(A) Depth of cover for crossings.

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(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.

extension of encasement if they are protected by a reinforced concrete slab of 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.

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.

Attached Graphic

(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.

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

(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.

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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

(i) Shared conduits. When an existing utility rents, leases, or sells conduit usage to another utility, the new utility and the conduit owner must jointly submit a use and occupancy agreement 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.

Source Note: The provisions of this §21.40 adopted to be effective March 17, 2005, 30 TexReg 1455; amended to be effective December 11, 2008, 33 TexReg 10064

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TITLE 43	TRANSPORTATION
PART 1	TEXAS DEPARTMENT OF TRANSPORTATION
CHAPTER 21	RIGHT OF WAY
SUBCHAPTER C	UTILITY ACCOMMODATION
RULE §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:

Attached Graphic

(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.

Source Note: The provisions of this §21.41 adopted to be effective March 17, 2005, 30 TexReg 1455

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TITLE 43	TRANSPORTATION
PART 1	TEXAS DEPARTMENT OF TRANSPORTATION
CHAPTER 21	RIGHT OF WAY
SUBCHAPTER C	UTILITY ACCOMMODATION
RULE §21.52	**Forms--General**

(a) Use and occupancy agreement forms are required for use for utility facilities installed, adjusted, relocated, or retained within highway right of way. These forms provide for a definite understanding as to the location and manner in which utilities will be installed and/or maintained and, where applicable, provide the necessary rights needed by the state to occupy the property interests held by the utility company. No term or condition of a use and occupancy agreement will be construed to grant, convey, or extinguish an interest in real property held by either the state or a utility.

(b) On highway routes within the corporate limits of municipalities all utility installations are to be in accordance with this part and subject to the state's approval.

(c) Other forms are also provided for conveyance of utility company property interests to the state when such interests within highway rights of way are abandoned.

Source Note: The provisions of this §21.52 adopted to be effective January 1, 1976; amended to be effective December 11, 2008, 33 TexReg 10064

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SUBCHAPTER C	UTILITY ACCOMMODATION
RULE §21.53	**Joint Use Agreement Forms**

(a) Joint use agreement forms are to be used when a utility has a prior property interest which is being retained within the highway right of way, and:

(1) when in connection with active highway projects an adjusted or relocated utility facility occupies that part of the highway right of way; or

(2) when a utility facility is retained within that part of the highway right of way without adjustment unless the utility has a previously approved department joint use agreement covering the right of way limits and which includes provisions for control of access when applicable.

(b) These forms shall include such terms, conditions, and utility location plans as may be prescribed by the director of the Right of Way Division to convey necessary information in order to protect and preserve the state highway system and the safety, health, and welfare of its use by the traveling public. Utility location plans shall be in accordance with the requirements contained in this subchapter concerning utility accommodation.

Source Note: The provisions of this §21.53 adopted to be effective January 1, 1976; amended to be effective May 29, 1989, 14 TexReg 2366; amended to be effective March 15, 2001, 26 TexReg 2055; amended to be effective December 11, 2008, 33 TexReg 10064

Texas Administrative Code

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CHAPTER 21	RIGHT OF WAY
SUBCHAPTER C	UTILITY ACCOMMODATION
RULE §21.54	**Use and Occupancy Agreement Forms**

(a) Use and occupancy agreement forms, other than joint use agreements, are to be used:

(1) for new utility installation after highway construction is completed;

(2) for new utility installation placed before or during highway construction except where the utility has a compensable property interest;

(3) when in connection with active highway projects an adjusted or relocated utility facility occupies part of the highway right of way; or

(4) when a utility facility is retained within the highway right of way without adjustment unless the utility has a previously approved department use and occupancy agreement covering the right of way limits and which includes provisions for control of access when applicable.

(b) These forms shall include such terms, conditions, and utility location plans, as may be prescribed by the director of the Maintenance Division to convey necessary information in order to protect and preserve the state highway system and the safety, health, and welfare of its use by the traveling public. Utility location plans shall be in accordance with the requirements contained in this subchapter concerning utility accommodation.

(c) In addition to the requirements in subsection (b) of this section, the district engineer may prescribe special district requirements which will be justified based on the specific soil, terrain, weather, vegetation, trees, traffic characteristics, type of utility line, or other factors unique to the area.

(d) The district engineer is authorized to approve all use and occupancy agreement forms, other than joint use agreements, except those on utility bridges, attachments to highway structures, or those which include exceptions as cited in §21.35 of this subchapter.

Source Note: The provisions of this §21.54 adopted to be effective January 1, 1976; amended to be effective May 29, 1989, 14 TexReg 2366; amended to be effective March 15, 2001, 26 TexReg 2055; amended to be effective December 11, 2008, 33 TexReg 10064

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RULE §21.55	**Abandoned Interests**

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.

Source Note: The provisions of this §21.55 adopted to be effective January 1, 1976; amended to be effective December 11, 2008, 33 TexReg 10064

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SUBCHAPTER C	UTILITY ACCOMMODATION
RULE §21.56	**Metric Equivalents**

All English units of measurement referenced in §§21.31-21.55 of this title (relating to Utility Accommodations) may be converted to metric equivalents as shown in Appendix A.

Attached Graphic

Source Note: The provisions of this §21.56 adopted to be effective July 9, 1996, 21 TexReg 5980; amended to be effective December 13, 1998, 23 TexReg 12474.

SOAH DOCKET NO. 473-10-5546
PUC DOCKET NO. 38354

APPLICATION OF LCRA TRANSMISSION SERVICES CORPORATION TO AMEND ITS CERTIFICATE OF CONVENIENCE AND NECESSITY FOR THE MCCAMEY D TO KENDALL TO GILLESPIE 345-KV CREZ TRANSMISSION LINE IN SCHLEICHER, SUTTON, MENARD, KIMBLE, MASON, GILLESPIE, KERR, AND KENDALL COUNTIES	§	**BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS**

LCRA TRANSMISSION SERVICES CORPORATION'S RESPONSE TO CLEAR VIEW ALLIANCE'S FOURTH REQUEST FOR INFORMATION

Question No. 4-22:

Did Mr. Symank or anyone else at LCRA TSC initiate any formal or informal inquiry within LCRA TSC to determine whether the professional experience of any engineer currently employed by LCRA TSC included a work assignment involving design or construction of a high voltage transmission line parallel to a US highway or interstate highway? If not, why not? If so, what was the result of that inquiry?

Response No. 4-22:

Note, LCRA TSC has no employees. Please see the testimony of Sara Morgenroth on page 7. LCRA TSC assumes that this question refers to employees of LCRA.

No, such an inquiry was not necessary. Please refer to the answer to Question 4-15. Mr. Symank and several other current LCRA design engineers have experience designing and constructing transmission lines in close proximity to TXDOT facilities, including paralleling, overlapping, and crossing.

Mr. Symank has experience involving reconstructing LCRA TSC's transmission line with structures actually in IH35 between the frontage lanes and mainlanes. These structures, however, were not an exception granted by TXDOT. They predated the interstate highway and the highway was designed to coexist.

Preparer: Curtis Symank Title: Engineering Supervisor, LCRA
Sponsor: Curtis Symank Title: Engineering Supervisor, LCRA