

All trenches, material piles, equipment and pipe which may serve as obstructions to either vehicular or pedestrian traffic shall be enclosed by fences or barricades, adequately lighted, to protect persons from injury and to avoid property damage. Where traffic must cross open trenches, the Contractor shall provide suitable bridges. All laws of the political subdivisions concerned shall be observed.

The Contractor shall furnish temporary support, adequate protection and maintenance of all underground and surface structures, drains, sewers and other obstructions encountered in the progress of the work.

No valve or other control on the existing system shall be operated for any purpose by the Contractor. The owner will operate all valves, hydrants, blow-offs and service stops.

(b) Laying. Proper implements, tools and facilities satisfactory to the Engineer shall be provided and used for the safe and convenient prosecution of the Work. All pipe, fittings, valves, and fire hydrants shall be carefully lowered into the trench piece by piece by means of a derrick, ropes or other suitable tools or equipment, in such a manner as to prevent damage to water main materials and protective coatings and linings. Under no circumstances shall water main materials be dropped or dumped into the trench.

All pipes and fittings shall be clean when laid and open ends of pipe shall be kept plugged with bulkheads during construction. Pipe shall be laid to a firm and even bearing for the full length. Bell holes shall be excavated as directed by the Engineer. Precautions shall be taken to prevent floating.

In joining all bell and spigot cast iron pipe and fittings, the spigot shall be properly seated in the bell of the next adjacent pipe and adjusted to give a uniform annular space. The joint shall be made with approved asbestos rope or treated paper rope of the proper dimension to center the spigot in the bell. Successive strands, as required, shall be driven home separately. Each successive strand shall be thoroughly hammered into the joint with suitable yarning tools. A space of not less than 2-1/4 inches in depth shall be left in the bell for the lead for all pipes having a nominal diameter of 20 inches or less, 2-1/2 inches for 24, 30 and 36-inch pipe and 3 inches for all pipe over 36 inches. The joint runner shall fit snugly against the face of the bell and the outside of the pipe and shall be dammed with clay to form a pouring lip to provide for filling the joint flush with the face and to the top of the bell. Each joint shall be made with one continuous pour filling the entire joint space with solid lead. After the lead has cooled to the temperature of the pipe, lead joints shall be calked by competent workmen until thoroughly compacted and watertight without overstraining the bells.

All mechanical joint cast iron pipe and fittings shall be joined using lead tipped rubber gaskets and cast iron follower rings. Just before making the joint, the inside of the bell and the outside of the spigot shall be thoroughly cleaned by wire brushing to remove rust and foreign material. Soapy water may be brushed on joint prior to slipping the gasket on the spigot and into the bell. The follower ring shall be brought toward the pipe flange evenly, maintaining a uniform distance at all points around the socket, until the joint is watertight.