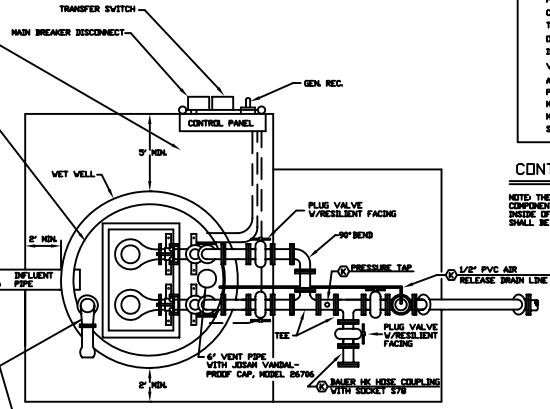


NOTE:

INSTALL ALUMINUM HANDRAILS ON ANY PLATFORM 6" X 6" OR SMALLER AND OVER 18" HIGH.

WETWELL & CLOSEST RECEIVING WAREHOUSE WITHIN PUMP STATION SHALL BE BOUNDARIES ARE TO BE LINED WITH 1/2" THICKNESS PROTECTIVE LINING APPLIED AT A MINIMUM 18" HIGHER THAN FLOOR LEVEL.

IF BYPASS PIPE WITH 6" REDUCING 3/4" BEND TO BE INSTALLED AT WETWELL WITH BALL 577



TYPICAL SUBMERSIBLE PUMP STATION PLAN WITHOUT SLAB (N.T.S.)

PUMP HP.	
CAPACITY GPM	
TOTAL HEAD FEET	
OPERATING RPM	
IMPELLER NO.	
VOLTS	
AMPS	
PHASE	
MANUFACTURER	
MODEL NO.	
SERIAL NO.	

CONTROL PANEL INFORMATION PLATES

NOTE: THE CONTRACTOR SHALL INCLUDE A SCHEMATIC FOR THE CONTROL PANEL COMPONENTS LAMPED ON BOTH SIDES PLACED IN A PROTECTIVE FRAME TO THE INSIDE OF THE PANEL DOOR. THE ABOVE PUMP AND MOTOR INFORMATION PLATE SHALL BE PERMANENTLY AFFIXED TO THE INSIDE OF THE PANEL DOOR.

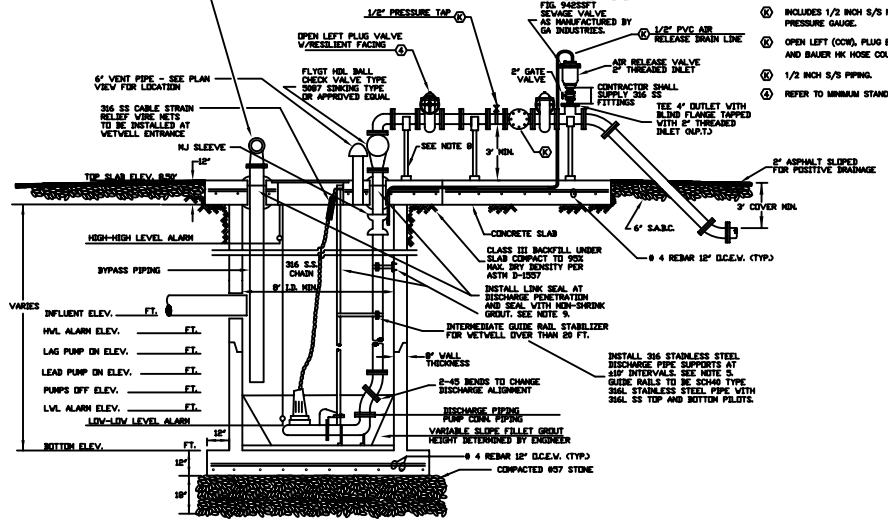
NOTES:

1. ALL PIPING SHALL HAVE FLANGE JOINTS EXCEPT WHERE MECHANICAL JOINTS ARE NOTED.
2. ALL HARDWARE IN WETWELL AND ABOVE GROUND PIPING SUCH AS BOLTS, NUTS, WASHERS, ETC. SHALL BE 316 S.S.
3. VENT CAP AND VALVES SHALL BE COATED THE SAME AS EXTERIOR STEEL.
4. PUMP CABLE HANGERS AND FLAT HANGERS SHALL BE 316 STAINLESS STEEL.

ALUMINUM PLATE WITH PUMP INFORMATION STAMPED IN PLATE TO BE ATTACHED TO INSIDE OF CONTROL PANEL DOOR IN PLAN VIEW.

KEYED NOTES

- ① INCLUDES 1/2 INCH 5/8" NIPPLE, SS BALL VALVE, AND LIQUID-FILLED PRESSURE GAUGE.
- ② OPEN LEFT (CW), PLUG BYPASS VALVE WITH RESILIENT SEAT FACING AND BAUER MK HOSE COUPLING WITH SOCKET STL.
- ③ 1/2 INCH 5/8" PIPING.
- ④ REFER TO MINIMUM STANDARDS FOR APPROVED PLUG VALVES.



TYPICAL SUBMERSIBLE PUMP STATION SECTION (N.T.S.)

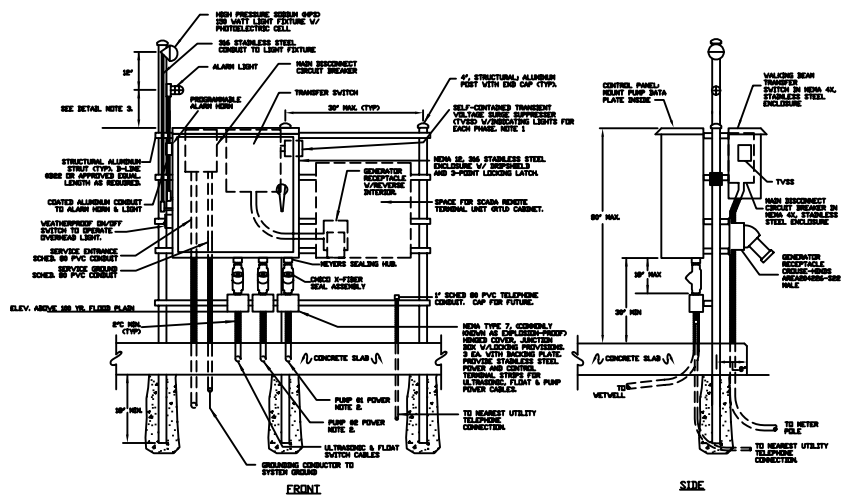
GENERAL NOTES:

1. WETWELL LEVEL AND ALARMS TO BE CONTROLLED BY MILLTRONICS HYBRID RANGE PLUS LEVEL TRANSMITTER AS MANUFACTURED BY MILLTRONICS HYBRID RANGE PLUS. THE LEVEL TRANSMITTER SHALL BE MOUNTED IN THE CONTROL PANEL. THE UNIT SHALL BE ISOLATED 4-8" ON OUTPUT WITH 5 FORM "C" RELAYS, WITH AN XRS TRANSDUCER WITH MULT-2M TEMPERATURE SENSOR AND 10 METERS OF SHIELDED CABLE AND HAND HELD PROGRAMMER. TRANSDUCER RANGE SHALL BE 20 FT. THE ULTRASONIC LEVEL CONTROLLER SHALL REGISTER FROM BOTTOM TO TOP IN FEET. CHARLESTON CPW SHALL SUPPLY THE MILLTRONICS ULTRASONIC LEVEL CONTROLLER ON PROJECTS FUNDED UNDER THE CHARLESTON CPW CAPITAL PROJECTS BUDGET.
2. PUMP STATIONS WITH GREATER THAN 20 HP, PUMPS SHALL HAVE TELEMECHANIC SOFT START AND STOP IN PLACE.
3. ALL POWER TO THE PUMP STATION SHALL BE THREE-PHASE POWER.
4. THE SIZE OF CONCRETE PAD SUPPORTING VALVES AND PIPING SHALL BE CONTINGENT ON THE SIZE OF PIPE AND THE LENGTH OF FITTINGS, COMPONENTS, VALVES, ETC. THE PAD SHALL EXTEND A MINIMUM OF TWO FEET PAST THE LAST COMPONENT IN THE VALVE ASSEMBLY. PAD SHALL BE FIELD VERIFIED WITH THE CONTRACTOR AND THE CIVIL FIELD REPRESENTATIVE.
5. CONTRACTOR SHALL INSTALL A SAFE GRATE SYSTEM BY R.L. CARLSON OR PROTECTIVE GRATING PANEL, OPTION BY HALLIDAY PRODUCTS, INC.
6. INSTALL PVC JUNCTION BOX AT 180 YEAR FLOOD LEVEL.
7. FOR CASE OF PROGRAMMING MILLTRONICS SHALL BE INSTALLED NO HIGHER THAN 60 INCHES. PIPE STANCHIONS SHALL BE CRIMMELL PIPE STANCHION MODEL, FLEX59 WITH STEEL VIEWS AND NUTS. THE STANCHION SHALL BE SECURED USING 4 GA. MILTI KWIK BOLT IT 316 SS. ANCHOR BOLTS. THE ENGINEER SHALL SIZE THE SUPPORT BASE PLATE AND ANCHOR BOLTS TO SUPPORT THE WEIGHT OF THE COMPONENTS WITHIN THE WETWELL AND VALVE ASSEMBLY.

9. CONTRACTOR TO INSTALL LINE SEAL AT DISCHARGE LINE PENETRATIONS AT TOP SLAB. THE LINE SEAL SHALL BE SUPPLIED WITH 316 STAINLESS STEEL HARDWARE, APPLY NON-SHRINK GROUT TO SEAL AROUND PIPE AT TOP AND BOTTOM OF SLAB PENETRATION.
10. ALL PUMP STATION CONTROL PANELS SHALL BE EQUIPPED WITH A TERMINAL BLOCK WITH DRY CONTACTS TO ALLOW CONNECTION TO SCADA CONTROL PANEL. SEE ATTACHED SCHEMATIC.
11. THE CONTRACTOR SHALL INSTALL SCADA CONTROL PANEL AS MANUFACTURED BY GE AUTOMATION, SUPPLIED BY CPW. THE PANEL FRAME SHALL BE BUILT TO HANDLE THE ADDITIONAL 24"x36" SCADA PANEL.
12. THE PUMP STATION CONTROLS SHALL BE EQUIPPED WITH TWO FLOATS. ONE SET AT HIGH-HIGH WATER LEVEL AND ONE AT LOW-LOW WATER LEVEL. THE FLOATS ARE TO BE SEQUENCED TO OPERATED WHEN THERE IS AN ULTRASONIC LEVEL CONTROL FAILURE OR A PLC FAILURE.
13. ALARM HORN SHALL BE PROGRAMMABLE TO ONE MINUTE EVERY HOUR.
14. INSTALL OUTSIDE WEATHERPROOF 120VAC OUTLET.
15. MOUNT A LIQUID-FILLED PRESSURE GAUGE ON THE FORCE MAIN IT SHALL BE LOCATED AS PER MANUFACTURER'S RECOMMENDATION.
16. PUMPS SHALL HAVE LIFTING HANDLES. LIFTING CHAINS ARE NOT ACCEPTABLE.
17. OVER-EXCAVATION BELOW THE REQUIRED 12" OF 607 STONE SHALL BE FILLED WITH 3000 PSI CONCRETE.
18. PROVIDE USHA APPROVED LETTERING ON THE TOP OF THE HATCH STATING "CONFIRMED SPACE, DO NOT ENTER WITHOUT A PERMIT."

DETAIL NOTES:

1. CONNECT TYPE ON LEAD END OF TRANSFER SWITCH MAXIMUM LEAD LENGTH 25'.
2. CONCRETE TO WET WELL SHALL BE 6" DIA. 80 P.V.C. UP TO 80 HP AND 8" DIA. GALVANIZED STEEL ABOVE 80 HP.
3. THE ALARM LIGHT SHALL BE 18" DIAMETER ABOVE THE CONTROL PANEL. 18" IS INCHES ABOVE THE FACE, INDICATED BY NUMBER.



EQUIPMENT MOUNTING DETAIL (N.T.S.)

ELEVATION NOTE:

THE SITE IS LOWER WITHIN FLOOD ZONE _____ FT. _____ INCHES AS SHOWN ON FLOOD MAP PANEL.

1. STEEL - STRUCTURAL, TANKS, PIPES AND EQUIPMENT

A. Steel (Immersion)

Surface Preparation

SSPC-SP10/ANCE 2 Near-white Blast Cleaning. The surface shall be free of all foreign matter and dry prior to painting. All points are Themac products.

1st Coat: Series 1 Omnitone applied at 2.5 - 3.5 dry mils.

2nd Coat: Series N-89 (Color: 1100N Clover) Hi-Build Epoxiale II applied at 4.0 - 8.0 dry mils.

3rd Coat: Series 104 (Color: 1120N Foliage) H.S. Epoxy applied at 3.0 - 5.0 dry mils.

Painting Contractor shall permit Owner's Representative and/or paint & coating manufacturer to inspect Contractor's work for conformance to this specification. Owner reserves the right to reject all work that does not comply with this specification.

Themac Contact Information: Themac, Inc.
Nick Vesce
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Columbus, SC 29224
Office: (803) 738-1553 Cell: (803) 422-3850
Email: nvvesce@themac.com

PUMP STATION OPERATING PARAMETERS	
SUBMERSIBLE PUMPS	
AVERAGE DAILY FLOW (GPM)	
PEAK DAILY FLOW (GPM)	
TOTAL DYNAMIC HEAD (TDH)	
WETWELL DIAMETER	
DEPTH OF WETWELL	
DISCHARGE PIPING	

1. STEEL - STRUCTURAL, TANKS, PIPES AND EQUIPMENT

A. Exterior Exposed Steel (Non-Immersion)

Surface Preparation

SSPC-SP6/ANCE 3 Commercial Blast Cleaning. The surface shall be free of all foreign matter and dry prior to painting. All points are Themac products.

1st Coat: Series 1 Omnitone applied at 2.5 - 3.5 dry mils.

2nd Coat: Series N-89 (Color: 1100N Clover) Hi-Build Epoxiale II applied at 4.0 - 8.0 dry mils.

3rd Coat: Series 73-U (Color: 1120N Foliage) Endura-Shield applied at 3.0 - 5.0 dry mils.

Painting Contractor shall permit Owner's Representative and/or paint & coating manufacturer to inspect Contractor's work for conformance to this specification. Owner reserves the right to reject all work that does not comply with this specification.

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CHARLESTON WATER SYSTEM

SUBMERSIBLE PUMP STATION WITH ABOVE GROUND PIPING

APPROVED BY:	DATE:	DRAWING NO.
CWS	AUG 2006	
SCALE:	REVISIONS:	58
NTS	FEB 2010	