Sub-Zero

Service Pipe:

Carbon steel service pipe shall be standard weight A333 welded or seamless, beveled for welding. Copper service pipe shall be Type “K”, hard-drawn copper tubing to ASTM B-88 and WWT-799. Straight lengths of piping will be supplied in 20 ft. lengths. Straight lengths of piping will be supplied with 6” of piping exposed at each end for field joint fabrication.

Insulation: *

The insulation shall be a foamed-in-place closed-cell polyurethane that completely fills the annular space between the carrier pipe and the exterior casing. The insulation shall have the following physical properties:

- Minimum Density (lb./cu. ft.) 2.0 ASTM D-1621
- 90-95 % Closed Cell ASTM D-2856
- “K” Factor BTU/Hr. sq. ft. °F/in. . . .147 ASTM C-177

Exterior Casing: **

The exterior casing shall be seamless, extruded white PVC Type 1, Grade 1, Class 12454-B per ASTM D-1784

Sub-Assemblies:

All fittings, anchors, end seals, and other accessories shall be prefabricated or field-fabricated, depending upon the engineer’s option and/or site conditions.

Field Joints:

After welding and hydrostatic testing, PVC jacketed straight field joints shall be insulated with polyurethane foam to the thickness specified, PVC sleeve, and pressure-sensitive tape.

Installation:

The installation contractor shall handle the piping system in accordance with the directions furnished by the manufacturer and as approved by the architect and engineer. The service piping shall be hydrostatically tested to 1-1/2 times the operating pressure, or as specified in the contract documents. The test shall be maintained for a minimum time of 1 hour. EXERCISE DUE CARE WHEN INSTALLING AND TESTING THE PIPING SYSTEM.

Carrier Pipe:

Carbon steel service pipe shall be standard weight or extra heavy, A53 ERW or A106 seamless, beveled for welding. (Stainless Steel piping shall be Type 304L or 316L. – Copper piping to be Type K cleaned and capped for medical use or Type L) All joints for pipe 2 ½” and larger in size shall be butt-welded. Sizes 2” and smaller shall be socket welded. Straight lengths of piping will be supplied with 6” of piping exposed at each end for field joint fabrication. Pipe lengths to be supplied in 21-42 ft. lengths.

Containment Pipe for Above Grade:

The outer conduit shall be a smooth wall, spiral welded steel conforming to ASTM Specification A-139, or electric resistance welded steel pipe conforming to ASTM Specification A-135, or as specified.

Containment Pipe Coating for Above Grade:

Red Oxide Primer, factory coated up to 3-4 mils dry film thickness.

Containment Pipe for Below Grade:

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.

Steel Containment Pipe Coating for Below Grade:

Steel conduit exterior shall be factory coated with a Fusion Bonded Epoxy. All exterior surfaces of the conduit shall be shot blasted prior to the application of the coating. Fusion Bonded Epoxy is a N.A.C.E. & N.A.P.C.A. approved corrosion coating.

Installation:

No Piping shall be installed in standing water. Trenches shall be maintained dry until final field closure is complete. The installation contractor shall handle the piping system in accordance with the directions furnished by the manufacturer and as approved by the architect and engineer. The service piping shall be hydrostatically tested to 1-1/2 times the operating pressure, or as specified in the contract documents. The non-metallic outer jackets shall be tested to 5 psi and 15 psi for the metallic secondary containment. The test shall be maintained for a minimum time of 1 hour. EXERCISE DUE CARE WHEN INSTALLING AND TESTING THE PIPING SYSTEM. DO NOT TEST WITH AIR OR GAS.