# DEPARTMENT OF TRANSPORTATION

## DIVISION OF TRANSPORTATION SOLUTIONS

Statutory Authority: 17 Delaware Code, Sections 131, 132 and 143; 26 Delaware Code, Chapters 9, 11 and 13 (17 **Del.C.** §§131, 132 & 143; 26 **Del.C.** Ch. 9, 11 & 13)
2 **DE Admin. Code** 2401

## FINAL

### ORDER

### 2401 Utilities Manual Regulations

Pursuant to the authority provided by 17 Del.C. §§131, 132 & 143; 26 Del.C. Ch. 9, 11 & 13, the Delaware Department of Transportation proposed to adopt changes to its regulation entitled the Utilities Manual Regulations.

The Department, through its Division of Transportation Solutions, published proposed revisions to the existing regulation, the Utilities Manual Regulations, seeking public comment through the public notice appearing in **26 DE Reg. 387 (11/01/22)**.

The Department indicated in its November 1, 2022 notice that it would accept written public comments on the proposed changes to the Utilities Manual Regulations from November 1, 2022 through December 1, 2022.

### Summary of the Evidence and Information Submitted.

There were no comments received by the Department. Links to two additional appendices have been inserted to provide further clarity for the public where external content is cited, but the substance of the regulations remains the same. The proposed changes to the Utilities Manual Regulations intended to revise Regulation 2401 are procedural changes which are administrative and organizational in nature and serve in part to address recent updates to federal law and clarify the intent of the Department as enacted through these regulations.

### Findings of Fact and Conclusions

Based on the record in this docket, I make the following findings of fact:

1. The proposed amendments to the Utilities Manual Regulations are useful and proper. The public comment period was appropriately held open for thirty days and no public comment was received.

2. The adoption of these proposed changes to the Utilities Manual Regulations is in the best interests of the State of Delaware. Having received no public comment, there is no basis upon which to further amend the regulation and it is adopted as amended.

### Decision and Effective Date

The Department hereby adopts the Regulations as proposed, to be effective January 11, 2023.

**IT IS SO ORDERED this** 14th **day of December 2022**.

**Nicole Majeski, Secretary**
**Delaware Department of Transportation**

### 2401 Utilities Manual Regulations

~~1.0 Introduction~~

~~- The Mission of the State of Delaware's Department of Transportation is to provide a safe, efficient, and environmentally sensitive transportation network that offers a variety of convenient, and cost-effective choices for the movement of people and goods.~~

~~- Effective management and design of utility installations are imperative for the safe and expedient construction and maintenance of the transportation network. Close coordination with utility owners is essential to meet these objectives.~~

- This manual outlines the general practices, policies, and procedures that affect the relationship between the Delaware Department of Transportation, hereafter referred to as the Department or DelDOT, and those entities desiring to place utility lines and appurtenances within the rights-of-way of this State. This manual explains the requirements and procedures necessary to facilitate utility installation, relocation, maintenance as well as any utility work in conjunction with highway project construction within Department right-of-way.

1.1 Purpose And Objectives

1.1.1 The overriding goal for this manual is to allow the user to locate and understand those regulations and procedures that are most pertinent to their activities in the highway-utilities process. The process embraces a large and exceedingly complex series of issues. This manual simplifies and condenses these issues for ease of location by the user.

1.1.2 The manual has been prepared to accomplish these objectives:

- to provide standard arrangements for permitting the installation of utilities on Department rights-of-way and for relocating utilities due to highway construction;
- to help utilities accomplish their work with the least delay and minimum interference with highway contractors or other utilities;
- to prevent service disruptions, damage to utility facilities, and hazardous conditions;
- to ensure that standards, specifications, and environmental considerations are met;
- to ensure the proper performance, high quality, and timely accomplishment of utility work, as well as the correct and timely reimbursement to utility companies when appropriate;
- to outline procedures and conditions that must be met for federal reimbursement, when utility work is part of a federal-aid project; and
- to outline procedures and conditions necessary for state reimbursement of utility work when circumstances, agreements and/or Delaware Code govern.

1.1.3 The information in this manual applies to all public and some private facilities, including (but not limited to) electric power, telephone, telegraph, communications, cable TV, lighting, water, gas, oil, petroleum, steam, chemicals, sewage, drainage, irrigation, and similar lines that are located within the rights-of-way of highways under the Department's jurisdiction. Underground, surface, and overhead facilities-whether singular or in combination-are covered by this manual.

1.2 Statutory Authority

1.2.1 The Delaware Code provides the Department with the authority and responsibility to regulate the use of all utilities on state highway rights-of-way. For the benefit of the reader, this manual reviews applicable portions of Delaware law.

1.2.2 The Department has the sole legal authority to control the use of state highway rights-of-way. Vesting this control in a single agency was necessary to ensure the safety of motorists and the proper operation of highway facilities. The Department has formulated the guidelines, policies, and procedures in this manual as tools for regulating utilities to achieve the aforementioned purposes.

1.2.3 The "Delaware State Highway Department" was established into law on April 2, 1917. Chapter 166 of the 1935 Code amended the original Act that created the Highway Department. Additional amendments, including Title 17 of Delaware Code, were enacted by the Legislature on February 11, 1953, and approved by the governor on February 12, 1953, including all prior amendments. This act provides authorization for the State to participate in the acquisition of rights-of-way, the placement of new utilities, and the adjustment of existing utilities.

1.2.4 Title 26 of the Delaware Code (1953) provides authorization for the State to control new installations of pipes, conduits, and wires above or beneath the public roads.

1.2.5 Section 143, Title 17, Delaware Code, established by law on January 16, 1962, made the State responsible for the entire cost of altering or relocating utilities that are within public highway rights-of-way when the utility facilities are owned or operated by a municipality, governmental body, or subdivision of the State as necessitated by highway construction, reconstruction, relocation, repair, or maintenance.

1.2.6 Section 132, Title 17, Delaware Code (1966) provides for the State to reimburse the owner for the expense of relocating public utility facilities necessitated by any project where the State is to be reimbursed at least 90% of the project cost from federal funds or by the federal government or any agency thereof. Such expense is to be the amount paid by the owner that is properly attributable to the relocation, after deducting therefrom any increase in the value of the new facilities and any salvage value derived from the old facilities.

1.2.7 Section 143, Title 17, Delaware Code, amended on June 29, 2004, allows the Department of Transportation flexibility to negotiate alteration or relocation agreements with public utilities in order to improve efficiency and fairness. While not required to do so, the Department may choose to enter into an agreement with a public utility for this purpose.

1.2.8 The opinion of the Court of Chancery, State of Delaware (1963) is the basis on which the State reimburses utility owners the expense of relocating public utility facilities on rights-of-way for which they hold title, or have permission or easement for occupancy, as necessitated by any project.

1.2.9 Adherence to the policies, practices and procedures of the Department of Transportation and, more specifically, to the requirements described in the Utilities Manual must be undertaken with full knowledge of, and compliance with, Chapter 8, Title 26, of the Delaware Code entitled "Underground Utility Damage Prevention and Safety." The Department's commitment to provide for the protection of public health and safety is of major importance and must be maintained at all times.

1.3 Construction And Location Requirements

- The State reserves the right to review and approve the detailed location and design of all utility installations, adjustments, or relocations affecting the highway rights-of-way, and will issue permits for proposed utility work. Chapter 3 describes permitting requirements.

1.4 Exceptions To Requirements

- The utility company shall submit any request, for deviation from the standards described in this manual, due to extreme hardship, to the Department. The request shall be in writing and must include full justification surrounding the hardship. The Department will assess the situation and provide recommendations. The documentation will be sent to the Utilities Engineer for coordination and comment, who shall then forward it to the Chief Engineer for final action.

1.5 Transmittal Of Information

- Where the manual specifies the submittal of plans or other documents, utilities are encouraged to submit electronic files with the Department's approval. If utilities choose to submit plans or other documents electronically, their systems and GIS databases must be compatible with DelDOT's current systems in order to transfer files electronically.

2.0 Definitions

"AASHTO": American Association of State Highway and Transportation Officials. AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail and water. Its primary goal is to foster the development, operation and maintenance of an integrated national transportation system.

"Active Federal-aid Highway Projects": Projects for which any phase of development has been programmed for federal aid highway funds and the State controls the highway rights of way. A project will be considered active until the date of its final acceptance by the Federal Highway Administration and thereafter will be considered complete.

"Adjustment": The relocation, removal, replacement, abandonment, etc., of existing utility facilities as necessitated by a highway construction project.

"Agreement": A legal instrument entered into by the Department and a utility on a highway construction project which outlines the legal and financial responsibilities of both parties.

"Arterial roadway": The functional classification for partial-access-control roads that serve to distribute traffic and are moderate in speed. Arterials carry traffic between collector roads and freeways. The DelDOT highway system map designates which roadways are arterials.

"Authorization": Permission by the applicable District Engineer, Construction Region Engineer or Utilities Engineer for the utility to proceed with any phase of a project.

"Backfill": Material used to replace or the act of replacing material removed during construction; also may denote material placed or the act of placing material adjacent to structures.

"Bar Chart": A schedule showing the proposed start and end dates for various utility activities on a complex singular contract or project. DelDOT prepares the Bar Chart based upon the Utility Statements submitted by the utilities.

"Betterment": Any upgrade of the facility being relocated made solely for the benefit of and at the election of the utility, not attributable to highway construction, as determined by the Utilities Engineer.

"Boring": The operation by which large carriers or casings are jacked through oversize bores. The bores are carved progressively ahead of the leading edge of the advancing pipe as soil is mucked back through the pipe.

"Casing": A larger pipe, conduit, or duct enclosing a carrier. Casings are installed in open cuts or by boring or driving. They are usually sealed at the ends and sometimes vented when the pipelines carry lighter-than-air gases. Casings are usually required to avoid the need for trenching through existing pavements, to prevent the destruction of the roadway due to leakage of liquids under pressure, or to prevent or contain leaking under pressure.

~~"Chief Engineer": Shall be a civil engineer registered or eligible for registration as such in Delaware and qualified to design as well as direct road engineering work as specified in the Delaware Code.~~

~~"Clear Roadside Policy": The Department's policy of providing a clear recovery area (clear zone so as to increase safety, improve traffic operations, and enhance the aesthetic quality of highways by designing, constructing, and maintaining highway roadsides as wide, flat, and with no abrupt changes in slope as practical and as free as practical from natural or manufactured hazards such as trees, drainage structures, non-yielding sign supports, highway lighting supports, utility poles, and other ground-mounted structures. The policy addresses the removal of roadside obstacles that are likely to be associated with accident or injury to highway users. However, when such obstacles are essential, the policy provides for appropriate countermeasures to reduce hazards. Countermeasures include placing utility facilities at locations that shield the hazard from out-of-control vehicles by using breakaway features, impact attenuation devices, or shielding. Full consideration is to be given to sound engineering principles and economic factors in all cases. See the DelDOT Road Design Manual and the AASHTO Roadside Design Guide for more details.~~

~~"Clear Zone": The total roadside border area, starting at the edge of the traveled way, available for safe use by errant vehicles. This area may consist of a shoulder, a recoverable slope, a non-recoverable slope, and/or a clear run-out area clear of fixed or non-traversable objects. The purpose is to provide errant vehicles a reasonable opportunity to stop safely or otherwise regain control of the vehicle. The desired width is dependent upon the traffic volumes and speeds, and on the roadside geometry. See the DelDOT Road Design Manual and the AASHTO Roadside Design Guide for calculation of Clear Zone widths.~~

~~"Code of Federal Regulations, Title 23, Part 645": The current regulations on utility relocations. Subpart "A" defines policy, procedure, and cost development for utility relocation, adjustments, and reimbursement. Subpart "B" defines policy and procedure for accommodating utility facilities on federal-aid highways.~~

~~"Collector Roadway": The functional classification for partial-access-control roads. Provides a less highly developed level of service at a lower speed for shorter distances by collecting traffic from local roads and connecting them with arterials. The DelDOT highway system map designates which roadways are collectors.~~

~~"Conduit": An enclosed tubular casing, singular or multiple, for the protection of wires, cables, or lines, usually jacketed and often extended from manhole to manhole.~~

~~"Conflict": Exists when a utility is in the way of highway construction or maintenance operations and needs adjustment or relocation. The presence of utilities in the right of way does not necessarily constitute a conflict.~~

~~"Coordination Meeting": Periodic meeting attended by representatives of utilities, for the purpose of informing those utilities of current policy and procedures and for discussing current topics of general interest.~~

~~"Construction": The actual building and all related work, including relocation or adjustments, incidental to the construction or reconstruction of a highway project except for preliminary engineering, Subsurface Utility Engineering, test holes, or rights of way work which is programmed and authorized as a separate phase of work.~~

~~"Construction Plans": The large scale usually 1 inch = 30 feet plan sheets which show the highway project in detail.~~

~~"Consultant": A registered professional engineer engaged by the Department of Transportation, State of Delaware, or a utility, to develop plans, specifications, and estimates for the Department or for a utility.~~

~~"Control of Access": The condition where the right of owners or occupants of abutting land or other persons to access, light, air, or view in connection with a highway is fully or partially controlled by public authority.~~

- ~~Full control of access means that the authority to control access is exercised to give preference to through traffic by providing access connections with selected public roads only, by prohibiting at-grade crossings and direct private driveway connections.~~
- ~~Partial control of access means that the authority to control access is exercised to give preference to through traffic to a degree that, in addition to access connections with selected public roads, there may be some at-grade crossings and private driveway connections.~~

~~"Corner Cut (Daylight Corner)": A right-of-way area at an intersection reserved for sight clearance and/or turning clearance, usually by a diagonal right-of-way line.~~

~~"Cost of Relocation": The entire amount paid by or on behalf of the utility properly attributable to the relocation after deducting from that amount any increase in value of the new facility, and any salvage derived from the old facility.~~

~~"Cost of Removal": The amount expended to remove utility property including the cost of demolishing, dismantling, removing, transporting, or otherwise disposing of utility property and of cleaning up to leave the site in a neat and presentable condition.~~

~~"Cost, Replacement": The remaining portion of the total cost of the relocation of a facility after deducting therefrom the cost of betterment, credit for salvage, and expired service life credit.~~

~~"Cost, Right-of-Way": The cost of land and interests to the acquisition of land or interest in land required for the relocation of the utility facility.~~

~~"Cost of Salvage": The amount expended to restore salvaged utility property to usable condition after its removal.~~

~~"Costs, Overhead or Indirect": Those costs, which are not readily identifiable with one specific task, job, or work order. Such costs may include indirect labor, social security taxes, insurance, stores expense, and general office expenses. Costs of this nature generally are distributed or allocated to the applicable job or work orders, other accounts and other functions to which they relate. Distribution and allocation is made on a uniform basis which is reasonable, equitable, and in accordance with generally accepted cost accounting practices.~~

~~"Cover": Depth to top of pipe, conduit, casing, cable or similar line or utility tunnel below the earth or roadway surface. It is normally referenced from the bottom of the highway ditch.~~

~~"Department": Department of Transportation, State of Delaware (DelDOT).~~

~~"Designation": The process of using a surface geophysical method or methods to interpret the presence of a subsurface utility and to mark its approximate horizontal position (its designation) on the ground surface.~~

~~"Designer": The Department employee engaged in the design of a highway project, or the outside engineering consulting firm hired by the Department for that purpose.~~

~~"Direct Burial": Installing a utility underground without encasement.~~

~~"District Engineer": District Engineer of North, Canal, Central, or South District. The Engineer that is the highest authority in a district.~~

~~"District Public Works Section": The unit within each district that is responsible for utility operations under the direction of the District Engineer.~~

~~"Duct": An enclosed tubular casing for protecting wires, lines, or cables, often flexible or semi-rigid.~~

~~"Eligibility": The costs incurred on a project or a specific phase of a project that, when authorized, may be reimbursable provided they are legally qualified under the applicable State Highway Laws.~~

~~"Emergency": A situation where the safety of the traveling public or general public, or the structural integrity of the highway facility, is placed in immediate danger (as defined in the Delaware Code, Title 26, Chapter 8 -- the "Miss Utility Law").~~

~~"Encasement": A structural element that surrounds a carrier or casing.~~

~~"Expired Service Life Credit": In any instance where the relocation involves the substitution of a replacement facility for an existing facility, a determination shall be made by the Department whether a credit is due to the project for the value of the expired service life of the facility being replaced. Such credit shall take into account the effect of such factors as wear and tear, action of the elements, and functional or economic obsolescence of the existing facility, not restored by maintenance during the years prior to the relocation.~~

~~"Expressway": A divided arterial highway for through traffic with full or partial control of access and generally with grade separations at major intersections. (See "Freeway.")~~

~~"Federal-Aid Coordinator": Maintains liaison with the Federal Highway Administration, insofar as fiscal matters are concerned, if federal monies are involved in the utility adjustment.~~

~~"Federal-Aid Highway Projects": Active or completed projects administered by or through DelDOT, involving the use of federal aid highway funds for the development, acquisition of right of way, construction, or improvement of the highway or related facilities, including highway beautification projects under 23 U.S.C. 319, Landscaping and Scenic Enhancement.~~

~~"Federal Highway Administration (FHWA)": Highway agency of the U.S. Department of Transportation.~~

~~"Final Billing": The detailed summary of the actual costs incurred by the utility on their relocation including the documentation necessary to verify the amounts expended.~~

~~"Fixed or Non-traversable Objects": Existing or planned objects, whether natural or manufactured, such as trees, drainage structures, non-yielding sign or lighting structures, drainage ditches, retaining walls, rock outcroppings, utility facilities, etc.~~

~~"Force Account Basis": Utility work performed by the utility's own forces with reimbursement at actual cost.~~

~~"Freeway": An expressway (divided arterial highway) with full control of access.~~

~~"Highway, Street or Road": Any public way for vehicular travel, including the entire area within the rights of way and related facilities.~~

~~"Highway Construction Project": The construction, reconstruction, widening, or resurfacing of a State Highway, within the existing legal right of way or within a new required right of way, by contract or by Department forces or agent of the Department.~~

~~"Highway Right-of-Way": Real property or interests therein, acquired, dedicated, or reserved for the construction, operation, and maintenance of a highway. Lands acquired under Section 319(b), Title 23, U.S.C. (Scenic strips 1965 Highway Beautification Act) shall be considered to be under the jurisdiction of the Department.~~

~~"Horizontal Clearance": As stated in the DelDOT Road Design Manual; the lateral distance from edge of traveled way to a roadside feature or object for a roadway with barrier curb. Roadways having curbed sections should be provided with a minimum horizontal clearance of 1.5 feet beyond the face of curb, with wider offsets (if possible to the full clear zone width) provided where practical since most types of curbs provide little help in redirecting an errant vehicle. Please see the DelDOT Road Design Manual and the AASHTO Green Book for more information regarding horizontal clearance.~~

~~"Initial Payment": First relocation payment to the utility by the Department under the terms of a reimbursement agreement.~~

~~"Interim Payment (periodic billing)": Reimbursement by the Department to the utility, either in specified minimum amounts or definite billing periods, as invoices for completed relocation work are submitted, whenever provided for in the reimbursement agreement.~~

~~"Jacking": The pushing of a sleeve or casing pipe under a highway to make an underground utility crossing without disturbing the roadbed by open trenching.~~

~~"Manhole (Utility Access Hole"): An opening in an underground system which workers may enter for the purpose of making installations, removals, inspections, repairs, connections, and tests.~~

~~"Master Franchise": The legal document that authorizes a regulated Public Utility to place its facilities within State rights of way, without any vested interest therein, under the provisions of Delaware Code 1953, Title 17, and supplements thereto.~~

~~"Median": The portion of a divided highway separating the traveled ways for traffic in opposite directions.~~

~~"Non-participating": Whenever utility relocations are not programmed with FHWA for reimbursement to the Department from federal funds, they are called "non-participating." Project design, right-of-way acquisition, and construction can be "participating," while utility relocations can be "non-participating." Particular utility relocations may be handled as "non-participating" on a federal-aid project, even when other utility relocation work on the same project is programmed as "participating."~~

~~"Offset": A. "Surveying offset" - A distance measured at right angles from the centerline of a highway to a specific point. B. "Roadway offset" - A measured distance along the centerline of a highway in feet from an established segment.~~

~~"Participating": Refers to utility adjustments or relocations performed after work has been programmed with and authorized by FHWA. Such funds are requested by the State at the pro-rata share applicable for the project where FHWA requirements are met by the Department and the utility.~~

~~"Pipe": A tubular product made as a production item for sale as such. Cylinders formed from plate material in the course of the fabrication of auxiliary equipment are not pipe as defined here.~~

~~"Flexible Pipe" - A plastic, fiberglass, or metallic pipe having large ratio of diameter to wall thickness, which can be deformed without undue stress.~~

~~"Rigid Pipe" - Pipe designed for diametric deflection of less than one percent.~~

~~"Semi-Rigid Pipe" - Pipe designed to tolerate from one percent to three percent diametric deflection.~~

~~"Plan Sheet Index": The small-scale highway plan sheet, usually sheet number two, showing the entire project.~~

~~"Preliminary Engineering (PE) estimate": Estimate of the preliminary engineering required to design the alteration, adjustments and/or relocation.~~

~~"Preliminary Engineering (PE"): The making of surveys, the preparation of utility plans, specifications, estimates (PS&E) and other related preparatory work in advance of construction operations.~~

~~"Prior Rights": Exist when a utility is determined to have legally occupied a public right of way prior to the time such right of way was conveyed to or acquired by the State of Delaware's Department of Transportation.~~

~~"Private Lines": Privately owned facilities that convey or transmit utility commodities devoted exclusively to private use.~~

~~"Private Right-of-Way": Lands in which utilities have a real property interest for the purpose of distributing or transmitting service. This term, when used for determining eligibility for reimbursement, shall mean any area outside of a public right of way, except lands owned by the State that are occupied by right of a license.~~

~~"Private Right-of-Way Status": Facilities located within the right of way regarded by the Department as having private rights for the purpose of determining liability for relocation costs in the event of further relocation. In this situation, the Department is responsible for paying relocation costs or for providing substitute right of way.~~

~~"Project Manager": The DelDOT staff member responsible and accountable for satisfactory completion of the construction project.~~

~~"Prorated Shares": The percentages of financial responsibility of the utility and the Department on a utility relocation necessitated by a highway construction project. Generally, proration is based on the original location of utility facilities.~~

~~"PS&E": Stands for "plans, specifications, and estimates."~~

~~"Public Right-of-way": The legal right of way of any public highway, street, road, or alley that is under the jurisdiction of the Department or any municipality or political subdivision. Law also designates certain navigable waterways as public rights of way.~~

~~"Public Utility": 'public utility' means a utility as defined in 26 Del.C. §102(2) and (4) per the Delaware Code §143, Title 17. A private business organization, subject to governmental regulation, that provides an essential commodity or service, such as water, gas, electricity, wastewater, or telecommunications, to the public.~~

~~"Real Property Interest Document": Evidence of the utility's title to a compensable real property interest.~~

~~"Reimburse and Participate (or their derivatives)": Shall mean that State funds may be used to repay the utility to the extent provided by law.~~

~~"Relocation": The adjustment of utility facilities required by the highway project. It includes removing and reinstalling the facility, including necessary temporary facilities, acquiring necessary right-of-way on the new location, moving, rearranging or changing the type of existing facilities and taking any necessary safety and protective measures. It shall also mean constructing a replacement facility that is both functionally equivalent to the existing facility and necessary for continuous operation of the utility service, the project economy, or sequence of highway construction.~~

~~"Replacement Facility": The replacement of the function of a facility rather than installing a replica facility.~~

~~"Required Right-of-Way": Private property to be acquired by the Department for highway purposes by amicable settlement or by Eminent Domain proceedings.~~

~~"Right-of-Way": Real property, or interests therein, acquired, dedicated, or reserved for the construction, operation, and maintenance of a highway, road, or street.~~

~~"Right-of-Way Certificate": A contract document that certifies that the right of way necessary to construct the project is available.~~

~~"Roadside": A general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.~~

~~"Roadway": In general, the portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways. In construction specifications, the portion of a highway within the limits of construction.~~

~~"Sacrificed Life": A reimbursable charge in the amount of the computed value of the unused life of a facility removed from private property and not functionally replaced.~~

~~"Salvage": The material removed and used or placed in storage for future use.~~

~~"Salvage Value": The amount received from the sale of utility property that has been removed or the amount at which the recovered material is charged to the utility's accounts, if retained for reuse.~~

~~"Scrap": Material that is not suitable for reuse and which is removed by the utility and sold, for which the State will receive proper credit.~~

~~"Service Connection": A line from a utility's main distribution line to the premises served, sometimes privately owned.~~

~~"Single-pole Construction": Use of single poles to support aerial facilities rather than double-pole arrangements such as H-frames.~~

~~"Sleeve": A short casing through pier or abutment of highway structure.~~

~~"Standard Construction Details": The DelDOT Standard Construction Details in effect on the date work commenced. The Details can be found at the following Web address: http://www.deldot.gov/static/publications forms.html~~

~~"Standard Specifications": The Standard Specifications for Road and Bridge Construction of DelDOT, in effect on the date work commenced. The Specifications can be found at the following Web address: http://www.deldot.gov/static/publications forms.html~~

~~"State": Department of Transportation, (DelDOT), State of Delaware.~~

~~"Test Hole Locating": The locating, through the use of test holes, of underground utility facilities. The entire procedure includes surveying and providing data for the top and bottom of the located facility as well as the existing ground at the site; tying vertical controls to a minimum of the two checked bench marks or available datum; properly backfilling the test holes and restoring the pavement to an acceptable condition approved by the Department; and providing data on Department plans as may be required.~~

~~"Total Estimated Service Life of the Replaced facility": The sum of the period of actual use plus the period of expectant remaining life. In instances where such a facility is still in operation but fully depreciated on the utility accounts, there shall be a mutual determination by the interested parties to establish the expected remaining life of the replaced facility.~~

~~"Traveled way (or travelway)": The portion of the roadway for the movement of vehicles, exclusive of shoulders and auxiliary lanes.~~

~~"Use and Occupancy agreement": The document (written agreement or permit) by which the Department approves the use and occupancy of highway right-of-way by utility facilities or private lines.~~

"Utility Coordinator": Coordinates the relocation or adjustment of all utilities between the utility and the Department of Transportation, State of Delaware.

"Utilities Engineer": The Engineer and authorized Representative of the Chief Engineer responsible for utility coordination work performed within DelDOT Transportation Solutions, Engineering Support.

"Utilities Section": The unit within DelDOT Transportation Solutions, Engineering Support responsible for matters concerning utilities under the direction of the Utilities Engineer.

"Utility Clearance": The arrangements by the utilities to accommodate the highway construction project. It does not indicate that the utility facilities are actually removed from the area but that facilities have been either adjusted to accommodate construction or that arrangements have been made to coordinate the relocation work with the highway contractor's operations.

"Utility Construction Permit": A permit that authorizes a utility to construct, maintain, or repair a utility facility within State rights of way.

"Utility Design Meetings": Utility-DelDOT meetings held to discuss utility relocations on specific highway construction projects. Usually, two such meetings are held on each project, the initial meeting to discuss probable relocation schemes and the final meeting to review relocations for inclusion in the highway plans.

"Utility Plans, Specifications and Estimate (Utility PS&E)": The detailed relocation cost estimate, prepared by the utility, consisting of highway plan sheets marked to show the relocation and any additional utility drawings or supplemental sheets that are necessary to provide a clear picture of the work to be performed and how the estimated costs were determined.

"Utility Statement": A synopsis of utility relocation work and its anticipated schedule that is incorporated in the bid package upon approval by the Department. (See Section 5.1.4)

"Verification of Facilities": The furnishing of information by the utility to verify the type, size, and location of facilities for the mutual benefit of both parties. It is intended that this may be accomplished at nominal cost to the utility, e.g., through maps, records, etc.

"Work Order System": A procedure for accumulating and recording into separate accounts of a utility all costs to the utility in connection with any change in its system or plant.

## 3.0 Design Requirements

- The requirements presented in this chapter apply to the location and design of all utility installations within the highway rights-of-way.

### 3.1 Types Of Work

- There are two distinct types of utility work in highway rights-of-way:

#### 3.1.1 Permit and New Service Installation Work. This work usually encompasses the maintenance of existing utility facilities or the installation of new services or utility distribution facilities. The appropriate District Public Works staff issues the permits and inspects the work.

- The purpose of the permit is to alert DelDOT that the work is taking place, so that DelDOT can review the traffic control, proposed locations and design and inspect the work to ensure the integrity of the roadway.

#### 3.1.2 Project Design and Facility Relocation Work. This work results from highway construction projects where it is necessary to relocate utility facilities. Project design work is coordinated through the Utilities Engineer and the Utilities Section. A permit is usually not required for this type of work because the highway construction project supervisor inspects the work. However, a permit is required for utility work in advance of construction where DelDOT Construction is not yet assigned to the project. The permit is processed via the District Public Works office. A permit is also required for preliminary test holes for the location of utilities unless the District waives the requirement.

- Traffic control for project design work is coordinated with the highway contractor, the highway construction project supervisor and the Construction District to ensure proper safety standards are employed.
- The District Public Works Section administers permit work in its district. The Construction Group Engineer administers highway construction projects. The Chief Engineer and the Assistant Director of Project Development are responsible for the project design. Any situations that cannot be resolved through the normal process may be forwarded to the appropriate authority.

### 3.2 Highway Safety And Traffic Control

- The Department considers highway safety a high priority that is an essential and indispensable component of every project from planning through the design and construction phases. Therefore, companies that install, maintain, service, operate, or otherwise work upon utilities within highway rights-of-way are always obligated to consider the safety of the general public. This includes providing appropriate traffic control within work areas.

#### 3.2.1 Traffic Control

- All reasonable measures shall be taken for the protection and safe operation of traffic during and after installation of facilities. For all utility maintenance or construction operations within public highway rights-of-way:

3.2.1.1 All traffic control shall conform to the requirements specified in the most current DelDOT manual Traffic Controls for Streets and Highways Construction, Maintenance, and Utility Operations ("Traffic Control Manual") and any other applicable State and federal regulations.

3.2.1.2 A traffic control plan, referencing the Traffic Control Manual, must be submitted and approved whenever a permit is required.

3.2.1.3 Failure by a utility to provide for traffic safety will be cause for immediate suspension of operations. The work will not be allowed to continue until the District is satisfied that proper traffic control is established.

3.2.1.4 If there are any discrepancies between the Manual on Uniform Traffic Control Devices (MUTCD) and the Traffic Control Manual, the DelDOT Safety Section shall be contacted for clarification. In all questions of interpretations of the MUTCD and the Traffic Control Manual, the judgment of the Chief Traffic Engineer shall be final. The protection prescribed for each situation shall be based on the speed and volume of traffic, duration of operation and exposure to hazards. The term "street" refers to all the streets in any municipality, including cities, towns, villages, or other local jurisdictions.

3.2.2 Traffic Control And Safety References

3.2.2.1 Title 17 of the Delaware Code provides for the establishment of traffic control and safety standards to be observed during utility construction and maintenance operations on or adjoining any public highway, road, or street. Public and private utilities, contractors under contract with utility companies, and all others engaged in utility construction and maintenance are required to comply with these standards.

3.2.2.2 The Traffic Control Manual explains in detail the principles and requirements of traffic control and safety standards. It covers traffic control procedures, responsibilities of involved parties, required training for personnel, and descriptions of approved control devices.

3.2.2.3 Responsible utility officials are strongly encouraged to obtain the Traffic Control Manual, study its contents, and make copies available to their field supervisors. The Traffic Control Manual can be found online at http://www.deldot.gov/static/publications_forms.shtml. The standards are to be implemented through the training and supervision of utility employees. Failure to meet standards will result in stoppage of work until deficiencies are brought into compliance.

3.2.2.4 All workers within state right of way shall have high visibility safety apparel that meets ANSI 107-2004 standard requirements. This apparel will meet the standard performance for Class 2 risk exposure. The apparel background material color shall be fluorescent yellow-green as defined in the standard. The reflective material shall be either orange, yellow, white, silver, yellow-green, or a fluorescent version of these colors, and shall be visible at a minimum distance of 1000'. For nighttime work, apparel meeting standard performance for Class 3 risk exposure is recommended.

3.2.3 Traffic Control Plan

3.2.3.1 The traffic control plan is an important aspect of the project. It shall be prepared by qualified individuals and understood by all affected parties before work begins. In preparing the traffic control plan; the sample cases in the Traffic Control Manual shall be followed. The plan must be submitted or traffic control case identified when applying to the District Office for a construction permit. If utility officials need to veer from standard case studies, an ATSSA Certified Traffic Control Supervisor must submit changes to DelDOT Safety for approval prior to applying for the permit.

3.2.3.2 The utility work shall not begin until the District approvals have been obtained and the approved permit information including traffic control are on the job site. Once the job has begun, the utility inspectors must ensure that the plan is followed throughout the project.

- In the case of emergency work where there is no prior approval of a traffic control plan; the utility is still required to follow the DelDOT Traffic Control Manual.
- The requirement for a utility traffic control plan may be waived on construction projects when the utility adjustments are made simultaneously with the highway contractor's operations and the highway contractor provides the traffic control. Under these circumstances, the utility and highway contractor must cooperate and coordinate their work so that neither is delayed by the other's operation. See Section 5.4.2.3.

3.2.4 Flaggers And Traffic Control

3.2.4.1 Flaggers are essential in controlling traffic when one lane is closed and motorists must alternately use the remaining lane. Other important assignments for flaggers are necessary in utility work, such as lane closures for equipment passage, the pulling of cable crossings, and the control of traffic speed.

3.2.4.2 The Department has specific requirements for flagger warning signs, safety clothing, training, and associated flagger concerns, as described in the Traffic Control Manual. Utility supervisors are expected to understand and abide by these requirements. Flaggers are required to be ATSSA certified, expected to be alert, and to know the correct way to stop traffic, slow it down, and keep it moving.

3.2.5 Inspection Of Traffic Control

- Routine inspections of traffic control elements must be made to ensure acceptable levels of operation. Inspections will be performed by trained District personnel and shall be accomplished at a frequency corresponding to the magnitude of the:

3.2.5.1 utility activity,

3.2.5.2 traffic volumes, and

3.2.5.3 other contributing factors.

When a utility or utility contractor fails to follow the approved traffic control plan, inspectors will suspend the work until the required traffic control is in place. Failure to follow the traffic control plan violates 21 Del.C. §4105 and is subject to punishment by law.

3.3 Location Of Utility Facilities

- In planning utility locations on highway rights-of-way, consideration must be given at all times to sound engineering principles, public safety, and economic benefits to the State. The planning must consider safety, the visual quality of the highway, and efficiency of maintenance.

3.3.1 Specifically, the following items must be considered:

3.3.1.1 Minimize future project interference. New utility facilities shall be located to minimize the need for later adjustments to accommodate future highway improvements or other utility installations. The location should allow for adequate access to the facilities and accommodate future maintenance. In addition to meeting with DelDOT to discuss future projects, the following are sources to check on projects:

The Capital Transportation Program (CTP):

Wilmington Area Planning Council (WILMAPCO):

http://www.wilmapco.org/RTP/index.htm

The Statewide Long Range Transportation Plan

Dover/Kent County Metropolitan Planning Organization (MPO)

3.3.1.2 Minimize future interference to traffic. Consider methods to maintain utility facilities with minimum interference to highway traffic.

3.3.1.3 Preserve safe traffic operation and future space. New longitudinal installations shall be located on a uniform alignment as near as practicable to the right of way line and outside the clear zone to provide a safe environment for traffic operation and preserve space for future highway improvements or other utility installations.

3.3.1.4 Comply with ADA. The location of utility facilities and appurtenances shall be in accordance with the Americans With Disabilities Act.

3.3.1.5 Allow only Perpendicular Crossings. Utility lines shall cross the highway on a line generally perpendicular to the highway alignment.

3.3.1.6 Consider utility facility's ownership, operation, and maintenance methods for all facilities that it installs within the boundaries of the right-of-way as well as private underground services or other facilities.

3.3.1.7 Comply with Clearances and Clear Zone policies. Conform to horizontal and vertical clearances of aboveground utility lines with the "clear zone" roadside policies applicable to the system and the particular highway section involved. The locations of aboveground utility facilities shall be consistent with the clearances applicable to all roadside obstacles for the type of highway involved. See Section 2 for the definitions of "clear roadside policy", "clear zone" and "horizontal clearances."

- Clear zones are established for new construction and major reconstruction projects. Clear zones on other existing roadways may be less than desirable. Utilities shall check with District Public Works to determine the clear zone widths for specific locations for utility work performed under

permits. The calculation of clear zone widths is explained in DelDOT's Road Design Manual and the AASHTO Roadside Design Guide.

- If there is no feasible alternative to locating appurtenances within the clear zone, the appurtenances (including fire hydrants) must meet breakaway criteria.

3.3.1.8 Consider future drainage. Future drainage requirements shall be considered when determining location of utility installations. Existing swales or ditches may need to be deepened. New drainage ditches may need to be constructed. New storm water drainage pipelines may need to be installed in the future.

3.3.2 Highways With Fully Controlled Access

- Freeways and some expressways have full control of access. Full control of access to highways means that preference is given to through traffic by providing access connections only with selected public roads and by prohibiting at-grade crossings and direct private driveway connections. Delaware highways with full access control include:

all interstate highways,

freeways

toll roads, and

other roadways as determined by the Department.

3.3.2.1 Crossing Of Freeway Right-of-way

- New utility installations, and adjustments or relocations of existing utilities, are permitted to cross a freeway only in exceptional cases. The installation's effect on safety must be considered. All installations shall cross the freeway on a line perpendicular to its longitudinal alignment. Underground crossings are preferred. Overhead crossings are not desirable and shall be avoided. If a utility believes there is no feasible alternative to an overhead crossing, it must submit a written request to the district. The utility request must include the proposed cost of the overhead installation, describe other alternatives, and detail the associated costs of those alternatives. District Public Works will use the information in making a final decision.
- The following applies to developed areas or areas that are planned for development:
- Spacing - The utility distribution or feeder line crossings of freeways will be spaced as needed to serve consumers in a general area.
- Approval - Crossings of the freeway by utility service connections may be permitted with approval of District Public Works. Consideration will be given only when utility services are not available within reasonable distances along the side of the freeway.
- Maintenance - Access points to service utilities must be located outside the denial-of-access lines of throughways or ramps. The placement of underground utilities across freeways must preclude the need to disturb the roadway for maintenance Or Expansion Operations.

3.3.1.2 Utilities Along Freeways - Lateral Positioning

3.3.1.2.1 Longitudinal installations of utilities will not be permitted within the denial-of-access lines of a freeway and other roads as determined by District Public Works. Frontage roads, where provided, may be used for placement of utilities with the approval of District Public Works. Utilities located outside the access lines cannot be serviced by entrance from through-traffic roadways or ramps.

3.3.2.2.2 Utilities located on existing highway rights-of-way where the highway facility is being upgraded to a freeway must normally be moved. Permission for such utilities to remain in place may be granted if all service can be made from outside the access control line.

3.3.2.3 Utilities Along Roads Or Streets Crossing Freeways

- Where a utility follows a road or street that crosses a freeway, the utility shall cross the freeway on the location of the crossroad or street, and generally within its right-of-way. The utility must be serviced without access from the freeway. All work is subject to State and FHWA regulations in effect at the time. Overhead crossings are not desirable and shall be avoided as noted in Section 3.3.2.1.

3.3.3 Partial-access-control Highways

- On partial-access-control highways, preference is given to through traffic to a degree that, in addition to access connections with selected public roads, there may also be some other roads crossing at grade as well as some private driveway connections. Except for the types of highways listed under full access control in Section 3.3.1, most highways in Delaware have partial access control.

3.3.3.1 Utilities Along Partial-access-control Highways - Lateral Positioning

3.3.3.1.1 In considering an aboveground facility along a partial-access-control highway, the following constraints apply with respect to the location of the facilities. Any exceptions to these requirements can be submitted by the utility and will be considered by the Department.

- Clear zone - Overhead utilities and appurtenances, placed longitudinally on the State's right-of-way, will be positioned outside of clear zones and as close to the right-of-way line as possible.
  - Curves - It is not desirable that aboveground installations be placed on the outside of curves on roadways where the speed limit is above 30 miles per hour. Permission may be granted on a hardship basis. Rebuilding or upgrading existing facilities currently on the outside of a curve must conform to this section unless outside of the adjusted clear zone.
  - Daylight corners and traffic islands - Aboveground features such as poles, guys, enclosures, etc. shall not be placed in corner cuts ("daylight corners") or on traffic islands.
  - Incorporated areas - In incorporated areas, aboveground utilities will be placed as close as possible to the right-of-way line. If utilities cannot be placed as close as possible to the right-of-way line, the designs shall be reviewed and approved by District Public Workson a case-by-case basis, to minimize the impact on the traveled way. In curbed sections, the utilities will be located as far as possible behind the curbs and in compliance with the ADA. They shall never be closer than the horizontal clearance established in DelDOT's Road Design Manual and A Policy on Geometric Design of Highways and Streets (AASHTO's Green Book) and the AASHTO Road Design Guide.
  - Occupy only one side of a roadway - Every effort shall be made to place a utility line on one side of the roadway. New aerial service connections shall be avoided if possible. A Utility Construction Permit shall not be issued to place one utility's facilities along both sides of a traveled way unless justified and approved by the Chief Engineer.
  - Pole foundations - When pole foundations will be utilized, the Department must approve the types and locations prior to the permit request.
  - Rural areas - In rural, unincorporated areas, aboveground utilities will be installed 30 feet or more from the traveled way if State right-of-way is available. District Public Works must expressly approve closer placement when sufficient right-of-way is not available. Aboveground utilities will not be placed within the clear zone.
  - Slopes and Ditches - Poles, guys, stub poles, or other equipment will not be placed on front slopes, back slopes or at ditch bottoms.

3.3.3.1.2 In considering an aboveground facility along a partial-access-control highway, the requirements below apply with respect to the design of the facilities. Any exceptions to these requirements can be submitted by the utility and will be considered by the Department.

- Joint-use - Joint-use single-pole construction must be used at locations where more than one utility or type of facility is involved. This is most important at locations where the right-of-way widths approach the minimum required for safe operations or maintenance, or where separate installations may require extensive removal or alteration of trees. Exceptions will be made only in cases of hardship as determined by District Public Works on a case-by-case basis. The pole owner should ensure that the pole is sized adequately to allow space for the joint use facilities.

- Note: The holder of a franchise must not grant permission to another utility facility to jointly occupy its pole line without notifying the other facility of the Department's requirements.
  - Single-pole construction - Any longitudinal installations of overhead lines on the highway right-of-way must be limited to single-pole construction.
  - Special Protection - Only approved protective measures will be permitted where special protection is required under AASHTO guidelines for aboveground installations.
  - The owner of any abandoned pole within state right-of-way is responsible for ensuring its removal in a timely manner.

3.3.3.2 Utilities Along Highways - Vertical Positioning

3.3.3.2.1 Overhead electric power and communications structures, lines and cables shall be installed in compliance with the latest edition of the National Electrical Safety Code. Existing lines and cables shall be maintained at minimum clearance of 23.5 feet above track rails of railroads and a minimum clearance of 18 feet above roads, streets, entrances and other areas subject

to truck traffic. The above two clearances shall be maintained under all conditions, i.e. maximum conductor sag conditions (subject to terms of railroad permit requirements) and a minimum of 18 feet above all roadways or in accordance with the codes described in Section 3.4, whichever is greater.

3.3.3.2.2 The owner of utility facilities is responsible for moving them to eliminate any visual obstruction or interference to any traffic control device. This includes moving structures, overhead lines and cables, splice boxes, enclosures, and other appurtenances in order to provide adequate visibility of a traffic control device.

3.3.3.3 Historic Sites, Scenic Areas, Parks, Etc.

- Aboveground utility installations including those needed for highway purposes such as highway lighting or to serve a weigh station, rest area, or recreation area are not permitted on highway rights-of-way or other lands which are acquired or improved with federal aid or direct federal highway funds and are located within or adjacent to areas of scenic enhancement and natural beauty. Such areas include public park and recreational lands, wildlife and waterfowl refuges, historic sites as described in 23 U.S.C. 138, scenic strips, overlooks, rest areas, and landscaped areas. However, the Department may permit exceptions provided that the conditions described in the current Program Guide Utility Relocation and Accommodation on Federal-Aid Highway Projects are met. Relocation of pre-existing utility facilities from overhead to underground is subject to reimbursement within the guidelines described in Section 5.0.

3.3.4 Subdivisions

3.3.4.1 Subdivision Streets Not Yet Accepted For State Maintenance

- The Subdivision Developer shall be responsible for submitting utility installation site plans to District Public Works for review and approval prior to commencement of street construction within the subdivision and prior to utility installation.
- It is not necessary for a utility to obtain a construction permit in new subdivisions. Upon completion and acceptance of the subdivision streets, the utilities that are located within the State right-of-way shall be franchised in accordance with the existing Annual Master Franchise for each utility.
- The utilities in a subdivision will be located as follows:

3.3.4.1.1 Utilities will be allowed within the right-of-way.

3.3.4.1.2 Aboveground utilities must be avoided if possible. If pole lines are to be used, they must be placed behind the clear zone.

3.3.4.1.3 Where feasible, underground utilities shall be placed behind the proposed curb line or in an established utility easement.

3.3.4.1.4 The main lines of underground utilities must be longitudinally located between the right-of-way line and the curb or edge of pavement except for sanitary sewers that will be placed to avoid the wheel path when they cannot be located outside the roadway. If possible, sanitary sewers should avoid the crown of the roadway. Service lines may cross under the paved area to connect residences with main lines.

3.3.4.2 Subdivision Streets Accepted For State Maintenance

- Utility construction permits are required for existing subdivisions. Existing underground utilities will be permitted to remain in place in subdivisions with streets currently maintained by the Department. However, any utilities that are upgraded shall be located according to Section 3.3.4.1, provided there is enough right-of-way to place them behind curbs.

3.4 Design

3.4.1 A Master Franchise must be in force for any utility facilities present in the highway right-of-way. The utility's proposed design in all cases must:

protect the integrity of the roadway or highway structure,

protect the appearance of the highway,

minimize interference with traffic during maintenance of the facility, and

minimize highway maintenance problems for the State.

3.4.2 Permit And New Service Installation

3.4.2.1 District Public Works will review a permit application for new or existing utilities, maintenance work and re-construction, and some utility work in advance of highway construction. If acceptable, the District Public Works Section will approve the:

3.4.2.1.1 proposed location for the utility facility, and

3.4.2.1.2 methods of installing and/or attaching the facility and repairing the highway or structure.

3.4.2.2 The District will review and approve the traffic control plan to ensure highway safety, including the safe and free flow of traffic.

3.4.3 Project Design And Facility Relocation

- On DelDOT highway construction projects the Utilities Engineer will coordinate, review, and approve the utility's proposed plans for the:

  location of the facility, either in its existing position or in a relocated position,

  methods of installing and/or attaching the facility,

  timing of any proposed adjustments and/or relocations, and

  reimbursement of work in accordance with the requirements in this manual.

3.4.4 Requirements

3.4.4.1 Utility installations on, over, or under the rights-of-way of State highways, and utility attachments to highway structures, are to meet or exceed the requirements listed below as well as any other applicable codes or regulations.

- Electric power and communications: National Electric Safety Code (NESC).
- Water transmission and distribution: American Water Works Association (AWWA).
- Pressure pipelines: Standard Code of Pressure Piping of the American Society of Mechanical Engineers ASME B31.4 and B31.8 and applicable sections of Federal, State, local and industry codes.
- Liquid petroleum pipelines: American Petroleum Institute Recommended Practice for Steel Pipelines Crossing Railroads and Highways. U.S. DOT Rules and Regulations governing transportation of such materials, including Code of Federal Regulations Title 49 Part 195.
- Pipelines carrying natural gas and hazardous materials: U.S. DOT Rules and Regulations governing transportation of such materials, including Code of Federal Regulations Title 49, Parts 192 and 195.
- Fiber optic facilities: Standard for the Physical Location and Protection of Below-Ground Physical Plant (EIA/TIA-590); also NESC provisions for communications cable.

3.4.4.2 Provisions for future expansion of utility facilities are to be made when planning for adjustments to existing facilities or preparing for new installations.

3.4.4.3 Underground utilities must consider safe trenching practices when preparing their designs and constructing their facilities. Both the utilities and their contractors must comply with all Occupational Safety and Health Administration (OSHA) requirements while working on highway rights-of-way. If unsafe work environments exist, work must stop until safe conditions are established or restored.

3.4.5 Other Permits

- Utilities are responsible for obtaining all required permits from municipal, State, and federal governmental agencies and railroads. Examples of these permits include, but are not limited to:
  - Water quality permits, DNREC Water Quality Certification,

    DNREC subaqueous Lands/Wetlands permits,

    DNREC Coastal Zone Consistency Certification,

    County Floodplain permit (New Castle County only),

    U.S. Coast Guard permit,

    US Army Corps 404 permits,

    Sedimentation and erosion permits,

    Railroad crossing permits (See Section 4.1).

3.5 Utility Clearances And Depth Of Cover

3.5.1 Positioning And Clearances

- Vertical and horizontal clearances between utilities and utility clearances above roadways must conform to the utility codes cited in Section 3.4 and any other applicable industry codes and standards.

3.5.2 Depth Of Cover

- Depth of cover must also conform to the utility codes cited in Section 3.4 and any other applicable codes and regulations. The Department may request greater cover in some instances due to the type of road being constructed.

3.5.3 For Highway Appurtenances

3.5.3.1 Utilities must provide the minimum overhead clearances above the roadway defined in the references listed in Section 3.4. Appropriate clearances from signal poles and street lighting shall also be maintained, as applicable codes require.

3.5.3.2‘ Utility accesses and valve covers shall not be located in the roadway of rural highways. If there is no feasible alternative in urban and suburban areas, they shall not be located in a wheel path or in the centerline of the roadway.

3.5.3.3 Horizontal clearances will be in accordance with the clear zone requirements described in the DelDOT Road Design Manual and A Policy on Geometric Design of Highways and Streets (AASHTO's Green Book). Exceptions must have the approval of the District Public Works Section.

3.6 Underground Installations

3.6.1 Underground Utilities Crossing Highways. Avoid utility crossings in deep cuts, near bridge and retaining wall footings, in wet or racky terrain and at highway cross drains where flow of water, drift, or streambed load may be obstructed. The crossings shall also be avoided where it is difficult to attain minimum cover, and through paved or unpaved berm slopes under structures. See Section 3.3 for more information regarding crossings of freeways and partial-access-control highways. Refer to section 3.6.3 for more information regarding pipelines.

3.6.2 Installation Methods

3.6.2.1 Directional Boring, Jacking And Push-augering

3.6.2.1.1 Directional boring is the industry standard and the method accepted by the Department. Boring is defined as the operation by which large carriers or casings are jacked through oversize bores. The bores are carved progressively ahead of the leading edge of the advancing pipe as soil is mucked back through the pipe. Jacking is defined as the pushing of a sleeve or casing pipe under a highway to make an underground utility crossing without disturbing the roadbed by open trenching.

3.6.2.1.2 Utilities must provide plans for proposed jacking, push-augering, or directional bore operations for approval by the District Public Works Section when applying for a construction permit. Directional bores are the preferred method and shall be considered wherever possible. Pits for jacking, push-augering or directional bore are not permitted in a proposed paving area.

3.6.2.1.3 The pits for jacking, push-augering, or directional bore must be excavated no closer to the roadway than 5 feet from the edge of an improved shoulder. Where the shoulder is dirt or grass, the pit excavation may encroach on the shoulder but must remain at least 10 feet from the edge of pavement. Adequate measures must be taken to ensure traffic safety and the integrity of the roadway, especially where the pit is so close to the traveled way. Two approved pit layouts are shown in Figure 2-1. For curb-and-gutter sections, pits must be a minimum of 5 feet from the back of the curb. If sufficient right-of-way is unavailable in the above situations, lesser distances, 2 feet or greater, may be approved.

3.6.2.2 Open Cutting

3.6.2.2.1 The open cutting of a roadway for the purpose of working on or installing new underground facilities shall be avoided. DelDOT's policy is to avoid the open cutting of any roadway for at least five years after resurfacing or reconstruction, unless there is no alternative. Exceptions will be made only in cases of hardship as determined by the Department on a case-by-case basis.

3.6.2.2.2 The District Public Works Section shall review requests for open cutting on a case-by-case basis, and shall have final approval of how the work is to be accomplished. For work related to a DelDOT highway project, permission for open cutting shall be requested as part of the Utility Statement during the planning of the project.

3.6.2.2.3 In the event open cutting is allowed, the utility must adhere strictly to the backfill and restoration requirements. The District Public Works Section will specify fill material. Borrow type C can be utilized however; Flowable Fill is recommended for cross-road cuts. Flowable Fill may be required by the District Public Works Section. Information regarding Flowable Fill from the Special Provisions can be found in Appendix F of this manual.

3.6.2.2.4 Utilities may not cover open trenches with steel plates between October 31 and April 15. The District Public Works Section may grant exceptions.

3.6.2.3 Other Installation Methods

3.6.2.3.1 Methods of installing utilities beneath roadways, other than push-augering, jacking, and directional bore will be considered for approval only on a case-by-case basis for specific sites.

The utility must prepare and submit complete plans and specifications for the excavation, design, and installation involved in other methods.

3.6.2.3.2 Other methods include tunneling and installing tunnel liners or open-cut construction involving the installation of:

- reinforced concrete box culverts;
- corrugated metal, structural plate, or reinforced concrete arch culverts;

or

- corrugated metal, structural plate, or reinforced concrete pipe culverts.

3.6.3 Pipelines

- All pipeline installations must conform to the applicable regulations pertaining to the type of installation being constructed. The Department considers vents, drains, markers, manholes, and shutoffs as parts of pipeline installations.

3.6.3.1 Permits

- Utilities are required to give advance notice and obtain approval from the District Office for any new pipeline or anticipated change to the current design or operation of a pipeline. The permit application shall specify the applicable codes to be used. Construction permits for pipelines shall specify the class of materials being carried, transmittant, the maximum working, test, or design pressures, and the design standards for the carrier.

3.6.3.2 Placement Of Pipeline

- Pipelines installed longitudinally - The pipeline must be placed as close as possible to the outer extremities of the highway, unless approved otherwise in municipality or suburban development. The placement shall not interfere with highway drainage or with the structural integrity of the travelway shoulders or embankment.

3.6.3.2.1 Pipeline Crossings:

3.6.3.2.1.1 Pipeline crossings shall not be located in deep cuts, across cuts and fills, on steep slopes, near footings of bridges or retaining wall footings, across intersections at grade or ramp terminals, in wet or rocky terrain, across drains where flows of water, drifts, or stream beds may be obstructed, or within basins of an underpass drained by a pump.

3.6.3.2.1.2 Pipe, conduit, sewer, or other similar facility must not be placed inside any drainage pipe. Neither shall objects be placed across the ends of any drainage pipe or culvert so as to obstruct the full flow of water.

3.6.3.2.1.3 Pipelines crossing streams must be securely suspended above flood lines or lay beneath streambeds.

3.6.3.2.2 Pipeline Appurtenances:

3.6.3.2.2.1 Manholes - Manholes are not to be located in the traveled way of any expressway or public way for vehicular travel. The District Public Works Section may authorize exceptions only at locations where manholes are essential parts of existing lines that have been previously authorized to remain in place. Such installations shall avoid intersections. Manholes shall be designed and located so that they will not interfere with other utilities and planned highway expansion. Manholes are not to be located in the flow line of ditches, the centerline of the roadway, or the wheel path of traffic. All manholes must be flush with the finished grade. Refer to Section 3.3.4.1 for information regarding Subdivisions.

3.6.3.2.2.2 Valves - Shut-off valves, preferably automatic, must be installed in lines at or near the ends of structures. Isolation valves will also be required near crossings of unusual hazards. Exceptions may be allowed when other safety devices placed within a reasonable distance of the structure or hazard can isolate the pipeline.

3.6.3.2.2.3 Vents - Any vents shall be located at both ends of casings longer than 150 ft and at the high end of short casings. Vent standpipes shall not interfere with maintenance, use of the highway, nor affect pedestrian traffic. The standpipes shall be highly visible and preferably located on a right-of-way line.

3.6.3.3 Hazardous Transmittants

- Crossings by pipelines carrying a hazardous liquid or liquefied gas (including propane) or other hazardous or volatile material shall not be allowed. Exceptions will be made only in cases of hardship as determined by the Department on a case-by-case basis with reference to federal guidelines. Natural gas pipelines, however, will be allowed via the permit review and approval process through the District Office.

3.6.3.4 Pipeline Installation

- Pipeline crossings are to be identified by permanent markers.
- Any new water line or sanitary sewer line shall be pressure-tested to assure that it is water-tight.
- Pipelines abandoned in place shall be properly purged and sealed.
- Depth of Pipeline - The utilities must also conform to the any utility codes cited in Section 3.4.4.
- Crossing - The critical control for the depth of cover on a non-cased pipeline crossing is the low point in the highway cross-section. Normally, this is the bottom of the longitudinal ditch. Additional protection shall be provided for any pipeline with less then minimal cover. Such measures would employ higher factor of safety in the design, construction, and testing of the uncased carrier pipe, including such features as thicker wall pipe, radiograph testing of welds, hydrostatic testing, coating and wrapping, and cathodic protection as well as well as suitable bridging or concrete slabs.
- Longitudinal - Pipelines in the highway right-of-way must be placed at least 24 inches below the finished surface. Lines crossing ditches must be placed at least 24 inches below the ditch flow line. The nearest edge of the trench is to be at least 5 feet from the edge of the traveled way or curb line, however, this distance can be reduced to 2 feet or greater should sufficient right-of-way be unavailable. Shoring must be placed where narrow right-of-way limits this minimum offset. The shoring will protect the curb line or traveled way during utility installation.
- Clearances between Utilities - All utilities shall be separated from one another as required by appropriate codes and ordinances.
- Section 1102, Title 26, Delaware Code stipulates that a distance of at least 3 feet shall be maintained between pipes carrying steam, heat, or power and pipes carrying gas or water, unless one is crossing the other. Where pipes are crossing one another, the minimum clearance must be at least 1 foot.
- Where a sanitary sewer line is to cross under a water line, the sanitary sewer line shall be laid with a minimum of 18 inches clearance between its top and the bottom of the water line. Where the minimum vertical clearance cannot be obtained, the District Public Works Section may approve the construction of the water line with slip-on or mechanical-joint ductile iron, cast iron, pressure, or pre-stressed concrete cylinder pipe for a distance of 10 feet on each side of the sanitary sewer. One full length of water-line pipe is to be centered over the sanitary sewer line so that both joints are as far from the sanitary sewer line as possible.
- The horizontal separation between sanitary sewer lines and water mains must be at least 10 feet, or in compliance with American Water Works Association (AWWA) regulations. Where it is impossible to separate underground utilities horizontally the desired minimum, the water line and sanitary sewer line must be constructed of slip-on or mechanical-joint ductile iron, cast iron, pressure, or pre-stressed concrete cylinder pipe with the approval of the appropriate regulatory authority.

3.6.4 Casings

3.6.4.1 A casing is a larger pipe, conduit, or duct enclosing a carrier. Underground utility crossings of roadways shall be made in sleeves or casings for the following conditions:

3.6.4.1.1 Utility crossings of freeways, expressways, and other controlled access highways and at other locations where it is necessary to avoid trenched construction and prevent inconvenience to highway users;

3.6.4.1.2 To protect carrier pipe from external loads or shock, either during or after construction of the highway; and

3.6.4.1.3 To prevent leaked material from saturating or damaging the highway embankment by conveying leaking fluids or gases away from the area directly beneath the roadway to a point of venting at or near the right-of-way line or to a point of drainage in the highway ditch or a natural drainage way.

3.6.4.2 When To Utilize Casings

- Except for circumstances as described in Section 3.6.4.3, the Department requires that:

3.6.4.2.1 All crossings of full-access-control roadways (interstate highways, toll roads, freeways) shall be enclosed or cased.

3.6.4.2.2 All crossings of existing or proposed arterial and collector roadways (partial-access-control roadways) shall be enclosed or cased. Arterial and collector roadways are identified on the DelDOT Functional Classification Maps.

3.6.4.2.3 Casings are required for crossings of existing or proposed major entrances to commercial facilities or residential subdivisions. However, if an exception is granted, at such locations the minimum design shall be the same as the design requirements outlined in Section 3.6.4.3, or as approved by the District Public Works Section.

3.6.4.2.4 Typically, jacked or bored installations of coated carrier pipes shall be cased unless assurance can be provided against damage to the protective coating.

3.6.4.2.5 Consideration shall be given to encasement or other suitable protection for any pipeline

3.6.4.2.5.1 with less than minimum cover,

3.6.4.2.5.2 near footings of bridges or other highway structures,

3.6.4.2.5.3 across unstable or subsiding ground, or

3.6.4.2.5.4 near other locations where hazardous conditions may exist.

3.6.4.3 Exceptions To Casings

3.6.4.3.1 Suitable bridging, concrete slabs, or other appropriate measures should be used to protect existing uncased pipelines which by reason of shallow cover or location make them vulnerable to damage from highway construction or maintenance operations. Such existing lines may remain in place without further protection measures if they are of adequate depth and do not conflict with the highway construction or maintenance operations, provided both highway and utility officials are satisfied that the lines are, and will remain, structurally sound and operationally safe.

3.6.4.3.2 High Density Polyethylene (HDPE) is under evaluation as an uncased carrier for natural gas.

3.6.4.3.3 New uncased construction can be employed if approved by District Public Works for permit work or the Utilities Engineer for highway construction projects. The approval is acceptable when open cutting is approved, if necessary, and in the following circumstances:

3.6.4.3.3.1 The carrier is approved by the Department and conforms to the material and design requirements of the utility industry, governmental codes and standards, can support the load of the highway plus loads superimposed thereon when the pipe is operated under all ranges of pressure from maximum internal to zero pressure, with a higher factor of safety than normally required for cased construction. Carriers meeting these requirements can be used for the following installations provided a profile is submitted along with the plans for the following types of installations:

3.6.4.3.3.1.1 Natural Gas - utilities can employ welded steel pipe as an uncased carrier pipe with at least 42 inches of cover. All such pipes shall meet design requirements as outlined above. High Density Polyethylene (HDPE) is under evaluation as an uncased carrier.

3.6.4.3.3.1.2 Water - The minimum requirements for waterline crossings shall be ductile iron pipe with an industry standard push joint and at least 42 inches of cover. All such ductile iron pipes shall meet design requirements as outlined above.

3.6.4.3.3.1.3 Other Transmittants: A Department approved uncased crossing of welded steel pipelines carrying a transmittant which is flammable, corrosive, expansive, or unstable materials, particularly if carried at high pressure, may be permitted, provided additional protective measures are taken in lieu of casing. Such measures would employ higher factor of safety in the design, construction, and testing of the uncased carrier pipe, including such features as thicker wall pipe, radiograph testing of welds, hydrostatic testing, coating and wrapping, and cathodic protection

3.6.4.3.4 Suitable bridging, concrete slabs, or other appropriate measures shall be used to protect existing uncased pipelines which by reason of shallow cover or location make them vulnerable to damage from highway construction or maintenance operations.

3.6.4.3.5 Any exceptions (aside from those mentioned in Section 3.6.4.3.3.1) to the casing requirements shall be determined by the District Public Works Section, based upon a written request for the exception stating the hardship and proposed method of crossing. In requesting exceptions, the utility shall consider the Department's policy of no open cutting of a roadway within 5 years after it has been resurfaced, except for an emergency. In addition, there shall be no open cutting for service lateral crossings. Utilities shall also consider those areas where repairs would be restricted by lack of rights-of-way or easements.

3.6.4.4 Permits For Casings

- In all situations where a casing is to be installed, the utility shall submit a plan describing the location, method, and type of casing for approval by the District Public Works Section.

3.6.4.5 Placement Of Casing

3.6.4.5.1 Where casings are required, the location of the crossings must be determined carefully so that, if necessary, the utility can acquire sufficient right-of-way or private easements to remove or replace the utilities.

3.6.4.5.2 Casings shall extend at least 5 feet beyond the curb, pavement, projected fill slopes, or ditch lines to assure proper support of roadways during any repairs to pipelines. For all access-controlled highways, the encasement shall extend from right-of-way line to right-of way line or outside outer curbs. The design shall encompass allowance for future widening of the highway without the need of utility adjustment.

3.6.4.6 Types Of Casing

Casings shall be designed to support the load of the highway and superimposed loads thereon and at least equal the structural requirements for highway drainage facilities. Corrugated materials shall not be allowed.

3.6.4.6.1 Volatile Transmittant - The casings for facilities transmitting volatile materials must be of steel pipe of standard manufacture. The joints must be welded or fused sealed around the entire circumference of the pipe as industry standards and regulations allow.

3.6.4.6.2 Non-Volatile Transmittant - The casings for facilities transmitting non-volatile materials may be of standard material such as steel pipe. Other usable materials must be of a design to sustain the live and dead loads currently used in Delaware highway design. Such materials include reinforced concrete pipe, cast iron pipe, aluminum pipe, and ductile iron pipe.

3.6.4.7 Casing Installation

3.6.4.7.1 All pipeline installations must conform to the applicable regulations pertaining to the type of installation being constructed. When a pipeline casing is placed under a roadway, all installations are to be made by jacking, push-augering, or other approved methods. If coated pipe is used for jacking or boring, the same pipe should not be used as a carrier pipe.

3.6.4.7.2 A typical layout for jacking through a roadway is shown in Figure 2-1. Appropriate traffic control measures shall be used in accordance with DelDOT's Traffic Control Manual due to the reduction in shoulder use by the traveling public caused by jacking operations.

3.6.4.7.3 Other requirements for installation are as follows:

3.6.4.7.3.1 Non-Metallic Pipe - Installations of non-metallic pipe must include a tracer material that is detectable by locating devices that are acceptable within the industry.

3.6.4.7.3.2 Depth of Casing - The minimum cover required over casings is 42 inches, as measured from the top of the casing. The critical control for the depth of cover on a non-cased pipeline crossing is the low point in the highway cross-section. Normally, this is the bottom of the longitudinal ditch. Additional protection shall be provided for any pipeline with less then minimal cover.

3.6.4.7.3.3 Clearances – All utilities shall be separated from one another as required by appropriate codes and ordinances.

3.6.4.7.3.4 Sealing of Casing – Casing pipe over 4 inches in diameter must be sealed. Where carrier pipes that carry combustibles are cased, the casing pipes must be provided with a screened vent on each end that is as near as feasible to the right-of-way boundaries.

3.6.4.7.3.5 Drains – Drains shall be provided for casings and tunnels enclosing carriers of liquid, liquefied gas, or heavy gas. Drains may not outfall into roadside ditches. Such outfall shall not be used as a wasteway for purging the carrier unless specifically authorized by a National Pollutant Discharge Elimination System (NPDES) permit.

3.6.4.7.3.6 Vents - Where carrier pipes that carry combustibles are cased, the casing pipes must be provided with a screened vent on each end that is as near as feasible to the right-of-way boundaries. Other requirements are as follows:

3.6.4.7.3.7 Vents required for cased pipes are to be located at the high end of short casings less than 150 feet long and at both ends of casings longer than 150 feet.

3.6.4.7.3.8 Vent standpipes and warning markers are to be located and constructed so as not to interfere with the maintenance of the highway nor be concealed by vegetation.

3.6.5 Electric, Communication, And CATV

3.6.5.1 The requirements discussed earlier in this chapter describing installations and maintenance of pipelines crossing highway rights-of-way as related to casings, markers, and installations must also be applied to underground electric, CATV, and communications lines two inches or larger. The minimum depth of cover for these cased crossings is 42". Greater cover may be required depending on the construction of the roadway.

3.6.5.2 For underground electric, CATV, and communications lines less than two inches in diameter:

3.6.5.2.1 Where a conduit or casing is placed under an existing roadway, all installations must be made by jacking, push-augering, directional bore or other approved methods. The casing must have a minimum nominal diameter of 2 inches and is to be placed a minimum of 24 inches below the surface. The utilities must also conform to the National Electric Safety Code and any other utility codes cited in Section 3.4. Utilities may be required to install facilities deeper on a case by case basis depending upon the construction of the roadway.

3.6.5.2.2 Where the burying of cable is permitted along the edge of pavement, it may be done by plowing or trenching methods. The nearest edge of the trench must be at least 5 feet from the edge of the pavement, however, this distance can be reduced to 2 feet or greater should sufficient right-of-way be unavailable. The minimum depth of bury for CATV, communications, and electric is 24 inches, however, these utilities must also conform to the National Electric Safety Code and any other applicable regulations.

## 3.7 Attachments To Structures

### 3.7.1 General

3.7.1.1 Attaching utility lines to a highway structure can materially affect the structure, the safe operation of traffic, and the efficiency of maintenance, safety inspections, and structural repairs.

3.7.1.2 New attachments of utility facilities such as water, gas, sanitary sewer mains and electrical facilities will not be allowed on new structures. Communications and other telecommunications will not be permitted unless an extreme hardship can be proven. If a utility believes there is no feasible alternative, it must submit a written request to the district. In the request, the utility must include the proposed cost of the installation, describe other alternatives, and detail the associated costs of those alternatives. The District Public Works Section, Bridge Design Engineer, and Utilities Engineer will use the information in making a decision. The request is also subject to the approval of the Assistant Director, Design and Chief Engineer. Where utility attachments are requested, they will be considered only if the structure in question is of a design that is adequate to support the additional load and to accommodate the utility facility without compromise of highway features, including reasonable ease of bridge maintenance. In all cases, gas lines or pipelines carrying explosive, corrosive, or flammable fluids must follow all applicable Federal and State codes.

3.7.1.3 The Department may enter into an agreement to reimburse the utility to design and inspect facility support and protection during Department projects as described in Chapter 5. Refer to the OSHA Technical Manual for requirements.

### 3.7.2 Request For Attachment

3.7.2.1 In extreme hardship cases, the utility shall submit to the Utilities Section Engineer a written request to attach its facility to a structure owned and maintained by DelDOT. The request shall include the following items:

3.7.2.1.1 Identification of the structure including details regarding the utility facility and its contents, such as pressure, voltage, current, flammability, freeze point, weight per foot, and any other pertinent information.

3.7.2.1.2 Calculations performed by a Delaware registered professional engineer to demonstrate the structural impact on the existing structure. All hazardous impacts must be addressed- magnetic fields, protection against electrocution, etc.

3.7.2.1.3 A study identifying alternate methods of getting the facility over, under, or around the obstacle, as well as the costs and problems associated with each alternative.

3.7.2.1.4 Descriptions of the proposed method of attachment and the appropriate devices for protecting the bridge and the facility.

3.7.2.1.5 The costs of the design and/or increased construction expenses, including the utility's commitment to pay for the construction expenses.

3.7.2.2 The request for attachment shall then be reviewed by District Public Works, Utilities Engineer and the Bridge Design Engineer. The request is also subject to the approval of the Assistant Director, Design and Chief Engineer.

3.7.2.3 Utilities are expected to make a good-faith effort to accommodate DelDOT maintenance or construction requirements. The Utility shall submit all material and construction specifications for inclusion in contract documents for any work to be performed by DelDOT's contractor.

### 3.7.3 New Construction

- If the Department approves the attachment, the utility must agree to having the facility installed by the Department's contractor at the price assigned to this bid item within the Department's construction project

bid, at the utility's expense. The utility shall reimburse the Department in accordance with the terms of an agreement outlining the conditions of bridge occupancy.

3.7.4 Existing Structures

- The following policies apply to utilities on existing structures:

3.7.4.1 Existing utilities attached to a structure can remain if they are not impacted by a Department project.

3.7.4.2 Existing utilities must be relocated off the structure if the Department's project requires either temporary or permanent relocation.

3.7.4.3 Any utility that plans to replace a facility attached to a structure shall relocate the facility off the structure.

3.7.4.4 The utility must consult the Department District Public Works on its choice of contractor, and have the Department's District Public Work's consent. The utility, by agreement, shall pay for Department inspection, and the Department shall have an inspector on site during the construction.

3.7.5 Attachment Procedures

- The following should be considered when the design of utility attachments is reviewed:

3.7.5.1 The attachment is designed to minimize adverse impact on structure maintenance.

3.7.5.2 No facilities are attached to the outsides of structures.

3.7.5.3 All utility facilities attached to structures shall be housed in casing pipes to allow for insertion and extraction of the carrier facility.

3.7.5.4 No manholes are constructed in bridge decks.

3.7.5.5 Utilities are placed so that the vertical clearance of the bridge above the stream, pavement, or railroad tracks is not reduced.

3.7.5.6 Utilities are located beneath decks, between the outer girders or beams, and within a cell -above the low superstructure steel or masonry.

3.7.5.7 Support rollers, saddles, or padded or coated hangers are used to muffle vibration noise.

3.7.5.8 The casings of pipes or conduits that are carried through bridges, or attached to them, are effectively opened or vented at each end to prevent pressure buildups and detect gas or fluid leaks. Casing pipes shall be sealed at the ends with a flexible material to prevent flowing water or debris from entering the annular space between the casing and carrier. Casing drains shall be provided for a carrier of liquid, liquefied gas, or heavy gas.

3.7.5.9 Additional protective measures are taken where pipes or conduits carried through or attached to structures are not cased. Such measures shall employ a higher safety factor in the design, construction, and testing of the pipeline than would normally be required for cased construction.

3.7.5.10 Upon leaving bridges, the utilities are aligned outside the roadway in as short a distance as operationally practicable.

3.7.5.11 Hangers or rollers are suspended from inserts below deck or from hanger rods clamped to beam flanges. No bolting through bridge floors or beams should be allowed.

3.7.5.12 Where appropriate, the linear expansion and contraction of utilities due to temperature changes are provided for. Line bends or expansion couplings should be used.

3.7.5.13 Suitable corrosion protection is provided.

3.7.5.14 Communication and electric lines that are attached to structures, or pass through them, are suitably insulated and grounded, and are carried in protective conduit or pipe from the point of exit from the ground to re-entry. Carrier pipe and casing pipe shall be suitably insulated from electric power line attachments.

3.7.5.15 Pipes and conduits that are carried through abutments are sleeved and tightly sealed with mastic, or carried through by other approved methods.

3.8 Preservation And Restoration

3.8.1 Preservation

3.8.1.1 Utilities are prohibited from spraying, cutting, and trimming trees on public highways or street rights-of-way unless written permission has been granted by the Department. When permission is granted for a utility to cut or trim trees, the work must be performed in compliance with Department standards.

3.8.1.2 Where tree removal is permitted, stumps must be removed, and the resulting holes shall be properly backfilled to allow for settlement in accordance with the DelDOT Standard Specifications.

3.8.1.3 The Department has adopted the ANSI Standard A300 (Part 1) - 2001 entitled Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices. The Landscaping and Reforestation Act Implementation (located in Section 2 of the DelDOT Road Design Manual) also provides guidelines for tree protection and maintenance during road construction projects.

3.8.1.4 For all future transportation projects and maintenance activities on existing highway alignments, trees must be replaced in accordance with the Department's Landscaping and Reforestation Act Implementation located in Section 2 of the DelDOT Road Design Manual. Each employee or agent of the Department who participates in the planning, design, and construction of projects and normal maintenance of the roadways should be aware of the aesthetic and environmental effect that natural vegetation provides. Every effort must be made to preserve the beauty of Delaware's roads. However, each employee or agent must also be aware of the danger posed by hazards left along the roadside. The AASHTO Roadside Design Guide should be used as reference. The traveling public has the right to expect a reasonably safe road and roadside area when faced with potential dangers such as blowouts, evasions of other vehicles or animals, adverse weather conditions, and other uncontrollable situations.

3.8.1.5 Utilities shall ensure that appropriate erosion control devices are in place before work starts and properly maintained during construction. The surface area disturbed by utility installations or relocations shall be kept to a minimum.

- Care shall also be taken in utility installations to avoid disturbing existing highway or private drainage facilities or sprinkler systems. Any damage to the facilities by the utility company or its subcontractors shall be repaired at the utility company's expense.

3.8.2 Restoration

3.8.2.1 Damage to highway traveled ways, shoulders, and drainage features caused by utility installations or repairs must be immediately restored to their original condition as stated in the Delaware Code. If utilities have not completed restoration within 30 days, noncompliance regulations will take effect. Temporary patches from winter months shall be permanently restored by May 15 before noncompliance action will be taken. Damage to roadside areas in the right-of-way shall be repaired as soon as possible, or as specified by the District Public Works Section. Restoration is also necessary when utilities are working on active construction sites. The District Public Works Section will determine any necessary repairs.

3.8.2.2 The utilities shall restore the damaged areas to a condition at least equivalent to that which existed prior to the utility work. In all cases, the District Public Works Section will determine the extent of restoration required. All such work will be done at the utility's expense and in accordance with the appropriate Standard Specifications. The Seeding specification is located in Section 734 of the Standard Specifications.

3.8.2.3 The utility shall maintain the non-pavement restoration for a period of 12 months after the satisfactory completion. Utilities are responsible for maintaining pavement patches that result from utility work for three (3) years.

3.8.2.4 Traveled Way - General

- To maintain traffic, not more than one lane of traffic shall be closed at a time whenever a traveled way is cut. All cross-road cuts for utilities will be made perpendicular to the longitudinal centerline of the traveled way, and perpendicular to the plane of the finished subgrade. All patches must have a minimum length of 6 feet (as measured along the roadway centerline) and the width of the lane or lanes disturbed. Any lane encroachment of one foot or more requires restoration of the full lane width. Before reopening the section, the area shall be made usable for traffic. DelDOT Standard Construction Detail P-2 illustrates cross-road cuts.

3.8.2.5 Flowable Fill

- Flowable fill is recommended for restoration of cross-road cuts although Borrow Type C can be utilized. Flowable fill shall meet the requirements of Special Provision 208500 as shown in Appendix F. The District Public Works Section may require flowable fill.

3.8.2.6 Temporary Patches

3.8.2.6.1 If immediate repairs to the traveled way are not feasible and if the District Public Works Section concurs a temporary patch may be used until permanent repairs are completed. Figure 2-3 shows the minimum design requirements for temporary patches: at least 8 inches of compacted graded aggregate overlaid by at least 2 inches of Superpave Type C 160 Gyration, PG 64-22. When weather conditions prohibit the use of such mix, District Public

Works can approve 10 inches of compacted graded aggregate overlaid by at least 2 inches of cold patch mix.

3.8.2.6.2 Figure 2-3 also illustrates trench width and backfill layer requirements. Backfill shall be placed and compacted in successive layers. Trench widths vary, but should not be less than 2 feet plus the outside diameter of the pipe. Each backfill layer is to be placed in a level, uniform cross section not exceeding 8 inches in loose depth, and then compacted with a mechanical tamper according to the Standard Specifications Division 200 regarding Earthwork.

3.8.2.7 Surface Treatments And Hot Mix Pavements

3.8.2.7.1 Figure 2-4 illustrates the details of permanent cross-road or longitudinal utility patches for surface-treated or hot mix asphalt roads and shoulders. Note that this is a minimum patch. If the existing roadway has a heavier cross section than indicated in Figure 2-4, it will be replaced with the same cross section or as directed by the District Public Works Section.

3.8.2.7.2 The compaction requirements for both the patch material and the backfill material are covered in Division 200 of DelDOT's Standard Specifications.

3.8.2.7.3 The details for a temporary patch are shown in Figure 2-3.

3.8.2.8 Portland Cement Concrete Pavements

3.8.2.8.1 Portland cement concrete (PCC) streets and roads must be patched as described in Section 503-"Patching Portland Cement Concrete Pavement"-of the Standard Specifications. The details are shown in the DelDOT's Standard Construction Detail P-2 for PCC Pavement Patching.

3.8.2.8.2 An approved concrete saw shall be used to make a vertical, full-depth cut in the concrete pavement. The cut is to be made to ensure a straight, clean, vertical surface.

3.8.2.8.3 Temporary patches are discouraged in PCC pavements in favor of plating the opening and returning the next day to pour permanent ones. If a temporary patch is to be used, it will require the same cross section as shown in Figure 2-3 (8 inches graded).

3.8.2.8.4 Other details of utility patches in PCC pavements are shown in Standard No. P2 of DelDOT's Standard Construction Details.

3.8.2.9 Hot Mix Overlays On PCC Pavements

- Utility patches made in PCC pavements with hot mix overlays shall comply with the current Standard Specifications and gain approval of the District Public Works Section. The patch layout is illustrated in Standard No. P2 of DelDOT's Standard Construction Details.

3.8.2.10 Roadsides

3.8.2.10.1 Damage to roadside areas in the right of way shall be repaired as soon as possible to conditions at least equivalent to those existing prior to utility work. The restoration of roadside areas is concerned mainly with trenching and backfilling requirements. First, excavation widths will vary depending on the type of utility being placed.

3.8.2.10.2 Trenches for cables, conduits, conductors, or pipes other than those that are plowed or cut by a small trencher with a 4-inch to 6-inch cut must be at least 8 inches wide.

3.8.2.10.3 Trenches for pipe (other than rectangular or square conduit) with an outside diameter of 6 inches or more must be cut 2 feet wider than the outside diameter of the pipe. The pipe will then be placed in the trench with a 1-foot clearance on each side.

3.8.2.10.4 Trenches are to be backfilled or covered immediately after installation of the utility facility. They cannot be left open overnight because they pose a hazard to the public. Authorization to use steel plates at any time other than April 15 through October 31 must be obtained from the District Public Works Section.

3.8.2.10.5 Acceptable material must be used to backfill trenches. It shall be placed in 8-inch layers (loose measurement) and thoroughly compacted just as for trenches in pavement areas. The backfill material and compaction method must meet the requirements of the Standard Specifications.

3.8.2.10.6 Excavated material that is not satisfactory for backfill shall be removed from the area immediately after excavation. Material that is satisfactory for backfill must be stockpiled in a safe and orderly manner preferably not stored on the roadway. District Public Works can approve storage on the roadway if necessary. Material stockpiled in the immediate work area must not pose a hazard to the traveling public. All materials shall be stockpiled in accordance with the rules established by the Manual on Uniform Traffic Control Devices (MUTCD).

3.8.2.11 Manholes And Valve Boxes

3.8.2.11.1 Where manholes or valve boxes are repaired in pavement areas, backfill shall be placed in 8-inch layers (loose measurement) and thoroughly compacted the same as for trenches in pavement areas. The backfill material (Type C Borrow) and compaction method must meet the current Standard Specifications.

3.8.2.11.2 During construction, areas around manhole lids and valve boxes must be dug by a non-destructive method. The details of proper roadway patching around manhole lids are shown in Figure 2-5.

3.8.2.12 Test Holes

3.8.2.12.1 When possible, test holes are to be dug by a nondestructive method such as by vacuum removal in a hole less than 244 square inches. The repair shall be only the size of the hole. The fill shall be compacted in lifts, and the same amount of stone, hot mix, concrete, etc. as the existing roadway - shall be replaced.

3.8.2.12.2 Sometimes small holes (up to 2 inches in diameter) bored in the surface for any type of utility testing or maintenance will be repaired with a flexible embedding sealer (cold poured resilient type epoxy joint sealer) approved by the District Public Works Section.

3.8.2.13 Highway Construction Projects

3.8.2.13.1 The restoration requirements defined in this chapter apply to the placement of utilities on existing roadways and rights-of-way. Where utility relocations and adjustments are made in conjunction with a highway improvement project, some portions of the restoration by the utilities may be unnecessary. For example, full restoration is unnecessary when the area will be repaved as a part of the highway improvement. Under these circumstances, appropriate portions of the restoration requirements may be waived.

3.8.2.13.2 The utility is responsible for restoring all sedimentation and erosion control measures to their original conditions and for maintaining temporary patches.

## 4.0 Master Franchise, Permits and Agreements

### 4.1 Definitions and General Requirements

#### 4.1.1 Definitions

- The Department uses three different types of documents to manage the installation and/or occupancy of utility facilities on, under or across State right-of-way. These documents include franchises, permits, and agreements.

"Letter Agreement" - A letter agreement is a legal instrument between a utility and the Department to establish the utility work in conjunction with a DelDOT highway construction project that the Department has determined to be reimbursable. It describes the terms and conditions in accordance with the State code by which the work and subsequent payment will be handled. An executed letter agreement is required prior to the performance of any work that is to be reimbursed. See Chapter 4 for further discussion.

"Public Utility Annual Master Franchise" - The Public Utility Annual Master Franchise is a legal instrument that grants the use of highway rights-of-way. It authorizes a public utility to place its facilities within State rights-of-way without any vested interest therein (under the provisions of Title 17 of the Delaware Code). A franchise does not serve as a control instrument over construction methods, traffic control features, or timing as opposed to a permit, which does. The only type of franchise accepted by the Department is the Public Utility Annual Master Franchise established October of 2004. The Master Franchise eliminated the need for a public utility to apply for a franchise each time a new utility installation was to be located within State right-of-way. The public utility applies for a Master Franchise for each County where it owns facilities within the State right-of-way. The executed Master Franchise remains in force for a period of 50 years and automatically renews annually for another 50 years unless otherwise agreed to by the parties.

"Use and Occupancy Agreement" - This agreement is between the Department and an individual or entity for a privately owned facility that crosses a State-maintained road. It provides the Department with information about the crossing and sets forth the conditions for it. This agreement may also be used for privately or individually owned facilities to be located on State rights-of-way.

"Utility Construction Permit" - A Utility Construction Permit authorizes a utility to construct, maintain, or repair a utility facility within State rights-of-way. The highway is under the control of District Public Works, and a Utility Construction Permit is used to secure the District Public Works Section's approval of the details controlling construction activities.

#### 4.1.2 General Requirements

4.1.2.1 A Master Franchise is required if a public utility locates facilities on State right-of-way. A public utility must submit a franchise application for each County where its facilities are located within the State rights-of-way.

4.1.2.2 A Utility Construction Permit is required in all cases of maintenance or installation of utility facilities on State right-of-way, including right-of-way within a municipality unless otherwise specified for a State Highway Construction Project. A Master Franchise or a Use and Occupancy Agreement must be in force before a construction permit is valid. The application for a Utility Construction Permit must be submitted to the applicable District Office of Public Works.

4.1.2.3 A Utility Construction Permit may not be issued to place aboveground or underground parallel facilities along both sides of a traveled way, unless justified and approved by the District Public Works Section or located within subdivisions. In the case of underground, safety and adequate space for other utilities should be considered before exceptions are approved.

4.1.2.4 If the utility crosses over or under a railroad, the District will make a notation on the permit that the work is subject to approval by the railroad company. A copy of the railroad company approval shall be supplied upon request to the District prior to crossing the railroad.

## 4.2 Master Franchise

### 4.2.1 Purpose

- The Master Franchise is a legal instrument by which the use of highway right-of-way is granted. It is not a control instrument over construction methods, traffic control features, or timing as opposed to a permit. The Department may grant a Master Franchise to the following utilities:

4.2.1.1 a public utility subject to the regulatory jurisdiction of the Public Service Commission;

4.2.1.2 a cable system operator or video services provider franchised by the Public Service Commission or a municipality; or

4.2.1.3 a utility owned, operated, controlled or created by the State, a municipality, county, or other political subdivision. The Public Utility Annual Master Franchise form is located in Appendix B of this manual.

### 4.2.2 Conditions

- The Master Franchise requires that all facilities to be constructed must meet the requirements set forth in this manual for locations, construction, construction methods, timing, etc.

### 4.2.3 Preparation

- The utility submits three Master Franchise forms for each County where they own facilities in the State rights-of-way. The three forms shall be signed with signature attested and the Company seal affixed. The franchise forms are to be submitted to the Utilities Engineer's office for processing.

### 4.2.4 Processing

- The appropriate Utility Coordinator reviews the Master Franchise forms for accuracy and completeness. If satisfactory, DelDOT Deputy Attorney General, Assistant Director of Engineering Support, and the Director of Technology and Support Services will execute the agreement and affix the Departmental seal. An original will be returned to the utility, one is forwarded to the DelDOT Director of Technology and Support Services, and one is retained in the Utilities Section. A copy of the Master Franchise will be forwarded to the appropriate District.

### 4.2.5 Renewals

- Each Master Franchise remains in effect for 50 years from the date of execution by the Department. The Master Franchise shall automatically renew annually for another 50 years unless otherwise agreed to by the parties. There is no need to file the franchise application annually.

### 4.2.6 Subdivisions

- Upon completion and acceptance of the subdivision or industrial streets, the utilities that are located within the State right-of-way shall be franchised in accordance with the existing countywide Public Utility Annual Master Franchise for each individual utility. Future work performed in that development will require only a utility construction permit. Please refer to the Standards and Regulations for Subdivision Streets and State Highway Access for requirements regarding subdivisions.

### 4.2.7 Freeway Right-of-way

4.2.7.1 Only in exceptional cases are utilities granted a Utility Construction Permit to cross freeway right-of-way on new locations, and rarely are they permitted to run longitudinally on freeway right-of-way.

4.2.7.2 A utility will be permitted along a freeway on a new location only under strictly controlled conditions. An application for permission to use or occupy the freeway right-of-way must be directed to the District Public Works Section.

4.2.7.3 The application must address the following:

4.2.7.3.1 the direct and indirect environmental and economic effects of any loss of productive agricultural land which may result from disapproving the use of the right-of-way,

4.2.7.3.2 the utility's compliance with the provisions of this manual and AASHTO policies as referred to in Appendix D,

4.2.7.3.3 why any other utility location would be extremely difficult and unreasonably costly for the utility consumer and

4.2.7.3.4 how the utility's installation on the freeway right-of-way will not adversely affect the design, construction, stability, traffic safety, or operation of the freeway.

4.2.7.4 The District Public Works Section will assess the situation and send the application with a recommendation and justification to the Utilities Engineer for coordination and comment. The Utilities Engineer will then review the application and provide the necessary coordination. Next, the application will be sent to the Assistant Director, Engineering Support for review.

4.2.8 Coordination Between Utility and State

- Both the Department and the utility company representatives need to exchange information regularly to help avoid conflicts between utility company projects and Department projects in terms of location, construction, or method of installation.

4.3 Use and Occupancy Agreements

4.3.1 Purpose

- The Use and Occupancy Agreement (shown in Appendix B) is to be used for privately or individually owned facilities that are located on or across a State-maintained roadway. For example, if a landowner owns both sides of a State roadway and needs to convey irrigation lines, water lines, gas lines, etc., between the properties, the landowner and Department must execute a Use and Occupancy Agreement.
- The Utility Use and Occupancy Agreement provides the Department with information about the facilities and sets forth their conditions. The owner must obtain a Utility Construction Permit for any construction, maintenance, or repair.

4.3.2 Conditions

- The Use and Occupancy Agreement provides the Department with information about the crossing and sets forth the conditions for the facilities. Only crossings will be allowed; longitudinal lines will not be permitted.
- Signs will be provided by the Department to mark the utility crossing at each right-of-way line. Furnishing the mounting post and installation in accordance with Department requirements is the responsibility of the utility owner.

4.3.3 Preparation

- A Use and Occupancy Agreement must be prepared by the owner, in triplicate, for each installation where a facility is placed on a State-maintained roadway.

4.3.4 Processing

- The Utility Use and Occupancy Agreement is then processed according to the following steps:

4.3.4.1 The agreement is reviewed by the appropriate District Public Works personnel for completeness, accuracy, and compliance with the provisions contained in this manual.

4.3.4.2 The District Public Works Section reviews the agreement and forwards a copy with sketches to the Utilities Engineer for review.

4.3.4.3 The Utilities Engineer reviews the information and makes comments to the District Public Works Section.

4.3.4.4 The District Public Works Section approves and signs the agreement after all corrections have been made, and then returns one copy to the applicant, sends one copy to the Utilities Engineer, and retains one copy.

4.3.4.5 In event of a dispute, the Chief Engineer has final approval.

4.4 Construction Permits

4.4.1 Purpose

- A Utility Construction Permit form (Appendix B) must be completed for all utility construction not performed in conjunction with a DelDOT construction project. A permit is required if utility work is done in advance of the construction project where DelDOT Construction has not yet been assigned. The permit is used to

secure the District Public Works Section's approval of the details controlling construction activities. An executed Public Utility Annual Master Franchise shall be on file prior to submission of a construction permit application for Public Utilities. A privately owned facility must have a Utility Construction Permit and a Use and Occupancy Agreement before any type of installation, repairs or relocation.

- To apply for a permit, contact the appropriate District Public Works Office:

  South District Public Works - Sussex County: 302-853-1340

  Central District Public Works - Kent County: 302-760-2473

  North and Canal District Public Works-New Castle County: 302-326-4679

- North District: Area north of and including I-95 and I-495 (except area west of Route 7, south of Route 2), including the City of Wilmington.
- Canal District: Area south of I-95 and I-495 (including west of Route 7 and south of Route 2 to Kent County, including the City of Newark.
- Usually, four sketches or plans must be attached to the construction permit application upon submittal. However, it is best to contact the District to see if there have been any changes to the requirements.

4.4.2 Electronic Permits

- A computerized permit process intended for large users may supplement the construction permit process. The utilities wishing to use the system will need to execute a letter agreement with the Department specifying the conditions of the electronic permits.

4.4.3 Requirements

- A Utility Construction Permit is required any time utility construction work (including excavations or openings) will disturb anything on the roadway or State right-of-way. The permit is necessary each time a facility is upgraded or rebuilt, or an installation is added (excluding services). Project Design Work (as defined in Section 3.1) is excluded from this requirement except in cases when Utility Work is performed in advance of construction or the Department requests test holes for the locations of utilities. The District may waive the permit requirement for test holes.
- Permits for Public Utilities will be issued only if a Master Franchise is in force. Private owners of facilities must have a Use and Occupancy Agreement along with a permit. The new permit request must show the existing and proposed installation.
- A utility that performs work on the State right-of-way longer than one working day to repair or adjust an existing facility or that disturbs the roadway must have a construction permit. If the work takes less than one day, and does not disturb the roadway, a permit is not required. However, the utility must notify the District Public Works Office of any lane closure on any roadway outside of a subdivision before starting work. The notification must include the location and type of work to be performed.
- In an emergency, the utility must promptly notify the District Public Works Office. The utility is responsible for communicating the type of emergency and location of the work to be performed and other pertinent information. The utility must submit a construction permit to the District Public Works Office as soon as possible. In case of an emergency during normal business hours, call the District Public Works numbers listed in Section 4.4.1. After normal business hours, please call:

| | |
|---|---|
| New Castle County: | 302-323-1111 |
| Kent County: | 302-760-2473 |
| Sussex County: | 302-855-1111 |

4.4.4 Fees

- No fees are authorized at this time.

4.4.5 Preparation

4.4.5.1 Utility Construction Permits are to be prepared in four copies (unless submitted electronically) by the utility company and submitted to the office of the District Public Works Section along with four copies of plan. The sketches or plans must show the:

4.4.5.1.1 width of the right-of-way,

4.4.5.1.2 type of roadway,

4.4.5.1.3 width of traveled way,

4.4.5.1.4 distance from the crossroad or side road to the installation,

4.4.5.1.5 distance from the centerline of the roadway to the installation,

4.4.5.1.6 type of shoulder,

4.4.5.1.7 width of shoulder,

4.4.5.1.8 drainage system in the utility area,

4.4.5.1.9 trench and restoration details,

4.4.5.1.10 north arrow, scale and legend, and

4.4.5.1.11 railroads crossing roadways.

4.4.5.2 In addition, all sketches for pressure pipeline installations must specify the class of transmittant, the maximum working pressure, the maximum design pressures, and the design standards for the carrier.

4.4.5.3 When a Utility Construction Permit is needed after a DelDOT highway contract has been awarded, the utility must obtain written permission from the DelDOT contractor to work in the project area. This policy includes any utility work not caused by the construction or improvement of a highway. For an exception to be made, the utility must have written permission from DelDOT to perform such work. To give this written permission, DelDOT must first obtain a satisfactory waiver, release, and quit claim from the State's contractor. It must cover all damages and all defenses whatsoever for delays caused by the utility work. If a dispute arises or the contractor will not provide the appropriate document, then the District Public Works Section has the option of setting a time frame in which the utility may work.

4.4.6 Processing

- The Utility Company submits a permit application to the District Public Works Office. The District assigns a permit number and distributes the originals as follows:

  original to the responsible District Public Works personnel,

  two copies to the utility, and

  one copy to the State Inspector

- Utility Construction Permits are required for work to be performed on state right of way or state maintained roads within the incorporated limits of a municipality. The utility must also have approval of the municipality.

4.5 Utility Construction, Relocation, Or Repair Not Due To Highway Construction

4.5.1 A public utility must not start construction of a new installation, repairs, or relocation until a Utility Construction Permit has been issued and a Master Franchise is in force. A privately owned facility must have a Utility Construction Permit and a Use and Occupancy Agreement before any type of installation, repairs or relocation.

4.5.2 The District Public Works office must be notified at least one working day before the start of construction. (Notification may be given in writing, orally, or by fax.) The information transmitted must include the starting date, road number, and permit number. Refer to Section 4.4.3 for further details including emergency situations.

4.5.3 Permits issued by the State may be revoked whenever state authorities ascertain a threat to the traveling public. Other causes for revocation may include--but may not be limited to--misuse, noncompliance with State requirements, or improper maintenance of traffic. Depending on the circumstances, any permit application may be denied.

4.5.4 The utility company or its contractor must have a responsible representative at the job site at all times to supervise the work. Information on the Utility Construction Permit must be available to this responsible representative.

4.5.6 Utilities must notify "Miss Utility" at least two working days before starting work. A "working day" shall mean every day, except Saturday, Sunday and state, federal and recognized operator holidays.

4.6 Noncompliance

4.6.1 If a utility fails to comply with any of the conditions, restrictions, or regulations prescribed by DelDOT and stated in this manual, the following actions will be taken:

4.6.1.1 The State will notify the utility, in writing, of the noncompliance. The State may also impose such actions, as it may deem appropriate, including an immediate stop work order until the utility complies.

4.6.1.2 The utility must correct the noncompliance within 30 days after receiving written notice from the State.

4.6.1.3 After the thirty 30 day period, the State will be required to take any action necessary to protect the safety of the traveling public. This may include restoration of roads or taking possession of and removing poles, pole lines, wires, pipelines, conduits, fixtures, or other structures or property owned by the utility and located on State right-of-way.

4.6.1.4 The utility will be responsible for all costs and expenses associated with the necessary action to correct the situation.

## 5.0 Utility Adjustments for Highway Construction

- Existing utilities along highways that are to be reconstructed may sometimes be allowed to remain in place, however they usually must be adjusted or relocated to accommodate the construction work and the reconstructed highway.
- Utility facilities must not be in the way of the reconstruction work in order to remain in place. In addition, their future maintenance must not create a hazard for the traveling public. The Utilities Engineer shall determine whether they may remain in place.
- In general, utilities are not reimbursed by the State for the cost of adjusting or relocating their facilities. In accordance with Section 143, Title 17, Delaware Code, however, some work is reimbursable. Both cases are discussed in this chapter.

### 5.1 Preconstruction Coordination

- The Utilities Section shall manage coordination of the design process for utility relocations and adjustments associated with highway construction projects. Utility companies shall provide information to the Department for all of their facilities within the existing or proposed right-of-way. The information provided will include the facility types, sizes, and locations.

#### 5.1.1 Concept Phase

- In the concept phase, the Department Project Manager is responsible for defining the limits of the right-of-way necessary to construct, operate, maintain the highway and plan for utility relocation. To minimize design time and avoid costly revisions, the Project Manager shall consult with the Utilities Section early in the design process. The Project Manager collaborates with the assigned Utility Coordinator to determine potential utility impacts. The Project Manager and Utility Coordinator shall determine the extent and timing of utility designation.
- The Utility Coordinator identifies existing utilities and contacts existing utility companies as necessary. The utility companies shall submit any easement or "prior rights" documentation to the Utilities Engineer. The purpose of the submittal is to establish a compensable interest if the utility is seeking reimbursement in accordance with Delaware Code. An executed agreement between the Department and the utility shall be in place for all eligible adjustments before any utility work can begin. Refer to Section 5.3 for more information regarding agreements.
- Note: It is the sole responsibility of the utility to provide the documentation of a compensable interest and not the Department's responsibility to seek it.

##### 5.1.1.1 Utility Designation

- The Project Manager and the Utility Coordinator will determine whether utility designation will be performed through MISS UTILITY, a Subsurface Utility Engineering (SUE) consultant or if utility designation is not required. The Project Manager specifies the Federal Highway Administration (FHWA) quality level of the SUE process required for the design of the project. If test holes are required, the Project Manager also specifies the number of test holes needed. The FHWA quality levels are classified as follows:
  - Level D information is retrieved from existing utility records.
  - Level C involves surveying visible aboveground utility facilities and correlating this information with existing utility records.
  - Level B involves the use of surface geophysical techniques to determine the existence and horizontal position of underground utilities.
  - Level A involves the use of non-destructive digging equipment at critical points to determine the precise horizontal and vertical position of underground utilities, as well as the type, size, condition, material, and other characteristics.
- The American Society of Civil Engineers Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data CI/ASCE 38-02 shall be followed for the classification and depiction of subsurface utility data.
- The results of the designation shall be forwarded to the Project Manager for incorporation into the plans and cross sections. The Project Manager, in coordination with the Utility Coordinator, shall determine which conflicts cannot be avoided and discuss alternatives with the affected utility company. The utility companies shall identify potential problems that could affect the project schedule at this stage of the plan development.

##### 5.1.1.2 Subsurface Utility Engineering (SUE) Consultant

- A Utilities Section SUE consultant or SUE consultant subcontracting to an approved Design Consultant may be utilized to acquire utility facility information. In all cases, the SUE consultant shall provide all information obtained from the approved tasks to the Project Manager, the approved Design Consultant for the project, and the DelDOT Utilities Section Coordinator. The SUE tasks may include utility designation, test holes, and coordination services. The SUE information includes, but is not limited to plans, test hole results, and review meetings.
- The utilities are required to provide or verify the designation information on their facilities regardless of the Department's use of a SUE consultant.

5.1.2 Survey Plans

- The Project Manager will provide two sets of survey plans per utility to the Utility Coordinator for distribution to each utility company. The utility will identify its existing and known abandoned facilities on the plans, indicating whether they are aerial, surface, or buried underground. The utility will also include information indicating:
  - the sizes of pipes,
  - number of conduits,
  - approximate depths of the facilities,
  - private easements,
  - any private services that may be affected,
  - the identity of other utility company facilities (attached, housed, aerial or underground),
  - any other information pertinent to the facilities,
  - and any planned relocations or reconstruction to occur within the limits of the project.
- The utility company must return the information to the Utilities Section within 30 days of receipt unless a later date is agreed upon by the Project Manager and the utility representatives.

5.1.3 Preliminary Plans

5.1.3.1 The Project Manager shall prepare preliminary plans showing the proposed alignment, typical sections, profile, schematic drainage alignment, existing right-of-way, proposed right-of-way, easements, clear zone, test hole data on cross-sections (if obtained), existing utility facilities from the survey data, and other details. The American Society of Civil Engineers Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data CI/ASCE 38-02 standards shall be followed for the classification and depiction of subsurface utility data.

5.1.3.2 The Project Manager will provide the Utilities Coordinator with two sets of preliminary plans to distribute to each utility involved in the project. If current, the utility information on the previously marked Survey plans will be shown on the preliminary plans.

5.1.3.3 The utility company is required to mark the preliminary plans with any additional right-of-way necessary for relocation of facilities. The following is typically requested with the marked Preliminary Plans:

5.1.3.3.1 suggested design modifications that would eliminate relocations,

5.1.3.3.2 description of utility relocations along with estimated timeframe for construction,

5.1.3.3.3 list of stations and offsets where test holes are needed,

5.1.3.3.4 identification of any permits that may be required, and

5.1.3.3.5 information on any other utility's facilities located on its poles.

5.1.3.3.6 Joint Use or third party installation requirements.

5.1.3.4 A utility may be dependent upon another utility's plans and actions in order to complete the work. The Utility Coordinator should be made aware of this condition in order to ensure efficient coordination of the project.

5.1.3.5 The utility company owning the pole, duct system, etc is responsible for coordinating the relocation of any renters or lessees as required by the Telecommunication Act of 1996.

- The utility company shall return the proposed work plan on one set of plans provided by the Department within 30 days of receipt. If a site meeting is held, the plans will be returned within two weeks of the meeting. In either case, a later date may be agreed upon by the project manager and the utility representatives.

5.1.3.6 Coordination and Site Meeting

- If a subsequent site meeting is held, the utilities shall return preliminary plans at the meeting or within two weeks of the meeting. The Utilities Section will forward a copy of the plans to the Project Manager.

- The Project Manager, in coordination with the Utility Coordinator and the utility company's representative, will review the preliminary plans for potential conflicts with existing utilities, and will determine which conflicts cannot be avoided. Any proposed signage or street lighting to be done in conjunction with the project shall also be reviewed and coordinated. If power lines must be relocated, the Project Manager shall coordinate the lighting needs, street lighting, signalization, traffic coordination installations, Traffic Impact Study (TIS) recommendations, etc. with the power company. DelDOT should apply for any necessary electric service from the utilities at this stage. If feasible, the utility poles may serve as light standards as well as carry the lines. Joint use agreements and location of DelDOT facilities shall be clarified as well.

5.1.3.7 Reimbursable Work

- If reimbursable work is involved and the letter agreement has been executed, the utility shall provide a cost estimate for the preliminary engineering (PE). The Utilities Engineer may elect to waive a detailed cost estimate for Preliminary Engineering.
- The Utilities Engineer shall grant a notice to proceed for preliminary engineering upon Departmental authorization of funding. A notice to proceed must be issued before the utility begins preliminary engineering in order for the preliminary engineering costs to be considered reimbursable by the Department.
- Within 30 days of the issuance of the notice to proceed and receipt of preliminary plans, or the date agreed to by the Utilities Engineer, the utility company shall supply a Utility Plans, Specifications and Estimate (Utility PS&E) package, consisting of plans, specifications, and estimate and four sets of marked color-coded plans. Utilities may submit color-coded plans electronically, however they must be printable on standard size paper. These plans indicate:
    - existing to remain,
    - existing to remove,
    - proposed reimbursable and
    - proposed non-reimbursable.

Refer to Section 5.3 for further details on plan preparation and reimbursable work.

The Utilities Engineer will review the Utility PS&E package and verify any proposed reimbursable work.

5.1.4 Semifinal Plans

- The Project Manager will give the assigned Utility Coordinator two sets of semifinal plans to distribute to each utility involved in the project. Any unresolved conflicts with the proposed construction and the utility's proposed relocation scheme need to be resolved.
- The proposed relocation plan will be shown on the semifinal plans with any corrections to existing facilities and submitted along with the utility company's proposed Utility Statement (Resume of proposed work).
- The Utility Statement (Resume of proposed work), submitted by the utility company, shall contain:
    - a description of the existing facilities;
    - any proposed changes, adjustments, or relocations;
    - the location, of the changes using station count and offsets;
    - quantities of borrow Type C if necessary;
    - the proposed time schedule (in calendar days) for completing the alterations, adjustments, or relocations for each phase of the Project's Sequence of Construction/ Maintenance of Traffic Plan; and
    - Any other information that may impact the state's contractor.
- The utility will return one set of semifinal plans with the changes marked, the proposed relocation plan, and their proposed Utility Statement to the Utilities Engineer within thirty (30) days of receipt unless a coordination meeting is requested. If a coordination meeting is scheduled, the plans should be returned within two weeks of the meeting. In either case, a later date may be agreed upon by the project manager and the utility representatives. The Utilities Engineer will verify any proposed reimbursable work.
- The DelDOT Project Utility Statement is subsequently prepared from all of the Utility Statements submitted by each of the public utilities. The DelDOT Project Utility Statement includes construction phases in which the work will occur and may include a list of locations for open cutting of roads. The Utilities Engineer will forward the DelDOT Project Utility Statement to the Project Manager. The applicable proposed relocation plans will also be forwarded.
- The DelDOT Project Manager shall generate a bar chart showing the road construction sequencing and how it coordinates with the utility relocation sequencing. The Utilities Engineer with the concurrence of the Project Manager and Regional Construction Engineer may waive the bar chart requirement for minor projects.

- The Project Utility Statement shall be submitted with the bar chart to construction. The Project Manager shall include the utility costs in the project cost estimate and append a construction sequencing bar chart, which does not contain specific dates. The following note shall be placed on the bar chart:
- "The information shown in the Contract Documents, including the Utility Statement and the Utility Schedule contained herein, concerning the location, type and size of existing and proposed utilities, their locations, and construction timing has been compiled by the preparer based on information furnished by each of the involved Utility Companies. It shall be the responsibility of the State's Contractor to verify all information and coordinate with the Utility Companies prior to and during construction, as specified in Section 105.09 of the Standard Specifications." Other general notes referencing contractor expectations to be included on the DelDOT Utility Statement are shown in Appendix H.
- The Project Manager shall sign approval of the DelDOT Utility Statement and return it to the Utilities Engineer.
- If necessary, a coordination meeting will be scheduled with affected utility companies to review the Utility Statements and sequencing bar chart. Utility companies shall modify their Utility Statements based upon the coordination meeting. Final Utility Statements from the utility companies are to be submitted to DelDOT within 30 days of the meeting so that a revised DelDOT Utility Statement can be prepared.

5.1.5 Final Plans

- When the plans are completed and the project is advertised, one set of final plans will be forwarded to each utility involved in the project. The Construction Engineer shall issue the notice to proceed with the relocation of facilities at or following the Preconstruction meeting.
- For reimbursable alterations, adjustments, or relocations, the Utilities Engineer shall notify the utility, Project Manager, and Construction Region when the proposed utility work has been authorized. The Utilities Engineer will also direct the utility to proceed with its alterations, adjustments, or alterations. See Section 5.3 for further details.

5.2 Non-reimbursable Work

Adjustments to utility facilities occupying highway right-of-way by Master Franchise are not eligible for reimbursement. Exceptions are discussed in Section 55.3. If the facilities have to be relocated due to the Department's project, the Department will provide right-of-way for relocation of the facilities. The relocation of the utility facilities will be at the sole expense of the utility.

5.3 Reimbursable Work

5.3.1 Utility Reimbursement on Highway Construction Projects

- Section 143, Title 17, Delaware Code determines the policies governing expenses of utility adjustments, removals, and relocations. A copy of Section 143 is located in Appendix F. The most recent copy of the Delaware Code may be found at Online Delaware Code at http://www.delcode.state.de.us/.
- Utilities are required to use the procedures established by FHWA for reimbursement. These are explained in the U.S. Department of Transportation Federal Highway Administration Program Guide Utility Relocation And Accommodation on Federal-Aid Highway Projects including amendments.

5.3.1.1 Funding

- The State shall fund adjustments, alterations, or relocations caused by DelDOT reconstruction, construction, relocation, repair, or maintenance of a public highway in the following circumstances:

5.3.1.1.1 Governmental Facilities - The facilities are owned and/or operated by a public utility of a municipality or of any governmental body or political subdivision of the State.

Appendix B - Agreement 86U-04

Appendix B - Agreement 86U-05

Appendix B - Agreement 86U-06

Appendix B - Agreement 86U-07

5.3.1.1.2 Court of Chancery Decision - The facility is private but located on fee simple real estate owned by the utility, or on a documented easement granted by a third party to the utility.

Appendix B - Agreement 86U-04

Appendix B - Agreement 86U-05

Appendix B - Agreement 86U-06

- If the utility is the owner of the right-of-way in fee or if the facility is located legally on private property and this property is acquired by the State for the reconstruction of a highway or structure, the State will assume liability for the cost of altering, adjusting, or relocating the existing facilities. The utility must provide documentation in the form of a copy of the record from the Recorder of Deeds. The utility may request "prior rights" rather than compensation by

the Department before the Department extinguishes the existing easement. Documentation must be completed by DelDOT Real Estate personnel and subsequently submitted to the Recorder of Deeds in the county in which said facilities are located.

5.3.1.1.3 "Prior Rights" - The utility may have "prior rights". Prior rights exist when a utility is determined to have legally occupied a public right-of-way prior to the time such right-of-way was conveyed to or acquired by the Department. Please see Section 5.3.3 for further details.

5.3.1.1.4 "Second Move" - The Department requires a second alteration or relocation of the same nongovernmental public utility facility within ten years from the date of completion of the initial alteration or relocation.

- Appendix B - Agreement 86U-38

5.3.1.1.5 Change in Plans - The Department alters its plan of construction before project completion, requiring a nongovernmental public utility to relocate its facility that has already been partially or fully relocated in connection with the project. The Department shall reimburse the public utility for the cost of altering or relocating in relation to the change in the Department plans. An approved Utility PS&E is required before a notice to proceed for this work can be issued.

- Appendix B - Agreement 86U-38

5.3.1.1.6 Delay - The Department cancels or does not commence a highway construction, reconstruction, relocation, repair, or maintenance project within a period of two (2) years from the date of authorization to proceed with nongovernmental utility work.

- Appendix B - Agreement 86U-38

5.3.1.1.7 Temporary Facilities - The Department requests a temporary alteration or relocation of the nongovernmental public utility facility. For example, if facilities need to be relocated temporarily for a bridge replacement and will need to be moved again when the construction project is complete.

- Appendix B - Agreement 86U-38

- The amount of reimbursement to be paid to a public utility in Section 5.3.1.1 is the entire cost of alteration or relocation minus any betterment of the altered or new facility and any salvage value derived from the old facility.

5.3.1.2 Discretionary Funding

- Decisions to fund utility relocations and adjustments in the following circumstances are left to the discretion of the Secretary of Transportation. The Department may enter into an agreement with a nongovernmental public utility by reason of highway construction, reconstruction, relocation, repair, or maintenance project as follows:

5.3.1.2.1 Special Circumstances - The Department may enter into an agreement with a nongovernmental public utility to reimburse for up to 50% for alterations or relocation if the facility is located within a highway right-of-way or public right-of-way by grant or franchise. The alteration or relocation must be necessitated by special circumstances with written approval from the Secretary of the Department of Transportation. A copy of the written determination of the Secretary shall be forwarded to the Public Service Commission for filing with the public records of the Commission.

- Appendix B - Agreement 86U-36

5.3.1.2.2 Unique Materials - The Department may enter into an agreement if the nongovernmental public utility construction specifications require the use and/or storage of unique materials or supplies in advance of the construction contract.

- Appendix B - Agreement 86U-37

5.3.1.2.3 Advance Move - If the Department determines it is beneficial, the Department may enter into an agreement to reimburse a nongovernmental public utility for increased expenses incurred as a result of alteration or relocations of a facility in advance of the commencement of a highway construction, reconstruction, relocation, repair or maintenance project.

- Appendix B - Agreement 86U-37

5.3.1.2.4 State Contractor - The Department may enter into an agreement with a nongovernmental public utility for work to be performed by the state contractor or subcontractor for specific facility alteration or relocation construction items identified and approved for construction. As part of the agreement, the public utility must agree to reimburse the Department or the Department's contractor or subcontractor for the construction items.

- Appendix B - Agreement 86U-39

5.3.1.2.5 Net Cost Savings Enhancement - The Department may enter into an agreement with a nongovernmental public utility to reimburse the utility for a specific facility enhancement if in the judgment of the Department, the enhancement will result in net cost savings to the Department, will expedite the project, or will otherwise result in increased public benefit and convenience.

- Appendix B - Agreement 86U-39

5.3.1.2.6 Support and Protection - The Department may enter into an agreement to reimburse the utility to design and inspect facility Support and Protection as necessary per the OSHA Technical Manual Section V Chapter 1 and the Delaware Code Title 26 Section 806. Costs shall be reimbursed on a force account basis.

- Appendix B - Agreement 86U-04
- Appendix B - Agreement 86U-05
- Appendix B - Agreement 86U-06
- Appendix B - Agreement 86U-07

5.3.2 Betterment

Betterment is defined as any upgrade to a facility being relocated, made solely for the benefit of and at the election of the utility and not attributable to highway construction as determined by the Utilities Engineer. The cost of a betterment or increased size in facilities is only reimbursable in accordance with FHWA regulations (Program Guide: Utility Relocation and Accommodation on Federal Aid Highway Projects and Code of Federal Regulations Title 23 Part 645) or as allowed by specific agreements enabled by Delaware law.

When seeking reimbursement with betterment involved, the utility shall submit two (2) Utility PS&E packages. The first detailed estimate with color-coded plans indicates relocation or adjustment in kind and the second shows the facility size increase or betterment. Right-of-way acquisition and salvage value shall be included where applicable on all estimates. Refer to Appendix C for details.

5.3.3 Prior Rights

Prior Rights, as mentioned above, exists when a utility's existing facilities have a compensable right to be located on DelDOT right-of-way. Prior Rights occur in the following circumstances:

5.3.3.1 The utility facility was constructed on private property through a recorded easement of record in the Recorder of Deeds office and the facility and its easement are encompassed by a DelDOT project.

5.3.3.2 The utility facility was relocated onto or remained in DelDOT right-of-way under a previous project and at the time, it was agreed that if it became necessary to relocate for a future transportation project, the cost would be borne by the project participants. (For proper documentation of this right, the utility must furnish a copy of the utility agreement stating the arrangement previously agreed to by DelDOT.)

- In cases of Prior Rights, the Department must approve all documentation. A flowchart of the process is located in Appendix K.
- Utilities normally do not have compensable interest or "Prior Rights" in subdivisions. The right-of-way in subdivisions belongs to the State upon recordation.

5.3.4 Reimbursable Work Process

- During the process of plan review discussed in Section 5.1, reimbursable work may be discovered. If the utility and the Utilities Section agree that reimbursable work will be involved, then the following must occur:
    - The State and the utility shall agree in writing as to the obligations and responsibilities of each party.
    - The agreement shall incorporate the conditions of occupancy for each party. The agreement shall also include the rights vested in the State and the rights and privileges retained by the utility.
    - The interest to be acquired by or vested in the State in any portion of the rights-of-way of a highway project to be used, occupied, or vacated by utilities shall be adequate in nature and extent for the construction, safe operation, and maintenance of the project.

5.3.5 Utility Adjustment Agreements

- Utility alteration, adjustment, or relocation agreements are used where the Department will be responsible for the cost of the work. An executed agreement shall be in place before any work begins when State and/or federal funds are used to pay for all or part of eligible utility adjustments. Samples of these letter agreements can be found in Appendix B.

5.3.5.1 Agreement Requirements

- Utility adjustment agreements must include:
    - the incorporating limits or areas to be served;
    - the responsibility of each party;
    - the terms and conditions regarding the relocation, adjustments, or reconstruction;
    - the action to be taken in case of noncompliance with State requirements; and
    - other provisions as deemed necessary to comply with State laws and regulations.
- Work incidental to utility relocations shall be performed by the utility with its own forces including a utility's open-end and/or continuing construction contractor, or by an approved utility contractor, unless such work is included in the Department's construction contract by separate agreement. When a utility obtains a contractor for the relocation work, the utility, federal and state regulations apply.

5.3.5.2 Preparation of Agreements

- When it is determined that a utility is to be reimbursed by the Department for a utility adjustment, the Utilities Section will prepare a letter agreement. The agreements are based upon State law and Court of Chancery decisions authorizing reimbursement, the type of ownership of the utility, state and/or federal participation, and the process for design and installation. Appendix B provides samples of letter agreements used by the Department.
- The Utilities Section will prepare the appropriate letter agreement for adjustment work. The agreement will include preliminary engineering that may be accomplished as part of the Department's project, either by the utility's own forces or by its contractor. The preliminary engineering is considered part of the Department's project because the existing locations and the proposed adjustments or relocations are incorporated in the Department's construction plans.
- The proposed letter agreement is forwarded to the Department's Deputy Attorney General for review/ signature and/or comments. Any changes made by the attorney are incorporated in the agreement. Four original letter agreements are forwarded to the utility for signature and seal affixation, and returned to the Utilities Engineer. The Chief Engineer or the Assistant Director of Engineering Support as designee provides signature approval with the final authorization provided by the Director of Technology and Support Services. The agreement is considered executed when the Department's seal is affixed.
- The distribution of the executed agreement is as follows:
    - original to the Director of Technology and Support Services,
    - original to the utility,
    - original to DelDOT Finance (upon funding authorization request, i.e. Utility PS&E submission) and
    - original retained by the Utilities Section.
    - Executed agreements are a part of the Utility PS&E submissions. The approved estimate and color-coded plans of the work involved are attached and considered part of the agreement.

5.3.5.3 Utility Plan Preparation

- The Project Manager will furnish the Utilities Engineer with construction plans and cross-sections for review. When reimbursable work is involved, the plans shall be used by the utility to estimate the scope of the utility work to be done. Reimbursable work is described in Section 5.3. The utility shall submit the preliminary engineering (PE) estimate for any engineering required to design the alteration, adjustments and/or relocation. The Department Utilities Engineer may elect to waive a detailed cost estimate for preliminary engineering. A sample of the engineering estimate is located in Appendix C.
- Utilities are required to use the procedures established by FWHA for reimbursement. The procedures are explained in the U.S. DOT FHWA Program Guide: Utility Relocation And Accommodation on Federal-Aid Highway Projects including amendments and the Federal-Aid Policy Guide (FAPG) Code of Federal Regulations Title 23.
- The PE estimate shall become part of the letter agreement mentioned above in Section 5.3.5.2. When the PE estimate is approved, a notice to proceed will be provided to the utility to begin the design for the adjustments and/or relocations. The utility shall prepare the Utility Plans, Specifications and Estimate (Utility PS&E) for the relocation or adjustment and forward them to the Utilities Engineer for review.
- Once the Utility PS&E package is reviewed and approved, it is forwarded to DelDOT Finance for funding authorization and approval. The Utilities Section must issue a notice to proceed before the

utility can begin construction work. Any work performed prior to notice to proceed shall be at the sole expense of the utility.

5.3.5.4 Employment of a Consultant for Utility PS&E

- As mutually agreed to by the Department and utility, preliminary engineering activities associated with utility relocation work may be done by an engineering consultant selected by the utility, with the approval of the Department. A utility must submit a letter to the Utilities Engineer requesting authorization to obtain a consultant to provide preliminary engineering services for utility relocations. The request shall state the type of work the consultant is expected to perform during the utility relocation for the project-i.e., prepare utility plans, specifications, estimates; inspect materials; and supervise work. The request shall meet the provisions established by federal procurement regulations of the U.S. DOT FHWA, and the applicable regulations of the Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects. Federal funds may participate in the cost of such services performed under existing written continuing contracts when it is demonstrated that such work is performed regularly for the utility in its own work and that the costs are reasonable.
- When a consultant is to prepare the Utility Plans, Specifications and Estimates, the utility must provide the DelDOT Utilities Engineer with preliminary plans, estimates, and a fee schedule from the consultant for performing the work. (The utility is required to review and approve the data before submitting it to the Utilities Engineer.) After Departmental review, the information may be forwarded to FHWA for concurrence.
- When the estimate and other data are acceptable to the State (and to FHWA, if applicable) the utility is notified to prepare and submit to the Utilities Engineer the specifications, estimates, and a draft of the contract between the responsible consultant and the utility. The draft must stipulate the work to be done under the agreement and the method of payment for preparing the Utility PS&E package.
- A consultant fee that is based on a percentage of the work to be performed will not be approved.
- When federal participation is involved in a highway construction project, the agreement with the consultant shall conform to federal procurement regulations and appropriate U.S. DOT regulations. Upon approval of the draft, the State may authorize the utility to execute the agreement with the consultant.

5.3.5.5 Processing Utility PS&E Packages

5.3.5.5.1 The Utility Plans, Specifications and Estimates (Utility PS&E) submitted by the utility shall include:

- Utility Statement (See Section 5.1.4)
- a detailed estimate of the work to be performed. See Appendix C for sample. Note: Other colors can be used provided they are legible and clearly labeled in the legend.
- marked color coded plans indicating:
- existing to remain (green)
- existing to be removed (red)
- proposed reimbursable (blue)
- proposed non-reimbursable (yellow)
- the terms under which the utility is to cross or otherwise occupy the highway rights-of-way;
- a description of the size, type, nature, and extent of each utility company's facility to be located within the highway rights-of-way;
- a description of each installation's construction requirements, traffic protection, maintenance, access restrictions, and any special conditions;
- adequate drawings or sketches that show the existing and proposed locations of the utility facility, including the:
- facility locations within the highway right-of-way with respect to the existing or planned DelDOT improvement, the traveled way, or the right-of-way, and
- control-of-access lines and approved access points; and
- the responsibilities of the utility for future adjustments of its facilities in order to accommodate Departmental improvements.

5.3.5.5.2 Four complete Utility PS&E packages shall be forwarded to the Utilities Engineer. The utility may in submit the color-coded Utility PS&E package electronically if in an acceptable format. Upon review and approval of the package for completeness and accuracy by the Utilities Engineer, the Utilities Section requests funding authorization and notifies the Project Manager.

One copy of the Utility PS&E package is forwarded to the Construction Region for their use in concurring that the work is done in accordance with the Utility PS&E. See Section 5.4.4 for information regarding inspections.

## 5.4 Construction Coordination

### 5.4.1 Authorization Of Utility Work

- The Utilities Engineer will notify the utility, Project Manager and Construction Region when the proposed utility work has been authorized. The Construction District directs the utility to proceed with its alterations, adjustments, or relocations.
- When State or federal funds will pay all or part of the costs of adjustments, all work done by the utility's own forces shall be on a force account basis.
- When a utility's request to perform the work by competitive bid has been approved, the following steps shall be taken:
  - Two copies of the bid tabulation, with the preliminary estimate included, are forwarded to the Utilities Engineer.
  - One copy of the bid tabulation is forwarded to FHWA, if applicable.
  - After approval from the State and FHWA, (if applicable) the utility is instructed to award the contract.
  - An executed copy of the contract between the utility and the contractor is furnished to the Utilities Engineer.
- When a utility requests permission to perform the work with a current continuing contract, using an outside contractor, the following shall take place:
  - The request is supported by an estimate based on the applicable contract unit prices.
  - After approval by the State and FHWA, (if applicable) the utility is instructed to proceed with the work.
  - An executed copy of the contract between the utility and its contractor is furnished to the Utilities Engineer.

### 5.4.2 Coordination During Construction

#### 5.4.2.1 Utility Preconstruction Conferences

- Representatives of each utility having facilities within the project limits, along with representatives of the contractor, may be required to meet with the Construction Region Engineer's representative to discuss in detail the effect that each utility's adjustment or relocation will have on the progress of the project.

#### 5.4.2.2 Preconstruction Conferences

- The Construction Region Engineer will notify the appropriate utilities, the "Miss Utility" Center, and the "Miss Utility" Representative, as to the place, time, and date that a preconstruction conference will be held.

#### 5.4.2.3 Contractor's Schedule

- The utility work on Department projects most often occurs simultaneously with the contractor's work and thus requires coordination. When this coordination is via a project utility meeting, a utility representative is required to attend. The utility and the contractor shall cooperate in scheduling work so that neither one is delayed by the other's operations. In addition, all traffic control for utility work must be performed according to DelDOT's Traffic Control Manual (Traffic Controls for Streets and Highways Construction, Maintenance, and Utility Operations) and coordinated with the immediate DelDOT project supervisor. This will be done to avoid conflicts and unnecessary disruptions in traffic flows through construction projects.
- The utility is required to attend progress meetings called by the Construction Region Engineer or a designated representative to review progress on certain projects.

### 5.4.3 Revisions

- This section refers to changes required to the plans or estimates after the notice to proceed is given. Occasionally, field conditions necessitate revision to a utility's approved plan of adjustment or relocation.

#### 5.4.3.1 Revision to Construction Project

- Changes to Construction Projects and their impact on utility relocation costs shall be carefully considered before proceeding. Refer to the Section 5.3.1.1 summary of reimbursement to public utilities for "Second Moves" and "Change in Plans." The time involved, material availability, additional labor and utility costs shall be evaluated before changes are pursued.

- The Utilities Engineer, Construction Engineer, and the Project Manager shall review any project plan revisions. Their approval is necessary in order to proceed with the revision.

5.4.3.2 Revision of Utility Plans and Estimates

- The utility shall forward a copy of the revised plan and/or estimate and the justification for the change for approval by the Utilities Engineer. Upon approval of the change, the Utilities Section shall request additional funds to cover the added cost.

5.4.3.3 Change Orders

- The Construction Region Engineer shall send copies of all change order correspondence and copies of all correspondence directed to the utilities, to the Utilities Engineer.

5.4.4 Progress Inspections

- Representatives of the Construction Region Engineer are responsible for inspecting the work performed by the utility including any utility work in advance of construction. Inspectors will monitor the material used, equipment used, and number and classification of personnel working at the location; and will keep daily logs showing a record of the same.

## 5.5 Payment for Work

### 5.5.1 Progress Payments

#### 5.5.1.1 Utility Billing

- The utility may submit progress billings for costs incurred after the executed utility agreement has been approved and notice to proceed has been received. The utility may also submit progress billings for the cost of materials stockpiled at the project site or specifically purchased and delivered to the utility for use on the project following similar approval. Any materials purchased or work performed prior to written authorization from the Utilities Engineer shall be done at the Company's sole expense. All invoices shall conform to the provisions of the Federal-Aid Policy Guide (FAPG): Code of Federal Regulations, Title 23, Part 645.
- Billing documents shall be submitted to the Utilities Section. The Utilities Section forwards the invoice to the Construction Region Engineer for verification of work accomplished. The Utilities Section processes the payments after verification in accordance with Section 5.5.5.2.

#### 5.5.1.2 DelDOT Billing Utility

- When the Department agrees for utility alteration or relocation work to be performed by the state contractor or subcontractor, the Department may submit progress billings.

### 5.5.2 Final Payment

#### 5.5.2.1 Final Bill From Utility

- A final and complete billing of all costs incurred will be made by the utility within six months from the last chargeable day of the project in compliance with the executed agreement. The statement of billing must follow the order of the items in the Utility PS&E identified as part of the executed letter of the agreement between the State and the utility. The statement shall be itemized to show:
    - the State Contract Number, Federal-Aid Project Number, project location and the executed Utility Agreement Number,
    - A brief description of work performed, identifying the Utility PS&E submission incorporated in project limits,
    - the date on which the last work was performed on the last item of billed expense,
    - a statement from the utility that it has or has not been paid in full for all reimbursable work performed,
    - the totals for each of the following costs: labor, overhead costs, travel expenses, transportation, equipment, handling costs, material and supplies, and other services,
    - salvage credits from recovered and replaced permanent material and recovered temporary material,
    - the replacement cost or the original charge for temporary use of material,
    - the location where the records and accounts billed can be audited, and the name of a contact person for auditing purposes,
    - a copy of the as-built plans, and
    - the final invoice specifying "final" and containing a summary of total project costs billed.

5.5.2.2 Final Payment Process

- The utility shall provide three copies of the final invoice along with as-built plans. The final billing will be processed in the following steps:

~~5.5.2.2.1 The Utilities Section will check the final billing for accuracy and adequate support documentation.~~

~~5.5.2.2.2 The Utilities Section will review the documentation to assure that all items are eligible for State participation.~~

~~5.5.2.2.3 The Utilities Section will forward billing and as-built plans to the Construction Region Engineer for verification that all work covered by the final billing has been satisfactorily completed.~~

~~5.5.2.2.4 The Utilities Section will process the final billing for payment after verification by the Construction Region Engineer.~~

~~5.5.2.2.5 DelDOT Audit is responsible for administering a final audit predicated on the relevant agreement and billing data upon notification and audit request from the Utilities Section.~~

~~5.5.2.2.6 DelDOT Audit will forward a copy of the completed audit report to the Utilities Section.~~

~~5.5.2.2.7 The Utilities Section will inform the utility of the audit findings. The utility phase of the project is closed out after the Department notifies the utility that it accepts the project.~~

~~- The project's administrative documents shall be closed out and funds terminated within one year of the last chargeable day of the projects. Exceptions will be approved if the Utilities Section is notified in writing of a pending invoice prior to last chargeable day.~~

## 1.0 Introduction

1.1 Purpose and Objectives

1.1.1 The mission of the State of Delaware's Department of Transportation (DelDOT) is excellence in transportation every trip, every mode, every dollar, and everyone. DelDOT supports that mission by developing, constructing, and maintaining the State's infrastructure in a manner that results in a safe, cost-effective, and efficient multi-modal transportation network that enhances mobility commerce, and livability. Proficient management and utility installation design in close coordination with utility owners are essential to construct and maintain the transportation network safely and effectively.

1.1.2 The purpose of this regulation is to prescribe policies and procedures for adjusting, relocating, and accommodating utility facilities and private lines within the public right-of-way of DelDOT-maintained highways and streets, including any utility work related to highway project construction in the right-of-way of DelDOT-maintained streets and highways. These regulations establish guidelines that affect the relationship between DelDOT and any entities seeking to place utility facilities within the rights-of-way of highways and streets maintained by DelDOT.

1.1.3 This regulation has been prepared to accomplish the following objectives:

1.1.3.1 Provide standard arrangements to install permitted utilities along DelDOT maintained highways and relocate or maintain utilities due to DelDOT projects.

1.1.3.1 Minimize utility work delays and interference for DelDOT projects, highway contractors, or other utilities.

1.1.3.3 Prevent service disruptions, utility facility damage, and hazardous conditions.

1.1.3.4 Ensure standards, specifications, and environmental considerations are met.

1.1.3.5 Ensure proper performance and high-quality utility work, along with accurate and timely reimbursement to utility companies when appropriate.

1.1.3.6 Outline procedures and conditions for federal reimbursement when utility work is part of a federal-aid project.

1.1.3.7 Outline procedures and conditions necessary for state reimbursement of utility work when circumstances, agreements, and Delaware code govern.

1.1.4 The information in this regulation applies to all public and private facilities, including but not limited to electric power, telephone, communications, cable TV, lighting, water, natural gas, oil, petroleum, steam, chemicals, sewage, drainage, irrigation, and similar lines located along roadways that are maintained by or otherwise located within state highway rights-of-way under DelDOT's jurisdiction. Underground, surface, and overhead facilities - whether singular or in combination - are also covered by this regulation.

1.2 Statutory Authority

1.2.1 The Delaware Code provides DelDOT with the authority and responsibility to regulate the use of all utilities within rights-of-way of highways and streets maintained by DelDOT.

1.2.2 DelDOT has the legal authority to control the use of rights-of-way of DelDOT-maintained highways and streets.

1.2.3 The "Delaware State Highway Department" was established into law on April 2, 1917. Chapter 166 of the 1935 Code amended the original act that created the Highway Department. The legislature enacted

additional amendments, including Title 17 of the Delaware Code, on February 11,1953. These were approved by the governor on February 12, 1953, and included all prior amendments as well. This act provides State of Delaware authorization to participate in acquiring rights-of-way, placing new utilities, and adjusting existing utilities.

1.2.4 Title 26 of the Delaware Code (1953) provides state authorization to control new installations of pipes, conduits, and wires above or beneath public roads.

1.2.5 Section 143, Title 17, of the Delaware Code established by law on January 16, 1962, made the state responsible for the entire cost of altering or relocating utilities within public highway rights-of-way when the utility facilities are owned or operated by a municipality, government body, or subdivision of the state when the altering or relocating of utilities is necessitated by highway construction, reconstruction, relocation, repair, or maintenance undertaken by DelDOT.

1.2.6 Section 132, Title 17, of the Delaware Code (1966) provides for the state to reimburse the owner for the expense of relocating public utility facilities for any project where the state is to be reimbursed at least 90% of the project cost from federal funds, by the federal government, or from any agency thereof. Such expense shall be the amount paid by the owner that is properly attributable to the relocation after deducting any increase in the new facilities' value and any salvage value derived from the old facilities.

1.2.7 Section 143, Title 17, of the Delaware Code, amended on June 29, 2004, allows DelDOT to negotiate alteration or relocation agreements with public utilities to improve efficiency and fairness.

1.2.8 The State of Delaware's Court of Chancery's 1963 opinion in *Delaware Power & Light Co. v. Terry*, 194 A.2d 553 (Del. Ch. 1963) forms the basis on which the state reimburses utility owners for the expense of relocating public utility facilities on rights-of-way for which they hold title or have permission or easement for occupancy, as necessitated by any project (Title 2 Transportation, 2400 Division of Transportation Solutions/2401 Utilities Manual Regulations). **[A copy of the Court of Chancery's 1963 Decision, 194 A.2d 553 is provided in Appendix F, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-f.pdf.]**

1.2.9 Adherence to DelDOT's policies, practices, and procedures, along with the requirements described in the Regulation, shall be undertaken with full knowledge of and compliance with Chapter 8, Title 26, of the Delaware Code entitled *Underground Utility Damage Prevention and Safety*. DelDOT's commitment to protect public health and safety is essential and must always be maintained.

1.3 Construction and Location Requirements. DelDOT shall have the right to review and approve the detailed location and design of all utility installations, adjustments, or relocations affecting the highway rights-of-way and will issue permits for proposed utility work. Subsection 4.1 describes permitting requirements in further detail.

1.4 Exceptions to Requirements. The utility company shall submit any request for deviation from or exception to the standards described in this regulation to DelDOT. The request shall be in writing and must include full justification surrounding the hardship. The written justification and any other pertinent information shall be sent for coordination and comment to DelDOT's District Public Works Office for permit projects and the Utility Engineer for highway projects. The process for requesting an exception is outlined in subsection 5.8.

1.5 Grandfathering. If utility projects are bid to contractors, under construction, or there is a prior publication of a utility regulation update, those facilities are not required to meet the regulation's updated provisions. However, utilities shall abide by the most current version of this regulation any time work is performed in conjunction with existing or proposed facilities within the rights-of-way on highways and street maintained by DelDOT.

1.6 Transmittal of Information. When the utility companies are required to submit plans or other documents under this regulation, they shall submit electronic files directly to DelDOT. When utilities submit plans or other documents electronically, their systems and GIS databases must be compatible with DelDOT's system for electronic file transfer.

1.7 Sea Level Rise

1.7.1 In accordance with Exec. Order No. 41 (Sep. 12, 2013) (Gov. Markell), all state agencies must incorporate measures for adapting to increased flood heights and sea level rise in the siting and design of projects for construction of new structures and reconstruction of substantially damaged structures and infrastructure. Such projects must be sited to avoid and minimize flood risks that would unnecessarily increase state liability and decrease public safety.

1.7.2 Utility projects shall also incorporate measures to improve resiliency to flood heights, erosion, and sea level rise using natural systems or green infrastructure to improve resiliency wherever practical and effective, if the utilities are within an area mapped by the Department Of Natural Resources And Environmental Control (DNREC) as vulnerable to sea level rise inundation, the projects should be designed and constructed to account for sea level changes anticipated during the lifespan of the facility in addition to FEMA flood levels. Utilities should consider and incorporate the sea level rise scenarios set

forth by the DNREC Sea Level Rise Technical Committee into appropriate long-range plans for infrastructure, facilities, land management, land use, and capital spending.

## 2.0 Definitions

The following is a list of terms and definitions relevant to transportation solutions, utilities regulations and DelDOT.

"**Adjustment**" means the relocation, removal, replacement, retirement, etc., of existing utility facilities as necessitated by a highway construction project.

"**American Association of Highway and Transportation Officials**" or "**AASHTO**" is the a non-profit, nonpartisan association representing highway and transportation departments in the 50 states, District of Columbia, and Puerto Rico.

"**Americans with Disabilities Act**" or "**ADA**" means The Americans with Disabilities Act of 1990, as amended.

"**Authorization**" means permission by the applicable district engineer, public works engineer, construction region engineer, or utilities engineer for the utility to proceed with any phase of the project.

"**Backfill**" means material used to replace or the act of replacing material removed during construction, also, may denote material placed or the act of placing material adjacent to structures.

"**Bar chart**" means a schedule showing the proposed start and end dates for various utility activities on a complex singular contract or project. DelDOT prepares the bar chart based on utility statements submitted by and in coordination with the utilities.

"**Betterment**" means any relocated facility upgrade made solely for the benefit and election of the utility and not attributable to highway construction, as determined by the utilities engineer.

"**Bridge**" means a structure, including supports, erected over a depression or an obstruction, such as water, a highway or a railroad, for carrying traffic or other moving loads that has an opening exceeding 20 square feet.

"**Buy America**" means the domestic manufacturing process requirement for all of the iron, steel, manufactured products, and construction materials that are permanently incorporated in a federal aid highway construction project outlined in federal laws, regulations, and policies including but not limited to United States Code (USC) Title 23 Part 313, USC Title 49 Part 5323, Code of Federal Regulation (CFR) Title 23 Part 635.410, CFR Title 49 Part 661, and any revisions as per the Infrastructure Investment and Jobs Act (H.R. 3684). See FHWA Question and Answer for Utilities: https://www.fhwa.dot.gov/utilities/buyam.cfm.

"**Carrier Pipe**" means a fluid-carrying inner pipe contained within a casing, encasement, or sleeve.

"**Casing**" means a larger pipe, conduit, sleeve, or duct enclosing a carrier.

"**Chief Engineer**" means the highest authority for the authorization of this regulation. The Chief Engineer has the authority to establish a designee to act on their behalf.

"**Clear Zone**" means the total roadside border area starting at the edge of the traveled way and available for safe use by errant vehicles. This area consists of elements such as a shoulder, a recoverable slope, a non-recoverable slope, and a run-out area clear of fixed or non-traversable objects. Fixed or non-traversable objects include existing or planned objects, whether natural or manufactured, such as trees, drainage structures, non-yielding sign or lighting structures, drainage ditches, retaining walls, rock outcroppings, utility facilities, etc. The purpose is to provide errant vehicles a reasonable opportunity to stop safely or otherwise regain vehicle control. The desired width is dependent on traffic volumes, speeds, and roadside geometry. See the *DelDOT Road Design Manual* and the *AASHTO Roadside Design Guide* for properly calculated clear-zone widths.

"**Conduit**" means an enclosed tubular casing, singular or multiple, for the protection of wires, cables, or lines, usually jacketed and often extended from manhole to manhole.

"**Conflict**" means when a utility facility is blocking highway construction or maintenance operations requiring the facility to be adjusted, relocated, or mitigated with other measures such as protecting the facility. The presence of utilities in the right-of-way does not necessarily constitute a conflict.

"**Coordination meeting**" means periodic meeting with utilities' representatives to outline current policy and procedures and discuss current topics of general interest.

"**Construction**" means the actual building and all related work, including relocation or adjustments, incidental to a highway project's construction or reconstruction-excluding preliminary engineering, subsurface utility engineering, test holes, or rights-of-way work programmed and authorized as a separate work phase. Construction requires adequate levels of subsurface utility engineering for managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. Please refer to the *Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data*, CI/ASCE 38-02, American Society of Civil Engineers, 2002.

"**Construction plans**" means scalable plan sheets that show the highway project in detail.

"**Consultant**" means a registered professional engineer engaged by DelDOT, another agency of the State of Delaware, or a utility to develop plans, specifications, and estimates for DelDOT or a utility.

"**Corner Cut**" or "**Daylight Corner**" means a right-of-way area at an intersection reserved for sight clearance or turning clearance, usually by a diagonal right-of-way line.

"**Cover**" means depth to top of pipe, conduit, casing, cable, or similar line or utility tunnel below the earth or roadway surface. It is normally referenced from the bottom of the highway ditch.

"**Dam**" means any artificial barrier, including appurtenant works, with the ability to impound or divert water, wastewater, or liquid-borne materials.

"**Delaware Manual on Uniform Traffic Control Devices**" or "**DE MUTCD**" means the manual approved by the Federal Highway Administrator as the national standard for all traffic control devices installed on any street, highway, bikeway, or private road open to public travel in accordance with 23 U.S.C. 109(d) & 402(a) as amended for use in Delaware. Published online at https://www.deldot.gov/Publications/manuals/de_mutcd/index.shtml.

"**Department**" or "**DelDOT**" means the State of Delaware's Department of Transportation.

"**Department of Natural Resources and Environmental Control**" or "**DNREC**" means the primary body concerned with the governance of public land, natural resources, and environmental regulations for the state.

"**Delineator**" means an object marker used to provide attention and awareness to a utility facility of importance or concern that is otherwise unnoticeable or difficult to locate.

"**Denial-of-access**" means that access rights have been obtained by DelDOT in the form of a recorded deed. Where access is controlled by deed there is no right of direct access through the deeded section.

"**Designation**" means the process of using a surface geophysical method or methods to interpret the presence of a subsurface utility and mark its approximate horizontal position (its designation) on the ground surface.

"**District engineer**" means the DelDOT district engineer of the north, canal, central, or south maintenance district. The engineer with the highest authority in a district.

"**District Public Works Section**" means the unit within each DelDOT maintenance district responsible for utility operations under the direction of the district engineer.

"**Duct**" means an enclosed tubular casing for protecting wires, lines, or cables, often flexible or semi-rigid.

"**Eligibility**" means the costs incurred on a project or a specific phase of a project that, when authorized, may be reimbursable provided they are legally qualified under the applicable State Highway Laws.

"**Emergency**" means a situation as defined in the Delaware Code, Title 26, Chapter 8 - the Miss Utility Law. This shall also include situations deemed by DelDOT to be an emergency within the rights-of-way of DelDOT-maintained highways and streets where the safety of the traveling public or general public, or the structural integrity of the highway facility, is placed in immediate danger.

"**Encasement**" means a structural element that surrounds a carrier or casing.

"**Executed agreement**" means a legal instrument entered by DelDOT and a utility construction project which outlines the legal and financial responsibilities of both parties.

"**Federal-Aid Highway Projects**" means the active or completed projects administered by or through DelDOT which involve the use of federal aid highway funds for the development, acquisition of right-of-way, construction, or improvement of the highway or related facilities, including highway beautification projects under 23 U.S.C. 319, Landscaping and Scenic Enhancement.

"**Federal Highway Administration**" or "**FHWA**" means the U.S. Department of Transportation's federal highway agency.

"**Flow Line**" means the bottom elevation of an open channel or bottom of pipe otherwise known as the invert of the pipe.

"**Functional classification**" means the system of hierarchical designation for highways based on the competing functions of transportation movement and access are satisfied. See *DelDOT Road Design Manual* Chapter 2 and functional classification maps for specific highway designation.

"**Hardship**" means the adherence to a requirement that will cause persistent difficulty with facility installation and long-term maintenance or will be prohibitively expensive resulting in unreasonable rate increases for utility customers.

"**Highway**" means any public way for vehicular travel including the entire area within the rights-of-way and related facilities. Also referred to as Street or Road.

"**Highway construction project**" means the constructing, reconstructing, widening, or resurfacing a state highway within the existing legal right-of-way or within a newly acquired right-of-way whether by contract, DelDOT forces, or a DelDOT agent.

"**Highway right-of-way**" means the real property or interests therein, acquired, dedicated, or reserved for the construction, operation, and maintenance of a highway. Lands acquired under Section 319(b), Title 23, U.S.C. (Scenic strips 1965 Highway Beautification Act) shall be under the jurisdiction of the department.

"**Lateral offset**" means the distance from the edge of traveled way, shoulder, or other designated point to the front face of a vertical roadside element. Lateral offset should not be confused with clear zone.

"**Letter agreement**" means the agreement that is the legal instrument between a utility and DelDOT to establish the utility work in conjunction with a DelDOT highway construction project that DelDOT has determined reimbursable.

"**Maintenance of Traffic**" or "**MOT**" means the process of establishing a work zone, providing related transportation management, and incorporating temporary traffic control on streets and highways right-of-way. Also known as Temporary Traffic Control (TTC).

"**Manhole**" means an opening in an underground system where workers can enter to install, remove, inspect, repair, connect, and test as needed.

"**Master Franchise**" means the legal document that authorizes a regulated Public Utility to place its facilities within state rights-of-way without any vested interest therein under the provisions of 17 **Del.C.** §1953 and supplements thereto.

"**Median**" means the portion of a divided highway separating the traveled ways for traffic in opposite directions.

"**Non-participating**" means whenever utility relocations are not programmed with FHWA for reimbursement to DelDOT from federal funds. Project design, right-of-way acquisition, and construction can be participating, while utility relocations can be non-participating. Utility relocations may be handled as non-participating on a federal-aid project, even when other utility relocation work on the same project is programmed as participating.

"**Participating**" means utility adjustments or relocations performed after work has been programmed with and authorized by FHWA. Such funds are requested by the state at the pro-rata share applicable for the project where FHWA requirements are met by DelDOT and the utility.

"**Pavement box**" means the cross section of the highway consisting of the highway surface, base and subbase materials.

"**Pipe**" means a tubular product made and sold as a production item.

"**Flexible pipe**" is a plastic, fiberglass or metallic pipe with a large ration of diameter to wall thickness designed for a diametric deflection of up to 5%. The pipe can be designed for a diametric deflection of up to 7.5% with an engineering study confirming the pipe's stability and structural soundness.

"**Preliminary Engineering**" means related preparatory work in advance of construction operations such as surveys, utility plans, specifications, estimates (PS&E), and more.

"**Preliminary Engineering Estimate**" means the estimate of the preliminary engineering required to design the alternation, adjustments or relocation.

"**Prior rights**" means a utility is determined to have legally occupied a public right-of-way prior to the time such right-of-way was conveyed to or acquired by the DelDOT.

"**Private lines**" means privately owned facilities that convey or transmit utility commodities devoted exclusively to private use.

"**Project manager**" means the DelDOT staff member responsible and accountable for the construction project's satisfactory completion.

"**PS&E**" means plans, specifications, and estimates.

"**Public Right-of-Way**" means the legal right-of-way of any public highway, street, road, or alley that is under the jurisdiction of DelDOT or any municipality or political subdivision. Certain navigable waterways are also designated as public rights-of-way.

"**Public utility**" means a utility as defined in 26 **Del.C.** §102(2) and 17 **Del.C.** §143.

"**Relocation**" means adjusting or moving utility facilities required for a highway project.

"**Replacement Facility**" means replacing the function of a facility rather than installing a replica facility.

"**Retirement**" means a utility facility that is inactive or deactivated but remains in place within the right-of-way. Also referred to as an abandoned facility.

"**Right-of-Way**" means real property, or interests therein, acquired, dedicated, or reserved for the construction, operation, and maintenance of a highway, road, or street.

"**Roadside**" means a general term denoting the area adjoining the outer edge of the roadway. Extensive areas between the roadways of a divided highway may also be considered roadside.

"**Roadway**" means the portion of a highway for vehicular use, including shoulders. A divided highway has two or more roadways. In construction specifications, the roadway is the portion of a highway within the limits of construction.

"**Sacrificed Life**" means a reimbursable charge for the value of the unused life of a facility removed from private property and not functionally replaced.

"**Salvage**" means material removed and used or placed in storage for future use.

"**Single-pole construction**" means the use of single poles to support aerial facilities rather than double-pole arrangements such as H-frames.

"**Sleeve**" means a short casing through pier or abutment of highway structure.

"**Standard Construction Details**" means the DelDOT Standard Construction Details in effect on the date of permit authorization or notice to proceed. Details can be found online at: https://deldot.gov/Publications/manuals/const_details/index.shtml.

"**Standard Specifications**" means the standard specifications for DelDOT road and bridge construction in effect on the date of permit authorization or notice to proceed. The specifications can be found online at: https://deldot.gov/Publications/manuals/standard_specifications/index.shtml.

"**State**" means the State of Delaware.

"**Temporary Traffic Control**" means the process of establishing a work zone, providing related transportation management, and incorporating temporary traffic control on streets and highways right-of-way. Also known as Maintenance of Traffic.

"**Traffic Control Devices**" means signs, signals, markings, or other devices used to regulate, warn, or guide traffic, placed on, over, or adjacent to a street, highway, private road open to public travel, pedestrian facility, or shared-use path by authority of a public agency or official having jurisdiction, or, in the case of a private road open to public travel, by authority of the private owner or private official having jurisdiction. Temporary traffic control devices including signs, channelizing devices, lighting devices, and shadow vehicles are governed by the DE MUTCD and ATSSA quality guidelines.

"**Traveled Way**" means the portion of the highway used for vehicles (including dedicated bicycle lanes), excluding shoulders and auxiliary lanes.

"**Typical Applications**" means predesigned temporary traffic control plans for specific solutions as illustrated and described in Chapter 6 of the DE MUTCD.

"**Use and Occupancy Agreement**" means the document (written agreement or permit) by which DelDOT approves the use and occupancy of highway right-of-way by utility facilities or private lines.

"**Utility Attachment Agreement**" means an agreement between a utility and DelDOT that covers the agreements for attachment of utility facilities to highway structures.

"**Utility clearance**" means the arrangements by the utilities to accommodate the highway construction project. It does not indicate that the utility facilities are removed from the area but that facilities have been either adjusted to accommodate construction or arrangements have been made to coordinate the relocation work with the highway contractor's operations.

"**Utility Conflict Matrix**" or "**UCM**" means a spreadsheet or enterprise database used by DelDOT to identify, track, coordinate, and resolve potential conflicts with utility companies throughout the highway project design process.

"**Utility coordinator**" means the DelDOT personnel assigned to a project responsible for coordinating the relocation or adjustment of all utilities between the utility and DelDOT.

"**Utility Construction Permit**" means a permit that authorizes a utility to construct, maintain, or repair a utility facility within state rights-of-way. Also, referred to as utility permit or construction permit herein.

"**Utility Facility**" means any privately, publicly, or cooperatively owned line, facility, or system for producing, transmitting, or distributing an essential commodity or service, such as water, gas, electricity, wastewater, or telecommunications to the public, whether active or retired.

"**Utility Permit Application Portal**" or "**UPA**" means the online portal used for the electronic submission of utility plans and documents associated with highway projects as well as utility permits.

"**Utility Plans, Specifications, and Estimate**" or "**utility PS&E**" means a detailed relocation cost estimate prepared by the utility and consisting of highway plan sheets which show the relocation and any additional utility drawings or supplemental sheets necessary to provide a clear picture of work to be performed and how estimated costs were determined.

"**Utility statement**" means a synopsis of utility relocation work and its anticipated schedule incorporated in the bid package upon approval by DelDOT. Also known as a resume of proposed work.

"**Utilities engineer**" means the engineer and authorized representative of the chief engineer responsible for utility coordination work performed within DelDOT Transportation Solutions.

"**Utilities Section**" means the unit within DelDOT Transportation Solutions responsible for matters concerning utilities under the direction of the utilities engineer.

"**Working Day**" means days between Monday through Friday, except for state, federal, and recognized operator holidays unless otherwise amended by the operative contract documents.

## 3.0 References and Source Material

3.1 References and Source Materials - National. The following guidelines and design standards (which are made available in their entirety through nationally recognized professional organizations and publications) are incorporated by reference, except as modified within this Manual. If conflicts may exist between incorporated references and the DelDOT Development Coordination Manual, the Development Coordination Manual controls.

- AASHTO's "A Policy on Geometric Design of Highways and Streets", 7th Edition (2018), commonly referred to as "the Green Book"
- AASHTO's "Roadside Design Guide", 4th Edition (2011)
- AASHTO's "Manual for Assessing Safety Hardware (MASH)", 1st Edition
- American Concrete Pipe Association's (ACPA) "Concrete Pipe and Box Culvert Installation Manual", (2007)
- ACPA's "Concrete Pipe Design Manual", (2009)
- TRB's "NCHRP (National Cooperative Highway Research Program) Report 350-Recommended Procedures for the Safety Performance Evaluation of Highway Features", (1993)
- National Electric Safety Code (NESC)
- U.S. Department of Transportation Federal Highway Administration's Program Guide Utility Relocation and Accommodation on Federal Aid Highway Projects
- ANSI A300 "Tree Shrub and other Woody Plant Management - Standard Practices (Pruning)"

3.2 References and Source Materials - State of Delaware

3.2.1 The following guidelines, design standards and independent manuals (which are made available in their entirety through their authoring Agencies and Departments of the State of Delaware) are incorporated by reference, except as modified within this regulation. In the event that conflicts may exist between incorporated references and this regulation, the Utilities Regulation controls.

- DelDOT's "Pedestrian Accessibility Standards for Facilities in the Public Right-of-Way" (PAS)
- DelDOT's "Road Design Manual" (RDM)
- DelDOT's "Standard Construction Details"
- DelDOT's "Standard Specifications for Road and Bridge Construction"
- DelDOT's "Bridge Design Manual"
- DelDOT's "Traffic Design Manual"
- DelDOT's "Traffic Calming Manual"
- DelDOT's "CADD Standards Manual"

3.2.2 Regulations that are adopted through the Federal or State of Delaware *Register of Regulations* shall be taken into consideration in each aspect of planning, design, or construction, where such regulations may have independent jurisdiction over applicable elements irrespective of any consideration in this regulation. The omission of explicit references to any such applicable State or Federal regulation from this regulation shall not have the effect of sheltering the design professional from the separate and additional responsibilities that such regulations may create. If conflicts may exist between State or Federal regulation and this regulations, the more restrictive criteria should be used, while meeting the intent of the controlling regulation. All regulations shall be considered in their entirety, inclusive of any amendments, in their most current version. The following is not an exhaustive list, but includes some of the more commonly referenced regulations:

- Delaware version of the "Federal Manual on Uniform Traffic Control Devices" (DE MUTCD), 2 **DE Admin. Code** 2402;
- Delaware's "Development Coordination Regulations", 2 **DE Admin. Code** 2309;
- U.S. DOJ Americans with Disabilities Act (ADA) "Standards for Accessible Design" (2010 - Federal Register Vol. 75, No. 178 as amended or current version);
- For Maintenance and New Service Installation Work, the applicable standards shall be the versions in effect at the time of permit authorization by the District Public Works; and
- For Project Design and Facility Relocation Work, the applicable standards shall be the versions in effect at the Notice to Proceed issued by the Utilities Engineer or designee.

## 4.0 Design Requirements for Rights-of-Way Utility Installations Within DelDOT-maintained Highways and Streets

4.1 Types of Work

4.1.1 Maintenance and new service installation work: this work consists of maintaining existing utility facilities and installing new services or utility distribution facilities. This work is not the result of a DelDOT highway project and is coordinated through the district public works office for the county where the work is performed.

4.1.2 Project Design and Facility Relocation Work. This work results from highway construction projects that require relocating utility facilities. Project design work is coordinated through the utilities engineer and utilities section.

4.1.3 Responsibility and Dispute Resolution. The District Public Works Section administers permit work in its respective district under the authority of the district engineer and, ultimately, the director of maintenance. The construction group engineer administers highway construction projects under the authority of the assistant director of construction. The assistant directors of project development and bridge are responsible for project designs and the assistant director of right-of-way (chief of ROW) is responsible for the utility section. The chief engineer has authority over the project development, bridge, right-of-way/ utilities, and construction sections of DelDOT. Any situations that cannot be resolved through the normal process may be forwarded to the appropriate authority.

4.2 Highway Safety and Temporary Traffic Control. DelDOT considers highway safety the highest priority that is an essential and indispensable component of every project from planning through the design and construction phases. Therefore, companies that install, maintain, service, operate, or otherwise work upon utilities within highway rights-of-way are required to provide appropriate temporary traffic control within work areas.

4.2.1 Temporary Traffic Control. Measures shall be taken for protection and safe operation of traffic and workers during and after installation of utility facilities. For all utility maintenance or construction operations within public highway rights-of-way.

4.2.1.1 All temporary traffic control shall conform to the requirements specified in the DE MUTCD and any other applicable state and federal regulations.

4.2.1.2 A temporary traffic control plan, referencing the DE MUTCD Part 6 and, if applicable, the appropriate Typical Applications, shall be submitted and approved whenever a permit is required.

4.2.1.3 Failure by a utility to provide for traffic safety shall be cause for immediate suspension of operations. The work will not be allowed to continue until the District is satisfied that the proper traffic control is established.

4.2.1.4 In all questions of interpretations of the DE MUTCD, the judgment of the Chief of Traffic Engineering or designee shall be final. The protection prescribed for each situation shall be based on the speed and volume of traffic, duration of operation, various modes of traffic and exposure to hazards.

4.2.1.5 No work shall occur over live traffic. If it is required that work be performed over a travel lane or a turn lane or bike lane, a lane closure shall be required. If it is required that work be performed over pedestrian facilities, the pedestrian facility shall be closed, and a pedestrian detour shall be required.

4.2.2 Temporary Traffic Control and Safety References

4.2.2.1 Title 17 of the Delaware Code provides for the establishment of traffic control and safety standards to be observed during utility construction and maintenance operations on or adjoining any public highway, road, or street. Public and private utilities, contractors under contract with utility companies, and all others engaged in utility construction and maintenance are required to comply with these standards.

4.2.2.2 The DE MUTCD explains in detail the principles and requirements of temporary traffic control and safety standards. It covers temporary traffic control procedures, responsibilities of involved parties, required training for personnel, and descriptions of approved control devices. The traffic control and safety standards are to be implemented through the training and supervision of utility employees.

4.2.2.3 Failure to meet the standards of the DE MUTCD will result in stoppage of work until deficiencies are brought into compliance.

4.2.3 Temporary Traffic Control Plan

4.2.3.1 The temporary traffic control plan is an important aspect of a project. It shall be prepared by a professional engineer registered in the State of Delaware and understood by all affected parties before work begins. In preparing the temporary traffic control plan, the appropriate typical applications in the DE MUTCD shall be followed. A plan for Maintenance of Pedestrian Traffic, including plans, specifications, and standards to provide a clear and positive manner for pedestrians to safely approach and traverse through temporary work zones, shall be required

when the proposed work impacts established pedestrian access routes. The plan must be submitted, or temporary traffic control typical application shall be identified when applying to the District Office for a utility construction permit. Temporary traffic control for design work is coordinated with the highway contractor, the highway construction project supervisor, and the construction section to ensure proper safety standards are employed.

4.2.3.2 The utility work within the right-of-way, except work associated with DelDOT highway project not requiring a permit as referred to in subsection 4.1.2, shall not begin until the District approvals have been obtained and the approved permit and supplementary information, including temporary traffic control plan, is on the job site. Once the job has begun, the utility inspectors must ensure that the plan is followed throughout the project.

4.2.3.3 In the case of emergency work where there is no prior approval of a temporary traffic control plan; the utility is still required to follow the DE MUTCD and the utility shall be prepared to immediately set up whatever temporary traffic control may be required to protect the public and perform necessary repair work.

4.2.3.4 On construction projects where utility adjustments are made simultaneously with the highway contractor's operations and the highway contractor provides the temporary traffic control, the utility is not required to prepare a temporary traffic control plan.

4.2.3.5 Under these circumstances, the utility and highway contractor must cooperate and coordinate their work so that neither is delayed by the other's operation. See subsection 6.4.2.2.

4.2.4 Flaggers and Temporary Traffic Control

4.2.4.1 Certified flaggers per the DE MUTCD are required in controlling traffic when flagging operations are needed.

4.2.4.2 DelDOT has specific requirements for flagger warning signs, safety clothing, training, and associated flagger concerns, as described in the DE MUTCD. Utility personnel acting as flaggers shall abide by these requirements.

4.2.5 Inspection of Temporary Traffic Control

4.2.5.1 Routine inspections of temporary traffic control elements must be made to ensure acceptable levels of operation. DelDOT has the right to inspect traffic control in a manner and at a frequency determined in the sole discretion of DelDOT.

4.2.5.2 When a utility or utility contractor fails to follow the approved temporary traffic control plan, inspectors may suspend the work within DelDOT right-of-way until the required temporary traffic control is in place. Failure to follow the temporary traffic control plan violates 21 **Del. C.** §4105 and is subject to punishment by law.

4.3 Location of Utility Facilities. When planning utility locations on highway rights-of-way, consideration must be given to sound engineering principles, public safety, and economic benefits to the state.

4.3.1 Planning must consider safety, the visual quality of the highway, and efficiency of maintenance. The following items must also be considered:

4.3.1.1 Minimal Future Project Interference: New utility facilities shall be located to minimize the need for later adjustments to accommodate future highway improvements or other utility installations. The location shall allow for adequate access to the facilities and accommodate future maintenance. In addition to meeting with DelDOT to discuss future projects, the following are sources to check on projects:

- The Capital Transportation Program (CTP);
- Wilmington Area Planning Council (WILMAPCO);
- The Statewide Long Range Transportation Plan;
- Dover/Kent County Metropolitan Planning Organization (MPO);
- DNREC Dam Safety Engineer - if near a dam; and
- DelDOT Representatives (Utility Engineer, District Public Works Office, Project Development Personnel, Bridge Personnel, Traffic Safety, etc.).

4.3.1.2 Minimal Future Interference to Traffic. Consider methods to maintain utility facilities with minimum interference to highway traffic.

4.3.1.3 Safe Traffic Operation and Preservation of Future Space. New longitudinal installations shall be located on a uniform alignment as near as practicable to the right-of-way line to provide a safe environment for traffic operation and preserve space for future highway improvements or other utility installations. Above-ground facilities shall meet the additional criteria being outside the clear zone.

4.3.2 General Standards. The following standards apply to all utilities:

4.3.2.1 Retired Facilities

4.3.2.1.1 The utility shall notify DelDOT of the intention to retire its facilities in place. Such retired installations within the right-of-way shall remain the responsibility of the utility unless an executed agreement or other form of written documentation is supplied to DelDOT showing the responsibility was transferred to another entity. The utility shall keep documentation of the facility as being disconnected or retired and shall provide it to DelDOT during coordination of projects. The utility shall also install RFID markers along any subsurface retired facilities at disconnected or capped locations so they can more easily be identified in the future. RFID markers shall be programmable and shall be programmed with utility owner name, contact phone number, facility material type, and facility size at a minimum.

4.3.2.1.2 If retired facilities cause issues with the operation, maintenance, or reconstruction of the highway, DelDOT shall notify the Utility to this problem and require the facilities be addressed. If maintenance issues persist, DelDOT may give notice to require the removal of all or part of retired utility facilities or the filling of any such facility by an approved method and restoration of the right-of-way. All utility facilities shall be properly purged of material and sealed at all open ends consistent with industry standards and federal, state, and local laws prior to retirement. Any utility facility that is proposed to be retired and removed by the utility owner must be disposed of consistent with industry standards and federal, state, and local laws.

4.3.2.1.3 When a new pole is being installed to replace an existing pole, all utilities shall be transferred from the old pole within 60 calendar days. The owner of any retired pole within the right-of-way of the state-maintained highway or street is responsible for ensuring its removal within 10 calendar days of the last utility being removed unless otherwise agreed to by the District Public Works office. See subsection 6.1.4.4.

4.3.2.2 ADA. The location of utility facilities and appurtenances shall be in accordance with the Americans with Disabilities Act (ADA) and the DelDOT Pedestrian Accessibility Standards (PAS). Utility Devices and appurtenances shall not be located where they would interfere with the accessibility of facilities nor create a negative impact to the accessibility of the facilities. If the proposed utility work will impact any existing pedestrian facilities, the utility company will be required to bring the impacted facilities up to the DelDOT Pedestrian Accessibility Standards. For examples of ADA responsibility associated with Utility work, see Appendix C, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-c.pdf. Any negative impacts that are created by utilities shall be remediated by the utility. If they are not remediated, non-compliance procedures in accordance with subsection 5.9 may be initiated. A Utility may not use the Utility Exception or Deviation procedures outlined in subsection 5.8 to avoid compliance with this section. If a Utility wishes to get an exception from these provisions, a Request for Practical Exception in accordance with the DelDOT PAS shall be required.

4.3.2.3 Clear Zone Policies and Lateral Offset

4.3.2.3.1 The locations of aboveground utility facilities shall be consistent with the clearances applicable to all roadside obstacles for the type of highway involved and consistent with clear zone and clear roadside policy. See the *DelDOT Road Design Manual* and the AASHTO *Roadside Design Guide* for more details related to providing a clear recovery area to increase safety, improve traffic operations, and enhance the aesthetic quality of highways by designing, constructing, and maintaining highway roadsides as wide, flat, and rounded as practical and as free as practical from natural or manufactured hazards such as trees, drainage structures, nonyielding sign supports, highway lighting supports, and utility poles and other ground-mounted structures.

4.3.2.3.2 Clear zones are established for new highway construction and major reconstruction projects. Utilities shall determine the clear zone widths and lateral offsets for specific locations for utility work performed under permits. The calculation of clear zone widths and information on lateral offsets is explained in the DelDOT Road Design Manual and the AASHTO Roadside Design Guide.

4.3.2.3.3 If there is no feasible alternative to locating appurtenances protruding more than four inches above the ground line within the clear zone, the appurtenances, including fire hydrants, shall meet breakaway criteria. Breakaway devices must be certified as meeting the breakaway characteristics established by AASHTO *Manual for Assessing Safety Hardware* (MASH), National Cooperative Highway Research Program (NCHRP), or FHWA. Appurtenances protruding more than four inches that are breakaway shall not be located within 1.5 feet from

the face of curb. Fixed objects may not be placed in the clear zone without going through the exception process.

4.3.2.3.4 Utility poles that are placed within the clear zone shall be properly delineated by either a yellow reflective band installed around the utility pole or a vertical rectangular object marker with yellow reflective sheeting. If an object marker is used, it shall be a minimum of 12 inches wide by 18 inches tall with one used on each side of the utility pole facing approaching traffic. The marker must be placed between four and five feet above the ground.

4.3.2.4 Perpendicular Crossings. Underground utility lines shall cross the highway on a line perpendicular to the highway alignment.

4.3.2.5 Delineators. All appurtenances existing outside of the paved surface and protruding from the ground greater than one inch, but less than 24 inches shall be properly delineated so that they are visible during mowing operations. The delineator shall be constructed of a durable, UV resistant, flexible material that will not pose a safety hazard to a vehicle or bystander if struck. It shall provide assured long-term outdoor durability, provide impact resistance, be colored in accordance with the American Public Works Association (APWA) color code for the associated utility, and contain a label with utility company, contact number, and facility information clearly identified. The delineator shall be a permanent installation with the base embedded at least 18 inches into the ground. Maintenance of the delineator and replacement when delineators are no longer functional shall be the responsibility of the utility company.

4.3.2.6 Ownership. The utility is responsible for the maintenance and relocation of all facilities located within DelDOT right-of-way whether facilities are active or retired. Ownership of facilities located within the DelDOT right-of-way shall not be transferred to individual property owners.

4.3.3 Highways with Fully Controlled Access: Delaware highways with full access control include interstate, expressway, and freeway, as defined by the functional classification.

4.3.3.1 Crossings. Underground crossings may be allowed if it is determined the crossing and installation does not affect safety. Aerial crossings are not permitted. Where a utility company has no alternative but to aerially cross a highway with fully controlled access, the company must follow the exception process described in subsection 5.8.

4.3.3.2 Lateral Positioning

4.3.3.2.1 Longitudinal installations of utilities shall not be permitted on fully controlled highways. Frontage roads, where provided, may be used for placement of utilities with the approval of DelDOT.

4.3.3.2.2 Utilities located on existing highway rights-of-way, where the highway facility is being upgraded to a fully controlled access highway, shall be moved outside of the rights-of-way of the fully controlled access highway.

4.3.3.2.3 Utilities Along Highways that Cross a Fully Controlled Access Highway. Where a utility follows a highway that crosses a fully controlled access highway, the utility shall cross the fully controlled access highway on the location of the highway, and generally within its right-of-way. The utility shall be serviced without access from the fully controlled access highway. All work is subject to State and FHWA regulations in effect at the time.

4.3.4 Highways. On highways, preference is given to through traffic to a degree that, in addition to access connections with selected public roads, there may also be some other roads crossing at grade as well as some private driveway connections.

4.3.4.1 Aboveground Utilities Along Highways-Lateral Positioning. The following constraints apply to the location of any aboveground facilities along a highway. Utilities can submit exceptions to these requirements for DelDOT consideration in accordance with subsection 5.8.

4.3.4.1.1 Clear Zone. At grade and above ground utilities protruding greater than four inches, placed longitudinally on DelDOT's right-of-way, shall be positioned in accordance with subsection 4.3.2.3.

4.3.4.1.2 Curves. Aboveground installations shall not be placed on the outside of curves on roadways where the speed limit is above 30 miles per hour. Rebuilding or upgrading existing facilities currently on the outside of a curve shall conform to this section unless outside of the adjusted clear zone or lateral offset.

4.3.4.1.3 Daylight Corners, Medians, and Traffic Islands. Aboveground features such as poles, guys, enclosures, etc. shall not be placed in corner cuts ("daylight corners") or medians or on traffic islands.

4.3.4.1.4 Incorporated Areas. In incorporated areas, aboveground utilities shall be placed as close as possible to the right-of-way line. In curbed sections, the utilities shall be located as far as possible behind the curb and in compliance with the ADA and the DelDOT PAS. Utility facilities shall never be closer than the lateral offset established in the AASHTO Roadside Design Guide as discussed in subsection 4.3.2.3.

4.3.4.1.5 Occupy One Side of Roadway. Every effort shall be made to place a utility's lines on one side of the roadway. New aerial service connections shall be avoided if possible. DelDOT will not issue a Utility Construction Permit authorizing the placement of utility facilities by the same company along both sides of a highway absent an authorized exception.

4.3.4.1.6 Pole Foundations. When pole foundations will be utilized, the utility shall submit foundation designs signed and sealed by a Delaware Professional Engineer with the permit application.

4.3.4.1.7 Slopes and Ditches. Poles, guys, stub poles, or other utility equipment or utility structures may not be placed in front slopes or ditch bottoms.

4.3.4.1.8 Joint-Use Single-Pole Construction. Joint-use single-pole construction shall be used at locations where more than one utility or type of facility is involved. The pole owner shall ensure that the pole is sized in accordance with industry standards to allow space for existing and future joint-use utility facilities. Note: The holder of a franchise shall not grant permission to another utility facility to jointly occupy its pole line without the other utility providing the pole owner with a copy of their executed DelDOT Master Franchise or verification from the District Public Works or the DelDOT Utilities Engineer of having an executed Master Franchise agreement on file with DelDOT.

4.3.4.1.9 Spacing: Pole line designs shall be performed to maximize pole spacing and limit the quantity of poles utilized. Minimum spacing shall be 150 feet.

4.3.4.2 Utilities Along Highways-Vertical Positioning

4.3.4.2.1 Overhead electric power and communications structures, lines and cables shall be installed in compliance with the National Electrical Safety Code.

4.3.4.2.2 The owner of utility facilities is responsible for moving them to eliminate any existing or proposed visual obstruction or interference to any traffic control device. This includes moving structures, overhead lines and cables, splice boxes, enclosures, and other appurtenances in order to provide adequate visibility of a traffic control device and to maintain safety clearances required in applicable laws, codes or regulations.

4.3.4.3 Historic Sites, Scenic Areas, Parks, etc.

4.3.4.3.1 Aboveground utility installations, including those needed for highway purposes such as highway lighting or to serve a weigh station, rest area, or recreation area, are not permitted on highway rights-of-way or other lands which are acquired or improved with federal aid or direct federal highway funds and are located within or adjacent to areas of scenic enhancement and natural beauty.

4.3.4.3.2 Such areas include public parks and recreational lands, wildlife and waterfowl refuges, historic sites as described in 23 U.S.C. 138, scenic strips, overlooks, rest areas, and landscaped areas.

4.3.4.3.3 DelDOT may permit exceptions provided that the conditions described in the current program guide utility relocation and accommodation on federal-aid highway projects are met.

4.3.4.3.4 Relocation of pre-existing utility facilities from overhead to underground is subject to reimbursement within the guidelines described in Section 6.0.

4.3.4.4 Utilities in Denial-of-Access. Where DelDOT has established a denial-of-access, utilities that require an entrance or access, either improved or unimproved, shall not be permitted.

4.3.4.5 Subdivisions and Industrial Parks

4.3.4.5.1 Subdivision Streets Not Yet Accepted for State Maintenance. The subdivision developer shall be responsible for submitting utility installation site plans to District Public Works for review and approval prior to commencement of street construction within the subdivision and prior to utility installation.

4.3.4.5.2 A utility shall obtain a utility construction permit for work in new subdivisions. All utilities shall install facilities in accordance with this regulation and all applicable Federal, State, and local requirements. Upon completion and acceptance of the subdivision streets, the utilities that are located within the right-of-way shall be franchised in accordance with the existing Master Franchise for each utility.

4.3.4.5.3 Utilities in a Subdivision must be located according to the following standards:

4.3.4.5.3.1 Utilities will be allowed within the right-of-way, outside of the paved surface.

4.3.4.5.3.2 The main lines of longitudinal underground utilities must be located between the right-of-way line and the curb or edge of pavement-except for sanitary sewers. If sanitary sewers cannot be located outside of the roadway, they may be allowed under pavement but should not be located under the wheel path. Sanitary sewer manholes may be placed along the center of the roadway. Service lines may cross under the paved area to connect residences with main lines.

4.3.4.5.4 Subdivision Streets Accepted for State Maintenance: Utility construction permits are required for existing subdivisions. Existing underground utilities will be permitted to remain in place in subdivisions with streets currently maintained by DelDOT. However, any utilities that are upgraded shall be located per subsection 4.5.

4.4 Design

4.4.1 Utility's proposed design in all cases shall:

4.4.1.1 Protect the integrity of the roadway or highway structure.

4.4.1.2 Minimize interference with traffic during installation and maintenance of the facility.

4.4.1.3 Minimize highway maintenance problems for DelDOT.

4.4.1.4 Avoid conflicts with other uses of the rights-of-way.

4.4.2 Maintenance and New Service Installation

4.4.2.1 The utility shall submit a permit application to the District Public Works Section to review for approval/rejection of work requiring new facility installation; facility maintenance, repairs, or reconstruction; pole upgrades, rebuilds, or replacements; and certain utility functions required prior to highway construction. The District Public Works Sections shall supply permit submissions to and review them with the DelDOT Utility Section if the proposed work area is within the limits of an active or proposed DelDOT highway project to ensure no potential conflicts. A highway project is considered active until DelDOT's final acceptance, after which it is considered complete. If the District Public Works Section deems the permit acceptable after consulting with appropriate DelDOT sections, the District Public Works Section will approve:

4.4.2.1.1 The proposed location for the utility facility.

4.4.2.1.2 The utility's method of installing or attaching the facility and repairing the highway or structure.

4.4.2.2 DelDOT will review and approve the temporary traffic control plan to ensure highway safety, including the safe and free flow of traffic and pedestrians.

4.4.2.3 Project Design and Facility Relocation: Includes removing and reinstalling permanent or temporary facilities; acquiring necessary right-of-way on new locations; moving, rearranging, or changing existing facilities; and taking any necessary safety and protective measures. It shall also cover constructing a replacement facility that is functionally equivalent to the existing facility and necessary for continuous operation of the utility service, the project economy, and sequence of highway construction.

4.4.2.4 On DelDOT highway construction projects, the utilities engineer will coordinate, review, and approve the utility's proposed plans for the following:

4.4.2.4.1 Location of the facility, either in its existing position or in a relocated position.

4.4.2.4.2 Methods of installing or attaching the facility and repairing the highway or structure.

4.4.2.4.3 Timing of any proposed adjustments and relocations.

4.4.2.4.4 Reimbursement of work in accordance with the requirements of Delaware Code as outlined in this regulation.

4.4.2.5 Requirements

4.4.2.5.1 Utility installations on, over, or under the rights-of-way of state highways and utility attachments to highway structures, shall meet or exceed the requirements listed below, as well as any other applicable codes or regulations in place at the time of Notice to Proceed (NTP) or permit authorization.

4.4.2.5.2 Electric Power and Communications. National Electric Safety Code (NESC).

4.4.2.5.3 Water Transmission and Distribution. American Water Works Association (AWWA).

4.4.2.5.4 Pressure Pipelines. Standard Code of Pressure Piping of the American Society of Mechanical Engineers ASME B31.4 and B31.8 and applicable sections of federal, state, local, and industry codes.

4.4.2.5.5 Liquid Petroleum Pipelines. American Petroleum Institute Recommended Practice for Steel Pipelines Crossing Railroads and Highways. U.S. DOT Rules and Regulations governing transportation of such materials, including Code of Federal Regulations Title 49 Part 195.

4.4.2.5.6 Pipelines Carrying Natural Gas and Hazardous Materials. U.S. DOT Rules and Regulations governing transportation of such materials, including Code of Federal Regulations Title 49, Parts 192, 193, and 195.

4.4.2.5.7 Fiber Optic Facilities. Standard for the physical location and protection of below-ground physical plant (EIA/TIA-590); also NESC provisions for communications cable.

4.4.2.5.8 Provisions for future expansion of utility facilities are to be made when planning for adjustments to existing facilities or preparing for new installations.

4.4.2.5.9 Underground utilities shall utilize safe trenching practices when preparing their designs and constructing their facilities. Both the utilities and their contractors shall comply with all Occupational Safety and Health Administration (OSHA) requirements while working on highway rights-of-way. If unsafe work environments exist, work shall stop until safe conditions are established or restored.

4.4.2.5.10 Other Permits

4.4.2.5.10.1 Utilities are responsible for obtaining all required permits from municipal, state, and federal agencies and railroads for all work they have performed. It is also the utility's responsibility to obtain all required permits for DelDOT road construction projects and when the utility or its contractor is performing the relocation work.

4.4.2.5.10.2 DelDOT will support and cooperate with the utility in obtaining such permits when the relocation work is associated with a highway project. Examples of these permits include, but are not limited to:

- Water quality permits, DNREC Water Quality Certification;
- DNREC subaqueous Lands/Wetlands permits;
- DNREC Coastal Zone Consistency Certification;
- DNREC Dam Safety permit;
- DNREC Coastal Construction Permit or Letter of Approval;
- Floodplain permit;
- U.S. Coast Guard permit;
- U.S. Army Corps permits (404, 408, etc.);
- Sediment and Stormwater permit;
- Railroad crossing permits;
- All Municipal required permits; or
- DelDOT Entrance Permits.

4.4.2.5.10.3 The utility will not be responsible for obtaining a Sediment and Stormwater permit when the utility work is within the highway contractor's limit of construction and the utility is performing the work when the highway contract is active. However, it is the individual utility's responsibility to seed and stabilize all disturbed areas associated with their work in accordance with DNREC regulations upon completion. If the disturbed areas are not properly restored, especially in association with a DelDOT project, DelDOT may take further action to obtain compliance as outlined in subsection 5.9. Where authority over the ROW is shared, utilities shall coordinate with all impacted stakeholders having defined ROW responsibilities.

4.5 Utility Clearances and Depth of Cover

4.5.1 Positioning and Clearances

4.5.1.1 Vertical and horizontal clearances between utilities and utility clearances above roadways shall conform to the utility codes cited in subsection 4.4.2.5.1 and any other applicable industry codes and standards.

4.5.1.2 Aerial utility lines crossing a highway or commercial entrance shall provide at least 18 feet of clearance at maximum sag conditions. Clearance over railroads shall be at least 23.5 feet at maximum sag conditions. Clearance over sidewalks shall be at least 80 inches at maximum sag conditions. Clearance over shared use paths shall be at least 96 inches at maximum sag conditions.

4.5.2 Depth of Cover

4.5.2.1 Depth of cover shall conform to the utility codes cited in subsection 4.4.2.5, the requirements in subsection 4.6, and any other applicable codes and regulations. Minimum depth of cover for all installations is 42 inches below the finished surface of the pavement.

4.5.2.2 Underground utilities shall be in the subgrade material and shall not be in the pavement box. Regardless of the minimum depth of cover requirements, if the depth of the pavement box is greater than the minimum cover, greater cover shall be required. DelDOT may request greater cover in some instances due to the type of road construction or other circumstances affiliated with proposed work or site conditions.

4.5.3 Highway Appurtenances

4.5.3.1 Utilities shall provide the minimum overhead clearances above the roadway defined in the references listed in subsection 4.4.2.5. Appropriate clearances from signal poles and street lighting shall also be maintained, as applicable codes require. DelDOT may request greater clearances due to construction and maintenance practices or other circumstances affiliated with proposed work or site conditions.

4.5.3.2 Utility accesses and valve covers shall not be in the roadway. If there is no feasible alternative, they shall not be in a wheel path or in the centerline of the roadway.

4.5.3.3 The horizontal placement of appurtenances shall be in accordance with the clear zone and lateral offset requirements described in subsection 4.3.2.3, the DelDOT Road Design Manual, AASHTO Roadside Design Guide, and A Policy on Geometric Design of Highways and Streets (AASHTO's Green Book).

4.6 Underground Installations

4.6.1 Underground Utilities Crossing Highways

4.6.1.1 Utility crossings in deep cuts, near bridge and retaining wall footings, in wet or rocky terrain where it is difficult to obtain minimum cover, and at highway cross drains where flow of water, drift, or streambed load may be obstructed are not preferred. Crossings shall be located so that the following conditions are not encountered:

4.6.1.1.1 Placements where attaining minimum cover would be jeopardized due to anticipated or encountered field conditions.

4.6.1.1.2 Placements running through paved or unpaved berm slopes under structures.

4.6.1.1.3 Underground utility lines shall not cross laterally within 50 feet of a bridge or dam.

4.6.1.1.4 Underground utility facilities shall not be located above corrugated metal pipes. See subsection 4.3 for more information regarding crossings of highways. Refer to subsection 4.6.2 for more information regarding pipelines.

4.6.1.2 Installation Methods

4.6.1.2.1 Trenchless Methods

4.6.1.2.1.1 Utilities shall provide construction plans for proposed trenchless operations for approval by the District Public Works Section when applying for a utility construction permit. For DelDOT highway projects, construction plans shall be provided to the utility coordinator assigned to the project prior to approval of the proposed operations.

4.6.1.2.1.2 Pits for underground installations are not permitted in existing pavement or a proposed paving area. The pits shall be excavated no closer to the roadway than five feet from the edge of an improved shoulder. Where the shoulder is dirt or grass, the pit excavation shall remain at least 10 feet from the edge of pavement. For curb-and-gutter sections, pits must be a minimum of five feet from the back of the curb. When adequate shoring is detailed in design and utilized in construction, pits may be 2 feet from the edge of the pavement.

4.6.1.2.2 Open Cutting

4.6.1.2.2.1 The open cutting of a roadway for the purpose of working on or installing new underground facilities is the secondary method for installation when trenchless methods are not feasible. Open cutting of any roadway may not be permitted for at least five years after resurfacing or reconstruction.

4.6.1.2.2.2 In the event open cutting is allowed, the utility shall restore the area in accordance with subsection 4.8.

4.6.1.2.2.3 Utilities shall not cover open trenches with steel plates between November 1 and March 31.

4.6.2 Pipelines

4.6.2.1 All pipeline installations shall conform to the applicable regulations pertaining to the type of installation being constructed. DelDOT considers vents, drains, markers, manholes, and shutoffs as parts of pipeline installations.

4.6.2.1.1 Permits. Utilities shall obtain approval from the District Public Works Office for any new pipeline or anticipated change to the current design or operation of a pipeline. The permit application shall specify the applicable codes to be used.

4.6.2.1.2 Except for gravity sanitary sewer where manholes are present and accessible, all newly installed facilities shall be locatable. See subsection 4.6.3.4 on Non-Metallic Pipe for more details.

4.6.2.1.3 Placement of Pipeline. When pipelines are installed longitudinally, the pipeline shall be placed as close as possible to the right-of-way line, unless approved otherwise in a municipality or suburban development. The placement shall not interfere with highway drainage or with the structural integrity of the traveled way, shoulders, or embankment.

4.6.2.2 Pipeline Crossings

4.6.2.2.1 Pipe, conduit, sewer, or other similar facility shall not be placed inside or through any drainage pipe, inlet, junction box, etc. Neither shall objects be placed across the ends of any drainage pipe or culvert to obstruct the flow of water.

4.6.2.2.2 Pipelines crossing streams shall be securely suspended above flood lines or laid beneath streambeds.

4.6.2.3 Pipeline Appurtenances

4.6.2.3.1 Manholes. Manholes may not be in the traveled way or centerline of any highways except in Subdivisions as outlined in subsection 4.3.4.5. Installations shall avoid intersections. Manholes shall be designed and located so that they will not interfere with other utilities and planned highway expansion. Manholes shall not be in the flow line of ditches, within the curb line, or the wheel path of traffic. All manholes shall be flush with the finished grade.

4.6.2.3.2 Valves. Isolation valves shall be placed at or near the ends of structures. Automatic shut-off valves shall be preferred. Valves and valve access points shall be placed outside of pedestrian access routes and shall not be located within the curb line.

4.6.2.4 Pipeline Installation

4.6.2.4.1 Pipeline Crossings shall be identified by delineators as described in subsection 4.3.2.5.

4.6.2.4.2 Pressurized Pipelines shall be pressure-tested to assure they are watertight, if applicable, and completely without leaks. See subsection 4.4.2.5.4, Pressurized Pipelines.

4.6.2.4.3 Pipeline Depth requirements are outlined in utility codes cited in subsection 4.4.2.5. Utilities shall conform to such codes whenever applicable. Pipelines may not be permitted in the pavement box.

4.6.2.5 Pipeline Crossings

4.6.2.5.1 Pipelines shall be placed a minimum 42" below pavement finished grade under highway. The critical control for the depth of cover on a non-cased pipeline crossing is the low point in the highway cross-section. Normally, this is the bottom of the longitudinal ditch. Additional protection shall be provided for any pipeline with less than minimal cover. These measures shall provide physical protection to facilities using suitable bridging or concrete slabs.

4.6.2.5.2 Longitudinal. Pipelines in the highway right-of-way must be placed at least 24 inches below the finished surface. Lines crossing ditches must be placed at least 24 inches below the ditch flow line. The nearest edge of the trench is to be at least five feet from the edge of pavement or back of curb line.

4.6.2.5.3 Clearances Between Utilities. All utilities shall be separated from one another as required by appropriate codes and ordinances, typically 12 inches minimum.

4.6.2.5.4 Hazardous Transmittants. Crossings by pipelines carrying a hazardous liquid (as defined in Code of Federal Regulations Title 49 Part 195.2) or liquefied gas (including propane) or other hazardous material as listed in Code of Federal Regulations Title 49 Part 172 shall not be allowed. Natural gas pipelines, however, will be allowed via the permit review and approval process through the District Office.

4.6.2.6 Casings. DelDOT requires Casings or Encasements under the following circumstances:

4.6.2.6.1 All crossings of full-access-control roadways (interstate highways, toll roads, freeways) shall be cased or encased;

4.6.1.6.2 All crossings of existing or proposed arterial and collector roadways shall be cased or encased. Arterial and collector roadways are identified on the DelDOT Functional Classification Maps;

4.6.1.6.3 Casings or encasement are required for crossings of existing or proposed major entrances to commercial facilities or residential subdivisions;

4.6.1.6.4 Jacked or bored installations of coated carrier pipes shall be cased; and

4.6.1.6.5 Encasement or other suitable protection shall be given for any pipeline with less than minimum cover, across unstable or subsiding ground, near other locations where hazardous conditions may exist.

4.6.2.7 Casing Placement. DelDOT requires Casings or Encasements under the following circumstances:

4.6.2.7.1 Casings shall extend at least five feet beyond the curb, pavement, projected fill slopes, or ditch lines to assure proper support of roadways during any repairs to pipelines. For all access-controlled highways, the casing shall extend from right-of-way line to right-of-way line or outside outer curbs; and

4.6.2.7.2 If necessary, the utility shall acquire enough right-of-way or private easements to remove or replace the utilities.

4.6.2.8 Casing Types

4.6.2.8.1 Casings shall be designed to support the load of the highway and superimposed loads thereon and at least equal the structural requirements for highway drainage facilities. Corrugated materials shall not be allowed.

4.6.2.8.2 Hazardous Transmittants. The casings for facilities transmitting hazardous materials shall be of steel pipe of standard manufacture. The joints shall be welded or fused sealed around the entire circumference of the pipe as industry standards and regulations allow. Natural gas facilities may be cased with polyethylene pipe of a design to sustain the live and dead loads currently used in Delaware highway design.

4.6.2.8.3 Non-Hazardous Transmittants. The casings for facilities transmitting non-hazardous materials shall be of a design to sustain the live and dead loads currently used in Delaware highway design. Such materials include steel pipe, reinforced concrete pipe, cast iron pipe, polyethylene pipe, fused PVC, and ductile iron pipe.

4.6.2.9 Casing Installation

4.6.2.9.1 All pipeline installations shall conform to the applicable regulations pertaining to the type of installation being constructed. When a pipeline casing is placed under a roadway, all installations are to be made by trenchless methods and shall be outside the pavement box. If coated pipe is used for jacking or boring, the same pipe shall not be used as the carrier pipe.

4.6.2.9.2 Other requirements for installation are as follows:

4.6.2.9.2.1 Sealing of Casing. Casing pipe shall be sealed at the ends with a flexible material to prevent flowing water and debris from entering the annular space between the casing and the carrier. Where carrier pipes that carry hazardous transmittance are cased, the casing pipes shall be provided with a screened vent on each end that is as near as feasible to the right-of-way boundaries.

4.6.2.9.2.2 Drains. Drains shall be provided for casings and tunnels enclosing carrier pipes containing liquid, liquefied gas, or heavy gas. Drains may not outfall into roadside ditches. Such outfall may not be used as a wasteway for purging the carrier unless specifically authorized by a National Pollutant Discharge Elimination System (NPDES) permit.

4.6.2.9.2.3 Vents. Where carrier pipes that carry combustibles are cased, the casing pipes shall be provided with a screened vent on each end that is as near as feasible to the right-of-way boundaries. Other requirements are as follows:

4.6.2.9.2.3.1 Vents required for cased pipes shall be located at the high end of casings less than 150 feet long and at both ends of casings longer than 150 feet.

4.6.2.9.2.3.2 Vent standpipes and warning markers shall be located and constructed so as not to interfere with the maintenance of the highway nor be concealed by vegetation.

4.6.3 Electric, Communication and CATV

4.6.3.1 The requirements discussed earlier in this chapter describing installations and maintenance of pipelines crossing highway rights-of-way as related to casings, markers, and installations shall be applied to underground electric, CATV, and communications lines greater than two inches in diameter. The minimum depth of cover for these cased crossings is 42 inches under a highway.

4.6.3.2 For underground electric, CATV, and communications lines two inches or less in diameter:

4.6.3.2.1 Where a conduit or casing is placed under highway, all installations shall be made by trenchless methods. The casing shall be placed a minimum of 42 inches below the finished surface.

4.6.3.2.2 Where a conduit or casing is placed under an existing roadway other than a highway, installations shall be made by trenchless methods. The casing shall have a minimum nominal diameter of two inches and is to be placed a minimum of 24 inches below the finished surface, the bottom of ditches and not in the pavement box.

4.6.3.2.3 When the conduit or casing is placed parallel to the paved surface, the minimum depth of cover shall be 24 inches. The utilities shall also conform to the National Electric Safety Code and any other utility codes cited in subsection 4.4.2.5.

4.6.3.3 Burial Methods. Where the burying of cable is permitted along the edge of pavement, it may be done by plowing or trenching methods. The nearest edge of the trench shall be at least 5 feet from the edge of the pavement. The minimum depth of bury for CATV, communications, and electric is 24 inches outside of pavement, however, these utilities shall also conform to the National Electric Safety Code and any other applicable regulations. Plowing or trenching lines shall be parallel to the centerline of the road between intersecting roads. Where possible, utilities shall coordinate and collocate in trenches.

4.6.3.4 Locatability. Installations of non-metallic pipe shall include a tracer material that is detectable by locating devices. Non-metallic gravity sanitary sewer systems where manholes are present and accessible are exempt from this requirement. Metal tape shall not be used as tracer wire. It is the Utility's responsibility to ensure all non-metallic facilities are detectable after installation is complete and shall demonstrate it is traceable to DelDOT. If the facilities are not detectable, DelDOT shall require further action which may include removal of facilities. Locatability of retired facilities shall be in accordance with subsection 4.3.2.1.

4.6.3.5 As-Builts. As-built plans shall be submitted to the district office or utility engineer for all underground installations upon completion of the work. As-built plans shall accurately portray the size, type, and material of the facilities along with the horizontal and vertical location. If as-builts are not provided, DelDOT may take further action to obtain compliance as outlined in subsection 5.9.

4.7 Attachments to Bridges (and Other Structures)

4.7.1 General

4.7.1.1 Attaching utility facilities to a highway structure can materially affect the structure, the safe operation of traffic, and the efficiency of maintenance, safety inspections, and structural repairs.

4.7.1.2 New attachments of utility facilities shall not be allowed on existing structures. If a utility believes there is no feasible alternative the exception process outlined in subsection 5.8 shall be followed.

4.7.1.3 Utility facilities shall not be attached to ancillary structures owned or maintained by DelDOT including above-ground structures like sign structures, streetlights, and camera poles.

4.7.1.4 DelDOT may enter into an agreement to reimburse the utility to design and inspect facility support and protection during DelDOT projects as described in subsection 6.3. Refer to the OSHA Technical Manual for requirements.

4.7.1.5 The utility shall have an executed Utility Attachment Agreement for attaching any utility to a structure.

4.7.2 Structure Reconstruction and New Construction. If DelDOT, through the exception process in subsection 5.8, approves the attachment, the utility shall agree to having the facility installed by the DelDOT's contractor at the price assigned to this bid item within the DelDOT construction project bid, at the utility's expense. The utility shall reimburse DelDOT in accordance with the terms of the agreement outlining the conditions of occupancy.

4.7.3 Existing Structures. The following policies apply to utilities on existing structures:

4.7.3.1 Existing utilities attached to a structure can remain if they are not impacted by a DelDOT project.

4.7.3.2 Existing utilities shall be relocated off the structure if DelDOT's project requires either temporary or permanent relocation.

4.7.3.3 Any utility that plans to replace a facility attached to a structure shall relocate the facility off the structure.

4.7.3.4 The utility shall submit their choice of contractor to the District Public Works Engineer or designee on its choice of contractor and have the District Public Works Engineer's consent. The utility shall pay for DelDOT inspection, and DelDOT inspector on site during the construction.

4.7.3.5 Utilities may request exception for attached facilities in accordance with the exception procedures outlined in subsection 5.8.

4.8 Preservation and Restoration

4.8.1 Preservation

4.8.1.1 Utilities shall get a permit for spraying, cutting, and trimming trees on public highways or street rights-of-way.

4.8.1.2 Where tree removal is permitted, stumps shall be removed, and the resulting holes shall be properly backfilled to limit settlement in accordance with the DelDOT Standard Specifications. Note: Requirements for tree removal may be different within the limits of a state-regulated dam and shall be coordinated with the DNREC Dam Safety Engineer.

4.8.1.3 When working under a permit for spraying, cutting, or trimming trees, utilities shall follow the ANSI Standard A300 (Part 1) 2017 entitled Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices for vegetation management.

4.8.1.4 For all future transportation projects and maintenance activities on existing highway alignments, trees shall be replaced in accordance with Delaware Code Title 17 Chapter 1 Section 7. Trees will not be allowed to be replanted within the limits of a state regulated dam.

4.8.1.5 Utilities shall ensure that appropriate erosion control devices are in place before work starts and properly maintained during construction. The surface area disturbed by utility installations or relocations shall be kept to a minimum.

4.8.1.6 Utility installations shall be performed in such a manner as to not disturb the existing highway or private drainage facilities. Any damage to the facilities by the utility company or its subcontractors shall be repaired to the satisfaction of DelDOT at the utility company's expense.

4.8.1.7 Utilities shall provide protection for all elements in the right-of-way and shall repair anything damaged.

4.8.2 Restoration

4.8.2.1 Damage to highway traveled way, shoulders, and drainage features caused by utility installations or repairs shall be immediately restored to their original condition unless conditions such as cold weather warrant temporary restoration. The roadway shall be immediately restored with asphalt pavement material and made flush with the surface of the roadway or as directed by the District Public Works Office for permit projects. The utility shall complete all permanent restoration within 30 days, or as directed by the Public Works Engineer. If utilities have not completed restoration within 30 days, noncompliance regulations as discussed in subsection 5.9 will take effect. Temporary patches from winter months shall be permanently restored by May 15 before noncompliance action as outlined in subsection 5.9 will be taken. Damage to roadside areas in the right-of-way shall be repaired as specified by the District Public Works Section. Restoration is also necessary when utilities are working on active construction sites. The construction engineer will determine any necessary repairs and timeframes for work associated with active highway construction projects. A project is considered active until DelDOT's final acceptance, after which it is considered complete.

4.8.2.2 Utilities shall restore any damaged areas to a state equivalent to or better than roadway conditions prior to utility work. In all cases, the District Public Works Section will determine the extent of restoration required for permit projects. Utilities will conduct all such work at their expense and in accordance with the appropriate DelDOT Standard Specifications and Standard Construction Details.

4.8.2.3 After satisfactory completion, utilities shall maintain non-pavement restoration for 12 months. Furthermore, utilities must maintain pavement patches in areas impacted by utility work including Pedestrian Access Routes (PAR) such as sidewalks for a period of three years.

4.8.2.4 Traveled way - General. To maintain traffic, not more than one lane of traffic shall be closed at a time whenever a traveled way is cut unless a detour plan is approved by DelDOT to allow the road to be closed. All crossroad cuts for utilities will be made perpendicular to the longitudinal centerline of the traveled way, and perpendicular to the plane of the finished subgrade. All patches shall extend a minimum length of three feet from either end of the cut (as measured along the roadway centerline) and the full width of the lane or lanes disturbed. To ensure integrity of the roadway and to minimize future maintenance issues, the District Public Works or DelDOT Construction personnel may require pavement restoration areas to be extended beyond what is outlined in the Standard Construction Details if there are multiple cuts in roadways within proximity to one another. DelDOT can require resurfacing of the roadway up to a maximum of 200 feet (as

measured along the roadway centerline) on each side of a trench crossing a highway to tie into an existing joint line. Any lane encroachment of one foot or more requires restoration of the full lane width. Before reopening the lane, the area shall be made usable for traffic.

4.8.2.5 Flowable Fill. Flowable fill can be used for restoration of crossroad cuts with approval from DelDOT. Flowable fill shall meet the requirements of DelDOT's Standard Specifications. Flowable fill shall not be used around flexible pipes unless stone is placed one foot around and above the flexible pipe.

4.8.2.6 Temporary Highway Patches

4.8.2.6.1 If immediate repairs to the traveled way are not feasible and if the District Public Works Section concurs, a temporary patch may be used until permanent repairs are completed. The minimum design requirements for temporary patches include at least eight inches of compacted graded aggregate overlaid by at least two inches of Type C asphalt pavement material. When weather conditions prohibit the use of such mix, District Public Works may approve 10 inches of compacted graded aggregate overlaid by at least two inches of cold patch mix in certain locations. In all cases, greater patch sections may be required by the District, the Utilities Engineer, or the Construction Section.

4.8.2.6.2 Trench width and backfill requirements shall meet those outlined for permanent patches in the DelDOT Standard Construction Details and Standard Specifications.

4.8.2.7 Surface Treatments and Asphalt Pavement Materials

4.8.2.7.1 The DelDOT Standard Construction Details illustrate the requirements of permanent crossroad or longitudinal utility patches for surface-treated asphalt pavement roads and shoulders. Note that this is a minimum patch unless otherwise directed by the District Public Works office for permits, or the DelDOT Utility Section or DelDOT Construction for work associated with highway projects. If the existing roadway has a thicker cross section than indicated in the detail, it will be replaced with the same cross section or will be repaired as directed by the District Public Works Section for permit work, or the DelDOT Utility Section or DelDOT Construction for highway projects.

4.8.2.7.2 The compaction requirements for both the patch material and the backfill material are covered in DelDOT's Standard Specifications.

4.8.2.8 Portland Cement Concrete Pavements

4.8.2.8.1 Portland cement concrete (PCC) streets and roads shall be patched as described in the DelDOT Standard Specifications and in accordance with the DelDOT Standard Construction Details.

4.8.2.8.2 An approved concrete saw shall be used to make a vertical, full depth cut in the concrete pavement to ensure a straight, clean, vertical surface.

4.8.2.9 Asphalt Pavement Overlays on PCC Pavements Utility patches made in PCC pavements with asphalt pavement overlays shall comply with the DelDOT Standard Specifications and gain approval of the District Public Works Section (for permit work) or DelDOT Construction (for highway projects). The required patch layout is illustrated in DelDOT's Standard Construction Details.

4.8.2.10 Roadsides

4.8.2.10.1 All areas disturbed in the right-of-way shall be restored to conditions at least equivalent to those existing prior to construction or utility work. The restoration shall occur as soon as the work is completed. For projects that are longitudinal, the restoration shall occur in order with installation. Areas not restored within 30 days of disturbance (weather permitting) will be considered non-compliant.

4.8.2.10.2 Trenching, pipe bedding and permanent patching shall be done in accordance with the DelDOT Standard Construction Details.

4.8.2.10.3 Trenches shall be backfilled or covered immediately after installation of the utility facility. They may not be left open overnight because they pose a hazard to the public. Steel Plates may be utilized in accordance with the DelDOT Standard Details including restrictions on dates of use.

4.8.2.10.4 The backfill material and compaction method shall meet the requirements of the DelDOT Standard Specifications.

4.8.2.10.5 Excavated material not meeting the requirements for backfill shall be removed from the area immediately after excavation. Material that is satisfactory for backfill shall be stockpiled in a safe and orderly manner. For permit work, District Public Works can approve storage on the roadway if necessary. For work related to a highway project, DelDOT Construction can

approve. Material stockpiled in the immediate work area shall not pose a hazard to the traveling public. All materials shall be stockpiled in accordance with the rules established by the DE MUTCD.

4.8.2.10.6 For Highway projects and permit work, the utility company shall be responsible for the removal and disposal of all unsuitable material. The Utility company shall be responsible for supplying and installing suitable material.

4.8.2.11 Manholes and Valve Boxes

4.8.2.11.1 Where manholes or valve boxes are repaired in pavement areas, backfill shall be placed in 8-inch layers (loose measurement) and thoroughly compacted - the same as for trenches in pavement areas. The backfill material (Type C Borrow) and compaction method shall meet the DelDOT Standard Specifications.

4.8.2.11.2 During construction, areas around manhole lids and valve boxes shall be dug by a non-destructive method. The details of proper roadway patching around manhole lids are shown in Appendix G, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-g.pdf.

4.8.2.12 Test Holes

4.8.2.12.1 Test holes shall be performed in accordance with the ASCE 38 standard.

4.8.2.12.2 Test holes shall be dug by a nondestructive method such as by vacuum removal in a hole less than 36 square inches. The repair shall be only the size of the hole. The fill shall be compacted in lifts, and the same amount of stone, asphalt pavement, concrete, etc., as the existing roadway, shall be replaced in accordance with the Standard Specifications. Hydro excavation of test holes may not be permitted within the right-of-way.

4.8.2.12.3 Small holes (up to two inches in diameter) bored in the surface for any type of utility testing or maintenance shall be repaired with a flexible embedding sealer (cold poured resilient type epoxy joint sealer) or standard methods approved by the District Public Works Section.

4.8.2.12.4 Depending on the quantity and location of the test holes, additional restoration may be required as directed by Public Works, the Utility Engineer, or DelDOT Construction. Similarly, if a restored test hole is not holding up within timeframes outlined in subsection 4.8.2.3, additional restoration shall be required as directed by the District Public Works office for permits, or the DelDOT Utility Section or DelDOT Construction for work associated with highway projects.

4.8.2.12.5 Key holing of test holes may be permitted upon approval by Public Works for permit work, the Utilities Engineer for DelDOT projects in design or the DelDOT Construction Engineer for DelDOT projects in construction.

4.8.2.13 Highway Construction Projects

4.8.2.13.1 The restoration requirements defined in this chapter apply to the placement of utilities on existing roadways and rights-of-way. Where utility relocations and adjustments are made in conjunction with a highway improvement project, some portions of the restoration by the utilities may be unnecessary. In these circumstances the DelDOT Utilities section or DelDOT construction section will direct which portions of the restoration requirements may be waived.

4.8.2.13.2 The utility company is responsible for restoring all sedimentation and erosion control measures to their original conditions and for maintaining temporary patches.

4.8.2.14 Sidewalks and Shared Use Paths

4.8.2.14.1 Temporary patches of sidewalk and shared-use paths shall be of a material that is firm, stable and slip-resistance.

4.8.2.14.2 The DelDOT Standard Construction Details illustrate the requirements of sidewalks and shared-use paths. Note that this is a minimum patch unless otherwise directed by the District Public Works office for permits, or the DelDOT Utility Section or DelDOT Construction for work associated with highway projects. If the existing sidewalk or path has a thicker cross section or is wider than indicated in the detail, it shall be replaced with the same cross section or width or will be repaired as directed by the District Public Works Section for permit work or the DelDOT Utility Section or DelDOT Construction for highway projects.

## 5.0 Master Franchise, Permits, and Agreements

5.1 General Requirements. DelDOT uses different types of documents to manage the installation and occupancy of utility facilities on, under, or across State right-of-way. These documents include franchises, permits, and agreements.

5.1.1 A Public Utility Master Franchise is required if a public utility wishes to locate facilities on the right-of-way of a DelDOT-maintained highway. A public utility shall submit a franchise application for each county where its facilities are to be located within the rights-of-way of a DelDOT-maintained road.

5.1.2 Public companies that do not qualify as public utilities in the Delaware Code will not be permitted to place facilities within DelDOT right-of-way absent legislative authority and an executed Use and Occupancy Agreement or Master Agreement. Use and Occupancy Agreements and Master Agreements will be developed for each individual situation in which a public company or private entity is permitted to place facilities in the right-of-way.

5.1.3 An executed Master Franchise or Use and Occupancy Agreement shall be on file prior to submission of a Utility Construction Permit application and before any type of installation, repair, or relocation occurs.

5.1.4 A Utility Construction Permit is required in all cases of utility facility maintenance or installation in the right-of-way of a DelDOT-maintained highway or street, including within a municipality unless otherwise specified for a state highway construction project. The application for a Utility Construction Permit shall be submitted to the applicable District Office of Public Works.

5.1.5 If the utility crosses over or under a railroad, the district shall contact the DelDOT Railroad Section to coordinate. The district will make a notation on the permit that the work is subject to approval by the railroad company.

5.1.6 Letter Agreement. A letter agreement is a legal instrument between a utility and the DelDOT to establish the utility work in conjunction with a DelDOT highway construction project. It describes the terms and conditions, in accordance with the State code, by which the work and subsequent payment will be handled. An executed letter agreement is required prior to the performance of any work that is to be reimbursed.

5.1.7 A Utility Attachment Agreement shall be on file for a utility requesting the attachment of a facility to highway or ancillary structure.

5.2 Master Franchise

5.2.1 Purpose. The master franchise is a legal instrument by which the use of highway right-of-way is granted. It is not a control instrument over construction methods, traffic control features, or timing as opposed to a permit. DelDOT may grant a master franchise to the following:

5.2.1.1 An entity meeting the definition of a public utility that is subject to the regulatory jurisdiction of the public service commission;

5.2.1.2 A cable system operator or video services provider franchised by the public service commission or a municipality; or

5.2.1.3 A utility owned, operated, controlled, or created by the state, a municipality, county, or other political subdivision.

5.2.2 Conditions

5.2.2.1 The master franchise requires that all facilities to be constructed shall meet the requirements set forth in this regulation.

5.2.2.2 All utility companies making underground installations shall be members of "Miss Utility of Delmarva" and, documentation verifying membership shall be provided prior to approval of Master Franchise.

5.2.3 Preparation. A Master Franchise must be in force for any Utility to place facilities in the highway right-of-way for which DelDOT has maintenance responsibility.

5.2.4 Coordination between Utility and State Projects. Both DelDOT and the utility company representatives need to exchange information regularly to help avoid conflicts between utility company projects and DelDOT projects in terms of location, construction timing and method of installation. See Section 6.0 for more details on DelDOT highway project coordination.

5.3 Use and Occupancy Agreements

5.3.1 Purpose. A Use and Occupancy Agreement (shown in Appendix A, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-d.pdf) is used for privately or individually owned facilities that are located on or across state-maintained rights-of-way. For example, if a landowner owns property on both sides of a state roadway and needs to convey irrigation lines, water lines, natural gas lines, propane lines etc., between properties, the landowner and DelDOT must execute a Use and Occupancy Agreement. The Use and Occupancy Agreement provides DelDOT with information about the facilities and sets forth their conditions. The owner shall obtain a Utility Construction Permit for any facility construction, maintenance, or repair.

5.3.2 Conditions. Only crossings are allowed. Longitudinal lines are not permitted.

5.3.3 Preparation. A Use and Occupancy Agreement shall be prepared by the owner for each installation where a facility is placed on a state-maintained right-of-way.

5.4 Letter Agreements. A Letter Agreement shall be required for all work not covered under a Master Franchise, a Use and Occupancy Agreement, or a Construction Permit. The agreement describes the terms and conditions, in accordance with the State code, by which work and subsequent payment will be handled for utility work.

5.5 Utility Attachment Agreement. A Utility Attachment Agreement is a subset of Letter Agreements and shall be required for all work where a utility facility will be attached to a DelDOT structure.

5.6 Utility Construction Permits

5.6.1 Purpose

5.6.1.1 A utility construction permit (see sample in Appendix A, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-a.pdf) shall be obtained for all utility construction not performed in conjunction with a DelDOT highway project. A utility construction permit is required if utility work is done in advance of notice to proceed being issued to the DelDOT contractor for the highway project which DelDOT construction personnel has yet to be assigned as determined by the Utilities Engineer. Permit submissions shall be coordinated with the DelDOT Utility Section when there are proposed or active highway projects in the vicinity of the permit scope of work.

5.6.1.2 Plans shall be submitted with the utility construction permit application via the UPA for the District Public Works Section to review. Plans will not be required if the district determines that a written description of the work and location is adequate to outline the construction.

5.6.2 Requirements

5.6.2.1 A utility construction permit is required any time utility construction work, including excavations or openings, will disturb anything on the roadway or within state right-of-way. A permit is necessary each time a facility is upgraded, maintained, or rebuilt or an installation is added, including services. Project design work as described in subsection 4.1 is excluded from this requirement unless the utility is notified otherwise by the utilities engineer. The district may waive the permit requirement for test holes.

5.6.2.2 The new permit request shall show the existing and proposed installation. Permit submissions shall clearly identify existing pedestrian facilities such as pedestrian connections, sidewalks, crosswalks, etc. along with any proposed work that will alter them. All proposed work shall comply with the ADA and DelDOT's PAS. Permits shall not be approved if the ADA and PAS requirements are not properly identified and addressed. See subsection 4.3.2.2 for ADA requirements.

5.6.2.3 A utility that performs work on DelDOT right-of-way longer than one working day to repair or adjust an existing facility or that disturbs the roadway will require a utility construction permit. If the work takes less than one day and does not disturb the roadway, a permit is not required. However, the utility shall notify the District Public Works Office of any lane or shoulder closure on any roadway. The notification shall include the location and type of work to be performed.

5.6.3 Emergency Situation

5.6.3.1 When a utility initiates an emergency, the utility shall promptly notify the District Public Works Office and the Traffic Management Center (TMC) at 302-659-4600 prior to performing work. The utility is responsible for communicating the type of emergency and location of the work to be performed and other pertinent information. Work may commence following verbal notification to public works and concurrence from Public Works that the situation is an emergency. The utility shall submit a utility construction permit to the District Public Works Office via the UPA within 24 hours of the commencement of work. The utility company shall install the required temporary traffic control devices and personnel in accordance with the DE MUTCD to protect the public and the workers performing emergency work and restoring the site.

5.6.3.2 When notified of a situation that is deemed an emergency by DelDOT, the utility shall verbally respond to DelDOT personnel within 30 minutes of being notified. The utility shall have someone on-site within the first hour of notification to determine needs and mobilize all personnel, equipment, and resources required to perform work, including MOT. The utility shall have MOT in place and commence remediation work to address the situation within 4 hours of being notified. At that point, the utility is responsible to take ownership of the site and relieve DelDOT crews. The TMC shall be notified by each utility once MOT is set and once work is complete. Noncompliance actions as outlined in subsection 5.9 may be taken should a utility not respond following notification.

5.6.3.3 For situations involving utility poles, responsibility falls to the pole owner to ensure all work is occurring in accordance with this policy, including maintenance of traffic. The pole owner shall

identify all utilities that are attached to their pole. They shall update TMC with the utility attacher information along with notifying and coordinating with utility attachers. The pole owner shall maintain the site and oversee work associated with all parties on their pole.

5.6.3.4 DelDOT's TMC will track responses and associated timeframes. In the event the required timeframes are not adhered to by utilities, DelDOT may initiate non-compliance actions as outlined in subsection 5.9.

5.6.3.5 If a utility intends to utilize temporary measures to safely resolve the immediate emergency, they shall coordinate such measures with DelDOT throughout the process. Any temporary measures shall be permanently resolved under the standard utility permit process within 2 weeks of the emergency.

5.6.3.6 In all emergency situations, the utility shall coordinate work with any other utility companies that are impacted by the work and that may have facilities in the area.

5.6.4 Fees. No fees are authorized at this time.

5.6.5 Preparation

5.6.5.1 Applications for utility construction permits and plans and documents shall be submitted to the appropriate District Public Works Section through the UPA.

5.6.5.2 The plans shall show the following:

5.6.5.2.1 Roadway name;

5.6.5.2.2 Width of the right-of-way and method of right-of-way determination;

5.6.5.2.3 Type of roadway material;

5.6.5.2.4 Width of traveled way;

5.6.5.2.5 Speed Limit of the affected road;

5.6.5.2.6 Proposed work;

5.6.5.2.7 Areas of pavement disturbance including sidewalks and shared use paths;

5.6.5.2.8 Distance from the crossroad or side road to the installation;

5.6.5.2.9 Distance from cross arm to existing right-of-way;

5.6.5.2.10 Distance from the centerline of the roadway to the installation;

5.6.5.2.11 Type of shoulder;

5.6.5.2.12 Width of shoulder;

5.6.5.2.13 Bore pits;

5.6.5.2.14 Test pit locations;

5.6.5.2.15 Drainage system or systems in the utility area;

5.6.5.2.16 Location of existing utilities (aerial and underground);

5.6.5.2.17 Trench and restoration details;

5.6.5.2.18 North arrow, scale, and legend;

5.6.5.2.19 Railroad crossing roadways;

5.6.5.2.20 Location and width of sidewalk;

5.6.5.2.21 Location and width of pedestrian connections; and

5.6.5.2.22 Sidewalk and pedestrian restoration details.

5.6.5.3 All plans for pressure pipeline installations shall specify the type of transmittant, the maximum working pressure, the maximum design pressures, and the design standards for the carrier.

5.6.5.4 Plans for casing shall specify the location, method of installation, and type of casing, size, and wall thickness proposed.

5.6.5.5 Traffic Control Plan or proposed Typical Application shall be submitted in accordance with subsection 4.2.

5.6.5.6 When a utility construction permit is needed after a DelDOT highway contract has been awarded, the utility shall obtain written permission from the DelDOT contractor to work in the project area. This policy includes any utility work not caused by the highway construction or improvement of a highway. See Appendix D, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-d.pdf, for Contractor Approval form.

5.6.5.7 Utility construction permits are required for work to be performed on state right-of-way or state-maintained roads within the incorporated limits of a municipality. The utility shall also have approval of the municipality prior to performing work.

5.7 Utility Construction, Relocation, or Repair Not Due to Highway Construction

5.7.1 A public utility shall not start construction of a new installation, repairs, or relocation until a utility construction permit has been issued, and a master franchise is in place. Refer to subsection 5.6.3 for further details including emergency situations. A privately owned facility shall have a utility construction permit and a use and occupancy agreement before any type of installation, repairs, or relocation.

5.7.2 The District Public Works office (for permit work) or the DelDOT Construction Section (for DelDOT highway project work) shall be notified at least one working day before the start of construction unless otherwise directed in writing. Notification may be given in writing, orally, by email, or by fax. The information transmitted shall include the starting date, road number, and project or permit number. Refer to subsection 5.6.3 for further details including emergency situations. The utility shall be responsible for notifications to the public and ensuring they are provided at the proper time.

5.7.3 Permits issued by DelDOT may be suspended or revoked whenever state authorities ascertain a threat to the traveling public. Other causes for revocation may include, but may not be limited to misuse, lack of response to DelDOT inquiries, noncompliance with state requirements, or improper temporary traffic control. Any permit application may be denied if it does not meet the requirements of this regulation.

5.7.4 The utility company or its contractor shall always have a responsible representative at the job site to supervise the work. A copy of the authorized permit and any supporting documentation shall be on site.

5.7.5 Utilities and their contractors shall utilize the Miss Utility system in accordance with Delaware Code Title 26 Chapter 8.

5.7.6 Utility companies shall provide as-built plans to the District for permit work and the utilities section for project work at the completion of all utility work as outlined in subsection 4.6.3.5.

5.8 Exception or Deviation

5.8.1 If the utility company feels that due to hardship or where this regulation conflicts with other regulation or code, an exception or deviation to the requirements of this regulation is necessary, the utility shall submit a request, for deviation from or exception to the standards described in this regulation to DelDOT. The request shall be in writing and must include full justification surrounding the hardship, alternatives evaluated to arrive at the proposed solution and cost associated with each alternative. It is the utility's responsibility to provide enough information to evaluate the hardship request. The request shall address the following:

5.8.1.1 Where a conflict between this regulation and other standards exists;

5.8.1.2 The extent to which the utility facility complies with the provisions of this regulation and AASHTO policies;

5.8.1.3 The direct and indirect environmental and economic effects of any loss of productive agricultural land which may result from disapproving the use of the right-of-way;

5.8.1.4 Why any other utility location would be extremely difficult and unreasonably costly for the utility consumer; and

5.8.1.5 How the utility's installation will not adversely affect the design, construction, stability, traffic safety, or operation of the right-of-way. If approved by DelDOT, DelDOT will require an agreement with the utility that all relocation costs due to a future DelDOT project are to be borne by the utility.

5.8.2 DelDOT will assess the situation and provide recommendations. The written justification and any other pertinent information shall be sent to the District Public Works Office for permit projects and the utilities engineer for highway projects. An approval for a hardship request is not a blanket approval for similar situations. The utility shall submit a request each time an exception or deviation is desired. DelDOT has the final authority in determining if an exception is approved.

5.9 Non-Compliance. If a utility fails to comply with any of the conditions, restrictions, or regulations prescribed by DelDOT and stated in this regulation without an approved exception as outlined in subsection 5.8, the following actions may be taken:

5.9.1 If the noncompliance is the result of an emergency, see subsection 5.6.3 for timeframes associated with responses.

5.9.2 If the noncompliance has a direct effect on public safety or impedes the flow of traffic, the utility shall take actions to address the noncompliance within four hours of being notified of it. If DelDOT determines immediate actions are required to protect the safety of the traveling public and the utility has not responded, then DelDOT may perform the work and take any action necessary to protect the traveling public. All costs associated with this shall be borne by the non-compliant utility.

5.9.3 If the utility does not meet a deadline, DelDOT may do the work or have the work performed by a contractor of DelDOT's choosing and charge the utility for the work.

5.9.4 In addition to the cost of the work being performed, DelDOT may charge a Utility company the road user cost for any delay associated with a utility delay or a failure to remedy non-compliance. Road user costs will be calculated in accordance with DelDOT Design Guidance Memorandum 1-24.

5.9.5 DelDOT will notify the utility, in writing, of the noncompliance. Consistent with applicable law, DelDOT may impose such reasonable sanction, as it may deem appropriate for noncompliance. For examples and not by way of limitation, DelDOT may impose lesser sanctions such as not issuing new permits to the utility; or issue an immediate stop work order on any active utility construction within DelDOT right-of-way until the utility complies.

5.9.6 The utility shall correct the noncompliance within 30 days after receiving written notice from DelDOT, unless otherwise agreed to by DelDOT. After the 30-day period, DelDOT will take any action necessary to protect the safety of the traveling public. This may include restoration of roads or taking possession of and removing poles, pole lines, wires, pipelines, conduits, fixtures, or other structures or property owned by the utility and located on state right-of-way. DelDOT will bear no cost for such work. All costs associated with this shall be borne by the non-compliant utility.

5.9.7 The utility is responsible for its contractors and will be held responsible for noncompliant actions by said contractors.

5.9.8 DelDOT may revoke the utility master franchise after 60 days' written notice to the utility of material noncompliance and opportunity to cure. Provided that in the event the cure requires more than 60 days to complete, the franchise shall remain valid so long as the utility promptly begins to effectuate such cure and diligently prosecutes it until completion. In the event of revocation of the franchise agreement, DelDOT may seek a court order to appoint a trustee to administer the utility's assets located within DelDOT's roadway rights-of-way until the noncompliance is corrected or such time as the utility's facilities, fixtures, assets, and appurtenances are removed from DelDOT's roadway rights-of-way. DelDOT will bear no cost for such removal. The utility shall bear all associated costs. This is not to be construed as placing any limitation upon either the utility or DelDOT to pursue any other legal or equitable remedy available to it for a breach of the conditions of the franchise.

## 6.0 Utility Adjustments for Highway Construction

6.1 Utility Adjustments and Preconstruction and Construction Coordination

6.1.1 General. In order to remain in place, utility facilities along highways that are to be relocated shall not be in the way of the highway reconstruction work. In addition, their future maintenance shall not create a hazard for the traveling public. Utility companies with affected facilities may request that existing facilities be left in place. Utilities are not reimbursed by DelDOT for the cost of adjusting or relocating their facilities except in accordance with Sections 132 and 143, Title 17, Delaware Code and the 1963 Court of Chancery decision: *Delaware Power & Light Co. v. Terry*, 194 A.2d 553 (Del. Ch. 1963). **[A copy of the Court of Chancery's 1963 Decision, 194 A.2d 553 is provided in Appendix F, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-f.pdf.]**

6.1.2 Preconstruction and Construction Coordination

6.1.2.1 Concept Milestone

6.1.2.1.1 Utility companies shall review and provide input related to concept plans provided by DelDOT during the concept milestone stage. Utility companies shall inform DelDOT of all existing and proposed facilities within the existing or proposed right-of-way. This information shall include facility types, sizes, locations, easements or other property interest documentation, and proof of prior rights in addition to the utility company's system improvements. A utility conflict matrix (UCM) may be utilized by affected utility companies, at DelDOT's direction during this phase, to provide evaluation and documentation of the potential conflicts between the proposed design and existing utility facilities. It is the sole responsibility of the utility to provide the documentation of a compensable interest and not DelDOT's responsibility to seek it.

6.1.2.1.2 All utilities shown on plans shall be in color. Colors shall be in accordance with APWA designations and DelDOT CADD standards.

6.1.2.2 Utility Designation Milestone

6.1.2.2.1 Utility companies shall respond to coordination efforts with DelDOT's project manager and the DelDOT utility coordinator to determine whether adequate utility designation insight can be gathered utilizing information obtained through "Miss Utility" or a utility as-built submission (to determine if more detailed utility designation is required). Utility companies shall coordinate with DelDOT's project manager and the DelDOT utility coordinator to determine if test holes are required, including the number and location of test holes needed.

6.1.2.2.2 The CI/ASCE 38-02 Guidelines shall be followed for the classification and depiction of subsurface utility data.

6.1.2.2.3 Utility companies shall respond and provide information to DelDOT's SUE consultant or SUE consultant subcontracting to an approved design consultant, operating at DelDOT's direction, to acquire utility facility information. Utility companies shall coordinate in advance of work with the SUE consultant upon notification to the utility of pending exploratory activities of existing utility facilities.

6.1.2.2.4 In all cases, utility companies shall coordinate with the SUE consultant to confirm the scope and accuracy of SUE designation of all information obtained from the approved tasks prior to transmittal to DelDOT's project manager, the approved design consultant for the project, and the utility coordinator.

6.1.2.2.5 Utility companies shall verify the designation information on their facilities regardless of DelDOT's use of a SUE consultant.

6.1.2.3 Survey Milestone

6.1.2.3.1 Affected utility companies shall review survey plans, when provided by DelDOT, and provide detailed responses to identify existing and known retired facilities on the plans, indicating whether they are aerial, surface, or buried underground. The utility company shall also include information indicating:

6.1.2.3.1.1 The sizes of pipes/conduits

6.1.2.3.1.2 Number of pipes/conduits

6.1.2.3.1.3 Approximate depths of facilities

6.1.2.3.1.4 Private easements or other property interest documentation

6.1.2.3.1.5 Proof of prior rights

6.1.2.3.1.6 Any private services that may be affected

6.1.2.3.1.7 The identity of other utility company facilities if known (attached, housed, aerial, or underground)

6.1.2.3.1.8 Any other information pertinent to the facilities

6.1.2.3.1.9 Any planned alterations or reconstruction of existing facilities or installation of new facilities within the limits of the project.

6.1.2.3.2 The utility company shall return the required information, except easement, property interest and existing prior rights, to the DelDOT Utilities Section within 30 days of receipt.

6.1.2.3.3 Utility companies shall supply DelDOT with easement, property interest, and existing prior rights documentation within 60 days of the receipt of the survey plan submission.

6.1.2.3.4 Utility company failure to provide the necessary information within the timeframes discussed herein, or as agreed upon between parties, will trigger the initiation of noncompliance procedures, at DelDOT's direction, as specified in subsection 5.9.

6.1.2.4 Preliminary Plan Milestone

6.1.2.4.1 Utility companies shall review and provide comments in unison with their review of the highway design when preliminary plans and a utility conflict matrix (UCM) are provided by DelDOT. The utility company review shall include identification of any potential conflicts or concerns.

6.1.2.4.2 The utility company shall mark the preliminary plans with existing facilities (if not shown or not shown correctly), proposed facility relocations, and any additional right-of-way necessary for relocation of facilities. The utility companies shall provide the following with the marked Preliminary Plans:

6.1.2.4.2.1 Suggested design modifications that would eliminate relocation;

6.1.2.4.2.2 Description of utility relocations along with estimated timeframe for construction;

6.1.2.4.2.3 List of stations and offsets where test holes are needed;

6.1.2.4.2.4 Identification of any permits that may be required;

6.1.2.4.2.5 Information on any other utility's facilities located on its poles;

6.1.2.4.2.6 Joint Use or third-party installation requirements;

6.1.2.4.2.7 To the best of its information, verify that existing facilities and retired facilities are shown correctly on the plans;

6.1.2.4.2.8 Private easements or other property interest documents (if applicable);

6.1.2.4.2.9 Proof of prior rights (if applicable); and

6.1.2.4.2.10 Request for field meeting, if needed.

6.1.2.4.3 The utility company shall make the DelDOT utility coordinator aware in any situation where a utility company may be dependent upon another utility company's plans or actions in order to complete their own work.

6.1.2.4.4 The utility company owning the pole, duct system, etc. shall perform necessary coordination related to the relocation of any renters or lessees as required by the Telecommunication Act of 1996.

6.1.2.4.5 The utility company shall return the preliminary plans provided by DelDOT with the required markup electronically within ninety (90) days of receipt through the UPA.

6.1.2.4.6 Coordination and Site Meeting. Following the distribution of preliminary plans, utility companies shall attend a site meeting at DelDOT's direction. The utility company shall return preliminary plans at the site meeting or within thirty (30) days of the meeting or the remainder of the 90 days as specified in subsection 6.1.2.4.5, whichever is greater.

6.1.2.4.7 Reimbursable Work

6.1.2.4.7.1 Utility companies with utility relocation work that is eligible for reimbursement shall provide the DelDOT utility coordinator with a detailed cost estimate for preliminary engineering in order to be evaluated for eligibility as reimbursable by DelDOT. The preliminary engineering work shall not be reimbursable if started prior to issuance of a notice to proceed from DelDOT.

6.1.2.4.7.2 Within ninety (90) days of the issuance of the notice to proceed and receipt of preliminary plans, the utility company shall electronically supply a plans, specifications, and estimate (Utility PS&E) package, consisting of plans, specifications, details, and estimate, and one set of marked color-coded plans. Electronically submitted color-coded plans shall be printable on standard DelDOT plotting size paper as specified in the DelDOT CADD Standards Manual. These plans shall indicate utility features as:

6.1.2.4.7.2.1 Existing to remain;

6.1.2.4.7.2.2 Existing to remove;

6.1.2.4.7.2.3 Proposed reimbursable; and

6.1.2.4.7.2.4 Proposed non-reimbursable.

6.1.2.4.7.3 Utility company failure to provide the necessary information within the timeframes discussed herein, or as agreed upon between parties, will trigger the initiation of noncompliance procedures, at DelDOT's direction, as outlined in subsection 5.9.

6.1.2.4.7.4 Refer to subsection 6.3 for further details on plan preparation and reimbursable work.

6.1.2.5 Semifinal Milestone. Utility companies shall review semifinal documentation such as plans, cross sections or a UCM, when provided by DelDOT. Utility company shall provide the DelDOT utility coordinator with marked-up semi-final documents for all utilities within the project limits, including the utility company's proposed utility statement (resume of proposed work). **[A sample Utility Statement is provided in Appendix E, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-e.pdf.]**

6.1.2.5.1 The following items shall be included with the marked semifinal plans:

6.1.2.5.1.1 Written concurrence for ROW shown on construction plans provided by DelDOT

6.1.2.5.1.2 Detailed cost estimate of reimbursable work: including necessary relocations and adjustments, with sufficient detail for discrete elements eligible for reimbursement.

6.1.2.5.1.3 Cost estimate for providing electric power service to traffic signals, roadway lighting, and ITS facilities.

6.1.2.5.2 The utility statement (resume of proposed work), submitted by the utility company, shall contain:

6.1.2.5.2.1 A description of the existing facilities

6.1.2.5.2.2 Any proposed changes, adjustments, or relocations

6.1.2.5.2.3 The location of the changes shall include station count and offsets.

6.1.2.5.2.4 Quantities of borrow Type C if necessary.

6.1.2.5.2.5 Activity based schedules and the proposed duration (in calendar days) for completing the alterations, adjustments, or relocations for each phase of the project's sequence of construction/ maintenance of traffic (MOT) or temporary traffic control Plan.

6.1.2.5.2.6 Any work or outage restrictions

6.1.2.5.2.7 A description of the proposed MOT needed to perform utility work; plans may be required if MOT requires more detailed planning than what is provided through the Typical Applications of the DE MUTCD.

6.1.2.5.2.8 A description of all materials with long lead times (lead times greater than three months) for ordering, if applicable.

6.1.2.5.2.9 A description of any anticipated permits required to allow the Utility to move forward with the relocation work, including the timeframe the Utility anticipates it will take to obtain said permits.

6.1.2.5.2.10 Any other information that may impact DelDOT's contractor.

6.1.2.5.2.11 The utility company shall return an electronic set of semifinal plans with the changes marked, the proposed relocation plan, and their proposed utility statement to the DelDOT utilities engineer through the UPA within ninety (90) days of receipt of semifinal plans from DelDOT, unless a coordination meeting is scheduled. If a coordination meeting is scheduled, the plans should be returned within thirty (30) days of the meeting or the remainder of the 90 days.

6.1.2.5.3 A coordination meeting will be scheduled, at DelDOT's direction, with affected utility companies to review the utility statements and sequencing bar chart. Utility companies shall modify their utility statements based on the coordination meeting. Utility companies shall submit their updated utility statements to DelDOT fourteen (14) days following the meeting so that a revised DelDOT utility statement can be prepared.

6.1.2.5.4 Utility company failure to provide the necessary information within the timeframes discussed herein, or as agreed upon between parties, will trigger the initiation of noncompliance procedures, at DelDOT's direction, as outlined in subsection 5.9.

6.1.2.6 Final Plans. Utility companies shall review final plans, construction schedules, and related documentation, when provided by DelDOT. Utility company shall provide the DelDOT utility coordinator with responses within (30) days of receipt of final plans and anticipated final construction schedule unless a coordination meeting is scheduled.

6.1.2.6.1 Written concurrence on final utility statement and activity-based bar chart construction schedule.

6.1.2.6.2 Signed reimbursement agreement

6.1.2.6.3 Request for NTP for advanced relocation

6.1.2.6.4 Request for NTP to order materials with long lead times (lead times greater than three months)

6.1.2.6.5 Request for NTP to start environmental permitting

6.1.2.6.5.1 Should the necessary information not be provided by the utility company within the timeframe discussed herein or as agreed upon between parties, then DelDOT may initiate noncompliance procedures outlined in subsection 5.9.

6.1.2.6.5.2 The utility company shall not begin work on advance relocations required for the highway project until an NTP is issued by the Utilities Engineer authorizing commencement of work. The utility company shall provide DelDOT with notification to ensure that the advanced relocation work is coordinated with and inspected by DelDOT construction. Utility companies shall coordinate directly through the District Public Works office for a utility construction permit, when determined by DelDOT that additional inspection personnel are required.

6.1.2.7 Construction Phase. The utility company shall attend the preconstruction meeting scheduled for the project. If utility company disputes the ability to attend the proposed preconstruction meeting, the utility company shall provide notice to the DelDOT construction engineer, and the utility coordinator assigned to the project. The NTP issued by DelDOT to highway contractor shall serve as the authorization and notice to utility companies for relocation work that is to occur concurrent to the highway project.

6.2 Non-Reimbursable Work. Adjustments to utility facilities occupying highway right-of-way by master franchise are not eligible for reimbursement. Exceptions are discussed in subsection 6.3. If the facilities must be relocated due to DelDOT's project, DelDOT will provide right-of-way for relocation of the facilities. The relocation of the utility facilities shall be at the sole expense of the utility.

6.3 Reimbursable Work

6.3.1 Utility Reimbursement on Highway Construction Projects

6.3.1.1 Section 143, Title 17, Delaware Code, determines the policies governing expenses of utility adjustments, removals, and relocations.

6.3.1.2 Utility company work that is considered reimbursable, as determined by DelDOT, shall only be eligible for reimbursement based on the utility companies restoring impacted facilities to the condition that existed prior to the project. This is referred to as in-kind replacement. Utilities shall use the procedures established by FHWA for reimbursement. These are explained in the U.S. Department of Transportation Federal Highway Administration Program Guide Utility Relocation and Accommodation on Federal-Aid Highway Projects including amendments.

6.3.1.3 Buy America provisions apply to all contracts within the scope of the NEPA document, regardless of the source of funding, if one contract within the scope of a NEPA document is awarded using Federal-aid funding. When Delaware Code prohibits DelDOT from reimbursing utilities, the utility work is not eligible for federal reimbursement. Federally ineligible work is not subject to the Buy America requirements. The utility may furnish materials from company stock only in the case where the supplied materials meet the Buy America requirements. The utility shall not be required to change its existing standards for materials used in permanent changes to its facilities as long as Buy America requirements are met.

6.3.2 Betterment

6.3.2.1 The cost of a betterment or increased size in facilities is only reimbursable in accordance with FHWA regulations (Program Guide: Utility Relocation and Accommodation on Federal Aid Highway Projects and Code of Federal Regulations Title 23 Part 645) or as allowed by specific agreements enabled by Delaware Code.

6.3.2.2 When seeking reimbursement with betterment involved, the utility shall submit two Utility PS&E packages. The first detailed estimate with color-coded plans indicates relocation or adjustment in kind and the second shows the facility size increase or betterment. Right-of-way acquisition and salvage value shall be included where applicable on all estimates.

6.3.3 Prior Rights Utility Companies shall submit the following to claim prior rights:

6.3.3.1 Documentation that the utility facility was constructed on private property with an easement of record in the recorder of deeds office and the facility and its easements are encompassed by a DelDOT project; or

6.3.3.2 Documentation that the utility facility was relocated onto or remained in DelDOT right-of-way under a previous project, during which participants agreed that if it became necessary to relocate for a future transportation project, DelDOT would assume the cost.

6.3.3.3 For proper documentation of this right, the utility shall furnish a copy of the utility agreement stating the arrangement previously agreed to by DelDOT.

6.3.3.4 The utility company shall present DelDOT with proof of prior rights no later than upon receipt of the semi-final plan submission. This may include documentation that shows rights existed prior to dedication of right-of-way or prior to right-of-way being purchased without properly being extinguished.

6.3.4 Reimbursable Work Process. The Utility Companies shall submit all documentation establishing prior rights to the DelDOT Utilities Section for approval. During the process of plan review discussed in subsection 6.1, reimbursable work may be discovered. The utility company shall obtain concurrence from the DelDOT Utilities Section that reimbursable work will be involved. Utility company shall coordinate to ensure that the following actions occur:

6.3.4.1 DelDOT and utility company shall agree in writing as to the obligations and responsibilities of each party.

6.3.4.2 The agreement shall incorporate the conditions of occupancy for each party. The agreement shall also include the rights vested in DelDOT and the rights and privileges retained by the utility company.

6.3.4.3 The interest acquired by or vested in DelDOT in any portion of the rights-of-way of a highway project to be used, occupied, or vacated by utilities shall be adequate in nature and extent for the construction, safe operation, and maintenance of the project.

6.3.5 Utility Adjustment Agreements. The utility company shall enter into utility alteration, adjustment, or relocation agreements for projects where DelDOT will be responsible for the cost of the work. The utility company shall obtain an executed agreement from DelDOT before work begins when state or federal funds are anticipated to be used to pay for all or part of eligible utility adjustments. DelDOT's Master Utility Reimbursement Agreement can be found in Appendix A, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-a.pdf.

6.3.5.1 Agreement Requirements: Utility adjustment agreements shall include:

6.3.5.1.1 The incorporating limits or areas to be served.

6.3.5.1.2 The responsibility of each party.

6.3.5.1.3 The terms and conditions regarding the relocation, adjustments, or reconstruction.

6.3.5.1.4 The action to be taken in case of noncompliance with state requirements.

6.3.5.1.5 Other provisions as deemed necessary to comply with state laws and regulations.

6.3.5.2 Work incidental to utility relocations shall be performed by the utility company with its own forces including a utility's open-end and continuing construction contractor, or by an approved utility contractor, unless such work is included in DelDOT's construction contract by separate agreement. When a utility company obtains a contractor for the relocation work, the utility, federal and state regulations apply.

6.3.6 Utility Plan Preparation

6.3.6.1 When reimbursable work is involved, the utility company shall coordinate with DelDOT to ensure that the appropriate construction plans are used to estimate the scope of the utility work to be performed and reimbursed. The utility shall submit the preliminary engineering estimate for any engineering required to design the alteration, adjustments or relocation. A sample of the engineering estimate is provided in Appendix B, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-b.pdf.

6.3.6.2 Utility company shall use the procedures established by FHWA for reimbursement. The procedures are explained in the U.S. DOT FHWA Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects including amendments and the Federal-Aid Policy Guide (FAPG) Code of Federal Regulations Title 23.

6.3.6.3 The preliminary engineering estimate shall become part of the letter agreement mentioned above in subsection 6.3.5. Utility company shall not begin the design for the adjustments or relocations until a notice to proceed has been obtained from DelDOT, indicating that the preliminary engineering estimate is approved and funding has been allocated by DelDOT. The utility company shall prepare the utility plans, specifications, and estimate (utility PS&E) for the relocation or adjustment and forward them to the DelDOT utilities engineer for review.

6.3.6.4 Any work performed by the utility company prior to DelDOT's issuing the notice to proceed shall be at the sole expense of the utility.

6.3.6.5 Employment of a Consultant for Utility PS&E

6.3.6.5.1 Utility company shall submit a written request to the DelDOT utilities engineer requesting authorization to obtain a consultant to provide preliminary engineering services for utility relocations. The request shall state the type of work the consultant is expected to perform during the utility relocation for the project, such as: preparing utility plans, specifications, and estimates; inspecting materials; and supervising work.

6.3.6.5.2 The request shall meet the provisions established by federal procurement regulations of the U.S. DOT FHWA, and the applicable regulations of the Program Guide: Utility Relocation and Accommodation on Federal-Aid Highway Projects. Federal funds may participate in the cost of such services performed under existing written continuing contracts when the utility company provides documentation to DelDOT's Utility Section and obtains concurrence that such work is performed regularly for the utility company in its own work and that the costs are reasonable.

6.3.6.5.3 When a utility company obtains DelDOT consent to have a consultant prepare the utility plans, specifications and estimates, the utility company shall provide the DelDOT utilities engineer with preliminary plans, estimates, and a fee schedule from the consultant for performing the work. The utility company shall review and approve the data before submitting it to the DelDOT utilities engineer.

6.3.6.5.4 When the consultant estimate and other data are deemed acceptable by DelDOT, the utility company shall prepare and submit the specifications, estimates, and a draft of the contract between the responsible consultant and the utility company to the DelDOT utilities engineer. The draft contract and materials shall stipulate the work to be done under the agreement and the method of payment for preparing the utility PS&E package.

6.3.6.5.5 Utility company submittals that propose a consultant fee which is based on a percentage of the work to be performed will not be approved by DelDOT.

6.3.6.5.6 When federal participation is involved in a highway construction project, the agreement with the consultant shall conform to federal procurement regulations and appropriate U.S. DOT regulations. Upon approval of the draft agreement by DelDOT, the utility company shall execute the agreement with the consultant.

6.3.6.6 Processing Utility PS&E Packages. Utility plans, specifications and estimates (utility PS&E) submitted by the utility company shall include:

6.3.6.6.1 A utility statement. See subsection 6.1.5.2.

6.3.6.6.2 A detailed estimate of the work to be performed. See Appendix B, located at https://deldot.gov/Business/drc/manuals/utilities-manual-2022/appendix-b.pdf, for sample "Utility Relocation Cost Estimate"

6.3.6.6.3 Marked color coded plans indicating:

- Existing to remain (green);
- Existing to be removed (red);
- Proposed reimbursable (blue);
- Proposed non-reimbursable (yellow); and
- Other colors can be used provided they are legible and clearly marked in the legend

6.3.6.6.4 The terms under which the utility is to cross or otherwise occupy the rights-of-way

6.3.6.6.5 A description of the size, type, nature, and extent of each utility company facility to be located within the highway rights-of-way

6.3.6.6.6 A description of each installation's construction requirements, traffic protection, maintenance, access restrictions, and any special conditions

6.3.6.6.7 Proposed maintenance of traffic (MOT) (i.e. Temporary Traffic control) needs

6.3.6.6.8 Adequate drawings or sketches that show the existing and proposed locations of the utility facility, including the following:

- Horizontal and vertical locations of proposed facilities;
- Facility locations within the right-of-way with respect to the existing or planned DelDOT improvement, the traveled way, or the right-of-way;
- Control-of-access lines and approved access points; and
- Responsibilities of the utility company for future adjustments of its facilities to accommodate DelDOT improvements.

6.3.6.6.9 The color-coded, complete utility PS&E package shall be forwarded to the utilities engineer electronically.

6.4 Construction Coordination

6.4.1 Authorization of Utility Work. The utility company shall not proceed with its alterations, adjustments, or relocations until given direction to proceed by DelDOT via the applicable Construction District or District Public Works office.

6.4.1.1 When State or federal funds will pay all or part of the costs of adjustments, all work done by the utility company's own forces shall be performed on a force account basis with reimbursement matching actual costs. When a utility company's request to perform the work by competitive bid has been approved by DelDOT, the utility company shall forward one copy of the bid tabulation, with the preliminary estimate included, to the DelDOT utilities engineer.

6.4.1.2 When a utility company requests permission from DelDOT to perform the work with a current continuing contract, using an outside contractor, the utility company shall include an estimate based on the applicable contract unit prices with the request submitted to the DelDOT utilities engineer.

6.4.2 Coordination During Construction

6.4.2.1 Utility Preconstruction Meetings. The utility companies shall have representatives at preconstruction meetings held by DelDOT or its' contractor to discuss in detail the effect that each utility's adjustment or relocation will have on the progress of the project.

6.4.2.2 Contractor's Schedule. The utility company shall coordinate its contractor's work occurring simultaneously with DelDOT projects. When this coordination is accomplished via a utility progress meeting, a utility company representative shall attend. The utility company shall cooperate in scheduling work so that the DelDOT contractor is not delayed.

6.4.3 Revisions. This section refers to changes required to the plans or estimates after DelDOT's notice to proceed is given. Occasionally, field conditions necessitate revision to a utility company's approved plan of adjustment or relocation.

6.4.3.1 Revising Construction Projects

6.4.3.1.1 Utility company changes to construction projects and their impact on utility relocation costs shall be carefully considered before proceeding. Refer to the subsection 6.3 summary of reimbursement to public utilities for "second moves" and "change in plans". The time involved,

material availability, additional labor and utility costs shall be evaluated before changes are pursued.

6.4.3.1.2 Utility company project plan revisions shall be coordinated with and provided to DelDOT's utilities engineer, construction engineer, and the project manager for review. DelDOT's approval is necessary to proceed with the utility company plan revisions.

6.4.3.2 Revising Utility Plans and Estimates. When revisions are necessary to the plan or estimate, the utility company shall forward a copy of the revised plan or estimate and the justification for the change for approval by DelDOT's utilities engineer or construction engineer. The utility company shall not proceed without DelDOT's Utility Section approval of the plan change, including confirmation of any additional funds requested to cover the added cost.

6.4.3.3 Change Orders. Copies of all change order correspondence and copies of all utility related correspondence shall include the affected utility companies, DelDOT's construction region engineer and utilities engineer.

6.4.3.4 As Builts. The utility shall submit as-built plans to the construction engineer and utility engineer for all underground installations within six months of work being completed or as part of the final invoice package. As-built plans shall accurately portray the size, type, and material of the facilities along with the horizontal and vertical location. If as-builts are not provided, DelDOT may withhold reimbursement and take further action to obtain compliance as outlined in subsection 5.9.

6.5 Payment for Work

6.5.1 Utility Billing

6.5.1.1 The utility company may submit progress billings at a frequency not to exceed one invoice per month for costs incurred after the executed utility agreement has been approved and notice to proceed has been provided by DelDOT. The utility company shall also submit progress billings for the cost of materials stockpiled at the project site or specifically purchased and delivered to the utility company for use on the project following similar approval by DelDOT. Any materials purchased, or work performed by the utility company prior to written authorization from the DelDOT utilities engineer shall be done at the company's sole expense. All utility company invoices shall conform to the provisions of the Federal-Aid Policy Guide (FAPG): Code of Federal Regulations, Title 23, Part 645 including; Subpart A which defines policy, procedure, and cost development for utility relocation, adjustments, and reimbursement, and Subpart B which defines policy and procedure for accommodating utility facilities on federal-aid highways.

6.5.1.2 Utility company billing documents including support for incurred costs (such as material used, equipment used, and number and classification of personnel working at the location) shall be submitted to the DelDOT Utilities Section.

6.5.1.3 Buy America certification shall be provided with or prior to any request for reimbursement.

6.5.2 Final Bill from Utility Company. A final and complete billing of all costs incurred shall be made by the utility company within six months from the last chargeable day of the project in compliance with the executed agreement. The utility company statement of billing shall follow the order of the items in the utility PS&E identified as part of the executed letter of the agreement between DelDOT and the utility company. The statement shall be itemized to show:

6.5.2.1 The DelDOT contract number, federal-aid project number, project location, and executed utility agreement number.

6.5.2.2 A brief description of work performed, identifying the utility PS&E submission incorporated in project limits.

6.5.2.3 The date the last work was performed on the last billed expense item.

6.5.2.4 Goods received to date.

6.5.2.5 A statement from the utility company stating whether it has or has not been paid in full for all reimbursable work performed.

6.5.2.6 The totals for each of the following costs: labor, overhead, travel expenses, transportation, equipment, handling, material and supplies, and other services.

6.5.2.7 Salvage credits from recovered and replaced permanent material and recovered temporary material.

6.5.2.8 The replacement cost or the original charge for temporary use of material.

6.5.2.9 The location where the records and accounts billed can be audited, and the name of a contact person for auditing purposes.

6.5.2.10 A definitive statement about the origin of all products, permanently incorporated into the project, covered under the Buy America requirements, if applicable.

6.5.2.11 The final invoice specifying "final" and containing a summary of total project costs billed.

6.5.3 Final Invoice Copies and As-Built Plans

6.5.3.1 The utility company shall provide DelDOT with one copy of the final invoice.

6.5.3.2 The Utility Company shall provide DelDOT with as-built plans following construction to document any changes that were made in construction. As-built plans shall be provided prior to final reimbursement.

6.5.4 Electric Power Service for Roadway Lighting, Traffic Signals, and Equipment. Utility company shall follow the DelDOT Design Guidance Memorandum (DGM) Process for Requesting Electrical Power Services, dated April 7, 2020.

**10 DE Reg. 1730 (05/01/07)**
**26 DE Reg. 618 (01/01/23) (Final)**