

GENERAL SPECIFICATIONS

- UNDERGROUND DUCTILE IRON PIPE SHALL BE CEMENT LINED, CLASS 54 WITH RESTRAINED JOINTS. PROVIDE FLANGED JOINTS WITH FULL FACED, OIL RESISTANT GASKETS FOR ALL ABOVE GROUND PIPE. FLANGE BOLTS SHALL BE HIGH STRENGTH TYPE 304 STAINLESS STEEL. COUPLINGS BETWEEN PVC AND DUCTILE IRON PIPE SHALL BE EPOXY COATED WIDE-RANGE COUPLINGS, 250 PSI RATING, AWWA C-213 COMPLIANT EQUAL TO USA BLUEBOOK MC-21293. CONTACT: (800) 548-1234
- CHECK VALVES SHALL BE EQUAL TO FLOMATIC WASTEWATER BALL CHECK VALVES WITH RUBBER-COVERED BALLS, NITRILE SEALS, FLANGED, 150 PSI PRESSURE RATING, USA BLUEBOOK MC-35683 FOR 6" VALVES.
- PLUG VALVES SHALL BE EQUAL TO VAL-MATIC CAM-CENTRIC VALVE WITH VULCANIZED BUNA-N COATED PLUG, FLANGED CONNECTIONS, CAST IRON BODY, EPOXY-COATED INTERIOR AND EXTERIOR. PROVIDE GEAR OPERATORS FOR VALVES 6" AND GREATER, USA BLUEBOOK MC-11293.
- LINKSEAL PIPE PENETRATIONS SEALS SHALL BE AS MANUFACTURED BY THUNDERLINE CORPORATION.
- EACH PNEUMATIC ACTUATOR SHALL BE AUTOMAX SUPER NOVA B-SERIES B100S08 WITH A DIRECTIONAL VALVE, FLOW CONTROL MODULES FOR ADJUSTING OPENING AND CLOSING SPEEDS, ROTARY POSITION INDICATOR WITH TWO SETPOINTS OF LIMIT SWITCHES, A PRESSURE REGULATOR WITH PRESSURE GAUGE ON THE DOWNSTREAM SIDE AND A DE-CLUTCHABLE MANUAL OVER-RIDE. OPERATORS SHALL BE DESIGNED TO OPERATE IN A CLASS I, DIVISION 2 ATMOSPHERE.
- COMPRESSOR SHALL BE RATED 3 SCFM @ 125 PSI AND SHALL BE SET TO STOP AT 125 PSI. COMPRESSOR MOTOR SHALL BE A MAXIMUM OF 1/2 HP, 208 X 120 VAC, 3 PHASE, 1700 RPM. COMPRESSOR SHALL BE COMPLETE WITH ALL START/STOP CONTROL AND SHALL BE RATED FOR OPERATION IN A CLASS 1 DIVISION 2 ATMOSPHERE.
- COMPRESSED AIR RECEIVER SHALL BE 7 GAL CAPACITY RATED AT 200 PSIG AND SHALL BE MC MASTER-CARR 988K15.

EMERGENCY STORAGE TANK SPECIFICATIONS

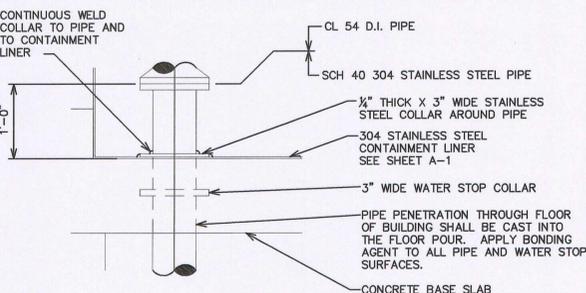
- TANK LAYOUT IS BASED ON (2) FRP TANKS WITH A WORKING VOLUME OF APPROXIMATELY 60,000 GALLONS EACH. (120,000 GALLONS USEABLE VOLUME IS REQUIRED.)
- TANKS SHALL BE AS MANUFACTURED BY BELCO OR EQUAL, 15'-8" DIAMETER X 45'-0" HIGH, DOME TOP, FLAT BOTTOM, FULLY SUPPORTED. TANK DESIGN SHALL CONFORM TO THE 2006 INTERNATIONAL BUILDING CODE (IBC) W/ NEW MEXICO AMENDMENTS. TANKS SHALL BE DESIGNED, ERECTED AND TESTED PER API-650 FOR ATMOSPHERIC CONDITIONS, A SEISMIC USE GROUP 1, AND SPECIFIC GRAVITY OF 1; WIND SPEED PER CODE.
- EACH TANK SHALL BE EQUIPPED WITH ONE LEVEL PROBE NOZZLE, ONE 6" VENT LINE, ONE FLOAT LEVEL NOZZLE, ONE 8" OVERFLOW CONNECTION, ONE 24 INCH ACCESS MANWAY, ONE 36" TANK CLEANOUT, ONE FILL LINE & LIFTING LUGS. PROVIDE ONE, 2 INCH FRP CONDUIT ON EACH TANK FROM GRADE TO TOP FOR FUTURE LIGHTING.
- TANKS SHALL BE EQUIPPED WITH BASE ANCHORS AND SECURED TO CONCRETE FOUNDATION PER CODE. HOLD-DOWN DESIGN AND ANCHORAGE SHALL BE BY THE TANK MFR. WITH DESIGN CALCULATIONS BASED ON THE ACTUAL TANKS PROVIDED AND SEALED BY A STRUCTURAL ENGINEER REGISTERED IN THE STATE OF NEW MEXICO. PROVIDE ROOFING FELT OR OTHER SLIP SHEET MEMBRANE BELOW TANK AS MAY BE REQUIRED BY TANK MFR. TO SEPARATE TANK FROM FOUNDATION SLAB.
- EACH TANK SHALL BE EQUIPPED WITH AN ACCESS LADDER & OSHA COMPLIANT SAFETY CAGE.

GEOSYNTHETIC CLAY LINING SYSTEM

GEOSYNTHETIC CLAY LINING (GCL) SYSTEM BELOW THE EMERGENCY STORAGE TANKS SHALL BE GECO BENTONAT SDN WITH 12 INCHES OF COMPACTED SOIL COVER REMOVE ONE FOOT OF SOIL FROM WITHIN THE CONTAINMENT AREA AND GRADE PER CONTOURS. INSTALL THE GCL WITH OVERLAPPING SEAMS PER MFR INSTRUCTIONS. COVER GCL MEMBRANE WITH 12 INCHES OF EXCAVATED SOIL, AND RE-COMPACT TO MINIMUM 90% DENSITY. PROVIDE PIPE PENETRATIONS, COLLARS & SEALS PER MFR DETAILS AND SEAL WITH BENTONITE.

INSTALL DRAIN PIPE WITH VALVE THRU CONTAINMENT BERM ON LOW SIDE TO DRAIN STORMWATER FROM CONTAINMENT AREA. INSTALL VALVE ON INSIDE OF CONTAINMENT BERM. PROVIDE WOODEN WALKWAY & SUPPORT POSTS - SEE SHEET A-1. EXTEND LINER SYSTEM UP POSTS AND SEAL PER MFR INSTRUCTIONS.

PNEUMATIC OPERATOR OPERATING SCHEDULE	
OPERATOR	DESCRIPTION OF OPERATION
1	AIR TO OPEN/ SPRING CLOSE
2	AIR TO CLOSE/ SPRING OPEN
3	AIR TO OPEN/ SPRING CLOSE
4	AIR TO OPEN/ SPRING CLOSE
5	AIR TO CLOSE/ SPRING OPEN



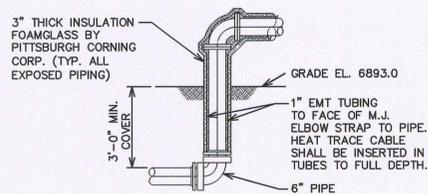
PIPE PENETRATION DETAIL
NOT TO SCALE

PACKAGED LIFT STATION SPECIFICATIONS

- THE PACKAGE SHALL CONSIST OF THE STEEL TANK, FRP GRATING OVER TANK PORTION, SUPPORT STEEL, PUMPS, PIPING, SCREEN, AND CONTROL PANEL FOR A COMPLETE INSTALLATION. PIPING AND VALVES WHICH SHALL BE INCLUDED WITHIN THIS PACKAGE ARE AS SHOWN.
- PROVIDE A36 CARBON STEEL SEPARATOR TANK DESIGNED TO SUPPORT THE SCREEN MECHANISM, FRP GRATING AND PUMPS. AN INTERNAL STEEL BAFFLE WALL IS SHOWN TO SEPARATE FLOATING OIL. THE TOP OF THE TANK SHALL HAVE A STEEL ANGLE FRAME ON THE INTERIOR AND EXTERIOR TO SUPPORT GRATING. (THE GRATING OUTSIDE THE TANK AND WALL SUPPORT ANGLES WILL BE PROVIDED BY OTHERS.) THE PUMPS AND SCREEN SHALL BE SUPPORTED BY THE STEEL TANK AND FRAMED TO ALLOW SUPPORT OF THE GRATING ALL AROUND. DESIGN ASSEMBLY FOR MIN. LOAD OF 50 LBS/SF PLUS EQUIP. WEIGHT. WIDE FLANGE BEAMS SHALL BE WELDED TO THE UNDERSIDE OF THE TANK FOR SUPPORTING IT UP OFF OF THE SLAB; SEE SHEET A-1 FOR GRATING, WIDE FLANGES, STAINLESS STEEL LINER, ETC.
- ALL CARBON STEEL COMPONENTS SHALL BE PREPARED BY SANDBLASTING PER SSPC 10. PROVIDE TWO COATS OF COAL TAR EPOXY, 8 MILS THICKNESS EACH (SEE PAINTING SPEC. PROVIDE ONE QUART OF TOUCH-UP PAINT FOR FIELD APPLICATION.)
- PUMPS SHALL BE VERTICAL SUMP PUMPS AS MANUFACTURED BY KERR PUMP, GOULDS, OR SMITH & LOVELESS, INC. ALL IRON OR STEEL CONSTRUCTION WITH RECTANGULAR COVER PLATE SUPPORTING THE MOTOR AND DISCHARGE PIPE. SEMI-OPEN BRONZE IMPELLER CAPABLE OF RAW SANITARY SEWAGE WITH 3 INCH SPHERES. CAPACITY: 300 GALLONS PER MINUTE AT 84 FEET OF TOTAL DYNAMIC HEAD AT 1750 RPM. PROVIDE THRUST BEARING WITH GREASE FITTING ON COVER PLATE. PUMP SHAFT SHALL BE MINIMUM OF 1 1/2 INCH DIAMETER. MOTORS SHALL BE 20 HP, 480V, 3 PHASE.
- SCREEN SHALL BE TYPE 304 STAINLESS STEEL, WEDGEWIRE, PARABOLIC GRATING SCREEN AS MANUFACTURED BY PARKSON OR SWECO. THE UNIT SHALL BE 6 FEET WIDE WITH A FLOW CAPACITY OF 600 GPM WHEN CLEAN. THE OPENINGS SHALL BE APPROXIMATELY 0.10 INCHES. PROVIDE STAINLESS STEEL FLANGED CONNECTIONS.

PACKAGED LIFT STATION SHALL BE AS MANUFACTURED BY:

- KERR PUMP AND SUPPLY COMPANY, (248) 543-3880, CONTACT: GLENN KLING
- SMITH & LOVELESS, (248) 643-8120, CONTACT: ED KMIT



EMERGENCY TANKS DRAIN DETAIL
SCALE: 3/8" = 1'-0"

MECHANICAL SPECIFICATIONS

EXHAUST FAN EF-1 SHALL BE FRP CONSTRUCTION DESIGNED TO MEET CLASS I, DIVISION 2 CONSTRUCTION FOR HAZARDOUS ENVIRONMENT. FAN SHALL BE IN-LINE STYLE EQUAL TO INDUSTRIAL AIR, PLASTICAIR OR HARTZELL AS4-12-FG, 1300 CFM @ 0.375" S.P., 1/2 H.P. MOTOR, 240 VOLT, SINGLE PHASE. FAN TO BE MANUALLY STARTED BY LOCAL WEATHER-PROOF SWITCH ON EXTERIOR OF BLDG. BY DOOR TO VENTILATE PRIOR TO ENTRY. THE FAN SHALL ALSO BE THERMOSTATICALLY CONTROLLED TO VENTILATE LIFT STATION WHEN INTERIOR TEMPERATURE REACHES 90°. PROVIDE A COOLING ONLY THERMOSTAT FOR OPERATION. THERMOSTAT & CONTROLS SHALL BE DESIGNED TO MEET CLASS I, DIVISION 2 CONSTRUCTION FOR USE IN A HAZARDOUS ENVIRONMENT.

FAN OPERATION: WHEN ROOM TEMPERATURE REACHES 90°, INTAKE LOUVER DAMPER OPENS AND FAN STARTS. THE FAN WILL CYCLE AND THE DAMPER OPEN AND CLOSE UNTIL ROOM TEMPERATURE DROPS BELOW 90°.

ROOF RELIEF AIR HOOD SHALL BE EQUAL TO GREENECH FABRA-HOOD, SIZE 18" X 18" ALL ALUMINUM CONSTRUCTION WITH SPECIAL 16" HIGH PITCHED ROOF CURB, GRAVITY BACKDRAFT DAMPER.

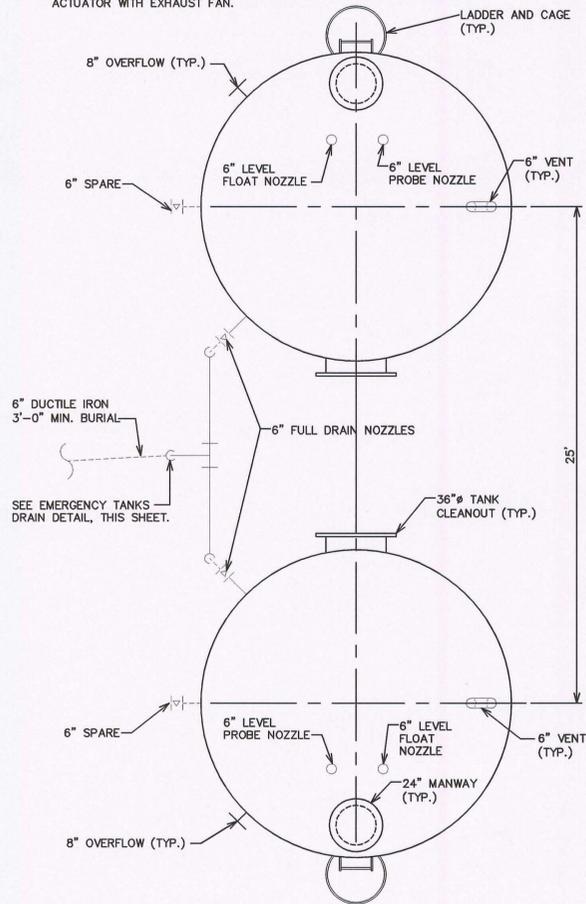
FURNISH AND INSTALL EXPLOSION PROOF AND CORROSION-RESISTANT ELECTRIC UNIT HEATER EH-1 AS SPECIFIED HEREIN. THE HEATER SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS AND APPLICABLE LOCAL AND NATIONAL CODES, AS SHOWN ON THE DRAWINGS, AND SHALL BE UL LISTED AND CSA CERTIFIED, RATED TO COMPLY WITH CLASS I, DIVISION 2 LOCATIONS. UNITS SHALL BE EQUAL TO INDECO COMPACT WITH ALL NON-STAINLESS STEEL COMPONENTS EPOXY COATED WITH REMOTE THERMOSTAT, CONTROL TRANSFORMER, HANGER KIT. HEATER SHALL BE SIZE 10, MODEL 236-F01T-0101D, 10 KW, 480 VOLT, 3 PHASE, FIBERGLASS REINFORCED DUCTWORK, INCLUDING FITTINGS, SHALL BE CONSTRUCTED OF INDUSTRIAL POLYESTER FIBERGLASS REINFORCED PLASTIC AND SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS. RESIN USED FOR THE DUCTWORK SHALL BE "HETRON" #FR992 WITH 3% ANTIMONY TRIOXIDE ADDED AS A FIRE RETARDANT, BEING SUITED FOR SERVICE IN AN ENVIRONMENT RICH IN HYDROGEN SULFIDE. ALL DUCTS SHALL BE RATED CLASS I AS DESCRIBED IN UL-181. THE DUCTWORK, AS TESTED IN ACCORDANCE WITH ASTM-E84 STEINER TUNNEL TEST, SHALL NOT EXCEED A FLAME SPREAD RATING OF 25, A SMOKE CONTRIBUTION OF 50, AND FUEL CONTRIBUTION OF 10. THE MANUFACTURER SHALL SUBMIT RESULTS OF TESTS CONDUCTED IN A UL LAB IN ACCORDANCE WITH UL-181 AND ASTM E-84.

SHUTOFF DAMPERS:

OUTSIDE AIR DAMPERS INSTALLED ADJACENT TO OUTSIDE AIR LOUVERS AND IN OTHER SHUT-OFF SERVICE SHALL BE AMERICAN WARMING & VENTILATING, INC. MODEL VC-28 OR EQUAL AIRFOIL BLADE DAMPERS. BLADES AND FRAMES SHALL BE 6063-T5 EXTRUDED ALUMINUM WITH .081 MINIMUM WALL THICKNESS. BLADE SEALS SHALL BE DUAL DURUMETER VINYL. JAMBS SHALL CONTAIN STAINLESS STEEL SPRING SEALS.

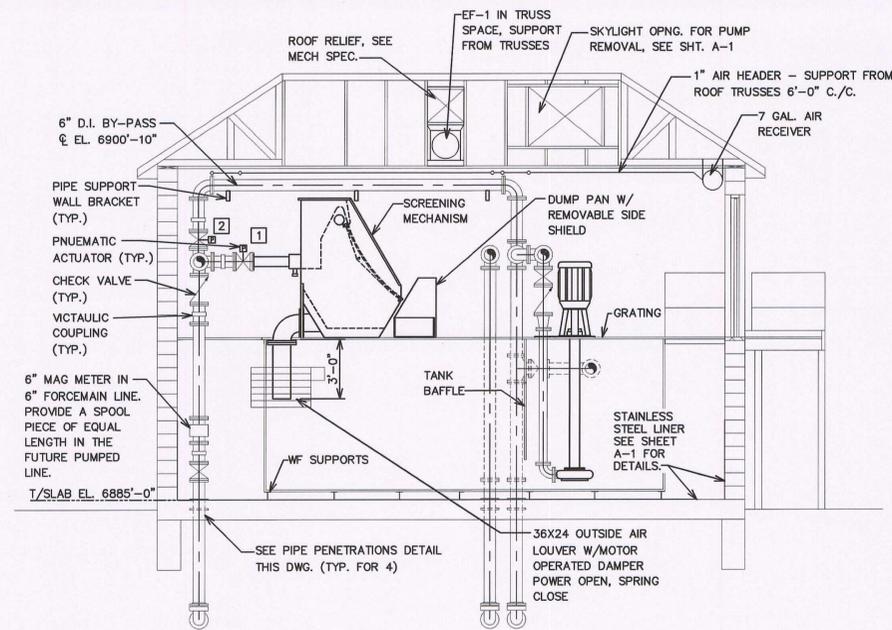
DAMPER ACTUATORS:

DAMPER ACTUATORS SHALL BE AS SPECIFIED HEREIN, UNLESS OTHERWISE NOTED. POWER OPEN, SPRING CLOSE ACTUATORS SHALL BE AS MANUFACTURED BY BARBER-COLMAN OR EQUAL. INTERLOCK DAMPER ACTUATOR WITH EXHAUST FAN.

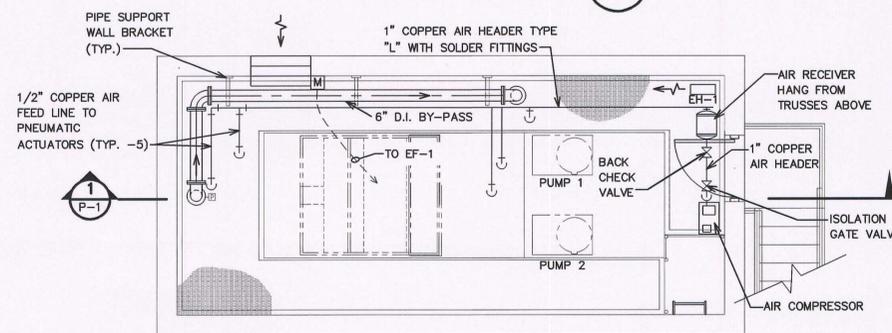


EMERGENCY TANKS ENLARGED PLAN
SCALE: 1/4" = 1'-0"

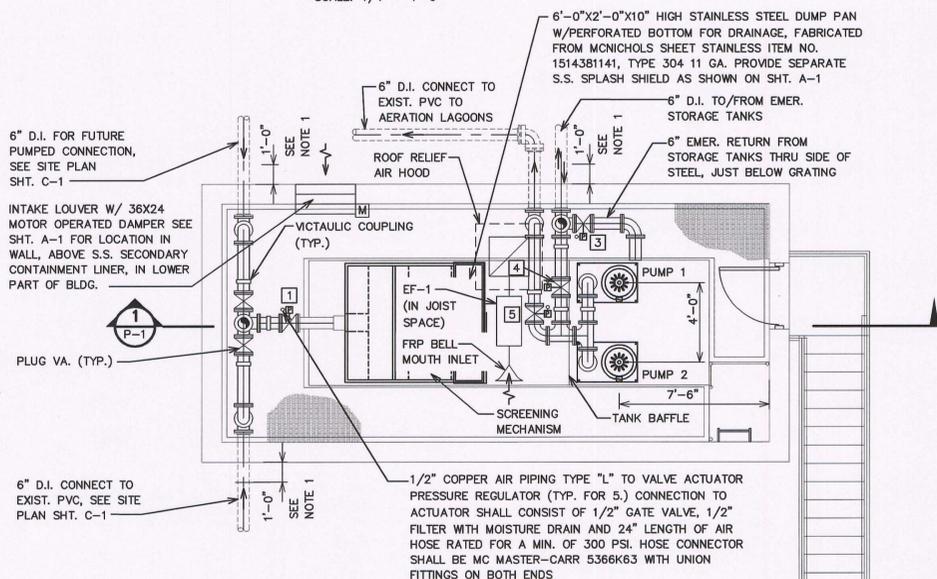
- NOTES:**
- TRANSITION FROM SCHEDULE 40, 304 S.S. PIPE UNDER BUILDING TO CL 54 D.I. PIPE. CONNECT PIPING WITH TRANSITION DRESSER COUPLING WITH RESTRAINED GLANDS.
 - SEE SITE PLAN SHT. C-1 FOR OVERALL LAYOUT.



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



PUMP STATION - UPPER PIPING PLAN
SCALE: 1/4" = 1'-0"



PUMP STATION PLAN - MANUAL SCREEN
SCALE: 1/4" = 1'-0"

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GW - 32

Maps

6-18-08	NMCCD SUBMITTAL
5-28-08	OWNER REVIEW
4-10-08	OWNER REVIEW
DATE	ADDITIONS AND/OR REVISIONS
DESIGNED	E.L.C./K.M./G.S.
DRAWN	M.T.M./I.M.G./T.W.R.
CHECKED	E.L.C./K.M.
APPROVED	P.T.R.

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WESTERN REFINING - GALLUP
SANITARY WASTEWATER LIFT STATION
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LIFT STATION PLAN, SECTION & DETAILS
HRC JOB NO. 20070465 SCALE AS NOTED
DATE JANUARY 2008 SHEET NO. P-1