SECTION (_____)

Steel Reinforced Polyethylene (SRPE) Tank

Standard Specification

1.0 GENERAL

1.1 This item shall govern the furnishing and installation of Steel Reinforced Polyethylene (SRPE) Tanks for rainwater harvesting and other underground water storage for nominal diameters 30" (750mm) through 120" (3000mm).

1.2 Contractor shall furnish all labor, materials, equipment and incidentals necessary to install the SRPE system, appurtenances and incidentals in accordance with the Drawings and as specified herein.

1.3 A stormwater treatment device upstream of the SRPE system is recommended as the appropriate means of pretreating for the purpose of extending the maintenance interval on the SRPE system and reducing the life cycle cost. Both engineered solutions shall be provided by a single supplier/manufacturer.

1.4 Applicable provisions of any Division shall govern work in this section.

1.5 Related Standards

- 1.5.1 ASTM F2562 "Standard Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage"
- 1.5.2 AASHTO Designation MP-20 Section
- 1.5.3 ASTM D3350 "Standard Specification for Polyethylene Plastics Pipe and Fittings Materials"
- 1.5.4 ASTM D2321 "Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications"
- 1.5.5 IAPMO IGC 329-2016 "Steel Reinforced Polyethylene Rainwater Harvesting Tanks"

1.6 Site layout drawings, product specifications, materials, hydraulic storage data and supported calculations of proposed alternatives shall be submitted to the Engineer of Record (EOR) for review at a minimum of 10 working days prior to bid closing.

1.7 The SRPE system proposal shall be sized in accordance to the design provided and approved by the Engineer of Record (EOR). Any Contractor deviating from the design shown on the plans, to include: material, footprint, etc., shall provide to the Engineer of Record (EOR) a summary report on stage-storage curves, design calculations, HydroCAD modeling and engineering drawings.

1.8 Shop drawings shall be annotated to indicate all materials to be furnished and installed under this section, and all applicable standards for materials, required tests of materials and design assumptions for structural analysis:

1.9 Before installation of the SRPE system, Contractor shall obtain the written approval of the Engineer of Record (EOR) for the stormwater system and the installation drawings.

1.10 All proposed alternatives to the SRPE system shall conform to IAPMO Standard IGC 329-2016.

2.0 MATERIALS

2.1 SRPE shall be manufactured in accordance with the applicable requirements of ASTM F2562 "Standard Specification for Steel Reinforced Thermoplastic Ribbed Pipe and Fittings for Non-Pressure Drainage and Sewerage".

2.2 Virgin high density polyethylene stress-rated resins are used to manufacture SRPE Tank and complimentary fabricated fittings. Resins shall conform to the minimum requirements of cell classification 345464C as defined and described in the latest version of ASTM D3350 "Standard Specification for Polyethylene Plastics Pipe and Fittings Materials".

2.3 The manufacturer of the SRPE system shall be one that has regularly been engaged in the engineering design and production of these systems for at least eight (8) years and which has a history of successful production, acceptable to the Engineer of Record (EOR). In accordance with the Drawings, the SRPE system shall be supplied by:

Contech Engineered Solutions
9100 Centre Pointe Drive
West Chester, OH, 45069
Tel: 1 800 338 1122

2.4 Sampling, testing, and inspection of PE resin, metal sheets and coils used for manufacturing the SRPE system shall be in accordance with to the above applicable referenced specifications. All fabrication of the product shall occur within the United States.

3.0 PERFORMANCE

3.1 The SRPE system shall be certified by the International Association of Plumbing and Mechanical Officials (IAPMO) to the IAPMO IGC 329-2016 "Steel Reinforced Polyethylene Rainwater Harvesting Tanks" standard

3.2 The SRPE system shall be labeled with a Uniform Plumbing Code (UPC) seal demonstrating conformance to the Uniform Plumbing Code.

3.3 All tanks must be leak tested and results documented using a positive pressure air test prior to shipment from the manufacturing location. Testing documentation shall include test air pressure, and hold time. A copy of the leak test report must be provided to the Engineer of Record as requested.

3.4 Bulkheads shall be constructed of material in conformance with Section 2.2 and designed for H-20/HS-25 final live loading conditions.

3.5 All SRPE system inlets shall be equipped with an inlet calming device that they may introduce water to the tank with little to no turbulence.

3.6 The SRPE system shall be fitted with a 4" vent tube for venting to atmosphere.

3.7 The SRPE system shall provide a minimum of one 36 inch diameter access riser.

3.8 Access covers shall be a minimum of 24 inches diameter to provide adequate inspection and maintenance without restrictions and obstructions to entry into interior of the SRPE system. Covers shall be watertight, do not slide, rotate, or flip open and are capable of supporting design loads and shall be conform to IAPMO IGC 329-2016.

3.9 SRPE tank spacing and stone base thickness cannot be altered with consultation from Contech Engineered Solutions, LLC.

3.10 The SRPE system shall be designed for a minimum HS-20/HS-25 final live loading conditions. The SRPE system shall meet HS-20/HS-25 loading requirements with a minimum cover measured from the top of tank to the bottom of flexible pavement as shown in Table 1.

Table 1: Dimensions and Cover limitations

Nominal Tank diam.	**Outside Diameter**	**Unit Weight***	**Minimum Wall Thickness** (t_1)		**Minimum Cover****		**Maximum Cover****	
inch	in. [mm]	lbs./ft	in.	[mm]	ft.	[m]	ft.	[m]
30	30.9 [785]	15.5	.082	[2.08]	1	[.305]	8	[15.2]
36	37.1 [942]	20.8	.082	[2.08]	1	[.305]	8	[15.2]
42	43.2 [1097]	26.5	.082	[2.08]	1	[.305]	8	[15.2]
48	49.5 [1257]	29.1	.130	[3.30]	1	[.305]	8	[15.2]
54	55.5 [1410]	34.7	.130	[3.30]	1	[.305]	8	[15.2]
60	61.4 [1560]	41.6	.130	[3.30]	1	[.305]	8	[15.2]
66	67.8 [1722]	56.9	.220	[5.58]	1.5	{.457]	8	[15.2]
72	74.1[1882]	65.6	.220	[5.58]	1.5	[.457]	8	[15.2]
84	85.9 [2182]	76.3	.220	[5.58]	2	[.610]	8	[15.2]
96	97.8 [2484]	87.0	.220	[5.58]	2	[.610]	8	[15.2]
108	111.3 [2827]	99.7	.220	[5.58]	2.5	[.762]	8	[15.2]
120	121.9 [3097]	109.0	.220	[5.58]	3	[.914]	8	[15.2]

* Approximate weights. Actual weight will vary with length.
**measured from top of tank to bottom of flexible pavement or top of rigid pavement

4.0 EXECUTION

4.1 The SRPE system installation shall be in accordance with ASTM D2321 “Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications” along with Table 1 and product-specific recommendations contained in Contech SRPE Tank Installation Guide, available from local Contech representative or from www.conteches.com.

4.2 The contractor shall follow Occupational Safety and Health Association (OSHA) guidelines for safe practices in executing the installation process in accordance with the manufacturer/supplier installation recommendations.

4.3 Supplier will conduct an on-site preconstruction meeting with the contractor prior to the scheduled delivery date of the SRPE system.

END SECTION