ITEM NO. 823
DIRECTIONAL BORING FOR
CUSTOMER’S WATER YARD PIPE

823.1 DESCRIPTION: This item shall govern the furnishing and installation of customer yard piping and conduit by the method of directional boring as shown in the contract documents and as directed by the Engineer.

823.2 MATERIALS:


2. The polyvinyl chloride (PVC) conduit shall be Schedule 80 or Certa T-Lock PVC, where applicable, and shall conform to the latest provision of ASTM D1785 or most applicable approved equal provision. The fittings for the PVC pipe shall be Schedule 80 and shall be in accordance with the latest provision of ASTM D2467 or most applicable approved equal provision.

823.3 CONSTRUCTION:

1. Determination for Directional Boring Method: Directional boring method shall be used for installations of customer’s “short yard piping” or “long yard piping” when open-cut method is not feasible. Refer to Item No. 822.3.1, “Designation of Yard Piping.” Directional boring method should be used to avoid disruption to items such as, but not limited to, substantial landscaping, trees, driveways, retaining walls, privacy walls, structures, or sprinkler systems that cannot be economically be replaced, or as directed by the Inspector. The yard piping shall be placed in 2 inch or 4 inch inside diameter (I.D.) PVC conduit as appropriate when directed by the Inspector.

2. Designation of Yard Piping: Refer to Item No. 822.3.1.

3. Materials: Refer to Item No. 822.3.2.

4. Installation: Directional Boring Method machine as manufactured by
“Ditch Witch,” “Vermeer,” or other approved equal, capable of drilling a minimum of a 300 feet continuous bore.

Refer to Item No. 822.3.3 for installation procedures for customer yard piping.

Directional boring shall be completed with the use of a directional boring machine, as manufactured by “Ditch Witch”, “Vermeer,” or other approved equal. The directional boring machine shall be supplied with an output signal inside the housing of the drill bit. The output signal shall have a constant output signal to allow a person to track the location of the beacon at all times. The drill bit shall be located a maximum of every 5 feet for exact location of the service line to be pulled in. When bore is completed, contractor shall provide SAWS with a pilot of the bore path.

The drilling machine shall be set up at such a location to avoid disruption of private yard and landscaping. The operator of the drilling unit shall check the bore path and position of boring pit at every five feet and make necessary correction to stay along the alignment. The pilot hole shall not be greater than 4 inches in diameter, except when a 4 inch PVC conduit is installed. The Contractor shall make necessary provisions to keep water and soil out of the installed yard piping.

The drilling machine shall be equipped with a drilling fluid compatible for the onsite conditions. The fluid, such as bentonite, shall be used for lubricating the pipe during pull-back, forcing spoils out of the pipe pit, assisting in holding the hole open during pull back, and hardening into a clay substance around the outside of the conduit, preventing settlement of the ground. Adequate drilling fluids shall be used to avoid a “hydra-lock” condition. The directional head shall be capable of accepting a variety of cutting bits for varied soil conditions.

Any damage to customer’s property, landscaping or trees caused by the Contractor’s activities of installing yard piping, shall be replaced to both the inspector’s and customer’s satisfaction, at no additional cost to SAWS.

Contractor shall take a video DVD recording of the entire project area prior to commencing any work in the area. A DVD video shall be turned into SAWS for review and approval before starting any work, including mobilization and preparation of right-of-way.

823.4 MEASUREMENT: Directional Boring for Customer’s Yard Piping” will be measured by the linear foot of the various types and sizes of customer’s yard piping or conduit installed.
PAYMENT: Payment for “Directional Boring for Customer’s Yard Piping” will be made at the unit price bid for each linear foot of customer’s new yard piping or conduit installed. Payment for customer yard piping shall be made under item “Yard piping – directional bore method”. When the yard piping is installed in conduit it shall be paid under items 2 inch I.D. PVC conduit – directional bore method, and “yard piping installed in conduit”, or items 4 inch I.D. PVC conduit – directional bore method” and yard piping installed in conduit.

Such payment shall include excavation, hauling and disposition or surplus material, approved backfill material, removal and replacement of customer’s lawn turf and whatever other surface vegetation and surface structure encountered, copper tubing, PVC conduit, and brass fittings or whatever size necessary to complete the tie at the customer’s point of connection.

- End of Specification -