CHAPTER 5: UTILITIES

GENERAL UTILITY INFORMATION

Experience shows that proactive utility coordination early in the design of a project minimizes the amount of effort needed later in the design life and during construction. It also helps the state avoid costly unexpected problems and claims. MnDOT has developed a 14-step utility coordination process that emphasizes communication among all parties involved. This process is outlined in detail in the MnDOT *Utility Accommodation and Coordination Manual*, which is available online at:

MnDOT Homepage … MnDOT A to Z…U…Utility Relocation…In the chapter for "Utility coordination process" click on the link for the "Utility Accommodation and Coordination Manual"

Many federal and state laws, rules, and regulations govern how the state handles utilities on its projects. They are listed below.

- Federal Laws
  - 23 USC 109(I)
  - 23 USC 123
- Federal Regulations
  - Part 645 of title 23 of Code of Federal Regulations
- Federal Guidelines
  - *Program Guide: Utility Adjustments and Accommodations on Federal Aid Highway Projects*, Sixth Edition, January 2003, FHWA-IF-03-014
  - *Highway/Utility Guide*, June 1993, FHWA-SA-93-049
- Minnesota State Constitution
  - Article 1, section 13
  - Article 14, section 2
- Minnesota Statutes
  - Section 161.20, subdivision 1
  - Section 161.45
  - Section 161.46
  - Section 222.37, subdivision 2
  - Section 216D.04
- Minnesota Rules
  - Parts 8810.3100 through 8810.3600

The "Laws, Rules, and Regulations" section on pages 8 through 9 of the Coordination Section of the Utility Accommodation and Coordination *Manual* briefly describes each of these items

MnDOT'S 14-STEP UTILITY COORDINATION PROCESS

A brief overview of the 14-step utility coordination process is described below.

Step 1: Utility Identification

Find utility owners the project may affect by contacting Gopher State One Call and using any other methods available (e.g., historical permits, old plans, etc.). Send the Utility Identification Letters to those utility owners who do not reply to the Gopher State One Call request.

Step 2: Utility Information Meeting

Send the Utility Information Meeting Letter to the utility owners. Prepare for, hold, and follow up on the Utility Information Meeting. Request information from the utility owners.

Step 3: Review of Information from Utility Owners

Receive and review information that the utility owners provide. Contact them about any errors or inaccuracies.

Step 4: Utility Design Meeting

Send the Utility Design Meeting Letter to the utility owners. Prepare for, hold, and follow up on the Utility Design Meeting.

Step 5: Request for Utility Relocation Plans

Request detailed relocation plans and schedules from the utility owners.

Step 6: Utility Coordination Follow Up

Review the relocation plans and schedules and follow up with the utility owners if there are any questions.

Step 7: Utility Design Change Meeting (optional)

The Utility Design Change Meeting is only necessary when there is a major change to the design of the project that will affect utilities. Prepare for, hold, and follow up on the Utility Design Change Meeting.

Step 8: Gopher State One Call Verification

Contact Gopher State One Call no more than 90 days before plan submittal to see if there have been any changes or additions to existing utilities.

Step 9: Review of Utility Relocation Plans, Schedule and Permit Submittal

Review the relocation plan, schedule, and permit application with Construction.

Step 10: Reimbursement and Utility Agreements (if necessary)

FYI…The Utility Agreements and Permits Unit performs this step when there are utility agreements on a project.

Step 11: Notice and Order and Utility Relocation Permit

FYI…The Utility Agreements and Permits Unit issues Notice and Orders and handles long-form permit applications.

Step 12: Utility Information in Contract Documents
Include all utility information in the request for bids.

Step 13: Construction
Construction coordinates any actual relocation in the field.

Step 14: Close Out (if necessary)
FYI…The Utility Agreements and Permits Unit closes out any utility agreements.

ABBREVIATED UTILITY COORDINATION PROCESS

The state requires the districts to use the full, 14-step utility coordination process on all projects, with a few exceptions. Projects that may qualify for the abbreviated process include those that:

- Have a timeframe less than 12 months;
- Are stand-alone bridge replacement, removal, renovation, and repair projects;
- Have no new right of way;
- Are mill and overlay projects;
- Require excavation but the exact location of excavation is determined in the field; and
- Require excavation for work with little latitude for adjustment in the field.

Refer to the "Project Categories for Abbreviated Process Application" on pages 82 through 84 of the *Utility Coordination section of the Utility Accommodation and Coordination Manual* for more information about these projects and which steps you can eliminate from the process.

DEPICTING UTILITY FACILITIES ON PLANS

State law dictates how we must address utilities on our construction plans. If any required utility information is missing, the state is responsible for the costs for any damages to facilities or disruptions of service.

Although it is best to have separate utility sheets, you can include utility information on other plan sheets if necessary.

General Requirements

- If there is a petroleum or high-pressure gas line in the vicinity of the project, include a warning note on the title sheet of the plan. (e.g. WARNING! PETROLEUM PIPELINE CROSSING)
- Ensure that the names of the utility owners on the plan sheets are the correct, legal names of those companies or agencies. Refer to the contact list on the Utilities website, for the most current names. Do NOT include contact names, phone numbers and/or e-mail addresses.
- Include the utility quality level note:

The subsurface utility information in this plan is utility quality level ___. This utility quality level was determined according to the guidelines of CI/ASCE 38-02, entitled, "Standard Guidelines for the Collection and Depiction of Existing Subsurface Utility Data." This not must be included in the plan whether utilities are affected or not.

- State whether electric facilities are transmission or distribution. Include the voltages of all power lines that are 69 kV or more.

Utility Tabulations

Typically ALL utility facilities that appear on the plan sheets are also shown tabulation form. Do not duplicate facilities in the plan sheets. Do not tab facilities that are too far away to appear on the plan sheets.

A sample of a utility tabulation is shown below.

Station	Location	In-Place Facility	Action			Utility Owner
			Leave As Is	Adjust	Relocate	
1+00 to 2+00	3 ft RT to 10 ft RT	buried telephone	X			Qwest Corp
2+00 to 3+00	10 ft RT to 9 ft RT	buried telephone	X			Qwest Corp
3+00	9 ft RT	telephone pedestal			X	Qwest Corp

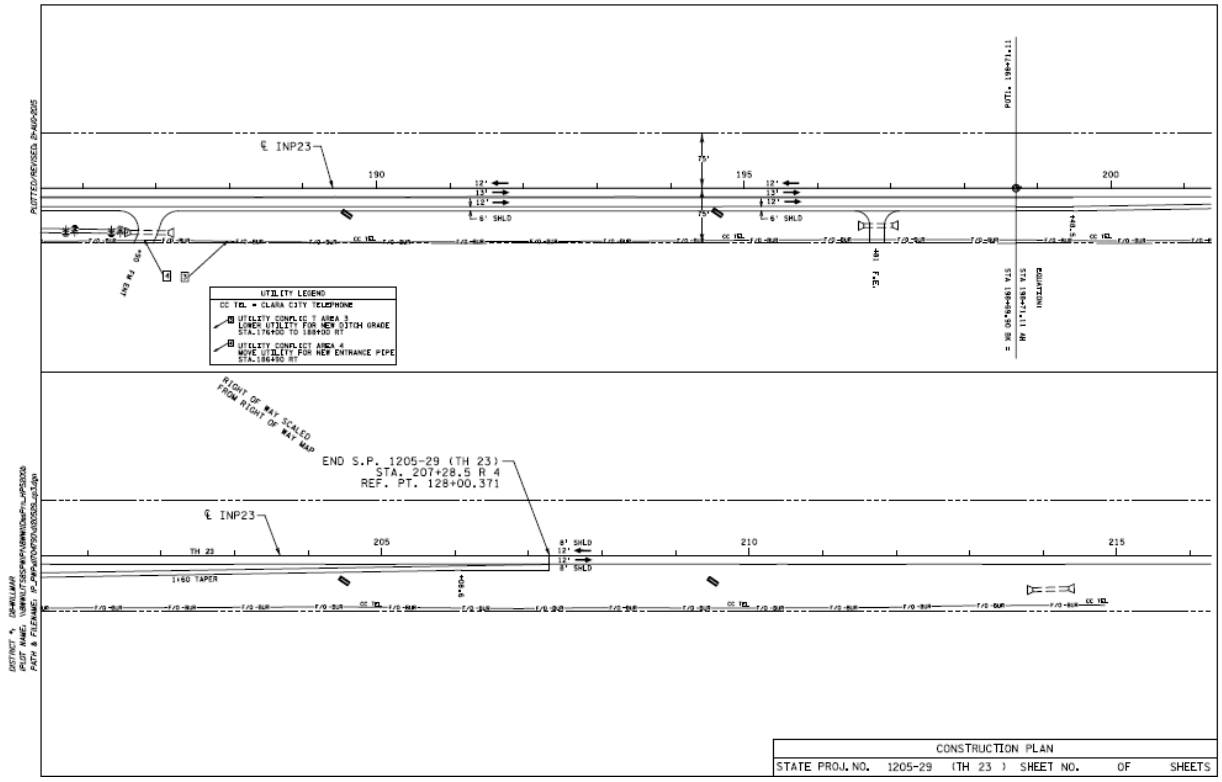
If you have a long project but will only affect utilities in specific locations, only show and tab utilities in those specific locations. For example, if you have a ten-mile mill and overlay project with two culvert replacements, provide plan views of the culvert replacements that show the utility facilities and tabulate those facilities. If there are other utility owners that have facilities in the project limits but not in the vicinity of the specific work, include the following statement and list the names of the utility owners:

> The following utility owners have facilities within the limits of the project but will not be affected.

If you check "ADJUST" for a utility action, you must define what adjust means (e.g. protect, lower in-place, etc.).

As an alternative to showing the in a utility tabulation format would be to show the utilities only within the plan sheets. Information that will be required would include the ownership of the facility and a graphical representation of the areas where a utility conflict occurs along with the required action (e.g. relocate or adjust). If using "ADJUST" a description of what needs to be done needs to be provide. This method may not be appropriate in urban areas with many utilities.

An example of showing utility conflicts graphically instead of through tabulations is below:



No Affected Utilities

If there are no utility facilities in the project limits, include the utility quality level note and the following sentence:

There are no utility facilities within the project limits.

If utility facilities are present but the project will not affect them, tabulations are not necessary. In those cases, in addition to the information provided in the *General Requirements* section above, use one of the following notes or something similar in the plan:

- No utilities are affected by this project.
- This project does not include excavation; therefore no utilities will be affected.
- The utilities on this project are located outside the limits of excavation and will not be affected.

In addition to one of the statements above, include following language followed by a list of the utility owner names:

- The following utility owners have facilities inside the limits of the project.

Left In-Place Out-of-Service vs. Abandoned

On occasion, utility owners will stop using certain facilities without removing them from the right of way. If you have a project where this is going to happen, make sure you use the correct term to describe the situation. In general, you should use the phrase "Leave In-Place Out-of-Service" for the affected facilities. This language tells the utility owner that it will retain

ownership and responsibility, and therefore liability for the facilities. The term "Abandon," however, turns responsibility and liability of the facilities over to the state.

Utility Locations and Elevations

Show the location of all utility facilities on the plan, profile, and cross section sheets of the plan. Appendix M of the *Utilities Manual* shows the standard symbols to use to represent each facility.

If you do not know the depth of underground facilities, use the following assumptions on the cross-section sheets:

- Telecommunications: 3.0 feet below the surface;
- Gas: 3.0 feet below the surface;
- Electric: 3.5 feet below the surface; and
- Water: 7.5 feet below the surface.

UTILITY AGREEMENTS AND PERMITS UNIT

The Utilities Unit sends a copy of the plan to all of the utility owners listed. They must send a Notice and Order to ALL utility owners that need to adjust or relocate their facilities because of our construction, whether there will be an agreement or not. The Utilities Engineer makes the final decision about whether utility work is reimbursable, so always check before making promises to utility owners. There are three situations in which the state MAY reimburse utility owners.

- The utility owner must relocate facilities from a location on which it has a property right, such as an easement.
- The relocation meets the requirements of a municipality's first move.
- The project is on interstate right of way.

Agency agreements are receivable agreements that are required when MnDOT's contractor will be placing, adjusting, or relocating utilities as part of the construction contract. A bridge attachment is the most common type of work covered by an agency agreement.

MUNICAPAL UTILITIES

When constructing a trunk highway project, MnDOT frequently encounters utility facilities owned by local units of government. These facilities include, but are not limited to:

- Sanitary sewer systems and their related appurtenances;
- Water mains and their associated hydrants, gate valves, and manholes; and
- Street lighting facilities.

While MnDOT often designs street lighting facilities, it considers the design of sanitary sewer and water main systems to be outside its area of expertise. This memo clarifies and provides guidance for dealing with sanitary sewer and water main systems affected by MnDOT construction projects.

Construction projects often make the relocation or adjustment of utility facilities necessary. Any party performing such relocation or adjustment work must do so pursuant to the MnDOT Utility Accommodation on Highway Right of Way Policy and the Utility Accommodation and Coordination Manual.

Minnesota Statutes, section 161.45, subdivision 2 allows a utility owner to appoint MnDOT as its agent to design and construct utility work as part of a state construction contract. MnDOT includes utility adjustment or relocation work in its contracts in cases where performing the work separately would be too difficult or expensive for the utility owner or would be too disruptive to the operations of the roadway (e.g., a relocation that would require digging up the road the contractor is building). Minnesota Statutes, section 161.45, "Utility on Highway Right-of-Way, Relocation;" Minnesota Statutes, section 161.46, "Reimbursement of Utility;" and Minnesota Administrative Rules 8810.3100 – 8810.3600, "Utilities and Equipment" determine which party is responsible for the costs associated with relocating or adjusting a utility owner's facilities as part of a MnDOT project. The Utilities Engineer provides the final determination on cost responsibility. For work included in a MnDOT construction contract, MnDOT is required to either execute a utility agreement or a cooperative construction agreement with that agency. The agreement details the cost responsibility, terms and conditions of the utility work.

If MnDOT includes a municipality's sanitary sewer or water main work in its construction contract, MnDOT and its consultants may not design those facilities; therefore, the municipality or its engineering consultant must perform the design engineering work. This is the case regardless of who is responsible for the cost of the relocation. If a consultant under the MnDOT contract is willing to perform the sanitary sewer or water main design, that consultant must enter into a separate contract with that municipality. The municipality is required to indemnify and certify any plans that will become part of MnDOT's project.

MnDOT may include minor modifications to the sewer and water facilities in its plans without detailed design sheets. Minor modifications include, but are not limited to, adjusting castings and valve boxes, vertically adjusting hydrants (but not horizontally adjusting them), and removing out-of-service facilities.

UTILITIES – BUY AMERICA

Description and Application

Buy America is the requirement that all iron and steel products that will be permanently incorporated into a project having Federal-Aid participation are manufactured domestically. The requirements for Buy America are found in 23 USC 313 and 23 CFR 635.410. Additional information can be found here: "FHWA Program Policy & Guidance Center Buy America". These requirements do not apply to products that do not contain iron or steel. NOTE: This is not the same as Buy American. Buy American applies to Federal procurement contracts per 41 USC 10a-10d and 48 CFR 25 (see here for more information).

The Buy America statute (23 U.S.C. 313) has been around for several years, but section 1518 of MAP-21 amended its scope in 2012. The statute now includes all contracts eligible for assistance under title 23 within the scope of a finding, determination, or a decision under the National Environmental Policy Act (NEPA), regardless of the funding source, if at least one contract within the scope of the same NEPA document uses federal funds. In this case, the term "project" includes all contracts covered by one environmental document. For example, the Saint Croix bridge crossing is considered one project, so all iron and steel components on the SPs that fall under it, even if they are not federally funded, must be Buy America compliant.

According to the Buy America statute, all permanent steel and iron products and their coatings must be domestic. All manufacturing processes, from the initial melting and mixing through the bending and coating stages, must occur in the United States. If a product leaves the US for any process, it will become a foreign product. The minimal use criteria of the act allows a contractor to use foreign products if the cost of those steel or iron products is no more than 0.1 percent of the total contract cost or $2,500 (whichever is greater). In order to use to use steel or iron components that cost more than this amount, the contractor must apply for and receive an approved waiver through the Regional Administrator of the FHWA.

Basically, any phase of any project involving any amount of federal funds must meet Buy America requirements. For example, if you have a contract for signal installation that is part of a larger project that will receive federal reimbursement, all steel signal poles must be Buy America compliant, even if the federal funds are very small.

Manufacturing is any process that modifies the chemical content; physical shape or size' or final finish of the product.

This includes:

- Initial melting, bending, drilling, machining, etc.
- Application of coatings applied to iron or steel.
- Components within applied coatings.
- This does not include:
- Materials/products shipped overseas for assembly prior to incorporation.

Buy America applies to all steel and iron materials/products, components and sub-components, and hardware necessary to encase, assemble, and construct steel components (e.g. reinforced concrete pipe, permanent sheet pile, truncated domes, catch basin grates, etc.).

If iron or steel products are shipped overseas for any of the reasons in the "includes" section above, it will be considered non-domestic and will not comply with Buy America requirements.

Scope

Buy America is applicable for all projects utilizing Federal Aid monies. In addition, the Moving Ahead for Progress in the 21st Century (MAP-21) legislation placed new requirements for projects (and contracts) that do not have Federal Aid, but do fall within the scope of a NEPA determination. These types of projects include State Funded projects that are completed within a "phase" or "stage" of the overall project but are let separately and also all utility relocations that

are required as a result of the overall construction defined within the NEPA determination. It should be noted that this includes both public as well as private utilities.

Waivers

In select instances, project specific waivers may be approved by the Regional Administrator. These should be done as early as possible and needs to be well justified. The information needed for this request is as follows:

- Federal- aid Project Number
- Project Description
- Project Cost
- Waiver Item Cost
- Country of Origin for the Product
- Reason for the Waiver

Incorporation of Materials/Products

Materials and/or products that are to be permanently incorporated into a construction project will need to have certification prior to incorporation. If an incorporated product or material is found to be in non-conformance with Buy America, the entire Federal participation may be in risk for the project (not just for the non-conforming materials).

Buy America only applies to permanent installations. Projects that only use state funds do not need to comply with Buy America.

TRENCHING FOR UTILITIES

There has been concern that consideration is not being taken for excavating for larger utility pipes. Be sure to allow for enough area to excavate for the deeper/larger utilities.

ROUNDABOUTS AND UTILITY COORDINATION

MnDOT and local agencies are utilizing and incorporating roundabouts (RABs) more frequently into their projects to improve the safety and traffic operations of their roadways. While MnDOT's Utility Accommodation and Coordination Manual does not address any section specifically as "Roundabouts," MnDOT's policy on accommodating utilities on its trunk highway rights of way is pretty clear.

From the Manual:

IV.A.1 – Location Requirements, General: "Utility facilities shall be located to minimize the need for later adjustments to accommodate future highway improvements, minimize risks to trunk highway and environmentally sensitive areas, and permit access for servicing such lines with a minimum of interference to highway traffic."

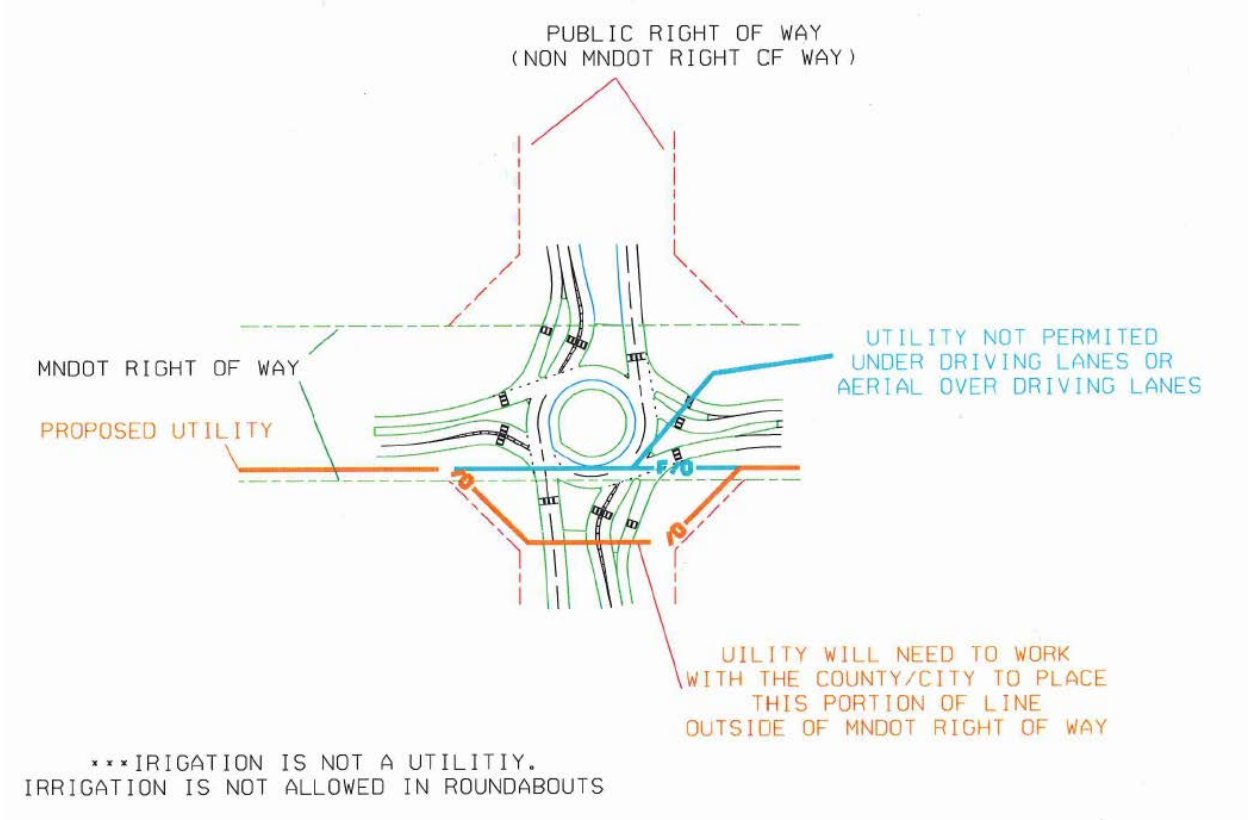
IV.D.1 – Location Requirements, Longitudinal Installations: "New longitudinal installations on highways without full or partial access control shall be located on uniform alignment as near as

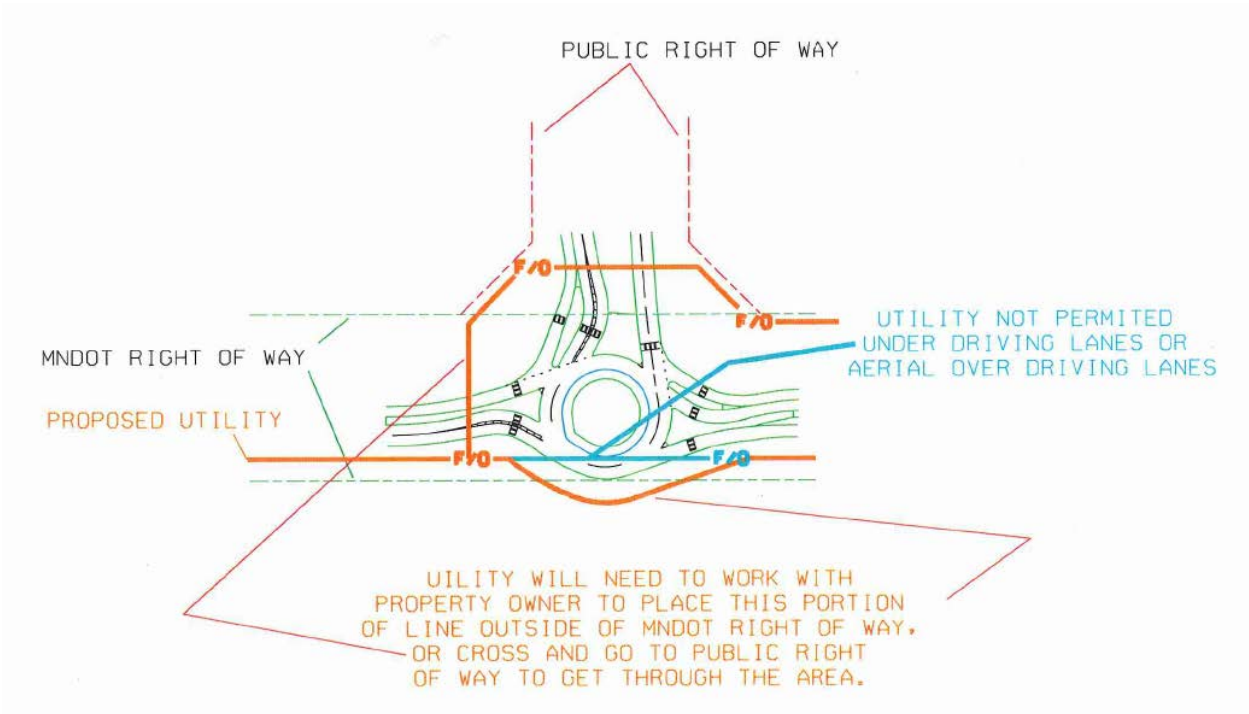
practicable to the right of way line and outside the clear zone. Pole lines shall normally be placed in the outer five feet next to the right of way line. Underground facilities, should be parallel and adjacent to these facilities. Other locations may be approved where particular circumstances warrant. The joint use of pole lines is encouraged, as is common trenching or plowing of underground facilities to minimize overcrowding of the right of way. The placement of all installations should allow servicing and maintenance with a minimum disturbance to traffic."

VIII.B.4 – Specific Requirements, Underground Utility Facilities, Longitudinal installations: "Underground utility facilities may be placed longitudinally by and must be located on uniform alignment as near as practical to the right of way line to provide a safe environment for traffic operations, preserve the integrity of the highway, and preserve space for future highway improvements or other utility facility installations. The distance from the right of way line will depend on the terrain involved and obstructions such as trees and other existing underground or aerial utility lines. Underground lines shall not be placed longitudinally beneath the median, beneath through traffic roadways including shoulders, or beneath ditch bottoms."

VIII.B.5 – Specific Requirements, Underground Utility Facilities, Crossings: "Underground utility facilities placed longitudinally along a connecting roadway shall not be placed under the median or beneath through traffic roadways, including shoulders, of the connecting roadway where the roadway connects with a state highway."

"Beneath through traffic roadways and including shoulders," e.g. under pavement is not permitted. Utilities are to be relocated away from RABs. New facilities are to "jog" around the RAB and not pass through in continuation. Refer to the two diagrams below showing T and multi-leg intersections at RABs.


PUBLIC RIGHT OF WAY
(NON MNDOT RIGHT OF WAY)
MNDOT RIGHT OF WAY
PROPOSED UTILITY
UTILITY NOT PERMITED
UNDER DRIVING LANES OR
AERIAL OVER DRIVING LANES
F/O
F/O
F/O
UILITY WILL NEED TO WORK
WITH THE COUNTY/CITY TO PLACE
THIS PORTION OF LINE
OUTSIDE OF MNDOT RIGHT OF WAY
***IRIGATION IS NOT A UTILITIY.
IRRIGATION IS NOT ALLOWED IN ROUNDABOUTS


PUBLIC RIGHT OF WAY
MNDOT RIGHT OF WAY
PROPOSED UTILITY
F/O
F/O
F/O
F/O
UTILITY NOT PERMITED
UNDER DRIVING LANES OR
AERIAL OVER DRIVING LANES
UILITY WILL NEED TO WORK WITH
PROPERTY OWNER TO PLACE THIS PORTION
OF LINE OUTSIDE OF MNDOT RIGHT OF WAY.
OR CROSS AND GO TO PUBLIC RIGHT
OF WAY TO GET THROUGH THE AREA.

In addition, MN Statute 8810.3600 – Underground Utilities states, "The underground utilities shall be so installed as virtually to preclude any necessity for disturbing the roadbeds to perform maintenance operations." This is a mandatory requirement of any MnDOT permit application.

On occasion, a local agency will request a permit to place irrigation facilities in trunk highway right of way to maintain landscaping. Irrigation is not a utility, and permits will not be issued for this type of installation. Please coordinate with the local agencies and make them aware when this is requested during planning and design. Irrigation is not allowed at RABs. Make note that irrigation is also not permitted on structures.

As you work through the early utility coordination steps found in MnDOT's Utility Accommodation and Coordination Manual when communicating with Utility Owners on your projects, please stress the importance of this issue and MnDOT's requirements. New (proposed) and all existing utilities are to be relocated away from and out from under RABs, and the utilities will not be permitted to cross through or under RABs. This is for all facilities, including but not limited to sanitary sewer, watermain, communication lines, power lines, CATV lines, etc. Storm sewer is essential to roadway operations and can be placed in RABs. However, design should consider laying out storm sewer facilities in a manner that minimizes placement of manholes in splitter islands, truck aprons, or raised median island areas, as this may create future MnDOT maintenance issues.

Coordinate with your District permits staff, or contact MnDOT's Utility Permits Group in St Paul if you have specific questions during development of your projects or local agency projects that incorporate RABs.

UTILITIES NEAR FOUNDATIONS

When working near bridge foundations be sure to check out the Bridge LRFD Manual regarding utilities near foundations. Utility location restrictions occur within 50 feet laterally, 50 feet below, and 15 feet above the base of spread footing foundations. Utility installations in this region requires review and approval by the MnDOT Bridge Office. Additional restriction on the locations of the utilities may be specified in other documents relevant to the project.