



14.1 General

The utilities article in the special provisions provides information regarding the utility facilities in the project area and the anticipated status of utility work at the time of the proposed highway improvement project. The utilities article of the special provisions is intended to provide the contractor with information that will be helpful in the bidding on, planning of, and scheduling for the proposed improvement project.

Inaccurate or incomplete information in the special provisions may cause claims for additional compensation to the contractor. Well written special provisions efficiently summarize utility work plans and provide detailed requirements for coordination to be performed during construction.

Write the special provisions from information provided by the utility owner in the utility work plan. Do not create special provisions without contacting the utility owner. The Wisconsin Department of Transportation (WisDOT) typically does not have direct control over utility owner actions. Therefore, roadway designers cannot make commitments on behalf of utility owners.

Ensure bidders have the most current data by verifying the schedule of utility adjustments just prior to the Plan, Specification and Estimate (PS&E) submittal. Contact each utility owner directly to get this information.

14.2 General Statements

Prior to detailing information regarding specific utilities, provide general information which typically applies to all utilities in the vicinity of the project. This will eliminate the need to repeat information under each utility.

14.2.1 Statement of Trans 220 Applicability

The first sentence of the utilities article for all projects must state whether or not Ch. Trans 220 Wis. Adm. Code (Trans 220) applies to the project. See [Chapter 1](#) to determine if Trans 220 applies.

If it is a Trans 220 project, begin the utilities article with the following paragraph:

This contract comes under the provisions of Wisconsin Administrative Code Ch. Trans 220.

If Trans 220 does NOT apply, use the following single-sentence paragraph instead:

This contract does not come under the provisions of Wisconsin Administrative Code Ch. Trans 220.

14.2.2 Advise Bidders to Review the Work Plans, Permits, or Both

When detailing significant utility relocations, it is a good idea to give bidders an opportunity to review the approved utility work plans, utility permits, or both. This practice maximizes the bidders understanding of the utility companies' intentions and minimizes the need to write complicated paragraphs to detail the utility work plans. Check with your region's Utility Coordinator to determine if this option is appropriate for your project. See Chapter 1 for a listing of each region's Utility Coordinators. The following text is an example of how to direct bidders to review the approved utility work plans, utility permits, or both:

Additional detailed information regarding the location of utility facilities is available at the region WisDOT office during normal working hours.

14.2.3 Coordinating Work to Be Done During Construction by Utility Owners

Use the following paragraph when work is being done during highway construction. The paragraph details notifications the contractor is required to provide per Ch. Trans 220.05(10) Wis. Adm. Code. If all relocations are expected to be completed prior to the beginning of the highway construction, omit the paragraph.

Some of the utility work described below is dependent on prior work being performed by the contractor at a specific site. In such situations, provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Provide this notice 14 to 16 calendar days in advance of when the prior work will be completed and the site will be available to the utility owner. Follow-up with a confirmation notice to the engineer and the utility owner not less than three working days before the site will be ready for the utility owner to begin its work.

14.3 Addressing Individual Utilities

14.3.1 Appropriate Level of Detail

Clearly indicate what, if any, utility coordination is required during the proposed highway improvement project. Give the bidder as much information as possible regarding the timeframes of utility work that will take place during the highway construction project. For example, "ABC Gas Company plans to lower the gas main between

Station 10+30 and Station 18+60 within 10 working days after the grading has been completed in that area.”

Address each utility facility requiring alteration or relocation separately and include the following information for each entry per the Facilities Development Manual (FDM) Procedure [FDM 19-15-25](#):

- Name of Utility Company (in **bold**)
- Type of facility; for example, 2-inch gas main, overhead power line, or buried telephone cable.
- Location of facility; for example, along the north side of Main Street between Washington Ave. and Lincoln Blvd.
- Location of conflicts.
- Corrective action that the utility will take; for example, lower gas main, or relocate line 10 feet right.
- Anticipated timing and duration, when applicable, of utility operations; for example, prior to the start of construction, by June 15, 2014, during construction, or two working days after pavement removal.

Include in the article all utility work scheduled for completion either before or during construction as well as utility work that is dependent upon the contractor’s operations.

Be specific and provide detail. Instead of “All utilities will be relocated in coordination with construction operations,” use “**Footville Telephone Company** will relocate their underground cable between Station 20+00 and Station 40+00 in coordination with construction operations under this contract.”

However, do not be too specific. For example, do not commit to specific dates, time frames, or construction methods, unless necessary. (This may be necessary on complex projects or Trans 220 projects that will have utility work performed during construction.) It is important to provide information, but not make commitments on the utility owner’s behalf. For example: state “This work will take approximately 14 working days,” instead of “This work will take 14 days.”

14.3.2 Avoid Redundant Utility Contacts

The contact person for the utility company will be listed on the General Notes sheet of the project plans. Such information is typically not repeated in the special provisions. However, it may be necessary to list a person who has specific duties regarding the construction operations, such as adjusting manholes or valve boxes, and is not the field contact for other issues during construction. An example of this is “Contact Jim Doe at 608-555-5555 after the pavement has been removed. Jim will adjust the service connections.” This could be supplemented with “Contact Jane Smith at 262-555-5555 for all other issues during construction.” Jane would be the contact person listed on the General Notes sheet. This clarifies that Jim Doe’s responsibilities are limited to adjusting the service connections.

14.3.3 Curb and Gutter Handwork

If the curb and gutter construction clearance requirements as described in [Chapter 9](#) cannot be met, insert a paragraph in the Special Provisions to alert the contractor of such field conditions, thus allowing the contractor to incorporate any necessary handwork into their bid price.

14.4 Formatting, Grammar, and Punctuation

Use the guidance contained in [FDM 19-15-80.2.2](#) and the [WisDOT Style Guide for Print Products and Web Pages](#) for direction on formatting, grammar, and punctuation.

14.4.1 Formatting Requirements

For guidance on formatting special provisions, see [FDM 19-15-1](#).

14.4.2 Avoid Using “Should”

Instead of using “should,” tell the contractor what is to be done. “Should” is a suggestion, it cannot be enforced.

14.4.3 “Consists of” vs. “Includes”

“The work includes” is not a restrictive phrase and suggests that the scope of the work may be greater than the listing of work that immediately follows. In most cases, it is better to use the word “includes” instead of the phrase “consists of.”

14.4.4 Lineal vs. Linear Feet

When measuring length, use “linear” rather than “lineal.” Lineal means belonging to or being in direct line of descent from an ancestor.

14.4.5 Its vs. It's

The word "it's" is a contraction for the words "it is" or "it has," while "its" is the possessive form of the pronoun "it."

14.4.6 Keep Your Sentences Short and Simple

Do not leave room for interpretation. Provide clear meaning to the contractor about what is expected.

14.4.7 Define Abbreviations

Some abbreviations are provided in WisDOT [standard spec 101.2](#). When introducing other abbreviations, use the whole term followed by the abbreviation in parentheses. When using acronyms, do not place periods between every letter. For example, write "ASTM," not "A.S.T.M." Do not abbreviate northbound, southbound, eastbound, or westbound.

Additional guidance on abbreviations can be found in the WisDOT Style Guide for Print Products and Web Pages (<http://www.dot.wisconsin.gov/library/publications/style.htm#abbreviations>).

14.4.8 Do Not Use "Etc."

"Etc." is short for "et cetera" which means "and others" or "and the rest." Use of "etc." in specifications is inappropriate because contractors are not required to deliver items that are not specifically mentioned. For example, instead of

"Furnish and install all other items necessary such as, wire nuts, splice kits and connectors, tape, insulating varnish, ground lug fasteners, sodium lamps, etc. for lighting to make the proposed system complete from the source of supply to the most remote unit,"

use

"Furnish and install all other items necessary such as, wire nuts, splice kits and connectors, tape, insulating varnish, ground lug fasteners, sodium lamps for lighting, and other appurtenances to make the proposed system complete from the source of supply to the most remote unit,"

or

"Furnish and install all other items necessary such as, wire nuts, splice kits and connectors, tape, insulating varnish, ground lug fasteners, and sodium lamps for lighting to make the proposed system complete from the source of supply to the most remote unit."

14.4.9 Be Consistent Throughout the Article When Referring to Locations

Use "Station" when referring to a specific station. Use "LT," "left," "RT," or "right" to refer to location other than east, west, north or south. Spell out right of way; do not use "ROW," "R/W" or "r/w."

For example: "SBC will lower the telephone pedestal at Station 15+50 RT." Or "Nine telephone poles between Station 377+70 to Station 386+30 will be removed and replaced with a buried cable near the right of way line."

14.4.10 Engineer/Project Manager/WisDOT's Representative

When referring to one of these people in the special provisions, use the term "engineer." Do NOT capitalize engineer. [WisDOT standard spec 101.3](#) defines the term "engineer" as "the Secretary of the Department of Transportation or the Secretary's authorized representative limited by the particular duties assigned to the representative."

14.4.11 Do Not Use the Forward Slash Mark (/) Unless it Represents the Word "Per"

Unless substituted for the word "per," slashes are ambiguous and therefore should not be used.

14.4.12 Use of Numbers and Units

When using numbers in sentences, follow the guidance provided in [FDM 19-15-80.3](#). Additionally, all numbers should have units, so refer to [FDM 19-15-80.4](#) for guidance on units.

14.4.13 Include the Year When Specifying Dates

The enforcement of completion dates or due dates can be questioned if the year is omitted, so always specify the year.

14.5 Sample Utilities Articles

Attachments 14.5.1 to 14.5.11 are sample utilities articles of the special provisions which may aid in writing and formatting. Use the table below to determine which samples to use:

Attachment	Utilities Present?	Utility Relocations	Description of Sample
Attachment 14.5.1	no	none	no known utilities
Attachment 14.5.2	yes	none	utilities present, but no conflicts or adjustments
Attachment 14.5.3	yes	none	coordinated under another Project ID
Attachment 14.5.4	yes	none	modify design to avoid conflicts in field
Attachment 14.5.5	yes	unknown	utility relocations to be identified and coordinated by contractor
Attachment 14.5.6	yes	prior to PS&E	utilities were relocated prior to PS&E submittal
Attachment 14.5.7	yes	after PS&E, but prior to construction	utilities are expected be relocated after PS&E submittal, but prior to highway construction
Attachment 14.5.8	yes	during construction, no site prep required	Relocations will be performed during construction, either by the utility owner or by the contractor. Utility relocations to be performed by the utility owners are NOT dependent upon the prior work performed by the contractor.
Attachment 14.5.9	yes	during construction, pending site prep	Utility relocations cannot be completed until the contractor has performed specific tasks.
Attachment 14.5.10	yes	yes	Utility conflicts are presented in the form of a list.
Attachment 14.5.11	yes	yes	Utility conflicts are presented in a table.
Attachment 14.5.12	yes	yes	Multiple Project IDs

14.6 Bid Item References

When referring to bid items within the articles, ensure that those bid items are part of the proposal. For example, if you specify that the contractor is to perform a utility line opening or adjust water valves as part of the contract work, ensure that the appropriate bid items are added to the estimate and plans.

[Attachments 14.6.1](#) through [14.6.6](#) contain special provisions for some utility related bid items. These utility-related bid items have been used on past projects and may be of interest to the designer. These are provided as examples rather than standard special provisions. Therefore, the designer and region utility engineer should work together to develop appropriate utility related bid items on a project by project basis.

Utilities.

This contract does not come under the provisions of Wisconsin Administrative Code Chapter Trans 220.

There are no known utility facilities within the project limits.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

The following utility owners have facilities within the project area; however, no adjustments are anticipated:

- **Madison Gas & Electric Company**
- **GTE North, Inc.**
- **TCI Cablevision**

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

All utilities within the construction limits of Project ID 1234-05-72 were coordinated under project ID 1234-05-71. There are no other known utility conflicts within the construction limits.

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

The following utility owners have facilities within the construction limits, however no conflicts are anticipated:

- **Madison Gas & Electric Company**
- **Ameritech Inc.**
- **TCI Cablevision**

Coordinate construction activities with a call to Diggers Hotline or a direct call to the utilities for the underground facilities in the area, as required per state statutes. Use caution to maintain the integrity of utilities. Coordinate with the engineer to adjust plans as needed to avoid any unanticipated utility conflicts.

Utilities.

This contract does not come under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Due to the nature of this work, utility conflicts were not resolved during design. Have all utilities field-located prior to beginning construction. Coordinate all utility relocations or adjustments that may be necessary to accomplish the work of this project.

The utility owners involved are:*

- Sites 1, 2, and 3: **Alliant Energy, Verizon, and Charter Communications**
- Sites 4 and 5: **Alliant Energy, Ameritech, and Wisconsin Gas**
- Sites 6, 7, and 8: **Wisconsin Electric, Midwest Telephone**

*NOTE: If all of the utility owners are members of Diggers Hotline, instead of using the sentence:

The utility owners involved are:

use:

All of the utility owners with facilities in the project work areas are members of Diggers Hotline.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

The following utility owners relocated their facilities in 2010 to avoid conflicts with this contract; no further utility conflicts are anticipated:

- **Madison Gas & Electric Company**
- **Ameritech Inc.**
- **TCI Cablevision**

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Adams Columbia Electric Co-op (ACE) has utility poles and overhead electric facilities throughout the project. ACE plans to replace the overhead lines with underground electric facilities within the construction limits prior to May 15, 2014.

TransCanada has a 12-inch gas pipeline crossing near Station 149+68. TransCanada plans to extend the casing on both sides of the road, install a vent on the south side of the road, and extend the vent on the north side of the road to accommodate the proposed plan and profile. TransCanada plans to begin this work in February 2014 and complete it within 20 working days.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Wisconsin Gas Company has a 6-inch **gas** main along USH 14 between Station 5+00 and Station 30+75 left. Wisconsin Gas Company plans to lower the 6-inch main between Station 13+00 and Station 17+00. Wisconsin Gas Company plans to begin this work by April 20, 2014 and complete it within five working days.

Wisconsin Gas Company also has a 2-inch gas main that crosses Freistadt Road near Station 14+05. Wisconsin Gas Company does not anticipate any conflicts with this gas main.

Ameritech, Inc. has underground **communication** facilities along the east side of USH 14 throughout the project. Ameritech plans to relocate a telephone pedestal in the slope easement near Station 15+68 right. Ameritech plans to complete this work by May 1, 2014.

Sanitary District No. 4 has a 36-inch **sanitary sewer** along USH 14 between Station 10+00 and Station 35+00. Adjust five manholes to match the new finished pavement elevation. Perform this work in accordance with the requirements of the Adjusting Manhole Covers bid item. Arrange for an observer to be on site during the manhole adjustments by notifying the sanitary district three to five working days prior to performing said adjustments.

Wisconsin Power and Light (WPL) has overhead **electric** facilities along USH 14 between Station 8+00 and Station 25+00 right and between Station 25+00 and Station 37+00 left. WPL does not anticipate any conflicts with these facilities.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Ameritech, Inc. plans to install an underground **communication** facility crossing near Station 339+50 after the subgrade is exposed in this area. Ameritech plans to vacate the existing underground communication facility crossing near Station 337+35. Provide notice 14 to 16 calendar days in advance of when the subgrade will be exposed and the site will be available to the utility owner. Follow-up with a confirmation notice to the engineer and the utility owner three to five working days before the site will be ready for the utility owner to begin its work. Ameritech anticipates this work will require up to five working days to complete.

Monona Sanitary District No. 4 has an existing 36-inch **sanitary sewer** between Station 10+00 and Station 35+00 on center line. Adjust five manholes to match the new finished pavement elevation. Perform this work in accordance with the requirements of the Adjusting Manhole Covers bid item. Arrange for an observer to be on site during the manhole adjustments by notifying the sanitary district three to five working days prior to performing said adjustments.

Madison Metropolitan Sewerage District (MMSD) has a **sanitary sewer** that requires no relocation. The relocated highway will cross over two sections of the sanitary sewer and place substantial loadings over a third section, requiring adjustments as follows:

1. Prior to construction, MMSD plans to raise the manhole near Station 55+30 approximately 9 feet. Make final adjustments in accordance to the Adjusting Manhole Covers bid item. Do not stockpile fill over the sanitary sewer pipe in excess of the proposed finished elevation between Station 55+20 and Station 58+00.
2. Prior to construction, MMSD plans to lower the manhole near Station 72+85 approximately 6 inches. This work is intended to accommodate the proposed cut between Station 70+10 and Station 73+10 which will reduce the amount of cover over the sanitary sewer pipe. Field-verify the location and depth of the sanitary sewer pipe in this shallow section.
3. MMSD has a sanitary sewer force main crossing near Station 91+40, an area requiring excavation below subgrade. A planned maximum of 11 feet of fill will be located on the east side of the existing USH 51. Provide proper support for the sanitary sewer force main while performing construction activities in this area. Hand excavate within 18 inches of the top of the force main.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Wisconsin Public Service Corporation (WPS) has **electric** facilities within the construction limits, include overhead lines along the east side of Argonne Street, overhead lines across Argonne Street near Station 14'ARG'+47 and underground facilities along the south side of Lombardi Avenue. Pending removal of Cabela's construction trailer from the utility easement along the east side of Argonne Street, WPS plans to relocate their facilities as follows:

- Move the utility pole near Station 14'ARG'+47 (23' RT) roughly 50 feet to the east and place new anchors roughly 20 feet north and west of the pole.
- Install new utility poles near Station 10'ARG'+07 (44' RT), Station 11'ARG'+23 (44' RT) and Station 13'ARG'+16 (48' RT) with a new anchor roughly 8 feet east of the new pole.
- After Time Warner and Net-Lec transfer their overhead facilities to the new WPS utility poles, WPS plans to remove poles from the following locations:
 - Station 10'ARG'+07 (22' RT)
 - Station 11'ARG'+23 (22' RT)
 - Station 12'ARG'+65 (22' RT)
 - Station 14'ARG'+47 (23' RT)
 - Station 14'ARG'+47 (43' LT)
- Pending a new contract between WPS and the Village of Ashwaubenon, WPS plans to move the pole near Station 114'VKE'+50 (50' RT) to roughly 6 feet south of the proposed curb, discontinue use of the underground electric cable between Stations 113'VKE'+00 (50' RT) and Station 115'VKE'+00 and replace it with an underground cable roughly 6 feet behind the proposed curb.
- Remove the pole near Station 14'ARG'+75 (70' LT).
- Discontinue use of the underground facility across Argonne St near Station 14'ARG'+75 and replace it with a deeper line.

Pending the coordination mentioned above, WPS plans to begin the aforementioned relocations in January 2013 and complete them prior to construction.

[NOTE: A numbered list may be used instead of a bulleted list if (and only if), it is an all-inclusive list.]

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Wisconsin Public Service Corporation (WPS) has **electric** facilities within the construction limits, include overhead lines along the east side of Argonne Street, overhead lines across Argonne Street near Station 14'ARG'+47 and underground facilities along the south side of Lombardi Avenue. Pending removal of Cabela's construction trailer from the utility easement along the east side of Argonne Street, WPS plans to relocate their facilities as follows:

Approximate Location(s)	Planned Relocation
Station 14'ARG'+47(23' RT)	Move the utility pole roughly 50 feet to the east and place new anchors roughly 20 feet north and west of the pole.
Station 10'ARG'+07 (44' RT) Station 11'ARG'+23 (44' RT) Station 13'ARG'+16 (48' RT)	Install new utility poles with a new anchor roughly 8 feet east of the new pole.
Station 10'ARG'+07 (22' RT) Station 11'ARG'+23 (22' RT) Station 12'ARG'+65 (22' RT) Station 14'ARG'+47 (23' RT) Station 14'ARG'+47 (43' LT)	WPS plans to remove these poles after Time Warner and Net-Lec transfer their overhead facilities to the new WPS utility poles.
Between Station 113'VKE'+00 (50' RT) and Station 115'VKE'+00	Pending a new contract between WPS and the Village of Ashwaubenon, WPS plans to discontinue use of the underground electric cable and replace it with an underground cable roughly 6 feet behind the proposed curb.
Station 14'ARG'+75	Discontinue use of the underground facility across Argonne St and replace it with a deeper line.

Pending the coordination mentioned above, WPS plans to begin the aforementioned relocations in January 2013 and complete them prior to construction.

Utilities.

This contract comes under the provisions of Wisconsin Administrative Code Chapter Trans 220.

Additional detailed information regarding the location of vacated, relocated, and/or removed utility facilities is available in the work plan provided by each utility company or on the permits issued to them. View these documents at the region WisDOT office during normal working hours.

Some of the utility work described below is dependent on prior work being performed by the contractor at a specific site. In such situations, provide the engineer and the affected utility a good faith notice of when the utility is to start work at the site. Provide this notice 14 to 16 calendar days in advance of when the prior work will be completed and the site will be available to the utility owner. Follow-up with a confirmation notice to the engineer and the utility owner three to five working days before the site will be ready for the utility owner to begin its work.

Project 1445-00-71

Black Earth Telephone Company has underground communication facilities...

Cross Plains Electric has overhead electric facilities on...

Project 1445-01-73

Cross Plains Electric has overhead electric facilities on...

Star Cablevision has communication facilities...

NOTE: This item should be used when only the manhole casting or cone is conflict and this conflict can be mitigated by slightly offsetting the manhole cone.

Sanitary Manhole Reconstruct, Item SPV.0060.xx.

A Description

This special provision describes removing the top concentric cone section of a manhole, and replacing it with an offset (eccentric) cone section in such a manner to place the casting in the terrace and out of the proposed curb and gutter, if possible.

B Materials

Perform this work in accordance to the pertinent requirements of section 611.2 of the standard specifications.

C Construction

Perform this work in accordance to the pertinent requirements of section 611.3 of the standard specifications and the standard detail drawing “Manholes Type 1.”

D Measurement

The department will measure Sanitary Manhole Reconstruct by the unit acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
SPV.0060.xx	Sanitary Manhole Reconstruct	Each

Payment is full compensation for removing and replacing the top cone section of the manhole; providing all required materials, including masonry and fittings; for salvaging and reinstalling existing covers, including frames, grates or lids; for all necessary excavation, backfilling, disposing of surplus material, and for cleaning out and restoring the work site; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

Protective Concrete for Gas Lines, Item SPV.0165.xx.

A Description

- (1) This special provision describes constructing protective concrete slabs with reinforcement over ANR gas transmission lines.

B Materials

- (1) Furnish materials conforming to the following:
 - a. Concrete.....Section 501
 - b. Reinforcement.....Section 505
 - c. Base Aggregate Dense.....Section 301 and Section 305
- (2) Provide grade A, A-2, A-FA, A-S, A-T, A-IS, or A-IP concrete conforming to 501.2. Alternatively, where one of the grade A mixes is allowed under standard spec 501.3.1.3, the contractor may use a QMP mix design approved for concrete pavement or structural concrete under this contract.
- (3) Provide polystyrene insulation board that conforms to the requirements for Extruded Insulation Board, AASHTO Designation M230, except delete the flammability requirement. Before installation, obtain from the manufacturer a certification indicating compliance and furnish it to the engineer.

C Construction

- (1) Expose the gas pipelines in the presence of ANR personnel using either hand digging or hydro-vac methods. No machine excavation is allowed near ANR lines until they are fully visually located.
- (2) Install concrete protective slab per detail and as specified below.
- (3) Form the foundation by excavating to the required elevation of the bottom of the base aggregate dense. Tamp or compact the foundation to ensure stability. Make the foundation wide enough to allow placing forms and performing concrete placement and finishing.
- (4) Place base aggregate base to the thickness and section the detail shows.
- (5) Place one-inch polystyrene insulation board as the detail shows.
- (6) Furnish and use wood or metal forms, that are straight and of sufficient strength to resist springing, tipping, or other displacement during depositing and consolidating the concrete. If using wood forms, provide surfaced planks, at least 2-inch nominal thickness stock. If using metal forms, ensure they are the engineer-approved section with a flat surface on top. Use forms as deep as the depth of the protective concrete slab. Securely stake, brace, and hold the forms firmly to the required line. Make the forms tight to prevent mortar leakage. Clean and oil all forms before placing concrete against them.
- (7) The engineer will check and approve the foundation, forms, and reinforcement before placement of the concrete. Place the concrete on a moist foundation, deposit it to the required depth, and consolidate sufficiently to bring the mortar to the surface, then strike-off and finish to a true and even surface. Before the mortar sets, brush or lightly broom the surface as directed by the engineer.

- (8) Use reinforcement conforming to, and place it as specified on, the detail.
- (9) Construct transverse joints at right angles to the protective concrete slab centerline, and construct longitudinal joints parallel to the centerline, unless specified otherwise. Construct the joints in the locations shown on the plans or as laid out in the field by the engineer.
- (10) No joint may deviate more than 5 degrees from perpendicular to the surface of the finished. Ensure that all joint axis do not deviate more than ½ inch from a straight line, or from the designated alignment at any point. If constructing the joints in sections, do not use offsets or concrete struts between adjacent units.
- (11) Do not divide the protective concrete slab into sections less than 3 feet, or greater than 12 feet in any dimension.
- (12) If constructing the protective concrete slab in partial width slabs, place transverse joints so they match the like joints in adjacent slabs. Produce the unit areas by using forms extending to the concrete's full depth.
- (13) The contractor may form contraction joints by cutting the concrete not less than ¼ of the depth through with a pointed trowel or other suitable tool. Edge-finish the joint.
- (14) The contractor may saw contraction joints at least one inch in depth and approximately 1/8 inch wide in the protective concrete slab. Perform sawing as soon as possible after the concrete sets sufficiently to prevent raveling during sawing and before shrinkage cracking occurs.
- (15) Round edges along forms, un-sawed joints, and division forms with a ½-inch radius edger.
- (16) Do not seal joints.
- (17) Cure the concrete as specified for concrete pavement in 415.3.12.
- (18) Protect the concrete as specified for concrete pavement in 415.3.16 (4), 415.3.16 (5), and 415.3.16 (6).
- (19) If the concrete is cured and the forms removed, backfill the spaces along the sides with satisfactory soil and thoroughly compact. Dispose of surplus excavation and restore the work site to a neat and orderly condition.

D Measurement

The department will measure Protective concrete for gas lines by the Square Foot acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

<u>ITEM NUMBER</u>	<u>DESCRIPTION</u>	<u>UNIT</u>
SPV.0165.xx	Protective Concrete for Gas Line	SF

NOTE: Ideally, facilities should be located prior to construction. In some instances, it may be necessary to field verify the location of utilities during construction. It is best to use these when the facility doesn't significantly impact the construction operations, there is an unusually high number of underground utility crossings, or it is not feasible to locate the facility during the work plan development stage. This bid item will rarely be used.

Utility Line Opening, Item SPV.0060.xx.

A Description

This special provision describes excavating to uncover utilities for the purpose of determining the elevation of those utilities and to determine if potential conflicts with proposed utilities exist.

B (Vacant)

C Construction

Complete the Utility Line Opening (ULO) as shown on the plan or as directed by the engineer. Excavate in a manner such that the utility in question is not damaged, and the safety of the workers is not compromised.

Perform the ULO as soon as possible and at least 3 days in advance of proposed utility or street construction to allow all conflicts to be resolved with minimal interruption. Where utilities are within 6 feet of each other at a location, only one ULO shall be called for. In this case, a single ULO shall be considered full payment to locate multiple utilities.

Ensure that all utility line openings have been approved by, and coordinated with, the engineer.

D Measurement

The department will measure Utility Line Opening, completed in accordance with the contract and accepted, by the unit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.xx	Utility Line Opening	Each

Payment is full compensation for performing all excavation required to expose the utility line; backfilling the excavation with existing material; compacting the backfill and restoring the site; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

NOTE: Ideally, facilities should be located prior to construction. In some instances, it may be necessary to field verify the location of utilities during construction. It is best to use these when the facility doesn't significantly impact the construction operations, there is an unusually high number of underground utility crossings, or it is not feasible to locate the facility during the work plan development stage. This bid item will rarely be used.

Locate Sanitary Sewer, Item SPV.0105.xx.

A Description

This special provision describes excavating to uncover and determine the exact location of the sanitary sewer crossing at Station XXX+XX, or as directed by the engineer.

B (Vacant)

C Construction

Perform the work in accordance to Wisconsin State Statute 182.0175 (Damage to Transmission Facilities), and in such a manner that the sanitary sewer is not damaged and the safety of the workers is not compromised.

D Measurement

The department will measure Locate Sanitary Sewer, completed in accordance with the contract and accepted, as a single complete unit of work.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.xx	Locate Sanitary Sewer	LS

Payment is full compensation for performing all excavation required to expose the sanitary sewer; backfilling the excavation with existing material; compacting the backfill and restoring the site; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

***NOTE:** Normally, the cost of exposing utility facilities for safety reasons during directional boring construction operations is borne by the contractor and is incidental to the bid item of directional boring. However, there may be projects for which the number of exposures is excessive or unknown; for those unusual projects, a bid item may be included in the contract to pay for this work separately.*

Locate Existing Utility, Item SPV.0060.xx.

A Description

This special provision describes locating existing utilities under paved surfaces, taking lateral and depth measurements that will be used for performing work for bid item Conduit, 3-Inch, Directional Bore and for bid item Multi-Cell Conduit, 4-Inch, Directional Bore, and restoring the pavement.

B Materials

Provide all base aggregate dense, asphaltic pavement, and concrete pavement, as required, to restore the site to its original condition. The materials provided shall be in accordance to the pertinent sections of the standard specifications.

C Construction

Remove pavement, alleys, or driveways, including all surfaces or other pavements superimposed thereon and base course or soil to the top of the utility being located. Core a nominal 6-inch diameter hole using conventional construction methods, or by using commercially available machinery that has been designed for this application.

Take lateral and depth measurements and provide the measurements to the engineer before performing directional boring.

Upon completion of the utility location, restore the roadway in the following manner. Install base aggregate dense from the bottom of the core exposed to the bottom of the pavement. Place concrete pavement and asphaltic surface to the dimensions as found in the existing roadway.

D Measurement

The department will measure Locate Existing Utility by the unit acceptably completed. One unit is one utility location.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.xx	Locate Existing Utility	Each

Payment is full compensation for sawcutting; removing pavement; performing all excavation; locating the utility; documenting utility lateral and depth information and providing it to the engineer; furnishing and placing all soil, base aggregate dense, concrete, and asphaltic surface necessary to restore the site to its original condition; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

NOTE: Normally, the cost of exposing utility facilities for safety reasons during directional boring construction operations is borne by the contractor and is incidental to the bid item of directional boring. However, there may be projects for which the number of exposures is excessive or unknown; for those unusual projects, a bid item may be included in the contract to pay for this work separately.

Expose Existing Utility, Item SPV.0060.xx.

A Description

This special provision describes exposing existing utilities under paved surfaces, taking lateral and depth measurements that will be used for performing work for bid item Conduit, 3-Inch, Directional Bore and for bid item Multi-Cell Conduit, 4-Inch, Directional Bore, and restoring the pavement. In addition to providing the required dimensions to the engineer, keep the utility exposed during the directional boring, allowing for visual assurance that all required utility clearances are being met.

B Materials

Provide all base aggregate dense, asphaltic pavement, and concrete pavement, as required, to restore the site to its original condition. The materials provided shall be in accordance to the pertinent sections of the standard specifications.

C Construction

Remove pavement, alleys, or driveways, including all surfaces or other pavements superimposed thereon and base course or soil to a minimum depth of 18-inches below the bottom of the utility being exposed.

When removing pavement, remove the pavement to an existing joint, or saw and chip to a true line with a face perpendicular to the surface of the existing pavement. Maintain drainage in accordance to subsection 205.3.3 of the standard specifications.

Take lateral and depth measurements and provide the measurements to the engineer before performing directional boring.

Keep the utility exposed and available for visual inspection until completing the directional bore. If the utility is exposed overnight or for prolonged periods of time, protect the utility from traffic by using steel plates suitable for carrying a vehicle or as directed by the engineer.

Upon completion of the utility location, restore the roadway in the following manner. Install base aggregate dense from the bottom of the core exposed to the bottom of the pavement. Place concrete pavement and asphaltic surface to the dimensions as found in the existing roadway.

D Measurement

The department will measure Expose Existing Utility by the unit acceptably completed. Should multiple utilities be located within the same exposure area, the department will measure the occurrence as one unit.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.xx	Expose Existing Utility	Each

Payment is full compensation for sawcutting; removing pavement; performing all excavation; locating the utility; documenting utility lateral and depth information and providing it to the engineer; furnishing and placing all soil, base aggregate dense, concrete, and asphaltic surface necessary to restore the site to its original condition; protecting the utility while it is exposed; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.