



MEMORANDUM

TO: District Engineers

DATE: January 4, 2010

FROM: John A. Barton, P.E. *John A. Barton P.E.*

SUBJECT: Thermoplastic Pipe

On April 9, 2009, wildfires in the Wichita Falls district resulted in damage to a multi-barrel HDPE pipe installation. In order to minimize the chance of fire-related damage on future installations, we are modifying the criteria for use of thermoplastic pipe on TxDOT projects. The criteria in this memo will supersede those in the previous memo dated September 17, 2002.

The attached Special Specification for thermoplastic pipe has been developed for district use. This is currently a districtwide one-time use specification to allow us to address changes as needed. The specification may subsequently be proposed to the Specifications Committee as a statewide specification.

Districts may use thermoplastic pipe on TxDOT projects subject to the following limitations until further notice:

- Roadways with current ADT less than 2000 per lane.
- Pipe diameters no greater than 36 inches.
- Multiple pipe installations shall have a maximum of two adjacent pipes.
- Fill heights over pipe from 2 feet to 12 feet. Minimum fill height for private driveways may be reduced to 1 foot.
- Installations to be cross-drainage or side-drainage culverts. Do not utilize thermoplastic pipe in closed storm sewer systems.
- Pipe placed beneath public roadways shall have end segments composed of a non-flammable material, such as CMP, RCP, or other approved materials for the following minimum distance into the embankment or natural ground:

Pipe Diameter	Length of Non-Flammable Section
24 inches or less	4'
30 inches	5'
36 inches	6'

The requirements for non-flammable end sections have been incorporated into the Special Specification, and made subsidiary to the pay item. It will not be necessary to delineate nor quantify the non-flammable end sections in the contract plans.

- If required by roadway safety criteria, ends of pipes shall have a safety end treatment appropriate to the non-flammable end segment utilized. For driveway pipes without

non-flammable end sections, utilize the Safety End Treatment (SET) details for Corrugated Metal Pipe (CMP).

- In addition to any safety end treatment required, pipe placed beneath public roadways shall have an extended non-flammable apron placed around each exposed end of the pipe. The requirements and limits for the non-flammable apron have been incorporated into the Special Specification, and made subsidiary to the pay item. It will not be necessary to delineate nor quantify the non-flammable aprons in the contract plans.

Please note the following for PS&E preparation:

- The Special Specification allows the choice of three materials for backfilling the pipe. Type I is flowable fill, Type II is cement stabilized sand, and Type III is an aggregate fill. Backfill Types I and II will need to be included as pay items. Type I is paid for under Statewide Special Specification Item 4438, "Flowable Backfill." Type II is paid for as "Cement Stabilized Backfill" under Standard Specification Item 400, "Excavation and Backfill for Structures."
- The Special Specification allows the choice of two joint types, Soiltight and Watertight. Both joint types are gasketed. The Soiltight joint is similar to typical joints for Reinforced Concrete Pipe and CMP in that small amounts of water may be able to leak into or out of the pipe, but soil should not be carried into the pipe. The Watertight joint is a very tight joint that is laboratory tested to over ten psi. Pipe with the Watertight joint is somewhat more expensive.
- The PS&E package will need to designate pipe diameter, joint type and backfill type.
- When Thermoplastic Pipe is included in a contract, it should be set up as an alternate to another pipe type. Bidding Thermoplastic Pipe as an alternate will allow tracking of the bid price and usage of the product.
- The Special Specification calls for the non-flammable apron to consist of concrete riprap "or other approved material." Other approved materials that may be called for in the contract plans include stone riprap, gabion mattresses, cement stabilized soil, or other non-combustible material that will prohibit vegetative growth.

Attachment

cc: Administration
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