

SUBCHAPTER C. UTILITY ACCOMMODATION

§21.31. Definitions. The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

- (1) AASHTO--American Association of State Highway and Transportation Officials.
- (2) Abandoned utility--A utility facility:
 - (A) that no longer carries a product or performs a function and for which the owner is unknown or cannot be located; or
 - (B) whose owner has requested abandonment and the abandonment has been approved by the district.
- (3) Access denial line--A line concurrent with the common property line across which access to the highway facility from the adjoining property is not permitted.
- (4) As-Built plans-- Drawings showing the actual locations of installed or relocated utilities.
- (5) Border width--The area between the edge of pavement structure or back of curb to the right of way line.
- (6) Bridge abutment joint--The joint between the approach slab and bridge structure.
- (7) Center median--The area between opposite directions of travel on a divided highway.
- (8) Certified as-installed construction plans--The construction plans for the installation of a utility, accompanied by an affidavit certifying that the facility was installed in accordance with the plans.
- (9) Commission--The Texas Transportation Commission.
- (10) Common carrier--As defined in the Natural Resources Code, §111.002.
- (11) Conduit--A pipe or other opening, buried or above ground, for conveying fluids or gases, or serving as an envelope containing pipelines, cables, or other utilities.
- (12) Controlled access highway--A highway so designated by the commission on which owners or occupants of abutting lands and other persons are denied access to or from the highway main lanes.
- (13) Department--The Texas Department of Transportation.
- (14) Depth of cover--The minimum depth as measured from the top of the utility line to the ground line or top of pavement.
- (15) Design vehicle load (HS-20)--A design load designation used for bridge design analysis representing a three-axle truck loaded with four tons on the front axle and 16 tons on each of the other two axles. The HS-20 designation is one of many established by AASHTO for use in the structural design and analysis of bridges.
- (16) Distribution line--That part of a utility system connecting a transmission line to a service line.
- (17) District--One of the 25 geographical districts into which the department is divided.
- (18) District engineer--The chief administrative officer in charge of a district, or his or her designee.
- (19) Duct--A pipe or other opening, buried or above ground, containing multiple conduits.
- (20) Engineer--A person licensed to practice engineering in the state of Texas.
- (21) Executive director--The chief administrative officer of the department.
- (22) Freeway--A divided highway with frontage roads or full control of access.

(23) Frontage road--A street or road auxiliary to, and located alongside, a controlled access highway or freeway that separates local traffic from high-speed through traffic and provides service to abutting property.

(24) Gathering line--A line that delivers raw product from various sites to a central distribution or feed line for the purposes of refining, collecting, or storing the product, and is private in function and does not directly or indirectly serve the public.

(25) Hazardous material--Any gas, material, substance, or waste that, because of its quantity, concentration, or physical or chemical characteristics, is deemed by any federal, state, or local authority to pose a present or potential hazard to human health or safety or to the environment. The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR §172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR Part 173 (49 CFR §171.8).

(26) High-pressure gas or liquid petroleum lines--Gas or liquid petroleum pipelines that are operated, or may reasonably be expected to operate in the future, at a pressure of over 60 pounds per square inch.

(27) Horizontal clearance--The areas of highway roadsides designed, constructed, and maintained to increase safety, improve traffic operation, and enhance the appearance of highways.

(28) Idled facility--A utility conduit or line which temporarily does not carry a product, or does not perform a function and whose owner has not provided a date for its return to operation.

(29) Inclement weather--Weather conditions that are hazardous to the safety of the traveling public, highway or utility workers, or the preservation of the highway.

(30) Low-pressure gas or liquid petroleum lines--Gas or liquid petroleum pipelines that are operated at a pressure not exceeding 60 pounds per square inch.

(31) Main lanes--The traveled way of a freeway or controlled access highway that carries through traffic.

(32) Maintenance Division--The administrative office of the department responsible for the maintenance and operation of the state highway system.

(33) Noncontrolled access highway--A highway on which owners or occupants of abutting lands or other persons have direct access to or from the main lanes by department permit.

(34) Outer separation--The area between the main lanes of a highway for through traffic and a frontage road.

(35) Pavement structure--The combination of the surface, base course, and subbase.

(36) Private utility--Any utility facility, its accessories, and appurtenances, including gathering lines devoted exclusively to private use.

(37) Public utility--A person, firm, corporation, river authority, municipality, or other political subdivision engaged in the business of transporting or distributing a utility product for public consumption.

(38) Ramp terminus--The entrance or exit portion of a controlled access highway ramp adjacent to the through traveled lanes.

(39) Right of Way Division (ROW)--The administrative office of the department responsible for the acquisition and management of the state right of way.

(40) Riprap--An appurtenance placed on the exposed surfaces of soils to prevent erosion,

including a cast-in-place layer of concrete or stones placed together.

(41) Service line--A utility facility that conveys electricity, gas, water, or telecommunication services from a main or conduit located in the right of way to a meter or other measuring device that services a customer or to the outside wall of a structure, whichever is applicable and nearer the right of way.

(42) TMUTCD--The most recent edition of Texas Manual on Uniform Traffic Control Devices for Streets and Highways.

(43) Transmission line--That part of a utility system connecting a main energy or material source with a distribution system.

(44) Utility--Any entity owning a public or private utility.

(45) Utility appurtenances--Any attachments or integral parts of a utility facility, including fire hydrants, valves, and gas regulators.

(46) Utility facilities--All lines and their appurtenances within the highway right of way except those for highway-oriented needs, including underground, surface, or overhead facilities either singularly or in combination, which may be transmission, distribution, service, or gathering lines.

(47) Utility strip--The area of land established within a control of access highway, located longitudinally within the border width, where an assignment may be designated for a utility delineating the area of use, occupancy, and access.

(48) Utility structure--A pole, bridge, tower, or other aboveground structure on which a conduit, line, pipeline, or other utility is attached.

§21.32. Purpose. This subchapter prescribes the minimum requirements for the accommodation, method, materials, and location for the installation, adjustment, and maintenance of public and private utilities within the right of way of the state highway system. These requirements are provided in the interests of the safety, protection, use, and future development of highways with due consideration given to the public service afforded by adequate and economical utility installations.

§21.33. Applicability.

(a) For highways under department jurisdiction, the provisions of this subchapter concerning utility accommodation apply to:

- (1) new utility installations;
- (2) additions to or maintenance of existing utility installations;
- (3) adjustments or relocations of utilities; and
- (4) existing utility installations retained within the right of way.

(b) The provisions of this subchapter concerning utility accommodation do not apply to utilities located within the rights of way of completed highways for which agreements with the department were entered into before the effective date of this subchapter.

(c) This subchapter applies to utility lines not specifically mentioned in accordance with the nature of the line. All lines carrying caustic, flammable, or explosive materials shall conform to the provisions for high-pressure gas and liquid fuel lines.

(d) The district engineer or designee may prescribe special district requirements on a specific installation or adjustment based on the specific soil, terrain, climate, vegetation, traffic

characteristics, type of utility line, or other factors unique to the area.

§21.34. Scope. This subchapter governs matters concerning accommodation, location, and methods for the installation, adjustment, relocation, and maintenance of utilities on state highway rights of way, but do not alter current authority for their installation nor determination of financial responsibilities for placement or adjustment. Any law, code, regulation, rule, or order that prescribes a higher degree of protection for highway facilities or the traveling public shall supersede this subchapter. District supplemental accommodation requirements shall be detailed where more than the minimums of this subchapter are required. If a utility contests such supplemental requirements, they may appeal to the district engineer. The district engineer's decision may be appealed to the Maintenance Division or Right of Way Division, as appropriate.

§21.35. Exceptions.

(a) Exceptions to any provisions contained in these sections and relating to utility accommodation shall be justified and recommended for approval by the district engineer and authorized by:

(1) the Right of Way Division Director using the form entitled "Certification for Utility Accommodation" for all utilities occupying the right of way under a utility joint use agreement; or

(2) the Maintenance Division Director, when a Utility Installation Request form or any instrument other than a utility joint use agreement is received for a proposed utility installation on an existing highway.

(b) Requests for exceptions will be considered only where the utility shows that extreme hardship or unusual conditions provide justification and where alternate measures can be prescribed in keeping with the intent of this subchapter. All requests for exceptions must be fully documented with design data and other pertinent information.

(c) For each request for exception the utility must clearly demonstrate that:

(1) the accommodation will not adversely affect the safety, design, construction, operation, maintenance, or stability of the highway;

(2) the accommodation will not be constructed or serviced by direct access from the main lanes of a freeway or connecting ramps;

(3) the accommodation will not interfere with or impair the present use or future expansion of the highway; and

(4) any alternative location would be contrary to the public interest, demonstrated by an evaluation of the direct and indirect environmental and economic effects that would result from the disapproval of the proposed use of the right of way.

§21.36. Rights of Utilities.

(a) Under state law, certain utilities have a right to operate, construct, and maintain their lines over, under, across, on, or along highways, subject to highway purposes. This includes utilities authorized by law to transport or distribute natural gas, water, electric power, telephone, cable television, or salt water and those that are authorized to construct and operate common carrier petroleum and petroleum product lines.

(b) Private lines may cross, but are not permitted longitudinally on highway rights of way.

This includes privately-owned lines from gas or oil wells, lines owned by oil companies within refinery and oil storage complexes or by firms engaged in businesses other than those described in subsection (a) of this section, private purpose lines of an entity described in subsection (a) of this section, and service lines owned by individuals.

§21.37. Design.

(a) General. The design of any utility installation, adjustment, or relocation is the responsibility of the utility. Utility design will be accomplished in a manner and to a standard acceptable to the department. The location and manner in which a utility installation, adjustment, or relocation work will be performed within the right of way must be reviewed and approved by the department. The department will review the measures to be taken to preserve the safety and free flow of traffic, structural integrity of the highway or highway structure, ease of highway maintenance, appearance of the highway, and the integrity of the utility facility.

Utility installations shall conform with:

- (1) the requirements of this subchapter;
 - (2) the National Electrical Safety Code rules for the installation and maintenance of electric supply and communication lines;
 - (3) 23 CFR Part 645B, Accommodation of Utilities;
 - (4) 49 CFR Part 192, Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards;
 - (5) 49 CFR Part 195, Transportation of Hazardous Liquids by Pipeline;
 - (6) the latest American Society for Testing and Materials (ASTM) specifications;
 - (7) the latest edition of the Texas Manual on Uniform Traffic Control Devices;
 - (8) 30 TAC §§290.38-290.47, relating to Rules and Regulations for Public Water Systems;
- and
- (9) applicable state and federal environmental regulations, including storm water pollution prevention, endangered species, and wetlands.

(b) Location.

(1) Utility lines shall be located to avoid or minimize the need for adjustment for future highway projects and improvements, to allow other utilities equal access in the right of way, and to permit access to utility facilities for their maintenance with minimum interference to highway traffic.

(2) Longitudinal installations, if allowed, shall be located on uniform alignments to the right of way line to provide space for future highway construction and possible future utility installations.

(3) New utility lines crossing the highway shall be installed at approximately 90 degrees to the centerline of the highway.

(4) The horizontal and vertical location of utility lines shall conform with §21.41(c) of this subchapter, consistent with the clearances applicable to all roadside obstacles. No aboveground fixed objects will be allowed in the horizontal clearance.

(5) The utility is responsible for determining whether other utility lines exist at, or if plans have been submitted to the department regarding, the proposed installation area. The utility must make every effort to insure that the proposed installation is compatible with existing and approved future utilities.

(6) Utilities on controlled access highways or freeways shall be located to permit maintenance of the utility by access from frontage roads, nearby or adjacent roads and streets, or trails along or near the right of way line without access from the main lanes or ramps. Utilities shall not be located longitudinally in the center median or outer separation of controlled access highways or freeways.

(7) On highways with frontage roads, longitudinal utility installations may be located between the frontage road and the right of way line. Utility lines shall not be placed or allowed to remain in the center median, outer separation, or beneath any pavement, including shoulders.

(8) When a longitudinal installation is proposed within existing access denial lines of a controlled access highway or freeway without frontage roads and meets the conditions of §21.35 of this subchapter, the department may establish a utility strip, specific to the requesting utility, designating the area of use, occupancy, and access. All existing and proposed fences shall be located at the freeway right of way line. Denial of access regarding property adjoining the right of way line will not be altered.

(c) Plans. Utilities shall be responsible and accountable for protecting the public investment in the highway, inclusive of all its components, and to maintain traffic capacity and safety for each highway user.

(1) All utility installations shall be of durable materials designed for long life expectancy and relatively free from the need for routine servicing or maintenance. In addition to the requirements of this subchapter, any existing utility lines to remain in place must be of satisfactory design and condition in the opinion of the district.

(2) Utilities shall avoid disturbing existing drainage courses. In addition, soil erosion shall be held to a minimum and sediment from the construction site shall be kept away from the highway and drain inlets.

(3) Utility expansions shall be planned to minimize hazards to, and interference with, future highway projects or other utility installations.

(4) Plans shall include the design, proposed location, vertical elevations, and horizontal alignments of the utility facility based on the department's survey datum, the relationship to existing highway facilities and the right of way line, and location of existing utilities that may be affected by the proposed utility facility.

(5) As-built plans or certified as-installed construction plans shall include the installed location, vertical elevations, and horizontal alignments of the utility facility based upon the department's survey datum, the relationship to existing highway facilities and the right of way line, and access procedures for maintenance of the utility facility. As-installed construction plans certified by a utility or its representative shall be submitted to the department for each relocation or new installation. In the alternative, if approved by the director of the Maintenance Division or Right of Way Division, a district may require a utility to deliver either as-installed construction plans that are certified by an independent party or final as-built plans that are signed and sealed by an engineer or registered professional land surveyor. In determining whether to authorize a requirement for independently certified or signed and sealed plans, the director shall consider:

(A) the amount of available right of way or the proposed utility facility's proximity to department facilities and other utility facilities that may be impacted; and

(B) past performance of the utility in providing accurate location data and conformance

with its certified as-installed construction plans.

(6) If approved by the director of the Maintenance Division or the Right of Way Division, a district may require a utility to deliver plans that are signed and sealed by an engineer. In determining whether to authorize a requirement for signed and sealed plans, the director shall consider:

(A) the amount of available right of way or the proposed utility facility's proximity to department facilities or other utility facilities that may be impacted;

(B) the complexity of required traffic control plans;

(C) whether the installation or adjustment activity requires a storm water pollution prevention plan; and

(D) the utility's past performance in providing accurate location data and conformance with its construction plans.

(d) Tunnels and bridges.

(1) Interstate highways. In providing a utility tunnel or utility bridge, the requirements in subparagraphs (A) - (I) apply.

(A) Mutually hazardous transmittants, such as fuels and electric energy, shall be isolated by compartmentalizing or by auxiliary encasement of incompatible carriers.

(B) The utility tunnel or utility bridge structure shall conform in design, appearance, location, bury, earthwork, and markings to the culvert and bridge practices of the department.

(C) Where a pipeline on or in a utility structure is encased, the casing shall be effectively opened or vented at each end to prevent possible build up of pressure and to detect leakage of gases or fluids.

(D) Where a casing is not provided for a pipeline on or in a utility structure, additional protective measures shall be taken, such as employing a higher factor of safety in the design, construction, and testing of the pipeline than would be required for cased construction.

(E) Communication and electric power lines shall be insulated, grounded, and carried in protective conduit or pipe from the point of exit from the ground to reentry, and the cable carried to a manhole located beyond the backwall of the structure.

(F) Carrier and casing pipe for gas, liquid petroleum, hazardous product, and water lines shall be insulated from electric power line attachments.

(G) Sectionalized block valves shall be installed in lines at or near ends of utility structures, pursuant to 49 CFR §192.179, Transmission Line Valves, unless segments of the lines can be isolated by other sectionalizing devices within a distance acceptable to the department.

(H) Any maintenance, servicing, or repair of the utility lines will be the responsibility of the utility.

(I) The utility shall notify the district 48 hours in advance of any maintenance, servicing, or repair; however, in an emergency situation, the utility shall notify the district as soon as practicable.

(2) Non-interstate highways. If a utility's line exists on its own easement and it would be more economical to the department to adjust the line across a highway by use of a utility tunnel or bridge rather than to provide separately trenched and cased crossing, consideration should be given to provision of such a structure. Where the utility line was placed through an approved utility installation request and the adjustment of the utility is the sole responsibility of the utility owner, the department may allow for the provision of a utility structure without cost to the

department, provided the conditions outlined in subsection (a) of this section and all other pertinent requirements are met. If a structure is to serve as a joint utility/pedestrian crossing or a joint utility/sign support structure, the department will participate to the extent necessary for accommodation of pedestrians or highway signs only.

(e) Joint use of utility and highway structures.

(1) The attachment of utility lines to bridges and grade separation structures is prohibited if other locations are feasible and reasonable.

(2) Where other arrangements for a utility line to span an obstruction are not feasible, the utility may submit a request to the district for attachment of the line to a bridge structure through a bridge attachment agreement. Each attachment will be considered on an individual basis, and permission to attach will not be considered as establishing a precedent for granting of subsequent requests for attachment.

(A) When it is impractical to carry a self-supporting communication line across a stream or other obstruction, the department may permit the attachment of the line to its bridge. If approved on existing bridges, the line must be enclosed in a conduit and so located on the structure as not to interfere with stream flow, traffic, or routine maintenance operations. When a request is made before construction of a bridge, if approved, suitable conduits may be provided in the structure if the utility bears the cost of all additional work and materials involved.

(B) If it is the department's responsibility to provide for the adjustment of telephone lines or telephone conduits to accommodate the construction of a highway and the adjustment provides for the placement of telephone conduits in a bridge, the department will allow a reasonable number of spare telephone conduits in the structure if the spares are placed at the time of construction and the telephone company bears the cost of the spare conduits.

(C) A utility shall not attach gas or liquid fuel lines to a bridge without the written approval of the executive director.

(D) Power lines carrying greater than 600 volts shall not be permitted on bridges.

(E) When a utility is granted permission to attach a pipeline to a proposed bridge prior to construction, any additional costs associated with the design or construction to accommodate the pipeline are the responsibility of the utility.

(F) A utility requesting permission to attach a pipeline to an existing bridge shall submit sufficient information to allow the department to conduct a stress analysis to determine the effect of the added load on the structure. The department may require other details of the proposed attachment as they affect safety and maintenance

(f) Aesthetics. A utility will notify the department before removing, trimming, or replacing trees, bushes, shrubbery, or any other aesthetic features. The department must approve the extent and method of removal, trimming, or replacement of trees, bushes, shrubbery, or any other aesthetic feature.

§21.38. Construction and Maintenance.

(a) General.

(1) The provisions of this section apply to all utility types, unless otherwise specified in §21.40 and §21.41 of this subchapter.

(2) Utilities with facilities on the right of way shall be responsible and accountable to maintain and protect the safety of the traveling public and the public's investment in the highway

facility.

(3) When an existing approved utility requires maintenance, the utility shall notify the district 48 hours before the start of any work. In an emergency situation, the utility shall notify the district as soon as possible.

(4) The utility shall not cut into the pavement or concrete riprap without written permission from the department.

(5) Utilities shall reimburse the department for the cost of measures taken in the interest of public safety, restoration, clean-up, and repairs to the highway and right of way made necessary by the utility's failure to comply with the provisions of this subchapter.

(b) Vegetation and site clean-up.

(1) When utility installation is complete, the utility shall return the right of way to a condition, at a minimum, equal to its original condition, including reseeding or resodding to prevent erosion. After the area is brought to grade, the entire disturbed area shall be covered in accordance with the department's Standard Specifications for Construction and Maintenance of Highways Streets & Bridges.

(2) To preserve and protect trees, bushes, and other aesthetic features on the right of way, the department may specify the extent and methods of tree, bush, shrubbery, or any other aesthetic feature's removal, trimming, or replacement, in conjunction with paragraph (1) of this subsection. The district engineer shall use due consideration in establishing the value of trees and other aesthetic features in the proximity of a proposed utility line and any special district requirements justified by the value of the trees and other aesthetic features.

(3) If settlement or erosion occurs due to the actions of the utility, the utility shall, at its expense, reshape, reseed, or resod the area as directed by the department. Reseeding, resodding, or repair under this section shall be completed within a reasonable period of time acceptable to the department.

(4) Pruning of trees shall comply with the department's Roadside Vegetation Management Manual. When unapproved pruning or cutting occurs, the utility shall be responsible for the replacement of trees or for damages to existing trees and bushes.

(5) Highways adjacent to utility construction sites shall be kept free from debris, construction material, and mud. At the end of every construction day, construction equipment and materials shall be removed from the horizontal clearance, placed as far from the pavement edge as possible, and properly protected.

(6) The utility shall reimburse the department for all costs incurred to repair damage from the actions of the utility. These costs may include restoration of and repairs to roads, drives, terrain, landscaping, or fences.

(c) Traffic control.

(1) The utility shall be responsible for the safety of, and shall minimize disruption to, the traveling public with proper traffic control.

(2) Appropriate measures shall be taken in the interests of safety, traffic convenience, and access to adjacent property that meet the requirements of the department's Compliant Work Zone Traffic Control Device List. The utility shall place appropriate signs, markings, and barricades before beginning work and shall maintain them to warn motorists and pedestrians properly. All traffic control devices shall conform to the TMUTCD and the National Cooperative Highway Research Project Report 350.

(3) All utility pits opened within the horizontal clearance shall be properly protected, in compliance with National Cooperative Highway Research Project Report 350, with concrete traffic barriers, metal beam guard fencing, appropriate end treatments, or other appropriate warning devices.

(d) Work restrictions.

(1) The department reserves the right to halt construction or maintenance during hazardous situations, such as inclement weather, peak traffic hours, special events, or holidays, or for non-compliance with a Utility Joint Use Acknowledgement or Utility Installation Request. Requests for emergency maintenance shall be directed to the appropriate district office.

(2) If the department determines that the facility was not installed in the location shown on the approved construction plans, the department may require the utility to take appropriate corrective action as determined by the department.

§21.39. Ownership/Abandonment/Idling.

(a) General. When, due to a highway construction project, a utility is required to relocate its facility from property in which it owns a property interest, the department will acquire the utility's abandoned property interest within the new highway right of way.

(b) Change of ownership or function. If a utility sells, assigns, or conveys its facility to another company, the new owner must notify the department of the sale within a reasonable period of time and provide the name, address, and phone number of a person to be contacted on matters concerning the utility facility, and must update all call signs and markers within a reasonable period of time.

(c) Abandonment or idling of facility.

(1) Abandonment in place.

(A) A utility that wishes to abandon a utility facility in place must submit a written request to the district engineer for each type of facility. The request must include the following detailed information for each facility proposed for abandonment:

(i) offsets from property lines and the centerline of the highway;

(ii) coordinates based on the global positioning system (GPS) or a survey datum as directed by the department;

(iii) the age, condition, material type, current status, quantity, and size of the facility;

(iv) a legend explaining symbols, characters, abbreviations, scale, and other data shown on any as-built drawing or record mapping;

(v) a statement certifying that the facility does not contain, or is not composed of, hazardous or contaminated materials; and

(vi) any additional information requested by the department.

(B) If the district engineer approves the abandonment in place, the utility facility owner shall continue to map, locate, and mark its abandoned facilities as required by this subchapter, federal regulations, or standards adopted by industry organizations, whichever is more restrictive.

(C) Abandonment shall not be construed as a change in ownership of the facility.

(2) Abandonment costs and restoration of public right of way. The utility shall be responsible for all costs associated with the maintenance or removal of its abandoned or idled lines within the right of way, unless adjustment of the line is the financial responsibility of the

department.

(3) Voids. Significant voids beneath the right of way are prohibited. The department, at the discretion of the district engineer, may require that a facility be filled with cement slurry or backfilled in accordance with department standards.

(4) High and low pressure gas pipeline abandonment. Each owner/operator shall conduct abandonment or deactivation of pipelines within the right of way in compliance with the requirements of this section, current federal, state, or local laws or codes, or industry standards, whichever are more stringent. If the line is approved for abandonment, the utility shall:

(A) purge, cut, and cap or plug the ends of all facilities at the right of way lines;

(B) submit to the department a written certification that the abandonment conforms with all requirements of this section, current federal, state, or local laws or codes, or industry standards, whichever are more stringent;

(C) slurry-fill the facility, if the department determines it is needed due to the age, condition, material type, quantity, and size of the facility; and

(D) disconnect each pipeline from all sources and supplies of gas, purge each pipeline of gas and, in the case of submerged pipelines, fill each pipeline with water or other approved materials, and seal it at the ends.

(5) Abandoned service lines or lines not in use. For each service line approved for abandonment, the utility shall:

(A) provide a locking device or other means designed to prevent opening on each valve that is closed, to prevent the flow of gas to the customer;

(B) install in the service line or in the meter assembly a mechanical device or fitting that will prevent the flow of gas;

(C) physically disconnect the customer's piping from the gas supply and seal the open pipe ends;

(D) insure that a combustible mixture is not present after purging; and

(E) fill each abandoned vault with a suitable compacted material.

(6) Record keeping for abandoned facilities. A record of underground utility facilities abandoned in the right of way shall be maintained in a utility's permanent files until the facility is completely removed from the ground, and shall be provided to the department promptly upon request. This record must include:

(A) offsets from property lines and the centerline of the right of way;

(B) coordinates derived from the global positioning system being used by the department or a survey datum as directed by the department;

(C) the type, quantity, and size of the equipment;

(D) a legend explaining symbols, characters, abbreviations, scale, and other data shown on map;

(E) the location of the abandoned facilities; and

(F) any additional information requested by the department.

§21.40. Underground Utilities.

(a) General.

(1) Encasement.

(A) Underground utilities crossing the highway shall be encased in the interest of safety,

protection of the utility, protection of the highway, and for access to the utility. Casing shall consist of a pipe or other separate structure around and outside the carrier line. The utility must demonstrate that the casing will be adequate for the expected loads and stresses.

(B) Casing pipe shall be steel, concrete, or plastic pipe as approved by the district, except that if horizontal directional drilling is used to place the casing, high-density polyethylene (HDPE) pipe must be used in place of plastic pipe.

(C) Encasement may be of metallic or non-metallic material. Encasement material shall be designed to support the load of the highway and superimposed loads thereon, including that of construction machinery. The strength of the encasement material shall equal or exceed structural requirements for drainage culverts and it shall be composed of material of satisfactory durability for conditions to which it may be subjected. The length of any encasement under the roadway shall be provided from top of backslope to top of backslope for cut sections, five feet beyond the toe of slope for fill sections, and five feet beyond the face of the curb for curb sections. These lengths of encasement include areas under center medians and outer separations, unless otherwise specifically addressed in subsections (b)–(f) of this section.

(D) The department will provide an example graphic upon request of a typical section showing encasement lengths

(2) Depth. Where placements at the depths in this section are impractical or where unusual conditions exist, the department may allow installations at a lesser depth, but will require other means of protection, including encasement or the placement of a reinforced concrete slab.

Reinforced concrete slabs or caps shall meet the following standards:

- (A) width — five feet, or three times the diameter of the pipe, whichever is greater;
- (B) thickness — six inches, at minimum;
- (C) reinforcement -- #4 bars at 12 inch centers each way or equivalent reinforcement; and
- (D) cover — no less than six inches of sand or equivalent cushion between the bottom of the slab/cap and the top of the pipe.

(3) Manholes and handholds.

(A) Manholes shall not be installed unless necessary for installation and maintenance of underground lines. In no case shall a manhole be placed or permitted to remain in the pavement or shoulder of a highway. However, on noncontrolled access highways in urban areas, the district may, in its discretion, allow existing lines to remain in place under existing or proposed highways. In these cases, manholes may remain in place or be installed under traffic lanes of low volume highways in municipalities only if measures are taken to minimize the installations and to avoid locating them at intersections or in wheel paths.

(B) To conserve space, a manhole's dimensions shall be the minimum acceptable by appropriate engineering and safety standards. The only equipment that may be installed in manholes located on the right of way is that essential to the normal flow of the utility, such as circuit reclosers, cable splices, relays, valves, and regulators. Other equipment, such as substation equipment, large transformers, and pumps, shall be located outside the right of way.

(C) Inline manholes are the only type permitted within the right of way. The width dimensions shall be no larger than necessary to hold equipment involved and to meet safety standards for maintenance personnel. Outside width, the dimension of the manhole perpendicular to the highway, shall not exceed ten feet, with the length to be held to a reasonable minimum. The outside diameter of the manhole chimney at the ground level shall not exceed 36

inches, except that if the utility demonstrates necessity, the district may, at its discretion, allow an outside diameter of up to 50 inches. The top of the roof of the manhole shall be five feet or more below ground level.

(D) All manhole covers shall be installed flush with the ground or pavement structure. In order to minimize vandalism, manhole covers must weigh at least 175 pounds. Manhole rings and covers must be designed for HS-20 loading.

(E) Manholes shall be straight, inline installations with a minimum overall width necessary to operate and maintain the enclosed equipment. The utility is responsible for any adjustment of the manhole rim that may be needed to meet grade changes.

(4) Installation.

(A) Lines placed beneath any existing highway shall be installed by boring or tunneling. Jacking may not be used unless approved in writing by the district. The district may require encasement of lines installed by boring or jacking. The use of explosives is prohibited. Pipe bursting or fluid/mist jetting may be allowed at the discretion of the department.

(B) For rural, uncurbed highway crossings, all borings shall extend beneath all travel lanes. Unless precluded by right of way limitations, the following clearances are required for rural highway crossings:

(i) 30 feet from all freeway main lanes and other high-speed (exceeding 40 mph) highways except as indicated in clauses (ii)-(iv) of this subparagraph;

(ii) 16 feet for high-speed highways with current average daily traffic volumes of 750 vehicles per day or fewer;

(iii) 16 feet for ramps; or

(iv) ten feet for low-speed (40 mph or less) highways.

(C) Annular voids greater than one inch between the bore hole and carrier line (or casing, if used) shall be filled with a slurry grout or other flowable fill acceptable to the department to prevent settlement of any part of the highway facility over the line or casing.

(D) For curbed highway crossings, all borings shall extend beneath travel and parking lanes and extend beyond the back of curb, plus:

(i) 30 feet from facilities with speed limits of 40 mph or greater; or

(ii) five feet from facilities with speed limits of less than 40 mph or less, plus any additional width necessary to clear an existing sidewalk.

(E) Where circumstances necessitate the excavation of a bore pit or the presence of directional boring equipment closer to the edge of pavement than set forth in paragraphs (2) or (3) of this subsection, approved protective devices shall be installed for protection of the traveling public in accordance with §21.38 of this subchapter. Bore pits shall be located and constructed in such a manner as not to interfere with the highway structure or traffic operations. If necessary, shoring shall be utilized for the protection of the highway, and must be approved by the district.

(F) All traffic control devices, including signs, markings, or barricades used to warn motorists and pedestrians of the construction activity must conform to the TMUTCD.

(G) When trenching longitudinally, backfill or stabilized sand shall be compacted to densities equal to that of the surrounding soil.

(5) Nonmetallic pipe detection. Where nonmetallic pipe is installed, whether longitudinally or at a crossing, a durable metal wire or other district-approved means of detection shall be

concurrently installed.

(6) Unsuitable conditions. The following conditions are generally unsuitable or undesirable for pipeline crossings and shall be avoided:

- (A) deep cuts;
- (B) locations near footings or bridges and retaining walls;
- (C) crossing intersections at-grade or ramp terminals;
- (D) locations at cross-drains where the flow of water may be obstructed;
- (E) locations within basins or underpasses drained by pump if the pipeline carries a liquid or liquefied gas; or
- (F) terrain where minimum depth of cover would be difficult to attain.

(7) Clearances. Except as specified in this subchapter, there shall be a minimum of 12 inches vertical and horizontal clearance between a pipeline and an existing utility, unless a greater clearance is required by the district. However, if an installation of another utility or highway feature cannot take place without disturbing an existing utility, the minimum clearance will be 24 inches.

(8) Crossings. A district may require crossings with no longitudinal connections to be encased within the right of way.

(9) Drainage easements. Where it is necessary for pipelines to cross department drainage easements outside of the right of way, the depth of cover shall be as specified for each type of utility. In cases where soil conditions are such that erosion might occur, or where it is not feasible to obtain specified depth, it shall be the responsibility of the utility to install retards, energy dissipators, encasement, or concrete or equivalent slabs/caps over the pipe, as approved by the department. Where grades on the pipelines must be maintained, such as gravity flow sewer lines, each case will be reviewed on an individual basis, keeping in mind that the main purpose of the channel is to carry drainage water and that this flow must not be obstructed. The utility owner is responsible for obtaining any other approvals to occupy the drainage easement.

(10) Existing installations in a highway or transportation project. At the district's discretion, existing longitudinal lines in a highway or transportation project that otherwise meet the requirements of this subchapter may remain in place if the lines:

- (A) can be maintained in accordance with §21.37(b)(2) of this subchapter; and
- (B) are not located under the pavement structure or shoulder of any proposed or existing highway.

(11) Markers. If a high pressure gas or liquid petroleum line crosses a highway, the utility shall place a readily identifiable, durable, and weatherproof marker over the centerline of the pipe at each right of way line. Readily identifiable, durable, and weatherproof markers shall be placed at a minimum distance of 500 feet or line of sight at the right of way line for pipelines installed longitudinally within the right of way. All markers shall indicate the name, address, emergency telephone number of the owner/operator, and offset from the right of way line. For gas or petroleum pipelines, the pipeline product, operating pressure, and depth of pipe below grade shall also be indicated on the markers. At locations where underground utilities have been allowed to cross at an angle other than 90 degrees to centerline, the district may require additional markers in the medians and outer separations of the highway.

(12) Backfilling. Underground utility installations shall be backfilled with pervious material and outlets for underdrainage.

(13) Underdrainage. Underdrains shall be provided where necessary. No puddling beneath the highway will be permitted.

(b) Gas and liquid petroleum lines.

(1) Low-pressure lines.

(A) Depth of cover for crossings. Depth of cover is the depth to the top of the carrier pipe or casing, as applicable. Where materials and other conditions justify, such as on existing lines remaining in place, the district may require a minimum depth of cover under the pavement structure of 12 inches or one-half the diameter of the pipe, whichever is greater.

(i) For encased low-pressure gas lines, the minimum depth of cover shall be:

(I) 18 inches or one-half the diameter of the pipe, whichever is greater, under pavement structure;

(II) 24 inches outside pavement structure and under ditches (original unsilted flowline);
or

(III) 30 inches for unencased sections of encased lines outside of pavement structure.

(ii) For unencased low-pressure gas lines, the minimum depth of cover shall be:

(I) 60 inches under the pavement surface or 18 inches under the pavement structure for paved areas;

(II) 48 inches outside paved areas and under ditches (original unsilted flowline); or

(III) a lesser depth if authorized by the district where a reinforced concrete slab is used to protect the pipeline.

(B) Depth of cover for longitudinal placement. The minimum depth of cover for longitudinal installations shall be 36 inches.

(C) Encasement. Low-pressure gas lines crossing the pavement shall be placed in a steel encasement. The district may waive this encasement requirement if the line is of welded steel construction and is protected from corrosion by cathodic protective measures or cold tar epoxy wrapping, and the utility signs a written agreement that the pavement will not be cut for pipeline repairs at any time in the future.

(D) Vents. One or more vents shall be provided for each casing or series of casings. For casings longer than 150 feet, vents shall be provided at both ends. On shorter casings, a vent shall be located at the high end with a marker placed at the low end. Vents shall be placed at the right of way line immediately above the pipeline, situated so as not to interfere with highway maintenance or be concealed by vegetation, and shall be no greater than six inches in diameter. The owner's name, address, and emergency telephone number shall be shown on each vent.

(E) Plastic lines. Plastic lines shall be encased within the right of way on crossings, and must have at least 30 inches of cover.

(F) Aboveground appurtenances. Except for vents, no above ground utility appurtenances for gas lines shall be permitted within the right of way.

(2) High-pressure lines.

(A) Depth of cover for crossings.

(i) Depth of cover is the depth to the top of the carrier pipe or casing, as applicable. Where materials and other conditions justify, such as on existing lines remaining in place, the district may approve a minimum depth of cover under the pavement structure of 12 inches or one-half the diameter of the pipe, whichever is greater. For encased high-pressure gas or liquid petroleum lines, the minimum depth of cover shall be:

(I) the greater of 18 inches or one-half the diameter of the pipe, under pavement structures;

(II) 30 inches if the line is outside the pavement structure or under a ditch; or

(III) 36 inches for unencased sections of encased lines outside the pavement structure.

(ii) Where a reinforced concrete slab is used to protect the pipeline, the district may authorize a reduction in the depths specified in this section. For unencased high-pressure gas or liquid petroleum lines, the minimum depth of cover is as follows:

(I) 60 inches under the pavement surface or 18 inches under the pavement structure in paved areas; or

(II) 48 inches if the line is placed outside the pavement structure or under a ditch.

(B) Depth of cover for longitudinal placement. The minimum depth of cover shall be 48 inches.

(C) Encasement. Casing shall consist of a vented steel pipe.

(D) Unencasement.

(i) Where encasement is not employed, the utility shall show that the welded steel carrier pipe will provide sufficient strength to withstand the internal design pressure and the dead and live loads of the pavement structure and traffic. Additional protective measures must include:

(I) heavier wall thickness, higher factor of safety in design, or both;

(II) adequate coating and wrapping;

(III) cathodic protection; and

(IV) the use of Barlow's formula regarding maximum allowable operating pressure and wall thickness, as specified in 49 CFR §192.105.

(ii) Shallow anode bed types exceeding 48 inches in width shall not be permitted in the right of way. All others must have a depth of coverage of at least 36 inches. Deep well anode beds of up to 60 inches in diameter are acceptable. Rectifier and meter loop poles shall be placed at or near the right of way line.

(iii) The minimum length of the additional protection shall be the same as that required for an encased crossing.

(iv) The district may allow existing lines under low-volume highways to remain in place without encasement or extension of encasement if they are protected by a reinforced concrete slab or equivalent protection or if they are located at a depth of five feet under the pavement structure and not less than four feet under a highway ditch.

(E) Vents. Vents shall be installed at both ends of a casing, regardless of length, with a marker on at least one end. Vents shall be placed at the right of way line immediately above the pipeline, situated so as not to interfere with highway maintenance or be concealed by vegetation. The owner's name, address, and emergency telephone number shall be shown on each vent marker.

(F) Aboveground appurtenances. Aboveground appurtenances, except vents for gas lines, shall not be permitted within the right of way.

(c) Water lines.

(1) Material type. All material types used for water lines shall conform to American Waterworks Association, applicable local requirements, and 30 TAC §290.44(a).

(2) Depth of cover. The minimum depth of cover shall be 30 inches, but not less than 18 inches below the pavement structure for crossings.

(3) Encasement. Unless another type of encasement is approved by the district, water lines crossing under paved highways must be placed in a steel encasement pipe within the limits of the right of way. At the district's discretion, encasement may be omitted under center medians and outer separations that are more than 76 feet wide. At the district's discretion, encasement under side road entrances may be omitted in consideration of traffic volume, condition of highway, maintenance responsibility, or district practice. Existing water lines 24 inches or greater may be allowed to remain unencased under the pavement of new low volume highways, provided depth and all other requirements of 30 TAC §290.44 are met.

(4) Manholes. The width dimensions shall be no larger than is necessary to hold equipment involved and to meet safety standards for maintenance personnel. The maximum inside diameter of the manhole chimney shall not exceed 48 inches. The outside diameter of the manhole chimney at the ground level shall not exceed 36 inches.

(5) Aboveground appurtenances.

(A) Fire hydrants and valves. When feasible, fire hydrants and blow-off valves are to be located at the right of way line. Fire hydrants shall not be placed in the sidewalk or any closer than five feet from the back of the curb. Valve locations shall be placed so as not to interfere with maintenance of the highway.

(B) Water meters. Individual service meters shall be placed outside the limits of the right of way. Master meters for a point of service connection may be placed in a manhole with a maximum width of 48 inch inside diameter. If additional volume is required, a manhole with a neck of 60-inch depth must be used.

(C) Service lines crossing highway by bore. Lines for customer service that cross the highway may be placed in a high-density polyethylene (HDPE) encasement pipe without joints (rolled pipe).

(d) Nonpotable water control facilities.

(1) Applicability. This subsection applies to agricultural irrigation facilities, water control improvement districts, municipal utility districts, flood control districts, canals, and similar nonpotable water control facilities.

(2) Depth of cover for buried pipe facilities. The minimum depth of cover, regardless of type of pipe used, shall be 30 inches, but not less than 18 inches below any pavement structure.

(3) Encasement for buried pipe facilities. Unless the district approves another type of encasement, all non-potable water control lines crossing under paved highways within the right of way must be placed in a steel encasement pipe. At the district's discretion, encasement may be omitted under center medians and outer separations that are more than 76 feet wide.

(4) Location and design requirements. Open ditch facilities and buried pipe facilities designed and constructed in accordance with this subchapter may be installed across the right of way. Longitudinal buried pipe facilities installed within the right of way must conform with §21.41(c) of this subchapter, consistent with the clearances applicable to all roadside obstacles. Open ditch facilities shall not be installed longitudinally within the right of way, nor will any aboveground appurtenances be permitted within the horizontal clearance.

(5) Levee/ditch travel road location. Coordination with and approval by the district is required where levee/ditch travel roads intersect the highway.

(e) Sanitary sewer lines.

(1) Material type. All material types used for sanitary sewer lines shall conform to 30 TAC

§317.2 and applicable local requirements.

(2) Depth of cover. The minimum depth of cover shall be 30 inches, but not less than 18 inches below any pavement structure.

(3) Encasement. Pressurized line crossings under paved highways within the limits of the right of way shall be placed in a steel encasement pipe. Gravity flow lines not conforming to the minimum depth of cover shall be encased in steel or concrete. At the district's discretion, encasement may be omitted under center medians and outer separations that are more than 76 feet wide.

(4) Manholes. Manholes serving sewer lines up to 12 inches shall have a maximum inside diameter of 48 inches. For lines larger than 12 inches, the manhole inside diameter may be increased an equal amount, up to a maximum diameter of 60 inches. Manholes for large interceptor sewers shall be designed to keep the overall dimensions to a minimum. The outside diameter of the manhole chimney at the ground level shall not exceed 36 inches.

(5) Lift stations. Lift stations and pump stations for sanitary sewer lines exceeding 48 inches inside diameter shall be located outside the limits of right of way.

(f) Electric and communication Lines.

(1) Underground electric lines.

(A) Depth of cover. All underground electric lines placed within the right of way may be installed by direct bury at depths according to the voltage of electric lines as required by the National Electrical Safety Code and as shown in the following chart. Figure §21.40(f)(1)(A) Figure §21.40(f)(1)(A): Minimum Depth of Cover by Voltage

Voltage	Minimum Depth of Cover
22,000 or less	30 inches
22,001 to 40,000	36 inches
40,001 and greater	42 inches

(B) Encasement. Electric lines crossing the roadway shall be encased in steel or comparable material greater than or equal to that of ductile iron, with satisfactory joints, or materials and designs that will provide equal or better protection of the integrity of the highway system and resistance to damage from corrosive elements to which they may be exposed. The lines shall be buried a minimum of 36 inches under highway ditches, and 60 inches below the pavement structure. Encasement shall be provided as outlined in this section.

(C) Installation. Longitudinal underground electric lines may be placed by plowing or open trench method. All plowing and trenching shall be performed in a uniform alignment with the right of way. If the installation of the facility is found to deviate from the approved location, the district, at its sole discretion, may require the adjustment of the facility to the approved location. The utility facility shall be located as set forth in §21.37(b) of this subchapter.

(D) Aboveground appurtenances.

(i) Aboveground appurtenances installed as part of an underground electric line shall be located at or near the right of way line, and shall not impede highway maintenance or operations.

(ii) Structures that are larger in plan view than single poles may be placed on the right of way if:

- (I) the installation will not hinder highway maintenance operations;
- (II) the housing will be placed at or near the right of way line;

(III) the installation will not reduce visibility and sight distance of the traveling public;
(IV) the dimensions of the housing are minimized, particularly where the need to allow space for highway improvement or accommodation of other utility lines is apparent;

(V) the outside width, length (longitudinal with respect to the right of way), and height dimensions of the aboveground portion of the housing do not exceed 36 inches, 60 inches, and 54 inches respectively;

(VI) the supporting slab does not project more than three inches above the ground line, nor extend more than 12 inches on either side of the housing structure; and

(VII) the installation will be compatible with adjacent land uses.

(E) Manholes. Manholes serving electric and communication lines shall conform to the requirements of this section.

(F) Abandonment. Underground electric lines may be abandoned in place at the discretion of the district.

(2) Underground communication lines.

(A) Longitudinal. The minimum depth of cover for cable television and copper cable communications lines shall be 24 inches. The minimum depth of cover for fiber optic facilities shall be 42 inches. If the owner/operator of a fiber optic facility waives damages and fully indemnifies the department in a form acceptable to the department, the minimum depth of cover may be reduced to not less than 36 inches.

(B) Crossings.

(i) The minimum depth of cover for cable television and copper cable communication lines shall be 24 inches under ditches or 18 inches beneath the bottom of the pavement structure, whichever is greater.

(ii) The top of the fiber optic facility shall be placed a minimum of 42 inches below the ditch grade or 18 inches below the pavement structure or 60 inches below the top of the pavement surface, whichever is greater. The department may authorize a minimum depth of cover of not less than 36 inches below the ditch grade or 60 inches below the top of the pavement surface, whichever is greater, if the owner/operator waives damages and fully indemnifies the department in a form acceptable to the department.

(iii) The department may require encasement or other suitable protection when necessary to protect the highway facility when the line is located:

(I) at less than minimum depth;

(II) near the footing of a bridge or other highway structure; or

(III) near another hazardous location.

(iv) Unless the line is encased, installation shall be accomplished by boring a hole the same diameter as the line. The annular void between a drilled hole and the line or casing shall be filled with a material approved by the district to prevent settlement of any part of the highway facility over the line or casing.

(C) Installation. Lines may be placed by plowing or open trench method and shall be located on uniform alignment with the right of way and as near as practical to the right of way line to provide space for possible future highway construction and for possible future utility installations.

(D) Multiple conduits.

(i) Shared conduits. When an existing utility rents, leases, or sells conduit usage to

another utility, the new utility and the conduit owner must submit a joint Utility Installation Request before placement of a new line within the conduit.

(ii) Additional conduits. No more than two additional empty conduits may be added for every full conduit line, unless otherwise approved by the district.

(E) Aboveground appurtenances.

(i) Aboveground pedestals or other utility appurtenances installed as a part of an underground communication line shall be located at or near the right of way line, so as not to impede highway maintenance or operations.

(ii) Large equipment housings. Structures that are larger in plan view than single poles may be placed on the right of way if:

- (I) the installation will not hinder highway maintenance operations;
- (II) the housing will be placed at or near the right of way line;
- (III) the installation will not reduce visibility and sight distance of the traveling public;
- (IV) the dimensions of the housing are minimized, particularly where the need to allow space for highway improvement and accommodation of other utility lines is apparent;
- (V) outside width, length (longitudinal), and height dimensions of the aboveground portion of the housing do not exceed 36 inches, 60 inches, and 54 inches respectively;
- (VI) the supporting slab does not project further than three inches above ground line, nor extend further than 12 inches on either side of the housing structure; and
- (VII) the installation will be compatible with adjacent land uses.

(F) Abandonment. Underground communication lines may be abandoned in place at the discretion of the district.

§21.41. Overhead Electric and Communication Lines.

(a) Type of construction. Longitudinal lines on the right of way shall be limited to single pole construction. Where an existing or proposed utility is supported by "H" frames, the same type structures may be utilized for the crossing provided all other requirements of this subchapter are met.

(b) Vertical clearance. The minimum vertical clearance above the highway shall be 22 feet for electric lines, and 18 feet for communication and cable television lines. These clearances may be greater, as required by the National Electric Safety Code and governing laws.

(c) Horizontal clearances. The following table indicates the design values for horizontal clearances: Figure §21.41(c)

Figure §21.41(c): Horizontal Clearances

Horizontal Clearances ¹				
Location	Functional Classification	Design Speed (mph)	Avg. Daily Traffic ²	Horizontal Clearance Width (ft) ^{3, 4, 5} Minimum Desirable
Rural	Freeways	All	All	30
Rural	Arterial	All	0 - 750	10 16
			750 - 1500	16 30
			>1500	30 -

Rural	Collector	≥50 ≤45	All All	Use above rural arterial criteria. 10 -
Rural	Local	All	All	10 -
Suburban	All	All	<8,000	106 106
Suburban	All	All	8,000 - 12,000	106 206
Suburban	All	All	12,000 - 16,000	106 256
Suburban	All	All	>16,000	206 306
Urban	Freeways	All	All	30
Urban	All (curbed)	≥50	All	Use above suburban criteria insofar as available border width permits.
Urban	All (curbed)	≤45	All	1.5 from curb face 3.0
Urban	All (uncurbed)	≥50	All	Use above suburban criteria.
Urban	All (uncurbed)	≤45	All	10 -
1 Because of the need for specific placement to assist traffic operations, devices such as traffic signal supports, railroad signal/warning device supports, and controller cabinets are excluded from horizontal clearance requirements, but must be located outside of the prescribed horizontal clearances or protected by a barrier.				
2 Average ADT over project life, i.e., 0.5 (present ADT and future ADT). Use total ADT on two-way highways and directional ADT on one-way highways.				
3 Without barrier or other safety treatment of appurtenances.				
4 Measured from edge of travel lane for all cut sections and for all fill sections where side slopes are 6:1 or flatter. Where fill slopes are steeper than 6:1, it is desirable to provide a hazard-free area beyond the toe of slope.				
5 Desirable, rather than minimum, values should be used where feasible.				
6 Purchase of 5 feet or less of additional right of way strictly for satisfying horizontal clearance provisions is not required.				
7 16 feet for ramps.				

(d) Location.

(1) Poles supporting longitudinal lines shall be located within three feet of the right of way line, except that, at the option of the department, this distance may be varied at short breaks in the right of way line. Poles with bases greater than 36 inches in diameter shall not be placed within the right of way. Guy wires placed within the right of way shall be held to a minimum and be in line with the pole line. Other locations may be allowed, but in no case shall the guy wires or poles be located closer than the minimum allowed by the department's horizontal clearance policy, as shown in subsection (c) of this section.

(2) Poles shall not be placed in the center median of any highway. At the department's discretion, poles may be placed in the outer separations or more than three feet inside the right of way where the right of way is greater than 300 feet and where poles can be located in accordance with the department's horizontal clearance policy, as shown in subsection (c) of this section.

(3) Overhead electric, communication, and cable television line crossings at bridges or grade separation structures are prohibited. Overhead lines shall not be located below any bridge structure. If rerouting the line completely around the structure and approaches is not feasible, a minimum horizontal distance of 150 feet from the bridge abutment joint and a minimum vertical clearance of 30 feet above the point of crossing the bridge pavement and retaining walls is required to ensure adequate safety for construction and maintenance operations.

(e) Markers. Utility poles must bear readily identifiable plaques or other approved markers denoting ownership and use, at a distance of approximately one pole per 1,320 feet, as equally spaced as practicable, and at every crossing, in a format acceptable to the department. Each company connecting to a pole shall appropriately identify its use of the pole. There shall be a beginning and end marker for each user of the pole line.