P.O. Box 361
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PART 1 – GENERAL

1.01 **DESCRIPTION For Below Grade Containment Piping**

A. Provide a prefabricated containment system, **Tricon Double-Con**, with the service pipe supported within the containment pipe that is drainable, dryable and testable, as manufactured by **Tricon Piping Systems, Inc.**

B. The system shall be provided as specified below and where shown on the plans by a manufacturer of these systems for not less than 15 years.

C. The system shall consist of service pipe, containment pipe, internal pipe supports, fittings, end seals, field joint closures and leak detection.

D. All straight sections and fittings shall be factory-prefabricated to field dimensions.

E. ***Systems fabricated either on site or off site by the installing contractor shall not be allowed.***

1.02 **APPLICABLE CODES**

A. All items shall be in accordance with the latest edition and revisions of the following codes and standards where applicable.

1. American Society of Mechanical Engineers (ASME).
2. American Society for Testing and Materials (ASTM).
3. American National Standards Institute (ANSI).

B. If there is any overlapping of, or conflict between, the requirements of these codes and this specification, then the requirement which is most stringent shall take precedence.

1.03 **SUBMITTALS**

A. The prefabricated containment system manufacturer shall provide a detailed layout showing the size, type and location of each component to be used in the system.

1.04 **DELIVERY, STORAGE AND HANDLING**

A. The installing contractor shall handle and store the piping system in accordance with the instructions supplied by the prefabricated containment system manufacturer, and exercise due care to prevent any damage to the containment pipe coating.

B. The piping system shall be supplied with temporary stays welded to the service pipe and containment pipe to prevent damage or misalignment prior to installation.

C. The piping system shall be supplied with end caps covering each pipe end to prevent the ingress of dirt, moisture, rodents and other contaminants.

PART 2 – PRODUCTS

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2.01 **MANUFACTURERS**

A. Tricon Piping Systems, Inc. of Canastota, NY (315-697-8787).

B. As approved by the engineer.

2.02 **MATERIALS**

A. Service Pipe

1. The service pipe shall be Sch. [40] [80] ASTM [A53B ERW] [A106B seamless] carbon steel, [beveled for butt welding] [square cut for socket welding].

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2. The service pipe fittings shall be ASTM [A234 WPB butt weld in accordance with ASME/ANSI B16.9 for sizes 2 ½" and larger] [A105 Class 3000 forged steel socket weld in accordance with ASME/ANSI B16.11 for sizes 2" and smaller].

B. **Containment Pipe (Shall be either #1 or #2)**

1. The outer conduit shall be a **nonmetallic fiberglass** conforming to ASTM 2310 standard classification TRP-11CX and ASTM D2996 specification RTRP 11CF1-5430, RTRP-11AF1-2214, RTRP-11AF1-2216. UL / ULC Rated and Listed for nonmetallic underground containment piping for petroleum products, alcohols and alcohol gasoline mixtures.
2. The outer containment pipe shall be smooth wall 10 gauge (0.134" wall) spiral butt weld carbon steel in accordance with ASTM A139, or Sch. 10 ASTM A135 carbon steel with a minimum wall thickness of 0.120".
   COATING: An outside coating of 20 mils of Fusion Bonded Epoxy will be applied to the outside diameter of the carbon steel containment piping.

C. **Internal Pipe Supports**

1. Pipe supports shall be designed and factory installed by the prefabricated containment system manufacturer, and shall consist of one of the following:
   a. A minimum of 3/16" thick carbon steel plate
   b. A minimum 1" wide x 1/8" thick non-metallic spacer
2. Pipe support type and spacing shall be determined by the prefabricated containment system manufacturer based on pipe size and material, and shall be located no more than 10 feet on center.
3. Pipe supports will allow for continuous air flow and drainage of the containment pipe and shall not allow for point loading.
4. [IF REQUIRED] Pipe supports shall be supplied with a ¾" guide tube for field installation of leak detection cable. A steel pull cable shall be factory installed to facilitate field pulling. [IF REQUIRED]

D. **Fittings**

1. Prefabricated elbows and tees shall be provided where shown on the plans and shall follow the same standards as specified for straight sections.
2. All factory welded containment joints shall be air tested prior to shipment.
3. [IF REQUIRED] Pull ports shall be provided for systems supplied with leak detection cable. Pull ports shall be located at intervals of 250 feet for a straight run or after every 180° of change in direction for systems with an annular space of less than 1". Pull ports shall be located at intervals of 400 feet for a straight run or after every 360° of change in direction for systems with an annular space greater than 1". [IF REQUIRED]

E. **End Seals**

1. Terminal ends shall be provided with a 3/8" carbon steel plate continuously welded to the outer diameter of the service pipe and the inner diameter of the containment pipe.
2. End seals shall be provided with a vent and/or drain connection as required.

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F. **Field Joint Closures**

1. Containment pipe closures shall be factory supplied 2 piece molded FRP couplings held together with factory supplied adhesive kits.
2. Containment pipe closures shall be factory supplied coated steel sleeve, matching the factory applied coating. Field applied coating will be required for touch up at welds.

2.03 **LEAK DETECTION**

A. Leak detection sensors shall be installed in the annular space of the prefabricated containment system or in a fabricated housing, at low points as indicated on the plans.

B. [IF REQUIRED] Leak detection cable shall be supplied by the prefabricated containment system manufacturer and routed continuously along the bottom of the containment pipe. [IF REQUIRED]

PART 3 – EXECUTION

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3.01 **INSTALLATION**

A. The installing contractor shall install the system in accordance with the instructions furnished by the prefabricated containment system manufacturer and as approved by the design engineer.

B. The piping system shall be kept clean and dry at all times during installation.

C. All temporary stays shall be removed from the piping system after welding the service pipe and prior to welding the containment pipe field joint closure.

D. The installing contractor shall weld the containment pipe closure in place and the containment pipe shall be air tested in accordance with the specifications prior to applying the coating.

E. The installing contractor will be responsible for repairing any damages to the protective containment pipe coating.

3.02 **TESTING**

A. A pressure test of the service pipe shall be performed by the installing contractor prior to completing the containment pipe field joint closures in accordance with the engineer's specification with a factory recommendation of 1.5 times the operating pressure for not less than 1 hour.

B. After the service pipe has been tested, the containment pipe shall be air tested at 15 psi for not less than 1 hour. All field welds shall be checked and re-welded, if necessary, prior to applying the protective coating.