

**0209.0317 Temporary Highline.** If a highline is required, the Contractor shall construct the highline per TW Standards. All pipe and components shall be NSF 61 for potable water. All tie-overs to the highline will need a Tucson Water Inspector for valve isolation. The Contractor shall be responsible for protection of the highline and must make any necessary repairs to the highline to maintain service at all times while the highline is in use.

**(A) GENERAL:** The Contractor shall be responsible for designing, furnishing, installing, maintaining, and removing temporary bypass pipeline as necessary to maintain service to Tucson Water Customers during the construction of new water mains.

**(B) MATERIALS:** Highline shall be HDPE SDR11 or PVC DR18 (PC235). Pipe and fittings shall be clean and free of foreign material. Flexible pipe or hose, if employed at connections, shall bear the imprint of the National Sanitary Foundation approval for portable water or the Contractor shall provide evidence of NSF approval for this use to the satisfaction of the Engineer. All bypass piping shall be restrained.

**(C) SUBMITTALS:** The Contractor shall submit temporary bypass plan(s) to be reviewed and accepted by Tucson Water prior to installation of bypass pipeline. The plan submittal shall include written certification that all pipe and components are for potable use only. Plans for temporary bypass piping that is 6-inch or larger diameter shall be sealed by an engineer registered in the state of Arizona. The bypass plans shall indicate all existing Tucson Water customers/services that are included in the bypass piping system.

**(D) INSTALLATION:** During installation, maintenance, and removal of the temporary bypass pipelines, the Contractor shall maintain continuity of service to Tucson Water Customers. Each new installation of temporary bypass pipeline will require flushing and disinfection prior to being put into service. A bacteria test shall be required per Section 209.0317 and the highline shall be pressure tested at maximum line pressure for 60 minutes with no leaks prior to the highline being placed in service. Where “lever” or “toggle” type couplings are used for joining lengths of bypass pipeline the couplings shall be securely installed to prevent accidental uncoupling of the pipeline. Each run of temporary bypass pipeline shall terminate with a minimum 2-inch valve for flushing and chlorination. Service connections shall not be used from or downstream of this valve.

**(E) MAINTENANCE:** The Contractor shall provide to Tucson Water names and phone numbers of personnel designated to perform maintenance and emergency repairs to the bypass pipeline. The Contractor shall provide protection and maintenance of the highline directed by the Engineer for traffic, water temperature, and other safety concerns. After service has been restored to a section of the new distribution main, the Contractor shall remove the temporary bypass pipeline and related facilities and complete required repairs/restoration to the area including streets, driveways, curbs, sidewalks, and landscaping and the area shall be left in a clean and orderly condition.

**(F) PAYMENT:** There is no separate measurement or payment for the temporary bypass pipeline (highline) as the cost will be considered incidental to the cost of the construction of the water main modifications and shall include, but not be limited to, all temporary connections, materials, components, and work necessary to design, install, operate, maintain, restrain, protect, dismantle, remove, and restore as described above.

ISSUED:		STANDARD DETAIL		DETAIL NO.
3/17		HIGHLINE INSTALLATION REQUIREMENTS		
REVISED:				SD-375
9/17				SHEET 1 OF 1