

PUMP HP.	_____
CAPACITY GPM	_____
TOTAL DEAD HEAD	_____
OPERATING RPM	_____
IMPELLER NO.	_____
VOLTS	_____
AMPS	_____
PHASE	_____
MANUFACTURER	_____
MODEL NO.	_____
SIN #1	_____
SIN #2	_____

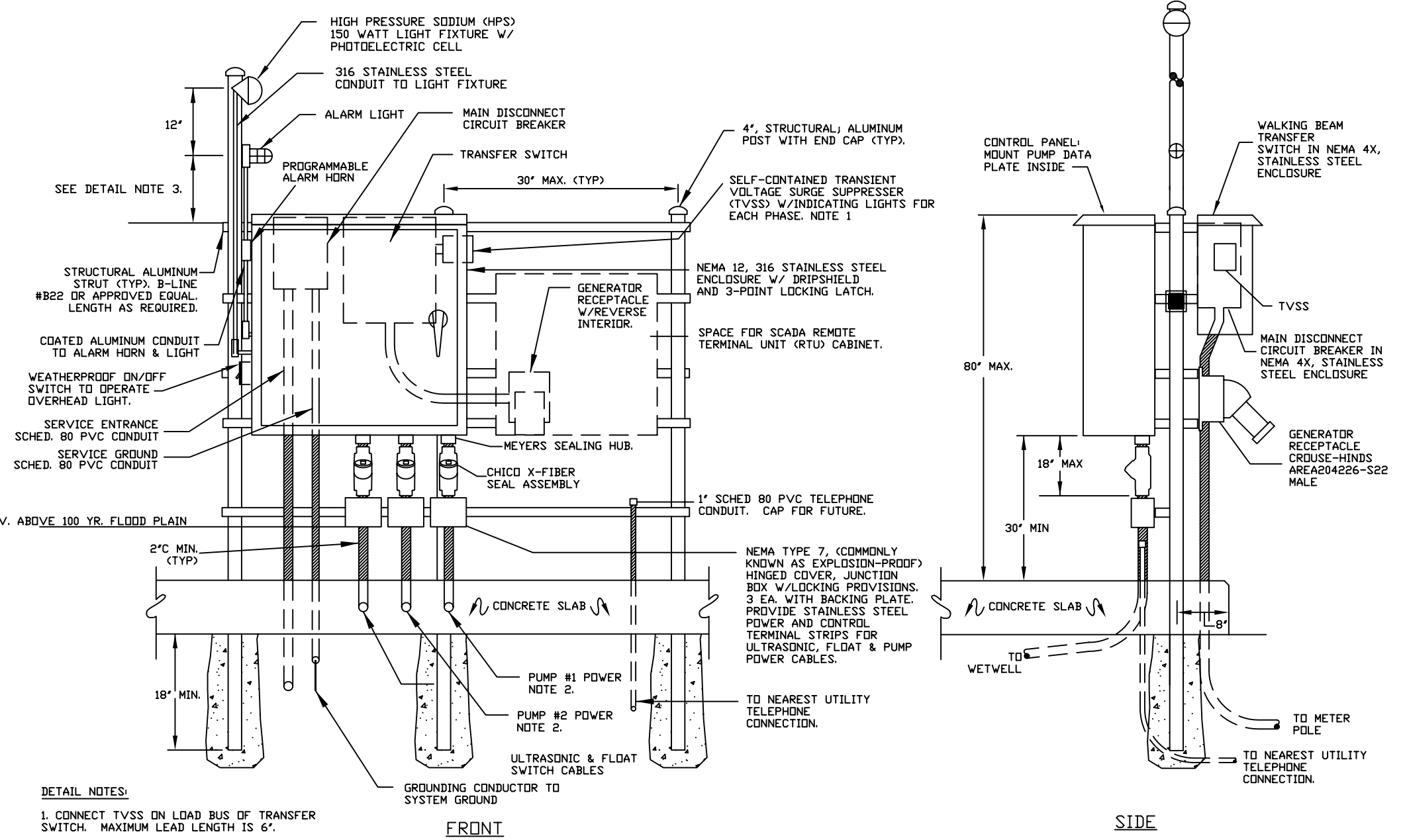
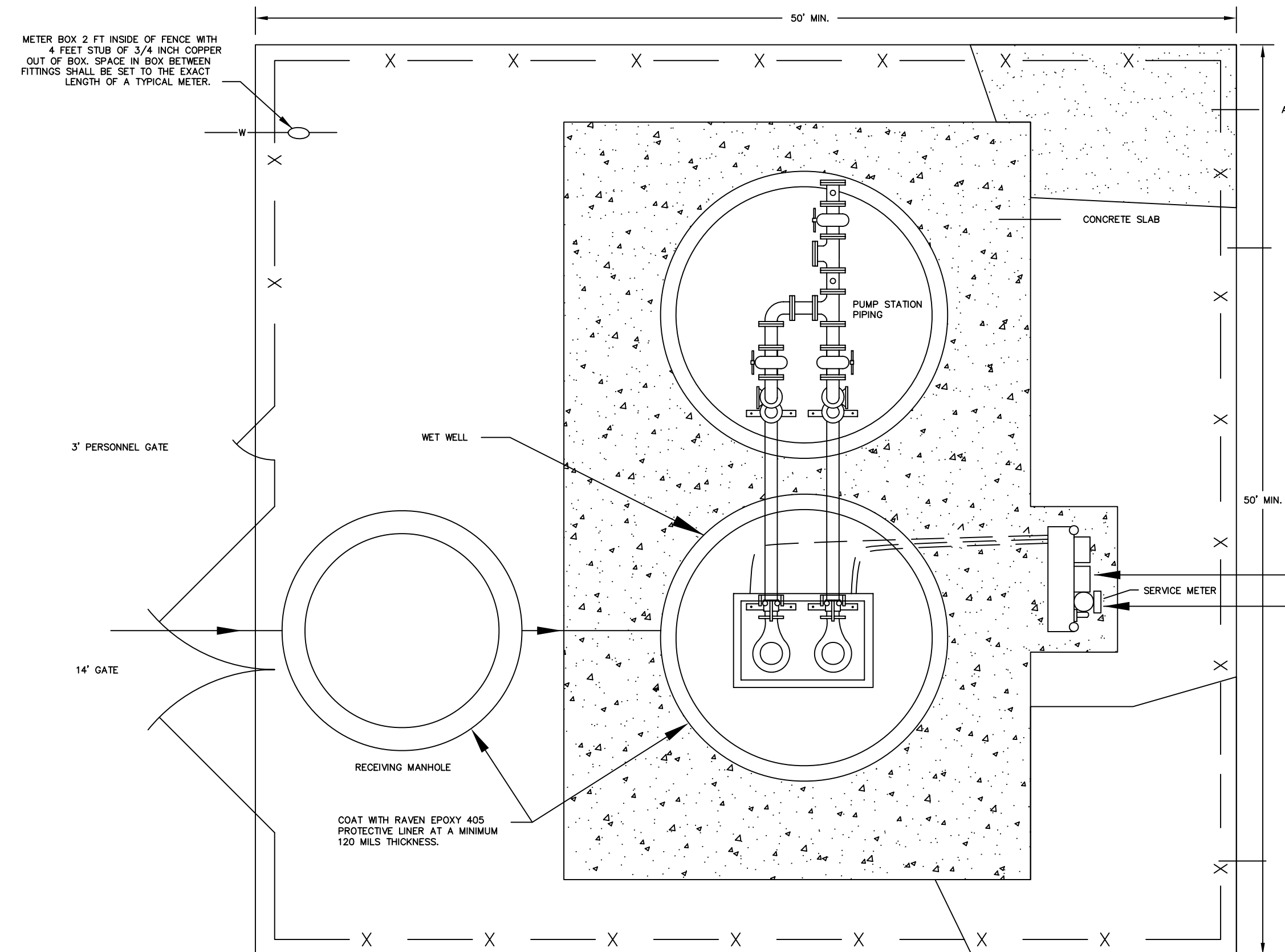
PUMP STATION OPERATING PARAMETERS	
GRINDER PUMPS	
AVERAGE DAILY FLOW (GPM)	
PEAK DAILY FLOW (GPM)	
TOTAL DYNAMIC HEAD (TDH)	
WETWELL DIAMETER	
DEPTH OF WETWELL	
DISCHARGE PIPING	

CONTROL PANEL INFORMATION PLATES

NOTE: THE CONTRACTOR SHALL INCLUDE A SCHEMATIC FOR THE CONTROL PANEL COMPONENTS LAMINATED ON BOTH SIDES PLACED IN A POCKET ATTACHED 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.

DETAIL NOTES:

- CONNECT TVSS ON LOAD BUS OF TRANSFER SWITCH MAXIMUM LEAD LENGTH IS 6'.
- THE ALARM LIGHT SHALL BE 12 INCHES ABOVE THE CONTROL PANEL OR 12 INCHES ABOVE THE FENCE, WHICHEVER IS HIGHER.

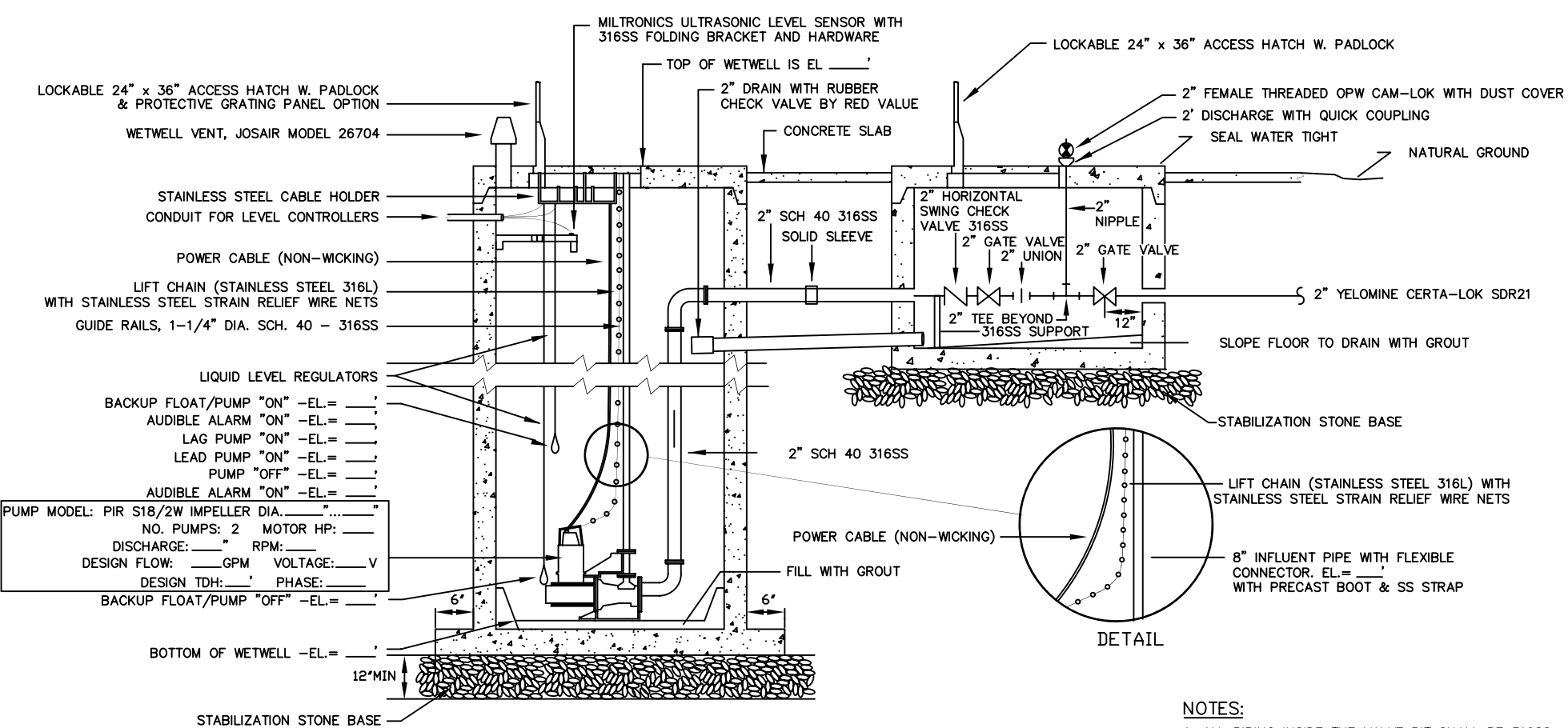


DETAIL NOTES:

- CONNECT TVSS ON LOAD BUS OF TRANSFER SWITCH. MAXIMUM LEAD LENGTH IS 6'.
- CONDUITS TO WET WELL SHALL BE 2" SCH 80 PVC UP TO 25 HP AND 2" RIGID GALVANIZED STEEL ABOVE 25 HP.

EQUIPMENT MOUNTING DETAIL (N.T.S.)

GRINDER PUMP STATION SITE PLAN (N.T.S.)



DETAIL

- NOTES:**
- ALL PIPING INSIDE THE VALVE PIT SHALL BE 316SS.
 - ALL PVC DISCHARGE PIPE AFTER VALVE PIT SHALL BE CERTA-LOK YELLOWINE SDR21 BY CERTANTO, EXCEPT FOR D.I.P. PORTION THROUGH JACK & BORE.

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

GENERAL NOTES:

- WETWELL LEVEL AND ALARMS TO BE CONTROLLED BY MILLTRONICS HYDRO RANGER PLUS ULTRASONIC LEVEL TRANSMITTER AS MANUFACTURED BY MILLTRONICS HYDRO RANGER PLUS. THE LEVEL TRANSMITTER SHALL BE HOUSED IN THE CONTROL PANEL. THE UNIT SHALL BE 315VAC, 60 HZ, ISOLATED 4-20 mA OUTPUT WITH 5 FORM 'C' RELAYS, WITH AN XRS TRANSDUCER WITH BUILT-IN TEMPERATURE SENSOR AND 10 METERS OF SHIELDED CABLE AND HAND HELD PROGRAMMER. TRANSDUCER RANGE SHALL BE 50 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.
- PUMP STATIONS WITH GREATER THAN 20 HP PUMPS SHALL HAVE TELEMECHANIC SOFT START AND STOP IN PLACE.
- ENGINEER SHALL VERIFY AND PROVIDE FOR 3-PHASE POWER TO PUMP STATION.
- 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 CPW FIELD REPRESENTATIVE.
- CONTRACTOR SHALL INSTALL A SAFEGATE BY SYRACUSE CASTINGS SALES CORP.
- INSTALL PVC JUNCTION BOXES AT 100 YEAR FLOOD LEVEL.
- FOR EASE OF PROGRAMMING MILLTRONICS SHALL BE INSTALLED NO HIGHER THAN 60 INCHES.
- PUMP STANCHIONS SHALL BE GRINNELL PIPE STANCHION SADDLE, FIG299 WITH STEEL YOKE AND NUTS. THE STANCHION SHALL BE SECURED USING 4 EA. MILIT. KNIP BOLT # 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.
- CONTRACTOR TO INSTALL LINK SEAL AT ALL DISCHARGE LINE PENETRATIONS OF CONCRETE. THE LINK SEAL SHALL BE SUPPLIED WITH 316 STAINLESS STEEL HARDWARE. APPLY NON-SHRINK GROUT TO SEAL AROUND PIPE AT TOP AND BOTTOM OF SLAB PENETRATION.
- 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.
- 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.
- 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.
- ALARM HORN SHALL BE PROGRAMMABLE TO ONE MINUTE EVERY HOUR.
- INSTALL OUTSIDE WEATHERPROOF 120VAC OUTLET.
- MOUNT A LIQUID-FILLED PRESSURE GAUGE ON THE FORCE MAIN IT SHALL BE LOCATED AS PER MANUFACTURER'S RECOMMENDATIONS.
- PUMPS SHALL HAVE LIFTING HANDLES. LIFTING CHAINS ARE NOT ACCEPTABLE.

**CHARLESTON WATER SYS
TYPICAL GRINDER PUMP STATION**

APPROVED BY: CWS	DATE: MAY 2007	DRAWING NO.
SCALE: NTS	REVISED: FEB 2010	59