

**761—115.13(306A) Underground utility facilities.****115.13(1) Depth requirements.**

a. *Minimum cover—roadway.* The minimum required cover under a roadway is 48 inches.

b. *Minimum cover—other portions of right-of-way.* The minimum required cover under other portions of the right-of-way is:

- (1) 48 inches for electrical cable.
- (2) 30 inches for communication cable except that 36 inches is required for longitudinal occupancy under freeway right-of-way.
- (3) 36 inches for all other underground facilities.

c. *Rocky terrain.* The department may allow an exception to the minimum depth requirement where rocky terrain makes it difficult to obtain the required depth. The department shall determine the minimum depth in these situations; however, no installation shall be authorized with less than 24 inches of cover.

d. *Other protective measures.* In critical situations where the necessary cover cannot be obtained, the department may approve other protective measures.

**115.13(2) Measurement of cover.** The cover is measured from one of the following:

- a. On rural-type roadways, the lowest pavement surface edge.
- b. On urban-type roadways, the gutter flow line, excluding local depressions at inlets.
- c. Where longitudinal installations will be behind the curb, the top of the curb.
- d. The surface of the surrounding ground or the low point of the ditch.

**115.13(3) Casing.** A casing shall:

a. Protect the highway from damage.

b. Protect the carrier pipe from external loads or shock, either during or after construction of the highway.

c. Convey leaking liquids or gases away from the area directly beneath the traveled way.

d. Provide for repair, removal and replacement of the utility facility without interference to the highway.

**115.13(4) Seals.** Casing pipe shall be sealed at both ends with a suitable material to prevent water or debris from entering the annular space between the casing and the carrier, in accordance with generally accepted industry standards.

**115.13(5) Transverse occupancy—encasement and related requirements.**

a. *Trenchless construction.* Underground transverse crossings of existing paved roadways shall be made by trenchless construction whenever practical. Any exception to this requirement must be specifically authorized by the district representative and noted in the permit.

b. *Electrical service.* Underground electrical service must be placed in a conduit from right-of-way line to right-of-way line and shall be clearly marked by the utility owner at the outer limits of the right-of-way.

c. *Pipelines.*

(1) Except as set out in 115.13(5)“c”(2), a pipeline carrying natural gas at an operating pressure of greater than 60 pounds per square inch, liquid petroleum products, ammonia, chlorine or other hazardous or corrosive products shall be encased from right-of-way line to right-of-way line.

(2) Encasement of a pipeline carrying a product listed in 115.13(5)“c”(1) is not required if the pipeline meets all of the following requirements and the utility owner certifies as a part of the permit that these requirements are met:

- It is welded steel pipeline.
- It is cathodically protected.
- It is coated in accordance with accepted industry standards.
- It complies with federal, state and local requirements and meets accepted industry standards regarding wall thickness and operating stress levels.

(3) A pipeline carrying a product listed in 115.13(5)“c”(1) shall be vented and marked at the outer right-of-way limits. The markers shall comply with accepted industry standards and include the following information: name and address of the owner, telephone number to contact in case of an emergency, and type of product carried.

(4) Encasement of a natural gas pipeline with an operating pressure that is not greater than 60 pounds per square inch is not required if the pipeline is made of copper, steel or plastic; the pipeline is protected and installed in accordance with accepted industry standards; and the utility owner certifies as a part of the permit that these standards are met. Otherwise, encasement is required.

*d. Communication cable.* The department may require encasement of communication cable.

*e. Sanitary sewer lines.* Sanitary sewer lines, both gravity and force mains, shall be encased from right-of-way line to right-of-way line. Exception: A gravity flow line that is installed subsequent to highway construction need not be encased if it will meet all of the following requirements:

(1) The opening is cut to the size of the carrier pipe so that there are no excessive voids around the pipe.

(2) The pipe is of sufficient strength to withstand the external loads created by the vehicular traffic on the roadway being traversed.

(3) Lines beyond the toe of foreslope are properly embedded.

*f. Waterlines.* Waterlines shall be encased from right-of-way line to right-of-way line. Exceptions:

(1) Encasement is not required where it is impractical due to existing conditions, as determined by the district representative. As a minimum, waterlines shall be encased from toe of foreslope to toe of foreslope.

(2) Waterlines with an inside diameter of two inches or less need be encased only from toe of foreslope to toe of foreslope. Venting and sealing of the encasement are not required.

(3) Properly embedded waterlines that are installed prior to highway construction need not be encased if extra strength cast iron or ductile iron pipe with mechanical joints and seals, or equivalent, is used from right-of-way line to right-of-way line.

*g. Installations vulnerable to damage.* Utility facilities that by reason of shallow depth or location are vulnerable to damage from highway construction or maintenance operations shall be protected with a casing, suitable bridging, concrete slabs or other appropriate measures.

*h. Other installations.* When it is acceptable to both the utility owner and the department, an underground utility facility not otherwise addressed in this subrule may be installed without protective casing if the installation involves trenched construction or small bores. Encasement requirements will be determined on an individual basis.

**115.13(6)** *Longitudinal occupancy—encasement and related requirements.*

*a.* Utility lines installed longitudinally to the primary highway right-of-way shall be encased at crossings of hard-surfaced side roads, streets and entrances in accordance with subrule 115.13(5).

*b.* Reserved.

**115.13(7)** *Multiduct systems.* The department may require installation of a multiduct system to be shared with others. Details of the installation are subject to department approval.

*a.* The department shall designate a “lead company” for the system. The lead company is generally the first utility owner requesting occupancy. The lead company is responsible for:

(1) Design and construction of the multiduct system.

(2) Maintenance of the multiduct system.

(3) Providing all capital required to construct the multiduct system.

*b.* Once a multiduct system has been established, the department shall require future occupancies to be located within one of the unoccupied inner ducts of the system. If all inner ducts are occupied, the department may require the establishment of an additional multiduct system.

*c.* Each occupant of a multiduct system shall share equally in the entire capital costs of the facility. As each new occupant is added to an existing system, the department shall require the new occupant to pay its proportionate share based on the number of inner ducts it occupies.

*d.* See subrule 115.16(8) for occupancy fees for longitudinal installations on freeways.

**115.13(8)** *Procedures for backfilling trenched construction and jacking or boring pits.*

*a.* When a carrier, pipe, conduit, or cable is placed by trenched construction, the backfill shall be placed and compacted so that there is no settlement or erosion. If settling or erosion of a trench is observed, it is the responsibility of the utility owner to correct the problem.

*b.* Jacking or boring pits shall be backfilled in the same manner as that described in paragraph “a” of this subrule.

c. Backfill under roadways or entrances shall be of a suitable material to minimize settlement. Examples of suitable material include granular backfill or flowable mortar.

**115.13(9) Procedures for trenchless construction.**

a. When trenchless construction techniques are used, the bore shall be as small as practical and in no case more than four inches larger than the facility or casing inserted.

b. Grout backfill is required for all unused holes and abandoned pipes. Grout or sand backfill is required for any borehole more than two inches larger than the installed casing or other facility. All bored facilities shall be constructed in such a manner that surface water is not transported to or otherwise allowed access to groundwater.

**115.13(10) Procedures for pavement removal.**

a. When the existing pavement must be cut to accommodate a utility installation, the cut shall be made with a concrete saw.

b. The width of the pavement removal shall be a minimum of six feet. If the distance from the specified cut to any adjacent longitudinal or transverse joint or crack is less than four feet, the pavement shall be removed to that joint or crack.

c. The district representative shall make the final determination on the required depth and width of cut.

**115.13(11) Procedures for pavement replacement.**

a. Restoration of pavement shall be accomplished in accordance with methods approved by the district representative.

b. The district representative may authorize temporary repair with bituminous material.

c. A permanent patch shall be placed as soon as conditions permit.

**115.13(12) Clear zone for pits.**

a. On freeways, jacking or boring pits are not allowed within the median. A jacking or boring pit shall be located in an area beyond the clear zone or the highway foreslope, whichever area locates the pit a greater distance from the edge of the traveled way, right-of-way width permitting.

b. On rural-type, nonfreeway primary highways, jacking or boring pits are not allowed within the median. A jacking or boring pit shall normally be located in an area beyond the clear zone or the highway foreslope, whichever area locates the pit a greater distance from the edge of the traveled way, right-of-way width permitting. However, a jacking or boring pit may be allowed within the foreslope if it is specifically authorized by the district representative and noted in the permit.

c. On urban-type, nonfreeway primary highways, jacking or boring pits should be located at least two feet back from the curb.

d. Jacking or boring pits authorized within the clear zone shall be protected at all times. Protection may include backfilling of the pit, temporary barrier rail, reflective fence, or other measures. All measures must be approved by the district representative.

**115.13(13) Construction methods.** Casing and pipeline installations shall be accomplished by dry boring, tunneling, jacking, trenching, directional drilling or other approved methods.

a. The use of water under pressure (jetting) or puddling to facilitate boring, pushing or jacking operations is not allowed.

b. However, a boring operation that requires the use of water only to lubricate the cutter and pipe is considered dry boring and is allowed.

**115.13(14) Encasement material.** It is the responsibility of the utility owner to ensure that it complies with all applicable federal, state, local and franchise requirements and meets generally accepted industry standards in the selection of encasement materials.