1. SPECIAL INSTALLATION OF PIPE [603] (REVISED 10-8-15)

Description. Install steel casing under the roadway as shown in the contract. Install steel casing by jacking and/or boring.

Material. Furnish the diameter of steel casing shown in the plans meeting Subsection 709.01.2. The pipe thickness shown in the plans is a minimum. Determine if this minimum thickness is structurally sufficient for the proposed jacking and/or boring loads, increase pipe thickness if necessary. Ensure the minimum yield point for the steel is at least 36 ksi (248.2 Mpa). Steel grades not covered in AWWA-C 200 will be evaluated on a case by case basis. Submit any request to use a steel grade not covered in AWWA-C 200 to the Project Manager for approval at least 21 calendar days before jacking and/or boring operations are scheduled to begin.

Pressure grout voids outside the pipe using a mixture of one part Type-1 cement and five parts sand meeting ASTM C404 for fine aggregate size 2 (manufactured). Use bentonite if necessary to lubricate grout and eliminate pumping resistance.

Construction Requirements. Submit four copies of jacking and/or boring plans to the Project Manager at least 21 calendar days before installation. Include shoring details, cribbing for the jacking pit, and other work related excavations in the plan. Also include a procedure for determining the existence of voids that may occur as a result of the process and a method of filling.

Submit five copies of fabrication drawings and manufacturer's mill test reports meeting Subsection 556.03 to the Project Manager for approval before fabrication of the pipe.

Shop drawings may be furnished in Adobe Acrobat Reader (.pdf) format or on 11″x17″ sheets.

Keep the approach trench or working pit as close to the toe of the fill as is safe and practical.

Make instrument checks on line and grade for each 8 feet (2.5 meters) length of steel casing installed by jacking and/or boring. Maintain a horizontal directional control tolerance of 1-foot (0.3 m) and a vertical tolerance of 3 inches (75 mm) from the location and elevation shown in the plans.

Ensure that jacking operations immediately follow the trimming and excavation. Control the excavation to conform to the outside casing dimension. Immediately grout all voids that occur due to rock pockets, loss of face material due to subsidence, etc., to prevent any settlement of embankment or loss of full side support around the pipe.

Use equipment and methods to assure a uniform distribution of the jacking load around the periphery of the pipe to prevent localized stress concentrations.

Dispose of the jacking and/or boring spoil as directed by the Project Manager.

Slope and contour the area disturbed by the jacking and/or boring to the original ground line. Topsoil and seed the area.

If an obstruction is encountered promptly notify the Project Manager. An obstruction is defined as a specific object (including, but not limited to, boulders, logs, and man-made objects) encountered during the jacking and/or boring operations which prevents the advance of jacking and/or boring. Submit four copies of a proposed obstruction removal method to the Project Manager for approval within 2 business days of encountering the obstruction.

Measurement and Payment. The installed steel casing length is measured per linear foot (meter), and paid for at the unit price bid for “Special Installation of Pipe”. Payment is full compensation for all costs associated with steel casing installation. Payment for the cost of furnishing steel casing will be made separately at the unit price bid for the pipe required.

Payment for obstruction removal will be made in accordance with Subsection 109.04.

Payment at the contract unit price is full compensation for all necessary resources to complete the item of work under the contract.