

Policy  
of the  
**Iowa Department of Transportation  
Highway Division**

For Accommodating  
**Utilities  
on the  
Primary Road System**

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*In Accord With  
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Chapter 115 (306A)*



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of Transportation**

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**CHAPTER 115**  
**UTILITY ACCOMMODATION**

**761--115.1(306A) STATEMENT OF POLICY.**

115.1(1) This chapter covers initial placement, adjustment, improvement, relocation, replacement and maintenance of utility facilities in, on, above or below the right-of-way of primary highways, including attachments to primary highway structures. It embodies the basic specifications and standards needed to ensure the safety of the highway user and the integrity of the highway.

115.1(2) The department reserves the right to make exceptions to this chapter where the exercise of sound and reasonable judgment indicates that the literal enforcement of this chapter would defeat its objectives.

**761--115.2(306A) DEFINITIONS.**

The following terms, when used in this chapter, shall have the following meanings unless the context otherwise requires:

**Agreement.** A contract between the department and a utility facility owner relative to utility facility relocation and reimbursement.

**Appurtenance.** A utility facility-related feature such as a vent, drain, utility access hole or marker.

**Backfill.** Replacement of suitable material around and over a pipe, conduit, duct, casing or utility tunnel, and compacted as specified.

**Cable.** An insulated conductor or combination of insulated conductors.

**Carrier.** A pipe directly enclosing a transmitted fluid (liquid or gas) or slurry. Also, an electric or communication cable, wire or line.

**Casing.** An oversize load-bearing pipe, conduit, duct, utility tunnel or structure through which a carrier or cable is inserted.

**Clear zone.** That roadside border area, starting at the edge of the traveled way, available for use by errant vehicles.

**Communication line or cable.** A circuit for telephone, telegraph, alarm system, television transmission or traffic control purposes.

**Conduit or duct.** An enclosed tubular runway for protecting wires or cables.

**Cover.** Depth from the grade of a roadway or ditch to the top of an underground utility facility.

**Department.** Iowa department of transportation.

**Direct burial.** Installing a utility facility underground, without encasement, by plowing.

**Drain.** An appurtenance used to discharge moisture or liquid contaminants from casings.

**Emergency.** A situation that presents a danger to the life, safety or welfare of motorists, persons working within the right-of-way or the general public and requires immediate attention.

**Encasement.** Placing a casing around a utility facility.

**Engineer.** The chief engineer of the department, or the chief engineer's duly authorized representative.

**FHWA.** Federal Highway Administration.

**Freeway.** A fully controlled access primary highway.

**Fully controlled access highway.** A primary highway for which the rights of ingress and egress from abutting properties have been legally eliminated by the roadway jurisdiction. Access to the highway is allowed only at interchange locations.

**Highly energized.** An electrical energy level that could be hazardous if the utility facility is struck or exposed. For purposes of this chapter, voltage exceeding 60 volts is considered to be highly energized.

**Highway, street or road.** A public way for the purposes of vehicular travel, including the entire area between the right-of-way lines.

**Interchange.** A system that provides for the movement of traffic between intersecting roadways via one or more grade separations.

**Median.** That portion of a divided highway separating the traveled ways from opposing traffic.

**MUTCD.** The Manual on Uniform Traffic Control Devices for Streets and Highways, as adopted in rule 761--130.1(321).

**Nonfreeway highway.** A primary highway that is not a freeway.

**Occupying the right-of-way.** Located or to be located in, on, above or below the primary highway right-of-way, including attachments to primary highway structures.

**Pavement.** That portion of a roadway used for the movement of vehicles, exclusive of shoulders.

**Pipe.** A tubular product made as a production item and for sale as a pipe. Cylinders formed from plate in the course of the fabrication of auxiliary equipment are not "pipe" as defined herein.

**Pipeline.** A carrier system used to transport liquids, gases, or slurries.

**Plowing.** Direct burial of a utility line by means of a plow-type mechanism that breaks the ground, places the utility line and closes the break in the ground in a single operation.

**Primary road or primary highway.** A road or street so designated in accordance with Iowa Code subsection 306.3(2). This definition includes primary road extensions in municipalities and primary roads under construction.

**Relocation.** The removal, rearrangement, reinstallation, protection or adjustment of a utility facility.

**Right-of-way.** The land for a public highway, street or road, including the entire area between the property lines. For purposes of this chapter, the right-of-way line for a freeway is the access control line.

**Roadway.** That portion of a highway, including shoulders and auxiliary lanes, available for vehicular use. A divided highway has two or more roadways.

**Rural-type roadway.** Any roadway that does not have as its outside extremities a curb and gutter section.

**Service connection.** Any water, gas, power, communication, sanitary sewer or storm sewer line that extends from the main or primary utility facility into an adjacent property and that is used to serve the property.

**Shoulder.** That portion of a roadway contiguous to the traveled way for accommodation of disabled vehicles, for emergency use and for the lateral support of the pavement base and surface courses.

**Toe of foreslope.** The intersection of the foreslope and the natural ground or ditch bottom.

**Traveled way.** That portion of a roadway used for the movement of vehicles, exclusive of shoulders and auxiliary lanes.

**Trenched.** Installed in a narrow open excavation.

**Untrenched.** Installed without breaking the ground or the pavement surface, such as by jacking, boring, tunneling or mechanical compaction.

**Urban-type roadway.** A roadway that has as its outside extremities a curb and gutter section.

**Utility.** A system for supplying water, gas, power or communications; a storm sewer, sanitary sewer, drainage tile or other system for transmitting liquids; a pipeline system; or like service systems. This definition includes traffic signal and street and intersection lighting systems.

**Utility access hole.** An opening in an underground system through which workers or others may enter for the purpose of making installations, inspections, removals, repairs, connections or tests.

**Utility facility.** Any pole, pipe, pipeline, pipeline company facility, sewer line, drainage tile, conduit, cable, aqueduct or other utility-related structure or appurtenance. However, the term does not include departmental facilities or the lines that service them.



**Utility tunnel.** An underpass for two or more utility lines.

**Vent.** An appurtenance used to ventilate or to discharge gaseous contaminants from casings.

761--115.3 Reserved.

761--115.4(306A) **GENERAL PROVISIONS FOR OCCUPANCY OF THE RIGHT-OF-WAY.**

The general requirements for utility facilities occupying the right-of-way are as follows:

**115.4(1) Permit.**

- a. Except as provided in rule 115.10(306A), a utility facility owner shall not place its utility facilities in, on, above or below the primary highway right-of-way, attach its facilities to a primary highway structure, or adjust, improve, relocate or replace existing facilities occupying the right-of-way without first obtaining permission from the department.
- b. This permission shall be in the form of a utility accommodation permit issued by the department to the utility facility owner.
- c. The purpose of the permit process is to ensure the safety of motorists, pedestrians, construction workers and other highway users; to ensure the integrity of the highway; and to document the location of utility facilities for use in managing the highway right-of-way and locating the facilities in the future.
- d. For certain utility facility relocations, an agreement between the utility facility owner and the department may be negotiated. However, the agreement by itself does not constitute a permit nor does it grant permission to occupy the primary highway right-of-way. The utility facility owner is responsible for obtaining a permit prior to commencing work within the right-of-way. The agreement will then be attached to and become a part of the permit.
- e. The term "permit" includes any attachments thereto.

**115.4(2) Assurance of compliance.** It is the responsibility of the owner of the utility facility to assure that its utility facility complies with all applicable local, state, federal and franchise requirements and meets generally accepted industry standards at the time of installation.

**115.4(3) No adverse effect on highway.** A utility facility shall not adversely affect the safety, design, construction, operation, maintenance or stability of a primary highway.

**115.4(4) Minimal hazards to the highway user.** Construction and maintenance of the utility facility shall be accomplished in a manner that minimizes disruption of primary highway traffic and other hazards to the highway user.

115.4(5) **Protection of landscaped and planted areas.** A landscaped or planted area that is disturbed shall be restored as nearly as practical to its original condition. Specific authorization must be obtained from the engineer prior to trimming trees or spraying within the right-of-way.

115.4(6) **Notice by department.** The department shall give the utility facility owner at least 48 hours' notice of any proposed primary highway construction or maintenance work, on either existing or newly acquired right-of-way, when the proposed work will be within ten feet of existing utility facilities that have been previously authorized by the department to occupy the right-of-way.

115.4(7) **Noncompliance.** The department may take any or all of the following actions for noncompliance with any provision of this chapter or any term of a permit:

- a. Halt utility construction or maintenance activities within the right-of-way.
- b. Withhold a relocation reimbursement until compliance is ensured.
- c. Revoke the permit.
- d. Remove the noncomplying construction or maintenance work, restore the area to its previous condition, and assess the removal and restoration costs against the utility facility owner.

115.4(8) **Private utility facility.** A utility facility that is dedicated to private use shall be accommodated in accordance with this chapter. However:

- a. At the discretion of the engineer, the cover requirement of rule 115.27(306A) for tile lines and sewer lines may be waived when necessary.
- b. At the discretion of the engineer, the original replacement and the removal of signs required in rule 115.11(306A) may be accomplished by department personnel.

#### 761--115.5(306A) GENERAL DESIGN PROVISIONS.

The general design requirements for utility facilities occupying the right-of-way are as follows:

115.5(1) **Responsibilities.** The utility facility owner is responsible for the design. Departmental review and approval of the design are required.

115.5(2) **Plans.** Design plans shall be prepared by a person knowledgeable in highway design and in work zone traffic control and shall include the measures to be taken to preserve the safe and free flow of traffic, structural integrity of the roadway and highway structures, ease of highway maintenance, appearance of the highway and integrity of the utility facility.

115.5(3) **Materials.** All utility facilities shall be of durable materials designed for long service life expectancy and relatively free from routine servicing and maintenance.

115.5(4) **Ground-mounted facilities.** Ground-mounted utility facilities shall be of a design compatible with the visual quality of the specific highway section being traversed. (See rule 115.8(306A))

761--115.6(306A) ACCESS TO UTILITY FACILITIES.

115.6(1) **Freeways.** Access to utility facilities occupying the right-of-way of freeways shall be in accordance with the following:

- a. Except for emergency work, access shall be obtained from other than the freeway or its ramps during utility construction or maintenance operations. This means that access shall be obtained from intersecting, adjacent or nearby public highways, streets, roads or trails or from private property. See subrules 115.11(4) and 115.14(4) for emergencies.
- b. Fence removal and replacement are subject to the limitations imposed by the permit.
- c. No gates or ladders shall be placed in or upon the right-of-way fence.

115.6(2) **Nonfreeway highways.** Access to utility facilities occupying the right-of-way of nonfreeway highways is generally permitted, subject to any limitation imposed by the permit.

761--115.7(306A) CLEAR ZONE REQUIREMENTS.

Highway roadsides shall be as free from physical obstructions above the ground as practicable.

115.7(1) **Freeways.** The clear zone requirements for utility facilities occupying the right-of-way of freeways are as follows:

- a. On freeways open to traffic, no personnel, equipment or materials shall be permitted in the median or within the clear zone area, right-of-way width permitting, during utility facility construction or maintenance operations, except for the stringing of transverse overhead conductors. In the interest of safety, temporary poles in the median may be permitted during cable or conductor stringing operations if considered advisable by the engineer.
- b. The clear zone shall be determined by reference to Table 3.1 of the 1989 AASHTO Roadside Design Guide.

115.7(2) **Nonfreeway highways.** The clear zone requirements for utility facilities occupying the right-of-way of nonfreeway highways are as follows:

- a. In rural areas with rural-type roadways, a permanent, aboveground obstruction shall be restricted to an area beyond the clear zone or the roadway foreslope, whichever locates the obstruction a greater distance from the edge of the traveled way.

- (1) If sufficient right-of-way is not available to accommodate this distance, the department may require that the facility consist of a breakaway design, require regrading of the right-of-way, or authorize the facility to be placed near the right-of-way line.
- (2) The clear zone table shown below shall, unless otherwise specified, be used to determine the appropriate clear zone distance on rural-type roadways based on present day traffic and the existing foreslope adjacent to and preceding the utility facility. The values in the table are based on a 60 mph design speed. Should the department decide that another design speed is more appropriate, the clear zone shall be determined by reference to Table 3.1 of the 1989 AASHTO Roadside Design Guide.
- (3) The clear zone shall, unless otherwise specified, be measured from the edge of the traveled way. In the table, the lower value represents the minimum acceptable distance, while the higher value represents the desirable distance to be achieved whenever practical.
- (4) Clear zone table:

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CLEAR ZONE (in feet)

Traffic Volume, ADT

<u>Foreslope</u>	Under 750	750-1500	1500-6000	Over 6000
3:1 or steeper	*16'-18' beyond the toe of foreslope or 20'-24' from edge of traveled way, whichever is greater	*20'-24' beyond the toe of foreslope or 26'-32' from edge of traveled way, whichever is greater	*26'-30' beyond the toe of foreslope or 32'-40' from edge of traveled way, whichever is greater	*30'-32' beyond the toe of foreslope or 36'-44' from edge of traveled way, whichever is greater
4:1	20'-24'	26'-32'	32'-40'	36'-44'
6:1 or flatter	16'-18'	20'-24'	26'-30'	30'-32'

\* Since recovery is less likely on foreslopes that are 3:1 or steeper, fixed objects should not be present in the vicinity of the toe of these slopes. Recovery of errant vehicles may be expected to occur beyond the toe of the slope. Determination of the width of the recovery area at the toe of a slope that is 3:1 or steeper should take into consideration right-of-way availability, environmental concerns, economic factors, safety needs and accident histories. The distance beyond the toe of foreslope may be reduced by the width of the existing shoulder.

- b. In suburban areas with rural-type roadways and speed limits of 45 miles per hour or lower, a permanent, aboveground obstruction shall be located at least 15 feet from the edge of the paved traveled way or beyond the roadway foreslope, whichever is greater.
- c. On urban-type roadways, a permanent, aboveground obstruction shall be located no closer than ten feet from the edge of the traveled way.

761--115.8(306A) SCENIC ENHANCEMENT.

The type and size of utility facilities and the manner in which they are installed can materially alter the scenic quality, appearance and view of highway roadsides and adjacent areas. For these reasons, additional controls are applicable in areas that have been acquired or set aside for their scenic quality. Such areas include scenic strips, scenic overlooks, rest areas, recreation areas, public parks and historic sites, and the right-of-way of primary highways that pass through or are adjacent to these areas. The additional controls are as follows:

- 115.8(1) **Underground installations.** A new underground installation may be permitted if it does not require extensive removal or alteration of trees or other natural features visible to the highway user and if it does not impair the visual quality of the area being traversed.
- 115.8(2) **Overhead installations.** The department may permit a new overhead installation only if the following three conditions are met:
  - a. Other locations for an overhead installation are unusually difficult, are unreasonably costly, or are more undesirable from the standpoint of visual quality.
  - b. Underground installation is not technically feasible or is unreasonably costly.
  - c. The location, design and materials to be used for the proposed overhead installation will give adequate attention to the visual qualities of the area being traversed.

761--115.9(306A) COSTS AND LIABILITY.

115.9(1) **Costs of relocation.** Should the department be responsible for the costs of utility facility relocation required for highway work, the department shall not pay for any betterment that results in an increase in the capacity of the facility, or any other utility adjustment not required by highway construction. The department is entitled to receive credit for the accrued depreciation on replaced facilities and the salvage value of any materials or parts salvaged and retained or sold by the utility facility owner.

115.9(2) **Liability under a permit.**

- a. The owner of the utility facility shall indemnify and save harmless the state of Iowa, its agencies and employees from any and all causes of action, suits at

law or in equity, for losses, damages, claims or demands, and from any and all liability and expense of whatsoever nature (including reasonable attorney fees), arising out of or in connection with the owner's use or occupancy of the primary highway right-of-way.

- b. The state of Iowa, its agencies or employees, will be liable for expense incurred by the permit holder in its use and occupancy of the primary highway right-of-way only when negligence of the state, its agencies or employees, is the sole proximate cause of such expense. Whether in contract, tort or otherwise, the liability of the state, its agencies, and employees, is limited to the reasonable, direct expenses to repair damaged utilities, and in no event will such liability extend to loss of profits or business, indirect, special, consequential or incidental damages.

**761--115.10(306A) UTILITY ACCOMMODATION PERMIT.**

**115.10(1) Application for permit.**

- a. When a utility facility is to be placed in, on, above or below the primary highway right-of-way or attached to a primary highway structure, or an existing utility facility occupying the right-of-way is to be adjusted, improved, relocated or replaced, the owner of the utility facility shall submit a utility accommodation permit application to the department's appropriate resident maintenance engineer.
- b. Exception: City approval, rather than departmental approval, is required for service connections within incorporated municipalities. The utility facility owner shall apply to the city. However, all service connections shall, as a minimum, meet the requirements of this chapter.

**115.10(2) Plan.** Each permit application shall be accompanied by a plan showing the following:

- a. Location of the utility facility by section, township, range, milepost and highway station, where such exist.
- b. Highway centerline and right-of-way limits.
- c. Location of the utility facility by distance to the nearest foot at each point where the facility's location changes alignment, as measured from:
  - (1) Centerline of the highway on nonfreeway installations.
  - (2) Right-of-way fence on freeway installations.
- d. All construction details including:
  - (1) Depth of burial.
  - (2) Types of materials to be used in the installation.
  - (3) Operating pressures and voltages.

- (4) Vertical and horizontal clearances.
- (5) Traffic control plan prepared by a person knowledgeable in work zone traffic control, or reference to a standard traffic control plan of the department.

**115.10(3) Waterways.** A permit application for the placement of a utility facility that will discharge materials into the nation's waters must be accompanied by satisfactory evidence of compliance with all applicable federal, state and local environmental laws and regulatory standards.

**115.10(4) Department action on permit application.**

- a. The department shall act on the permit application within 30 days after its filing with the appropriate resident maintenance engineer. If an emergency should exist, the department shall act on the application as expeditiously as possible.
- b. Failure on the part of the applicant in providing the information listed in subrules 115.10(2) and 115.10(3) may, within this 30-day period, cause a delay in the department's taking final action on the application.

**115.10(5) Approvals required.**

- a. Departmental approval of the permit application is required.
- b. City approval is also required if the proposed work is within the corporate limits of the municipality.
- c. FHWA approval may be required if the proposed work is in, on, above or below the right-of-way of an interstate highway, including attachments to interstate highway structures.
- d. Prior to completion of construction, any change in the work as described in the approved permit shall require the prior approval of the department and the submission of as-built plans.

**115.10(6) Permit.**

- a. At a minimum, the permit allows:
  - (1) The permittee to perform the work covered by the permit.
  - (2) The utility facility described in the permit to occupy the right-of-way and to be used and maintained.
- b. The permit does not convey a permanent right of occupancy.

**115.10(7) New permit required.** A new permit is required any time there is a change in the class of transmittant, an increase in the maximum design pressure shown on the permit or any other physical change in the utility facility. Replacing an existing copper communication line with fiber optic cable is a physical change and requires a new permit.

**115.10(8) Expiration of certain permits.**

- a. Permits covering gas or water mains outside the corporate limits of municipalities shall expire after 20 years. Renewal may be requested.
- b. See subrule 115.24(17) for permits covering longitudinal occupancy of freeways.

**115.10(9) Copy at job site.** The owner of the utility facility or its contractor shall have a copy of the permit on the construction site at all times for examination by highway officials.

**115.10(10) Transfer of permit.**

- a. A new permit is not needed when a utility facility is sold, transferred or leased, unless there is a change that requires a new permit (see subrule 115.10(7)). The requirements of the permit and this chapter shall remain in force as long as the utility facility continues to occupy the right-of-way and serve its intended purpose.
- b. To assist the department in completing the notifications required in subrule 115.4(6), the new utility facility owner should contact the department's resident maintenance engineer responsible for the geographical area involved and advise the resident maintenance engineer of the following:
  - (1) Geographical area involved in the new ownership.
  - (2) New ownership name and address.
  - (3) Designated telephone number for notification purposes.

**761--115.11(306A) TRAFFIC PROTECTION.**

The traffic protection and traffic control requirements and guidelines for utility work within the primary highway right-of-way are as follows:

**115.11(1) Signs furnished.** The department shall furnish all signs necessary to conduct primary highway traffic through the construction or repair area. However, the owner of the utility facility may elect to use its own signs if they conform to the MUTCD.

- a. The utility facility owner is responsible for the original placement of signs and their removal after the work has been completed. The utility facility owner shall correctly use signs as needed while work is in progress.
- b. Department-owned signs shall be made available to the utility facility owner at one of the major departmental maintenance facilities. When work has been completed, these signs shall be returned to the facility from which obtained. Signs lost, damaged or destroyed shall be replaced or paid for by the owner of the utility facility.



**115.11(2) Traffic control for all work.** The following applies to all types of work.

- a. When performing work within the right-of-way, the owner of the utility facility is responsible for installing warning signs and protective devices and providing flaggers in accordance with departmental requirements for the protection of the traveling public and workers on the site.
- b. The placement of signs, barricades and channelizing devices shall be in accordance with the MUTCD and departmental specifications for traffic control for street and highway construction and maintenance operations.
- c. Flaggers shall be provided at work sites to stop traffic intermittently as necessitated by work progress or to maintain continuous traffic past a work site at reduced speeds to help protect the work crew. For both of these functions the flagger must, at all times, be clearly visible to approaching traffic for a distance sufficient to permit proper response by the motorist to the flagging instructions, and to permit traffic to reduce speed before entering the work site. In positioning flaggers, consideration must be given to maintaining color contrast between the work area background and the flagger's protective garments. Flagging shall be conducted in accordance with the MUTCD and the procedures required in the department's Flagger's Handbook.
- d. On urban-type roadways, the work vehicle may be used to supplement normal signing if it is equipped with an amber revolving light or amber strobe light.
- e. Additional protection should be provided when special complexities and hazards exist.

**115.11(3) Traffic control for construction and maintenance work.** The following applies to work that is not emergency work.

- a. The type of traffic control used shall be adequate for the nature, location and duration of work, type of roadway, traffic volume and speed, and potential hazards.
- b. Where high traffic volumes cause frequent congestion, routine scheduled maintenance and construction should be avoided during hours of peak traffic.
- c. Work areas should be occupied for only as long as it is necessary to safely move in, finish the work, remove all utility work signs and move out.
- d. Special care should be taken to clearly mark suitable boundaries for the work space with channelizing devices so that pedestrians and drivers can see the work space. If any of the traveled lanes are closed, tapers shall be used as required by the MUTCD and department standard road plans.
- e. Pedestrians should not be expected to walk on a path that is inferior to the previous path. Loose dirt, mud, broken concrete or steep slopes may force pedestrians to walk on the roadway rather than the sidewalk. Repairs (temporary or permanent) to damaged sidewalks should be made quickly. This may include bridging with steel plates or good quality wood supports.

- f. Any work that cannot be completed during the day and that impedes traffic, presents a hazard overnight or is located within the clear zone may need additional attention. Reflectorized signs and channelizing devices are required by the MUTCD. Warning lights are optional but should be considered.
- g. Any member of the crew who serves as a flagger shall be equipped with a red flag or STOP-SLOW paddle and with a reflective vest, and shall be trained for proper flagging procedures as specified in the department's Flagger's Handbook.
- h. Work areas involving excavations on the roadway should generally not exceed the width of one traffic lane at a time. The work should be staged and, if needed, approved bridging should be used. This type of activity should be fully coordinated with the engineer or, in cities, with the city traffic or public works department.

**115.11(4) Traffic control for emergency work.**

- a. Emergency work on a utility facility is unplanned work and may be necessary at any time of the day or night. It may be caused by storm damage or involve disruption of utility service to customers. The emergency work operation usually involves a small crew and a work vehicle for a short period of time.
- b. The extent of traffic control used for emergency work may be less than that used for longer term construction or maintenance. However, the safety of pedestrians, motorists and workers should be provided.
- c. The work vehicle should be equipped with an amber revolving light or amber strobe light, portable signs and channelizing devices in good condition, and necessary equipment for flaggers.

**761--115.12(306A) GENERAL CONSTRUCTION AND MAINTENANCE RESPONSIBILITIES AND PROCEDURES.**

The general requirements for utility construction and maintenance work within the primary highway right-of-way are as follows:

- 115.12(1) **Execution of work.** The work shall be executed in a satisfactory manner and in accordance with good construction practices.
- 115.12(2) **Disturbance of other contractors.** The work shall be accomplished in a manner that minimizes disturbance to any other contractor working within the right-of-way.
- 115.12(3) **Protection of landscaped and planted areas.** No person shall spray, trim, cut down, root up, remove, cut or mutilate in any manner, any tree, shrub, bush or vine situated upon any portion of the right-of-way without the specific written authorization of the engineer.
- 115.12(4) **Safety, health and sanitation.** The owner of the utility facility shall comply with the MUTCD and all applicable federal, state and local laws and regulations governing safety, health and sanitation. The owner shall furnish such additional

safeguards, safety devices and protective equipment and shall take such actions as are reasonably necessary to protect the life and health of the public.

- 115.12(5) **Clear zone.** When not in actual use in an installation operation, vehicles, equipment and materials shall not be parked or stored within the clear zone or median.
- 115.12(6) **Underground transverse crossings.** Underground transverse crossings of existing paved roadways shall be made by untrenched construction whenever possible. Any variance must be specifically authorized by the engineer and noted in the permit.
- 115.12(7) **Clear zone for jacking pits.**
- a. On freeways, jacking pits are not permitted within the median. Also, they shall be located in an area beyond the clear zone or the roadway foreslope, whichever locates the pits a greater distance from the edge of the traveled way, right-of-way width permitting.
  - b. On rural-type, nonfreeway highways, jacking pits are not permitted within the median. Also, they shall normally be located in an area beyond the clear zone or the roadway foreslope, whichever locates the pits a greater distance from the edge of the traveled way, right-of-way width permitting. However, a jacking pit may be allowed within the foreslope if it is specifically authorized by the engineer and noted in the permit.
  - c. On urban-type, nonfreeway highways, jacking pits shall generally be located at least two feet back from the curb.
  - d. Jacking pits authorized within the clear zone shall not remain open during night-time hours.

761--115.13(306A) **CONSTRUCTION RESPONSIBILITIES AND PROCEDURES.**

The requirements for utility construction work within the primary highway right-of-way are as follows:

- 115.13(1) **Notice of construction.** The owner of a utility facility shall give the engineer at least 48 hours' prior notice of its intent to start construction within the right-of-way.
- 115.13(2) **Relocation.** If relocation of an existing utility facility occupying the right-of-way is required due to highway construction, the owner of the utility facility shall relocate the facility without cost to the state and, whenever possible, in advance of the highway work.
- 115.13(3) **Authority of engineer.**
- a. The engineer has the authority to decide any questions that arise regarding the intent of the permit and compliance therewith, as related to the condition of the highway.

- b. The engineer may approve minor alterations in the plans or character of the work, as related to the condition of the highway, which may be considered necessary or desirable during the progress of the work to satisfactorily complete the proposed construction. Such an alteration shall not be considered a waiver of nor shall it invalidate any provision of the permit.

**115.13(4) Authority to inspect and approve.**

- a. The department reserves the right to inspect and approve any construction work performed within the right-of-way as it relates to the condition of the highway.
- b. The utility facility owner shall provide reasonable cooperation.

**115.13(5) Department inspectors.** The department may appoint inspectors to represent the engineer in the inspection of construction. Inspectors are placed on the job to keep the engineer informed of the progress of the work and the manner in which it is being performed, and to call to the utility facility owner's attention any infringements of the permit. The inspectors shall not:

- a. Modify in any way the provisions of the permit.
- b. Delay the work by failing to inspect the work with reasonable promptness.
- c. Act as a supervisor for the work or perform any other duties for the utility facility owner or its contractor.
- d. Improperly interfere with the management of the work.
- e. Approve or accept any portion of the work on behalf of the department.

**115.13(6) Work in progress.** The utility facility owner is responsible for the care and maintenance of partially completed work within the right-of-way. Unless otherwise authorized by the permit or the engineer, all work performed within the right-of-way shall be restricted to a time frame of 30 minutes after sunrise to 30 minutes before sunset.

**115.13(7) Repair and clean-up.** Prior to final inspection of the work by the department, the utility facility owner shall:

- a. Upon notification by the department, immediately make any repairs to the right-of-way that are necessary due to the construction work.
- b. Remove from the right-of-way all unused materials and rubbish resulting from the work and leave the right-of-way in a clean, presentable condition.

**115.13(8) Final inspection.** Upon notification by the utility facility owner or its authorized representative that the work is completed, the engineer shall make a prompt inspection of each item of work included in the permit as it relates to the condition of the highway.

- a. If the engineer finds that the work is not in compliance with the permit, the engineer shall provide to the utility facility owner written notice of the particular defects found. The owner is responsible for remedying these defects in a timely manner.
- b. If the engineer finds that the work is in compliance with the permit, the engineer shall so notify the utility facility owner.

**115.13(9) Procedures for backfilling trenched construction and jacking or boring pits.**

- a. When a carrier, pipe, conduit, duct or cable is placed by trenched construction beneath a roadway or driveway or within five feet of the edge of an existing or proposed pavement or base course, the backfill within the roadway shall be placed and compacted in no more than six-inch lifts, from the top of the installation to the ground line. The backfill shall be of suitable material free from boulders, frozen clods, and roots, excessive sod and other vegetation. The fill shall be carefully hand-tamped under and around the installation in lifts not to exceed four inches in loose thickness.
- b. Jacking or boring pits shall be backfilled in the same manner as that described in paragraph "a".
- c. When compaction is required in an area inaccessible to tamping-type rollers, a mechanical tamper of a size suitable for the work involved shall be used.
- d. Pneumatic tampers shall be operated at pressures no less than those recommended by the manufacturer.
- e. Compaction of backfill shall be to the satisfaction of the engineer and consistent with good highway construction methods.

**115.13(10) Procedures for untrenched construction.**

- a. When untrenched construction techniques are used, the bore shall be as small as possible and in no case more than four inches larger than the facility or casing inserted.
- b. Grout backfill is required for all unused holes and abandoned pipes. Grout or sand backfill is required for any borehole more than two inches larger than the installed casing or other facility. All bored facilities shall be constructed in such a manner that surface water will not be transported to or otherwise allowed access to groundwater.

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

- a. When the existing pavement must be cut to accommodate a utility installation, the cut shall be made with a concrete saw to a minimum depth of one and one-half inches.
- b. The width of the cut shall be determined by the width of the required trench plus 12 inches on each side of the trench. If the distance from the recommended width of cut to any adjacent longitudinal or transverse joint or crack is less than four feet, the pavement shall be removed to that joint or crack.

- c. Final determination of depth and width of cut shall be made by the engineer.

**115.13(12) Procedures for pavement replacement.**

- a. Restoration of pavement shall be accomplished in accordance with department's specifications.
- b. Temporary repair with bituminous material may be authorized by the engineer.
- c. A permanent patch shall be placed as soon as conditions will permit.

**761--115.14(306A) MAINTENANCE RESPONSIBILITIES AND PROCEDURES.**

The requirements for utility maintenance work within the primary highway right-of-way are as follows:

**115.14(1) General.** The owner of the utility facility is responsible for its maintenance. The owner shall:

- a. Maintain the facility in a good state of repair in accordance with applicable federal, state and local laws and regulatory standards.
- b. Replace and stabilize all earth cover and vegetation where it has eroded over an underground utility facility when the erosion is due to or caused by the placement or existence of the facility.

**115.14(2) Freeways—notice required.**

- a. For freeways, the owner of the utility facility shall give the department's resident maintenance engineer 48 hours' prior notice of its intent to perform predictable routine maintenance within the right-of-way. Telephone notification is sufficient notice.
- b. Access to the utility facility shall be obtained from other than the freeway or its ramps.
- c. See subrule 115.14(4) for emergency maintenance activities.

**115.14(3) Nonfreeway highways—notice required.**

- a. For nonfreeway highways, the owner of the utility facility shall give the department's resident maintenance engineer 48 hours' prior notice of its intent to perform predictable routine maintenance within the right-of-way. Telephone notification is sufficient notice.
- b. Notice is not required to perform predictable routine maintenance on service connections.
- c. See subrule 115.14(4) for emergency maintenance activities.

**115.14(4) Utility emergency maintenance activities.**

- a. Access to the site is permissible from the freeway roadways and ramps when an emergency exists.
- b. The utility facility owner shall take all necessary and reasonable safety measures to protect the traveling public and cooperate fully with the state highway patrol and the department in completing the emergency maintenance activities.
- c. If the nature of the emergency is such that it interferes with the free movement of traffic, the state highway patrol and the department shall be notified immediately.
- d. The utility facility owner shall as soon as possible notify the department of the emergency, advising the department of what steps are being taken for the protection of the traveling public, the extent of the emergency, and what steps are being taken to address the emergency.

**115.14(5) Department emergency maintenance activities.** There will be times when department forces will be required to perform highway-related emergency maintenance activities. Examples would be stop sign replacement and handling hazardous material spills. If utility facilities are affected, the department shall as soon as possible notify the utility facility owner of the emergency condition and what steps are necessary to protect the utility facility.

761--115.15 to 115.19 Reserved.

**761--115.20(306A) GENERAL REQUIREMENTS FOR TRANSVERSE UTILITY FACILITY OCCUPANCY.**

**115.20(1) Number of crossings.** The number of utility facilities crossing the primary highway right-of-way shall be kept to a minimum. The department may require distribution facilities to be installed on each side of the highway to minimize numerous crossings and service connections. In individual cases, the department may require several facilities to cross in a single conduit or structure. Crossings should be perpendicular to the highway alignment.

**115.20(2) Underground installations.**

- a. For both cased and uncased installations, consideration shall be given to placing spare conduit or duct to accommodate known or planned expansion of underground lines crossing the highway.
- b. Underground installations shall be located and encased as provided in rules 115.27(306A) to 115.34(306A).

**761--115.21(306A) TRANSVERSE UTILITY FACILITY OCCUPANCY OF FREEWAYS.**

The requirements for utility facilities crossing the right-of-way of freeways are as follows:

**115.21(1) General.** The following applies to both underground and overhead installations:

- a. Utility facility installations are not permitted within the interchange area of intersecting freeways unless they are highway related.
- b. In other interchange areas, occupancy may be considered if access to the utility facility can be obtained from other than the freeway or its ramps. If a utility facility cannot reasonably be accessed from an intersecting, adjacent or nearby public highway, street, road or trail, it shall be installed on private property around the interchange area to a point of crossing.

**115.21(2) Overhead installations.** Overhead installations shall comply with the following:

- a. In general, poles, guys and other supporting structures and related ground-mounted facilities shall be located outside the freeway right-of-way. A single span shall be used to cross the freeway where the width of freeway right-of-way permits.
- b. In interchange areas:
  - (1) Single pole construction shall be used with the number of poles kept to a minimum.
  - (2) Overhead lines shall be constructed on tangent, parallel to the intersecting road, without guys or anchors being placed in the areas between the ramps and main roadways of the freeway. Guy poles shall be located as near to the freeway right-of-way line as possible.
  - (3) Poles shall be located as close to the toe of foreslope of the intersecting road as possible, but shall remain outside the clear zone.
  - (4) Poles shall be located as far from the main roadways and ramps of the freeway as possible. No poles are permitted within the median, or within the clear zone along the ramp pavement and the freeway pavement.
  - (5) Self-supporting poles or towers, double arming and insulators, and dead-end construction should be considered.

**761--115.22(306A) TRANSVERSE UTILITY FACILITY OCCUPANCY OF NONFREEWAY HIGHWAYS.**

The requirements for utility facilities crossing the right-of-way of nonfreeway highways are as follows:

**115.22(1) Underground installations.** Underground installations shall comply with the following:

- a. Waterlines two inches or less in inside diameter shall be copper, ABS plastic ASTM 1527 or equivalent, or PVC pipe ASTM 1785 or equivalent.



b. Reserved.

**115.22(2) Overhead installations.** Overhead installations shall comply with the following:

- a. In rural areas with rural-type roadways, poles, guys and other supporting structures and related ground-mounted facilities shall be located as near to the right-of-way line as possible.
  - (1) These aboveground obstructions shall be located in an area beyond the clear zone or the roadway foreslope, whichever locates the obstruction a greater distance from the edge of the traveled way, right-of-way width permitting.
  - (2) Self-supporting poles or towers, double arming and insulators, and dead-end construction should be considered.
- b. In suburban areas with rural-type roadways and speed limits of 45 miles per hour or lower, utility poles shall be located at least 15 feet from the edge of the paved traveled way or beyond the roadway foreslope, whichever is greater, with the preferred location being near the right-of-way line.
- c. On urban-type roadways, utility poles shall be placed at the right-of-way line, but no closer than 10 feet from the back of the curb. Exceptions to this requirement shall be considered on an individual basis. In general, ground anchors or stub poles shall not be placed between a pole and the pavement.
- d. Poles, guys, anchors and other appurtenances shall not be located in ditches, at drainage structure openings or on roadway shoulders. All poles, guys, anchors and other appurtenances shall be located to minimize interference with the maintenance operations of the department.
- e. The engineer may approve the adjustment of minimum setback distances for poles and other appurtenances if they meet minimum AASHTO breakaway criteria.

**761--115.23(306A) GENERAL REQUIREMENTS FOR LONGITUDINAL UTILITY FACILITY OCCUPANCY.**

**115.23(1) Uniform alignment.** Longitudinal utility facility installations should be located on uniform alignment as near as practicable to the right-of-way line so as to provide a safe environment for traffic operations and to preserve space for future highway improvements and other utility installations.

115.23(2) Reserved.

**761--115.24(306A) LONGITUDINAL UTILITY FACILITY OCCUPANCY OF FREEWAYS.**

The requirements for longitudinal utility facility occupancy of the right-of-way of freeways are as follows:

**115.24(1) Type of installation permitted.** Underground utility facilities installed in compliance with this rule are permissible. Except as provided in this rule, no aboveground installations other than those needed to serve highway facilities are permitted.

**115.24(2) General prohibitions.**

- a. The facility shall not adversely affect the safety, design, construction, operation, maintenance or stability of the present use or future expansion of the freeway.
- b. The facility shall not be used for transmitting gases or liquids or for transmitting products that are flammable, corrosive, expansive, highly energized or unstable.
- c. The facility shall not present a hazard to life, health or property if it fails to function properly, is severed or is otherwise damaged.
- d. No direct service connection to adjacent properties is permitted.
- e. No utility facility is permitted in or on a structure carrying a freeway roadway or ramp, except as provided in subrule 115.24(18).

**115.24(3) Minimal maintenance.** Once installed, the facility shall require minimal maintenance.

**115.24(4) Location and depth.** The facility shall be located on uniform alignment, preferably within eight feet of the freeway right-of-way line, and at a location approved by the department. The facility shall be installed at a minimum depth of 36 inches.

- a. The department reserves the right to waive the minimum depth of installation where rocky terrain makes it difficult to obtain the desired depth. The department shall determine the minimum depth in these situations; however, no installation shall be authorized with less than 24 inches of cover.
- b. Except for multiduct systems and isolated locations as determined by the department, cable shall be installed by the plowing method only. Borings, as necessitated at public road intersections, stream crossings and railroad crossings, shall be in compliance with rule 115.33(306A).
- c. Utility access holes and splice boxes may be placed below the existing ground line. The location and number of installations are subject to department approval.

**115.24(5) Access to facility.** Access to the facility shall be obtained from other than the freeway or its ramps. See subrule 115.6(1).

**115.24(6) Clear zone.** See rule 115.7(306A).

**115.24(7) Aboveground installations.**

- a. Identification signs shall be placed by the utility facility owner within 12 inches of the right-of-way fence, at the line of sight, along the entire

occupancy route. These signs shall identify the owner/operator's name, telephone number to contact in case of an emergency, and type of buried utility.

- (1) The signs shall be composed of an ultraviolet-resistant material.
- (2) The signs shall be no larger than 200 square inches each.
- (3) The interval between signs shall be no more than one-quarter mile in rural areas and 500 feet in urban areas.
- (4) Additional signs shall be placed on each side of public roads and streets intersecting or crossing the freeway at points where the freeway right-of-way line intersects the public road or street right-of-way line.
- (5) The utility facility owner is responsible for the installation and maintenance of the signs.

b. Pedestals may be placed within six inches of the right-of-way fence. The number of installations is subject to department approval.

c. Repeater stations shall be placed outside the right-of-way line.

115.24(8) **Metallic warning tape.** Metallic warning tape shall be installed a minimum of 12 inches below the existing grade and above the utility installation to facilitate future locating.

115.24(9) **Engineering.** The utility facility owner shall retain the services of a qualified engineering firm.

a. The firm is responsible for overseeing continuous on-site inspection of the installation of the facility including all provisions pertaining to access to the work site and traffic control.

b. Upon completion of the project, a registered engineer of the engineering firm shall certify to the department on the appropriate forms that the installation, traffic control, and access to the work site were accomplished in accordance with the permit.

c. Any changes in the original alignment as approved by the department shall require prior approval of the department and the submission of as-built plans.

115.24(10) **Traffic control.** See rule 115.11(306A).

115.24(11) **Multiduct system.** The department reserves the right to require facilities to be installed within a multiduct system to be shared with others. A multiduct system consists of two or more ducts as determined by the department. Details of the installation are subject to department approval.

- a. A multiduct system is required for all occupancies located in the following areas:

ROUTE	LOCATION
I-29	I-80 to 16th Avenue in Council Bluffs
I-29	Big Sioux River to Sergeant Bluff/Airport Interchange in Sioux City
I-80	Missouri River to Madison Avenue in Council Bluffs
I-35/80	W. Jct. of I-235 to E. Jct. of I-235
I-235	Entire Route in and near Des Moines
I-80	I-280 Interchange to Mississippi River Bridge in Scott County
I-80	Iowa 965 to Iowa 1 in Iowa City
I-74	Entire Route in Scott County
I-280	Entire Route in Scott County
I-380	Gilbertville Interchange Westerly to End of Route
I-380	U.S. 30 to Boysen Road in Cedar Rapids
U.S. 30	Fairfax Road to "C" Street in Cedar Rapids
U.S. 20	Iowa 58 to I-380 in Waterloo/Cedar Falls Area
U.S. 20	I-29 to Iowa 12 Interchange in Sioux City
U.S. 61	Locust Street Connection to City Island Bridge in Dubuque
U.S. 218	11th Street to Airport Interchange in Waterloo

- b. The department may designate the first utility facility owner requesting occupancy as the "lead company." The lead company is responsible for:
- (1) Design and construction of the multiduct system.
  - (2) Maintenance of the multiduct system.
  - (3) Providing all capital required to construct the multiduct system.
- c. Once a multiduct system has been established, the department shall require future longitudinal facility occupancies to be located within one of the unoccupied inner ducts of the system. If all inner ducts are occupied, the department may require the establishment of an additional multiduct system.
- d. Each occupant of a multiduct system shall share equally in the entire capital costs of the facility. As each new occupant is added to an existing system, the new occupant shall be required to pay its proportionate share based on the number of inner ducts it occupies.

**115.24(12) Occupancy fees.** The utility facility owner shall pay to the department an annual fee for longitudinal occupancy of the right-of-way. The initial fee is due before any construction work commences within the right-of-way.

- a. Unless otherwise specified, the annual fee shall be as follows:
- (1) Urban areas (those locations listed in 115.24(11)"a"): Flat fee of \$9,000 per cable installation, or \$4,500 per cable mile of occupancy, whichever is greater.

(2) Rural areas (all other locations): Flat fee of \$7,500 per cable installation, or \$1,500 per cable mile of occupancy, whichever is greater.

- b. When the department requires the installation of a multiduct system, the department reserves the right to negotiate an agreement with the lead company for a discounted fee payment schedule until the lead company has recovered all or an agreed upon portion of the cost of placing the system. Subsequent occupants of the multiduct system shall be required to pay the full annual fee as established in paragraph "a".
- c. The department reserves the right to negotiate an annual fee for an occupancy dedicated solely to state governmental use. If a multiduct system has been established and at least one inner duct is unoccupied, the department shall require the facility to be installed within the multiduct system.
- d. Every fifth year from the effective date of this subrule, the department shall review the established fees for possible adjustment. Any change in the fee structure shall be noted in all existing permits when the next annual fee is payable.

**115.24(13) Performance bond.** The utility facility owner shall file a performance bond with the department prior to commencing work within the freeway right-of-way.

- a. The bond shall be in the amount of \$100,000 per permit and shall guarantee prompt restoration of any damage caused during the installation of the utility facility.
- b. Upon completion of the project, certification as required in subrule 115.24(9), and acceptance of the project by the department, the performance bond shall be released.

**115.24(14) Insurance.**

- a. The utility facility owner shall maintain the following insurance for bodily injury, death and property damage arising out of or in connection with the construction, maintenance and operation of the facility:
  - (1) General public liability insurance with limits of not less than \$500,000 for injury or death of a single person, or not less than \$1,000,000 for any one accident, and not less than \$250,000 per accident for property damage.
  - (2) Comprehensive automobile liability insurance with limits of not less than \$500,000 for injury or death of a single person, or not less than \$1,000,000 for any one accident, and not less than \$250,000 per accident for property damage.
  - (3) Excess liability coverage with limits of not less than \$5,000,000.
  - (4) Statutory workers' compensation coverage.

- b. This insurance shall be in effect prior to commencing any work within the freeway right-of-way.
- c. Coverage may be provided by blanket policies of insurance covering other property or risks.
- d. The department shall be named as an additional insured in the general public liability and excess liability insurance policies.

**115.24(15) Future relocation.**

- a. The utility facility owner shall agree to waive all future rights to be reimbursed for relocation costs incurred should maintenance or construction of the freeway system require relocation of the utility facility.
- b. Should relocation of the utility facility be required, the department makes no assurance nor assumes any liability to the utility facility owner that the facility will again be allowed to occupy the freeway right-of-way.

**115.24(16) Liability.** The utility facility owner shall agree to the liability statements found in subrule 115.9(2).

**115.24(17) Permit.**

- a. The utility facility owner shall not commence work within the right-of-way until it receives the approved permit from the department.
- b. The term of the permit shall not exceed 20 years. Upon expiration, it may be extended in writing or renegotiated.

**115.24(18) Utility attachments to border bridges.** Occupancy may be permitted for utility attachments to existing or planned border bridges when the adjoining state's highway agency requests the department to approve the request. The department's approval is subject to the following:

- a. The facility shall not be used for transmitting gases or liquids or for transmitting products that are flammable, corrosive, expansive or highly energized or unstable.
- b. The facility shall not present a hazard to life, health or property if it fails to function properly, is severed or is otherwise damaged.
- c. Except for communication cable, the facility shall exit the freeway right-of-way as soon as physically possible after crossing the state line into Iowa.
- d. Occupancy is subject to receipt of the attachment and engineering fees specified in rule 115.40(306A) and the occupancy fee specified in subrule 115.24(12).
- e. All other applicable provisions of this chapter shall be adhered to.

**115.24(19) Existing facilities.**

- a. A utility facility occupying land that subsequently becomes freeway right-of-way may remain within the right-of-way if the facility:
  - (1) Can be accessed from other than the freeway or its ramps.
  - (2) Does not adversely affect the safety, design, construction operation, maintenance or stability of the freeway.
- b. If these conditions are not met, the facility shall be relocated.

**115.24(20) Utilities for highway facilities.** Longitudinal occupancy of utility facilities that service highway-related facilities are permissible upon such terms and conditions as the department may determine.

**761--115.25(306A) LONGITUDINAL OCCUPANCY OF NONFREEWAY HIGHWAYS.**

The requirements for longitudinal utility facility occupancy of the right-of-way of nonfreeway highways are as follows:

**115.25(1) Underground installations.** Underground installations shall comply with the following:

- a. With the exception of natural gas lines with an operating pressure of 150 pounds per square inch or less, no carriers of transmittants that are flammable, corrosive, expansive or unstable shall be placed longitudinally within the right-of-way.
- b. On rural-type roadways, utility facilities shall be located in an area beyond the roadway foreslope, right-of-way width permitting, except at locations where this is not acceptable, such as deep ravines or ditches. A determination as to what is acceptable in these situations shall be made by the engineer.
- c. On urban-type roadways, utility facilities shall be located as near to the highway right-of-way line as possible and preferably not within the traveled way. Utility access holes placed within the right-of-way shall not protrude above the surrounding surface.
- d. In general, utility facilities are not permitted in the median. However, in special cases an exception may be approved by the engineer.

**115.25(2) Overhead installations.** Overhead installations shall comply with the following:

- a. In rural areas with rural-type roadways, poles, guys and other supporting structures and related ground-mounted facilities shall be located as near to the right-of-way line as possible.

- (1) These aboveground obstructions shall be located in an area beyond the clear zone or the roadway foreslope, whichever locates the obstruction a greater distance from the edge of the traveled way, right-of-way width permitting.
  - (2) In individual cases, the department reserves the right to require self-supporting poles or towers, double arming and insulators, breakaway devices and dead-end construction to be used.
- b. In suburban areas with rural-type roadways and speed limits of 45 miles per hour or lower, utility poles shall be located at least 15 feet from the edge of the paved traveled way or beyond the roadway foreslope, whichever is greater, with the preferred location being near the right-of-way line.
  - c. On urban-type roadways, utility poles shall be placed at the right-of-way line, but no closer than 10 feet from the edge of traveled way. Exceptions to this requirement shall be considered on an individual basis. In general, ground anchors or stub poles shall not be placed between a pole and the pavement.
  - d. Poles, guys, anchors and other appurtenances shall not be located in ditches, at drainage structure openings or on roadway shoulders. All poles, guys, anchors and other appurtenances shall be located to minimize interference with the maintenance operations of the department.
  - e. The engineer may approve the adjustment of minimum setback distances for poles and other appurtenances if they meet minimum AASHTO breakaway criteria.

**761--115.26(306A) VERTICAL OVERHEAD CLEARANCE REQUIREMENTS.**

115.26(1) The vertical clearance for overhead utility facilities and the lateral and vertical clearances from bridges shall conform with generally accepted industry standards, except where greater clearances are required by state statute or rule.

115.26(2) However, in no event shall the minimum vertical clearance be less than:

- a. 18 feet above the roadway for service connections.
- b. 20 feet above the roadway for other overhead utility facilities.

**761--115.27(306A) UNDERGROUND DEPTH REQUIREMENTS.**

115.27(1) **Measurement of cover.** The cover is measured from:

- a. The ultimate pavement surface edge except that on a curve, it is measured from the lowest pavement surface edge.
- b. The gutter flow line, excluding local depressions at inlets, where there are curbs and gutters.
- c. The top of the curb, where installation is to be behind the curb.



- d. The surface of the surrounding ground or the low point in the ditch.
- 115.27(2) **Minimum cover—roadway.** The minimum cover under a roadway shall be 48 inches or such greater depth as may be required to clear the pavement structure.
- 115.27(3) **Minimum cover—other portions of right-of-way.**
- a. The minimum cover in other portions of the right-of-way shall be:
- (1) 48 inches for electrical cables.
  - (2) 30 inches for communication cables except as noted in subrule 115.24(4) for longitudinal occupancy of freeway right-of-way.
  - (3) 36 inches for all other underground facilities.
- b. In critical situations where the necessary cover cannot be obtained, other protective measures may be approved.
- c. The department reserves the right to waive the minimum depth of installation where rocky terrain makes it difficult to obtain the desired depth. The department shall determine the minimum depth in these situations; however, no installation shall be authorized with less than 24 inches of cover.

761--115.28(306A) LOCATION OF APPURTENANCES.

- 115.28(1) **Freeways.** Unless otherwise provided, all aboveground appurtenances shall be located outside the right-of-way of freeways.
- 115.28(2) **Nonfreeway highways—rural type.** For rural-type nonfreeway highways, all appurtenances shall generally be located at or as near as possible to the right-of-way line.
- 115.28(3) **Nonfreeway highways—urban type.** For urban-type nonfreeway highways, all appurtenances should generally be located outside the pavement as near to the right-of-way line as possible. Utility access holes for existing facilities may be incorporated into the pavement when it is not practicable to relocate the existing utility facility.

761--115.29 Reserved.

761--115.30(306A) GENERAL REQUIREMENTS FOR ENCASEMENT OF UNDERGROUND UTILITY FACILITIES.

- 115.30(1) **Casing.** A casing is an oversize load-bearing pipe, conduit, duct, utility tunnel or structure through which a carrier or cable is inserted. A casing shall:
- a. Protect the roadway from damage and provide for repair, removal and replacement of the utility facility without interference to highway traffic.

- b. Protect the carrier pipe from external loads or shock, either during or after construction of the highway.
  - c. Convey leaking liquids or gases away from the area directly beneath the traveled way to a point of venting at or near the right-of-way line.
- 115.30(2) **Appurtenances.** The casing shall include necessary appurtenances, such as vents, drains and markers.
- 115.30(3) **Seals.** Casing pipe shall be sealed at both ends with a suitable material to prevent water or debris from entering the annular space between the casing and the carrier, in accordance with generally accepted industry standards.
- 115.30(4) **Transverse occupancy.** See rules 115.31(306A) and 115.32(306A).
- 115.30(5) **Longitudinal occupancy.** Utility lines installed longitudinally to the primary highway right-of-way shall be encased at certain locations. Such locations include, but are not limited to, crossings of hard surfaced sideroads, streets and entrances.

**761--115.31(306A) ENCASEMENT REQUIREMENTS FOR TRANSVERSE OCCUPANCY OF FREEWAYS.**

Underground utility facilities crossing freeway right-of-way shall be encased through the entire right-of-way limits. However, a pipeline carrying high pressure natural gas, liquid petroleum products, ammonia, chlorine or other hazardous or corrosive products need not be encased as long as the installation meets the requirements of paragraph 115.32(2)"a".

**761--115.32(306A) ENCASEMENT REQUIREMENTS FOR TRANSVERSE OCCUPANCY OF NONFREEWAY HIGHWAYS.**

The requirements for encasement of underground utility facilities crossing the right-of-way of nonfreeway highways are as follows:

- 115.32(1) **Electrical service.** Underground electric service must be placed in conduit or duct from right-of-way line to right-of-way line and shall be clearly marked by the owner at the outer limits of the right-of-way.
- 115.32(2) **Pipelines.**
- a. A pipeline carrying natural gas at an operating pressure of greater than 60 pounds per square inch, liquid petroleum products, ammonia, chlorine or other hazardous or corrosive products shall be encased unless the pipeline meets the following requirements:
    - (1) It is a welded steel pipeline.
    - (2) It is cathodically protected.
    - (3) It is coated in accordance with accepted industry standards.

- (4) It complies with federal and state requirements and meets accepted industry standards regarding wall thickness and operating stress levels.
  - (5) It is marked at the outer right-of-way limits in accordance with paragraph "b" of this subrule.
  - (6) The utility facility owner certifies, as a part of the permit, that the requirements of subparagraphs (1) to (5) will be met.
- b. A pipeline carrying a product identified in paragraph "a" of this subrule:
- (1) Shall be marked at the outer right-of-way limits. The markers shall give the name and address of the owner, phone number to contact in case of an emergency, and the type of product carried.
  - (2) Shall, if it does not qualify for a waiver of encasement requirements, be encased in a plastic casing from right-of-way line to right-of-way line and be vented at the outer right-of-way limits.
- c. Encasement of a natural gas pipeline with an operating pressure of 60 pounds per square inch or less, of copper, steel or plastic, is not required if:
- (1) The pipeline is protected and installed in accordance with accepted industry standards.
  - (2) The utility facility owner certifies, as a part of the permit, that such standards will be met.

**115.32(3) Communication cables.** Communication cables shall be encased from toe of foreslope to toe of foreslope. Exception: direct buried lines need not be encased.

**115.32(4) Sanitary sewer lines.** Sanitary sewer lines shall be encased from right-of-way line to right-of-way line. Exceptions:

- a. Properly embedded gravity flow lines that are installed prior to highway construction need not be encased if:
  - (1) Heavy duty cast iron or ductile iron pipe is used within the highway construction limits.
  - (2) Suitable mechanical joints and seals are used.
- b. Gravity flow lines that are installed subsequent to highway construction need not be encased if:
  - (1) The opening is cut immediately ahead of the pipe installation, and the opening is cut to the size of the carrier pipe so that there are no excessive voids around the carrier pipe once installed. The cut of the opening and the jacking of the pipe must be completed in one operation.
  - (2) The pipe is of sufficient strength to withstand the external loads created by the vehicular traffic on the roadway being traversed.

**115.32(5) Water lines.**

- a. Water lines shall be encased, as a minimum, from toe of foreslope to toe of foreslope. Venting and sealing of the encasement is not required.
- b. Water lines with an inside diameter of more than two inches shall be encased from right-of-way line to right-of-way line.
- c. Exception: Properly embedded water lines that are installed prior to highway construction need not be encased if extra strength cast iron or ductile iron pipe with mechanical joints and seals is used from right-of-way line to right-of-way line.

**115.32(6) Installations vulnerable to damage.** Utility facilities which by reason of shallow depth or location are vulnerable to damage from highway construction or maintenance operations shall be protected with a casing, suitable bridging, concrete slabs or other appropriate measures.

**115.32(7) Other installations.** Where it is acceptable to both the utility facility owner and the department, an underground utility facility not otherwise addressed in this rule may be installed without protective casing if the installation involves trenched construction or small bores. These shall be determined on an individual basis.

**761--115.33(306A) BORING REQUIREMENTS.**

**115.33(1) Clear zone for pits.**

- a. On freeways, boring pits are not permitted within the median. Also, they shall be located in an area beyond the clear zone or the roadway foreslope, whichever locates the pits a greater distance from the edge of the traveled way, right-of-way width permitting.
- b. On rural-type, nonfreeway highways, boring pits are not permitted within the median. Also, they shall normally be located in an area beyond the clear zone or the roadway foreslope, whichever locates the pits a greater distance from the edge of the traveled way, right-of-way width permitting. However, a boring pit may be allowed within the foreslope if it is specifically authorized by the engineer and noted in the permit.
- c. On urban-type, nonfreeway highways, boring pits shall generally be located at least two feet back from the curb.
- d. Boring pits authorized within the clear zone shall not remain open during nighttime hours.

**115.33(2) Construction methods.** Casing and pipeline installations shall be accomplished by dry boring, tunneling, jacking, trenching or other approved methods.

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

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

761--115.34(306A) ENCASEMENT MATERIAL.

It is the responsibility of the owner of the utility facility to ensure that it complies with all applicable local, state, federal and franchise requirements and meets generally accepted industry standards in the selection of encasement materials. The following materials are acceptable for use in encasing utility facilities:

115.34(1) **Welded steel pipe.** Welded steel pipe, smooth wall, that is in sound condition. Welded steel pipe shall have the following minimum wall thickness:

<u>Casing Diameter (inches)</u>	<u>Minimum Wall Thickness (inches)</u>
Under 6	Standard wall pipe or .188 wall pipe
6, 8, 10, 12, 14, 16	.188 - 3/16
18, 20, 22	.250 - 1/4
24, 26	.281 - 9/32
28, 30, 32, 34	.312 - 5/16
36, 38, 40, 48	.344 - 11/32

115.34(2) **Cast iron or ductile iron pipe.** Cast iron pipe or ductile iron pipe of the same class as used for carrier pipe.

115.34(3) **PVC or CPVC pipe.** Polyvinyl chloride (PVC) or chlorinated polyvinyl chloride (CPVC) pipe. PVC sewer pipe, types PSP and PSM, shall have the following minimum wall thickness:

<u>Casing Diameter (inches)</u>	<u>Minimum Wall Thickness (inches)</u>	
	<u>PSP</u>	<u>PSM</u>
4	.120	.120
6	.253	.153
8	.199	.205
9	.230	.230
10	.249	.256
12 (maximum acceptable)	.299	.305

115.34(4) **PE pipe.** Polyethylene (PE) pipe. PE pipe shall have the following minimum wall thickness:

<u>Casing Diameter (inches)</u>	<u>Minimum Wall Thickness (inches)</u>
3	0.318
4	0.409
6	0.602
8	0.785
10	0.978
12 (maximum acceptable)	1.160

**115.34(5) Reinforced concrete pipe.** Reinforced concrete pipe meeting the requirements of the department's standard road plans at the time of installation.

- a. Material used with a diameter of less than 18 inches shall use the fill height table for 18-inch diameter pipe.
- b. If bell-jointed material is used, the bell shall not exceed the outside diameter pipe by:
  - (1) One and one-half inches on pipes with an inside diameter of 12 inches or less.
  - (2) Two inches on pipes with an inside diameter of more than 12 inches.
- c. In lieu of bell-jointed material, banded material may be used.
- d. Material used for encasement of liquid or gas transmission lines shall have joints sealed with all-weather butyl rope-type sealer.

**115.34(6) Electric conduit.** Nonmetallic materials such as polyvinyl chloride, transite or vitrified clay for electric conduit.

761--115.35 to 115.39 Reserved.

**761--115.40(306A) UTILITY FACILITY ATTACHMENTS TO BRIDGES.**

**115.40(1) Electrical power and communication cable attachments.** The requirements for attaching electrical power and communication cable to primary highway structures are as follows:

- a. Electrical power and communication cable may be attached to existing structures if it is determined by the department to be in the best interest of the public. New structures may be designed to accommodate electrical power and communication cable if the attachment is determined by the department to be in the best interest of the public.
- b. Proposals for placing any electrical power or communication cable on or near bridges, whether existing or planned, or whether on rural or urban roadways, must be approved by the department. The application shall include a detailed sketch showing the method of attachment and weights of attachment. A separate permit is required for each bridge.
- c. All attachments shall be in conduits, pipes or trays, shall be located beneath the structure's floor, shall be located above low steel or masonry of the structure and shall not be attached to the structural steel.
- d. Expansion devices are required. Cables in cells or casings shall be grounded wherever necessary. Carrier pipe shall be suitably insulated from electrical power line attachments.

- e. All costs attributable to the installation of an attachment to a new structure shall be paid by the utility facility owner unless the attachment is installed as a part of or in lieu of utility relocation costs.
- f. For an attachment to an existing structure:
  - (1) Welding or drilling holes in or attaching to structural steel primary members is prohibited.
  - (2) Utility facilities may be attached to noncritical concrete areas.
  - (3) Holes shall generally not be cut in wing walls, abutments or piers.

**115.40(2) Pipeline attachments.** The requirements for attaching pipelines to primary highway structures are as follows:

- a. Pipelines may be attached to bridge structures when installation below ground is not feasible, the design of the bridge will accommodate the attachment, and space is available.
- b. The method of attachment and replacement of the pipeline must be approved by the department. A separate permit is required for each bridge.
- c. Pipelines shall be attached in a neat manner. Pipes shall be placed beneath the structure's floor, inside the outer girders or beams (or in cells specifically designed for the installation), and above low steel or masonry of the structure.
- d. Pipes shall be designed to withstand expected expansion or contraction forces. If necessary, expansion devices such as expansion joints, offsets or loops shall be used.
- e. Pipelines in cells or casings shall be vented and grounded whenever necessary.
- f. Pipelines that have an operating pressure of more than 75 pounds per square inch or that are larger than two inches in diameter shall have shutoffs not more than 300 feet from each end of the bridge.
- g. Casing requirements shall be judged on an individual basis. In some instances, thicker-walled or extra strength pipe may be considered in lieu of encasement.
- h. All costs attributable to the installation of an attachment to a new structure shall be paid by the utility facility owner unless the attachment is installed as a part of or in lieu of utility relocation costs.
- i. For an attachment to an existing structure:
  - (1) Welding or drilling holes in or attaching to structural steel primary members is prohibited.
  - (2) Utility facilities may be attached to noncritical concrete areas.

- (3) Holes shall generally not be cut in wing walls, abutments or piers.
- j. The owner of the utility facility shall provide an indemnity bond to be executed by either itself or by a responsible bonding company, at the department's option.
- (1) The indemnitor under the bond shall, in the event of damage resulting from any cause whatsoever arising out of or from permission to attach a pipeline, indemnify the department against all loss or damage to it or any third party therefrom, including but not limited to the expense of repairing or replacing the bridge and the cost of alternate highway facilities for traffic during the period of such bridge repair or replacement.
- (2) The indemnity bond shall be kept in full force and effect for as long as the pipeline is attached to the highway bridge. The amount of the bond may be reviewed by the department, and adjustments may be required as deemed necessary.

**115.40(3) Attachment fee.**

- a. The fee for attaching electrical power or communication cable to a bridge is \$50 per bridge plus:
- $\$0.30 \times \text{weight of attachment in pounds per foot} \times \text{length of bridge in feet.}$
- b. The fee for attaching a pipeline to a bridge is \$50 per bridge plus:
- |                  |         |                                     |
|------------------|---------|-------------------------------------|
| 2-inch pipeline: | \$1.50  | per foot x length of bridge in feet |
| 3-inch pipeline: | \$3.00  | per foot x length of bridge in feet |
| 4-inch pipeline: | \$4.50  | per foot x length of bridge in feet |
| 5-inch pipeline: | \$6.25  | per foot x length of bridge in feet |
| 6-inch pipeline: | \$8.50  | per foot x length of bridge in feet |
| 7-inch pipeline: | \$10.75 | per foot x length of bridge in feet |
| 8-inch pipeline: | \$13.00 | per foot x length of bridge in feet |
- Other sizes  $\$0.30 \times \text{weight of attachment in pounds per foot} \times \text{length of bridge in feet.}$
- c. The attachment fee is due in advance of the utility facility owner's commencement of any construction work within the right-of-way.
- d. Water mains, sewer lines and steam lines belonging to or serving a municipality may, if the department considers it desirable, be attached to a primary highway bridge structure without an attachment fee being assessed.

**115.40(4) Engineering fee.** An engineering fee for the department's increased costs of design, construction and inspection is required for a utility facility owner's proposal to attach a facility to a structure that is in the planning stages. This fee shall be billed to the owner when the department's work is completed.

These rules are intended to implement Iowa Code chapters 306A and 320 and section 314.20 and Iowa Code Supplement Section 319.14.



THE FOLLOWING PAGES CONTAIN  
EXHIBITS TO BE USED AS GUIDELINES  
AND ASSISTANCE IN OBTAINING  
COMPLIANCE WITH THE DEPARTMENT'S  
UTILITY ACCOMMODATION POLICY

THESE EXHIBITS ARE TO BE USED  
FOR PURPOSES AS GUIDELINES OR AIDS  
AND ARE NOT TO BE CONSIDERED AS  
PART OF THE DEPARTMENT'S  
UTILITY ACCOMMODATION POLICY

Iowa Department of Transportation  
HIGHWAY DIVISION  
Application for use of  
Highway Right of Way for  
Utilities Accommodation

County \_\_\_\_\_ Miles \_\_\_\_\_  
Permit No. 37-42A

Applicant: Coleman Telephone Cooperative  
(Name of Owner)  
1127 South J. Avenue Adams Iowa 50974  
(Address) (City) (State) (Zip Code)

Iowa Department of Transportation  
Ames, Iowa 50010

Gentlemen:  
Approval is hereby requested for the use of Primary Highway Iowa 66 in Sec. 32  
(Number)  
T 76N , R 16W , \_\_\_\_\_ Miles County 4.5 miles.  
south from Kellysville  
(Direction) (Place, Town, Etc.)

at Highway Station(s) No. 348+60 to 357+10 for the accommodation of an fiber optic  
line for the transmission of telecommunication signals.

The installation shall consist of plowing a fiber optic cable five feet inside the east right of way  
(Detailed Description)  
line of Iowa 66 at a depth of no less than 30 inches.

and shall be located as shown on the detailed plat attached hereto.

**AGREEMENTS: The utility company, corporation, applicant, permit holder or licensee, (hereinafter referred to as the permit holder) agrees that the following stipulations shall govern under this permit.**

1. The location, construction and maintenance of the utility installation covered by this application shall be in accordance with the current Iowa Department of Transportation Utility Accommodation Policy.
2. The installation shall meet the requirements of local municipal, county, state, and federal laws, franchise rules and regulations, regulations and directives of the Iowa State Commerce Commission; Utilities Division, the Department of Natural Resources, all rules and regulations of the Iowa Department of Transportation and any other laws or regulations applicable.
3. The permit holder and its contractors, shall carry on the construction, repair and maintenance of the accommodated utility with serious regard to the safety of the traveling public and adjacent property owners. Traffic protection shall be in accordance with Part VI of the current Manual on Uniform Traffic Control Devices for Streets and Highways.
4. The permit holder agrees to give the Iowa Department of Transportation forty-eight hours notice of its intention to start construction on the highway right-of-way. Said notice shall be made to the Engineer whose name is shown below.
5. Before beginning work in the highway right-of-way, it is the responsibility of the permit holder to contact other utilities which may be located in the area of the proposed work.
6. A copy of the approved permit shall be available on the job site at all times for examination by Department of Transportation officials.
7. Flagging operations are the responsibility of the permit holder. The original placement of signs and removal upon completion of the work shall be accomplished by the permit holder.
8. Operations in the construction and maintenance of said utility installation shall be carried on in such a manner as to cause minimum interference to or distraction of traffic on said highway.
9. The permit holder shall be responsible for any damage that may result to said highway because of the construction operation or maintenance of said utility and shall reimburse the State of Iowa or the Iowa Department of Transportation any expenditure that the State of Iowa or the Iowa Department of Transportation may have to make on said highway because of said Permit Holder's utility having been constructed, operated and maintained thereon.
10. The permit holder agrees to at all times give the Iowa Department of Transportation timely notice of intention to perform routine maintenance within the right-of-way. Said notice shall be to the Engineer whose name is shown below.
11. Non-compliance with any of the terms of the Iowa Department of Transportation policy, permit or agreement, may be considered cause for shut-down of utility construction operations or withholding of relocation reimbursement until compliance is assured, or revocation of the permit. The cost of any work caused to be performed by the State in removal of non-complying construction will be assessed against the permit holder.
12. The permit holder shall be fully responsible for any future adjustments of its facilities within the established highway right-of-way caused by highway construction or maintenance operations.
13. This permit shall be terminated 20 years from date of approval for gas and water mains outside the corporate limits of a municipality in accordance with the Code of Iowa, Chapter 320. Renewal may be requested.
14. The owner of the utility facility shall indemnify and save harmless the State of Iowa, its agencies and employees, from any and all causes of action, suits at law or in equity, for losses, damages, claims or demands, and from any and all liability and expense of whatsoever nature, arising out of or in connection with the owner's use or occupancy of the public highway.
15. The Iowa Department of Transportation shall give the permit holder at least forty-eight hours notice of any proposed construction or maintenance work, on either existing or newly acquired right-of-way when the proposed work will be within ten feet of a utility location as previously approved by the Department by permit or written agreement. The permit holder shall be responsible within this timeframe to arrange to protect its facilities.
16. The State of Iowa and the Iowa Department of Transportation assume no responsibility for damages to the permit holder's property occasioned by any construction or maintenance operations on said highway if permit holder has been notified in accordance with stipulation number fifteen above or if the facilities are not located in accordance with this permit.

17. The State of Iowa, its agencies or employees, will be liable for expense incurred by the permit holder in its use and occupancy of the highway right-of-way only when negligence of the State, its agencies or employees, is the sole proximate cause of such expense. Whether in contract, tort or otherwise, the liability of the State, its agencies and employees, is limited to the reasonable, direct expenses to repair damaged utilities, and in no event will such liability extend to loss of profits or business, indirect, special, consequential or incidental damages.

18. The following special requirements will apply to this permit:

Traffic control shall be in compliance with Standard Road Plan RS-2. No work shall be  
allowed within the primary highway rights-of-way from 1/2 hour prior to sunset to  
1/2 hour after sunrise.

APPLICANT:

COLEMAN TELEPHONE COOPERATIVE By James William manager  
Name of Owner Signature Title  
1127 S. J AVE. KELLYSVILLE, IA. Date DECEMBER 24, 19 91  
5097A

APPROVAL OF CITY OR TOWN

(If proposed line is within an incorporated town or city, the Council of said town or city must grant approval for installation.)

"The undersigned city or town joins the grants embodied in the above permit executed by the Iowa Department of Transportation on condition that all of the covenants and undertakings therein running to the Iowa Department of Transportation shall insure to the benefit of the undersigned city or town. The permit is approved by the below delegated city or town official.

By \_\_\_\_\_ Date \_\_\_\_\_, 19 \_\_\_\_  
Signature Title

CONCURRENCE OF APPROVAL BY THE FEDERAL HIGHWAY ADMINISTRATION (when applicable)

\_\_\_\_\_ Date \_\_\_\_\_, 19 \_\_\_\_  
Authorized Federal Highway Administration Official

Additional Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

APPROVAL BY THE STATE FOR POLE LINE AND BURIED INSTALLATIONS

Michael Mahoney Date 12/30, 19 91  
Resident Maintenance Engineer

APPROVAL BY THE STATE FOR BRIDGE ATTACHMENTS

Recommended \_\_\_\_\_ Date \_\_\_\_\_, 19 \_\_\_\_  
Resident Maintenance Engineer

Approved \_\_\_\_\_ Date \_\_\_\_\_, 19 \_\_\_\_  
District Maintenance Engineer

Notice of intention to start construction on the highway right-of-way shall be sent to:

David Hadacek 237 South View, Carhill, Ia. 57333 604-382-5293  
Engineer Address Telephone

Notice of intention to start maintenance on the highway right-of-way shall be sent to:

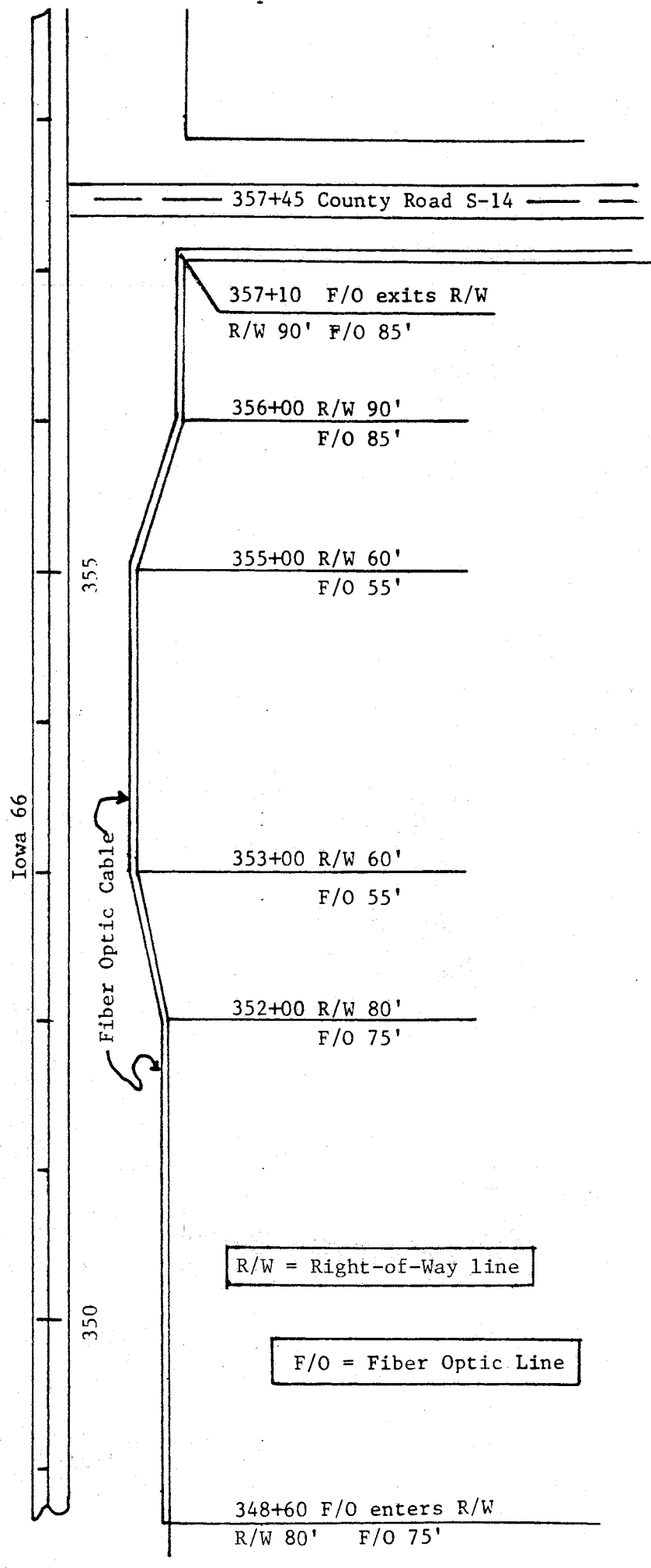
Edward Duncan 237 South View, Carhill, Ia. 57333 604-382-6935  
Engineer Address Telephone

5 copies of this application will be required for all installations except within city limits  
6 copies of this application will be required for all installations within city limits

N

1" = 100'

SECTION 32, T-76N, R-16W  
of  
MILES COUNTY



357+45 County Road S-14

357+10 F/O exits R/W  
R/W 90' F/O 85'

356+00 R/W 90'  
F/O 85'

355+00 R/W 60'  
F/O 55'

353+00 R/W 60'  
F/O 55'

352+00 R/W 80'  
F/O 75'

R/W = Right-of-Way line

F/O = Fiber Optic Line

348+60 F/O enters R/W  
R/W 80' F/O 75'

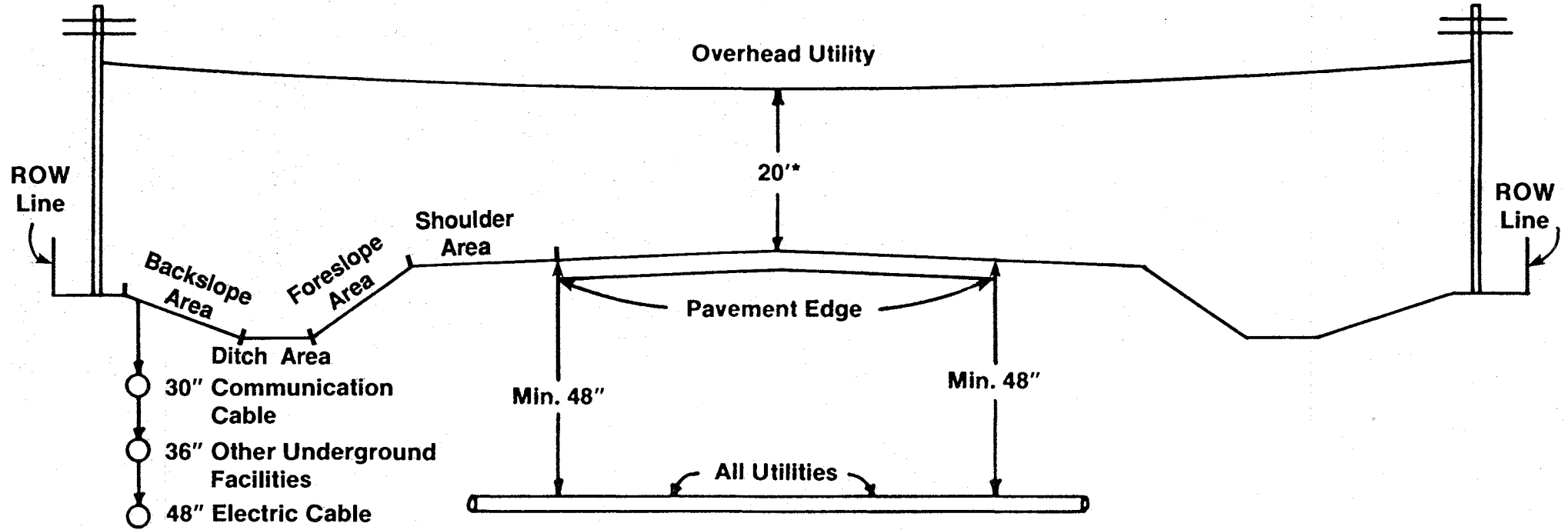
Iowa 66

355

350

Fiber Optic Cable

Utilities to be located as near the highway right of way line as physically possible.

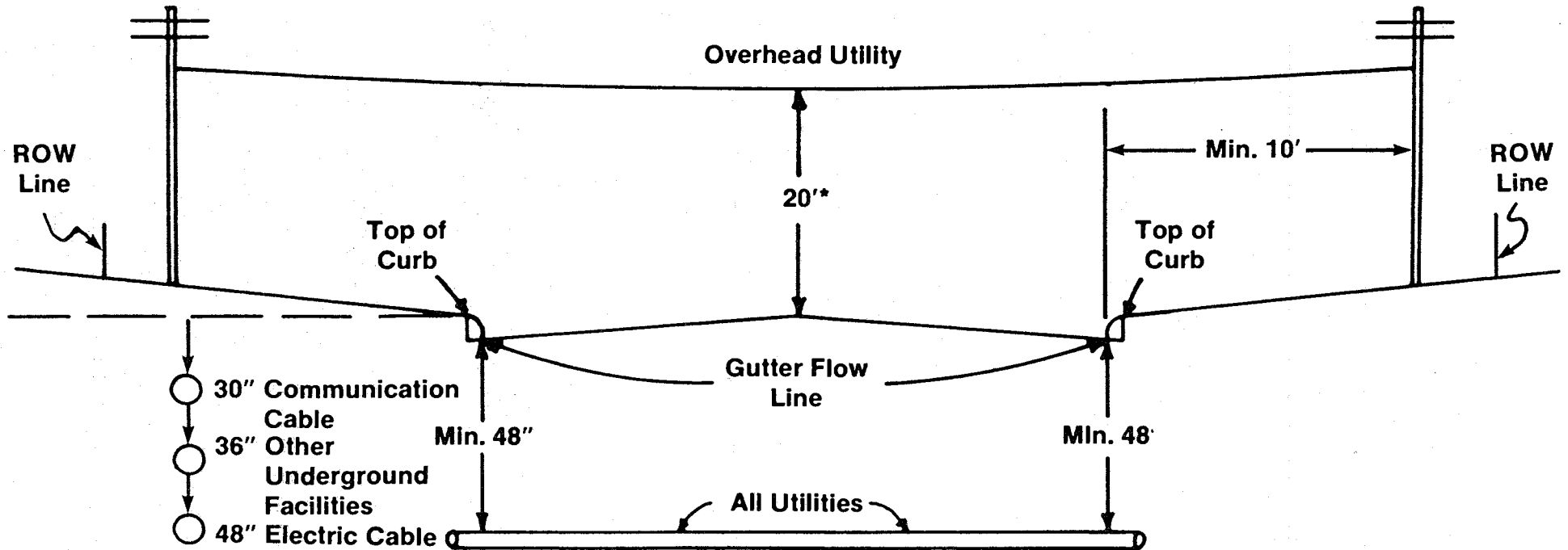


**Minimum Policy Requirements  
Rural Section  
Non-Freeway Highway**

Note: See Utility Policy, Section 115.27  
for further details.

\*Minimum vertical  
clearance for  
service connections  
shall be 18 feet.

Utilities to be located as near the highway right of way line as physically possible.  
 Minimum distances for utility poles shall be no closer than 10 feet back of curb.

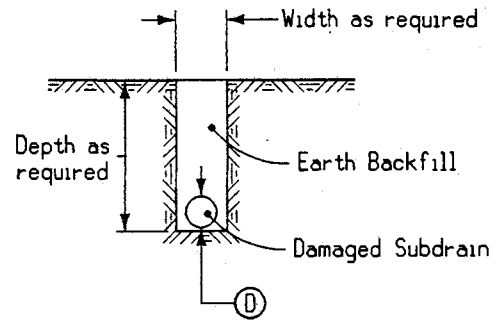
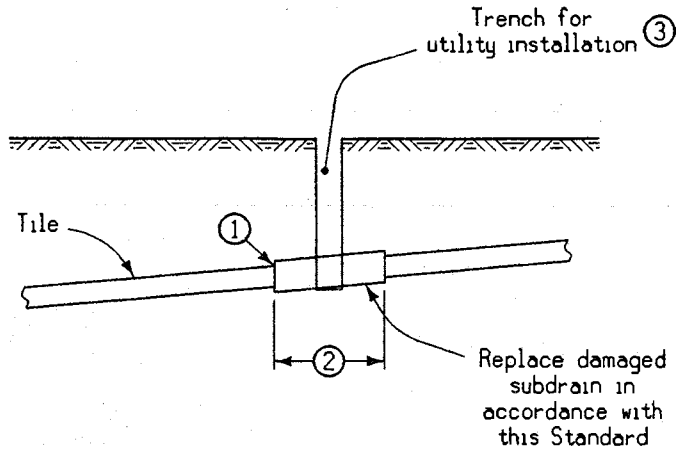


**Minimum Policy Requirements  
 Urban Section  
 Non-Freeway Highway**

Note: See Utility Policy, Section 115.27 for further details.

\*Minimum vertical clearance for service connections shall be 18 feet.

# Tile Line Repair Guideline



NOTE: Replacement of drainage tile shall be accomplished so as to cause the minimum of disturbance to existing field tile. The repaired drainage tile shall be left in a functional condition with special emphasis placed on maintaining existing flow line elevations.

A = A minimum of width 24" shall be excavated outside the normal utility trench wall or such greater width as may be required to expose a minimum length of 12" of undamaged drain tile.

REPLACEMENT SCHEDULE - CASE 'A'										
Existing Tile ⓓ	4	6	8	10	12	15	18	21	24	>24
Proposed Subdrain Size										
Concrete Pipe	-	-	12	15	15	18	21	24	30	D+6"
Coated C.M.P.	10	12	15	18	21	24	30	36	36	*

\* Replacement sizes provide equivalent capacity based on a 6" settlement assuming a 0.20% slope with  $n=0.013$  for concrete pipe and  $n=0.025$  for corrugated pipe (Mannings Formula).

## NOTES:

Tile lines disturbed within the right-of-way (outside the Roadway Embankment Area\*) limits shall be repaired as follows:

May be repaired with schedule 40 PVC pipe of compatible size or in accordance with the replacement schedule - case "A" as listed below. Replacement with schedule 40 PVC pipe shall require using a connecting device of a Fernco plain and plain and flexible pipe coupling or equal.

Tile lines disturbed within the "Roadway Embankment Area" shall be replaced in accordance with the replacement schedule - case "A" stated below and as follows:

- ① Concrete collar to be placed around joint where existing tile line and corrugated aluminized metal pipe connect.

- ② Minimum length of corrugated metal pipe shall be 4 feet. Minimum length of 2 feet on each side of tile line break location.
- ③ Trench shall be backfilled with 8 inches loose material, compacted to 6 inches with a minimum of 95% compaction of natural density.
- A. Backfill and compact area around drain tile to be completed by hand until new tile is completely covered. Remainder of the trench shall be backfilled by acceptable methods.
- B. Area shall require inspection by the Iowa Department of Transportation inspectors or their designated personnel prior to backfilling of trench.

\* "Roadway Embankment Area" is defined as the area lying between the foreslopes of a two-lane roadway and from near foreslope to far foreslope of a four lane roadway.

