES: (X)

1. 3/4" HWS DN, 3/4" HWR DN. SEE CABINET UNIT HEATER PIPING DETAIL ON SHEET M2.2.
2. 1" HWS DN, 1" HWR DN. SEE UNIT HEATER PIPING DETAIL ON SHEET M2.2.
3. FILTER FEEDER. SEE BASE MOUNTED PUMP DETAIL ON SHEET M2.2 FOR PIPING.
4. 60 GALLOPN THERMAL EXPANSION TANK. SUSPENDED FROM STRUCTURE ABOVE PUMPS. SEE DETAIL ON SHEET M2.2. BASED ON 20.8 GALLONS OF EXPANSION, 0.37 ACCEPTANCE FACTOR. OPERATING WEIGHT 629 LBS. TACO MODEL PS060-125 OR EQUAL.
5. BASE MOUNTED CIRCULATING PUMP ON CONCRETE HOUSEKEEPING PAD. HOUSE KEEPING PAD BY OTHERS. SEE PUMP DETAIL ON SHEET P1.7.
6. FLANGED AIR SEPARATOR. TACO MODEL AC03-150.
7. GAS FIRED BOILER ON CONCRETE HOUSEKEEPING PAD. HOUSEKEEPING PAD BY OTHERS.
8. PROVIDE AND INSTALL 3-WAY VALVE.
9. AUTOMATIC GLYCOL FEED PACKAGE: SHALL BE MANUFACTURED BY GENERAL TREATMENT PRODUCTS MODEL: GP-55-E-2, OR APPROVED EQUAL AND CONSIST OF A 55 GAL POLYETHYLENE TANK, HINGED POLYETHYLENE COVER, CARBON STEEL FRAME, LOCKABLE NEMA 4X CONTROL PANEL, LOW LEVEL FLOAT SWITCH, 1/3 HP (115/1, 5.6 AMP) OPEN MOTOR BRONZE GEAR PUMP WITH INTERNAL PRESSURE RELIEF, PRESSURE SWITCH, PRESSURE RELIEF VALVE, CHECK VALVE, Y STRAINER, PVC PLUMBING AND REINFORCED BUTYL RUBBER HOSE ASSEMBLIES.

(1) HYDRONIC PIPING PLAN - NORTH
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

NOT DISCLOSED

HYDRONIC PIPING PLAN - NORTH

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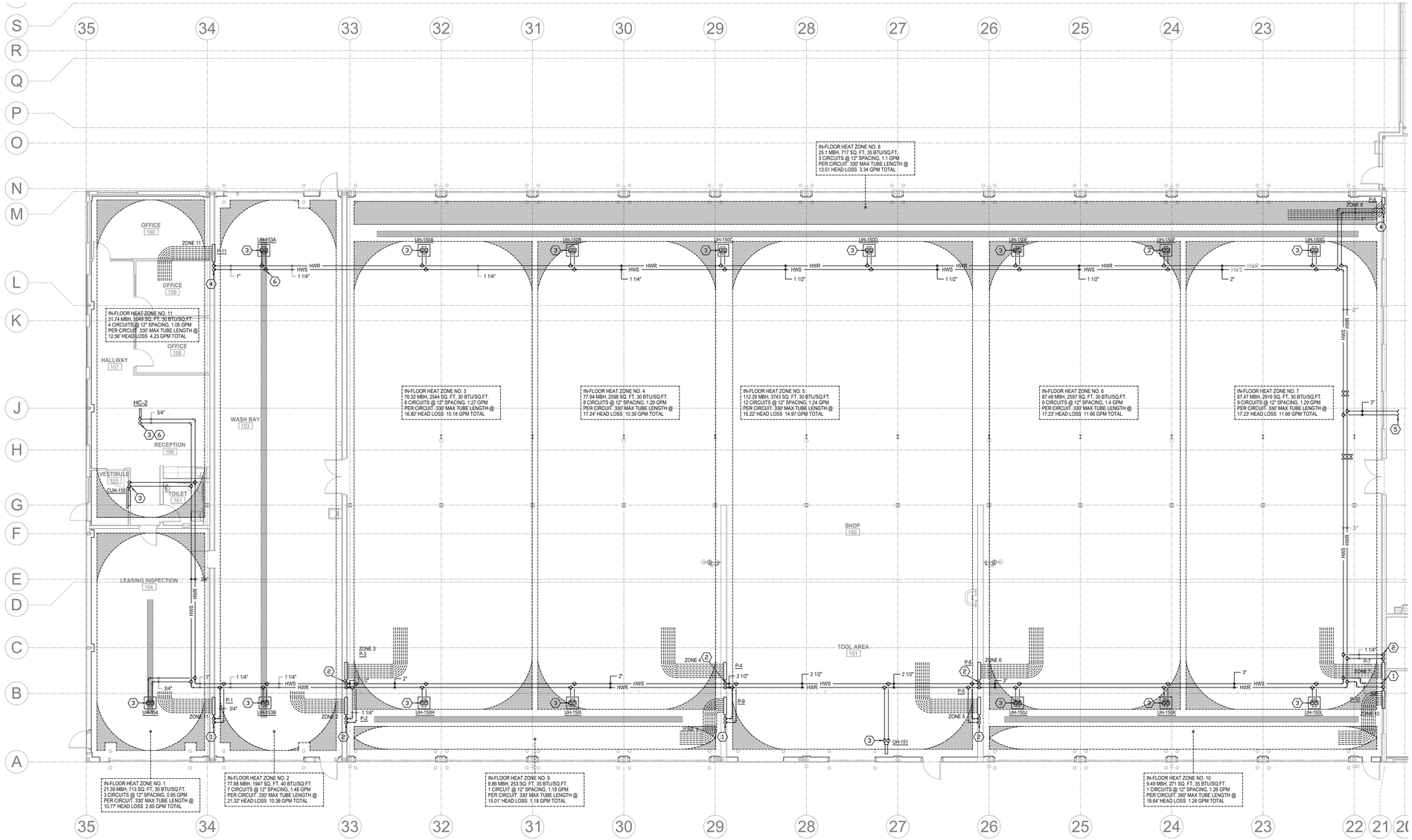

GENERAL NOTES:

1. THE IN-FLOOR HEAT ENTERING WATER TEMPERATURE SHALL BE SET AT 100°F.
2. THE DESIGN SHALL BE BASED ON A 15° DELTA T.
3. THE DESIGN SHALL BE BASED ON 5/8" PEX TUBING.
4. PIPE SPACING SHALL BE SET AT 12" ON CENTER.
5. THE PRESSURE DROP IS BASED ON 30% PROPYLENE GLYCOL @ 60° START UP TEMPERATURE.
6. TOTAL HEAD PRESSURE SHOWN INCLUDES PRESSURE DROP THROUGH THE IN-FLOOR HEAT MANIFOLD.
7. THE PIPING IN THE SHOP AND ANY EXPOSED AREAS SHALL HAVE A PROTECTIVE PVC JACKETED SHELL INSULATION.
8. UNDERSLAB IN-FLOOR HEAT INSULATION BY OTHERS.
9. PROVIDE PROPYLENE GLYCOL CLEANING, FLUSHING AND TESTING RESULTS WITH PROJECT O&M MANUALS.

KEYED PIPING NOTES: (X)

1. 3/4" HWR DN, 3/4" HWS DN. SEE IN-FLOOR HEAT MANIFOLD DETAIL ON SHEET M2.2.
2. 1 1/4" HWR DN, 1 1/4" HWS DN. SEE IN-FLOOR HEAT MANIFOLD DETAIL ON SHEET M2.2.
3. 3/4" HWS DN, 3/4" HWR DN. SEE UNIT HEATER PIPING DETAIL ON SHEET M2.2.
4. 1" HWS DN, 1" HWR DN, SEE IN-FLOOR HEAT MANIFOLD DETAIL ON SHEET M2.2.
5. SEE CONTINUATION ON SHEET P1.6.
6. PROVIDE AND INSTALL 3-WAY VALVE.

1 HYDRONIC PIPING PLAN - SOUTH
1/8" = 1'-0"

PLAN NORTH / TRUE NORTH

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HYDRONIC PIPING PLAN - SOUTH

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HOT WATER COIL

MARK	SERVES	CFM	COIL SIZE H X L (IN)	FINS/IN	NU. OF ROWS	MAX. FACE VEL.	MAX. AIR PD	TOTAL CAP. (MBH)	EAT (°F)	LAT (°F)	GPM	MAX. WATER PD	EWT (°F)	LWT (°F)	MANUFACTURE	MODEL	NOTES
HC-1	RTU-6	880	16 x 18	80	6	500	0.31	76.4	40.0	120.0	5.0	0.21	160	130	TRANE	DWLB18	1
HC-2	AHU-1	1150	18 x 18	72	2	500	0.13	38.3	50.0	80.0	2.5	0.40	160	130	TRANE	DWLB18	1
HC-3	RTU-5	1890	24 x 24	72	4	500	0.23	125.1	40	101	8.5	0.16	160	130	TRANE	DWLB24	1
HC-4	RTU-6	3420	30 x 30	72	4	520	0.29	223.6	40	101.3	15.0	0.36	160	130	TRANE	DWLB30	1

NOTES:
1. PROVIDE WITH DELTA FLO FINS.

DIFFUSER, REGISTERS, AND GRILLES

MARK	MAX STATIC PD (IN W.G.)	MAX NC	DAMPER (Y/N)	FRAME TYPE	NECK SIZE (LxW) (IN)	FACE SIZE (LxW) (IN)	MOUNTING	MATERIAL	FINISH	MANUFACTURE	MODEL	NOTES
D-1	0.05	20.0	Y	23	SEE PLAN	24X24	LAY-IN	STEEL	WHITE	KRUEGER	PLQ	1,2,3
D-2	0.05	20.0	Y	23	SEE PLAN	24X24	LAY-IN	STEEL	WHITE	KRUEGER	PVQ	1,2,3
D-3	0.05	20.0	Y	---	WHITE	WHITE	DUCT	STEEL	WHITE	KRUEGER	RM2PLQ	1,2,3,4
R-1	0.05	20.0	Y	22	SEE PLAN	SEE PLAN	SURFACE	STEEL	WHITE	KRUEGER	880	1,2,3
R-2	0.05	20.0	Y	22	SEE PLAN	SEE PLAN	SURFACE	STEEL	WHITE	KRUEGER	680MP-H	1,2,3
G-1	0.05	20.0	N	23	SEE PLAN	24X24	LAY-IN	ALUMINUM	WHITE	KRUEGER	S580P	1,2,3
G-2	0.05	20.0	N	22	SEE PLAN	SEE PLAN	SURFACE	ALUMINUM	WHITE	KRUEGER	S580P	1,2,3

NOTES:
1. CONTRACTOR SHALL VERIFY MOUNTING, FINISH AND SURFACE CONSTRUCTION PRIOR TO FURNISHING MATERIALS.
2. NC SHALL BE LESS THAN 20 ON DIFFUSERS, REGISTERS, AND GRILLES LOCATED IN OCCUPIED SPACES.
3. REFER TO PLANS FOR QUANTITIES OF DIFFUSERS, REGISTERS, AND GRILLES.
4. DIFFUSER SHALL BE DUCT MOUNTED.

TERMINAL BOX - HOT WATER REHEAT

MARK	CFM RANGE					INLET DIAMETER (INCHES)	SIZE (WxHxD) (IN)	WEIGHT (LB)	HOT WATER COIL DATA					MANUFACTURE	MODEL	NOTES
	MIN	MAX COOLING	MAX HEATING	MAX PRESSURE DROP (IN H_2O)	MAX NC				CAPACITY (MBH)	EAT/LAT (°F)	ROWS	GPM	WATER PD (FT H_2O)			
VAV-1	40	90	70	0.01	14	4	12x8x24	170	3.4	55/100	2	0.3	0.02	KRUEGER	LMHS-4	1
VAV-2	70	150	130	0.03	12	5	12x8x24	170	6.9	55/104	2	0.6	0.08	KRUEGER	LMHS-5	1
VAV-3	70	150	130	0.03	12	5	12x8x24	170	6.9	55/104	2	0.6	0.08	KRUEGER	LMHS-5	1
VAV-4	70	200	170	0.04	19	5	12x8x24	170	9.4	55/106	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-5	70	230	200	0.06	19	5	12x8x24	170	10.2	55/102	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-6	70	230	200	0.06	19	5	12x8x24	170	10.2	55/102	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-7	70	230	200	0.06	19	5	12x8x24	170	10.2	55/102	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-8	70	230	200	0.06	19	5	12x8x24	170	10.2	55/102	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-9	70	230	200	0.06	19	5	12x8x24	170	10.2	55/102	2	1.0	0.16	KRUEGER	LMHS-5	1
VAV-10	70	280	230	0.07	16	6	12x8x24	170	10.9	55/99	2	1.0	0.16	KRUEGER	LMHS-6	1
VAV-11	130	510	500	0.38	17	7	12x10x24	170	25.8	55/103	3	2.0	0.15	KRUEGER	LMHS-7	1
VAV-12	130	520	500	0.38	17	7	12x10x24	170	25.8	55/103	3	2.0	0.15	KRUEGER	LMHS-7	1
VAV-13	210	620	600	0.12	10	9	14x13x24	170	28.1	55/140	2	3.0	0.51	KRUEGER	LMHS-9	1
VAV-14	160	650	500	0.17	18	8	12x10x24	170	24.0	55/99	2	5.0	3.2	KRUEGER	LMHS-8	1
VAV-15	490	1100	930	0.22	8	14	20x18x24	170	XXXXX	55/	2	XXXXX	XXXXX	KRUEGER	LMHS-14	1

NOTES:
1. PROVIDE WITH DDC CONTROLS, COIL ACCESS PANEL. FIELD VERIFY RIGHT OR LEFT HAND UNIT.

UNIT HEATER SCHEDULE

UNIT NO.	MFG.	MODEL NO.	TYPE	INTAKE LOCATION	DISCHARGE LOCATION	CFM	FAN MOTOR(S) RPM	FAN HP	MCA	AMP	VOLTS	PH	HEATING CAPACITY MBH	EAT	LAT	EWT	LWT	GPM	WPD	REMARKS
CUH-100	BEACON/ MORRIS	W-120	FRW	F	F	130	3200	0.034	---	0.5	115	1	10.7	65	120	160	138	1.0	0.43	1,2
CUH-102	BEACON/ MORRIS	W-120	FRW	F	F	130	3200	0.034	---	0.5	115	1	10.7	65	120	160	138	1.0	0.43	1,2
CUH-116	BEACON/ MORRIS	W-120	FRW	F	F	130	3200	0.034	---	0.5	115	1	10.7	65	120	160	138	1.0	0.43	1,2
CUH-146A	BEACON/ MORRIS	W-120	FRW	F	F	130	3200	0.034	---	0.5	115	1	10.7	65	120	160	138	1.0	0.43	1,2
CUH-155	BEACON/ MORRIS	W-120	FRW	B	B	130	3200	0.034	---	0.5	115	1	10.7	65	120	160	138	1.0	0.43	1,2
UH-138A	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-138B	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-141A	STERLING	HSA-136-11-L2-1	VP	T	B	750	--	1/20	1.8	1.4	115	1	27.5	60.0	92.0	160	130	1.3	5'	1,3,5
UH-150A	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150B	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150C	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150D	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150E	STERLING	VSB-125-11-L2-1	HP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150F	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150G	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150H	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150I	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150J	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150K	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-150L	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-151	STERLING	HSA-136-11-L2-1	VP	T	B	750	--	1/20	1.8	1.4	115	1	27.5	60.0	92.0	160	130	1.3	5'	1,3,5
UH-153A	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5
UH-153B	STERLING	VSB-125-11-L2-1	VP	T	B	1790	--	1/6	2.9	2.3	115	1	59.8	60.0	90.0	160	130	3.0	5'	1,3,5

MODEL TYPE: F - FLOOR; FI - FLOOR INVERTED FLOW; W - WALL; WI - WALL INVERTED FLOW; FRW - FULLY RECESSED WALL
FRWI - FULLY RECESSED WALL INVERTED FLOW; SRW - SEMI RECESSED WALL; SRWI - SEMI RECESSED WALL INVERTED FLOW
C - CEILING; RC - RECESSED CEILING; HP - HORIZONTAL PROPELLER UNIT ; VP - VERTICAL PROPELLER UNIT
LOCATIONS: F - FRONT; R - REAR; B - BOTTOM; T - TOP
REMARKS:
1. HEATING CAPACITY BASED ON 75% WATER/ 25% PROPYLENE GLYCOL.
2. PROVIDE TAMPER RESISTANT FASTENERS FOR ACCESS DOOR.
3. HANG UNIT FROM STRUCTURE WITH NEOPRENE ISOLATORS.
4. INSTALL TOP OF HEATER +/- 6" BELOW MEZZANINE.
5. INSTALL 2" BELOW STRUCTURAL STEEL. VERIFY UNIT DOES NOT INTERFERE WITH CRANE OPERATION.

PUMP SCHEDULE

UNIT NO.	MFG.	DESCRIPTION	MODEL NO.	FLANGE SIZE	IMPELLER SIZE	STYLE	FLOW RATE (GPM)	HEAD (FT)	MOTOR HP	RPM	ELECTRICAL V/PH	FLA	REMARKS:
P-1	TACO	ZONE 1 IN-FLOOR HEAT	009-F5	3/4"	---	INLINE	3.0	9.06	1/8	3250	115/1	1.40	1, 2, 9
P-2	TACO	ZONE 2 IN-FLOOR HEAT	0013-F3	1 1/4"	---	INLINE	11.0	22.90	1/6	3250	115/1	2.00	1, 2, 9
P-3	TACO	ZONE 3 IN-FLOOR HEAT	0011-F4	1 1/4"	---	INLINE	11.0	16.31	1/8	3250	115/1	1.76	1, 2, 9
P-4	TACO	ZONE 4 IN-FLOOR HEAT	0011-F4	1 1/4"	---	INLINE	11.0	16.31	1/8	3250	115/1	1.76	1, 2, 9
P-5	TACO	ZONE 5 IN-FLOOR HEAT	0011-F4	1 1/4"	---	INLINE	15.0	16.31	1/8	3250	115/1	1.76	1, 2, 9
P-6	TACO	ZONE 6 IN-FLOOR HEAT	0011-F4	1 1/4"	---	INLINE	12.0	16.31	1/8	3250	115/1	1.76	1, 2, 9
P-7	TACO	ZONE 7 IN-FLOOR HEAT	0011-F4	1 1/4"	---	INLINE	12.0	16.31	1/8	3250	115/1	1.76	1, 2, 9
P-8	TACO	ZONE 8 IN-FLOOR HEAT	0011-F4	1"	---	INLINE	3.5	15.40	1/8	3250	115/1	1.76	1, 2, 9
P-9	TACO	ZONE 9 IN-FLOOR HEAT	0011-F4	3/4"	---	INLINE	1.5	15.01	1/8	3250	115/1	1.76	1, 2, 9
P-10	TACO	ZONE 10 IN-FLOOR HEAT	0014-F1	3/4"	---	INLINE	1.5	18.64	1/8	3250	115/1	1.45	1, 2, 9
P-11	TACO	ZONE 11 IN-FLOOR HEAT	0014-F1	1"	---	INLINE	4.5	12.56	1/8	3250	115/1	1.45	1, 2, 9
P-12	---	PRIMARY BOILER PUMP	W/BOILER	INLINE	---	INLINE	---	---	---	---	---	---	1, 2
P-13	---	PRIMARY BOILER PUMP	W/BOILER	INLINE	---	INLINE	---	---	---	---	---	---	1, 2
P-14	TACO	SECONDARY BOILER PUMP	FI2510	3" S X 2 1/2" D	8.4	BASE	240	70	7.5	1760	460/3	---	2, 3, 4
P-15	TACO	SECONDARY BOILER PUMP	FI2510	3" S X 2 1/2" D	8.4	BASE	240	70	7.5	1760	460/3	---	2, 3, 4
ALTERNATE PUMPS													
P-16	TACO	ZONE 12 IN-FLOOR	0011-F4	1 1/4"	---	INLINE	9.5	15.02	1/8	3250	115/1	1.76	1, 2, 6, 9
P-17	TACO	ZONE 13 IN-FLOOR	0014-F1	1 1/4"	---	INLINE	10.0	8.95	1/8	3250	115/1	1.45	1, 2, 7, 9
P-18	TACO	ZONE 13 IN-FLOOR	0014-F1	1 1/4"	---	INLINE	10.0	8.95	1/8	3250	115/1	1.45	1, 2, 7, 9
P-19	TACO	ZONE 14 IN-FLOOR	0014-F1	1"	---	INLINE	5.5	13.93	1/8	3250	115/1	1.45	1, 2, 8, 9
P-20	TACO	ZONE 14 IN-FLOOR	0014-F1	1"	---	INLINE	3.5	14.12	1/8	3250	115/1	1.45	1, 2, 8, 9

REMARKS:
1. PUMPS SHALL BE MOUNTED IN A MANNER THAT WILL ALLOW THEM TO BE EASILY SERVICE AND/OR REPLACED.
2. PUMP SELECTION IS BASED ON 25% PROPYLENE GLYCOL @ 60° STARTUP TEMP.
3. UTILIZED SHAFT GROUNDING RINGS.
4. PUMP FRAMES SHALL BE GROUTED.
5. INCLUDE TACO MODEL SD30030-5 SUCTION DIFFUSER OR EQUAL.
6. PUMP P-16 IS TO BE INCLUDED UNDER ADD ALT. NO. 1.
7. PUMPS P-17 & P-18 ARE TO BE INCLUDED UNDER ADD ALT. NO. 2.
8. PUMPS P-19 & P-20 ARE TO BE INCLUDED UNDER ADD ALT. NO. 3.
9. HEAD LOSS SHOWN ON IN-FLOOR HEAT PUMPS INCLUDED HEAD LOSS THROUGH THE IN-FLOOR HEAT MANIFOLD.

VARIABLE FREQUENCY DRIVE SCHEDULE

GENERAL DATA	PLAN TAG	VFD-1	VFD-2	
	MANUFACTURER	YASKAWA	YASKAWA	
	MODEL NUMBER	Z1B-1B-011	Z1B-1-011	
	SERVES	P-14	P-15	
	LOCATION	SEE PLAN	SEE PLAN	
	WEIGHT (LBS)	90	90	
	OVERALL SIZE (WxHxD)(IN)	11x49x14	11x49x14	
	REMARKS	NONE	NONE	
MOTOR DATA	HP (W)	7.5	7.5	
	VOLTS	480	480	
	PHASE	3	3	
	AMPS	11	11	

MAKE UP AIR UNIT - GAS FIRED

MARK	TYPE	CFM	RPM	EXTERNAL SP (IN HG)	TEMP. RISE (°F)	CAPACITY (MBH)		ELECTRICAL DATA				WEIGHT (LBS)	MANUFACTURE	MODEL	NOTES
						INPUT	OUTPUT	HP	V/PH	MCA	MOP				
MAU-1	DIRECT FIRED	39,100	526	0.75	87.1	4,000.0	3,680.0	40	460/3	65.9	110	4,800	GREENHECK	DGX-133-H42	1

NOTES:
1. PROVIDE ROOF CURB WITH VIBRATION ISOLATION, VARIABLE VOLUME TWO SPEED CONTROL (39,100 CFM ALARM, NORMAL 19,555 CFM), ALUMINUM MESH WEATHER-HOOD, ANGLED FILTER SECTION (MERV-8 FILTERS), EXTENDED LUBE LINES, FACTORY MOUNTED VFD, HEAT INLET AIR SENSOR, DIRTY FILTER SWITCH, FIRE STAT (TYPE III), SMOKE DETECTOR, BMS INTERFACE (MONITOR ONLY, BACNETIP) AND HINGED ACCESS PANELS.

ROOFTOP UNIT SCHEDULE

MARK	BLOWER			COOLING						EER @ ARI	MCA	MAX FUSE SIZE	VOLTAGE / PHASE	MIN OA	WEIGHT (LBS)	MANUFACTURE	MODEL	NOTES
	CFM	EXTERNAL S.P.("WC)	HP	LAT AIR (°F DB)	LAT AIR (°F WB)	# OF STAGES	NOMINAL TONAGE	TOTAL MBH	SENS. MBH									
RTU-1	NOT USED																	
RTU-2	1860	0.75	1.0	57	54	(VARIABLE)	5.0	58.5	47.5	12.5	11.0	15.0	460/3	200	924	TRANE	TZC060E4R0	2
RTU-3	1760	0.75	1.0	59	57	(VARIABLE)	5.0	58.5	47.5	12.5	11.0	15.0	460/3	360	924	TRANE	TZC060E4R0	2
RTU-4	1800	0.75	1.0	60	57	(VARIABLE)	5.0	58.5	47.5	12.5	11.0	15.0	460/3	260	924	TRANE	TZC060E4R0	3
RTU-5	1890	0.75	0.75	56	55	(VARIABLE)	6.0	71.0	57.5	12.6	22.0	30.0	460/3	400	941	TRANE	TZC072E4R0	4
RTU-6	4300	0.75	3.0	58	57.1	4	12.5	144.0	107.3	12.1	30.0	40.0	460/3	800	2,459	TRANE	THH150G4R0	5

NOTES:
1. NOT USED.
2. PROVIDE WITH E-FLEX AND E-DRIVE TECHNOLOGY, ROOF CURB WITH VIBRATION ISOLATION, DOWN-FLOW AIR FLOW, LOW LEAK ECONOMIZER(COMPARATIVE ENTHALPY WITH BAROMETRIC RELIEF), MULTIPLE - ZONE VAV CONTROL, FACTORY MOUNTED VFDS, HINGED FILTER ACCESS DOOR (2" MERV 8 FILTERS), HAIL GUARDS, NON-FUSED DISCONNECT, ENHANCED DEHUMIDIFICATION, BACNET COMMUNICATION INTERFACE, CO2 SENSOR - DEMAND CONTROL VENTILATION, FROSTAT AND CRANKCASE HEATER.
3. PROVIDE WITH E-FLEX AND E-DRIVE TECHNOLOGY, ROOF CURB WITH VIBRATION ISOLATION, HORIZONTAL AIR FLOW, LOW LEAK ECONOMIZER(COMPARATIVE ENTHALPY WITH BAROMETRIC RELIEF), MULTIPLE - ZONE VAV CONTROL, FACTORY MOUNTED VFDS, HINGED FILTER ACCESS DOOR (2" MERV 8 FILTERS), HAIL GUARDS, NON-FUSED DISCONNECT, ENHANCED DEHUMIDIFICATION, BACNET COMMUNICATION INTERFACE, CO2 SENSOR - DEMAND CONTROL VENTILATION, FROSTAT AND CRANKCASE HEATER.
4. PROVIDE WITH E-FLEX AND E-DRIVE TECHNOLOGY, ROOF CURB WITH VIBRATION ISOLATION, HORIZONTAL AIR FLOW, LOW LEAK ECONOMIZER(COMPARATIVE ENTHALPY WITH BAROMETRIC RELIEF), MULTIPLE - ZONE VAV CONTROL, FACTORY MOUNTED VFDS, HINGED FILTER ACCESS DOOR (2" MERV 8 FILTERS), HAIL GUARDS, NON-FUSED DISCONNECT, ENHANCED DEHUMIDIFICATION, BACNET COMMUNICATION INTERFACE, CO2 SENSOR - DEMAND CONTROL VENTILATION, FROSTAT, AND CRANKCASE HEATER.
5. PROVIDE WITH TWO SCROLL COMPRESSORS, ROOF CURB WITH VIBRATION ISOLATION, HORIZONTAL AIR FLOW, LOW LEAK ECONOMIZER(COMPARATIVE ENTHALPY WITH BAROMETRIC RELIEF), MULTIPLE - ZONE VAV CONTROL, FACTORY MOUNTED VFDS, HINGED FILTER ACCESS DOOR (2" MERV 8 FILTERS), HAIL GUARDS, NON-FUSED DISCONNECT, ENHANCED DEHUMIDIFICATION, BACNET COMMUNICATION INTERFACE, CO2 SENSOR - DEMAND CONTROL VENTILATION, FROSTAT, SUPPLY AIR SMOKE DETECTOR, AND CRANKCASE HEATER.

FANS

MARK	LOCATION	FAN DATA		CFM HIGH SPEED	CFM LOW SPEED	ESP (IN H_2O)	FAN RPM	DRIVE TYPE	MOTOR DATA			MAX* SONES	MANUFACTURE	MODEL	NOTES
		WEIGHT (POUNDS)	FAN TYPE						HP (W)	VOLT	PHASE				
EF-1	CEILING	14.0	FC	150	NA	0.5	1050	DIRECT	(80)	115	1	3.5	GREENHECK	SP-B150	1
EF-2	CEILING	40.0	FC	420	NA	0.5	1,080	DIRECT	(285)	115	1	6.0	GREENHECK	SP-A710	2
EF-3	CEILING	40.0	FC	420	NA	0.5	1,080	DIRECT	(285)	115	1	6.0	GREENHECK	SP-A710	2
EF-4	IN-LINE	42.0	FC	420	NA	0.5	1,080	DIRECT	(258)	115	1	2.0	GREENHECK	CSP-A710	3
EF-5	IN-LINE	41.0	FC	600	NA	0.5	990	DIRECT	(227)	115	1	6.0	GREENHECK	CSP-A700	4
EF-6	IN-LINE	41.0	FC	500	NA	0.5	891	DIRECT	(159)	115	1	2.0	GREENHECK	CSP-A700	4
EF-7	ROOF	80.0	BI	1,200	600	0.5	1,681	DIRECT	0.25	115	1	11.0	GREENHECK	G-103-VG	5
EF-8	NOT USED														
EF-9	ROOF	110.0	BI	3,600	1,800	0.5	1,389	DIRECT	2.0	208/230	1	20.0	GREENHECK	G-163-VG	7
EF-10	ROOF	110.0	BI	3,900	1,950	0.5	1,480	DIRECT	2.0	208/230	1	22.0	GREENHECK	G-163-VG	8
EF-11	ROOF	180.0	BI	5,130	2,570	0.5	1,414	BELT	2.0	460	3	24.0	GREENHECK	GB-180-20	9
EF-12	ROOF	180.0	BI	5,130	2,570	0.5	1,414	BELT	2.0	460	3	24.0	GREENHECK	GB-180-20	9
EF-13	ROOF	210.0	BI	6,910	3,450	0.5	860	BELT	2.0	460	3	20.0	GREENHECK	GB-240-20	10
EF-14	ROOF	210.0	BI	6,910	3,450	0.5	860	BELT	2.0	460	3	20.0	GREENHECK	GB-240-20	10
EF-15	ROOF	210.0	BI	6,910	3,450	0.5	860	BELT	2.0	460	3	20.0	GREENHECK	GB-240-20	10
EF-16	ROOF	230.0	BI	7,900	3,950	0.5	601	BELT	2.0	460	3	16.0	GREENHECK	GB-300-20	11

NOTES:
1. PROVIDE WITH INTEGRAL BACKDRAFT DAMPER, DISCONNECT, RECTANGULAR HOODED WALL CAP (WC-10X3), WHITE ALUMINUM GRILLE, ROUND DUCT CONNECTOR AND ALUMINUM WHEEL.
2. PROVIDE WITH INTEGRAL BACKDRAFT DAMPER, DISCONNECT, RECTANGULAR HOODED WALL CAP (WC-18X8), WHITE ALUMINUM GRILLE, ROUND DUCT CONNECTOR AND ALUMINUM WHEEL.
3. PROVIDE WITH INTEGRAL SPRING LOADED BACKDRAFT DAMPER, DISCONNECT, RECTANGULAR HOODED WALL CAP (WC-18X8) AND ALUMINUM WHEEL.
4. PROVIDE WITH INTEGRAL SPRING LOADED BACKDRAFT DAMPER, DISCONNECT, RECTANGULAR HOODED WALL CAP (WC-18X8), SOLID STATE SPEED CONTROL AND ALUMINUM WHEEL..
5. PROVIDE WITH ROOF CURB, GRAVITY DAMPER (WD-100-PB-12X12), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, VARI-GREEN EC MOTOR (0-10 VDC INPUT) AND VARI GREEN 2-SPEED (W/INTEGRAL 85-277V TO 24 VDC TRANSFORMER).
6. NOT USED.
7. PROVIDE WITH ROOF CURB, GRAVITY DAMPER (WD-100-PB-16X16), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, VARI-GREEN EC MOTOR (0-10 VDC INPUT) AND VARI GREEN 2-SPEED (WITH INTEGRAL 85-277V TO 24 VDC TRANSFORMER).
8. PROVIDE WITH ROOF CURB, DAMPER (WD-100-PB-16X16) AND 115 VAC ACTUATOR (MP-100A), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, VARI-GREEN EC MOTOR (0-10 VDC INPUT), VARI-GREEN TRANSFORMER AND VARI-GREEN REMOTE INDOOR WALL MOUNTED DIAL.
9. PROVIDE WITH ROOF CURB, BEARING WITH GREASE FITTINGS, GRAVITY DAMPER (WD-100-PB-18X18), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, AUTOMATIC BELT TENSIONER AND VFD RATED MOTOR WITH SHAFT GROUNDING, VARI-GREEN DRIVE-100 (0-10 VDC INPUT) AND VARI GREEN 2-SPEED (WITH INTEGRAL 85-277V TO 24 VDC TRANSFORMER).
10. PROVIDE WITH ROOF CURB, BEARING WITH GREASE FITTINGS, GRAVITY DAMPER (WD-100-PB-24X24), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, AUTOMATIC BELT TENSIONER AND VFD RATED MOTOR WITH SHAFT GROUNDING, VARI-GREEN DRIVE-100 (0-10 VDC INPUT) AND VARI GREEN 2-SPEED (WITH INTEGRAL 85-277V TO 24 VDC TRANSFORMER).
11. PROVIDE WITH ROOF CURB, BEARING WITH GREASE FITTINGS, GRAVITY DAMPER (WD-100-PB-30X30), NEMA-1 TOGGLE SWITCH, WIRING PIGTAIL, AUTOMATIC BELT TENSIONER AND VFD RATED MOTOR WITH SHAFT GROUNDING, VARI-GREEN DRIVE-100 (0-10 VDC INPUT) AND VARI GREEN 2-SPEED (WITH INTEGRAL 85-277V TO 24 VDC TRANSFORMER).
12. INTERLOCK WITH MAU-1 AND GAS DETECTION SYSTEM.

UNIT HEATER - HYDRONIC

MARK	LOCATION	WT. LB.	CFM	EAT (°F)	LAT (°F)	EWT (°F)	LWT (°F)	GPM	DELTA P	MBH	ELECTRIC DATA					CABINET DATA	MANUFACTURE	MODEL	NOTES
											HP	MCA	AMP	V	PH	CONFIGURATION			
UH-1	SEE PLAN	70.0	1790	60.0	90.0	160.0	130.0	3.0	0.15	59.8	1/6	2.9	2.3	115	1	VERTICAL	STERLING	VSB-125-11-L2-1	1
UH-2	SEE PLAN	32.0	750	60.0	92.0	160.0	130.0	1.3	0.6	25.7	1/20	1.8	1.4	115	1	HORIZONAL	STERLING	HSA-136-11-L2-1	1

NOTES:
1. INSTALL 2' BELOW STRUCTURAL STEEL. VERIFY UNIT HEATER DOES NOT INTERFERE WITH CRANE OPERATION.
2. INSTALL TOP OF UNIT HEATER +/- 6" BELOW MEZZANINE.

AIR HANDLER UNIT

MARK	AIR DATA			COOLING COIL DATA				ELECTRICAL DATA						GENERAL DATA			MANUFACTURE	MODEL	NOTES
	CFM	ESP (IN H_2O)	MIN. OA (CFM)	SENS CAP (MBH)	TOTAL CAP (MBH)	EAT DB/WB (° F)	REFRIGERANT	HP	V	PH	MCA	MOP	SEER	SIZE (WxHxD) (IN)	WEIGHT (LB)	STYLE			
AHU-1	1250	0.7	100	27.93	32.98	76/62	R-410A	3/4	208/230	1	5	15	17	24x62x22	170	HORIZONAL	TRANE	GAM5B0B36M31SB	1

NOTES:
1. PROVIDE WITH A SECONDARY OVERFLOW SWITCH.

AIR COOLED CONDENSING

MARK	SERVES	NOMINAL CAPACITY (TON)	COOLING DATA		CONDENSING DATA					ELECTRICAL DATA					GENERAL DATA		MANUFACTURE	MODEL	NOTES
			SENS CAP (MBH)	TOTAL CAP (MBH)	FAN NO.	FAN HP	NO. STAGES	AMB. TEMP.	REFRIGERANT	V	PH	MCA	MOP	SEER/ EER	SIZE (WxHxD) (IN)	WEIGHT (LB)			
ACC-1	AHU-1	3	27.93	32.98	1	1/8	2	95°F	R-410A	208/230	1	24	35	16/12.5	35x51x39	250	TRANE	4TTR7036A1000B	1,2,3,4,5

NOTES:
1. REFRIGERANT PIPING QUANTITIES AND SIZE TO BE PER MANUFACTURER'S SCHEMATIC.
2. COOLING CAPACITY BASED ON 95°F EAT.
3. PROVIDE FACTORY COMPUTER SELECTION PRINTOUT FOR CONDITION STATED ABOVE.
4. PROVIDE COMPRESSOR WITH 5 YEAR WARRANTY. ALL COMPRESSORS SHALL HAVE A MINIMUM SEER VALUE OF 17.0.
5. PROVIDE A WALL MOUNT BRACKET.

PACKAGE TERMINAL AIR CONDITIONAL UNIT

MARK	NOMINAL CAPACITY (TON)	COOLING DATA					ELECTRICAL DATA					GENERAL DATA				MANUFACTURE	MODEL OUTDOOR/INDOOR	NOTES
		SENS CAP (MBH)	TOTAL CAP (MBH)	AMB. TEMP.	SUPPLY AIR (CFM)	REFRIGERANT	V	PH	MCA	MOP	SEER/ EER	INSIDE UNIT SIZE (WxHxD) (IN)	OUTSIDE UNIT SIZE (WxHxD) (IN)	INSIDE UNIT WEIGHT (LB)	OUTSIDE UNIT WEIGHT (LB)			
FC-1/CU-1	1.5	14.4	18.0	95°F	400	R-410A	208/230	1	15	25	16/11.1	35x9x12	38x16x28	30	110	TRANE	4TYK6518A10N0B/ 4MYW6518A10N0B	1,2,3,4,5

NOTES:
1. REFRIGERANT PIPING SHALL BE SIZED BY MANUFACTURER.
2. PROVIDE FACTORY COMPUTER SELECTION PRINTOUT FOR CONDITION STATED ABOVE.
3. PROVIDE COMPRESSOR WITH 5 YEAR WARRANTY.
4. PROVIDE A WALL MOUNT THERMOSTAT.
5. PROVIDE WITH CONDENSATE PUMP.

BOILER SCHEDULE

UNIT NO.	MFG.	MODEL NO.	INPUT MHB	OUTPUT MBH	THERMAL EFFICENCY	GAS CONNECTION	IN/OUT CONNECTION	VENT SIZE	INTAKE SIZE	ELECTRICAL V/PH	FLA	SHIPPING WEIGHT (LBS)	REMARKS:
B-1	REILLO	ARRRAY AR-4000	4,000	3,844	96.1	2"	4" / 4"	8"	10"	230/1	24.0	2,900	1, 2, 3, 4, 5

REMARKS:
1. INCLUDE CONDENSATE NEUTRALIZATION KIT.
2. PRIMARY BOILER PUMPS INTEGRAL TO BOILERS.
3. BOILER INCLUDES 8 INTEGRAL MODULES.
4. BOILER FLUE SHALL BE AL-29 OR EQUAL.
5. HEATING CAPACITY BASED ON 75% WATER/ 25% PROPYLENE GLYCOL.

ENERGY RECOVERY VENTILATOR (WITH TOTAL ENERGY WHEEL)

MARK	MIN. OA MAX. OA CFM	MIN. E.A. MAX. E.A. CFM	S.A. CFM	SUPPLY ESP. (IN WG)	EXHAUST ESP. (IN WG)	ENERGY RECOVERY WHEEL SUMMER				ENERGY RECOVERY WHEEL WINTER				WHEEL EFF	COOLING SECTION				HEATING SECTION				HOT GAS REHEAT			ELECTRICAL DATA					GENERAL DATA		MANUFACTURE	MODEL	NOTES
						OUTDOOR AIR		EXHAUST AIR		OUTDOOR AIR		EXHAUST AIR		SUMMER / WINTER	TOTAL CAPACITY (MBH)	SENSIBLE CAPACITY (MBH)	NOMINAL TONNAGE	NUMBER OF COMPRESSORS	GAS TYPE	INPUT/ OUTPUT (MBH)	TURN DOWN MOD	TEMP RISE (°F)	TYPE	CAPACITY (MBH)	LEAVING AIR (°F)	V	PH	MCA	MOP	EER/ IEER	SIZE (WxHxD) (IN)	WEIGHT (LB)			
						ENTER DB/WB (°F)	LEAVING DB/WB (°F)	ENTER DB/WB (°F)	LEAVING DB/WB (°F)	ENTER DB/WB (°F)	LEAVING DB/WB (°F)	ENTER DB/WB (°F)	LEAVING DB/WB (°F)																						
ERV-1	200/1480	180/1480	1600	0.5	0.5	95/79	80.8/68.1	75/68	89.2/74.3	95/79	80.8/68.1	75/68	89.2/74.3	69 / 71.3	91.1	55.0	7.5	1	NATURAL	100/80	16:1	46.3	MOD	61.6	84.8	460	3	22.7	30	12.2/12.7	86x60x150	2,790	GREENHECK	RVE-40-30P-30H-7.5	1,2

NOTES:
1. DESIGN CONDITIONS BASED ON SUMMER DB 95°F AND WB 79°F, AND WINTER DB -20° F.
2. PROVIDE ROOF CURB, MODULATING WHEEL FROST CONTROL, MERV 8 OA, EA AND SUPPLY AIR FILTERS, OA, EA AND SUPPLY LOW LINK DAMPERS, SUPPLY AND EXHAUST VFDS, BACNET CONTROLLER, PHASE AND BROWN OUT PROTECTION, UNIT DISCONNECT, HAIL GUARDS, R-410A REFRIGERANT, VARIABLE CAPACITY DIGITAL SCROLL COMPRESSOR, CRANKCASE HEATER, ECM CONDENSING FAN MOTOR, HIGH AND LOW PRESSURE CUTOUTS, SERVICE VALVES AND STAINLESS STEEL HEAT EXCHANGER WITH POWER VENTING.

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MECHANICAL SCHEDULES & DETAILS (1 OF 2)

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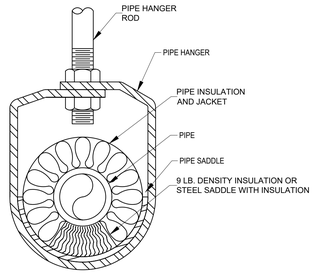
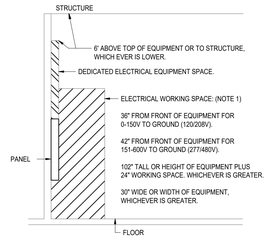


PIPE HANGER DETAIL

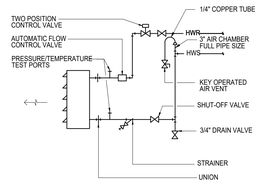
SCALE: NONE



ELECTRICAL CLEARANCE SPACE

SCALE: NONE

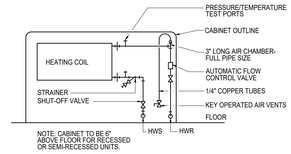
1. VERIFY WITH LOCAL CODE REQUIREMENTS, SPECIFICATIONS AND NATIONAL ELECTRIC CODE



UNIT HEATER PIPING DETAIL

SCALE: NONE

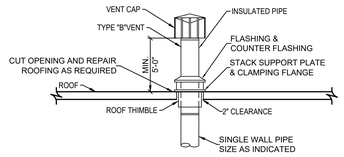
1. AUTOFLOW CONTROL VALVES SHALL INCLUDE INTEGRAL AIR BLEEDERS, TEST PORTS AND UNIONS.



CABINET UNIT HEATER DETAIL

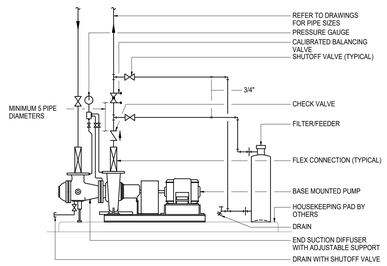
SCALE: NONE

1. AUTOFLOW CONTROL VALVES SHALL INCLUDE INTEGRAL AIR BLEEDERS, TEST PORTS AND UNIONS.



ROOF AND WALL CAP DETAIL

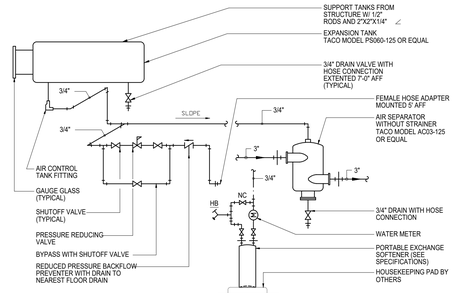
SCALE: NONE



BASE MOUNTED PUMP DETAIL

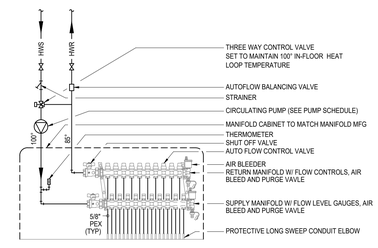
SCALE: NONE

1. PUMPS SHALL BE PROVIDED WITH LASER ALIGNMENT COMPLETED ON SITE. PROVIDE ALIGNMENT REPORT WITH PUMP CLOSEOUT O&M MANUALS.



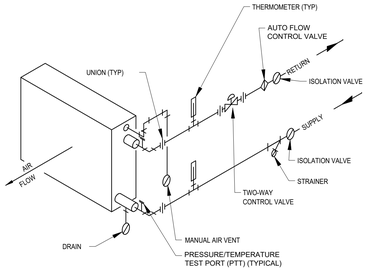
HEATING EXPANSION TANK DETAIL

SCALE: NONE



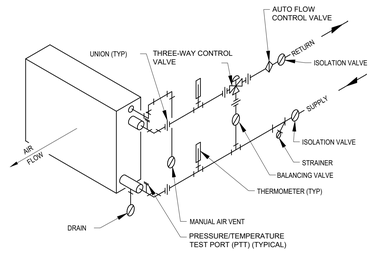
IN-FLOOR HEAT MANIFOLD DETAIL

SCALE: NONE



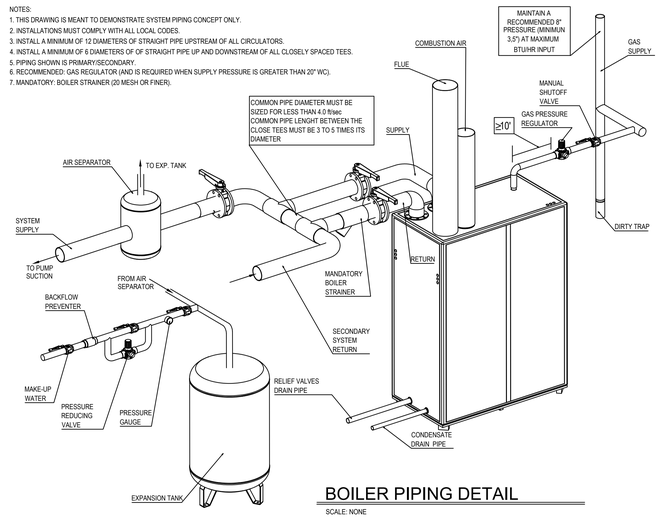
WATER COIL WITH 2-WAY VALVE DETAIL

SCALE: NONE



WATER COIL WITH 3-WAY VALVE DETAIL

SCALE: NONE



BOILER PIPING DETAIL

SCALE: NONE

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MECHANICAL SCHEDULES & DETAILS (2 OF 2)

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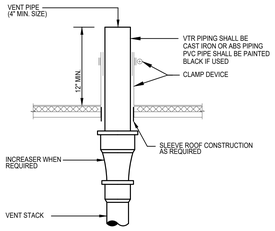
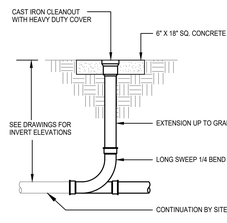


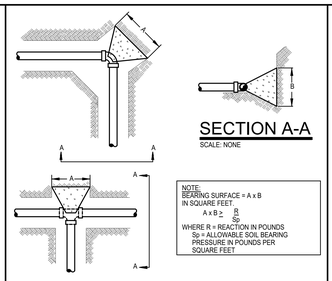
PLUMBING VENT DETAIL

SCALE: NONE



EXTERIOR CLEANOUT DETAIL

SCALE: NONE



SECTION A-A

SCALE: NONE

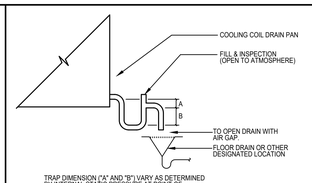
NOTE:
BEARING SURFACE = A x B
IN SQUARE FEET.

$A \times B \geq \frac{R}{Sp}$

WHERE R = REACTION IN POUNDS
Sp = ALLOWABLE SOIL BEARING
PRESSURE IN POUNDS PER
SQUARE FEET

THRUST BLOCK DETAIL

SCALE: NONE



TRAP DIMENSION ("A" AND "B") VARY AS DETERMINED BY INTERNAL STATIC PRESSURE AT POINT OF CONNECTION.

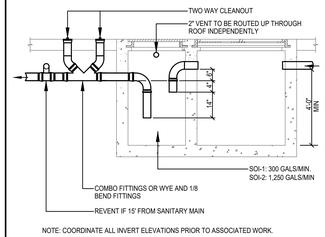
DIMENSION	POSITIVE STATIC PRESSURE	NEGATIVE STATIC PRESSURE
"A"	SP MAX	1.5 X SP
"B"	1.5 X SP	SP MAX

SP_{MAX} = MAXIMUM STATIC PRESSURE TO BE EXPERIENCED (DESIGN AT POINT OF CONNECTION).

CONDENSATE TRAP DETAIL

SCALE: NONE

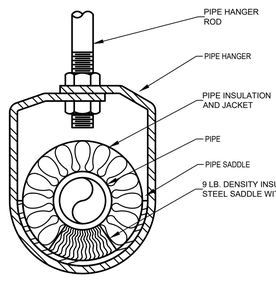
"A" & "B" MEASUREMENTS TO BE PROVIDED BY EQUIPMENT PROVIDER



NOTE: COORDINATE ALL INVERT ELEVATIONS PRIOR TO ASSOCIATED WORK.

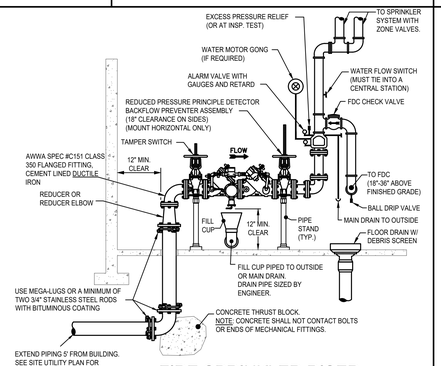
SAND/OIL INTERCEPTOR DETAIL

SCALE: NONE



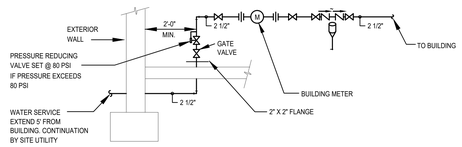
PIPE HANGER DETAIL

SCALE: NONE



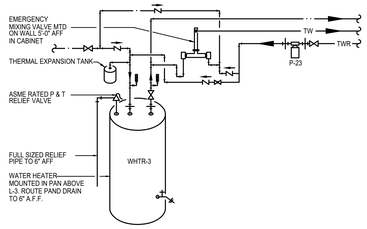
FIRE SPRINKLER RISER

SCALE: NONE



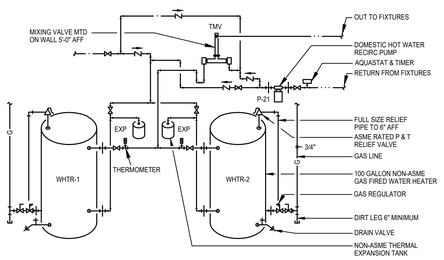
WATER SERVICE/METER DETAIL

SCALE: NONE



WATER HEATER PIPING DETAIL WHTR-3

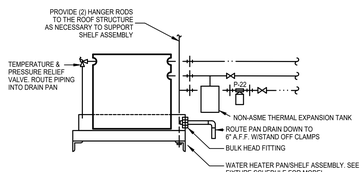
SCALE: NONE



WATER HEATER PIPING DETAIL WHTR-1 & 2

SCALE: NONE

1. PVC WATER HEATER INTAKE AND EXHAUST PIPING SHALL BE ROUTED UP AND OUT THROUGH ROOF BY THE PLUMBING CONTRACTOR.
2. REFER TO MANUFACTURERS RECOMMENDATIONS FOR INTAKE AND EXHAUST ROUTING AND INSTALLATOIN RECOMMENDATIONS.



WATER HEATER PIPING DETAIL WHTR-4

SCALE: NONE

PLUMBING FIXTURE SCHEDULE

FIXTURE SYMBOL	TYPE	MFG.	MODEL NO.	TRIM	SUPPLIES	WASTE	REMARKS
WC-1	WATER CLOSET WALL HUNG FLUSH VALVE	KOHLER	K-4325 KINGSTON	SLOAN G2 8111-1.6 BATTERY OPERATOR SENSOR FLUSH VALVE	---	--	K-4731-SC TOILET SEAT INSTALL TOP OF BOWL RIM AT 15" A.F.F. DUAL FILTERED BY-PASS ON FLUSH VALVE
WC-2	WATER CLOSET WALL HUNG FLUSH VALVE - ADA	KOHLER	K-4325 KINGSTON	SLOAN G2 8111-1.6 BATTERY OPERATOR SENSOR FLUSH VALVE	---	--	K-4731-SC TOILET SEAT INSTALL TOP OF BOWL RIM AT 17" A.F.F. DUAL FILTERED BY-PASS ON FLUSH VALVE
WC-3	WATER CLOSET FLOOR MOUNTED FLUSH TANK - ADA	KOHLER	K-3493 HIGHLINE	---	---	--	K-4731-SC TOILET SEAT
UR-1	URINAL - WALL MOUNTED	KOHLER	K-5016 DEXTER	SLOAN G2 8186-1.0 BATTERY OPERATOR SENSOR FLUSH VALVE	---	--	INSTALL TOP OF RIM AT 24" A.F.F. DUAL FILTERED BY-PASS ON FLUSH VALVE
UR-2	URINAL - WALL MOUNTED - ADA	KOHLER	K-5016 DEXTER	SLOAN G2 8186-1.0 BATTERY OPERATOR SENSOR FLUSH VAVLE	---	--	INSTALL TOP OF RIM AT 17" A.F.F. DUAL FILTERED BY-PASS ON FLUSH VALVE
L-1	LAVATORY - DROP IN CHINA - ADA	KOHLER	K-2196-1 PENNINGTON SINGLE HOLE	SLOAN 150-1.0 BATTERY OPERATOR SENSOR FAUCET	BRASSCRAFT KTCR19 STOPS SI-20 SUPPLIES 649 ESCHUTEONS	METAL GRID STAINER, 1 1/2" 17 GA. BRASS P-TRAP ASSEMBLY	---
L-2	LAVATORY - WALL HUNG CHINA - ADA	KOHLER	K-2007 KINGSTON SINGLE HOLE	SLOAN 150-1.0 BATTERY OPERATOR SENSOR FAUCET	BRASSCRAFT KTCR19 STOPS SI-20 SUPPLIES 649 ESCHUTEONS	METAL GRID STAINER, 1 1/2" 17 GA. BRASS P-TRAP ASSEMBLY	---
L-3	LAVATORY - WALL HUNG MULTI FONT	SLOAN	EWF-43000	INTEGRAL SENSOR	BRASSCRAFT KTCR19 STOPS SI-20 SUPPLIES 649 ESCHUTEONS	METAL GRID STAINER, 1 1/2" 17 GA. BRASS P-TRAP ASSEMBLY	HARD WIRED. COORDINATE WITH ELECTRICAL COORDINATE COLOR WITH ARCHITECT
SK-1	SINK - STAINLESS STEEL SINGLE COMPARTMENT - ADA	ELKAY	GECR2521 CELEBRITY 2-HOLE 4"C	ELKAY FAUCET LK406GN04T6 1.5 GPM AERATOR	BRASSCRAFT KTCR19 STOPS SI-20 SUPPLIES 649 ESCHUTEONS	CUP STYLE BASKET STAINER, 1 1/2" 17 GA. BRASS P-TRAP ASSEMBLY	WRIST BLADE HANDLES
EWC	WATER COOLER DUAL HEIGHT - ADA	ELKAY	EZSTL8C	---	BRASSCRAFT KTCR19 STOP SI-20 SUPPLY 649 ESCHUTEON	17 GA. BRASS P-TRAP	---
SH-1	SHOWER - ADA	AQUATIC	13638FSC	INCLUDE OPTIONAL PRESSURE BALANCED VALVE AND SLIDE BAR SHOWER ASSEMBLY	---	2" SHOWER DRAIN ASSEMBLY	ADA COMPLIANT SEAT, STAINLESS STEEL GRAB BARS FLEXIBLE DAM, REMOVEABLE THRESHOLD
MSK	MOP SINK	MUSTEE	63M	63.600A FAUCET	---	2" SHOWER DRAIN	STAINLESS STEEL DOME STRAINER, MOP HANGER HOSE AND HOLDER, INSTALL CHECK VALVES ON HOT AND COLD WATER SUPPLY PIPING
ESH	EMERGENCY SHOWER	SPEAKMAN	SE-616	--	---	--	RECIRCULATED TEMPERED WATER CONNECTION
UB-1	LAUNDRY BOX	GUY GRAY	WB200HA	---	---	---	SINGLE LEVER BALL TYPE VALVE WITH INTEGRAL HAMMER ARRESTORS. PROVIDE CHECK VALVES ON HOT AND COLD WATER SUPPLY TO LAUNDRY BOX
WH	WALL HYDRANT	WOODFORD	MODEL 67	---	---	---	INTEGRAL VACUUM BREAKER, LOOSE KEYED OPERATOR, COORDINATE LENGTH WITH WALL DEPTH SEAL WALL PENETRATION WITH FOAM SEALANT
FD-1	FLOOR DRAIN	SIOUX CHIEF	832-NR SERIES	---	---	3"	NICKEL BRONZE STRAINER. PROVIDE LEVELING SHIMS AS NEEDED
FD-2	FLOOR DRAIN	SIOUX CHIEF	860-4PI SERIES	---	---	4"	CAST IRON ROUND STRAINER
FD-3	FLOOR DRAIN	SIOUX CHIEF	860-4PI SERIES	---	---	4"	CAST IRON ROUND STRAINER & STAINLESS STEEL DEBRIS BASKET
CO	FLOOR CLEANOUT	SIOUX CHIEF	834 SERIES	---	---	4"	NICKEL BRONZE COVER. PROVIDE LEVELING SHIMS AS NEEDED
GCO	GRADE CLEANOUT	SIOUX CHIEF	851-24I SERIES	---	---	4"	CAST IRON ROUND COVER
TD-1	TRENCH DRAIN	ACO	S300K	---	---	---	12" DUCTILE IRON SLOTTED GRATE. IRON EDGED CHANNELS
TD-2	TRENCH DRAIN	ACO	S300K	---	---	SK900 INLINE CATCH BASIN AND OPTIONAL TRASH BUCKET	12" DUCTILE IRON SLOTTED GRATE. IRON EDGED CHANNELS
TMV	THERMOSTATIC MIXING VALVE	LAWLER	803 ROUGH BRASS	---	---	---	MOUNT MIXING VALVE ON WALL 5' A.F.F.
EMV	EMERGENCY MIXING VALVE	LAWLER	911 ROUGH BRASS	---	---	---	RECESSED STAINLESS STEEL CABINET INSTALLED 5' A.F.F. 85° SET POINT
RD-1	ROOF DRAIN ASSEMBLY	ZURN	Z100	---	---	4"	CAST IRON DOME AND STRAINER OBTAIN WRITTEN ROOF DRAIN HEIGHTS FROM ROOFING CONTRACTOR PRIOR TO INSTALLATION
RD-2	ROOF DRAIN ASSEMBLY	ZURN	Z100	---	---	6"	CAST IRON DOME AND STRAINER OBTAIN WRITTEN ROOF DRAIN HEIGHTS FROM ROOFING CONTRACTOR PRIOR TO INSTALLATION
ORD-1	OVERFLOW ROOF DRAIN ASSEMBLY	ZURN	Z100	---	---	4"	CAST IRON DOME AND STRAINER PROVIDE 2" INTERNAL WATER DAM OBTAIN WRITTEN OVERFLOW ROOF DRAIN HEIGHTS FROM ROOFING CONTRACTOR PRIOR TO INSTALLATION
ORD-2	OVERFLOW ROOF DRAIN ASSEMBLY	ZURN	Z100	---	---	6"	CAST IRON DOME AND STRAINER PROVIDE 2" INTERNAL WATER DAM OBTAIN WRITTEN OVERFLOW ROOF DRAIN HEIGHTS FROM ROOFING CONTRACTOR PRIOR TO INSTALLATION

REMARKS/NOTES:
1. ALL FIXTURES INCLUDING FAUCET TRIM AND SHOWER HEADS SHALL BE CAULKED. TOILET AND OTHER FIXTURES LOCATED AGAINST TILE SHALL BE CAULKED WITH CLEAR CAULK.
2. ALL FIXTURES SHALL BE INSTALLED AS RECOMMENDED BY THE MANUFACTURER INCLUDING MORTAR BEDS/ADHESIVE FOR SHOWERS IF RECOMMENDED.
3. COORDINATE FLOORING AND THRESHOLD HEIGHT REQUIREMENTS FOR ADA SHOWERS WITH THE GENERAL CONTRACTOR PRIOR TO ASSOCIATED WORK.
4. SHOWER DRAINS SHALL BE INSTALLED WITH 100% SILICONE SEALANT. COMPRESSION STYLE SHOWER DRAINS ARE NOT ACCEPTABLE FOR THIS PROJECT.
5. THE INTEGRITY OF THE FIRE RATED WALL AND CEILINGS SHALL BE MAINTAINED AT ALL TIMES. THIS CONTRACTOR IS RESPONSIBLE FOR FIRE CAULKING/SEALING AS REQUIRED TO COMPLETE THEIR SCOPE OF WORK.
6. THE FIXTURE STOPS AND SUPPLIES LISTED ABOVE SHALL BE CHROME PLATED 1/4 TURN BALL STYLE STOPS WITH CHROME METAL ESCHTEONS TRIM RINGS (CAULKED TO WALL) AND FLEXIBLE BRAIDED SUPPLY TUBES.
7. INSTALL ALL ADA FIXTURES PER MANUFACTURERS RECOMMENDED HEIGHTS AND LOCATIONS AS ALLOWED BY LOCAL ADA CODE.

WATER HEATER SCHEDULE

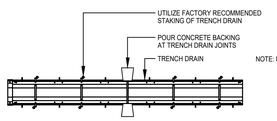
UNIT NO.	MFG.	MODEL NO.	CAPACITY GALLONS	INPUT (MBH)	UEF/ THERMAL EFFICENCY	RECOVERY @ 90° RISE	EXPANSION TANK REQUIRED	ELECTRICAL V/PH	FLA	SHIPPING WEIGHT (LBS)	REMARKS:
WHTR-1	A.O. SMITH	BTH-150	100	150	97	198	A.O. SMITH PMI-14	120/1	5.0	523	1,2,3
WHTR-2	A.O. SMITH	BTH-150	100	150	97	198	A.O. SMITH PMI-14	120/1	5.0	523	1,2,3
WHTR-3	A.O. SMITH	ENL-50	48	4500W	0.93	21	A.O. SMITH PMI-14	240/1	21	172	1,4,5,7
WHTR-4	A.O. SMITH	EJCT-20	19.9	2500	0.93	11	A.O. SMITH PMI-14	120V	15	68	1,5,6,7

REMARKS:
1. ASME T&P RELIEF VALVE.
2. INCLUDE OPTIONAL CONDENSATE NEUTRALIZATION KIT.
3. CONCENTRIC VENT KIT.
4. UNIT SHALL BE MOUNTED ON A HOLDRITE MODEL 50-SWHP-W-C WATER HEATER PLATFORM.
5. UNIT SHALL BE MOUNTED ABOVE LAVATORY.
6. UNIT SHALL BE MOUNTED ON A HOLDRITE MODEL 40-SWHP-W-C WATER HEATER PLATFROM.
7. PROVIDE ADEQUATE BACKING AND STRUCTURAL SUPPORT TO PROPERLY SUPPORT THE OPERATING WEIGHT OF THE WATER HEATER.

PUMP SCHEDULE

UNIT NO.	MFG.	DESCRIPTION	MODEL NO.	STYLE	FLOW RATE (GPM)	HEAD (FT)	MOTOR HP	RPM	ELECTRICAL V/PH	FLA	REMARKS:
P-21	TACO	DOMESTIC HOT WATER RECIC	0012	INLINE	5	14	1/8	3250	120	1	1,2
P-22	TACO	DOMESTIC HOT WATER RECIC	0010	INLINE	5	10	1/8	3250	120	1	1,2
P-23	TACO	DOMESTIC HOT WATER RECIC	0010	INLINE	5	10	1/8	3250	120	1	1,2

REMARKS:
1. PUMPS SHALL INCLUDE BRONZE OR STAINLESS STEEL FLANGES WITH INTEGRAL FLOW CHECKS AND ASSOCIATED GASKETS.
2. PUMPS SHALL BE MOUNTED IN A MANNER THAT ALLOWS THEM TO BE EASILY SERVICED AND/OR REPLACED.
3. DOMESTIC RECIRCULATING PUMPS SHALL INCLUDE ALL ASSOCIATED FLANGES, CHECK VALVES, AQUASTAT AND TIMER.



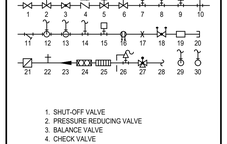
NOTE: UTILIZE LASER OR STRING LINE ALIGNMENT OF TRENCH DRAIN PRIOR TO, AND DURING CONCRETE INSTALLATION TO ENSURE PROPER DRAIN ALIGNMENT.

TRENCH DRAIN SUPPORT DETAIL

SCALE: NONE

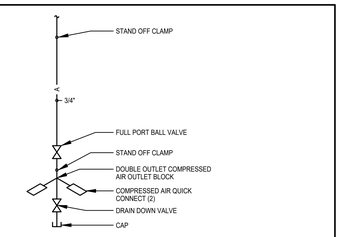
LEGEND

SYMBOL	ABBREV.	DESCRIPTION
	CW	COLD WATER
	HW	HOT WATER
	RHW	RECIRCULATED HOT WATER
TW	TW	TEMPERED WATER
S	SCW	SOFT COLD WATER
S	SHW	SOFT HOT WATER
S	SRHW	SOFT RECIRCULATED HOT WATER
DI	DI	DEIONIZED WATER
LSPR	LSPR	LAWN SPRINKLER
FSPR	FSPR	FIRE SPRINKLER
A	A	COMPRESSED AIR
O	O	OXYGEN
VAC	VAC	VACUUM
W	W	WASTE BELOW GRADE
W	W	WASTE BELOW FLOOR
W	W	WASTE ABOVE GRADE
AW	AW	ACID WASTE
DS	DS	DOWNSPOUT (RAINWATER)
V	V	VENT
AV	AV	ACID VENT
HWS	HWS	HEATING WATER SUPPLY
HWR	HWR	HEATING WATER RETURN
CHS	CHS	CHILLED WATER SUPPLY
CHR	CHR	CHILLED WATER RETURN
COND	COND	CONDENSATE
G	G	NATURAL GAS LINE (FIRM)
WG	WG	WELDING GAS
		SPLASH BLOCK
		CONNECTION TO EXISTING
	CO	CLEANOUT
	WH	WALL HYDRANT
	FD	FLOOR DRAIN
	FSK	FLOOR SINK
	HB	HOSE BIBB
		ROUND INTAKE/EXHAUST PIPE UP
		ROUND INTAKE/EXHAUST /FLOOR PENETRATION
		ROUND INTAKE/EXHAUST PIPE DOWN
	STAT	THERMOSTAT
	STAT	THERMOSTAT W/LOCKING COVER



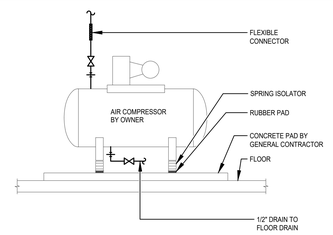
1. SHUT-OFF VALVE
2. PRESSURE REDUCING VALVE
3. BALANCE VALVE
4. CHECK VALVE
5. CONTROL VALVE
6. GAS COCK/PLUG VALVE
7. THERMOMETER
8. PRESSURE GAUGE
9. MANUAL AIR VENT
10. UNION
11. STRAINER W/DRAIN VALVE
12. TOP CONNECTION TEE W/ELBOW
13. BOTTOM CONNECTION TEE W/ELBOW
14. SIDE CONNECTION TEE
15. SHOCK ABSORBER
16. FLOW METER FITTING
17. PIPE ANCHOR
18. BALANCE VALVE W/FLOW METER FITTING
19. FLOW CONTROL VALVE
20. PIPE CAP, PLUG OR CLEANOUT
21. FLOAT AND THERMOSTATIC TRAP
22. PRESSURE AND TEMPERATURE TEST PORT
23. FLOW DIRECTION ARROW
24. EXPANSION JOINT
25. FLEX CONNECTOR
26. PRESSURE AND TEMPERATURE RELIEF VALVE
27. THREE WAY CONTROL VALVE
28. CONTINUATION SYMBOL
29. PIPE DOWN
30. PIPE UP

ABBREV.	DESCRIPTION
A	Compressed Air
AFF	Above Finished Floor
AG	Above Grade
AHU	Air Handling Unit
ARCH	Architect or Architectural
AV	Acid Vent
AW	Acid Waste
BAS	Building Automation System
BG	Below Grade
BHP	Brake Horsepower
BTU	British Thermal Units
CA	Combustion Air
CAP	Capacity
CC	Center to Center
CHR	Chilled Water Return
CHS	Chilled Water Supply
CO	Cleanout
COND	Condensate
CUH	Cabinet Unit Heater
CW	Cold Water
°F	Degrees Farenheit
DI	Deionized Water
DIV	Division
DN	Down
DS	Downspout
DWG	Drawing
EEW	Emergency Eye Wash
ELECT	Electrical
EQUIP	Equipment
ESH	Emergency Shower
EWC	Electric Water Cooler
EWT	Entering Water Temperature
EXIST	Existing
EXP	Expansion
FCU	Fan Coil Unit
FD	Floor Drain
FP	Fan Powered VAV
FSK	Floor Sink
FSPR	Fire Sprinkler
FTG	Fitting
G	Gas (Natural or LP Gas)
GAL	Gallon
GALV	Galvanized
GPH	Gallons Per Hour
GPM	Gallons Per Minute
HANDI	Handicapped
HC	Heating Coil
HD	Hub Drain
HP	Horsepower
HPR	Heat Pump Return
HPS	Heat Pump Supply
HTG	Heating
HW	Hot Water
HWR	Heating Water Return
HWS	Heating Water Supply
ID	Inside Dimension
INT	Internal
I.E.	Invert Elevation
KW	Kilowatt
L	Lavatory
LBS	Weight in Pounds
LP	Liquified Petroleum
LSPR	Lawn Sprinkler
LWT	Leaving Water Temperature
MFG	Manufacturer
MBH	BTU x 1000
MHP	Motor Horsepower
MSK	Mop Sink
MTD	Mounted
NO	Number
O	Oxygen
OC	On Center
OD	Outside Diameter
ODS	Overflow Downspout
ORD	Overflow Roof Drain
PD	Pressure Drop
PH	Phase
PLBG	Plumbing
RAD	Radiant Heater/Radiation
RD	Roof Drain
RECIRC	Recirculating
RPM	Revolutions Per Minute
SH	Shower
SK	Sink
SPECS	Specifications
SS	Stainless Steel
TEMP	Temperature
TW	Tempered Water
TYP	Typical
UH	Unit Heater
UR	Urinal
V	Unit Ventilator
UV	Vent or Volts
VAC	Vacuum
VOL	Volume
W	Waste or Watts
W/	With (to include)
W/O	Without (does not include)
WC	Water Closet
WF	Wash Fountain
WPD	Water Pressure Drop
WG	Weld Gas



TYPICAL AIR DROP DETAIL

SCALE: NONE



AIR COMPRESSOR PIPING DETAIL

SCALE: NONE

NOT DISCLOSED

PLUMBING DETAILS AND SCHEDULES

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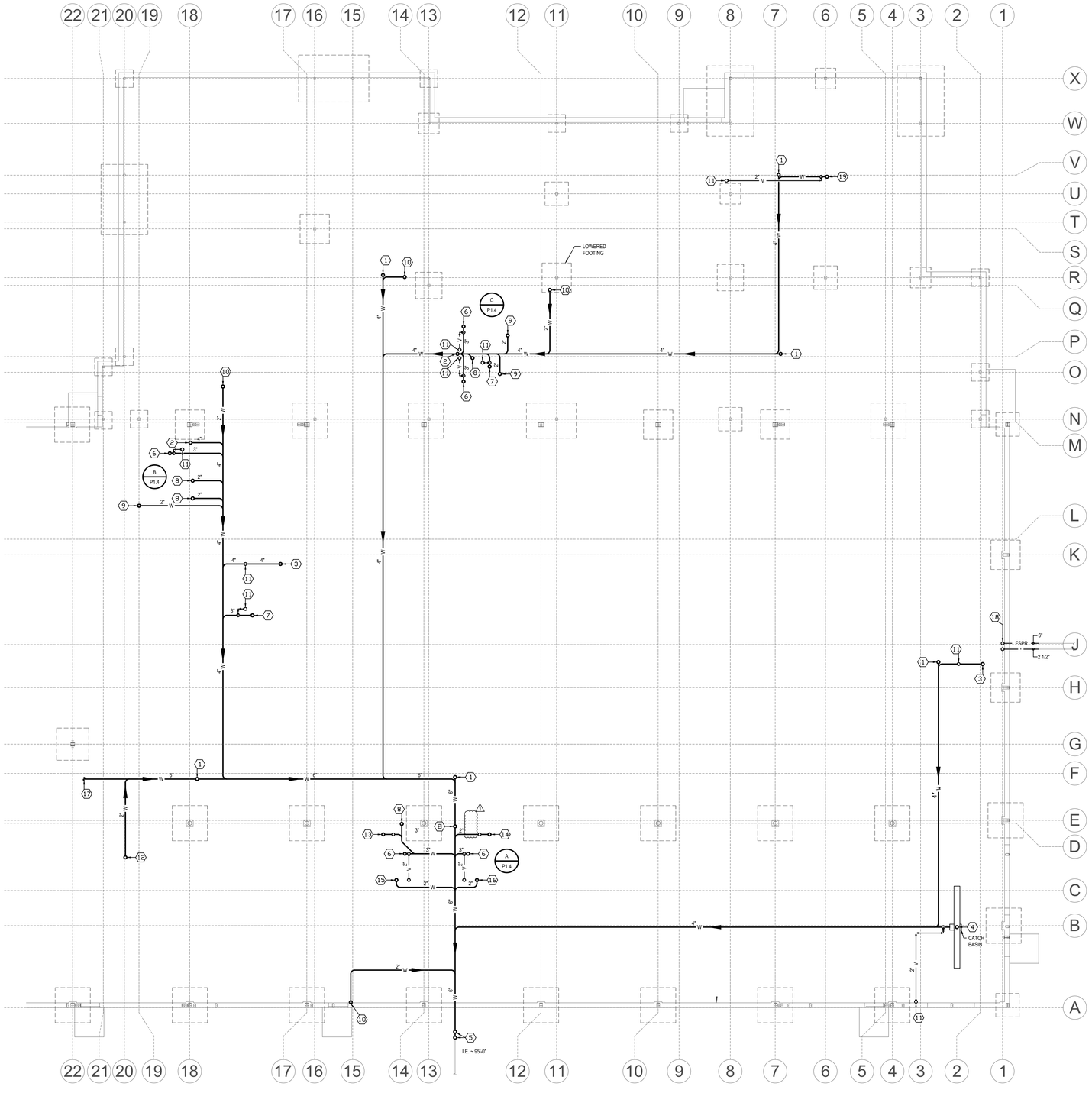
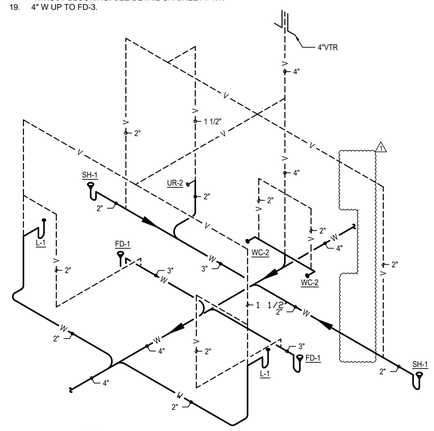
PLUMBING



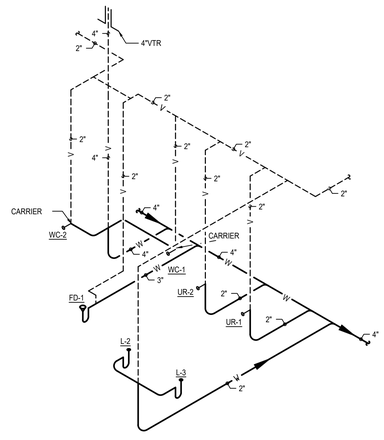
1 UNDERGROUND PLUMBING PLAN - NORTH
1/8" = 1'-0"

KEYED PLUMBING NOTES: (X)

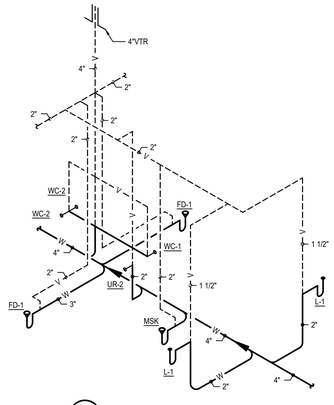
1. 4" W UP TO CO.
2. 4" W UP TO CARRIER GROUP.
3. 4" W UP TO FD-2.
4. 4" W UP TO TD-2/CATCH BASIN.
5. 4" W UP TO GCO.
6. 3" W UP TO FD-1.
7. 3" W UP TO MSK.
8. 2" W UP TO UR.
9. 2" W UP TO LAV.
10. 2" W UP TO SK.
11. 2" V UP.
12. 2" W UP TO EWC.
13. 2" W UP TO SH, 2" V UP.
14. 2" V UP, 2" W UP TO SH.
15. 2" W UP TO LAV, 2" V UP.
16. 2" V UP, 2" W UP TO LAV/EWC.
17. SEE SHEET P1.3 FOR CONTINUATION.
18. 6" FSPR UP TO BLIND FLANGE. 2 1/2" CW SERVICE UP TO BLIND FLANGE. PROVIDE THRUST BLOCKING. SEE DETAIL ON SHEET P1.1.
19. 4" W UP TO FD-3.



A P1.4 WASTE & VENT RISER
SCALE: NONE



B P1.4 WASTE & VENT RISER
SCALE: NONE



C P1.4 WASTE & VENT RISER
SCALE: NONE

NOT DISCLOSED

UNDERGROUND PLUMBING PLAN - NORTH

PLAN NORTH TRUE NORTH

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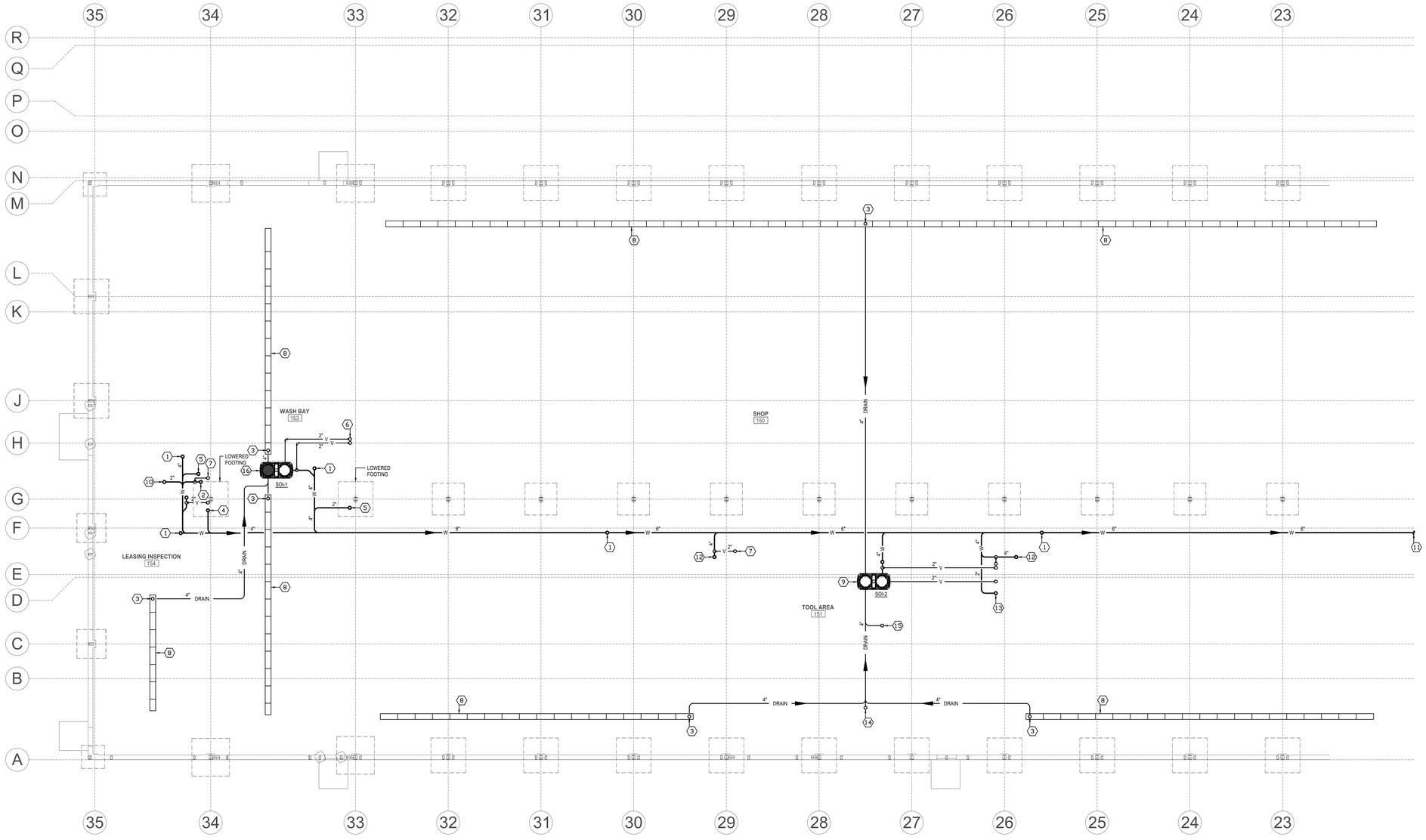

KEYED PLUMBING NOTES: (X)

1. 4" W UP TO CO.
2. 4" W UP TO WC.
3. 4" DRAIN UP TO TD (LESS P-TRAP).
4. 2" W UP TO LAV.
5. 2" W UP TO SK.
6. 2" V UP, 2" V UP.
7. 2" V UP.
8. TRENCH DRAIN ASSEMBLY. REFER TO TRENCH DRAIN JOINT DETAIL ON SHEET P1.1.
9. SAND/OIL INTERCEPTOR (1,250 GAL/MIN). SEE DETAIL ON SHEET P1.1.
10. 2" W UP TO UR.
11. SEE SHEET P-3 FOR CONTINUATION.
12. 4" W UP TO FD-2.
13. 2" V UP, 2" V UP, 2" V UP, 2" W UP.
14. 4" DRAIN UP TO CO.
15. 4" W UP TO FD-3.
16. SAND/OIL INTERCEPTOR (300 GAL/MIN). SEE DETAIL ON SHEET P1.1.

1 UNDERGROUND PLUMBING PLAN - SOUTH
1/8" = 1'-0"

NOT DISCLOSED

UNDERGROUND PLUMBING PLAN - SOUTH

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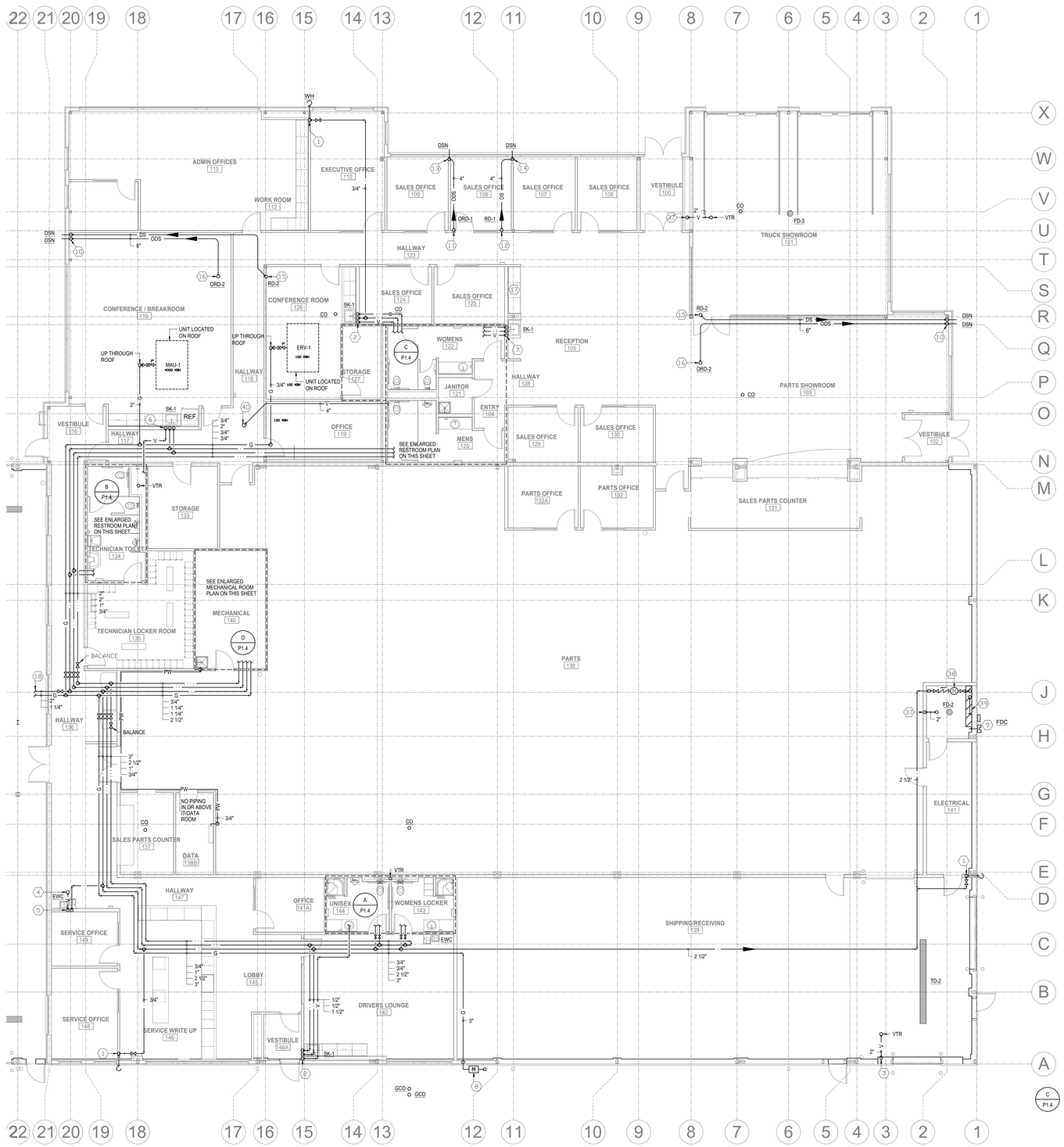
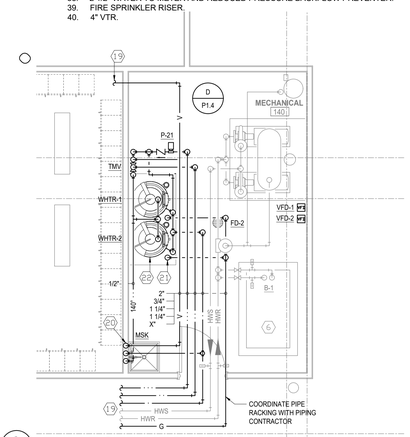
KEYED PLUMBING NOTES:

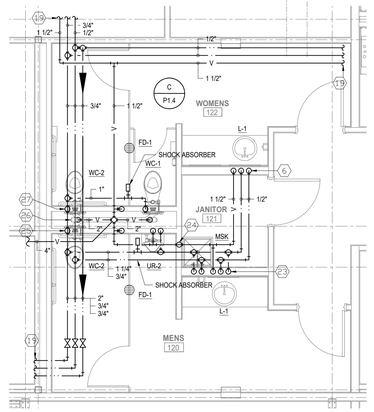
1. 3/4" CW DN TO WH MOUNTED 18" ABOVE FINISHED GRADE.
2. 1/2" HW DN, 1/2" CW DN, 1 1/2" V/2" W DN. ROUTE PIPING THROUGH CABINET TO SERVE SK-1.
3. 2" V UP (4" VTR), 2" V DN.
4. 2" V UP (4" VTR).
5. 2" V DN, 1/2" CW DN.
6. 1 1/2" V/2" W DN, 1/2" CW DN, 1/2" HW DN.
7. 1/2" CW DN, 1/2" HW DN, 1 1/2" V/2" W DN.
8. NATURAL GAS METER SIZED AT 2 PSIG @ 1 PSIG PRESSURE DROP X 500' @ 9130 MBH.
9. FIRE DEPARTMENT CONNECTION LOCATION.
10. 6" DS DN, 6" ODS DN. ROUTE PIPING DN AND OUT THROUGH WALL 18" ABOVE FINISHED GRADE.
11. 4" ODS UP TO 4" ORD.
12. 4" DS UP TO 4" RD.
13. 4" ODS DN AND OUT THROUGH WALL 18" ABOVE FINISHED GRADE.
14. 4" DS DN AND OUT THROUGH WALL 18" ABOVE FINISHED GRADE.
15. 6" DS UP TO 6" RD.
16. 6" ODS UP TO 6" ORD.
17. ROUTE PIPING THROUGH CABINET TO SERVE COFFEE MAKER. COFFEE MAKER WATER PIPING SHALL HAVE AN INDEPENDENT ISOLATION VALVE LOCATED UNDER SK-1.
18. SEE SHEET P1.5 FOR CONTINUATION.
19. SEE THIS SHEET FOR CONTINUATION.
20. 2" V DN, 1/2" CW DN, 1/2" 140° HW DN.
21. 3/4" G DN TO WHTR (TYPICAL OF 2). PROVIDE GASCOCK, PRESSURE REDUCING VALVE, DIRT LEG AND UNION.
22. 100 GALLON NON-ASME GAS FIRED WATER HEATERS ON CONCRETE HOUSEKEEPING PAD. SEE WATER HEATER PIPING DETAIL ON SHEET P1.1. HOUSEKEEPING PAD BY OTHERS.
23. 1/2" CW DN, 1/2" HW DN, 1 1/2" V/2" W DN, 1/2" HW DN, 1/2" CW DN.
24. 2" V DN.
25. 1" CW DN, 2" V DN, 1 1/2" V/2" W DN, 3/4" CW DN.
26. 2" V DN, 4" V UP/DN, 2" V DN.
27. 1" CW DN, 2" V DN, 1" CW DN.
28. 1" CW DN.
29. 4" V UP/DN (4" VTR).
30. 1" CW DN, 1 1/2" V/2" W DN, 3/4" CW DN, 1 1/2" V/2" W DN, 3/4" CW DN.
31. 1/2" CW DN, 1/2" HW DN, 1 1/2" V/2" W DN, 3/4" CW DN, 3/4" HW DN.
32. 1/2" CW DN, 1/2" HW DN.
33. 1/2" HW DN, 1/2" CW DN.
34. 1 1/2" V/2" W DN, 3/4" CW DN.
35. 1/2" CW DN, 1/2" HW DN, 1 1/2" V/2" W DN, 2" V DN.
36. 2" V DN, 1 1/2" V/2" W DN, 1/2" CW DN, 1/2" HW DN.
37. 2" V DN, 2" V UP (4" VTR).
38. 2 1/2" WATER TO METER AND REDUCED PRESSURE BACKFLOW PREVENTER.
39. FIRE SPRINKLER RISER.
40. 4" VTR.



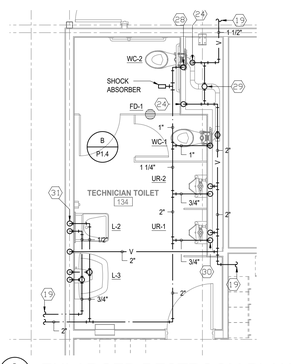
1 PLUMBING PLAN - NORTH
1/8" = 1'-0"



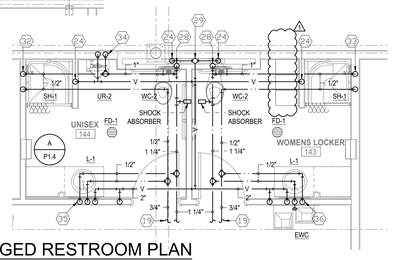
D P1.4 ENLARGED MECHANICAL ROOM PLAN
SCALE: NONE



C P1.4 ENLARGED RESTROOM PLAN
SCALE: NONE



B P1.4 ENLARGED RESTROOM PLAN
SCALE: NONE



A P1.4 ENLARGED RESTROOM PLAN
SCALE: NONE

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PLUMBING PLAN - NORTH

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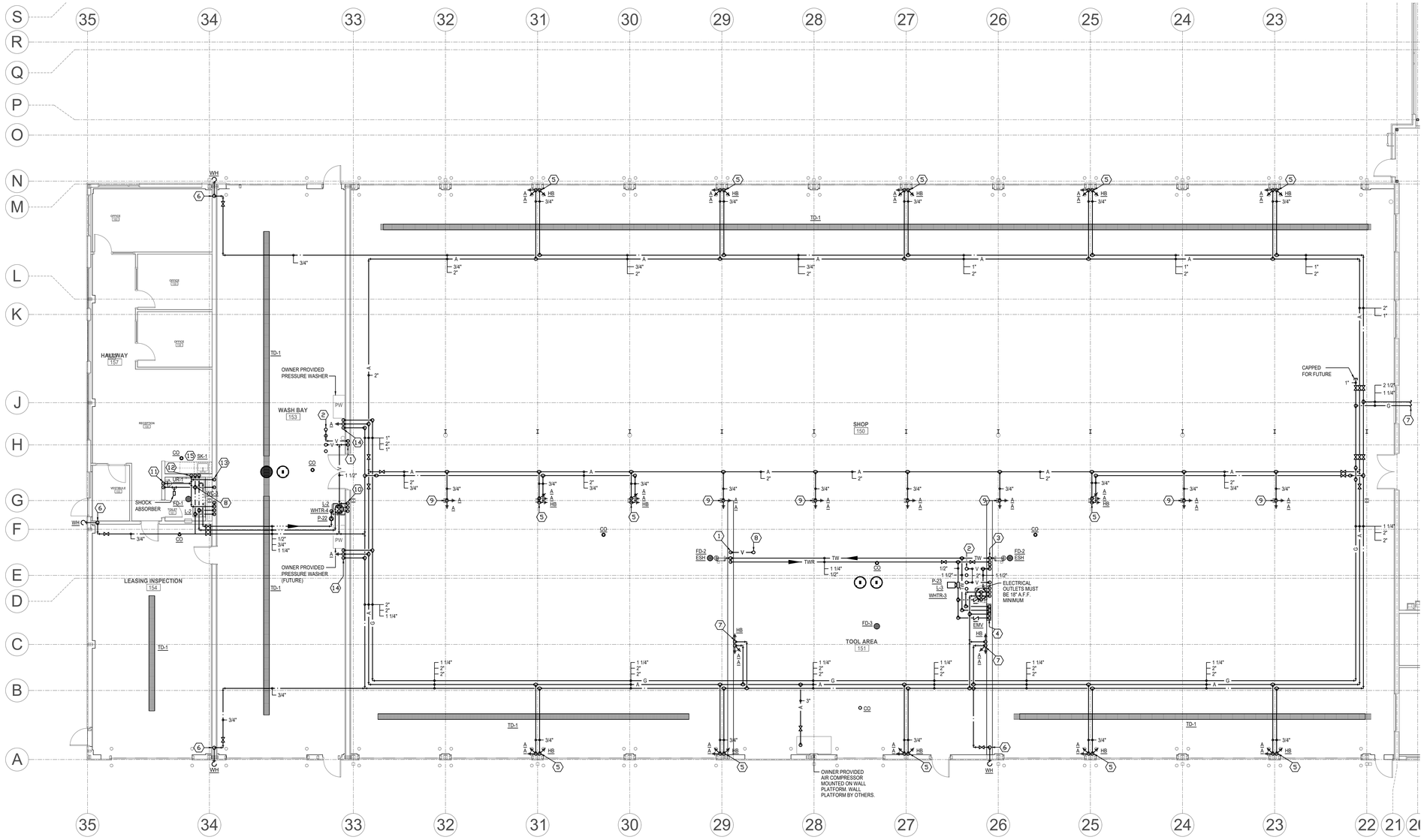

KEYED PLUMBING NOTES: (X)

1. 2" V DN, 2" V DN.
2. 2" V UP (4" VTR), 2" V UP (4" VTR).
3. 1 1/4" TW DN, 2" V DN, 2" V DN, 2" V DN, 1 1/2" V/2" W DN, 3/4" HW DN, 3/4" CW DN.
4. 1 1/4" HW DN, 1 1/2" TW DN, 1 1/4" CW DN. REDUCE 1 1/2" TW TO 1 1/4" AT EMV.
5. 3/4" A DN, 3/4" CW DN TO HB. MOUNT AIR AT 48" A.F.F. AND HB 36" A.F.F. PROVIDE (2) 1/2" QUICK CONNECT COUPLINGS, DRIP LEG AND DRAIN DOWN VALVE.
6. 3/4" CW DN TO WH MOUNTED 18" ABOVE FINISHED GRADE.
7. SEE SHEET P1.4 FOR CONTINUATION.
8. 2" V UP (4" VTR).
9. 3/4" A DN. MOUNT AIR AT 48" A.F.F. PROVIDE (2) 1/2" QUICK CONNECT COUPLINGS, DRIP LEG AND DRAIN DOWN VALVE.
10. 1 1/2" V/2" W DN, 1/2" HW DN, 1/2" CW DN.
11. 1 1/2" V/2" W DN, 3/4" CW DN.
12. 1 1/2" V/2" W DN, 1/2" CW DN, 1/2" HW DN.
13. 1/2" CW DN, 2" V DN, 2" V DN, 1 1/2" V/2" W DN, 1/2" HW DN, 1/2" CW DN.
14. 1" G DN, 3/4" A DN, 1" CW DN. TERMINATE DROPS 5' A.F.F WITH FULL PORT BALL VALVE AND QUICK CONNECT FITTINGS TO MATCH THE PRESSURE WASHER CONNECTION REQUIREMENTS. COORDINATE WITH MANUFACTURER AND OWNER TO DETERMINE EXACT CONNECTION REQUIREMENTS AND LOCATIONS. PROVIDE WITH GAS COCK AND PRESSURE REDUCING VALVE.
15. 1/4" CW WITH ISOLATION VALVE UNDER COUNTER FOR COFFEE MACHINE.

NOT DISCLOSED

PLUMBING
PLAN - SOUTH

(1) PLUMBING PLAN - SOUTH
1/8" = 1'-0"

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