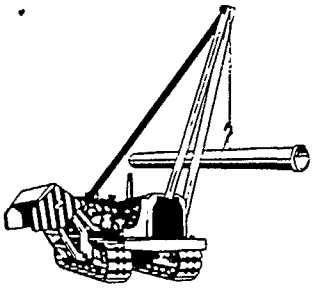

UNITED PIPELINE CONSTRUCTION COMPANY

4511 ILLINOIS AVENUE • LOUISVILLE, KENTUCKY 40213 • 502/452-2652

PLAINTIFF'S EXHIBIT

CAP-858

February 28, 1983

Capco
1400 Twentieth Street, South
P.O. Box 3435
Birmingham, Alabama 35255

Attn: S. G. Leyshock

Dear Mr. Leyshock:

In reference to your letter dated February 16, 1983, I have reviewed the AWWA Standards for Installation of Asbestos-Cement Pressure Pipe and the only change I can recommend is noted in Section 3.4.2.

Sincerely,

Gilbert Gentry

Gilbert Gentry
Secretary

GG/phl

Enclosure

should be taken not to reverse the gasket when placed in the bell. Each pipe joint shall be sealed with a coupling consisting of an asbestos-cement sleeve and two rubber rings or an equivalent coupling or joint of equivalent strength and performance. The pipe joint shall not be deflected either vertically or horizontally beyond the limits recommended by the manufacturer.

3.3.2.1 When pipelaying is not in progress, the open ends of installed pipe shall be closed to prevent entrance of trench water into the line.

3.3.2.2 Whenever water is excluded from the interior of the pipe, enough backfill shall be placed on the pipe to prevent floatation. Any pipe that has floated shall be removed from the trench and the bedding corrected to conform to paragraph 3.2.3. No pipe shall be laid when the weather is unsuitable for proper installation as determined by the engineer.

3.3.3 *Pipe cutting.* Pipe-cutting methods that produce a smooth, square cut end without damage to the pipe and that minimize or eliminate airborne particles shall be employed. Rotating blades, hand saws, or similar materials, when properly used, are acceptable. Abrasive disks are not recommended unless special precautions are taken.

3.3.4 *End preparation.* Whenever it is necessary to cut a length of pipe in the field, the end shall be prepared as follows:

3.3.4.1 The pipe end of random lengths shall be machined by commercially available field lathes designed for this purpose to ensure that the diameter, profile, and roundness meet the pipe manufacturer's specifications. The machined surface on which the compression ring seals shall be smooth and cylindrical to ensure joint integrity.

3.3.4.2 The pipe end of machined overall lengths shall be beveled in accordance with the pipe manufacturer's specifications.

3.3.5 *Length of pipe at fittings and rigid structures.* When rigid joints are formed by caulked materials or by bolts with rubber ring seals, such as at fittings, the length of 8-in. diameter and smaller pipe fitted into the bell of the fittings shall not exceed 3 ft 3 in. and the length of 10-in. diameter and larger pipe shall not exceed 6 ft 6 in. At least one flexible joint shall be used between two adjacent rigid joints. A coupling shall be cast in the wall of rigid structures at the point of entry of pipelines to provide flexibility at the wall. To provide additional flexibility, the pipe at the point of entry shall have a laying length of not more than 6 ft 6 in.

Sec. 3.4 Jointing of Pipe to Valves, Hydrants, and Fittings

3.4.1 *General.* Each valve, hydrant, or fitting connected to asbestos-cement pipe shall either be equipped with a bell of an inside diameter large enough to receive the pipe and caulking of at least ¼-in. thickness around the full circumference of the pipe, or shall have a profile that permits a seal to be made between the machined pipe and the bell of the fitting with a rubber ring.

3.4.1.1 Before valves, hydrants, or fittings are laid, all lumps, blisters, and excess coating shall be removed from the bell. The inside of the bell shall then be wire-brushed and both the inside of the bell and the spigot end of the pipe shall be wiped clean and dry. All surfaces to be jointed shall be kept clean until the joints are made.

3.4.2 *Push-on joints.* The push-on joint is a single rubber-gasket joint.

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It shall be assembled by positioning a continuous rubber ring gasket in the annular groove in the fitting bell and pulling the machined pipe end into the bell. A lubricant approved by the pipe manufacturer must be used. Care should be taken to ensure obtaining the correct size of gasket for the fitting bell for use with the correct size of asbestos–cement pipe. Cast-iron bell gaskets* and asbestos–cement coupling gaskets are not interchangeable. An asbestos–cement coupling gasket shall not be used in a cast-iron fitting bell.

3.4.3 *Mechanical joint.* The mechanical joint is a bolted joint of the stuffing box type. In some sizes and classes, an adaptor is required between the asbestos–cement pipe and the mechanical joint. The joints shall conform to the current revision of ANSI A21.11 (AWWA C111), "Rubber-Gasket Joints for Cast-Iron and Ductile-Iron Pressure Pipe and Fittings," and shall be assembled as required in Appendix A, Notes on Installation of Mechanical Joints, of that standard.

3.4.4 *Poured joints.*

3.4.4.1 The yarning or packing material shall be as specified by the engineer. It shall consist of molded rubber rings. Asbestos rope or treated paper rope may be used only with the approval of the engineer when the space between the bell and spigot will not permit the use of a rubber ring.

3.4.4.2 The yarning material shall be placed around the spigot of the pipe and shall be of proper dimensions to center the spigot in the bell. When the spigot is shoved home, the yarning material shall be driven tightly against the inside base or hub of the bell with suitable yarning tools.

3.4.4.3 When a single strand of yarning material is used, it shall have an overlap at the top of not more than 2 in. When more than a single strand is required for a joint, each strand shall be cut to sufficient length so that the ends will meet without causing overlap. The ends of the strands shall meet on opposite sides of the pipe and not on the top or at the bottom. Successive strands of yarning material shall be driven home separately.

3.4.4.4 Lead-joint bells shall provide a jointing material space of not less than 2¼ in. for pipe of 20 in. diameter and smaller and 2½ in. for pipe 24–42 in. in diameter.

3.4.4.5 Lead for caulking purposes shall meet the current requirements of ASTM B29, "Standard Specifications for Pig Lead, in the Common Desilverized Grade."

Sec. 3.5 Setting of Hydrants, Valves, and Fittings

3.5.1 *General.* Hydrants, valves, and fittings shall be provided and installed as shown on the drawings or as specified in the supplementary specifications. They shall be inspected carefully and cleaned as required in paragraph 3.4.1.1 prior to lowering into the trench.

3.5.2 *Reaction or thrust backing.* A reaction or thrust backing shall be provided at each hydrant, valve, bend, and tee and at reducers or fittings where changes in pipe diameter occur. They shall be centered on the longitudinal axis and extended to solid undisturbed ground. Hydrants may be tied to the water main with rods. The size and shape of the thrust backing or the number and size of the tie rods shall be as shown on the drawings or as specified in the supplementary specifications.

* Some C.I. fittings do require the same gasket as used in the pipe couplings

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