

UTILITY ACCOMMODATION POLICY

June 2022

SEDGWICK COUNTY PUBLIC WORKS

This policy is adopted by Sedgwick County Public Works for the maximum convenience and protection of the traveling public and applies to all public and private utilities within the County road or Township road right-of-way in the unincorporated areas of Sedgwick County, Kansas.

UTILITY ACCOMMODATION POLICY

SEDGWICK COUNTY, KANSAS

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INTRODUCTION

This policy is adopted by Sedgwick County Public Works acting pursuant to the power and authority granted to Sedgwick County by the laws of the State of Kansas to administer the County/Township Road System in a manner providing for the maximum convenience and protection of the traveling public and as set forth in County Resolution No. 62-1019, and any amendments or updates thereto, which can be found online at www.sedgwickcounty.org.

Public or private utilities involving project work on a county or township road right-of-way require a Utility Permit Agreement, which may be obtained from Sedgwick County Public Works, 1144 S. Seneca, Wichita, Kansas, (316) 660-1777, www.sedgwickcounty.org.

This policy shall become effective upon approval of both the County Engineer and the Board of County Commissioners and shall supersede any previously published standards and policies concerning accommodation of utility facilities and appurtenances. Where laws or orders of public authority, industry codes, governmental codes or highway authorities prescribe a higher degree of protection than provided by this policy, the higher degree of protection shall prevail. When circumstances are encountered which make the literal application of this policy impossible or impractical, alternate proposals may be submitted by the utility company to the County Engineer for consideration and approval.

Sedgwick County Public Works representatives will offer assistance in obtaining Utility Permit Agreements and will review utility sketches and make recommendations. Public Works representatives shall also be responsible for utility company compliance with the provisions of the Utility Permits Code.

Adopted on June 22, 2022 by Resolution No. 110-2022.

I. GENERAL POLICY

This policy applies to the location, construction, maintenance, removal and relocation of all private, public and cooperatively owned utilities within the highway right-of-way under County or Township jurisdiction in the unincorporated areas of Sedgwick County, Kansas.

Utility companies who utilize subcontractors are responsible for subcontractor compliance with County specifications, regulations and permits issued pursuant to this policy. Subcontractors must carry the required liability insurance unless the subcontractor is covered by the utility company insurance. Utility companies and subcontractors shall follow industry accepted construction and safety practices and follow applicable statutes and regulations. Unsatisfactory work will be rejected and result in permit revocation and may result in denial of future Utility Permit Agreements.

An approved and signed copy of the Utility Permit Agreement must be on the premises at the start and during the period any work is performed.

Periodic updates will be made to the Utility Permit Agreement. The current version of the form applies. The County Engineer may waive requirements of this policy in writing for utility lines which service facilities required for operating the highway.

Utility Companies or their subcontractor(s) are responsible for contacting Kansas One-Call and for securing additional permits (i.e. permits for railroad right-of-way encroachment or pipeline easement encroachment).

A. GLOSSARY OF TERMS/DEFINITIONS

CARRIER: Pipe directly enclosing a transmitted fluid (liquid or gas).

CASING: A larger pipe enclosing a carrier.

CLEAR ZONE: The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, recoverable slope, non-recoverable slope, and/or clear run-out area. The desired width is dependent upon the traffic volumes, speeds, and the roadside geometry. Clear Zone can be determined by referring to the latest edition of the AASHTO "Roadside Design Guide".

CONTRACTOR: Every person, firm, association or corporation that may contract with any owner or lessee for construction, maintenance or repair of work performed on a public utility, which necessitates the performance of labor in, or the use or storage of materials upon, any road or road right-of-way.

HIGHWAY: The entire area within the right-of-way dedicated as a public way for the purpose of vehicular travel.

KDOT STANDARD SPECIFICATIONS: The current edition of the Kansas Department of Transportation Standard Specifications for State Road and Bridge Construction. The specifications are located online at www.ksdot.org/burConsMain/specprov/specifications.asp.

PRIVATE UTILITY: Privately owned facilities which convey or transmit commodities as defined in this section but devoted exclusively to private use.

PROJECT: Either the furnishing of materials or the performance of labor in or upon a public right-of-way in the unincorporated area of Sedgwick County, which furnishing or performing:

SEDGWICK COUNTY UTILITY ACCOMMODATION POLICY

1. Occurs within a contiguous area of not to exceed one (1) square mile (with the exception of small cell networks that may have up to twenty-five (25) small cell facilities within the same permitted project; see SMALL CELL FACILITY and SMALL CELL NETWORK definitions);
2. Is prosecuted according to plans on file with the Sedgwick County Public Works Department; and
3. Is completed no later than one (1) year after approval by the County Engineer or his/her designee and said construction shall be diligently pursued to completion.

PUBLIC RIGHT-OF-WAY: The area of real property in which the County has a dedicated or acquired right-of-way interest in the real property. It shall include the area on, below or above the present and future streets, alleys, avenues, roads, highways, parkways or boulevards dedicated or acquired as right-of-way. The term does not include the airwaves above a right-of-way with regard to wireless telecommunications or other non-wire telecommunications or broadcast service easements obtained by utilities or private easements in platted subdivision or tracts.

PUBLIC UTILITY: Every person or entity, or their trustees, lessees, or receivers, that owns, controls, operates, or manages any poles, lines, anchors, conduit, pipe, transformers and any and all equipment or machinery incidental thereto for the transmission of telephone, wireless data signal, or data messages or for the production, transmission or delivery or furnishing of heat, light, water or power within the public rights-of-way in the unincorporated areas of the County. The term may also apply to any person or entity engaged in the business of providing wireless services or the wireless infrastructure required for wireless services, upon their submission of an application pertaining to a utility permit agreement.

ROADWAY: The portion of a highway from outside edge of shoulder to outside edge of shoulder (or between curb lines).

SMALL CELL FACILITY: A wireless facility that meets both of the following qualifications:

1. Each antenna is located inside an enclosure of no more than six cubic feet in volume, or in the case of an exposed antenna, all of the elements could fit in an imaginary enclosure of nor more than six cubic feet.
2. Primary equipment enclosures that are no larger than seventeen cubic feet in volume. Associated equipment may be located outside the primary equipment and shall not be included in the equipment volume calculation. Associated equipment includes, but is not limited to, any electric meter, concealment, telecommunications demarcation box, ground-based enclosures, back-up power systems, grounding equipment, power transfer switch, cut-off switch and vertical cable runs for the connection of power and other services.

SMALL CELL NETWORK: A collection of interrelated small cell facilities designed to deliver wireless service.

TRAFFIC CONTROL PLAN: A signing plan for controlling traffic when work is being performed on the highway or within the "Clear Zone". The signing plan will be in accordance with the Manual on Uniform Traffic Control Devices and the State of Kansas Traffic Control Standards. Whenever the Traffic Control Standards conflicts with the Manual, the Standards shall govern. The signing plan will also address storage of materials and parking for work crew vehicles on the right-of-way when appropriate.

UTILITY COMPANY: Utility Company is a company placing their utility on County right-of-way.

WIRELESS FACILITY: Equipment at a fixed location that enables wireless communications between user equipment and a communications network.

B. UTILITY PERMIT AGREEMENTS

Utility Permit Agreements are required when utility facilities are installed, operated, maintained or removed within the public road right-of-way. The County Engineer has the authority to approve and execute Utility Permit Agreements per Sedgwick County Resolution No. 139-2016. See Sedgwick County Code Section 22-24 for more information.

C. RESPONSIBILITIES

The Utility Permit Agreement outlines the responsibilities and provisions to the utility owner. The permit allowing a utility facility owner the privilege of placing its facilities in or on the road right-of-way does not constitute any permanent right for such use. See Sedgwick County Code Section 22-25 (b) for further information.

D. BONDING AND LIABILITY

In order to guarantee satisfactory performance of a utility permit agreement, each utility shall execute and deliver to Sedgwick County Public Works a bond, payable to Sedgwick County, with good and sufficient sureties as indicated within Exhibit C to the Utility Permits Code. The amount of the bond shall be according to the schedule attached to this Code within Exhibit C. A utility may file and maintain with Sedgwick County Public Works a bond continuous in nature in the same amount as indicated within Exhibit C. All work will require that a bond and liability insurance be provided as more specifically outlined in the Utility Permit Agreement. The bond and liability insurance will be on file with Sedgwick County Public Works subject to the Utility Permit Agreement.

E. CHANGE OF OWNERSHIP

The Utility Owner cannot assign or otherwise transfer ownership or responsibility of a utility without consent of the County. If and when a Utility Company changes ownership, the County Engineer shall be notified in writing of the names and addresses of the new owners within 30 days.

F. ABANDON OR RETIRE IN PLACE

The Utility Company shall notify the County when the utility has been abandoned or retired in place and is responsible for all costs associated with removal of (or making safe in place) abandoned or retired in place utility. The utility company shall remove all above ground structures, pedestals, markers, manholes, and other structures or installations deemed necessary by the County Engineer or designee. See Sedgwick County Code Section 22-30 for more details.

G. CONSTRUCTION PROJECTS AND RELOCATION

When requested by the County, in order to accomplish construction or maintenance activities, a Utility shall promptly remove or relocate its facilities within the public right-of-way at no cost to the County. Such relocation and/or adjustment shall be completed as soon as reasonably possible within the time set forth in any request by the County. The County shall provide wireless telecommunications projects notice 180 days prior to relocation. See Sedgwick County Code Section 22-31.

Any damages suffered by the County or its contractors as a result of the Utility's failure to relocate or adjust its facilities shall be borne by the Utility.

If utilities are not moved in a reasonable time following a request by the County, the County may move the utilities. County may submit an itemized statement of costs for the relocation to the Utility and Utility shall reimburse County upon receipt of this statement.

The Utility may coordinate with the County to move/adjust utilities as part of the construction or maintenance project.

H. NON-COMPLIANCE

Non-Compliance with any of the terms of this Utility Accommodation Policy or Utility Permit Agreements may be considered as cause for shutdown of operations until compliance is assured or revocation of the permit. The cost of any work required by the County Engineer in the removal of noncomplying construction will be assessed against the utility owner.

II. DESIGN

A. LOCATION

Proposed facilities shall be located to the satisfaction of the County Engineer or designee. Utility installations or adjustments should be located to:

- Minimize need for later adjustments to accommodate future improvements within the public road right-of-way.
- Allow for planned expansion of utility facilities.
- Minimize public road and utility costs.
- Minimize hazards and interference with smooth flow of highway traffic.
- Allow for health, safety and welfare of traveling public.

No facilities that extend greater than 4 inches above ground shall be placed within 15 feet of the edge of the roadway, or within the Clear Zone of the roadway, when feasible.

B. MATERIALS

All utility installations on, over or under highway rights-of-way and attachments to highway structures shall be of durable materials designed for long service life expectancy and relatively free from routine servicing and maintenance. Materials shall conform to current applicable material specifications and codes.

C. METHOD OF WORK

Each utility company is responsible for the design of the facilities to be installed within the highway rights-of-way or attached to a highway structure. The method of work will be described and done in a manner satisfactory to and with the approval of the County Engineer or designee.

D. PLANS

Sketches for utilities must include a thorough description of the area to be worked upon and type of work to be done. See Appendix A for information to be included in sketches.

E. FUTURE EXPANSION

1. On new installations or adjustments of existing utility lines, provisions should be made for known or planned expansion of the utility company facilities, particularly those located underground or attached to bridges and structures.
2. Plan future expansion to minimize hazards and interference with highway traffic when additional overhead or underground lines are installed.

F. CATHODICALLY PROTECTED UTILITIES

Buried pipelines cathodically protected must be electrically isolated from underground metallic highway structures, unless the pipeline and highway structure are interconnected and cathodically protected as a single unit. Any cathodically protected utility shall be at least 10 feet from any bridge substructure. Anode beds associated with a cathodically protected utility shall be at least 300 feet or more from any substructure element. Inspections and electrical tests must be made to assure proper electrical isolation. Pipeline cathodic protection systems shall be designed as to minimize any adverse impacts of stray currents to adjacent structures.

G. TRAFFIC CONTROL

1. All utility work on the roadway, within the Clear Zone, or involving equipment parked in the Clear Zone, requires a Traffic Control Plan.
2. Traffic Control is to be provided by the utility company for all Utility Permit Agreements whenever such utility company work interferes with the movement of traffic or where the work or equipment is located within the Clear Zone.
3. Personnel working on County right-of-way must wear ANSI Class II High Visibility Safety apparel compliant with 23 CFR Part 634, as set forth in 71 Federal Register 67792 to 67800 (Nov. 24, 2006). The purpose of the regulations is to decrease the likelihood of worker fatalities or injuries caused by motor vehicles and construction vehicles and equipment within the right-of-way.
4. The traveling public shall be warned of the activities of the contractor or individuals involved with utility construction and maintenance within the highway right-of-way by means of signs, flaggers, and traffic control devices as outlined in the latest edition of the "Manual of Uniform Traffic Control Devices" (MUTCD), U.S. Department of Transportation, FHWA.
5. Flaggers will be required according to the MUTCD when utility construction and maintenance work on the roadway (including pavement) is in progress. Control by flaggers is for the safety of the workers and the traveling public. Flaggers must wear ANSI Class II safety vests and high visibility headwear at all times when flagging traffic.
6. Typical Signing Plans for traffic control on highways involving "Roadside Work" and "Lane Closure" are available on the County website www.sedgwickcounty.org under Public Works. These are typical plans and should be supplemented if necessary to conform to the MUTCD.
7. A specific Traffic Control Plan may be required for utility work on Divided, Four-Lane Undivided, and High Volume Two-Lane Highways, especially in urban areas.
8. All Traffic Control Plans must be preapproved by the County Engineer or designee.

H. PARKING AND STORAGE

Storage of materials, parking of equipment and vehicles when not used in actual utility work within the road or highway right-of-way will not be permitted on the right-of-way unless no other alternative is available. If such storage or parking is permitted, then it must be located beyond the Clear Zone and as far to the edge of the right-of-way as possible.

III. SPECIAL PROVISIONS

Although all provisions cannot be covered in this policy, it is expected that work will be carried out in a manner which accounts for the health, safety and welfare of the public.

A. DISCHARGE OF WASTE MATERIAL

Applications for Utility Permit Agreements for the installation of utility facilities which will discharge materials into the nation's waters must be accompanied by satisfactory evidence of compliance with all applicable requirements of United States Army Corps of Engineers (USACE), and other Federal, State and local environmental protection agencies with jurisdiction. A copy of any necessary permit or authorization shall be provided to the County Engineer or designee upon request.

B. PIPELINES CARRYING HAZARDOUS MATERIALS

Pipelines shall be installed in a safe and reinforced manner in case of breakage. Permit applications for pipelines carrying hazardous, corrosive or detrimental materials shall contain the names of company officials who can be contacted on a 24-hour basis in case of any incidence causing a dangerous situation involving the utility. The utility will notify Sedgwick County Public Works Department of all changes in the calling list.

C. ROADSIDE, LANDSCAPE AND PRESERVATION

1. AERIAL INSTALLATIONS

New aerial installations shall be avoided in such areas where there is a feasible and prudent alternative to the use of such lands by the aerial facility. Consideration will be given to utility owners for the necessary trimming, clearing or removal of vegetation to provide adequate clearance of overhead wires with regard to the preservation of planted vegetation. In no case will approval be granted for wasteful or wanton trimming or removal of vegetation in order to provide easy solutions to solve difficulties.

2. DISTURBED AREAS

Areas of highway right-of-way disturbed by the installation, maintenance, removal and relocation of utilities shall be kept to a minimum. No work, other than emergency work, will be permitted on highway right-of-way when soil condition is wet enough to cause rutting or other damage to the right-of-way.

All excavations will be backfilled within forty-eight (48) hours after work is completed, or as directed by the County Engineer and/or Township official, and shall comply with the KDOT Standard Specifications Type B, MR-90 compaction requirements for Excavation of Embankment for Highways.

Disturbed areas shall be returned to normal grade and elevation, with adequate compaction of backfill material, and all excess material removed by the utility. Any asphalt damages due to utility project work, will be repaired in an equal or improved manner than previously existed within the time frame of project completion. Also, all destroyed vegetation shall be replaced by the utility by sodding, seeding, fertilizing and mulching as required by the County Engineer or Township Official.

Adequate protection against erosion shall be provided by the utility in disturbed areas that are susceptible to erosion. Such protection may be in the form of rock riprap, wash checks, hay cover or other material that is approved and does not interfere with highway maintenance operations.

3. DRAINAGE FACILITIES

Care shall be taken to avoid disturbing or altering existing drainage facilities. Underground utility facilities shall be backfilled with approved material and outlets provided for entrapped water. Underdrains should be provided where necessary.

4. CLEANUP

Prior to final inspection all unused materials or debris must be removed from the site of the project area, leaving the right-of-way in a clean, presentable condition.

5. SPRAYING, CUTTING AND TRIMMING TREES

Trees, shrubs, bushes, vines or ground cover on the highway right-of-way shall not be sprayed, pruned, trimmed, cut down, rooted up, removed or mutilated in any manner, unless Utility Permit Agreement and/or submitted plans explain such work, with the approval of the County Engineer or Township Official. Electric companies should explain trimming of trees on the Utility Sketch to prevent dangerous situations during installation and repair of aerial lines.

D. REPAIR

All public utilities that operate in the public right-of-way in unincorporated Sedgwick County are required to repair all damage to the right-of-way caused by the installation or maintenance of the utility and to return the public right-of-way to the condition prior to construction per Sedgwick County Public Works standards. If the utility fails to make repairs required by Sedgwick County Public Works within 60 days after written notice has been provided, the County may make those repairs and charge the utility the cost of the repairs. In this situation, the County would also be authorized to apply the bond provided by the utility per Exhibit C of resolution 139-2016.

E. TRENCHING AND BACKFILL

1. Trenches shall be cut to have vertical faces only where soil and depth conditions permit, with a maximum width of outside diameter of pipe, plus two (2) feet. Open pits or trenches shall be excavated and protected according to Occupational Safety and Health Administration (OSHA) Law & Regulations and the MUTCD.
 - a. Bedding shall be provided to a depth of six (6) inches or half of the diameter of the pipe, whichever is the least. This requirement may be waived for lines with the inside diameter of two (2) inches or less, and installed in compliance with the current American Waterworks Association (AWWA) Standards, or other applicable industry standards.

- a. Bedding material shall be free of lumps, clods, stones and frozen material and shall be graded to a firm but yielding surface without abrupt changes in bearing value.
- b. The compaction density of the bedding and backfill material shall be 90% (std.) paralleling road right-of-way and 95% (std.) crossing road right-of-way as determined by AASHTO T-99 Standards, unless otherwise advised by the County Engineer.

F. PIPELINE INSTALLATIONS

1. It is the responsibility of the utility company installing pipelines to specify the type and class of material, maximum working pressures, and test and design pressure for the safety, health and welfare of the general public.
2. Vent standpipes shall be located and constructed so as not to interfere with maintenance of the road or concealed by vegetation. Where possible, they shall be marked and located at the right-of-way line. The markers shall give the name and address of the owner and phone number to contact in case of emergency.
3. Roadside ditches or natural water courses shall not be used for purging the carrier unless specifically authorized by the County Engineer and approved by any state or federal agency with jurisdiction over said ditches or water courses.
4. The utility companies (with the exception of telephone utilities) shall place readily identifiable and suitable markers at the right-of-way where it crosses the road, except in those cases where a vent serves as a marker.

IV. MAINTENANCE AND SERVICING FACILITIES

A. OWNER'S RESPONSIBILITIES

1. Maintenance of the utility is the responsibility of the utility owner. Maintenance must be performed to keep the facility in a condition as constructed and in accordance with the requirements of federal, state and local statutes, regulations and utility codes.
2. Utility companies shall replace and stabilize all earth cover and vegetation where the underground utility has caused erosion.
3. The utility company shall repair settlement of backfills, fills, and embankments placed by the utility company or its contractors or subcontractor at any tier which may occur within one (1) year of notice of acceptance from the County Engineer or designee. Any repairs shall be made by the utility company within thirty (30) days after receipt of notice from the County Engineer.

B. EMERGENCY MAINTENANCE

Emergency repair of utilities located within public rights-of-way is permissible without first obtaining a Utility Permit Agreement, if an emergency exists that is dangerous to the health, safety or welfare of the public and which requires immediate repair. The utility owner shall take all necessary and reasonable safety measures and temporary traffic control measures consistent with the MUTCD or the State of Kansas Traffic Control Standards to protect the traveling public and cooperate fully with local law enforcement and the County Engineer.

The utility company will advise the County Engineer of the location of the emergency as soon as possible after discovering the emergency. The utility company will coordinate with Public Works on the work and traffic control. Any damage to the right-of-way will be restored in accordance with Section III. C. 2, "Disturbed Areas."

V. UTILITY INSTALLATIONS

Utility lines constructed within public right-of-way shall be in conformance with the current KDOT Standard Specifications, National Electric Safety Code, American Waterworks Association Standards, American National Standards Institute, and other applicable publications.

A. UNDERGROUND INSTALLATIONS

1. GENERAL

- a. Utilities will not be permitted in the traveled way, shoulder or shoulder slopes, deep cuts, near bridge footings or in wet or rocky terrain. Any exception shall be approved by the County Engineer.
- b. Unsuitable material located at trench bottom for pipelines will be layered with aggregate material of sufficient thickness for stabilization.
- c. Manholes shall not be located in a bridge deck, traveled way, median, shoulder, shoulder slope, ditch or backslope and shall not protrude above the surrounding ground.
- d. All buried plastic pipes shall be required to have a tracer wire for ease of locating.
- e. Private and public Utility Company lines shall not be permitted to be attached to or routed through drainage structures or cattle passes.
- f. Fiber optic lines shall be buried at a depth of at least three (3) and have a tracer wire for ease of locating.
- g. Buried vaults larger than a hand hole (3 foot x 4 foot) shall be located on private right-of-way. Aboveground equipment cabinets other than splitter posts shall be located on private right-of-way.

2. UTILITIES PARALLELING RIGHT-OF-WAY

- a. Underground utility installations shall be located at the outer limits of the right-of-way to minimize interference with maintenance operations and future highway improvements.
- b. Underground facilities shall be located at a minimum depth of three (3) feet below lowest point of ditch. Such cable may require greater burial depth at certain locations including, but not limited to, crossings of streambeds, side roads, and major entrances. In no case shall the depth of cover for any underground facilities be less than that meeting applicable Industry Safety Guidelines.
- c. If less than minimum depth is necessary because of existing utilities, water table, ordinance, or similar reasons the line shall be rerouted or protected with a casing, suitable bridging, concrete slab or other appropriate means.
- d. All pedestal type structures shall be located at the outer limits of the right-of-way, preferably within three (3) feet of the right-of-way line.

3. UTILITIES CROSSING RIGHT-OF-WAY

- a. All road crossings shall be made by boring or punching under road. Open cuts across surfaced, graveled and dirt roads will be permitted only when special permission is granted by the County Engineer or Township Official.
- b. Underground utility installations shall be located normal (perpendicular) to highway alignment where practical.
- c. All utility crossings on county roads will be enclosed in a casing approved by the County Engineer, with some exceptions as explained in Section VI, Part B: Cased Lines & Uncased Lines.
- d. All utilities crossing under ditches and roadways shall have a minimum depth of cover of five (5) feet below crown grade or three (3) feet below ditch grade, whichever is greater. In fill sections, the natural ground line at the toe of the slope will be considered ditch grade.

B. OVERHEAD INSTALLATIONS

Where aerial crossings are required, all poles, guys, anchors and appurtenances shall be located preferably within two (2) feet of the right-of-way line, to minimize adjustments for accommodating future road improvements. They shall not be located in ditch bottoms, at drainage structure openings or on roadway shoulders.

Where there are curbed sections, the utilities, poles, guys, anchors and appurtenances shall be located as far as practical behind the face of the outer curbs and where feasible behind the sidewalks. The preferred location is near the right-of-way line.

The minimum vertical clearance to overhead electrical installations shall be that required by the current edition of the National Electrical Safety Code, Institute of Electrical and Electronics Engineers (IEEE). General clearance guides based on 175 foot spans, are provided in the following table:

| Vertical Clearance ⁽¹⁾ | Line Voltage |
|--|---------------------|
| 15 ft. 6 in. | Communication Lines |
| 18 ft. | 0-750 |
| 20 ft. | 750-15,000 |
| 22 ft. | 15,000-50,000 |
| (2) | Over 50,000 |

(1) Increase clearance 0.01 foot for each foot in excess of 175 foot span.

(2) increase clearance 0.033 foot for each 1,000 volts of the excess over 50,000 volts

Installations preferably shall be limited to single pole type construction with vertical configuration of conductors and cables. Joint-use single pole construction is encouraged at locations where more than one utility or type of facility is involved. When multiple utilities are located on a span, current industry standards for the utility type shall dictate clearance requirements.

VI. ENCASEMENT OF UTILITIES

A. GENERAL

Casings shall be an oversized load bearing conduit or duct through which a utility is inserted at locations where the line is conducive to exposure; as on bridges (see Appendix B), under roadways and near the ground surface.

Casings are used for the following reasons:

- to provide for utility repair without interference to highway traffic.
- to protect carrying pipe from external load or shock.
- to convey leaking fluids or gases away from the area directly beneath traveled way to a point of venting near the right-of-way line.

The casing shall include necessary appurtenances such as vents, drains and markers. Casing pipe shall be sealed at both ends with a suitable material to prevent unwanted leakage, and shall be at least two nominal pipe sizes larger than the carrier pipe.

1. Utility Lines Crossing Public Right-of-Way

Utility lines that cross the public right-of-way will in general require casing under the roadway with a minimum distance from toe of backslope to toe of backslope in ditch sections and from toe of fill slope to toe of fill slope in fill sections.

2. Utility Lines Paralleling Public Right-of-Way

Utility lines that parallel the public right-of-way require casing at certain locations, such as crossing of streambeds, sideroads and/or major entrances.

B. CASED LINES AND UNCASSED LINES

1. ELECTRIC SERVICE LINES

Electric service lines require conduit when crossing the roadway from right-of-way line to right-of-way line and must be clearly marked by the owner at the outer limits of the right-of-way.

2. LINES CARRYING HIGH PRESSURE, HAZARDOUS OR CORROSIVE PRODUCTS

Lines carrying high pressure, hazardous or corrosive products such as natural gas, liquid petroleum, ammonia, chlorine, or other such products need not be cased provided they are:

- a. Welded steel pipelines
- b. Cathodically protected
- c. Coated in accordance with accepted industry standards
- d. Meet the requirements of the American National Standards Institute
- e. Designed for operating stress levels in accordance with Federal Pipeline Safety Regulations

A Waiver of Casing is required for this type of line stating that the conditions and provisions in (a) through (e) above will be complied with.

Such lines not meeting conditions and provisions (a) through (e) above must be cased and shall be vented and marked at the outer right-of-way limits. The markers shall give the name and address of owner and phone number to contact in case of emergency.

3. SANITARY SEWER

Sanitary sewer lines do not usually require casing, but exceptions may be made at the discretion of the County Engineer. The owner shall comply with local and state law requirements and the "Uniform Plumbing Code" regulations on the distance required between sewer and water lines.

4. WATER LINES

Water lines two (2) inches or less inside diameter of copper, steel, or plastic do not usually require casement, except in certain instances as may be requested by the County Engineer.

Water lines crossing the right-of-way, constructed prior to highway construction with proper bedding, and utilizing extra strength cast iron or ductile iron pipe with mechanical joints and seals or restrained joints do not require casement between right-of-way.

All other water lines crossing road right-of-way must be cased, from toe to toe of backslope in ditch sections or toe to toe of fill slope in fill sections. Venting and sealing of casement is not required.

5. TELEPHONE AND/OR COMMUNICATIONS CABLE

Direct buried telephone and communications cable will not require casement.

6. OTHER UTILITIES

Utilities not previously mentioned will be dealt with on an individual basis to determine whether casing is required.

NOTE: Utility lines, which by reason of shallow depth or location make them vulnerable to damage from highway construction or maintenance operations, shall be protected with a casing or use of other appropriate measures.

C. CASING MATERIAL

The following materials are acceptable for use in the casing of utility facilities:

1. Welded steel pipe, smooth wall, in sound condition with a minimum wall thickness as specified in the latest edition of the American Petroleum Institute Recommended Practice 1102, Steel Pipelines Crossing Railroads and Highways. The following table is taken from Annex C of API 1102 Seventh Edition (December 2007) for bored crossings under highways:

| Casing Nominal Pipe Diameter | Minimum Nominal Wall Thickness |
|-------------------------------------|---------------------------------------|
| ≤12.75" | 0.134" |
| 14"-20" | 0.134" |
| 22"-36" | 0.164" |

| Casing Nominal Pipe Diameter | Minimum Nominal Wall Thickness |
|------------------------------|--------------------------------|
| 38"-44" | 0.188" |
| 46"-48" | 0.219" |
| 50"-60" | 0.250" |

2. The following types of pipe material shall meet the requirements of the current KDOT Standard Specifications and the referred to minimum AASHTO and ASTM requirements:
 - a. Aluminized corrugated steel or corrugated aluminum pipe and coupling bands
 - b. Reinforced concrete pipe
 - c. Vitrified clay pipe
 - d. Cast Iron or ductile iron pipe of the same class as used for carrier pipe.
3. High-Density Polyethylene (HDPE) providing it meets the minimum ASTM Specifications.
4. Polyvinyl Chloride (PVC) and Chlorinated Polyvinyl Chloride (CPVC) providing it meets the minimum ASTM Specifications and all applicable laws and codes. CPVC pipe shall meet the ASTM Specifications as listed in the following table:

| CPVC ASTM SPECIFICATION F 441 | | |
|--|------------------------|----------|
| Casing Diameter | Minimum Wall Thickness | Schedule |
| 4" | 0.237" | 40 |
| 6" | 0.280" | 40 |
| 8" | 0.322" | 40 |
| 10" | 0.365" | 40 |
| 12" | 0.460" | 40 |

The use of PVC pipe for casing is acceptable up to a maximum diameter of 12 inches.

5. Electric conduits may be of non-metallic materials such as polyvinyl chloride (PVC), High-Density Polyethylene (HDPE), transite or vitrified clay.

VII. BORING

A. RESTRICTIONS

Pits for boring, tunneling or jacking will not be permitted in the highway median and will not be permitted closer to the roadway than toe of fill in fill sections or toe of shoulder slope in ditch sections when allowed in the public right-of-way.

B. CONSTRUCTION REQUIREMENTS

Casing and pipeline installations shall be accomplished by dry boring, tunneling, jacking, trenching or other approved methods.

1. The use of water under pressure (jetting) or puddling will not be permitted to facilitate boring, pushing or jacking operations. Some borings may require water to lubricate the cutter and pipe and, under such conditions, is considered dry boring.
2. Where unstable soil conditions exist, boring or tunneling operations shall be conducted in such a manner as not to be detrimental to the roadside being crossed.
3. If excessive voids or too large of a bored hole is produced during casing or pipeline installations, or if it is necessary to abandon a bored or tunneled hole, prompt remedial action shall be taken by the utility company, subject to the approval of the County Engineer.
4. All voids or abandoned holes by boring or jacking shall be filled by pressure grouting when deemed necessary by the County Engineer. The grout material shall be a sand cement slurry with a minimum of two (2) sacks of cement per cubic yard and a minimum of water to assure satisfactory placement.

C. BORED OR TUNNELED HOLE DIAMETER

Bored or tunneled installations shall have a hole diameter which shall not exceed the outside diameter of the utility pipe, cable or casing (including coating) by more than one and one-half (1½) inches on pipes with an inside diameter of twelve (12) inches or less, or two (2) inches on pipes with an inside diameter greater than twelve (12) inches.

APPENDIX A

UTILITY SKETCH REQUIREMENTS

See Example Plan Sheet on page 16

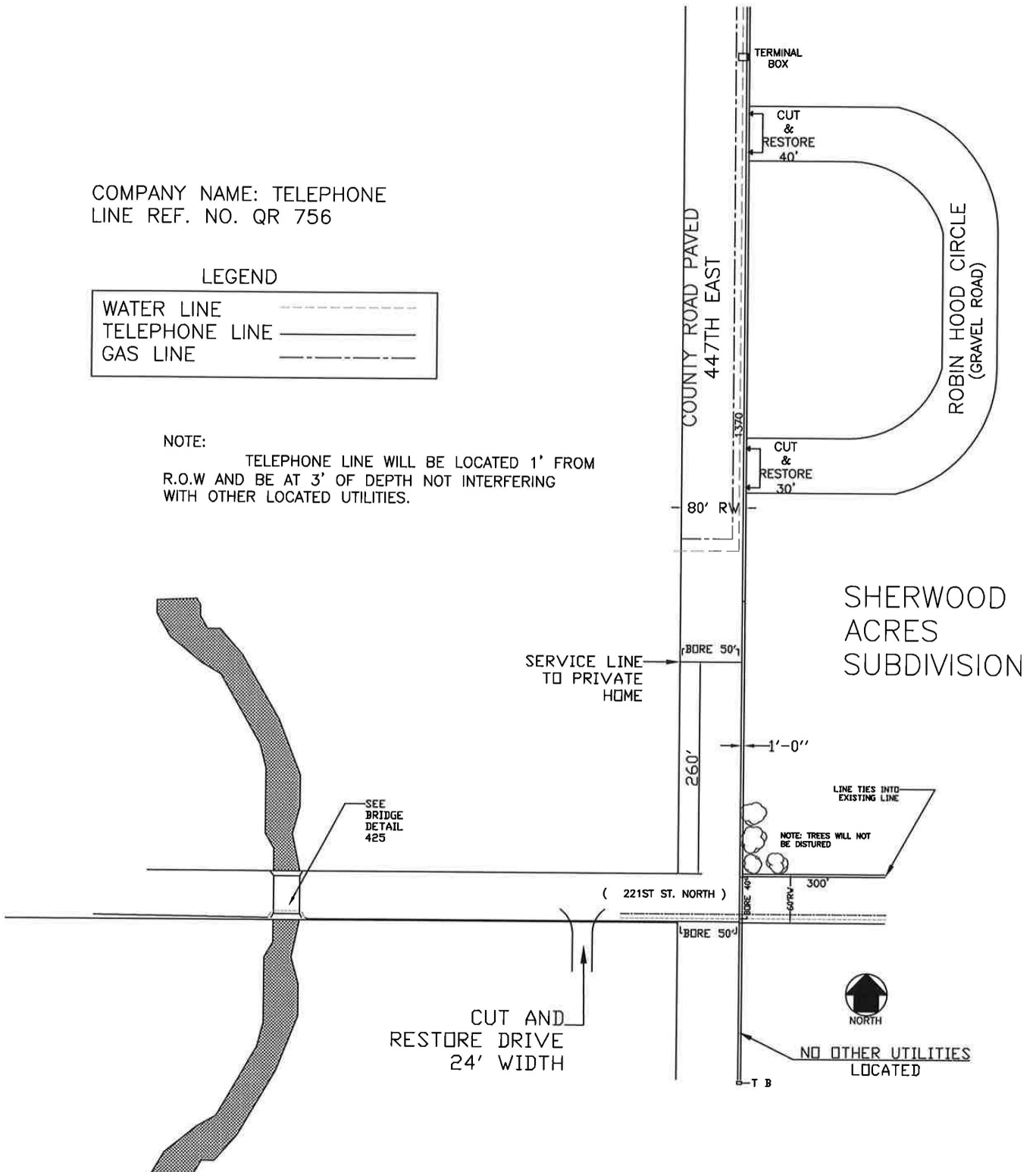
1. Street names and Sedgwick County road number (both when available) and hundreds block (e.g.: 55th West (Hoover)).
2. Section, Township and Range.
3. Type of street surface (concrete, asphalt, gravel, sand, dirt).
4. Explain material to be installed, type of line, testing pressures, any casing, manholes or vents, etc., by location, dimensions, plan and profile.
5. Indicate name and general location of subdivision, additions or developments.
6. Indicate location of line:
 - a. distance from edge of right-of-way
 - b. length of line
7. Indicate what the new line is tying into (terminal point, existing line, service for new development, etc.).
8. Explain if line will be cut or bored into ground.
 - a. No County road or paved driveway will be cut across without special permission from the County Engineer.
 - b. If all driveway entrances are to be bored, note as such. If cut, indicate location of driveway and length of cut.
9. Indicate other utility lines by location and description in the project area . If there are none, make a statement indicating as such.
10. Any trees or obstacles in the line location shall be indicated and noted of any approved disturbance.
11. All sketches shall include a north arrow, symbol legend and dimensioning.
12. NOTES:
 - a. A general legal description should be included on the Utility Permit Agreement.
 - b. Coordination with Townships may be required on Township maintained roads. Sedgwick County Utility permits are required for all utility work done in Sedgwick County with the exception of incorporated cities with roads not under the jurisdiction of County/Township maintenance.
 - c. Utility applicants shall notify County, Township and other utilities located in the work area 24 hours prior to beginning of construction work.

EXAMPLE PLAN SHEET

COMPANY NAME: TELEPHONE
 LINE REF. NO. QR 756

| LEGEND | |
|----------------|-------|
| WATER LINE | ----- |
| TELEPHONE LINE | _____ |
| GAS LINE | ----- |

NOTE: TELEPHONE LINE WILL BE LOCATED 1' FROM R.O.W AND BE AT 3' OF DEPTH NOT INTERFERING WITH OTHER LOCATED UTILITIES.



APPENDIX B

BRIDGE ATTACHMENTS

A. GENERAL

1. All proposals for utility installations and other attachments to bridges or structures must be reviewed by the County Engineer or designee.
2. Policies stated earlier in the main section also apply to bridge attachments.
3. A Utility Permit Agreement will also cover bridge attachments with the addition of a drawing, entitled "Bridge Detail." (As seen in the example in the latter part of this appendix.) Attachment plans will include catalog cuts of attaching hardware and construction plans detailing the method of attaching the utility and position of the utility on any bridge or structure. Prohibited practices include:
 - a. Anchors driven using the explosive type driving force method.
 - b. All welding and drilling on steel members.
 - c. All drilling in pre-stress and reinforced concrete girders.
 - d. Attachment of conduits to bridge handrail and guardrail components.
 - e. Pipelines using bridge members to resist forces generated by fluids in motion.
4. A permit allowing a utility owner the privilege of attaching its facilities to a public road structure does not constitute any permanent right for such attachment. Any removal, remodeling, maintenance or relocation of the attachment, whether required by Sedgwick County or not, will be promptly accomplished by the owner at no cost to Sedgwick County unless other provisions have been made. Such installations shall be done in a way that installation, service and maintenance can be achieved without access to the bridge deck.
5. Insurance coverage, for any damages that occur by reason of pipeline attachments carrying PETROLEUM, HAZARDOUS OR CORROSIVE PRODUCTS, will be provided by the utility company in the amount determined for each bridge or structure by the County Engineer. Minimum coverage will be set at the replacement value of the structure.

B. DESIGN

The utility company is responsible for the design of their facility attachments to a public road structure and shall submit plans for review and approval, prepared and signed by a Kansas licensed Professional Engineer.

1. When a new structure is in the design stage, the County, through cooperation with the utility company, may arrange for conduit or pipe hangers to be shown on bridge construction plans for installation by the Sedgwick County Public Works Department or its authorized contractor. Additional costs resulting from such attachments are borne by the utility company unless otherwise provided by agreement.
2. Satisfactory provision for longitudinal (conduit or pipeline) movement due to temperature differentials or lineal expansion and contraction of the bridge shall be made in conduit or pipeline

designs. Such provisions may be line bends, flexible couplings or other methods acceptable under appropriate industry standards and specifications.

3. Utility company lines will not be permitted through bridge abutments.
4. Manholes used to service the facility shall not be located in the bridge deck. Such manholes shall be located beyond the edge of the wearing surface of the bridge or structure.

C. LOCATION

1. The County Bridge Engineer may be contacted for recommended locations and acceptable types of utility attachments for various bridges. Some standard utility attachments and their placement are illustrated in the latter part of this appendix.
2. Generally, utility lines and conduits are located at the side of the bridge, attached to the deck or hubguard. Wherever possible, attachments will be placed on the downstream side of bridges.
3. Transition of alignment of utility from paralleling right-of-way to bridge or structure should be perpendicular to the roadway. The utility line should come up along the outside or over the wingwall and then parallel to the deck of the bridge or structure. Attachment of utilities to existing bridges shall be made using hangers or clamps.
4. On new structures only, a hole through bridge abutments or wingwalls will be made only when design calls for reinforcement around the hole and leakage of water or backfill material is prevented. Any exception to this will be approved by the County Engineer.

D. MATERIALS

1. All attachments to bridges and structures shall be of durable materials designed for long service life expectancy and relatively free from routine servicing and maintenance. Conformance with current applicable materials specifications and codes is mandatory.
2. All steel materials used in attaching a utility to a structure must be stainless or galvanized.

E. METHOD OF ATTACHMENT

1. On steel structures utilities must be supported by a clamping device. Welding and drilling are prohibited.
2. On concrete structures utilities are to be attached using expansion anchors installed by drilling. The explosive type drive force method of anchoring is prohibited.
3. See pages 20-22 for attachment details.

F. PLANS

1. Bridge detail plans will include an end view and cross sectional view of the bridge showing attachment points. Also, a precise attachment detail will be shown.
2. Other information to be included: weight (lbs/ft), location of conduit and attachments, number and spacing of attachments and diameter of conduit.
3. Refer to bridge detail sketch on pages 20-22.

G. PIPELINES

1. Attachment of pipelines carrying liquid petroleum, hazardous or corrosive products will not be permitted in bridges or structures except in extreme cases where the owner can substantiate that any other location is extremely difficult and of unreasonable cost to the utility company and to the consumer.
2. Pipelines carrying natural gas, liquid petroleum products or other volatile fluid or gas under pressure will require installation of emergency shut off valves. Such valves shall be placed within an effective distance on each side of the bridge, unless the pipeline is equipped with nearby shut off valves or operates under control of automatic shut off devices.
3. Attachments shall be encased the length of the bridge with the casing carried beyond the back of the bridge abutments and opened or vented at each end to detect leakage when the line carries fluids such as:
 - a. Petroleum, hazardous or corrosive products, sewage, etc., or
 - b. Water lines carried over railroads, streets or other roads.
4. Carrier and casing pipe shall be suitably insulated from electric power line attachments.

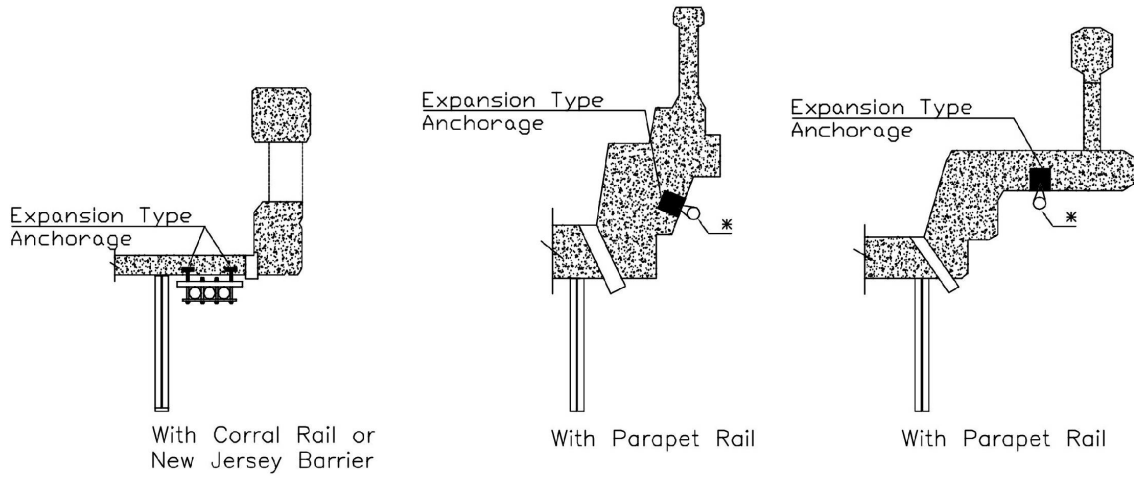
H. COMMUNICATIONS AND ELECTRIC LINES

Communication and electric power line attachments shall be suitably insulated, grounded and carried in protective conduit or pipe from point of exit from the ground to re-entry.

I. MAINTENANCE

1. Maintenance of the utility facility is the responsibility of the utility owner. Maintenance of the utility attachments will not be performed from the roadway, unless specifically authorized by Sedgwick County Public Works.
2. Utility installations and attachments shall be maintained to the satisfaction of the County Engineer.

BRIDGE ATTACHMENT ON CONCRETE STRUCTURE

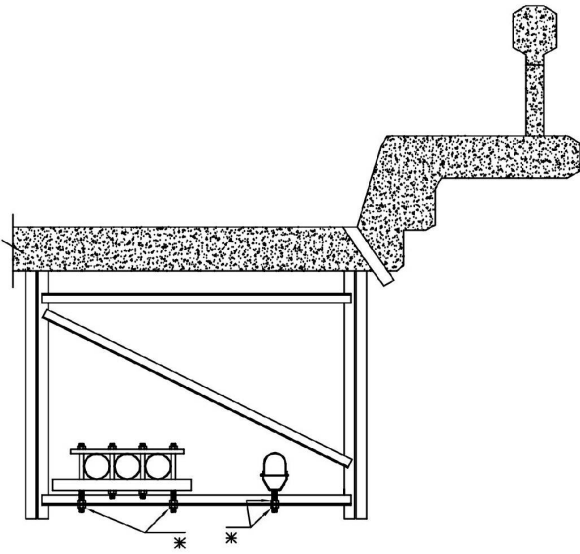


SINGLE OR MULTIPLE CONDUITS
- ALTERNATIVE LOCATIONS -

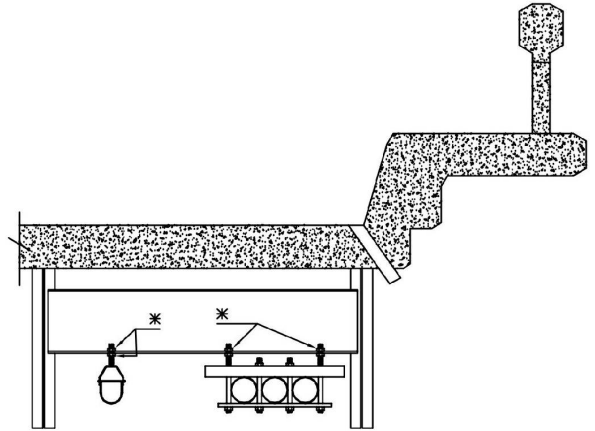
*Drilling, welding, or cutting of any structural steel is not allowed.
Use Conduit or Beam Clamps in place of drilling or cutting.

NOTE: All steel materials used in attaching a utility to a structure must be stainless or galvanized.

BRIDGE ATTACHMENT ON STEEL SUPERSTRUCTURE



With Cross Frame Diaphragm



With Bent Plate Diaphragm

SINGLE OR MULTIPLE CONDUITS
- PREFERRED LOCATIONS -

*Drilling, welding, or cutting of any structural steel is not allowed.
Use Conduit or Beam Clamps in place of drilling or cutting.

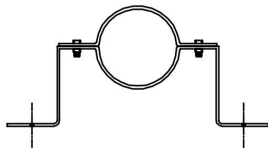
NOTES:

- 1) Bottom of conduits should not be lower than beam flanges.
- 2) All steel materials used in attaching a utility to a structure must be stainless or galvanized.

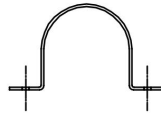
EXAMPLE CLAMPS AND HANGERS



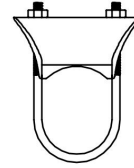
SPLIT RING HANGER



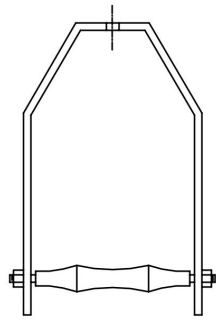
OFFSET PIPE CLAMP



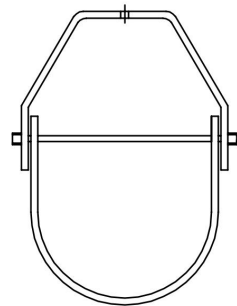
HOLD DOWN PIPE CLAMP



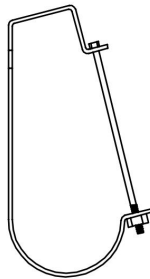
RIGHT ANGLE PIPE CLAMP



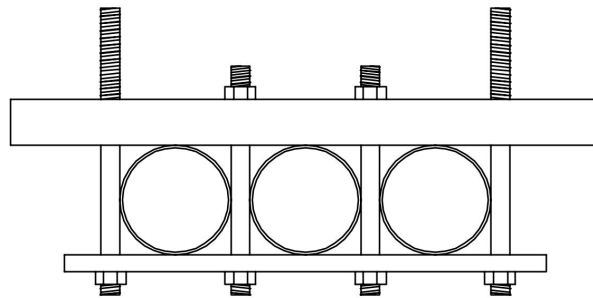
PIPE ROLLER HANGER



CLEVIS HANGER



T-SLOT HANGER



DUCT SUPPORT SYSTEM