



SECTION 734

JACKING PIPE

734.1 Description. This work shall consist of jacking reinforced concrete pipe culvert (gasket type) underneath existing pavements at locations shown on the plans in accordance with the following requirements.

734.2 Materials. All material shall conform to Division 1000, Materials Details, and specifically as follows:

Item	Section
Reinforced Concrete Culvert, Storm Drain and Sewer Pipe	1026

734.2.1 The class of pipe specified in the contract item will be determined for vertical load only. Additional reinforcement or strength of pipe required to withstand jacking pressure shall be determined by the contractor and furnished at the contractor's expense.

734.2.2 Temporary concrete traffic barrier shall comply with [Sec 617](#).

734.3 Construction Requirements.

734.3.1 The contractor shall protect the pipe jacking work area with temporary concrete traffic barrier.

734.3.1.1 On two-lane roadways with two-way traffic, 300 feet (90 m) of concrete traffic barrier shall be installed on the shoulder to protect the work area. The barrier shall be centered on the jacking pit. The first and last 100 feet (30 m) of barrier shall be tapered at a 25:1 ratio away from the traveled way. The center 100 feet (30 m) of barrier shall be parallel to the centerline of the roadway and 4 feet (1.2 m) from the outside edge of the shoulder. Approved crashworthy end terminals shall be installed on the exposed ends of the tapered sections.

734.3.1.2 On divided and undivided multi-lane roadways, 200 feet (60 m) of concrete traffic barrier shall be installed on the shoulder to protect the work area. The first 100 feet (30 m) of barrier shall be centered on the jacking pit, parallel to the centerline of the roadway and 4 feet (1.2 m) from the outside edge of the shoulder. The second 100 feet (30 m) of barrier shall be installed on a 25:1 taper away from the traveled way in the direction of on-coming traffic. An approved crashworthy end terminal shall be installed on the upstream end of the tapered section. Where work on the receiving side is limited to 8 hours or less, drum-like channelizers may be used in lieu of the barrier as approved by the engineer.

734.3.2 Variations from theoretical alignment and grade for the completed jacked pipe shall not exceed 0.5 feet (150 mm) for each 100 feet (30 m) of pipe.

734.3.3 The excavated hole shall not be more than 0.1 foot (30 mm) greater than the outside diameter of the pipe. Sluicing and jetting with water will not be permitted. When material tends to cave in from outside these limits, a metal shield shall be used ahead of the first section of pipe when jacking or pushing.

734.3.4 If the excavated hole is formed by the horizontal boring method, the boring equipment used to bore the hole shall be of proper type and in proper working order to ensure the work is performed to the satisfaction of the engineer.

734.3.5 The boring equipment shall be operated by experienced workers and in a manner meeting the approval of the engineer. Bored holes shall be cleaned of excess material before pipe is jacked or pushed into place.

734.3.6 Any areas resulting from caving or excavation outside the above specified limits shall be backfilled with sand grout by a method which will fill the voids. The excavated area around the pipe shall be sealed with grout for a minimum distance of 3 feet (1 m) from the outside face of the fill or cut slope.

734.3.7 If steel casing pipe, to be left in place, is used with this installation method, the contractor shall have the option to delete the gasket type joints for the limits of the jacked pipe.

734.4 Method of Measurement. Measurement of jacked pipe, complete in place, will be made to the nearest foot (meter) along the geometrical center of the pipe. Final measurement will not be made except for authorized changes during construction, or where appreciable errors are found in the contract quantity. The revision or correction will be computed and added to or deducted from the contract quantity. The length of structure may be increased by not more than 3 feet (1 m) as necessary to avoid cutting the pipe, but such increased length will not be included in the contract quantity for payment.

734.5 Basis of Payment.

734.5.1 All cost for work area protection will be paid for at the contract unit price for each of the pay items included in the contract.

734.5.2 The accepted quantities of jacked pipe, complete in place, will be paid for at the contract unit price. Payment will be considered full compensation for excavation and backfilling of the jacking pits, disposal of excess excavation from jacking or boring operations, sand or grout for filling voids, and any other incidental items or equipment necessary to complete the installation.