

HIGHWAY DESIGN MANUAL

Chapter 13 - Utilities

Revision 41

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**CHAPTER 13
UTILITIES**

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13.1 INTRODUCTION

This chapter discusses the laws, regulations and procedures associated with Utilities (i.e., the entities owning and/or operating utility facilities), and provides guidance regarding progressing projects with and without utility involvement (e.g., projects with and without utility facility relocation, adjustment, or betterments) to award. This chapter and State laws and regulations define utility facilities to mean the lines, facilities and systems for producing, transmitting, or distributing communications, signal, power, electricity, light, heat, gas, oil, crude products, liquid products, water, steam, wastes, storm water not connected with highway drainage, and other similar commodities, including fire and police signal systems and street lighting systems, which directly or indirectly serve the public or any part thereof.

In addition, this chapter:

- Contains requirements that apply to all projects let by the Department (e.g., Appendix 13D Utility Facilities Inventory Report).
- Applies to and is for use by Utilities seeking accommodation within State highway right of way.
- Does not apply to railroads and their associated utilities (communications, signals, power, etc.). Guidance regarding railroads is provided in Chapter 23 of this manual.

13.2 UTILITY ACCOMMODATION

The State accommodates utility facilities within the right of way of State highways as discussed in Sections 13.2.1 through 13.2.3.

13.2.1 Part 131 of Title 17 of the Official Compilation of Codes, Rules, and Regulations of the State of New York

Part 131 identifies the rules and regulations associated with the accommodation of utility facilities located within state highway rights of way, and those utility facilities that affect the use and operation of state highway facilities. In addition, Part 131 is applicable to other highways in which federal laws or regulations require such compliance (e.g., locally administered federally aided projects). As such, Part 131 shall be used by Utilities seeking accommodation within State highway rights of way and by personnel progressing capital construction projects for letting by the Department.

Applicable utility facilities include water mains, gas mains, sewer lines, telephone, cable, other communication lines, electric, and other utilities and structures. The rules and regulations under Part 131 apply to both public and privately owned utilities.

The major points of Part 131 address the statutory authority and conditions associated with utility facility occupation of State highway right of way, various types of permits and agreements, general design requirements and construction procedures, and insurance requirements.

Refer to Appendix 13A for the full text of Part 131.

13.2.2 Accommodation Plan for Longitudinal Use Of Freeway Right Of Way by Utilities

The *Accommodation Plan for Longitudinal Use of Freeway Right Of Way by Utilities* (hereinafter referred to as the “Accommodation Plan”) is most applicable to Communication Utility Companies, and as a result, it is not necessary for designers working for the Department to be familiar with it in order to progress a capital construction project.

The “Accommodation Plan” discusses the process by which parties interested in using portions of the right of way of a freeway for longitudinal installations of communications facilities are granted approval to do so, and applies only to the occupation of freeways by lines, facilities, or systems used for communications. The major points of the “Accommodation Plan” address the means by which to submit an expression of interest, the Department's Request for Proposal process, the requirements to be included in the proposal, proposal evaluation criteria, utility facility installation conditions and requirements, and necessary permits/agreements.

Refer to Appendix 13B for the full text of the “Accommodation Plan”.

13.2.3 Requirements for the Design and Construction of Underground Utility Installations Within the State Highway Right of Way

The *Requirements for the Design and Construction of Underground Utility Installations Within the State Highway Right of Way*, commonly referred to as the “Blue Book”, addresses the general requirements for the design and construction (by a Utility) of underground utility facility installations within the State highway right of way. The “Blue Book” was developed with recognition of the fact that soil, traffic, weather, and other conditions vary considerably across the state. In this respect, the requirements contained in the “Blue Book” should be viewed as general guidelines, preserving flexibility for any Region to include specific requirements in its highway work permits which suit that Region's unique needs.

The major points of the “Blue Book” address the general design and construction requirements for Utility-installed underground utility facility installations, various types of underground highway crossings, material specifications, and maintenance and protection of traffic requirements.

The requirements contained within the “Blue Book” are promulgated by the Department under authority of Title 17, *New York Official Compilation of Codes, Rules and Regulations Part 131* (17 NYCRR Part 131), and apply to highway work permits authorizing work within the State highway right of way for water mains, gas mains, sewer lines, telephone, cable, other communication lines, electric and other utilities, and structures. These requirements, and any specifications which are added to the work permit on the method of performing work, are enforceable by the Department.

The “Blue Book” is provided in Appendix 13C for use by Utilities seeking accommodation within the State highway right of way.

13.3 UTILITY COORDINATION

To avoid unnecessary delays and costs in the physical construction of a highway project, it is essential that both the Department and Utilities give full consideration at the earliest practicable date to the coordination process associated with utility adjustments and relocations, and that insofar as feasible and economical, the necessary utility facility adjustment work be accomplished before the Department's contractor starts work. Recognition must be given to the fact that if owners of utility facilities are to complete the adjustments of their facilities by the time desired, they must have ample opportunity and time to design the adjustments, budget the costs, procure the necessary materials and supplies, fit the work into operating schedules, assemble the required crews and equipment, and actually perform the work.

It is desirable, whenever practicable, to avoid utility facility relocation in the selection of a design alternative and the establishment of right of way taking limits. In addition, consideration should be given to designing around utility facilities.

As soon as the highway location and design have advanced sufficiently so that any right of way clearance work and utility facility adjustment work that will be required is apparent, the Region should initiate joint studies of the situation (e.g., representatives of all affected governmental agencies and Utilities should be contacted and requested to participate), including on-site investigations, to estimate the costs and difficulties involved and to consider whether revisions should be made in the location and design to reduce such costs and difficulties. When several Utilities are involved, as in urban areas, representatives of all owners should be present at the same conferences in order that their plans for proposed adjustments can be properly coordinated and that consideration can be given, where feasible, to the joint use of certain facilities (e.g., pole lines or utility facility tunnels). As a result of these studies, determination should be made as to the nature and extent of the work to be done, who is to be responsible for its performance, and the general distribution of costs thereof. Agreement should also be reached regarding the scheduling of work to avoid conflicts with the highway contractor's work.

Early coordination is also critical to give owners of utility facilities (both Municipally owned and others) the opportunity to plan and combine any betterment work they may be contemplating for their facilities within the project limits. Both highway and utility facility work can be very disruptive to a community and every effort should be made to combine and/or coordinate utility facility upgrades and/or betterments. A betterment need not be defined as merely replacing one size conduit with a larger or additional conduits but a betterment could be where a Utility reimburses the Department for the additional cost of minor adjustments (i.e., in a drainage design or guide rail design) that results in savings to the Utility in terms of reducing or eliminating relocation work while still maintaining the integrity of the highway or roadside design. The Department and the Utilities need to work cooperatively in order to explore these situations which can save both money and construction time.

Refer to Sections 13.4 and 13.5 for additional guidance regarding coordination with Utilities.

13.4 DESIGN PHASES I-VI

The designer, Regional Utilities Engineer (RUE), Regional Real Estate Group, and Utilities should closely coordinate their efforts so that projects will progress to construction without delay, and once in construction, progress consistent with the contract documents. The activities discussed in Sections 13.4.1 and 13.4.2 should be considered during the project development process. These activities are organized within the context of the Preliminary and Final Design Stages.

13.4.1 Preliminary Design Stage (Design Phases I-IV)

13.4.1.1 Existing Utility Facility Location

All existing utility facilities should be located as part of the terrain data collection process discussed in Chapter 5, Section 5.4, of this manual. The type of terrain data to be gathered should be based on the type of project and scope of work. Sections 13.4.1.1 A through E discuss collecting utility facility location information via photogrammetry, field survey, site visitation, contact with Utilities, and the use of subsurface utility engineering.

A. Photogrammetry

This section provides a listing of the utility facility-type features obtained using photogrammetry and is based on the information provided in the *Specifications for Photogrammetric Stereocompilation*.

Some necessary information is not provided by photogrammetry (e.g., utility facility ownership, overhead lines, underground utility facilities). This type of information should be obtained through contact with Utilities, field survey, site visitation, and the use of subsurface utility engineering.

The following types of utility facilities are mapped by photogrammetry:

- Fire Hydrants
- Gas Line Markers
- Gas Line Vents
- Guy Wires or Brace Poles
- Light Poles
- Light Pull Boxes
- Manholes
- Pipelines
- Substations, Electric/Gas
- Transmission Poles, Towers and Lines
- Utility Boxes
- Utility Poles
- Utility Poles - Cross Country
- Utility Poles with Lights
- Valves (Large)

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B. Field Survey

If field survey is selected as the means to gather terrain data, field survey will gather the same type of utility facility information as obtained via photogrammetry. Field survey should be requested and performed to gather any necessary utility facility information not obtained through photogrammetry (e.g., to gather terrain data which cannot be identified through photogrammetry) or to supplement photogrammetry. Field survey would not routinely gather data regarding overhead utility facilities unless requested to do so.

C. Site Visitation

The project should be visited by the designer to gather information not obtained through photogrammetry or survey (e.g, types of overhead lines (cable TV, electric), ownership information). In addition, consideration should be given at this time as to how the proposed project may influence existing or proposed utility facilities.

D. Contact With Utilities

Utilities should be contacted to determine if they have facilities which may be impacted by the project and to provide the location of their facilities. Designers are cautioned regarding the use of existing records of underground site conditions because they are often incorrect, incomplete, or otherwise inadequate. These conditions exist for a number of reasons:

- The records were not accurate in the first place. Design drawings are not as-built, or installations were field run and no record was ever made of actual locations.
- On old sites, there have usually been several utility owners, architects/engineers, and contractors installing facilities and burying objects for decades in the area. Seldom are the records placed in a single file, and often they are lost.
- References are frequently lost. Records show that an object is a certain distance from a building that is no longer there, or an object is a certain distance from the edge of a two-lane road that is now four lanes or is part of a parking lot.
- Lines, pipes, and tanks are removed from the ground, but aren't removed from the drawings.

E. Subsurface Utility Engineering and Quality Levels

Subsurface utility engineering (SUE) is an engineering process for accurately identifying the quality of subsurface utility facility information needed to develop a capital project, and for acquiring and managing that level of information during the project development process.

In order to understand SUE, it is important to first define the quality levels of utility facility information that are available (e.g., to the designer and the contractor). The concept of quality levels was developed from the realization that sometimes more reliable information on the location of underground utility facilities is known to the designer, but is not typically presented within any documents (e.g., the contract documents) for the benefit of others. Examples of the wide range of notations historically made include presenting information regarding a gas line for which there exists a certified reference to a recoverable survey control in the same manner as presenting a water line for which there is only a verbal recollection by a water company representative.

Four separate quality levels of subsurface utility facility information are generally recognized and are as follows:

- Quality Level A (QLA): Quality Level A is the highest degree of accuracy. The information shown on the plans has been obtained by the actual exposure (or verification of previously exposed and surveyed utility facilities) of subsurface utilities, using (typically) minimally intrusive excavation equipment to determine their precise horizontal and vertical positions, as well as their other utility facility attributes. (Shown as QLA)
- Quality Level B (QLB): Quality Level B is the second highest degree of accuracy. The information shown on the plans has been obtained through the application of appropriate surface geophysical methods (i.e., underground cameras, radar, sonar, tone outs, etc.) to identify the existence and appropriate horizontal position of subsurface utility facilities. Quality Level B data are reproducible by surface geophysics at any point of their depiction. The information was surveyed to applicable tolerances and reduced onto the plans. No excavations were performed. (Shown as QLB)
- Quality Level C (QLC): Quality Level C is the third highest degree of accuracy. The information shown on the plans has been obtained by surveying and plotting visible above-ground utility features and by using professional judgement in correlating this information to Quality Level D information. (Shown as QLC)
- Quality Level D (QLD): Quality Level D is the lowest degree of accuracy. The information shown on the plans was derived solely from existing NYSDOT and/or utility company records or recollections. (Shown as QLD)

The quality level definitions shall be provided in the general notes section of the plans.

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In addition to providing the quality level definitions, the quality level information (i.e., QLA, QLB, QLC, QLD) for each subsurface utility facility shown on the general plans and utility plans shall be shown on the right-hand side of the plan sheet above the as-built revision box.

For example, underground utilities known on this project:

- Waterlines: Sta. 0+035 lt. - Sta. 1+030 lt.= QLA; Sta. 1+030 lt. - Sta. 9+350 lt. = QLC; etc.
- Sanitary Sewers: (Town) Sta. 5+020 rt. - 7+090 rt. = QLD; (City) Sta. 7+090 rt. - Sta. 9+015 rt. = QLD; etc.
- Electric: (RG&E) Sta. 0+000 rt. - 14+050 rt. and Sta. 0+000 lt. - 17+050 lt. = QLC
- Telephone: (Verizon), Sta. 0+000, rt. - 14+050,rt. and Sta. 0+000, lt.-17+050, lt., = QLA
- Gas: (RG&E), 399 mm, Sta. 0+000 rt. - 8+029 rt. = QLA; 200 mm, Sta. 8+029 rt. - Sta. 14+050 rt. = QLD; etc.
- Traffic Loop Detectors: Rtes. 5 & 20 intersection with Bristol Street (NE, SE and SW legs of intersection = QLD, etc.
- Inform Communications Cables: Sta. 0+000 rt. - 14+050 rt. = QLA; Sta. 14+050 rt. - 17+050 rt. = QLD; etc.

Accurate identification of underground utility facilities is a critical element in the design of any project. As previously discussed, relying on record plans obtained from the Utility can often create delays during construction due to inaccuracies in identifying the true locations of utility facilities. In the past, the only way to accurately determine offsets and depths of utility facilities was to dig test pits with a backhoe. This, in itself, often caused utility facilities to be damaged. Now, with the recent technologies associated with SUE, underground utility facilities can be located easily, safely, and less expensively.

SUE utilizes electromagnetic, magnetic, sonic, and other energy fields to determine the approximate horizontal location of underground utility facilities. The facilities are then located through the use of nondestructive digging equipment (such as vacuum excavation) to determine the precise horizontal and vertical positions, as well as the type, size, and condition of the buried utilities. This information should then be tied to the project's survey control and provided in the contract documents for the project.

Early results from the Department's SUE program have shown that projects involving profile or horizontal alignment changes, excavation for drainage, etc., can realize significant benefits by utilizing this technology. Conservative estimates based on the Department's experience, as well as the experiences of other states, indicate that for every \$1 spent on SUE, overall project savings can average between \$5 and \$10. Designers should consider the use of this valuable tool for projects in which a moderate to high potential for utility conflicts exist (e.g., projects with storm drainage systems, profile changes, signal pole installation). SUE may be appropriate for use along the entire project length or for certain segments. Those desiring to use SUE on a project should contact the Design Quality Assurance Bureau, Design Support Services Section for details as provisions for SUE are performed by a consultant managed by DQAB.

FHWA encourages the use of SUE as an integral part of preliminary engineering. Costs for SUE services are eligible for Federal participation. Proper use of this cost-effective, professional engineering service will eliminate many of the utility problems typically encountered on highway projects, including:

- Delays to projects caused by waiting for utility relocation work to be completed so highway construction can begin.
- Delays to projects caused by redesign when construction cannot follow the original design due to unexpected utility conflicts.
- Delays to contractors during highway construction caused by cutting, damaging, or discovering utility lines that were not known to be there.
- Time-related compensation by contractors for delays resulting from unexpected encounters with utilities.
- Deaths, injuries, property damage, and releases of product into the environment caused by cutting utility lines that were not known to be there.

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Accurate and comprehensive knowledge of the exact horizontal and vertical location of all underground utilities early in the development of a project, long before excavation begins, makes it possible to:

- Design around many underground utility facilities, thus avoiding costly and time-consuming relocations.
- Accurately depict utility facilities on construction plans so the Utilities, the Department, and Contractors will know exactly where all of them are prior to any excavation.

The Department should not be relocating underground utility facilities unnecessarily or encountering them unexpectedly when progressing a project because SUE technology is readily available to help eliminate these wasteful activities.

Following is an example table showing how test hole data should be presented in the plans. A working version is provided in the tables.cel cell library.

TEST HOLE COORDINATE TABLE								
TEST HOLE NUMBER	UTILITY W, T, G, E, SA, ST	EXISTING LOCATION			TOP OF UTILITY ELEVATION	COORDINATES		REMARKS
		STATION	OFFSET m			NORTHING	EASTING	
			LT	RT				

13.4.1.2 Coordination With Utilities

- The designer should identify major utility facilities involved (high-voltage transmission lines, large gas transmission lines, etc.) and initiate liaison with the Utility(ies) through the Regional Utilities Engineer (RUE).
- The designer should contact Utilities within the project limits and discuss with them any potential betterments or upgrades the Utility might be planning or would like to explore. Proper coordination helps prevent future utility cuts into newly/recently paved or reconstructed pavement. These cuts can have a detrimental effect on pavement life, aesthetics, and at times, safety.

13.4.1.3 Initial Utilities Facilities Inventory Report

An Initial Utility Facilities Inventory Report should be prepared by the designer, with support from the RUE, listing all information that can be obtained at the time about each major utility facility for each alternate. The report should be kept with the project files and updated as more information becomes available during the progression of Design Phases I through IV. As the design progresses to the end of Design Phase IV, the report should contain a listing of all utility facilities for the recommended alternative and related information as it becomes available. Instructions regarding the preparation of the Initial Utility Facilities Inventory Report are provided in Appendix 13D.

13.4.1.4 Design Approval Document

The information required in Appendix B of the *Design Procedure Manual* should be provided in the Design Report. If a Design Report is not required, similar consideration should be given to utility facilities within the project limits (i.e., describe and identify owners of utility facilities in the vicinity of the project that could be affected by or have an effect on the project). At the end of Design Phase I, the Draft Design Approval Document should be sent to the Regional Utilities Engineer (RUE) for review and comment.

A. Preliminary Plans

All existing underground and aboveground utility facilities should be plotted on the general plans and separate drainage and utility plans if utility facility relocation, adjustment, betterments, and/or storm drainage system work is proposed. In addition, underground utility facilities should be plotted on the cross sections and major utility crossings should be plotted on the profile.

B. Design Alternatives

The designer should consider the influence of major utility facilities (high-voltage transmission lines, large gas transmission lines, fiber-optic duct banks, large water mains, etc.) as one of the controlling factors in design. It is desirable, whenever practicable, to avoid utility facility relocation in the selection of a design alternative and the establishment of right of way taking limits (e.g., consideration should be given to designing around utility facilities). Where utility facility relocation and/or adjustment is unavoidable, compliance shall be in accordance with this chapter.

The designer should determine the approximate scope and cost of utility facility relocations and betterments required for each design alternate and provide this information in the Draft Design Approval Document. Include costs to the State (i.e., the Department), and the Utility (i.e., municipal, state, private, and/or public utility).

13.4.2 Final Design Stage (Design Phases V&VI)

13.4.2.1 Design Phase V

The activities presented in Sections 13.4.2.1 A through G should be performed and/or considered.

A. Initial Utility Facilities Inventory Report

Early in this phase, the RUE should submit one copy of this report to the Design Quality Assurance Bureau, Design Support Services Section (DQAB, DSSS). The report should be submitted even if it must be revised and resubmitted later during Design Phase V. (Preparation of this report is discussed in Section 13.4.1.3.)

B. Approved Design Alternate

All utilities should be provided with information (plans, profiles, anticipated construction staging, and preliminary construction schedule, etc.) associated with the approved design alternative.

C. Advance Detail Plans (ADPs)

As discussed in Chapter 21, Section 21.2.2.20 of this manual, existing utility facilities and proposed utility facility(ies) relocation should be shown on the utility plans.

When the ADPs have progressed to the point where tops of cuts, toes of slopes, proposed drainage facilities, and right of way lines are shown, plots of the plans marked unofficial should be sent to all the Utilities involved. The Utility should be requested to check the plotted details of existing utility facilities for accuracy and indicate any proposed utility facility relocations.

D. Accommodation of Utility Facilities on Structures

The accommodation of utility facilities on Structures is discussed in Appendix 13A, Section 131.20. Utility facilities on bridges should be coordinated with the Structures Design and Construction Division. Preliminary Bridge Plans (on ledger size paper) should be provided to Utilities who may be interested in occupying the structure with their facility. If a Utility is interested in occupying the structure, the Utility shall submit a letter of request to the Regional Director in which justification is provided to substantiate their request. Refer to Section 7 of the *Bridge Manual* for additional guidance regarding the accommodation of utilities on structures.

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Because utility facilities and landscape plantings often must occupy the same relatively narrow strip of right of way and utility facilities often have limitations (e.g., location), landscape plantings should be located and coordinated with the utility facility relocation and overall project design to best utilize the available area. Utilities should be contacted because, many times, the Utility can assist in the selection of species that are compatible with the overhead electric lines, such that extensive trimming is not required over time.

F. Utility Facility Relocations, Betterments, and/or Adjustments

During Design Phase V, consideration for utility facility relocations, betterments, and/or adjustments should be continued. When utility facility relocations, betterments and/or adjustments are a component of the project, the following items should be substantially complete or well under way by the end of Design Phase V:

- Time schedules for relocating utility facilities (i.e., preparation of the Special Note Coordination with the Utility Schedule).
- Utility reimbursement (reimbursable versus non-reimbursable, agreements, method of reimbursement (by DOT or Utility)).

Refer to Section 13.5. for additional guidance regarding these items.

G. Final Utilities Facilities Inventory Report

This report should be prepared by the designer with support from the RUE near the end of Phase V. Guidance regarding the preparation of this report is provided in Appendix 13D.

13.4.2.2 Design Phase VI

Section A discusses activities which should be performed for all projects and Section B discusses activities which should be performed for those projects with Utility involvement (i.e., relocations, adjustments, betterments).

A. All Projects

- **Plans.** Check to make sure all graphic symbols representing proposed and existing Utility facilities are shown on the plans (i.e., general plans and utility/drainage plans). The contract documents should indicate the disposition of each Utility facility (i.e., to remain in place, to be relocated by others, to be relocated by the Contractor as part of the project). In addition, the quality level information and definitions should be provided as discussed in Section 13.4.1.1.E.
- **Final Utility Facilities Inventory Report.** The RUE shall submit the Final Utility Facilities Inventory Report to DQAB, DSSS when the final Plans, Specifications and Estimate (PS&E) are submitted to DQAB, PS&E Section. The report provides information regarding the status/disposition of Utility facilities associated with the project, and should be accompanied by all utility agreements and resolutions not already submitted.
- **Special Notes.** The special note entitled "Coordination with the Utility Schedule" shall be provided for all projects regardless of whether there is utility involvement. Guidance regarding preparing this note for projects with Utility involvement is provided in Sections 13.5 and 13.5.1. Example special notes are illustrated in Appendix 13E.

B. Projects with Utility Involvement

- **Agreements.** Utility Work Agreement(s), other agreements (Municipal Agreement, etc.), and resolution(s) shall be submitted to the Design Quality Assurance Bureau, Design Support Services Section.

13.5 UTILITY FACILITY RELOCATIONS, ADJUSTMENTS, AND BETTERMENTS

As discussed in Section 13.3, it is desirable, whenever practicable, to avoid utility facility relocation in the selection of a design alternative and the establishment of right of way taking limits. In addition, consideration should be given to designing around utility facilities. Where utility facility relocation is unavoidable, compliance shall be in accordance with this chapter.

This section emphasizes the urgency of expediting the relocation of utility facilities made necessary by highway work and provides the format wherein this should be accomplished. The designer and Regional Utility Engineer (RUE) should coordinate the initiation of utility facility preliminary engineering and relocation early in the design stage so that the Department will avoid delays in progressing the project to award. In addition, early and continued coordination during the design and construction stages will facilitate contractor and utility operations.

When utility facility relocations, betterments and/or adjustment are a component of the project, the following items should be substantially complete or well under way by the end of Design Phase V:

- Preparation of the HC 140 Utility Work Agreement (including eligibility for reimbursement) and special note "Coordination with the Utility Schedule" (including establishing time schedules for utility facility relocation/adjustment).

The RUE shall negotiate relocations (including time schedules for relocations and/or adjustments), betterments (including incorporating utility relocation/adjustment work in the Department's construction contract), and/or adjustments with the involved Utility and submit the Utility Work Agreement to the Utility for signature. It is often beneficial to the overall project schedule to have as much of the utility facility work included in the Department's contract as possible.

An appropriate and acceptable method of encouraging utility companies to include their relocation and/or adjustment work (i.e., work to be performed at the Utility's expense) in Department contracts is to use "Fixed Price Lump Sum Items." The quality of the estimate in these instances is paramount to properly protect both the Utility and the Department.

- Initiating any other agreements (e.g., Municipal Agreement)
- The RUE should notify all Utilities to prepare plans, order materials, and take actions on any physical relocation or adjustment upon authorization (i.e., signing of the HC 140 by the Region for non reimbursable relocations and/or adjustments or signing of the HC 140 by DQAB for reimbursable relocations and/or adjustments performed by the Utility).
- The Utility involved should be requested to submit to the State a set of marked plans showing the proposed relocation of utility facilities within the project limits. The relocation plan should show lines, poles, etc., designated to remain, and those to be removed and their proposed relocation. The designer should transfer this information to the utility plans.

13.5.1 Time Schedules For Relocating Utility Facilities

The purpose of this section is to establish Department policy and a procedure whereby reasonable time schedules for Utilities to relocate their facilities can be established, thus avoiding potential project delays during construction.

In developing time schedules, it is paramount to coordinate and discuss the possibility of concurrent work with all effected Utilities. Meeting jointly with all the Utilities can often be helpful in developing more efficient time schedules. It is not always necessary to have Utilities perform their relocations in series (i.e., electric, telephone, cable).

Often, Utilities will not begin their utility facility relocation work until after the Department's contractor has performed sufficient "stake out" and/or clearing and grubbing. In some cases, however, the Utility could begin relocation work prior to the Department's contractor being on-site. These opportunities should be explored and discussed with the Utilities.

It is Department policy to establish (first through negotiations with the Utility, or if necessary unilaterally) time schedules for the relocation or adjustment of Utility facilities necessitated by the Department's project and to inform (i.e., serve notice) any Utility of such time schedules. Time schedules either imposed by the Department or negotiated with the Utility shall be reasonable. Authority to require a Utility to comply with time schedules is found in Section 11-102 of the General Obligations Law. Appendix 13E includes this law in its entirety and a three-page synopsis which should be referred to for a complete understanding of the law's provisions and the Department's implementation of it.

It is important that the designer, RUE, and Utility acting jointly as described in Sections 13.3 and 13.4, completely identify the utility facilities to be removed, adjusted, relocated, or replaced as early as possible prior to the submission of the final Plans, Specifications, and Estimate (PS&E). As part of the Utility's review and coordination process, the project timing and staging should be verified and constructibility issues considered and addressed. Current project schedules and contract documents should be provided to the Utility so that they may have a clear understanding of the proposed scope and work sequence. These activities should be performed so that the details of these time schedules can be presented to, and discussed with, the Utility's representative(s) and then included in the contract documents.

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The following four items outline a procedure which should be followed by the Designer and the RUE to establish utility facility relocation time schedules:

1. After identifying the utility facilities to be removed, relocated, or replaced, and discussing time schedules with the Utility to accomplish these actions, include as part of the Utility Work Agreement (Form HC 140), the Special Note entitled "Coordination with the Utility Schedule". Refer to Appendix 13E for additional guidance and an example of the Special Note. This same Special Note covering all utility facility actions to be performed by the Utility is also to be submitted with the PS&E, thereby making it a part of the contract documents.
2. When the contract letting date is firmly established, often when the PS&E is transmitted to the DQAB, (this date should be confirmed with the Regional Planning and Program Manager), the "Preletting Notice to Utility to Remove or Relocate Its Facilities" should be sent to the Utility whose facilities are affected and a copy sent to the Design Quality Assurance Bureau, Design Support Services Section. The Special Note entitled "Coordination with the Utility Schedule" shall be attached to the "Preletting Notice to Utility to Remove or Relocate Its Facilities".

Appendix 13E contains directions for completing the Preletting Notice and an example notice. Note the twofold purpose of this notice in the last paragraph of Appendix 13E, §13E.3.2.

3. Immediately upon award of the contract, the "Post-Award Notice Pursuant to Section 11-102 of the General Obligations Law and Part 131 of Title 17 of the New York State Code, Rules and Regulations" should be sent to the Utility whose facilities are affected and a copy sent to the Design Quality Assurance Bureau, Design Support Services Section. The Special Note entitled "Coordination with the Utility Schedule" shall be attached to the post- award notice.

Appendix 13E contains directions for completing the post-award notice and an example notice. The purpose of this notice is to put into effect the liability provisions of Section 11-102 of the General Obligations Law which make a Utility responsible for damages that result from the untimely removal, relocation, or replacement of its facilities.

4. In the event the Utility either fails to accomplish its work in a timely fashion, or procrastinates so that it appears that it will not complete its work within the time schedule established in the Post-Award Notice, a letter should be sent to the Utility which is similar to that provided in Appendix 13E. The Special Note entitled "Coordination with the Utility Schedule" shall be attached to this follow-up letter.

The Regional Design Engineer is responsible to see that the requirements of this section are put into effect working jointly with designers and the RUE so that the established time schedule is:

1. Reasonable and consistent with the construction staging plan and overall project schedule.
2. Included as a Special Note in Form HC 140 Utility Work Agreement for all utility facility relocation being performed by the Utility, specifying where and when the utility facilities will be relocated. Form HC 140 shall be executed by the Utility's representative and forwarded to DQAB, DSSS prior to submission of the PS&E to the DQAB, PS&E Section.
3. Included as a Special Note entitled "Coordination with the Utility Schedule" submitted with the PS&E.
4. Transmitted to the Utility in all instances when utility facilities are to be adjusted by the Utility (i.e., the owner), in accordance with the requirements of Section 11-102 of the General Obligations Law.

13.5.2 Utility Reimbursement

The authority to reimburse or not reimburse a Utility is based on provisions contained in Section 10 Subdivision 24, and Section 10 Subdivision 24-b of the Highway Law.

Under current law, in general, municipally owned utility facilities are eligible for reimbursement whether on highway right of way or private property and nonmunicipally owned utility facilities (e.g., Transportation Corporations or private utilities) would only be eligible when on private right of way or for projects with Interstate categories of funding.

Under Section 10 Subdivision 24, the Department has the ability to reimburse municipally owned utility facility relocations provided the relocations are required by Department construction, and under present policy in virtually all cases we do.

Under Section 10 Subdivision 24-b, the Department is authorized to use construction funds for the removal, relocation, replacement, or reconstruction of privately, publicly, cooperatively owned utility facilities or facilities of a transportation corporation located on privately owned property. The Department defines "private property" as property not owned by any governmental (Federal, State, local) entity, agency, authority, etc. However, reimbursement to Utilities owned by Transportation Corporations or Utilities acting as Transportation Corporations (Niagara Mohawk, Con Edison, Verizon, etc.) located on state highway right of way is limited to projects with Interstate categories of funding and other limited circumstances discussed in Section 13.5.2.2 D.

Utility reimbursement can be accomplished by incorporating utility facility work in the Department's construction contract or by direct payment to the Utility for work performed. If the work is to be incorporated into the Department's construction contract, a Utility Work Agreement (Form HC 140) is required (this is the only agreement required). If direct payments are to be made to the Utility, then either a "Municipal Agreement", a "Reimbursement Agreement", or an "Agreement to Provide Compensation for the Removal, Relocation, Replacement, or Reconstruction of Utility Facilities and Appurtenances Located on Privately Owned Property" is required and shall be obtained by the Region in addition to the Utility Work Agreement. In addition, a Highway Work Permit is required by the Regional Traffic and Safety Group and 17 NYCRR 131.16 to specify conditions under which the Utility will be allowed to perform work on state highway right of way. It should be noted that a Highway Work Permit is not to be substituted for a Utility Work Agreement (Form HC 140) and vice versa.

Guidance regarding completing the agreements is provided in Section 13.5.2.2.

13.5.2.1 Estimates

Regardless of whether the utility facility work is to be performed by the Department as part of our construction contract or by the Utility (i.e., the owner of the facility eligible for reimbursement), the utility shall prepare the following data, which shall be submitted to the Region as promptly as possible:

1. A plan and cross sections and/or profile of the present and proposed utility facilities within the affected area. The use of plans supplied by the Region is required. The Utility may prepare its own plan only if specifically authorized by and pursuant to any conditions stipulated by the Region.
2. A detailed cost estimate covering all work to be performed. This detailed estimate must be broken down to separate temporary and permanent work. Salvage credit must also be separated in the same manner. All additions and betterments, whether desired by the owner or required by the State, must be clearly identified. The State will accept any of the following forms of estimates:
 - a. A detailed estimate showing quantities and unit prices of materials, hours and rates of labor, hours, rates and descriptions of equipment used, together with all overhead, allowances, etc.
 - b. The actual original cost of the portion involved, adjusted by the application of the appropriate cost index variations.
 - c. An estimate based upon composite unit prices derived from average annual costs of the individual components involved in the replacement.
3. The forms designated in Appendix 13G should be used as appropriate for all preliminary estimates. In preparing the estimate, the owner should consider those costs and credits defined more fully in Appendix 13G. The owner may add an average percentage to cover the incidental overhead cost. The bills, however, must show all details of overhead on an actual cost basis.

13.5.2.2 Agreements and Releases

This section provides guidance regarding the types of agreements and releases used in connection with utility facility relocations or adjustments made necessary as a result of the Department's project.

Illustrations of all agreements and releases are provided in Appendix 13G. Working copies should be obtained from the Design Division Electronic Toolbox.

UTILITIES

A. Utility Work Agreement (Form HC 140)

The purpose of the HC 140 is to fully document, prior to the project's letting, all information relating to utility facility relocation made necessary due to the Department's project, and any requested betterment work. An HC 140 shall be completed for each Utility involved (i.e., relocated, adjusted, or seeking betterment work) within the project limits. Except for betterment work, more than one utility facility may be noted on the form. A separate form shall be provided for each type of betterment work.

The HC 140 is an important part of Utility Relocation Preliminary Engineering because it:

- States who will pay for the utility facility relocation.
- States who will perform the work.
- Indicates whether or not betterments will be provided.
- Makes possible federal participation in the cost of relocation.

The RUE should secure completion of the HC 140 as early as possible after receipt of Design Approval or upon completion of the Preliminary Design Stage, and transmit copies of the agreement as follows:

- Nonreimbursable relocations and/or adjustments. An HC 140 for nonreimbursable relocations and/or adjustments shall be approved and signed by the RUE, and one copy of the signed agreement provided to the DQAB, DSSS.
- Reimbursable relocations and/or adjustments. An HC 140 for reimbursable relocations and/or adjustments shall be approved and signed by the Main Office Utility Engineer. Therefore, three copies of the agreement shall be transmitted to DQAB/DSSS with two copies of the estimates and one copy of the plans (with profiles, if applicable) prepared by the Utility showing present, temporary, and proposed utility facilities within the affected area.
- Betterments. Subdivisions 27 and 33 of Section 10 of the State Highway Law allow utility work to be included as part of the construction contract. An HC 140 for betterment work shall be approved and signed by the Main Office Utility Engineer. Therefore, three copies of the agreement shall be transmitted to DQAB/DSSS with two copies of the estimate.

Pursuant to 17 NYCRR 131.16, when the Utility will be performing work within the State's right of way, a Highway Work Permit is required. The RUE should remind the utility of this requirement.

The funding authorization for federally funded utility facility relocations and/or adjustments not included in the Department's construction contract (i.e., performed by the utility) will be sought by DQAB as HC 140s are submitted. The authorization consists of a Federal-Aid Project Agreement for Federal-Aid Projects. No separate funding authorization is processed by DQAB for 100% State-funded projects.

B. Municipal Agreement

A Municipal Agreement covers reimbursement for the relocation or adjustment (by the municipality or by contract awarded by the municipality) of all municipally owned facilities due to the Department's project and is the instrument used to transfer funds to the municipality. The agreement shall be for the total estimated cost of the necessary work including permanent and temporary installations. If retired materials are left in place, that fact should be so noted. A Municipal Agreement is not required if the relocation/adjustment work will be performed as part of the Department's construction contract.

Utility facility work covered by a Municipal Agreement shall not commence and no reimbursable preliminary engineering or construction costs shall be incurred prior to the date on which the agreement has been approved by the Department and the State Comptroller (if necessary). If it appears that the amount provided for in the agreement will be insufficient to properly complete the work, a Supplemental Agreement shall be prepared and processed in the same manner as the original agreement. After completion of the work, and upon agreement of final billing, the municipality is required to sign a General Release as stipulated in the agreement.

A sample Municipal Agreement, Supplemental Agreement, and General Release is provided in Appendix 13G. In addition, Appendix 13G contains form CONR 335 (9/89) Appendix A Standard Clauses For All New York State Contracts. CONR 335 shall be attached to the "Municipal Agreement."

UTILITIES

C. Agreement to Provide Compensation for the Removal, Relocation, Replacement or Reconstruction of Utility Facilities and Appurtenances Located on Privately Owned Property

Utility facilities located on private property that require relocation or adjustment as a result of the Department's project are eligible for reimbursement. Current Department policy is to reimburse utility facility relocation costs for all relocated facilities located on private property from construction funds, in accordance with Section 10 (24-b) of the Highway Law.

The Agreement to Provide Compensation for the Removal, Relocation, Replacement or Reconstruction of Utility Facilities and Appurtenances Located on Privately Owned Property, commonly referred to as the "Private Property Agreement", is the instrument used to transfer funds to the Utility. It will be processed similarly to the existing Municipal Agreement, that is after the HC140 (Utility Work Agreement) and before the relocation work has commenced. No reimbursable preliminary engineering or construction costs shall be incurred prior to the date on which the Department and the Comptroller (if necessary) approves the agreement.

If it appears that the amount provided for in the agreement will be insufficient to properly complete the work, a Supplemental Agreement shall be prepared and processed in the same manner as the original agreement. After completion of the work and upon agreement of the final billing, the Utility is required to sign a General Release as stipulated in the Agreement.

For many years, the practice of the Department was to reimburse relocation costs only if the Utility owned a real property interest (i.e. fee or easement pursuant to Section 30 of the Highway Law) using a Right of Way Agreement of Adjustment (Form ROW 21-6). The agreement of adjustment was prepared and executed after the bill for relocation was submitted by the Utility to the Department. The amount of the agreement was determined by the Department after a final audit of the bill. There may be limited situations where a Right of Way Agreement of Adjustment might still be applicable. The Right of Way Agreement of Adjustment shall only be used with the prior approval from the Design Quality Assurance Bureau.

A sample of both agreements and the release is provided in Appendix 13G. In addition, Appendix 13G contains form CONR 335 (9/89) Appendix A Standard Clauses For All New York State Contracts. CONR 335 shall be attached to the "Private Property Agreement."

D. Reimbursement Agreement

Agreements with Transportation Corporations (or those acting as Transportation Corporations) for compensation of utility facility adjustments located on state highway right of way may be provided **if**:

- The project for which such utility facilities are to be removed, relocated, replaced, or reconstructed will be federally funded and the cost of such removal, relocation, replacement, or reconstruction are a part of the approved project cost; and
- Such compensation shall be provided only:
 - For the Interstate funding category of projects; and,
 - For the other categories of projects only when specific appropriation by the State Legislature has been made for such purpose; and
- For those categories for which compensation is provided, the Department shall reimburse the Corporation at a rate not less than the rate of reimbursement the State shall receive from the federal government; and
- Such Corporation enters into an agreement with the Commissioner of Transportation in connection with undertaking the work of removal, relocation, replacement, or reconstruction which shall specify the amount or the basis of compensation that is to be provided toward the fair and reasonable cost of such removal, relocation, replacement, or reconstruction.

The Reimbursement Agreement is the instrument used to transfer funds to the Utility. Utility facility work covered by the Reimbursement Agreement shall not commence until the Agreement has been approved by the Department and the State Comptroller (if necessary).

If it appears that the amount provided for in the agreement will be insufficient to properly complete the work, a Supplemental Agreement shall be prepared and processed in the same manner as the original. After completion of the work, upon agreement of final billing, the Corporation is required to sign a General Release as stipulated in the agreement.

A sample of both agreements and the release is provided in Appendix 13G. In addition, Appendix 13G contains form CONR 335 (9/89) Appendix A Standard Clauses For All New York State Contracts. CONR 335 shall be attached to the Reimbursement Agreement.

13.5.3 Municipal Resolutions

This section discusses municipal utility resolutions associated with municipal utility facility relocations and betterments.

A. Municipal Utility Relocation Resolutions

Municipal Utility Relocation Resolutions are required to authorize the signature of the Utility Work Agreement, grant the State of New York authority to perform the relocation or adjustment for the owner, and state the municipality's agreement to maintain the facilities adjusted via State-let contract. Example resolutions are provided in Appendix 13G.

B. Municipal Betterment Resolutions

Betterments are defined in Chapter 21, Section 21.5.3 of this manual. If a betterment is associated with a municipal utility facility relocation or is included as part of the Department's construction contract, it is necessary to obtain Resolutions authorizing such. Examples of Municipal Betterment Resolutions are illustrated in Chapter 14 of this manual.

13.5.4 Utility Service Connections

13.5.4.1 NYSDOT Policy: Reestablishing Utility Service Connections

Utility service connections are defined in 17 NYCRR 131.5 (i.e., utility service connection means a service connection, from a utility distribution or feeder line or main to the premises served.). The Department will pay for utility service reconnections only under the following conditions:

- The work must be paid for as a contract item only. The owner will not be allowed to have the work performed by others.
- The work is limited to “In Kind” replacement only.
- The relocation is necessary as a result of a transportation project.
- The property owner (and not the utility) is responsible for all costs.

13.5.4.2 Existing Electric Services

Consideration should be given regarding the need to reestablish existing electric services based on the proposed scope of project work. Reestablishing electric service may be paid for by the Department, providing:

- It is the same type of connection that previously existed (i.e., underground before and after).
- The utility is allowed by Public Service Corporation tariff to pass such cost on to the customer. Note that in many cases the Utility is not allowed (or is limited) to back charge the customer.
- Confirmation regarding the Utility’s ability to pass the cost of reconnecting on to the affected property owner should be determined prior to committing the State to pay for a reconnect. Should there be any doubt, ask to see the agreement between the property owner and the Utility.

Item 07662.01 Reestablishing Electrical Underground Service To Customers should be used when project work necessitates the reestablishment of secondary service (normal low voltage - less than 600 volts) to customers. (Note payment for the utility facility work is made to the Contractor.)

Item 15662.60 Furnishing Electrical Service should be used to reestablish high voltage (primary) service to customers (this item was originally established and is still applicable to furnish electrical service to State-owned facilities). Because it is high voltage, only the utility is allowed to do the work, and the specification is set up for the Contractor to reimburse the utility. The item should be serialized and a specific item number should be considered for each reconnection because the cost of relocating primary services will likely vary from building to building.

13.5.4.3 Release Form For Adjustment of Private Facilities Included in the State's Contract

The release form illustrated in Appendix 13G should be used when it is necessary for the Department, as a result of work of construction, reconstruction or maintenance of state highways, to provide for the removal, relocation, replacement, or reconstruction of privately, publicly or cooperatively owned electrical, gas, telephone, water or sewer utility connections, these facilities are located either on private property or highway right of way or both, and the adjustment of these facilities is to be included within the State's contract. In addition, Appendix 13G contains example transmittal memos which may be used to transmit the release form to the property owner.

The release should be processed as follows:

- The Regional Utilities Engineer and/or designer jointly with owner is to fill in all possible information on the form.
- If there is a question as to whether or not the owner shall be responsible for any of the expense of the replacement of the affected facility, this determination is to be made by the Region, with assistance from the Office of Legal Affairs in the event difficulties arise.

13.6 STANDARD SPECIFICATIONS, SPECIAL SPECIFICATIONS, AND SPECIAL NOTES

13.6.1 Standard Specifications

Section 663 provides standard specifications associated with water supply facilities. As discussed in Section 13.6.3, the Special Note entitled “Owner Requirements for Water Mains and Appurtenances” shall be provided when using the Section 663 pay items. Refer to Appendix 13F for information regarding water supply systems.

13.6.2 Special Specifications

Item 07662.01 Reestablishing Electrical Underground Service To Customers should be used when project work necessitates relocation/adjustment to underground electric facilities to customers. Note that payment for the utility facility work is made to the Contractor. In addition, Item 15662.60 Furnishing Electrical Service is available and should be used to consistent with the guidance in Section 13.5.

13.6.3 Special Notes

Special notes should be provided, as necessary, to convey special directions, provisions, or requirements peculiar to the project. Refer to Chapter 21, Section 21.4, of this manual for additional guidance regarding the use and format of special notes.

The following special notes related to utility facility work shall be provided as discussed below:

1. The special note entitled “Coordination with the Utility Schedule” shall be provided as discussed in Section 13.4.2.2 and 13.5.1.
2. The special note entitled “Owner Requirements for Water Mains and Appurtenances” shall be prepared by the designer, with input from the Owner, for use in conjunction with the pay items provided in Section 663 of the *Standard Specifications*.

The special note illustrated in Appendix 13F should be used. Working copies should be obtained from the Design Division Electronic Toolbox. When completing the note, it is not necessary or desired to cite references to any AWWA or ANSI Standards that are already provided in the *Standard Specifications*. The primary dimensions will be in metric, or Nominal Pipe Size (NPS) designations. English equivalents may be added in parentheses, if desired.

13.7 CONSTRUCTION STAGE - SUPERVISION, INSPECTION, AND FIELD RECORDS

As previously stated, relocation or adjustment of utility facilities may be performed by Utility forces, by contract let by the Utility, or by contract included as part of the Department's project.

Field work performed by the Utility shall be under their direct supervision and all records shall be kept in accordance with the established practice of the Utility consistent with Department requirements.

Refer to the Contract Administration Manual, §102-09, for additional guidance regarding Utility reimbursement during the construction stage.

13.8 REFERENCES

1. "Design Procedure Manual," Design Quality Assurance Bureau, New York State Department Of Transportation, State Campus, Albany, New York, 12232.