

## ELECTRICAL NOTES:

1. THE CONTRACTOR SHALL FURNISH AND INSTALL A COMPLETELY SELF-CONTAINED DUPLEX MOTOR CONTROL PANEL. THE CONTROL PANEL SHALL PROVIDE SHORT CIRCUIT AND OVERLOAD PROTECTION FOR THE PUMPS. AN ALTERNATOR SHALL BE PROVIDED TO ALTERNATE THE LOAD PUMP DUTY BETWEEN THE TWO PUMPS ON SUCCESSIVE CYCLES.
2. THE DUPLEX MOTOR CONTROLS SHALL BE HOUSED IN A NEMA 3R ENCLOSURE. THE ENCLOSURE SHALL BE FORMED OF G-90 GALVANIZED STEEL WITH ALL SURFACES PHOSPHATIZED, THEN FINISHED INSIDE AND OUT WITH ANSI 61 GRAY POLYESTER POWDER FINISH. A FULL WIDTH DRIP SHIELD IS TO BE FORMED INTO THE TOP CAP TO PREVENT STANDING WATER FROM DRIPPING INTO THE INTERIOR WHEN THE DOOR IS OPENED. THIS DRIP SHIELD AND THE FORMED EDGES OF THE ENCLOSURE SHALL PROVIDE A SEATING SURFACE FOR THE FULL DOOR GASKET. THE DOOR IS TO BE EQUIPPED WITH TWO GALVANIZED HINGES WITH STAINLESS STEEL HINGE PINS. TWO PAD-LOCKABLE DRAW-PULL LATCHES SHALL BE PROVIDED TO HOLD THE DOOR CLOSED. WELD NUTS SHALL SUPPORT THE REMOVABLE STEEL COMPONENT MOUNTING PANEL. THE REMOVABLE PANEL IS TO BE WHITE ENAMEL AND WILL BE DRILLED AND TAPPED FOR COMPONENT MOUNTING. THE ENCLOSURE SHALL HAVE EXTERNAL MOUNTING TABS FOR POLE MOUNTING. THE ENCLOSURE MUST BE RATED NEMA 3R RAIN-TIGHT AND SHALL BE SUITED FOR OUTDOOR MOUNTING.
3. A THERMAL MAGNETIC CIRCUIT BREAKER SHALL BE PROVIDED TO PROTECT THE MOTOR FROM SHORT CIRCUITS AND TO SERVE AS A MOTOR BRANCH CIRCUIT DISCONNECT AS REQUIRED BY THE NATIONAL ELECTRICAL CODE (NEC).
4. A MAGNETIC STARTER SHALL BE PROVIDED FOR THE PUMP MOTOR. THE STARTER SHALL BE EQUIPPED WITH A THREE (3) POLE BIMETALLIC OVERLOAD RELAY WITH AMBIENT COMPENSATION AND CLASS 10 QUICK TRIP HEATERS. HEATERS MUST BE PROPERLY SIZED FOR MOTOR LOAD. THE OVERLOAD RELAY SHALL PROVIDE THE TERMINALS FOR CONNECTION OF THE PUMP MOTOR CABLE.
5. A CONTROL TRANSFORMER SHALL BE PROVIDED TO SUPPLY 115 VOLTS FOR THE CONTROL CIRCUIT AND AN AUXILIARY OUTLET AT THE CONTROL PANEL. THE TRANSFORMER SHALL BE A CONTINUOUS DUTY, MACHINE TOOL TYPE, SIZED TO MEET THE LOAD REQUIREMENTS OF THE CONTROL CIRCUIT. THE TRANSFORMER PRIMARY SHALL BE CONNECTED TO THE LOAD SIDE OF THE CIRCUIT BREAKER. ONE SIDE OF THE SECONDARY WINDING SHALL BE SIZED TO PROTECT THE TRANSFORMER IN ACCORDANCE WITH REQUIREMENT OF THE NEC.
6. A TWO (2) POLE, 600 VAC, 30 AMPERE RATED FUSE BLOCK SHALL BE PROVIDED FOR TRANSFORMER PRIMARY WINDING; A ONE (1) POLE, 250 VAC, 30 AMPERE FUSE BLOCK WILL BE PROVIDED FOR THE SECONDARY WINDING. FUSES SHALL BE SIZED TO PROTECT THE TRANSFORMER IN ACCORDANCE WITH REQUIREMENTS OF THE NEC.
7. AN AUTOMATIC ALTERNATOR SHALL BE PROVIDED WHICH WILL ALTERNATE THE LEAD AND LAG PUMPS AT THE SHUT-OFF OF EACH PUMPING CYCLE. THE ALTERNATOR CIRCUITRY SHALL START THE LAG PUMP IN THE EVENT THAT THE LEAD PUMP CAPACITY IS LESS THAN THE INFLOW OR THE LEAD PUMP FAILS.
8. A TERMINAL BLOCK SHALL BE PROVIDED FOR CONNECTION OF LEVEL CONTROLS AND OTHER CONTROL WIRING AS REQUIRED FOR PROPER PUMP INSTALLATION. THE CONTROL SHALL BE EQUIPPED WITH A HAND-OFF-AUTO SELECTOR SWITCH AND AN AMBER RUN LIGHT, MOUNTED ON AN ALUMINUM PLATE UNDER COVER OF THE ENCLOSURE DOOR. THE SELECTOR SWITCH SHALL BE A TOGGLE TYPE WITH SCREW TERMINALS RATED 250 VAC, THREE (3) AMPERES. THE RUN LIGHT SHALL BE ½ WATT 115-VOLT NEON TYPE.
9. THE CONTROL PANEL SHALL BE EQUIPPED WITH AN DORSETT SCADA SYSTEM TO PROVIDE CONTACT WITH CITY PERSONNEL ON ALL ALARM POINTS.
10. THE CONTROL SHALL BE WIRED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE. ALL WIRING SHALL BE PERFORMED IN A NEAT AND ORDERLY MANNER.

## PUMP NOTES:

### EQUIPMENT:

- A. THE CONTRACTOR SHALL FURNISH AND INSTALL TWO (2) 6", FLYGT 18 HORSEPOWER, SUBMERSIBLE NON-CLOG PUMPS, WITH 453 HT IMPELLER. THE MOTOR SHALL BE 460 VOLT, 3-PHASE, 60 HZ.
- B. THE PUMPS SHALL BE SUBMERSIBLE, NON-CLOG UNITS DESIGNED FOR HANDLING STORM WATER. PUMPS SHALL BE CAPABLE OF OPERATING IN A LIQUID TEMPERATURE OF 104°F.
- C. PROVIDE MOISTURE CUT-OFF SENSORS IN THE LIFT STATION PUMP MOTORS.
- D. AS PART OF THE LIFT STATION SYSTEM THE CONTRACTOR SHALL FURNISH AND INSTALL A HOOK-UP FOR A PORTABLE STAND-BY GENERATOR SET.

### SUBMITTALS:

THE FOLLOWING SUBMITTAL DATA SHALL BE PROVIDED BEFORE INSTALLATION BEGINS. FAILURE TO PROVIDE THIS INFORMATION SHALL BE CAUSE FOR REJECTION.

- A. PUMP PERFORMANCE CURVES
- B. PUMP OUTLINE DRAWING
- C. STATION DRAWING FOR ACCESSORIES
- D. ELECTRICAL MOTOR DATA
- E. CONTROL DRAWING AND DATA
- F. ACCESS FRAME AND DRAWING
- G. INSTALLATION GUIDES
- H. TECHNICAL MANUALS
- I. PARTS LIST
- J. ALL HOOK-UP COMPONENTS FOR PORTABLE STAND-BY GENERATOR SET.

### TESTS:

THE FOLLOWING TEST SHALL BE PERFORMED ON EACH PUMP BEFORE SHIPMENT:

- A. IMPELLER, MOTOR RATING AND ELECTRICAL CONNECTIONS SHALL BE CHECKED FOR COMPLIANCE WITH THE DRAWINGS.
- B. PRIOR TO SUBMERGENCE, EACH PUMP SHALL BE RUN DRY TO ESTABLISH CORRECT ROTATION.
- C. EACH PUMP SHALL BE RUN SUBMERGED IN WATER.
- D. MOTOR AND CABLE INSULATION SHALL BE TESTED FOR MOISTURE CONTENT OR DEFECTS.

UPON REQUEST, A WRITTEN QUALITY ASSURANCE RECORD CONFIRMING THE ABOVE TESTING SHALL BE SUPPLIED WITH EACH PUMP AT THE TIME OF SHIPMENT.

### START-UP SERVICE:

THE EQUIPMENT MANUFACTURER SHALL FURNISH THE SERVICES OF A QUALIFIED SERVICE REPRESENTATIVE AT THE SITE TO INSPECT THE INSTALLATION. AFTER THE PUMPS HAVE BEEN COMPLETELY INSTALLED AND WIRED, THE CONTRACTOR SHALL HAVE THE MANUFACTURER PERFORM THE FOLLOWING:

- A. MEGGER STATOR AND POWER CABLES.
- B. CHECK SEAL LUBRICATION
- C. CHECK FOR PROPER ROTATION
- D. CHECK POWER SUPPLY VOLTAGE
- E. MEASURE MOTOR OPERATING LOAD AND NO LOAD CURRENT
- F. CHECK LEVEL CONTROL OPERATION AND SEQUENCE
- G. CHECK OPERATION OF HOOK-UPS FOR STAND-BY GENERATOR SET AND ALL COMPONENTS TO INSURE PROPER OPERATION FROM BEGINNING TO END OF A SIMULATED POWER OUTAGE.

DURING THIS INSPECTION THE MANUFACTURER'S REPRESENTATIVE SHALL REVIEW RECOMMENDED OPERATION AND MAINTENANCE PROCEDURES WITH THE OWNER'S PERSONNEL.



ENOCH CITY  
900 E MIDVALLEY RD  
Enoch, UT 84721  
Tel. (435) 586-1119

# SUBMERSIBLE STORM WATER LIFT STATION

SCALE:  
N.T.S.  
DATE:  
APR. 2024

DETAIL No.:

D11.0D

SHEET:  
4 of 5