SECTION (_____)

ChamberMaxx

Underground Detention and Infiltration Standard Specification

1.0 GENERAL

1.1 This item shall govern the furnishing and installation of ChamberMaxx underground detention and infiltration chamber systems.

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

1.3 The containment row of the ChamberMaxx system is recommended as the appropriate means of pretreating for the purpose of extending the maintenance interval on the ChamberMaxx system and reducing the life cycle cost. The containment row shall consist of a row of chambers which lays upon 2 layers of AASHTO M288 Class I woven geotextile between the chamber and stone bedding.

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

1.5 Related Standards

1.5.1 ASTM 2418 “Standard Specification for Polypropylene Corrugated Wall Stormwater Collection Chambers”

1.5.2 ASTM F-2787 “Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers”

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 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:

1.8 Before installation of the ChamberMaxx system, Contractor shall obtain the written approval of the EOR for the stormwater system and the installation drawings.

1.9 All proposed alternatives to the ChamberMaxx system shall conform to applicable above referenced ASTM specifications.

2.0 MATERIALS

2.1 The chamber shall be constructed of injection molded polypropylene copolymer formulated for high impact and stress cracking resistance and sustained structural performance during

high temperatures. The chamber shall be designed and manufactured in accordance to ASTM F-2418 and F-2787.

2.2 The chamber shall be designed to AASHTO LRFD Bridge Design Specifications (Section 12), as applied to material and performance requirements for buried thermoplastic pipes. Design live load shall be the AASHTO HS-20 and HS-25 truck, including multiple lane presence factors, over a minimum cover of 18 inches and chamber row spacing of 5 inches or greater.

2.3 The chamber system shall be comprised of three chamber configurations: The MIDDLE chambers shall be open-ended to allow unobstructed hydraulic flow, inspection, and maintenance. The START and END chambers shall each have an integral end wall designed to resist loading at the start and end of the chamber rows. The chambers within a row shall be installed with overlapping end corrugations.

2.4 The nominal dimensions of the START chamber shall be 51.4 inches wide, 30.3 inches tall, and 98.4 inches long. The nominal dimensions of the MIDDLE chamber shall be 51.4 inches wide, 30.3 inches tall, and 91.0 inches long. The nominal dimensions of the END chamber shall be 51.4 inches wide, 30.3 inches tall, and 92.0 inches long. The nominal storage volume inside the chamber shall be 75 cubic feet when utilizing 6” of stone above and below chamber with 40% stone porosity per ChamberMaxx standard detail.

2.5 The chamber shall have a continuously-curved, arch-shaped section profile.

2.6 The START and END chamber integral end wall shall be structurally suitable for cutting and inserting inlet pipes and shall provide a range of pipe diameter indicants up to 24” diameter as cutting templates.

2.7 The chamber shall be a corrugated, open-bottom design and top vent orifices for hydraulic pressure equalization. Corrugation valleys and crests shall be sub-corrugated to increase stiffness.

2.8 The chamber shall have a circular cut line for an optional reinforced inspection port configured to accept a 4” Schedule 40 pipe.

2.9 The END chambers shall be capable of being cut to shorter lengths to accommodate site specific requirements.

2.10 The chamber shall be supported by integral structural footings comprised of load dispersing toe ribs and longitudinally aligned stiffening ribs.

2.11 The manufacturer of the ChamberMaxx 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 ChamberMaxx system shall be supplied by:

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

3.0 PERFORMANCE

3.1 The ChamberMaxx 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 EOR a summary report on stage-storage curves, design calculations, HydroCAD modeling and engineering drawings.

3.2 ChamberMaxx row spacing and stone base thickness cannot be altered with consultation from Contech Engineered Solutions, LLC.

3.3 The ChamberMaxx system shall be designed so as the hydraulic grade line will increase evenly throughout whereas transverse movement from one storage compartment to another shall not be permitted. All storage compartments shall be connected via manifold (or connecting pipe) versus by entirely transporting stormwater through stone.

3.4 The ChamberMaxx system shall include a containment row(s) for the collected of sediment in stormwater prior to flowing into the chamber array. The containment row shall be connected to a diversion structure with a 24 inch pipe. The initial flow of stormwater shall be diverted by a weir into the containment row. The containment row shall consist of a row of chambers which lays upon 2 layers of AASHTO M288 Class I woven geotextile between the chamber and stone bedding.

4.0 EXECUTION

4.1 The ChamberMaxx system shall be installed per the Contech “ChamberMaxx Stormwater Retention System Standard Installation Detail”, available from local Contech representative or from www.conteches.com.

4.2 For temporary construction vehicle loads, an extra amount of compacted cover may be required over the top of the chambers. The Height-of-Cover shall meet the minimum requirements shown in the Contech “ChamberMaxx Stormwater Retention System Standard

Installation Detail". The use of heavy construction equipment necessitates greater protection for the chambers than finished grade cover minimums for normal highway traffic.

4.3 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.

4.4 Contractor is required to participate in an on-site preconstruction meeting with the supplier prior to the scheduled delivery date of the ChamberMaxx system.

END SECTION