SECTION 15061

STEEL PIPE & FITTINGS

PART 1- GENERAL

1.1 DESCRIPTION

A. Work Included: Furnish and install steel pipe and fittings of the type(s) and size(s) and in the location(s) shown on the Drawings and as specified herein.

B. Related Work Specified Elsewhere (When Applicable): "Pipe and Pipe Fittings - General" is specified in this Division.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Standard Steel Pipe:

1. Classes and maximum working pressures shall be as specified in ANSI B31.1 and as shown on the Drawings.
2. ASTM A-l20 carbon steel, lapwelded or ASTM A-53 carbon steel, seamless.
3. Zinc coated (galvanized) or black steel as indicated.
4. Underground:
   a. Buried steel pipe shall be coated with a factory-applied coating of polyethylene, bonded to the pipe with a hot applied elastic adhesive. The coating and adhesive shall have a minimum thickness, as recommended by the coating manufacturer.
   b. The field coating of welded joints, fittings and field repairs to the factory-applied coating shall be made with pressure-sensitive tape and primers recommended by the manufacturer of the polyethylene coating.
   c. The polyethylene coating shall be X-Tru-Coat manufactured by Republic Steel Corp., Cleveland, Ohio,; plastic coating manufactured by Pipe Line Service Corp., Franklin Park, Ill.; or an acceptable equivalent product.
   d. The joints of buried galvanized pipe and any carbon steel fittings shall be wrapped with petroleum-based tape. The tape width shall be as recommended by the manufacturer. The tape overlap shall be 55 percent.
   e. The tape shall be equivalent to Denso tape for application less than 130°F and equivalent to Densyl tape for application greater than 130°F (including air lines).
5. End connections: As shown on the Drawings.

B. Fittings:

1. General Service Screwed: Standard pattern malleable iron with full length clean cut threads, ANSI Bl6.3.
2. Special Service Screwed: Class 2,000 or 3,000 forged steel.
3. Drainage Screwed: Cast iron recessed thread.

4. Welded:
    a. ASTM A-234 made from ASTM A-l06 Grade B seamless tube.
    b. Long-radius elbows.
    c. Reducing tees for one size reduction, weld-o-lets or thread-o-lets for small take-offs.
    d. 150 pound series slip-on or weld neck flanges ANSI B-16.5 using carbon steel, ASTM A-181, grade l.
5. Unions: 250 pound series malleable iron with brass to iron seats.
6. Corrosion Resistant Fittings:
    a. Welded corrosion resistant steel pipe shall be of fittings fabricated from the same alloy as the pipe.
    b. Screwed corrosion resistant steel pipe shall use malleable iron or ductile iron fittings.
7. Grooved Joint Pipe Fittings:
    a. Manufacturer:
        (1) Victaulic, Style 75
        (2) Or equal of Gustin-Bacon
    b. Fittings as specified above, with pre-cut grooves.
    c. Gaskets: Manufacturer's standard, or as required for intended service with respect to fluid, temperature and pressure.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Threaded Joints:
    1. Ream the ends of threaded pipe to remove all burrs.
    2. Cut threads clean with long tapers.
    3. Remove all dirt and chips from the inside of the pipe and fittings and from the threads.
    4. Make up joints with an approved pipe joint compound or tape applied to the male threads only.
    5. When connecting pipes to recessed drainage fittings, seat them against the shoulder of the fittings.
    6. When required to back off joints, entirely disjoint, wipe the threads of both the pipe and fittings clean, apply new joint compound, and reassemble the connection.

B. Welded Connections:
    1. All welding shall conform to ANSI B31.1.
    2. All welders shall be certified for types and classes of welds being performed.
    3. All welds shall be inspected for quality and suitability. Repair or replace all unsatisfactory welds.

C. Flanged Joints:
    1. Tighten flange bolts so that the gaskets are uniformly compressed and sealed.
    2. Do not distort flanges.

3. Leave flange bolts with the ends projecting 1/8 inch to 3/8 inch beyond the faces of the nuts after tightening.
4. Gasket material shall be compatible with pipeline fluid.

D. Grooved Joints:
1. Follow manufacturer's instructions.
2. Utilize manufacturer approved pipe grooving machines.
3. Lubricate all gaskets.
4. Torque all bolts as required by manufacturer.

E. Cutting: Cut pipe from measurements taken at the site; not from the Drawings.

F. To permit convenient disassembly for alterations and repairs, install unions or flanges where shown on the Drawings and:
1. In long runs of piping,
2. In bypasses around equipment,
3. In connections to traps, tanks, pumps, and other equipment,
4. Between shutoff valves, and
5. In other locations as directed by the Engineer, and as indicated on the Drawings.

END OF SECTION