

MECHANICAL LEGEND					
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	WALL MOUNTED THERMOSTAT		COLD WATER LINE	LAV	LAVATORY BASIN
	FIRE DAMPER		HOT WATER LINE	WC	WATER CLOSET
	1 HOUR FIRE RATED WALL		HOT WATER RECIRC	SK	STAINLESS STEEL SINK
	24"x24" T-BAR CEILING DIFFUSER, NECK SIZE AS SHOWN.		DWV INSTALLED PIPING	MS	MOP SINK
	EGGCRATE RETURN AIR GRILLE.		DWV VENT PIPING	EF	EXHAUST FAN
	EGGCRATE EXHAUST AIR GRILLE C/W OPPOSED BLADE DAMPER.		SHUT-OFF VALVE	FFH	FORCED FLOW HEATER
	FLEXIBLE DUCT, SIZE TO MATCH DIFFUSER NECK SIZE.		CLEANOUT	N	NEW SEMI-RECESSED SPRINKLER HEAD
	DUCT TAKE-OFF C/W VOLUME DAMPER, SIZE TO MATCH DIFFUSER NECK SIZE.		P-TRAP	N	NEW FULLY-RECESSED SPRINKLER HEAD
	SUPPLY AIR DUCTWORK		PIPE DROP OR FROM BELOW	E	EXISTING UPRIGHT SPRINKLER HEAD
	DUCTWORK C/W 1" EXTERNAL THERMAL INSULATION.		FIRE DAMPER ACCESS DOOR.	<div>DIFFUSER GRILLE OR REGISTER TYPE</div> <div> 8" 300</div> <div>NECK OR FACE SIZE</div> <div>AIR FLOW (CFM)</div>	
	WALL MOUNTED 5 LB. FIRE EXTINGUISHER W/ CABINET.	N.I.C.	NOT IN CONTRACT		

EXHAUST FAN SCHEDULE							
TAG	DESCRIPTION	MAKE/MODEL	AIR FLOW (CFM)	E.S.P. ("W.C.)	ELECTRICAL		REMARKS
					WATTS	VOLT/PH	
EF-1	CEILING MOUNT INLINE EXHAUST FAN	BROAN L100	90	0.125	100	120/1	INSTALL 6" SHEET METAL DUCT WITH TRANSITION TO 8" ROUTED TO EXTERIOR VENT HOOD. EXHAUST FAN TO BE WIRED WITH OCCUPANCY SENSOR SWITCH.

GRILLE AND DIFFUSER SCHEDULE					
TAG	MANUFACTURER	MODEL	MOUNTING	FINISH	REMARKS
S1	PRICE	SPD	DUCT	WHITE	24"x24" SQUARE CEILING SUPPLY AIR DIFFUSER, PLAQUE, STEEL, ROUND NECK.
R1	PRICE	80	CEILING	WHITE	SCREW MOUNTING FRAME ALUMINUM CEILING RETURN GRILLE.
E1	PRICE	80	CEILING	WHITE	SCREW MOUNTING FRAME ALUMINUM CEILING EXHAUST GRILLE C/W OPPOSED BLADE DAMPER.
L1	PRICE	DE635	WALL	WHITE	6" DEEP , 35' FIXED BLADE EXTRUDED DRAINABLE LOUVER.

DOMESTIC WATER HEATER SCHEDULE							
TAG	DESCRIPTION	MAKE/MODEL	STORAGE (GALLONS)	MBH (KW)	SOURCE	ELECTRICAL	REMARKS
						VOLT/PH	
EHWH-1	ELECTRIC WATER HEATER	AO SMITH	6.0	1.0	ELECTRIC	120/1	INSTALLED ON DRAIN PAN, C/W PRESSURE SWITCH, T&P RELIEF VALVE.

PUMP SCHEDULE						
TAG	DESCRIPTION	MAKE/MODEL	CAPACITY	ELECTRICAL		REMARKS
				HP	VOLT/PH	
P-1	BOOSTER PUMP	GRUNFOS GUNFOS/SCALA1 3-45-1	1.5 GPM @ 25 PSI	0.75	208/1	FULLY INTERGRATED, COMPACT SELF-PRIMING, WATER BOOSTER PUMP, 115V, W/ NEMA 5-15 PLUG, 144FT MAX HEAD, INDOOR/ OUTDOOR USE

PLUMBING FIXTURE SCHEDULE				
TAG	DESCRIPTION	FIXTURE	TRIM	ACCESSORIES AND REMARKS
WC-1	FLOOR MOUNT, TANK TYPE, MACERATING TOILET SYSTEM	LIBERTY PUMPS, ASCENT2, IST SWITCH SENSING AND CLEAN CONNECT SEAL, ADA.	HIGH-PROFILE FLUSH TANK, 1.28 GPF / 4.8 LPF.	REMOVABLE ACCESS COVER, MACERATING PUMP WITH RAZORCUT SYSTEM. STAINLESS STEEL BLADES.
LAV-1	WALL-HUNG WHITE BATHROOM SINK	AMERICAN STANDARD, FRONT OVERFLOW, FAUCET LEDGE, WHITE	DELTA, MIXING METERING HANDWASH FAUCET, 0.5 GPM VANDAL RESISTANT, NON-AERATING SPRAY OUTLET, VANDAL RESISTANT ADA LEVER HANDLE.	

PLUMBING FIXTURE CONNECTIONS				
TAG	DCW	DHW	DRAIN	VENT
FD	-	-	75	40
LAV	15	15	40	30
SK	15	15	40	30
WC	20	-	75	40
PROVIDE PLUMBING VENTS ACCORDING TO THE REQUIREMENTS OF NATIONAL PLUMBING CODE AND AUTHORITY HAVING JURISDICTION.				

ELECTRIC HEATER SCHEDULE						
TAG	DESCRIPTION	MAKE/ MODEL	WEIGHT (LBS)	CAPACITY (KW)	POWER V/PH/HZ	REMARKS
FFH-1	WALL FAN ELECTRIC HEATER	STELPRO WF150BT	3.0	1.5	208/1/60	SINGLE WIDTH CABINET, 24"x17"xH5"
FFH-2	WALL FAN ELECTRIC HEATER	STELPRO WF150BT	3.0	1.5	208/1/60	SINGLE WIDTH CABINET, 24"x17"xH5"

TANK SCHEDULE					
TAG	DESCRIPTION	MAKE/MODEL	CAPACITY (GAL)	DIMENSIONS L x W x H (INCH)	REMARKS
ST-1	POTABLE WATER STORAGE TANK	FLEXHOPPER PLASTICS, MODEL #: VSQ 333	400	42.5" X 32.5" X 79.25"	HEAVY DUTY, ONE-PIECE, SEAMLESS POLYETHYLENE, SELF-SUPPORTING.
ST-2	SEWAGE WATER STORAGE TANK	FLEXHOPPER PLASTICS, MODEL #: VSQ 333	400	42.5" X 32.5" X 79.25"	HEAVY DUTY, ONE-PIECE, SEAMLESS POLYETHYLENE, SELF-SUPPORTING.

MECHANICAL DRAWING LIST	
M0.0	- EQUIPMENT SCHEDULES, LEGEND & DRAWING LIST
M1.0	- MECHANICAL FLOOR PLAN
M2.0	- SPECIFICATIONS

CODE & DESIGN COMPLIANCE	
1.	INTERNATIONAL PLUMBING CODE

WATER TANK - SEQUENCE OF OPERATION INSTALL A FLOAT SYSTEM IN THE SEWAGE TANK. THIS INCLUDES FLOAT SYSTEM IN THE SEWAGE TANK, THIS INCLUDES FLOAT SWITCHES OR SENSORS/ALARMS THAT CAN DETECTS THE SEWAGE LEVELS. <ul style="list-style-type: none"><li>WHEN WATER TANK IS FULL AND THE HIGH LEVELS SWITCH ACTUATES, IT WILL SEND A SIGNAL TO THE EXTERIOR ALERT SYSTEM AND INITIATE ALERT LIGHT OUTSIDE.</li><li>WHEN WATER TANK IS EMPTY AND THE LOW LEVEL SWITCH ACTUATES, IT WILL SEND A SIGNAL TO THE INTERIOR TANK ALERT SYSTEM AND INITIATE AN ALARM AND LIGHT ON THE INTERIOR OF THE TANK ALERT BOX.</li><li>UPON ALARM INITIATION, THE TANK ALARM SYSTEM WILL SHUT DOWN WATER PRESSURE BOOSTER PUMP.</li></ul>	
SEWAGE TANK - SEQUENCE OF OPERATION INSTALL A FLOAT SYSTEM IN THE SEWAGE TANK. THIS INCLUDES FLOAT SWITCHES OR SENSORS/ALARMS THAT CAN DETECTS THE SEWAGE LEVELS. <ul style="list-style-type: none"><li>NORMAL OPERATIONS: AS SEWAGE FROM THE FIXTURES (TOILET, SINKS, ETC.) IN THE BUILDING IS USED, IT FLOWS INTO THE SEWAGE TANK VIA THE SEWAGE DRAINS.</li><li>FLOAT SYSTEM MONITORING: THE FLOAT SYSTEM CONSTANTLY MONITORS THE SEWAGE LEVEL WITHIN THE TANK. IT CONSISTS OF ONE OR MORE FLOATS THAT ARE POSITIONED AT DIFFERENT LEVELS WITHIN THE TANK.</li><li>SEWAGE LEVEL RISES: WHEN THE SEWAGE LEVEL IN THE TANK RISES TO A PREDETERMINED LEVEL, AS DETECTED BY THE FLOAT SYSTEM, IT TRIGGERS AN ACTION TO PUMP OR DIVERT THE SEWAGE.</li><li>CONTINUED MONITORING: THE FLOAT SYSTEM CONTINUES TO MONITOR THE SEWAGE LEVEL IN THE TANK AS SEWAGE IS USED IN THE BUILDING</li><li>CYCLE REPEATS: THE CYCLE OF MONITORING SEWAGE LEVELS, ACTIVATING ALARMS, INDICATOR SIGNALS. SEWAGE TANK IS EMPTIED AND OPERATIONS ARE REPEATED WITHIN ITS OPERATIONAL RANGE.</li></ul>	

MARK	DATE	DESCRIPTION
1	2024.07.04	ISSUED FOR REVIEW
2	2024.07.01	ISSUED FOR 90% REVIEW

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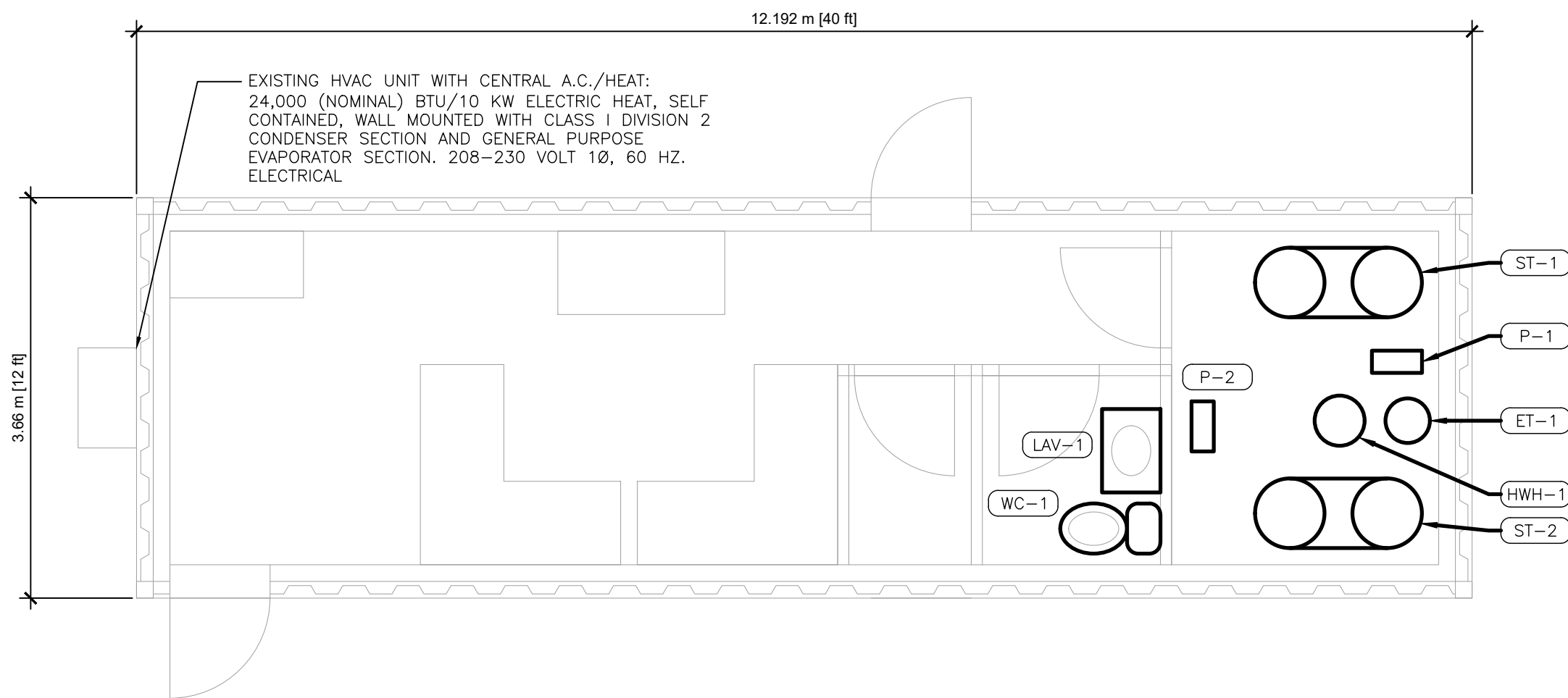
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WASILLA, ALASKA

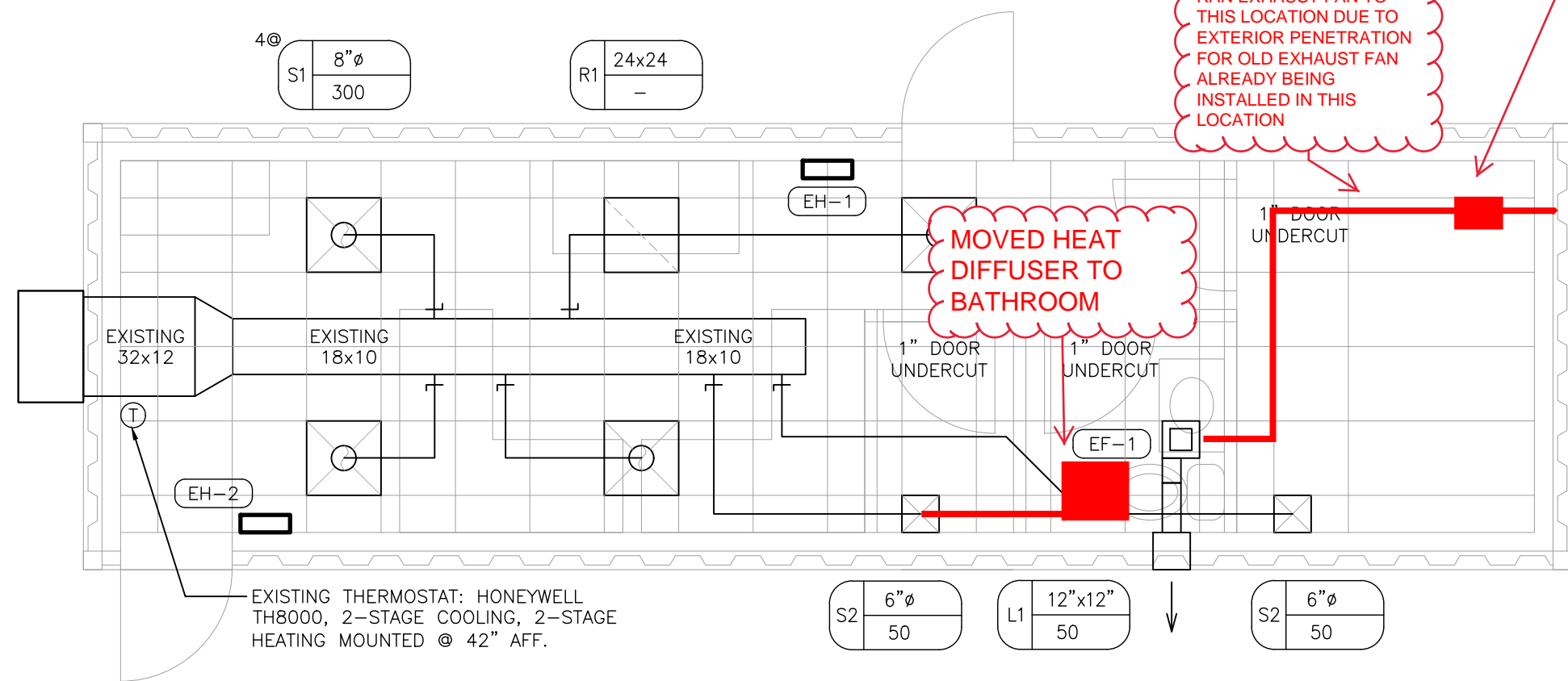
EQUIPMENT SCHEDULES, LEGEND & DRAWING LIST

DESIGNED BY	CM
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DRAWING NO.	

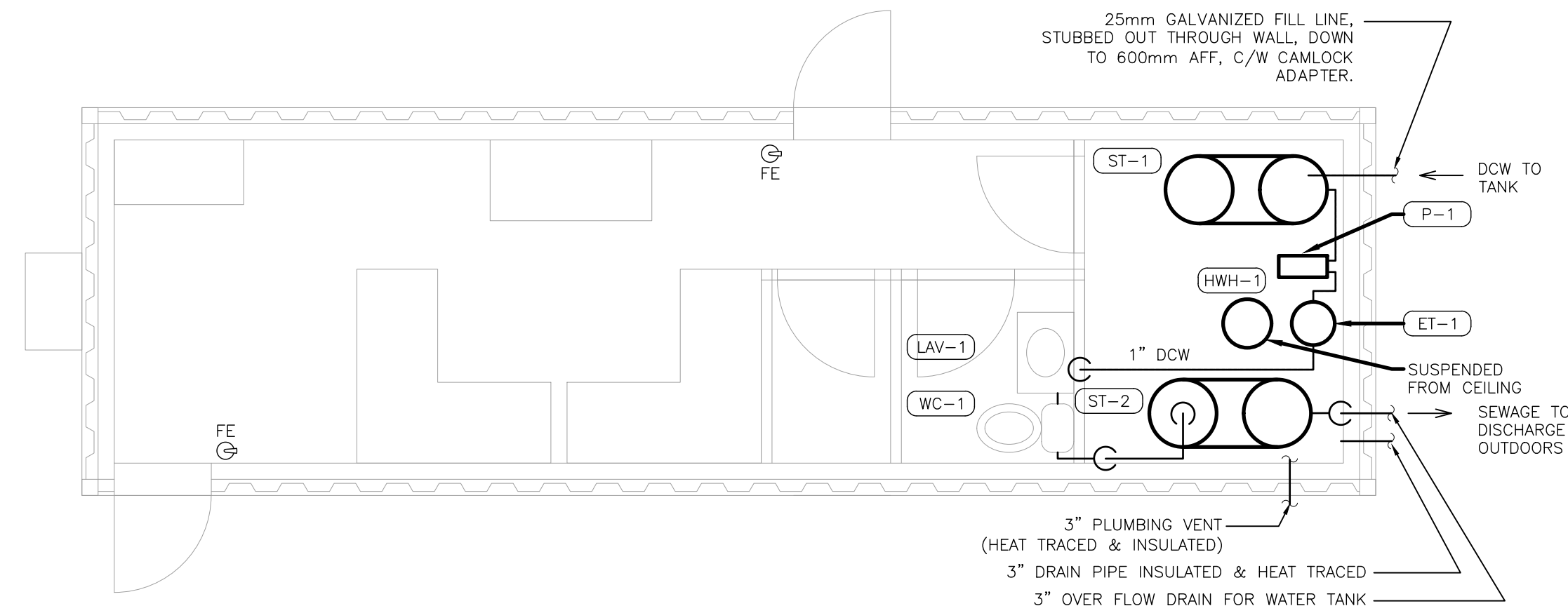
M0.0



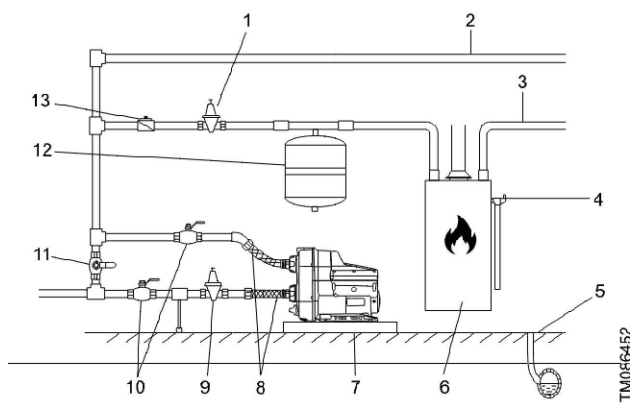
1 EQUIPMENT PLAN  
M1.0 SCALE: 1:50



2 HVAC FLOOR PLAN  
M1.0 SCALE: 1:50



3 PLUMBING FLOOR PLAN  
M1.0 SCALE: 1:50

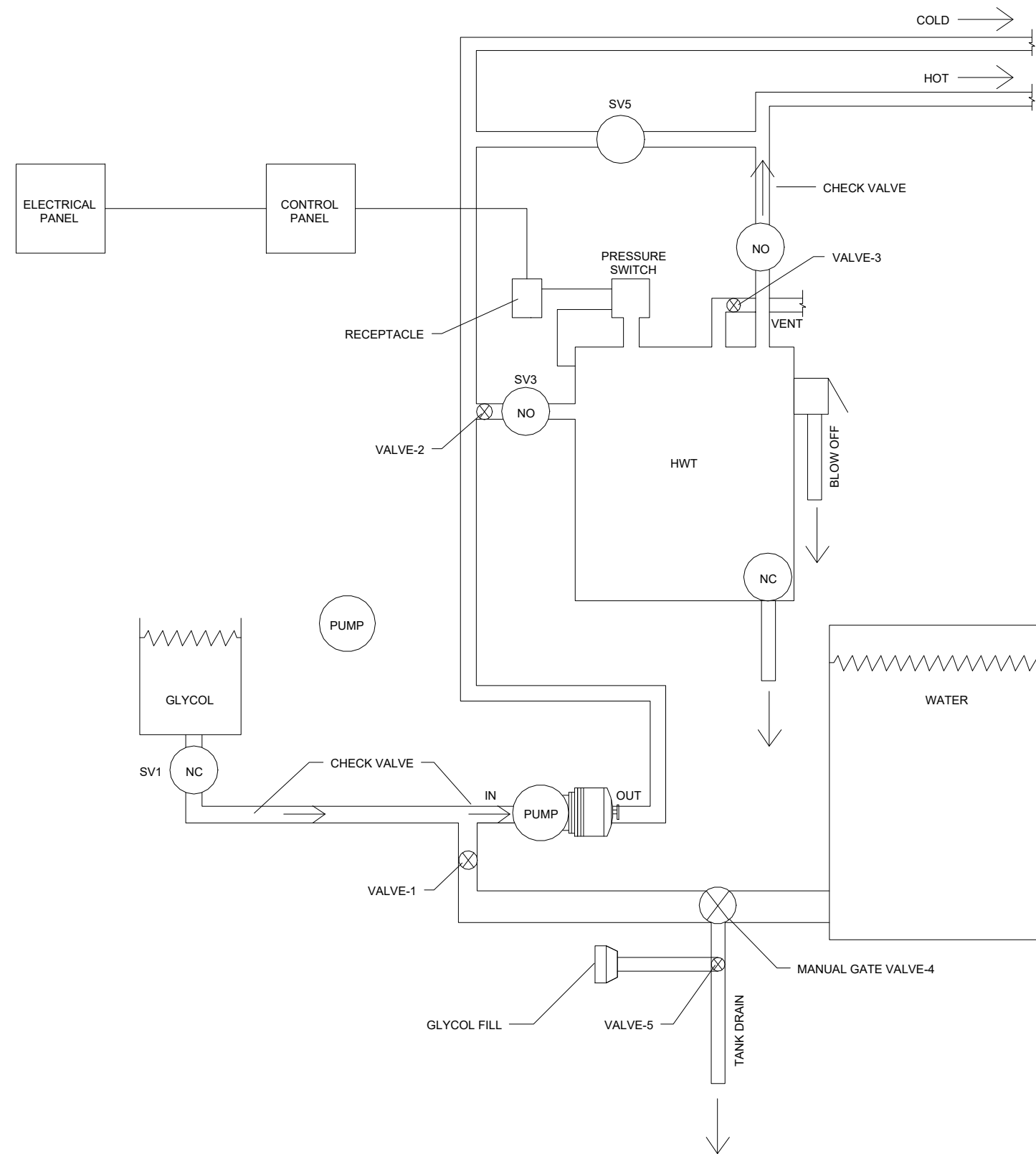


Installation example

Pos.	Description
1	Pressure-relief valve (optional)
2	Cold water
3	Hot water
4	Temperature and pressure valve
5	Drain to sewer
6	Water heater
7	Drip tray. Install the pump on a small stand to prevent the ventilation holes from being flooded.
8	Flexible hoses
9	Optional pressure-reducing valve on the inlet side if the pressure can exceed 10 bar (145 psi).
10	Isolating valves
11	Bypass valve
12	Expansion tank
13	Non-return valve

GENERAL NOTES:

1. WATER PIPING TO BE CROSS-LINKED POLYETHYLENE (PEX) C/W CRIMPED FITTINGS AND SHUT OFFS AT ALL FIXTURES.
2. VENT: PVC, STEEL PIPE TO EXTERIOR.
3. WASTE: PVC, SCH 40, MULTIPLE DISCHARGE POINTS, EXTERNAL MANIFOLDS BY OTHERS.
4. PROVIDE VENTING AS PER THE INTERNATIONAL PLUMBING CODE.
5. ALL VALVES, UNIONS, ETC. TO BE THE SAME SIZE AS THE LINE SIZE UNLESS NOTED OTHERWISE.
6. PROVIDE ISOLATION VALVES AND UNIONS ON EVERY EQUIPMENT, BALANCING AND CONTROL VALVES.
7. ALL WASTE AND VENT PIPING TO BE SLOPED AT 3.2mm PER 300mm (1/8" PER FOOT) UNLESS NOTED OTHERWISE.
8. ALL REQUIRED CLEANOUTS SHALL BE INSTALLED AS PER THE INTERNATIONAL PLUMBING CODE.
9. ALL SEWER CONNECTIONS ARE STAINLESS STEEL THREADED COUPLINGS FOR CONNECTION AT SITE.
10. ALL HOT AND COLD WATER LINES TO BE INSULATED.
11. ALL PLUMBING VENT PIPING IN CEILING PLENUM TO BE WRAPPED WITH THERMAL CERAMIC PLENUM WRAP (MORGAN THERMAL CERAMICS 7-714-233) BEFORE CONNECTION TO STEEL PIPE SECTION.
12. ALL SLEEVE PENETRATIONS TO BE 150mm (6").
13. ALL TANKS MUST BE EMPTY PRIOR TO LIFTING OR LOADING.
14. ALL PIPING TO BE SURFACE MOUNTED TO PREVENT FREEZING.
15. ALL MECHANICAL EQUIPMENT AND MATERIALS ARE TO BE CSA CERTIFIED / APPROVED.
16. INSTALL EQUIPMENT AS PER MANUFACTURER MANUAL. PROVIDE ISOLATION VALVES AND CHECK VALVES IN PIPING.
17. ALL PLUMBING SYSTEMS ARE TO BE INSTALLED, SUPPORTED, AND TESTED AS PER THE INTERNATIONAL PLUMBING CODE AND CANADA NATIONAL PLUMBING CODE.
18. ALL PLUMBING PIPING INSTALLED WITHIN EXTERIOR WALLS MUST BE HEAT TRACED AND INSULATED TO PREVENT FREEZING. ENSURE HEAT TRACING CABLES ARE PROPERLY INSTALLED AND DESIGNED TO MAINTAIN A SAFE AND STABLE TEMPERATURE AROUND THE PIPES.



4 PUMP CONTROL FLOW DIAGRAM  
M1.0 SCALE: 1:50

ADDED AUTO DAMPER INTERLOCKED WITH EXHAUST FAN TO CLOSE WHEN NOT ENERGIZED

RAN EXHAUST FAN TO THIS LOCATION DUE TO EXTERIOR PENETRATION FOR OLD EXHAUST FAN ALREADY BEING INSTALLED IN THIS LOCATION

MOVED HEAT DIFFUSER TO BATHROOM

EXISTING HVAC SEQUENCE

IN AUTO POSITION, EITHER COOLING OR HEATING CONTROL MAY BE ACTIVATED BASED ON THE ACTUAL AND PRESET BUILDING INDOOR AIR TEMPERATURE READINGS. THE BUILDING INDOOR AIR TEMPERATURE SET POINT IS PRESET BY THE CUSTOMER.

**COOLING MODE:**  
CIRCUIT R-Y MAKES AT THERMOSTAT PULLING IN COMPRESSOR CONTACTOR, STARTING THE COMPRESSOR AND OUTDOOR MOTOR. THE G (INDOOR MOTOR) CIRCUIT IS AUTOMATICALLY COMPLETED ON ANY CALL FOR COOLING OPERATION OR CAN BE ENERGIZED BY MANUAL FAN SWITCH ON THERMOSTAT FOR CONSTANT AIR CIRCULATION. IF THE ACTUAL BUILDING INDOOR AIR TEMPERATURE IS ABOVE THE SET POINT, THE COOLING STAGE WILL BE ACTIVATED VIA THE HVAC THERMOSTAT. HUNTER PRESETS THE BUILDING INDOOR AIR TEMPERATURE SET POINTS TO: 75° + 2 °F (SUMMER) AND 68 + 2°F (WINTER), ONLY FOR TESTING PURPOSES.

**HEATING MODE:**  
CIRCUIT R-W1 MAKE AT THE THERMOSTAT PULLING IN HEAT CONTACT FOR THE STRIP HEAT AND BLOWER OPERATION. ON A CALL FOR SECOND STAGE HEAT, R-W2 MAKES BRINGING ON SECOND HEAT CONTACTOR, IF SO EQUIPPED. IF THE ACTUAL BUILDING INDOOR AIR TEMPERATURE IS BELOW THE SET POINT, THE HEATING STAGE WILL BE ACTIVATED VIA THE HVAC THERMOSTAT. HUNTER PRESETS THE BUILDING INDOOR AIR TEMPERATURE SET POINTS TO: 75° + 2 °F (SUMMER) AND 68 - 2°F (WINTER), ONLY FOR TESTING PURPOSES.

**NORMAL START-UP:**  
• DOUBLE-CHECK THE ELECTRIC POWER VOLTAGE SUPPLIED TO ALL HVAC CIRCUITS TO CONFIRM THAT IT MATCHES NAMEPLATE ELECTRICAL REQUIREMENTS.  
• MAKE SURE ELECTRICAL DISTRIBUTION PANEL ALL OTHER ELECTRICAL CIRCUITS OF THE BUILDING ARE ENERGIZED, AND NO ALARM CONDITION EXISTS.  
• TURN THE EQUIPMENT THERMOSTAT TO THE "AUTO" POSITION.

WINTERIZATION SEQUENCE OF OPERATIONS:

- 1- CLOSE 1-1/4" WATER TANK BALL VALVE (VALVE #1)
- 2- TURN ON WINTERIZE SWITCH
- 3- CLOSE WATER HEATER 3/4 " BALL VALVE (VALVE #2)
- 4- OPEN 3/4 " BALL VALVE VENT ON TOP OF WATER HEATER (VALVE #3)
- 5- PERFORM VISUAL VERIFICATION OF GLYCOL PRESENCE EACH FIXTURE.
- 6- SHUT WINTERIZATION SWITCH OFF.
- 7- OPEN 1-1/4" BALL VALVE TO DRAIN WATER TANK. (VALVE #4)
- 8- AFTER TANK HAS DRAINED AND SHUT OFF SYSTEM. ADD APP.1 CUP.
- GLYCOL INTO WATER TANK DRAIN LINE. OPEN 1-1/4" VALVE BEFORE.
- DOING SO. (VALVE #5)
- VALVE-3
- VALVE-2
- VALVE-1
- VALVE-5
- GLYCOL FILL

DE-WINTERIZATION SEQUENCE OF OPERATIONS:

- 1- CLOSE 3/4 " BALL VALVE VENT ON TOP OF WATER HEATER (VALVE #3)
- 2- CLOSE 1-1/4" BALL VALVE TO DRAIN WATER TANK. (VALVE #4)
- 3- OPEN WATER HEATER 3/4 " BALL VALVE (VALVE #2)
- 4- TURN OFF WINTERIZE SWITCH.
- 5- OPEN 1-1/4" WATER TANK BALL VALVE (VALVE #1)

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1	2024.07.04	ISSUED FOR REVIEW

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ATCO BRM - ALASKA RETROFIT

PROJECT TITLE  
PROJECT ADDRESS  
WASILLA, ALASKA

MECHANICAL PLANS

DESIGNED BY	II
DRAWN BY	II
CHECKED BY	AP
DRAWING NO.	

M1.0



MECHANICAL SPECIFICATION

1. GENERAL
- 1.1. INTENT
- 1.1.1. THE INTENT OF THIS SPECIFICATION AND THE DRAWINGS IS TO PROVIDE A COMPLETE AND FULLY OPERATING MECHANICAL SYSTEM IN COMPLETE ACCORD WITH APPLICABLE CODES. THE MECHANICAL CONTRACTOR SHALL MAKE PROVISIONS FOR LABOUR, MATERIAL, AND EQUIPMENT NECESSARY TO COMPLETE THE MECHANICAL WORK. DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS BINDING AS IF CALLED FOR BY BOTH. SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS WHICH LEAVES DOUBT AS TO THE TRUE INTENT AND MEANING, OBTAIN A RULING FROM THE CONSULTANT TEN (10) DAYS BEFORE SUBMITTING TENDER. FAILING THIS, ALLOW FOR MOST EXPENSIVE ALTERNATIVE. CONTRACT DOCUMENTS ARE DIAGRAMMATIC ONLY. THEY ARE TO ESTABLISH SCOPE, MATERIAL AND QUALITY. THEY ARE NOT DETAILED INSTALLATION DRAWINGS. MINOR DETAILS USUALLY NOT SHOWN OR SPECIFIED AND ANY INCIDENTAL ACCESSORIES REQUIRED FOR PROPER INSTALLATION OF THE SYSTEM ARE TO BE INCLUDED IN THE WORK. CONTRACTOR IS TO ENSURE THAT ALL INTENDED EQUIPMENT WILL FIT WITHIN GIVEN SPACES. MAKE REFERENCE TO THE ELECTRICAL, MECHANICAL, ARCHITECTURAL AND STRUCTURAL DRAWINGS, WHEN SETTING OUT WORK AND BEFORE ORDERING EQUIPMENT. CONTRACTOR TO ENSURE THAT ALL BALANCING EQUIPMENT IS ACCESSIBLE BY ACCESS DOORS WHERE REQUIRED.
- 1.2. CODE COMPLIANCE
- 1.2.1. ALL WORK SHALL CONFORM TO CURRENT EDITION OF NATIONAL, PROVINCIAL AND MUNICPAL CODES, STANDARDS AND ACTS; AND WILL MEET THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. CODES, STANDARDS, AND REGULATIONS REFERENCE BY THESE SPECIFICATIONS SHALL BE THE LATEST EDITION UNLESS NOTED OTHERWISE.
- 1.2.2. ALL EQUIPMENT AND DEVICES SHALL BE ULC LISTED AND/OR CSA CERTIFIED WHERE APPLICABLE.
- 1.3. LIABILITY
- 1.3.1. ASSUME RESPONSIBILITY FOR LAYOUT OF WORK; AND FOR ANY DAMAGE CAUSED TO THE OWNER OR OTHER TENANTS BY IMPROPER EXECUTION OF WORK.
- 1.3.2. PROTECT FINISHED AND UNFINISHED WORK FROM DAMAGE.
- 1.3.3. TAKE RESPONSIBILITY FOR CONDITION OF MATERIALS AND EQUIPMENT SUPPLIED AND PROTECT UNTIL WORK IS COMPLETED AND ACCEPTED. CO-ORDINATE DELIVERIES WITH THE GENERAL CONTRACTOR.
- 1.4. CERTIFICATES
- 1.4.1. GIVE NOTICES, OBTAIN PERMITS AND APPROVALS, AND PAY FEES SO WORK SPECIFIED MAY BE CARRIED OUT. FURNISH CERTIFICATES IF REQUESTED, AS EVIDENCE THAT WORK CONFORMS TO LAWS AND REGULATIONS OF THE AUTHORITIES HAVING JURISDICTION.
- 1.5. CUTTING AND PATCHING
- 1.5.1. ALL WORK SHALL BE CO-ORDINATED WITH OTHER TRADES ESPECIALLY THAT RELATED TO CUTTING AND PATCHING OF REQUIRED OPENINGS; AND LOCATIONS AND INSTALLATION OF SLEEVES, INSERTS, SUPPORT, CURBS, FRAMES AND ACCESS DOORS.
- 1.5.2. PROVIDE X-RAY OF ALL REQUIRED PENETRATIONS OF THE FLOOR. X-RAY USE FOR LOCATING IN FLOOR REBAR AND CONDUIT TO BE DONE AFTER NORMAL WORKING HOURS. TAKE NECESSARY PRECAUTIONS TO PROTECT COMPUTER EQUIPMENT WHEN X-RAYING FLOORS. COORDINATE WITH OWNER.
- 1.6. ALTERNATIVE MATERIALS AND EQUIPMENT
- 1.6.1. CONTRACT PRICE SHALL BE BASED ON MATERIALS AND EQUIPMENT SPECIFIED. APPROVAL BY CONSULTANT OF EQUIPMENT SUBMITTED BY THE MECHANICAL TRADE AS EQUAL TO THAT SPECIFIED DOES NOT RELIEVE THE MECHANICAL TRADE OF ANY RESPONSIBILITY.
- 1.6.2. REVISIONS REQUIRED TO ADAPT ACCEPTED EQUALS AND ALTERNATIVES SHALL BE INCLUDED IN THE CONTRACT PRICE. NO INCREASE IN THE CONTRACT PRICE WILL BE CONSIDERED TO ACCOMMODATE THE USE OF EQUIPMENT OTHER THAN THAT SPECIFIED.
- 1.7. GUARANTEE
- 1.7.1. PROVIDE THE OWNER WITH A WRITTEN GUARANTEE THAT THE EQUIPMENT INSTALLED AND WORK PERFORMED SHALL REMAIN IN SERVICEABLE CONDITION FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY THE OWNER. THE WARRANTY SHALL COVER MATERIAL AS WELL AS LABOUR.
- 1.8. STANDARD OF MATERIALS AND WORKMANSHIP
- 1.8.1. MAKE AND QUALITY OF MATERIALS USED ARE SUBJECT TO APPROVAL BY THE CONSULTANT. REMOVE UNACCEPTABLE MATERIALS AND INSTALL SUITABLE MATERIALS IN THEIR PLACE.
- 1.8.2. MATERIALS SHALL BE NEW AND OF UNIFORM PATTERN THROUGHOUT, UNLESS NOTED OTHERWISE.
- 1.8.3. EMPLOY ONLY TRADESMEN PROPERLY LICENSED TO PERFORM THE SPECIFIC WORK. THE CONSULTANT MAY PERFORM SPOT CHECKS FOR TRADE TICKETS AND ACCREDITATION.
- 1.9. RECORD DRAWINGS
- 1.9.1. KEEP ON SITE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS, RECORDING CHANGES AND DEVIATIONS ON THESE DRAWINGS SHALL BE MADE AVAILABLE ON A WEEKLY BASIS FOR REVIEW BY THE CONSULTANT.
- 1.9.2. UPON COMPLETION OF WORK, SUBMIT FINAL RECORD DRAWINGS TO THE CONSULTANT. THESE MUST BE SUBMITTED WITHIN TWO (2) WEEKS AFTER ACCEPTANCE OF WORK. FAILURE TO SUBMIT DRAWINGS WILL RESULT IN THE WORK BEING DONE BY THE OWNER AND THE COST DEDUCTED FROM THE FINAL PAYMENT. THE FINAL RECORD DRAWINGS SHALL BE PREPARED BY A QUALIFIED DRAFTSPERSON ON AUTOCAD FILES, WHICH SHALL BE PROVIDED BY THE CONSULTANT. CONTRACTOR SHALL USE CURRENT VERSION OF AUTOCAD AS USED ON THE PROJECT DRAWINGS.
- 1.10. SUBSTANTIAL COMPLETION INSPECTION
- 1.10.1. ADVISE CONSULTANT FIVE (5) DAYS PRIOR TO THE DATE INSPECTION IS DESIRED. PROVIDE PROOF THAT THE SITE AND THE SYSTEMS ARE IN THE STATE REQUIRED FOR INSPECTION. ALL SYSTEMS TO BE FULLY OPERATIONAL AND ANY DEFICIENCIES SHOULD BE NOTED TO THE CONSULTANT.
- 1.10.2. ALL DEFICIENCIES SHALL BE COMPLETED WITHIN TWO (2) WEEKS AFTER SUBSTANTIAL COMPLETION AND LETTER SUBMITTED TO CONSULTANT WITHIN THAT TIME ADVISING THAT THE WORK IS COMPLETE. FAILURE TO COMPLETE WORK WILL RESULT IN WORK BEING DONE BY THE OWNER AND THE COSTS DEDUCTED FROM FINAL PAYMENT.
- 1.10.3. THE FOLLOWING SHALL BE AN OUTLINE CHECKLIST OF THE MINIMUM REQUIREMENTS TO BE MET BY THE CONTRACTOR PRIOR TO THE CONSULTANTS' SUBSTANTIAL PERFORMANCE BY THE CONTRACTOR.
- 1.11. INSPECTION:
- 1.11.1. COMPLETE BALANCING REPORTS, FINAL PLUMBING INSPECTION CERTIFICATE FROM LOCAL PLUMBING INSPECTOR, FIRE STOPPING AND FIRE DAMPER TEST LETTER, POTABLE WATER MAIN'S FLUSHING AND CHLORINATION TEST CERTIFICATE, FINAL AS-BUILT DRAWINGS READY FOR REVIEW, MAINTENANCE AND OPERATION MANUALS, READY FOR REVIEW.
- 1.11.2. CO-ORDINATION WITH ELECTRICAL DIVISION
- 1.11.3. CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK. THIS IS PART OF THE CONTRACTORS SHOP DRAWING REVIEW AND NO EXTRAS WILL BE CONSIDERED FOR DIV. 15/16 (MECHANICAL AND ELECTRICAL) POWER MISMATCHES.
- 1.12. CO-ORDINATION OF SERVICES
- 1.12.1. CO-ORDINATE WITH PROPER UTILITIES FOR SERVICES SUCH AS WATER, SANITARY, STORM, NATURAL GAS, AND ASSUME ALL CHARGES.
- 1.13. BALANCING
- 1.13.1. BALANCE TERMINAL BOXES, FANS AND AIR OUTLETS TO AIR VOLUMES INDICATED ON THE DRAWINGS AND IN THIS SPECIFICATION.
- 1.13.2. SUBMIT TWO (2) COPIES OF THE REPORT TO ENGINEER WITHIN TWO (2) WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO SUBMIT THE REPORT WITHIN THE SPECIFIED TIME WILL RESULT IN THE WORK BEING DONE BY THE OWNER AND THE COSTS DEDUCTED FROM FINAL PAYMENT.
- 1.13.3. BALANCING SHALL BE PERFORMED TO THE FOLLOWING ACCURACIES:
- TERMINALS ±10%  
CENTRAL EQUIPMENT ± 5%
- 1.13.4. PROVIDE A DROP TEST OF ALL FIRE DAMPERS AND A LETTER/CERTIFICATE ATTESTING TO THIS WORK.
- 1.14. FIRE-STOPPING
- 1.14.1. FIRE-STOP ALL PIPE AND DUCT PENETRATIONS THROUGH FLOORS AND WALLS, DESIGNATED AS FIRE AND/OR SMOKE SEPARATIONS. REFER TO ARCHITECTURAL FIRE STOPPING FOR SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 1.14.2. ALL FIRE STOP MATERIALS AND METHODS MUST BE APPROVED IN ACCORDANCE WITH CAN4-S115-M85, AND BE ULC LISTED.

2. DUCTWORK AND ACCESSORIES

- 2.1.1. FABRICATE DUCTWORK IN ACCORDANCE WITH SMACNA DUCT MANUAL AND ASHRAE HANDBOOKS. DUCTWORK SHALL MEET THE REQUIREMENTS OF NFPA 90A AND 90B AND CONFORM TO APPLICABLE CODES.
- 2.1.2. PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL CEILING SPACES AND HEIGHTS AND CONFLICTS WITH OTHER TRADES.
- 2.1.3. DUCT SIZES INDICATED ARE INSIDE CLEAR DIMENSIONS. FOR ACOUSTICALLY LINED OR INTERNALLY INSULATED DUCTS MAINTAINS SIZE INSIDE DUCTS.
- 2.1.4. PROVIDE FIRE DAMPERS WHERE DUCTS CROSS FIRE SEPARATIONS. FIRE DAMPERS SHALL BE ULC LISTED AND CONSTRUCTED IN ACCORDANCE WITH ULC STANDARD S112 "FIRE DAMPERS". FUSIBLE LINKS SHALL BE CONSTRUCTED TO ULC STANDARD S505.
- 2.1.5. PROVIDE ADEQUATELY SIZED ACCESS PANELS FOR DAMPERS, EQUIPMENT, FIRE DAMPERS, VALVES, RADIATION VALVES, AND ANY OTHER EQUIPMENT REQUIRING SERVICING. COORDINATE LOCATION WITH ARCHITECTURAL
- 2.1.6. PROVIDE ACOUSTICAL SEAL AROUND DUCTS AND SOUND TRAPS AT PENETRATION THROUGH SOUND Baffles.
- 2.1.7. MODIFY CEILING SYSTEM WHERE REQUIRED TO ACCOMMODATE GRILLES AND DIFFUSERS.
- 2.1.8. EXPOSED ROUND DUCTWORK TO BE SPIRAL LOCK SEAM TYPE ONLY.
- 2.1.9. PROVIDE DUCT HANGERS AND SUPPORTS IN ACCORDANCE WITH SMACNA MANUALS.
- 2.1.10. IDENTIFY DUCTWORK AS PER THE BASE BUILDING STANDARDS. CONFIRM THESE PRIOR TO SUBMITTING TENDER.
- 2.2. LOW VELOCITY DUCTWORK
- 2.2.1. DUCTWORK SHALL BE GALVANIZED STEEL. THE MINIMUM SHEET METAL THICKNESS FOR DUCTS INCLUDING FITTINGS, ACCESS DOORS, AND OTHER ACCESSORIES SHALL BE AS PER SMACNA DUCT MANUAL FOR LOW VELOCITY DUCTWORK.
- 2.3. DUCT SEALING
- 2.3.1. ALL SUPPLY, RETURN AND EXHAUST DUCT JOINTS, LONGITUDINAL AS WELL AS TRANSVERSE, SHALL BE SEALED USING:
- 2.3.2. LOW PRESSURE DUCTWORK:
- SLIP JOINTS: APPLY HEAVY BRUSH-ON HIGH PRESSURE DUCT SEALANT. APPLY SECOND APPLICATION AFTER THE FIRST APPLICATION HAS COMPLETELY DRIED OUT. WHERE METAL CLEARANCE EXCEEDS 1.5MM, USE HEAVY MASTIC TYPE SEALANT.
- FLANGED JOINTS: SOFT ELASTOMER BUTYL OR EXTRUDED FORM OF SEALANT BETWEEN FLANGES FOLLOWED BY AN APPLICATION OF HEAVY BRUSH-ON HIGH PRESSURE DUCT SEALANT.
- OTHER JOINTS: HEAVY MASTIC TYPE SEALANT.
- 2.3.3. DUCT TAPES AS SEALING METHOD ARE NOT PERMITTED.
- 2.3.4. SURFACES TO RECEIVE SEALANT SHOULD BE FREE FROM OIL, DUST, DIRT, MOISTURE, RUST AND OTHER SUBSTANCES THAT INHIBIT OR PREVENT BONDING.
- 2.3.5. DUCT LEAKAGE TESTS SHALL BE CONDUCTED IN ACCORDANCE WITH SMACNA HVAC AIR DUCT LEAKAGE MANUAL AND SHALL COMPLY WITH THE REQUIREMENTS OF ASHRAE 90.1.
- 2.3.6. DUCT SEALANT USED SHALL BE CLEAR SEALANT, SUITABLE FOR FIELD PAINTING. (IF REQUIRED).

3. FIRE PROTECTION

- 3.1. FIRE EXTINGUISHER
- 3.1.1. FURNISH AND INSTALL FIRE EXTINGUISHER CABINETS IN LOCATIONS INDICATED ON THE DRAWINGS, AND IN COMPLIANCE WITH NFPA 10.
- 3.1.2. FIRE EXTINGUISHERS TO BE MODEL ABC-5 OR 10 (5 OR 10 LBS) MULTI PURPOSE DRY CHEMICAL FIRE EXTINGUISHER WITH 4A60BC RATING,.
- 3.1.3. FIRE EXTINGUISHERS CABINETS TO BE 16 GAUGE STEEL CONSTRUCTION WITH 12 GAUGE FULLY OPENING DOOR IN ADJUSTABLE FRAME, 6MM (0.25) DUOLITE SAFETY GLASS FULL PANEL DOOR, APPROVED LATCHING DEVICE, PRIME COAT.
4. PIPING
- 4.1. INSULATION
- 4.1.1. FACTORY APPLIED VAPOUR BARRIER JACKET, MOULDED TO CONFORM TO PIPING, "K" VALUE AT 24°C MAXIMUM 0.035 W/M °C. RECOVER WITH ULC LABELED THERMOCANVAS.
- 4.1.2. ALL HOT PIPING TO BE INSULATED WITH FINE FIBROUS GLASS INSULATION WITH FACTORY APPLIED GENERAL PURPOSE JACKET, MOULDED TO CONFORM TO PIPING, "K" VALUE AT 24°C MAXIMUM 0.035 W/M °C. RECOVER WITH ULC LABELED THERMOCANVAS.
- 4.1.3. PIPING TO BE INSULATED
- PIPE SIZEINSULATION (MM)
- DCW TO 40MM50MM & OVER15
- DHW & DHWR TO 40MM50MM & OVER15
- CONDENSATE DRAINSALL SIZES12

4. PIPE MATERIAL:

- SERVICE: SANITARY AND STORM DRAINAGE, AND VENT (ABOVE GRADE). MATERIAL: DWV COPPER OR DWV XFR
- SERVICE: DOMESTIC WATER (ABOVE GRADE INSIDE BUILDING). MATERIAL: TYPE "L" HARD COPPER

4.3. PIPE CONNECTIONS

- 4.3.1. SCREWED JOINT STEEL PIPING UP TO AND INCLUDING 40MM. BUTT WELD PIPING 65MM AND LARGER INCLUDING BRANCH CONNECTIONS. SCREW 50MM PIPING FOR LIQUID SYSTEMS, WELD 50MM PIPING FOR AIR OR GAS SYSTEMS. USE DIELECTRIC TYPE COUPLINGS WHEN JOINING DISSIMILAR METAL PIPES. USE 95/5 SOLDER JOINTS FOR SOLDERING DOM. WATER COPPER PIPE.

4.4. PIPE HANGERS AND SUPPORTS

- 4.4.1. ALL PIPING SHALL BE FIRMLY SUPPORTED AND SECURELY BRACED. PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING AND GALVANIZED HANGERS AND SUPPORTS FOR GALVANIZED PIPING.
- 4.4.2. PROVIDE RING TYPE HANGERS FOR PIPING UP TO 40MM AND CLEVIS TYPE HANGERS FOR PIPING OVER 40MM.

PIPE SUPPORT SPACING:		
PIPE SIZE	ROD DIAMETER(MM)	SPACING(MM)
15	9	1.8
20-40	9	2.4

5. PLUMBING

5.1. PLUMBING GENERAL

- 5.1.1. ALL WORK TO BE IN ACCORDANCE WITH THE NATIONAL PLUMBING CODE, LATEST EDITION.
- 5.1.2. THIS PROJECT INVOLVES RENOVATION TO AN EXISTING BUILDING. THE CONTRACTOR IS TO BE INSPECT THE RENOVATED AREA PRIOR TO TENDER CLOSE AND INCLUDE IN THE BID ALL WORK TO MEET THE WORK OUTLINED IN THE DOCUMENTS.
- 5.1.3. INSTALL VACUUM BREAKERS, TRAP PRIMERS AND BACKFLOW PREVENTORS ON PLUMBING LINES AS REQUIRED BY CODE.
- 5.1.4. GRADE DRAINAGE LINES 2% PER FOOT, UNLESS NOTED OTHERWISE.
- 5.2. PLUMBING FIXTURES
- 5.2.1. ALL FIXTURES TO BE COMMERCIAL GRADE WITH CSA APPROVAL.
- 5.2.2. REFER TO SCHEDULE ON DRAWINGS FOR FIXTURES.
6. DA

6. EXECUTION

- 6.1. REAM ALL PIPING AND KEEP PLUGGED TO PREVENT ENTRY OF DIRT. USE PIPES, WHICH CONFORM TO CSA AND ASTM STANDARDS.
- 6.2. CONSIDER THE PIPING SHOWN ON THE DRAWINGS AS DIAGRAMMATIC, FOR CLEARNESS IN INDICATING THE GENERAL RUNS AND CONNECTIONS AND THAT THE PIPING MAY, OR MAY NOT, IN ALL PARTS BE SHOWN IN THE TRUE POSITION. THIS DOES NOT RELIEVE THE CONTRACTOR FROM THE RESPONSIBILITY FOR THE PROPER ERECTION OF THE SYSTEMS AND ACCESSORIES IN EVERY RESPECT SUITABLE FOR THE WORK INTENDED.
- 6.3. ENSURE THAT FABRICATION, WELDED OR OTHERWISE, MEETS THE REQUIREMENTS OF THE [ASA B31.1 CODE] FOR PRESSURE PIPING, THE [CSA B51 CODE] FOR BOILER, PRESSURE VESSEL, AND PRESSURE PIPING, AND ALL REQUIREMENTS OF THE SAFETY CODE ACT OF THE PROVINCE OF ALBERTA AND OTHER RELATED CODES AND STANDARDS.
- 6.4. USE ONLY FITTINGS, OR OTHER MATERIALS TO BE INCORPORATED IN THE WORK, WHICH ARE APPROVED BY THE [ALBERTA BOILERS SAFETY ASSOCIATION,] FOR THE CLASS OF WORK FOR WHICH THEY ARE USED.
7. TESTING
- 7.1. MAKE ALL TESTS BEFORE PIPING IS FURRED IN OR CONCEALED IN ANY WAY.
- 7.2. NOTIFY CONSULTANT AT LEAST 48 HOURS BEFORE COMMENCING WITH TEST AND GIVE CONSULTANT A WRITTEN CERTIFICATE CONFIRMING THESE TESTS.
- 7.3. CHECK HORIZONTAL PIPE WITH AN ACCURATE LEVEL FOR ANY ALTERATIONS IN PITCH. INSPECT LATERALS, CROSS ARMS, AND ELIMINATE POCKETS.
- 7.4. SUBJECT PIPING TO AN AIR PRESSURE TEST OF 1,035 KPA FOR TWO (2) HOURS WITHOUT LEAKAGE AND TEST JOINTS WITH A SOAP SOLUTION WHILE THE PIPING IS UNDER PRESSURE.
- 7.5. IF ANY LEAKS ARE DISCOVERED BY THE ABOVE TESTS, REMOVE AND REPLACE THE FAULTY PORTIONS OF THE SYSTEMS AND REPEAT THE TEST. REPEAT THIS PROCEDURE UNTIL THE SYSTEM IS ACCEPTED BY THE CONSULTANT'S REPRESENTATIVE ON THE SITE. DO NOT CAULK THREADED JOINTS.
8. CONTROLS
- 8.1. ALL CONTROLS WORK TO BE UNDERTAKEN BY THE MECHANICAL CONTRACTOR. A CONTROLS SUB-CONTRACTOR WILL BE REQUIRED TO COMPLETE THIS WORK.
- 8.2. THIS PROJECT INVOLVES RENOVATION TO AN EXISTING CONTROL SYSTEM AND THE ADDITION OF A NEW AHU SYSTEM. THE CONTRACTOR IS TO INSPECT THE SYSTEMS PRIOR TO SUBMITTING PRICE AND INCLUDE IN THE BID ALL CONTROL COMPONENTS REQUIRED TO PROVIDE A FULLY OPERATIONAL SYSTEM, INCLUDING, BUT NOT LIMITED TO THERMOSTATS, VALVES, AND INTERLOCKS.
- 8.3. THERMOSTATS TO BE MOUNTED AT NORMAL HEIGHT, UNLESS NOTED. CALIBRATE THERMOSTATS PRIOR TO INSTALLATION.

9. NATURAL GAS SYSTEM

- 9.1. EQUIPMENT SHALL COMPLY WITH THE SAFETY CODES ACT OF [THE PROVINCE OF BRITISH COLUMBIA AND CSA B51 - BOILER, PRESSURE VESSEL, AND PRESSURE PIPING CODE.
- 9.2. IN COMPLIANCE WITH THE ACT AND RELEVANT CODES, ALL FITTINGS SHALL BE REGISTERED BY MANUFACTURER, AND SHALL BE IDENTIFIED BY THE APPROPRIATE CANADIAN REGISTRATION NUMBER.
- 9.3. WHERE FITTINGS ARE PROVIDED WITHOUT THE APPROPRIATE [CANADIAN REGISTRATION NUMBER] THE CONTRACTOR SHALL OBTAIN A COPY THE MANUFACTURERS STATUTORY DECLARATION AS PROVIDED BY THE AUTHORITIES HAVING JURISDICTION.
- 9.4. ALL WELDING AND FABRICATION SHALL BE TO THE REQUIREMENTS OF THE [ANSI/ASME B31.1 CODE FOR PRESSURE PIPING AND CSA B51 CODE FOR THE CONSTRUCTION AND INSPECTION OF BOILERS AND PRESSURE VESSELS.
- 9.5. PITCH LINES AND PROVIDE DRIP LEGS AT CONDENSATION COLLECTION POINTS.
- 9.6. INSTALL AND TEST NATURAL GAS PIPING DISTRIBUTION SYSTEM IN ACCORDANCE WITH NATURAL GAS AND PROPANE INSTALLATION CODE CSA B149.1-2010, AND TO APPROVAL OF LOCAL GAS UTILITY AND LOCAL AUTHORITIES.
- 9.7. PIPING AND EQUIPMENT PROVIDED UNDER THE MECHANICAL DIVISION SHALL BE COMPLETED WITH ALL NECESSARY SUPPORTS AND HANGERS REQUIRED FOR A SAFE AND WORKMANLIKE INSTALLATION [CODE CSA B149.1-2010] REQUIREMENT.
- 9.8. ALL FIXTURES, APPLIANCES AND APPURTENANCES SHALL HAVE SHUT-OFF VALVES.
- 9.9. [ALL NATURAL GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL] IS THERE PIPING SPEC TO FOLLOW? ALL NATURAL GAS VENT PIPING SHALL BE TYPE "L" HARD COPPER.
- 9.10. CONTRACTOR IS RESPONSIBLE FOR SUPPLY AND INSTALL OF ALL MATERIAL NEEDED FOR A FULLY OPERATIONAL GAS DISTRIBUTION SYSTEM (GAS REGULATORS, PIPING, FITTINGS, ISOLATION VALVES, EXPANSION LOOPS, ACCESSORIES, SUPPORTS, HARNESSING, ETC.) AS PER DRAWINGS AND SPECIFICATIONS.
10. REFRIGERANT PIPING SYSTEM
- 10.1. PROVIDE ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT REQUIRED TO COMPLETE THE WORK AS SHOWN ON THE DRAWING(S) AND SPECIFIED HEREIN.
- 10.2. SUPPLY AND INSTALL ALL REFRIGERANT PIPING, INSULATION, FITTINGS, VALVES, EXPANSION LOOPS, ACCESSORIES, SUPPORTS, HANGERS, ETC. FOR ALL DX COOLING SYSTEMS. REFRIGERANT SYSTEMS SHALL BE DESIGNED AND INSTALLED BY QUALIFIED TECHNICIANS REGULARLY ENGAGED IN PROJECTS SIMILAR TO THIS.
- 10.3. HANGER SPACING SHALL BE IN ACCORDANCE WITH THE ASHRAE GUIDELINES. ALL PIPING SHALL BE FIRMLY SUPPORTED AND SECURELY PROVIDE COPPER PLATED HANGERS AND SUPPORTS FOR COPPER PIPING AND GALVANIZED HANGERS AND SUPPORTS FOR GALVANIZED PROVIDE RING TYPE HANGERS FOR PIPING UP TO 1-1/2" AND CLEVIS TYPE HANGERS FOR PIPING OVER 1-1/2".
- 10.4. REFRIGERANT SYSTEMS SHALL BE AS FOLLOWS: THERMOSTATIC EXPANSION VALVES, STRAINER-DRYERS AND COMBINATION MOISTURE-LIQUID INDICATORS SHALL BE SPORLAN, ALCO OR OTHER APPROVED MANUFACTURER.
- 10.5. REFRIGERANT PIPING INSULATION (INSIDE THE BUILDING): ALL LIQUID AND SUCTION LINES SHALL BE INSULATED WITH 128" THICK FLEXIBLE ELASTOMERIC INSULATION, ARMAFLEX II OR IMCOSHIELD.
- 10.6. REFRIGERANT PIPING INSULATION (OUTSIDE THE BUILDING): ALL LIQUID AND SUCTION LINES SHALL BE INSULATED WITH ALUMINUM JACKET

SEAL

REVISIONS

MARK	DATE	DESCRIPTION
1	2024.07.04	ISSUED FOR REVIEW
2	2024.07.01	ISSUED FOR 90% REVIEW

CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON SITE AND REPORT ANY DISCREPANCIES TO DESIGNER AND/OR ENGINEER PRIOR TO PROCEEDING WITH WORK

DO NOT SCALE DRAWINGS

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ATCO BRM - ALASKA RETROFIT

PROJECT TITLE  
PROJECT ADDRESS  
WASILLA, ALASKA

MECHANICAL SPECIFICATIONS

DESIGNED BY CH  
DRAWN BY CC  
CHECKED BY CM  
DRAWING NO.

M2.0