Nebraska Department of Transportation

Roadway Design Division – Policy Letter

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Approved by: Mick S. Syslo 2024.03.01 11:54:13-06'00' /
Mick Syslo, Roadway Design Engineer, P.E. Date

Approved by: DAVID A MRAZ Digitally signed by DAVID A MRAZ Date: 2024.03.05 10:18:17 -06'00' /
Wayne Fedora, Division Administrator, NE FHWA Date

Roadway Design Manual chapters affected by this policy letter:

Chapter Ten: Miscellaneous Design Issues
Section 12.D - Utility Accommodation on State Highway Right-of-Way
Chapter Seventeen: Resurfacing, Restoration and Rehabilitation (3R) Projects
Section 10. F - Utilities

POLICY FOR UTILITY ACCOMMODATION ON STATE ROW

The Nebraska Department of Transportation (NDOT or Department) is responsible for the design, construction, reconstruction, mitigation, maintenance, and operation of the Nebraska state highway system. The rights-of-way (ROW) and other property rights of the Department for the state highway system are dedicated to meeting these responsibilities. There are times when public and private utility facilities need to cross or, in some cases, locate along state ROW to provide important public services to private and public properties. This policy addresses when such utility facilities should be allowed to use state highway ROW and provides the requirements, limitations, and conditions for the location, installation, use, maintenance, and removal of such facilities when placed on state highway ROW. This policy is also intended to fulfill Nebraska's (the State's) obligations concerning a Utility accommodation policy under the Code of Federal Regulations (CFR), Title 23, Highways, Subpart B, including Section 645.211.

The following topics are discussed in greater depth in the attached document:

- Governing Laws and Authorities
- General Policy
- Utility Accommodation
- General Plans Drawing Requirements
- Utility Permit to Occupy State Right-of-Way
- NDOT Construction Projects and Required Utility Relocations
- Construction, Maintenance, and Inspection
- Change of Ownership, Idling, Removal, or Abandonment
- Unique Situations

Sent to: NDOT Roadway Design Division, NDOT "Distribution B", and FHWA Nebraska Division

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Nebraska Department of Transportation
Utility Accommodation Policy

January 12, 2024

NEBRASKA
Good Life. Great Journey.
DEPARTMENT OF TRANSPORTATION

Preface

This policy for the accommodation of utility facilities on highway right-of-way (ROW) is premised on Nebraska law that specifies "the rights-of-way acquired by the department [of Transportation] shall be held inviolate for state highway and departmental purposes and no physical or functional encroachments, structures, or uses shall be permitted within such right-of-way limits, except by written consent of the department…." (Nebraska Revised Statute [Neb. Rev. Stat.] § 39-1359(1)). Further, Section 39-1361 requires obtaining a written permit from the Nebraska Department of Transportation (NDOT or Department) when a Utility or others propose to cross a state highway with an aboveground or belowground facility. Failure to comply with these provisions may result in criminal sanctions. (See Neb. Rev. Stat. § 39-1362.) Similarly, Title 23 Code of Federal Regulations Section 1.23 and other federal provisions confirm that generally the state's interest in highway ROW must be paramount and exclusive. Accordingly, the Department reserves the right to review, restrict, and prohibit, in the Department's sole discretion, new or additional uses of the highway property for utility and other non-highway uses.

Nebraska law also recognizes the need for certain utility facilities to use or occupy "public highways." For example, Neb. Rev. Stat. § 70-305 provides general authority for electric power providers to occupy public highways with power lines. However, Section 70-309 states that if the public highway is a "state or federal highway," then (1) the occupation of that property is subject to the regulations and restrictions prescribed by the Department and (2) the cost of relocation of such lines for a future highway project is the responsibility of the electric utility.

Similarly, telecommunications companies have a comparable right to occupy public highways under Neb. Rev. Stat. § 86-704(1). Again, if the public highway is a state or federal highway, the two restrictions described above apply. The definition of what is telecommunications is set out in Neb. Rev. Stat. § 86-117. The placement of broadband infrastructure in state highway property is also likely to increase in order to improve access to internet services, while retaining authority to determine where, if at all, within the corridor to place such infrastructure and how to preserve available space for future highway needs and uses.

There are at least four overarching interests of the Department concerning the use or occupancy of state or federal highway ROW. First, the primary use of the highway ROW must be for highway purposes or for uses found by the Department to be in its best interest. Second, the rights and obligations of those using or occupying public property are subject to the safety and operational efficiency of those using the highways. Third, there is limited space available for non-highway uses, and thus, uses of the highway ROW must preserve the available space and be easy and convenient to locate when needed. Finally, the Department reserves the right to reconstruct the highways at any time for departmental or other state purposes. Such action by the Department may necessitate the relocation of utility or other facilities located in the ROW. Those occupying public property are expected to promptly relocate their facilities when the Department needs such facilities moved for departmental or other state purposes.

These conditions underlie the discussions in this policy concerning the details of the use or occupancy of state highway property. Please contact the Department as soon as possible if you want to discuss the potential use of highway property for non-highway uses or purposes.

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Acronyms and Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
AWWA	American Water Works Association
BABA	Build America, Buy America
CER	composite eligibility ratio
CFR	Code of Federal Regulations
Department	Nebraska Department of Transportation
FHWA	Federal Highway Administration
HDPE	high-density polyethylene
ITS	Intelligent Transportation System
K-Sheet	Utility Plan Sheet
LOA	Letter of Authorization
LPA	Local Public Agency
MUTCD	*Manual on Uniform Traffic Control Devices for Streets and Highways*
NDOT	Nebraska Department of Transportation
Neb. Rev. Stat.	Nebraska Revised Statute
NEC	National Electrical Code
NESC	National Electrical Safety Code
NEPA	National Environmental Policy Act
PDF	portable document format
PE	polyethylene
PHMSA	Pipeline and Hazardous Materials Safety Administration
PS&E	Plans, Specifications, & Estimates
PSM	Plastic Sewer Main
PSP	Plastic Sewer Pipe
PUE	public utility easement
PVC	polyvinyl chloride
ROW	right-of-way
SDR	standard dimension ratio
SOC	State Operations Center

SUE	subsurface utility engineering
USC	United States Code

Chapter 1 Introduction

1.1 Overview

The Nebraska Department of Transportation (NDOT or Department) is responsible for the design, construction, reconstruction, mitigation, maintenance, and operation of the Nebraska state highway system. The rights-of-way (ROW) and other property rights of the Department for the state highway system are dedicated to meeting these responsibilities. There are times when public and private utility facilities need to cross or, in some cases, locate along state ROW to provide important public services to private and public properties. This document is intended to establish policy concerning when such utility facilities should be allowed to use state highway ROW and to provide the requirements, limitations, and conditions for the location, installation, use, maintenance, and removal of such facilities when placed on state highway ROW. This policy is also intended to fulfill Nebraska's (the State's) obligations concerning a Utility accommodation policy under the Code of Federal Regulations (CFR), Title 23, Highways, Subpart B, including Section 645.211.

1.2 Highways Included

This policy applies to all state highways, including those segments of state highways located within the corporate limits of Nebraska municipalities. This policy does not apply to county roads or city streets not on the state highway system; however, this policy may be used by a Village, City, or County as needed or when required. Utility facilities are allowed to **cross** any state highway, although the requirements for crossing interstate highways and freeways may be different. Generally, this policy does not allow Utility installations to be placed along and parallel to interstate highways or freeways; these installations will be referred to as **longitudinal** installations. Policy concerning longitudinal installations of utility facilities along other state highways is set out herein. NDOT reserves the right to allow longitudinal installations along interstate highways and freeways as a part of highway construction projects or with assistance or consideration from a private partner(s) when determined to be in the public's or highway user's best interest. Further, NDOT reserves the right to deny a requested crossing or longitudinal installation in a new or unusual circumstance when the installation includes risks deemed by NDOT to be unreasonable for the public or for the traveling public, or whenever such request conflicts with NDOT's present or future need or use of the property for state highway or transportation purposes.

NDOT and a local political subdivision may share some of the responsibilities over some of the duties of a state highway within the corporate limits of a city. NDOT has the superior authority over the placement of public and private utilities on the real estate within those highway segments.

1.3 Utility Types and Utility Facilities Included

This policy applies to municipal, public, and quasi-public Utility Owners established under Nebraska or federal law when such entity needs to place utility facilities over, under, or across state highway ROW with transmission, mainline, supply, or distribution wires, cables, conduits, pipelines, or other utility facilities. These utility facilities serve public and private properties, and include water, sanitary and storm sewer, electricity, telephone, telegraph, natural gas, and other heating oils, liquids, or gases. This policy also applies to facilities of other public or private providers including broadband; internet; cable television; telecommunications; pipelines for liquids, gases, and other substances; or other facilities generally accepted to be utility facilities. The conditions, limitations, and requirements for each type of facility may be different under this policy, and NDOT may supplement this policy by applicable, commonly accepted industry best practices and engineering judgment. Finally, NDOT reserves the right to treat a particular proposed use of state highway ROW as if it were a utility facility and to

specify what requirements of this policy, or of commonly accepted best practices or engineering judgment, should apply to the proposed installation.

1.4 Overarching NDOT Policy

Notwithstanding any other language of this document, the following is the overarching policy of NDOT.

1.4.1 Utility Facility Highway Crossings

Generally, this policy allows utility facilities to cross over, under, or across state highway ROW when the following conditions are met:

- The crossing is inclusive of, but not limited to, a public or private utility facility.
- The crossing is needed for a public purpose or a limited private need for properties that are residential, commercial, agricultural, industrial, or of other similar uses.
- The proposed location is available for installation (longitude, latitude, and depth).
- Spacing requirements can be met, and the installer will provide X, Y, and Z survey coordinates for any newly installed facility.
- The Utility Owner/installer is responsible for using reasonable proactive methods to locate existing facilities, protect those facilities during the installation process, and place the facilities in a way that maximizes reserving space for future use.
- The location and design of the facilities, and the materials used, will meet industry or legal requirements and standards, including the use of all appropriate safety features (as determined by NDOT), and shall conform to this policy.
- The installation, operation, maintenance, repair, and when applicable, removal costs will be paid by the installer or the public or private Utility Owner.
- Owner and installer will have insurance coverage consistent with NDOT's typical installation and occupancy insurance requirements.
- All other reasonable requirements will be met, whether NDOT typical requirements and/or common in the industry for this installation type.

1.4.2 Utility Facility Highway Crossings Process

NDOT reserves the right to process new requests to cross state highway ROW with utility facilities using the following approach. The entity proposing the crossing must provide (1) the specific proposed crossing location, (2) a description of the facility to be installed and the installation method, (3) a detailed explanation of what will be conveyed (gas, fluids, light, electronic signals, electricity, etc.) by the installed facility, (4) a statement of how the proposed use serves a public or private use, (5) an explanation of the spacing requirements and the method for identifying the post-installation location of such facilities, (6) any known or suspected risk from what is to be conveyed by the facility on or in the vicinity of state property, for both risk to state property and to the traveling public, including, but not limited to, risk from leakage, and (7) industry installation standards and best practices for such facilities and any other efforts the Utility Owner will make to reduce or mitigate the proposed risk.

Once all applicable information has been provided, the State will review the information, request additional information when applicable, and if the proposed crossing location is acceptable, shall allow

the installation so long as it conforms to the technical requirements set out herein or specified by the State as a condition of granting the permit.

1.4.3 Utility Facility Highway Longitudinal Installations

The following overarching concept and concerns apply to proposed new longitudinal installations and may be applicable to crossings, as determined by the Department:

- Relocation at Utility Owner Cost. The occupation of state highway ROW is expressly subject to the requirement that if a future NDOT construction, maintenance, or other transportation project requires the relocation of a utility facility, such relocation will be at the sole cost of the Utility and must be completed promptly.
- Limited Space. There is frequently a limited amount of ROW width remaining for a potential longitudinal utility facility in the existing highway ROW, and in some instances, there may be no remaining available location because of prior installations, NDOT future needs, or statewide broadband initiative.
- NDOT Future Needs. NDOT has a near-future need for a longitudinal underground corridor for fiber optic and other installations related to developing smart highway technology and vehicle-to-vehicle communication facilities and systems as a part of the operation of the state highway system. A sufficient space/corridor for NDOT future needs must always be preserved and will not be made available for use by a proposed new longitudinal user within the NDOT existing ROW.
- Statewide Broadband Initiative. Nebraska law includes a strong public purpose for improved statewide internet access, which requires leaving space open in public highway ROW for broadband facilities. A sufficient space/corridor for future broadband use must always be preserved and will not be made available for use by a proposed new longitudinal user within the NDOT existing ROW.
- NDOT Dig Once Policy. Nebraska has a strong interest in a dig-once approach for any space left (after accounting for NDOT's future needs and public broadband needs), and such a dig-once approach will require collocation, installation of multiple conduits, or installation of excess capacity (dark fiber) in new installations in order to properly manage the limited space available in highway ROW.
- Leasing the ROW – For Profit Uses. For use of the state highway ROW by a "for profit" entity, the State reserves the right to require that the entity "lease" the portion of ROW to be occupied, a decision that will be at NDOT's discretion.
- As-Built Survey Quality Location Data. NDOT will require that any new utility facility installation is installed using equipment that will provide survey quality location information, including X, Y, and Z coordinates. The installer must provide detailed as-built plans, including such data, in a form acceptable to the State.

To seek permission from NDOT for a potential longitudinal utility installation, the Utility Owner must follow the process and submit the information to NDOT required under Section 1.4.2 and Chapter 6 of this policy.

If an entity requests the installation of a new utility facility or the adjustment or relocation of an existing utility facility longitudinally within a highway ROW and the entity's legal authority to install, adjust, or relocate its facility longitudinally within the highway ROW is not readily evident, NDOT may require that the entity provide (1) written certification that it is an entity authorized by state law to operate, construct, and maintain its utility facilities over, under, across, on, or along state highways,

and (2) documentation that substantiates that the entity filed its status with the Nebraska Public Service Commission or applicable state agency and its facilities are subject to public safety regulations.

1.5 Reservation of Rights

Notwithstanding any language in this policy, NDOT reserves the right to determine what types of facilities, utility or otherwise, may be placed over, under, or across state highway ROW. Once NDOT has determined to allow a proposed utility facility, this policy establishes the conditions, limitations, and requirements for the installation, use, occupancy, maintenance, and repair of the facility.

Exceptions to the utility crossing provisions contained in this policy and relating to utility accommodation shall be applied for by the Utility Owner, and the Utility shall provide justification that an exception is necessary and that the proposed alternative measures align with the intent of this policy. NDOT's decisions concerning non-approval of proposed longitudinal utility installations will be final and will not be subject to review. The exception shall be recommended for approval by the NDOT District Engineer or designee and authorized by the NDOT Utility Engineer. The Utility shall use the Permit to Occupy process and NDOT Form 19, Application to Occupy Right of Way, for all utility facilities occupying the ROW, as contained in Chapter 6 of this policy.

Requests for exceptions will be considered only where the utility establishes that extreme hardship or unusual conditions provide justification and where alternative measures can be prescribed in keeping with the intent of this policy. All requests for exceptions must be fully documented as follows:

- For each exception request, the Utility must clearly demonstrate, with design data and other pertinent information, that the requested exception will not adversely affect the safety, design, construction, operation, maintenance, or stability of the highway.
- The Utility must demonstrate that its request is the minimum exception needed to accomplish the necessary accommodation and with consideration of other utilities in the future.
- The requested exception will not be constructed or serviced by direct access from the main lanes of an interstate/freeway or connecting ramps.
- The requested exception will not interfere with or impair the present use or future expansion of the highway.
- The accommodation of the utility is in the public's best interest and is cost effective.
- The accommodation of the utility will not have a direct or indirect impact on the environment.

1.6 Compliance with Law

Compliance with this policy does not relieve a Utility Owner from complying with the laws and regulations of the State of Nebraska or other public authorities, or with industry standards of practice that may prescribe a higher degree of protection than provided by this policy. In instances where the latter occurs, the more stringent provision shall prevail. Utility installations on public highway ROW are the responsibility of the Utility Owner, and compliance with the provisions of this policy or the conditions of a permit issued pursuant to this policy does not relieve a utility of its legal responsibilities under Nebraska law.

1.7 Additional Requirements

A permit allowing a Utility the accommodation of placing its facilities over, under, or across the highway ROW does not constitute any permanent right of use. Removal, remodeling, maintenance, or relocation of the facilities will be promptly completed by the owner at no cost to NDOT.

If an entity requests the installation of a new utility facility or the adjustment or relocation of an existing utility facility longitudinally within a highway ROW and the entity's legal authority to install, adjust, or relocate its facility longitudinally within the highway ROW is not readily evident, NDOT may require that the entity provide (1) written certification that it is an entity authorized by state law to operate, construct, and maintain its utility facilities over, under, across, on, or along state highways, and (2) documentation that substantiates that the entity filed its status with the Nebraska Public Service Commission or applicable state agency and that its facilities are subject to public safety regulations.

NDOT reserves the right to determine the meaning of the provisions of this policy when the meaning is uncertain, retains the right to determine whether a particular proposed installation will be allowed, and retains the right to specify the limitations and conditions applicable to any type of proposed installation not clearly addressed in this policy.

Chapter 2 Governing Laws and Authorities

2.1 Overview

Most actions needed for utility adjustments are governed by various legal requirements. These requirements can be categorized as follows:

- Statutes. A written law passed by a legislature on the state or federal level. Statutes set forth general propositions of law. Statutes often require a federal or state agency to establish rules and regulations to carry out the intent of the legislation. These rules and regulations are adopted by the agency and are commonly referred to as "administrative laws."
- Administrative Laws. Administrative laws have the force and effect of law. The CFR contains the federal government's administrative law. The Nebraska Administrative Code contains the State of Nebraska's administrative law. The appropriate sections of these codes form the basic rules for adjusting and accommodating utilities on transportation projects.
- Court Cases.

The adjustment and accommodation of utility facilities on the state highway system and reimbursement for the costs of such work will be in accordance with the provisions of:

- federal codes and regulations;
- Nebraska codes and regulations;
- Nebraska policies.

It should be noted that NDOT policy on utility adjustments may be more restrictive than the federal regulations.

Also, please be advised to always refer to the latest version of these standards and source documents.

2.2 Federal

2.2.1 United States Code

The United States Code (USC) contains the laws of the United States of America. These laws, among other laws, set out the responsibilities of the Federal Highway Administration (FHWA), which has oversight authority on transportation projects to carry out requirements of federal law. USC Title 23 relates to federal-aid for highways and includes utility adjustments.

In USC Title 23, Highways, the following sections apply to utilities accommodation:

- Section 103 – National Highway System
- Section 109(l)(1) – Standards [Pertaining to accommodation of utilities]
- Section 111 – Agreements relating to use of and access to rights-of-way – Interstate System
- Section 123 – Relocation of utility facilities

2.2.2 Code of Federal Regulations

The CFR is a codification of rules published in the *Federal Register*. Regulations, policies, and practices dealing with utility relocation and accommodation matters are found primarily in CFR Title 23, Highways, Part 645. These requirements form the nucleus of both State and LPA utility adjustments.

In CFR Title 23, Highways, Part 645 pertains to utilities, as follows:

- 23 CFR Part 645, Subpart A – Utility Relocations, Adjustments, and Reimbursement
- 23 CFR Part 645, Subpart B – Accommodation of Utilities
- 23 CFR Part 645, Subpart C – Broadband Infrastructure Deployment

These requirements form the nucleus of both State and Local Public Agency (LPA) utility policies.

For other special information, refer to the following:

- The Pipeline Safety Act, 49 CFR Parts 190, 191, 192, and 195
- The Office of Pipeline Safety
- Pipeline and Hazardous Materials Safety Administration (PHMSA)

2.2.3 National Electrical Code

The National Electrical Code (NEC) is a nationally accepted guide to the safe installation of electric wiring and equipment and is widely used as the basis of laws and regulations. The Occupational Safety and Health Administration (OSHA) borrowed extensively from the NEC in developing Design Safety Standards for Electrical Installations. This standard is now federal law.

2.2.4 National Electrical Safety Code

The National Electrical Safety Code (NESC) was developed for safeguarding people during installation, operation, and maintenance of electrical supply and communications lines. It also covers equipment and associated work practices employed by:

- public or private electrical suppliers;
- communications;
- railways;
- similar utilities in the exercise of their operations.

2.2.5 Electric Deregulation Act

The Electric Deregulation Act requires the electric industry to restructure its operations. It also allows community-owned utilities and member-owned cooperatives to choose whether they will compete with investor-owned utilities.

2.2.6 Build America, Buy America Act

The Build America, Buy America Act requires that all the iron, steel, manufactured products, and construction materials used in infrastructure projects are produced in the United States. Build America, Buy America (BABA) provisions are set forth in both the USC and CFR and are implemented by FHWA and NDOT. The Buy America stipulations are applicable to contracts eligible for federal-aid funding. Therefore, any utility work that is accomplished as a result of such contracts cannot be

excluded from Buy America provisions. The FHWA Buy America statutory provisions are in 23 USC § 313 and the regulatory provisions are in 23 CFR § 635.410. Additional information regarding Buy America requirements is available in FHWA's Construction Program Guide.

2.2.7 Americans with Disabilities Act

The Americans with Disabilities Act of 1990 (ADA), codified at 42 USC §§ 12101 et seq., is a civil rights law that prohibits discrimination based on disability. The U.S. Department of Justice published revised regulations for ADA Titles II and III in 2010. These regulations adopted revised, enforceable accessibility standards called the 2010 ADA Standards for Accessible Design, which set guidelines for accessibility to places of public accommodation and commercial facilities by individuals with disabilities.

2.2.8 Manual on Uniform Traffic Control Devices for Streets and Highways

The *Manual on Uniform Traffic Control Devices for Streets and Highways* (usually referred to as the Manual on Uniform Traffic Control Devices, abbreviated [MUTCD]) is a document issued by FHWA to specify the standards by which traffic signs, road surface markings, and signals are designed, installed, and used. In the United States, all traffic control devices must legally conform to these standards.

2.2.9 Manual for Assessing Safety Hardware

The American Association of State Highway and Transportation Officials (AASHTO) *Manual for Assessing Safety Hardware* is a manual for consistency in testing and evaluation of roadside safety features. It includes a matrix for cable barrier testing on slopes, test vehicle dimensions, and test documentation requirements.

2.3 State

State laws regarding utilities accommodation are located in Nebraska Revised Statues (Neb. Rev. Stat.) Chapter 39, as follows:

- § 39-1302 (5), (24), and (25): Terms, defined.
- § 39-1337: State highway system and highway approach; department; construction, maintenance, control; improvement; sufficiency rating.
- § 39-1359: Rights-of-way; inviolate for state and department purposes; temporary use for special events; conditions; notice; Political Subdivisions Tort Claims Act; applicable.
- § 39-1361: Cross or dig up highway; permit by department; conditions.

2.4 Nebraska Department of Transportation

NDOT policies and manuals that are relevant to utilities accommodation include the following:

- *Access Control Policy to the State Highway System*
- *Standard Specifications for Highway Construction*
- *State of Nebraska Supplement to the Manual on Uniform Traffic Control Devices*

2.5 Related and Industry

Associations and their publications that are relevant to utilities accommodation include the following:

- AASHTO
  - *AASHTO LRFD Bridge Design Specifications* – By Purchase
  - *A Guide for Accommodating Utilities Within Highway Right-of-Way*
  - *A Policy on the Accommodation of Utilities Within Freeway Right-of-Way* – By Purchase
  - *Roadway Lighting Design Guide* – By Purchase
  - *Roadside Design Guide* – By Purchase
  - *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals* – By Purchase
  - *A Policy on Geometric Design of Highways and Streets* – By Purchase
  - *Manual for Assessing Safety Hardware* – By Purchase
- American Society of Civil Engineers (ASCE)
  - *CI/ASCE 38-02, Standard Guideline for Investigating and Documenting Existing Utilities*– By Purchase
  - *CI/ASCE 75-22* Standard Guideline for Recording and Exchanging Utility Infrastructure Data – By Purchase
- American National Standards Institute (ANSI) Illuminating Engineering Society
  - *The Lighting Handbook* – By Purchase
  - Recommended Practice 8-18 – By Purchase
- American Petroleum Institute (API)
  - API Standards
- American Water Works Association (AWWA)
  - AWWA Standards
- Institute of Electrical and Electronics Engineers (IEEE) Standards Association
  - *National Electrical Safety Code* (NESC)
- National Fire Protection Association
  - *National Electrical Code* (NEC)
- Society of Cable Telecommunications Engineers (SCTE)
  - SCTE Standards

Chapter 3 General Policy

3.1 Protection of Traveling Public During Installation of Utilities

Utility contractors or representatives installing utility facilities within the highway ROW shall protect the traveling public by using the appropriate traffic control devices, such as signs and flaggers, as outlined in the most recent edition of the MUTCD and the *State of Nebraska Supplement to the Manual on Uniform Traffic Control Devices*. All utility construction and maintenance operations should be planned with full regard to safety, and any interference with roadway traffic should be kept to an absolute minimum.

3.2 Permit/Application to Occupy Highway Right-of-Way

All work in the highway ROW shall require a Permit to Occupy issued by NDOT if not permitted in an existing permit. If a utility facility needs to be relocated by a highway project, a properly executed agreement with NDOT shall be required in addition to the new or updated permit. No utility installation shall adversely affect the safety, design, construction, operations, or maintenance of the highway.

All requests to place utilities within the highway ROW shall be initiated through the appropriate NDOT District Office overseeing the area of the intended work. The District Map is provided to help determine which District Office to obtain an application from.

A Permit to Occupy, allowing a utility the privilege of placing its facilities in or on the highway ROW, does not constitute any permanent right for such use. The State Transportation Improvement Program (STIP) should be reviewed to determine if a proposed permit will be within the limits of an NDOT highway project to reduce relocations and excavations. When utilities are located on existing NDOT ROW and will be impacted by NDOT projects, all relocations or adjustments will be completed promptly and at no cost to NDOT.

In addition to the requirements in this policy, NDOT may prescribe special requirements that will be justified based on the specific soil, terrain, weather, vegetation, trees, traffic characteristics, type of utility line, or other factors unique to the area.

3.3 Relocation of Utilities Due to NDOT Projects

The adjustment, relocation, and/or removal of utility facilities on the state highway system, and reimbursement for the costs of such work, will be in accordance with a written agreement between the State and the utility company, county, or city, whichever is applicable.

If NDOT determines that an adjustment, modification, relocation, or removal of a utility facility may be required by an improvement to a state highway, NDOT will provide the Utility with plans and specifications to enable the Utility to reasonably determine the future location, including depth of cover and required clearances, and if applicable, the estimated cost of the adjustment, modification, relocation, or removal of the utility facility. In addition to the executed agreement, an approved Permit to Occupy will be required and shall conform to the conditions of this policy.

3.4 Accommodation, Construction, and Maintenance of Utilities

All utility facilities shall be kept in a good state of repair in accordance with the requirements of federal, state, and local laws; federal and state regulatory standards; NDOT policies; and applicable utility industry codes. Planned maintenance operations within the fenced interstate or freeway ROW

will be permitted only upon prior notification and approval by NDOT, as appropriate. It is the Utility Owner's responsibility to replace and stabilize all earth cover and vegetation where it has eroded over an underground utility facility where such erosion is due to or caused by the placement or existence of the underground utility facility. If a Utility Owner does not meet the requirements of this policy, NDOT may take actions as specified in Section 8.9, Non-approved or Non-compliant Installations.

Chapter 4 Utility Accommodation

4.1 General Accommodation Requirements for Utility Facilities

This policy specifies the conditions under which existing, proposed, adjusted, or relocated utility facilities may be accommodated on NDOT ROW. Although NDOT strives to accommodate utility facilities whenever possible, the authorized use and occupancy of NDOT ROW for non-highway purposes is subordinate to the transportation need and the safety of the traveling public.

Today's Permit to Occupy is Tomorrow's Conflict. The importance of developing and adhering to policies for the accommodation of utility facilities in NDOT ROW is paramount because the permit approved today will create the potential conflict of tomorrow. All utility accommodations should consider the following factors:

- The utility accommodation will not adversely affect the safety, design, construction, operation, maintenance, or stability of the transportation facility.
- The utility accommodation will not be constructed and/or serviced by direct access from the through-traffic roadways or connecting ramps.
- The utility accommodation will not interfere with or impair the present, planned, or future reconstruction or expansion of the transportation facility.
- Any alternative location would be contrary to the public interest. This determination would include an evaluation of the direct and indirect environmental and economic effects resulting from the disapproval of the use of this ROW.

The demand for use of NDOT ROW has continued to increase over time. The presence of a utility facility within the ROW may significantly impact the highway if its facilities must be relocated. In addition, NDOT encourages collaboration, cooperation, and joint use among various utilities (and non-utilities where appropriate) to be placed within NDOT ROW. Utility Owners shall coordinate with NDOT to identify highway-related facilities that will have clearance requirements to maintain highway operations, such as traffic control, lighting, and communication systems. Failure to coordinate with the appropriate NDOT District or Division could lead to a non-approval of a proposed utility installation (see Section 8.9, Non-approved or Non-compliant Installations).

4.2 General Provisions and Responsibilities

The intent of these policies and procedures is to establish and administer reasonable uniform utility accommodation practices in the interest of developing and preserving safe roadsides and minimizing possible interference with, and impairment to, structures and the visual quality, safe operation, and maintenance of highways within NDOT ROW. Whenever a utility is in a location under the authority of multiple entities such as cities, counties, or tribal lands, the Utility Owner must coordinate with all governing authorities in order to meet the minimum necessary requirements of each entity.

4.2.1 Industry Standards and Requirements

The Utility Owner is responsible for complying with all applicable local, state, federal, environmental, and franchise requirements, and for meeting accepted industry standards in installation, maintenance, servicing, and all operations of the utility facility being located within NDOT ROW. See Chapter 2, Governing Laws and Authorities.

4.2.2 Maintenance

All utility facilities shall be kept in a good state of repair in accordance with the requirements of local, state, and federal laws; state and federal regulatory standards; and applicable utility industry codes. See Chapter 8 of this policy for further information.

4.2.3 Controlled Access Highways

Access rights are rights of ingress or egress (entrance or exit) to the highway facility from an adjacent parcel of land. NDOT acquires real property rights to parcels of land used for transportation-related purposes. In some circumstances, it is in the public's interest for NDOT to control the right of ingress or egress to portions of public ROW. NDOT's "Access Control Policy to the State Highway System" defines varied levels of public access rights to and from properties abutting highways depending on the type of facility.

NDOT allows both longitudinal utility facility occupation and transverse crossings of highways under its jurisdiction except for interstates and freeways. Utility facilities on NDOT highway ROW should be designed to facilitate access and maintenance in conformance with NDOT's Access Control Policy and with the least disruption to, and impact on, vehicular safety. NDOT accommodation of utilities on interstates and freeways shall conform with 23 CFR 645.209 (c).

A Utility Owner's rights of access on NDOT roadways shall be subject to the same rights of access that apply to the general public, as referenced above, in order to maintain the integrity and safety of the highway. When installing, modifying, servicing, or maintaining a utility facility on a controlled access facility, the Utility Owner will access this installation from nearby or adjacent public roads or streets, or from designated access routes along or near the highway ROW lines connecting only to an intersecting road, from which entry may be made to the outer portion of the highway ROW. Access to and use of through-traffic lanes and ramps shall be subject to the same rights of access that apply to the public.

See Sections 4.3.2.2, 7.3.8, and 8.5.2 of this policy for additional information.

4.2.4 Financial Obligations

The Utility Owner assumes all risks associated with its utility facilities within NDOT ROW. These risks include injuries to NDOT employees and contractors, Utility Owner employees and contractors, and the general public; damage to adjacent utility facilities in the area; and injuries or property damages resulting from failure to properly install and maintain the Utility Owner's facility. NDOT requires the Utility Owner and its contractors to maintain payment and performance bonds and insurance to cover these risks.

4.2.4.1 Payment and Performance Bonds for a Permit to Occupy ROW

Any contractor used by a Utility Owner to install or relocate a utility facility within NDOT ROW must provide to NDOT a payment and performance bond to cover the completion of the installation or relocation using NDOT's standard payment and performance bond form.

4.2.4.2 Insurance

Before beginning any work within NDOT ROW to install or relocate utility facilities, Utility Owners and their contractors must obtain and keep in effect the types and amounts of insurance shown in NDOT's current standard utility installation requirements.

NDOT must be named as an additional insured on a primary and non-contributory basis in the general liability policy, and as further provided by the NDOT insurance requirements.

The Utility Owner and its contractors have the duty when installing or relocating a utility facility to confirm they are using the most current version of the insurance requirements.

4.2.4.3 Indemnification

It is understood that the Utility Owner shall be required to indemnify NDOT, and language in the Utility Agreement will be substantially similar to the following:

> Utility Owner agrees to indemnify, defend and hold harmless State, its agencies, and its employees, for any claim, cost, liability or responsibility arising out of the acts, omissions or negligence of Utility Owner or its contractors, including reasonable attorney's and expert witness fees and expenses, related to the use or occupancy of State ROW by Utility Owner or its contractors, so long as, and to the extent that, such liability was not caused by the sole negligence or willful misconduct of the State as provided below. It is understood that this indemnity includes, but is not limited to, claims against Utility Owner or its contractors, including by: (a) any person or entity traveling along State ROW, (b) pedestrians, (c) adjacent landowners or lessees, or (d) others using or occupying State ROW for any reason.
>
> State will incur no cost, responsibility or liability to Utility Owner or its contractors arising out of the intentional or unintentional acts or negligence of the traveling public, pedestrians, public or private utility owners, independent contractors or others using or occupying State ROW for any purpose, including when the utility installation is not in compliance with the terms of the permit (too shallow, different location, etc.). However, State will be responsible for the active negligence or willful misconduct of State's employees and officers, expressly subject to the limitations and conditions of the Nebraska State Tort Claims Act, found at Neb. Rev. Stat. §§ 81-8,209 to 81-8,239.11, and the Nebraska Constitution and Statutes.

4.2.5 Ownership, Nebraska811, and Emergency Notifications

Utility installations within public ROW are the responsibility of the Utility Owner. Compliance with the provisions of this policy or the conditions of a permit issued pursuant to this policy does not relieve a Utility of its legal responsibilities under Nebraska and federal law.

Any time a utility facility occupies NDOT ROW or if a utility company requests the installation of a new utility facility or the adjustment or relocation of an existing utility facility within highway ROW and the entity's legal authority to install, adjust, or relocate its facility within the highway ROW is not readily evident, NDOT may require that the entity provide the following:

- Written certification that it is an entity authorized by state law to operate, construct, and maintain its utility facilities over, under, across, on, or along state highways
- Documentation that substantiates the entity filed its status with the applicable state regulatory commission or agency and its facilities are subject to public safety regulation

The One-Call Notification System Act (Neb. Rev. Stat. §§ 76-2301 through 76-2331) sets the requirements to be followed by any "person" contemplating "excavation" (defined in Neb. Rev. Stat. § 76-2315 and § 76-2308, respectively) and requirements to protect "underground facilities" (defined in Neb. Rev. Stat. § 76-2317 and discussed in § 76-2323). This law shall be followed by anyone permitted to install utility facilities on state highway ROW. As a condition of occupying NDOT ROW by permit, a Utility Owner accepts the responsibility of performing a utility locate in the field when requested by Nebraska811 or NDOT for design, construction, or maintenance activities. Markers shall also be placed on the ROW line giving the name and address of the Utility Owner and the phone number to contact in case of emergency, in accordance with the One-Call Notification System Act. If

ownership of a utility facility changes, the new Utility Owner will comply with Section 9.1 of this policy and update all markers within 90 days of the ownership change.

Utility Owners and the contractors working on their behalf must notify other utility operators that have existing underground facilities in the area so that those utility operators can identify and locate their underground facilities prior to new work so contractors may then observe proper precautions to safeguard the existing underground facilities from damage. Notification to operators of underground facilities must be done by calling Nebraska811, the statewide One-Call Notification Center, at 811 or 1--800-331-5666 (both numbers are toll free) or online at www.ne1call.com using ITIC (Internet Ticket Processing).

Situations that could affect public safety, disrupt utility service, or damage the NDOT ROW may develop suddenly and unexpectedly and demand immediate action. In those situations, the Utility Owner shall proceed immediately with all necessary actions while attempting to contact NDOT. When emergency repairs become necessary, written permission will not be necessary before beginning the needed repairs. The Utility Owner shall be responsible for safe and efficient traffic control to current standards, including the most recent edition of the MUTCD, and shall fully brief NDOT of all actions as soon as practical.

4.2.6 Required Regulatory Permits

All requests to install or place utility facilities within the highway ROW shall be accompanied by written certification advising NDOT that the proposed facility meets all Nebraska and federal laws, including National Environmental Policy Act (NEPA), as well as laws and regulations of the municipality, county, railroad, and other agencies, as applicable. This is to include licenses, permits, or approvals acquired from the appropriate agencies charged with the responsibility for enforcement or oversight of the proposed installation.

4.2.7 National Environmental Policy Act

If federal funds are designated for use in a Permit to Occupy or relocation activities, NDOT shall coordinate to ensure the designated utility work is assessed and disclosed in the NDOT project's NEPA documentation.

4.2.8 Railroad Agreements

Railroad License Agreements are entered into between NDOT and a railroad company for the joint use of the ROW. The agreements are customarily used when an active, operating railroad is involved as opposed to abandoned railroad property. These agreements are in the form of a license because they are permissive and do not create a property interest. Railroad License Agreements are most commonly used when a highway and railroad intersect and when a highway and railroad share a parallel drainage ditch.

When a utility wishes to occupy ROW that is jointly used by NDOT and a railroad company, the utility must submit a Permit to Occupy to the local NDOT District Office and a permit/license request to the railroad indicating the intention of occupying railroad-highway ROW. In this manner, NDOT can address the safety of the traveling public and the integrity of the highway structure and can accommodate future highway projects. A utility facility that crosses railroad ROW shall provide a copy of the fully executed permit to install the utility facility within the railroad ROW from the railroad to the NDOT District Permit Officer prior to installation of the utility facility within NDOT ROW. The railroad request and review ensure that the interests of the railroad company are addressed.

4.3 Accommodation of Utility Facilities on NDOT Highways

Potential impacts on the highway and its users shall be considered in the design and location of utility facilities on or along highway ROW. Efficient, effective, and safe joint highway and utility development of transportation corridors is important along all public ROW, and especially for high-speed and high-volume roads, such as major arterials, interstates, and freeways.

The accommodation of utilities is based on the NDOT rules, regulations, and policies at the time the Utility Owner was allowed to install the utility facility within NDOT ROW. When relocations or adjustments are required, the facilities will conform to and meet the requirements of the current NDOT rules, regulations, and policies.

4.3.1 Non-Interstate Highways

On rural-type roadways, utility facilities should be located beyond the highway backslope, as near the ROW line as possible, width permitting, except at locations where this is not possible, such as deep ravines or ditches, and only allowed with a site-specific request and NDOT approval. Additionally, utility facilities are not allowed in the median.

On urban-type roadways, utility facilities should be located as near to the ROW line as practical and preferably not within the traveled way. A utility appurtenance placed within the clear zone of the ROW shall not protrude above the surrounding surface.

4.3.2 Interstates and Freeways

4.3.2.1 General

Interstates and freeways with interchanges should be as free of obstructions as possible. Longitudinal utility occupancy inside the fenced ROW of an interstate or freeway is not permitted unless deemed absolutely necessary by NDOT and may be considered only as a last resort when no other feasible route can be followed by the utility facility or when such utility facility exclusively serves a highway facility. NDOT and others having jurisdictional authority over the interstate or freeway must concur that no feasible alternate utility location is possible before allowing longitudinal occupancy of the interstate or freeway ROW. All new or modified access to the interstate system must be approved by FHWA and developed in accordance with federal laws and regulations (23 USC §§ 109 and 111, 23 CFR § 625.4, and 49 CFR § 1.48(b)(1)).

4.3.2.2 Control of Access

In 1959, AASHTO adopted a guide for the parallel use of interstate/freeway ROW. This guide was created to:

- develop and maintain access control;
- maximize highway safety and function;
- ensure uniformity of utility treatment among the states.

In 1988, FHWA allowed each state the right to determine whether Utility Owners would be permitted the parallel use of interstate/freeway ROW. NDOT under its authority does not permit placement of longitudinal utilities in its interstate ROW.

On interstates and freeways, NDOT purchases the right of access to public ROW from the adjacent property. These rights are purchased with the intent to control access to vehicular travel in a legally

defined area of the ROW and to through-traffic lanes in the immediate vicinity. The main concern is for areas where traffic entering the roadway would confuse the traveling public. These areas are located:

- adjacent to ramps;
- along curves;
- where sight distances are critical;
- along main lane facilities without frontage roads (not allowed by NDOT Utility Policy); and
- in outer separation and medians (not allowed by 23 CFR Part 645).

In special cases of crossing access control lines, new utility installations may be permitted under controlled conditions. However, in each case, the Utility Owner must show all of the following:

- The utility accommodation will not adversely affect the safety, design, construction, operation, maintenance, or stability of the transportation facility.
- The utility accommodation will not be constructed and/or serviced by direct access from the through-traffic roadways or connecting ramps.
- The utility accommodation will not interfere with or impair the present, planned, or future reconstruction/expansion of the transportation facility.
- Any alternative location would be contrary to the public interest. This determination would include an evaluation of the direct and indirect environmental and economic effects resulting from the disapproval of the use of this ROW.

Specific details of the location, type, and method of construction and maintenance that will be permitted inside the fenced interstate or freeway ROW will be determined individually at the time such utility occupancy is authorized. The Utility may at any time be required to construct a fence or other barrier to effectively prevent access from the through-traffic roadways or ramps to the utility facilities within the interstate or freeway ROW. Utility Owners follow designated access routes within the ROW approved by NDOT.

All costs connected with these designated access routes shall be borne by the Utility Owners occupying the interstate or freeway ROW, and neither the existence of the designated access routes nor the utility occupancy of the ROW gives anyone a vested or compensable right within the highway ROW. All utility access routes, facilities, appurtenances, etc., must be immediately adjusted or relocated at the Utility's own expense when so directed by NDOT or the authority having jurisdiction over the interstate or freeway. All erosion, weed control, destroyed or damaged vegetation and plantings, or other damage to the highway ROW caused by the Utility inside the interstate or freeway ROW shall be repaired, restored, replaced, or compensated for by the Utility occupying such ROW.

Emergency conditions may require that direct access be gained from the interstate or freeway. Under emergency conditions, the State Operations Center (SOC) should be contacted at 402-331-5993 as soon as possible to document the emergency conditions. The SOC will then notify the appropriate NDOT office.

Utility facilities occupying interstate or freeway ROW outside the control of access fence, or outside of ramps or frontage roads will conform to Sections 4.2.3 of this policy.

4.3.3 Joint Use of Utility and Highway Structures

Utility facilities attached to a highway bridge can materially affect the structure, the operation of traffic, the efficiency of maintenance and reconstruction, and the appearance of the structure. Therefore,

feasible and reasonable actions are to be taken to avoid attaching utility facilities to NDOT structures; utility facilities should be placed in another location instead. While NDOT discourages attachments to structure, particularly pipelines, exceptions may be considered when they serve a public interest and are justified. Utility facilities will not be attached to any type of drainage pipe, concrete box culvert, or stock pass. Utility attachments generally will not be permitted on mainline interstate or freeway bridges that have not been specifically designed to accommodate them, except to exclusively serve a highway facility. Utility attachments to existing structures crossing interstates or freeways will be considered on an individual basis.

4.3.3.1 General Requirements

For a utility facility to be attached, a detailed engineering report shall be provided that clearly demonstrates all of the following:

- Significant economic and environmental savings will occur by locating the utility on the structure.
- Installation and maintenance will not significantly impact traffic operations of the highway.
- The aesthetics of the utility will not detract from the current conditions of the area.
- The utility facilities do not expose the public to a safety risk.
- The highway structure is adequately rated to support the additional load and to accommodate the utility facility without compromise of highway features, including ease of bridge inspection and maintenance.
- Utility facilities attached to the bridge maintain a vertical clearance such that the lowest part does not extend below the bottom of any beam or girder at any point when crossing over roadways, railroads, waterways, and flood-prone areas.

The proposed utility facility shall not hamper structure maintenance or degrade the integrity of the structure. The utility facility shall be removable without causing damage to the structure.

Maintenance of the utility and attachment system will be the responsibility of the Utility Owner to the satisfaction of the NDOT District Office. Access from the bridge deck for service or maintenance will not be allowed. Manholes used to service the utility will be located beyond the edge of the outer roadway shoulders. Manholes will not be located in the bridge deck, approach slabs, medians, or roadway pavement wearing surface.

4.3.3.2 Request for Bridge Attachment

Plans are required in the request for utility attachments to bridges and structures. The following minimum information will be required by NDOT in order to process the request and locate the utility lines on the structure:

- Location (sketch) of utility lines relative to the centerline of the bridge structure
- Number, type, and size of utility lines or conduits
- Weight per foot of encased utility
- Minimum bending radius for the conduit specified
- Manufacturer’s details of attaching hardware
- Anchor size and spacing

- Size of polyvinyl chloride (PVC) sleeves required at piers and abutments
- Type or method of entry through abutments
- Name and phone number of contact person to supply construction materials

Requests will be submitted through the District Permit Officer or Utility Coordinator (as part of a relocation) to the NDOT Roadway Design Division, Utility Section. NDOT's Bridge Division will give special consideration to large or heavy utility facilities, such as water mains. NDOT's Bridge Division will review, and after approval, the attachment specifications provided by the utility will be incorporated into the bridge design plans. A set of bridge plans will then be sent to the requesting utility company for review and to the Permit Section of the ROW Division for issuance of a permit.

Permit requirements regarding, but not limited to, performance guarantees, and liability insurance are included in the approved Permit to Occupy ROW. Structure insurance coverage for damages that occur to the structure by reason of attachments carrying PETROLEUM, HAZARDOUS, AND/OR CORROSIVE PRODUCTS will be provided by the utility company in an amount determined for each bridge or structure by NDOT. A permit allowing a Utility Owner the privilege of attaching its facilities to a highway structure does not constitute any permanent right for such attachment.

Any removal, remodeling, maintenance, or relocation of the attachment, whether required by NDOT or not, will be promptly accomplished by the Utility Owner at no cost to NDOT.

Utility companies will be responsible for the design of their attachment system. Utility systems shall be suspended by means of cast-in-place anchors only. The NDOT Bridge Division will not approve other methods including anchors driven using explosive-type driving force methods. Other methods of attachment will be evaluated on an individual basis.

All attachments to bridges and structures should be of durable materials designed for a long service life and relatively free from routine servicing and maintenance.

Conformance with current applicable materials specifications and codes is mandatory. All steel materials used in attaching a utility to a structure must be stainless steel anchors and hot-dipped galvanized supports.

Cast-in-place PVC sleeves one size larger than the utility conduit will be required to pass utility lines through concrete diaphragms and abutment walls. Utility lines will not be attached to, or supported by, steel separators. Utility installation through piers or wing walls will not be permitted.

All utility lines shall be suitably insulated, grounded, and carried in protective conduit or pipe within the limits of the bridge structure. When a utility line transitions from a parallel alignment to the ROW to the bridge structure, the transition section should be perpendicular to the roadway.

4.3.3.3 Provisions and Guidelines

Utility attachment system design will be subject to the following NDOT provisions:

- Utilities are to be installed, serviced, and maintained without access from the bridge deck. Attachment systems shall be designed to expand and contract independently of the bridge structure, and no longitudinal or lateral loads may be applied to the bridge structure. Satisfactory provisions for longitudinal conduit or pipeline movement due to temperature differentials or lineal expansion and contraction of the bridge shall be made in conduit or pipeline designs. Such provisions may be line bends, flexible couplings, or other methods acceptable to the appropriate utility code. Attachment of conduit to the bridge deck surface, bridge handrail, concrete barriers, concrete rails, or guardrail components will not be allowed.

Welding, drilling, cutting, or attachment to structural steel members or prestressed or reinforced concrete girders will not be allowed.

- Pipelines carrying natural gas, liquid petroleum products, or other volatile fluid or gas under pressure will require installation of emergency shutoff valves. Pipelines shall have shutoffs not more than 500 feet from the structure. Where a feasible location for shutoff valves is not available within 500 feet of the structure, NDOT may allow a distance greater than 500 feet between the shutoff and the structure. The location of shutoff valves for multiple structures near each other will be considered on an individual basis. Pipelines having more than 500 kPa (75 psi) operating pressure or larger than 2 inches in diameter shall have shutoff valves that activate automatically when a sudden drop in pressure occurs. Casing requirements will be based on industry codes and practices. Pipelines in cells or casings shall be vented and grounded whenever necessary.

The NDOT Bridge Division will use the following guidelines to locate the utility lines on the bridge structure and detail the utility attachment in the bridge plans as specified by the utility company request.

- Superstructure attachments will be beneath the bridge deck and inside the outer girders and shall not extend below an elevation that is 1 foot above the bottom flange. Concrete slab structures will have utilities placed in the slab.
- All utility lines will be extended through the abutment walls using cast-in-place PVC sleeves. Utilities will continue under the bridge approach section and below the grade beam. Utilities will exit from under the paving section at an angle of 45 degrees to the roadway center line, 3 feet (min.) beyond the end of the wing, and at a depth of 3 feet (min.) below grade.

The utility company shall pay all additional costs and engineering fees attributed to the installation of the line unless such attachments are made as a part of, or in lieu of, utility relocation. The additional cost of structural materials and/or design beyond what is needed for highway purposes will be determined by the State. These additional costs will be assessed to the utility company at a reasonable rate by the State. The conduit itself is to be supplied and installed later by the utility company.

4.3.4 Utility Service Connections

An NDOT Permit to Occupy is required for any installations or placement of new and existing service connections to adjacent properties from within NDOT ROW. The Utility Owner must submit the permit request in the same manner as all other utility installations.

4.4 Location

The demand for access to accommodate utility placement within NDOT ROW will continue to grow. Therefore, it is increasingly important that utility facilities are carefully placed. The degree of attention to detail exercised for any utility placement should be the same as that for an NDOT construction project. Longitudinal utility facility installations should be located on uniform alignment as near as practical to the ROW line to provide a safe environment for traffic operations, to preserve space for future highway improvements and other utility installations, and to allow servicing utility facilities with minimum interference to highway traffic. Aboveground utility appurtenances including manholes, fire hydrants, poles, and guy wire installations may not encroach on or impact Americans with Disabilities Act (ADA) clearances or pedestrian facilities as referenced in Chapter 2 of this policy.

When a Utility Owner is planning to install or relocate a longitudinal facility, the Utility Owner must communicate with the NDOT Permit Coordinator or NDOT Utility Coordinator to obtain NDOT existing ROW plans and information on proposed highway projects including proposed highway and ROW plans. It is the Utility's responsibility to ask questions and ask for guidance to assist in locating the utility. NDOT's order of preference is first to locate longitudinal utilities as close to the ROW line as possible and if that is unattainable then outside the clear zone of the roadway as shown in Section 4.4.1 of this policy.

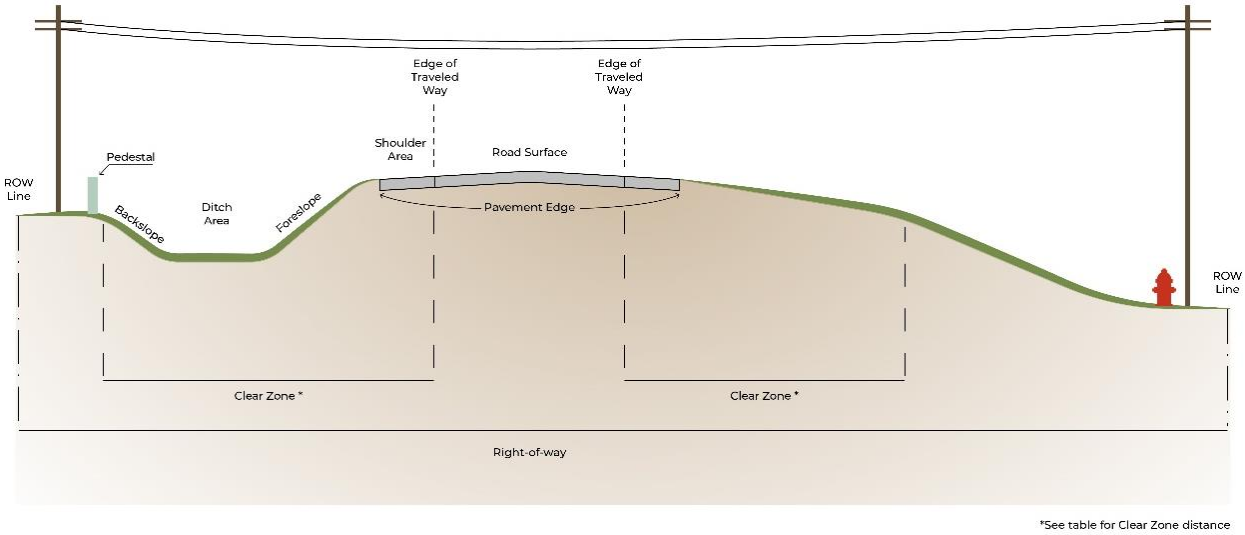
When sufficient ROW is not available to accommodate a utility facility outside the clear zone or there is a conflict with sections of this policy, NDOT may require the utility facility to be located underground as a condition of being accommodated on NDOT ROW.

If relocating a utility facility for a highway project, refer to Chapter 7 of this policy for additional considerations.

4.4.1 Clear Zone Requirements for Ground-Mounted Utility Facilities

The highway clear zone is the unobstructed, traversable area provided beyond the edge of the through traveled way for recovery of errant vehicles and is, unless otherwise specified, measured from the edge of the traveled way. The clear zone may be composed of flatter side slopes adjacent to the roadway and could include portions of roadway ditches as shown in Figure 4-1. To meet the goal of a recoverable area, highway roadsides shall be as free from physical obstructions above the ground as practicable.

Figure 4-1. Highway Clear Zone



In rural areas with rural-type roadways, a permanent, aboveground obstruction shall be restricted to an area beyond the clear zone, ROW width permitting. If sufficient ROW is not available to accommodate this distance, the governmental subdivision or NDOT may require that the facility consist of a breakaway design or regrade the ROW.

4.4.2 Clear Zone Distances for Highways

For interstates/freeways, expressways, rural two-lane highways, and transitional facilities, the design clear zone distance is selected from Table 4-1 using the design speed and sides lopes. Because design speeds and roadside geometry can all vary throughout a corridor, clear zone distances must be

determined for each distinct roadway segment. If questions arise regarding which clear zone distance applies, the District Permit Officer should be contacted.

Table 4-1. Clear Zone Distances for Highways

Design Speed	Foreslopes (feet)*			Backslopes (feet)*			Urban Curb Section (feet)*
	6:1 or flatter	Steeper than 6:1, up to and including 4:1	Steeper than 4:1	Steeper than 4:1**	4:1 or flatter, up to 6:1	6:1 or flatter	6:1 or flatter
40 mph or less	16	18	***	16	16	16	6
45–50 mph	22	28	***	16	16	20	22
55 mph	24	32	***	18	18	22	24
60 mph	32	44	***	22	22	26	28
65–70 mph	34	46	***	24	24	30	30

* Clear zone distances are measured from the edge of the driving lane.

** Backslopes as steep as 2.5:1 can be considered as part of the clear zone as long as they are relatively smooth and do not contain any fixed objects. Refer to NDOT for further guidance.

*** Because a vehicle traveling on a slope steeper than 4:1 is likely to be diverted to the bottom of the slope, the width of any slope steeper than 4:1 cannot be counted in the clear zone determination. Refer to NDOT for further guidance.

In suburban areas with rural-type roadways and speed limits of 45 mph or less, a permanent, aboveground obstruction should be at least 16 feet from the edge of the paved traveled way, with the preferred location being near the ROW line. In cities, towns, and urban areas where curb sections exist, rigid poles, anchors, guy wires, and appurtenances shall be located at the back of the sidewalk or a minimum of 6 feet back of curb, with the preferred location also being near the ROW line.

4.4.3 Crossings

Installation of utility facilities across highway ROW will be permitted in accordance with the conditions of this policy in the best interest of the traveling public, including the following:

- New utility facilities (both aboveground and underground) crossing the highway shall be installed at approximately 90 degrees to the centerline of the highway.
- Utility facilities should avoid major intersections and interchanges if possible due to the complexity of highway structures, other facilities, and limited ROW.
- Joint occupancy of utility facilities is encouraged to minimize the number of crossings.

4.5 Underground Utility Installations

4.5.1 General

NDOT may permit a new underground installation 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.

There shall be a minimum of 12 inches of vertical and horizontal clearance between a new utility facility and an existing utility facility unless a greater clearance is required by NDOT, the existing Utility Owner, or another regulatory agency. However, if an installation of another utility facility or highway feature cannot take place without disturbing an existing utility facility, NDOT may require a minimum clearance of 24 inches.

All new utility installations that cannot be located by normal subsurface locating methods must be installed with a detectable underground warning tape along the utility line so an accurate location can be determined for future projects and installations. This applies to non-ferrous or non-toneable materials.

Service lines shall be installed in a straight line, perpendicular from the utility facility to the ROW line, with the latitude and longitude of the utility service line identified at or near the ROW line.

Highway ROW disturbed by the construction of underground lines shall be returned to the original grade and elevation, and all excess material removed. All underground lines placed in areas susceptible to erosion shall have adequate protection against erosion. The protection may be in the form of erosion control fabric, hay cover, or other material that proves to be satisfactory and does not interfere with maintenance operations. Erosion protection shall be coordinated with, reviewed by the NDOT District Office, and included in the plans. Additional information is included in Chapter 8 of this policy.

4.5.2 Materials Requirements

Pipelines shall include sanitary and storm sewers, water, gas, petroleum products, chemicals, and irrigation lines. Approved materials for the construction of the pipelines shall include cast iron, ductile iron, steel pipe with protective coating, vitrified clay, concrete, specially treated concrete, composite pipe (truss pipe), copper pipe, and polyethylene (PE) 3408 or PE 2406 pipe. Applicable regulatory and industry standards are found in Chapter 2 of this policy.

Flexible pipe intended to carry a fluid (liquid or gas) is also approved with the following restrictions:

1. PVC pipe
    a. A manufacturer's certification or notarized statement advising NDOT that the pipe material meets or exceeds the AWWA standard for PVC pipe or the specifications listed below must be presented with the application:
        i. Material shall be PVC 1120 or PVC 1220 in accordance with ASTM D1784: Standard Classification System and Basis for Specification for Rigid Poly(Vinyl Chloride) (PVC) Compounds and Chlorinated Poly(Vinyl Chloride) (CPVC) Compounds.
        ii. Pipe shall conform to ASTM D2241: Standard Specification for Poly(Vinyl Chloride) (PVC) Pressure-Rated Pipe (SDR Series). A manufacturer's certification is required stating that the pipe complies with the proper specifications for the intended use, including an NSF certification mark

(formerly a National Sanitation Foundation Testing Laboratory Seal of Approval).

iii. Pipe fittings shall meet the requirements of ASTM D2466 (Schedule 40) or ASTM D2467 (Schedule 80) for socket-type fittings. The wall thickness shall be equal to or greater than the pipe standard dimension ratio (SDR) specified. Joints shall be push-on bell ends as specified below. Mechanical joint cast iron fittings with PVC adapters or transition gaskets are also approved.

iv. Joints shall be rubber-gasket, push-on bell that meet the minimum requirements for the pipe specified. Rubber gaskets shall conform to the requirements of ASTM D1869. The joint shall be wall thickened at points of stress and so that the SDR specified is maintained throughout the bell. Manufacturers shall certify that their joints meet or exceed the minimum workmanship, general dimensions, tolerances, burst pressure, and working pressure for the pipe SDR and pressure rating specified.

v. Pipe design shall conform to all of the following:

(1) Minimum acceptable wall thickness shall be SDR 17 for 4-inch and greater inside diameter and shall be SDR 13.5 for pipes smaller than 4-inch inside diameter.

(2) If the maximum pipeline working pressure exceeds 1,100 kPa (160 psi), the SDR shall be adjusted to provide a safety factor of 2.8 to 1 based on sustained pressure tests.

vi. Approved minimal wall thickness can be found in Table 4-2.

Table 4-2. Pipe Dimensions for Polyethylene Pipe

Casing Diameter (in.)	Minimum Wall Thickness (in.)
3	0.318
4	0.409
6	0.602
8	0.785
10	0.979
12 max. acceptable	1.160

2. PE pipe

a. A manufacturer's certification or notarized statement advising NDOT or the appropriate governmental subdivision that the pipe meets or exceeds the following ASTM standards for PE pipe must be presented with the application:

i. ASTM D3350: Standard Specification for Polyethylene Plastics Pipe and Fittings Materials

ii. ASTM D2837: Standard Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials or Pressure Design Basis for Thermoplastic Pipe Products

iii. ASTM D2657: Standard Practice for Heat Fusion Joining of Polyolefin Pipe and Fittings

iv. ASTM D2513: Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings

v. ASTM D2444: Standard Specification for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Failing Weight)

vi. ASTM D2412: Standard Test Method for Determination of External Loading Characteristics of Plastic Pipe by Parallel-Plate Loading

vii. ASTM D2290: Standard Test Method for Apparent Hoop Tensile Strength of Plastic or Reinforced Plastic Pipe

viii. ASTM D2122: Standard Test Method of Determining Dimensions of Thermoplastic Pipe and Fittings

b. Joints shall conform to 49 CFR § 192.281, Plastic Pipe.

c. Pipe design shall conform to design limitations listed in 49 CFR § 192.123, Design Limitations for Plastic Pipe.

d. Approved minimum wall thickness can be found in Table 4-2, above.

e. Telecommunication facilities using flexible pipe crossing the interstate or freeway ROW shall be cased and buried.

f. Plastic PE pipe should be in accordance with Table 4-2, above.

4.5.3 Pipeline and Casing Construction

Pipeline and casing construction within the highway ROW shall conform to one or more of the following current appropriate standards for pipeline construction and the current edition of NDOT's *Standard Specifications for Highway Construction*:

- 49 CFR Parts 190, 191, and 192
- U.S. Department of Transportation Pipeline Safety Standards
- American Society of Mechanical Engineers (ASME) B31 Code for Pressure Piping, formerly known as ANSI B31 Code for Pressure Piping
- ASME B31.1, Power Piping
- ASME B31.3, Process Piping
- ASME B31.4, Pipeline Transportation Systems for Liquid Hydrocarbons and Other Liquids
- ASME B31.8, Gas Transmission and Distribution Piping Systems
- AWWA Standards and Specifications
- Natural Gas Pipeline Safety Act of 1968

4.5.4 Longitudinal/Parallel Occupancy

Installations of underground facilities should be within 5 feet of the outer limits of the existing ROW or proposed ROW if proposed if new ROW is being purchased. All installations and appurtenances shall

be located to minimize interference with maintenance operations of NDOT. Longitudinal installations shall not be located on the highway foreslope or in the ditch bottom.

Installations in villages and cities may require the use of the shoulder for underground electrical power and communication lines; however, attempts should be made to anticipate future construction and place the underground electrical power and communication lines in such a position that they do not conflict with future construction. The preferred location is near the highway ROW line.

Along highways in villages and cities, where there is insufficient ROW or no suitable location for underground electrical power and communication lines outside of the traveled way, such lines may be placed under the surfacing if it is determined to be in the best interest of the traveling public by a representative of NDOT or the appropriate governmental subdivision.

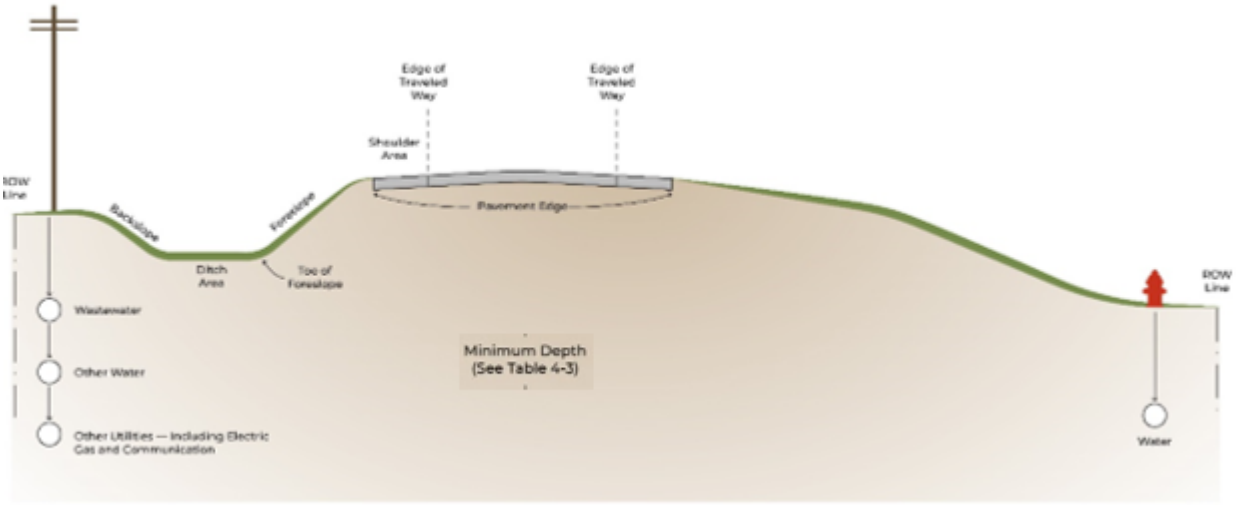
All manholes shall be placed outside the traveled way where possible. Manholes placed outside the traveled way shall not protrude above the surrounding ground except with the approval of NDOT or the appropriate governmental subdivision and in compliance with the horizontal clearance policy.

Utilities installing underground electrical power and communication lines where the ROW width is insufficient or topographic features prohibit a feasible route at or near the ROW line will need the permission of NDOT or the authority having jurisdiction over the highway to designate a specific location of such facilities and any additional specific conditions concerning the occupancy.

4.5.5 Depth of Cover for Longitudinal/Parallel Lines

The depth of cover for longitudinal placement is the depth from either the existing ground or proposed grade to the top of the encasement, or the carrier pipe if encasement is not used, as shown in Figure 4-2. The existing or proposed grade must be noted in the submittals because it needs to be clear which dimension or reference is used. Otherwise, additional conflicts will be created, and the line relocated.

Figure 4-2. Depth of Cover for Longitudinal Lines



4.5.6 Depth of Cover for Crossings

The depth of cover for crossings is the depth from either the existing ground or proposed grade to the top of the encasement, or the carrier pipe if encasement is not used, as shown in Figure 4-3. The required depth of bury and encasements is provided in Table 4-3.

Figure 4-3. Depth of Cover for Crossing

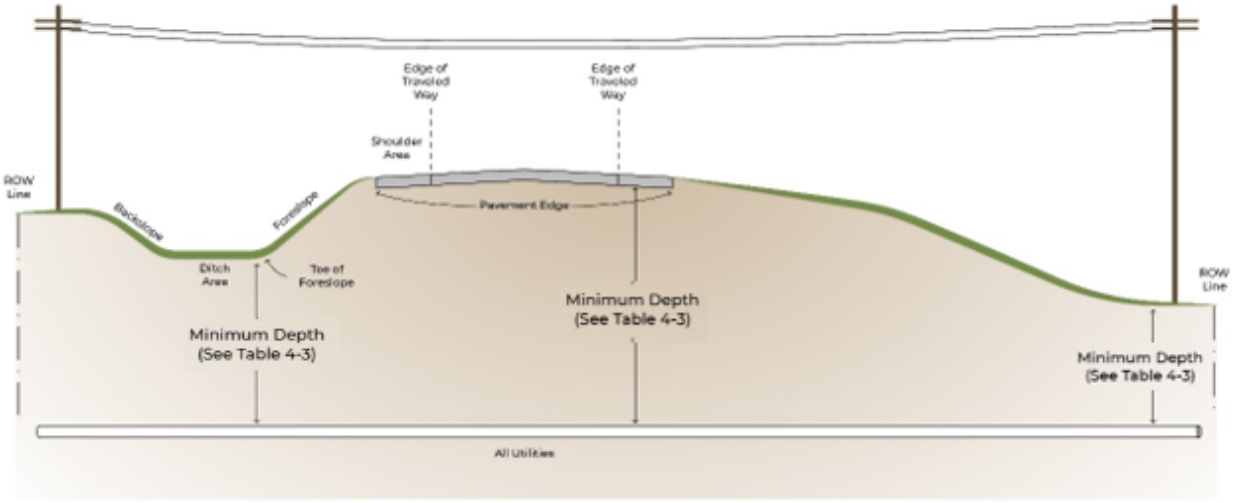


Table 4-3. Depth of Bury and Encasements

Facility Type	Crossing Encased (in.)	Longitudinal[1] (in.)	Casing Material (Recommended)
Low pressure gas	60	48	Steel
High pressure gas[2]	60	60	Steel
Electric	48	48	Any
Communication	48	48	Any
Water	60	48	HDPE
Wastewater gravity flow	36	36	HDPE
Wastewater pressure flow	60	48	HDPE
Other water	60	48	HDPE

1 Additional 12 inches of depth is required within 50 feet either side of a water course, drainage structure, etc. or within 10 feet if parallel to the water course or drainage structure.

2 High pressure gas is defined as greater than or equal to 60 psi. Depth for all un-encased gas lines shall be 120 in.

3 Crossing depth is below lowest point of crossed grade.

Where placements at the depths in this section are impractical or where unusual conditions exist, NDOT may allow installations at a lesser depth, but will require other means of protection, including encasement or the placement of a reinforced concrete slab. Reinforced concrete slabs or caps shall meet the following standards:

- Width – 5 feet, or three times the diameter of the pipe, whichever is greater
- Thickness – a minimum of 6 inches
- Reinforcement -- #4 bars at 12-inch centers each way or equivalent reinforcement

- Cover – no less than 6 inches of sand or equivalent cushion between the bottom of the slab/cap and the top of the pipe

4.5.7 Encasements

An encasement shall be an oversized load-bearing casing, conduit, or duct through which a cable or pipe is inserted in order to protect the roadway from damage and to provide for repair, removal, or replacement of the cable or pipe without interference to highway traffic.

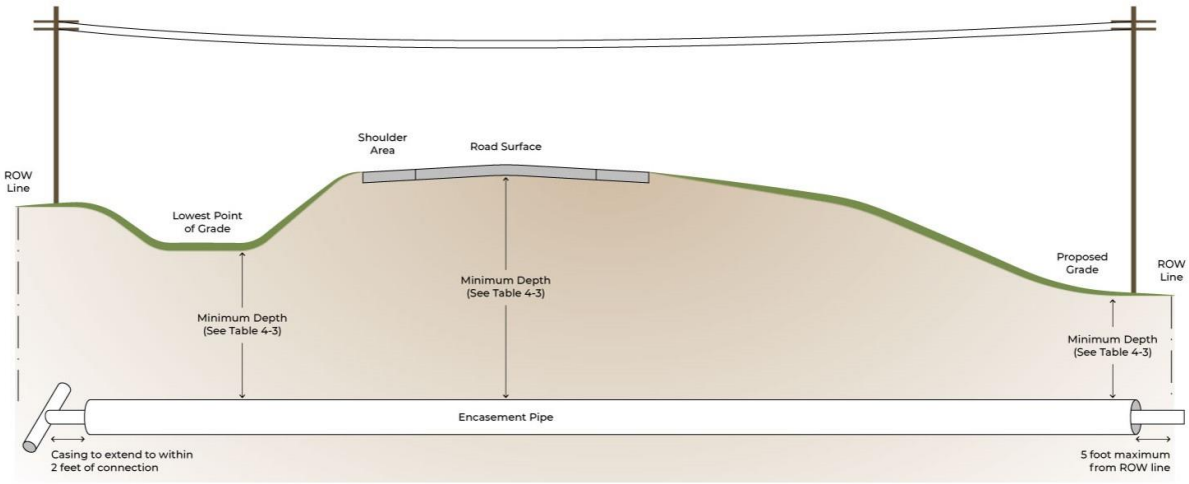
The encasement may be of metallic or non-metallic material depending on the type of utility facility. If the encasement is not Schedule 40 PVC, high-density polyethylene (HDPE), or steel, the utility must demonstrate that the encasement is adequate for the expected loads and stresses.

The encasement shall have a minimum diameter at least two (2) nominal pipe sizes larger than the nominal size of the facility being encased, but in no case shall the casing be less than 50 mm (2 inches) greater than the outside diameter of the facility being encased.

The length of any encasement shall extend, as applicable, to within 5 feet of the ROW, within 2 feet of a connecting longitudinal line, or 5 feet beyond the face of the curb, whichever is greatest, as shown in Figure 4-4. Encasement pipe shall be sealed at each end 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. These lengths of encasement include areas under center medians and outer separations (the area between the main lanes of a highway for through traffic and a frontage road). After considering traffic volume, condition of highway maintenance responsibility, and District practice, the NDOT District may waive the encasement requirement under side road entrances.

Vents, if required, shall be placed outside of the ROW lines.

Figure 4-4. Encasements



Encasement material shall be as follows:

1. Welded steel pipe, smooth wall that is in sound condition. Welded steel pipe shall have the minimum wall thickness shown in Table 4-4.

Table 4-4. Pipe Dimensions for Welded Steel Pipe

Casing Diameter (in.)	Minimum Wall Thickness (in.)
Under 6	Standard wall pipe of 0.188-inch wall, as preferred
6–16	0.188
18–22	0.250
24–26	0.281
28–34	0.312
36–48	0.344

2. Reinforced concrete and corrugated metal culvert pipe meeting the requirements of the current edition of NDOT's *Standard Specifications for Highway Construction*.
3. Plastic PVC pipe type PSP (Plastic Sewer Pipe) and PSM (Plastic Sewer Main) meeting the minimum requirements of ASTM specifications and in accordance with Tables 4-5 and 4-6.

Table 4-5. Pipe Dimensions for Polyvinyl Chloride Pipe Type PSP

Casing Diameter (in.)	Minimum Wall Thickness (in.)
4	0.120
6	0.153
8	0.199
9	0.230
10	0.249
12 max. acceptable*	0.299

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

Table 4-6. Pipe Dimensions for Polyvinyl Chloride Pipe Type PSM

Casing Diameter (in.)	Minimum Wall Thickness (in.)
4	0.120
6	0.153
8	0.205
9	0.230
10	0.256
12 max. acceptable*	0.305

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

4.5.7.1 General Encasement Waiver Requirements

Waiver of casing:

1. Natural gas, crude oil and liquid petroleum products that are cathodically protected and constructed with pipe material that meets federal pipeline safety specifications will be considered.
2. Pipelines 2 inches or less in diameter carrying liquids will be considered. This does not apply when flexible pipe is used.
3. Gas service lines with 500 kPa (75 psi) or less operation pressure will be considered.
4. PE 3408 and PE 2406 pipe less than 2 inches for gaseous products will be considered.
5. PE 3408 and PE 2406 pipe greater than 2 inches for gaseous products, if less than 500 kPa (75 psi) will be considered.
6. Pipes not under pressure will be considered.

4.5.7.2 Encasement Waivers for Steel Pipelines – Specific Requirements

NDOT may waive the pipeline encasement requirement for steel pipeline installations when the following conditions are met; the waiver does not apply to any water or sewer installations or any proposed non-steel installations and must be approved by NDOT prior to any installations:

1. Pipeline wall thickness shall be a minimum of one standard wall thickness greater than the mainline pipe thickness at each state highway crossing.
2. Pipelines shall be installed at a minimum depth of 10 feet below the lowest elevation along the state highway undercrossing.
3. Boring pits shall be placed outside state highway ROW on the freeway/expressway system. If this is not achievable, additional coordination with NDOT will be required.
4. Pipeline wall thickness shall be a minimum of one standard wall thickness greater than the mainline pipe thickness at each state highway crossing. The pipe must have a heavier wall thickness or a higher factor of safety in design, or both.
5. Pipelines shall be cathodically protected. If horizontal directional drilling techniques are used, then an additional abrasive resistance coating should be applied to the pipe.
6. The Utility Owner shall meet all the insurance requirements shown on NDOT's standard construction installation and/or long-term occupation insurance requirement documents.
7. The Utility Owner will provide a post-construction certification that all NDOT highway undercrossings were installed according to the construction plan and that the installation meets all requirements of 49 CFR. A template post-construction certification is available from NDOT.
8. Continuous leak monitoring practices will be employed throughout the life of the pipeline.
9. Pipeline undercrossings shall be marked in accordance with this policy and federal regulations.

4.5.8 Water, Sewer, and Communication Manholes

Manholes may not be installed unless necessary for the installation and maintenance of underground facilities. Manholes will not be placed or permitted to remain in the pavement or shoulder of a highway. However, on highways in municipal areas, NDOT may allow existing facilities to remain in

place under existing or proposed highways on a case-by-case basis. In these cases, manholes may remain in place or be installed under traffic lanes of low-volume highways in municipalities only if measures are taken to minimize the installations and to avoid locating them at intersections or in wheel paths. Further requirements may be found in Sections 4.5.9, 4.5.10, 4.5.12, and 4.5.13.

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

Inline manholes are the only type permitted within the ROW. The width dimensions may not be larger than necessary to hold equipment involved and to meet safety standards for maintenance personnel. The outside width, referring to the dimension of the manhole perpendicular to the highway, may not exceed 10 feet, with the length to be held to a reasonable minimum. The outside diameter of the manhole chimney at the ground level may not exceed 36 inches. The top of a manhole roof or vault must be 5 feet or more below ground level.

All manhole covers shall be installed flush with the ground or pavement structure. To minimize vandalism, manhole covers must weigh at least 175 pounds. Manhole rings and covers must be designed for HL93 loading and be able to carry traffic.

The Utility is responsible for any adjustment of the manhole rim that may be needed to meet grade changes caused by NDOT pavement sealcoats or overlays unless the Utility Owner has a reimbursable right as referenced in Section 7.10 of this policy.

4.5.9 Water Pipelines and Irrigation Lines

All pipe materials used for water line installations shall conform to AWWA and applicable local requirements.

Water pipelines crossing under state highways shall be placed in an encasement pipe within NDOT ROW.

The width dimensions of manholes may not be larger than is necessary to hold equipment involved and to meet safety standards for maintenance personnel. The outside diameter of the manhole chimney at the ground level may not exceed 36 inches.

4.5.9.1 Aboveground Appurtenances

Aboveground utility appurtenances, including manholes, fire hydrants, poles, and guy wire installations, may not encroach on or impact ADA clearances or pedestrian facilities as referenced in Chapter 2 of this policy.

Fire Hydrants and Valves

When feasible, fire hydrants and blow-off valves shall be located at the ROW line. Fire hydrants may not be placed in the sidewalk or any closer than 6 feet from the back of the curb, or behind sidewalk if adjacent to the curb. Valve locations shall be placed so as not to interfere with maintenance of the highway.

Water Meters

Individual service meters shall be placed outside of NDOT ROW. Master meters for a point of service connection may be placed in a manhole with a maximum width of 48-inch inside diameter. If additional volume is required, a manhole with a neck of 60-inch depth shall be used.

4.5.9.2 Non-potable Water Control Facilities

Non-potable water control facilities include agricultural irrigation facilities, water control improvement districts, municipal utility districts, flood control districts, canals, and similar non-potable water control facilities.

The minimum depth of cover, regardless of the type of pipe used, is 48 inches for longitudinal utility facilities and 60 inches from the lowest point of grade for all crossings.

All non-potable water control lines crossing under state highways shall be encased.

Open ditch facilities that are part of an irrigation or water control system may not be installed longitudinally within NDOT ROW. Aboveground appurtenances within the horizontal clearance of the highway facility are prohibited. Coordination with, and approval by, NDOT is required where levee/ditch travel roads intersect the highway.

4.5.10 Sanitary Sewer and Storm Sewer Lines

All requests to place sewer lines within the highway ROW shall be accompanied by a statement advising NDOT that the proposed sewer line meets all Nebraska and federal laws, and that all licenses, permits, or approvals have been acquired from the agency charged with the responsibility for enforcing the Clean Water Act.

4.5.10.1 Gravity Flow Sewer Lines

The preferred location for the installation of gravity flow sewer lines is near the highway ROW line with a minimum required depth of 36 inches, as shown in Table 4-3. Along highways in villages and cities, where there is insufficient ROW or no suitable location for pipelines outside of the traveled way, such lines may be placed under the surfacing if it is determined to be in the best interest of the traveling public by a representative of NDOT or the appropriate governmental subdivision. If pipelines are placed under the roadway surfacing, attempts should be made to anticipate future construction and place the pipeline in such a position that it does not conflict with future construction.

All pipe materials used for sewer line installations must conform to applicable industry standards and applicable local requirements.

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

4.5.10.2 Sewer Force Mains / Pressurized Lines

Requested changes in use or operating pressure of any pipeline occupying public highway ROW or a structure shall not be allowed without first certifying to NDOT and other required governing authorities that such change is permitted and in compliance with all laws or regulations of the United States, State of Nebraska, industry, or governmental codes. After receipt of the request and certifications of compliance, NDOT will review the request for compliance with this policy.

Additional requirements for sewer force mains are as follows.

- All crossings of state highways within the ROW shall be encased.
- Lift stations and pump stations for sewer lines shall be located outside of NDOT ROW.
- The minimum depth of cover for pressurized sewer lines is 48 inches.

- All crossings of state highways within the ROW shall be encased.

4.5.11 Oil and Gas Pipelines

4.5.11.1 Hazardous

No carrier of flammable, corrosive, expansive, or unstable material shall be placed longitudinally within the ROW of an NDOT highway.

4.5.11.2 General Requirements

Longitudinal/Parallel occupancy of highway ROW with flexible pipe carrying fluids(liquid or gas) shall be a minimum of 10 feet from the toe of the fill slope and preferably at the ROW line.

Depths and encasement requirements are as shown in Table 4-3, above. Additional depth may be required to protect the traveling public and the pipeline.

Any underground oil and gas facility that crosses a drainage course within the highway ROW must be installed a minimum of 60 inches below the flow line of the drainage structure or the drainage course. If there is a difference in elevation between the flow line of the drainage structure and the drainage course, the lowest elevation shall be used.

Except for vents, pipeline markers, and gas rectifiers, aboveground utility appurtenances for gas lines are prohibited within NDOT ROW.

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

- Shallow anode bed types exceeding 48 inches in width may not be used within NDOT ROW. All others must have a depth of coverage of at least 36 inches.
- Deep well anode beds of up to 60 inches in diameter are acceptable.
- Rectifier and meter loop poles shall be placed at or near the ROW line.

4.5.12 Underground Electrical Lines

Underground electrical power lines constructed within the highway ROW shall conform to the current NESC and the current edition of NDOT's *Standard Specifications for Highway Construction*.

Underground electrical power lines can be installed by direct bury plow method or by trenching and shall be located on uniform alignment with the ROW and as near as practical to the ROW line. Trenching can be used for direct bury of heavy cable or placing of conduit or multi-celled ducts. No trenching or direct bury will be allowed on sites where mechanically stabilized earth systems are used. If no other option is feasible and NDOT approves, placement and location of the utility must be approved by the mechanically stabilized earth manufacturer and incorporated into the design of the mechanically stabilized earth system.

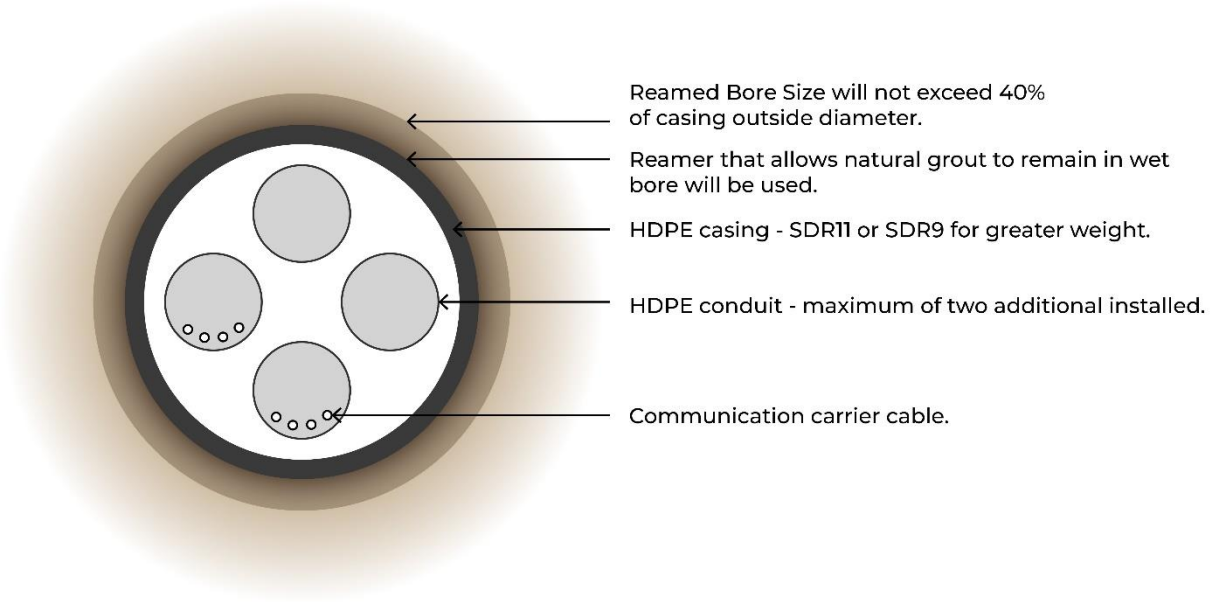
4.5.13 Underground Communication Lines

Communication lines used for transfer of phone, messages, radio, television, internet, data, and broadband services will require a Permit to Occupy NDOT ROW and conform with the following:

1. Depth of cover for crossings. The minimum depth of cover for communication lines is 60 inches below the lowest point of the crossed grade.

2. Depth of cover for longitudinal placement. The minimum depth of cover for the longitudinal placement of communication lines is 48 inches.
3. Encasement. Communication lines shall be encased in accordance with Figure 4-5 for all crossings. The external encasement must be an HDPE pipe with a size dimension ratio of 11 or less or an equivalent encasement. A carrier cable inside of the external encasement must have an additional internal conduit that is HDPE or equivalent. The external encasement must allow for the addition of at least one internal conduit and for the removal or replacement of internal conduits as needed. The reamed bore size may not exceed 40 percent of the outside diameter of the external encasement, and a reamer that allows the natural wet grout to remain shall be used.

Figure 4-5. Casing and Conduits



4. Installation. Longitudinal communication lines may be placed by plowing or open trench method and shall be located on uniform alignment with the ROW and as near as practical to the ROW line to provide space for possible future highway construction and for possible future utility installations.
5. Conduits. All new conduits installed within NDOT ROW shall be labeled with the utility name and phone number at each point of access.
6. Multiple or shared conduits.
    a. Shared conduits. When an existing utility rents, leases, or sells conduit usage to another utility, the new utility company must individually apply for a new Permit to Occupy and the existing utility owner shall amend their existing Permit of Occupy before placement of a new line within the conduit. See also Section 1.4.3.
    b. Additional conduits. No more than two additional empty conduits may be added for every full conduit line unless otherwise approved by the NDOT District Office.

c. Dig once. To limit the number of times the NDOT ROW may be disturbed, NDOT may require the Utility Owner to install a second conduit for future use as a part of granting the Utility Owner's right to occupy state ROW. See Section 4.7 of this policy for additional information.

7. Aboveground appurtenances.

   a. Aboveground pedestals or other utility appurtenances installed as a part of an underground communication line shall be located at or near the ROW line so as not to impede highway maintenance or operations and must be included in the Permit to Occupy ROW.

   b. Hand holes may be installed at or below grade within 5 feet of the NDOT ROW line but only when sufficient width is available between curbs, sidewalks, and the ROW line. The length may not exceed 6 feet, and the width may not exceed 5 feet. The cover must be rated for loads appropriate to the given location. Hand holes should not be installed in a sidewalk. See Section 4.5.8 of this policy for further reference.

   c. For large equipment housings, structures that have a diameter larger than 18 inches or a rectangular side of 18 inches is not preferred but may be placed at the ROW if:

      i. the installation does not hinder highway maintenance operations;

      ii. the housing is placed at or near the ROW line;

      iii. the installation does not reduce visibility and sight distance of the traveling public;

      iv. the dimensions of the housing are minimized, particularly where the need to allow space for highway improvement and accommodation of other utility facilities is apparent;

      v. the outside width, length (longitudinal), and height of the aboveground portion of the housing do not exceed 36 inches, 60 inches, and 54 inches, respectively;

      vi. the supporting slab does not project further than 3 inches above the ground line and does not extend further than 12 inches on either side of the housing structure;

      vii. the installation is compatible with adjacent land uses.

8. Removal or abandonment. Underground communication line and encasement removal or abandonment processes are found in Chapter 9 of this policy.

4.5.14 Markers

Adequate markers shall be placed on the ROW line at a minimum of 1500-foot intervals longitudinally and at both ROW lines for a crossing. The markers shall give the name and address of the Utility Owner and the phone number to contact in case of an emergency. Markers shall also comply with Nebraska811 requirements. See Section 4.2.5 of this policy for additional information.

4.6 Overhead Electrical and Communication Lines

4.6.1 General

Aerial electrical and communication lines constructed within the public ROW shall be constructed in accordance with the current NESC. The alignment of the overhead lines shall be as near the ROW line

and parallel to the highway centerline as is practical without encroachment on private property, ignoring minor irregularities in the ROW line where possible. An overhang of an overhead line on private property shall require an NDOT Permit to Occupy.

Locations on interstates must conform with Section 4.3.2, Interstates and Freeways, of this policy.

Highway ROW disturbed by the construction of aerial electrical power and communication lines shall be returned to the original grade and elevation, and all excess material shall be removed. All aerial electrical power and communication lines placed in areas susceptible to erosion shall have adequate protection against erosion.

All vegetation destroyed by the construction of aerial electrical and communication lines within the highway ROW shall be replaced by the permittee.

Joint use of utility poles is encouraged to avoid placing additional poles within the ROW to the extent practical. All poles and anchors shall conform to the horizontal clearances set forth in Table 4-1, above.

4.6.2 Types and Sizes of Pole Construction

Poles shall be of single pole construction with widths measured at the widest part of the pole base that are greater than 42 inches in diameter to be placed within NDOT ROW. H-frame or multi-leg tower construction is not allowed due to the large area of ROW needed for the utility to occupy.

4.6.3 Location and Horizontal Clearances

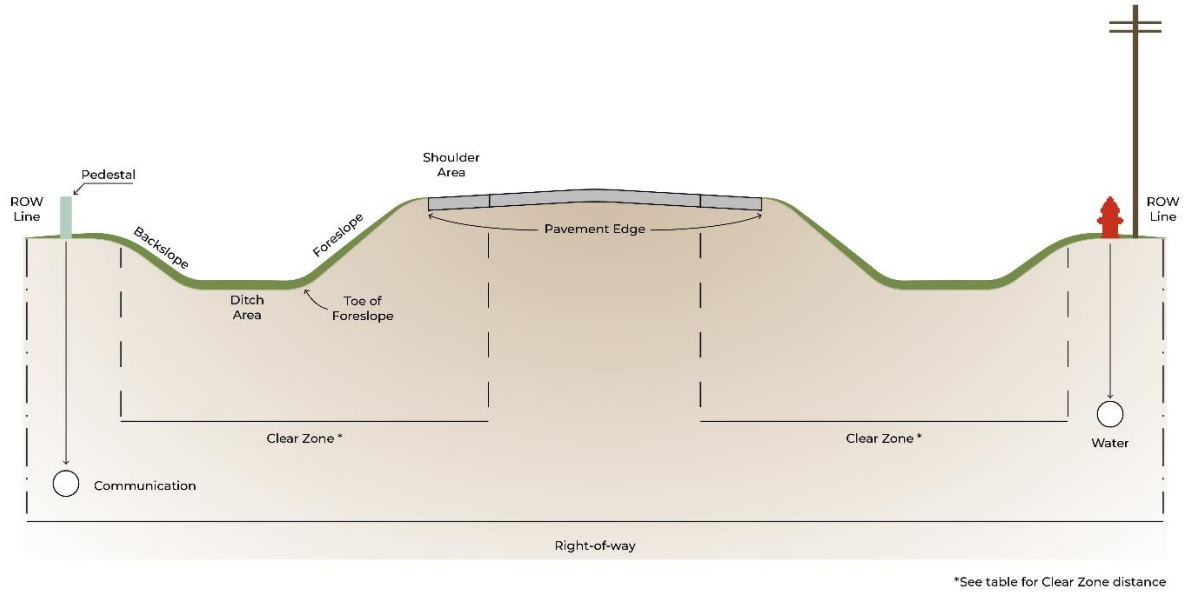
Poles for aerial electrical and communication lines constructed within the highway ROW shall be constructed in accordance with the current NESC. The poles of the overhead lines should be outside the ROW wherever feasible and shall be outside the fenced area on interstates and freeways. Poles in the interstate/freeway ROW is an absolute last resort and must span the ROW whenever possible.

Poles shall be designed to accommodate all facilities and equipment to be attached to the pole. Equipment shall be attached only to poles that have been engineered to support the attachment.

The horizontal clearance for poles, guys, and all ground-mounted utilities on NDOT roadways or outside the interstate or freeway fenced ROW will conform to Section 4.4 of this policy.

Longitudinal utility facility installations should be on uniform alignment as near as practical to the ROW line to provide a safe environment for traffic operations, to preserve space for future highway improvements and other utility installations, and to allow servicing utility facilities with minimum interference to highway traffic, as shown in Figure 4-6.

Figure 4-6. Longitudinal Overhead Utility Facility Installations



Poles may not be placed in the center median of any highway.

- Facilities must be placed beyond the designated horizontal clear zone for the highway.
- New poles shall be located as close as feasibly possible to the state highway ROW line without encroachment on private property; a 5-foot maximum offset is preferred. Except with the approval of NDOT, this distance may be varied at short distances when the ROW width changes.
- New poles shall not be located within the highway foreslope or within drainage ditches or channels unless written approval is provided by the State.
- In cities, towns, and urban areas where curb sections exist, rigid poles, anchors, guy wires, and appurtenances shall be located at the back of the sidewalk or a minimum of 6 feet from the back of the curb, whichever is greater.
- Poles, devices, or facilities shall not obscure or block sight lines from the highway or intersecting roads to vehicles, traffic control devices, or pedestrians on, approaching, entering, or leaving the highway.
- Pole and facility location design shall consider the conditions and features of the highway property and place them where the pole and facility installation and access will not create new or future access problems, work site maintenance issues, or property damage concerns.
- Overhead electrical and communication lines running longitudinal to a bridge or grade separation structures must maintain a clearance of 30 feet above the highest point of the bridge pavement, any bridge rail, or retaining wall unless there is adequate horizontal clearance, as determined by the NDOT District, between the bridge or grade separation structure and the overhead electrical or communication line.

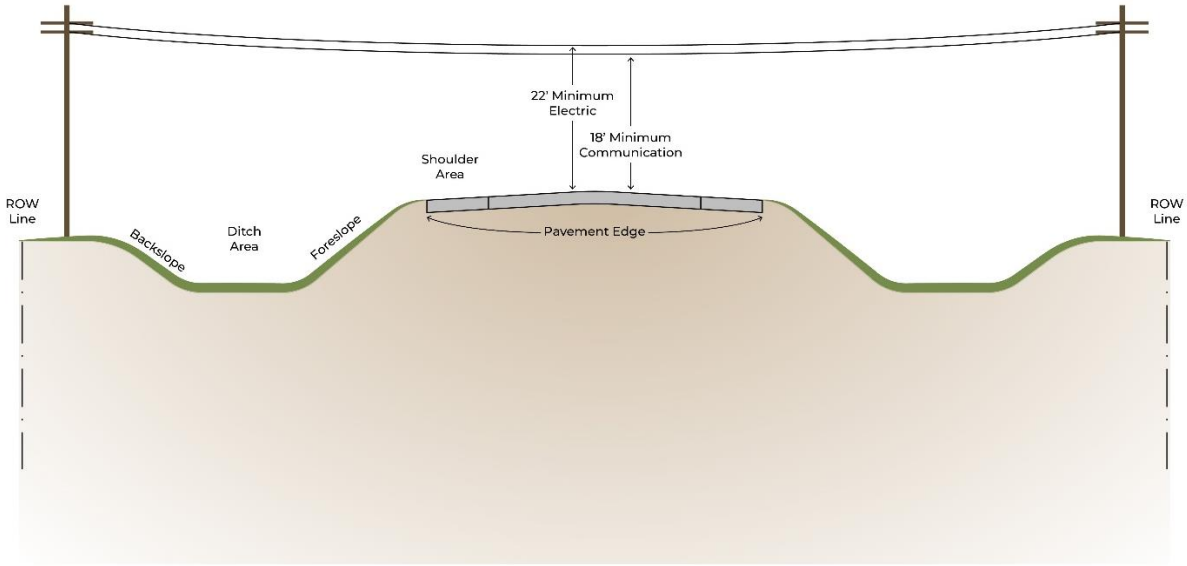
- For overhead crossings at intersections, bridges, or large drainage structures that require greater vertical clearances or longer spans, the pole width measured at the widest part of the pole base may not be greater than 42 inches.
- Overhead electrical crossings lines must have a minimum of 10 feet of clearance from any NDOT structure, including traffic control, lighting, and communication facilities. Compliance with the NESC and OSHA clearance minimum requirements are required. This is to avoid risk of arcing from the electric facility during construction or maintenance.

4.6.4 Vertical Clearance above the Traveled Way

General clearance guidelines, based on 175-foot spans, are as follows and are shown in Figure 4-7:

- Installation of aerial electrical lines within and crossing public highway ROW shall comply with the NESC for minimum vertical clearances and conductor sizes. However, additional clearance may be required by NDOT or local authorities.
- All aerial electrical lines on NDOT ROW shall have a minimum clearance of 22 feet above the traveled way.
- The minimum clearance of 22 feet will be required on driveways and intersecting side streets within NDOT ROW.

Figure 4-7. Overhead Electrical and Communication Line Crossings



Overhead electrical and communication line crossings at and over bridges or grade separation structures are prohibited. Additionally, overhead lines may not be located below any bridge structure. A minimum horizontal distance of 150 feet is required from any bridge abutment joints.

Poles may not be placed in the center median of any highway. At NDOT's discretion, poles may be placed in the outer separations or more than 3 feet inside the ROW where the ROW is greater than 300 feet and where poles can be located in accordance with NDOT's horizontal clearance policy,

4.6.5 Guy Wires

Guy wires placed within the ROW shall be held to a minimum and shall be in line with the pole line. Other locations may be allowed, but in no case shall the guy wires or poles be located closer than the minimum allowed by NDOT's horizontal clearance policy, and guy wires and poles may not encroach on current ADA guidelines.

4.6.6 Markers

Electrical and communication pole lines must bear, in a format acceptable to NDOT, readily identifiable plaques or other approved markers denoting ownership and use at a frequency of every other pole, as equally spaced as practicable, and at every crossing. Each company connecting to a pole shall appropriately identify its use of the pole. There shall be a beginning and end marker for each user of the pole line. Markers shall also comply with Nebraska811 requirements. See Section 4.2.5 of this policy for additional information.

4.7 Broadband and Communication Towers

This section prescribes the minimum design standards for the accommodation, method, materials, and location for the installation, adjustment, and maintenance of broadband facilities under this policy. The Utility Owner is responsible for all measures to be taken to preserve the safety and free flow of traffic, the structural integrity of the highway or highway structure, ease of highway maintenance, the appearance of the highway, and the integrity of the utility facility.

4.7.1 General

NDOT’s technical requirements related to the placement of broadband, small wireless devices, and associated lines and equipment on state highway property will be used in conjunction with the State’s Small Wireless Facility Agreement and Permitting process and 23 CFR 645, Subpart C, Broadband Infrastructure Deployment.

Facilities (in this section, collectively Devices and equipment) allowed on state highway property include the following:

- Small wireless receivers/transmitters and antennas (hereafter referred to as Devices)
- Necessary equipment, which includes the following:
  - Fiber optic line to Devices
  - Electrical line to Devices
  - New poles, when necessary, for installation of Devices and Facilities
  - New pole foundations

Device collocation and installation will be in the following order based on site availability:

- Existing, non-NDOT-owned or operated streetlight or utility pole structures, with the documented permission of the structure owner or operator
- Existing NDOT streetlight poles
- New poles installed by the small wireless facility owner when collocation is not possible

The State reserves the right to limit which structures may be used for the installation of Devices based on site-specific requirements including safety. Express written permission from the structure owner or operator will be required for any Device installed on a non-NDOT-owned structure.

Devices or other facilities shall not be installed on the following NDOT structures:

- Breakaway poles unless meeting the following requirements:
  - There are insufficient reasonable alternative collocation options at or near the requested location.
  - The small wireless facilities can be safely installed, operated, and maintained.
  - The collocation of the small wireless facilities will not violate reasonable wind, ice, weight, and seismic load requirements on state light poles.
- Traffic control devices
- Traffic signal poles and associated mast arm structures
- Buildings
- Bridges
- Weather or camera towers
- Communication towers
- High mast lighting towers
- Intelligent Transportation System (ITS) poles and infrastructure
- State-owned wireless support structures
- Overhead sign trusses
- Other similar infrastructure or structures

The September 26, 2018, Federal Communications Commission's Declaratory Ruling and Third Report and Order titled "Accelerating Wireless Broadband Deployment by Removing Barriers to Infrastructure Investment" does not, in whole or in part, reduce the State's rights to regulate and control the use of state ROW for the safety and operation of the transportation facility.

4.7.2 Location and Clearances

Location requirements for Devices and Facilities shall conform with Section 4.5 and 4.6 of this policy. Devices and Facilities shall not be allowed on interstate or freeway ROW.

4.7.3 Wireless Facility Pole Requirements

Existing and new pole(s) shall be as follows:

- New poles shall not exceed 50 feet in height, including antennas.
- Devices may be installed on existing poles if the installed Devices, including antennas, do not extend existing structures on which they are located to a height of more than 50 feet or by more than 10 percent taller than other neighboring structures, whichever is greater.
- New poles shall be free standing and shall not include guy wires or other external means of support.

- New pole design plans shall document that pole installation and foundation design are based on a soils and structural analysis.
- Plans shall document that existing poles are structurally sufficient for installation of Devices and associated equipment.
- New pole design plans and plans documenting structural sufficiency of existing poles for installation of Devices and associated equipment shall be signed and sealed by a licensed Nebraska Professional Engineer.

Associated equipment size limitations are as follows:

- All Devices, Facilities, and related equipment, including electrical and fiber connections, shall use the minimum amount of space necessary.
- Each antenna associated with the installation, excluding associated antenna equipment, may be up to (that is, no more than) 3 cubic feet in volume.
- All Devices and Facilities (new and existing), including antennas, may not exceed 28 cubic feet in volume or size (excluding pole).
- No aboveground cabinets or equipment boxes will be allowed, and if extra space is needed, it shall be located below ground.
- Good faith attempts shall be made to include electric meters on existing or new poles; however, a separate meter pedestal may be allowed when required by the electric provider.

Device materials and attachment shall be as follows:

- To the extent reasonably possible, the Devices and visible equipment shall generally match and not contrast with the materials and appearance of the structure to which they are attached.
- All Devices and Facilities shall be made of durable and resilient materials to prevent early deterioration.
- Devices must be securely attached to the pole.

Aesthetics shall be as follows:

- Materials and color of the equipment should generally match and be consistent with the appearance of the poles nearby and with industry practice.
- Materials and color of the equipment shall be consistent with local requirements.
- The small wireless company will be solely responsible for meeting all applicable local, state, and federal permit requirements concerning the aesthetics of each installation.

Installation, construction, and maintenance shall be as follows:

- Construction and maintenance activities shall not be conducted near trees, landscaping, highway signs, or traffic control devices.
- The work site and access path must be restored to preexisting conditions and kept in a clean, finished condition with established turf and must be free of weeds, materials, and debris.
- Construction and maintenance equipment, materials, and vehicles shall not be parked or stored within the highway clear zone.

- Construction equipment, materials, and vehicles shall not be stored on state highway property except when installation, repair, or maintenance activities are in active progress.
- Every 5 years after installation or prior to renewal of an agreement for continued use and occupancy of state highway property, the small wireless facility owner shall inspect all poles on which Devices are installed, Devices, and other Facilities located on state highway property for the compliance with these technical requirements and, when applicable, for structural sufficiency. The small wireless facility owner shall provide a certification to the state that an inspection has been completed and that all Facilities are structurally sound for continued occupancy of state highway property.

4.7.4 Service Connections

Electrical and fiber lines and service connections shall be as follows:

- Electrical and fiber lines shall be installed in a straight line, perpendicular from the Facility to the state highway property line, with latitude and longitude of the line identified at or near the state property line.
- Longitudinal installation of electrical and fiber lines shall be avoided when reasonably possible and, when allowed, shall be located near the state property line, and minimized in length on state highway property.
- Placement of Devices shall favor locations near existing electrical and fiber services.
- Electrical and fiber lines shall not be closer than 2 feet horizontally or vertically to any highway structure.
- Electrical and fiber service lines shall be buried 48 inches below the existing ground or 48 inches below the bottom elevation of any adjacent drainage ditches and structures.
- Electrical and fiber line installations or relocations due to proposed construction or maintenance on state highway property shall be installed 48 inches below the proposed grade and 60 inches below the designed bottom elevation of any future drainage ditches and structures.
- The Utility Owner must comply with the more restrictive installation requirements for fiber or electrical, whether it is the State's requirements or the local jurisdiction's requirements.
- The small wireless facility owner is responsible for all electrical costs associated with the installation and ongoing operation of its facility.

4.7.5 Work Site Access and Traffic Control

Work site access and traffic control shall be in conformance with Sections 4.2.3, 4.3.2.2, and 8.4.1 of this policy.

The State will not be responsible for the development, implementation, or oversight of the applicant's Traffic Control Plan.

4.7.6 Small Wireless Facilities

When a Utility Owner desires to install and operate small wireless facilities on NDOT ROW, the Utility Owner will enter into an agreement with NDOT titled "State Highway Right of Way Permit Agreement for the Installation and Operation of Small Wireless Facilities."

The following applies to the occupation of small wireless facilities on NDOT ROW:

- Interstates and Freeways. The State will not issue permits for small wireless facilities, including Devices and other Facilities and/or utility poles, to be placed interstates and freeways.
- State Structures Available for Small Wireless Facility Installation. The Utility may apply for installation of small wireless facilities, including Devices and other Facilities, on state non-breakaway light poles. The Utility may also apply for installation of small wireless facilities, including Devices and other Facilities, on state breakaway light poles if (1) there are insufficient reasonable alternative collocation options at or near the requested location; (2) the small wireless facilities can be safely installed, operated, and maintained; and (3) the collocation of the small wireless facilities will not violate reasonable wind, ice, weight, and seismic load requirements on state light poles. The State will not otherwise issue permits for installations of small wireless facilities, including Devices and other Facilities, on state traffic signal utility poles and traffic control devices, buildings, bridges, weather or camera towers, or on other State-owned wireless support structures. The State will also not issue permits for small wireless facilities, including Devices and other Facilities, on structures within the highway clear zone, except for breakaway poles, when the criteria referenced in Section 4.7.1 for breakaway poles are satisfied.
- Non-State Owned or Operated Light Poles. If the Utility wishes to install small wireless facilities on utility poles, including light poles, not owned or operated by the State, the Utility shall also obtain the written permission of the entity that owns or has maintenance obligation for such poles and shall provide such documentation to the State in a form acceptable to the State with the permit application.
- Collocation. To the maximum extent reasonably possible, the Utility will locate small wireless facilities in a way that will maximize the opportunity for the collocation of small wireless facilities on the State's light poles, Utility-installed utility poles, and other utility poles.
- New Poles Installed by Utility. New utility poles to be installed by the Utility must be located so that they will not interfere with (1) traffic operations, (2) existing highway drainage patterns, ditches, or facilities, (3) areas determined by the State to be needed for present or future state highway use, or (4) the location, operation, or use of other State- or Utility-owned facilities. Such utility poles should be installed near the outside edge of the state highway property. New utility poles may not include guy wires or other external means of support and shall be designed with a foundation sufficient to ensure that the pole's foundation is structurally sound, as certified by a structural engineer with experience in designing foundations for poles on public property. The State retains the discretion to, in good faith based on engineering judgment, reject or require additional design consideration revisions concerning the installation of a new utility pole or Device at a particular location.
- New Poles Available for Additional Facilities Collocation. To the maximum extent reasonably possible, Device and Facility attachments to utility poles shall be designed to include capacity to allow for the collocation of additional small wireless facilities, including Devices and other and Facilities by the Utility or by others in the small cell industry, on a first come first served basis, with collocation conditions that are non-discriminatory and consistent with current industry practice. Upon written notification to the Utility, the State shall be allowed to reserve pole space, or share the trenches or bores, in the area where the collocation is to occur.
- Environmental Requirements. The Utility will be solely responsible for any environmental assessments or determinations lawfully required by any entity in order to install, operate, or

maintain its small wireless facilities, including Devices and other Facilities and/or utility poles. Any work required to satisfy or implement environmental requirements under NEPA in relation to the Utility's use or occupancy of state highway property will be identified by, and accomplished at, the sole financial responsibility of the Utility for the duration of time the Utility's small wireless facilities, including Devices and other Facilities and/or Utility poles, are located on state highway property.

- Infrastructure Non-Disclosure Laws. The Utility shall notify the State in writing if any part of the Utility's project is subject to the provisions of non-disclosure laws involving the confidentiality and security of the location of utility facilities, such as the Critical Infrastructure Information Act of 2002 at 6 USC § 131 et seq. If the parties agree that the location of the Utility's facilities must be kept confidential under applicable non-disclosure laws, the Utility will propose a plan for designing and completing the installation project that is in compliance with the Critical Infrastructure Information Act of 2002 or other laws of this type.

4.7.7 Communication Towers

The placement of freestanding communication towers generally requires a large area of ROW, which limits the placement of other utilities in the same area, moreover, the towers and their equipment may impede on the clear zone and obstruct sight distance. Requests for the accommodation of a communication tower on NDOT ROW will be reviewed on an individual basis by the local NDOT District Office and approved by the NDOT Utility Engineer. The accommodation will be under an agreement specific for the communication tower.

4.8 Unique and Special Cases

4.8.1 Scenic Enhancement Easements

In and through areas where scenic easements have been acquired, additional controls on utilities may be required to preserve the scenic quality, appearance, or view. Such areas include scenic byways, scenic strips, overlooks, rest areas, recreation areas, wildlife and waterfowl refuges, and the ROW of sections of highway that pass through public parks and historic sites.

4.8.1.1 Underground Installations

New underground utility installations may be permitted within scenic easements where such installations do not require extensive removal or alteration of trees or other natural features visible to the highway user or do not impair the visual quality of the lands being traversed.

4.8.1.2 Aerial Installations

New aerial installations should be avoided within scenic easements where there is a feasible and prudent alternative to the use of such lands by the aerial facility. Where this is not the case, aerial installations may be considered only where:

- other locations are unusually difficult and unreasonably costly, or are more undesirable from the standpoint of visual quality;
- undergrounding is not technically feasible or is unreasonably costly;
- the proposed installation can be made at a location and will employ suitable designs and materials that give adequate attention to the visual qualities of the area being traversed.

4.8.2 Utility Corridors

State laws governing land acquisition for highway uses do not include authority to purchase ROW for utility purposes. However, utilities may jointly use available areas within highway ROW acquired for the maintenance of backslopes, clear zones, and other highway features. To maximize the use of these limited areas, utilities are encouraged to use the utility corridor concept by joint trenching, common duct occupancy, and joint common utility infrastructure. Using the utility corridor concept does not create a property interest or ownership.

Communication and cooperation are essential to achieving the desired results for the utility corridor concept. It is required that a Memorandum of Understanding be executed by all parties before constructing the corridor.

4.8.3 Temporary Occupations

Temporary utility installation activities in construction and can require temporary utility lines. All temporary in NDOT ROW are required to be reviewed and approved. The Utility must also submit plans accurately depicting the location and type of utility facility occupying NDOT ROW. This agreement must include an adjustment schedule and any special requirement by NDOT and/or the Utility. This agreement must be executed by the NDOT District Engineer or designee.

4.8.4 Utility Service for Highway Facilities

NDOT will coordinate construction and maintenance of utility lines for highway-oriented needs, such as lighting or traffic signals, by means other than a Permit to Occupy form. These installations must be handled by a written agreement between NDOT and the Utility. The agreement must state the location and method of installation and must include a statement declaring that these lines will be devoted exclusively to highway use and, as such, that the utility company will not be permitted to extend these lines at a later date to service other customers.

4.8.5 Monitoring Wells

The request for a permit to drill and install monitoring wells in the ROW generally results from the presence of contaminated groundwater. The wells allow the applicant to monitor the amount of contamination and the direction of flow of the contaminated groundwater. The applicant must provide documents that support the necessity of using the highway ROW from the governmental agency responsible for determining the extent of the contamination. The use of the highway ROW should be considered only as a “last resort” when no other feasible monitoring well locations are available for use by the applicant. In this case, the well shall be placed outside of the pavement and clear zone. The request will be coordinated with the local NDOT District Office and ROW Division and not considered a Permit to Occupy.

4.8.6 NDOT Drainage Easements

Where it is necessary for utility facilities to cross NDOT drainage easements outside of the ROW, the depth of cover shall be as specified for each type of utility facility in Table 4-3 above. In cases where soil conditions are such that erosion might occur, or where it is not feasible to obtain the specified depth, it shall be the responsibility of the Utility to include in the Permit of Occupy plans and install dampening devices, energy dissipators, encasement, or concrete or equivalent slabs/caps over the pipe, as approved by NDOT. Where grades on pipelines must be maintained, such as gravity flow sewer lines, each case will be reviewed on an individual basis. The main purpose of NDOT's drainage easement is to carry drainage water, and the drainage may not be obstructed. The Utility is

responsible for obtaining any other approvals or rights required to occupy the drainage easement, including, but not limited to, Section 408 of the Clean Water Act when applicable.

4.8.7 Utility Bridges

Structures constructed exclusively for utility facilities to cross over highways and waterways (also known as utility bridges) may be used where underground or aerial crossings are not feasible. The design of these structures must conform to all highway structural and safety standards, all pertinent laws and regulations, and must be of a material and aesthetic design that is in harmony with the appearance of the highway facilities. Any requests for such structures should be forwarded to the NDOT District Office with justification data and proposed designs. The NDOT Bridge Division will consider the request for approval by reviewing the design of the installation. If approved, an appropriate permit and agreement is to be coordinated with NDOT. The agreement should include provisions making the Utility Owner responsible for maintenance, adjustment for highway improvements, restoration, or removal if damaged by traffic or other causes, and any damages to the State or the public that may be caused by the utility bridge.

Chapter 5 General Plans Drawing Requirements

5.1 Overview

Design and construction plans are required for all submittals including Permits to Occupy (Chapter 6) and Utility Project Agreements (Chapter 7). The plans for a utility facility shall be prepared by a person familiar with highway design and work zone traffic control in addition to the utility facility requirements. Plans shall include 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. NDOT may require utility projects affecting the safety of the public to be under the responsible charge of a licensed Nebraska Professional Engineer for engineering projects or a licensed Nebraska Professional Land Surveyor for land surveying projects.

Plans commonly referred to as K-Sheets must include the proposed location, vertical elevations, and horizontal alignments of the utility facility based on survey data provided by a person registered as a professional land surveyor or NDOT's survey data, the relationship to existing highway facilities, and the existing and/or proposed ROW line. The proposed ROW line should be used when ROW is being acquired, and the proposed elevations/grade should be used when in cut or fill sections. Plans must also include the location of existing utility facilities that are in the same vicinity as, including any that may be affected by, the proposed utility facility. Existing and proposed utilities identified and shown on plans should conform with the methods and processes in ASCE 38-22, Standard Guideline for Investigating and Documenting Existing Utilities, and ASCE 75-22, Standard Guideline for Recording and Exchanging Utility Infrastructure Data. The use of standard industry practices for utility identification within state ROW allows for an efficient method of data exchange between utility companies and stakeholders. Positional accuracy levels for both horizontal and vertical locating will be as specified by NDOT in accordance with Table 5-1.

Table 5-1. Positional Accuracy Levels

Positional Accuracy Level	Positional Accuracy* (customary units)	Positional Accuracy*, ** (SI units)
1	0.1 ft	25 mm
2	0.2 ft	50 mm
3	0.3 ft	100 mm
4	1 ft	300 mm
5	3 ft	1,000 mm
0	Indeterminate	Indeterminate

Source: ASCE 75-22, Table 2-1.

* At the 95% confidence level, in accordance with FGDC-STD-007, 4-2002. Positional Accuracy Level 1 generally coincides with requirements for vertical positional accuracy in ASCE 38-02 Quality Level A.

** Positional Accuracies in SI units should be used in jurisdictions that use SI units. There are minor variations between English-unit and SI-unit Positional Accuracies for the same Positional Accuracy Level; this is to meet common conventions used in either unit of measure environment.

5.2 NDOT Survey Datum

All utilities shall be located and tied to the best available survey datum to allow NDOT to adequately manage the ROW. Utility relocations required by highway construction projects shall be designed to the project survey datum, including local datum adjustment factors, which will be provided by NDOT. District Permit Officers will provide guidance regarding survey control for utilities to be constructed by approved permits.

5.2.1 Horizontal Datum

Current federal and state highway projects are referenced to the North American Datum of 1983 High Accuracy Reference Network for horizontal positions and ellipsoid heights and often use local datum adjustment factors. As newer projections of the North American Datum are implemented, they should be referenced and will supersede any previous projections. Utility location data collected must be based on the same datum as the highway project to accurately locate utility facilities with regard to the highway facility and determine if conflicts exist with proposed improvements.

5.2.2 Vertical Datum

The North American Vertical Datum of 1988 is to be referenced for orthometric heights or elevations. As newer projections of the North American Vertical Datum are implemented, they should be referenced and will supersede any previous projections.

5.2.3 Existing NDOT Plan Datum and Existing Roadway Features

If proposed utility facilities are not shown on a proposed NDOT project with horizontal and vertical survey control established or in an area with existing NDOT benchmarks, then the existing and proposed locations of the utility facilities shall be clearly indicated in reference to the NDOT plan roadway alignment survey station and must be located by dimensioned distances from obvious permanent highway features such as bridges or drainage structures along with ties to the ROW line. Latitude and longitude coordinates to the nearest 0.01 second should be given to locate the proposed utility facility along the state highway system. Vertical datum should be based on bridges or drainage structures shown with elevations or flowlines on NDOT plans.

5.3 Required Information and Details

Each permit application shall be accompanied by a plan showing the location of the utility facility by route, county, section, township, range, milepost, and highway stationing, where these references exist, along with the highway centerline and existing/proposed ROW lines. Plans for utility installations must include the size, type, and method of installation, including construction staging areas, for the proposed utility facility to be located within the state highway ROW, and adequate detailed drawings indicating the location of the proposed installation with respect to the traveled way of the highway, the existing or proposed ROW lines, and where applicable, the control of access lines. Utility design plans must be developed using symbology and levels of accuracy as shown in ASCE 38-22 and ASCE 75-22 standards and directed by NDOT during the permit or relocation process.

5.3.1 Reference to Existing Right-of-Way and Roadway

Plans shall show the location of the utility facility by distance at each point where the facility's location changes alignment, as measured from the:

- centerline of the highway on nonfreeway installations or centerline of the nearest roadway on an interstate or freeway;

- roadway feature being referenced, which shall be clearly defined by the Utility Owner (e.g., roadway centerline or nearest edge of pavement and the roadway alignment location);
- existing ROW and deflection points as shown in NDOT ROW plans.

5.3.2 Design Details

Plans shall include, but are not limited to, design details such as the following:

- Entire utility project limits, including along adjacent county roads or streets.
- Depth of burial from the proposed grade/surface if there will be a grade change or from the existing surface if no grade changes are required. Clearly define which surface is being referenced and indicate if the depth of bury is to the top of the pipe or the flow line, where applicable.
- Type, size, and thickness of materials to be used in the installation.
- Sag elevations and clearances of overhead lines.
- Operating pressures and voltages.
- Vertical and horizontal clearances to other utility facilities and NDOT structures such as bridges, headwalls, culverts, or riprap in close proximity.
- Pipe casing details, when applicable, including the size, type, thickness, and limits of the casing pipe.
- Proposed methods of construction or installation, including construction staging areas.
- Erosion control and restoration plan.

Plan sheets and details for work outside of NDOT ROW, including work on city, county, and non-NDOT maintained roadways, shall be clearly marked as being outside of NDOT ROW.

5.4 Plans Sheets, General Notes, and Graphics Files

5.4.1 Legend and Symbology

All features shown within the plan set shall have a corresponding symbol. The legend shall include all applicable symbols and line styles. NDOT may require color coding of utility facilities based on examples of ASCE 38-22 or as directed by the NDOT District Office.

5.4.2 Title Sheet Required

The following information shall be included on the plan title sheet:

- Vicinity map. A vicinity map shall be included to provide a quick and easy reference to the location of the proposed work. The following aspects shall be included in the vicinitymap:
  - North arrow.
  - Road labels.
  - Labels identifying the beginning and end of the proposed work area.
- County name.

- Contact information. This information shall consist of names, telephone numbers, and email addresses of key people involved in permit plan development and permit construction, and shall, whenever possible, include a 24-hour contact to address issues during construction.
- Utility Owner project number, if applicable.
- Engineering firm information if one is used.
- Date of issuance of sealed plans.
- Project scope. This information shall include a brief description of the work being proposed, with general project limits provided (e.g., proposed installation of new 8-inch sewer along N-14 from US Highway 275 to Wylie Drive).

5.4.3 General Notes

If included, general notes shall not only reflect Utility Owner requirements, but also NDOT requirements as directed by NDOT.

5.4.4 Plan View Required

The following aspects shall be included on all plan view sheets:

- North arrow.
- Road labels.
- Stationing along utility facility alignments or referenced to NDOT project centerline, when applicable.
- Scale and dimension. All plans shall be either to scale or properly and accurately dimensioned. Scaled plans shall show the scale, which shall be no greater than 1" = 100'.
- Facility features, including the following:
  - Length of the installation or segment.
  - Size of the facility (carrier and encasement pipe, as applicable).
  - Utility material.
- Utility structures or major components with dimensions to determine the size of the facility and its impacts on the ROW.
- Installation method, including construction staging areas.
- Bore diameter. This should be the actual diameter of the drilled bore or ream hole, and not the diameter of the carrier or encasement pipe.
- Bore pit locations, including the following:
  - Dimensions of bore pit.
  - Offsets from roadway features (i.e., offsets of bore pits from the edge of pavement or back of curb, the ROW line, and other relevant roadway features).
- Roadway features, including the following:
  - Edge of pavement and/or back of curb, with roadway width labeled for existing and proposed, if applicable.

  - ROW line and/or controlled access line, with ROW width labeled for existing and proposed, if applicable.
  - Guardrail.
  - Storm drainage features (e.g., cross drainage pipes, longitudinal drainage pipes, catch basins and drop inlets, driveway pipes) with culvert diameters.
  - Ditch line and/or toe of fill.
- Bridges.
- ROW lines. Both existing and proposed shall be included, when applicable.
- Existing and proposed utility easement limits.
- Applicable non-utility features, including, but not limited to, curb ramps, sidewalk, and fencing type (e.g., chain link, woven wire).
- Offsets from proposed facilities. If not clearly conveyed by plan scaling, dimensions shall be included to show the offset of the proposed facility from the following roadway features:
  - Edge of pavement or back of curb.
  - ROW line, either the existing or proposed lines.
  - Guardrail.
  - Culverts, drainage structures, etc.
  - Bridge components, including the substructure of the bridge if the encroaching utility is proposed near a bridge.
  - Existing utility facilities and utility appurtenances (e.g., utility poles, hydrants, valves, manholes, handholes, cabinets) near the proposed installation.

5.4.5 Profile View (As Required)

A profile view is required when crossing a roadway, including county roads and city streets. At a minimum, a standard detail shall be included to show how roadways will be crossed. The following aspects shall be included on all profile view sheets:

- The entire cross section throughout the ROW
- Roadway features
- ROW limits, both existing and proposed
- Stationing along the utility facility alignment
- Minimum vertical dimensions and clearances
- Bore pit locations and depths
- Elevations, sizes, and materials for proposed utility relocations
- Grade and/or cover on proposed utility facilities
- Scale of profile view
- Rim/Cover and invert elevations for proposed utility structures

- Erosion control, slope, and drop-off protective measures
- Maximum bore diameter
- Applicable roadway characteristics
  - Roadway grades of vertical alignments (existing and/or, if applicable, proposed)
  - Posted speed limit (to assist in the absence of documented design speed)

5.4.6 Utility Detail Sheets

The following detail sheets shall be included, if applicable:

- Aerial line cross-section view in detail with minimum vertical clearances, with reference to the roadway profile. This cross-section detail shall be included even if the proposed work is a modification of an existing crossing.
- Minimum required depth of the installation.
- Road crossing detail for controlled access and/or non-controlled access roadways, depending on which is applicable. This detail shall note how the Utility Owner or contractor will access, construct, and install facilities crossing above roadways.
- Underground utility structure details, including the cross section, size, encasement, and materials of the utility structure.
- Utility structures. ANSI tier rating for outside of pavement or AASHTO HS-20 load compliance under pavement or driveway should be noted for all proposed structures. If the proposed structure is not ANSI Tier 22 or HS-20 load rated or stronger, the NDOT Approved Product number shall be provided.
- Applicable details for handholes, vaults, manholes, and other utility structures proposed, including the size and material of the structure.
- Installation/sidewalk repair detail if utility structures are proposed to be installed within the sidewalk or if construction will impact the sidewalk.
- Bore pit detail. This detail shall note the standard size and depth of proposed bore pits.
- Bore detail. This detail shall show the maximum proposed bore diameter.
- Other utility and non-utility details, as applicable.
- Site-specific details. Instances may occur when a standard detail is not applicable to a certain situation. In these instances, a site-specific detail shall be required to provide more detailed guidance for the situation.

5.4.7 Erosion Control Plan (As Required)

See Section 4.2.7.

5.4.8 Traffic Control Plan (As Required)

The traffic control plan must comply with the most recent edition of the MUTCD and the State of Nebraska Supplement to the MUTCD. Installations requiring activities near higher volume or higher speed roadways, or lane closures may require a pre-construction meeting with NDOT. The plan must

also include how the Utility Owner, its representative, or the construction contractor will access and maintain the utility facility after installation.

If an NDOT standard traffic control sheet plan is appropriate for the utility work being performed, it may be included in the utility plan set. If the utility work cannot be covered using an NDOT standard traffic control sheet, then a traffic control plan must be prepared by a Professional Engineer or an American Traffic Safety Services Association certified traffic control manager knowledgeable in work zone traffic control. The Utility Owner is responsible for using the types of traffic controls that are adequate for the nature, location, and duration of work; type of roadway; traffic volume and speed; and potential hazards.

5.4.9 File Types

The Utility Owner shall prepare design plans in a legible manner that depict all required information in a hard copy and a digital format. A portable document format (PDF) is required with the submission. Other formats such as .KMZ, Shapefile, Geodatabase, ArcGIS, AutoCAD, MicroStation, or other mutually agreed upon formats may assist in coordination of NDOT projects and allow an exchange of detailed information.

At the completion of the installation, as-built plans and other related information shall be furnished by the Utility Owner to NDOT in the same formats.

5.5 Quality Control

The Utility Owner is expected to provide quality control measures on all submittals provided to NDOT. Quality control by the Utility Owner should include an internal design plan review process that includes detailed elements of the design and report, calculation, design, and specification checking protocols. Plans that clearly define the scope of improvements and are fully detailed, thorough, and professionally designed will expedite the NDOT review and approval process.

Chapter 6 Utility Permit to Occupy State Right-of-Way

6.1 Today's Permit is Tomorrow's Conflict

Today's Permit is Tomorrow's Conflict. The importance of developing and adhering to policies for the accommodation of utility facilities in NDOT ROW is paramount because the permit approved today will create the potential conflict of tomorrow. All utility accommodations should consider the following factors:

- The accommodation must not adversely affect the safety, design, construction, operation, maintenance, or stability of the highway.
- The accommodation must not interfere with or impair the present use or future expansion of the highway.
- Any alternative location would be contrary to the public interest.

NDOT encourages collaboration, cooperation, and joint use such as joint trenching or multi-duct occupancy among various Utility Owners intending to place facilities within NDOT ROW. Utility Owners must coordinate with NDOT to identify highway-related facilities that will have clearance requirements to maintain highway operations such as traffic control, lighting, and communication systems. Failure to coordinate with the appropriate NDOT District or Division could lead to a non-approval of a proposed utility installation (see Section 8.9, Non-approved or Non-compliant Installations).

6.2 Permit to Occupy Process

NDOT District Permit Officers are the points of contact to begin the permit application process. Proper completion of the NDOT Form 19, Application to Occupy Right of Way, and inclusion of plans of the proposed work are essential to timely permit processing. The NDOT Form 19 is shown in Figures 6-1 through 6-3. The District Permit Officers will review the applications to verify their completeness. If the NDOT Form 19 and the corresponding plans and supporting documents are not properly completed at the time of the permit application, the permit package may be returned to the applicant, and the permit review will not begin until a properly completed permit package is received. When a permit package has met NDOT requirements in the review process, NDOT will approve the permit, which will constitute an agreement between NDOT and the utility company and may provide an attachment with provisions associated with the approved permit and associated plans and supporting documents. The encroaching party and its designated representatives (e.g., engineering consultants, subconsultants) are ultimately responsible for the quality of the engineering design and plan preparation.

The NDOT Form 19 includes a field to indicate the county in which the permit is being requested. If the proposed work involves multiple counties, a separate NDOT Form 19 should generally be completed for each county. It may be acceptable to submit one permit form for multiple counties if the counties are within the same District. This is generally a decision to be made by the District Permit Officer prior to the submittal of the permit package.

Figure 6-4 shows the permit application process, including steps that occur within NDOT.

Figure 6-1. NDOT Form 19 – Application to Occupy Right of Way

NEBRASKA
Good Life. Great Journey.
DEPARTMENT OF TRANSPORTATION

Application to Occupy Right of Way

Applicant: ***(Name and Address)***

Date: _____

Phone: _____

Fax No.: _____

Email: _____

Type	*With a*	*Size*	*Material Type*
☐ Overcross	☐ Water Line ☐ Wireless Infrastructure		
☐ Undercross	☐ Sewer Line		
☐ Occupy	☐ Gas Line		
☐ Miscellaneous	☐ Telephone Line ☐ Underground ☐ Aerial		
	☐ Temporary Irrigation Pipe Crossing *(Remove by October 15th this year)*		
	☐ Electric Line ☐ Underground ☐ Aerial If aerial, type of Section: ☐ Ditch ☐ Curb Speed Limit: mph		
	☐ Tree Trimming/Tree Removal ☐ Grading ☐ Other		

Location: beginning _____ feet East ☐ West ☐ North ☐ South ☐ of the East ☐ West ☐ North ☐ South ☐ Line of Section _____, Township _____ North, Range _____ East ☐ West ☐ of the 6th P.M., _____ County, Nebraska. This is also _____ feet East ☐ West ☐ North ☐ South ☐ of Milepost No. _____ on the East ☐ West ☐ North ☐ South ☐ side of Highway No. _____. If the application is to "occupy," the work extends _____ feet East ☐ West ☐ North ☐ South ☐.

Requirements: The applicant agrees to complete this work in accordance with the terms and conditions of the Nebraska Department of Transportation. Any permit issued **will be cancelled** if the work specified **is not completed within the term listed on the permit** or within any **additional length of time granted.** Request for an extension of time to complete the work must be made in writing. Any extension granted will be acknowledged in writing by the Nebraska Department of Transportation. **The Applicant may cancel the permit with written notification** at any time prior to beginning work on highway right of way.

Performance Guarantee: ***(Make payable to Nebraska Department of Transportation)***

Amount: $ _____ **Check/Account No.** _____

Name and Address: _____

This guarantee is for the faithful compliance by the Applicant to the terms of the permit. It is understood that should the Applicant fail to perform the work as set forth in the permit, the State will have the right to keep the performance guarantee as liquidated damages for its necessary supervisory and inspection expenses and to initiate such legal proceedings as are necessary to secure either performance of the work in compliance with the terms of the permit or the restoration of the highway right of way to its previous condition prior to the activities of the Applicant.

NOTE: Please complete the appropriate location plan attached for overcross or undercross of location to occupy state right-of-way. When your project requires engineering plans, please submit two sets of plans, no larger than 12"x18". The engineering plans shall show the general features of the work to be completed and all information such as sizes, distances, dimensions, cuts and fills, erosion control measures, etc., when applicable.

_____ _____
Name (Please Print) *Applicant's Signature*

_____ _____ _____ _____
Recommended By *Date* *District Engineer Approval* *Date*

District Recommendations:

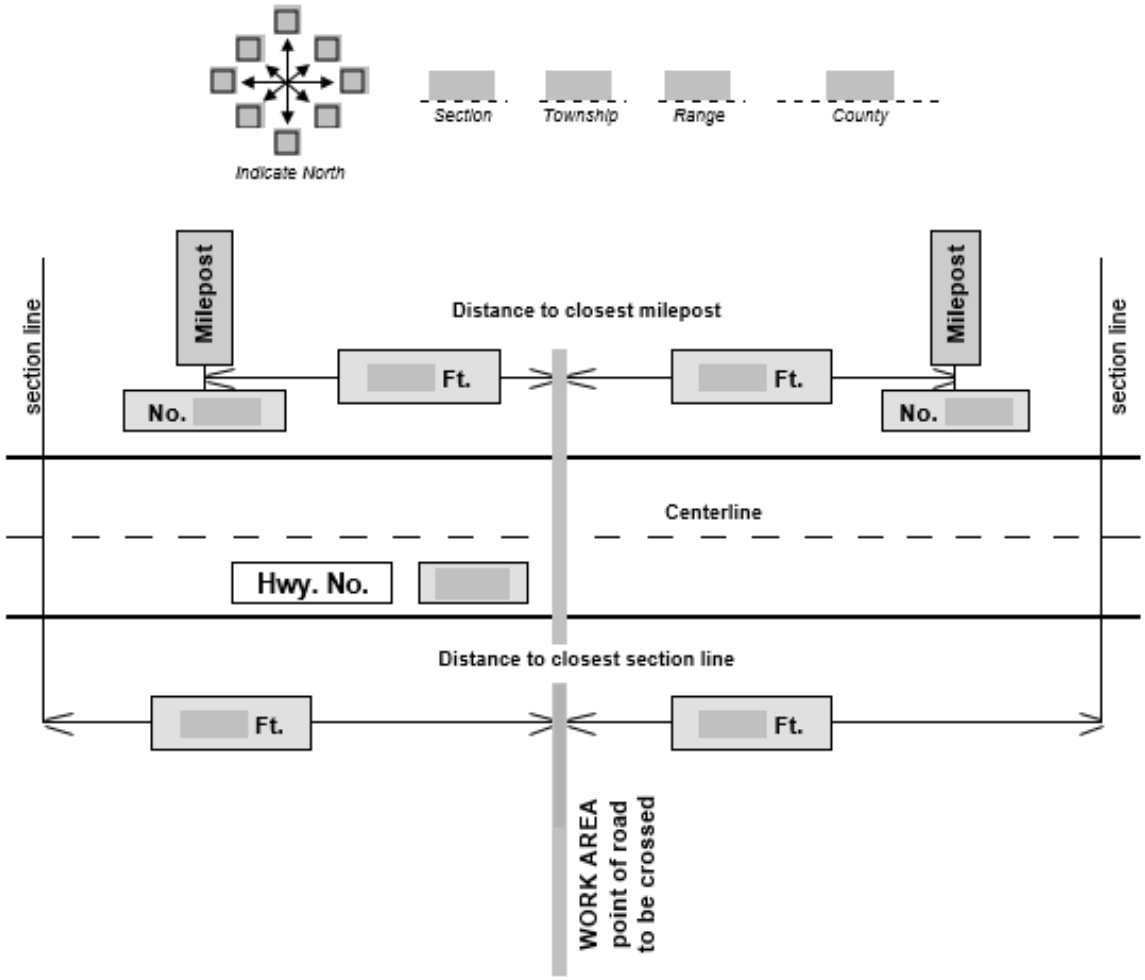
NDOT Form 19, April 2020

For NDOT Use Only
Highway Right-of-Way Use Agreement #_____
Wireless Infrastructure Agreement #_____

Figure 6-2. NDOT Form 19 – Application to Occupy Right of Way (Continued)

Location Plan for Overcross or Undercross

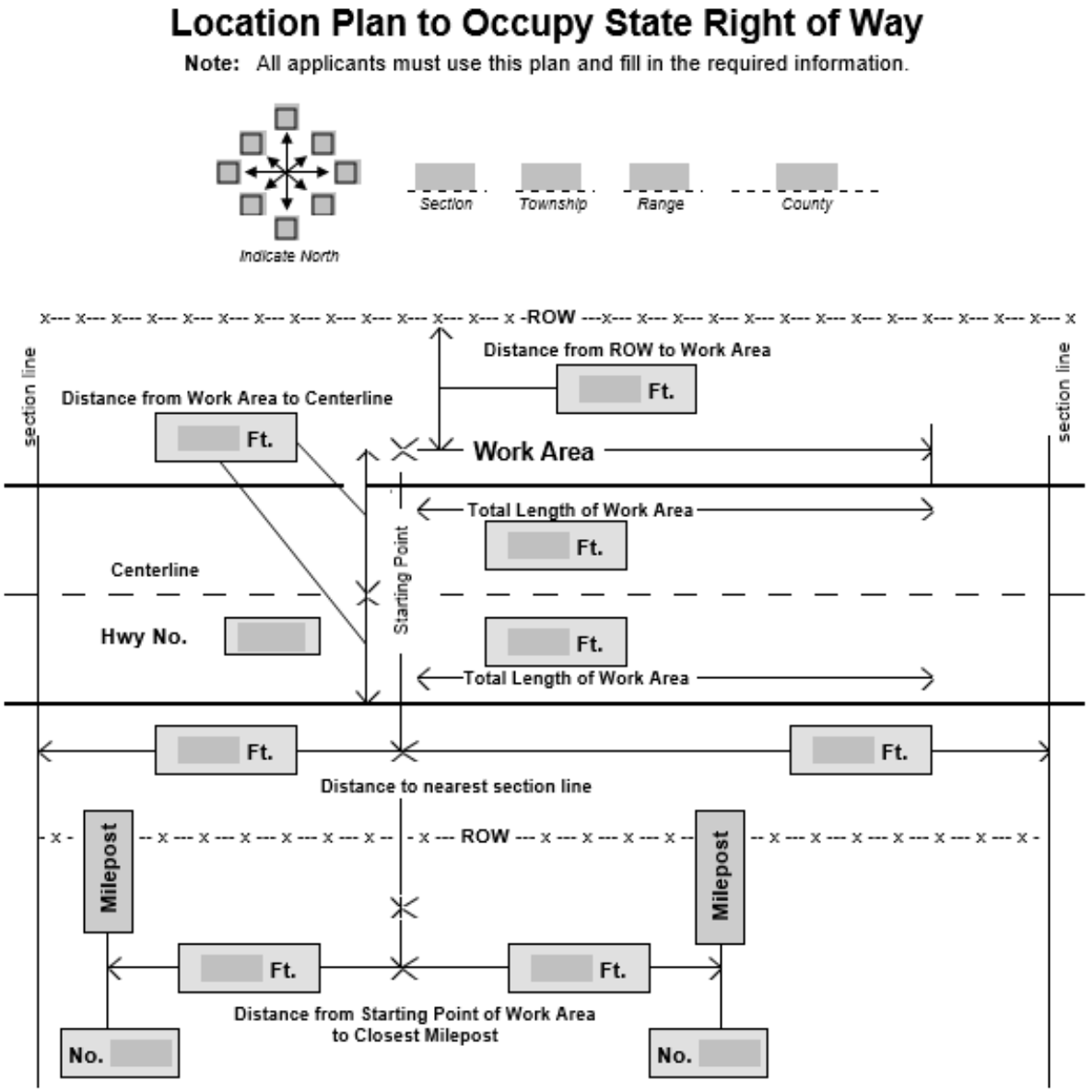
Note: All applicants must use this plan and fill in the required information.



Note: The following information is required on all plans:

- Highway number
- Distance in feet to nearest section line
- Distance in feet to nearest milepost
- Complete legal description, including section, township, range, and county
- Designate North direction

Figure 6-3. NDOT Form 19 – Application to Occupy Right of Way (Continued)



Note: The following information is required on all plans:

- Highway number
- Distance in feet to nearest section line
- Distance in feet to nearest milepost
- Distance in feet to State ROW
- Distance in feet to centerline
- Total length of work area
- Complete legal description, including section, township, range, and county
- Designate North direction

Figure 6-4. NDOT Permit to Occupy Process

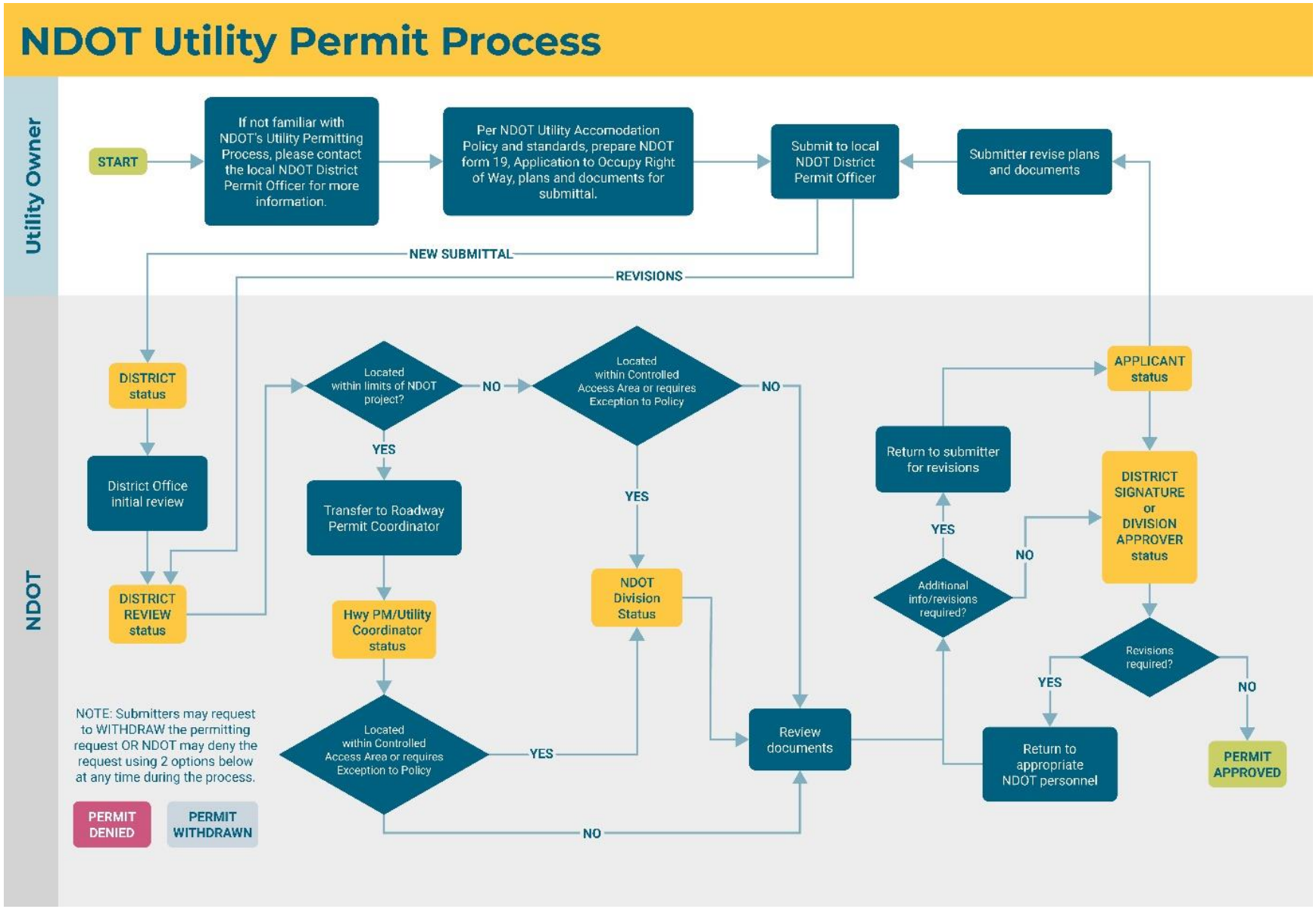
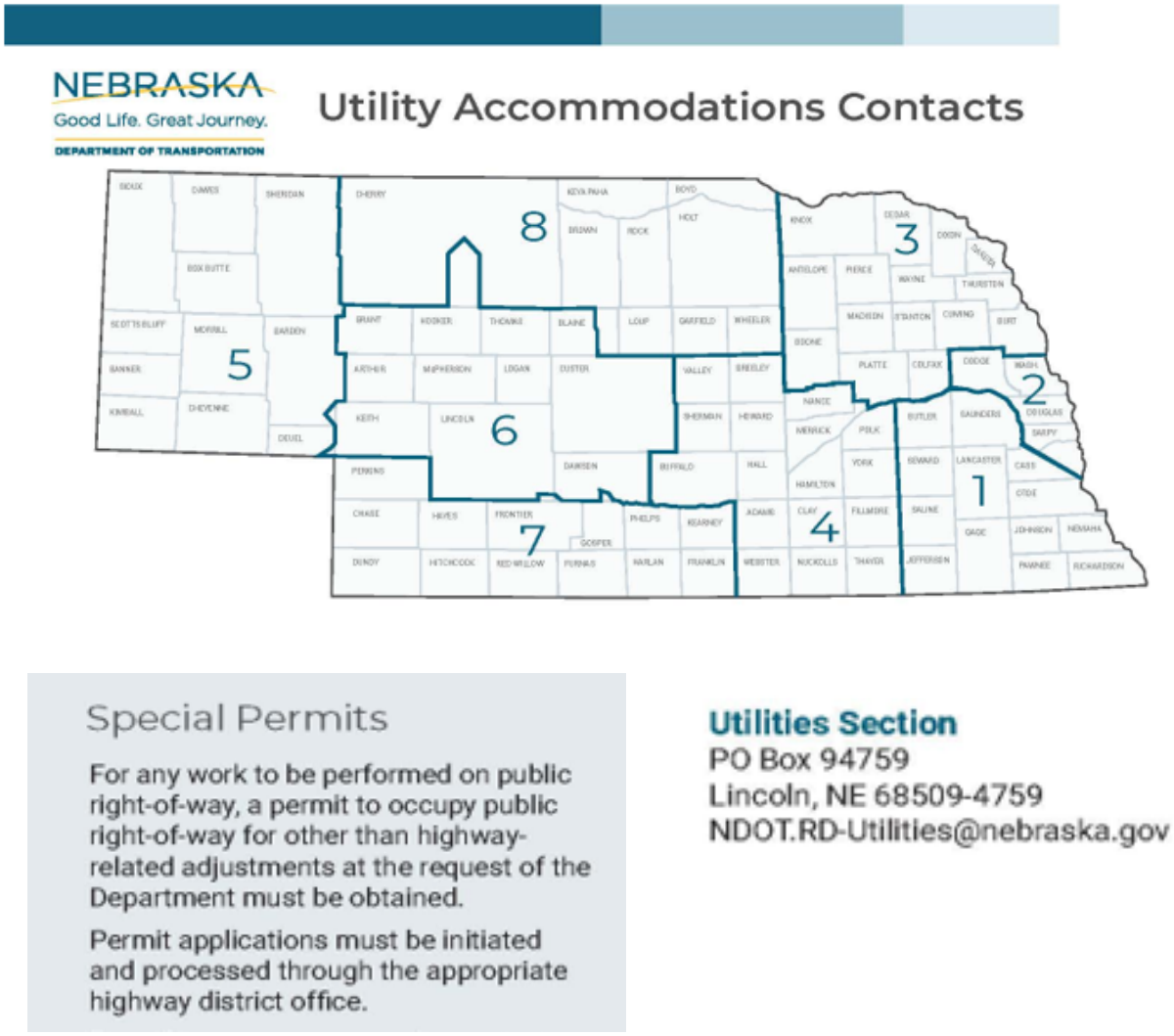


Figure 6-5 provides contact information for NDOT personnel involved in the Permit to Occupy process. This information is subject to change, and the current information is available on NDOT's website.

Figure 6-5. NDOT Utility Accommodations Organizational Chart



6.2.1 Requirement for Nebraska811 Notifications and Future Locates on NDOT Projects

Notification to operators of underground facilities is done by calling Nebraska811, the statewide One-Call Notification Center, at 811 or 1-800-331-5666 (both numbers are toll free) or online at www.ne1call.com using ITIC (Internet Ticket Processing). Utility Owners are expected to be a part of, and comply with, Nebraska811 procedures.

As a condition of occupying NDOT ROW by permit, a Utility Owner accepts the responsibility of performing a utility locate on active, inactive, and abandoned facilities in the field when requested by NDOT for design, construction, or maintenance activities; see Section 9.5 of this policy for information on abandonment. All buried utility facilities placed within NDOT ROW shall be electronically locatable from the surface. When utility facilities are not of ferrous material, then tracer wires, radio-frequency identification (RFID) marker balls, or other measures should be used to ensure that the facilities can be located electronically without the need for excavation.

NDOT may withhold approval of permits for failure to comply with the requirements of this section.

6.2.2 Required Regulatory Permits and NEPA

See Sections 4.2.6 and 4.2.7.

6.2.3 Insurance, Indemnity, and Performance Guarantees

See Section 4.2.4.

6.3 Performing Work on Public Right-of-Way or Adjacent Property

It is the policy of NDOT to maintain good relations with the public and utilities. Any right-of-entry agreement to enter an adjacent property is an agreement between the Utility Owner or representative and the adjacent landowner, whether verbal or in writing.

Utility companies are responsible for locating the ROW line, either existing or proposed, prior to installation to ensure proper placement of the facilities. ROW monuments disturbed during construction shall be re-referenced by a licensed Nebraska Professional Land Surveyor and reset after construction.

The utility company applying for the Permit to Occupy or conducting the installation/modification is responsible for coordinating with other Utility Owners in the area and coordinating utility relocations or conflict mitigation if in conjunction with an NDOT project. The costs incurred are the Utility Owner's unless otherwise shown in Chapter 7 of this policy.

When performing work on NDOT ROW, all work shall be in compliance with Section 7.12 and Chapter 8 of this policy.

6.4 Routine Maintenance and Replacement or Upgrade

All utility facilities shall be kept in a good state of repair in accordance with the requirements of federal, state, and local laws; federal and state regulatory standards; and applicable utility industry codes.

No additional action or permits will be required for routine Utility Owner maintenance. Routine maintenance is activities requiring no change of location, horizontal or vertical, and no change in

function, pressure, or nature of operation. Routine maintenance is the activities necessary to maintain the integrity and operation of the facility.

A new Permit to Occupy or Amended Permit shall be required for minor and major upgrades, location changes, replacement, and changes in function. All work in the ROW must be coordinated with the NDOT District Permit Coordinator as directed in Section 4.2 of this policy.

Relocations or adjustment of existing utility facilities due to highway construction will require a new Permit to Occupy and a Utility Project Agreement if eligible for reimbursement. The modification or relocation of the utility facility shall conform to the conditions of this policy.

6.5 Emergency Repairs and Natural Disasters

Situations that could affect public safety, disrupt utility service, or damage the NDOT ROW may develop suddenly and unexpectedly, and demand immediate action are considered emergency repairs.

In the event of major natural disasters, NDOT will coordinate with Utility Owners to re-establish service as quickly as possible. In those situations, the Utility shall proceed immediately with all necessary actions.

When emergency repairs become necessary, written permission will not be necessary before beginning the needed repairs. The Utility shall notify NDOT of all actions as soon as practical. The Utility Owner shall be responsible for safe and efficient traffic control to current standards, including the most recent edition of the MUTCD.

Under emergency conditions, the SOC should be contacted at 402-331-5993 as soon as possible to document the emergency conditions. The SOC will then notify the appropriate NDOT office.

Chapter 7 NDOT Construction Projects and Required Utility Relocations

7.1 Overview

NDOT, as necessary, performs highway improvement projects on segments of the state highway system (collectively referred to as state projects or individually referred to as a state project, the State's project, or a federal project [if federal funding is used]). Utility companies that own and operate one or more utility facilities within the existing or proposed NDOT ROW of the state highway system may be required to adjust their facilities due to a state project. Utility facilities beyond the existing ROW may also be impacted by a state project and require relocation.

For utility companies occupying NDOT ROW by permit, the conditions of that Permit to Occupy dictate that conflicting or impacted utilities must be relocated. It is the Utility Owner's responsibility to coordinate with NDOT and relocate the utility when notified by NDOT. Relocations of utilities beyond the existing NDOT ROW in conflict with proposed highway projects are also the Utility Owner's responsibility, and the conditions for relocation and reimbursement are established through the NDOT coordination process and Utility Project Agreement as required in this policy. NDOT's authority to require the relocation of utilities in NDOT ROW is defined in Chapter 1 of this policy.

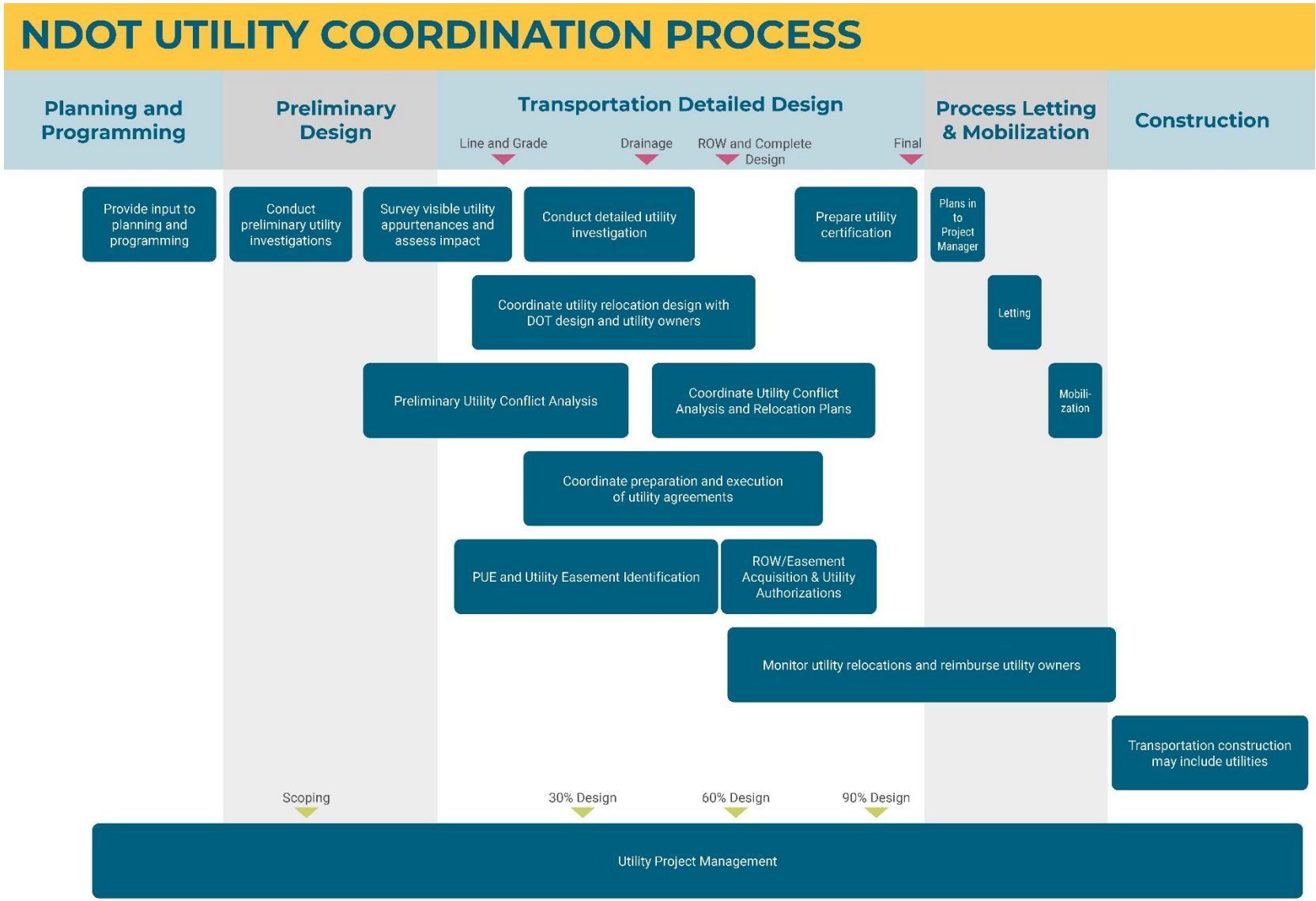
Utility coordination activities occur on each new state project with utility companies within the limits of the project. These coordination activities include the identification of utility facilities within the project limits, conflict analysis, and subsurface utility engineering (SUE) work. Conflict analysis includes a determination if a Utility's facilities are in conflict with the highway project. When a conflict is identified, NDOT will first ascertain if protective measures or changes in highway project design can be made to avoid the conflict, second determine if there are protective measures or project changes that will minimize the adjustments required by the utility, and finally, in the absence of alternatives, accommodate the utility by relocation. When a conflict is identified and cannot be avoided, the utility facilities must be removed, relocated, or adjusted by the Utility Owner with minimal delays or added expense to the state project. This can be accomplished only when all stakeholders, including Utility Owners and their designers and NDOT, work together in developing an efficient solution to accommodate utilities within a project.

Utilities shall comply with all applicable federal and state laws, rules, and regulations when participating in the adjustment, removal, and relocation of their facilities impacted by NDOT projects.

7.1.1 Design / Right-of-Way / Utility Flow Chart

Figure 7-1 is a Utility Coordination Process chart that relates utility coordination activities to the NDOT highway design process. This chart shows when certain utility coordination tasks should occur.

Figure 7-1. Utility Coordination Process Chart



Note: PUE = public utility easement; ROW = right-of-way.

7.1.2 NDOT Project Programming

NDOT uses state funds to program and build highway projects. The programing of the relocation cost of utilities on a highway project is based on preliminary utility estimates requested by NDOT from utility companies.

NDOT employs a utility coordination process for state-funded projects that will allow NDOT to seek federal participation later in the project development process if needed. For this reason, federal procedures are followed on NDOT projects.

The cost of adjusting reimbursable utility facilities is separate from the cost to construct the highway project but is incorporated into the total project cost. Therefore, accurate utility estimates are important in project programming.

Transportation projects may be programmed and authorized with functionally different processes and authorities, including:

- design-bid-build (most common);
- public-private partnerships;
- accelerated project delivery methods, including, but not limited to, design-build, construction manager/general contractor, and alternative contracts.

Public-private partnerships, design-build, construction manager/general contractor, and other alternative contracts are unusual in Nebraska and beyond the scope of this policy. NDOT will inform the affected utilities if alternative contracting methods are used and will establish special conditions through agreement with the utilities.

7.2 NDOT Preliminary Planning and Engineering

Early consideration of utility impacts during project planning and design will give all parties time to work out the details of accommodating or relocating utilities. Success in reducing cost and delay is the result of cooperation and collaboration among the numerous stakeholders, including the NDOT Project Managers, Utility Owners, and NDOT Utility Coordinators.

During the project planning phase, NDOT Utility Coordinators and surveyors will gather information about utilities in the vicinity of the project. The surveyors will gather location data visually on-site as well as information using utility records and Nebraska811. This information will be depicted on project surveys and project plans. The Utility Coordinators will interview representatives of the utility companies to gather information on the types and nature of facilities in the project area, the expected difficulty and risks associated with relocation of those facilities, rough estimates of the cost of relocation, and expected schedule requirements for relocation design and construction. NDOT will assess the potential impacts on the utilities and risks to the project. This assessment will be used to influence the design of the project and minimize overall project costs.

7.3 Utility Considerations During Highway Design

7.3.1 NDOT Cooperative Project Meetings and Exchange of Data

NDOT will provide the Utility with sufficient plans and specifications to enable the Utility to determine if its facilities conflict with a project. Utility companies must provide NDOT all record as-built plans and drawings of existing facilities. If a conflict(s) is/are determined by NDOT to necessitate the relocation of the utility facility, the Utility can use the plans and specifications to reasonably develop a relocation

plan with design standards and constraints, including depth of cover and required clearances. NDOT will provide the schedule for the highway project and other project constraints. NDOT will conduct meetings and communication to give feedback on the proposed relocation plans and other utilities in the vicinity. NDOT will provide any required forms for relocation and reimbursements.

Project meetings that Utility Owners are expected to attend include:

- utility kickoff meeting;
- utility project progress meetings;
- utility workshops;
- pre-construction meetings;
- weekly construction meetings;
- field inspection meetings.

7.3.2 Avoidance, Minimization, and Accommodation of Impacts

The Avoid, Minimize, and Accommodate approach during highway design should be used in resolving utility conflicts as early as possible in the project planning process. Avoid, minimize, and accommodate are listed in order of preference. Practical engineering with consideration of total project cost (including non-reimbursed Utility Owner cost) is encouraged as a strategy for use in each of these methods. The Avoid, Minimize, and Accommodate approach is as follows:

7.3.2.1 Avoid

Avoiding the relocation of a utility is a benefit to the Utility Owner, customers, taxpayers, motorists, and NDOT. All groups will benefit from avoiding relocation costs and potential impacts in the time required to complete the project. However, if a utility conflict has been identified, the first step is for both the Utility and NDOT to evaluate various design options. The preferred outcome is to completely eliminate the need to adjust or relocate the utility; that is, to avoid the conflict.

7.3.2.2 Minimize

During the evaluation of design options, it may be determined that the conflict cannot be completely eliminated. In this case, both the Utility and NDOT will consider items including cost and schedule to evaluate different options to minimize the impact of the conflict.

7.3.2.3 Accommodate

If a conflict cannot be avoided or minimized, then NDOT will accommodate the relocation of the utility. The utility will be adjusted, relocated, or removed to eliminate the conflict with the proposed roadway improvements.

7.3.3 Consideration of Total Project Cost

When evaluating project and utility relocation alternatives, NDOT will make an effort to reduce total project costs, including NDOT project costs and the cost of utility relocations. Decisions will be made by NDOT without regard to whether the costs are to be borne by NDOT or by the Utility Owner to maximize the overall public value. The evaluation will also consider the effect of the alternatives on the project schedule. The consideration of the value of how the duration of the relocations will affect the project schedule will vary depending on the individual project circumstances.

7.3.4 Factors in Determining Utility Impacts or Conflicts

A utility is considered to be in conflict with a project if it meets any of the following criteria:

1. Direct conflicts
    a. The existing utility is in direct conflict with a proposed highway improvement.
    b. Construction of the project will damage or obliterate any of the utility facilities.
    c. Construction poses an unacceptable risk to the utility facilities.
2. Proximity conflicts
    a. The location of the existing facilities creates an unsafe situation for traffic or pedestrians in the finished project.
    b. The location of the facilities is considered by NDOT to be incompatible with the finished project.
    c. As a result of final grade or conditions of access, the utility facility is rendered inaccessible for normal operation and maintenance.
    d. The utility facilities are not compatible with routine highway and ROW operation and maintenance activities by NDOT. These routine activities could include repair of drainage facilities, repairs to the subgrade, repaving, grading, compaction, and mowing.
3. Regulatory conflicts
    a. Final or intermediate grades reduce the cover over underground utilities to unsafe depths or to depths unacceptable under published specifications, accepted practice, or regulations, including this policy.
    b. Final or intermediate grades reduce clearance of aboveground facilities to below acceptable heights or render facilities unusable or structurally unsound.
    c. There are violations of clear zones and location requirements.
    d. There are violations of other regulatory authorities including NEPA, PHMSA, and ADA.
4. Constructability and construction phasing conflicts
    a. Construction of a project cannot proceed safely because of the proximity of equipment or personnel to the facilities.
    b. The facilities are constructed from an unsuitable material and the grade over the facilities will be changed by the project to increase risk to the facilities to an unacceptable level, or heavy equipment is likely to be operated over the facilities and produce an unacceptable load on the facilities.
    c. Construction or relocation cannot occur until a prior construction phase is complete. For example, the final location of a utility facility is in the proposed fill section of a roadway and cannot occur until the fill has been completed.

Utility facilities in conflict by condition 2c (inaccessibility for maintenance) may be relocated at the discretion of the owner. The responsibility for the relocation costs will be determined according to the policy on determination of cost responsibility. If the Utility Owner chooses not to relocate at the time of the project, NDOT will not assume financial responsibility for a subsequent relocation not associated with the project that rendered the facilities inaccessible.

7.3.5 Utility Facility Location Considerations

NDOT has a limited ability to accommodate an ever-growing request for ROW usage by the utility industry. As a result, it is not uncommon to find areas of NDOT ROW where placement of new utility facilities would not be feasible. Such situations cause challenges when NDOT needs to modify the existing roadway facility. In these situations, the following options should be considered by NDOT and/or Utility Owners:

- Stacking. For example, place sewer, high-pressure oil and gas, water, and fiber optic lines at depths that will accommodate placement of shallower and more frequently accessed low-pressure gas and underground communication lines.
- Joint trenching.
- Utility conduits.
- Multi-duct systems.
- Compatible arrangements based on classes or types of utilities.
- Directional boring. Directional boring may sometimes be used to place gas, water, and underground power and fiber optic lines at greater depths. This allows them to be placed below existing facilities.
- Off-site relocation.
- Moratorium. NDOT may need to require a moratorium for Permits to Occupy on a highway project while undergoing design and/or construction.
- Dig Once. NDOT may require a Dig Once approach to locations where there are limited available spaces for utility facilities to be placed.

Feasibility of the above options may be determined by the utilities after consultation with NDOT. NDOT has no liability for damage to existing facilities nor will it guarantee access to such placements if the utility experiences future problems.

7.3.6 Future Planned Expansion of Utility Facilities and NDOT Projects

Consideration should be given for known or planned expansion of utility facilities when relocating. Current project relocations should be planned to minimize future hazards, conflicts, or interference with highway facilities during future utility expansions. Additionally, identification of future NDOT projects in the area may help eliminate future utility impacts.

7.3.7 Nebraska811 and Subsurface Utility Engineering

7.3.7.1 Nebraska811

In accordance with the One-Call Notification System Act, Utility Owners and contractors working on their behalf must notify other operators of existing underground facilities in the area of proposed work so other utility operators have the opportunity to identify and locate their underground facilities, as discussed in Section 4.2.5 of this policy. Notification to operators of underground facilities must be done by calling Nebraska811, the statewide One-Call Notification Center, at 811 or 1-800-331-5666 (both numbers are toll free) or online at www.ne1call.com using ITIC (Internet Ticket Processing).

Nebraska811 locates do not provide an exact location or vertical elevation but an approximate location to help avoid harming the utility facility when digging in the area. For this reason, as a

condition of occupying NDOT ROW by permit, a Utility Owner accepts the responsibility of performing a utility locate in the field when requested by NDOT for design, construction, or maintenance activities, and must be in conformance with Section 4.2.5 of this policy.

7.3.7.2 Subsurface Utility Engineering

SUE information may be obtained by NDOT or a Utility Owner. The cost of SUE services may be reimbursable if required by NDOT. SUE services are normally required in areas where the exact location or elevation of a utility facility is needed to avoid or clear a utility conflict due to its proximity to an NDOT highway structure or another utility.

The use of SUE can prove to be a valuable resource to benefit NDOT and Utility Owners. An FHWA study titled "Cost Savings on Highway Projects Utilizing Subsurface Utility Engineering" (2000) reports utility relocation cost savings more than four times greater than the expense of SUE exploration.

Using SUE early can aid in determining:

- the accurate alignment and elevation of a utility facility;
- those facilities that may remain in place;
- those facilities that can be accommodated by implementation of design modifications;
- those facilities that will require adjustment to clear proposed construction.

NDOT design teams use SUE for the following reasons:

- Use of SUE providers conserves NDOT and utility company resources.
- SUE providers are trained and equipped to determine locations and elevations of utilities.
- Information provided by SUE can aid in identifying utility facilities' owners.
- Data can be obtained and submitted in a format compatible with design data.
- Conflicts can be avoided through design changes.
- Determination of adjustments will accommodate proposed designs.
- Locations of unmarked or unknown utilities can be identified.

SUE deliverables should be integrated into NDOT's Plans, Specification, & Estimates (PS&E) contract package to enable the contractor and all other pertinent parties to have maximum information on utilities within the construction area.

If the SUE data is not integrated into NDOT's PS&E contract package, SUE deliverables should be shared among:

- NDOT designers or consultants;
- affected utilities;
- Districts;
- LPAs (optional).

Use of NDOT computer-aided design and drafting (CADD) standards in SUE deliverables is necessary for uniform depiction of utilities in highway design files.

It may not be necessary to obtain SUE data for lines that are already planned for abandonment or known to be in conflict.

The SUE quality level requested for utility location is a professional opinion of the reliability of utility information required. Such reliability is determined by the means and methods deemed necessary by a Professional Engineer. Each of the following four utility quality levels is established by different methods of data collection and interpretation:

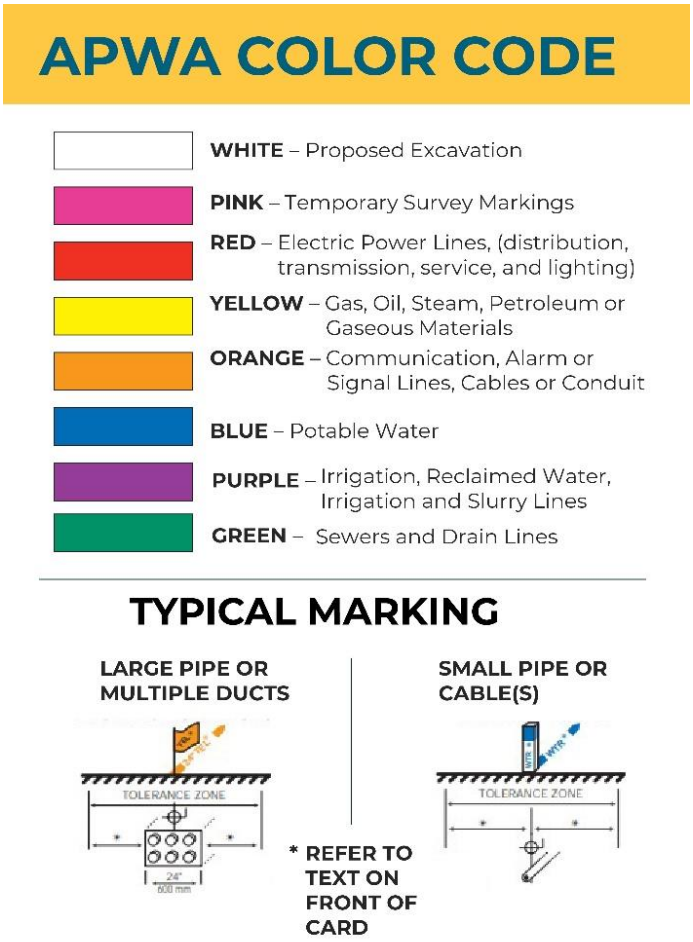
- Utility quality level A. Precise horizontal and vertical location of utilities obtained by the actual exposure and subsequent measurement of subsurface utilities, or verification of previously exposed and surveyed utilities, usually at a specific point. Minimally intrusive excavation equipment is typically used to minimize the potential for utility damage. Precise horizontal and vertical locations, as well as other utility attributes, are to be shown on plan documents. Horizontal and vertical accuracy is typically set to 0.05 feet (15 mm).
- Utility quality level B. Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Quality level B data should be reproducible by surface geophysics at any point of their depiction. This information is surveyed to applicable tolerances defined by the project and reduced onto plan documents.
- Utility quality level C. Information obtained by surveying and plotting visible aboveground utility features and by using professional judgment in correlating this information to quality level D information. Level C includes all field survey data to locate utility features that are not included in level B procedures.
- Utility quality level D. Information derived from existing records or oral recollections.

The four quality levels are also shown in Figure 7-2.

Figure 7-2. Subsurface Utility Engineering Quality Levels

Utility plans, when color coded, and on-the-ground markers, flags, and paint will have standard American Public Works Association color coding, as shown in Figure 7-3.

Figure 7-3. American Public Works Association Color Codes



7.3.8 Access and Maintenance Concerns

Access rights are rights of ingress or egress (entrance or exit) to the highway facility from an adjacent parcel of land. NDOT acquires real property rights to parcels of land used for transportation-related purposes. In some circumstances, it is in the public's interest for NDOT to control the right of ingress or egress to portions of public ROW. NDOT's "Access Control Policy to the State Highway System" defines varied levels of public access rights to and from properties abutting highways depending on the type of facility. See Sections 4.2.3, 4.3.2.2, and 8.5.2 of this policy for additional information.

7.3.9 Long Lead Items: Utility Replacement Easements and Material Fabrication

Items that may impact the project schedule must be identified early in the utility coordination process, including at the initial meetings with the utility. These items include moratoriums on service interruptions, funding or budget concerns, lead times for material fabrication, or replacement easements. Many of these items must be factored into the highway project's critical path. A Utility Owner may request a pre-authorization for these long lead items to reduce impacts on the project schedule.

7.3.10 Inclusion in Highway Contract

As a rule, highway ROW should be clear of utility conflicts before the letting of transportation construction projects (23 CFR § 635.307). However, utility adjustments may be performed by, or coordinated with, the highway contractor and/or included in the PS&E highway letting package. NDOT may elect to include water and sewer in the highway construction contract if mutually agreed upon by NDOT and the Utility Owner. Inclusion of the utility construction in highway letting plans requires close coordination with NDOT designers.

7.3.10.1 Municipal Cost Sharing Agreement

Utility work included in the highway construction contract may include items that are ineligible for NDOT cost participation. Therefore, it will be necessary for the Utility to submit the estimated ineligible costs through the Municipal Cost Sharing Agreement with NDOT before letting the highway contract.

The Utility will also be required to contribute funds for the inspection of the utility facility performed under the highway construction contract.

7.3.10.2 Procedure

If it is determined that water or sewer relocation is to be included in the proposed highway construction contract, the following items should be considered:

- Who is responsible for the cost of the adjustment: the municipality/Utility, NDOT, or other?
- If it is determined that the Utility is responsible for the adjustment costs and the NDOT contractor will perform all or part of the adjustment, NDOT must execute a Municipal Cost Sharing Agreement to fund the required work.
- Before the project can be awarded, funds must be collected from the utility at least 30 days prior to the letting of the highway construction contract.
- Fundings are required for all non-reimbursable utility work, (i.e., incorporation of work determined to be ineligible for NDOT cost participation or, in some instances, betterments) included in NDOT's PS&E letting documents.

- A statement of how all work and coordination will be accomplished is described in NDOT's PS&E letting documents. The part to be performed by each party involved should be described.
- Preliminary plan estimates and Municipal Cost Sharing Agreement (if applicable) for utility work must be forwarded to NDOT. After coordination and review by applicable Divisions, the District will include the utility plans and estimate in the appropriate utility agreement assembly. After approval, work will be incorporated in the highway PS&E letting documents.
- Costs to the roadway contractor, paid through the Municipal Cost Sharing Agreement, must be shown on the cost estimate of the Utility Project Agreement in order to calculate the total Utility Relocation Project Cost. The costs must be separated to show what is to be paid to the roadway contractor and what is to be reimbursed to the utility company (if applicable) through the Utility Project Agreement (described in the following section).
- Modifications to the utility scope of work, before or after letting, that impact associated costs/quantities must be coordinated with NDOT.

NOTE: If utility adjustments are included in the highway construction contract, the plans submitted by the Utility must be signed and sealed by an Engineer.

7.3.11 Temporary Relocations and Phasing

Temporary relocations may be necessary for some projects. NDOT prefers a single relocation where feasible. Temporary relocations that are required during a project are reimbursable under the same policies and agreements as permanent relocations or adjustments under this policy. The temporary relocation cost should be itemized separately from the permanent relocation cost in the agreement estimate.

Temporary relocations should be moved back to their original or final location as soon as the temporary relocation is no longer needed. In all cases, the utility should be in the final location before the construction project is accepted.

Temporary relocations must be shown on the relocation plans, any temporary construction easements, along with the timeline and project phasing required.

7.4 Overview of the Utility Relocation Process

NDOT's utility coordination facilitates the removal, relocation, or adjustment of utility facilities when an NDOT highway project makes such removal, relocation, or adjustment necessary. NDOT works to ensure that utilities are removed, relocated, or adjusted by the Utility Owner in a timely and efficient manner to the benefit of NDOT, the Utility Owner, the traveling public, and utility customers. NDOT establishes close-working relationships with Utility Owners, keeping them abreast of highway projects, project schedules, policy changes, and other highway utility-related issues. The Utility Owner can expect the following to occur:

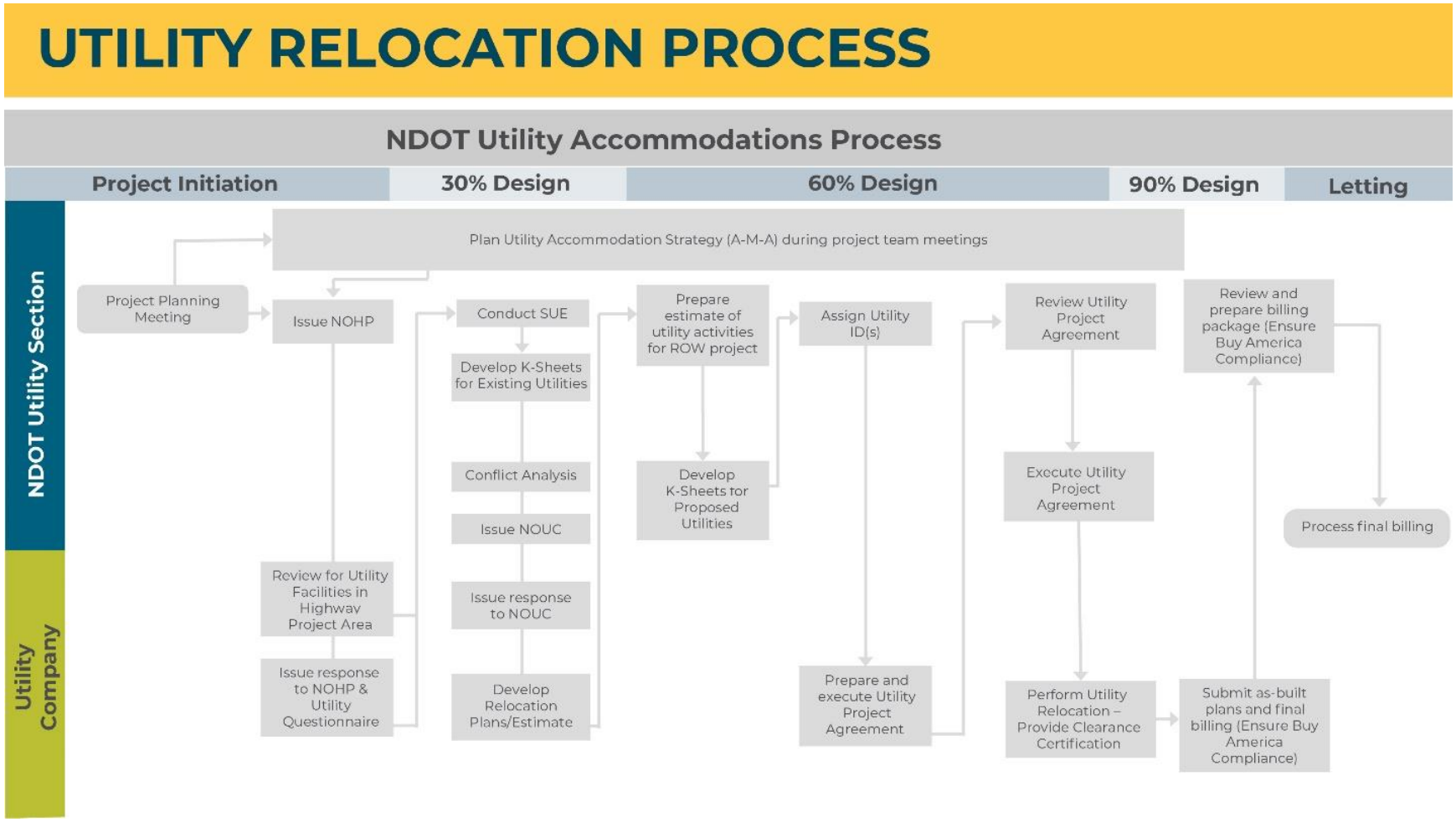
- NDOT will provide a Notice of Highway Project to the Utility when NDOT is developing a highway project that may affect the Utility's facilities. NDOT will provide the Utility with preliminary plans, including known utility facilities, and pole listing if applicable, subsequent plan revisions, and a tentative project letting date for a specific project when NDOT determines that the highway project is sufficiently developed. NDOT will provide a project number that will be used by stakeholders to identify the specific NDOT project.

- Upon receipt of the Notice of Highway Project, the Utility Owner will review NDOT's plans for the location accuracy of the Utility's facility in relation to the highway project and will complete a questionnaire supplied by NDOT. The Utility Owner must identify known and potential conflicts between the existing utility facility and the proposed highway project. After the review, the Utility Owner must notify NDOT in writing of the Utility's conclusions if the facility is in conflict or not and provide existing location information in an electronic format. Additionally, the Utility Owner must provide any information support a claim for reimbursement.
- NDOT will review the information and data supplied by the Utility Owner for concurrence and work with the Utility Owner to conduct a conflict analysis. If more precise location information is required, NDOT may require the Utility Owner to perform a SUE investigation as described in Section 7.3.7.2 of this policy to accurately locate the utility facility. If a utility conflict is confirmed, NDOT will then provide a Notice of Utility Conflict to the Utility Owner.
- The Utility Owner, upon receipt of the Notice of Utility Conflict, will promptly initiate development of utility layout/relocation plans to include both existing and proposed utility facilities. This information will be incorporated in the project plans on sheet that are commonly referred to as K-Sheets. The parties will enter into an agreement in which the Utility's project plans, cost estimate, and schedule are formally documented. The agreement will be either a Permit to Occupy Agreement or a Utility Project Agreement depending on whether the Utility Owner is eligible for reimbursement or not. See Section 7.5, Types of Utility Agreements, for which type of agreement to use based on which party is responsible for cost and construction. The K-Sheets are also included to provide for information to the NDOT highway contractor and as well as for the utility contractor to perform the required relocation. See Chapter 5 of this policy for information on plan requirements.
- After the execution of the Utility Project Agreement or Permit to Occupy, NDOT will provide a Letter of Authorization (LOA) to proceed with construction. The Utility Owner must receive the LOA before any work can occur. Costs incurred prior to the LOA will not be eligible for reimbursement.
- The status of the Utility Owner's progress is monitored by NDOT for compliance with the Utility Project Agreement, including field inspection, maintaining schedule, and support of reimbursement. If work is not being satisfactory performed, NDOT will take appropriate actions. See Chapter 8 of this policy for further information on inspection and monitoring.
- Often during utility project construction, conditions are different than anticipated and a change order is required to modify the scope, schedule, or estimate of the Utility Project Agreement. See Sections 7.11, 7.12, and 8.4.5 for information on change orders.
- After the relocation is completed, the Utility Owner will provide NDOT an as-built plan of the relocated utility facility. The as-built plan must be received in support of invoices submitted by the Utility Owner for reimbursement. Additionally, all records must be maintained for audit purposes. For information on invoices and supporting documentation, see Section 7.13 of this policy.

It should be noted all stakeholders understand that NDOT project plan revisions are expected as the NDOT project is developed. The Utility Owner is expected to promptly complete its review of each revised set of NDOT project plans provided by NDOT to determine whether Utility's project plans will need to be revised. The Utility Owner will revise plans as necessary.

Figure 7-4 shows the utility relocation process just described.

Figure 7-4. Utility Relocation Process

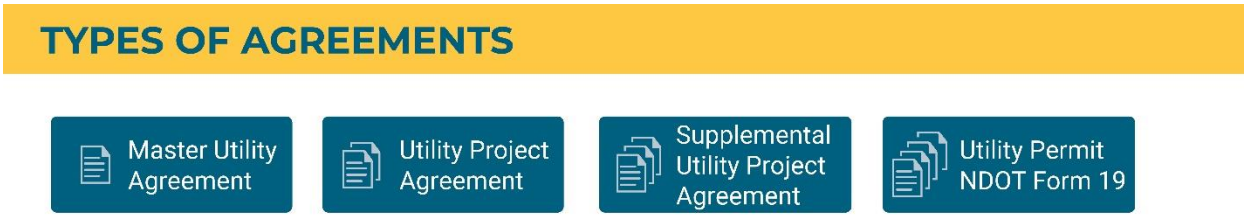


See Section 5.1 of this policy for discussion of K-Sheets and utility layouts, existing and proposed.

7.5 Types of Utility Agreements

NDOT has four types of utility agreements, as shown in Figure 7-5 and discussed below.

Figure 7-5. Types of Utility Agreements



7.5.1 Master Utility Agreements

NDOT enters into Master Agreements with many Utility Owners who are frequently encountered on highway projects. The purpose of Master Utility Agreements is to (1) establish a procedure for a Utility and NDOT (Parties) to identify the location of a Utility's facilities and any conflicts between an NDOT Project and the Utility's facilities; (2) develop and plan for a utility relocation project when a conflict has been identified and cannot be avoided; and (3) establish the conditions for NDOT to reimburse a Utility's costs when eligible.

Utility relocations must still be completed in accordance with 23 CFR Part 645, Subpart A, Utility Relocations, Adjustments, and Reimbursement, and this policy. These documents provide authority for utility relocation work and the basis to pay the Utility for eligible costs resulting from the utility's relocation.

In the event that a Master Agreement allows for the Utility to terminate the Agreement and that right is exercised, the Master Agreement will continue to govern as a Utility Project Agreement for any utility project developed to the point where Utility has submitted plans and cost estimates to NDOT. Terminated agreements will not govern any utility project when the Utility has not yet submitted plans and cost estimates, unless the Parties otherwise agree.

The agreements typically note that the Parties intend that the Master Agreement will continue in effect after any sale, merger, or other disposition of the Utility or the Utility's facilities.

7.5.2 Utility Project Agreement

When relocation of a utility facility is required and the Utility Owner is eligible or partially eligible for reimbursement, NDOT and the Utility Owner will enter into a Utility Project Agreement in which the Utility's eligibility, project plans, cost estimate, and schedule are formally documented. See Sections 7.7 and 7.8 of this policy for further information.

7.5.3 Supplemental Utility Project Agreement

When a change is required and a utility facility is being relocated under a Utility Project Agreement, NDOT and the Utility Owner will enter into a Supplemental Utility Project Agreement in which any changes of the Utility's eligibility, project plans, cost estimate, and schedule are formally documented. See Section 7.13 and 8.5.5 of this policy for further information.

7.5.4 Permit to Occupy Agreement (NDOT Form 19)

When relocation of a utility facility is required and the utility is located within NDOT ROW, NDOT and the Utility Owner will enter into a Permit to Occupy Agreement. If reimbursement is sought, the Permit to Occupy will be included in the Utility Project Agreement so the project plans, cost estimate, schedule, and terms of reimbursement are documented. See Chapter 6 of this policy for further information on the Permit to Occupy Agreement.

7.6 Clearance Documents

When a utility facility has been permitted to occupy NDOT ROW, utility relocations will be the responsibility of the Utility and a Utility Project Agreement will not be required. On highway projects when a utility facility is not in conflict, the relocation is avoided by design, or the utility facility is removed from service, a Clearance Form may be required to document how the utility is clear of proposed highway construction.

If the Utility is relocating its facility and is financially responsible, then a Relocation Clearance Form may be required in addition to the Permit relocation plans to document the agreed date a utility will be clear of proposed highway construction.

7.7 Utility Project Agreements

NDOT will assume the financial responsibility for non-betterment costs of adjusting or relocating utilities when the conflicting utility facility occupies a valid property interest owned by the Utility or other eligible documented compensable interests.

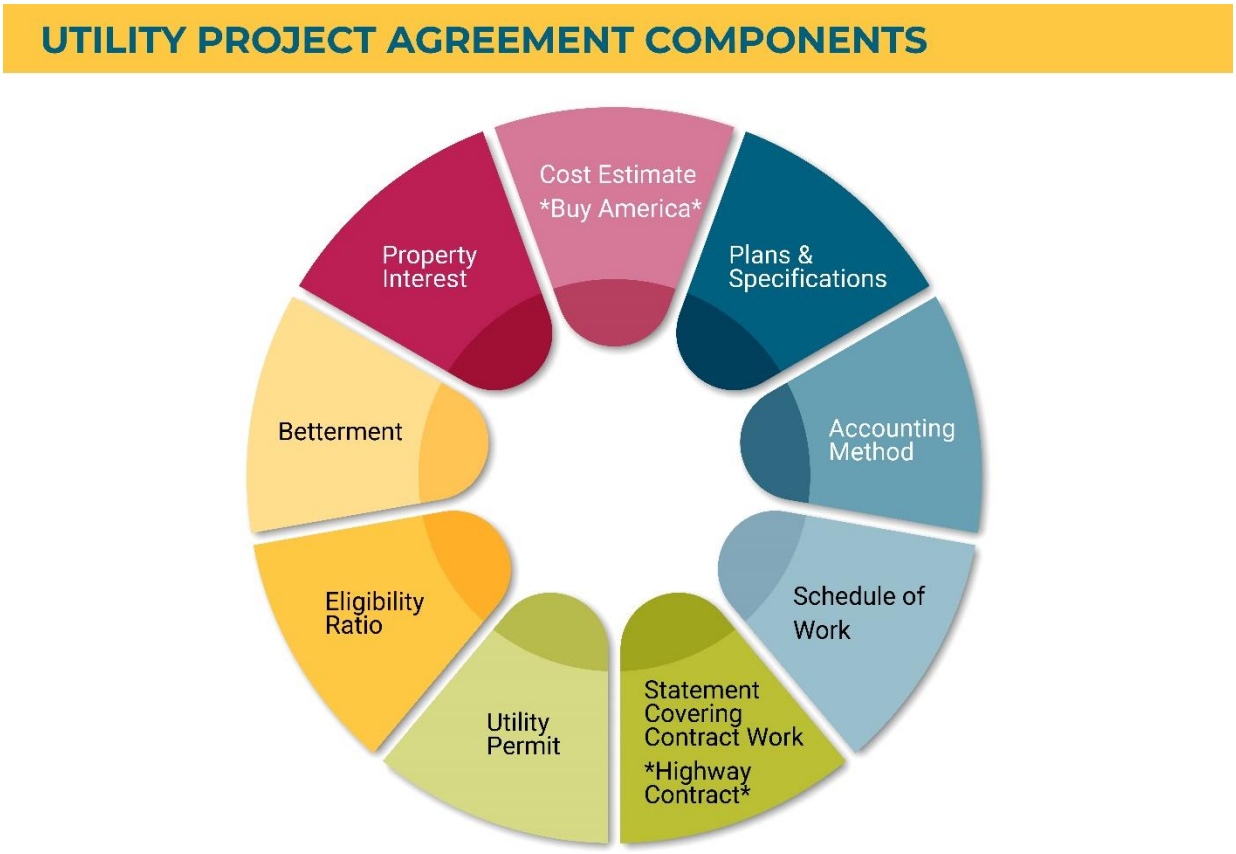
NDOT and the Utility will enter into a Utility Project Agreement in which the Utility's project plans, detailed cost estimate, and schedule are formally documented. The Utility Project Agreement must be fully executed before commencement of the utility relocation project. All eligible costs, including authorized material purchases and/or replacement utility easements, cannot be reimbursed without an executed Utility Project Agreement and an LOA. Materials purchased or easements acquired before execution of the Utility Agreement is at the Utility Owner's risk and may not be compensable without Pre-Authorization.

NDOT may need to suspend, limit, or terminate a Utility's development of a utility project due to changes in the schedule or viability of NDOT's project, among other reasons. If this occurs, NDOT will communicate its project changes to the Utility by providing written notice to the Utility and will reimburse the Utility for reasonable, eligible, and authorized costs incurred by the Utility up to the time of the change. NDOT will also work with the affected Utility to develop a plan for NDOT reimbursement of any agreed upon reasonable, eligible, and authorized costs that would be incurred by the Utility as a direct result of the project changes. In cases where materials or supplies paid for by NDOT would be retained by the Utility, the affected Utility will reimburse NDOT for the cost of those materials. NDOT will pay the Utility's reasonable costs incurred to return materials or supplies when the Parties agree that such materials or supplies (1) should be returned by the Utility to the supplier, (2) are eligible for reimbursement, and (3) were acquired for the Utility's project.

7.8 Utility Project Agreement Requirements

The components of a Utility Project Agreement are shown in Figure 7-6 and discussed below.

Figure 7-6. Utility Project Agreement Components



7.8.1 Plans and Specifications

A Utility is solely responsible for all aspects of the design of its utility project. The utility project must be completed in accordance with 23 CFR Part 645, Subpart A, Utility Relocations, Adjustments, and Reimbursement, and this policy.

NDOT will review the Utility's project plans to determine (1) whether the proposed relocated facility will be functionally equivalent to the existing facility, and (2) whether relocating the facility is necessary for continuous operation of the Utility's service, the project economy, or the sequence of highway construction.

The following is a brief review of information required to be included in the relocation plans. Full survey, information, and plan requirements are shown in Chapter 5 of this policy.

Existing and proposed facilities are to be shown at a scale and detail to demonstrate accommodation compliance.

Relocation plans must include the following:

- Existing, temporary, and proposed utility facilities with:
  - operating pressures, directions of flow, source of power, wall thickness, coated and wrapped lines, anode beds, yield strength, design factor or class location, etc., when applicable;

  - enough information about the existing and proposed installation to determine any betterment in the proposed facility, such as types and quantities of materials, strength classifications, conductor sizes, number of cable pairs, and protective devices upon existing and proposed lines;

- limits of compensable interests;
- control of access / access denial lines and highway station numbers;
- a brief explanation of factors that justify the work, such as:
  - direct construction conflict between the existing utility and the proposed highway improvements;
  - lack of compliance with this policy when the existing utility facility after the proposed highway improvements does not meet minimum requirements;
  - inclusion of the existing/proposed highway profile and the existing/proposed utility profile to justify lowering the utility line(s);
  - indication of fill or cut slopes to justify adjustment of poles.

7.8.1.1 Permit to Occupy

Relocations or adjustment of existing utility facilities due to highway construction for which reimbursement will be requested will require both a new Permit to Occupy and a Utility Project Agreement if eligible for reimbursement. The Permit to Occupy should be approved prior to the execution of the Utility Project Agreement, if possible, to minimize changes to the Utility Project Agreement.

7.8.2 Schedule

All Utility Project Agreements shall include a schedule that identifies a start date of relocation, the duration for construction activities, and a completion date that can be relied on by NDOT and contractors. If a Utility Project Agreement is not required because the Utility is financially responsible for the relocation, then a Relocation Clearance Form may be required. NDOT relies on relocation schedules provided by the utility companies to keep projects on schedule. When the utility companies are unable to keep their schedules or have unrealistic schedules, the delays to the project can result in significant loss of public funds.

It is important that utility companies provide their utility relocation schedules to NDOT so the schedule can be included in the critical path of the highway project because utility relocations are one of the most common causes of project delays. The utility company's schedule is an important part of the Utility Project Agreement and must be clearly defined to be enforceable.

The Utility must be a part of the development of the project schedule and phasing when in the highway project construction contract. Occasionally, it is impossible to relocate utilities prior to construction of segments of the roadway (in deep cut sections, for example), and coordination between the Utility and the highway contractor must be included in the Special Provisions of the highway construction contract.

The schedule must be realistic and mutually agreed to by all parties. Additional milestone dates may be added as mutually agreed upon by NDOT and the Utility.

7.8.3 Detailed Cost Estimates

When a Utility's costs are expected to be eligible for reimbursement, the Utility shall submit to NDOT an accurate itemized cost estimate for the completion of the functional replacement of the Utility's facilities. The estimate shall contain sufficient detail and be provided in a form that will match the way the Utility will invoice NDOT for costs actually incurred during construction. The Utility's estimated costs must be based on an actual cost method of estimating costs, including those described in the following subsections.

7.8.3.1 General and Overhead

Indirect charges such as general engineering and supervision, general office salaries and expenses, construction engineering and supervision by other than the Utility, legal expenses, insurance, relief, pensions, and taxes shall be charged to jobs or units on the basis of the amount of such overhead reasonably applicable. All indirect costs (overheads/loadings) should be described and supported at the time of billing. These costs are subject to audit for determination of eligibility.

Some costs that are not eligible for state and federal participation are:

- entertainment expenses;
- advertising;
- sales promotion;
- special insurance premiums, such as those on lives of company officials;
- special bonuses not a part of the general condition of employment;
- taxes and expenses relating to financing or refinancing, including issuance of stock;
- expenses of listing of securities on exchanges;
- federal and state income taxes;
- provisions for contingent reserves, director's salaries, or special management studies;
- bad debts;
- sale and rate studies;
- contributions;
- fines and penalties;
- interest on borrowings;
- lobbying and research programs.

7.8.3.2 Materials

NDOT provides authorization to order materials following the execution of the Utility Project Agreement. NDOT, at its discretion, may provide Pre-Authorization to the Utility to make early purchases of materials when necessary. Materials eligible for reimbursement and authorized for early purchase will be reimbursable.

Additionally, factors that will be included in the Utility's material overhead account must be clearly shown, and major items of materials must be itemized.

Unit costs, such as assembly units of property, may be used for estimating purposes if the Utility uses such units in its own normal operations, as follows:

- Assembled utility components as recognized by the industry with unit items of materials and supplies should be shown as assembly units with unit prices.
- All materials subject to BABA must be identified to delineate the items that will require documentation compliance.

7.8.3.3 Labor

The estimate must show person-hours by the rate for the job title. Additionally, unit costs for labor will be acceptable when the Utility's system of accounts provides for this method of estimating. This type of cost estimating is usually done by utility cooperatives.

However, if items of overhead are included in the unit cost for labor, these items are detailed separately to be analyzed to ensure the costs were incurred after execution of a Utility Project Agreement. The Utility should also include in the estimate the amount of time anticipated for supervisory labor; costs incidental to the preparation of the plans, estimates, and agreement documents; and expenses that will be paid to individuals directly engaged in the proposed adjustment.

All labor charges and expenses shown must be in conformity with similar charges that are reflected in the accounts of the Utility and incurred in its normal operations.

When construction assembly units are used in estimating the cost of the work, labor costs may be shown on an assembly unit basis.

7.8.3.4 Transportation and Equipment

Charges should have sufficient documentation and explanation of necessity, as follows:

- Personal expenses
  - Other direct expenses may include meals and lodging required by use of the Utility's forces in remote areas. The costs should be in keeping with those normally incurred by the Utility. Expense types will be documented in the Utility Project Agreement and invoiced in the same format.
- Equipment
  - Equipment should be shown by type, size, and rate.
  - The charges should reflect the Utility's normal accounting procedures.
  - Rentals should also be shown by type, size, and rate.
  - Published equipment rates, instead of actual rates, are not allowable (i.e., Means Guide).

7.8.3.5 Traffic Control

The Utility shall be solely responsible for cost of erecting, operating, inspecting, maintaining, and removing all traffic control devices on streets, roads, and highways deemed necessary by the Utility for the construction of the utility project. The Utility's traffic control shall comply with the most recent edition of the MUTCD.

Develop a MUTCD-compliant traffic control plan estimate, to include:

- appropriate signs, markings, and barricades per the traffic control plan;

- safety equipment, such as:
  - barrels;
  - signage;
  - flagmen;
- clear zone protection devices, such as:
  - concrete traffic barriers;
  - appropriate end treatments;
  - other appropriate warning devices.

7.8.3.6 Utility Construction Work Force and Contracts

The Utility Owner shall provide all labor, tools, equipment, and materials for the relocation of its facilities as required by NDOT's project. The Utility shall be solely responsible for the construction of the utility project according to the utility project plans. The Utility may use the following contracting methods if the utility project is eligible for reimbursement:

- A Utility Owner may construct the utility project with its own forces.
- A Utility Owner may use an existing written continuing or indefinite delivery contract that the Utility has with a construction contractor for construction of the utility project, provided the continuing contract was not entered into for the purpose of performing the NDOT project and the costs are fair and reasonable. The Utility shall furnish NDOT with a complete copy and supporting documentation, when requested, of the continuing contract for review prior to construction. The Utility shall also notify NDOT when the costs set out in the continuing contract vary from the final cost estimate.
- A Utility Owner may award a construction contract for the utility project to the lowest qualified bidder based on appropriate solicitation. The Utility must, at a minimum:
  - publish a notice of the bidding for the duration of time required by applicable federal or state law. If the Utility solicits bids from a list of qualified contractors, the list must be submitted to the State prior to the solicitation of bids;
  - submit the bid proposal and construction schedule to NDOT for review prior to letting a contract;
  - submit a copy of the bids received and the Utility's recommendation of award to NDOT for concurrence prior to any award.

A Utility Owner shall include statutorily required contract clauses in any contract it has with a contractor / lower tier subcontractor for construction of the utility project.

The Utility Owner shall advise the NDOT Project Manager and the NDOT Utility Engineer in writing at least 1 week prior to (1) the expected start date and (2) the expected completion date of the utility project. This is to allow NDOT sufficient time to schedule personnel for inspection and approval of work performed. The Utility shall promptly update the NDOT Project Manager of any changes in the Utility's expected project completion date. The Utility shall also promptly advise the NDOT Project Manager in writing of the utility project completion.

7.8.3.7 Replacement Easements

ROW costs are defined as those instances where there is an interest in land acquired. ROW costs for replacement or damages should be in accordance with the Utility's normal methods.

Replacement ROW may be defined as the land and interests in land acquired outside existing highway ROW for or by the Utility. These costs may include salaries and expenses of Utility employees engaged in the valuation of, and negotiation for, ROW; amounts paid to independent fee appraisers for appraisal of the ROW; recording costs; deed fees; and similar costs normally paid that are incidental to land acquisition. These costs shall not be lumped together but shall be broken down as separate line items in the cost estimate, with estimated quantities and units.

Payment of property damages necessary for a utility adjustment is reimbursable when properly documented. A valuation of the replacement ROW must be conducted before the initiation of negotiations. Losses to improvements such as crops, timber, fences, and gates caused by utility construction will be considered as damages and will be properly chargeable by the Utility as a construction or adjustment expense. No reimbursement is permitted for damages caused by negligence on the part of the Utility or its employees.

Existing record documentation affirming a Utility's property interest at the present facility location needs to be submitted to NDOT. Upon completion of the utility adjustment, the Utility's prior property interest will be quitclaimed to NDOT as shown in the Utility Project Agreement.

7.8.3.8 Salvage

The estimate must contain appropriate credits for salvage and accrued depreciation value as follows, if applicable:

- If existing materials are to be removed from the project as part of the adjustment or relocation of the Utility's facilities, a credit must be given for their value against the net cost of the adjustment.
- If materials are to be restocked, the credit should be in an amount comparable to the prices charged for similar materials when issued from the Utility's stock.
- If the salvaged materials are to be sold as junk or for scrap value, that amount should be credited to the net cost of the adjustment.
- If the salvaged materials are deemed to have no value and are disposed of with no value being returned to the Utility, then a credit does not need to be applied to the adjustment's net cost. Justification should be provided to substantiate removal.

NDOT or the LPA will verify the disposition of salvage materials in their construction diary, and a statement as to the disposition should accompany the billing for the adjustment.

7.8.3.9 Betterment

The costs to functionally replace a Utility's facility shall be considered non-betterment costs. Improvements made to a Utility's facilities that are required by (1) applicable federal or state law, (2) local codes and regulations, (3) industry standards or practices accepted by NDOT, (4) replacement of devices or materials no longer regularly manufactured with the next highest grade/size, or (5) betterments for which there are direct benefits and /or that are required for the transportation project may also be considered non-betterment.

A Utility's detailed cost estimate shall separately identify the cost of any elective betterment included within the Utility's project. Elective betterment is any upgrading of the facility being relocated that is

not attributable to the highway construction and that is made solely for the benefit of, and at the election of, the Utility and is not required by (1) federal or state law, (2) local codes and regulations, or (3) industry standards or practices accepted by NDOT (see 23 CFR § 645.105).

NDOT will evaluate and approve the elective betterment calculated by the Utility.

Elective betterment credit is computed as follows:

1. Prepare a plan and cost estimate for replacement of the existing facility in the most economical manner, as required by the transportation construction project: *(A)*.
2. Prepare a second plan and cost estimate including the betterments that the Utility elects to build: *(B)*.
3. Subtract the two (above items) from one another to arrive at the difference between the two: *(B) minus (A) = (X)*
4. Compute a betterment credit percentage based on the ratio of the result *(X)* in the bullet above to the betterment estimate *(B)*: $(X)/(B)$ = Elective Betterment Credit Percentage.
5. Apply the elective betterment percentage to the final billing of actual costs incurred in building the "bettered" facility *BEFORE* deducting accrued depreciation, if applicable, and salvage credits.

Table 7-1. Example Computation of Elective Betterment Percentage

Estimated Total Cost of Relocation:	$1,000,000 *(B)*
Non-betterment Estimate	- 700,000 *(A)*
	$ 300,000 (difference) *(X)*
Elective Betterment Credit Percentage:	$ 300,000 *(X)* / $ 1,000,000 *(B)*
	= 30% Betterment Credit

7.9 Build America, Buy America

Build America, Buy America (BABA) requires the use of domestic steel, iron, manufactured products, and construction materials in USC Title 23 funded highway contracts. The use of foreign steel or iron materials or products in a federal-aid project is prohibited with few exceptions (e.g., use on a temporary basis; use of manufactured products that are not predominantly steel and iron; minimal use; under nationwide or individual waivers [very rare]). The Buy America statute at 23 USC 313 was modified by the Moving Ahead for Progress in the 21st Century Act, Section 1518, to require Buy America on the basis of a contract's associated NEPA documentation. All contracts, irrespective of funding source, are subject to Buy America compliance if any contract to construct a portion of a project subject to NEPA is or has been funded under USC Title 23.

Build America, Buy America requirements apply to all utility relocations regardless of whether the Utility or NDOT is financially responsible for the relocation. NDOT-funded non-federal-aid projects will be developed so they are eligible for federal aid if the funding source changes. All steel and iron permanently incorporated into a Utility's project must be manufactured or produced, including the application of coatings, in the United States, as required under the federal Buy America requirements of 23 USC § 313 and applicable regulations, including, but not limited to, 23 CFR § 635.410 and the guidance of FHWA's Construction Program Guide.

7.9.1 Application

The Utility will fully comply with all federal BABA requirements applicable to a federal-aid transportation project and will not permanently incorporate into the utility project any materials, supplies, parts, or equipment that do not fully comply with all BABA requirements.

The Utility shall not accept delivery of any steel, iron, manufactured products, or construction materials to be permanently incorporated into a utility project without a certification from the supplier or provider stating that the steel or iron complies with the federal BABA requirements. The Utility shall immediately notify NDOT if the Utility becomes aware that steel or iron was permanently incorporated into the utility project without a proper certification of compliance with the BABA requirements. When requested, the Utility shall take all actions deemed necessary by NDOT to remedy non-compliance or to prove compliance with the BABA provisions. The Utility shall retain a copy of, and provide to NDOT or FHWA, all BABA documentation, including, but not limited to, certifications, for a period of 3 years after the date of final payment received by the Utility. The requirements of this section do not include products for which Buy America waivers have been granted under 23 CFR § 635.410 or as otherwise directed by the FHWA "Construction Program Guide."

7.9.2 Availability and Schedule

The availability and schedule of obtaining BABA-compliant materials should always be taken into consideration and included in the utility project schedule.

7.9.3 Certifications and Mill Reports

The Utility shall provide to NDOT copies of all certifications received when the Utility submits invoice(s) for payment. NDOT will not pay any invoices submitted by the Utility if the Utility cannot prove compliance with BABA requirements for federal-aid transportation projects. The Utility shall remove and replace BABA-compliant materials if NDOT subsequently determines that the Utility has not met the federal BABA requirements.

7.9.4 Non-compliance

In the detailed cost estimate, each BABA item should be identified so it is easily recognized as an item that requires documentation of compliance. If a Utility completes its project but is unable to provide all necessary BABA certifications, the Utility may, in NDOT's sole discretion, be required at its sole cost to remove all non-compliant or non-certified materials and install compliant materials.

7.10 Private Utility Easements

Federal law requires that the State have sufficient control over the property on which a project is constructed so it is devoted "exclusively to public highway purposes" (23 CFR § 1.23). State law gives priority to NDOT when a utility easement or ROW crosses, will cross, or is on NDOT property. Accordingly, NDOT requires that a Utility's property rights be subordinated and relinquished to NDOT property in exchange for payment of the costs of the functional replacement of the utility facilities.

7.10.1 Replacement Easements

In instances where utility facilities are to be relocated off the highway ROW and be eligible for reimbursement, the Utility will quitclaim or otherwise release any property rights it holds within the ROW. If the Utility refuses to quitclaim, NDOT will not participate in the cost of replacement ROW.

Utilities should coordinate with NDOT early for the approval of the estimated cost of the replacement easement to ensure reimbursement and that acquisition of the easement does not impede the critical path of the NDOT schedule.

7.10.2 Subordination and/or Relinquishment

When the State acquires permanent easements or fee title for the State's project in areas in which the Utility has an existing easement or fee title for its utility facilities, the parties agree that the State's property rights will be primary, and the Utility hereby subordinates and relinquishes its property rights to property rights of the State in those areas. The subordination and relinquishment will become effective when the Utility receives payment from the State for the cost of functional replacement of all or part of the Utility's existing utility facilities.

If NDOT determines, in its sole discretion, that the Utility is not required to relocate its facilities as a result of the State's project, then the Utility will retain a right to a one-time only reimbursement for non-betterment relocation costs required by a future state project when the following conditions are met:

1. The Utility presently occupies a private easement.
2. The state property for the State's project will encompass some or all of the Utility's easement, but relocation of the utility facilities will not be required for the State's project.
3. The Utility agrees to subordinate its property rights in the part of its easement that will be in NDOT ROW.

NDOT and the Utility will enter into a Joint Use Agreement to document the Utility's right to future reimbursement. The Utility will further be required to obtain a Permit to Occupy NDOT ROW and to obtain any necessary future permits for repair, reconstruction, or maintenance of the part of the utility facilities located on NDOT ROW.

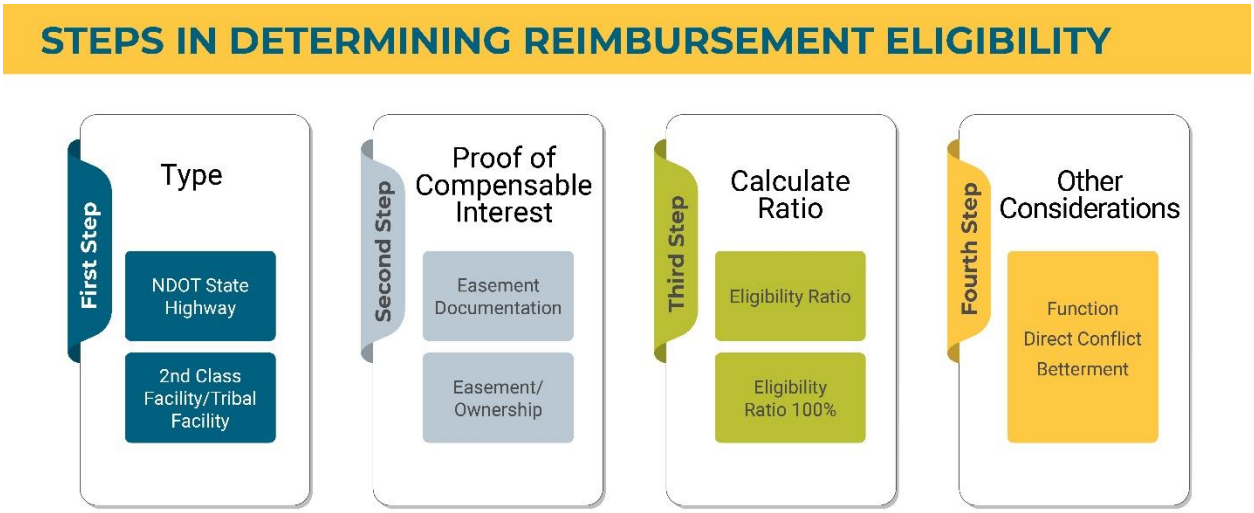
7.11 Reimbursement Eligibility Requirements

NDOT will determine, in its sole discretion, whether, and to the extent that, a Utility's project is eligible for reimbursement by the State. The State agrees to reimburse the Utility for eligible non-betterment costs of the Utility's project when the State determines all the following provisions are met:

- The Utility has sufficiently identified and documented a conflict between the State's project and the Utility's existing facilities.
- The Utility's project functionally replaces the Utility's existing facilities that are in conflict with the State's highway project.
- The Utility's project costs incurred are justified and sufficiently documented.
- The Utility's project is constructed according to the final plans and specifications.
- Either the Utility's existing facilities are located outside of state property and on private property or the Utility possesses a previously granted right to be paid for relocation of the utility facilities located within state property.
- The Utility's existing facilities are located either within the corporate limits of a second-class municipality or within the limits of a tribal reservation.
- The Utility's project conforms to 23 CFR Part 645, Subpart A, Utility Relocations, Adjustments, and Reimbursement; 23 CFR Part 645, Subpart B, Accommodation of Utilities; and this policy.
- The Utility has complied with all provisions of this Utility Accommodation Policy.

The steps for determining reimbursement eligibility are shown in Figure 7-7.

Figure 7-7. Steps in Determining Reimbursement Eligibility



7.11.1 Eligibility Percentage and Proof of Compensability

NDOT shall review the State and Utility's project plans to determine (1) what percentage of the Utility's existing facilities is located on state property and (2) what percentage is located off of state property in utility easements. These percentages will be used as a part of the State's determination of the reimbursement eligibility proportion of the Utility's project.

In all cases where the Utility is requesting reimbursement, the burden of proof of eligibility for reimbursement rests with the Utility. It is the responsibility of NDOT to diligently examine documentation provided by the Utility.

When the conflict lies solely within the joint use / acquisition of the Utility's property, the eligibility ratio is 100 percent.

For a Utility Project Agreement to be approved, the Utility's compensable property interest or statutory right must be clearly documented and supported by verifiable evidence, such as a recorded easement, public utility easement (PUE), or fee title ownership.

7.11.1.1 Easement

A utility easement is a specific right to occupy a legally described parcel of land that has been, or can be, recorded in the real property records of the county.

7.11.1.2 Public Utility Easements

PUEs are rights obtained by cities, counties, or other local agencies when property is platted or re-platted for development. ROW is reserved to accommodate utility access to the development. This ROW is intended for use for all utilities and therefore conveys a compensable interest to any utility placed within the easement. However, the PUE does not convey a replacement ROW interest to any occupants of the PUE.

All Utilities within a PUE have compensable rights if any portion of the easement were to be incorporated into the proposed ROW limits of a transportation project. The incorporated portion gives

the Utilities within that portion the right to request NDOT cost participation in any adjustment to those specific facilities.

The Utilities located within the easement would be eligible for costs to relocate or adjust their facilities on a one-time basis and would not be eligible to retain any future compensable rights.

7.11.1.3 Fee Title Property

If a Utility owns the fee title to property required for a proposed highway project requiring ROW, it is NDOT's preferred practice to acquire the fee title to that property. If the facilities or operations of a public utility are affected on the required ROW, the facilities will be eligible for state cost participation. This cost participation will be in accordance with the appropriate Utility Project Agreement and/or the Utility Joint Use Agreement (if one exists).

If a Utility owns or occupies ROW or has plant facilities located on land owned by the Utility and existing facilities are no longer needed or are not part of the Utility's system requirements for delivering service to the public, payment for the land or utility facilities needed to accommodate construction should be handled as a ROW acquisition matter. The land and facilities must therefore be appraised for acquisition.

Other items that may need to be examined to determine if they are eligible for ROW acquisition are as follows:

- Control of access rights to the property owned for utility facilities if the facilities can be accessed from another location
- Substations, water treatment plants, lift stations, and power plants that are no longer needed to maintain utility capabilities or may be made obsolete by other methods that are the result of adjustments to their facilities in other locations
- Water wells or cathodic protection wells that do not need to be replaced
- Excess property located around utility facilities if the acquisition will not hinder the function of the facilities
- Property owned by the utility housing personnel, equipment, or materials should always be acquired by the ROW acquisition process.

7.11.2 Partially Eligible Relocations

In many instances, a utility relocation or adjustment will involve a utility facility located on both existing NDOT ROW under a Permit to Occupy and on a Utility-owned easement. NDOT's reimbursement of relocation costs attributable to the relocation will be proportional to the Utility's existing occupation of NDOT ROW and the new occupation of the total existing and proposed ROW. The ratio derived from this proportion is the eligibility ratio. This ratio is applied to all costs for the relocation and is the basis of reimbursement.

There are two methods of deriving an eligibility ratio. First, is the Linear Method, which is a proportional ratio of the eligible line length over the total line length of the facility in NDOT's new ROW footprint. The second method the Pole Count Method, which uses the number of poles to be relocated within the proposed ROW over the number of poles in both existing and prosed ROW. The Pole Count method should be used when the Linear Method would not provide an equitable reimbursement for the work performed.

Eligibility for reimbursement of utility adjustment costs must be clearly identified. Eligibility issues must be resolved before NDOT approval of the Utility Project Agreement.

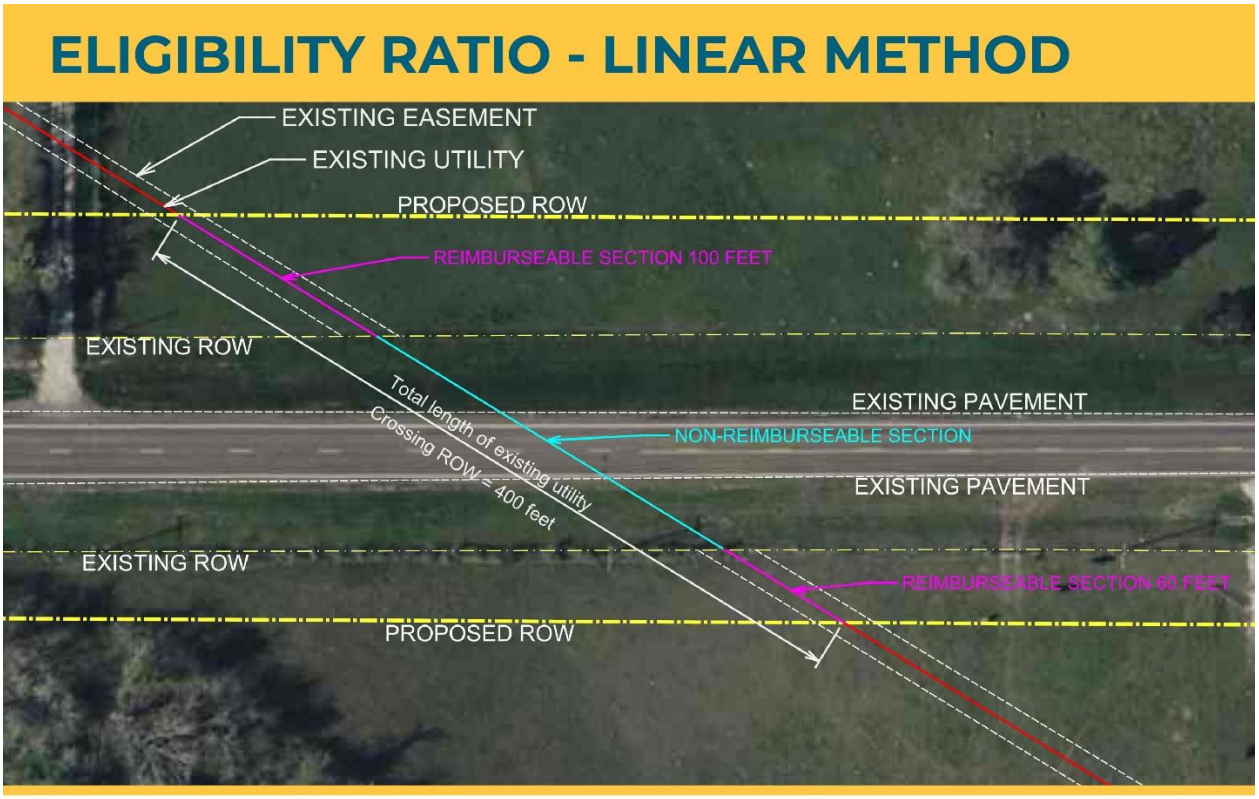
7.11.2.1 Linear Method of Calculating Partially Eligible Relocations

The Linear Method is normally used for underground pipelines and cables.

An example of a Linear Method of calculating an eligibility ratio would be if the total length of a utility facility segment is 300 feet, and 100 feet of the Utility's existing facility is presently located on highway ROW by statutory right and 200 feet is presently occupying utility ROW (or utility easement), then NDOT will participate in 66.67 percent (200 feet / 300 feet) of the total cost of the required adjustment after deducting any credits due for betterment and salvage.

Figure 7-8 shows an example of calculating an eligibility ratio using the Linear Method.

Figure 7-8. Linear Method for Eligibility Ratios



Total length of existing utility crossing ROW = 400 feet

Length of existing utility crossing ROW = 400 feet

Eligibility Ratio

$\frac{160'}{400'}$ = 0.40 or 40% eligible for reimbursement

Reimbursement will be 40% of the total estimated relocation cost

7.11.2.2 Pole Count Method of Calculating Partially Eligible Relocations

The Pole Count Method is normally used for the line pole relocations of electric and overhead communication facilities. Guy poles, push braces, and down guys must be excluded from the ratio because these items are considered supporting structures.

In developing the ratio, line length or number of poles is restricted to existing facilities, in conflict, located within the existing and proposed highway ROW. Existing facilities that are not in conflict with the highway project and located outside the existing and proposed ROW limits will not be used in developing the ratio. However, the percentage established from the ratio will be applied to all

applicable costs necessary for the adjustment. If multiple underground cables are in the general location and owned by the same Utility, then the overall length of the facility will be used to calculate the eligibility ratio. When calculating an eligibility ratio, counting the combined length of the pipe and the cable carried within the pipe is not acceptable.

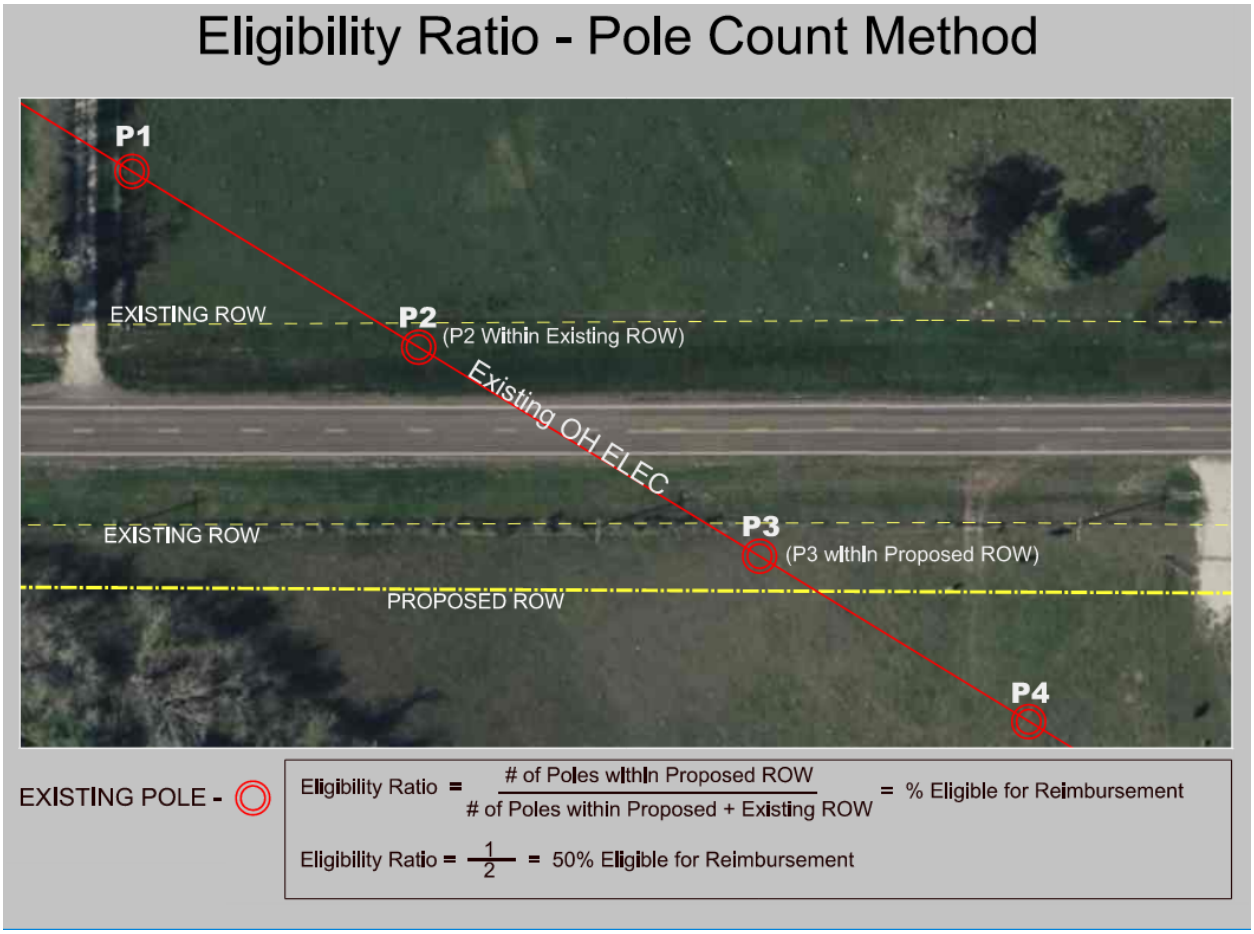
All applicable adjustment costs will be ineligible for NDOT cost participation when line poles are on highway ROW by statutory right, and guy poles, push braces, and/or down guys are on Utility-owned ROW. However, NDOT will participate in ROW costs incurred in conjunction with adjustment of the guy poles, push braces, and/or down guys.

The basis for developing the eligibility ratio for underground pipelines, cables, overhead power, and communication facilities is as follows:

- Although line lengths for pole line adjustments are generally not used as a basis for determining an eligibility ratio, special conditions (e.g., transmission towers, railroad intersections) may warrant consideration for such handling. When these conditions exist, all factual data must be submitted to the NDOT Utility Coordinator for determination regarding the appropriate method of handling.
- When facilities are to be removed and not replaced, the establishment of an eligibility ratio must not include these facilities. Utility adjustment charges must be prorated only for those facilities being functionally replaced.
- The State's participation must be limited to replacement-in-kind of the Utility's property interest, including length, width, and type. The established eligibility ratio must be applied to all costs associated with the accommodation.

Figure 7-9 shows an example of calculating an eligibility ratio using the Pole Count Method.

Figure 7-9. Pole Count Method for Eligibility Ratio



7.11.2.3 Composite Eligibility Ratios

On any given project, there may be multiple utility adjustments at different locations within the highway ROW project limits. When these different locations contain different line sizes and/or eligibility ratios, it will be necessary to calculate a composite eligibility ratio (CER). A CER is calculated to mitigate administrative and accounting difficulties encountered with simultaneous work sites having different individual eligibility ratios. The total cost of the adjustment should include all costs associated with the adjustment, including engineering, construction, administration, inspection, etc. When calculating eligibility ratio, counting the length of the pipe and the cable carried within the pipe is not acceptable.

The formula for determining a CER is:

CER =X+Y+Z/A+B+C

Where:

A = Total cost of adjustment of Utility "A"

B = Total cost of adjustment of Utility "B"

C = Total cost of adjustment of Utility "C"

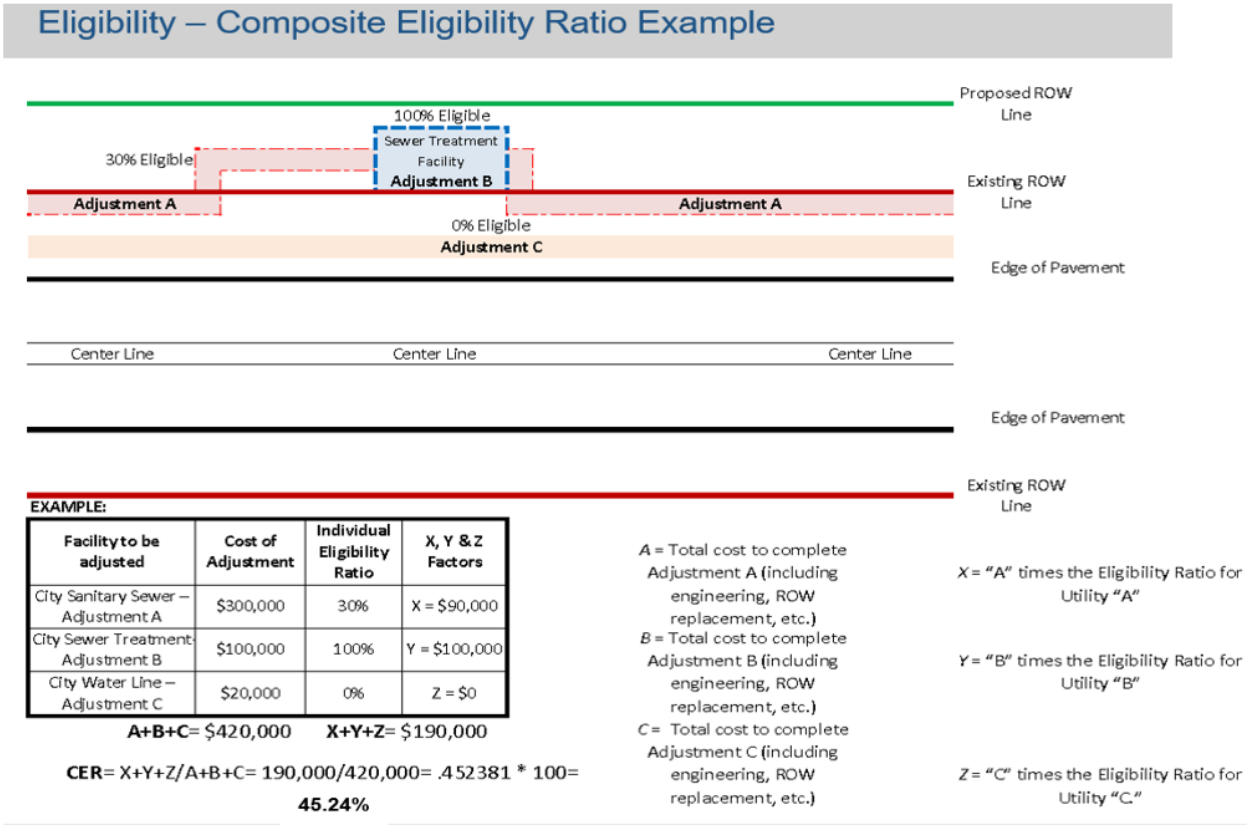
X = "A" times the eligibility ratio for Utility "A"

Y = "B" times the eligibility ratio for Utility "B"

Z = "C" times the eligibility ratio for Utility "C"

An example CER is shown in Figure 7-10.

Figure 7-10. Composite Eligibility Ratio Example



7.11.3 All Other Required Permits

The Utility must possess all other permits necessary for construction of its project prior to beginning construction in conformance with Chapter 1 and 4 of this policy. Other permits include, but are not limited to, those required by NEPA, the city, the county, or other regulatory authorities. NDOT assumes no responsibility for the Utility's compliance for permits outside its area of jurisdiction.

7.11.4 Approvals and Signature Authority

Because NDOT's Master Agreement and Utility Project Agreements, as well as other utility agreements, are binding contracts between the Utility and NDOT, it is necessary that authorized representatives execute the agreements. These representatives of the Utility must have been granted such authority under charter or by-law provisions, a resolution, and/or governing documents of the utility company. The grant of signature authority by the Utility ensures that the person signing on behalf of the Utility has authority to bind the Utility to the terms and conditions of the agreements and documents.

Utility companies may also grant signature authority to a specific position at the utility company rather than naming a particular individual. When a utility company authorizes a certain position of the utility company rather than naming an individual, regardless of who the person is who holds that position at

the utility company, that position will continue to have authority to execute documents as an authorized representative of the utility company. Any changes in staffing at the utility company are resolved when the utility company names a position rather than an individual. This allows the signature authority granted by the utility company to remain valid despite variability of the individual person who holds the position.

It is helpful to ask the utility company for a "blanket" authorization that grants signature authority to a specific individual, or a specific position, at the utility company to execute agreements and documents on all highway adjustment work included in the Utility's system. This blanket authorization should be addressed in the Master Utility Agreement and would be applicable to all Utility Project Agreements for the Utility.

7.11.5 Uncooperative and Non-responsive Utilities

While it is assumed all stakeholders are committed to transportation projects progressing toward completion for the mutual benefit of the traveling public and citizens of the state, this is not always the case. A utility company's primary goal and responsibility is to provide service to its customers. While not opposed to the transportation project, a utility company may view the proposed highway improvement and the need to relocate its utility facilities as an added cost and a drain on its resources even when their current occupation of NDOT ROW is provided by the State. In other cases, the Utility owns a property interest, such as an easement, and the impacts are viewed similar to those on a landowner whose property is being acquired for the project and the benefit of the public. Additionally, a Utility often does not have the funds to pay for the design and relocation of its facilities. For these reasons, NDOT promotes communication, cooperation, and coordination with all utility companies.

It is expected that a Utility communicate and negotiate with NDOT in good faith to reach an agreement on the terms of the relocation. Unfortunately, a Utility may become non-responsive as evidenced by:

- not communicating, avoiding phone calls, and not responding to emails or letters;
- missing coordination meetings;
- not cooperating with NDOT to avoid or resolve utility conflicts with the proposed project.

To overcome these lapses, a proactive effort must be used early in the process that includes the following:

- Communication. A continuous flow of information among all parties involved in the utility adjustment process is vital. Therefore, it is important for all to respond quickly to requests for information.
- Cooperation. NDOT and Utilities must cooperate and prioritize the utility adjustments, each doing their part as follows:
  - NDOT must:
    - eliminate conflicts with utility facilities through modifications in project design when feasible;
    - include utility adjustment work in the highway contract when possible and in agreement with the Utility.
  - Utilities must begin preparing utility adjustment plans when NDOT plans show a profile, basic drainage requirements, and pavement structure design.

- Coordination. NDOT should take the lead in coordinating the utility adjustment process as follows:
  - NDOT should coordinate the following:
    - Notification of project schedules, delays, or revised letting priority
    - Facilitation of a cooperative venture among two or more utilities for the collective performance of the work (e.g., common trenching, joint occupancy)
    - Notification of any change orders that occur after letting of the construction contract
  - Utilities must notify NDOT of the following:
    - Any change in company name or ownership
    - Any mergers and acquisitions
    - Financing issues
    - Location of utilities
    - Manpower availability
    - Material lead times
    - Unique design considerations
    - Windows of adjustment time and ability to meet NDOT schedules

When coordination efforts are not enough to reasonably mitigate utility conflicts, it may be necessary to escalate the project issues to a higher authority within the utility company or NDOT. If a Master Agreement is in place, a list of the utility company officers and contact information should be included. Many times, the appropriate individuals are unaware of the problems and are willing to assist in progressing the transportation project and overcoming the project-level issues.

It is important for all parties to:

- listen and remain calm;
- ask questions;
- do not be defensive or reciprocate negative behavior;
- make the commitment not to be confrontational;
- be sure to focus on the project's goals and organizational values, not just the individual entity's goals.

Additionally, if a local utility company is involved, a local county or city official may be able to communicate the public's backing of the project and show that cooperation mutually benefits all.

In all cases, documentation of communications, meetings, and correspondence should be prepared and maintained for use as required.

7.11.6 Failure to Enter Into a Project or Permit Agreement

A Utility will be deemed as non-responsive if NDOT notifies a Utility and gives reasonable time to respond and/or relocate as needed and a response is not received, or if a response is received, no information is provided, or data and schedule commitments have not been made. At that time NDOT will send written notification to the Utility Owner documenting the non-response in an attempt to initiate communication and cooperation.

When NDOT encounters a Utility Owner that is non-responsive, cannot reach an agreement, the Utility Owner refuses to relocate, or refuses to claim ownership, NDOT may exercise its rights and authority to affect the necessary adjustments through the right of Eminent Domian or other legal remedies.

Additionally, if the Utility Owner does not comply and is non-responsive, NDOT may consider legal options to determine the utility facility abandoned and subject to removal in whole or in part for the construction of the highway improvement. NDOT may remove the utility facilities by inclusion in the highway improvement contract. After completing the work, the Utility Owner will be invoiced for the work performed. If the invoice is not paid, NDOT will refer the matter to the Office of the Attorney General for further action.

7.12 Performing the Utility Project Adjustment

7.12.1 General

The State will provide the Utility with an LOA to proceed with construction. Construction costs incurred by the Utility prior to the date the Utility Project Agreement was authorized are not eligible for reimbursement. All work performed in conjunction with the Utility Project Agreement must be in compliance with Chapter 8 of this policy.

In addition to coordinating with NDOT, Utility Owners must coordinate with one another when more than one Utility desires to use the same ROW. Such coordination is required to ensure that all utility facilities will be placed in a way that avoids interference with each other during construction, normal use, and maintenance. All relocated utility facilities must be constructed as planned so as not to interfere with other relocating or existing utility facilities. NDOT may require utility facilities not relocated per the Utility Project Agreement or approved plans to be brought into compliance at no expense to NDOT.

7.12.1.1 Utility Owner's Ongoing Responsibility

The Utility is responsible for damages that occur from the installation of the facility. If the Utility or its agent damages the ROW, including, but not limited to, the roadway, shoulders, ditches, and structures, or fails to restore the ROW to the satisfaction of NDOT, the non-betterment cost of restoring or repairing the ROW by NDOT will be borne by the Utility. In some cases, this may involve the performance and indemnity bond posted for the subject work.

7.12.2 Pre-construction Activities

7.12.2.1 Kickoff Meeting and Schedule

The Utility shall advise the NDOT Project Manager and the NDOT Utility Engineer in writing at least 1 week prior to (1) the expected start date and (2) the expected completion date of the utility project. The Utility shall promptly update the NDOT Project Manager of any changes in the Utility's expected project completion date. The Utility shall also promptly advise the NDOT Project Manager in writing of the utility project completion.

If a Utility does not comply with the schedule agreed to in the Utility Project Agreement, then the Utility may be responsible for costs associated with delay claims incurred by NDOT from the highway contractor.

7.12.3 Inspections

At the discretion of the NDOT District Engineer or designee, a highway inspector may be assigned to any utility work covered under a Permit to Occupy or Utility Project Agreement on highways open to traffic or on a highway project if, in the District Engineer's opinion, inspection is necessary. Any inspector assigned to the installation operations will have full authority to act on behalf of NDOT and to stop all work not in compliance with the approved plans, permit, and this policy. The inspector shall have the authority to perform field tests and take material samples for laboratory tests for BABA requirements.

The degree of inspection of utility construction may vary with the nature and location of the utility work due to its impacts on the completed transportation facility.

Construction records must be maintained by the utility inspector to ensure that work proposed in a Utility Project Agreement or Permit to Occupy is accomplished according to the agreement. In addition, records must be maintained to support the payment request submitted at the conclusion of the work, to verify satisfactory performance, and to recommend payment to the Utility.

Inspection requirements for utility relocations on NDOT projects are further detailed in Section 8.3 of this policy.

7.12.4 Restoration of Services

The determination of whether NDOT has some financial responsibility for reestablishing utility service to a property depends on whether that property constitutes a partial or whole acquisition of property rights. If the utility line is presently serving property or properties that are subject to acquisition in their entirety, NDOT will not reimburse the Utility for the installation of new lines but will coordinate this situation through the NDOT ROW Division. NDOT cannot provide service to property or properties where service did not previously exist. If, however, there is only a partial acquisition of property or properties within the proposed ROW and utility service is presently provided, NDOT will participate in the cost of providing a new service to the remainder. NDOT will also provide for installations parallel to the proposed ROW line to make service available to the approximate location serviced by the present utility facility.

For utility facilities providing service to an improvement either partially or wholly within the area of ROW acquisition, NDOT will not reimburse the Utility for the installation of new private service lines through the utility process but rather through the ROW acquisition process. The value will be established through the ROW appraisal process. The Utility or the consumer is responsible for providing utility facilities to the new or relocated residence or business.

Backflow prevention assemblies, or backflow preventers, are required by municipalities and other government agencies for water lines to protect the public water supply from becoming contaminated by the reversal of flow of water and other liquids, gases, or other substances into the public water supply.

Backflow preventers are found on private property and are typically found on the private side, downstream, of the water meter. It is the responsibility of the property owner to install and maintain the backflow preventer when one is required.

The cost to cure a backflow prevention system, which is required to be adjusted due to highway construction, should be included in the appraisal of the parcel where the backflow preventer is located. The property owner is typically responsible for hiring a licensed plumber to install a new backflow preventer.

7.12.5 As-Builts or As-Installed

Upon completion of the utility project construction, the Utility shall supply accurate as-built drawings within 30 days to the NDOT Utility Coordinator. The as-built drawings must include the following information:

- Actual path alignment
- Depth of cover for the casing
- Actual length
- Product diameter
- Casing diameter
- All final elevations

The format of a deliverable must include a PDF drawing with this information and GIS georeferenced datafile (in .KMZ or ESRI shapefile/geodatabase format) and must be according to NDOT standards. Additional information on file types is provided in Section 5.4.9.

7.13 Changes in the Utility Project Agreement

If after execution of the Utility Project Agreement, changes are required to the plans for relocation and/or cost estimate, NDOT will review the Utility's revised plans, specifications, and detailed cost estimate, and when acceptable, NDOT and the Utility shall enter into a Supplemental Utility Project Agreement to amend the Utility Project Agreement. Supplementals are required when the scope of work changes or unanticipated conditions require changes in construction methods or the level of effort from the original agreement. See Section 8.5.5 of this policy additional information.

Prior to, or at the time of, final billing, revisions shown in as-built plans will be required so that NDOT files can reflect the true location of the adjusted facility. In addition to revisions regarding location, any additions or deletions to the original design of the adjusted facility should be reflected in the submission of revised plans.

Any changes in work may require a revision of the betterment percentage established in the approved Utility Project Agreement. These revisions must be applied appropriately to the final billing for the utility project. The Supplemental Utility Project Agreement will be considered the final plans and final cost estimate. A Supplemental Utility Project Agreement must be issued on the State's standard Supplemental Utility Project Agreement form prepared by the State and signed by the parties.

7.14 Invoicing, Reimbursements, and Audits

A Utility Project Agreement and LOA must be in place before invoicing with documentation is received and the reimbursement may be processed. The Utility will be reimbursed on an actual cost basis or lump sum by the use of work order records for each utility project. See Section 7.8.3 of this policy for additional information.

7.14.1 Invoice and Supporting Documentation

Records of actual costs incurred form the basis for reimbursement to the Utility. In many cases for billing purposes, contractor invoices, certified ledgers, timesheets, and other indirect methods can be used to substantiate costs. Invoices for reimbursement must be in a form that the actual costs can be compared with the Project Utility Agreement estimate.

7.14.2 Partial Progress Payments

The Utility may submit progress invoices for the portions of its utility project that have been completed. All invoices must adequately substantiate the work completed for the Utility's project. The Utility agrees not to submit progress invoices totaling less than $2,500.00. The State will make progress payments based on satisfactory prosecution of work in accordance with the Utility Project Agreement for 100 percent of the amount invoiced up to, but not to exceed, 95 percent of the amount of the final cost estimate. The State will make a reasonable effort to pay the Utility within 30 days of receipt of the Utility's invoice. Final payment will be subject to completion of the State's final cost audit report at the discretion of the State.

The Utility shall submit its partial progress payment invoice with adequate documentation (invoices, accounting ledgers, and/or time sheets) to substantiate the partial progress costs of the utility project. A complete summary of all costs to date must be included in a form consistent with the estimate and previous invoices.

7.14.3 Final Billings

The Utility shall submit its final invoice upon completion of the utility project. The Utility's final invoice must be noted as "final" on the invoice, adequately substantiate the costs of the utility project, and include a complete summary of all costs from all invoices in a form consistent with the estimate and previous invoices. Upon satisfactory completion of the utility project and receipt of the Utility's final invoice, the State will pay up to, but not to exceed, 95 percent of the amount of the final cost estimate for the Utility's project. Final payments are subject to final cost audit at the discretion of the State.

Utility relocation costs, as prescribed by 23 CFR § 645.117, shall be recorded by means of work orders in accordance with an approved work order system except when another method of recording costs has been approved by State. Invoices shall include a complete summary of all costs, including supporting documentation and sufficient detail so that costs incurred can be compared item-by-item with the final cost estimate submitted by the Utility. The Utility shall state on the invoice the start and completion date of construction of the utility project. Buy America certificates must also be submitted with the invoice.

7.14.4 Audits and File Retention

Upon the State's determination that the Utility has completed the utility project, the State or its authorized representative may complete an audit of the payments made under the Utility Project Agreement. The parties understand that the audit may require an adjustment of the payments made under the Utility Project Agreement. Based on the final cost audit report, the Utility agrees to reimburse the State the amount of any overpayment, and the State agrees to pay the Utility the amount of any underpayment. The acceptance by the Utility of the final payment will release the State from all claims and liability, whether by the Utility, the Utility's representatives, or the Utility's assigns, for all aspects of the utility project arising out of this Agreement.

The Utility must retain all project records for 7 years to meet NDOT file retention requirements.

Chapter 8 Construction, Maintenance, and Inspection

8.1 General Provisions

The Utility Owner requesting approval to conduct work within NDOT ROW shall provide and maintain all necessary precautions during construction and future maintenance activities to protect the traveling public, pedestrians, bicyclists, road users, other utilities, and the transportation facility. All work on NDOT ROW must be coordinated with the NDOT District Office and be in compliance with their Permit to Occupy or Utility Project Agreement. Utility Owners must follow the MUTCD, maintain the safety of the traveling public, and coordinate with adjacent Utility Owners. The Utility Owner will be responsible for all damages caused by the installation or maintenance of the utility facility.

The following describes activities and procedures that take place after a Permit to Occupy highway ROW and/or a Utility Project Agreement has been approved and the utility-related construction work has commenced.

For any work being conducted on NDOT ROW, proper signs, signal lights, flaggers, and other warning devices shall be installed in conformance with the most recent edition of the MUTCD. Activities, procedures, and guidelines for parking vehicles and equipment, excavation within ROW and near signalized intersections, removal of excavated materials, pavement cut repairs, and related work items are provided herein.

In addition, to coordinating with NDOT, Utility Owners must coordinate with one another when more than one Utility is using the same ROW. Such coordination is required to ensure that all utility facilities will be placed in a way that avoids interference with each other during construction, normal use, and maintenance. All relocated utility facilities must be constructed as planned so as not to interfere with other relocating or existing utility facilities. NDOT may require utility facilities not relocated per the Utility Project Agreement or approved plans to be brought into compliance at no expense to NDOT.

The Utility Owner will be solely responsible for any damage to the utility facilities or any loss to NDOT, adjacent utilities, or others caused by the construction, operation, or maintenance of the utility facility. A Utility is responsible for the construction and maintenance of its utility facility, including installation, adjustment or relocation, replacement, and repair. Construction and maintenance must conform with approved submitted permit plans and specifications.

An approved/executed permit and/or Utility Project Agreement with plans must always be on site for review while utility construction is being performed. A digital copy of the executed permit and approved plans may suffice to satisfy this requirement. This should include approved permits to get to and from their facility, access, or other permits such as required from a railroad.

8.2 Emergency Situations

Under emergency conditions, the SOC should be contacted at 402-331-5993 as soon as possible to document the emergency conditions. The SOC will then notify the appropriate NDOT office. For further information, see Sections 4.3.2 and 6.5 of this policy.

8.3 Communication and Coordination Meetings

Communication with the NDOT District Permit Officer is required before, during, and after the installation of a utility facility on NDOT ROW. During installation or maintenance of a utility facility under a permit and not part of an NDOT construction project, notifications of starting work, kickoff

meetings for larger installations, and inspection meetings all may be required with the NDOT District Permit Officer.

On NDOT construction projects, coordination meetings with the NDOT District Permit Officer, NDOT Utility Coordinator, NDOT Project Manager, highway contractor, and other stakeholders, including other Utility Owners, are essential to maintaining schedules and avoiding additional conflicts. Construction phase meetings that the Utility Owner is expected to attend include utility workshops, utility relocation kickoff meetings, utility pre-construction meetings, NDOT project pre-construction meeting, and progress meetings. See Section 7.12 of this policy for additional information.

8.4 Utility Installation Inspections

At the discretion of the NDOT District Engineer or designee, a highway inspector may be assigned to any utility work covered under a Permit to Occupy or Utility Project Agreement on NDOT highways or highway construction projects. Such inspector shall have the right to complete an inspection but shall not have a duty to do so. When inspection occurs, any NDOT inspector assigned to the installation operations will have full authority to act on behalf of NDOT and to stop all work that is not in compliance with the approved plans, permit, and this policy. The inspector shall have the authority to perform field tests and take material samples, including inspection for compliance with BABA requirements.

The degree of inspection of utility construction may vary with the nature and location of the utility work due to its impacts on the transportation facility and the traveling public. For installations of a short duration and not on an NDOT project, this may include spot checking for general conditions, traffic control, and safety of personnel and the public. On NDOT projects, the utility work conducted may require a close check to ensure that the transportation facility or project will not be adversely affected. This may include continuous and close observation of the installation location, depths of facilities within the ROW, and construction methods including backfilling and restoration operations.

Inspections and visual checks by NDOT inspectors for MUTCD compliance should require Utility personnel to provide flares, barricades, warning signs, and flaggers throughout installation or adjustment operations to protect the public and construction and NDOT personnel as follows:

- The Utility must protect (by using barricades, barriers, and signs) boring or tunneling pits, trenches near shoulders, manhole excavation, and boring of holes for communication or power poles, etc., to ensure a safe working and traveling area.
- The Utility must ensure that proper safety clear zone distances are identified and maintained free of obstacles, and that appropriate traffic barriers are installed.
- The Utility must give careful attention to any special condition that may present a safety concern, such as underground or overhead power or communication lines.

If not on an NDOT highway project, the inspector may keep a diary of the daily activities and notable events of the day. On NDOT projects (see Chapter 7.12.3), construction records must be maintained by the inspector to ensure that work proposed within the appropriate Utility Project Agreement is accomplished according to the agreement. In addition, records must be maintained to support the reimbursement request submitted at the conclusion of the work, to verify satisfactory performance, and to recommend payment to the Utility. For reimbursable relocations, the following three basic types of construction records are required based on how the utility performs the relocation and the accounting method used:

1. Actual cost adjustment performed by Utility Owner forces:
   - A daily record should be maintained by the Utility of the number and classes of employees working on the project and, if possible, the hours worked.
   - A record should be maintained in the construction diary of the Utility's major items of equipment so that billing charges may be verified.
   - Dates of any field changes or deviations from the Utility Project Agreement and the reasons for these changes should be recorded.
   - Records of materials used and removed from the job site and returned to stock or scrapped should be maintained.
2. Actual cost adjustment performed by a utility contractor:
   - The Utility Owner should be certain that units of work, as provided in the bid proposal, are measured and recorded to form a basis for checking payment to the utility contractor.
   - Diary recordings should list the station numbers of daily operations and the units of work accomplished for that period, as shown in the agreement.
   - If contract labor used by a Utility is based on a bid per hour, per day, etc., the Utility Owner should maintain records on this type of labor in the same way as for labor by the Utility's personnel.
   - Records of materials used and removed from the job site and returned to stock or scrapped should be maintained.
3. Lump sum method:
   - When the Utility Project Agreement uses a lump sum method of accounting, the inspectors are not required to keep records of labor hours, material items, or equipment time, but must be able to confirm that the work is accomplished according to the plans and specifications agreed to in the Utility Project Agreement.

Regardless, if under a Permit to Occupy or a Utility Project Agreement and the type of accounting method utilized, the inspectors must keep diary entries. The inspectors should understand that their diary records afford support for reimbursement to the Utility. These diaries should:

- document all appropriate dates;
- document inclement weather and down time;
- document verbal authorization for minor changes;
- record the locations, depths, or heights of adjusted facilities and other information necessary to coordinate transportation project and utility construction and to ensure that the utilities were installed according to approved plans/permits and meet all minimum criteria of this policy;
- document notable incidents.

For all types of Utility Project Agreements, an inspection should be completed to identify the final disposition of recovered materials, whether salvaged or scrapped, for the allowance of appropriate credits. This is to prevent any possibility that the Utility may be cited for the full value of the materials when and if a final project audit is performed. The inspector must retain either a letter from the utility company noting the time and place that the recovered materials to be salvaged or scrapped will be available for inspection, or documentation from the NDOT inspector verifying inspection of such materials.

The NDOT Project Construction Engineer or the NDOT inspector should not be concerned with placing a dollar value on the materials but rather should ensure that proper classification and disposition is made.

The NDOT Utility Section letter authorizing work under the approved Utility Project Agreement should include a request that NDOT be notified of the time and place recovered materials will be available for inspection before salvage or scrap. Upon receipt of such information, it shall be retained in District project files. When credit is allowed for salvaged material, a statement is required that all material from the original facility was covered in the credit, or that the items recovered were available for inspection and proper notice given. This statement should accompany the final billing for the project.

NDOT may not be able to inspect or monitor the Utility's project or the Utility's compliance with the federal BABA requirements during construction. If that occurs NDOT may request sufficient documentation to verify compliance. If the Utility completes its project but is unable to provide all necessary BABA certifications, the Utility may, at NDOT's discretion, be required at its sole cost to remove all non-compliant or non-certified materials and install compliant materials. See Section 7.12 of this policy for additional information.

8.5 Construction and Maintenance

8.5.1 Erosion Control

Highway ROW disturbed by the construction of utility facilities shall be returned to the original grade and elevation and all excess material removed. Utility facilities placed in areas susceptible to erosion shall have adequate protection against erosion. The ROW disturbed shall be returned to the original grade, reseeded with an NDOT approved seed mix, and mulched. Steep slopes and other areas susceptible to erosion will require the use of additional measures such as silt fence, bale checks, and erosion control blankets. An erosion control plan shall be part of the permit application. Erosion protection shall be coordinated, included in the plans, and reviewed by the NDOT District Office.

8.5.2 Work Site Access and Traffic Control

The Utility is responsible for the safety of, and shall minimize disruption to, the traveling public with proper traffic control. Safety precautions apply to utility construction as well as to the project contractor's operations as they affect the safety and convenience of the traveling public, construction personnel, and the property owners abutting the project. See Sections 4.2.3, 4.3.2.2, and 7.3.8 of this policy for additional information.

During all construction and maintenance activities, the Utility Owner is responsible for using the appropriate traffic control devices, such as signs and flaggers, as outlined in the most recent edition of the MUTCD, the State of Nebraska Supplement to the MUTCD, and NDOT's standard traffic control plans. NDOT must approve or may request additions to the utility traffic control plan, and the Utility must include it in the permit plans before commencement of any operations.

The Utility may be required by NDOT to erect, at each end of the Utility's installation, an informational sign for work associated with a utility facility on NDOT's ROW. The sign must have the Utility's contact information. Contactors should have their contact information available when working on the utility project.

Work site access shall be as follows:

- The applicant and anyone performing work on the applicant's behalf should enter the work site from either side streets or private property when reasonably possible.

- The applicant shall develop and enforce a Work Site Access and Maintenance Plan for the entrance and exit from the state highway to the applicant's work site to be used by the applicant and anyone performing work on the applicant's behalf (including, but not limited to, employees, contractors, sub-contractors, suppliers, repair or maintenance personnel, and other such personnel).
- The Work Site Access and Maintenance Plan shall, when applicable, be consistent with the most recent edition of the MUTCD.
- The Work Site Access and Maintenance Plan shall be submitted with the Permit to Occupy.

Traffic control shall be as follows:

- The applicant shall develop a Traffic Control Plan for use when construction, reconstruction, or significant operations are being completed at the work site.
- The Traffic Control Plan will be used to warn and guide the traveling public around the work being completed at the work site.
- The Traffic Control Plan must be consistent with the most recent edition of the MUTCD and NDOT Standard Traffic Control Plans.
- The Traffic Control Plan shall be submitted with both the Permit to Occupy and Utility Project Agreement.

The State will not be responsible for the development, implementation, or oversight of the applicant's Traffic Control Plan.

8.5.3 Required Notices for Starting, During, and Completing Utility Project Construction

The following notices are required from the Utility Owner prior to, during, and before completion of utility project construction:

- The Utility shall notify the NDOT Project Manager, NDOT District Permit Officer, and NDOT Utility Coordinator (only for reimbursable relocations) in writing at least 1 week prior to the expected start date and completion date of the utility project. This will allow NDOT to assign an inspector, review traffic safety concerns, and schedule a kickoff meeting, if needed. NDOT must have adequate notification to allow an inspector to be on site when a utility project is started.
- The Utility must notify NDOT 48 hours prior to proposed lane closures so appropriate notices to the public may be distributed.
- The Utility shall promptly update NDOT of any changes in the Utility's expected project completion date. The Utility shall also promptly advise NDOT in writing of the utility project completion.

If a Utility does not comply with the schedule agreed to in the Utility Project Agreement (see Chapter 7), the Utility may be responsible for costs associated with delay claims incurred by NDOT from the highway contractor.

8.5.4 Installation Methods

To maintain and protect the pavement structure and preserve the integrity of the highway, Utilities shall not cut into the pavement or concrete riprap.

Utility facilities placed beneath any existing highway shall be installed by boring or tunneling. Longitudinal installations of a utility facility across driveways and intersecting roadways should be bored. The use of explosives is prohibited.

The following may not be used unless approved in writing by NDOT:

- Jacking
- Pipe bursting or fluid/mist jetting
- Open trench construction through intersecting roadways and driveways

When boring is used for installation, bore pits are preferred to be outside ROW limits for crossings, and on longitudinal installations, bore pits shall not be within the highway clear zone.

The method of installation shall be detailed and included in the Permit to Occupy for NDOT review and approval.

8.5.5 Changes in Work, Scope, or Cost

All changes in work or scope must be coordinated with the NDOT District Permit Coordinator and the Permit to Occupy amended. When it is necessary for a Utility to make substantial changes in its utility relocation plans, whether such changes are necessitated by a change in utility requirements, highway plan revisions, or changes during construction, NDOT will determine if the proposed utility changes are acceptable from a construction standpoint. The Utility Owner will be asked to submit revised plans, as well as an estimate to cover the changes, if work is associated with a Utility Project Agreement. NDOT will review the submitted changes, and if found satisfactory, NDOT will notify the Utility Owner that the changes are acceptable and to proceed with the work. If the revised plans or estimate is not satisfactory, then the Utility Owner must coordinate with NDOT and resubmit to reach a resolution.

If changes are of a minor nature and will not adversely affect the construction project or significantly change the cost of relocation, then the NDOT Utility Coordinator or the NDOT Project Manager will authorize such changes with the input of the NDOT Project Manager.

Minor changes are those changes that are less than $100,000 or 25 percent or less of the approved agreement, whichever is greater, can be easily explained, and result in minimal changes of quantities or installation locations from the approved agreement. The NDOT Utility Coordinator may authorize utility companies to do work not included in the approved estimate but necessary to accomplish the intent of the agreement, such as changes in materials, method of installation, or alignments. This authorization may be taken without formal approval by NDOT, but with the specific understanding that adequate documentation will be established and submitted to NDOT with, or before, the final billing. Valid justification must accompany any changes and must not conflict with either this policy or CFR. Notations regarding minor changes should be documented in the construction diary as supporting documentation for future payments.

Unless a safety hazard is created, the NDOT Utility Coordinator or the NDOT Project Manager may approve a change of less than $100,000 or 25 percent of the approved estimate, documenting the justification to the NDOT Utility Engineer. These changes may, if necessary, be reviewed in the field.

Minor changes in installation location or estimated quantities should be shown in as-built plans and submitted to the NDOT Utility Coordinator. They should also be shown on a revised copy of the Utility Project Agreement.

Major changes include instances when the cost of the change is greater than $100,000 or the percentage of change in cost is greater than 25 percent of the approved agreement; changes in the scope of work, as approved; and any new additions or major deletions to the approved Utility Project Agreement.

Major changes in the scope of work covered by the approved Utility Project Agreement, as well as substantial changes in installation locations, must be submitted in writing to the NDOT Utility Coordinator for prior review and approval. The Utility may proceed with the work upon receipt of authorization from NDOT. The Utility shall be furnished with a copy of the authorization. All verbal authorizations to Supplemental Utility Project Agreements should be evidenced in a written Supplemental Utility Project Agreement form within 30 days of verbal authorization.

If construction requirements do not permit the delay necessary to secure advance written approval, verbal authorization by telephone or electronic mail may be obtained, followed by written confirmation thereafter.

NDOT approval of changes will be considered as approval of a revised estimate, which must be submitted.

All major changes require execution of the Supplemental Utility Project Agreement form.

8.5.6 Wildlife, Vegetation, and Site Clean-up

When utility project construction or maintenance is complete, the Utility shall restore the ROW to substantially the same or better condition than existed before the construction or maintenance, including reseeding or resodding to prevent erosion.

Highway ROW disturbed by the construction of underground lines shall be returned to the original grade and elevation, and all excess material removed. All underground lines placed in areas susceptible to erosion shall have adequate protection against erosion. The protection may be in the form of hay cover, or other material that proves to be satisfactory and does not interfere with maintenance operations. Erosion protection shall be coordinated with, reviewed by the NDOT District Office, and included in the plans.

Any excavations shall be properly backfilled and compacted to be smooth and not subject to settlement or erosion. If settlement or erosion occurs due to the actions of the Utility, the Utility shall, at its expense, reshape, reseed, or resod the area as directed by NDOT. Reseeding, resodding, or repair under this section shall be completed within a reasonable period that is acceptable to NDOT, not to exceed 12 months after the day that the utility project construction or maintenance was completed. NDOT, in its sole discretion, may extend the 12-month period if the installation project conditions warrant an extension.

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

To preserve and protect trees, bushes, and other aesthetic features on the ROW, NDOT may specify the extent and methods of tree, bush, shrubbery, or any other aesthetic feature removal, trimming, or replacement. In this, NDOT shall use due consideration in establishing the value of trees and other aesthetic features near a proposed utility facility and any special requirements justified by the value of the trees and other aesthetic features.

When unapproved pruning or cutting occurs, the Utility is liable for damage to existing trees and bushes and may be responsible for their replacement.

All restoration must be accepted by the NDOT District Office. NDOT may, at the NDOT District's discretion, allow the Utility to forego restoration when doing so serves the best interest of the State.

8.6 Reimbursement of Damages

Utilities shall reimburse NDOT for measures taken by NDOT in the interest of public safety, restoration, cleanup, and repairs to the highway and ROW made necessary by the Utility's failure to comply with the provisions of this policy. Costs incurred may include repairing damage to the ROW that is the result of actions by the Utility or its contractor and measures taken for the restoration of, and repairs to, pavement structure, drainage structures, terrain, landscaping, or fences.

The Utility is also responsible for any damages beyond the ROW line, and NDOT will not be a party to repairing damages. The Utility or its contractor will be responsible to resolving issues with the adjacent property owners.

8.7 Work Restrictions

NDOT reserves the right to halt construction or maintenance during hazardous situations, such as inclement weather, peak traffic hours, special events, holidays, or for non-compliance with a permit or Utility Project Agreement. If NDOT determines that the utility facility was not constructed or maintained in the location or in the manner shown on the approved construction plans or permit, NDOT may require the Utility to take appropriate corrective action.

8.8 Utility Work Included in a Highway Construction Contract

If an NDOT highway improvement project requires the adjustment or relocation of a utility facility, the Utility, by agreement with NDOT, may authorize NDOT to include the adjustment or relocation of the utility facility in the highway construction contract. NDOT may enter into an agreement under this policy only if:

- the relocations are for water or sewer facilities, which are the only relocations included in project plans;
- including the adjustment or relocation of the utility facility in the construction contract is necessary to meet the construction sequencing of the state highway improvement project or will expedite the project;
- the Utility will meet NDOT’s timeline for submitting plans and will not delay NDOT’s project or plan submittal;
- the adjustment or relocation of the utility facility by NDOT's contractor can be accomplished in conformity with all applicable local, state, and federal regulations for the installation of the particular utility facility;
- the adjustment or relocation of the utility facility by NDOT's contractor will not involve an unreasonably high risk of:
  - danger to the traveling public or highway or construction workers due to the presence of hazardous materials, high pressure pipelines, or other potentially dangerous utility products;
  - prolonged interruption of the delivery of a utility product that is essential to public health and safety.

The Utility must provide the required plans, specifications, and cost estimate for the adjustment or relocation of the utility facility before it may be included in the construction contract. The Utility is also responsible for ensuring that the design and construction of the utility facility meets all regulatory and

environmental compliance requirements. Final acceptance by the Utility of the adjustment or relocation after the construction work is completed is required.

The Utility is responsible for physically connecting the installed utility facility to its existing utility facilities to make the installed facility operational and for performing any tests required to ensure compliance with all applicable safety standards and regulations.

During the adjustment or relocation of a utility facility under an agreement under this subsection, the Utility remains liable under any certificate of service. NDOT is not responsible for any issue related to the design or construction of the adjustment or relocation of the utility facility after final acceptance by the Utility of the utility facility. The Utility is also responsible for any ongoing maintenance of the utility facility.

8.9 Non-approved or Non-compliant Installations

If NDOT determines that a utility facility installed within the NDOT ROW was not approved, constructed, or maintained in the location or in the manner shown on the approved construction plans and permit, NDOT will require the Utility Owner to take appropriate corrective action.

NDOT may take any or all of the following actions for non-compliance with any provision of this policy or any term of a permit:

- Halt utility construction or maintenance activities within the ROW.
- Withhold an adjustment reimbursement until compliance is ensured.
- Revoke the existing permit, removal, and replacement of non-compliant facilities at the Utility Owner's expense.
- Remove the non-complying construction or maintenance work, restore the area to its previous condition, and assess the removal and restoration costs to the Utility Owner.
- Place all pending and future permits on hold until the issue is resolved.

If the Utility Owner disputes NDOT’s finding that the utility facility was not approved, constructed, or maintained in the location or in the manner shown on the approved construction plans and permit, the Utility Owner may request a hearing with NDOT prior to NDOT taking the above action(s). If the Utility Owner has previously had an opportunity to challenge NDOT’s finding and did not challenge it, or was unsuccessful in the challenge, it may not request a hearing.

Chapter 9 Change of Ownership, Idling, Removal, or Abandonment

9.1 Change of Ownership

When a Utility Owner sells, assigns, or conveys its utility facility to another company, it shall notify NDOT of the sale and provide the new Utility Owner's contact information. The new Utility Owner should contact NDOT prior to the acquisition to verify it has a legal right to occupy NDOT ROW as a public or private utility. The new Utility Owner, within 90 calendar days of the acquisition, shall notify the NDOT District Permit Coordinator, NDOT Utility Engineer, and NDOT Property Management Supervisor of the sale in writing and:

- provide the name, address, email, and phone number of the new Utility Owner and a person to be contacted on matters concerning the utility facility;
- acknowledge whether the new owner is a public utility, common carrier, or other entity authorized by state law to operate, construct, and maintain its lines over, under, across, on, or along state highways;
- update all call signs and markers. Markers shall comply with Nebraska811 requirements.

If the Utility Owner sells, assigns, or conveys its utility facility to another company as a transfer of ownership, all documentation, including company/corporate certifications, services provided to the public, and proof of being a public utility, should be available from the previous and new owners upon request from NDOT. The new Utility Owner should have obtained the proper approvals, requirements, and filings with the Nebraska Public Service Commission and Nebraska Secretary of State. Documentation may be requested when there is an NDOT improvement or maintenance project. Not having proper documentation upon request may cause a delay in executing the Utility Project Agreement or a delay to the project.

9.2 Change of Function of Utility Facility

If a Utility wishes to materially change the character, use, or function of an approved utility facility and the new character, use, or function would result in the application of more stringent requirements under the provisions of this policy that are applicable to the approved utility facility, the Utility will submit to NDOT a new permit and otherwise comply with the requirements contained in this policy concerning utility accommodation.

Changes in ownership, function, use, or operating pressure of any pipeline occupying public highway ROW or structure shall not be allowed without first certifying to NDOT or the appropriate authority that such change is in compliance with laws or orders of the United States, the State of Nebraska, or industry or governmental codes and thereafter receiving specific approval from NDOT or the appropriate authority to make such change as proposed. Such certification should identify the specific sections of the applicable laws, orders, or codes that permit or authorize the change together with the permit number or agreement that authorized the utility encroachment. Changes in function or use will require the approval of a new permit.

9.3 Idling

NDOT requires all utility facilities that have been idled or deactivated for more than 1 year, and with no plan for reactivation, to be removed from the highway ROW. An idled or deactivated line is a utility

facility that is not serving the public or transporting a utility product. While an idled utility facility is on NDOT ROW, the Utility shall do the following:

- Notify NDOT at the time a facility is idled, deactivated, and reactivated.
- Maintain records of the utility's location, size, and type of material.
- Furnish such records to NDOT upon request.
- Show these facilities on all utility work/relocation plans submitted to, or requested by, NDOT.
- Perform locates on facilities when requested by Nebraska811 or NDOT.
- Remove or relocate in a timely manner for NDOT transportation projects as required in Chapter 7 of this policy.

To return an idled utility facility to active service, the Utility shall notify NDOT of the intent to reactivate the facility. NDOT will review the existing permit for compliance and may require a new permit to rectify any deficiencies. This requirement does not apply if the service is temporarily restored for an emergency or for an NDOT construction need.

An idled line with a documented plan to reactivate, which is required to adjust or relocate, will follow the Utility Relocation Process as directed in Chapter 7 of this policy.

9.4 Removal of Utility Facility

The increased demand for use of NDOT ROW, along with the increasing number of abandoned or idled utility facilities on NDOT ROW, has dictated the standard practice of removing abandoned utility facilities. NDOT requires removal of abandoned utility facilities because it eliminates the need to determine ownership of an abandoned utility facility or the possibility of encountering an abandoned utility on a highway construction project or during maintenance operations. Additionally, removal of abandoned facilities gives each Utility more space to install its facility and to better utilize the limited ROW.

NDOT will determine and approve whether a Utility must remove all or a portion of the utility facility when the Utility Owner requests to abandon the facility, retired or idled. Removed or abandoned facilities within NDOT ROW must be left in a condition that will not compromise the highway asset or cause an environmental issue and must include the following:

- Grout or sand backfill is required for all unused holes, voids, and abandoned pipes, including gas, water, or sewer. Grout or sand backfill is required for any voids more than 2 inches larger than the installed casing or any other facility. All facilities shall be left in such a manner that surface water is not allowed to access, infiltrate, or contaminate groundwater.
- All aboveground utility facilities and appurtenances must be removed from the ROW.
- Any asbestos line or any material that may cause harm to the environment or the health or safety of the public will not be allowed to remain in place or be abandoned and must be removed at the expense of the Utility Owner. Proper procedures and qualified personnel will be required to remove any facilities that may cause a risk to the environment.
- In areas of joint jurisdiction or oversight, such as a municipality or railroad, or if an industry standard requires additional or more restrictive requirements, the most restrictive standard must be used.

9.5 Abandonment and Partial Removal of Utility Facilities

A Utility will not be allowed to abandon a utility facility or the responsibility for its facility within NDOT ROW. A Utility may request to abandon in place a utility facility or a portion of the facility by submitting a written request to NDOT through the NDOT District Permit Officer. An abandonment request may be approved if the immediate removal would cause greater disruption of the public's use of the transportation facility and ROW rather than allowing the utility facility or a portion thereof to remain in place.

9.5.1 Abandonment Requirements

The Abandonment Request from the Utility Owner must include the following detailed information for each facility proposed for abandonment:

- Limits of the facility proposed to be left in place with offsets from property lines and the centerline of the highway
- Coordinates based on the global positioning system (GPS) or a survey datum as directed by NDOT
- The age, condition, material type, current status, quantity, and size of the utility facility
- A legend explaining symbols, characters, abbreviations, scale, north arrow, and other data shown on any as-built or as-installed drawing or record mapping
- A statement certifying the utility facility does not contain, or is not composed of, hazardous or contaminated materials
- A statement certifying the safety of the traveling public and that the transportation infrastructure will not be compromised
- A statement certifying that abandonment will not prevent other Utilities from using NDOT ROW and that abandonment is the only option possible
- A statement certifying that the proposed abandonment is not a change in ownership of the utility facility and that the abandoned installations within the ROW remain the responsibility of the Utility
- Any additional information requested by NDOT

The proposed abandonment must not create a maintenance condition that would be disruptive to the transportation facility. If NDOT approves the abandonment in place, the Utility Owner shall:

- continue to map, locate, and mark abandoned each utility facility as required by this policy, federal regulations, standards adopted by industry organizations, and Nebraska811;
- perform locates for transportation projects as required or requested by Nebraska811 or NDOT;
- show these facilities on all utility work/relocation plans submitted to or requested by NDOT.

The Utility shall be responsible for all costs associated with the maintenance and/or removal of its abandoned utility facilities within the ROW unless the removal of the line is caused by an active highway project and the removal is the financial responsibility of NDOT as identified and agreed to in a Utility Project Agreement.

9.5.2 Abandonment/Removal by Utility Type

Abandonment or removal of a utility facility that leaves a significant void within the highway ROW is prohibited. NDOT, at the discretion of the NDOT District Engineer, may require that a utility facility be filled with cement slurry or backfilled. The methods for abandoning and removing facilities within NDOT ROW are described in Sections 9.5.2.1 through 9.5.2.5.

9.5.2.1 Abandoning and Removing Pipelines and Conduits (General)

Utility pipelines and conduits that have been approved by NDOT to be abandoned and are shown in the abandonment request shall be abandoned as follows:

- Safely empty the pipeline contents, plug the ends, and fill with grout or flowable fill. Prepare grout to a consistency that will flow and be vibrated in order for the mix to flow uniformly into the pipe to be filled.
- Use the construction methods in the current edition of NDOT's *Standard Specifications for Highway Construction*.

Utility pipes or conduits that will be abandoned within the highway ROW are required to be filled or removed when:

- pipes or conduits are larger than 24 inches in diameter;
- pipes or conduits are located within the roadway typical section / roadway prism within the NDOT project's limits of construction and one of the following:
  - pipes 12 to 24 inches in diameter are less than 20 feet below the finished grade.
  - pipes 6 to 12 inches in diameter are less than 12 feet below finished grade and not made of cast iron, ductile iron, HDPE, or PVC.
  - pipes are located below the groundwater table that could become a conduit for water movement.

Underground electrical and communication lines, including conduits, may not be abandoned in place unless authorized by NDOT and shall be removed as follows when no longer in use:

- Excavate, remove, and dispose of properly any abandoned pipe or conduit to be removed. Backfill the resulting trench, and properly compact the trench using local excavated material or select backfill as required.
- Fill abandoned pipe with grout or flowable fill to at least 90 percent full or completely full.
- Remove any abandoned utility pipe exposed by grading operations to a minimum depth of 12 inches (or deeper as directed by NDOT) below subgrade elevation of the proposed roadbed or completed grading template.
- Use grout to plug all abandoned utility pipes at the entrance to all manholes, whether the manhole is to be abandoned or not.
- Use grout to plug all abandoned water mains after new water mains are placed in service. Abandon valves by removing the valve box and backfilling with approved material.

While abandoned utility facilities are to be removed, encasements may be abandoned in place at the discretion of NDOT.

9.5.2.2 Abandoning Manholes and Vaults

Utility manholes shall be abandoned by removing the top of the manhole to the manhole spring line or to an elevation of 2 feet below the roadway subgrade, whichever is greater, and filling the manhole barrel with approved material. Then the connecting utility pipes shall be plugged before filling or removing the manhole. Abandonment shall be completed by removing the manhole taper, wall, and base on all manholes to be removed.

9.5.2.3 Removing Water Meters

Water meters shall be removed and properly disposed of, including disconnecting, and plugging the water service line at the source main and the line where it intersects the ROW line. Removing the line within NDOT ROW.

9.5.2.4 Removing Fire Hydrants

Fire hydrants shall be removed by disconnecting and plugging the hydrant leg pipe as close to the water main as possible. Then if the hydrant valve is within 4 feet of the main, the valve shall be closed, the outlet side of the valve shall be plugged, and the valve box shall be removed.

9.5.2.5 Abandoning High- and Low-Pressure Pipelines

Each Utility shall abandon or deactivate pipelines within the highway ROW in compliance with the requirements of this policy; current federal, state, or local laws or codes; or industry standards, whichever are more stringent. If the pipeline is approved for abandonment in place, the Utility shall:

- purge, cut, and cap or plug the ends of all pipeline facilities at the ROW lines;
- submit to NDOT a written statement that the abandonment conforms with all requirements of this section; current federal, state, or local laws or codes; or industry standards, whichever are more stringent;
- grout the pipeline with a flowable fill if NDOT determines it is needed due to the age, condition, material type, quantity, and size of the facility;
- disconnect each pipeline from all sources and supplies of gas; safely purge each pipeline of gas; and in the case of submerged pipelines, fill each pipeline with water or other approved materials and seal it at the ends.

For each gas service line approved for abandonment in place, the Utility shall:

- provide a locking device or other means designed to prevent opening on each valve that is closed to prevent the flow of gas or contaminants in the abandoned line or the line to the gas customer;
- install in the service line or in the meter assembly a mechanical device or fitting that will prevent the flow of gas;
- physically disconnect the abandoned piping from the gas supply and seal the open pipe ends;
- ensure that a combustible mixture is not present after purging;
- fill each abandoned vault with a suitable compacted material.

9.5.3 Abandonment and Removal for an NDOT Transportation Project

NDOT follows federal policies, and funds may available for abandonment and removal of a utility facility if the existing facility poses a safety hazard to the traveling public. To qualify for funds, proof must be provided in the form of an accident history or safety study that justifies the expense. Otherwise, funds are not available for abandonment or removal purposes. The reason for this interpretation is that both federal and state law refer to the "relocation" of utilities, defined as the removal and reinstallation of the facility. This definition applies regardless of the location of the utility facility. If reimbursable, u*tilities requiring only abandoning or removal (for example, cut and cap) of existing facilities should be treated as a ROW acquisition item and will be coordinated through the NDOT ROW Division.* Plans need to specify abandonment procedures per 49 CFR § 192.727. In addition, 49 CFR § 192.605 requires each Utility to maintain a procedural manual for operations and maintenance.

Funds may be approved for the total cost of removal when such removal is required by construction, when existing facilities cannot be abandoned in place, or for aesthetic or safety reasons as determined by NDOT. When the utility facilities are approved to be abandoned in place but the Utility or the contractor elects to remove and recover the materials, Removal costs that exceed the value of the materials recovered are not an eligible expense if reimbursement is requested under a Utility Project Agreement found in Chapter 7 of this policy.

When the utility facility is no longer needed and removal is necessary to accommodate the roadway project, the removal of the item may be handled either as a ROW item or a utility adjustment if the Utility has a compensable property interest. When handled as a ROW item, the damages allowed are to equal the depreciated value of the facility, with the necessary removals being accomplished by the roadway contractor. If accomplished as a utility adjustment, NDOT, as agreed upon in the Utility Project Agreement, may reimburse, if eligible, the Utility for removal costs and receive salvage credit for the material removed, up to, but not exceeding, removal costs. The cost of removal of service lines is not reimbursable because, in most cases, the Utility does not hold a written easement that establishes a compensable interest in these areas.

9.6 Record Keeping for Abandoned Utility Facilities

A record of underground utility facilities abandoned within the highway ROW shall be maintained in a Utility's permanent files until the utility facility is completely removed from the ground and shall be provided to the NDOT District Office and the NDOT Utility Engineer upon completion of removal. The Utility shall continue to show these facilities on all utility work/relocation plans submitted to, or requested by, NDOT.

This record of abandonment must include the utility's location based on NDOT datum, size, and type of material.

In addition, the Utility shall perform locates on facilities when requested by Nebraska811 or NDOT. All removals or relocations shall be done in a timely manner for NDOT transportation projects.

Chapter 10 Unique Situations

10.1 Overview

Guidance in this chapter of the policy is for unique situations rarely encountered or when other NDOT Divisions may be the responsible section for a utility-related process. This guidance should be used to facilitate consistent application of utility-related activities throughout NDOT.

10.2 Resource Sharing

The shared use of ROW and telecommunication facilities may benefit NDOT's goal to create an ITS by which NDOT can use the telecommunication industry to provide:

- message boards to keep the public informed of conditions on the roadway ahead;
- video cameras to monitor roadway conditions and possibly control traffic;
- roadside assistance to the public;
- toll integration information;
- other ITS.

NDOT can execute an agreement for use of a particular area, rather than execute a lease, as follows, if doing so benefits NDOT:

- The agreement with a telecommunications provider should:
  - benefit NDOT;
  - be consistent with NDOT's safety, maintenance, operation, and beautification objectives;
  - allow NDOT to have a cost saving;
  - advance NDOT's efforts to share or develop its own telecommunications program.
- The agreement will allow the provider to place the provider's telecommunications facilities within a state or federal highway ROW.
- The agreement may benefit NDOT in the form of:
  - payment;
  - shared use of a telecommunication facility;
  - equipment, facilities, or services.
- The agreement will contain the specific details of each project. This agreement may include, but not be limited to, requirements concerning:
  - traffic control;
  - bonds and insurance;
  - coordination with NDOT construction projects;
  - relocations;
  - construction, maintenance, and inspection of telecommunication facilities.

Where applicable, any agreement should be cleared with LPAs, and requires approval by FHWA on federal-aid highways, per 23 CFR § 645.113.

10.3 Leasing of Right-of-Way

NDOT has the authority to execute leases with private utilities for placement of utility facilities in NDOT ROW or for use of facilities owned by the state (see Section 1.4.3).

10.4 Unknown Utility Ownership and Active/Inactive Status

Many times, NDOT will need to contact a Utility Owner because of:

- emergency situations with lines down, leaks, or other safety concerns;
- upcoming NDOT highway projects that may impact a utility facility;
- maintenance activities in the area near a utility facility;
- a need to know if a line is active or inactive.

When these situations arise, it is necessary to know who the current Utility Owner is and their contact information. If the Utility Owner has not followed the provisions of Chapter 9 of this policy, the safety of the public may be at risk, or additional time and resources are expended to locate the Utility Owner.

Situations of unknown utility ownership may develop when a Utility Owner sells to a new owner or multiple new owners and the utility system and lines are mapped incorrectly or not at all. The utility lines may also be included in general terms such as the "Eastern Distribution System" or a portion of the "West Facility." The sales transaction may also be documented in corporate documents and not in the real property records of the county, making records search difficult. Additionally, inactive or abandoned lines may not have been addressed in these transactions. Other utility lines may predate current permitting practices and were never documented as being on the ROW.

Determining the ownership and an authorized agent of the Utility can be accomplished as follows:

- Review existing NDOT permits and all Nebraska811 information in the area.
- Contact Utility Owners or representatives of similar facilities in the area.
- Investigate other adjacent roadway utility plans and records, including old easement documentation that may show up on surveys or land conveyances.
- Visit with landowners or individuals being served by the facility.
- Contact county/city maintenance personnel or commissioners who may have historical knowledge of the area.
- Attempt to follow the utility line to its source and/or destination. This may require obtaining permission from property owners to access their property. Some lines may require following for a mile or more before finding an indication of where their origin or destination may be.
- Use SUE surveys to track lines to their origin or destination and determine their ownership.
- If a Utility Owner cannot be determined, or if a utility line is active or inactive and carries a hazardous or unknown product, use SUE to tap and determine the status and condition of the line.

When a utility conflict is encountered and ownership cannot be determined, whether unknown active, abandoned, or inoperative status, NDOT will exhibit a good faith effort by publishing its intention to tap, cut and cap, or remove the utility facility according to state regulations and industry standards. This process normally includes using a citation by publication and should be handled in the same manner as a ROW parcel with unknown ownership and coordinated with the NDOT ROW Division.

10.5 Hazardous Materials and Conditions

Transmission of gases, petroleum products, waste materials, and electrical power presents hazards to users of ROW, including the public. Both Utility Owners and NDOT personnel need to consider these risks and how to mitigate their effects. Not addressing safety issues early may bring a highway project to a halt or put construction personnel and the public at risk.

Gas and oil pipelines pose multiple safety hazards. Consider the following:

- Both low- and high-pressure gas lines pose a threat and a risk of explosions.
- Petroleum byproduct lines may contain poisonous gases, such as hydrogen sulfide. Lines carrying poisonous gases shall NOT be allowed to run longitudinally within the ROW.

Sanitary sewer lines may also pose hazardous conditions. Consider the following:

- Avoid contamination of clothing.
- Sewer gases are highly combustible and pose a threat of explosion. The gases create a danger working near or within the sanitary sewer manholes.

Pipelines carrying hazardous materials are required to post warning signs and signs of identification of product along, or at, the ROW line. Spillage from any pipeline source, other than potable water lines, should be reported to the District's Hazardous Materials (HAZMAT) Coordinator.

10.5.1 Electrical and Communication Lines

Overhead or underground power lines can have hidden hazards and should be approached cautiously. The following are things to watch for:

- Dead power lines and equipment can contain enough static electricity to cause injury or death. Never assume that power lines or equipment are safe until tested by qualified personnel.
- Active underground power lines can build up considerable static electricity along the line itself and transfer over to metal casings.

Telecommunication lines, although having low amounts of voltage, present the following hazards:

- Glass particles in fiber optic lines can easily be embedded in skin and cause severe irritation.
- Looking directly into an active fiber optic line may cause eye damage.

10.5.2 Asbestos

The most obvious hazard may occur during removal of asbestos pipe, if such removal is approved. If any portion of the pipe is crushed, asbestos particles are released into the atmosphere and pose an inhalation threat.

Asbestos removal requires specialized procedures and often cannot be performed by the highway contractor, which causes delays.

10.5.3 Contaminated Sites

NDOT will not take possession of land that has been contaminated by oil or petroleum leakage.

If a substation, transformer storage site, or an underground storage tank is involved in an adjustment and the site will be incorporated into the ROW, the Utility will need to execute a Permit to Occupy.

If there is no storage tank but the ground is contaminated, the Utility will need to execute a ROW Indemnity Agreement with the State.

10.6 Geophysical Exploration on ROW

NDOT may authorize the use of highway ROW for geophysical surveys. These surveys shall conform to the following in order to protect the highway facility from damage, avoid interference in maintenance operations, preserve the safe and efficient flow of traffic, and protect the traveling public:

- No blasting shall be performed.
- No operations shall be conducted in an area that may result in damage to the pavement, shoulder, or other highway facilities, and impact or vibration equipment should not be used on traffic lanes or paved shoulders.
- Access for conducting any surveys on controlled access highways shall not be allowed from the main lanes or ramps.
- On controlled access highways, cables shall not be placed across the pavement. All cable crossings must be made using existing drainage facilities.
- On non-controlled access highways, cables placed on the pavement shall be arranged so they do not create a hazardous condition or rumble strip effect. All cables shall be securely anchored to the roadway with materials that will not damage and/or puncture the pavement. Nails, spikes, and similar materials used for anchors shall be placed beyond the pavement edge.
- Adequate signs, barricades, flags, etc., shall be maintained as necessary to protect the traveling public in compliance with the MUTCD and NDOT Standard Traffic Control Plans.
- The operations shall not interfere with the flow of traffic. All equipment shall be parked and/or operated on one side of the roadway only, as far from the shoulder as practical, and shall not be parked in the clear zone.
- Operations will not be allowed when the ground conditions are such that work within the ROW would cause rutting and/or tracking of mud onto the roadway surface.
- The geophysical survey company shall restore the ROW to its original condition, free of any damage, including ruts or any impact on vegetation. Any costs incurred by NDOT for necessary restoration work will be billed to the geophysical survey company at cost.
- The firm making the request shall understand any actions of the geophysical survey company that create any liability or affect the rights of the holders of any property and/or mineral ownerships involved should be solely their concern and responsibility.
- The requestor will meet any additional requirements deemed necessary by the NDOT District Office.

A letter, not a permit, shall be used when responding to requests to perform geophysical surveys on highway ROW.

10.7 Divestment of NDOT Right-of-Way

When excess NDOT ROW is transferred or sold to another entity, an easement interest will be reserved for utility facilities occupying the NDOT ROW being relinquished by NDOT. Any relocation or adjustment of the existing utility facility will be the responsibility of the new owner of the ROW being conveyed.

10.8 Tribal Lands

There are four sovereign Native American tribes in Nebraska that have democratic forms of government. These tribes are the Omaha, Ponca, Santee Sioux, and Winnebago, which are governed by their own tribal constitutions, bylaws, ordinances, and laws. This is because Nebraska is a Public Law 280 state with jurisdiction over the Native American tribes. Public Law 280 is the federal law that gave the states extensive jurisdiction over tribes if they chose to assume such jurisdiction. Nebraska chose to retrocede some Public Law 280 jurisdiction back to the federal government, which is to the Bureau of Indian Affairs.

Native American tribes are generally subject to federal, state, and local laws. On federal Indian reservations, however, only federal and tribal laws apply to members of the tribe. The tribes have the right to form their own governments; to make and enforce laws, both civil and criminal; to tax; to establish and determine membership (i.e., tribal citizenship); to license and regulate activities within their jurisdiction; to zone; and to exclude persons from tribal lands. The Omaha, Santee Sioux, and Winnebago Tribes have their own judicial and law enforcement agencies, and the Ponca Tribe has a tribal court system.

The Omaha and Winnebago reservations are contiguous to one another and are located 80 miles north of the City of Omaha, Nebraska. The Santee Sioux Tribe is located 190 miles northwest of the City of Omaha and 115 miles west of the Omaha and Winnebago reservations. The Ponca Tribe of Nebraska does not have a reservation.

NDOT has oversight and maintenance of state and federal roadways through tribal reservations. NDOT's utility coordination process with the tribes is similar to the utility coordination process NDOT has with other municipalities, including cities and counties. This includes the use of Master Utility Agreements and Project Level Agreements. Tribes may use legal and consultant resources to assist in their preparation of agreements and plans. The tribes will use actual cost accounting methods and a contracting process in conformance with 23 CFR Part 645, Subpart B and this policy.

Chapter 11 Definitions

Abandoned utility	A utility facility that no longer carries a product or performs a function and for which the owner: (A) does not plan to use in future operations; or (B) is unknown or cannot be located.
Access denial line	A line concurrent with the common property line across which access to the highway facility from the adjoining property is not permitted.
Aerial utility easement	An easement for the installation and maintenance of an aerial utility facility, with all necessary poles and appurtenances including service drops. This may also be used when only lines or wires overhang a private property.
Approved Permit	An NDOT Form 19, Application to Occupy Right of Way, or Permit to Occupy approved by NDOT which constitutes an agreement between NDOT and the Utility Owner.
As-built plans	Drawings showing the actual locations of installed or relocated utility facilities.
Backflow preventers	Are required by municipalities and other governmental agencies to protect the public water supply from becoming contaminated by the reversal of flow of water and other liquids, gases, or other substances into the public water supply.
Betterment	The enhanced value of real property arising from local improvements
Border width	The area between the edge of pavement structure or back of curb to the right-of-way line.
Bore Pit/Boring	An excavated pit containing the track and boring machine / process of making a horizontal or nearly horizontal excavation in an already-dug hole (i.e., one that has been excavated by digging) to install underground infrastructures such as pipelines, cables, and more.
Bridge abutment joint	The joint between the approach slab and bridge structure.
Broadband service	Internet service with the capability of providing: (A) a download speed of 25 megabits per second or faster; and (B) an upload speed of three megabits per second or faster.
Center median	The area between opposite directions of travel on a divided highway.
Certified as-installed construction plans	The construction plans for the installation of a utility facility, accompanied by an affidavit certifying that the facility was installed in accordance with the plans.
Commission	The Nebraska State Highway Commission.

Common carrier	As defined in Nebraska Revised Statues, §75-501.
Communication line	Any conductive wire or cable that uses electrical or light signals for the transmission of information.
Conduit	A pipe or other opening, buried or aboveground, for conveying fluids or gases, or serving as an envelope containing pipelines, cables, or other utility facilities.
Controlled access highway	A highway so designated by the commission on which owners or occupants of abutting lands and other persons are denied access to or from the highway main lanes.
Customer / Customer service	A service connection from a utility's distribution or feeder line or main to the premises served.
Depth of cover	The minimum depth as measured from the top of the utility line to the ground line or top of pavement.
Design vehicle load (HL93)	A design load designation used for bridge design and load rating analysis in accordance with Load and Resistance Factor Design (LRFD) methodology as defined by FHWA and AASHTO.
Director	The chief administrative officer in charge of either the Maintenance Division or the Right of Way Division, or a successor division of either the Maintenance Division or the Right of Way Division.
Distribution line	That part of a utility system connecting a transmission line to a service line.
District	One of the eight geographical districts into which the department is divided.
District Engineer	The chief administrative officer in charge of a district, or his or her designee.
Drainage Easement	A legal agreement granting specific property rights for water management to ensures proper runoff flow to prevent flooding, often requiring maintenance to keep the drainage pathway clear.
Duct	A pipe or other opening, buried or aboveground, containing multiple conduits.
Easement	(1) A property interest that may be acquired or agreed to that allows someone else the legal right to use your property for a specific purpose. An easement grants permission for someone who is not the owner of the land to use the land in some capacity. (2) An easement is a right, other than the acquisition of title, acquired to use or control property for a designated purpose. This applies to some right-of-way, often when passing through federal land, across railroads, and across utility-owned (fee simple) property.

Encasement	A pipe or other structure that is separate from and surrounds a utility facility and that: (A) supports the pavement structure and superimposed loads on the pavement, including construction machinery, and protects the pavement structure if the carrier pipe fails; (B) protects utility facility against accidental damage from excavation equipment; and (C) allows the repair or replacement of the utility facility without disturbing the pavement structure.
Engineer	A person licensed to practice engineering in the state of Nebraska.
Engineering study	An appropriate level of analysis as determined by the department, which may include a traffic impact analysis, that determines the expected impact that permitting access will have on mobility, safety, and the efficient operation of the state highway system.
Executive director	The chief administrative officer of the department, or that officer's designee not below the level of assistant executive director.
Fee Title (fee simple)	A land interest owned in fee simple is owned completely, without any limitations or conditions. This type of unlimited estate is called absolute. Generally, fee simple right-of-way is recorded in the county courthouse from either land purchased with Department funds or dedicated to the Department at no expense to the Department.
Freeway	A divided highway with frontage roads or full control of access.
Frontage road	A street or road auxiliary to, and located alongside, a controlled access highway or freeway that separates local traffic from high-speed through traffic and provides service to abutting property.
Gathering line	A line that delivers a raw utility product from various sites to a central distribution or feed line for the purposes of refining, collecting, or storing the product.
Handhole	An underground enclosure that houses and protects underground distribution equipment, including, but not limited to, splice cases, excess cable, and construction or pull-box equipment. These enclosures are typically non-metallic. The removable cover is typically installed flush to grade and supports the anticipated loading requirements of the installation.
Hazardous material	Any gas, material, substance, or waste that, because of its quantity, concentration, or physical or chemical characteristics, is deemed by any federal, state, or local authority to pose a present or potential hazard to human health or safety or to the environment. The term includes hazardous substances, hazardous wastes, marine pollutants, elevated temperature materials, materials designated as hazardous in the Hazardous Materials Table (49 CFR §172.101), and materials that meet the defining criteria for hazard classes and divisions in 49 CFR Part 173 (49 CFR §171.8).

High-pressure pipeline	A pipeline that is operated or may reasonably be expected to operate in the future, at a pressure of over 60 pounds per square inch.
Horizontal clearance	The areas of highway roadsides designed, constructed, and maintained to increase safety, improve traffic operation, and enhance the appearance of highways.
Horizontal directional drilling	(HDD) is a minimal impact trenchless method of installing underground utilities such as pipe, conduit, or cables in a relatively shallow arc or radius along a prescribed underground path using a surface-launched drilling rig.
Inclement weather	Weather conditions that are hazardous to the safety of the traveling public, highway or utility workers, or the preservation of the highway.
Inline manhole	Manholes placed at regular spacings along an underground line to allow access and maintenance.
Interstate highway	A part of the Eisenhower Interstate System of highways that retains its separate identity within the National Highway System. Normally consisting of a divided highway that has full control of access and may or may not have frontage roads.
Joint use agreement	A use and occupancy agreement that describes the obligations, responsibilities, rights, and privileges vested in the department and retained by the utility, and used for situations in which the utility has a compensable interest in the land occupied by its facilities and the land is to be jointly occupied and used for highway and utility purposes.
Low-pressure pipeline	A pipeline that is operated at a pressure not exceeding 60 pounds per square inch.
Main lanes	The traveled way of a freeway or controlled access highway that carries through traffic.
Manhole(s)	An underground structure cylindrical in shape and tapered off at the top to provide for an access manhole cover and ring.
Master Utility Agreement	Master Utility Agreement purpose is to: (a) establish a procedure for a Utility and NDOT (Parties) to identify the location of a Utility's facilities and any conflicts between an NDOT Project and the Utility's facilities; (b) develop and plan for a utility relocation project when a conflict has been identified and cannot be avoided; (c) establish the conditions for NDOT to reimburse Utility's cost when eligible.

MUTCD	The most recent edition of Nebraska Manual on Uniform Traffic Control Devices for Streets and Highways, comprised of the following three items: (1) 2009 Federal MUTCD with Revisions 1 & 2 (2) Nebraska 2019 Supplement to MUTCD
Noncontrolled access highway	A highway on which owners or occupants of abutting lands or other persons have direct access to or from the main lanes by department permit.
One-Call (811)	Notification to operators of underground facilities is done by calling Nebraska811, the statewide One-Call Notification Center, at 811 or 1-800-331-5666 (both numbers are toll free) or online at www.ne1call.com using ITIC (Internet Ticket Processing).
Operations Division	The administrative office of the department responsible for the maintenance and operation of the state highway system.
Outer separation	The area between the main lanes of a highway for through traffic and a frontage road.
Pavement structure	The combination of the surface, base course, and subbase.
Pipelines high pressure	A pipeline that is operated or may reasonably be expected to operate in the future at a pressure of over 60 pounds per square inch.
Pipelines low pressure	A pipeline that is operated at a pressure not exceeding 60 pounds per square inch.
Private utility	A person, firm, corporation, or other entity engaged in a utility business other than a public utility or saltwater pipeline operator. The term includes an individual who owns a service line.
Public utility	A person, firm, corporation, river authority, municipality, or other political subdivision that is engaged in the business of transporting or distributing a utility product that directly or indirectly serves the public and that is authorized by state law to operate, construct, and maintain its facilities over, under, across, on, or along highways. The term includes a common carrier and a gas corporation. The term also includes providers of broadband service.
Public utility easement (PUE)	Rights obtained by cities, counties, or other local agencies when property is platted or re-platted for development.
Resource sharing	Resource or Infrastructure sharing is a strategy for providing the extension of telecommunication networks and reducing stakeholder costs and efforts. Sharing can take place between different network access providers or users such as NDOT and may also include passive infrastructure of other utilities such as electricity grids and transport networks.
Right of Way Division	The administrative office of the department responsible for the acquisition and management of the state right-of-way.

Right-of-way (ROW)	A general term denoting land, property, or interest therein, devoted to transportation purposes.
Riprap	An appurtenance placed on the exposed surfaces of soils to prevent erosion, including a cast-in-place layer of concrete or stones placed together.
Saltwater	Water that contains salt and other substances and that is intended to be used in the exploration for oil or gas or that is produced during the drilling or operation of an oil, gas, or other type of well.
Saltwater pipeline	A pipeline that carries saltwater. The term includes a pipeline that carries water and water-based solutions from an oil or gas well on which hydraulic fracturing treatment has been performed to a waste disposal well.
Saltwater pipeline operator	A person, firm, corporation or other entity that owns, installs, manages, operates, leases, or controls a saltwater pipeline that is not a public utility.
Service line	A utility facility that conveys electricity, gas, water, or telecommunication services from a main or conduit located in the right-of-way to a meter or other measuring device that services a customer or to the outside wall of a structure, whichever is applicable and nearer the right-of-way.
State project	Highway improvement projects on segments of the state highway system (collectively state projects, individually state project, State's project, or federal project [if federal funds are used]).
Temporary saltwater pipeline	An above-ground saltwater pipeline that satisfies the requirements of § 21.57 of this subchapter.
Traffic impact analysis	A traffic engineering study that determines the potential current and future traffic impacts of a proposed traffic generator and that is signed, sealed, and dated by an engineer licensed to practice in the state of Nebraska.
Transmission line	That part of a utility system connecting a main energy or material source with a distribution system.
Use and occupancy agreement	The written document, whether in the form of an agreement, acknowledgment, notice, or request, by which the department approves the use and occupancy of highway right-of-way by utility facilities.
Utility	Any entity owning a utility facility.
Utility accommodation	The use and occupancy of highway right of way by utility facilities or private utility lines authorized by statute or agreement by NDOT.
Utility appurtenances	Any attachments or integral parts of a utility facility, including fire hydrants, valves, communication controller boxes and pedestals, electric boxes, and gas regulators.

Utility facility	All utility lines, pipelines, saltwater pipelines, conduits, cables, and their appurtenances within the highway right-of-way except those for highway-oriented needs, including underground, surface, or overhead facilities either singularly or in combination, which may be transmission, distribution, service, or gathering lines.
Utility Owner	A person, firm, corporation, authority, municipality, or other political subdivision that is engaged in the business of transporting or distributing a utility product that directly or indirectly serves the public and is authorized by state law to operate, construct, and maintain its facilities over, under, across, on, or along NDOT ROW.
Utility product	The product, such as water, saltwater, steam, electricity, gas, oil, crude resources, communications, cable television, or waste disposal services, or broadband service, carried by the utility facility.
Utility strip	The area of land established within a control of access highway, located longitudinally within the area between the outer traveled way and the right-of-way line, for the nonexclusive use, occupancy, and access by one or more authorized utilities.
Utility structure	A pole, bridge, tower, or other aboveground structure on which a conduit, line, pipeline, or other utility facility is attached.
Vault	An underground structure rectangular in shape and composed essentially of a floor slab, vertical walls, top slab, manhole covers, and manhole rings or frames.

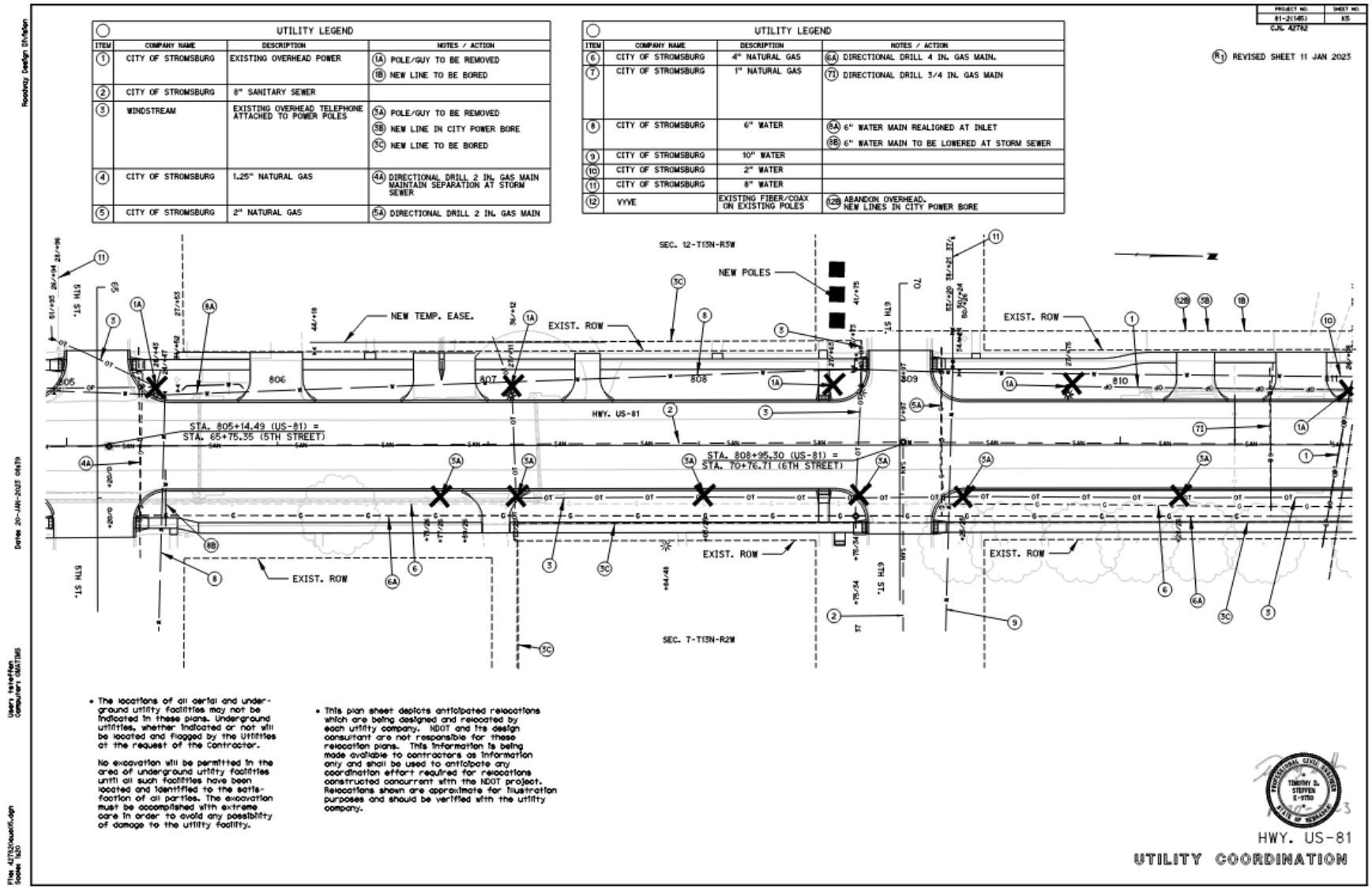
Appendix A
Templates

Templates

Contact your NDOT Utility Coordinator for the most recent documents.

- Accommodation of Utilities on ROW
  - Permit to Occupy Application Agreement (NDOT Form 19)
  - Insurance Requirements
  - Steel Pipeline Casing Waiver Certification - Post Construction
  - Small Wireless Agreement
  - Utility Accommodation Exception Certification
- Utility Project Relocations
  - Master Utility Agreement
  - Utility Project Agreement
    - Pre-Work Authorization
    - Work Authorization
  - Supplemental Utility Project Agreement

Appendix B
Example K-Sheet


UTILITY LEGEND
ITEM | COMPANY NAME | DESCRIPTION | NOTES / ACTION
1 | CITY OF STROMSBURG | EXISTING OVERHEAD POWER | 1A POLE/GUY TO BE REMOVED; 1B NEW LINE TO BE BORED
2 | CITY OF STROMSBURG | 8" SANITARY SEWER |
3 | WINDSTREAM | EXISTING OVERHEAD TELEPHONE ATTACHED TO POWER POLES | 3A POLE/GUY TO BE REMOVED; 3B NEW LINE IN CITY POWER BORE; 3C NEW LINE TO BE BORED
4 | CITY OF STROMSBURG | 1.25" NATURAL GAS | 4A DIRECTIONAL DRILL 2 IN. GAS MAIN MAINTAIN SEPARATION AT STORM SEWER
5 | CITY OF STROMSBURG | 2" NATURAL GAS | 5A DIRECTIONAL DRILL 2 IN. GAS MAIN
UTILITY LEGEND
ITEM | COMPANY NAME | DESCRIPTION | NOTES / ACTION
6 | CITY OF STROMSBURG | 4" NATURAL GAS | 6A DIRECTIONAL DRILL 4 IN. GAS MAIN.
7 | CITY OF STROMSBURG | 1" NATURAL GAS | 7I DIRECTIONAL DRILL 3/4 IN. GAS MAIN
8 | CITY OF STROMSBURG | 6" WATER | 8A 6" WATER MAIN REALIGNED AT INLET; 8B 6" WATER MAIN TO BE LOWERED AT STORM SEWER
9 | CITY OF STROMSBURG | 10" WATER |
10 | CITY OF STROMSBURG | 2" WATER |
11 | CITY OF STROMSBURG | 8" WATER |
12 | YYVE | EXISTING FIBER/COAX ON EXISTING POLES | 12B ABANDON OVERHEAD. NEW LINES IN CITY POWER BORE
PROJECT NO. 81-2(185) C.N. 42782 SHEET NO. K5
R1 REVISED SHEET 11 JAN 2023
Roadway Design Division
Date: 20-JAN-2023 09:39
User: kstaffan
Consultant Activities
File: 42782sue05.dgn
Scale: 1:20
SEC. 12-T15N-R5W
SEC. 7-T15N-R2W
NEW POLES
NEW TEMP. EASE.
EXIST. ROW
HWY. US-81
STA. 805+14.49 (US-81) = STA. 65+75.35 (5TH STREET)
STA. 808+95.30 (US-81) = STA. 70+76.71 (6TH STREET)
805
806
807
808
809
810
5TH ST.
6TH ST.
• The locations of all aerial and underground utility facilities may not be indicated in these plans. Underground utilities, whether indicated or not will be located and flagged by the utilities at the request of the Contractor.
No excavation will be permitted in the area of underground utility facilities until all such facilities have been located and identified to the satisfaction of all parties. The excavation must be accomplished with extreme care in order to avoid any possibility of damage to the utility facility.
• This plan sheet depicts anticipated relocations which are being designed and relocated by each utility company. NDOT and its design consultant are not responsible for these relocation plans. This information is being made available to contractors as information only and shall be used to anticipate any coordination effort required for relocations constructed concurrent with the NDOT project. Relocations shown are approximate for illustration purposes and should be verified with the utility company.
TIMOTHY D. STEFFEN E-9750 PROFESSIONAL CIVIL ENGINEER STATE OF NEBRASKA
HWY. US-81
UTILITY COORDINATION