Design and Installation of Casings Installed on Tollway Right-of-way

(Revised 04-10)

Soil borings must be taken at the push pit and the receiving pit.

A geotechnical report must be submitted to the Tollway. A dewatering plan must be supported by a geotechnical report and recommendation.

The proposed casing must be plotted on the boring logs at the current elevation.

The **water table** must be clearly shown and defined on the boring logs.

The Tollway will not allow casings to be bored and jacked through non-cohesive (sandy, granular) soils where the **water table is above the bottom of the casing** without dewatering the site. If the area cannot be dewatered, a bored and jacked casing will not be allowed. In the event the work is underway and water is encountered, work will be stopped, the bore must be stabilized, a dewatering plan must be submitted, reviewed, approved and implemented before the work will be allowed to proceed.

Casings will not be installed in granular soils that contain **cobbles and large rocks** except by hand mining or pipe ramming. Machine boring and jacking will not be allowed.

The minimum diameter of a casing is **36 inches.** The minimum diameter of the casing is required for access to remove obstructions, inspection, grout the casing and provide options in case unanticipated site conditions are encountered. The minimum thickness of an A-36, Grade B steel casing is 3/8 inch.

Casings must have 1 inch diameter (minimum) grout holes installed 10 to 15 feet apart and located near the top of the casing to allow the space between the soil and the casing to the grouted solid. The grout holes must be installed before the casing is installed. The contractor may be required to remove the auger from the casing for inspections at any time.

If a large void is detected, work on the project will be stopped, accessible areas must be filled with grout and the roadway must be pressure grouted through the pavement.

Casings must be located a minimum of **4 feet under any ditches.** Casings shall **extend completely across** the right-of-way unless otherwise allowed by the Tollway.

Where it is not practical to extend the casing completely across the right-of-way, the ends of the casing, and the associated excavations for the push and receiving pits, must not be located closer the 30 feet from the shoulder of the mainline roadway or 30 feet from a ramp unless the area is protected by guardrail.

A permanent shoulder closure must be erected for all push and receiving pits located on Tollway property. Pits on Tollway property must be fenced and protected against the entry of vehicles. Push pits near the roadway shall be located on the inside of ramp curves.

Concrete barrier wall and approved crash attenuators must be installed in front of pits that must be excavated on Tollway property and are not safely located outside the clear zone. The clear zone is generally 30 feet from the edge of shoulder but may increase due to the configuration of the roadway.

Casings shall extend a minimum of 8 (eight) feet past a drainage ditch or 10 (ten) feet past a line projected down the slope of an embankment supporting the roadway.

Push pits, receiving pits and the right-of-way fence must be temporarily fenced when the contractor is not working.

A survey of the elevations of the pavement and shoulders is no longer required.

Three sets of the plans must be submitted on an **11 X 17** sheets. The plans must show (but are not limited to showing) a scaled plan and profile view of the crossing including the following:

1. The existing ground profile.
2. Tollway right-of-way lines, any survey markers or GPS stations.
3. The Tollway fence line.
4. The approximate **mile post of the crossing** (mile posts are located every quarter mile along the Tollway).
5. Any crossroad and the distance between the casing and the center line of any cross road passing over or under the Tollway that is within 200 feet.
6. The casing and the carrier pipe (type, dimensions, etc.).
7. Tollway mainline pavement, shoulders, and median walls.
8. Drainage ditches, culverts and storm sewers, roadway lights.
9. **Fiber optic cables** or coaxial cables running parallel on the right-of-way.
10. Gas, water and electrical services, under drain, septic systems, drain tiles.
11. Overhead electrical and communication lines.
12. Underground gas and petroleum lines and associated vents.
13. Any other facilities installed on Tollway right-of-way by others.
14. Location of the push and receiving pits in plan and profile.

15. Location of the water table in the profile drawing.
16. Suggested number, size and capacity of well points if dewatering is required.
17. General notes for the installation of casings on the Tollway.
18. Location of an casing vents and cathodic test stations.
19. The location of a sign attached to the right-of-way fence at both sides of the right-of-way identifying the pipe line facility, owner, and permit number.

There shall be no valves vaults, regulating stations, drain structures, tees, branch services, manholes, drains, blow downs or any facility associated with the casing and the carrier pipe crossing located on Tollway property. Vents should be located at the fence line whenever possible. Cathodic test stations should be located at the fence line.

Please remember to specify the following on the plans:

- Specify temporary fence at the pits.
- Specify access control (close up the right-of-way fence at the end of the day).
- Specify a shoulder closure for the mainline roadway and ramps.
- Specify crash attenuators (truck mounted attenuators may be acceptable) for any pit or equipment encroaching into the clear zone.
- Specify the Requirements for Work on the Tollway on the plans.
- Specify no access to the site from Tollway shoulder without approval.
- Specify grout holes and grouting around the casing.
- Specify a sign for the right-of-way fence that shows the type of facility and permit number.
- Specify the need to locate and expose the Tollway's fiber optic cable.