

1.0 CODES, STANDARDS AND DESIGN GUIDELINES

1.1 THE MECHANICAL SYSTEMS FOR THIS FACILITY SHALL BE DESIGNED BY A LICENSED PROFESSIONAL ENGINEER IN CONFORMANCE WITH ALL FEDERAL, STATE AND MUNICIPAL LAWS AND REGULATIONS AND SHALL CONFORM TO THE LATEST EDITION OR REVISION OF THE CODES AND STANDARDS OF THE FOLLOWING TECHNICAL ASSOCIATIONS AND ORGANIZATIONS:

- AABC: AMERICAN AIR BALANCE COUNCIL
AMCA: AIR MOVING AND CONDITIONING ASSOCIATION
ANSI: AMERICAN NATIONAL STANDARD INSTITUTE
ASHRAE: AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR CONDITIONING ENGINEERS
ASME: AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM: AMERICAN SOCIETY FOR TESTING AND MATERIALS
ARI: AIR CONDITIONING AND REFRIGERATION INSTITUTE
IBC: INTERNATIONAL BUILDING CODE
NFPA: NATIONAL FIRE PROTECTION ASSOCIATION
SMACNA: SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION INC.
UL: UNDERWRITER'S LABORATORIES
IMC: INTERNATIONAL MECHANICAL CODE
FM: FACTORY MUTUAL
MSS: MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY.

1.2 DESIGN SHALL BE BASED ON INFORMATION CONTAINED IN THIS SPECIFICATION AND DRAWINGS.

1.3 SUBMIT COPY OF ALL DESIGN CALCULATIONS TO ADI FOR RECORD PURPOSES UPON COMPLETION OF CONSTRUCTION.

2.0 SITE INFORMATION

2.1 GENERAL

- 2.1.1 MAKE SERVICE CONNECTIONS TO NEW SITE UTILITIES IN A MANNER APPROVED BY THE AUTHORITY HAVING JURISDICTION.
2.1.2 COORDINATE LOCATIONS, SIZES AND ELEVATIONS OF WATER AND SEWER SERVICES WITH THE SITE SERVICES CONTRACTOR AND LOCAL UTILITIES REQUIREMENTS.
2.1.3 WATER SOURCE: DOMESTIC WATER SHALL BE SUPPLIED BY OWNER TO A DISTANCE OF 5 FT FROM THE BUILDING EXTERIOR ON WEST SIDE OF BUILDING. TYPICAL WATER PRESSURE: 70-80 PSI.
2.1.4 SANITARY SEWER: SANITARY DRAINAGE PIPING. SEWER SHALL BE A GRAVITY DRAIN TO THE SITE SANITARY SEWER. PIPING TO EXTEND 5 FT FROM BUILDING EXTERIOR ON WEST SIDE OF BUILDING.
2.1.5 STORM SEWER: THIS BUILDING SHALL HAVE A SLOPED ROOF WITH GUTTERS AND DOWNSPOUTS.
2.1.6 WORK BY OTHERS: THERE IS NO PLUMBING OR HVAC REQUIRED BY THIS CONTRACTOR FOR THE GENSET AREA OR THE BULK SLUDGE STORAGE AREA INCLUDING THE ADJACENT SUMP PIT. ALL OTHER PLUMBING AND HVAC SHOWN ON DRAWINGS IS TO BE PROVIDED BY THIS CONTRACTOR.

3.0 MISCELLANEOUS REQUIREMENTS

- 3.1 IDENTIFY ALL EQUIPMENT, PIPING, DUCTWORK WITH COLOR CODED TAGS, NAMEPLATES, LABELS, TAPE/FLOW ARROWS AS APPROPRIATE. IDENTIFY ALL CONCEALED EQUIPMENT WITHIN THE CEILING SPACES BY INSTALLING COLOR CODED PRESSURE SENSITIVE TAPE ON ACCESS DOORS OR CEILING PANELS AS APPLICABLE.
3.2 FOR WATER SHUT OFF SERVICE, USE BRONZE BODY BALL VALVES FOR PIPING SYSTEMS. PROVIDE SHUT OFF VALVES FOR EACH FIXTURE.
3.3 PROVIDE ACCESS TO ALL FANS, VALVES AND CONTROL DEVICES FOR MAINTENANCE AND REPAIRS.
3.4 PROVIDE DRAINAGE VALVES WITH CHAINED ON CAPS AT ALL LOW POINTS OF HYDRONIC SYSTEMS.
3.5 PROVIDE ALL REQUIRED SUPPLEMENTARY STEEL SUPPORTS FOR EQUIPMENT, PIPING, DUCTWORK. SUITABLY CLEAN, PRIME AND FINISH THIS STEEL UPON INSTALLATION COMPLETION.
3.6 SUBMIT A COMPLETE SET OF ENGINEERING DRAWINGS FOR REVIEW PRIOR TO FABRICATION OF ALL SYSTEMS. DRAWINGS SHALL BE STAMPED BY A QUALIFIED PROFESSIONAL ENGINEER LICENCED TO PRACTICE IN THE STATE OF IDAHO.

3.7 INSTALL ALL MECHANICAL EQUIPMENT STRICTLY IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND WHERE APPLICABLE, REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION. CLEARANCES WILL BE, AS A MINIMUM, AS REQUIRED BY RELEVANT CODES AND REGULATIONS AND/OR AS RECOMMENDED BY EQUIPMENT MANUFACTURERS. IN ADDITION, ARRANGE ANY PROTRUSIONS IN SUCH A WAY AS TO AVOID HAZARDOUS SITUATIONS FOR PERSONNEL TRAFFIC.

4.0 THERMAL INSULATION

4.1 INSULATION THICKNESSES AND TYPES FOR EQUIPMENT, PIPING, AND DUCTWORK FOR THE PLUMBING, HEATING, AND VENTILATION SYSTEMS SHALL BE PROVIDED AS FOLLOWS: 1" THICK FORMED RIGID MINERAL FIBRE WITH VAPOUR BARRIER AND PVC JACKETING, -40°F TO 250°F, APPLICATION FOR PIPING, VALVES AND FITTINGS ON ABOVE GROUND POTABLE AND NON-POTABLE COLD WATER. TWO 1" LAYERS OF RIGID OR FLEXIBLE MINERAL FIBRE WITH VAPOUR BARRIER, -40°F TO 150°F, APPLICATION ON RECTANGULAR, ROUND AND OVAL DUCTWORK ON FRESH AIR INTAKES FROM LOUVRE TO FAN.

5.0 FIRE PROTECTION

5.1 FIRE EXTINGUISHERS

5.2.1 PROVIDE MULTI-PURPOSE DRY CHEMICAL PORTABLE FIRE EXTINGUISHERS AS REQUIRED BY THE LOCAL BUILDING CODE AND NFPA 10 - LATEST EDITION. FIRE EXTINGUISHERS TO BE SURFACE MOUNTED ON WALL WITH WALL BRACKETS. FIRE EXTINGUISHER LOCATIONS TO BE SHOWN ON DESIGN DRAWINGS.

6.0 PLUMBING

- 6.1 BACKFLOW PROTECTION SHALL BE INSTALLED TO THE REQUIREMENTS OF THE APPLICABLE PLUMBING CODE AS FOLLOWS: REDUCED PRESSURE PRINCIPLE TYPE AS PREMISES PROTECTION FOR POTABLE WATER MAIN. REDUCED PRESSURE PRINCIPLE TYPE ON WATER SUPPLY PIPING TO LAB.
6.2 SUPPLY AND INSTALLATION OF WATER METER WILL BE BY OWNER/LOCAL AUTHORITY AND IS NOT INCLUDED IN THIS CONTRACTOR'S SCOPE.
6.3 UTILIZE WATER CONSERVING FIXTURES AND TRIM.
6.4 WATER FOR FIXTURES SHALL BE SUPPLIED BY A DISTRIBUTION SYSTEM OF INSULATED COPPER PIPING.
6.5 SANITARY PIPING TO BE A SYSTEM OF COPPER, DWV PVC, DWV ABS, CAST IRON OR A COMBINATION THEREOF AS IS ALLOWABLE BY LOCAL CODES. VENT ALL SANITARY DRAINAGE IN ACCORDANCE WITH THE LOCAL CODES.
6.6 UTILIZE NON-LEAD BASED SOLDERS ONLY FOR COPPER PIPING.
6.7 FD AND FFD: ALL FLOOR DRAINS AND FUNNEL FLOOR DRAINS SHALL HAVE TRAP PRIMERS AND HEAVY DUTY STRAINERS. DRAIN LOCATIONS SHOWN ON FLOOR PLAN.
6.8 HB: THE BUILDING IS TO BE EQUIPPED WITH INTERIOR AND EXTERIOR HOSE BIBBS AS INDICATED ON THE FLOOR PLAN. ALL HOSE BIBBS SHALL BE COMPLETE WITH VACUUM BREAKERS. EXTERIOR HOSE BIBBS SHALL BE OF THE NON-FREEZE TYPE.
6.9 CS-1: PROVIDE ONE LABORATORY SINK AS SHOWN ON FLOOR PLAN. 316 STAINLESS STEEL, 10" DEEP DOUBLE BOWL, SELF-RIMMING, LEDGE-BACK. CHROME-PLATED LABORATORY FAUCET WITH GOOSENECK SPOUT, VACUUM BREAKER AND SERRATED NOZZLE. CAST BRASS P-TRAP WITH CLEANOUT.
6.10 WC-1: FLOOR MOUNTED, VITREOUS CHINA WATER CLOSET WITH INSTITUTIONAL CLASS FLUSH TANK, MAXIMUM 3.5 GALLONS PER FLUSH, 2" BALL PASS AND INSTITUTIONAL CLASS SEAT WITH CHECK HINGE.
6.11 LV-1: VITREOUS CHINA SELF-RIMMING ABOVE COUNTER TYPE LAVATORY WITH INSTITUTIONAL CLASS CHROME PLATED BRASS 4" BASIN FAUCET, SUPPLY STOPS, OPEN GRID STRAINER AND BRASS P-TRAP.
6.12 SH-1: 36" X 36" ACRYLIC SHOWER CABINET WITH CURTAIN ROD, CURTAIN AND SOAP DISH. CHROME PLATED BRASS LOW FLOW SHOWER HEAD C/W CHROME PLATED BRASS BENT ARM, WALL ESCUTCHEON, SET SCREW, PRESSURE BALANCED WASHERLESS BALL VALVE WITH STOPS AND COLOUR LABELLED ESCUTCHEON.
6.13 ES-1: PROVIDE TWO EMERGENCY SHOWERS AS SHOWN ON FLOOR PLAN. COMBINATION SHOWER AND EYE/FACE WASH UNIT COMPLETE WITH 10" SHOWER HEAD, 11" RECEPTOR AND TWIN EYE/FACE WASH NOZZLES. SHOWER TO BE ACTIVATED BY PULL ROD. EYE/FACE WASH TO BE ACTIVATED BY PUSH FLAG. SHOWER FLOWRATE: 20 GPM @ 20 PSI. EYE/FACE WASH FLOWRATE: 2.5 GPM @ 20 PSI. WATER TO BE SUPPLIED AT A MINIMUM OF 60°F. UNIT TO COME COMPLETE WITH THERMOSTATIC MIXING VALVE. IN COMPLIANCE WITH OSHA AND ANSI Z358.1.

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Table with 4 columns: No., Revision, Ckd. By, Date. Contains a grid for tracking revisions.

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Table with project details: Const. North, Drawn By: CPK, Dwg. Standards Ckd. By: DER, Designed By: CJR, Dwg. Design Ckd. By: [Signature]

ADI Systems Inc. Waste Treatment Systems logo and address: Fredericton, NB, CA and Salem, NH, US; CAN PATENT #1253266; #2,096,852; USA PATENTS #5,505,848; #5,587,080; MEXICO PATENT #190898

Table with project title: ANAEROBIC TREATMENT SYSTEM FOR RENOVA ENERGY PLC HEYBURN, ID; Dwg. Title: CONTROL BUILDING MECHANICAL SPECIFICATIONS; Project No.: 1079-3.1; Dwg. No.: 6-8; Rev. No.: 0; Scale: NOT TO SCALE