



SECTION 46010
HDPE PUMP STATION WET WELL

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1.01. SUMMARY

- A. This section details all requirements related to the manufacture, supply, and installation of the 96" ID HDPE Pump Station Wet Well (Wet Well) as detailed within the and described herein.

1.02. GENERAL

- A. The Wet Well body shall be manufactured from high density polyethylene pipe (HDPE) meeting ASTM F894 and designed in accordance with ASTM F1759. The Wet Well Top and Base are to be manufactured from profile wall polyethylene panel material and reinforced to meet the project specific loadings and manufacturer's recommendations. The Wet Well is to be prefabricated with all internal fittings and vessel penetrations prefabricated by an ISO 9001 certified manufacturer with a minimum of 5-years of experience fabricating HDPE Pump Station Wet Wells. The Contractor is responsible for coordinating component scope of supply and fabrication drawings with the manufacturer. Alternate manufacturers may be approved provided the minimum quality control and experience conditions can be demonstrated.

Approved HDPE Material Manufacturer: **Weholite by Infra Pipe Solutions, Ltd.**

- B. The Wet Well is to be supplied by a local service provider with a minimum of 5-years of experience supporting and servicing HDPE Pump Station Wet Well projects. Service provider shall have the ability to deploy to the project within 24 hour notice. Service provider shall have the ability to support field modification and HDPE extrusion welding should conflicts arise. Service provider shall also have the ability to support pump, valve, instrumentation, and control panel installation and start up. Alternate service providers/suppliers may be approved provided the experience and capability conditions can be demonstrated.

Approved Suppliers/Service Providers: **CS3 Waterworks, Inc.**

1.03. STANDARDS

ASTM F894 POLYETHYLENE (PE) LARGE DIAMETER PROFILE WALL SEWER AND DRAIN PIPE.
ASTM F1759 DESIGN OF HIGH DENSITY POLYETHYLENE MANHOLES
ASTM D3350 POLYETHYLENE PLASTIC PIPES AND FITTINGS MATERIALS.
ASTM C1147 DETERMINING WELD STRENGTH OF THERMOPLASTICS
ASTM D2321 UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS

1.04. WET WELL COMPONENTS

- A. Wet Well HDPE Body to be RSC250 (minimum) ASTM F894 HDPE. Profile Annular Space may be filled with concrete to provide additional reinforcement per manufacturers recommendations in accordance with ASTM F1759.
- B. Wet Well HDPE Top Plate is to accommodate a 16,000 LB Service Vehicle Axle Load and a 12" thick cast in place concrete load relief slab at grade. Concrete load relief slab geometry and reinforcing shall be per Structural contract plans.
- C. Wet Well Buoyancy Countermeasure Base shall utilize a projection of reinforced profile wall HDPE panel beyond the outside of the vessel. A cast in place concrete collar shall also be cast around the

outside perimeter of vessel. The Manufacturer is to submit design calculations assuming a 1.25 Factor of Safety, fully submerged vessel, and saturated soil condition.

- D. Submersible Pump vibratory and impact load shall be mitigated by providing an HDPE encapsulated concrete mass with a minimum of four (4) times the single submersible pump weight, not including break away fittings. 316 Stainless Steel anchor bolts shall be wet cast into concrete base or threaded inserts utilized.
- E. Wet Well Inlet and Outlet Penetrations shall be Solid Wall HDPE extrusion welded to the inside and outside wall of the vessel.
- F. Internal/Discharge Piping shall be DR11 Solid Wall HDPE in accordance with ASTM D2412. Internal pipe bracing and supports shall be in accordance with the manufacturer's recommendations.
- G. Guiderails shall be 3-inch Schedule 316 stainless steel. Intermediate guiderail supports shall be provided for lengths exceeding 15-feet. Guiderail supports are to extrusion welded to the vessel wall and mechanically fastened to the discharge piping per the pump manufacturer's recommendations.
- H. Pump base elbows (break away fittings) to be shipped to manufacturer prior to start of installation.

1.05. QUALITY ASSURANCE

- A. Prior to release for fabrication, the Wet Well manufacturer shall provide fabrication drawings and supporting calculations for engineer of record approval and contractor release. Final Approved Drawings and Calculations for recordation must be signed and sealed by a Professional Engineer Licensed in the State of Florida.
- B. All joints and connections between Prefabricated Polyethylene components shall be factory leak tested with air to 4 psi. Manufacturer to provide quality control documentation of all testing performed. 24 hour Hydrostatic Testing draw down testing to be provided by Contractor in the field.
- C. Excavation, bedding preparation, and backfill to be in accordance with ASTM D2321, the approved released drawings, and the project's geotechnical report. The Contractor shall allow the construction inspector to confirm and document that backfill material gradation, type, placement, and compaction meets ASTM D2321 and the manufacturer's documented requirements and approved drawings. The contractor is to notify the engineer 48 hours prior to any significant activities related to backfill of the Wet Well.

1.06. WARRANTY

- A. The Wet Well shall be supplied with the manufacturer's standard 1-year warranty covering all components prefabricated components for materials and manufacturing.

(END OF SECTION)