



Texas Department of Transportation - Austin District - 7901 N. IH35 Bldg. 1, Austin, TX 78753

SPECIAL PROVISIONS

FOR UNDERGROUND CONDUIT, CABLE AND PIPELINE INSTALLATIONS / BORING AND TUNNELING

This special provision is provided as a supplement to the TAC Rule 21.40 for underground utilities.

Minimum depth of cover is required according to the chart below for all permits in the Austin District:

Underground Utilities 21.40 Minimum Depth of Cover (inches) from lowest point of grade.				
Facility Type	Crossing Encased	Crossing un-encased	Longitudinal ²	Casing Materials (recommended)
Low Pressure Gas	60	60	48	HDPE or Steel
High-Pressure Gas ¹	60	84 ³ , 120 ⁴	72 ⁵ , 120 ⁶	Steel
Electric	60	NA	48	Any
Communication ALL	60	NA	48	Any
Water	60	NA	36	HDPE
Wastewater gravity flow	30	NA	30	HDPE
Wastewater pressured flow	60	NA	36	HDPE
Other Water	60	NA	36	HDPE
UNIT OF MEASURE IS INCHES				
(1) High-pressure gas is any pipeline designed to operate above 60 psi.				
(2) Additional 12 inches of depth is required within 50 feet of water course, culvert, etc.				
(3) min. depth is increased by 24" greater than the minimum depth than other utility crossings.				
(4) 10 feet minimum depth required for: SH (State Highways), US (US Highways), IH (Interstate Highways).				
(5) Longitudinal depth is increased by 24" greater than the minimum depth required in TAC Rule 21.40.				
(6) Longitudinal depth required for: SH (State Highways), US (US Highways), IH (Interstate Highways).				

It will be the utility companies' responsibility to determine if there are any existing utility lines present prior to starting their installation. If any unanticipated utility lines are discovered the utility company should resubmit to TxDOT a revised site plan that reflects a new assignment. The first 3-ft of right of way is reserved for power poles. The width of an open cut along the right of way must be kept to a minimum. All public roadways, driveways, and other access connections must be bored. The only exception to this policy would be if the Utility Company provides TxDOT a signed letter from the owner of the driveway or roadway in question. This letter must have the following information reflected: Owners full name, address and telephone number with their signature.

All excavated areas within the right of way must be backfilled with like materials and be tamped down by means of pounding or compacting in 6" horizontal layers to a density equal to that of the surrounding soil. **TxDOT does not approve of the use of sandy loam as topsoil.** The ROW must be reshaped to its original condition and any disturbed areas reseeded or Hydra-mulched. Seeded area will need to be watered every



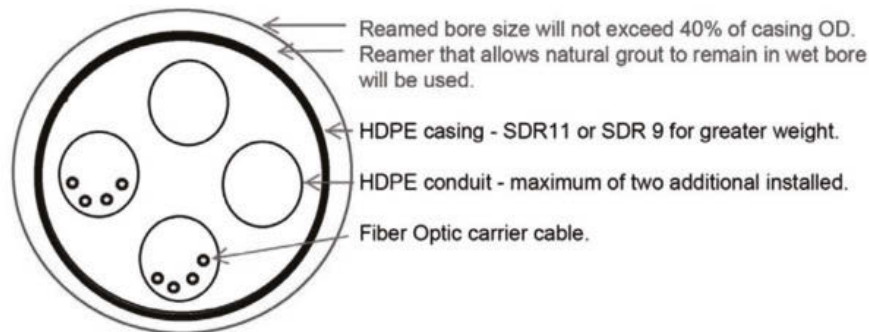
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three days or install a blanket. When roadway repairs are required a flow able flexible base material mixed with Portland cement at a ratio of one sack per cubic yard or two sack ready-mix concrete. Flowable backfill fill will be required to repair roadways as indicated in TxDOT specification Item 401.

Fire Hydrants (except on curbed roadways) and cable closures, risers, etc. for buried utilities must be located within 18-inches of the ROW line. Large communication equipment housing placed on the highway right of way must be placed at or near the right-of-way line.

The Utility Company or its contractor must keep the roadway clean, of mud, and free debris at all times. If the weather is poor, work should stop. In the interest of highway beautification and in order to preserve desirable trees, boring or tunneling will be required if installation falls within five feet (5-ft) of said trees. With the following exceptions: (a) in areas where planned roadway expansion would require tree removal; (b) when the diameter of the installation under the tree would cause extensive damage to the tree's root system; (c) at the prerogative of the Engineer, a tree may be removed and replaced with another, with an agreed maintenance period of one year.

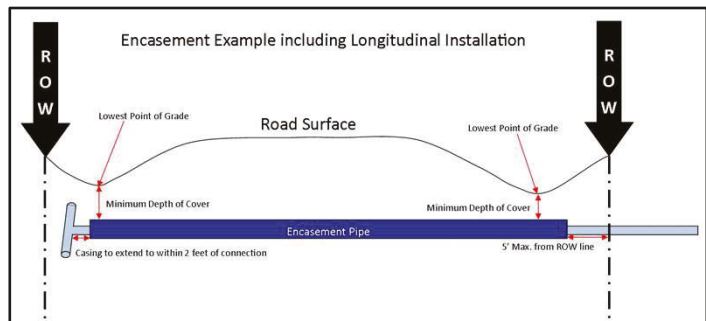
Figure: 43 TAC §21.40 (g) (5)



BORING AND TUNNELING

Utility lines crossing under the roadway must be installed by means of boring or tunneling. State and other public roadway crossings must be encased under the pavement and be placed at the specified depth as shown in the Utility Accommodation Rules.

Encasement pipe can either be steel or HDPE, and must be made of load bearing materials. Roadway crossing should be encased from right of way line to right of way line or as far as possible.





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Bore Pits and Barrier Protection

Excavation must be done in a way that minimizes the possibility of the Bore Pit walls shedding or sloughing. Bore Pits located closer than 10-ft from the edge of pavement must be reinforced with wood or steel to insure that the existing roadway or pit walls don't collapse. Reinforced wall shoring and / or trench box protection is required for all holes, pits and trenches deeper than 5-ft. Bore pits located closer than 30-ft from the edge of pavement should be protected by Concrete Traffic Barriers. These barriers need to be placed at least 8-ft off the edge of pavement, and be positioned at a 10 to 1 angle that gradually moves away from the roadway. TxDOT may allow the use of water filled barriers in certain instances, but due to the high speeds, concrete traffic barriers should be used. The work area must comply with OSHA requirements. And work crews and equipment must be confined to areas outside of the roadways shoulder and off the edges of pavement. No explosives can be used within the state right-of-way at any time.

Boring and Tunneling

When soils beneath the roadway pavement are sandy and unstable, tunnels must be drilled and encased simultaneously, with the excess materials removed through the encasement pipe. The auger or drill head must not project more than 6-inches ahead of the casing pipe. Water must not be used in conjunction with drilling in unstable soil environments.

In stable soil environments, drilling may be done first, and then the encasement pipe inserted. While the tunnel is being drilled, the encasement pipe can be positioned and welded into place. In stable soil environments water can be used in conjunction with drilling as long as the water does not cause the soil to become unstable. Drilling mud may be used to stabilize the hole prior to inserting casing. Water must be kept off the roadway at all times.