Title 7—DEPARTMENT OF TRANSPORTATION
Division 10—Missouri Highways and Transportation Commission
Chapter 3—Utility and Private Line Location and Relocation

7 CSR 10-3.010 Location and Relocation of Utility Facilities on State Highways

PURPOSE: This rule provides a uniform system for regulating the location, construction, maintenance, removal and relocation of utility facilities on the right-of-way of highways in the state highway system to provide for the public safety and to facilitate the construction and maintenance of these highways.

(1) Application.

(A) The following rule is established for the location or relocation of utility facilities on the right-of-way of highways in the state highway system. Any location or relocation of utility facilities contrary to this policy is declared to be an interference with the construction, maintenance or operation of state highways and their right-of-way and is prohibited.

(B) Except as described in this rule, all work to be performed on right-of-way of the state highway system in connection with the location, relocation or maintenance of utilities, and where the roadway, shoulders or right-of-way will be affected by the work, must be done only under a permit or agreement to be issued by authority of the Missouri Highways and Transportation Commission **prior to the commencement of said work**. Application for these permits may be made on forms provided for that purpose and [*shall*] state specifically the nature of the work to be performed. A deposit may be required to insure completion in accordance with the permit issued. Applications for permits may be obtained at any of the [*ten (10)*] **seven (7)** district highway offices of the [*c*]**C**ommission**, Missouri Department of Transportation's website,** or by requesting the applications from the office of the Missouri Highways and Transportation Commission at Jefferson City, Missouri. [*Replacement of individual poles and attachments or other existing utility facilities where only spot excavation is required and which excavation is not between the shoulder lines of the highway may be considered as routine maintenance, and a permit will not be required, provided the company involved abides by all parking and access regulations contained elsewhere in this policy for the type of highway on which the maintenance work is to be performed. Where parking and access violations occur or if the right-of-way is left in an unsatisfactory condition, the offending utility owner may be required to secure a permit for future maintenance work on the right-of-way. The policies prescribed in this rule are intended to reflect general policies of the commission and specific application should be made and permit obtained for the contemplated work rather than to rely fully upon these rules.*

(C) In the event that utility lines or facilities are so damaged as to constitute an emergency situation directly affecting or endangering traffic on the highway or public health or safety, access is permitted to the damaged facility by leaving the through roadways at such points as may be necessary to effect emergency repairs, provided immediate notice is given to the State Highway Patrol and the commission's district engineer.]

(C) When emergency operations work is necessary, the damaged facility may be accessed immediately and without a permit by leaving the through roadways at such points as may be necessary to effect emergency repairs, provided immediate notice is given to the State Highway Patrol and the Commission's District Engineer or his/her designee for the District wherein the work will be performed, and a permit for emergency operations is requested immediately upon discovery of the need for emergency operations. A permit for emergency operations work shall be obtained as soon as practical, but in no event later than 2 working days after the emergency operations work has commenced. For the purposes of this paragraph, emergency operations may include, but is not limited to, unplanned work in response to utility lines or facilities being so damaged as to constitute an emergency situation directly affecting or endangering traffic on the highway or public health or safety.

(D) This policy does not apply to utility lines for services to facilities required for operating the highway.

(2) Road Classification.

(A) Interstate System or Other Freeways. Interstate highways and highways with fully controlled access.

(B) High Type Roads. Roadways with a constructed base and/or a wearing surface (other than aggregate) of two inches (2") or more thickness which have limited access, but not fully controlled or no access control.

(C) Low Type Roads. Roadways with an aggregate surface or an asphalt wearing surface which is less than two inches (2") in thickness.

(3) Definitions and General Information.

(A) Ditch line. A break line where the roadway ditch meets the back slope. It is located at the lowest point of a V-bottom ditch or furthest point from the roadway of a flat bottom ditch where the roadway slopes back to the existing ground line.

(B) Duct. An enclosed tubular casing, or raceway, for protecting wires, lines, or cables which is often flexible or semirigid (one to three percent (1–3%) diametric deflection). The casing, or raceway, is separate from the cable or conductor which passes through it.

(C) Encasement. Encasement as used in this policy means the placing of an installation around and outside of an underground facility consisting of a larger conduit which will permit the removal and replacement of the facility. An alternate to the conduit type encasement would be reinforced concrete poured around the facility. Acceptable materials are described in subsection (5)[*(C)*].

(D) Limits of interchanges. For the uniform handling of utility installations only, the limits of interchanges are the outside ramp curve points.

(E) Minimum cover for new underground utilities shall be: forty-two inches (42") for all water lines (parallel and crossings); forty-two inches (42") for fiber optic cable (crossings, encased in rigid conduit); seventy-two inches (72") for fiber optic cable (crossings encased in polyethylene (PE) pipe); thirty inches (30") for direct burial and in-trench fiber optic cable (parallel); twenty-four inches (24") for all other direct burial cable (parallel); seventy-two inches (72") for uncased polyethylene (PE) gas pipe crossings under ditches and roadways but thirty inches (30") elsewhere and thirty inches (30") for all other (such as, but not limited to, gravity sewers, force sewers and electric) underground utilities (parallel and crossings).

(F) Normal right-of-way line. An imaginary line that connects sudden breaks in the major right-of-way points for roadways. Sight distance right-of-way points (triangles) at roadway intersections are not to be considered as sudden breaks for determining normal right-of-way.

(G) Pull box width. Maximum pull box width, perpendicular to the right-of-way line within the utility corridor, is thirty inches (30").

(H) Scenic enhancement areas. Scenic enhancement areas [*shall*] include area acquired or so designated as scenic strips, overlooks, rest areas, recreation areas and all rights-of-way of highways adjacent thereto and the rights-of-way of highways which pass through public parks and historic sites as described under 23 U.S.C. 138.

(I) Utility. Privately, publicly or cooperatively owned line, facility or system for producing, transmitting or distributing communications, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, storm water not connected with highway drainage or any other similar commodity, including any fire or police signal system or street lighting system which directly or indirectly serves the public and does not include privately-owned facilities devoted exclusively to private use. The term utility shall also mean the utility company inclusive or any wholly owned or controlled subsidiary. The term utility includes those facilities used solely by the utility which are a part of its operating plant. The term also includes those utility type facilities which are owned or leased by a government agency for its own use or otherwise dedicated solely to governmental use.

(J) Utility corridor. An area established for the placement of utility facilities parallel to and within six feet (6') of the normal right-of-way.

(K) Vertical clearance for overhead crossings. The vertical clearance of new or existing overhead installations shall not be less than the current minimum requirements of the *National Electric Safety Code,* but in no case less than eighteen feet (18').

(4) Location and Relocation of Utility Lines.

(A) Interstate System or Other Freeways.

1. General policy.

A. All utility installations on highways of the interstate system or other freeways shall be installed, serviced and maintained without entering or leaving the through-traffic roadways and ramps except at points for that purpose and without parking any equipment or storing materials upon the medians, through roadways and ramps or shoulders of the roadways.

B. New service connections to existing parallel facilities shall be permitted only where an outer roadway exists and then only where access is permitted by the [*c*]**C**ommission.

2. Roadway crossings of utilities.

A. Overhead crossings are permitted for power transmission and distribution lines and for multiple circuit communication lines where an underground installation is not economically feasible. Supports for existing overhead crossing facilities may be located on the right-of-way near the right-of-way line. Supports for new overhead crossing facilities may be located on the right-of-way near the right-of-way line where an outer roadway exists and shall be located off the right-of-way where no outer roadway exists. Overhead service crossings are not permitted except as described in paragraph (4)(A)3.

B. Underground utility crossings shall be continuously encased under the through roadways, medians, ramps and shoulder areas with the casing extending to the toe of the fill slopes or to the ditch line. In curb sections the encasement shall extend outside the outer curb of the roadways a distance equal to the depth of the encasement at the curb line. Encasement for fiber optic cable shall extend from within six feet (6') of one right-of-way line to within six feet (6') of the other right-of-way line. A detector tape shall be placed approximately one foot (1') above the encasement where installed by open trench through unpaved areas. Manholes or vent pipes shall be located at the right-of-way line or adjacent to the outer roadway. Encasement shall be [*required*] **used** under high type outer roadways. Exceptions may be made for encasement as follows: non-fiber communication or electric cables installed in ducts; welded steel pipelines carrying gaseous or liquid petroleum products provided they are cathodically protected against corrosion, triple coated in accordance with accepted pipeline construction standards, and meet the applicable material requirements; natural gas distribution pipe (nominal six inches (6") diameter maximum) of polyethylene (PE) plastic, traceable, installed by a horizontal bore method at a minimum depth of seventy-two inches (72") under ditches and roadways, constructed in accordance with and meeting applicable material requirements; gas service connections of steel or copper, protected and constructed in accordance with and meeting applicable material requirements; and water service connections and crossings of copper two inches (2") inside diameter or less and meeting applicable material requirements.

3. Service crossings may be permitted in isolated cases for residential or commercial establishments when the denial of these crossings would require construction of more than twelve hundred feet (1,200') of utility line to provide the service. Main or distribution line crossings [*shall*] **will** be required to serve a general area other than isolated cases.

4. Parallel installations on the right-of-way shall be permitted only where an outer roadway exists, provided that poles are within two feet (2') of the normal right-of-way line and underground facilities are within six feet (6') of the normal right-of-way line, and provided that the facility can be installed and maintained between the outer roadway and the right-of-way line, except that—

A. Existing overhead or underground facilities that parallel an existing roadway which will be incorporated into the completed highway as an outer roadway may remain in place if all maintenance and service can be performed from an outer roadway and their existing location does not interfere with construction, maintenance or operation of the completed highway; [*and*]

B. Existing parallel facilities along an existing road which will be incorporated into the completed highway, except as permitted in subparagraph (4)(A)4.A., shall be relocated to the normal right-of-way line—poles to be within five feet (5') and underground installations within six feet (6') thereof[.]**;**

C. Existing telephone conduit systems with multiple ducts may be filled with any type of communication cable until full[.]**; and**

D. Underground facilities are expected to be buried within six feet (6') of sight distance right-of-way lines at roadway intersections unless granted a variance to this policy. Overhead facilities may be allowed to span intersecting roadways with sight distance triangles (SDTs) provided the poles, or supports, are located outside the SDT.

5. Careful consideration shall be given to the location of guys, anchors, braces and other supports. Generally, good design procedure will provide that these appurtenances be located at right-of-way jogs, along intersecting road right-of-way or at other similar acceptable locations, so that encroachment is held to an absolute minimum.

6. Existing gravity trunk sanitary sewers shall be considered individually and removed or left in place, contingent upon age, condition, feasibility of moving and whether service and maintenance can be performed without entering or leaving the through roadways and ramps except at points provided for that purpose or without parking any equipment or storing materials upon the median, through roadways, ramps or shoulders. Encasement for existing trunk sanitary sewer crossings may be required for questionable condition, protection during construction or heavy fills. Manholes are to be relocated to the right-of-way lines or adjacent to an outer roadway.

7. Encasement is not [*required*] **necessary** for new trunk sanitary sewer crossings of vitrified clay, reinforced concrete or cast iron except when installation procedures would produce voids in the roadbed, heavy fills or installations under pressure. Manholes are to be located off the right-of-way where possible or adjacent to an outer roadway.

8. Interchanges and separations.

A. No facilities will be permitted within the limits of [*interchanges of cloverleaf or directional design*] **an interchange or separation** where planned or existing.

B. Utility installations within the limits of [*a diamond type*] **an** interchange or separation will be permitted only along the minor road, provided that all construction, service and maintenance can be performed from the minor road. Manholes and poles shall be located beyond the ramp termini.

9. Structures.

A. No utility facilities will be permitted in or on a structure carrying an interstate road or other freeway.

B. No utility facilities will be permitted in or on a structure carrying a minor road over an interstate road or other freeway except wires and then only when no other practical means exist for crossing. All such crossings shall be by agreement and a charge will be made for the increased maintenance costs involved.

(B) High Type Roads (Limited but not Fully Controlled Access Right-of-Way).

1. General policy. All utility facilities shall be installed, serviced and maintained without entering or leaving the highway except at approved access points, and without parking equipment and materials on the median, pavement, ramps or shoulders, and
without cutting or damaging the roadway surface or paved shoulders. New service connections to parallel facilities and service crossings shall be permitted only at access points granted by the [*c*]**C**ommission.

2. Roadway crossings of utilities.

A. Overhead mainline crossings are permitted provided the supports are located near the right-of-way line. New overhead service crossings may be permitted in isolated cases for residential or commercial establishments where the denial of such crossings would require the construction of more than twelve hundred feet (1,200') of utility line to provide the same service. Supports for service crossings shall be located as near the right-of-way line as possible.

B. Underground utility crossings shall be continuously encased under the through roadways, median, ramps and shoulder areas with the casing extending to the toe of the fill slopes or to the ditch line. In curb sections, the encasement shall extend outside the outer curb of the roadways a distance equal to the depth of the encasement at the curb line. Encasement for fiber optic cable shall extend from within six feet (6') of one right-of-way line to within six feet (6') of the other right-of-way line. A detector tape shall be placed approximately one foot (1') above the encasement where installed by open trench through unpaved areas. Manholes or vent pipes shall be located at the right-of-way line or adjacent to an outer roadway. Encasement shall be [*required*] **used** under high type outer roadways. Exceptions may be made for encasement as follows: non-fiber communications and electric cables installed in ducts; welded steel pipelines carrying gaseous or liquid petroleum products, provided they are cathodically protected against corrosion, triple coated in accordance with accepted pipeline construction standards and meet the applicable material requirements; natural gas distribution pipe (nominal six inches (6") diameter maximum) of polyethylene (PE) plastic, traceable, installed by a horizontal bore method at a minimum depth of seventy-two inches (72") under ditches and roadways, constructed in accordance with and meeting applicable material requirements; gas service connections of steel or copper, protected and constructed in accordance with and meeting applicable materials requirements; and water service connections and crossings of copper two inches (2") inside diameter or less and meeting applicable material requirements.

3. Parallel facilities. Parallel installations on the right-of-way will be permitted provided that poles are within two feet (2') of the normal right-of-way line and underground facilities are within six feet (6') of the normal right-of-way line except—

A. Existing poles being relocated shall be within five feet (5') of the normal right-of-way line;

B. Existing overhead facilities that parallel an existing roadway which will be incorporated into the completed roadway may remain in place if all maintenance and service can be performed in accordance with provisions of paragraph (4)(B)1. and their existing location does not interfere with construction, maintenance or operation of the completed highway;

C. Existing underground facilities (other than sanitary sewers) that parallel an existing roadway which will be incorporated into the completed roadway may be left in place where it is impractical to relocate the facility provided that maintenance and service be performed without cutting or damaging the pavement or interfering with the construction, maintenance and operation of the highway;

D. Multiple facilities at intersections, existing steel pipe transmission and distribution facilities for gaseous petroleum products that parallel an existing roadway which will be incorporated into the completed roadway may be left in place subject to an agreement by the utility company that maintenance or service, and facility expansion will be performed without cutting or damaging the pavement or interfering with the construction, maintenance or operation of the highway and provided that the facility is cathodically protected against corrosion and meets the applicable material requirements;

E. Careful consideration shall be given to the location of guys, anchors, braces and other supports. Generally, good design procedure will provide that these appurtenances be located at right-of-way jogs, along intersecting road right-of-way or at other similar acceptable locations, so that encroachment is held to an absolute minimum;

F. Existing telephone conduit systems with multiple ducts may be filled with any type of communications cable until full; and

G. Underground facilities are expected to be buried within six feet (6') of sight distance right-of-way lines at roadway intersections unless granted a variance to this policy. Overhead facilities may be allowed to span intersecting roadways with SDTs provided the poles, or supports, are located outside the SDT.

4. Existing gravity sanitary sewer mains will be considered individually and removed or left in place contingent upon age, condition, feasibility or moving and whether service and maintenance can be performed without damaging the roadway surfacing. If an existing parallel gravity main is left in place within the limits of the paved surface, paved shoulder lines or curb lines, stub mains as required shall be laid between the sewer main and curb or shoulder lines for future service connections in each block. Manholes shall be relocated outside the traveled roadway. Encasement for existing gravity trunk sanitary sewer crossings may be required for questionable condition, protection during construction, heavy fills or installations under pressure.

5. Encasement is not [*required*] **used** for new trunk sanitary sewer crossings of vitrified clay, reinforced concrete or cast iron pipe except when installation procedures would produce voids in the roadbed, heavy fills or installations under pressure. Manholes are to be located as near the right-of-way line as practical.

6. Interchanges and separations.

A. No facilities will be permitted within the limit of [*interchanges of cloverleaf or directional design*] **an interchange or seperation** where planned or existing.

B. Utility installations within the limits of [*a diamond type*] **an** interchange or separation will be permitted only along the minor road provided that all construction, service and maintenance can be performed from the minor road. Manholes and poles shall be relocated beyond the ramp termini.

7. Structures.

A. No utility facilities will be permitted in or on a structure carrying a limited access high type road.

B. No utility facilities will be permitted in or on a structure carrying a minor road over a high type road except wires and then only where no other practical means exist for crossing. All such crossings shall be by agreement and a charge will be made for the increased maintenance costs involved.

(C) High Type Roads (Without Access Control).

1. General policy.

A. All new facilities shall be installed and maintained without cutting or damaging the roadway surface or paved shoulders except that in the event that underlying rock formations or other obstructions are encountered that prevent boring or pushing operations, special permission may be granted for pavement cuts when the need is established.

B. Pavement cuts may be made by permit only. Permits will be issued only when it is impractical to otherwise service and maintain the facility.

2. Roadway crossings of utilities.

A. Overhead main line and service crossings are permitted provided the supports are located near the right-of-way lines.

B. Underground facilities generally shall be continuously encased under the through roadways, median, ramps and shoulder areas with the casing extending to the toe of the fill slopes or to the ditch line. In curb sections, the encasement shall extend outside the outer curb of the roadway(s) a distance equal to the depth of the encasement at the curb line. Encasement for fiber optic cable shall extend from within six feet (6') of one right-of-way line to within six feet (6') of the other right-of-way line. A detector tape shall be placed approximately one foot (1') above the encasement where installed by open trench through unpaved areas. Manholes or vent pipes shall be located at the right-of-way line or adjacent to an outer road. Encasement shall also be [*required*] **used** under high type outer roadways. Exceptions for encasement may be made as follows: non-fiber communication and electric cables installed in ducts; welded steel pipelines carrying gaseous or liquid petroleum products, provided they are cathodically protected against corrosion, triple coated in accordance with accepted pipeline construction standards and meet the applicable material requirements; natural gas distribution pipe (nominal six inches (6") diameter maximum) of polyethylene (PE) plastic, traceable, installed by a horizontal bore method at a minimum depth of seventy-two inches (72") under ditches and roadways, constructed in accordance with and meeting applicable material requirements; gas service connections of steel or copper, constructed and protected in accordance with and meeting the applicable material requirements; and water service connections and crossings of copper two inches (2") inside diameter or less and meeting the applicable material requirements.

3. Parallel installations on the right-of-way will be permitted provided that poles are within two feet (2') of the normal right-of-way line and underground facilities are within six feet (6') of the normal right-of-way line except—

A. Existing poles, being relocated, shall be within five feet (5') of the normal right-of-way line;

B. Existing overhead facilities that parallel an existing roadway which will be incorporated into the completed roadway may remain in place if their existing location does not interfere with construction, maintenance or operation of the completed highway;

C. Existing underground facilities (other than sanitary sewers) that parallel an existing roadway which will be incorporated into the completed roadway may be left in place where it is impractical to relocate the facility provided that maintenance and service can be performed without cutting or damaging the pavement or interfering with the construction, maintenance and operation of the highway;

D. Multiple facilities at intersections, existing steel pipe transmission and distribution facilities for gaseous petroleum products that parallel an existing roadway which will be incorporated into the completed roadway may be left in place subject to an agreement by the utility company that maintenance, service and facility expansion will be performed without cutting or damaging the pavement or interfering with the construction, maintenance or operation of the highway and provided that the facility is cathodically protected against corrosion and meets the applicable material requirements;

E. Careful consideration shall be given to the location of guys, anchors, braces and other supports. Generally, good design procedure will provide that these appurtenances be located at right-of-way jogs, along intersecting road right-of-way or at other similar acceptable locations, so that encroachment is held to an absolute minimum;

F. Existing telephone conduit systems with multiple ducts may be filled with any type of communication cable until full; and

G. Underground facilities are expected to be buried within six feet (6') of sight distance right-of-way lines at roadway intersections unless granted a variance to this policy. Overhead facilities may be allowed to span intersecting roadways with SDTs provided the poles, or supports, are located outside the SDT.

4. Existing sanitary sewer mains shall be considered individually and removed or left in place contingent upon age, condition, feasibility of moving and whether service and maintenance can be performed without damaging the roadway surfacing. If an existing parallel main is left in place within the limits of the paved surface, paved shoulder or curb lines, stub mains as required shall be laid between the sewer main and curb or shoulder lines for future service connections in each block. Manholes where necessary shall be relocated outside the traveled roadway wherever practical. Encasement for existing trunk sanitary sewer crossings may be required for questionable condition, protection during construction, heavy fills or installations under pressure.

5. Encasement is not [*required*] **used** for new trunk sanitary sewer crossings of vitrified clay, reinforced concrete or cast iron except when installation procedures would produce voids in the roadbed, heavy fills or installations under pressure. Manholes are to be located as near the right-of-way line as practical.

6. Structures.

A. No utility facilities will be permitted in or on a grade separation structure except wires (communication, electric power, fiber or metal) and then only where no other practical means exist for crossings.

B. No utility facilities shall be placed on any structure except by agreement and a charge will be made for the increased maintenance cost involved.

(D) Low Type Roads (Without Access Control).

1. Roadway.

A. Existing parallel surface installations interfering with construction, maintenance or operation shall be relocated to within five feet (5') of the normal right-of-way line. Poles for new parallel surface installations shall be located within two feet (2') of the normal right-of-way line. Careful consideration shall be given to the location of guys, anchors, braces and other supports. Generally, good design procedure will provide that these appurtenances be located at right-of-way jogs, along intersecting road right-of-way or at other similar acceptable locations, so that encroachment is held to an absolute minimum.

B. Existing parallel underground installations interfering with construction, maintenance or operation shall be relocated to as near the right-of-way line as practical. New parallel underground installations shall be located within six feet (6') of the normal right-of-way line. Existing telephone conduit systems with multiple ducts may be filled with any type of communication cable until full.

C. Existing overhead crossings that interfere with construction, maintenance or operation shall be relocated with their supports as near the right-of-way line as is practical. New overhead crossing installations shall be located with their supports as near the right-of-way line as is practical.

D. Installation of underground utility crossings may be made **by utilizing pavement cuts issued by permit. Permits will only be issued for pavement cuts when servicing and maintaining the facility by any other methods is impractical.** [*trenching half the roadway at a time.*] Encasement, as provided in subsection (5)[*(C)*], [*shall be*]**is** required for fiber optic cable, [*except as allowed in subparagraph (5)(C)1.C.,*] pressure lines except welded steel pipelines carrying gaseous or liquid petroleum products provided they are cathodically protected against corrosion and natural gas distribution polyethylene (PE) plastic pipe of nominal six inches (6") diameter maximum bored a minimum of seventy-two inches (72") below the ditches meeting the applicable material requirements, sewers and drains when crossing under the roadway using polyethylene, polyvinyl chloride (PVT), thermoplastic, asbestos cement or acrylonitrile butadiene styrene (ABS) pipe material. The encasement for fiber optic cable shall extend from within six feet (6') of one right-of-way line to within six feet (6') of the other right-of-way line. A detector tape shall be placed approximately one foot (1') above the encasement.

E. Underground facilities are expected to be buried within six feet (6') of sight distance right-of-way lines at roadway intersections unless granted a variance to this policy. Overhead facilities may be allowed to span intersecting roadway with SDTs provided the poles, or supports, are located outside the SDT.

2. Structures.

A. No utility facilities will be permitted in or on a grade separation except wires (communication, electric power, fiber or metal) and then only where no other practical means exist for crossings.

B. No utility facilities shall be placed on any structure except by agreement and a charge will be made for the increased maintenance costs involved.

(E) Scenic Enhancement Areas.

1. All existing utility facilities within the limits of a scenic enhancement area requiring adjustment because of construction or reconstruction shall be placed underground or relocated beyond the limits of the scenic enhancement area. No new above ground facilities will be permitted. New underground facilities will be permitted provided they do not extensively alter or impair the appearance of the area.

2. The requirements of this section will not permit the installation of utilities if prohibited by other sections of this policy.

(5) [*Approved Materials for Underground Utility Facilities (Other Than Cable).*] **Approved Materials for Underground Utility Facilities (Including Carrier and Encasement). Utility companies will be allowed to use only the types of material as a carrier and encasement for their facilities as approved and provided for in the respective permit issued for any utility location, relocation and maintenance work where the use of the material is contemplated.**

[*(A) Water and Sewer Lines.*

1. Copper meeting the requirements of ASTM Specification B 88-99, Type K.

2. Cast iron meeting Specification ANSI 21.6-1975 (AWWA C106-75) or ANSI 21.8-1975 (AWWA C108-75). Joints shall be mechanical or push on meeting Specification ANSI A 21.11-2000 (AWWA C111-00).

3. Ductile iron meeting Specification ANSI 21.51-1996 (AWWA C151-96). Joints shall be mechanical or push on meeting Specification ANSI A 21.11-2000 (AWWA C111-00).

4. Prestressed concrete cylinder pipe meeting ANSI/AWWA C301-99 for sizes sixteen inches (16") in diameter or larger.

5. PVT pipe for water transmission shall be of Type PVT 1120 material and shall meet the requirements of ASTM D-2241-00 or the latest revision thereof. For sizes one inch (1") and larger, dimensions shall not be less than specified for SDR 26 pipe. For three-fourths inch (3/4") size, dimensions shall not be less than specified for SDR 21 pipe. Pipe, fittings and couplings may have integral bell and ring-type joint or solvent-weld type joint. The owner shall furnish to the district engineer a certification by the manufacturer that the pipe supplied will conform to the specified requirements. This certification shall include substantiating test results representative of the pipe to be furnished.

6. Asbestos cement pipe shall meet the requirements of ANSI/AWWA C400-93 for Class 150 or Class 200 pipe, or the latest revision thereof, or ASTM C296-00, Type II, for Class 150 or Class 200 pipe or the latest revision thereof. Uncombined calcium hydroxide shall not exceed 1.0 percent. Couplings shall consist of an asbestos cement sleeve of the same composition as the pipe and two (2) rubber rings suitable in size and design for the pipe with which it is used. The rubber rings shall conform to the requirements of ASTM D-1869-95 (Reapproved 2000) or the latest revision thereof. The owner shall furnish to the district engineer a certification by the manufacturer that pipe and rubber rings supplied will conform to the specified requirements. This certification shall include substantiating test results, including crushing strength, representative of the pipe to be furnished.

7. Polyethylene (PE) plastic tubing for water transmission shall be PE 3406, SDR 9 with a minimum working pressure of one hundred sixty pounds per square inch (160 psi) and meeting the requirements of ASTM D 2737-99 or the latest revision thereof. Polyethylene plastic pipe for water transmission shall be PE 3406, SDR 7 with a minimum working pressure of one hundred sixty pounds per square inch (160 psi) and meeting the requirements of ASTM D 2239-99 or the latest revision thereof. The owner shall furnish the district engineer a certification by the manufacturer that the pipe will conform to the specified requirements. This certification shall include substantiating test results representative of the pipe to be furnished.

8. Polybutylene plastic tubing for water transmission shall be PB 2110, SDR 13.5, PR 160 psi; and shall meet the requirements of ASTM D 2666-96a or the latest revision thereof. Polybutylene plastic pipe shall be PB 2110, SDR 9, PR 250 psi; PB 2110, SDR 11, PR 200 psi; or PB 2110, SDR 13.5, PR 160 psi; and shall meet the requirements of ASTM D 3000-95a of PB 2110, SDR 7, PR 250 psi; PB 2110, SDR 9, PR 200 psi; or PB 2110, SDR 11.5, PR 160 psi; and shall meet the requirements of ASTM D 2662-96a or the latest revision thereof. The owner shall furnish the district engineer a certification by the manufacturer that the pipe will conform to the specified requirements. This certification shall include substantiating tests results representative of the pipe to be furnished.

9. ABS composite sewer piping for gravity sewer installations shall meet the requirements of AASHTO M 264-92 (2000) (ASTM D 2680-95a) or the latest revision thereof. The owner shall furnish to the district engineer a certification by the manufacturer that the pipe supplied will conform to the specified requirements. This certification shall include substantiating test results representative of the pipe to be furnished.

10. PVT pipe and fittings for gravity water and sewer transmission shall meet the requirements of ASTM D 3034-00 SDR 35, ASTM F 789-95a, ASTM F 679-00 or ASTM D 2680-95a or the latest revision thereof. The owner shall furnish to the district engineer a certification by the manufacturer that the pipe and fittings will conform to the specified requirements. This certification shall include substantiating test results representative of the pipe and fittings to be furnished.

(B) Gas Lines.

1. Copper for gas shall meet with requirements of ASTM Specification B88-99 Type K or ASME B31.8-1999 or latest revision thereof.

2. Thermoplastic pipe for gas transmission shall conform to all of the requirements of the USA Standard Code for Pressure Piping, Gas Transmission and Distribution Piping Systems, ASME B31.8-1999. Thermoplastic pipe shall be polyvinyl chloride (PVT) Type II, Grade 1 (PVT 2110) or polyethylene Type II, Grade 3, (PE 2306), and shall conform to the requirements of ASTM D 2513-00. Dimensions shall not be less than that specified in ASTM D 2513-00. The owner shall furnish to the district engineer a certification by the manufacturer that the pipe supplied will conform to the specified requirements. This certification shall include substantiating test results representative of the pipe to be furnished.

3. For bored installations polyethylene (PE) pipe grade PE 2406 or better may be used without encasement for gas distribution six inches (6") or less in diameter. This pipe and its components shall conform to requirements outlined in currently approved ASTM D 2512-95 specification Thermoplastic Gas Pressure Pipe, Tubing and Fittings, ASTM D 2683-98 specification Socket Type Polyethylene (PE) Fittings for Outside Diameter-Controlled Polyethylene Pipe and ASTM D 3261-97 specification Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing. All pipe and components shall also conform to the materials qualification found in Department of Transportation Gas Division 49 CFR 192.59 and in 4 CSR 240-40.030(2)(D).

4. Welded steel pipe lines shall meet the requirements of ASME B31.1-2001 and ASME B31.8-1999 or ASME B31.4-1998 or latest revision thereof.

(C) Encasement.

1. Conduits permitted for encasement shall be new material or equivalent and shall conform to the following:

A. The requirements of the latest revision of the Missouri Highways and Transportation Commission Standard Specifications for—reinforced concrete culvert pipe; vitrified clay culvert pipe; cast iron pipe or ductile iron of the same class as used for carrier pipe; corrugated metal culvert pipe (corrugated metal culvert pipe is permitted for encasement only on roadways where current Missouri Department of Transportation design practices would permit its use as crossroad drainage structures); or corrugated metal sectional plate culvert pipe. (Corrugated metal sectional plate culvert pipe shall not be used unless it is impractical to use other approved types of encasement for new utility installations. When used, the voids around the outside of the corrugated pipe shall be grouted with an approved material); and

B. Other encasement material. Smooth wall, welded steel pipe with a minimum wall thickness will be permitted as follows:

Casing Diameter (inches)	***Minimum Wall Thickness (inches)***
6, 8, 10, 12, 14 & 16	*.188*
18, 20 & 22	*.250*
24 & 26	*.281*
28, 30, 32 & 34	*.312*
36, 38, 40 & 48	*.344*

less than 6	*Standard wall pipe or .188 wall as preferred*

C. Fiber optic cable may be encased in polyethylene (PE) conduit when it is placed at a minimum depth of seventy-two (72") below natural ground and is "traceable."

2. Encasement of facilities with reinforced concrete shall be with a minimum of six inches (6") of Class B reinforced concrete meeting Missouri Highways and Transportation Commission specifications. The steel reinforcing shall be in accordance with the requirements of the Missouri Highways and Transportation Commission specifications for an equivalent size of reinforced concrete culvert pipe which would be specified under like conditions. A permissible option to this reinforcing steel requirement may be conventional deformed reinforcing bars placed as shown on the Missouri Highways and Transportation Commission standard drawings for box culverts of like size as a minimum.

(D) General. The type of material permitted for underground facilities other than that specified in this policy shall conform to that specified in the Missouri Highways and Transportation Commission standard specifications. Material for installations not covered in the standard specifications or in this policy shall be subject to approval by the chief engineer, taking into consideration the applicable industry code.

(6) Installation Requirements of Water and Sewer Mains and Service Line.

(A) All cast iron and ductile iron water mains shall be installed in accordance with Specification ANSI/AWWA C600-99 or the latest revision thereof.

(B) All asbestos cement water mains shall be installed in accordance with Specification ANSI/AWWA C603-96 or the latest revision thereof.

(C) All thermoplastic water mains shall be installed in accordance with Specification ASTM D 2774-94 or the latest revision thereof.

(D) All thermoplastic gravity sewer piping shall be installed in accordance with Specification ASTM D 2321-00 or the latest revision thereof.]

([*7*]**6**) Protective equipment. Cables, wires, small diameter pipes and other such utility appurtenances extending from the surface of the ground shall be equipped with covers or guards to improve their visibility.

([*8*]**7**) Cutting Pavement. In the event that permission is granted to cut an existing P.C.C. or A.C. pavement, all cuts, if possible, shall be made with a saw to a minimum depth of two and one-half inches (2 1/2"). The width of cut shall be determined by the width of required trench plus twelve inches (12") on each side of the trench. In the event that the distance to any adjacent longitudinal or transverse joint or crack is less than four feet (4') the pavement shall be removed to that joint or crack. All pavement repair shall be made to *Missouri Standard Specification for Highway Construction*.

([*9*]**8**) Special Conditions. Special conditions at specific locations which make adherence to this policy impractical may be submitted to the chief engineer for consideration of an acceptable alternate.

*AUTHORITY: sections 226.020 and 227.240, RSMo 2000[.]**, **sections 227.551-559, RSMo 2006.** Original rule filed Jan. 21, 1965, effective Jan. 31, 1965. Amended: Filed May 8, 1965, effective May 18, 1965. Amended: Filed Aug. 5, 1966, effective Aug. 10, 1966. Amended: Filed Aug. 15, 1967, effective Aug. 25, 1967. Amended: Filed Dec. 3, 1968, effective Dec. 13, 1968. Amended: Filed Jan. 20, 1970, effective Jan. 30, 1970. Amended: Filed April 8, 1971, effective April 18, 1971. Amended: Filed Nov. 22, 1972, effective Dec. 2, 1972. Amended: Filed Aug. 9, 1974, effective Aug. 19, 1974. Refiled: March 17, 1976, effective March 17, 1976. Rescinded and readopted: Filed May 12, 1978, effective Aug. 11, 1978. Amended: Filed Feb. 21, 1984, effective Aug. 15, 1984. Amended: Filed June 10, 1988, effective Nov. 11, 1988. Amended: Filed Aug. 8, 1997, effective Feb. 28, 1998. Amended: Filed Oct. 7, 2002, effective May 30, 2003.*

**Original authority: 226.020, RSMo 1939 and 227.240, RSMo 1939.*